

# Research and Analysis on Financial risk of SL Company -- Based on the F-score model

Hongyun Jiang <sup>a</sup>, Shouyong Li <sup>b</sup>

Business School of Guilin University of Technology, Guilin, 541004, China

<sup>a</sup>454492334@qq.com, <sup>b</sup>785776016@qq.com

**Abstract.** The application of big data technology has promoted the rapid development of Chinese e-commerce and retail enterprises, and the birth of new retail model has also brought new vitality to the retail industry. However, the outbreak of COVID-19 has not only aggravated the contraction of economic demand, but also seriously retarded the development pace of major retail enterprises, which are facing increasing financial risks. Based on the F-score model, this paper selects the financial data of retail enterprise SL Company from 2017 to 2021 and conducts calculation and processing, analyzes and evaluates its financial risks. Finally, it puts forward corresponding suggestions to deal with financial risks.

**Keywords:** Financial risk; F-score model; Retail enterprises.

## 1. Introduction

SL Company was founded in Nanjing in 1990, the business scope covers traditional home appliances, electronic goods, department stores, books and other fields, which is one of the leading retail enterprises in China. In 2004, SL Company was successfully listed in Shenzhen Stock Exchange due to its excellent business performance and gained the favor of many investors.

Therefore, based on the F-score model, this paper explores the current financial risks of the company and analyzes the reasons, so as to provide suggestions for SL company to get rid of its financial difficulties.

## 2. Overview of theories of F-score model

Due to the fact that the Z-score model was not fully considered in the construction of cash flow changes and other factors, in order to overcome its limitations in the evaluation of corporate financial risks, Zhou Shouhua (1996) and other scholars established a new financial risk prediction model, F-score model, based on the Z-score model [1].

The specific calculation formula of F-score model as follows:

$$F = -0.1774 + 1.1091X_1 + 0.1074X_2 + 1.9271X_3 + 0.0302X_4 + 0.4961X_5. \quad (1)$$

Where,  $X_1$  = working capital/total assets;  $X_2$  = retained earnings/total assets;  $X_3$  = (net profit + depreciation)/average total liabilities;  $X_4$  = market value of shareholders' equity /total liabilities;  $X_5$  = (net profit + interest expenses+ depreciation)/average total assets.

The critical point of the F-score model is 0.0274. If the F-score value of a company is lower than the critical point, the company will be predicted to be bankrupt. On the contrary, if the F-score is above the critical point, the company will be predicted to continue to survive. In addition, if the F-score value falls into the range of [-0.0501, 0.1049], it indicates that the F-score model cannot accurately predict the financial condition of the company at this time, and further analysis with more information is needed to get the final conclusion.

### 3. Financial risk analysis of SL company based on F-score model

#### 3.1 Calculation results and numerical analysis of F-score value

**Table 1.** Numerical calculation results of F-score model of SL Company from 2017 to 2021

Years	2017	2018	2019	2020	2021
X1	0.149841	0.190476	-0.00211	-0.08062	-0.20516
X2	0.135785	0.168812	0.181634	0.178406	-0.03304
X3	0.072363	0.149608	0.084705	-0.02351	-0.30918
X4	0.704908	0.452667	0.394172	0.334036	0.227432
X5	0.044751	0.091222	0.054621	-0.00289	-0.20121
F	0.186313	0.399223	0.042003	-0.28431	-1.09726

Data Source: Calculated based on the financial data of SL Company

By collecting and sorting the data required for F-score model calculation from the publicly disclosed financial data of SL Company from 2017 to 2021, the results are shown in Table 1 according to the calculation of each X value of the F-score model.

As can be seen from Table 1, the X value and F-score value of SL company on the whole showed a trend of rising first and then falling. Especially in the next three years of 2019, the decreasing range increased year by year. The F-score values of 2019 to 2021 were 0.042003, -0.28431 and -1.09726 respectively, which were lower than the critical point of 0.0274, which shows that after the outbreak of COVID-19, the operating condition of SL company was inevitably hit seriously, and the financial risk was increasing year by year, and the company was facing the crisis of bankruptcy.

#### 3.2 Financial risk analysis of SL Company

##### 3.2.1 Weak solvency and high debt risk

The X1 reflects the liquidity level of enterprise assets. If the ratio is higher, which means the liquidity of enterprise assets is stronger and the financial risk is smaller. In Table 1, the X1 decreased year by year from 0.190476 in 2018 to -0.20516 in 2021, and it was negative in the last three years, which indicates that SL company's solvency weakened year by year. In addition, the financial data publicly disclosed by SL company shows that the working capital decreased year by year from 38 billion yuan in 2018 to -35.02 billion yuan in 2021, and the last three years of 2019 were negative, which indicates that the company's current short-term solvency is relatively weak. The asset-liability ratio increased year by year from 46.82% in 2017 to 81.84% in 2021, which indicates that the company's current long-term solvency is relatively weak.

The X3 reflects the ability of the cash flow generated by an enterprise to repay debts. If the ratio is higher, which means the enterprise's solvency will be stronger. The X3 decreased year by year from 0.149608 in 2018 to -0.30918 in 2021, and has been negative since 2020, which indicates that in recent years, the ability of SL company's cash flow to repay the company's debt is weakening year by year, and the risk of bankruptcy is also increasing.

The X4 reflects the relationship between net assets and debts of an enterprise. If the ratio is higher, which means the net assets of an enterprise is higher and the financial risk is smaller. The X4 decreased year by year from 0.704908 in 2017 to 0.227432 in 2021, which indicates that the net assets of the company decreased year by year. The main reason is that the total liabilities of the company generally showed an upward trend and the market value of shareholders' equity showed a downward trend, and the risk of the company's debt repayment is aggravated.

##### 3.2.2 Weakened profitability and insufficient cash flow creation ability

The X2 reflects the cumulative profit level of the enterprise. If the ratio is higher, which means the cumulative profit ability of the enterprise is stronger and the financial risk is smaller. As can be seen from Table 1, the X2 decreased year by year from 0.181634 in 2019 to -0.03304 in 2021, which indicates that the cumulative profitability of SL company has weakened in recent years, and the profit situation is not optimistic.

The X5 measures the ability of total assets to create cash flow. If the ratio is higher, which means the ability of total assets to create cash flow is stronger and the financial risk is smaller. Since 2018, the X5 has decreased year by year from 0.091222 to -0.20121 in 2021, and remained negative in the following two years, which indicates that the ability of the company's total assets to create cash flow is gradually weakening, and the company's business situation is depressed. Therefore, it has to increase loans to maintain normal production and operation. Interest expense also increased year by year from 647.6 million yuan in 2016 to 3.685 billion yuan in 2021, the company is currently facing great financial pressure.

### **3.2.3 Failure of diversified investment and low investment efficiency**

According to SL company publicly disclosed annual performance report data, SL Company's net profit attributable to shareholders of the superior company in 2021 was a net loss of 42.3 billion yuan, compared with the net loss of 4.275 billion yuan in 2020, the loss was nearly nine times larger. For the causes of the huge losses, mainly is combined with the current year of the external environment for the company and its operating conditions change, accounts receivable, the investment arm of the affiliated party of intangible assets such as trademark and domain name, goodwill, and associated enterprises of a long-term equity investment and relevant provision for impairment of assets, confirm the investment losses, It is expected to reduce the company's net profit attributable to shareholders of listed companies by RMB 25.475 billion in 2021. It can be said that the diversified investment layout of SL Company in recent years has resulted in losses in the fields of logistics and financial services, except for gains in some projects. The huge deficit caused by the blind diversification of investment not only seriously endangers the capital chain of SL company, but also led to a rapid deterioration in the company's financial position.

## **4. Suggestions on financial risk response of SL Company**

### **4.1 Improve financing methods and optimize debt structure**

The reduction of solvency not only affects the approval of the company's credit financing projects, but also prompts suppliers to adjust the time and amount that the company can occupy the payment. Therefore, SL Company must continuously optimize its debt structure, reduce the demand for short-term loans, reduce the proportion of similar financial financing, reasonably control the proportion of current liabilities and interest-bearing liabilities in total liabilities, and balance the proportion of different types of liabilities when raising funds.

On the one hand, relevant departments of the company can jointly establish an effective mechanism to reduce and prevent financing risks, and further point out a clear direction for the company's financing program. The management of the company should also clarify its responsibilities in debt management, discover and monitor abnormal debts through the information system, and take timely measures to reduce the risks caused by abnormal debts to an acceptable level; On the other hand, the company should attach importance to establishing a good cooperative relationship with upstream suppliers, reasonably occupy the payment for goods from suppliers, and prevent malignant delay in payment.

### **4.2 Improve channel construction and enhance consumer stickiness**

SL Company started as a physical store selling household appliances. After the online platform was established in 2009, the company still focused on offline operations. With the rise of e-commerce, it gradually invested resources into the development of online mall, but it has fallen behind competitors starting from e-commerce. With the increase of capital and labor costs for maintaining the company's online platform, the operation of offline stores is also negatively affected.

According to the current situation, only by using online means to connect with consumers can SL company better enhance consumer stickiness and improve profitability. In this regard, SL Company should define the business focus of the two channels, organically combine online and offline

resources, and create a good shopping environment and comfortable shopping experience for consumers offline. For the online, SL Company should rely on the big data and other advanced technologies, which continuously maintains and updates the online platform to improve customer satisfaction and expand consumer groups.

#### **4.3 Rationally control the pace of investment and improve the scientific nature of investment decision**

In view of the failure of the company's current diversified investment, SL Company should timely sell the shares of projects with low investment benefits to reduce investment losses. At the same time, according to its own development situation and existing resources, the company should focus on the retail business, moderately give up unnecessary investment to reduce investment risks.

Company management before a specific investment plan, to make a full discussion, consider whether the investment project with the company's business, corresponds to the strategic target, and the company's current manpower and material resources, financial resources such as adequacy, constantly raise the scientific nature of the investment decisions and achieve steady investment.

### **5. Summary**

Based on the calculation of SL company nearly five years of F-score value, prediction and analysis of the present the financial risk of the company, found that the financial risk of the SL company mainly focused on the financing management, profitability and investment management three aspects, and pointed to give Suggestions to cope with the situation for SL company get rid of the financial risk to provide a reference.

### **Acknowledgements**

Guangxi Education Science Plan 2021 Guangxi Financial and Economic Literacy Education Research Special topic: Research on the Cultivation of Financial and Economic Literacy Education Teaching Ability of College Teachers (2021ZJY965).

### **References**

- [1] Zhou Shouhua, Yang Jihua, Wang Ping. On the early warning analysis of financial crisis -- F score model [J]. Accounting Research, 1996(08): 8-11.
- [2] Xi Yanling. F-score model of Chinese Internet listed companies financial risk early warning research [J]. National Circulation Economy, 2020 (18): 80-81.
- [3] Wu Shilong, Lu Xianyi. Research on Forecasting Model of Financial Distress of listed Companies in China [J]. Economic Research, 2001 (6).
- [4] Zheng Cuiping. Enterprise Financial risk management and control strategy [J]. Accounting Learning, 2020(8): 79-80.
- [5] Cong Lin. Financial risk analysis of Huayuan Real Estate based on F-score model [J]. Modern Business, 2021(5):190-192. (in Chinese).