Review of the Empirical Literature on Stock Crash Risk: The Role of Managers' Characteristic, Information Environment and Its Micro-Consequences

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Abstract. An unexpected, sharp decline in stock prices over a short period of time is known as a stock crash. A significant catastrophic incident or the economic crisis may have a side effect that causes stocks to collapse. This can also be due to widespread public anxiety about a stock fall, which leads to panic selling and additional market declines. The negative skewness of the firm-specific weekly returns is how we estimate crash risk using a large sample of publicly listed companies from 2009 to 2019. The study examined how various firm characteristics, mechanisms for corporate governance, and macroeconomic factors affect crash risk and how crash risk affects future stock returns, earnings quality, and corporate policies. The main findings include: (1) Companies have a higher crash risk due to higher leverage, lower profitability, lower growth opportunities, more intangible assets, more earnings management, more information asymmetry, weaker shareholder rights, and lower institutional ownership. (2) Crash risk is negatively correlated with company value and positively correlated with cost of capital. (3) Crash risk predicts lower future stock returns and operating performance. The consequences of a stock market crash are a topic of great interest among economists, policymakers, investors, and the general public. A stock market crash is characterized by a sudden and significant decline in the value of stocks, often leading to a wide range of economic and financial repercussions. Therefore, we will review the empirical literature on the reasons which caused the stock risk crash and the consequences of stock market crashes, focusing on their impacts on various changes with companies, such as the personal changes within the company and the financial varies within the company.

Keywords: economic crisis · Public panic · stock market crash

1 Introduction

A stock market crash is an unexpected decline in stock prices that may start a protracted bear market or indicate impending economic crisis. Fear in the market and selling among anxious investors can exacerbate market collapses. The social and political impacts of a

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stock market crisis can be significant in addition to these economic and financial effects. For example, a decline in economic growth and household wealth can lead to increased social and political unrest, as individuals and groups become more dissatisfied with their economic circumstances. This can lead to political instability, which can in turn have a range of economic and social consequences. Stock prices are subject to fluctuations due to various factors, such as market conditions, investor sentiment, firm performance, and corporate events. However, some firms experience more extreme and sudden drops in their stock prices than others, which can have significant implications for shareholders, managers, regulators, and the economy as a whole. These events are known as stock price crashes, and they represent a form of tail risk that is difficult to predict and hedge against. The causes and effects of stock market collapses have been thoroughly studied throughout the years.

Several studies have identified various firm-level factors, such as leverage, profitability, and growth opportunities, that increase crash risk [1]. Corporate governance mechanisms, such as shareholder rights and institutional ownership, have also been shown to influence the risk of collapse. Additionally, macroeconomic factors, such as interest rates and inflation, have also been found to be associated with crash risk. Except for the considerable research on the topic, several issues remain unexplored. First, there is a lack of consensus on how to measure crash risk [2, 3]. Second, although previous studies have identified determinants of crash risk, it is still unclear how these factors interact with each other to influence the crash risk [4]. Third, the implications of crash risk for firm performance, such as future stock returns and earnings quality, remain inconclusive [1]. In the case of this research project, we aim to provide new insights into the sources and effects of stock price crash risk, which can help investors and policymakers make informed decisions. Specifically, we investigate the determinants of stock price crash risk. The reminder of this paper: In order to determine crash risk, which is the negative skewness of a particular company's weekly returns, we used a sample of publicly traded firms from 2009 to 2019. According to our research, a variety of firm-level factors are related to a greater crash risk, including higher leverage, lower profitability, lower growth opportunities, more intangibles, more surplus management, weaker shareholder rights, and lower institutional ownership. In addition, macroeconomic factors, such as interest rates and inflation, were also found to be associated with crash risk. These finding indicate the significance of firm characteristics and macroeconomic factors in influencing collapse risk and are consistent with earlier studies.

2 Review of the Extant Literature

2.1 The Causes Reasons of Stock Collapse Risk

The Effect of Manager-characteristic on Stock Crash Risk

Managerial incentives and characteristics can also affect stock crash risk by influencing managers' preferences for concealing or disclosing bad news. Several studies have examined how management compensation contracts affect stock market crash risk. For example, firms with higher option-based compensation have higher crash risk because options force managers to bet on risky projects and manipulate returns, while firms with

higher equity-based compensation have higher equity risk and higher, and therefore lower, crash risk; the proportion of equity firms with higher equity had a lower risk of collapse because equity aligns management's interests with those of shareholders [5, 6]. Other studies have examined how management ownership, overconfidence, gender, education, separation, and tenure affect crash risk [5, 7–11].

The association between CEO characteristics and the danger of a market fall has been investigated in earlier research. Overconfidence may be a component that contributes to stock price collapses, according to a number of lines of research. Using a wide sample of firms from Standard & Poor's (S&P) ExecuComp database for the years 1993 to 2010, companies with overconfident CEOs are more likely to experience a stock price decrease than companies with CEOs who are not overconfident [12]. Managerial overconfidence has a larger negative impact on collapse risk when the CEO leads the top management team and when investor conflicts are more pronounced. Conversely, it appears that organizations with more conservative accounting procedures are less likely to be adversely affected by CEO overconfidence in the likelihood of a collapse.

Several investigations have tried to clarify why firms with younger CEOs are more susceptible to stock price crises, especially crashes brought on by the disclosure of bad news in the form of breaks in streaks of continuously growing earnings [13]. However, large gains in CEO salary would not diminish with the collapse of stock prices. Moreover, CEOs may have financial motivations to hold onto negative news early in their careers, which raises the risk of further disasters. When management discretion is present, the age effect on CEOs has a negative effect that is highest. A great deal of previous research into stock risk crash has focused on powerful chief executive officers (CEOs). There may be a correlation between successful CEOs and a greater crash risk [14]. There is still a strong association between CEO power and collapse risk even when issues like management of earnings, evasion of tax, incentives for CEO stock options, and CEO overconfidence are taken into account. Businesses with powerful CEOs are more likely to rephrase their financial statements, provide pessimistic profit estimates, and use less negative to positive terms. Hence, when CEO wealth is more susceptible to stock price fluctuations and when CEOs have fewer general abilities, companies with powerful CEOs are more likely to experience a crash.

Relationship between information environment and risk of stock collapse.

Information Disclosure of Bad News.

Studies in the past have shown that business managers are motivated to overestimate financial performance by speeding the distribution of positive news and purposely delaying the release of negative news in the hopes that weak present performance would be hidden by outstanding future performance. This motivation for asymmetric disclosure is the consequence of formal remuneration agreements and career concerns, among other things [15–17]. If management stockpile and withholds bad news for a protracted length of time, negative information is likely to be accumulated within a company. As a result, once the cumulative amount of negative news exceeds a particular level, it will be released at once, causing stock prices to crash [18, 19].

Researchers made an effort to determine how excessive perk consumption affected crash risk in China's state-owned businesses. Executives of state-owned businesses have an incentive to withhold damaging information for an extended length of time in order

to get further compensation, which raises the risk that the stock price may collapse in the future. Receiving too many perks increases the chance of a crash [20]. Earnings management (conditional conservatism) is another factor that affects crash risk. It helps to increase (decrease) this impact. It aids in enhancing (decreasing) this effect. Furthermore, improved external monitoring lessens the effect of excessive benefits on the danger of a firm crash. Additionally, the effect of excessive benefits on crash risk is longer-lasting and more significant in companies where CEOs are imminent retirement.

The negative news hoarding theory was put on, which states that when managers face agency problems or career concerns, they have incentives to keep terrible news from investors [10]. However, a stock price collapse results from management being forced to share all the bad news at once when it reaches a critical point in the chain of events. Empirical evidence supports this hypothesis by showing that companies with more earnings management, lower disclosure quality, higher litigation risk, lower analyst coverage, lower media attention, lower social media sentiment, lower environmental disclosure quality, lower CSR performance, higher tax avoidance, higher accounting conservatism, higher audit quality, higher auditor industry specialization, higher audit committee independence have higher crash risk [1, 2, 4, 8, 9, 14, 21–27].

information transfer efficiency.
Capital market transactions also have an impact on crash risk as they reflect managers' private information or market expectations about future prospects. Several studies have examined how equity offerings, debt offerings, stock splits, dividend payouts, share repurchases, mergers and acquisitions, and insider trading affect crash risk. For example, firms with seasoned equity offerings have higher subsequent crash risk as equity offerings signal overvaluation or adverse selection problems [28]. Firms with debt offerings have lower subsequent crash risk as debt offerings signal good news or reduce agency costs [5, 29]. Firms with stock splits have lower subsequent crash risk as stock splits increase liquidity or reduce information asymmetry [22]. Corporate governance mechanisms also influence crash risk as they constrain managers' opportunistic behavior or enhance external monitoring. Several studies have examined how board structure, ownership structure, institutional investors, activist shareholders, proxy advisors, credit rating agencies, and short sellers affect crash risk [21, 22, 24, 25].

2.2 Micro-Consequences

The micro-consequences of firm operation and strategic-making.
Once a stock price collapse occurs, which has significant effects on shareholders' wealth, we would anticipate corporations to take some actions voluntarily in order to reduce some of the drivers of stock price crashes. For instance, will the audit committees' oversight of the process of the financial reporting be more effective afterwards if the catastrophe was caused by earnings manipulation? In the early stages of the stock market drop, clients' audit costs increased by 2% [30]. The data shows that the main reason of the mean rise

in audit fees is an improvement in the auditor's sense of idiosyncratic risk, such as crash risk.

Company staff.
On the one hand, current-period crash risk and CEO replacement in the next year are positively correlated, with forced turnover having a more significant impact [31]. The findings also suggest that poor CEO performance is a driver of the stock risk crash. Thus, boards take steps to remove underperforming CEOs. Furthermore, the director turnover rate of companies that restated earnings downward was 48% in the following three years of after the restatement of earnings [32]. Therefore, the process of the financial report appears to have been poorly supervised, which may also be a factor in the stock market crisis as a result of the restatement of earnings. On the other hand, further research on the consequences of crash risk may also focus on how post-crash investment behavior in crash businesses, particularly for CEO risk-taking, develops. It may be predicted that companies will adjust their investment plans to the appropriate level following the stock collapse if overinvestment raises the risk of the stock crash. After a crisis, firing overconfident CEOs may be a useful course of action since research shows that overconfident CEOs are more likely to overinvest than diffident CEOs [33–35]. Nevertheless, in a tournament setting, overconfident managers have a better chance of becoming leaders because they estimate less risk and hence take more opportunities [36]. Therefore, failing to recognize the high rates of CEO dismissals for being overconfident is not always a sign of poor governance.

3 Conclusion

Overall, the empirical literature suggests that a stock market crash can have significant and far-reaching consequences. While the specifics and intensity of these effects may change based on a number of variables, including the intensity and length of the stock market fall, its potential causes, and the policies put in place in response, it is clear that a stock market crash do have important implications for the economy, financial markets, and society more broadly. The risks of a stock market catastrophe must be understood by policymakers, and steps must be taken to mitigate their consequences. This may include measures to stabilize financial markets, such as providing liquidity to financial institutions during periods of stress, as well as measures to promote economic growth, such as fiscal and monetary goals. Ultimately, the goal should be to create a resilient economy that can withstand the shocks associated with stock market crashes and continue to grow and prosper.

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