Research on the Evaluation of the Sustainable Development Level of the Chengdu-Chongqing Economic Circle

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Abstract. With the development of China's economy and the improvement of the level of agricultural production, the issue of sustainable development has received more and more attention. In this paper, we firstly screen the financial indicators of listed enterprises' performance evaluation from four aspects of solvency, profitability, operating ability and development ability, and screen the non-financial indicators of listed enterprises' performance evaluation from three aspects of innovation ability, environmental ability and social responsibility, and finally get the index system of listed enterprises' performance evaluation under the sustainable development which contains 15 indicators. Then, the data of A-share listed companies in the Chengdu-Chongqing Twin Cities Economic Circle from 2015 to 2021 were screened through the GuotaiAn database as the research samples. The entropy weight method and comprehensive index combination method are chosen to evaluate the comprehensive performance of listed enterprises and evaluate the sample enterprises under financial and non-financial indexes respectively. The results show that the weights of the indicators of sustainable development level of listed companies in Chengdu-Chongqing area are greatly varied, among which the weights of the four indicators of operating ability, social responsibility, innovation ability and solvency are greater, indicating that the operating ability as the dominant driver of sustainable development of listed companies in the Chengdu-Chongqing area has a greater impact, and at the same time, indicating that the non-financial indicators have a greater impact on the evaluation of listed companies' performance; in the composite index, the 12 municipalities of the city In the comprehensive index, the sustainable development level of 12 cities is steadily improving, and there are certain differences between cities, and the differences are increasing.

Keywords: sustainable development; corporate performance; entropy weight method; comprehensive index method

1   Introduction

With the development of China's economy and the improvement of the level of agri-cultural production, the pressure on the environment has gradually increased, in order to balance the relationship between economic growth and environmental protection, the issue of sustainable development has received more and more attention, adopted by the United Nations Summit on Sustainable Development in 2015, "Changing Our World: The 2030 Agenda for Sustainable Development", formally put forward the 17 Sustainable Development Goals (SDGs), covering three major aspects: social, eco-nomic and environmental. SDGs), covering social, economic and environmental as-pects. In 2020, China proposes to build the Chengdu-Chongqing Twin-city Economic Circle, which will create a new power source to drive the country's high-quality de-velopment. Since there is still a gap in the research on sustainable development of the Chengdu-Chongqing Twin Cities Economic Circle, this study constructs 15 indicators (covering the three major aspects of society, economy, and environment) suitable for the sustainable development of the Chengdu-Chongqing Twin Cities Economic Circle based on the SDGs framework, which are used to explain the 11 SDGs targets, and utilizes the GuotaiAn database, with the years 2015-2021 as the time scale of the study. Due to the existence of new companies listed and old companies delisted or closed every year, 114 A-share Chengdu-Chongqing companies listed in China's Shanghai and Shenzhen were selected in 2015, 125 in 2016, 136 in 2017, 143 in 2018, 150 in 2019, 150 in 2020, and 181 in 2021, so as to analyze the development of the Chengdu-Chongqing region. In this way, a quantitative study on the sustainable de-velopment of Chengdu-Chongqing Twin Cities Economic Circle is conducted, with a view to providing reference value for the better sustainable development of Cheng-du-Chongqing Twin Cities Economic Circle.

By reading a large amount of literature and exploring from multiple angles, this ar-ticle reviews the concept of sustainable development from three aspects: the meaning, influencing factors, and evaluation indicators.

1.1   The Meaning of Sustainable Development Concept

Foreign scholar Robert C. Higgins (1977)[1] first proposed the concept of sustainable development. He proposed the concept of sustainable development for the develop-ment of enterprises based on relatively active market economic activities. In the 21st century, Dyllick and K.Hockerts[2] and others believe that sustainable development is not just economic growth based on environmental protection. Scholars believe that sustainable development is the growth of multiple capitals, including the growth of economic, environmental and social capital. Domestic scholar Wang XJ (2015) [3] believes that people are the driving force of all development. The key to promoting sustainable development lies in cultivating people. Only by improving people's com-prehensive literacy through education and looking at things with a critical eye can we contribute to sustainable development. contribute to the process.

1.2   Factors Influencing the Concept of Sustainable Development

Foreign scholars Ridley (2011)[4] and others believe that social responsibility is a key factor affecting sustainable development, and it is necessary to incorporate the social responsibility dimension into the sustainable development performance evaluation system. Domestic scholars Zeng FE, Zheng X, and Li X (2018)[5] believe that science and technology are an important way to promote modern development, and the innovation capabilities of enterprises provide strong support for the sustainable development of enterprises.

1.3   Evaluation Indicators of Sustainable Development

In order to ensure the effectiveness of indicators, the selection process must follow certain principles. Jeffrey Ridley and Marta (2011)[4] believe that social responsibility evaluation affects corporate sustainable development performance evaluation. Domestic scholars have expanded the principles of indicator selection. Li XX (2017)[6] studied the 2030 Sustainable Development Agenda and elaborated on how China implements the sustainable development goals, including the "13th Five-Year Plan", ecological construction, and green development. It has become an important basis for constructing sustainable development indicators.

2   Construction of Evaluation Indicators

Sustainable development is based on the concept of sustainable development. Yi ZZ[7], ang JM[8], Ren CY[9] and others selected financial capability and non-financial capability indicators while considering the availability of indicator data, synthesizing the research of scholars and combining the availability of data. principles to select indicators for this article, refer to existing research results, and on the basis of adhering to the principles of orientation, operability, comparability, dynamics, and systematicness, consult relevant experts for their opinions many times, and adjust and adjust the indicator system. Modified and finally determined the Chengdu-Chongqing region's sustainable development evaluation index system with "financial indicators-non-financial indicators" as the first-level indicators, including 7 second-level indicators and 15 third-level indicators (as shown in Table 1). Among them, corporate performance evaluation based on financial indicators is a traditional evaluation method. Financial indicators mainly include the company's four aspects of profitability, operation, debt repayment and development capabilities. Among them, solvency is an important factor in ensuring the normal operation of an enterprise, profitability is the ultimate goal pursued by an enterprise, operating capability is the way to improve the economic operation of an enterprise, and development capability is the necessary guarantee for the sustainable operation of an enterprise. Non-financial indicators mainly reflect the company's sustainable development capabilities, among which the company's innovation capabilities, environmental protection capabilities and social responsibility status comprehensively reflect the company's sustainable development capabilities. Therefore, the arithmetic average of the annual weights in the Cheng-

du-Chongqing region from 2015 to 2021 is combined to reflect the importance of each indicator.

Table 1. Six-year average weight of evaluation indicators

First level indicator	Weights	Secondary indicators	Weights	Level three indicators	Attributes	Weights
financial capability	56.76%	Profitability	0.59%	Roe	+	0.26%
				operating net profit margin	+	0.11%
				Net interest rate on total assets	+	0.21%
		Operating capacity	40.69%	Accounts receivable turnover ratio	+	20.39%
				Current asset turnover ratio	+	3.36%
				Fixed asset turnover rate	+	16.94%
		Solvency	12.11%	current ratio	+	3.26%
				quick ratio	+	3.78%
				cash ratio	+	5.07%
		Development ability	3.38%	sustainable growth rate	+	0.76%
				Owner's equity growth rate	+	1.40%
				Growth rate of net assets per share	+	1.22%
non-financial capabilities	43.24%	Creativity	13.94%	Whether it has passed ISO14001 certification	+	13.94%
		social responsibility	27.75%	Whether to refer to GRI	+	27.75%
		environmental capabilities	1.60%	Whether to disclose environmental and sustainable development	+	1.60%

3   Data Sources and Entropy Weight Method

3.1   Data Source

In Chengdu and Chongqing regions as the research object. The original data comes from the CSMAR Database" and the time span is 2015-2021. For individual missing data, the mean method and interpolation method were used to complete the missing data.

3.2   Comprehensive Evaluation Model of Sustainable Development in Chengdu-Chongqing Region

3.2.1 Entropy Value Method to Determine Indicator Weight.

The entropy weight method is one of the methods to determine the weight of indicators. Its advantage is that it uses precise quantitative data to calculate weighting, and the results obtained are more objective. The size of the entropy weight determines the degree of dispersion and the role of indicators in evaluation. That is, the greater the entropy weight, the greater the effect on the evaluation results, and conversely, the smaller the effect [10].

Therefore, this article uses the entropy weight method to determine the weight of the indicator. The calculation steps are as follows:

n companies and m indicators are selected, it X_{ij} represents the value of the j-th indicator of the i-th company ($i = 1, 2, \ldots, n; j = 1, 2, \ldots, m$).

(1)There are differences in the indicators selected during the research process in the process of data quantification. Some are positive and some are negative, and the units of the indicators are also inconsistent, which results in the inability to use the original data to calculate directly. Therefore, using dimensionless quantization processing can ensure the consistency of the original data. There are differences in the method of undivided quantification for different indicators. The specific steps are:

The dimensionless quantification formula of positive indicators is:

$$Y_{ij} = \frac{X_{ij} - \min(X_{1j}, X_{2j}, \ldots, X_{nj})}{\max(X_{1j}, X_{2j}, \ldots, X_{nj}) - \min(X_{1j}, X_{2j}, \ldots, X_{nj})}$$

In order for the data operation and processing to be meaningful, zero and negative values must be eliminated, so the dimensionless data needs to be translated as a whole, that is $X_{ij} := X_{ij} + α$, but in order not to destroy the inherent laws of the original data , the original data should be retained to the maximum extent , the value of a must be as small as possible, that is, $α$ is the closest X_{ij} minimum value. This article takes $α = 0.0001$.

(2) Calculate the proportion of the indicator. The proportion of the i company in the indicator under the j indicator is:

$$P_{ij} = \frac{Y_{ij}}{\sum_{i=1}^{n} Y_{ij}}, (i = 1,2, \ldots, n; j = 1,2, \ldots, m)$$

(3)Calculate the entropy value e_j of the indicator. An indicator with a small entropy value has greater utility. On the contrary, an indicator with a large entropy value has a small utility. The calculation formula is:

$$e_j = -k \sum_{i=1}^{n} p_{ij} \ln(p_{ij}), (k>0, K = \frac{1}{\ln(n)}, e_j \geq 0)$$

(4)Calculate the difference coefficient g_j of the indicator. The difference coefficient and the final evaluation result show positive changes. The greater the coefficient, the greater the impact. The calculation formula is:

$$g_j = 1 - e_j, (j = 1,2, \ldots, m)$$

(5) Calculate the entropy weight w_j of the indicator. The greater the entropy weight, the more important the indicator is and the greater its impact on the evaluation object. The calculation formula is:

$$w_j = \frac{g_j}{\sum_{j=1}^{m} g_j}, (j = 1,2, \ldots, m)$$

3.2.2 Comprehensive Index Method Calculation.

The comprehensive index method refers to a method that, on the basis of determining a set of reasonable index systems, weights the average of individual indexes of various indicators to calculate a comprehensive index for comprehensive evaluation[11]. The larger the comprehensive index is, the better the evaluated object is; on the contrary, the worse it is, which forms the basis for decision-making. The comprehensive index in this article is recorded as I_i, and the calculation formula of the comprehensive index is:

$$I_i = \sum_{j=1}^{n} \omega_i Y_{ij}, (i = 1,2,\ldots,m; j = 1,2,\ldots,n)$$

4   Comprehensive Evaluation of Sustainable Development of Listed Companies in Sichuan and Chongqing Regions

4.1   Analysis of Weight of Evaluation Indicators

As can be seen from Table 1, the weights of the indicators of sustainable development level of listed companies in Chengdu-Chongqing area are greatly varied, among which the weights of the four indicators of operating ability, social responsibility, innovation ability and solvency are greater, which indicates that the operating ability as the dominant driving force of sustainable development of listed companies in Chengdu-Chongqing area exerts a greater influence. At the same time, as shown in Table 1, there is a big difference in the weight of each three-level indicator layer of sustainable development level in Chengdu-Chongqing region, among which the weights of four three-level indicators of accounts receivable turnover, fixed asset turnover, whether it is certified by ISO14001 or not, and whether it is referenced to GRI are all above 0.1, indicating that the operation and innovation of enterprises as the primary driving factors of sustainable development in Chengdu-Chongqing region are continuing to exert force, and these two These two factors still occupy a dominant position. The weights of current asset turnover, current ratio, quick ratio, cash ratio, growth rate of owner's equity, growth rate of net assets per share, and disclosure of environment and sustainable development are all between 0.01-0.1, which are also important driving forces for sustainable development in Chengdu-Chongqing area. The weights of return on net assets, net operating profit margin, net total asset margin, and sustainable growth rate are lower than 0.01, indicating that Chengdu-Chongqing region only needs to maintain appropriate profitability to ensure stable economic growth and economic security, and at the same time indicating that the sustainable growth of enterprises in the Chengdu-Chongqing region is weaker at present, and enterprises need to pay attention to the sustainability of development.

4.2   Annual Analysis of Sustainable Development

2015 weight analysis of entropy method.

Due to the large amount of data, only the weights and scores of specific values in 2015 are measured and analyzed as an example, and the data of other years are shown in the Appendix Table 6. As can be seen in Table 2, the financial and non-financial indicators in the first-level indicators of sustainability accounted for 59.18% and 40.82%, respectively, and in general, the financial indicators have a higher impact on listed companies. The accounts receivable turnover ratio has the highest weight among the financial indicators, accounting for 26.54%, which shows that the average collection period, bad debt loss, accounts receivable turnover days, and asset liquidity speed of listed companies in Chengdu-Chongqing region in 2015 have a strong ability to influence the high and low level of sustainable development of the enterprise. In addition, the total weight of the secondary indicators of solvency is 10.73%, and the total weight of the development capacity is 10.22%, which shows that the stability of the financial situation of the enterprise, the size of the financial risk, the development trend of production and operation, and the ability to grow assets have a greater impact on the sustainable development of the Shanghai Branch. Finally, the sum of weights of profitability is only 0.76%, which shows that the profitability of listed companies in 2015 has a small and negligible impact on sustainable development. Among the non-financial indicators, the indicator of whether to refer to GRI accounts for 22.88%, second only to the accounts receivable turnover ratio, which can be seen that the requirements and methods of disclosure of corporate sustainability information have a great auxiliary effect on the level of corporate sustainable development.

Table 2. Summary of weight calculation results of entropy method in 2015

item	Information entropy value	Information utility value	Weight coefficient
	e	d	w
current ratio	0.9155	0.0845	2.79%
quick ratio	0.9064	0.0936	3.09%
cash ratio	0.8530	0.1470	4.85%
sustainable growth rate	0.9068	0.0932	3.08%
Owner's equity growth rate	0.8935	0.1065	3.51%
Growth rate of net assets per share	0.8901	0.1099	3.63%
Net profit margin on total assets (ROA)	0.9909	0.0091	0.30%
Return on equity (ROE)	0.9992	0.0008	0.03%
operating net profit margin	0.9869	0.0131	0.43%
Accounts receivable turnover ratio	0.1956	0.8044	26.54%
Current asset turnover ratio	0.9231	0.0769	2.54%
Fixed asset turnover rate	0.7453	0.2547	8.40%
Whether to refer to GRI's "Sustainability Reporting Guidelines"	0.3063	0.6937	22.88%
Whether to disclose environmental and sustainable development	0.8819	0.1181	3.90%
Whether it has passed ISO14 00 1 certification	0.5744	0.4256	14.04%

Composite Index Method Score Analysis 2015.

The composite scores of the 12 cities in the Chengdu-Chongqing region in 2015 and their rankings are shown in Table 3. The larger the composite index is, the better the evaluated object is. According to the ranking, Chengdu City, Chongqing City and Mianyang City are in the top three of the ranking, in which Chengdu City's score is far more than other cities in the first place. It can be seen that the sustainable development of listed companies in Chengdu is in good shape, and since Chengdu is a new first-tier city, both in terms of the number of listed companies and the quality of the listed companies, it can be predicted that it will maintain its leading position for many years to come. Chongqing scored in the second place, in which the highest score of innovation ability, which can be seen, innovation has become an essential element in the development of the enterprise road. In addition to Chengdu, Chongqing "cliff" score, the rest of the city gap is relatively small, due to the insufficient sample size of listed companies in some cities in 2015, so there is also no score of the city.

Table 3. score of Chengdu-Chongqing twin-city economic circle in 2015

project	Profitability	Operating capacity	Solvency	Development ability	environmental capabilities	Creativity	social responsibility	overall ratings	Ranking
Chengdu	1.135226	0.356223	0.139208	0.368013	0.687613	1.092207	0.843144	4.621633	1
Chongqing	0.581957	0.278295	0.092273	0.515304	0.000824	0.858140	0.562105	2.888899	2
Mianyang	0.089791	0.038834	0.021144	0.085779	0.229006	0.312035	0.421326	1.197917	3
Suining	0.049706	0.029905	0.016886	0.165555	0.000137	0.195023	0.280884	0.738097	4
Deyang	0.004306	0.004429	0.002190	0.006703	0.000023	0.039004	0.140414	0.197069	5
Meishan	0.005113	0.006708	0.002268	0.000581	0.000023	0.039004	0.140414	0.194111	6
Leshan	0.027421	0.008317	0.004572	0.007961	0.000046	0.039008	0.000028	0.087353	7
Zigong	0.019528	0.007159	0.004812	0.010675	0.000046	0.039008	0.000028	0.081257	8
Nanchong	0.007486	0.018781	0.003827	0.010616	0.000046	0.039008	0.000028	0.079791	9
Neijiang	0.014293	0.004609	0.002317	0.004682	0.000023	0.039004	0.000014	0.064942	10
Ya'an	0.011296	0.003194	0.002605	0.007285	0.000023	0.039004	0.000014	0.063421	11
Dazhou	—	—	—	—	—	—	—	—	12

4.3   Comprehensive Analysis

The evaluation index system was calculated by the first value method and weighted calculation, and the comprehensive index of sustainable development of 12 cities in Chengdu-Chongqing area was obtained and ranked, and the results are shown in Table 5.

From the overall scale of the Chengdu-Chongqing Twin Cities Economic Circle (Figure 1), the composite index shows an increasing trend year by year during 2015-2021, from 10.212 in 2015 to 20.414 in 2021, an increase of 99.90%, the quality of sustainable development in Chengdu-Chongqing region has been significantly improved. During this period, the growth of the average composite index is relatively maintained at a high level, and the growth rate of 2019-2021 reaches more than 69%, indicating that the overall quality of development has been improved at a faster pace.
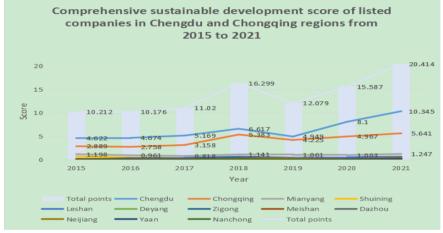

Fig. 1. Comprehensive score of Chengdu and Chongqing regions from 2015 to 2021

In terms of the level 1 indicators, (Table 4), the increase in financial capacity amounted to 39% and the increase in non-financial capacity amounted to 142%, indicating that there has been an increase in both financial and non-financial capacity, with a larger increase in non-financial capacity. In addition, overall, both financial and non-financial ability composite scores increase year by year, and the increase is larger. Surface Chengdu-Chongqing Twin Cities Economic Circle sustainable development ability is a gradual upward trend, the future sustainable development situation is better.

Table 4. Comprehensive scores of first-level indicators from 2015 to 2021

First level indicator	2015	2016	2017	2018	2019	2020	2021
financial capability	4.178	4.691	4.245	6.375	4.659	6.007	5.801
non-financial capabilities	6.037	5.484	6.77 5	9.924	7.420	9.58 0	14.613

From the urban scale (Table 5), from 2015 to 2021, the composite index of sustainable development of 12 cities in the Chengdu-Chongqing area all showed an upward trend, and the average increase in the six provinces amounted to 168%, indicating that the 12 cities in the Chengdu-Chongqing area have achieved more significant results in sustainable development. Among them, in 2015, the highest for Chengdu City (4.622), the lowest for Ya'an City (0.063), the gap is 73 times; 2021, the highest Chengdu City (10.345) and the lowest Nanchong City (0.033), the gap is 313 times, the gap increases. Except for Mianyang City, Suining City and Nanchong City, the fluctuation of the composite index value of the other nine cities is more significant, and the ranking changes accordingly. Except for Suining and Nanchong, the remaining 10 cities have improved their sustainable development level from 2015 to 2021. Overall, the sustainable development level of the 12 cities shows a steady improvement, with some differences between cities, and the differences are increasing.

Table 5. Comprehensive scores and rankings of 12 cities in Chengdu- Chongqing region from 2015 to 2021

City	2015 aggregate score	rankings	2016 aggregate score	rankings	2017 aggregate score	rankings	2018 aggregate score	rankings	2019 aggregate score	rankings	2020 aggregate score	rankings	2021 aggregate score	rankings	2015-2021 aggregate score	average ranking
Chengdu	4.62	1	4.67	1	5.17	1	6.62	1	4.95	1	8.10	1	10.35	1	6.35	1
Chongqing	2.89	2	2.76	2	3.16	2	5.38	2	4.23	2	4.97	2	5.64	2	4.15	2
Mianyang	1.20	3	0.96	3	0.82	3	1.14	3	1.06	3	1.00	3	1.25	3	1.06	3
Suining	0.74	4	0.50	4	0.40	5	0.61	5	0.27	6	0.19	6	0.67	4	0.48	4
Leshan	0.09	7	0.37	5	0.44	4	0.68	4	0.46	4	0.55	4	0.67	5	0.47	5
Deyang	0.20	5	0.23	6	0.23	6	0.45	7	0.33	5	0.16	8	0.42	6	0.29	6
Zigong	0.08	8	0.21	7	0.23	7	0.47	6	0.20	8	0.24	5	0.27	9	0.24	7
Meishan	0.19	6	0.20	8	0.22	8	0.27	9	0.21	7	0.11	9	0.40	7	0.23	8
Dazhou	—	12	0.16	9	0.19	9	0.24	10	0.16	10	0.18	7	0.20	11	0.16	9
Neijiang	0.06	10	0.04	10	0.04	11	0.27	8	0.19	9	0.05	10	0.32	8	0.14	10
Ya'an	0.06	11	0.04	11	0.03	12	0.05	12	0.02	11	0.05	11	0.20	10	0.07	11
Nanchong	0.08	9	0.03	12	0.09	10	0.13	11	0.01	12	—	12	0.03	12	0.05	12
total	10.21	—	10.18	—	11.02	—	16.30	—	12.08	—	15.59	—	20.41	—	13.68	—

5   Five Conclusions and Suggestions

5.1   Conclusions

This paper evaluates the sustainable development level of listed companies in 12 cities of Chengdu-Chongqing region in 2015-2021 by entropy value method and comprehensive index method, and obtains the following conclusions:

The result of the comprehensive weight shows that the weight of operating capacity in the financial secondary index of sustainable development under the entropy value method is the highest, amounting to 40.69%, of which the accounts receivable turnover ratio accounts for 20.39% and the fixed asset turnover ratio accounts for 16.94%, which is far more than the other secondary indexes. The analysis of enterprise operating ability can evaluate the efficiency of enterprise asset operation, promote the optimization of enterprise asset management and economic efficiency, and improve the level of sustainable development of the enterprise. Among the non-financial indicators, the social responsibility indicator has the highest weighting of 27.75%. It can be seen that whether listed companies refer to GRI or not is an important guidance for the level of sustainable development of enterprises. The comprehensive score situation seems to be roughly an upward trend from 2015-2018, and reached the peak of the score in 18 years, indicating that the financial ability and non-financial ability indexes of listed companies during this four-year period are positive to the addition with the sustainable development of the enterprise, and there is a slight downward trend in 2019, but the overall trend is still rising, which may be due to the natural fluctuations of the market and the influence of the irresistible factors.

According to the results of the average score and ranking of 12 cities in Chengdu-Chongqing region in 2015-2021, there is a big difference between the regions, among which Chengdu City has an average composite score of 6.354, ranking first on average. As a leader in the construction of the Chengdu-Chongqing economic circle, Chengdu Municipality has been adhering to the new development concept in the field of sustainable development, focusing on the green industry chain, and its performance has helped to further harvest the recognition of both domestic and foreign investors, forming a virtuous cycle in which the enterprise value and the level of sustainable development have increased at the same time. Chongqing ranked second with an average sustainability score of 4.146, just behind Chengdu. In recent years, Chongqing Municipality's economic aggregate has been breaking through, and its economic structure has been adjusted, coupled with the reconstruction of the modernized industrial system and the reinforcement of the Chengdu-Chongqing region's Twin Cities Economic Circle, which has strengthened its momentum of innovation and development. The overall difference in the level of sustainable development of other cities in the Chengdu-Chongqing region is not large, although not as large as that of Chengdu-Chongqing, but the overall trend is favorable, and the level of sustainable development is steadily improving.

From the perspective of the time dimension, the overall trend of the composite score from 2015-2021 is upward. Among them, 2017-2018 is an important turning point with the largest increase, indicating that the sustainable development level of

listed companies in Chengdu-Chongqing region increased significantly in 2018, and the market capitalization and GDP data of listed companies in Chengdu-Chongqing region were good in that year.The composite score declined in 2019 due to market volatility and force majeure, but it rebounded in a short period of time, and the overall trend is still on the rise, and the sustainable development level is also improving.

5.2   Suggestions

1. Strengthen the operational capabilities of listed companies and establish scientific evaluation indicators.

According to the conclusion of the weights derived from the entropy method, profitability is very important for the sustainable development of listed companies in Chengdu-Chongqing area. Enhancement of corporate profitability can make the company's sustainable development ability can be improved, but also can strengthen the ability of enterprises to cope with a variety of financial risks. In addition, while enhancing corporate profitability, it is also important to focus on the enhancement of profit quality and profit sustainability, stabilize the profit growth rate, and optimize the asset structure.

2. Strengthen system construction and sharing mechanisms.

According to the comprehensive score of Chengdu-Chongqing region in each year and the average score, it can be seen that Chengdu and Chongqing are always in the forefront, which cannot be separated from the role of its talent, capital, technology and other resources gathering, but the gap between the main city of Chengdu-Chongqing Economic Circle and the rest of the region is too large, which will result in the imbalance of the level of financial development in the economic circle. The main city's radius of radiation is not large enough, and the radiation capacity is not strong enough is the main reason for this phenomenon. Therefore, the government should strengthen the institutional construction, through internal and external collaboration mechanisms, to eliminate institutional barriers to the flow of financial factors, and to facilitate financial agglomeration with the main cities. At the same time, strengthen regional integration, establish a more sound sharing mechanism, favorable with the reduction of cross-regional costs and information asymmetry, in order to enhance the efficiency at the same time, but also to strengthen the ability of the real economy, increase the radius of the main city, enhance its radiation capacity, to achieve the development of the point to lead the face, improve enterprise information technology, improve the technology has become a listed company's sustainable development of the necessary path.

Appendix

Table 6. Weight of each indicator from 2015 to 2021

item	2015	2016	2017	2018	2019	2020	2021
Net profit margin on total assets (ROA)A	0.30%	0.23%	0.11%	0.33%	0.18%	0.17%	0.53%
Return on equity (ROE) A	0.03%	0.10%	0.13%	0.17%	0.09%	0.15%	0.12%
operating net profit margin	0.43%	0.32%	0.10%	0.24%	0.10%	0.18%	0.10%
Accounts receivable turnover ratioA	26.54%	20.03%	16.92%	15.01%	19.63%	22.33%	22.27%
Current asset turnover ratio A	2.54%	3.40%	4.22%	4.35%	3.12%	2.74%	3.13%
Fixed asset turnover rate A	8.40%	22.29%	21.14%	15.86%	21.57%	15.29%	14.05%
current ratio	2.79%	3.15%	3.65%	5.28%	3.29%	3.39%	1.30%
quick ratio	3.09%	3.72%	4.45%	5.27%	3.94%	3.99%	1.98%
cash ratio	4.85%	4.77%	5.09%	7.03%	5.39%	6.70%	1.63%
sustainable growth rate	3.08%	0.19%	0.24%	0.42%	0.09%	0.01%	1.30%
Owner's equity growth rate A	3.51%	1.06%	2.04%	0.55%	0.09%	0.54%	1.98%
Growth rate of net assets per share A	3.63%	0.83%	1.38%	0.64%	0.09%	0.34%	1.63%
Whether it has passed ISO14 00 1 certification	14.4%	11.47%	13.97%	16.01%	11.34%	12.82%	17.55%
Whether to refer to GRI's "Sustainability Reporting Guidelines"	22.88%	27.17%	25.09%	27.02%	30.16%	30.04%	31.91%
Whether to disclose environmental and sustainable development	3.90%	1.27%	1.47%	1.81%	0.91%	1.29%	0.52%

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