



A Study on the Financial Situation of China's Retail Industry in the Context of the COVID-19 Epidemic

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ABSTRACT

Under the sudden new crown epidemic in 2020, my country's overall economic situation has been hit a lot, especially in the retail industry. The overall financial situation has declined significantly, and many companies have even closed down. In order to allow companies to better face financial risks, this paper mainly studies the impact of the epidemic on the financial situation of China's retail industry and analyzes the financial risk level of enterprises by applying the Z-score model. This paper also makes suggestions on the current company's business strategy through research. It can be concluded that some companies still go up against the current by means of methods.

Keywords: *COVID-19, Financial statement analysis, Financial indicators, Z-score model*

1. INTRODUCTION

Under the impact of the epidemic since 2020, the impact of the epidemic on the retail industry has gradually entered the attention of researchers. At present, there have been many related studies. The research methods rely on a wide range of models, but there is still a lack of using the Z-score model for companies to analyze the risks of financial situations. Because the current epidemic situation is still severe, how companies in the retail industry will face great challenges in how to survive in the future, and how to deal with financial risks has become a necessary condition for companies to survive. Therefore, this paper will take several representative listed companies as examples, use financial statement data, and use the Z-score model to analyze what financial shocks and financial risks these companies have faced under the epidemic. This paper will give relevant suggestions on how to face future financial risks and how to survive in the current economic environment for companies. The research in this paper can help Chinese retail enterprises assess the impact of the epidemic, and has a good reference for related enterprises. There are also some lessons for companies on how to recover from the epidemic.

2. INTRODUCTION TO ECONOMIC BACKGROUND

In recent years, a large number of retail industry

companies around the world have gone bankrupt, and the transformation of domestic traditional brick-and-mortar retail companies under the competition of e-commerce retail has been extremely difficult. At the beginning of 2020, the new crown pneumonia epidemic endangered the global economy, and a large number of enterprises were forced to suspend production, and the sales performance of my country's retail industry fell off a cliff. Going back to the SARS epidemic in 2003, the growth rate of total retail sales of consumer goods declined for 8 consecutive months [1]. Compared with the "SARS" epidemic in 2003, the new crown pneumonia epidemic has a wider scope and a longer duration. Enterprises in the general retail industry whose main business is the sales of general commodities and whose consumption scenarios are mainly presented in physical scenes such as department stores, supermarkets, and shopping centers are more directly impacted than other enterprises in the retail industry. This is because of the characteristics of offline physical sales in the context of the new crown pneumonia. The changing trends, influencing factors, prevention and control issues of financial risks of general retail enterprises are worth studying. Using the Z-score model, this paper selects 49 listed companies in the general retail industry as the research object and analyzes the financial risks of listed retail companies under the new crown epidemic. As well as providing advice on the health and sustainable development of enterprises after the epidemic.

3. FINANCIAL RISKS FACED BY ENTERPRISES UNDER THE NEW CROWN EPIDEMIC

3.1 Research on Corporate Financial Risk

Enterprise financial risk refers to the uncertainty of financial status due to various unpredictable or controllable factors in the process of various financial activities, so that the enterprise may suffer losses. The influencing factors are not only the unfavorable business environment of the enterprise objectively, but also the ineffectiveness of the enterprise's decision-making, organization and management subjectively [2]. The evaluation methods of enterprise financial risk mainly include the univariate model method, multivariate model method, fuzzy analytic hierarchy process and so on. Among them, the Z-score model invented by American scholar Altman, as a multivariate model method, is easy to apply and easy to obtain data and is widely studied and used by scholars at home and abroad.

3.2 Research on the Impact of Public Emergencies on Corporate Financial Risks

Domestic research on the impact of public emergencies on the economy mainly focuses on the two periods of the SARS epidemic and the new crown pneumonia epidemic. Due to the short duration of SARS, the growth trend of the macro economy has not stagnated [3]; while the impact of the new crown epidemic has a wider geographical scope and a longer duration, coupled with factors such as changes in the market economy structure, the short-term impact of the new crown epidemic on the economy will be greater than that of SARS in 2003. Enterprises, especially retail enterprises, are the most negatively impacted in such major public

emergencies.

3.3 Financial Risk Research of Retail Enterprises

The financial risks faced by the retail industry mainly come from two aspects, including financing, investment, liabilities and other fund management problems and poor management. In addition to the general financial risks of the retail industry, the general retail industry also has its own unique financial risks, such as supply chain and logistics costs, channel integration, online shopping and other retail forms of competition, insufficient product power and service, and the contradiction between commodity cost and commodity price, etc. Based on the research status of the above-mentioned fields, it can be found that the academic research on corporate financial risk has become more and more in-depth, and the financial risks faced by general retail enterprises are also different from general enterprises and other retail enterprises, but their quantitative research is relatively rare [4]. Corporate financial risks in the general retail industry in the context of public emergencies are worthy of further in-depth study.

4. CASE STUDY

4.1 Z-score Model

Considering the ease of data acquisition and the operability of the model, this study uses the Z-score model to evaluate the financial risk of enterprises. The Z-score model is shown in formula (1):

$$Z=1.22X_1+1.4X_2+3.3X_3+0.6X_4+0.999X_5 \quad (1)$$

The calculation formulas and meanings of the respective variables are shown in Table 1:

Table 1. Calculation formula and meaning of independent variables of Z-score model

Independent variable	Formula	Meaning
X1	$= \frac{\text{current assets} - \text{current liabilities}}{\text{total assets}} = \frac{\text{retained earnings}}{\text{total assets}}$	Reflect the liquidity and scale of enterprises.
X2	$= \frac{\text{retained earnings}}{\text{total assets}}$	Measure the accumulated profits of enterprises, reflect the operating years
X3	$= \frac{\text{earnings before interest and tax}}{\text{total assets}}$	reflect the profitability of production
X4	$= \frac{\text{stock market value} * \text{total number of stocks}}{\text{total liabilities}}$	reflect the stability of the basic financial structure of enterprises.
X5	$= \frac{\text{sales}}{\text{total assets}}$	Reflect the sales ability of enterprises.

If the Z-score of an enterprise is greater than or equal to 2.67, the enterprise is unlikely to go bankrupt. If the Z-score is less than 1.81, the probability of bankruptcy of the enterprise is high. The score is between 1.81 and 2.67, which is a gray area. If the Z-score of a company is in this range, it means that the company's financial situation is unstable and it needs to control risks. The higher the Z-score, the less likely the company will go bankrupt.

4.2 Data Sources

This paper refers to Shenying & Wanguo Securities Industry Classification Standard, selects 49 listed companies in the general retail industry as the research objects, and divides them into three categories: department stores, supermarkets, and multi-format retail according to their different business modes and main commodities, as shown in Table 2 below. Mainly through the CSMAR listed company research platform to obtain the key financial indicator data of the company, and through the cninfo website to obtain the company's financial report and other notification information.

Table 2. Research objects and their sub-industry classification.

order	Classify according to main business	Securities code	Enterprise abbreviation	order	Classify according to main business	Securities code	Enterprise abbreviation
1	Department store industry	000417	Hefei department store	26	Multiple formats	002640	*ST cross-border
2	Department store industry	000501	Ewushang A	27	Multiple formats	600694	Dashang stock
3	Department store industry	000564	*ST episode	28	Multiple formats	600697	Ouya group
4	Department store industry	000715	zhongxing shenyang commercial building co., ltd	29	Multiple formats	600729	Chongqing department store
5	Department store industry	002187	Guangbai stock	30	Multiple formats	600774	Hanshang group
6	Department store industry	002277	Youa stock	31	Multiple formats	600778	Youhao group
7	Department store industry	002419	Tianhong stock	32	Multiple formats	600785	Xinhua Mall
8	Department store industry	002561	Xujiahui	33	Multiple formats	600827	Bailian stock
9	Department store industry	600280	Central shopping mall	34	Multiple formats	600838	Shanghai Jiubai
10	Department store industry	600306	*ST mall	35	Multiple formats	600858	Ginza stock
11	Department store industry	600628	New World	36	Multiple formats	600861	Beijing Urban and Rural
12	Department	600693	Dongbai	37	Multiple	601113	ST Huading

	store industry		group		formats		
13	Department store industry	600712	Nanning department store	38	Multiple formats	601366	Liqun shares
14	Department store industry	600723	ShouShang shares	39	Supermarket industry	000750	Zhongbai group
15	Department store industry	600814	Hangzhou jiebai	40	Supermarket industry	002251	Better Life Group
16	Department store industry	600828	Maoye business	41	Supermarket industry	002264	Xinhuadu
17	Department store industry	600857	Ningbo Zhongbai	42	Supermarket industry	002336	Renrenle
18	Department store industry	600859	Wangfujing	43	Supermarket industry	002697	Hongqi chain
19	Department store industry	600865	Baida group	44	Supermarket industry	600361	Hualian zongchao
20	Department store industry	601010	Wenfeng shares	45	Supermarket industry	601116	Sanjiang shopping
21	Department store industry	601086	Guofang group	46	Supermarket industry	601933	Yonghui supermarket
22	Department store industry	603101	Huijia age	47	Supermarket industry	603031	Anderle
23	Department store industry	603123	Cuiwei stock	48	Supermarket industry	603708	Jiajiayue
24	Multiple formats	000419	Tongcheng holding	49	Supermarket industry	605188	Guoguang chain
25	Multiple formats	000785	easyhome				

4.3 Empirical Research and Result Analysis

Taking 2018-2020 as the time span, the research objects are divided into three sub-sectors of department store industry, supermarket industry and multi-format retail industry, and the Z-score model is used for calculation respectively.

The average curve of the Z-score of each industry Calculate the Z-score of 49 companies for three years and follow the general retail The three sub-sectors of the industry and the industry as a whole are averaged, and the results are put into the same line chart for comparison, as shown in Figure 1 below.

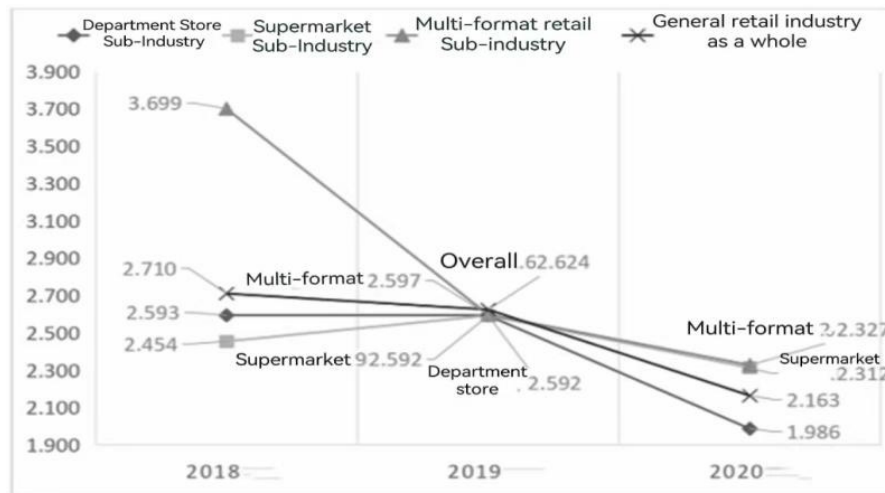


Figure 1 Trend chart of Z-score change in general retail industry and each sub-industry

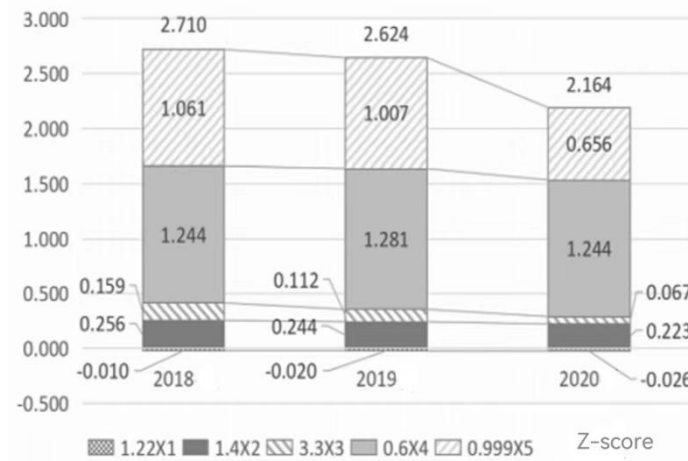


Figure 2 The overall Z-score of the general retail industry and its independent variable composition trend

From the trend chart, before the outbreak of the new crown epidemic, the average Z-value of the general retail industry has shown a downward trend, showing a slight decline as a whole. Department stores and multi-format retail have declined, especially multi-format retail has experienced a serious decline. After the outbreak of the new crown epidemic, the Z-value of the whole industry has declined more sharply than before. It can be seen that the new crown epidemic has brought a huge impact on the entire industry, of which the department store sub-industry has the greatest impact, while the supermarket sub-industry has the strongest anti-risk ability in the new crown epidemic, and the impact is minimal [5]. However, the financial risks of the department store and multi-format retail sub-sectors have intensified and deteriorated, which deserves special attention. On the whole, the Z-value of the general retail industry is generally not high, and the overall Lack of upward momentum, when the external objective environment changes, the ability to resist risks is weak [6].

The Z-score model combines the solvency indicators (X1, X4), profitability indicators (X2, X3), and operating capacity indicators (X5) through 5 variables to obtain a

comprehensive score to give an early warning to the financial situation of listed companies. As is shown in Figure 2, the changing trend of each independent variable that constitutes the Z-score will directly affect the Z-value result. Therefore, exploring the changing trend of the independent variables can find out the key factors that affect the financial status of the enterprise to a certain extent. In the context of the epidemic, the decline of the Z value of the whole industry is specifically reflected in the continuous decline of all independent variables except X4. The X1 variable is negative, and the downward trend of X5 and X3 is the most obvious [7]. X1, the decline in the ratio of net working capital/total assets, shows that the capital liquidity of the general retail industry is deteriorating, mainly due to the weakening of production and supply-side capacity due to the epidemic, the increase in procurement costs, the continuous outflow of fixed expenditures, and the need for borrowing to maintain the company's living expenses. Fundamental liquidity risk arises from basic operations. The decline in X5 (sales/total assets) indicates that the overall sales capacity of the industry has been weakening year by year, mainly because general retail has been hit by both new

retail and the epidemic, resulting in a further decline in sales performance. A decrease in X3 (EBIT/Total Liabilities) indicates that a decrease in EBIT or an increase in total liabilities of an enterprise, whether it is a decrease in the profitability of funds or a decrease in solvency, will have an adverse impact on the sustainable development of the enterprise [8]. Therefore, the general retail industry needs to take timely measures, focusing on improving sales performance, strengthening working capital management, controlling debt scale, etc., to prevent financial risks in a timely manner [9].

5. HOW SHOULD LISTED COMPANIES DEAL WITH THE FINANCIAL CRISIS AT PRESENT

5.1 *Providing Personalized Service and Marketing*

The general retail industry should use digital technology to provide consumers with complete personalized services and point-to-point marketing. From the perspective of different formats: the supermarket format should take offline stores as the main position, combine them with online APP, build a user center, and improve the quality and price Low commodities and diverse convenience services provide user stickiness [10]; department stores should further optimize the stock structure, accurately locate customer groups, and actively expand new retail channels while promoting the transformation of offline stores; multi-format retail should conduct a comprehensive analysis of each format, close to users in an all-round way, focusing on the development of industries with a large profit contribution rate [11].

5.2 *Increasing Investment in Product Supply Chain*

For powerful general retail enterprises, they should increase investment in product supply chain, establish their own brand products and self-operated supply chain, and carry out source procurement, so as to ensure the price of products while improving the quality Advantage. At the same time, the supply chain is used for business expansion, and the profit point of the enterprise is pre-positioned [12]. Small and medium-sized general retail enterprises should focus on operating corporate credit and reach long-term friendly cooperation with local suppliers, so as to obtain more priority product supply. Applicable and more flexible billing cycles.

6. CONCLUSION

According to the calculation results of the Z-score model, although the performance of most companies has suffered a serious decline under the influence of the epidemic, there are still some companies facing the

difficulties. Companies can improve their current financial situation by using a variety of strategies. This paper focuses on analyzing the business risk of a company from the perspective of financial statements. However, in real life, the analysis of a company's financial status should take into account various factors more comprehensively. It is hoped that in future research, other factors affecting the company's financial position can be taken into account to analyze risks more comprehensively.

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