Research on Enterprise Financial Risk based on Empirical Analysis

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Abstract. financial risk is an important theoretical and practical issue in modern enterprise financial management, which is not only related to daily transactions and business activities but also related to investment, financing, dividend decision-making and so on. Based on the empirical analysis of the annual report data of 48A-share listed companies in 2017 and 2018 in Shandong Province, China, this paper aims to study the financial risks of listed companies and puts forward some suggestions according to the conclusions.

Keywords: Listed company; Financial risk; Empirical study.

1. Introduction

With the development and construction of the country becoming more and more perfect, the social requirements for enterprises are getting higher and higher, and the competition among enterprises is becoming more and more fierce. The development of the identification and control of enterprise financial management risk in our country is not perfect, whether it is the theoretical basis, institutional system or early warning system, there are more serious problems. Only by solving the problems can we ensure the sustainable development of enterprise financial management. If the financial risk can not be effectively controlled for the first time, the daily management activities and future development of the enterprise will be greatly affected.

Therefore, this paper makes an empirical analysis on the annual report data of 48A-share listed companies in 2017 and 2018 in Shandong Province, China, in order to study the financial risk of listed companies, and puts forward some corresponding suggestions according to the conclusions.

2. Overview of Financial Risk

The risk of enterprise financial management is caused by global economic problems. with the change of the global economic system, the economic development of our country has also changed greatly, whether it is the enterprise environment or legal regulations. all let the enterprise financial management risk emerge gradually. Besides, the risk of financial management is also affected by the national policy. to make the economic development in line with the level of the world economy, the state has made appropriate adjustments and improvements to the original economic policy. this has led to an increase of many new risks in the business process. At the same time, the rising exchange rate has also caused the risk of enterprise management, on the one hand, increased the pressure of corporate interest, on the other hand, it also cut off many enterprises to achieve financing channels. Finally, a large part of the enterprise financial management risk is caused by the enterprise itself, such as employees do not have a clear understanding of the risk, lack of control of risk management and so on.

Financial risks can be classified into three categories: the first is the concept of income difference, the second is the concept of harm and loss, and the third is the concept of uncertainty. In this paper, the financial risk is defined as the risk that the pre-income caused by the uncertain factors caused by the capital movement deviates from the actual risk in various business, fund-raising and investment activities. Its properties include objectivity, randomness, relevance and similarities, and differences.

3. Research Variable Design

The measurement methods of financial risk include index analysis method, expected equity capital income method and financial leverage coefficient method. This paper uses the index analysis method to measure financial risk, including financial leverage, financial status, cash flow capacity, and company size. The research samples are selected from the financial statement data of 48 A-share listed companies in Shandong Province in 2017 and 2018

3.1 Financial Leverage

With the increase of financial leverage, the pressure on the company to repay principal and interest increases, and the greater the financial risk, which increases the possibility of financial crisis and bankruptcy of the company, and the equity multiplier is positively related to the financial leverage of the enterprise. therefore, the financial risk of the enterprise also changes. In this paper, equity multiplier is used to reflect financial leverage, Q = total assets/shareholders' equity.

3.2 Financial Situation

The better the financial situation of a company, the less likely it is to have a financial crisis. This paper uses the Z score of Altman,1968 to express it. The model is as follows:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5 \tag{1}$$

Among them, X1 = (current assets-current liabilities) / total assets; X2 = (undistributed profits + earnings reserve) / total assets; X3 = (pre-tax profits + financial expenses) / total assets; X4 = (market price per share × number of tradable shares + net assets per share × number of non-tradable shares) / total liabilities; X5 = main business income / total assets. When the Z value is greater than or equal to 3, it means that the financial situation of the enterprise is in a safe and stable region, and the Z value is less than 1.81, which means that the enterprise is in a dangerous state and there will be signs of bankruptcy. The place between 1.81 and 3 is called\"grey area". Further investigation is needed.·

3.3 Cash Flow Capacity

Considering that there is a serious phenomenon of profit manipulation in China's listed companies, which makes Erman's Z score deviate in the analysis of China's listed companies, it is necessary to adjust the actual forecast effect through cash flow capacity. C is expressed as C, C = net cash flow / total liabilities of operating activities.

3.4 Company Size

The larger the company size, the better the economic effect, the lower the external financing cost, the lower the degree of information asymmetry, and the smaller the possibility of financial distress. In this paper, S is used to represent the size of the company, S = the natural logarithm of the book value of total assets at the end of the year.

4. Model Establishment and Data Analysis

The empirical model of this paper is as follows

$$H = \alpha + \beta_1 Z_i + \beta_1 C_i + \beta_1 Q_i + \beta_1 S_i + \varepsilon \tag{2}$$

And represent the constant term and the random error term, respectively. The regression analysis of the above formula is carried out by using SPSS software, and the regression equations between H value and Z value, C, Q and S variables are obtained as follows:

$$H = -0.1744 + 0.0637Z + 0.0371C - 0.0049Q_i - 0.0013S_i \tag{3}$$

This paper omits the correlation analysis between these variables and the calculation process of the regression equation, and directly uses the regression results to calculate and analyze the data of listed companies in Shandong Province.

Table 1: stock data of enterprises from 2017 to 2018

	Annual	Average	Median	Maximum	Minimum value	Standard deviation
H value	2018	0.8395	0.8632	11.151	-0.7106	2.0567
	2017	0.7986	0.8399	5.2876	-0.8239	1.5865
Z value	2018	2.9947	2.1389	21.8261	-0.8239	4.0159
	2017	5.0515	4.5125	21.1353	-9.963	532749
C cash flow capacity	2018	23.2734	12.5643	318.4485	-14.8973	58.4984
	2017	18.68	15.0038	125.539	-5.5824	24.6333
Q equity multiplier	2018	2.4855	1.9745	17.15	-4.11	3.2689
	2017	2.1197	1.9021	6.4885	-0.4289	1.1901
S company size	2018	21.1013	21.1187	24.0219	19.5178	1.0126
	2017	21.9736	22.5796	24.1755	20.6027	0.9132

In this paper, we choose the median as the main judgment basis, because the maximum and minimum values have a great impact on the average value, there will be an average defect, which will affect our judgment of the changing trend of the sample. From the above analysis data, it is not difficult to find that the overall operating conditions of listed companies in 2018 have decreased compared with 2017, and the overall financial risk of enterprises has increased. Through the Z-value analysis of Altman, we can see that the overall situation of listed companies in Liaoning Province in 2017 is good, in a safe and stable area, but by 2018, the Z-value of listed companies has dropped below the safety line, at the lower end of the "grey area" of Altman, and the financial risk has increased significantly.

Through the data analysis of C-value cash flow capacity, we can see that the cash flow capacity has declined in 2018, which means that the cash profitability of companies is weakened, and the economic profits of enterprises will be reduced, thus increasing the financial risk of enterprises. The Q-value equity multiplier increases slightly in the sample year, indicating that the financial leverage of the company's external financing becomes larger, and the company will bear greater risks. The S value decreased by nearly 1 point in 2018, indicating that the size of listed companies decreased, the stock market value decreased, and the financial risk increased.

5. Conclusion

Summing up the above analysis, we can see that the financial risk management of listed companies is an important long-term work that can not be ignored. in practice, financial risk management must be brought into the daily work of the company's financial management, and attention should be paid to preventing risks at all times. take effective measures to avoid risks. The following are the suggestions made in this paper on financial risk management:

Strengthen the awareness of financial risks in enterprises. Enterprises should give full play to the subjective initiative of financial personnel to actively guard against financial risks. Financial risks exist in all aspects of financial management, and mistakes in any link will bring unpredictable financial risks to enterprises, so financial managers must put risk prevention awareness throughout the financial management work.

Establish an early warning mechanism for the financial crisis. The financial crisis is caused by the continuous deterioration of the financial situation of the enterprise, so it is necessary to establish a mechanism to observe the early signals that can lead to financial deterioration and solve those problems that may endanger the survival of the enterprise as soon as possible.

Maintain a reasonable capital structure. The focus of enterprise financial structure management is to maintain a reasonable proportion of the structure of enterprise capital, debt, and investment, to ensure the solvency of the enterprise and the normal operation of the enterprise.

Implement financial budget management. The establishment of a modern enterprise system requires enterprises to carry out comprehensive budget management, and it is also an inevitable choice to effectively guard against financial risks to adapt to market uncertainty and volatility. The financial risk of an enterprise is a double-edged sword. on the one hand, it brings losses and even threatens the survival of the enterprise, but on the other hand, in the rapidly changing market environment, it also brings opportunities for the development of many enterprises. therefore, it is necessary to comprehensively evaluate the financial risk according to the actual situation of each enterprise to play a correct role in helping the development of the enterprise.

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