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Firm-Specific Crash Risk: Revisiting

Selmy Abd elrahman
Lecturer Assistant, Department ofBusiness Administration,
Port Said University, Egypt
El Giziry Khairy
Professor, Department of Business Administration, Cairo University, Egypt

Abstract:
We surveyed the burgeoning literature on the determinants of firm-specific crash risk that relied heavily on the theoretical framework of Jin and Myers (2006) where, established on different drivers, managers engage in bad news hoarding activities. Stock price crash risk, the leptokurtic distribution of firm-specific returns, has been recently attracting considerable research interests. Following Habib, Hasan, and Jiang (2017), we synthesized and categorized a vast body of literature on the determinants of crash risk into: (i) financial reporting and corporate disclosures, (ii) managerial incentives and managerial characteristics, (iii) capital market transactions, (iv)corporate governance mechanisms, and (v) informal institutional mechanisms.

Keywords:*Firm-specific risk, stock price crash, financial reporting and disclosure mechanism, corporate governance*

1. Introduction

Stock-price crash risk entails asymmetry, especially downside risk, thus it was excessively examined by researchers and practitioners as a means to recognize its determinants. Crash risk is the conditional skewness of return distribution rather than the likelihood of extreme negative returns (Chen, Hong, and Stein, 2001). Conditional skewness is considered a salient characteristic of return distribution. Most likely, the distribution of stock returns exhibits negative swings rather than positive ones (Chen et al., 2001; Hong and Stein, 2003). negatively skewed stock prices presumes that investors would typically expect higher returns for these stocks implying that conditional skewness is a priced risk factor (Harvey and Siddique, 2000). Crash risk has important implications for portfolio theories and asset and option-pricing models since, unlike risks emanating from systematic volatilities, crash risk cannot be mitigated through portfolio diversification (Sunder, 2010; Kim and Zhang, 2014).Consequently, being the biggest component of total volatility, studying the behavior of idiosyncratic risk is indispensable when striving to enhance the forecasting ability in predicting future returns (Campbell, 2001; Masry and El-Menshawy, 2018).

Established on the theoretical framework of Jin and Myers (2006) and following Habib, Hasan, and Jiang (2017), we surveyed the burgeoning literature on the determinants of idiosyncratic risk and categorized them as: (1) financial reporting and corporate disclosure, (2) managerial incentives and characteristics, (3) capital market transactions, (4) corporate governance mechanisms, and (5) informal institutional mechanisms. In carrying out the review of the determinants of crash risk and unlike Habib et al. (2017), we extended the survey on crash risk determinants to include any article with the terms 'idiosyncratic risk', 'stock-price crash', 'crash risk' in the review with no restriction to articles published in specific journals.

2. Financial Reporting and Corporate Disclosure

French and Roll (1986) argued that the arrivals of private information justify the variation in returns. King (1988) added that stock prices co-vary with industry returns and market returns. This raised a dilemma of whether a firm's stock price reflects information ascribed to market factors, industry factors, and firm-specific factors. Roll (1988) attested that a significant portion of the idiosyncratic return variation is captured by firm-specific variables. West (1988) stated that the swift incorporation of these information increases stock price synchronicity (R^2)resulting in a reducedidiosyncratic volatility.Hereafter, Morck, Yeung, and Yu (2000) determinedR^2asa universalscale of information efficiency and interpreted higher R^2 values as returns that reflect bulkier market-wide information and lower R^2 values as returns that reflect bulkier firm-specific information. Durnev, Morck, Yeung, and Zarwin (2003) extended Morck et al. (2000) work and assured that the variation of firm-specific return is proportionate to the informational content of future earnings and more efficient corporate investment. Despite that, Ashbaugh-Skaife, Gassen, and LaFond (2006) provided little support for maintaining stock price synchronicity as a measure of information content, meanwhile, they presented their zero-return metric as a better measure of firm-specific information impounded into asset prices.

Considerably, providing public shareholders with stronger legal protection against corporate insiders ensures lower synchronicity, thereby, rendering the firm-specific risk-arbitrage more attractive (Zhang, Wang, and Jiang, 2017). Annual earnings announcements are typified by being more informative, particularly in countries with higher quality

earnings and better enforced insider trading laws, and less informative in countries with more frequent interim financial reporting (DeFond, Hung, and Trezevant, 2006). Obviously, frequent disclosures are positively related to the percentage of firms' tradable assets which enhances market capitalization. Additionally, entrenching financial reporting transparency notably risk-related information is of a paramount importance for its role in reducing the cost of capital provided the mitigating effect transparency has regarding information risk (Easley and O'hara, 2004; Barth and Schipper, 2008; Chen, Pan, Wang, and Shen, 2016; Tan, Zeng, and El-shandidy, 2017). This is unlikely becoming unless firms entertain a relevant scale of accessibility to outside market participants, discernibly, in weak public information environments as accessible firms tend to accumulate less negative corporate information than inaccessible firms (Firth, Wong, and Zhao, 2019).In light of this, economies that are confronted with challenges to offer reliable and high quality information go through hurdles to attract external sources of funds (Spasić and Denčić-Mihajlov, 2014; Tas and Tan, 2016).

Jin& Myers (2006) extended the work of Morck et al. (2000) and developed a model with incomplete transparency that is able to predict stock price crashes as accumulated negative firm-specific information are suddenly delivered to the public. Under those circumstances, the predisposition of the management to withhold bad news allows for a greater magnitude of the negative stock price reaction to bad news (Kothari, Shu, and Wysocki, 2009).Accordingly, opaque firms as well as excessive transparent firms are more prone to experiencing stock-price crashes that is provoked by earnings guidance, though, this contradicts the general notion that more guidance enhances transparency and mitigates crash risk(Hutton, Marcus, and Tehranian 2009; Hamm, Li, and Ng 2012; Zhang and Nam, 2016)

Financial market transparency interacts differently as to the pursued accounting regimes. The marking to market regime provides investors with early warning signals while historical cost regime on the contrary gives management a 'veil' under which they hide firms' true economic performances which is associated with increased potentiality to experience severe crashes in asset prices (Bleck and Liu, 2007). Firms' stocks are less synchronized with the entire market if firms have superior accounting disclosure policies forcing managers to reveal negative news on timely manner. On this account, investors would be incurring less costs collecting firm-specific information (Song, 2015). Alongside, tax avoidance facilitates managerial bad news hoarding activities by justifying management's opportunistic behaviors, consequently, intensifies stock-price crash risk (Kim, Li, and Zhang, 2011). One way out is the adoption of the International Financial Reporting Standards (IFRS) resulting in a more transparent information environment in parallel with an information asymmetry diminution(DeFond, Hung, and Li, 2015; Espinoza, Mella, Palavecinos, and Ross, 2015). Another way out is the adoption of the accounting conservative reporting approach that curbs management opportunistic behavior (Moradzadehfard, Lotfi, and Fathi, 2011).

Typically, overvaluation is accompanied by high earnings management which enables managers to withhold and accumulate negative firm-specific news (Jensen, 2004; 2005). Also, higher degrees of earnings smoothing, either real earnings smoothing or discretionary income smoothing, are associated with greater management proclivity to withhold bad news, keep projects with poor performance, and engage in ineffective risk management(Chen, Kim, and Yao, 2016).Above and beyond, the bad effect of accruals manipulation and earnings smoothing aggravate with complex 10-K reports announcements which is consistent with the notion that managers can successfully hide adverse information by writing complex financial reports(Kim, Wang, and Zhang, 2018).Thus, delivering virtuous 10-K reports is a prerequisite for improving corporate disclosure (Chung, Hrazdil, Novak, and Suwanyangyuan, 2018).

Financial comparability has a controversial impact on stock-price crash risk. Kim, Li, Lu, and Yu (2016) stated that the expected crash risk decreases with greater financial statement comparability. In line with Kim et al. (2016), Stallings (2017) explained this relation as the information content of earnings is greater for firms with higher comparability resulting in more information usefulness for investors in equity valuation decisions. Contrariwise, Du, Li, Tuo, and Zhang (2018) demonstrated a positive association between comparability and future stock-price crash risk consistent with the notion that corporate managers do not have the disposition to release firm-specific information especially bad news as long as their firms' financial statements are undergoing comparability to those of the industry peers.

Prior literature corroborated that socially responsible firms are committed to higher standards of transparency and engage in less bad news hoarding behaviors (Kim, Li, and Li, 2014; Lee, Herold, and Yu, 2016; Khajavai, Taghizadeh, Maharluie, and Rezaee, 2018; Dai, Lu, and Qi, 2019).Evidence showed that internal controls have a moderating effect on the relationship between CSR and stock price crash risk, where, in environments with higher levels of internal controls, CSR prominently reduces the risk of stock-price crash (Hao, Qi, and Wang, 2018).

3. Managerial Incentives and Characteristics

For instance, when overconfident managers convey their optimistic beliefs about the firms' long-term prospects to the stock market, they overestimate their investment projects' returns and ignore their negative net present value. At this juncture, overconfidence bias left managers no choice but engage in bad news hoarding behavior causing stock prices to crash(Roy Chowdhury and Sletten, 2008; Kim, Wang, and Zhang, 2011; Ryu, 2017). CEO age was found to be significant for firm policies and outcomes, forasmuch, firms with younger CEOs are more likely to hoard bad news in their early stages of their career which increases future crashes (Andreou, Louca, and Petrou, 2017).

Managerial ability is aroused contentiously. There is an evidence that more-able managers over-invest ensuing a higher likelihood of future crashes gleaned from their large career concerns and engage in more risk-taking decisions given possessing better operational information (Habib and Hasan, 2017; Cui, Chen, Zhang, and Zhu, 2019). On the contrary, there is another belief that managerial ability is inversely proportional with stock-price crash risk provided that managers with a higher ability attempt to release more voluntary disclosure to demonstrate their ability, auspiciously, lowering the likelihood to experience future stock-price crashes (Park and Jung, 2017).

The sensitivity of a chief financial officer's (CFO) option portfolio per stock price is positively related to stock-price crash risk(Kim, Li, and Zhang, 2011). Also, the executive pay restraints has an asymmetric impact on crash risk (Bai, Wang, Yu, and Zheng, 2019). Not to mention that higher CEO inside debt holdings is associated with lower abnormal accruals, higher accruals quality, and a lower likeliness of an earnings misstatement considering auditors - in firms with large CEO inside debt holding - are less likely to report a material internal control weakness(He, 2015).

4. Capital Market Transactions

Callen and Fang (2015) reported that short interest is positively related with stock-price crash risk. This is consistent with the view that short sellers are more capable of detecting and dealing with bad news hoarding behaviors by managers.Jia,Deng,and Xu (2018) documented that debt structure is also positively associated with stock-price crash risk.However, Dang, Lee, Liu, and Zeng (2018) provided evidence that firms with large proportions of short-term debts have lower future stock-price crash risk drew on the view that short-term debt acts as a monitoring mechanism in curbing managerial opportunistic behaviors.

Chang, Chen, and Zolotoy (2016)demonstrated that more liquid firms have a higher likelihood of future bad earnings news releases accompanied by greater selling by transient investors suggesting that liquidity induces managers to withhold bad news fearing that its disclosure will lead to selling by transient investors.Conversely, Chauhan, Kumar, and Pathak (2017) showed that stock liquidity could decrease stock-price crashes using two possible mechanisms; the threat of intervention and price in formativeness.

5. Corporate Governance Mechanisms

Good governance reduces the destabilizing behavior of investors and mitigates agency problems (Anuchitworawong, 2010). Future crashes increase with higher institutional ownership, higher percentage of directors that hold shares, and opacity in financial reports and decrease with the increase in audit expertise, audit independence, and the existence of a formal governance policy in the companies' mandate. Such that; 1) the rising proportion of institutional ownership and the percentage of directors that hold stocks pressurize management to deliver short-run performance, 2)the suboptimal decision making is mainly occurring in opaque information environments, and 3)the negative impact the percentage of independent directors on the audit committee and the auditor industry expertise have related to crashes highlights that they both may improve the transparency and reliability of the financial reports (Andreou, Antoniou, Horton, and Louca, 2016).

5.1. Internal Corporate Governance Mechanisms

Insiders are legally permitted to buy and sell shares of the firm and its subsidiaries. However, these transactions must be properly registered with the Securities and Exchange Commission (SEC). The enforcement of insider trading laws makes the trading on private information costly and risky which constrains corporate insiders' incentives to conceal adverse information, thereby, reducing stock-price crash risk (Hu, Kim, and Zhang, 2016). Reporting material weaknesses in internal control (ICW) and its disclosure is considered a defamatory token for the afflicted firm's financial reporting system causing extreme negative outliers in stock return distributions (Kim, Yeung, and Zhou, 2013). For this, the internal control and its five components; (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring is susceptible to alleviate future stock price crash risk (Chen, Chan, Dong, and Zhang, 2017).

Cheung, Fung, and Tsai (2009) stated that managerial ownership increases the alignment of interests of bringing together shareholders and managers that could alleviate the agency problems via resolving information asymmetry and eventually lowering stock-price crash risk (Park and Song, 2018). Also, independent directors with reputation incentives voluntarily disclose more information, thereby, the firm-specific information content in a firm's stock price increases and positively affecting on corporate transparency ending up with lowering stock-price crash risk (Sila, Gonzalez, and Hagendorff, 2017).

5.2. External Corporate Governance Mechanisms

Typically, institutional investors have privileges as to information access, whereon, the prices of stocks held by institutions incorporates information about future earnings relatively earlier. Accordingly, the shareholding by financial institutions alleviates information asymmetry via the increased monitoring activities that curtails management bad news hoarding behavior (Ho, Jiang, and Kim,2001; Haghighat, Farhangzadeh, and Haghighat, 2015; Choi, Jin, and Yan, 2013; Kim, Li, Luo, and Wang, 2019).

In some cases, geography serves as a proxy for the availability of information and allows local institutional investors to execute profitable trades based on their superior information, wherefore, both the level of and change in local institutional ownership have the ability to predict future stock returns which is not the case with respect to nonlocal institutional holding (Baik, Kang, and Kim, 2009).

Although overly optimistic analysts do not reveal negative information on a timely manner to, but still, investors do recognize analysts as important information intermediaries and monitors, hence, meeting analysts' expectations is negatively associated with stock-price crash risk(Chan, Jiang, Xu, and Yi, 2012; Yeung and Lento, 2018; Kim, Lu, and Yu, 2019).Also, individual auditor industry specialization decreases the risk of experiencing stock-price crash by mitigating earnings manipulation with auditor's personal characteristics moderating the association between auditor industry specialization and crash risk (Feng, Habib, Huang, and Qi, 2019).

Hypothetically, corporate site visits might seem beneficial for market participants to gain information about firms via providing more firm-specific information to the market. Affirmatively, there is an evidence that the average cumulative abnormal return (CAR) around the announcement day of institutional investors' CSVs is significantly positive which is consistent with the notion that institutional investors' CSVs exacerbate managers' incentives to withhold bad news leading to the accumulation of bad news and adding up to future stock-price crash risk (Gao, Cao, and Liu, 2017; Lu, Fung, and Su, 2018).

6. Informal Institutional Mechanisms

Corporate transparency is conceptualized within a country as output from a multi-faceted system whose components collectively produce, gather, validate, and disseminate information,whereon, the governance transparency factor is related to countries legal/judicial regimes, whereas the financial transparency factor is related to political economy (Bushman, Piotroski, and Smith, 2004). It is also worth noting that firms with political connections are not exposed to crashes than their counterparts (Luo, Gong, Lin, and Fang, 2016). Also, multinational firms are significantly more likely to crash than domestic firms (Boehme and May, 2016).

Regions indulged in social norms that facilitate productive and cooperative actions are regions with high social trust which is reflected in less crash risk (Coleman, 1988, 1990; Guiso, Sapienza, and Zingales, 2003; Jha, 2013).On one hand, these firms engage in higher accounting conservatism and fewer financial restatements (Cao, Xia, and Chan, 2016; Li, Wang, and Wang, 2017).On another hand, trust results in lowering the proclivity of financial misstatements and internal control material weakness disclosures, hence, improving financial reporting quality by means of better information production and information sharing (Garrett, Hoitash, and Prawitt, 2014). Unlikely, firms headquartered in regions with higher levels of corruptionare expected to have higher future stock-price crash risk(Cao, Qin, and Zhu, 2019). This is consistent with the rationale that firms that have previously exhibited unfaithful disclosure behavior are more likely to suffer stock-price plunges due to information asymmetry (Ryu, 2019).Religion also plays a pivotal role in corporate governance stemming from the fact that religious environments entertain a reduced earnings management and less management perk problemsby means ofunraveling the management agency problem, thenceforth, reflecting a lowered stock-price crash risk(Li and Cai, 2016).

7. Conclusion

In this paper we extended the work of Habib et al. (2017) and reviewed the empirical literature on the determinants of stock-price crash risk. Following Habib et al. (2017), we categorized the determinants into (1) financial reporting and corporate disclosures, (2) managerial incentives and managerial characteristics, (3) capital market transactions, (4) corporate governance mechanisms, and (5) informal institutional mechanisms. We focused on the managerial incentives ascribable for the hoarding of bad news behavior. However, managerial incentives merely are not sufficient to withhold bad news as managers would have to devise mechanisms for concealing negative information such as earnings guidance and manipulation, tax avoidance, and CSR disclosures. Moreover, we reviewed prior literature considering the role of conservatism, external auditing, and corporate governance mechanisms in curbing managerial opportunistic use of such mechanisms.

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