FORECASTING METHOD AND APPLICATION OF ENTERPRISE FINANCIAL PROSPECT BASED ON EXPONENTIAL SMOOTHING METHOD AND F-SCORE MODEL

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ABSTRACT

Enterprise financial forecast includes financial forecast and risk forecast, which is an important means of sustainable and healthy development of enterprises. It can effectively help enterprises grasp the direction of future development and protect the economic interests of stakeholders. On the basis of analyzing the existing financial forecasting and risk forecasting methods, exponential smoothing method and F score model are introduced. Taking the China Resources and Environment Co., Ltd. as the research object, the financial prediction of exponential smoothing method and the risk prediction of F score model are carried out to verify the feasibility of the method. At the same time, it provides data support for managers and investors to make scientific and reasonable decisions.

Key words: Financial prospect, Risk prediction, Exponential smoothing method, F-score model

1. Introduction

With the continuous development of national economy and the continuous reform of economic system, the development space of China's financial market is becoming broader and broader, and more and more small and medium-sized enterprises seize the opportunity to develop rapidly. However, with the rapid economic development, the competition in the market is becoming more and more exciting, causing many enterprises to face problems such as financial difficulties, deterioration of living environment, narrow financing channels, and insufficient funds. These problems will gradually lead to financial crisis of the enterprise, threatening the sustainable and healthy development of the enterprise[1]. If the financial risk problem is not solved, it is a potential threat to enterprises and other stakeholders such as investors. Enterprises may fall into

financial difficulties, affecting normal operations; investors' asset appreciation or value preservation goals will be shattered, and losses may be lost; loans issued by banks will also be unrecoverable[2]. Therefore, using scientific forecasting models to predict the future financial status and financial risks of enterprises can not only prepare well in advance to deal with financial risks and formulate reasonable financial plans, but also help enterprises to grasp the future development direction and protect the economic interests of relevant stakeholders, to promote the sustainable and healthy development of enterprises[3].

2. Definition of Enterprise Financial Prospect and Review of Existing Forecasting Methods

Financial prospect refers to the scientific predictability and measurement of the financial activities and financial results of the enterprise based on the historical data generated by the capital movement in the reproduction process, combined with the actual conditions and requirements. So as to make a correct assessment of the future development space and strategic decision, provide scientific and reasonable decision support for strategic decision makers and point out the direction of future development. It is one of the important links of financial management. The main task is to calculate various financial indicators of the enterprise through the forecasting model, evaluate the production and operation status, and predict the development and changes of financial income and expenditure, so as to formulate business objectives and prepare future financial plans.

With the rapid changes in the market, the competitive environment has become more and more intense, and enterprises are also facing unknown risks at any time. However, different market environments and market risks require different strategic plans and financial plans to maintain the healthy and sustainable development of enterprises. Therefore, enterprise prospect forecasting is an important measure to predict the financial risks of enterprises. It is very necessary to analyze the prospects of enterprises and forecast important financial indicators of enterprises. Enterprise prospect forecast analysis is mainly divided into financial forecast and risk forecast.

At present, many scholars at home and abroad have conducted research on the forecasting of corporate financial prospects, and the forecasting models are also different and the same, and the research conclusions are different. Liu Haoran takes the CATL era as the research object, selects three key financial indicators of net sales profit rate, total asset turnover rate, and net asset growth rate, and uses exponential smoothing method to predict its financial prospects. The smoothing index is selected between 0.5 and 0.8, and it is concluded that the sales net profit of the company will continue to decline, and the total asset turnover rate and the growth rate of net

assets will continue to rise. And use the Z-SCORE model for risk prediction. The prediction results show that CATL has been in good financial condition since its listing in 2018 and has a certain ability to resist risks[4]. Hu Hao believes that the company's financial forecast is mainly related to current strategic decisions and past data. So, he uses the sales percentage method to analyze the unique relationship between sales revenue and the balance sheet, so as to predict the future financing strategy of the company, and use the "Z model" to predict the financial risks that the company will face in the process of development. The results show that the Z- values from 2017 to 2020 is relatively high. Although it is low in 2016, it is still higher than 2.99, which is a good state. Generally speaking, Lijiang Co., Ltd. will not have major financial crisis and bankruptcy risks, and has a good development prospect[5]. Ling ziyi and ma fang fang believe that GM (1,1) model is a gray dynamic forecasting model that can predict financial data relatively accurately with less sample data. Taking the financial report of B company as the research object, they predicted the financial data of B Company in 2019 from four perspectives of solvency, profitability, operation ability and growth ability, and compared it with the actual calculation results of B company's financial statement data in 2019, which showed that the prediction method was more accurate[6]. Ning Chunyuan et al. established the prediction model of feed forward neural network based on MDS, and improved the learning rate and accuracy effectively by utilizing the function approximation feature of FNN[7]. Jing Jing Wang et al. believed that the BP neural network model could only predict the data of one year at a time, which was relatively limited, while time series could be predicted for many years at a time, and more data could be used for modeling to make the prediction result more accurate[8]. Wang Xin and Wu Ji et al. proposed a fault time series analysis and prediction method based on LSTM cyclic neural network, and compared with many typical time series prediction models, the accuracy and applicability of the method were verified[9]. Ren Liang and Sun Deshan indicated that SVM has good generalization ability under limited learning mode and can realize the minimization and induction of structural risk. Through the financial forecast analysis of 684 enterprises, predict whether the enterprise will be ST in the next two years, the research shows that SCM can effectively improve the forecast progress[10]. Yin Luying proposed to build a financial risk prediction model based on stepwise discriminant analysis and discriminant analysis under principal components. Through case analysis of the financial data of 136 ST companies and non-ST companies, it was verified that the model has a high prediction accuracy[11]. The above studies are conducted by various scholars using different prediction models to predict financial data and risk of enterprises, and relevant conclusions are drawn through case verification.

3. Methodology

3.1 Exponential Smoothing Method

Exponential smoothing method is to add a smoothing weight to the historical value of time series to predict the future data. The exponential smoothing method is actually another form of weighted moving average. The principle is that the exponential smoothing value of any period is the weighted average of the actual observation value of the current period and the exponential smoothing value of the previous period. We can adjust the value of a according to the weighted average. The size observes the smoothness of the predicted value to select the best predicted value.

The calculation formula of exponential smoothing method is shown in 1.

$$SF_{t+1}=a*A_t+(1-a)*SF_t \quad (1)$$

In the formula:

SF_{t+1}—Exponentially smoothed forecast for period t+1；

a—Smoothing coefficient, which indicates the weight assigned to the actual data，$(0<a\leq1)$；

A_t—The actual value in period t. the actual value of the forecast previous period；

SF_t—The smoothed value of the t-th period, that is, the smoothed predicted value of the previous period is predicted.

The accuracy of exponential smoothing method is greatly affected by a value. In general, a value with a larger variation trend is selected, while a value with a smaller variation trend is selected. In this paper, the empirical judgment method commonly used in the theoretical field is combined with the trial algorithm to determine the approximate range of A through the specific time series, and then compare the standard error of the selected value of A through the trial algorithm. The smaller the standard error, the more accurate the predicted value. The value range of a is 0-1. According to the change trend of the relevant indicators in the financial analysis above from 2015 to 2019, we choose the range of a to be between 0.2-0.7. Exponential smoothing prediction was performed when a value was 0.2, 0.3,0.4,0.5,0.6 and 0.7 respectively. Finally, the optimal A value was determined according to the standard error of the predicted value corresponding to a value.

3.2 F-score Model

F-score is a new multivariate discriminant model based on z-Score warning model, which improves some limitations. Since the Z-Score model was based on the data of American listed companies as the sample, and did not fully consider the change of cash flow and other factors, it has certain geographical limitations. Therefore, Zhou Shouhua et al. (1996) introduced the cash flow factor on the basis of Z-Score model, conducted empirical analysis on the data of listed companies in China as research samples, and proposed an improved F-score model.

F -score model formula is shown in 2:

$$F=-0.1774+1.1091X_1+0.1074X_2+1.9271X_3+0.0302X_4+0.4961X_5 \quad (2)$$

In the formula:

X_1= (ending current assets - ending current liabilities)/ending Total assets

X_2= (surplus reserve + undistributed profit)/total assets at the end of the period

X_3= (net profit + depreciation)/average total liabilities

X_4= market value of shareholders' equity/total liabilities at the end of the period

X_5= (net profit + depreciation + interest income)/average total assets

Discriminant criteria: The critical point of F value crisis is 0.0274. When the F value calculated by the enterprise is greater than 0.0274, it indicates that the enterprise is in good financial condition with little risk and the warning color is green. When F value is less than 0.0274, it indicates that the enterprise is in a state of severe risk and is about to go bankrupt, and the warning color is red.

4. Case Analysis

According to relevant statistics, discarded electronic products are increasing at an annual rate of 20%. However, discarded electrical and electronic products contain some precious metals, which are rare renewable resources and the main culprit of environmental pollution. Therefore, it is necessary to recycle and dispose of waste electrical appliances, recycle renewable resources, and reduce the discharge of toxic substances. The state has also promulgated corresponding laws and regulations to regulate and support the recycling and dismantling industry of waste electrical and electronic products. This industry has great development potential and broad prospects.

Therefore, this paper selects China Re Resources and Environmental Protection, which is known as the "resource recycling and rubbish king", as the research object, uses the exponential smoothing method to make financial forecasts, and uses the F-score model for risk prediction, so as to analyze the future development direction of China Re Resources and Environmental Protection.

4.1 Profile of China Re Resources and Environment Co., LTD

4.1.1 Enterprise Overview

China Re Resources and Environment Co., LTD. (hereinafter referred to as the "Company") was renamed shaanxiQinling Cement (Group) Co., LTD in 2016. The original main business of the company was cement production and sales. Due to the major asset reorganization in 2015, the main business changed to recycling and processing of waste electrical and electronic products. In 2018, the integrated disposal of solid waste in the industrial park became the main business, and in 2019, the company expanded the hazardous waste disposal field into its business. China Re Resources and Environment Co., LTD. was listed on Shanghai Stock Exchange in 1999, stock code: 600217. With 12 subsidiaries, China Re Resources and Environment Co., LTD. has established more than 5,000 waste electrical appliances recycling networks nationwide, with the annual processing capacity of waste electrical appliances reaching 29.58 million units, which is the leader in the industry.

4.1.2 Financial Status of the Enterprise

As of December 31, 2021, the financial status of China Re Capital Ring is shown in Table 1. The total assets are RMB 7,188,983,500, an increase of 16.53% compared with last year. Among them, the current assets are RMB 6,161,966,500, an increase of RMB 81,282,500 compared with 2020.Accounting for about 85.71% of the total assets. It shows that the scale of current assets of China Re Capital Environment is relatively large, the liquidity is relatively strong, and it is relatively flexible. In the current assets, the monetary capital accounts for RMB 11.18853449 million, accounting for about 19.29% of the current assets, which is in a reasonable proportion range, indicating that the utilization rate of China Re Resources and Environment Co., LTD. funds is relatively high, which helps to increase the profitability of enterprises. The total liabilities are RMB 4,760.986 million, an increase of 20.50 percentage points compared with 2020. Among them, current liabilities are RMB 3,275,793,300, an increase of 9.36% compared with 2020, current liabilities and non-current liabilities are RMB 1,485,115,300. The non-current liabilities increased by 55.41% compared to 2020. From this, it can be seen that the increase in recapitalization and environmental liabilities in mid-2021 is mainly due to the non-current

liabilities of enterprises, which indicates that the production and operation funds of enterprises have increased, and the cost of capital has increased, which has reduced the repayment pressure to a certain extent. The owner's equity increased from RMB 221.80961 million in 2020 to RMB 242.80749 million, an increase of 9.47%, indicating that the profitability of reinvestment Ring is acceptable.

Through the analysis of the above financial data, we can see that China Re Capital Has a large scale, good financial status and strong profitability, and everything is developing in a good direction. At the same time, the senior management of the enterprise should also pay attention to the large number of non-current liabilities of your company, and the increase proportion is a little high, which is easy to cause financial risks. It should pay attention to the reasonable planning of non-current liabilities.

Table 1.Statement of financial position

Unit: Ten thousand

Accounting item	2021	2020	Increase or decrease
Monetary fund	118853.49	74497.47	59.54%
Current assets	616196.65	534914.5	15.20%
Non-current assets	102701.7	81994.9	25.25%
Total assets	718898.35	616909.4	16.53%
Current liabilities	327579.33	299539.66	9.36%
Non-current liabilities	148511.53	95560.14	55.41%
Total liabilities	476090.86	395099.8	20.50%
Owner's equity	242807.49	221809.61	9.47%

4.2 Financial Forecast of Refinancing Ring

Financial analysis can not only understand the past and current operating status and development level of an enterprise, but also predict the future development status and profitability of the

enterprise through the analysis of financial data, so as to show the most real current development status of the enterprise for enterprise managers so that they can make scientific and reasonable strategic planning. In recent years, With the strong support of government policies, China Refinance Ring has developed rapidly and has a broad prospect. If reasonable financial forecast can be made through corporate financial data, China Refinance Ring will make its own strategic planning and development policy more clear in the future development. Therefore, exponential smoothing method, a research method in conjunction with the time series in this paper, is selected to predict financial prospects. This prediction method is the most frequently used prediction method in production prediction, and its predicted value can more accurately and reasonably reflect the actual changes in the market. On the basis of the above financial analysis, this paper selects the asset-liability ratio index of solvency, operating margin and gross margin index of profitability, accounts receivable turnover index of operating capacity and operating income growth rate index of development capacity for specific analysis.

Table 2. Predicted values of asset-liability ratio under different smoothing coefficients

Asset-liability ratio	The actual value	0.2	0.3	0.4	0.5	0.6	0.7
2015	61.95%	—	—	—	—	—	—
2016	66.36%	61.95%	61.95%	61.95%	61.95%	61.95%	61.95%
2017	64.98%	62.83%	63.27%	63.71%	64.16%	64.60%	65.04%
2018	69.19%	63.26%	63.79%	64.22%	64.57%	64.83%	65.00%
2019	68.13%	64.45%	65.41%	66.21%	66.88%	67.44%	67.93%
2020	64.05%	65.18%	66.22%	66.98%	67.50%	67.86%	68.07%
2021	66.22%	64.96%	65.57%	65.81%	65.78%	65.57%	65.26%
2022	—	65.12%	65.77%	65.97%	66.00%	65.96%	65.94%
Standard error	—	0.0120	0.0147	0.0163	0.0174	0.0183	0.0192

As can be seen from Table 2, the minimum standard error of the predicted value of the asset-liability ratio under different smoothing coefficients corresponds to A, which is 0.2. At this time, the standard error is 0.0120, and the corresponding predicted value is also closest to the reality. It can be seen that the predicted value of asset-liability ratio in 2022 is 65.12%, showing a downward trend compared with the data in 2020 and 2021. It shows that enterprises are aware of the problem of high asset-liability ratio and weak long-term solvency, and are steadily reducing the ratio and reducing financial risks. However, on the whole, the ratio is still high, and enterprises still need to pay attention to this problem.

Table 3. Predicted operating profit margins under different smoothing coefficients

Operating profit margin	The actual value	0.2	0.3	0.4	0.5	0.6	0.7
2015	14.25%	—	—	—	—	—	—
2016	12.72%	14.25%	14.25%	14.25%	14.25%	14.25%	14.25%
2017	11.02%	13.94%	13.79%	13.64%	13.49%	13.33%	13.18%
2018	12.54%	13.36%	12.96%	12.59%	12.25%	11.94%	11.67%
2019	15.07%	13.20%	12.83%	12.57%	12.40%	12.30%	12.28%
2020	14.29%	13.57%	13.50%	13.57%	13.73%	13.96%	14.23%
2021	8.71%	13.71%	13.74%	13.86%	14.01%	14.16%	14.27%
2022	—	12.71%	12.23%	11.80%	11.36%	10.89%	10.38%
Standard error	—	0.0047	0.0064	0.0081	0.0099	0.0195	0.0141

It can be seen from Table 3 that when the smoothing coefficient is 0.2, the minimum standard error of the predicted value of operating profit margin is 0.0047, which means that the predicted value made by the exponential smoothing model is closest to the actual value at this time. At this time, the operating profit margin of CRE in 2022 is 12.71%, which is higher than that in 2016-

2018 and 2021, although it is lower than that in 2020. Generally speaking, the development is stable.

Table 4. Predicted gross margin under different smoothing coefficients

Gross profit margin	The actual value	0.2	0.3	0.4	0.5	0.6	0.7
2015	57.47%	—	—	—	—	—	—
2016	47.38%	57.47%	57.47%	57.47%	57.47%	57.47%	57.47%
2017	44.09%	55.45%	54.44%	53.43%	52.43%	51.42%	50.41%
2018	32.09%	53.18%	51.34%	49.70%	48.26%	47.02%	45.99%
2019	31.15%	48.96%	45.56%	42.65%	40.17%	38.06%	36.26%
2020	32.45%	45.40%	41.24%	38.05%	35.66%	33.91%	32.68%
2021	24.55%	42.81%	38.60%	35.81%	34.06%	33.04%	32.52%
2022	—	39.16%	34.39%	31.31%	29.30%	27.94%	26.94%
Standard error	—	0.0631	0.0796	0.0901	0.0966	0.1006	0.1030

As can be seen from Table 4, the minimum standard error corresponding to the predicted gross margin value is 0.0631. At this time, the predicted value is close to the actual value, and the corresponding A value is still 0.2. It can be seen from the data in the table that the gross profit margin of China Re Resources and Environment Co., LTD. from 2015 to 2021 has been on a downward trend, and the enterprise's insufficient cost control ability has led to the decline of gross profit margin in recent years and the lack of profitability. However, from the predicted gross profit rate of 39.16% in 2022, it can be seen that the gross profit rate is gradually increasing, and the enterprise is gradually strengthening cost control, reducing costs and improving profitability.

Table 5. Predicted value of accounts receivable turnover under different smoothing coefficients

Accounts receivable turnover (times)	The actual value	0.2	0.3	0.4	0.5	0.6	0.7
2015	1.37	—	—	—	—	—	—
2016	0.95	1.37	1.37	1.37	1.37	1.37	1.37
2017	0.96	1.29	1.24	1.20	1.16	1.12	1.08
2018	1.05	1.22	1.16	1.11	1.06	1.02	0.99
2019	0.98	1.19	1.13	1.08	1.06	1.04	1.03
2020	0.81	1.15	1.08	1.04	1.02	1.00	1.00
2021	0.76	1.08	1.00	0.95	0.91	0.89	0.87
2022	—	1.01	0.93	0.87	0.84	0.81	0.79
Standard error	—	0.0011	0.0014	0.0015	0.0016	0.0017	0.0017

As can be seen from Table 5, the minimum standard error of the predicted value of accounts receivable turnover is 0.0011, and the smoothing coefficient at this time is 0.2. The predicted value is the most objective and closest to the actual value. Therefore, accounts receivable turnover in 2022 is expected to be 1.01. It can be seen from the table that the receivables turnover rate of CRE is almost lower than 1 from 2016 to 2021, while it is expected to be 1.01 in 2022, which shows that the enterprise has been aware of the low efficiency of receivables and the delayed return of funds, and is gradually improving and steadily improving the receivables turnover rate.

Table 6. Predicted growth rates of operating income under different smoothing coefficients

Growth rate of operating income	The actual value	0.2	0.3	0.4	0.5	0.6	0.7
2015	7.19%	—	—	—	—	—	—
2016	-11.4%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%
2017	60%	3.47%	1.60%	-0.26%	-2.12%	-3.98%	-5.84%
2018	14.61%	14.77%	19.12%	23.85%	28.94%	34.41%	40.25%
2019	4.33%	14.74%	17.77%	20.15%	21.78%	22.53%	22.30%
2020	1.80%	12.66%	13.74%	13.82%	13.05%	11.61%	9.72%
2021	-1.25%	10.49%	10.16%	9.01%	7.43%	5.72%	4.18%
2022	—	8.14%	6.73%	4.91%	3.09%	1.54%	0.38%
Standard error	—	0.0390	0.0587	0.0792	0.1002	0.1217	0.1435

From Table 6, it can be seen that when the growth rate of operating income is 0.2, the predicted value is the most accurate, because the standard error at this time is 0.0390, which is the smallest standard error among the selected a coefficients. Meanwhile, the growth rate of operating revenue in 2022 is 8.14%, significantly higher than that in 2021. According to the financial analysis, the growth rate of China Refinancing Ring's operating income is not stable, which is greatly affected by environmental protection policies and unhealthy competition in the industry. However, it has been positive and has good development potential. Sure enough, the growth rate of operating income will increase in 2022, and the future development of China refinancing Ring is more optimistic.

4.3 Reinvestment Ring Risk Prediction

In order to more objectively and reasonably show the financial status of China Reinvestment Ring, this part carries out financial risk identification. In this paper, the z-Score early-warning

model, which is based on the improvement of some limitations, is selected as the new multivariate discriminant model —F-score model for early-warning identification of financial risks in China refinancing ring. The following is the financial risk forecast for China Refinancing Ring.

Table 7.Summarizes the data used in the 2017-2021 refunding ring model

Unit: 100 million

Project	2017	2018	2019	2020	2021
Ending current assets	40.2186	38.8580	48.8133	55.6266	61.6197
Ending current liability	23.5375	19.2978	33.8697	31.3202	32.7579
Total assets at end	48.2433	46.4888	57.2693	64.5897	71.8898
Total ending liabilities	31.3482	32.1658	39.0199	41.5763	47.6091
Average total liabilities	26.7968	31.9766	35.5928	40.2981	44.5927
Average total assets	40.7173	48.0774	51.8791	60.9295	68.2398
Surplus reserves	1.0267	0	0.1736	0.3885	0.2136
Undistributed profit	7.2498	5.7843	9.4971	13.3012	15.5468
Net profit	2.2014	3.2165	4.0600	4.3797	3.0586
Depreciation	2.3296	2.8089	3.3544	3.7849	4.3720
Interest income	0.0632	0.0661	0.0536	0.0571	0.1351
Market value of shareholders' equity	90.2600	56.8000	71.1000	79.7100	105.1200

The data in Table 7 are calculated and sorted out according to the financial statements of China Re Investment Ring from 2017 to 2021. The market value of shareholders' equity is not disclosed

in the annual report, and relevant adjustment project information cannot be obtained. However, the stock market value can reflect the market value of shareholders' equity to a certain extent, so it is approximately replaced by the market value on the balance sheet date. Table 8 is the relevant data of F score model obtained based on the data calculated and sorted out in Table 7.

Table 8. F-score Model calculation table of refinancing ring from 2017 to 2021

Indicators	2017	2018	2019	2020	2021
X_1	0.3458	0.4208	0.2609	0.3763	0.4015
X_2	0.1716	0.1244	0.1689	0.2119	0.2192
X_3	0.1691	0.1884	0.2083	0.2026	0.1666
X_4	2.8793	1.7659	1.8221	1.9172	2.2080
X_5	0.1128	0.1267	0.1440	0.1349	0.1109
F	0.6933	0.7819	0.6580	0.7780	0.7342

It can be seen from Table 8 that F values of the refinancing ring from 2017 to 2021 are 0.6933, 0.7819, 0.6580, 0.7780 and 0.7342 respectively, all of which are greater than the critical point 0.0274, indicating that the financial risks of the refinancing ring in these years are small, showing a green warning and sustainable operation. According to the change trend of F value, it can be seen that the range of enterprise F value varies little in recent years. Therefore, it can be inferred that the enterprise's financial status is still good in the next year, with little risk and no sign of bankruptcy. But the composition structure of the mesoscopic F score model and its calculation results, found that X4 assumes the obvious downward trend, and X4 index is reflects the enterprise assets structure stability, reflect the index of enterprise value, shows that the enterprise assets structure is not stable, gradually reduce the trend of enterprise value, indirectly reflects the enterprise debt paying ability is abate, increase the financial risk.

Combined with the relevant data in Table 7, we find that the market value of shareholders' equity of the company shows a downward trend from 2017 to 2019, and rises in 2020. Although the market value increased in 2020, it still showed a declining trend compared with that in 2017-2018, indicating that shareholders and the public have a declining trust in enterprises. However,

the competitive situation of the market environment, policy changes and the brand influence of the enterprise will all have a certain impact on the market value of the enterprise. Therefore, the management of the enterprise should pay attention to the strategic change in this aspect, improve the brand influence of the enterprise, and regain the trust of shareholders and the public. The total ending liabilities of enterprises have been on the rise, increasing from 3.313482 billion yuan in 2017 to 4.76091 billion yuan in 2021, an increase of 1.6 billion yuan in five years. The above accounting analysis and financial analysis also analyzed that the debt of CRE is relatively high, which should be paid attention to by the senior management to avoid the situation of difficult debt repayment.

In general, the change trend of X1, X2, X3 and X5 values of China Re Resources and Environment Co., LTD. is small, and the F value is relatively stable and there is a distance from the bankruptcy critical point of 0.0274. Therefore, the financial risk of the enterprise is small, the financial situation is good, and the sustainable production and operation.

5. Conclusion

With the continuous development of China's market economy, the competitive pressure of enterprises in the market environment is also increasing. Some enterprises use unfair means to carry out unfair competition, resulting in serious vicious competition in the market. The business performance of many enterprises also began to decline, the frequent occurrence of default fraud, especially unfriendly to small and medium-sized enterprises with insufficient capital and technological strength. Therefore, the ability of enterprises to make corresponding strategic decisions when the internal and external environmental risks change is an important measure for enterprises to remain invincible in such an encouraging competitive environment. Enterprise forecast analysis is an important part of enterprise management activities, through the enterprise's historical data, financial data to predict important financial indicators in the future, and according to the predicted value to make the corresponding financial plans and strategic decisions. At the same time, the enterprise prospect forecast can also distinguish whether the enterprise has financial risk in the future, the company's financial structure, financing structure is reasonable, so that the enterprise management and investors to carry out financial risk early warning identification. Therefore, the financial forecast of enterprises can not only help enterprises to identify risks, so as to take timely measures to prevent financial risks and resolve financial risks, but also help enterprises to make appropriate strategic decisions, financial plans, and grasp the correct direction of business development.

Based on this, this paper focuses on the exponential smoothing model of financial data prediction

and the F score model of risk prediction methods and applications. This paper takes China Re Resources and Environment Co., Ltd. as the research object and makes a case study. The data from 2015 to 2021 are selected to make financial forecast from four perspectives: asset-liability ratio index in solvency, operating margin and gross margin index in profitability, receivables turnover index in operation ability, and operating income growth index in development ability. The risk prediction is made based on the data from 2017 to 2021 of China Refinance Ring, so as to analyze the future development prospects of China Refinance Ring. It provides data support for The financial decision and risk prevention of China Re Capital Environment Company in the future as well as the investment decision of the majority of investors.

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