

The Impact of CEO Characteristics on Stock Price Crash Risk: A Systematic Literature Review

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ARTICLE INFORMATION

Publication information

Research article

HOW TO CITE

Pangestuti, Rinda Siaga, & Isti Puji Hastuti. (2024). The Impact of CEO Characteristics on Stock Price Crash Risk: A Systemic Literature Review. Journal of International Conference Proceedings, 7(2), 574-589.

DOI:

<https://doi.org/10.32535/jicp.v7i2.3473>

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Received: 21 September 2024

Accepted: 23 October 2024

Published: 25 November 2024

ABSTRACT

The purpose of this Systematic Literature Review (SLR) is to determine the effect of CEO characteristics on stock price crash risk in terms of CEO characteristics so that it can be used as a reference for potential future research directions. This SLR uses ROSES with VOSviewer from reference data accessed on Scopus, ScienceDirect, and Google scholar. The research results in the form of proposed hypotheses that can be used for future research include: H1: CEO physicality has a positive effect on increasing stock price crash risk; H2: CEO psychological conditions affect stock price crash risk; H3: CEO social life affects stock price crash risk; H4: Career affects stock price crash risk; H5: Demographic conditions affect stock price crash risk. The future research can be conducted in developed European countries, the US, or other developing countries, considering that most of these studies are dominated by China. The challenge in this research is access to CEO data that is private or not available on the Thomson Reuters DataStream, Capital IQ, or Bloomberg subscription.

Keywords: Systematic Literature Review, CEO Characteristics, Stock Price Crash Risk.

INTRODUCTION

The research on the effect of CEO characteristics on stock price crash risk starts from the initial assumption that the CEO plays an especially key role in the sustainability of the company where investors see aspects of CEO characteristics in determining their investment portfolio (Fang et al., 2024). Knowing the people and culture behind a company is important (Artha et. al., 2023) besides doing the financial performance (Kepramareni et. al., 2023). For instance, the dialect of the CEO can increase stock price crash risk (Song et al., 2023). Zheng et al. (2023) explored the relationship between CEO facial structure and stock price crash risk. As a result, facial features with a dominant wider jaw or thicker eyebrows may be associated with a higher level of testosterone hormone that makes a person behave in a more dominant and aggressive manner. CEOs with these facial structures tend to take greater risks in managerial decision-making, which may increase stock price crash risk. Sun et al. (2014) found that positive emotions on the CEO's face show an optimistic expression which is an indicator of confidence and belief in the company's future performance. Conversely, facial expressions that show fear, worry, or stress can be interpreted as a lack of CEO confidence in the future of the company, which can cause concern among investors and lead to a sharp stock price crash due to negative market sentiment.

CEO mood also affects stock price crash risk. It has been mentioned that a company is dependable on humans (Kaligis et. al., 2023). Akansu et al. (2017) found that CEO mood can affect the way he thinks, plans, and makes decisions. A positive mood is often associated with better performance. Company performance is one of the main factors that affect stock prices. When a company performs poorly, investors will become concerned about the future of the company and interpret the information as a signal that the stock price will fall. This can increase stock price crash risk. In addition to mood, overconfident CEOs also have the potential to make bolder and more aggressive investment decisions (Qiao et al., 2022). Aggressive and high-risk investment decisions can increase the likelihood of a stock price crash because they can cause stock price instability. If many people in the company follow the CEO's decisions without considering the risks properly, this can increase the company's exposure to stock price crash risk (Kim et al., 2016; Yusuf, 2021).

Demographic factors such as gender, age, origin, domicile, marital status, and educational background of the CEO can also affect stock price crashes. Gong et al. (2022) found that gender compatibility between the CEO and CFO has a significant impact on the risk of stock price crashes. Jodinesa & Chalid (2023) found that female CEOs tend to reduce stock price crash risk.

Andreou et al. (2017) explain that older CEO age tends to reduce stock crash price risk. Conversely, younger CEOs tend to make decisions more quickly so that they pay less attention to the precautionary principle and can increase stock price crash risk (Le et al., 2024). Liu et al. (2023) find that CEOs who are from the region where the company operates tend to reduce the potential stock price crash risk because clan culture and social trust strengthen focal relationships (Chen et al., 2022). Also, CEOs who live close to the company tend to reduce stock price crash risk due to effective operational control (Su et al., 2024). In addition, CEOs who are married, generalists, and who have an educational background as a lawyer also tend to be able to reduce stock price crash risk (Pham, 2020; Kim et al., 2022; Fang et al., 2024). A factor that affects the reduction of stock price crash risk that is no less important is the insider CEO (Choi et al., 2022) because it is considered superior in terms of knowledge and experience related to the company's internal operations and dynamics compared to the outsider CEO.

Other factors that can trigger potential stock price crash risk are CEO duality, salary, tenure, power, salary, cronyism, turnover, and centrality. When the CEO also serves as chairman of the board of directors, duality occurs which causes the supervision of the board of directors over the CEO to be weak, causing the accumulation of company problems that are not detected in the short term. That is why when these problems arise, it can cause a significant stock price crash (Xiding et al., 2017; Xiang et al., 2020; Le et al., 2024; Kalia, 2024; Su et al., 2024). Regarding salary, Le et al. (2024) a large salary gap can create dissatisfaction among employees and can reflect more risky behavior from the CEO which in turn can push stock prices up in the short term. This strategy can increase stock price volatility and crash risk (Habib et al., 2016).

Moreover, if the CEO's salary is small, the greater the stock price crash risk (Li et al., 2024). Increased stock price crash risk can also be caused by long tenure CEOs (Le et al., 2024) and CEO power (Zhao et al., 2023; Kalia, 2024). CEO power allows them to have significant control over the flow of information within the company. When this negative information is finally revealed, often suddenly, it can cause a sharp stock price crash (Harper et al., 2020; Al Mamun et al., 2020). Other negative information can include sudden CEO turnover which is often viewed as a negative signal by the market (Li et al., 2023). Also, there is CEO cronyism that prioritizes their personal or professional relationships over the interests of the company and shareholders (Hanlon et al., 2023). CEO centrality can increase the likelihood of a significant negative shock to stock prices (Krishnamurti et al., 2021). With the differences in market conditions over time, research on stock price crash risk is important to do, especially due to the characteristics of the CEO as a leader in the company (Pham & Nguyen, 2023).

LITERATURE REVIEW

CEO Facial Features on Stock Price Crash Risk

Zheng et al. (2023) explored the relationship between CEO facial structure and stock price crash risk. It is known that more dominant facial features, such as a wider jaw or thicker eyebrows, can be associated with higher levels of the hormone testosterone. High levels of testosterone have been associated with more dominant and aggressive behavior. Therefore, CEOs with more dominant facial structures may tend to take greater risks in managerial decision-making, which may increase stock price crash risk.

Facial features with aggressive or impulsive tendencies will be more prone to decision-making influenced by emotions, which may increase stock price crash risk. Sun et al. (2014) found that a CEO's face showing positive emotions such as a smile or optimistic expression can be an indicator of confidence and belief in the company's future performance. This can increase investor confidence and stock price stability. Conversely, facial expressions that show fear, worry or stress can be interpreted as a lack of CEO confidence in the company's future. This can cause concern among investors and lead to a sharp decline in the stock price, which could eventually trigger a stock price crash given that negative facial expressions can exacerbate market sentiment.

CEO Mood on Stock Price Crash Risk

In addition to facial expressions, CEO mood is also of concern to investors as CEO mood is considered one of the psychological factors that can influence their decision-making and risk-taking behavior. Akansu et al. (2017) found that CEO mood can affect the way they think, plan, and make decisions in performing their duties. For example, CEOs in a

positive mood tend to be bolder and more innovative in making decisions, while CEOs in a negative mood may be more conservative and cautious. This can have a direct impact on company performance, with positive moods often associated with better performance and negative moods often associated with worse performance.

Company performance is one of the main factors that affect stock prices. When a company performs poorly, investors may become concerned about the future of the company and interpret the information as a signal that the stock price will fall. This can increase stock price crash risk. Conversely, satisfactory performance can give investors' confidence and push up the stock price. Future research could investigate the role of different emotional states (e.g., fear, happiness, anger) across different industries and cultural contexts. In addition, they propose to examine how the mood of other executive team members may interact with the CEO mood to influence firm performance (Akansu et al., 2017).

CEO Overconfidence on Stock Price Crash Risk

CEOs who are overconfident will make bolder and more aggressive investment decisions. Overconfident CEOs tend to take greater risks in making financial decisions, such as making riskier investments or conducting rapid business expansion (Qiao et al., 2022). However, aggressive investment decisions and risks taken by overconfident CEOs may also increase the likelihood of a stock price crash as overconfident decisions may lead to instability and increased volatility in the company's stock price. Overconfident CEOs may tend to provide overly optimistic information to the market, masking potential risks and real problems. When the information provided by the CEO does not match the actual performance of the company, it may cause a shock to investors and trigger a stock price crash. Also, the CEO's overconfidence can spill over into the organization, influencing the decisions of managerial and other employees. If many people in the company follow the CEO's decisions without considering the risks properly, this can increase the company's exposure to stock price crash risk (Kim et al., 2016; Yusuf, 2021).

CEO Gender on Stock Price Crash Risk

Gong et al. (2022) found that gender compatibility between the CEO and CFO has a significant impact on stock price crash risk. More specifically, high gender compatibility between CEO and CFO (meaning that both have the same gender) tends to reduce stock price crash risk. This suggests that good coordination between a gender-matched CEO and CFO can result in more effective risk management, which in turn can reduce the likelihood of stock price crashes. Related to gender, Jodinesa & Chalid (2023) found that female CEOs tend to reduce stock price crash risk.

CEO Age on Stock Price Crash Risk

Andreou et al. (2017) explain that older CEOs tend to have more experience and wisdom accumulated from long years in the industry. This experience can help them make wiser decisions and avoid unnecessary risks, thereby reducing stock crash price risk. Older CEOs are usually more conservative in taking risks compared to younger CEOs. They may be more cautious and focus more on long-term stability rather than pursuing risky short-term gains.

CEOs who are nearing the end of their careers may be more motivated to maintain their reputation and leave a positive legacy. This may encourage them to maintain integrity and transparency and avoid practices that could damage the company and cause a stock price crash. However, while older CEOs may provide greater managerial stability, which may reduce stock price uncertainty and volatility, there are also some factors that may increase the risk of stock price crashes associated with CEO age such as resistance to innovation or slower decision-making ability. Conversely, younger CEOs tend to make

decisions more quickly, thus paying less attention to the precautionary principle and increasing stock price crash risk (Le et al., 2024).

CEO Hometown on Stock Price Crash Risk

Liu et al. (2023) explain that CEO hometown identity refers to a CEO who comes from or has a strong attachment to the city or region where the company operates. This identity includes a sense of emotional, social, and cultural attachment to the place of origin. CEOs who have strong ties to their hometown tend to feel a greater social responsibility towards the local community. They are more likely to make decisions that consider the long-term impact and sustainability of the company, which in turn reduces the risk of default. CEOs with a strong hometown identity are usually more concerned about personal reputation and honor in their home communities. This leads them to manage the company more carefully and ethically, avoiding actions that could damage their reputation in the eyes of the community. CEOs with hometown identity often have strong social and business networks in the area. These networks can provide additional support and resources that can help the company overcome financial and operational difficulties, reducing the risk of default.

With more prudent and long-term oriented management, CEOs with hometown identity can reduce the possibility of extreme events that cause stock price crashes given that this study uses stock price volatility that reflects investors' confidence in companies with CE hometown identity characteristics that are considered capable of providing stock return stability. J. Chen et al. (2022) also found that local CEOs reduce stock price crash risk because clan culture and social trust strengthen focal relationships.

CEO Duality on Stock Price Crash Risk

CEO duality occurs when the CEO also serves as chairman of the board of directors. When CEO duality occurs, supervision from the board of directors against the CEO is weak. When coupled with inattentive institutional investors, external oversight is also reduced. This gives more room for the CEO to make decisions that may be high-risk without adequate control. CEOs with duality of office may tend to take riskier decisions to achieve short-term targets or to maintain their power. Without close scrutiny from attentive institutional investors, the risks of these decisions may not be identified or acted upon. Lack of supervision can lead to the accumulation of problems or unhealthy practices within the company that go undetected in the short term. When these problems arise, they can cause a significant stock price crash (Xiding et al., 2017; Xiang et al., 2020; Le et al., 2024; Kalia, 2024; Su et al., 2024).

CEO Salary on Stock Price Crash Risk

Le et al. (2024) conducted research on the impact of CEO disparity stock price crash risk. As a result, a large salary gap can create dissatisfaction among employees and can reflect more risky behavior from the CEO. CEOs who receive much higher compensation may be more likely to take big risks to increase short-term profits, which could ultimately lead to a stock price crash in the future if the strategy fails.

Furthermore, if the CEO is given equity-based compensation in the form of either stock or stock options then there is a strong incentive for the CEO to push the stock price up in the short term, even if it means taking greater risks. This strategy can increase stock price volatility and crash risk (Habib et al., 2016). CEOs who are given shares as a 'gift' actually increase stock price crash risk (M. D. (Marty) Pham & Nguyen, 2023) In addition, CEO salary can also negatively affect stock price crash risk. The smaller the CEO's salary, the greater the stock price crash risk (Y. Li et al., 2024).

CEO Tenure on Stock Price Crash Risk

Le et al. (2024) states that CEO tenure or CEOs who have served for a long time may tend to feel overconfident or experience a decline in innovative and careful decision making. In addition, they may be more at risk of maintaining short-term reputation than long-term stability, which may increase the risk of stock price crashes in the future.

CEO Power on Stock Price Crash Risk

Zhao et al. (2023) and Kalia (2024) mention that CEO power or CEOs who have great power will increase stock price crash risk. CEO power is more likely to cover up negative or bad information to maintain the company's image and stock price in the short term. This lack of transparency can lead to the accumulation of risks that are invisible to the market and investors. When the information is eventually revealed, it can trigger a significant stock price crash. Powerful CEOs feel more comfortable making high-risk decisions without adequate consultation or oversight from the board. These risky decisions can increase stock price volatility and increase the likelihood of a stock price crash.

In the context of China, where CEO influence can be substantial and regulatory oversight may be less stringent compared to other markets. The media also plays a key role in shaping public and investor perceptions. Thus, great CEO power can increase the risk of stock price crashes as it has the potential to mask valuable information, reduce transparency, and encourage risky decision-making.

CEO power gives them significant control over the flow of information within the company. They may choose to hide or delay the disclosure of negative information to preserve the company's image and stock price in the short term. When this negative information is finally revealed, often suddenly, it can cause a sharp stock price crash. Also, CEO power may lead them to establish a corporate culture that is less transparent and less accountable. Such a culture can led to unethical or suboptimal management practices (Harper et al., 2020; Al Mamun et al., 2020).

CEO Insider on Stock Price Crash Risk

An "insider" CEO is an individual who has worked in the company before, while an "outsider" CEO is an individual recruited from outside the company. Insider CEOs have an advantage in terms of knowledge and experience related to the company's internal operations and dynamics. Insider CEOs may have a greater emotional attachment and long-term interest in the company due to their previous involvement in the company. This may encourage them to take more cautious and long-term oriented decisions, reducing the tendency to take unnecessary risks. In contrast, outsider CEOs, while often bringing new experiences and perspectives, can sometimes be perceived by the market as a source of uncertainty and risk. Significant leadership changes can create uncertainty about the strategic direction of the company and undermine investor confidence. This can increase stock price crash risk (Choi et al., 2022).

CEO Geographic Distance on Stock Price Crash Risk

CEO geographic distance is the CEO whose residence is close to the company (Su et al., 2024). Significant geographical distance between the CEO and the head office or other management team can hinder effective communication and timely supervision. Lack of communication and oversight can lead to poorly informed decisions or lack of coordination, which can increase the risk of strategic and operational errors that can trigger stock price crashes as CEOs who are far from the center of operations may not be able to respond quickly to problems or crises that occur. Also, the geographical distance may make the CEO less engaged or less aware of local market conditions, customer needs, and competitive dynamics in the company's main locations of operation. CEOs who are far from the headquarters may be less involved in the daily

operations of the company, which may reduce the effectiveness of management and operational control.

Generalist CEOs to Stock Price Crash Risk

Generalist CEOs often have experience across different industries and business functions compared to specialist CEOs. This allows them to introduce diversification and innovation strategies that can reduce industry-specific risks and increase firm stability. With extensive knowledge and cross-sector experience, generalist CEOs can make better and more informed decisions. Decisions based on a more holistic understanding of the business environment can reduce the likelihood of wrong decisions that can lead to stock price crashes (Fang et al., 2024).

CEO Turnover on Stock Price Crash Risk

Abnormal CEO turnover or unusual or sudden CEO turnover is often seen as a negative signal by the market. These changes can occur for assorted reasons such as deficient performance, scandals, or internal conflicts, all of which can create uncertainty among investors. This uncertainty often leads to increased stock price volatility and can contribute to stock price crash risk. An abruptly replaced CEO may leave information gaps or a lack of transparency regarding the true state of the company. This lack of transparency can lead to negative speculation and distrust among investors, increasing the risk of a stock price crash when bad information is eventually revealed. Also, CEO changes are often accompanied by changes in company policies and strategies. Investors may be concerned about uncertainty and potential disruption to existing business plans, which may increase the risk of stock price volatility. Market reactions to CEO turnover can also be emotional and speculative (Li et al., 2023).

CEO Cronyism on Stock Price Crash Risk

Hanlon et al. (2023) discuss the impact of cronyism in the boardroom on stock price crash risk. Boardroom cronyism refers to a practice in which executives, including CEOs, prioritize their personal or professional relationships over the interests of the company and shareholders. Cronyism can lead to decision-making that is based on personal relationships rather than objective evaluation of performance or business needs. Non-objective decisions can result in inefficient resource allocation, poor projects, or incompetent management appointments. This increases the risk of deficient performance and instability, which can lead to stock price crashes.

Cronyism is often linked to a lack of transparency, where valuable information is hidden to protect certain individuals or groups. In an environment of cronyism, the board of directors may be less effective in performing its oversight function due to personal relationships with the CEO or other executives. Cronyism can create a negative corporate culture, where employees feel, they are not rewarded based on their achievements, but rather because of their relationships. Future research can investigate the effect of anti-cronyism policies on stock price crash risk (Hanlon et al., 2023).

CEO Centrality on Stock Price Crash Risk

Krishnamurti et al. (2021) discusses the effect of CEO centrality on stock price crash risk. CEO centrality refers to how dominant and influential the CEO is in decision making and company operations. The concentration of power in one individual can lead to unwise decision making due to the lack of supervision and input from other parties. Wrong or high-risk decisions made by the CEO can increase the likelihood of a significant negative shock to the stock price. CEOs with high centrality may be more likely to control the information shared with the public and shareholders.

Companies that rely heavily on CEOs with centrality may face high risks if the CEO is suddenly unable to continue his duties (for example, due to health or resignation). Thus, CEO centrality may increase the risk of falling stock prices through mechanisms such as concentration of power, low transparency, and over-reliance on a single individual. Further research can help identify ways to manage and mitigate these risks, such as through strengthening the role of the board and promoting a more inclusive and collaborative corporate culture (Krishnamurti et al., 2021).

CEO Marital Status on Stock Price Crash Risk

Kim et al. (2022) discussed the effect of CEO marital status on stock price crash risk and found that married CEOs tend to show emotional stability and a more balanced personal life. This stability can be reflected in more careful and measured decision-making, reducing the possibility of excessive risk-taking that could lead to stock price crashes. Married CEOs may be more focused on building and maintaining their good reputation over the long term, both professionally and personally.

The marital commitment may encourage CEOs to be more prudent in running the company, ensuring that decisions are not only profitable in the short term but also sustainable in the long term, reducing the risk of major negative surprises. Support from spouses and families can give CEOs a broader view and support a better work-life balance. Future research can look at the difference in impact between CEOs who are married, divorced, or single and the regional or country culture of these statuses on stock price crash risk.

CEO Lawyer on Stock Liquidity and Stock Price Crash Risk

Pham (2020) discusses the effect of CEO educational background as a lawyer on stock liquidity. Although the focus of this article is on stock liquidity, the influence of lawyer CEOs can also be explored on stock price crash risk. Lawyer CEOs have a deep understanding of laws and regulations. A good understanding of regulations can improve a company's compliance with capital market regulations, reducing legal and litigation risks, which can improve investor confidence and stock liquidity.

Strict compliance with regulations reduces the risk of litigation and significant fines, which can cause a sudden stock price crash. Lawyer CEOs tend to ensure that their companies adhere to strict disclosure standards and are more cautious and conservative in their decision-making. Future research can be conducted using non-lawyer CEO characteristics to examine the differences in CEOs' backgrounds with stock price crash risk.

CEO Early Life Disaster on Stock Price Crash Risk

The experience of early life disaster can affect stock price crash risk through several psychological and behavioral mechanisms that impact CEO managerial decisions (Y. Chen et al., 2021). CEOs who experience early life disasters tend to develop a conservative and cautious attitude. These traumatic experiences make them more sensitive to risk and uncertainty, so they are more likely to make more cautious decisions in a business context. Traumatic experiences can make CEOs more proactive in identifying and managing potential risks that could result in a drop in share price, such as operational, financial or reputational issues. Thus, early life disasters in CEOs influence the formation of their character and mindset. Early life disasters can be in the form of great famine (Cheng et al., 2021). CEOs with great famine experience or who have experienced massive famine before, tend to be more vigilant in managing company information and more transparent, which reduces the possibility of a drastic stock price crash. Future research can compare early life disaster experiences across generations.

CEO Dialect on Stock Price Crash Risk

Song et al. (2023) found that sharing the same dialect between the CEO and the auditor can increase the level of familiarity and trust between the two. This has the potential to make auditors more easily accept the information provided by the CEO without conducting adequate verification. Sharing the same dialect can reduce information asymmetry between CEOs and auditors. Although communication is smoother and more effective, the closeness that results from sharing the same dialect can reduce the effectiveness of auditor oversight. Auditors may become less independent and more likely to overlook signs of trouble that could lead to a decline in the stock price. This can result in less rigorous oversight and greater potential for manipulation of financial information. Thus, while sharing the same dialect may facilitate better communication, it may also negatively impact the quality of auditor oversight and increase stock price crash risk Song et al. (2023).

RESEARCH METHOD

Nisa et al. (2022) used ROSES during the research phase, which consists of the definition of the research objectives, including identification, screening (determination of inclusion and exclusion criteria), and eligibility. The next stage is quality assessment, where further checks are made to ensure that the selected articles meet the criteria. The final stage describes how data was collected for review, processing, and validation. This research uses data accessed from Scopus, ScienceDirect, and Google scholar with the following selection strategy:

Table 1. Selection Strategy

| Database | Search String |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scopus dan ScienceDirect | TITLE-ABS-KEY ceo AND characteristics OR "stock price crash risk" AND stock AND price AND crash OR stock AND price* OR price AND crash AND risk* |
| ScienceDirect dan Google Scholar | ceo AND characteristics AND stock AND price AND crash AND risk |

Source: Scopus, ScienceDirect, Google Scholar input, 2024.

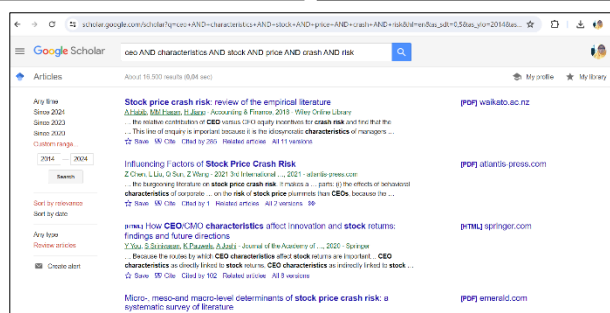
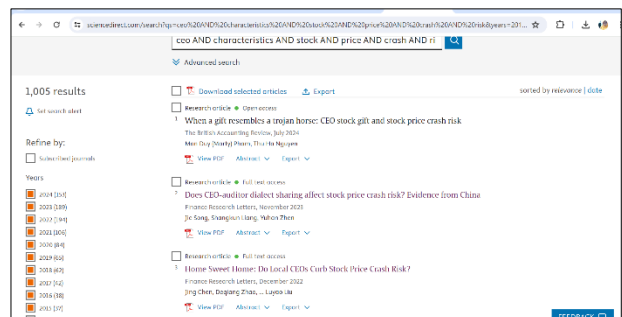
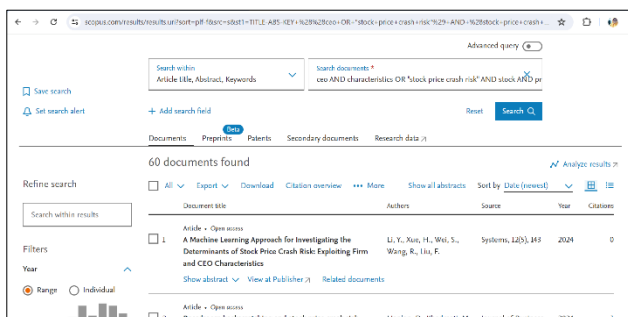


Figure 1. Scopus, ScienceDirect, and Google Scholar Output, 2024.

Based on the output in Figure 1, it is known that the number of articles from Scopus is 60, ScienceDirect is 1,005, and Google Scholar is 16,500. The article or document is then screened. Screening is done by ensuring that the articles included are in accordance with the topic of CEO characteristics and stock price crash risk, use English, and come from indexed journals or conferences. After identification, 37 articles were obtained from screening. Then, 30 articles were obtained (considering time constraints) that could be accessed and in accordance with the screening criteria as shown in Figure 2. as follows:

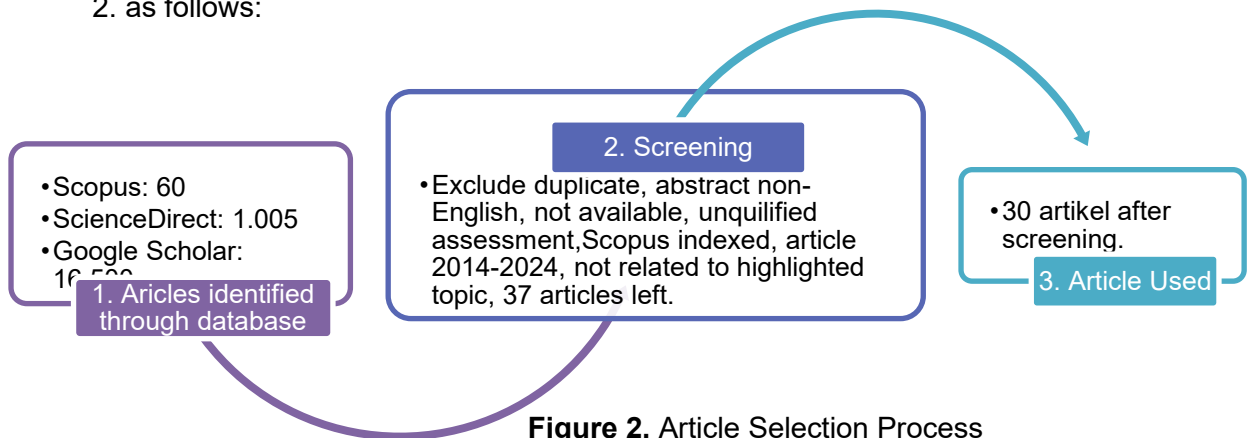


Figure 2. Article Selection Process

Quality assessment is conducted by reading Scopus indexed articles, in English, and there is peer-to-peer review for the journal (Nisa et al., 2022). The quality assessment prioritized Scopus-indexed articles during the period 2014 to 2024 by not determining that the article should be in Q1, Q2, Q3, or Q4. The software used in this systematic research literature is VOSviewer.

RESULTS

Descriptive and network analyses

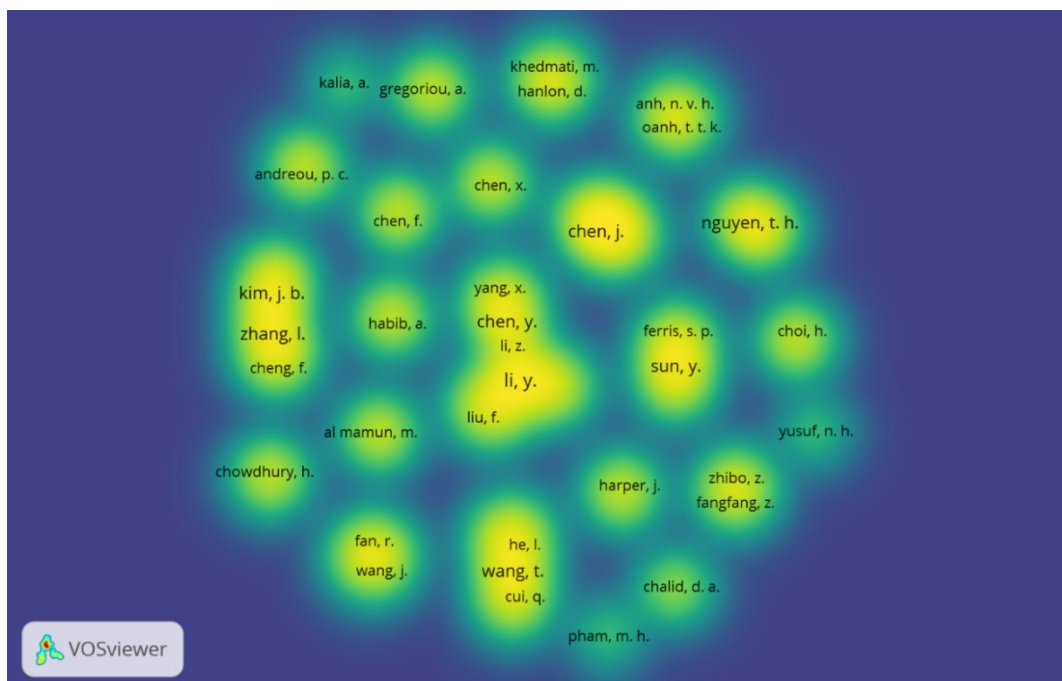


Figure 3. Authors' Density

When viewed from the density, there are 94 items related to authors in the VOSviewer data. Of these 94 items, there are 13 authors who are connected to each other as shown in Figure 4 as follows:

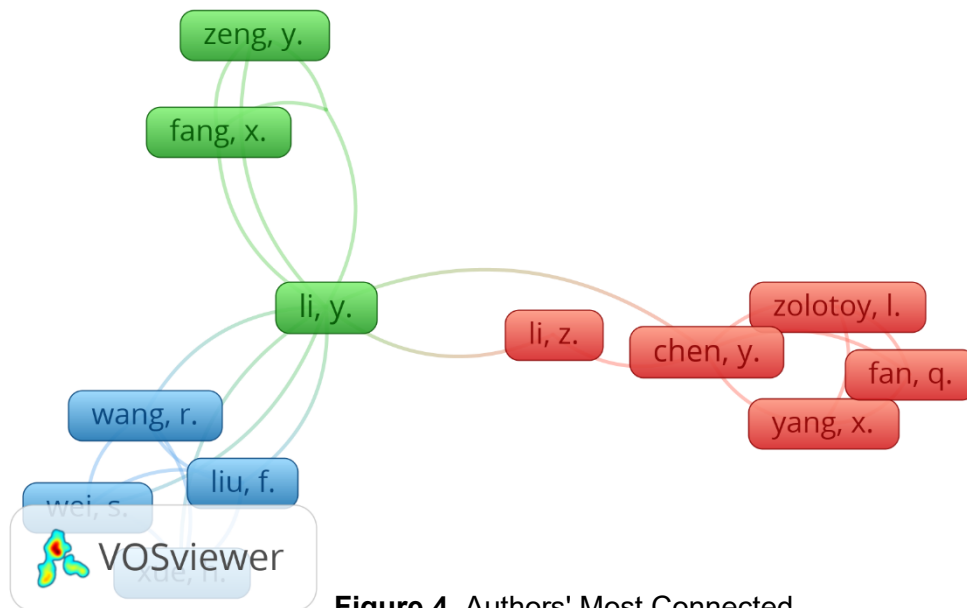


Figure 4. Authors' Most Connected

When viewed from co-occurrence based on keywords for CEO characteristics, 27 keywords were selected with the results in Figure 5. as follows:

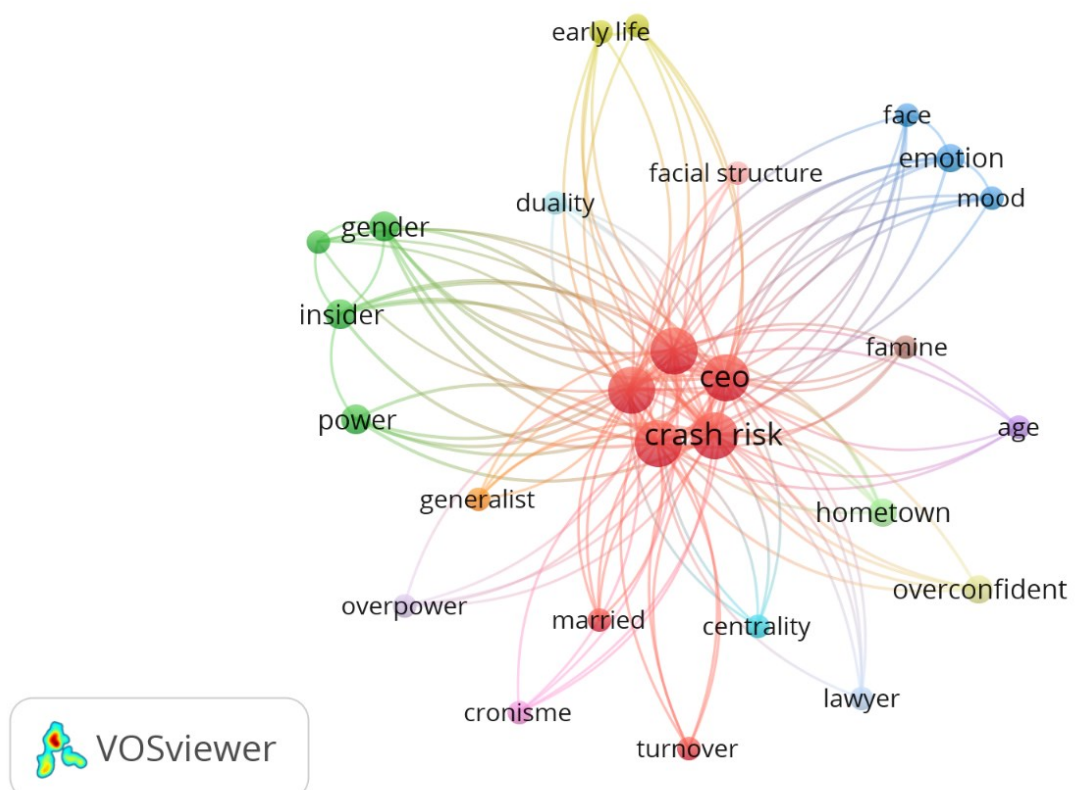


Figure 5. CEO Characteristics

DISCUSSION

Based on the literature review and the results of the VOSviewer output for CEO characteristics in Figure 5, a summary table and potential future research for what CEO characteristics can be used based on suggestions from previous studies are made as follows:

Table 2. Future Research Avenue

| Year | Author(s) | CEO Characteristics | Future Research Avenue |
|-----------|-----------------------------------------------------------------------------------------------|-------------------------|-----------------------------------|
| 2024 | Fang et al. (2024) | CEO generalist | CEO specialist |
| 2024 | Su et al. (2024) | CEO geographic distance | CEO geographic distance |
| 2024 | Le et al. (2024) | CEO tenure, CEO salary | CEO tenure, CEO salary |
| 2020-2024 | Harper et al. (2020); Al Mamun et al. (2020); Zhao et al. (2023); Kalia (2024) | CEO power | CEO power |
| 2020-2024 | Xiding et al. (2017); Xiang et al. (2020); Le et al. (2024); Kalia (2024); Su et al., (2024). | CEO duality | CEO duality |
| 2017-2024 | Andreou et al. (2017); Le et al. (2024) | CEO age | CEO age |
| 2014-2024 | Sun et al. (2014); Zheng et al. (2023) | CEO facial structure | CEO facial structure |
| 2023 | Song et al. (2023) | CEO dialect | CEO dialect |
| 2023 | Z. Li et al. (2023) | CEO turnover | CEO turnover |
| 2023 | Hanlon et al. (2023) | CEO cronyism | CEO anti-cronyism |
| 2022-2023 | J. Chen et al. (2022); Liu et al. (2023) | CEO hometown | CEO hometown vs CEO international |
| 2022-2023 | Gong et al. (2022); Jodinesa & Chalid (2023) | CEO gender | CEO gender |
| 2022 | Kim et al. (2022) | Married CEO | Single/Divorced CEO |
| 2022 | Choi et al. (2022) | CEO insider | CEO insider vs outsider |
| 2016-2022 | Kim et al. (2016); Yusuf, (2021); Qiao et al. (2022) | CEO overconfident | CEO overconfident |
| 2021 | Krishnamurti et al. (2021) | CEO centrality | CEO collaborative culture |
| 2021 | Y. Chen et al. (2021); Cheng et al. (2021) | CEO early life disaster | CEO early life disaster |
| 2020 | Pham (2020) | CEO lawyer | CEO non-lawyer background |
| 2017 | Akansu et al. (2017) | CEO mood | CEO emotional state |

Source: Created by Authors, 2024.

Proposed Recommendation Hypothesis

Based on Table 2. Future Research Avenue on the Effect of CEO Characteristics on Stock Price Crash Risk, a hypothesis model can be created for research recommendations that are juxtaposed with a summary of the effect of CEO characteristics on stock price crashes and proposed hypotheses. The research gap from the results of this Systematic Literature Review (SLR), in addition to the size indicators of CEO characteristics in Table 2, also recommends quantitative research by conducting multiple linear regression based on the results of questionnaire data and secondary data processed simultaneously (including dummy data if any) after coding the ordinal data for questionnaires with Likert scales (if needed).

The categorization of CEO characters is divided into five based on the results of the literature review, namely based on physical character, psychology, social life, career, and demographics. The five categories will later become dimensions in panel data regression for the independent variable CEO characteristics and the dependent variable stock price crash risk. Meanwhile, the indicators used in each dimension are as follows:

Table 3. Categorization in CEO Characteristics and Proposed Hypotheses

| Category/ Dimension (1) | Indicators (2) | Reference(s) (3) | Effect on Stock Price Crash Risk (4) | Proposed Hypotheses ... thus, based on Section 1. Introduction, Section 2. Literature Review, and the research results in reference (3), it is assumed: (5) |
|-----------------------------------|----------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Physic | Sun et al. (2014); Zheng et al. (2023) | Facial structure | + | H1: CEO physicality has a positive effect on increasing stock price crash risk. |
| 2. Psychology | Akansu et al. (2017) | Emotional state | + | H2: CEO psychological conditions affect stock price crash risk. |
| | Kim et al. (2016); Yusuf, (2021); Qiao et al. (2022) | Overconfident | + | |
| | Y. Chen et al. (2021); Cheng et al. (2021) | CEO early life disaster | - | |
| 3. Social Life | Krishnamurti et al. (2021) | Collaborative culture | + | H3: CEO social life affects stock price crash risk. |
| | Song et al. (2023) | Dialect | + | |
| | Hanlon et al. (2023) | Anti-cronyism | - | |
| 4. Career | Harper et al. (2020); Al Mamun et al. (2020); Zhao et al. (2023); Kalia (2024) | Power | + | H4: Career affects stock price crash risk. |
| | Xiding et al. (2017; Xiang et al. (2020); Le et al. (2024); Kalia (2024); Su et al., (2024). | Duality | + | |
| | Le et al. (2024) | Tenure | + | |
| | | Salary | - | |
| | Z. Li et al. (2023) | Turnover | + | |
| | Pham (2020) | Non-lawyer background | + | |
| | Choi et al. (2022) | Insider | - | |
| | | Outsider | + | |
| | Fang et al. (2024) | CEO specialist | - | |

| Category/ Dimension (1) | Indicators (2) | Reference(s) (3) | Effect on Stock Price Crash Risk (4) | Proposed Hypotheses ... thus, based on Section 1. Introduction, Section 2. Literature Review, and the research results in reference (3), it is assumed: (5) |
|-----------------------------------|----------------------------------------------------|-------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.Demografi | Su et al. (2024) | CEO geographic distance | + | H5: Demographic conditions affect stock price crash risk. |
| | Andreou et al. (2017); Le et al. (2024) | CEO age | - | |
| | J. Chen et al. (2022); Liu et al. (2023) | Local hometown | - | |
| | | International hometown | + | |
| | Gong et al. (2022); Jodinesa & Chalid (2023) | Women | - | |
| | | Men | + | |
| | Kim et al. (2022) | Single | + | |
| | | Divorced | + | |
| | Y. Chen et al. (2021); Cheng et al. (2021) | CEO early life disaster | - | |

Source: Created by Authors, 2024.

CONCLUSION

SLR with the topic of CEO characteristics and stock price crash risk is interesting to continue regarding the results of further research recommendations considering that there are still not many studies that combine these two topics to be studied. Moreover, if it is conducted in developed European countries, the US, or other developing countries, considering that most of these studies are dominated by China. The challenge in this research is access to CEO data that is private or not available on the Thomson Reuters DataStream, Capital IQ, or Bloomberg subscription.

ACKNOWLEDGMENT

A gratitude to the Faculty of Economics of Universitas Islam 45 for funding and the Management Science Graduate Program of Universitas Indonesia for the access to international journals and data.

DECLARATION OF CONFLICTING INTERESTS

There is no conflict of interest.

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Appendix A. Basic Literature Review

| No. | Year | Author(s) | Title | Journal | Descriptions | |
|-----|------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | CEO Characteristics | Impact on Stock Price Crash Risk |
| 1 | 2024 | (Fang et al., 2024) | Generalist CEOs and stock price crash risk. | Journal of Business Finance and Accounting | Generalist CEO | Generalist CEO decreases stock price crash risk. |
| 2 | 2024 | (Y. Li et al., 2024) | A Machine Learning Approach for Investigating the Determinants of Stock Price Crash Risk: Exploiting Firm and CEO Characteristics. | Systems | CEO Pay (Total gaji tahunan CEO) | CEO pay has a positive effect on stock price crash risk. The less the salary the bigger the stock price crash risk. |
| 3 | 2024 | (Su et al., 2024) | The geographic distance of independent directors and stock price crash risk: Evidence from China. | Research in International Business and Finance | CEO non-duality CEO short geographic distance | CEO non-duality makes independent directors work better coupled with short geographic distance (the distance between the residence of independent directors and the company) which makes a decrease in stock price crash risk due to a good supervisory role. |
| 4 | 2024 | (Kalia, 2024) | EO power and stock price crash risk in India: the moderating effect of insider trades. | Asian Journal of Economics and Banking | CEO power CEO duality | CEO power and CEO duality can reduce stock price crash risk in the short term but in the medium term it is the opposite. |
| 5 | 2024 | (Le et al., 2024) | Insider trading, gender diversity within the board room, CEO pay gap, and stock price crash risk. | International Journal of Finance and Economics | CEO pay disparity. CEO duality CEO tenure CEO age | CEO pay disparity, CEO duality, and CEO tenure are positively related to future price crashes. Thus, young CEOs increase stock price crash risk. |
| 6 | 2023 | (Z. Li et al., 2023) | Top management abnormal turnover and stock price crash risk: Evidence from China. | International Review of Financial Analysis | CEO turnover | CEO turnover increases stock price crash risk |
| 7 | 2023 | (Hanlon et al., 2023) | Boardroom backscratching and stock price crash risk. | Journal of Business Finance and Accounting | Boardroom backscratching (Cronyism CEO with director) | The existence of boardroom backscratching, or cronyism, such as when a company's CEO and directors simultaneously receive excessive remuneration may inhibit the |

| No. | Year | Author(s) | Title | Journal | Descriptions | |
|-----|------|---------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | CEO Characteristics | Impact on Stock Price Crash Risk |
| | | | | | | board's constructive criticism and monitoring, resulting in more likelihood of bad news hoarding which increases the potential stock price crash risk. |
| 8 | 2023 | (Oanh et al., 2023) | Ceo Overpower and Stock Price Crash Risk: Evidence From Family Businesses in Vietnam. | Journal of Eastern European and Central Asian Research | CEO overpower CEO duality | CEO power tends to have a negative effect on stock price crash risk if the CEO has a large ownership in the family company. CEO duality increases stock price crash risk. |
| 9 | 2023 | (Liu et al., 2023) | Stay home, stay safe: CEO hometown identity and default risk. | Finance Research Letters | CEO hometown identity | CEO hometown identity significantly limits default risk due to the hometown identity effect, and the CEO's reputation and ability based on hometown identity is recognized to alleviate financial constraints. |
| 10 | 2023 | (Zhao et al., 2023) | Media Tone and Stock Price Crash Risk: Evidence from China. | Mathematics | CEO power | CEO power has a positive effect on stock price crash risk. |
| 11 | 2023 | (Jodinesa & Chalid, 2023) | emale CFO and Stock Price Crash Risk: Evidence from Indonesia. | Paradigma, | CEO gender | Female CEOs have more potential to reduce stock price crash risk. |
| 12 | 2023 | (Zunxin et al., 2023) | <u>CEO Facial Structure and Stock Price Crash Risk</u> | <u>Accounting and Finance</u> , Accounting and Finance Association of Australia and New Zealand | CEO face structure | More dominant facial features, such as a wider jaw or thicker eyebrows, may be associated with higher levels of the hormone testosterone. High levels of testosterone have been associated with more dominant and aggressive behavior. Therefore, CEOs with more dominant facial structures may tend to take greater risks in managerial decision-making, which may increase stock price crash risk. |
| 13 | 2023 | (Song et al., 2023) | Does CEO-auditor dialect sharing affect stock price crash risk? Evidence from China. | <i>Finance Research Letters</i> | CEO dialect | CEO dialect increases stock price crash risk. |

| No. | Year | Author(s) | Title | Journal | Descriptions | |
|-----|------|------------------------|---------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | CEO Characteristics | Impact on Stock Price Crash Risk |
| 14 | 2022 | (Choi, et al., 2022) | CEO Origin and Stock Price Crash Risk: Insider versus Outsider CEOs | Corporate Governance: An International Review | CEO origin (insider vs outsider) | The insider CEO is considered to have a better understanding of the Company's condition so that it can maintain the stability of market sentiment and reduce the potential stock price crash risk. |
| 15 | 2022 | (Kim et al., 2022) | Married CEOs and stock price crash risk. | European Financial Management | CEO marital status | Married CEOs reduce the potential stock price crash risk compared to unmarried CEOs. |
| 16 | 2022 | (Gong et al., 2022) | CEO–CFO gender congruence and stock price crash risk in energy companies. | Economic Analysis and Policy | CEO gender congruence | CEO gender congruence improves the quality of corporate information processing and corporate governance, which in turn inhibits corporate executives from hoarding bad news and ultimately reduces crash risk. |
| 17 | 2022 | (Qiao et al., 2022) | Chief financial officer overconfidence and stock price crash risk. | International Review of Financial Analysis | CEO overconfidence | CEO and CFO overconfidence increases stock price crash risk. |
| 18 | 2022 | (J. Chen et al., 2022) | Home Sweet Home: Do Local CEOs Curb Stock Price Crash Risk? | Finance Research Letters | Local CEO | Local CEOs lower the risk of falling share prices as clan culture and social trust strengthen focal relationships. |
| 19 | 2021 | (Y. Chen et al., 2021) | CEO early-life disaster experience and stock price crash risk. | Journal of Corporate Finance | Early-life disaster experience CEOs | Firms led by early-life disaster experience CEOs have higher stock price crash risk because early-life disaster experience CEOs are more risk tolerant, and thus more willing to accept the risks associated with bad news hoarding, which leads to the formation of stock price crashes. |
| 20 | 2021 | (Cheng et al., 2021) | Aftershock: CEO Great Famine Experience and Stock Price Crash Risk. | Frontiers in Psychology | Great famine CEO | CEOs who experienced the Great Famine in early life tend to hoard bad news, resulting in higher stock price crash risk. |

| No. | Year | Author(s) | Title | Journal | Descriptions | |
|-----|------|-----------------------------|------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | CEO Characteristics | Impact on Stock Price Crash Risk |
| 21 | 2021 | (Krishnamurti et al., 2021) | CEO centrality and stock price crash risk. | Journal of Behavioral and Experimental Finance | CEO's network centrality | CEO's network centrality is less likely to exhibit bad news hoarding behavior, which leads to lower future stock price crash risk because CEOs with this characteristic have a lower likelihood of using accounting manipulation with aggressive accruals and earnings management. |
| 22 | 2020 | (M. H. Pham, 2020) | In law we trust: Lawyer CEOs and stock liquidity. | Journal of Financial Markets | CEOs with a law degree (lawyer CEOs) | Lawyer CEOs increase stock market liquidity compared to non-lawyer CEOs. Increased stock market liquidity leads to stock price stability which reduces stock price crash risk. |
| 23 | 2020 | (Al Mamun et al., 2020) | Powerful CEOs and stock price crash risk. | Journal of Corporate Finance | CEO power | Powerful CEO increases stock price crash risk. |
| 24 | 2020 | (Harper et al., 2020) | Stock price crash risk and CEO power: Firm-level analysis. | Research in International Business and Finance, | CEO power | CEO power increases stock price crash risk. |
| 25 | 2017 | (Akansu et al., 2017) | Firm Performance in the Face of Fear: How CEO Moods Affect Firm Performance. | Journal of Behavioral Finance, | CEO mood | Positive mood improves the performance of the CEO and the company, which can provide positive sentiment to the market and maintain stock price stability so that the potential for stock price crashes can be minimized. |
| 26 | 2017 | (Andreou et al., 2017) | CEO age and stock price crash risk. | Review of Finance | CEO age | The older the age of the CEO, the wiser it is, thus reducing the potential stock price crash risk. |
| 27 | 2017 | (Xiding et al., 2017) | CEO duality and stock price crash risk: Evidence from China. | Transformations in Business and Economics | CEO duality | CEO duality reduces supervisory effectiveness and thus increases stock price crash risk. |

| No. | Year | Author(s) | Title | Journal | Descriptions | |
|-----|------|----------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | CEO Characteristics | Impact on Stock Price Crash Risk |
| 28 | 2016 | (Kim et al., 2016) | CEO Overconfidence and Stock Price Crash Risk. | Contemporary Accounting Research | CEO overconfidence | Excessive CEO self-confidence increases the risk of falling share prices. |
| 29 | 2016 | (Habib et al., 2016) | Stock Price Crash Risk: Review of the Empirical Literature. | SSRN Electronic Journal. | CEO pay | With CEO compensation in the form of stock or stock options, there is a strong incentive for CEOs to push the stock price up in the short term, even if it means taking greater risks. This strategy can increase stock price volatility and crash risk. |
| 30 | 2014 | (Sun et al., 2014) | The power of fear: Facial emotion analysis of CEOs to forecast firm performance. | Proceedings of the 2014 IEEE 15th International Conference on Information Reuse and Integration, IEEE IRI | CEO emotions | A CEO's face showing positive emotions such as a smile or an optimistic expression can be an indicator of confidence and belief in the company's future performance. This can increase investor confidence and stock price stability. Conversely, facial expressions that show fear, worry or stress can be interpreted as the CEO's lack of confidence in the company's future. This can cause concern among investors and lead to a sharp decline in the share price, which can eventually trigger a stock price crash. |