

Research on Financial Risk Evaluation of BG Shares

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Abstract

For a long time, the iron and steel industry, a basic industry, has been an important boost for the development of my country's national economy. As one of the leading listed companies of China's domestic steel companies, BG shares are obviously necessary and predictable and effective in evaluating its financial risks. Based on the above considerations, this article uses factor analysis to evaluate the financial risks of BG shares. It is concluded that the financing ability, investment ability and operating ability of BG shares are relatively ordinary, the solvency and the overall situation are relatively poor, and the financial risk is prone to occur.

Keywords

BG Shares; Financial Risk Evaluation; Factor Analysis.

1. Introduction

In my country, large and small steel companies and related upstream and downstream companies are like galaxies, and BG shares are undoubtedly one of the most shining companies among them. Undoubtedly, evaluating the financial risks of such a representative steel company is beneficial, effective and necessary for the company itself or the entire industry.

Based on the above considerations, this article firstly summarizes the financial risk evaluation methods proposed by the predecessors through the collection, clarification and summarization of the previous related research literature, and on this basis, analyzes their advantages and disadvantages, and finally finalizes the use of factor analysis methods. BG shares conducts research on financial risk evaluation. Furthermore, combined with the statistics on the financial data of BG shares from 2014 to 2019, a total of 14 financial indicators reflecting the company's financial risks were selected to identify the financial risks of BG shares. Finally, by combining the actual situation of BG shares with the above evaluation and analysis results, after drawing relevant conclusions, corresponding preventive measures against the financial risks of BG shares are proposed based on the results of data analysis.

2. Research Status at Home and Abroad

2.1. Research Status Abroad

Fitzpatrick was the first person to propose, discuss and analyze the company financial risks. He only used a single variable for the research on the identification of financial risks. Such analysis results have their own limitations. [1]

Edward Altman, out of consideration of the limitations and one-sidedness of a single variable, suggested to use a multiple linear discriminant model to study the financial risks that caused corporate bankruptcy. Constructed the Z-Score model. [2]

Edward Altman and Narayanan formed a new model with seven variables based on the original five variables of the Z-Score model, which became the ZETA model. [3]

2.2. Research State in China

Liu Yanyan pointed out that the identification of financial risks is nothing more than qualitative analysis, quantitative analysis, or a combination of qualitative analysis and quantitative analysis. And respectively enumerate several representative analysis methods. [4]

Cui Yan used the development of various domestic industries as his research samples, and conducted effective assessments of the financial risks of their respective industries, and rationally applied the conclusions obtained in the field of risk management. [5]

Lin Yi focused on the analysis of the investment risks that may be encountered in the process of investment in the production and operation of enterprises, and suggested that diversified operations should be adopted, diversified investment methods should be adopted, and corresponding defense mechanisms should be established to avoid such risks. [6]

3. Evaluation of Financial Risks of BG Shares

First, identify the financial risks of BG shares, and secondly, use factor analysis as an example to evaluate the financial risk level of BG shares. Based on these data, this article will also quantify the financial risk level of BG shares, and finally propose financial risk control recommendations.

3.1. BG Shares Financial Risk Identification

3.1.1. Fundraising Risk Identification

There are many sources of financing activities, such as borrowing, absorbing investment, issuing bonds, and so on. Before 2019, bank loans accounted for almost 80% of the BG financing channels, which also resulted in excessive reliance on bank loans. It shows that the company's capital structure is unbalanced and there are financing risks.

3.1.2. Investment Risk Identification

Obviously, starting from 2018, the investment of companies in fixed assets has been greatly reduced compared with before. However, this large amount of self-investment undoubtedly shows that the effectiveness of BG shares investment is questionable. This also confirms the existence of enterprise investment risks.

3.1.3. Operational Risk Identification

Overcapacity in my country's steel industry and increasingly fierce competition in the steel market have led to a large backlog of inventories. This is a common and commonplace problem in my country's steel industry. Inventory backlog can directly affect the inventory turnover rate. This also reflects the existence of operational risks in the enterprise.

3.2. BG Shares Financial Risk Assessment

This article selects 14 indicators to evaluate the financial risks of BG shares. As shown in the table, the common factor variances are extracted from the 14 indicators, and their correlation is analyzed. There is a high correlation and can be used as an analysis indicator. Evaluate the risk of BG shares.

(1) Variable correlation test

The 20-year financial data of the selected BG shares is tested, and the conclusion is that the Kaiser-Meyer-Olkin score is 0.543. Compared with the standard value of 0.5, factor analysis can be performed on this part of the data. Performing a ball test on Bartlett, we can see that the chi-square distribution is scored 364.071 after statistics, and the significance is $0 < 0.01$. It can be seen that the correlation matrix and the identity matrix have a large difference, and the data has a higher the overlap rate of information, and the degree of correlation between variables, have yielded conclusions suitable for factor analysis.

Table 1. Common factor variance

Numble	Scheme 1	Scheme 2
Current ratio	1.000	0.917
Quick ratio	1.000	0.94
Cash ratio	1.000	0.882
Shareholders' equity ratio	1.000	0.757
ROE (average)	1.000	0.963
Sales margin	1.000	0.969
ROA	1.000	0.97
Net profit (year-on-year growth rate)	1.000	0.864
Inventory turnover	1.000	0.907
Liquid assets turnover rate	1.000	0.818
Turnover rate of total assets	1.000	0.759
Capital accumulation rate	1.000	0.918
Operating income growth rate	1.000	0.945
Growth rate of total assets	1.000	0.785

(2) Extract common factors

As shown in Table 2, it can be seen from the table that 14 indicators can extract 4 factors with initial eigenvalues greater than 1, and their eigenvalues are 7.238, 2.833, 1.228, and 1.096. The 4 factors can be named F1, F2, respectively, F3, F4, the variance explanation ratios are 51.699%, 20.239%, 8.77%, 7.826%, and the total variance explanation rate is 88.534%, indicating that the 4-factor explanation effect is better.

Table 2. Explained total variance

Ingredients	Initial eigenvalue			Extract the sum of squares and load			Rotate the sum of squares loading		
	total	variance%	accumulation%	total	variance%	accumulation%	total	variance%	accumulation%
1	7.238	51.699	51.699	7.238	51.699	51.699	4.486	32.043	32.043
2	2.833	20.239	71.938	2.833	20.239	71.938	3.977	28.407	60.45
3	1.228	8.77	80.708	1.228	8.77	80.708	2.754	19.67	80.12
4	1.096	7.826	88.534	1.096	7.826	88.534	1.178	8.414	88.534
5	0.775	5.535	94.068						
6	0.267	1.904	95.972						
7	0.181	1.292	97.264						
8	0.154	1.099	98.363						
9	0.118	0.843	99.206						
10	0.059	0.42	99.625						
11	0.033	0.233	99.859						
12	0.015	0.107	99.966						
13	0.004	0.027	99.993						
14	0.001	0.007	100						

(3) As shown in Table 3, it can be seen that:

In F1, the current ratio, quick ratio, cash ratio, shareholder's equity ratio, and inventory turnover rate have a larger contribution rate;

In F2, ROE, net sales interest rate, total net interest rate ROA, and liquid assets turnover rate have a larger contribution rate;

In F3, the contribution rate of total asset turnover rate, capital accumulation rate, operating income growth rate, and total asset growth rate is relatively large;

The contribution rate of net profit growth rate in F4 is relatively large;

Table 3. Rotating component matrix

	F1	F2	F3	F4
Current ratio	0.782	0.507	0.205	-0.08
Quick ratio	0.953	0.168	-0.027	0.052
Cash ratio	0.892	0.294	-0.009	-0.024
Shareholders' equity ratio	0.699	0.44	0.024	-0.273
ROE (average)	0.285	0.887	0.308	-0.012
Sales margin	0.418	0.886	0.018	0.097
ROA	0.293	0.885	0.313	-0.055
Net profit (year-on-year growth rate)	-0.062	-0.031	0.048	0.926
Inventory turnover	0.937	0.156	0.004	0.068
Liquid assets turnover rate	0.193	0.821	0.286	-0.159
Turnover rate of total assets	-0.312	0.165	0.68	-0.414
Capital accumulation rate	0.57	0.193	0.746	-0.018
Operating income growth rate	0.005	0.523	0.817	0.068
Growth rate of total assets	0.02	0.14	0.865	0.132

(4) Calculate factor score

Table 4. Comprehensive score sheet of financial risk of BG shares from 2000 to 2019

	F1	F2	F3	F4	F
2000-12-31	-0.82396	0.51833	-0.40303	1.75057544	-0.82396
2001-12-31	-0.30792	-0.28077	0.68426	0.272732929	-0.30792
2002-12-31	0.91295	-1.00008	0.93377	0.376405536	0.91295
2003-12-31	1.92065	-0.77196	0.25445	0.630681767	1.92065
2004-12-31	2.59558	-0.64396	-0.51042	0.713761918	2.59558
2005-12-31	0.63268	3.84504	0.00199	0.379160164	0.63268
2006-12-31	0.66867	0.26511	-0.40481	-0.177051422	0.66867
2007-12-31	0.32418	0.32402	-0.49095	-0.33823234	0.32418
2008-12-31	-0.34599	0.04716	-0.83026	-0.673038519	-0.34599
2009-12-31	-0.42152	-0.74061	-0.22533	-0.62299192	-0.42152
2010-12-31	0.52885	0.21326	-0.05864	-0.304108399	0.52885
2011-12-31	-0.47311	0.12123	-0.64086	-0.48526307	-0.47311
2012-12-31	-0.22170	-0.65173	-0.37978	-0.302073926	-0.22170
2013-12-31	-0.86622	-0.20116	-0.46713	-0.343648494	-0.86622
2014-12-31	-0.92807	-0.26640	-0.31303	-0.28299616	-0.92807
2015-12-31	-1.61116	-0.40809	-0.38090	-0.406188131	-1.61116
2016-12-31	-0.54796	0.13443	3.82676	0.002292413	-0.54796
2017-12-31	-0.26046	0.24953	0.18375	-0.036974922	-0.26046
2018-12-31	-0.00827	-0.42339	-0.27692	-0.025528963	-0.00827
2019-12-31	-0.76723	-0.32997	-0.50292	-0.127513901	-0.76723

Table 4 introduces us to the financial risks of BG shares during the period 2000-2019. During the period, after excluding the values from 2018 to 2019, the F values of BG shares are all

positive, indicating that the company has a good development trend. According to the ranking in the table, BG shares had the best financial position in 2002. At the same time, during the period 2002-2012, the overall score of the company was in a declining state.

4. Conclusion

BG shares have financial risks. BG share financing methods cannot be limited to traditional commercial loans, bill discounts, bank acceptance bills, etc., but can also try new types of financing. Companies should pay attention to the capital structure and reduce and control the scale of liabilities through effective capital structure regulation. Enterprises should implement scientific analysis, management and control in terms of investment selection, scale and risk. Enterprises should adjust their capital structure to reduce the scale of short-term liabilities.

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