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Stock liquidity and stock prices crash-risk: Evidence from India

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ABSTRACT

In this paper, we examine the role of stock liquidity as a governance mechanism to discipline managers for withholding bad news (stock price crash-risk). This topic is useful to emerging markets because the dominance of controlling owners limits the monitoring of internal governance. Stock liquidity can be altered by the financial market regulations, thereby improving firm-level governance. In empirical analysis, we show that stock liquidity decreases stock price crash-risk. We identify two possible mechanisms through which stock liquidity reduces stock price crash-risk: the threat of intervention and price informativeness.

1. Introduction

Stock liquidity has become an increasingly important mechanism for monitoring management, thereby improving corporate governance. This is because it facilitates good governance of the firm either by trading (also known as "exit") (Edmans, 2009) or by the intervention of blockholders (also known as "voice") (Maug, 1998). Our study is motivated by a literature suggesting that stock liquidity can affect shareholders' incentive to monitor managers. This study empirically examines the consequence of stock liquidity as governance on managerial short-termism, which is regarded as one of the most important concerns by academicians and the practitioners alike (Edmans, 2009). Our study is mainly motivated by Jin and Myers (2006) and Kim, Li, and Zhang (2011), who argue that the short-term benefits encourage managers to accumulate bad news to inflate stock prices because their incentives are tied with stock prices. However, when the accumulation of bad news reaches its upper bound, it tumbles at once, resulting in a significant drop in stock prices. We posit that, if stock liquidity actually facilitates good monitoring, stocks with higher liquidity should have a low level of stock price crash-risk (crash-risk).

Most empirical studies examining the role of stock liquidity in facilitating good governance are concentrated on developed markets[1], which are different from emerging markets in several aspects. First, Indian minority shareholders are vulnerable

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[1] Li, Chen, and French (2012) document that liquidity improves corporate governance for Russian firms.

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to poor legal frameworks[2], including high concentrated ownership. Second, Jameson, Prevost, and Puthenpurackal (2014) illustrate that the effect of expropriation on minority shareholders through founder and family members does not get mitigated by independent directors because socially connected directors, especially connected to controlling shareholders[3], are shown to be less effective monitors. In such case, evidence associated with governance driven by stock liquidity will be more beneficial to protect minority shareholders for emerging markets, such as India and Russia, than in developed markets.

Stock liquidity may diminish crash-risk for two sources. First, strategic traders collect information on the firm's fundamentals and use this information for their trading. In this process, stock liquidity helps strategic traders to purchase additional stocks at a lower trading cost, thereby encouraging block formation (Edmans, Fang, & Zur, 2013). This mitigates a free-rider problem attributable to the separation of ownership and control (Shleifer & Vishny, 1986). Subsequently, blockholders supervise managers and acquire benefits from a price appreciation caused by their active interventions (Maug, 1998). Consistent with this view, Norli, Ostergaard, and Schindele (2015) illustrate that, for firms with liquid stock, shareholders' response to poor performance is more likely to be decisive.

Furthermore, if a manager's compensation is sensitive to stock prices, blockholders can discipline the manager by selling their stocks, putting a downward pressure on stock prices. This leads to a reduction in the value of managers' equity compensation. Therefore, even without direct intervention, the threat of blockholders' exit can act as an effective mechanism for governance (Edmans, 2009).[4] Bharath, Jayaraman, and Nagar (2013) provide empirical evidence for exit threats. We expect that, either by exit threats or by intervention, stock liquidity disciplines managers. Therefore, managers might renounce short-term profits by releasing bad news on time to the market, thereby reducing the possibility of crash-risk.

Our second channel by which more stock liquidity can reduce crash-risk is stock price informativeness. This argument is grounded in studies by Grossman and Stiglitz (1980), Kyle (1985), Holmström and Tirole (1993), and Easley and O'Hara (2004). These researchers model informed traders, who optimally decide their trading intensity by the level of stock liquidity because more liquidity reduces trading costs. The results are more liquid stock, more trading by informed traders, which consequently increases prices informativeness. Consistent with this view, previous studies illustrate that the degree of pricing error is lower for liquid stocks (Chordia, Goyal, Sadka, Sadka, & Shivakumar, 2009; Chordia, Roll, & Subrahmanyam, 2008). Likewise, Jayaraman and Milbourn (2011) show that firms with liquid stocks, in designing the CEO annual pay, are more likely to link the compensation with equity performance. We postulate that once stock prices become more informative, managers face constraint in manipulating stock prices by delaying the release of bad news, leading to lower crash-risk.

Using a large sample of Indian firms, we show that highly liquid stocks have lower crash-risk. This negative relationship is significant both statistically and economically, even when alternative proxies of stock liquidity and crash-risk are considered. We conduct a series of tests to confirm the robustness of our main finding. Specifically, our results are consistent with firm and year fixed-effects. The Fama-MacBeth regression estimates are also congruent.

We next address identification concerns, since the stock liquidity and crash-risk face simultaneity issue, which potentially creates ambiguity in the direction of causality. In other words, liquidity can affect crash-risk, but can be affected by crash-risk as well. To address this concern, we follow two methodologies. First, we use the two-stage least square. To do so, we follow Fang, Noe, and Tice (2009) and employ the average stock liquidity of all other firms in the same industry as an instrument variable. Second, we run a test surrounding stock splits as an exogenous shock to liquidity following a difference in difference approach (DiD). We expect that a stock split is a desirable quasi-natural experiment since it increases the stock liquidity (Jayaraman & Milbourn, 2011), but it is unlikely that a stock split directly affects crash-risk. Both tests confirm our main finding that stock liquidity reduces crash-risk.

We next examine possible mechanisms through which an enhanced stock liquidity causes lower crash-risk. In particular, we examine whether the stock liquidity affects crash-risk attributable to the threat of intervention or the threat of exit channel. Admati and Pfleiderer (2009) and Edmans (2009) demonstrate that the threats to exit will be stronger if managerial wealth is sensitive to stock prices. Nevertheless, stock-option-based compensation is yet to take off in India. For instance, Balasubramanian, Black, and Khanna (2010), based on survey evidence, report that only 16% of Indian firms incorporated a stock option component into compensation. Therefore, we posit that the exit threat channel should not drive our result. Subsequently, we examine the threat of intervention channel. We expect that if stock liquidity actually increases the threat of intervention by blockholders to discipline managers, then stock liquidity and crash-risk should exhibit a stronger relationship for firms with high blockholders' ownership because higher ownership is valuable for intervention (Maug, 1998). The result indicates that the effect of stock liquidity on crash-risk is more pronounced for firms with a higher proportion of blockholders' ownership.

We next explore the price informativeness channel. As stock liquidity encourages informed traders to trade at a lower costs, it also increases the price informativeness and leads to a decrease in managers' intention to hide bad news from the market. Our

[2] For details, please see Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008), and Standard and Poor's transparency and disclosure survey reports.

[3] In Indian firms, founders own, on average, more than 50% of outstanding shares. Therefore, it is likely that controlling shareholders may have significant influence on board appointments.

[4] Edmans (2009) shows that managers' focus on long-term growth compared to short term profits is based on the threat of exit. Admati and Pfleiderer (2009) argue that the threat of exit reduces the agency problem of managers taking action for their private benefit at the cost of shareholders. Edmans and Manso (2011) demonstrate that the ownership structure consisting of multiple block holding reduces the effectiveness of intervention but strengthens the governing mechanism through trading.