

# The Impact of Corporate Governance Structure on the Financial Risk



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**Abstract:** This paper first introduces the research background of financial risks and corporate governance structure, using a sample of A-share companies listed in Shanghai and Shenzhen Stock Exchange from 2016 to 2018. It applies Z-score to measure financial risks and finds some quantitative methods to measure the factors in the corporate governance structure. This paper uses multiple linear regression model to analyze the correlation between financial risks and the corporate governance structure. The results show that ownership concentration, executive shareholding percentage and executive compensation have the most significant influence on financial risks and all of them are negatively correlated with financial risks. Therefore, we recommend companies to improve the non-executive director mechanism of listed companies, to maintain a relatively concentrated ownership structure, and to take effective incentive mechanism for executives. These recommendations can help companies better manage financial risks.

**Keywords:** corporate governance structure, financial risks, Z-score, A-share listed companies

## 1. Introduction

The financial risk of a company has been one of the focuses of scholars in the field of financial management. It has a significant impact on the stability of companies' operations, the steady development of the capital market, and even the operation of the whole social economy. Recent events underline how the effect of boards on important organizational actions and outcomes remains one of the key controversies of the field of management and governance research (McNulty, Florackis & Ormrod, 2013). After the incident of Enron occurred in 2001, people have paid more attention to the causes of its bankruptcy, including complicated corporate governance structure, financial statement problems, lack of vitality of company culture and many other factors. But more importantly, the governance at Enron has shown serious problems, which aggravates the financial risks of companies (Healy & Palepu., 2003). This previous event underlines the effectiveness of the corporate governance structure, it seems to have implications for financial risks in the company.

Financial risk is the possibility of losing money

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on an investment or business venture. Some more common and distinct financial risks include credit risk, liquidity risk, and operational risk (Hayes, 2023). Operational risk is the result of various uncertainties in the process of financial activities and is the concentrated embodiment of the company's risk. Because it can more comprehensively, accurately and effectively reflects the real financial difficulties faced by the company, this paper tends to adopt the concept of operational risk as the financial risk.

## 2. Literature Review

As Judge William Q. and Zeithaml Carl P. (1992) noted, companies are more prone to financial crisis in the absence of non-executive directors' supervision. If most of the board of directors of a company are executive directors, their enthusiasm and motivation to supervise the chief executive officer will be very low, then it is difficult for the board of directors to perform their duties of controlling the company's strategy and participating in the company's decision-making. Therefore, senior managers have more control over the company, causing the danger of insider control.

Claessens Stijn, Djankov Simeon and Lang Larry H. P. (2000) clarified that the existence of

controlling shareholders is common practice and it happens in more than half of the listed companies in the world. They found that the higher the shareholding percentage of controlling shareholders, the lower the financial risk of the company. Besides, he pointed out in order to avoid the financial crisis of the company, the controlling shareholders must be fully supervised and encouraged in the company with a highly centralized equity structure. Therefore, they can consider the overall interests of stakeholders and the overall benefits of the company.

Goyal Vidhan K. and Park Chul W. (2005) concluded that when the shareholding percentage of executives are higher, they will have a stronger sense of responsibility and provide better service to the company. Therefore, the financial risk of the company will be reduced.

Chang Woo-Jin, Hayes Rachel M., Hillegeist Stephen A. (2015) identified financial risk is associated with the incentives provided to chief executive officer. Financial risk is positively associated with equity-based compensation and is negatively associated with cash bonuses.

### 3. Statement of Hypotheses

**H1: The size of the board of directors of a company is positively correlated with the level of its financial risks.**

Under the *Company Law of People's Republic of China ACT.109*, the range of the number of directors of a company is set as 5 to 19. With a large size board of directors, the directors will be interdependent and lack the motivation to supervise the operation of the company. Therefore, the decision-making efficiency of the board of directors will decrease, affecting the operation and management of the company.

**H2: The percentage of non-executive directors in a company is negatively correlated with the level of its financial risks.**

A non-executive director typically does not engage in the day-to-day management of the organization but is involved in monitoring the executive directors and acting in the interests of the company stakeholders (Barone, 2023). If the non-executive director of the company can perform their duties independently, the quality of the company's financial information will be significantly improved and the financial management activities

will be better coordinated and supervised.

**H3: Ownership concentration is negatively correlated with the level of financial risks.**

Ownership concentration refers to the concentration or dispersion of all shareholders' equity due to different shareholding ratios, which is an indicator to measure the status of equity distribution. In companies with relatively concentrated equity, several major shareholders own most of the company's shares, so they have the strength and enthusiasm to participate in the company's operation, management and to supervise the operators.

**H4: Ownership balance degree is negatively correlated with financial risk.**

The degree of ownership balance is used to measure the power between other major shareholders and controlling shareholders. Companies with a high ownership balance often are not prone to have controlling shareholders with absolute advantages. This can avoid the controlling shareholders damaging the interests of other major shareholders. When other major shareholders have the right, relative or equal, to the controlling shareholders in supervising the decision-making process, they can play a crucial supervisory role, thus reducing corporate financial risks.

**H5: The shareholding percentage of executives in a company is negatively correlated with its financial risk level.**

**H6: The level of executive compensation is negatively correlated with the level of financial risks.**

The executive incentive includes the compensation and shareholding percentage of the executives. Increasing the executive incentive will help to align the interests of executives with the company's interests, so that the executives will more likely be acting in the interests of the company in their roles as managers and pay more attention to the risks of the company, thus reducing corporate financial risks.

### 4. Methodology

#### 4.1. Sample selection

To ensure the availability of data of our research, we select A-share companies listed in both Shenzhen and Shanghai Stock Exchange with continuous operations from 2016 to 2018 as the initial sample. 357 companies with incomplete data were omitted

from the analysis. 3795 companies with complete data were used as sample.

#### 4.2. Source of data

The data of the sample is collected from the relevant databases and websites such as the Resset database, Wind database and Shenzhen and Shanghai Stock Exchange website. Such collected data will be processed and sorted out by creating an Excel table including the information related to the 6 hypotheses. SPSS23.0 statistical software will be used in the process of the empirical analysis.

#### 4.3. Research design

##### 4.3.1. Variables setting

(1) Dependent variables—financial risks

The formula is

$$Z=1.2X_1+1.4X_2+3.3X_3+0.6X_4+1.0X_5.$$

The X variable description in Z-score Model is as follows:

$X_1$ =Working capital/total assets

$X_2$ =Retained earnings/total assets

$X_3$ =Earnings before interest and taxes (EBIT)/total assets

$X_4$ =Market value of equity/book value of total liabilities

$X_5$ =Sales/total assets

The level of financial risks is measured according to the values of Z. When the value of Z is less than 1.81, it indicates that the company is likely to go bankrupt. When the Z value is between 1.81 and 2.99, it is called "gray area", indicating that the financial condition of the company fluctuates considerably. A Z value over 2.99 indicates that the level of corporate financial risks is low and the company's financial condition is good.

(2) Independent variables—corporate governance structure variables

**Table 1 Variable and its description**

| Variable Type         | Corporate Governance Structure        | Variable Name                         | Symbol         | Value Standard                                                                                                                             |
|-----------------------|---------------------------------------|---------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Independent Variables | characteristics of board of directors | size of board of directors            | V <sub>1</sub> | total number of board of directors                                                                                                         |
|                       |                                       | percentage of non-executive directors | V <sub>2</sub> | number of non-executive directors/ total number of board of directors                                                                      |
|                       | ownership structure                   | ownership concentration               | V <sub>3</sub> | the sum of squares of the shareholding percentage of the top five shareholders                                                             |
|                       |                                       | ownership balance                     | V <sub>4</sub> | the sum of the shareholding percentage of the second to fifth largest shareholders/ the shareholding percentage of the largest shareholder |
|                       | executive incentive                   | shareholding percentage               | V <sub>5</sub> | the number of shares held by executives/ total number of shares                                                                            |
|                       |                                       | executive compensation                | V <sub>6</sub> | natural logarithm of the sum of the top three executives' compensation                                                                     |
| Control Variables     |                                       | company size                          | C <sub>1</sub> | natural logarithm of the company's total assets                                                                                            |
|                       |                                       | capital turnover                      | C <sub>2</sub> | operating income/ total assets                                                                                                             |

##### 4.3.2. Model Building

In order to test the relevant hypotheses proposed above, the following basic empirical model is established:  $Z=\beta_0+\beta_1V_1+\beta_2V_2+\beta_3V_3+\beta_4V_4+\beta_5V_5+\beta_6V_6+\beta_7C_1+\beta_8C_2+\varepsilon$

Z is the financial risk which infers to the Z in a

variable setting. V is the corporate governance variable.  $C_1$ ,  $C_2$  are the coefficients of the control variables.  $\beta_0$  is a constant term.  $\varepsilon$  is the random interference term.

## 5. Analyze Procedure and Findings

### 5.1. Descriptive statistics analysis

| Variables | Max         | Min          | Median      | Average     | SD          |
|-----------|-------------|--------------|-------------|-------------|-------------|
| Z         | 301.1961252 | -35.71723406 | 3.089622864 | 5.057501666 | 8.985528701 |

|                |             |             |             |             |             |
|----------------|-------------|-------------|-------------|-------------|-------------|
| V <sub>1</sub> | 18          | 5           | 9           | 8.434554974 | 1.6681298   |
| V <sub>2</sub> | 0.666666667 | 0           | 0.363636364 | 0.375799832 | 0.054341311 |
| V <sub>3</sub> | 7941.569247 | 14.14260007 | 1285.365884 | 1560.395913 | 1114.52553  |
| V <sub>4</sub> | 5           | 0.014415544 | 1.159431875 | 1.20830623  | 0.755905236 |
| V <sub>5</sub> | 90.48642468 | 0.000       | 2.326643044 | 15.49777525 | 20.57863559 |
| V <sub>6</sub> | 7.832494223 | 5.222716471 | 6.293903642 | 6.317910753 | 0.294392045 |
| C <sub>1</sub> | 12.26994243 | 7.863665875 | 9.583502869 | 9.653437992 | 0.587826401 |
| C <sub>2</sub> | 9.937070043 | 0.005498162 | 0.5215614   | 0.63042655  | 0.583288125 |

In terms of financial risk level (Z), the gap between the minimum value (-35.71723406) and the maximum value (301.1961252) is quite wide, which shows that there are great differences in the level of financial risks faced by different companies. According to Altman Z-score, when the Z value is over 2.99, the corporate financial risk level is low. Since the average of Z is 5.057501666, the average financial risk level is relatively low.

In terms of the size of the board of directors (V<sub>1</sub>), the median and average are about 9, indicating that most companies have little difference in the size of their board of directors, and they prefer to choose a board with an average of 9 members.

In terms of the proportion of non-executive directors (V<sub>2</sub>), the largest proportion is 66% of the directors in the company, while the lowest proportion is 0%. This indicates that there is a big difference in the implementation of the non-executive director mechanism in each company.

In terms of ownership concentration (V<sub>3</sub>), the

gap between the maximum value (7941.569247) and the minimum value (14.14260007) is obvious, which means that each company has its own unique way of distribution of shares, and different companies do have great differences in the arrangement of a ownership structure.

In terms of ownership balance (V<sub>4</sub>), the average is about 1.20830623. Generally speaking, the total amount of shares held by the second to fifth largest shareholders exceeds the largest shareholders.

In terms of the shareholding percentage of executives (V<sub>5</sub>), the median is only 2.326643044%, indicates that the shareholding percentage of executives in most of the companies is generally low, and the share incentive on executives has not been paid enough attention to in the operation of some companies.

In terms of executive compensation (V<sub>6</sub>), the maximum is 7.832494223 and the minimum of 5.222716471, which fully reflect the gap in executive compensation.

## 5.2. Linear regression analysis

### 5.2.1. Findings of Linear Regression

| Coefficients                         |  |                             |            |                           |         |      |                         |       |
|--------------------------------------|--|-----------------------------|------------|---------------------------|---------|------|-------------------------|-------|
| Model                                |  | Unstandardized Coefficients |            | Standardized Coefficients | t       | Sig. | Collinearity Statistics |       |
|                                      |  | B                           | Std. Error | β                         |         |      | Tolerance               | VIF   |
| (constant)                           |  | 29.751                      | 3.714      |                           | 8.010   | .000 |                         |       |
| Size of the Board of Directors       |  | -.039                       | .109       | -.007                     | -.355   | .723 | .647                    | 1.546 |
| Proportion of Non-Executive Director |  | 3.901                       | 3.172      | .024                      | 1.230   | .219 | .715                    | 1.399 |
| Ownership Concentration              |  | .001                        | .000       | .069                      | 3.980   | .000 | .870                    | 1.149 |
| Ownership Balance                    |  | .153                        | .205       | .013                      | .745    | .457 | .885                    | 1.130 |
| Executive Compensation               |  | 3.479                       | .555       | .114                      | 6.265   | .000 | .794                    | 1.176 |
| Executive Shareholding Percentage    |  | .016                        | .008       | .037                      | 2.113   | .035 | .851                    | 1.259 |
| Company Size                         |  | -5.054                      | .310       | -.331                     | -16.327 | .000 | .641                    | 1.559 |
| Capital Turnover                     |  | -.523                       | .252       | -.034                     | -2.077  | .038 | .983                    | 1.018 |
| a. Dependent Variable: Z value       |  |                             |            |                           |         |      |                         |       |

### Coefficients Explanation of Linear Regression

The symbol direction of regression coefficient  $\beta$  indicates the influence direction of the independent variable on the dependent variable.

Generally, when the  $t$  value of a certain indicator is  $|t| < 1.64$ , that indicator is not significant. When the  $t$  value of a certain indicator is  $1.64 \leq |t| < 1.96$ , that indicator is significant at a 10% level. When the  $t$  value of a certain indicator is  $1.96 \leq |t| < 2.58$ , that certain indicator is significant at a 5% level. When the  $t$  value of a certain indicator is  $|t| \geq 2.58$ , that indicator is significant at a 1% level. When a certain indicator is significant, the smaller the Sig. value is, the more significant the influence of the variable is.

The value of the variance expansion factor (VIF) of the model is between 1 and 2, which is far less than 10, indicating that there is no significant multicollinearity problem between each independent variable of the model and other independent variables.

According to the findings, we put the indicators that passed the significance test into the model which is  $Z = 0.069X_3 + 0.114X_5 + 0.037X_6 - 0.331C_1 - 0.034C_2$ .

## 6. Interpretation of Findings

### Correlation between board characteristics and financial risk of companies

According to the regression results, the size of a board of directors is positively related to the financial risk, which shows that too many board members will lead to the decrease of directors' enthusiasm and their efficiency of decision-making. The lack of an independent decision-making conscious will result in the increase of financial risk of the company.

According to the regression results, the proportion of non-executive directors has a negative correlation with financial risk. This result is consistent with our hypothesis 2 and reasonable in a certain degree because, with a larger proportion of non-executive directors, there will be stronger supervision to prevent executive directors from making decisions that are harmful to the interests of stakeholders and thus the financial risk of the

company is reduced.

### Correlation between ownership structure and financial risk

According to the regression results, the ownership concentration is negatively related to the financial risk. This is consistent with the hypothesis 3 and the result is significant. When the ownership concentration is high, the major shareholders' interests will be closely aligned with the company, which can decrease the financial risk by motivating the major shareholders to supervise the company.

According to the regression results, the ownership balance is negatively related to the financial risk. The increase of ownership balance will effectively restrain the damage of controlling shareholders to the interests of other major shareholders. This enable the companies' operational management to be discussed by a number of shareholders to avoid the situation that all the decisions are made by the controlling shareholders. Therefore, the company's internal control and the operation will be more effective and efficient, which will reduce the financial risk. However, the result is not significant, and we assume that it might because some of the major shareholders lack of ability to make reasonable decisions that will be adopted by companies.

### Correlation between executive incentive and financial risk

According to the regression results, the executive incentive (executive compensation and executive shareholding percentage) is negatively related to the financial risk. As the executive incentive increases, they will be more proactive in managing the company, which increases corporate returns and avoids risks. Therefore, the financial risk will be reduced.

## 7. Conclusion

The results of this paper show that ownership concentration, executive shareholding percentage and executive compensation have the most significant influence on financial risks and all of them are negatively correlated with financial risks. For the

ownership concentration, the result suggests that companies should develop a relatively concentrated ownership structure so that the major shareholders' interest can be aligned with that of the companies. Therefore, they will make decisions in the interest of the company. For the executive incentive, the result suggests that it is better for the company to increase executive shareholding percentage and their compensation, thus ensuring that the executives are more motivated to perform their duties.

According to the results, we recommend companies to improve the non-executive director mechanism of listed companies, to maintain a relatively concentrated ownership structure, and to take effective incentive mechanism for executives. With these specific recommendations, the corporate governance structure of the company can be more effective, thus reducing the uncertainties and hazards a company faces when it attempts to do its day-to-day business activities.

### Conflict of Interest

The author declares that he has no conflicts of interest to this work.

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