Ⅴ　韓国セッション報告

A Study on the Relationship Between Board Structure and Financial Risk in Chinese Manufacturing Companies

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Abstract

The study of financial risk is a hot issue in financial accounting, because the existence of financial risk endangers the life of the enterprise. Enterprises are caught in a business crisis due to improper handling of financial risks. The financial crisis of enterprises is caused by many factors: internal factors or external factors, such as the unreasonable corporate governance structure. As the core of the corporate governance structure, the board of directors supervises the company's management personnel on behalf of investors, so the company has an inevitable responsibility for the financial crisis. Therefore, this paper introduces the board structure into the research of financial risk. From the four aspects of board size, board position setting, board meeting frequency and board shareholding ratio, the paper combines theoretical analysis and empirical research to demonstrates the mechanism relationship of board structure and corporate financial risk. The paper analyzes the impact of the four aspects of the board of directors and proposes four hypotheses. As to the sample, the A-share manufacturing enterprises in China's Shanghai and Shenzhen stock markets were selected during 2011-2018. Descriptive statistics, correlation coefficient analysis and linear regression analysis were carried out to study the impact of board structure on the financial risk level of enterprises. By the study of the impact of the four aspects of the board on the financial risk of the company, it identified the factors that have critical impacts on the financial risk of the company. The results showed that the board structure of Chinese manufacturing enterprises has a considerable impact on its financial risk: the board size, the board meeting frenquency are significantly positively correlated with the financial risk of the company; the board shareholding ratio are not significant with financial risk. the board position setting are in a negative relationship with financial risks, but the statistical results are not significant. Focusing on the board size, the board positions setting, the board meeting frequency and the board shareholding ratio, the paper points out how to improve the board structure of the company to reduce its financial risk based on the analysis of the article and the current status of the board structure of the listed manufacturing companies in China. Suggestions for the reducing financial risk and the further research direction of this paper were given and pointed out in the end.

Key words: board structure; financial risk; board size

1 Introduction

1.1 Research Background and Significance

1.1.1 Research Background

With the advancement of the global economic integration process and the reform and innovation of the capital market system, China's economy is developed steadily. In 2018, the gross domestic product ranks the best in the world, contributing more than 20% to global economic growth, and reducing 5% in energy consumption per unit of GDP. By the end of 2018, the number of A-share companies on Shenzhen and Shanghai stock exchanges was 3,583, increased by 52.99% compared with 2,342 in 2011. The total market value at the end of 2018 was near to 48.59 trillion yuan, compared with 24.2 in 2011. The trillion has increased by 100.79%.

According to the "2018 White Paper on Value Creation of Chinese Manufacturing Listed Companies", there were 3,527 A-share listed companies, including 2,224 manufacturing companies, accounting for 63.06%. The total market value of A shares is 55.02 trillion yuan, of which the total market value of manufacturing companies is 24.08 trillion yuan, accounting for 43.78%. Although manufacturing companies have slightly decreased in volume and market value compared with the first half of 2017, manufacturing is still an important support for the domestic economy.

On February 24, 2017, China Securities Regulatory Commission announced 20 cases of typical violations of securities supervision and auditing in 2016. Xintai Electric fraudulent issuance and information disclosure were illegal among them, and the Shenzhen Stock Exchange launched a major illegal decommissioning procedure. It became the first case of mandatory delisting of fraudulent issuance in China. Therefore, in the context of the booming Chinese manufacturing market, there are also many hidden dangers, and the defects in corporate governance are increasingly obvious. Board governance, which is at a critical position in corporate governance, is particularly important. Therefore, by analyzing and exploring how the board structure of the company acts on financial risks at this stage, the board structure is introduced into the research of financial risk. Constructing a positive and effective board governance structure is not only a means to effectively prevent financial risks, but also an active measures to deal with financial crisis. In order to promote the standard operation of listed companies in China, the China Securities Regulatory Commission and the State Economic and Trade Commission jointly issued the "Guidelines for the Governance of Listed Companies" on January 7, 2002, which clearly expounded the rules of conduct that directors must abide by in detailed chapters. In 2007, the State-owned Assets Supervision and Administration Commission also strictly ordered its subsidiaries to actively play the role of the board of directors and strengthen supervision over business managers. In 2013, the Board of Directors of China continuously clarified the role of independent directors in

corporate governance. This shows it is imperative to deeply analyze the structure of the board of directors.

1.1.2 Research Significance

The literature on the relationship between the structure of the board of directors and the financial risks of enterprises is still rare. It is only involved in the research on the relationship between corporate governance and corporate financial risks. Therefore, this paper draws on the research related to corporate governance and financial risks and it analyzes the current situation of the board structure based on the actual situation in China, then it builds a systematic theory between the board structure and the financial risks of the company, including the the board size, directors' behavior and directors' incentives of board structure. In practice, the phenomenon of corporate failure due to the board governance failure is no longer new enough to prove the importance of the board of directors to the company. Therefore, it is very urgent to conduct research on the impact of board structure on corporate financial risks. Therefore, this paper chooses from the board structure, the paper studies the impact of the board structure of listed companies on the financial risks of enterprises based on the research results of the predecessors and the combination of standard research and empirical analysis. The paper further explores the deep-seated causes of financial risks in order to better prevent financial crisis in enterprises.

1.2 Research Content

This paper takes the manufacturing industry as a research sample, and empirically explores the relationship between its board structure and financial risk by selecting the research data of listed companies in 2011-2018. The arrangement of the text: Chapter 2, prior research; Chapter 3, Empirical research design of the relationship between board structure and financial risk. Chapter 4, Analysis of the empirical results of the relationship between board structure and financial risk. Chapter 5, conclusions and recommendations.

2 Advanced Research and Assumptions

2.1 The Concept of Board Structure

The board of directors is the key to corporate governance and the core of establishing a modern enterprise management system. Due to the reasonable arrangement of the board structure, the behavior of the board of directors and the incentives of the directors, which seriously affect the effective functioning of the board of directors. This paper starts from analyzing the structural factors of the board, and studies its impact on the financial risk of the company, and then outlines the board structure and the financial risks of the company. The academic community has not formed a unified understanding of the concept of board structure. This paper believes that the board structure is based on the corporate governance, as the connection between the company's shareholders and the management of the daily affairs of the management. In

order to make the board of efficient operation, scientific decision-making it is the key to corporate governance of reasonable supervision and organizational structure, daily operation, duties of the board of directors and system rules. The components of the board structure include: the board size, board meetings frequency, the board positon setting and incentives for directors.

This paper refers to the selection of the board structure indicators in the prior research. According to the specific situation of the board structure of China, the selected indicators are: the board size, the board positions setting, the board meetings frequency, and the board shareholding proportion. The board size, that is, the existence of the board of directors, is the premise of the effective operation of the board of directors, specifically the number of directors in the board of directors. The two positions of the board of directors, that is, whether the chairman and the general manager are the same person, if they are held by different people, they are separated from each other, and the same person is called the two-in-one. The board meetings frequency refers to the number of annual board meetings. Incentives for directors refer to the equal rights and obligations. While giving the board of directors the obligation, they should also give appropriate incentives to improve the enthusiasm of the board members. This paper selects the board shareholding proportion as shareholders' rights, so that the directors can better manage the company from the perspective of shareholders.

2.2 The Meaning of Financial Risk

At present, there are narrow and broad sense of the concept of financial risk. In a narrow sense, Ross, Westerfield, Jordan (1995) argued that the financial risk of a company refers to the risk of the company raising funds; in a broad sense, Chen Gongrong and Ai Zhiqun (2002) believed that: the financial risk referred to the unpredictable and control The factors that cause the company's actual income to deviate from the expected return, and the possibility of damage to the company's interests.

Many scholars believed that the board structure has a lot to do with financial risks. Demsetz et al. (1985) in the process of studying the impact of board structure on business performance, with 511 US companies as research samples, empirical analysis showed that the impact of board structure on business results was not significant, but in this research process Among them, they unexpectedly found that the structure of the board of directors would have an impact on certain company-specific risks, and the reasonable setting of the board structure could reduce the risk. The research results of Warfield et al. (1995) showed that the level of corporate financial risk would be affected by the number of shares held by managers or institutional investors. Qian Zhonghua (2009), believed that the unreasonable structure of the board of directors was a key factor in the failure of corporate governance based on the board structure, which leads to financial distress in turn. In view of the board structure, he selected the three aspects of equity concentration,

shareholder activity and the nature of controlling shareholders to conduct an empirical analysis. It was found that the proportion of the largest shareholder and the number of shareholders meeting were inversely proportional to the possibility of the company being in financial distress. Non-state-owned enterprises are more likely to fall into financial difficulties than state-owned enterprises.

2.3 Advance Research and Assumptions on the Relationship Between Board Structure and Financial Risk

As the main body of corporate governance, the board of directors effectively governs the enterprise through informal and formal regulations. It becomes the central link of corporate governance, and plays a pivotal role to safeguards the interests of the principal and to seeks the sustainable development of the enterprise. Therefore, the good or bad governance directly affects the interests of all shareholders and the future of the entire enterprise.

The board of directors is elected by the shareholders' meeting and it is the link between the shareholders and the managers who handle daily affairs. Thus it has a crucial impact on the company's business development and it is like a "double-edged sword" If it is used properly, it can make good profits, but if it is used improperly, it may cause serious financial risks and even cause discruptcy. Therefore, it is necessary to improve the board structure so that it can reconcile the contradictions among shareholders, the board of directors and the managers better. It prevents the financial risks of enterprises from being increased. This paper attempts to explain its impact on the financial risk of the company from the three aspects of the composition, behavior and incentives of the board of directors.

2.3.1 Research Status and Hypothesis of the Impact of Board Size on Corporate Financial Risks

With regard to the impact of the board size on the financial risk of enterprises, there are three conclusions abroad. Chagantietal (1985) argued that the larger the board of directors, the less the financial risk. The professional level, management skills, network resources of directors, all of these can provide better services to enterprises and improve corporate performance, thereby financial risk of enterprises will be reduced. In empirical research, Changanti, Mahajan, and Sharma (1985) found that the board size of directors is inversely proportional to the probability of bankruptcy. Chtourou et et al (2001) used 300 US companies as samples to study the relationship between board structure and earnings management. The results showed that the board size of directors is inversely proportional to earnings management. Conversely, another group represented by Jensen (1993) believed that the smaller the size of the board, the better it could promote the development of the company, the more efficient the decision-making, the better the response to the ever-changing market, and thus the less of the enterprise financial risk. Some of the empirical research supports this

conclusion, Lipton. M&LLorsh's empirical statement in 1992: Whenboard sizeexceeded the red line of 10 people, its work efficiency was getting lower and lower, and the benefits brought by the increase of personnel could not make up for the shortcomings caused by mutual communication; They were also more likely to be manipulated by corporate management. The empirical results of Lipton Lorsch (1992) showed that small-scale boards did better in internal control, which reduced the company's risk. The third view is that the correlation between board size and corporate financial risk level is not significant. Abbott (2000) and others selected 83 financial misstatement companies from 1991 to 1999. After pairing, they found that there was no significant correlation between board size and financial misstatement.

The board size of directors is an important part of the board of directors, and it has a significant impact on the effective exercise of its supervisory and decision-making functions. According to the provisions of the "Company Law" of China, the number of board of directors of a company should be more than 5 persons and less than 19 persons. Although there are minimum regulations on the number of board of directors of the company, the minimum size of the board of directors is guaranteed, which is beneficial to the function of the board to a certain extent. However, board sizeis not as large as possible. If it is too large, it will constrain its positive effects. This paper believes that, firstly, a large-scale board of directors will make directors lazy and "free rider" mentality. If the board size is too large, the cost increases, the members are highly dependent, and the motivation to perform their duties is insufficient. When managing the risks, when dealing with risks, they will rely on others to deal with the risks. Financial risks are getting worse. Secondly, the larger the size of the board, the more difficult it is to coordinate and communicate information among members. Because the board members have different backgrounds, knowledge levels, risk preferences, ways of thinking, and different interests, communication and coordination between them becomes difficult, and it is difficult to reach a consensus, which leads to inefficient decision-making. Therefore, this paper believes that as the size of directors increases, the governance efficiency of the board of directors will decrease, which in turn will affect the financial crisis. Therefore, the paper makes the following assumptions:

Hypothesis 1: The board size of directors is positively correlated with the level of financial risk of the company.

2.3.2 Research Status and Assumptions of the Impact of the Two Positions of the Board on the Financial Risks of Enterprises

There are also two different voices about the relationship between the two positions and financial risks. One view is that the combination of the chairman and the general manager is positively related to the financial risk of the company. Molz (1988) supported this conclusion in theoretical research. The results show that when the two roles of

chairman and general manager are separated, the management of the board of directors of the company is greatly reduced, and the financial information of the company is more open and transparent. On the empirical side, Efendietal (2006) conducted a study of 33 companies that were in financial crisis in the United States in 2001 and 2002. The conclusions show that companies with both directors and general managers are more likely to have a financial crisis. Dechow (1996) also proved this conclusion through empirical research. In addition, there is no significant correlation between the two positions and the financial risk level of the company. Empirical studies such as Petra and Chtourouetal show that the correlation between the earnings response coefficient and the two positions is not significant. There are two very different views on the relationship between the relationship between the chairman and the general manager and the financial risks of the company. Zhu Yu (2006) based on the theory of stewardship, concluded that in the case of two-in-one, corporate financial risks will be better detected and contained in time, which can effectively reduce the financial risks of enterprises. In contrast, Dong Nanyan and Zhang Junrui (2007) pointed out that companies with separate jobs are less likely to receive non-standard audit opinions than those with two jobs. Yu Fusheng (2008) Liu Yinguo and Wu Xiaqin also found through research that the financial risk of the two divisions is lower than that of the two divisions.

According to the principal-agent theory, the main conflict of interest in the agency problem is the contradiction between the managers and shareholders of the general manager. Since the main role of the chairman is to supervise the hiring, reward and punishment, evaluation and dismissal of the general manager and the board meeting, when the chairman and the general manager are united, he must perform both the decision-making and the supervision. All have a key role, which makes the relationship between the board of directors and the general manager complex, and it is easy to cause the internal supervision mechanism to lose its role. When the chairman (general manager) uses the dual identity to interfere with the operation of the enterprise, the enterprise management is vulnerable to a few people “slap the head” The impact of the decision causes the individual to act arbitrarily, thereby increasing the financial risk of the enterprise. In addition, being a two-time executive is easy to create a feeling of pride and complacency. If supervision is weak, more aggressive financial policies and management measures may be implemented, which may result in poor business operations and increased financial risks. If the two positions are separated, the board of directors and the management are more independent. They perform their duties. The board of directors can more effectively supervise the management and ensure the scientific nature of the resolution, which will make the company more stable and have lower financial risks. Therefore, the principal-agent theory insists

that the two positions should be separated to maintain the effectiveness and independence of the board of directors.

This paper believes that the problem of Chinese enterprises at present is that rights are too concentrated and need to be decentralized. One, because Management is not perfect enough, supervision is weak, and excessive concentration of rights will cause more harm than good; on the other hand, the development goals of enterprises can be fully achieved through the communication of senior executives, and the combination of the two positions cannot solve the problem fundamentally. Therefore, the separation of the two positions in our country is better than the integration of the two positions. Therefore, this paper proposes the following assumptions:

Hypothesis 2: The relationship between the position of the chairman and the general manager is negatively correlated with the level of financial risk.

2.3.3 Research Status and Hypothesis of the Impact of Board Meeting frequency on Corporate Financial Risks

Regarding the number of board meetings, the research conclusions at home and abroad are relatively uniform, and there are roughly two factions. Lipton & Lorsch (1992) pointed out that the more meetings are held, the more opportunities for company directors to participate in management, and the greater the enthusiasm, the board should meet at least once every two months, at least one day at a time. Conger (1998), Biaoxie (2005) and domestic scholar Xie Deren (1999), Sun Jian (2008) and Qian Zhonghua (2009) also hold the same view. Another point of view is that most of the board meetings are in the form of walking. Discussing and discussing the daily affairs of the company does not involve the company's substantive problems, nor does it play a role in preventing financial risks. In most cases, the financial risks of the company are already very high. Seriously, the meeting is only a research strategy. In this logic, the more frequent the board meeting, the decline in corporate performance. Jensen (1993) and Vafeas (1999) and domestic scholars Gu Yu, Yu Dongzhi (2001), Shen Yifeng, Zhang Junsheng (2002), He Ping (2009).

The frequency of board meetings, that is, the number of times the board of directors meets within one year, explains to a certain extent the board's practice of its supervisory responsibilities. According to China's "Company Law", a company limited by shares must meet at least two board meetings each year. The more board meetings, the more positive the directors' governance behavior and the more complete the management of the company. As a result, more ideas will collide and the directors' expertise will be used more fully, which will help the board of directors to make decisions and reduce the company's finances. risk. Another point of view is that companies with good operating conditions often do not need too much board governance, because the company is operating normally, and excessive external force promotion is a bit redundant. The board of directors is like a

fire-fighting facility. The higher the frequency of board meetings, the worse the company's performance. Moreover, there are many problems in the board meetings of Chinese enterprises, such as low attendance rate, short agenda, poor implementation, imperfect rules and regulations, etc. Most of the meetings are unnecessary discussions and mutual responsibilities for trivial matters, so that there is no such thing. Positive effects will only increase the burden on enterprises. Therefore, our board meeting is only a formal walk through the scene. This article insists that the frequency of board meetings is high and often the performance of the company is poor. The more the meeting is held, the more likely it is that the company will be caught in a financial crisis. Therefore, this paper proposes the following assumptions:

Hypothesis 3: The board meeting frequency is positively related to the level of financial risk of the company.

2.3.4 Research Status and Hypothesis of the Impact of Shareholding Ratio of Directors on Corporate Financial Risks

Jensen Ruback (1983) confirmed in theory that the higher the shareholding ratio of directors of listed companies, the more likely the board of directors to self-interest in order to maintain their status and high income, veto some of the company's value in the long run. However, the loss of some immediate interests of the project is not conducive to the improvement of the company's performance, which in turn increases the financial risk of the company. Wright (1996) and COSO (1999) also demonstrated from an empirical point of view that the higher the proportion of directors' shareholding, the greater the false component of the company's financial report.

In the modern companies, the board of directors accepts the entrustment of shareholders to supervise the day-to-day management activities of company executives. Its behavior is often not well measured, especially the measurement of its work effort has certain doubts. Under the premise of "economic man", the board of directors may damage the interests of the principal for its own interests, or may be opportunistic behaviors such as laziness, risk avoidance, free rider. In order to circumvent this moral hazard, they need to be appropriately motivated, including material and equity. Only by ensuring their material living standards will they be able to supervise corporate executives wholeheartedly and help them make informed decisions to avoid corporate financial risks. However, the role of material incentives is temporary, and it does not make the director's vital interests and shareholders' interests tend to be so, so equity incentives are needed. At present, equity incentives are generally applicable. It is based on the future of the company, and the salary incentives are focused on the present. It keeps the director's personal interests and the long-term interests of the company highly consistent, and the directors will pay close attention to the future development of the company and more effectively supervise the company's senior management. Moreover,

because the directors hold shares, the board of directors and the shareholders realize the uniformity of interests. When the shareholders of the company and the company executives conflict, they will make the decisions made more in line with the shareholders' rights. Of course, we must master the degree of equity incentives. If the equity is "excessively motivated", the board will lose its original independence and objectivity and harm the interests of small and medium shareholders. Directors are likely to be involved in manipulating surpluses and profiting by affecting stock prices. However, if "insufficient incentives", it will not achieve the desired effect. Since the equity incentive has just been introduced to China, the application is not universal. Even if there is equity incentive, it will only give individual incentives to a few directors on the board of directors. Therefore, Chinese enterprises generally face the problem of "insufficient incentives." Therefore, this paper proposes the following assumptions:

Hypothesis 4: The shareholding ratio of directors is negatively correlated with the financial risk level of enterprises.

3 Research Design of the Relationship Between Board Structure and Financial Risk

3.1 Sample Selection and Data Sources

3.1.1 Sample Selection

Based on the prior research of the relationship between the board structure and financial risk of companies in China, this paper selects the companies in Shanghai and Shenzhen Stock Exchange for 8 consecutive years from 2011 to 2018 for empirical analysis. As a dominant industry in China, the manufacturing industry plays an important role in the national economy. The choice of a single industry can effectively limit the impact of the macroeconomic environment on the company's financial situation, and eliminate the forecast bias caused by different industries. In order to ensure the validity and accuracy of the empirical conclusions, the samples are screened one by one according to the following principles:

In order to ensure the validity and robustness of the data, this paper selects companies listed on the Shanghai and the Shenzhen Stock Exchange during 2011 and 2018. In addition, the A-share listed companies that issued both B-shares and H-shares were excluded to prevent the B-shares or H-shares issued by certain companies from interfering with the financial data in the A-share market.

3.1.2 Data Source

This paper measures the relationship between the financial risk level and the structure of the board of directors. The main source of the data is the corporate governance and company research module in the CSMAR database. The data are sampled based on the above screening criteria. The data is continuously from 2011 to 2018, with a total sample size of 14017.

3.2 Research Variables

The variables are divided into dependent

variables, Independent variables and control variables.

3.2.1 Dependent Variables

This paper adopts the Z-score model proposed by the American scholar Altman in 1968 to measure the financial risk level of the sample companies, and it uses the average value of Z calculated from the financial indicators of the listed companies in the manufacturing industry from 2011 to 2018. The Z-score model measures the financial risk more comprehensively and can fully reflect the listed company's ability in financing, debt repayment, operation, profitability and it is in line with the definition of financial risk in this paper. In addition, the Z-score model predicts the company's financial status with high accuracy and simple operation, and has great use value at home and abroad. Therefore, this paper refers to the previous research, using Altman's Z-score model as a substitute for financial risk to measure the financial risk level of listed companies in China. The Z score is inversely proportional to the financial risk of the enterprise. That is, the smaller the Z score, the greater the financial risk, and the larger the Z score, the smaller the financial risk of the enterprises.

3.2.2 Independent Variables

The board structure is the explanatory variable of this paper. It mainly studies the influence of board structure on the financial risk level of enterprises from three aspects: board composition, director behavior and director incentive. Financial risk is studied by selecting the board size, the two positions settings of the board, the board meetings frequency, and the proportion of directors' shareholdings. Board size is measured by the number of directors. The setting of the two positions of the board is based on whether the roles of chairman and general manager are combined. The frequency of board meetings is expressed in terms of the number of meetings held by the board of directors each year. The shareholding ratio of directors is expressed as the proportion of shares held by board members at the end of the year as a percentage of the company's total shares. See Table 3.1.

3.2.3 Control Variables

This paper refers to previous research results and selects the return on assets, company growth and asset turnover rate as control variables. Although they are not the main cause of financial crisis, the board structure often works through these ratios, so it is necessary to set such control variables. See Table 3.1.

Return on assets (ROA): It is the ratio of the company's net profit to the average total assets, which measures the profitability. The higher the ROA, the stronger the company's profitability and the more financial risks it can bear.

GROWTH: It measures the growth capacity of a company. The faster a company grows, the larger the value. A fast-growing enterprise shows that it has strong adaptability to external environmental changes and has a fast response, so it may face less risk. This paper uses the total asset growth rate as a

surrogate variable for the company's growth. The weaker the growth, the smaller the company's investment and financing needs, so the lower the level of risk faced by the company, the more favorable the company's stability.

The asset turnover rate (TAT) is used to measure the operational capability. It is the ratio of the net sales income to the average total assets in a certain period of time. The higher the total asset turnover rate, the stronger the sales ability of the enterprise and the better the efficiency of asset investment.

<Table 3.1> The list of specification of variables

Variable	Variable type	Variable name	Variable symbol	Description
Dependent variable	Financial risk	Z value	Z	The higher the Z value, the less the risk, The lower the Z value, the greater the risk.
Independent variable	Board composition	Board size	Bsize	Total number of board members
	Board composition	the two positions settings of the board of directors	Bconsis	The chairman and the general manager are in one taking 0, otherwise taking 1
	Board behavior	the frequency of board meetings	Bfrequ	Number of board meetings held within one year
	Board incentive	shareholding ratio of directors	Bratio	Number of shares held by directors / total number of shares
control variable	Profitability	Return on assets	ROA	(total profit + interest expense) / average total assets
	Growth ability	Company growth	GROWTH	(ending assets of the year- beginning assets of the year) / beginning assets of the year
	Operating capacity	Asset turnover	TAT	Net operating income / average total assets

3.3 Model Construction

According to the previous theoretical analysis part, we can see that the structure of the board of directors has a certain impact on financial risks. What is the relationship between the two, still need to be further empirically tested. For this reason, the four factors of the board size, the board's two positions, the board meeting frequency and the director's shareholding ratio are the independent variables. The four independent variables are represented by "BSTRU" in the model. Taking the financial risk Z as the dependent variable, the multiple returns of the return on the return on the asset return rate, asset growth rate and asset turnover rate. The regression model is as follows:

$$Z=\beta_0+\beta_1 BSTRU_1+\beta_2 ROA_{i,t}+\beta_3 GROWTH_{i,t}+\beta_4 TAT_{i,t}+\varepsilon \quad \text{(Model)}$$

4 Analysis of the Empirical Results of the Relationship Between Board Structure and Financial Risk

4.1 Descriptive Statistics

4.1.1 Variable Descriptive Statistics

In this paper, we use unbalanced panel data analysis of Stata14 to make descriptive statistical analysis of the dependent, independent and control variables, and obtain the maximum, minimum, median, mean and standard deviation of each variable. Table 4.1 shows:

<Table 4.1> Descriptive statistical analysis of variables

	N	Mean	P50	SD	Min	Max
Z	14015	9.29	3.44	21.38	1.00	778.17
Bsize	11587	8.53	9.00	1.56	5.00	14.00
Bconsis	6355	0.31	0.00	0.46	0.00	1.00
Bfrequ	14007	9.41	9.00	3.48	4.00	21.00
Bratio	10396	0.05	0.00	0.13	0.00	0.60
ROA	14017	0.06	0.05	0.07	(0.22)	0.24
GROWTH	12192	0.19	0.10	0.34	(0.31)	1.89
TAT	12191	0.68	0.59	0.40	0.10	2.44

Through descriptive statistical analysis of the above variables, we can see some characteristics of financial risks and board structure of the companies in China:

(1) In terms of the Z value of the financial risk level, as shown in Table 4.1, the minimum value of 1, the difference with the maximum value of 778.17 is quite different, indicating that there are large differences in the level of financial risk faced by different companies. The median of 3.44 and the average of 9.29 are both greater than 2.675, indicating that more than half of the companies have good financial status and low financial risk, but the median of 3.44 is close to 2.675, indicating that there are still a few companies whose financial status is not stable enough and there may be financial risks.

(2) In terms of the size of the board of directors, the standard deviation is 1.56, indicating that the size of the board of directors varies greatly among different enterprises, but the number of people with the largest number is 14 and the minimum is 5, the company law of China clearly stipulates: The number of board members should be greater than 5 and less than 19. It shows that the scale of the board of directors of each enterprise has reached the minimum requirements of the company law.

(3) The two roles of the chairman and the general manager are on the one hand, with

an average value of 0.31. This indicates that the chairman and general manager of most enterprises are served by the same person and means that the two positions are in one mostly in Chinese Manufacturing companies.

(4) In terms of the frequency of board meetings, the maximum value 21 and the minimum value 4 differ by 17 and the standard deviation is 3.48, indicating that the frequency of board meetings between enterprises is quite different and uneven; the average value is 9.41, indicating that most enterprises remain 9 board meetings a year.

(5) Although the highest proportion of directors' shareholdings has reached 60%, the current shareholding ratio of directors in China is generally low, with an average of only 5%. Even many corporate directors do not hold company shares. The incentive role of personnel has not received enough attention in the operation of some enterprises.

4.2 Correlation Analysis

When modeling, if there is multiple collinearity between variables, it will have a great impact on the accuracy of the model. Therefore, before the regression analysis, the correlation analysis of the independent variables is needed to eliminate those highly relevant variables. The most commonly used correlation of analytical variables is the Pearson correlation coefficient. However, when the explanatory variables are more, Pearson reflects the degree of linear correlation between variables. Therefore, this paper uses the partial correlation coefficient (r) to reflect any two. The relationship between variables, when describing the correlation between variables, is divided into the following four cases shown in table 4.2:

<Table 4.2> r value range and correlation table

R range	Correlation
r≥0.8	Highly correlated
0.5≤r＜0.8	Moderate correlation
0.3≤r＜0.5	Low correlation
r<0.3	irrelevant

The variable correlation analysis is shown in Table 4.3:

<Table 4.3> Variable Correlation Analysis Table

	Z	Bsize	Bconsis	Bfren	Bratio	ROA	GROWTH	TAT
Z	1							
Bsize	0.019	1						
Bconsis	-0.060	-0.174	1					
Bfren	-0.058	-0.01	0.015	1				
Bratio	-0.091	-0.095	0.085	0.011	1			
ROA	-0.060	0.006	0.068	-0.096	0.029	1		
GROWTH	-0.125	-0.065	0.123	0.082	0.080	0.261	1	
TAT	0.086	0.062	-0.024	-0.052	-0.045	0.250	0.029	1

It can be seen from Table 4.3 that the correlation coefficients of the four board structure variables and the three control variables selected in this paper are less than 0.3, indicating that there is no multicollinearity in the regression model constructed by these explanatory variables. Therefore, regression analysis can be performed.

4.3 Regression Analysis

This paper analyzes the four dimensions of the board structure and establishes four basic assumptions about the relationship between board structure and financial risk. In order to verify these hypotheses, this paper selects appropriate indicators and establishes multiple regression models for empirical research. The Husman test is used first, and the model is applied to fixed effect regression. The regression results are shown in Table 4.4:

<Table 4.4> Results of regression analysis

Variables	Bsize	Bconsis	Bfren	Bratio
Bsize	-0.364***			
	(-2.75)			
Bconsis		0.408		
		-0.78		
Bfrequ			-0.123***	
			(-3.64)	
Bratio				-0.09
				(-0.11)
ROA	-4.628*	-0.647	-5.052***	-2.865
	(-1.92)	(-0.20)	(-2.65)	(-1.50)
GROWTH	-1.226***	-1.127**	-0.746***	-0.553**
	(-3.86)	(-2.56)	(-2.60)	(-2.21)
TAT	2.497***	2.528***	2.065***	2.787***
	-4.26	-3	-4.13	-5.32
_cons	11.043***	6.572***	8.951***	5.598***
	-9.43	-11.51	-18.91	-16.82

Note: The standard deviations are in brackets. *, **, *** indicate significant at 10%, 5%, and 1% respectively.

According to the results of Table 4.4, we can make the following conclusions: The regression coefficient of board size (Bsize) and Z value is -0.364, indicating that the size of the board of directors is positively correlated with financial risk and it is significant at the 1% confidence level. The resulet is consistent with assumption 1. It shows that the size of the board of directors of manufacturing companies in China has a significant impact on the financial risks of enterprises. The larger the size of the board of directors, the greater the financial risk of the company. It shows that the size of the board of directors

is too large, the cost increases, and the members are highly dependent. When managing the company or when dealing with risks, they will rely on others to spread the risks. The larger the board is, the more difficult it is to coordinate and communicate information among members. The larger the size of the board, the more obvious the dysfunction. Due to the above reasons, the size of the board of directors and the risk of the company are closely related.

The regression coefficient of the board's two positions setting (Bconsis) and Z value is 0.408, which indicates that the relationship between the chairman and the general manager is negatively correlated with the financial risk level. That indicates the financial risk of the two-in-one enterprise is more than the two positions separation. However, it didn't pass the significance test and was inconsistent with the previous hypothesis 2. This may be separated from the roles of chairman and general manager. Although it can avoid the disadvantages brought by the two jobs, it also reduces the decision-making efficiency and responsiveness of the company. In this era of time-honored, the benefits are greatly reduced. Increased risk. This leads to inconsistencies in relevance.

The regression coefficient of the frequency of board meetings (Bfrequ) and Z value is -0.123, which is significant at the 1% confidence level. That means the number of board meetings is positively related to the financial risk level of the enterprise, and the more the number of board meetings, the greater the financial risk of the company. Support the theoretical hypothesis 3. The high-frequency board meeting actually shows that the company has fallen into a financial crisis. The board meeting is only to solve the crisis and study and formulate countermeasures.

The regression coefficient of the directors' shareholding ratio (Bratio) and Z value is -0.09. This shows the shareholding ratio of the directors is positively related to the financial risk level of the enterprises, which means that the greater the shareholding ratio of the directors, the greater the financial risk of the enterprise. However, it did not pass the significance test and was inconsistent with the previous hypothesis 4. The higher the shareholding ratio of the directors of listed companies, the more likely the board of directors to keep self-interest. In order to maintain their status and high income, the board of director will veto against some projects that increase the value of the company in the long run, but lose some immediate benefits, which is not conducive to the company's performance. The increase, which in turn increases the financial risk of the company.

The relationship between each control variable and financial risk can be seen from the regression analysis table in Table 4.4: (1) The return on assets and the Z value are significantly negatively correlated at the 10% level, that is, the higher the return on assets of Chinese listed manufacturing companies, the higher the financial risk. low. (2) The growth of the company is significantly negatively correlated with the Z value, which indicates that the greater the company's

growth, the greater the financial risk. (3) The asset turnover rate ROA is positively correlated with the Z value at the level of 1%, indicating that the higher the asset turnover rate of the manufacturing enterprises, the smaller the financial risk.

5 Conclusions and Recommendations

5.1 Conclusions

With the gradual improvement of the socialist market economic system, the modern enterprise system is becoming more and more popular, and the role of the board of directors in corporate governance becomes more and more important. Whether the board of directors can fully play its supervisory role directly affects the company's operating performance and management status. Therefore, the structure of the board of directors has an important impact on the level of financial risk of the company. This paper selects the A-share manufacturing enterprises in Shanghai and Shenzhen from 2011 to 2018 as samples, and studies the impact of board structure on the financial risk level of enterprises through a combination of theory and empirical methods. conclusion as below:

(1) The size of the board of directors passed the significant test, and the size of the board of directors was positively correlated with the financial risks of the company. It shows that the size of the board of directors of listed companies in China has a significant impact on the financial risks of enterprises. The larger the size of the board of directors, the greater the financial risk of the company. (2) The setting of the two positions of the board of directors did not pass the significant test, but the setting of the two positions of the chairman and the general manager was positively related to the financial risk, that is, the separation of the two positions was less than the financial risk of the two jobs. (3) There is a significant positive correlation between the number of board meetings and corporate financial risks. The more meetings the board meets, the greater the financial risk the company faces. (4) There is a significant positive correlation between the shareholding ratio of directors and the financial risks of enterprises. However, it did not pass the significance test and was inconsistent with the previous hypothesis 4. Under the premise of "agent", the board of directors starts from its own interests and makes some measures that are not conducive to the development of the enterprise, thereby increasing the risk of the enterprise.

5.2 Recommendation

After research, it is concluded that the board size has a significant impact on the level of financial risk. According to common sense analysis, the appropriate board size and knowledgeable, competent, and responsible board members should be able to greatly improve the efficiency of corporate governance, thereby reducing or even avoiding financial risks. In order to completely change the status quo and actively mobilize the enthusiasm of the board of directors in corporate governance, we must respect the

status of the board members, fully recognize the importance of the board, minimize the unnecessary intervention of the shareholders' meeting, and actively explore the most suitable for itself. The size of the board of directors, the quality of the directors to improve the quality of the directors, the director's work history, education, technical level, job conditions, etc., in addition to the director's election, education, training and recall conditions, for the board to play Some roles create a good institutional environment. This paper suggests that small-scale enterprises should adopt the management method of both the chairman and the general manager, and most enterprises should adopt a separate corporate governance structure. While giving the directors a fixed allowance, we should consider giving the directors a certain bonus to the company's current performance, and conditionally giving the company directors appropriate equity incentives and gradually increasing the shareholding ratio of the directors. Linking their returns with their performance of duties, the quality of business performance and the prospects of the company, in order to motivate them to work hard, truly represent the interests of small and medium shareholders, and effectively protect the interests of the majority of minority shareholders. For the structure variables of the board of directors, this paper only selects the scale of the board of directors, the setting of the two positions of the board of directors, the frequency of board meetings, the proportion of directors' shares, and the director's salary. There are also some limitations. The board of directors has other limitations, such as the ratio of directors to men and women, academic distribution, work history, etc. can also be used as further research directions.

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