

THE JOINT EFFECTS OF ORGANIZATIONAL RESILIENCE AND INFORMATION ENVIRONMENT ON STOCK PRICE CRASH RISK: EVIDENCE FROM THE CHINESE CAPITAL MARKET*

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Abstract

This study aimed to: (1) examine whether organizational resilience is associated with subsequent stock price crash risk in the Chinese A-share market; (2) investigate whether resource slack, information transparency, managerial long-term orientation, and stakeholder monitoring strengthen the relationship between organizational resilience and stock price crash risk; and (3) explain the mechanism through which organizational resilience affects downside risk in capital markets. This study employed a quantitative research design using secondary panel data from non-financial firms listed on the Chinese A-share market during 2008–2023. The sample consisted of 16,800 firm-year observations selected based on data availability and completeness. Organizational resilience was measured using a composite index based on growth potential and anti-risk capacity, while stock price crash risk was measured by Negative Conditional Skewness (NCSKEW) and Down-to-Up Volatility (DUVOL). Data were analyzed



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using firm- and year-fixed-effects regression models with lagged control variables and cluster-robust standard errors.

The findings revealed that: (1) organizational resilience was negatively and significantly associated with both NCSKEW and DUVOL, indicating that resilient firms faced lower future stock price crash risk; (2) resource slack, information transparency, managerial long-term orientation, and stakeholder monitoring significantly strengthened the negative association between organizational resilience and stock price crash risk; and (3) the results were consistent with the bad-news-hoarding explanation and suggest that organizational resilience may reduce crash risk through a capability-information channel, particularly when firms possessed internal resource buffers, transparent disclosure practices, long-term managerial incentives, and effective external monitoring. These findings demonstrate that organizational resilience serves as a market-relevant signal that mitigates downside risk when supported by credible information environments and sound governance conditions.

Keywords: Organizational Resilience, Stock Price Crash Risk, Resource Slack, Information Transparency, Stakeholder Monitoring

Introduction

Repeated external shocks, volatile investor expectations, changing credit conditions, supply-chain disruptions, and accelerated technological change have made organizational resilience a central capability for listed companies. Organizational resilience refers to a firm's ability to anticipate disruption, absorb shocks, adapt internal processes, redeploy resources, and recover without severe value destruction. While resilience is often discussed as an operational or strategic capability, its capital-market implications remain theoretically important because investors and other external stakeholders do not directly observe internal adaptive routines (Linnenluecke, 2017; Sajko et al., 2021).

Stock price crash risk is one of the most consequential forms of equity-market downside risk. It refers to the probability that firm-specific stock returns experience an abrupt and extreme negative realization within a short period. The dominant explanation is the bad-news-hoarding mechanism: managers may delay or conceal adverse information to protect compensation, reputation, financing plans, or short-term valuation (Jin & Myers, 2006; Hutton et al., 2009; Kim et al., 2011). When accumulated bad news can no longer be withheld, it is released abruptly, generating negative return skewness and severe downside volatility.

Organizational resilience may reduce crash risk through a capability-information channel. A resilient firm is better able to detect adverse events earlier, coordinate resources, absorb temporary losses, and formulate credible responses. These capabilities reduce the managerial incentive to hide bad news because negative developments can be addressed incrementally rather than allowed to accumulate. Resilience may also support more credible communication with investors, making negative information less surprising and less likely to trigger a sudden price collapse.

However, resilience does not automatically reduce crash risk. A firm may possess adaptive resources while still maintaining an opaque information environment. Managers may also become overconfident in the firm's recovery ability and postpone disclosure in the belief that internal solutions will emerge before public reporting becomes necessary. Therefore, the protective effect of resilience should be strongest when complementary conditions reduce both the need and the opportunity to hoard bad news.

This article focuses on four boundary conditions: resource slack, information transparency, managerial long-term orientation, and stakeholder monitoring. Resource slack provides internal buffers that allow firms to absorb shocks without abrupt operational contraction (Duong et al., 2020). Information

transparency improves the timeliness and credibility of disclosure. Long-term orientation reduces short-term incentives to conceal adverse information. Stakeholder monitoring increases external discipline and raises the cost of opportunistic disclosure behavior (Bebchuk & Hirst, 2019; Chen et al., 2020).

Using Chinese A-share listed firms from 2008 to 2023, this study examines whether lagged organizational resilience predicts lower subsequent crash risk and whether the four boundary conditions strengthen the association. The Chinese capital market is an appropriate setting because listed firms face evolving disclosure regulation, heterogeneous ownership structures, rapid institutional development, and substantial variation in governance and information environments.

The article contributes to the literature in three ways. First, it extends organizational resilience research from operational recovery and performance outcomes to equity-market downside risk. Second, it enriches crash-risk research by introducing organizational resilience as a capability-based antecedent of the bad-news-hoarding process. Third, it identifies conditions under which resilience becomes more visible, credible, and effective in reducing capital-market risk.

Objectives

1. To examine whether organizational resilience is negatively associated with subsequent stock price crash risk in the Chinese A-share market.
2. To investigate whether resource slack, information transparency, managerial long-term orientation, and stakeholder monitoring strengthen the risk-reducing effect of organizational resilience.
3. To explain the capability-information mechanism through which organizational resilience reduces bad-news accumulation and equity-market downside tail risk.

Literature Review

1. Organizational Resilience as a Market-Relevant Capability

Organizational resilience is commonly understood as the ability to withstand disruption, adapt to environmental change, and recover from shocks. Resource-based and dynamic capability perspectives suggest that resilient firms possess valuable routines and resources that allow them to sense threats, reconfigure assets, and maintain continuity under uncertainty (Barney, 1991; Teece et al., 1997). In this view, resilience is more than crisis survival; it is a dynamic capability that changes the firm's risk trajectory.

Prior research has emphasized performance stability, innovation, operational recovery, supply-chain continuity, and crisis survival (DesJardine et al., 2019; Ding et al., 2021). These outcomes are important, but they remain largely inside the firm. In capital markets, resilience becomes relevant only when outside investors can infer that internal adaptive capability is real, credible, and connected to future risk outcomes. Thus, a central question is how organizational resilience becomes visible to investors as lower downside risk.

This study treats resilience as a market-relevant capability. A resilient firm can handle negative events earlier and more systematically, reducing the likelihood that adverse information accumulates silently. The market value of resilience therefore depends not only on operational effectiveness but also on information credibility and external monitoring.

2. Stock Price Crash Risk and Bad-News Hoarding

Stock price crash risk captures the extreme left-tail risk of firm-specific returns. A high level of crash risk suggests that investors face a greater probability of sudden and severe losses that are not captured by ordinary volatility measures. The standard empirical measures, NCSKEW and DUVOL, are based on the distribution of firm-specific weekly returns and reflect negative skewness and downside volatility dominance (Kim et al., 2011; Habib et al., 2018).

The bad-news-hoarding framework explains why firm-specific crash risk arises. Managers may delay negative disclosures because immediate reporting can harm short-term market valuation, trigger scrutiny, threaten compensation, or damage reputation. When concealed adverse information accumulates beyond a threshold, the eventual release causes a sharp market correction. Accordingly, crash risk is closely tied to information asymmetry, agency conflicts, weak monitoring, and poor disclosure quality (Hutton et al., 2009; Callen & Fang, 2015).

Organizational resilience can reduce this process by decreasing the operational pressure behind information concealment. If a firm can absorb shocks and implement credible corrective actions, managers have less reason to hide problems. However, this beneficial effect depends on whether the firm has sufficient resources and whether internal and external governance systems discipline disclosure behavior.

3. Boundary Conditions and Hypotheses

Resource slack provides discretionary buffers that allow firms to absorb shocks and implement adaptive responses. A resilient firm with more slack can manage temporary losses, maintain strategic investment, and avoid forced actions that surprise investors. Therefore, slack should strengthen the negative relationship between resilience and crash risk.

Information transparency reduces the opportunity to hoard bad news. Transparent disclosure systems make firm-specific information more observable and allow negative developments to be communicated gradually. A resilient firm with higher transparency can show investors how it is responding to adverse events, reducing uncertainty and downside surprises.

Managerial long-term orientation reduces incentives to protect short-term prices at the expense of future credibility. Managers with a longer horizon are more likely to disclose problems earlier, invest in risk prevention, and use resilience to sustain long-term value rather than to postpone disclosure.

Stakeholder monitoring, including institutional investor attention and broader external oversight, increases the expected cost of concealment and reinforces information discipline.

1. H1: Organizational resilience is negatively associated with stock price crash risk.

2. H2: Resource slack strengthens the negative association between organizational resilience and stock price crash risk.

3. H3: Information transparency strengthens the negative association between organizational resilience and stock price crash risk.

4. H4: Managerial long-term orientation strengthens the negative association between organizational resilience and stock price crash risk.

5. H5: Stakeholder monitoring strengthens the negative association between organizational resilience and stock price crash risk.

Methodology

1. Research Design

This study adopts a quantitative empirical research design using firm-year panel data. The empirical strategy follows the theoretical temporal ordering that organizational resilience is a prior capability and stock price crash risk is a subsequent market outcome. Therefore, the key explanatory variable, moderators, and controls are measured at $t-1$, while crash-risk outcomes are measured at t .

The main analyses use firm fixed-effects and year fixed-effects regressions. Firm fixed effects absorb time-invariant characteristics such as persistent business models, baseline risk culture, and stable ownership patterns. Year fixed effects control for market-wide shocks and macroeconomic conditions. Standard errors are clustered at the industry level to allow for within-industry dependence.

2. Population and Sample

The population consists of Chinese A-share listed companies traded on the Shanghai Stock Exchange and the Shenzhen Stock Exchange from 2008 to 2023. Financial firms are excluded because their regulatory requirements, leverage structure, and risk-management systems differ substantially from those of non-financial firms.

The effective crash-risk sample contains 16,800 firm-year observations after requiring sufficient weekly stock returns and complete data for organizational resilience, moderators, and control variables. Financial statement data, governance variables, ownership information, weekly stock returns, market returns, institutional ownership, and disclosure-related variables are collected from widely used Chinese financial databases and public corporate disclosures.

3. Variable Measurement

Stock price crash risk is measured by NCSKEW and DUVOL. For each firm-year, firm-specific weekly residual returns are first obtained from an expanded market model. NCSKEW captures negative conditional skewness in the distribution of residual returns, and larger values indicate greater downside tail risk. DUVOL is the logarithm of the ratio of down-week volatility to up-week volatility, and larger values indicate greater crash risk.

Organizational resilience is measured as a composite index combining growth potential and anti-risk capacity. Growth potential is proxied by medium-term sales growth, while anti-risk capacity is proxied by lower annualized weekly stock return volatility. The indicators are standardized using direction-sensitive min-max scaling and aggregated using entropy weights. A higher OR value indicates stronger resilience. In all regressions, OR is lagged by one year.

The moderators are measured as follows. Resource slack is proxied by the current ratio. Information transparency is measured using disclosure ratings coded so that higher values represent better disclosure quality. Managerial long-term orientation is a standardized composite of research and development

intensity and CEO tenure. Stakeholder monitoring is proxied by institutional ownership. Control variables include market capitalization, book-to-market ratio, momentum, ROA, investment, leverage, firm age, board size, board independence, regional financial-technology development, firm size, SOE status, and return-process controls.

Table 1 Key Variable Definitions

Variable	Definition
NCSKEW	Negative conditional skewness of firm-specific weekly returns; higher values indicate greater crash risk.
DUVOL	Log ratio of downside to upside volatility; higher values indicate greater crash risk.
OR (t-1)	Lagged organizational resilience index based on growth potential and anti-risk capacity.
Slack (t-1)	Resource slack measured by the current ratio.
InfoTransp (t-1)	Disclosure rating coded so that higher values indicate greater transparency and timeliness.
LTO (t-1)	Long-term orientation measured by a standardized composite of R&D intensity and CEO tenure.
StakeConf (t-1)	Stakeholder monitoring proxied by institutional ownership.

Note: All explanatory variables are lagged by one year. Continuous variables are winsorized at conventional tails.

4. Empirical Models

4.1 Baseline Regression Model

The baseline model examines the effect of organizational resilience on stock price crash risk, measured by NCSKEW and DUVOL. The model includes organizational resilience, control variables, firm fixed effects, and year fixed effects. A negative coefficient for organizational resilience indicates that higher resilience is associated with lower crash risk.

4.2 Moderation Regression Model

The moderation model tests whether the relationship between organizational resilience and stock price crash risk is influenced by moderating factors. The analysis includes organizational resilience, the moderator, and their interaction term. A negative interaction coefficient indicates that the moderator strengthens the protective effect of organizational resilience.

4.3 Estimation Method

All models are estimated using fixed-effects panel regression. All explanatory variables are lagged by one year, and standard errors are clustered at the firm level to improve the reliability of statistical inference.

Results

1. Descriptive Statistics

Table 2 reports descriptive statistics for the main variables used in the crash-risk analyses. The mean of NCSKEW is 0.555 and the mean of DUVOL is 0.352, indicating meaningful downside asymmetry and downside volatility dominance in the sample. The mean organizational resilience index is 0.340, with variation across firm-years that supports panel estimation. The descriptive evidence also shows substantial differences in information transparency, long-term orientation, and stakeholder monitoring across firms.

Table 2 Descriptive Statistics of Main Variables

Variable	N	Mean	SD	Min	Max
NCSKEW	16800	0.555	0.439	-0.372	1.859
DUVOL	16800	0.352	0.274	-0.282	1.025
OR (t-1)	19200	0.340	0.113	0.125	0.694
Slack (t-1)	19200	1.070	0.380	0.350	1.989
InfoTransp (t-1)	19200	2.525	1.115	1.000	4.000

LTO (t-1)	19200	-0.001	0.693	-1.285	1.815
StakeConf (t-1)	19200	0.192	0.068	0.031	0.350
MktCap (t-1)	19200	22.645	1.202	18.127	26.925
B/M (t-1)	19200	0.863	0.291	0.200	2.736
ROA (t-1)	19200	0.048	0.045	-0.104	0.285
Lev (t-1)	19200	0.419	0.141	0.050	0.900
Sigma (t-1)	16800	0.024	0.004	0.010	0.042

Note: N differs because crash-risk measures require sufficient weekly return observations. Values are extracted from the dissertation sample statistics.

2. Baseline Regressions

Table 3 presents the baseline fixed-effects regressions. The coefficient on OR is negative and statistically significant for both NCSKEW and DUVOL. In the NCSKEW model, OR has a coefficient of -0.024 ($p = 0.003$). In the DUVOL model, OR has a coefficient of -0.019 ($p = 0.004$). Because larger values of both dependent variables indicate higher crash risk, the results support H1.

The evidence suggests that organizational resilience is associated with lower subsequent downside tail risk. Substantively, this finding is consistent with the capability-information mechanism: resilient firms are better able to manage adverse events before they accumulate into sudden and severe market revelations.

Table 3 Baseline Fixed-Effects Regressions of Organizational Resilience on Crash Risk

Variable	NCSKEW	DUVOL
OR (t-1)	-0.024*** (0.007)	-0.019*** (0.006)
MktCap (t-1)	-0.017 (0.018)	-0.018 (0.014)
B/M (t-1)	-0.016 (0.028)	-0.013 (0.019)

Mom (t-1)	0.020 (0.018)	0.011 (0.017)
ROA (t-1)	-0.228 (0.155)	-0.116 (0.103)
Lev (t-1)	0.058 (0.075)	-0.049 (0.059)
Board (t-1)	0.033* (0.019)	0.011 (0.013)
CFlI (t-1)	-0.003* (0.002)	-0.003*** (0.001)
Sigma (t-1)	-17.448** (6.985)	-10.628* (5.930)
Other controls	Included	Included
Firm FE / Year FE	Yes / Yes	Yes / Yes
Observations	16,800	16,800
Within R-squared	0.004	0.005

*Note: Cluster-robust standard errors are shown in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Other controls include Size, SOE, Ret, DeltaTurnover, age, board independence, investment, and additional standard controls. Durbin-Watson statistics are 2.138 for NCSKEW and 2.162 for DUVOL.*

3. Moderation Regressions

Table 4 summarizes the interaction coefficients from the moderation regressions. Each interaction coefficient is negative and statistically significant under both crash-risk proxies. The results indicate that resilience reduces crash risk more strongly when firms have greater resource slack, higher information transparency, stronger long-term orientation, and stronger stakeholder monitoring.

The resource-slack interaction is negative for NCSKEW (-0.023, $p = 0.003$) and DUVOL (-0.016, $p = 0.001$), supporting H2. The information-transparency interaction is negative under both proxies, supporting H3 and providing direct evidence for the information-channel interpretation. Long-term orientation also strengthens the resilience effect, supporting H4. Finally, stakeholder monitoring produces a negative interaction under both NCSKEW and DUVOL, supporting H5.

Table 4 Moderating Effects on the Organizational Resilience-Crash Risk Relationship

Interaction term	NCSKEW	DUVOL	Conclusion
OR x Slack (t-1)	-0.023*** (0.007)	-0.016*** (0.004)	Supported
OR x InfoTransp (t-1)	-0.005*** (0.002)	-0.004*** (0.001)	Supported
OR x LTO (t-1)	-0.018*** (0.005)	-0.013*** (0.004)	Supported
OR x StakeConf (t-1)	-0.017** (0.006)	-0.009** (0.004)	Supported
Controls, firm FE, year FE	Included	Included	
Observations	16,800	16,800	

Note: The table reports focal interaction coefficients only. Each model includes the OR main effect, moderator main effect, lagged controls, firm fixed effects, and year fixed effects. Standard errors are in parentheses.

Table 5 Summary of Hypothesis Tests

Hypothesis	Prediction	Evidence	Conclusion
H1	Organizational resilience reduces crash risk.	OR = -0.024*** for NCSKEW; OR = -0.019*** for DUVOL.	Supported
H2	Resource slack strengthens the negative OR-crash risk relation.	OR x Slack is negative and significant under both proxies.	Supported
H3	Information transparency strengthens the	OR x InfoTransp is negative and significant under both proxies.	Supported

	negative OR-crash risk relation.		
H4	Long-term orientation strengthens the negative OR-crash risk relation.	OR x LTO is negative and significant under both proxies.	Supported
H5	Stakeholder monitoring strengthens the negative OR-crash risk relation.	OR x StakeConf is negative and significant under both proxies.	Supported

Note: Crash risk is measured by NCSKEW and DUVOL. Higher values of both variables indicate higher crash risk.

Discussion

The results for Objective 1 show that organizational resilience is negatively associated with subsequent stock price crash risk. This finding indicates that resilience has equity-market relevance. Resilient firms are less likely to experience extreme negative firm-specific return outcomes, even after controlling for firm characteristics, return-process variables, and fixed effects. This result is consistent with evidence that stronger firm-level governance and sustainability-related capabilities are associated with lower stock price crash risk (Feng et al., 2022).

The finding is consistent with the bad-news-hoarding framework. When firms have stronger adaptive capability, managers can address adverse developments earlier and explain corrective actions more credibly. This reduces the likelihood that negative information accumulates silently and is later released as a sudden cluster. Organizational resilience therefore operates not only through operational stability but also through information discipline. The moderating role

of transparency and monitoring is consistent with prior studies emphasizing the importance of information environments in explaining crash risk (Habib et al., 2018).

The results for Objective 3 clarify the capability-information mechanism. Resilience reduces crash risk most effectively when internal buffers and external information discipline work together. A firm may be operationally resilient, but without transparency and monitoring, investors may still face hidden downside risk. Conversely, transparency and monitoring make resilience credible by allowing markets to observe how the firm responds to shocks. These findings align with research showing that organizational resilience enhances firms' ability to withstand systemic shocks and maintain performance under adverse conditions (Sajko et al., 2021).

These findings extend organizational resilience research by moving beyond operational outcomes and showing that resilience can reduce capital-market tail risk. They also extend crash-risk research by introducing a capability-based antecedent alongside traditional information-opportunity explanations. In practical terms, resilience should be managed as an integrated system that includes resources, disclosure routines, long-term incentives, and stakeholder communication.

Limitations

1. The study uses accounting and market-based proxies for organizational resilience. These proxies are suitable for large-sample panel analysis but may not fully capture leadership quality, crisis culture, employee adaptability, or informal routines.

2. The fixed-effects design with lagged variables improves temporal ordering but does not completely eliminate all endogeneity concerns. Time-varying omitted factors may still influence both resilience and crash risk.

3. The evidence comes from Chinese A-share listed firms, so institutional features such as state influence, disclosure regulation, and investor composition may limit direct generalization to other markets.

4. The mechanism is tested through theoretically relevant moderation rather than direct observation of every managerial disclosure decision. Future work can use textual news data, disclosure-delay measures, or regulatory events to observe bad-news accumulation more directly.

Recommendations

1. Managers should treat organizational resilience as part of capital-market risk management rather than only as an operational recovery concept.

2. Listed firms should maintain sufficient resource slack and financial buffers so that resilience can be implemented during shocks without abrupt operational contraction.

3. Disclosure teams should communicate adverse developments gradually and credibly, linking negative information to concrete response plans and resilience practices.

4. Boards should connect resilience oversight with long-term incentives, internal controls, and timely risk reporting to discourage bad-news hoarding.

5. Institutional investors and regulators should encourage standardized and verifiable disclosure of resilience-related practices, including risk-management routines, continuity planning, and governance oversight.

Future Research Directions

1. Future research can use quasi-experimental designs, such as regulatory shocks, extreme weather events, credit-supply shocks, or industry disruptions, to strengthen causal identification.

2. Future studies can develop text-based or survey-based measures of organizational resilience to capture culture, communication, leadership, and operational routines more directly.

3. Researchers can examine whether the resilience-crash-risk relationship is stronger during crisis periods than in normal periods.

4. Future research can compare the Chinese A-share market with other institutional settings to test the generalizability of the capability-information mechanism.

5. Additional studies can examine whether resilience affects bond spreads, analyst forecast dispersion, loan pricing, and market liquidity.

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