Executive compensation adjustment and the risk of stock price

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Abstract. Based on the 'convergence of interests' hypothesis, rational people hypothesis, and management information hiding hypothesis. This study uses the 2023 Fortune 500 as its research object to analyze the effects of executive remuneration adjustment on the danger of the stock price crash. The research shows that when the board of directors can effectively supervise the executives, the company's adjustment of the number of executive compensation will help to improve the incentive efficiency, promote the " convergence of interests " between executives and shareholders, relieve the agency problem, and then inhibit the crash of company's stock price. When the senior executive power gradually expands and loses control, the salary adjustment may be a manifestation of the executives seeking personal benefits, which not only does not help to solve the agency problem but may even become a part of the agency problem, which in turn increases the chance that the company's stock price may drop.

Keywords: salary adjustment; stock price crash risk; executive power.

1. Introduction

Since the foundation of the Amsterdam Stock Exchange in the 17th century, the stock markets around the world have experienced many fluctuations. In particular, the U.S. financial crisis in the 1930s made countries attach great importance to the economic crisis and take measures to avoid it. However, it is still impossible to prevent this phenomenon. After the U.S. housing market collapsed in 2008, the subprime mortgage crisis expanded to the real economy and international financial markets, causing a global economic downturn, skyrocketing unemployment, social unrest, and a political crisis. As a result, academic and practical circles have given the stock market collapse problem much attention. The manager conceals bad news, which results in the slow buildup of bad news until it spirals out of control, which is the cause of the stock price fall, according to the research conclusions of the literature that has already been published. The stock price drop will start as soon as the terrible news hits the capital market [1].

So why does management hide lousy news? Relevant research shows that the motivation of executives to hide bad information is usually related to compensation or transaction contracts. The stronger the reason for executive compensation comparison, the lower the comparability of accounting information [2]; large-scale companies are more willing to effectively expand financing channels and attract external investment by enhancing the disclosure of MD&A information's quality [3]. The board of directors with a large-scale structure is conducive to information disclosure. The board of directors with too small a scale needs more effective supervision and restriction. It is more likely to conceal the company's unfavorable factors when disclosing information, so external investors need help to obtain objective and practical information [4].

As the core figure responsible for the operation and management of enterprises, the actions and motivation of senior executives have a tremendous influence on the organization's short- and long-term success. Therefore, when the board of directors realizes the existing incentive methods are ineffective, it will try to adjust executives' compensation to alleviate agency conflicts. Usually, the salary adjustment reflects the improvement of corporate governance [5]. However, executive compensation has been affected by many factors. Then, will the risk of a stock price crash be affected when executives' power expands so that they can control their compensation? This problem has significant research value.

Compared to the existing literature, the following features primarily indicate the paper's purpose: The pay system design is the challenge and the main focus [6]. Executive compensation incentive has

long been a significant issue of discussion in theoretical and practical circles [7]. From the existing research, scholars have focused on the design process, incentive methods, influencing factors, and incentive consequences of compensation. However, little literature has involved the adjustment of compensation structure and its economic effects [8]. The influence of executive remuneration adjustments on the danger of stock price crashes is given in this essay. Few studies have examined the threat of impact from the standpoint of executive compensation, although numerous scholars have recently performed extensive studies on the reasons for this risk. According to this study, CEO remuneration modification significantly impacts the company's risk. In addition, it offers appropriate solutions for various circumstances, which has a high reference value for easing corporate agency issues and lowering the chance of the crash.

2. Research Background

From these existing papers, scholars have discussed the causes and influencing factors of this stock price crash.

According to the hypothesis of management information hiding, in most cases, because the management delays or even conceals the company's negative news due to their interests, the negative statement is forced to be released centrally after the critical point, which will wreak havoc on the stock price. According to the rational man hypothesis, the management defense hypothesis, and the loss aversion hypothesis, the company's management has the motivation to conceal the negative news; according to the 'information asymmetry' theory and 'incomplete contract' theory, management also has the ability to suppress negative news.

A widely accepted view is the stock price bubble and information hiding hypothesis ', which holds that there are various bubbles in the stock market, and the information opacity of the capital market provides some facile chance for managers to hide negative news. Therefore, insiders with information advantages are motivated to manage accounting information disclosure for self-interest strategically. However, the company's ability to carry bad news is limited. Once it exceeds the load and loses control, negative news is concentrated and released into the capital market, which will instantly puncture the bubble and cause a collapse in the stock price. The above view has also been pointed out by related research.

Moreover, when the agency cost of executives is large enough, the regulatory authorities ' mandatory disclosure of social responsibility information by listed companies not only fails to effectively alleviate information asymmetry but also leads to a significant increase in the risk of stock price crashes. When executive power is effectively constrained and supervised, the board of directors can continuously deepen the understanding of executive ability through ' learning 'and optimize the executive incentive model accordingly. Under this premise, the adjustment of the executive compensation structure will significantly alleviate the company's agency conflict, reduce the chance of negative information hiding, and ultimately reduce the risk of a stock price crash. Therefore, this paper proposes H1: The likelihood of a stock market crash for the corporation is inversely connected with changes in executive compensation.

Executives have natural information advantages and the power to determine essential matters of the company. When executives ' power balloons until they lose control, they will likely use the power they wield to intervene in the pay process for personal gain.

When the executive power is too large, the enterprise's salary adjustment is not necessarily to pursue the improvement of enterprise efficiency [4]. The agency conflict is getting worse at this point, and the quality of accounting data is declining, which not only makes it harder for the company to prevent a stock price fall but also significantly raises the danger [9].

Based on the above analysis, this paper believes that the way and effect of compensation adjustment on stock price crash risk depends on the size of executive power[10]. It can also be understood that the necessary premise for the establishment of H1 above is that executive power can be effectively controlled [11]. Thus, it is proposed H2: The degree to which a change in compensation

structure reduces the likelihood of a stock market meltdown increases with the size of the executive team.

3. Model Formulation

This paper selects the top 500 companies in the world in 2023 as the research object. The initial samples are processed as follows: samples with fewer than 30 trading weeks annually are removed to ensure the comparability and efficacy of the data; pieces with missing data are removed; representatives from the financial sector are excluded; and the necessity to gauge the risk of a stock price collapse based on the weekly idiosyncratic return rate of individual stocks is taken into consideration. Exclude models that do not meet the " salary structure adjustment " definition later. After the above screening, 2496 observations were initially obtained. In order to avoid the impact of the novel coronavirus epidemic, the data was up to 2019, and 504 observations were finally accepted, including 240 in the treatment group and 264 in the control group. The data used in this study are from the Oriental Wealth Database.2.2.2 Variable declaration

3.1. Risk of a Stock Price Crash

According to the available research, the return volatility ratio (Duvol) and negative return skewness coefficient (Ncskew) are the two most widely utilized measuring indicators of stock price crash risk. Only the negative return skewness coefficient is computed in this research.

Ncskew, or negative return skewness coefficient. The practice of Zhou Lei and others is primarily referenced in this study for the measurement of the negative return skewness coefficient (Ncskew). Firstly, the regression model of the stock's t-week return rate on its previous and subsequent market returns is constructed, and the residuals are retained. Then, the residual is added to 1, and the natural logarithm is taken as the idiosyncratic weekly yield R of the individual stock. Finally, the following model is used to derive the negative return skewness coefficient(Ncskew):

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

Among them, n is the number of trading weeks for individual stock 'i', and R is the stock's peculiar weekly yield. The chance of a stock market crash increases with the index value.

3.2. Executive Compensation Adjustment

The executives referred to in this article are broad concepts, including all management. This paper calculates the share-based compensation of the enterprise's financial statements. In order to make the selected samples more in line with the research theme of this paper, this paper only chooses the pieces of active changes in executive compensation, excluding the observation value of passive adjustment of compensation only due to stock price changes. This paper only focuses on the impact of active adjustment of executive compensation on stock price crash risk. Therefore, this paper defines the dummy variable Change. When the proportion of cash compensation increases compared with the previous period, it takes 1; when it remains unchanged, it takes 0; when it decreases, it takes − 1. At the same time, in order to capture the information of executive compensation structure adjustment more comprehensively, we also define an alternative variable, Change ', from the opposite direction. When the proportion of equity compensation increases compared with the previous period, it takes 1, 0 when unchanged, and 1 when reduced.

3.3. Executive Power

This paper uses a univariate measurement method represented by " whether the executive and the chairman are in one position " to measure executive power. The selected variables are whether the executive and the chairman are in one position (take 1, otherwise take 0). According to the previous theoretical analysis, only when the executive power has well constrained, the adjustment of executive

compensation can play a role in inhibiting the risk of stock price crash. Therefore, empirical tests are more conducive to setting executive power as a reverse index. The above variables are summed up to take the opposite number, which can form the executive power variable Power '.

3.4. Control Variables

Based on the existing study, this paper selects the following control variables: company size (Size), return on total assets (ROA), the company's adjusted weekly return mean (RET), and standard deviation (STD)

This study collects relevant data and applies statistical analysis techniques, such as regression analysis, to examine the relationship between executive compensation adjustment and stock price crash risk while controlling for other factors and control variables accounting for other factors that could influence stock price crash risk, including firm-specific characteristics, industry factors, market conditions, and corporate governance variables. In order to test the impact of executive compensation adjustment on the risk of stock price crash, this paper simplifies the research model:

$$\text{CrashRisk it} + 1 = \alpha 0 + \alpha 1\ \text{Changeit} + \alpha 2\text{Powerit} + \varepsilon\text{it} \quad (1)$$

4. Empirical Results and Analysis

4.1. Descriptive statistical analysis

The descriptive statistical analysis findings for the key variables are presented in Table 1. It is clear that the variable Ncskew, which measures the risk of the crash, has a mean value smaller than 0 and a relatively stable coefficient of variation of roughly 2.346. Additionally, it can be shown from a comparison of the treatment group and the control group that the average risk of a stock price collapse in the treatment group is lower. This confirms the hypothesis that the adjustment to CEO compensation will reduce the risk of a stock price crash. The average value of the company's idiosyncratic weekly return rate has a high coefficient of variation of up to 17.695, indicating that there are significant differences in the idiosyncratic weekly return rate between different companies. The average value of ROA is about 2.672, and the coefficient of variation is 2.043. It shows that the degree of dispersion is at a medium level.

Table 1. Descriptive statistics of the primary variables

Variable	Observations	Mean value	Variance	Minimum value	Maximum value
Ncskew	504	-0.142	2.346	-4.817	5.968
Change	504	0.056	0.539	-1	1
ROA	504	2.672	0.431	-1.153	0.644
Power	504	0.421	0.507	0	1

4.2. Analysis of relationship

The correlation analysis findings for the critical variables in this study are presented in Table 2. As can be observed, the change in executive salary adjustment is highly negatively linked with this variable Ncskew, which reflects the degree of stock price crash, which provides preliminary support for H1. The correlation coefficient between any two variables in Table 2 does not surpass 0.5, further demonstrating that the likelihood of multicollinearity between variables is low.

Table 2. the critical variables

Variable	Ncskew	Change	ROA	Power
Ncskew	1.00			
Change	-0.20	1.00		
ROA	-0.08	0.10	1.00	
Power	0.01	0.10	-0.08	1.00

5. Summary

This study uses the 2023 Fortune 500 as its research object to analyze the effects of executive remuneration adjustment on the danger of the stock price crash. This study evaluates the effects of the adjustment of CEO salary on the likelihood of stock price collapse based on the 'convergence of interests' hypothesis, rational people theory, and management information concealment hypothesis. Changing the executive remuneration structure is helpful in alleviating the agency problem, enhancing the quality of accounting information, and then reducing the risk of the company's stock price collapse when the executive power is successfully restrained. At this time, the compensation adjustment plays a ' benefit convergence effect '; however, when executives ' power continues to expand until they lose control, changing the compensation structure may be the result of executives ' self-interest, which is not conducive to alleviating agency problems and curbing this stock price crash risk.

The implications of the conclusions of this study are as follows:

First, make executive organizational structure power more strictly limited. This study concludes that in order to increase the effectiveness of the board of directors' performance, the effectiveness of salary structure adjustment, and reduce the risk of the stock price crash, it is necessary to tighten the controls on the power of the executive organizational structure and, to the greatest extent possible, avoid the combination of chairman and CEO.

Second, in order to optimize the incentive impact, reduce agency contradiction, and ultimately reduce the likelihood of a collapse of stock price, the board of directors should completely take into account the demands of all levels when determining executive compensation.

Third, continue to raise the standard of accounting data. Theoretical and practical circles usually concur that the stock price crash is the direct result of management's suppression of negative information, which has been concentrated and leaked to the capital market. Therefore, reducing the danger of a stock market fall requires improving accounting information quality and both parties' information transparency.

References

[1] Zhou Lei, Zhou Pinghua, Fang Yue. Executive compensation structure adjustment and stock price crash risk: 'convergence of interests' or 'trench defense'. 2021 (2020-8): 87-98.

[2] Yuan Guijing. Comparability of executive compensation, marketization process, and accounting information comparability. China General Accountant, 2023 (4): 96-99.

[3] Hong Yu, Fang Xiaodong. Management discussion and analysis of the influencing factors of information disclosure-Taking the manufacturing industry as an example.Journal of Putian University, 2017,24 (6): 43-47.

[4] Long Fengjiao.External Supervision, Corporate Governance and Internal Control Deficiencies Disclosure-Based on the Perspective of Management Motivation Choice. Journal of Chongqing University of Technology: Natural Science, 2019, 33 (2): 216-224.

[5] Kang Lixia, Xu Fei. Executive pay gap, CEO characteristics, and stock price crash risk. Friends of Accounting, 2020 (2): 8.

[6] Efendi T F. ANALYSIS OF THE IMPLEMENTATION OF THE SIMPLE SALARY SIM APPLICATION IN GROGOL DISTRICT, SUKOHARJO DISTRICT. 2020(4).

[7] Li Chong, Zhang Li, Su Yongjian. An empirical study on the relationship between salary structure, job satisfaction, and job performance of college teachers. Fudan Education Forum, 2016 (5): 7.

[8] Guo Yu, Gu Haiying. The impact of executive compensation structure on business performance. East China Economic Management, 2008,22 (004): 100-103.

[9] Xie Huobao, Hui Lili. Cost stickiness, corporate governance and executive pay-performance sensitivity-empirical evidence from the perspective of corporate risk. Management review, 2017,29 (3): 16.

[10] Zhang Yongwen Cao Jiajia. Analysis of the impact of corporate governance structure on employee compensation-Empirical research from manufacturing listed companies. Metallurgical Accounting, 2022,41 (3): 46-51.

[11] Chen Yizao, Chen Yan, Huang Shihua, etc. The impact of executive compensation contract reference effect on the company's stock price synchronicity. Journal of Management, 2023,20 (2): 287-296.