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Research Paper

COMPARATIVE STUDY OF THE FINANCIAL COMPETITIVENESS OF LISTED CULTURAL COMPANIES IN CHINA

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ABSTRACT

This paper built financial competitiveness evaluation index system based on financial competitiveness. It used factor analysis to analyze financial competitiveness of 18 listed cultural companies in China. Results showed that the most competitive companies were cultural products manufacturing companies, followed by newspaper publishing companies, movies and other cultural products manufactures. Through an analysis of the impact factor, this paper pointed out that for listed culture companies, profitability was the most important factor which affected the competitiveness of financial, stability factors had greater impact, while asset management and operation ability factors had little effect.

KEY WORDS: *Listed Cultural Company; Financial Competitiveness; Factor Analysis*

I. INTRODUCTION

Along with the development of economy, information technology and network, social productivity, mode of production, way of life has undergone profound changes, which resulting in the birth of higher spiritual demand and stimulating the production and consumption of cultural products. Production of cultural industry accounted for the proportion in the total GDP is increasing. Due to the cultural industry has less resource consumption, less environmental pollution, high value-added features, it is known as the "sunrise industry" in twenty-first Century and has gradually become a new growth point of economic development in the world. In September 26th of 2009, China published first cultural industry promotion plan, indicating that culture industry has risen to the national strategic level. Many provinces and cities pay high attention on the cultural industry, and develop it as pillar industry. In recent years, both the quantity of culture companies and the kinds of culture products show a significant increase trend. According to statistics, the added value of China's cultural industry reached 2700 billion yuan in 2015, increasing 12% compared to 2014. The output of news publishing industry grew by about 20%.The total output of mobile phone publishing, network publishing, animation publishing, network game publishing and digital printing and digital publishing industry increased 42% compared to 2014. Film and television market also appeared high growth. On one hand, this phenomenon reflects the rapid development of the cultural industry. On the other hand, it also shows that the competition of cultural industry will become increasingly fierce. How to improve the competitiveness of the cultural industry and promote sound and rapid development of cultural industry has become an urgent problem to be solved.

Competitiveness can be divided into international competitiveness, national competitiveness, industrial competitiveness, enterprise competitiveness. The first three belong to the macro scope, whose research data is very rich and Potter's theory of competitive advantage is the most representative. The enterprises

competitiveness is the ability to enable enterprises to win in the market competition, which belongs to micro scope. According to the theory of enterprise capability, enterprise competitiveness is an integration of competence, and financial competitiveness, which is an organic part of them, is the most important aspects of the competitiveness of enterprises. So this paper researches enterprise competitiveness from the perspective of financial competitiveness of listed culture companies, evaluating the financial competitiveness through empirical analysis, in order to provide scientific basis for improving the competitiveness of enterprises.

The research of financial competitiveness started late. Wang Yanhui, Guo Xiaoming, Cheng Yan etc have expounded the connotation of financial competitiveness and core competitive ability and their mutual relations, and applies the theory to the enterprise financial management, and puts forward the conception of financial competitiveness and financial ability of core competition and the method of how to identify the financial core competence. Niu Chengzhe set up a comprehensive evaluation system of financial competitiveness; Wang Cuichun evaluated financial competitiveness of agricultural listed companies using the method of factor analysis. Jia Yan, Liu Rong selected state-owned companies in Shandong Province as sample, established the evaluation index system of financial competitiveness; Zhu Xiaotong got the financial competitiveness ranking data through the analysis of Xinjiang listed company. According to the financial characteristics of the cultural industry, this paper puts forward the index system and method of evaluating the financial competitiveness of the cultural industry, and determines the financial competitiveness levels of listed culture companies in A stock market in order to help companies understand the competition status and the influence of the financial competitiveness of the main factors, which can help them to take targeted measures to improve their competitiveness level.

2 INDEX SYSTEM CONSTRUCTION AND SAMPLE SELECTION

2.1 Index system construction

The financial competitiveness is a complex system composed of a number of financial indicators. According to the financial competitiveness connotation and characteristics of cultural industry, following the principles of the pertinence, comprehensiveness, comparability, scalability, availability, 12 indicators are chosen to reflect the financial competitiveness of culture companies. They are earning per share (EPS), net assets per share (NAPS), net assets yield (ROE%), earnings per share after deducting (DEPS), currency ratio (CR), quick ratio (QR), turnover rate of receivable accounts (RART), the ratio of asset and liability (RDA%), the rate of net profit (RNP %), the rate of return on total assets (ROA%), the turnover rate of fixed assets (FAT), the turnover ratio of total assess (AT).

2.2 Sample selection

This paper takes 22 listed cultural companies as research samples. Because Saidi media company has been special treated for two consecutive years of losses, it should be removed from the sample, otherwise it will cause interference on the results of the analysis. Because Huayi Brothers, Blue Focus, Huayi Yijia just listed on the gem, part of the financial statements data showed abnormal or missing data, they will also be removed from the sample. So the effective sample is 18. The final research data come from 2013 annual financial report, whose accounting information is disclosed after the audit by accounting firm, so it has the authenticity and accuracy.

3 EMPIRICAL ANALYSIS

3.1 Method of factor analysis

Financial competitiveness evaluation index will undoubtedly provide sufficient information for study, but there may be correlations among the index which will affect the analysis result. Factor analysis method can effectively solve this problem. Its basic principle is through analyzing the internal structure of the correlation coefficient matrix between variables, the original variables are combined with the mathematical tools to interpret the information reflected by the large number of original variables with a few independent public factor variables, thus finding the main factors influencing the observational data and determining the weights objectively and avoiding the subjective arbitrariness. The basic principle is: suppose there are n samples, each sample observes P variables, Xij represents the data of the first example of the J-1 indicator of the sample I, writing down as: $X_i = (X_{i1}, X_{i2}, \cdots, X_{ip})^T$ .The extracted public factor (also known as principal factor) variable is represented by F1,F2,...,Fm (M represents the number of main factors, m<p), writing down as:

$$F = (F_1, F_2, \cdots, F_m)^T$$

The model of factor analysis can be described as:

$$\begin{cases} X_1 = a_{11}F_1 + a_{12}F_2 + \cdots a_{1m}F_m + \varepsilon_1 \\ X_2 = a_{21}F_1 + a_{22}F_2 + \cdots a_{2m}F_m + \varepsilon_2 \\ X_p = a_{p1}F_1 + a_{p2}F_2 + \cdots a_{pm}F_m + \varepsilon_p \end{cases} \quad (1)$$

Its matrix form is: :

$$X = AF + \varepsilon \quad (2)$$

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1m} \\ \cdots & \cdots & \cdots \\ a_{p1} & \cdots & a_{pm} \end{pmatrix} \quad (3)$$

A is the evaluation coefficient matrix, which is called the factor load matrix,

The a_{jm} is the load of the J index on the m factor (abbreviated as factor load). The greater the absolute value of the a_{jm}, the greater the relevance of the indicator to the principal factor is.

£ is the special factor matrix, which plays the residual effect, and represented as $\varepsilon = (\varepsilon_1, \varepsilon_2, \cdots, \varepsilon_n)^T$. After the factor model is established, each sample can be examined in turn. The linear combination of the variable x of primary fact Fi is set as follows:

$$F_i = \beta_{i1} X_1 + \beta_{i2} X_2 + \cdots \beta_{ip} X_p \quad (i = 1, 2 \cdots m) \quad (4)$$

The formula (4) is called the factor scoring function. = ($_{i1}$, $_{i2}$ $\cdots$ $_{ip}$)^T is called the factor scoring matrix, and the main factor score of each sample data can be estimated by regression method.

Finally, taking ₵$_i$ as the weighting factor, and represents the proportion of the variance contribution rate of each principal factor Fi to all main factor variance contribution rate, we construct the comprehensive scoring function as the following:

$$F = \delta_1 F_1 + \delta_2 F_2 + \cdots \delta_m F_m \quad (5)$$

The samples can be compared and analyzed according to the comprehensive score.

3.2 Factor analysis

3.2.1 Applicability Testing

Before extracting the public factor, it is necessary to test the sample. The correlation coefficient matrix of the sample index indicates that the absolute value of correlation coefficient between each index is more than 0.3%, which indicates that the relativity is greater. Meanwhile, the KMO measure results listed in table 1 and the Bartlett Spherical test show that KMO= 0.691 >0.5, which has achieved the feasible criterion of factor analysis. The significant level of the Bartlett sphere test is 0.000<0.005, so the rejection correlation coefficient matrix is the hypothesis of the unit matrix, which illustrates the data is suitable for factor analysis.

Table1 KMO and Bartlett test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.691
Bartlett's Test of Sphericity	Approx. Chi-Square	278.452
	df	66
	Sig.	.000

3.2.2 Extracting main factor

There are many ways to extract principal factors, such as the maximum likelihood method, a factor extraction method and so on. This paper selects the principal component analysis method. The analysis principle omitted here, the results of the principal component analysis using SPSS17.0 are shown in table 2.

Table 2 Initial eigenvalues and variance contribution rate

Component	Initial Eigenvalues			Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %		Total	% of Variance	Cumulative %
1	5.888	49.067	49.067	7	.171	1.429	98.969
2	2.793	23.278	72.344	8	.061	.512	99.482
3	1.524	12.704	85.048	9	.044	.369	99.850
4	.709	5.908	90.956	10	.011	.090	99.941
5	.475	3.960	94.916	11	.006	.046	99.987
6	.315	2.625	97.541	12	.002	.013	100.000

Extraction Method: Principal Component Analysis.

As you can see from table 2, there are three variables whose initial eigenvalues are greater than 1, which together explain the 85% (cumulative contribution rate) of the standard deviation of financial competitiveness. A column of the common measure of a variable can see that these three components basically reflect sufficient information provided by the original data. According to the principle that the cumulative variance contribution rate is not less than 70%, the main factor number can be determined to be three by F1, F2 and F3 respectively.

3.2.3 Establish factor load matrix

Firstly, the original factor load matrix was established for the extraction of three main factors F1, F2 and F3 (Due to the length of the article, the results omitted). In order to make the economic significance of the main factor more obvious, we use the maximum variance method to rotate. After 4 iteration convergence, the rotation factor load matrix as shown in table 3.

Table 3 The rotational factor load matrix

Index	Component			Index	Component		
	1	2	3		1	2	3
EPS	.833	.484	.065	RART	.032	.006	-.929
NAPS	.035	.831	-.086	RDA	-.189	-.678	.137
ROE	.964	-.116	.142	RNP	.840	.009	-.351
DEPS	.777	.533	.106	ROA	.955	.115	.146
CR	.044	.944	.156	FAT	.420	.686	.780
QR	.030	.950	.158	AT	.664	.127	.616

a. Rotation converged in 4 iterations.

As seen from table 3, the first main factor F1 has high load on earning per share, net asset yield, after deducting earnings per share, net profit margin and total asset return rate. These five indicators are mainly related to the company's profitability, which can be named as the profit factor. Among them, the net asset return and total asset return rate of the load is up to 95%, which shows that the contribution of these two factors to financial competitiveness is very obvious. The second principal factor F2 has high load on the net assets, turnover ratio, quick ratio and asset liabilities ratio. Turnover ratio, currency ratio and the asset liabilities ratio reflect the company's solvency, and the net assets per share reflect the company's strength and investor's investment risk. Therefore, F2 can be named as the stabilizing factor. The third type of main factor F3 has high load on turnover rate of receivable accounts, turnover rate of fixed assets and turnover rate of total assets. These three indicators reflect the company's asset management capabilities and operational capabilities, which can be named asset management and operational capability indicators.

3.2.4Calculation factor score and comprehensive score

The score of coefficient matrix can be obtained by using the default regression analysis of SPSS. The results are shown in table 4.

Table 4 Score of coefficient matrix

Index	Component			Index	Component		
	1	2	3		1	2	3
EPS	.171	.069	-.055	RART	.076	.067	-.591
NAPS	-.052	.246	-.117	RDA	-.004	-.192	.150
ROE	.249	-.123	.028	RNP	.242	-.040	-.284
DEPS	.150	.085	-.028	ROA	.227	-.055	.014
CR	-.077	.261	.027	FAT	.018	.131	.223
QR	-.081	.263	.029	AT	.117	-.062	.332

According to the score of coefficient matrix, the scores of various factors can be computed by using the formula (4). Then using the formula (5), we can calculate the comprehensive score of the company's financial competitiveness. Table 5 lists the factors scoring, the comprehensive score and ranking situation in each region.

Table 5 Rank of factor score and comprehensive score

Stock code	Stock name	F1	Rank	F2	Rank	F3	Rank	S	Rank
002292	Yuefei animation	0.129	8	3.321	1	0.441	8	1.212	1
002348	Henkel shares	2.172	1	-0.444	12	0.811	2	0.785	2
002301	Qixin stationery	0.385	6	1.460	2	0.472	7	0.696	3
600880	Borui media	1.493	2	-0.418	10	-0.470	15	0.354	4
600551	Time Publishing	0.461	4	0.231	4	0.097	13	0.264	5
600088	Centre TV media	0.451	5	-0.088	7	0.144	12	0.161	6
601801	Anhui New media	0.484	3	-0.460	13	0.868	1	0.155	7
600386	Beiba media	0.088	9	-0.441	11	0.645	3	-0.020	8
600825	Xinhua media	0.043	10	-0.485	14	0.569	5	-0.063	9
601999	Publishing media	-0.128	11	-0.321	9	0.578	4	-0.071	10
002238	Tianwei Video	-0.294	14	0.113	6	-0.725	16	-0.178	11
000793	Hua Wen Media	-0.188	12	-0.554	15	0.324	10	-0.208	12
600037	Gehua wired	0.207	7	0.206	5	-3.272	18	-0.326	13
600832	Oriental pearl	-0.212	13	-0.254	8	-1.445	17	-0.372	14
600831	Broadcasting network	-0.468	15	-0.894	17	-0.102	14	-0.486	15
000917	Dianguang media	-0.940	16	-0.600	16	0.230	11	-0.519	16
600661	New Nanyang	-1.090	17	-0.894	18	0.478	6	-0.636	17
002181	Guangdong Media	-2.591	18	0.522	3	0.358	9	-0.748	18

4. CONCLUSION

4.1 In general, the score is positive, indicating that the factor is strong. The higher the score is, the strong the ability is. From figure 1, we can see there are 7 sample companies whose financial competitiveness is positive. This figure is less than 40% of the total number of samples, which show the financial competitiveness of listed companies of cultural industry from overall view is not strong. Figure 1 also shows that the financial competitiveness of sample companies exists large difference. There is twice times difference of the competitiveness index between Guangdong animation which is ranked first and Guangdong media which is ranked last. Judging from the ranking results, the companies whose financial competitiveness are located in top three areYuefei animation, Henkel share and Qixin stationery, all belong to the cultural products manufacturing. The next are Borui media, Time publishing, Anhui new media, publishing media and other main publishing companies. The rank of Tianwei video, broadcasting network, Dianguang media is relatively lean after. The companies engaged in other cultural industries are less competitive.

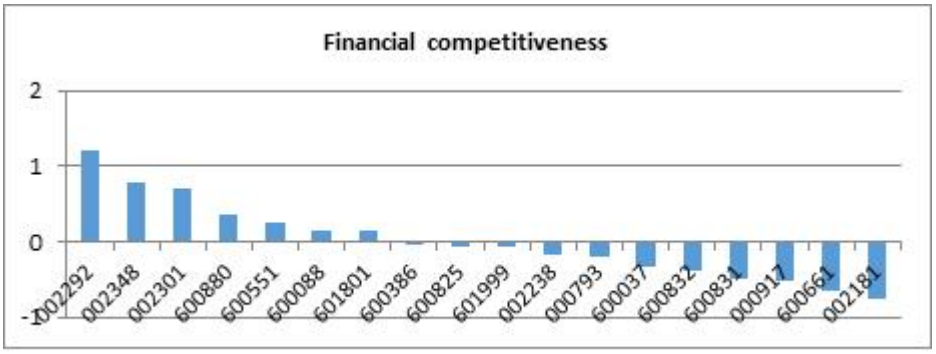

Figure 1 Financial competitiveness of listed companies in cultural industries

4.2 From the view of profit factor, there are 10 companies whose score is positive, accounting for 56% of the total number of samples. Gaoyue share company is ranked as the first one in absolute superiority. In addition to Publishing Media, the profit factor of the publishing industry is generally higher. Borui media is especially prominent in the media. In addition to Zhongshi media, the rank of profitability factors of film industry is backward, which shows that these companies are disadvantage in the ability of profitability.

4.3 From the view of stability factor, the score is only 5, indicating the overall weakness of the solvency and risk-resisting ability of listed companies in culture industry. Aofei animation and Qixin toy's score is far higher than other companies, indicating that their solvency in the industry is very good. There is almost no solvency risk and their capital is secure. Guangdong Media has greatly increased the score on the factor because of its lower asset-liability ratio and higher turnover ratio and speed ratio. Film companies have lowered their solvency due to higher asset-debt ratios and lower mobility and speed ratios.

4.4 From the view of asset management and operational capability factors, the score is 13, accounting for 72% of the total number of samples, indicating that the assets of the listed companies in the cultural industry have strong overall ability to operate. The score of Anhui New Media is the highest, showing it is the most competitive. Cultural products manufacturing industry remains strong in this respect. But for Borui Media, Time publishing, Centre TV media, the factor is ranked behind. The score of film and television industry about this factor is on the downstream level.

The results show that the most important factor influencing financial competitiveness is the profit factor, the second is the stability factor. The asset management and the operation ability has less influence. Therefore the focus should be on profitability. For specific companies, according to various factors in the industry rankings, they can identify gaps and take measures to improve financial competitiveness timely.

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