

The impact of corporate financialization on stock price crash risk

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Abstract. In recent years, the continuous occurrence of stock price crashes and the significant financialization trend of non-financial firms have aroused widespread attention from regulators, investors and academia. Based on the panel data of China's A-share non-financial listed companies from 2010 to 2023, this paper designed a rigorous empirical research program and utilized descriptive statistical analysis, correlation analysis, multiple regression analysis and other analytical methods to explore the impact of enterprise financialization on stock price crash risk. The empirical results show that enterprise financialization is conducive to attenuating future stock price crash risk.

Keywords: Enterprise Financialization; Stock Price Crash Risk.

1. Introduction

Since the reform and opening up, China's economy has been developing at a high speed, providing a favorable environment for the development of China's financial industry, and the scale of the financial market has gradually expanded. As of June 2023, the total assets of China's financial institutions amounted to RMB 449.21 trillion yuan, and liabilities reached RMB 410.48 trillion yuan; among them, the securities industry and the insurance industry have developed most rapidly, and the year-on-year growth rate of the total assets of the securities industry and the insurance industry from the end of 2020 to the beginning of 2022 exceeded 20%.

The rapid development of the financial sector means that more and more capital is being injected, including investment by non-financial companies. According to the survey data in 2022, more than half of the A-share non-financial listed enterprises hold certain financial assets, non-financial enterprises through the reasonable allocation of financial assets, can adjust the company's risk position, improve the company's profitability. This series of factors has led to the financialization trend of "de-realization to virtualization" in China.

At this stage, the research on financialization mainly focuses on corporate asset allocation, stock price impact, and corporate innovation investment. Literature on the impact of financialization on stock price collapse is still very limited, therefore, this paper examines the impact of the level of financialization on the risk of stock price collapse by measuring the level of financialization and the risk of stock price collapse based on the stock price and financial data of enterprises.

2. Data and Methodology

2.1. Data

In this paper, the data of A-share listed companies are selected from 2010-2023, in which the explanatory variables are lagged one period relative to the explanatory variables, the sample interval of the explanatory variables is 2011-2023, and the sample interval of the explanatory variables is 2010-2022. Before conducting the research related to the financialization of enterprises and the risk of stock price collapse, the following treatments were done to the sample data: exclude the financial industry samples, exclude the samples with sample intervals of ST or *ST, exclude the missing values, exclude the samples with the number of trading weeks less than 30 weeks, and perform a two-sided Winsorize shrinkage on all the variables at the 1% level.

Finally, a total of 840 stocks and 10,921 sets of yearly-firm observations are obtained for the period 2010-2023. The macro data are from the National Bureau of Statistics (NBS), the micro data are from CSMAR database, and the measurement software is Stata16.

2.1.1. Level of financialization

Referring to the research of other scholars, modern real estate is independent of the real economic sector, presenting the characteristics of virtualization, and real estate prices are greatly affected by the fluctuations of macro policies and stock prices, so this paper will include real estate in the consideration of financial assets, and in the empirical analysis of the calculations can also be found to occupy a large proportion of the financial assets.

This paper studies the inclusion of trading financial assets, available-for-sale financial assets, loans and advances, held-to-maturity investments, investment real estate, long-term equity investments, and derivative financial assets in the calculation of financial assets, this paper refers to the level of financialization of the enterprise FIN is calculated as.

$FIN = (\text{net available-for-sale financial assets} + \text{trading financial assets} + \text{net loans and advances issued} + \text{net held-to-maturity investments} + \text{net long-term equity investments} + \text{net investment real estate} + \text{derivative financial assets}) / \text{total assets}$

2.1.2. Stock price crash risk

The explanatory variable selected in this paper is stock price crash risk, based on Kim (2011), this paper uses negative skewness coefficient (NCSKEW) and top-down volatility (DUVOL), the larger the value of both, the higher the risk of stock price crash. The negative skewness coefficient and top-down volatility data in this paper are from the NCSKEW CSMR factor research database. The calculation method is as follows:

$$R_{i,t} = a_i + b_1 R_{m,t-2} + b_2 R_{m,t-1} + b_3 R_{m,t} + b_4 R_{m,t+1} + b_5 R_{m,t+2} + e_{i,t}. \quad (1)$$

Where $R_{m,t}$ is the market-weighted average return in week t and $e_{i,t}$ is the residual of individual stock return volatility. Controls are made for before and after periods to account for asynchronous trading conditions.

Calculating the adjusted rate of return:

$$W_{i,t} = \ln(1 + e_{i,t}). \quad (2)$$

Negative skewness coefficients and top-down volatilities can be constructed from the calculated adjusted returns:

$$NCSKEW_{i,t} = [n(n-1)^{(3/2)} \sum W_{i,t}^3] / [(n-1)(n-2) (\sum W_{i,t}^2)^{(3/2)}]. \quad (3)$$

$$DUVOL_{i,t} = \log \{ [(n_u - 1) \sum_{\text{down}} W_{i,t}^2] / [(n_d - 1) \sum_{\text{up}} W_{i,t}^2] \}. \quad (4)$$

Where n denotes the number of weeks stock i is traded, n_u denotes the number of weeks stock i is up in year t , and n_d denotes the number of weeks stock i is down in year t .

2.1.3. Control variables

Referring to the studies of other scholars, the control variables selected in this paper are: firm size (SIZE), market-to-book ratio (BM), return on assets (ROTAR), return on equity (ROE), profit share from financial activities (FR), and adjusted weekly return deviation (SIGMA).

2.2. Empirical methodology

In the design of the empirical model, the risk of stock price crashes is lagged by one period, drawing on the treatment of stock price crashes by other scholars. This paper chooses the fixed effects model for empirical analysis:

$$\text{Crash}_{i,t} = a + b_1 \text{Fin}_{i,t-1} + rX_{i,t-1} + u_i + w_i + e_{i,t}, \quad (5)$$

Where $Crash_{i,t}$ denotes the risk of stock price collapse of individual stock i in year t , which is measured using the negative skewness coefficient (NCSKEW) and bottom-up volatility (DUVOL) in this paper, $Fin_{i,t-1}$ denotes the level of financialization of individual stock i in year $t-1$, and X is a control variable (mainly including firm size SIZE, adjusted weekly return bias SIGMA, return on assets ROTAR, book-to-market ratio BM, etc.). u and w denote industry fixed effects and time fixed effects, respectively. e denotes residual term.

3. Empirical evidence

Table 1 reports the results of the regressions of firm financialization on *NCSKEW* after controlling for the effects of year and industry.

In regressions 1 and 3, the coefficient of *FIN* is significant at the 1% level, and the coefficient of *FIN* is -0.3308, with a t-value of 0.1245. In regression 2, the coefficient of the coefficient of *FIN* is -0.2026 and the t-value is 0.114, which implies that the degree of financialization of the firms is significantly negatively related to the risk of stock price crash. This empirical result suggests that the positive effect of corporate financialization on stock price crash risk dominates, thus making the former have a mitigating effect on the latter.

Table 1. Results

Variables	Scheme 1 OLS	Scheme 2 fe	Scheme 3 fe
FIN	-0.3308*** (0.060)	-0.2026* (0.114)	-0.3308*** (0.1245)
SIGMA			1.6858*** (0.5519)
SIZE			0.0610*** (0.0218)
BM			-0.5090*** (0.0627)
ROTAR			0.6720 (0.4404)
ROE			-0.2181 (0.2511)
FR			-0.0217 (0.0169)
Intercept term		-0.3240*** (0.011)	-1.6383*** (0.6021)
Annual effects	NO	NO	YES
Industry effects	NO	NO	YES
R ²	0.0009	0.0003	0.0514

4. Summary

Financialization of firms helps to reduce the risk of their future stock price crashes. Corporate financialization under the precautionary motive brings a positive impact on the risk of stock price collapse by improving the financing constraints; corporate financialization under the arbitrage motive may be a tool for corporate insiders to regulate profits, which makes the adverse news hidden and reduces the information transparency of corporations, thus bringing a negative impact on the risk of stock price collapse, and at the same time, investors will increase their attention to corporations based on the fear that their own interests will be damaged, and regulators will increase their attention to corporations based on the fear that the stability of the capital market will be affected, among other purposes. At the same time, investors will pay more attention to the enterprise based on the fear of

damage to their own interests, and regulators will enhance supervision and management of the enterprise based on the fear of the stability of the capital market will be affected, etc. The strengthening of the external supervision force will bring a positive impact on the risk of stock price collapse, thus the relationship between the financialization of the enterprise and the risk of stock price collapse will be affected by the results of the two sides of the game of power; the allocation of the enterprise's financial assets has the effect of reversing the losses and smoothing the earnings, and smoothing the earnings helps to increase the current accounting profitability.

The allocation of financial assets by enterprises has the effect of reversing losses and smoothing earnings, and smoothing earnings helps to improve the predictive ability of current accounting surplus information on future surplus, which is conducive to investors' understanding of the real situation of enterprises, making a correct assessment of the value of the enterprise, and alleviating the degree of information asymmetry, which will bring a positive impact on the risk of stock price collapse.

Taken together, financialization ultimately plays a role in mitigating the risk of stock price collapse, as the positive impact of corporate financialization on the risk of stock price collapse is greater than the negative impact of corporate financialization on the risk of stock price collapse.

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