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Disclosure Quality and Risk of Share Price Collapse

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Abstract: In recent years, the stock crash has become a serious financial crisis, which can seriously undermine the personal gains of investors and the stability of society, as well as bring about long-term negative impacts on society. Therefore, it is necessary to strengthen the regulation in order to prevent the emergence of such crisis. Through empirical analysis, we can see that when companies strengthen internal control and improve information disclosure, it will help to effectively reduce the possibility of future stock crash. Through this study, we can see that the corporate internal control disclosure system implemented in China in recent years has been able to help companies avoid the crisis of stock plunge as well as provide strong support for the sustainable growth of China's capital market. This study adopts a state-of-the-art methodology, utilizing a number of data about internal information control of listed companies and its related data, as well as related indicators about stock crashes, thus greatly expanding out the development trend in recent years. This provides theoretical references on how companies can avoid stock price crashes and whether the level of internal control disclosure needs to change.

Keywords: information disclosure, internal information control disclosure, stock crash

1. Introduction

Since the "crash", the stock market has been in a state of volatility, and its volatility has brought huge risks to investors, and also seriously affected the stability of the financial market, and more likely to have a serious impact on the long-term growth of the real economy. The stock market in China has a high frequency and large range of oscillations, the reasons for which are worth investigating, and the disclosure environment in the Chinese market has not been optimistic. Therefore, this paper focuses on the impact of information transparency on stock price collapse risk in the Chinese market.

By analyzing the financial statements of listed firms across China, it is clear that firms' internal control and regulation can greatly reduce the likelihood of stock crashes, however, if firms fail to improve these measures in a timely manner, the likelihood of stock crashes will be greatly increased.

The significant contributions of this paper are: firstly, by exploring the risk of stock crash in depth, we can not only better understand the economic benefits of internal control, but also analyze the cost-effectiveness of internal control from a broader perspective; secondly, we can also explore the factors affecting the risk of stock crash more comprehensively, so as to better understand the importance of internal control.

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2. Literature Review

2.1. Studies Related to Disclosure and Stock Price Crash Risk

Information disclosure plays a crucial role in the stock market by linking investors and influencing speculators' decisions. Therefore, how to assess the quality of disclosure and how to predict speculators' decisions has become a hot topic in the current investment field. Past research has often only been able to explore this issue through theoretical derivation, but not through actual testing. Studies have shown that information disclosure is crucial in reducing the risk of stock price crashes. Research by Kong Dongmin, Yi Zhihong, and other scholars has shown that when information asymmetry exists, the information competition behavior of institutional investors will help to enhance the risk of stock market crash [1], and the firm's external guarantees will have a corresponding negative correlation, especially when the disclosure rate, the level of control, and the competitiveness of the market are all quite weak, and this relationship becomes especially prominent.

The level of social responsibility information disclosure and conditional accounting robustness has a significant negative relationship in terms of information disclosure, according to Quan Xiaofeng et al. This negative relationship only exists in the case of mandatory disclosure and the absence of third-party information authentication of the social responsibility report companies; According to research by Song Xianzhong et al., corporate disclosure of social responsibility information lowers the likelihood of future stock price crashes by being strongly negatively connected with that risk. According to this, there is a lower chance of future stock price collapses when corporations provide information on their social responsibility. According to research by Sun Shuwei et al., CEOs who reduce their equity ownership run a higher chance of seeing their stock prices crash, While Wu Zhanchi et al. came to the opposite conclusion, the stock price collapse is triggered by the selling behaviors of major shareholders among the insiders, but the stock price collapse is not due to the insiders hiding the bad news, and it is not due to the insiders' behavior of aggregating "bad news" that ultimately triggers the risk of stock price collapse [2-5]. The selling practices of major shareholders, which increased the distance between their interests and those of outside investors and sharply increased the uncertainty, were, however, what caused the crash and not the insiders' concealment of bad news that would have caused it [4-6].

2.2. Review of Existing Research

According to the findings, inequality and disclosure of information are significant causes of stock market crashes, while openness and transparency are critical determinants of such crashes. However, due to differences in research samples, data sources, and research methodologies, the link between the risk of stock price crashes and the quality of information disclosure has not been consistently concluded.

The purpose of this paper is to investigate the effectiveness of corporate internal control disclosure and whether it can effectively reduce information asymmetry in the capital market, enhance the pricing efficiency of the stock market, and help to prevent the resulting stock risk.

3. Theory Construction and Hypothesis Formulation

The possibility of a stock price collapse may lead to a sharp decline in stocks. Since crashes occur in capital markets from time to time, analyzing the causes and exploring the influencing factors directly from the market level has become the focus of many scholars. Unlike the market level which emphasizes on the analysis of investors' heterogeneous beliefs, Jin and Myers assumed that investors' beliefs are homogeneous and analyzed the crash mechanism from the perspective of the

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management which possesses the information advantage and has certain disclosure options, and the resulting hypothesis of management's covering up is the theoretical foundation for the study of the factors affecting the risk of stock price crashes from the firm level. According to Jin and Myers, there is a clear opportunistic tendency of corporate management, which can greatly affect the financial status of the company, and the main form of this influence is the opacity of financial reports. Although the leaders of the firms are responsible for reflecting the relevant information about the financial reports and their results to the market in a timely manner in order to gain more attention, this situation also makes the financial reports of the firms more sensitive and more difficult to reflect the status of the firms' financial reports in a timely manner.Jin and Myers found that in the case of firms that face negative impacts, such as poor financial performance, bad investment decisions, etc. In order to maintain its position and compensation, management often chooses to avoid disclosing negative reports [7, 8], which results in the firm's financial condition becoming more secretive. As management continues to cover up its negative features, it makes the information transparency of the company drop significantly, which leads to the plunge of the stock market. This occurred mainly from the fact that management consciously postponed the negative reporting of its commitments while ignoring other important elements when making salary agreements, planning personal development and building corporate dynasties. As outside investors discover the potential risks of the business, they find out negative information about the business, and, although they don't notice it for a while, they also realize that the risks of the business are, on the whole, they are cumulatively large because of their potential, and that, when their potential is fully utilized, the profits of the business will be greatly increased, and that, when their potential is fully utilized, the risks of the business will be fully utilized, and that, when the risks of the business are fully utilized, the profits of the business will be greatly increased, and that thus, the stock price of the firm is significantly increased, thus avoiding the risk of a occurrence of a stock price crash [9].

Internal control is crucial to the financial status of an enterprise, and good internal control can enhance the accounting robustness of an enterprise [10], prevent managers from abusing accounting policies [8], and reduce the risk of concealing material information, thus reducing the uncertainty of the stock market.

Through the perfect internal control mechanism, as well as strict financial review, the information asymmetry between management and investors can be greatly reduced, preventing them from abusing accounting policies and opportunistically disclosing information selectively, so that investors can clearly know the risks of the enterprise and can make correct investment decisions based on this information, which will allow the stock price to better respond to the company's operational status, and further enhance the pricing level of the stock market. Measures should be taken in order to prevent a market crash due to the bursting of a market bubble. This leads to the first hypothesis of this paper.

H1: The quality of internal control disclosure is negatively related to the risk of stock price crash.

4. Empirical Design and Analysis of Results

This paper focuses on the effect of internal control disclosure on the risk of stock price collapse to test Hypothesis 1.

4.1. Empirical Research Design

4.1.1. Sample Selection and Data Sources

The "Dibbo-Internal Control Disclosure Index" is the internal control disclosure index used in this study. As the first study sample, this article chooses all publicly traded businesses in Shanghai and

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Shenzhen from 2017 to 2021. The initial sample is screened in accordance with the following guidelines, citing Pan Yue et al., Xu Nianxing et al., and Li Xiaorong and Liu Xing: (1) The samples with fewer than 30 weekly returns of individual stocks in a given year are excluded to ensure the reliability of the regression model because the stock price crash risk indicator is obtained by processing the residuals from the regression of weekly returns of individual stocks; (2) the samples with fewer than 30 weekly returns; (3) Samples with less than 30 weekly returns, (4) Samples with more than 30 weekly returns, (5) Samples with less than 30 annual returns, (6) Samples with missing values in financial data, (7) Samples with missing values in financial data; (8) Continuous variables are treated using a two-sided total of 1% shrinkage (Winsorize) to reduce the impact of extreme values. In the end, 9624 observations were collected using the aforementioned criteria.

4.1.2. Selection of Variables

Risk of Share Price Collapse. Drawing on Chen et al., Jin And Myers, Jin and Myers, Hutton et al., Kim et al., an, an and Zhang, Callen and Fang, Callen and Fang, Li Xiaorong, Liu Xing, and other scholars, we can better understand these theories and apply them in practice with a view to obtaining more effective results. In this article, we will take two approaches to assess the risk of corporate collapse. First, we will take the weekly return of individual stocks as a benchmark for judging stock prices and compare it with the weighted average return of weekly liquid stock prices, and then we will take a new approach that combines these two parameters in order to assess the collapse risk of a firm:

$$r_{i,t} = \alpha_i + \beta_1 r_{M,t-2} + \beta_2 r_{M,t-1} + \beta_3 r_{M,t} + \beta_4 r_{M,t+1} + \beta_5 r_{M,t+2} + \varepsilon_{i,t} \quad (1)$$

The purpose of this study is to explore the return at week t and compare that return to the market capitalization at week t in order to better control for the detrimental effects of asynchronous trading on the results. By calculating the residuals, we can infer whether a firm's returns are in line with expectations. If this number is negative, it implies that the firm's returns are lower while the expected returns are higher.

In this study, we use the Negative conditional return skewness (NCSKEW) for the first crash hazard index and name it NCSKEW.The specific calculation steps can be found in equation (2).

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

Where n is the number of weeks that stock i is traded in year t.

DUVOL is an index used for the second crash risk which detects asymmetric changes in stock returns and can be computed by equation (3).

$$DUVOL = \log\{[(n_u - 1)\sum_{Down} W_{i,t}^2]/[(n_d - 1)\sum_{up} W_{i,t}^2]\} \quad (3)$$

In this statement, the weekly return of stock i is higher than the average for the year, which indicates that its stock price is more likely to crash. both NCSKEW and DUVOL are positive indicators, that is, the greater the NCSKEW (DUVOL), the greater the risk of a stock price crash.

Level of Disclosure of Internal Control Information. Both "Dibor-Internal Control Disclosure Index" and "Dibor-Internal Control Index" are widely used in the internal control management of companies. The "Dibor-Internal Control Disclosure Index" is derived from the "China Accounting Association's Index of Internal Control of Listed Companies in China", which was prepared through in-depth domestic academic discussions and in-depth reviews by national audit organizations, and

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has received extensive academic support. The "Dibor-Internal Control Index" focuses more on the risk management capability of enterprises and is more in line with the development needs of enterprises.

This index is designed according to the five elements of the C-SOX system, which covers five level 1 indicators to assess the internal control (Supervise), inherent environmental protection (Enironment), risk assessment (Assess), management behavior (Control), and information system and communication (InfComt) of an enterprise. By creating 65 secondary indicators, we can determine which objectives are considered and which are ignored and calculate the relevant scores based on the company's financial statements and internal control documents.

Control Variables. According to Zhou et al., it shows that future market volatility will increase due to serious internal control problems. Based on the lnIC in the "Dibbon-China Internal Control Index for Listed Companies", we propose a new approach to measure the internal control level of firms in order to reduce future market volatility.

In the past literature, we further consider a number of other factors in this study, including the negative value skew ratio (NCSKEW), the monthly mean excess turnover rate (OTurnover), the benchmark spread of weekly returns (Sigma), the weekly return (Ret), and the size of the firm. Size (Size). Book Value Ratio (BM), Asset Quality Ratio, Profit Ratio, Financial Condition Indicator (ROA), and Disclosure Procedures (AbsACC).

4.1.3. Modelling

This paper uses model (4) to test hypothesis H1. In the model, Crash is the two crash risk indicators NCSKEW and DUVOL in 2012; dis -IC is the five internal control disclosure indicators in 2011; ControlVariable is the control variable and Ind is the industry dummy variable. According to hypothesis H1, the coefficient of internal control disclosure indicator β_i should be significantly negative.

$$\mathrm{Crash}_{t+1} = \alpha + \sum_{j=1}^{5} \beta_j \, (jthdis\_IC_t) + \sum_{q=6}^{m} \beta_q \, (qthControlVariable_t) + Ind + \varepsilon \qquad (4)$$

4.2. Analysis of Empirical Results

4.2.1. Descriptive Statistical Analyses

The descriptive statistics results as shown in Table 1 show that the mean values of the two crash risk indicators, NCSKEW and DUVOL, are -0.410 and -0.276, respectively, which are more similar to the descriptive results of Xu, Nianxing et al.; and the standard deviations are 0.779 and 0.481, respectively, which indicate that there are large variations of these two indicators in the sample. Among the five disclosure indicators, the mean score of Supervise, an internal oversight indicator, is 13.229. The mean scores of the other dimensions range from 0.03 to 6.890. The mean (median) of the internal control quality lnIC is 635.523 (659.578).

Table 1: Descriptive statistical analyses.

variable symbol	sample size	average value	(statistics) standard deviation	minimum value	median	maximum values
$NCSKEW_{t+1}$	9624	-0.410	0.779	-2.755	-0.358	1.803

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Table 1:(continued).

$DUVOL_{t+1}$	9624	-0.276	0.481	-1.445	-0.279	1.006
$Supervise_t$	9624	13.229	2.301	3.000	13.700	15.600
$Environment_t$	9624	6.890	2.146	0.000	7.210	10.880
$Assess_t$	9624	5.723	1.251	2.850	5.680	8.740
$Control_t$	9624	8.312	2.033	0.000	8.450	12.030
$InfCom_t$	9624	2.961	0.954	0.390	3.000	5210
$InIC_t$	9624	635.523	121.571	1.000	659.578	812.894
$NCSKEW_t$	9624	-0.373	0.784	-2.649	-0.339	1.930
$Oturnover_t$	9624	0.312	0.330	-0.049	0.207	1.646
$Sigma_t$	9624	0.057	0.020	0.023	0.054	0.129
Ret_t	9624	0.000	0.008	-0.013	-0.002	0.034
$Size_t$	9624	22.510	1.309	20.119	22.343	26.497
BM_t	9624	0.565	0.371	0.072	0.470	1.955
Lev_t	9624	0.429	0.193	0.069	0.425	0.865
ROA_t	9624	0.037	0.067	-0.278	0.036	0.213
$AbsACC_t$	9624	0.060	0.060	0.001	0.042	0.324

4.2.2. Statistical Analysis of Correlation

"Supervise) both exhibit less than 5% significance, which suggests that even ignoring the effects of other external factors, "internal supervision " disclosure would also be enhanced, thereby reducing the likelihood of future stock crashes, a finding that also happens to be consistent with H1's expectations. Although this study fails to confirm that the risk of future stock market crashes is affected by internal control information, we may still explore several aspects, such as: firm size, assets, financial condition, and growth potential, as well as the correlation between these variables and internal control information. In addition, we may also explore the future market environment so that we can better predict future market volatility. In order to obtain accurate results, we should examine how various external factors affect the volatility of the stock market through multiple regression analysis to obtain valid information.

4.2.3. Regression Analysis

Table 2 displays the pertinent empirical results from the OLS regression model. After controlling for the impact of internal control quality and other factors, the coefficient of Supervise, an indication of internal control disclosure, is -0.00239 and significant at the 1% level in Regression 1, which utilizes NCSKEW as an indicator of the probability of stock price collapse.

4.2.4. Empirical Results

The risk of stock price collapse and the other aspects of internal control disclosure are not significantly correlated, according to this study. This may be because the "internal control" element's primary function is to oversee and regulate management's behavior, and it is the most

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independent and legally binding to management, making it the most crucial component to prevent management from acting in an avaricious manner and lowering the risk of a stock price collapse. In contrast, the "internal environment" is one of the most crucial components of the internal control system, which is the most crucial component. Although the "internal environment" is a very fundamental component of the internal control system, it is equally crucial to establish a company-wide culture of managerial oversight and control. While "risk assessment," "control activities," and "risk assessment" are the most crucial components of the internal control system and are the most independent and binding to the management, it is challenging to rely on such a soft mechanism as culture to form a meaningful constraint on the management's self-interested behaviors. It is challenging to stop the management's rent-seeking behavior in "risk assessment," "control activities," and "information and communication" because the management either participates in the entire implementation process or in the final evaluation, which is easily manipulated and influenced by the management. This study further adjusts for information opacity in Regression 2 and discovers that information opacity and Studies by Jin and Myers and Hutton et al. show a strong and positive correlation between the likelihood of a stock market decline. More importantly, at this point, the Supervise coefficient is still negative and significant at the 1% level. In regressions 3 and 4, DUVOL is used in place of the stock price crash risk indicator in this study, and the coefficient of supervision is significantly negative at the 1% level. In addition, although not statistically significant, the coefficient of lnIC, a gauge of the efficacy of internal controls, is negative. This demonstrates that, in order to lessen the risk of future stock market crashes, enhancing the disclosure of internal control information is more crucial in China than developing the internal control system itself.

According to previous research, the control variables NCSKEW, Sigma, and Size are strongly favorably connected to the probability of stock price crashes, whereas BM and Lev are significantly adversely related to that risk. This demonstrates the great trustworthiness of the study in this report as well.

Table 2: Regression statistical analysis.

	NCSKEW (1)	NCSKEW+ (2)	DUVOL+ (3)	DUVOL+ (4)
Supervise	-0.00239	-0.00252	-0.00361	-0.00393
	(-0.81)	(-0.85)	(-0.76)	(-0.83)
Environment	-0.000467	-0.000397	-0.000812	-0.000633
	(-0.17)	(-0.14)	(-0.18)	(-0.14)
Assess	-0.00201	-0.00184	-0.00916	-0.00872
	(-0.34)	(-0.31)	(-0.95)	(-0.91)
Control	0.00938***	0.00944***	0.0106**	0.0107**
	-3.24	-3.26	-2.28	-2.3
InfCom	-0.0205***	-0.0203**	-0.0338***	-0.0333***
	(-2.58)	(-2.56)	(-2.65)	(-2.61)
INIC	-0.0000499	-0.0000441	-0.0000451	-0.0000304
	(-0.85)	(-0.75)	(-0.48)	(-0.32)
NCSKEW	-0.118***	-0.118***	-0.219***	-0.219***
	(-16.07)	(-16.04)	(-18.59)	(-18.53)
Oturnover	-0.0510*	-0.0498*	-0.0917**	-0.0887**
	(-1.85)	(-1.81)	(-2.07)	(-2.01)
Sigma	-0.981***	-0.980***	-1.060*	-1.058*
	(-2.67)	(-2.67)	(-1.79)	(-1.79)

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Table 2: (continued).

Ret	-2.337***	-2.353***	-3.926***	-3.967***
	(-3.12)	(-3.14)	(-3.26)	(-3.29)
Size	0.102***	0.101***	0.166***	0.162***
	-3.81	-3.76	-3.84	-3.76
BM	-0.662***	-0.667***	-1.021***	-1.034***
	(-19.08)	(-19.36)	(-18.29)	(-18.65)
Lev	-0.462***	-0.456***	-0.768***	-0.752***
	(-4.86)	(-4.80)	(-5.02)	(-4.92)
ROA	0.232*	0.191	0.296	0.191
	-1.92	-1.64	-1.52	-1.02
AbsACC	0.131		0.337**	
	-1.29		-2.07	
Constant	-1.712***	-1.672**	-2.739***	-2.636**
	(-2.61)	(-2.55)	(-2.59)	(-2.50)
Industry	YES	YES	YES	YES
N	9624	9624	9624	9624
F	27.95	28.89	29.71	30.6
adj-R^2	-0.203	-0.203	-0.195	-0.196

Note: ***, **, * indicate significant at the 1 per cent, 5 per cent and 10 per cent levels, respectively; t-values obtained from White's (1980) heteroskedasticity robustness adjustment are in parentheses, below.

5. Conclusion

The importance of internal control disclosure cannot be ignored, which can effectively prevent the occurrence of future stock price crash, therefore, the study of their correlation has become a research hotspot in the field of internal control disclosure of listed companies nowadays, and the results of these researches provide useful references for Chinese listed companies. In this paper, we take the data of Chinese A- and B-share listed companies from 2017-2021 as a sample,based on analyzing and summarizing the related literature. According to recent findings, future market volatility may have a significant impact on firms' internal controls. Therefore, our study not only helps us to better understand how to reduce future market volatility, but also to better predict future market volatility by analyzing firms' financial statements.

First, in order to prevent the hazards of a crash, we must increase transparency about internal control issues and take the necessary steps to resolve them. Second, in order to safeguard the transparency of internal controls, we must establish a rigorous audit and auditing program and strictly enforce the auditing procedures to ensure the accuracy and objectivity of the auditing process. Thirdly, in order to safeguard the transparency of internal control, we must establish a rigorous auditing and auditing procedure, and strictly implement the auditing procedure to ensure the transparency and objectivity of the auditing process. Then they should be severely punished.

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