ATLANTIS PRESS
Advances in Social Science, Education and Humanities Research (ASSEHR), volume 95
2017 International Conference on Education, Economics and Management Research (ICEEMR 2017)

A Study on the Financial Competitiveness of Listed Companies

—Taking Agricultural Listed Companies as an Example

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***Abstract*—Based on the financial data of agricultural listed companies in 2014, this paper uses the factor analysis method of multivariate statistics to evaluate the financial competitiveness of agricultural listed companies from three aspects: financial viability, financial development and financial potential. The results show that profitability, short-term solvency and long-term solvency can show the company's financial viability, asset operating capacity and cash acquisition ability to express the company's financial development, growth ability can reflect the company's financial potential, and profitability plays a leading role in the financial competitiveness of the comprehensive evaluation.**

Keywords—Financial Competitiveness; Agricultural; Listed Companies

I. INTRODUCTION

Agriculture is the basis of the national economy, and an agricultural listed company is the direction of agricultural economic development. Agricultural listed companies are the backbone of agricultural enterprises, which represent the agricultural advanced productive forces, whose competitiveness will also affect the development of China's agricultural economy directly. And due to the fact that the management system is not perfect, the management concept is relatively backward, the governance structure is not perfect and many other issues, China's agricultural listed companies did not form a good guiding role at this stage.

With the passage of time, enterprises compete from the cost, brand and other competition into their own competitiveness. Only by constantly exploring and cultivating the enterprise's unique resources and ability to improve their own competitiveness, enterprises can survive in a complex environment. The improvement of financial competitiveness will help to realize the integrated ability of sustainable competitive advantage. Through the integration of data, the use of professional methods, analyzing the financial competitiveness systematically for China's agricultural listed companies; it is of great significance to give full play to the exemplary role of agricultural listed companies. At the same time, it is of great sense to enhance the financial philosophy and the information quality for agricultural listed companies.

II. THE LITERATURE REVIEW

The foreign study of company competitiveness appeared firstly in Michael Porter (M.E.Porter, 1980) "Competitive Strategy", he pointed out that the factors of production, market demand, the level of related industries, corporate strategy and competitors, opportunities and government affect the industrial competitiveness among countries. With the further development of enterprise capacity theory, the famous American scholar Prahalad and Hamel put forward the "corporate financial competitiveness" published in the "Harvard Business Review" for the first time in 1990.Andrew Campbell, Catherine Somer pointed out that financial competitiveness is the core component of enterprise competitiveness in 1999.

In the aspect of financial competitiveness research in domestic, Zhu Wen-li and Kan Li-na (2012) establish financial competitiveness evaluation system based on risk management ability, innovation and development ability, management and profitability, and combine with the characteristics of commercial banks and financial competitiveness factors using factor analysis method to evaluate the selection of 16 listed banks in Shenzhen and Shanghai, finally, the study provides countermeasures to reduce the non-performing assets and maintain the competitive advantage of enterprises according to the overall score ranking. On the basis of the relationship between R&D and financial competitiveness, LI Ji-zhi and LI Bo construct the evaluation system of financial competitiveness, and evaluate the financial competitiveness of 41 agricultural listed companies in Shenzhen and Shanghai through factor analysis, and put forward the measures to cultivate and enhance the financial competitiveness.

In summary, domestic and foreign scholars elaborate their respective understanding for the elements and evaluation system of financial competitiveness in different levels, which has gradually formed a more complete theoretical system. But for our country, compared with other industries, the study on the financial competitiveness China's agricultural listed companies usually adopts a single evaluation method, and has not enough depth and system, which does not match with China's traditional agricultural status. The formation of the evaluation index for the financial competitiveness is based on the analysis of the connotation, constituent elements and the

relationship among the elements of the corporation financial competitiveness, and mostly combined with the evaluation by the use of qualitative and quantitative indicators.

III. RESEARCH DESIGN

A. Research methods

The greatest advantage of factor analysis is that it is not the weight of the individual factors of the subjective assignment, but on the basis of the respective variance contribution rates. The greater the variance contribution rate is, the more important the variable gets, so it has a larger weight; on the contrary, the smaller the variance contribution rate is, the variable is relatively unimportant, so its corresponding weight is smaller. Therefore, the factor analysis method can avoid the arbitrary determination of the randomness for the weight, so that the evaluation results are unique and objective. In addition, the entire process of factor analysis can be carried out by operating computer software, etc., and its operability is strong. Compared with other methods, factor analysis is a scientific, simple and practical comprehensive evaluation method, which is suitable for the evaluation of enterprise financial competitiveness.

B. Data source and sample selection

This paper adopts the standards of CITIC industry classification, and the data stems from the Rui Si database. Based on the principles of availability, comprehensiveness, comparability, reliability and so on, the paper chooses 30 agricultural listed companies as the sample data, and analyzes the factors of financial competitiveness in three aspects of the financial viability, financial development and potential financial competitiveness factor analysis.

C. The Index system

TABLE I. INDICATOR DESIGN

Serial number	Indicator name	Formula
X1	Return on assets	Net profit / average total assets * 100%
X2	Sales gross margin	(Operating income - operating cost) / operating income * 100
X3	Earnings per share (basic)	Net profit / total number of shares at the end of the period
X4	Return on sales	*100Net profit / sales revenue * 100
X5	Current Ratio	Current assets / current liabilities
X6	Quick ratio	Quick assets / current liabilities
X7	equity ratio	Total liabilities / shareholders' equity
X8	Debt Asset ratio	Total liabilities / total assets * 100%
X9	Total asset turnover	Sales income / [total assets at the beginning of the period + total assets at the end of the period) / 2]
X10	Cash sales ratio	Net cash flow from operating activities / operating income
X11	Operating cash flow per share	Net cash flow from operating activities / total share capital at the end of the year
X12	Total assets cash recovery rate	Net cash flow from operating activities / [(total assets at the beginning of the period + total assets at the end of the period) / 2]
X13	Total asset growth rate	(Total assets in the period - total assets in the previous period) / total assets in the previous period * 100
X14	Sales revenue growth rate	(Current sales income - previous sales income) / last period of sales income * 100

IV. EMPIRICAL ANALYSIS

A. The statistical test

TABLE II. KMO AND BARTLETT TESTS

KMO and Bartlett tests	
Samples are sufficient to measure the Kaiser-Meyer-Olkin metric	0.528
Bartlett's sphericity test approximates the chi-square	366.017
df.	91
sig.	0．000

The results show that KMO = 0.528> 0.5, which indicates that factor analysis can be used to evaluate, while the results of the Bartlett test Sig = 0.000, less than 0.05, indicating that the data are relevant, so also proved fully this point.

B. Analyzing the effect of each factor to extract

TABLE III. COMMON FACTOR VARIANCE

	Initial	Extract
X1	1	0.813
X2	1	0.882
X3	1	0.897
X4	1	0.727
X5	1	0.887
X6	1	0.863
X7	1	0.862
X8	1	0.876
X9	1	0.945
X10	1	0.902
X11	1	0.893
X12	1	0.951
X13	1	0.87
X14	1	0.747

Extraction method: principal component.

According to the table given the common factor variance, the results extracted with the initial variance of 1 are analyzed: the common factor variance of X9, X10, X12 indicators are also more than 0.9, so the extraction effect is very good; Most of the indicators are in the 0.8 range; X2, X14 indicators are also more than 0.7, variable information are missing less, variable extraction are very good.

C. The eigenvalues of the correlation coefficient matrix R and total variance decomposition

TABLE IV. EXPLAINING THE TOTAL VARIANCE

	Initial eigenvalue			Extract squares and load			Rotate squares and load		
	Total	**Variance%**	**Accumulation%**	**Total**	**Variance%**	**Accumulation%**	**Total**	**Variance%**	**Accumulation%**
1	4.63	33.072	33.072	4.63	33.072	33.072	3.343	23.878	23.878
2	2.848	20.346	53.418	2.848	20.346	53.418	3.202	22.874	46.752
3	2.483	17.732	71.15	2.483	17.732	71.15	2.825	20.182	66.934
4	1.153	8.233	79.383	1.153	8.233	79.383	1.58	11.284	78.218
5	1.003	7.166	86.549	1.003	7.166	86.549	1.166	8.331	86.549
6	0.661	4.724	91.273						
7	0.397	2.834	94.107						
8	0.302	2.16	96.267						
9	0.199	1.424	97.691						
10	0.14	1.002	98.693						
11	0.068	0.483	99.176						
12	0.066	0.473	99.649						
13	0.037	0.262	99.911						
14	0.012	0.089	100						

The principal component analysis method is used as the factor extraction method. The selected factor extraction criterion is: eigenvalue≧1.It can be seen from the table that the eigenvalues of the first five common factors satisfy the condition.

According to the principle of cumulative contribution rate greater than 80%, the cumulative explanatory rate of the first five common factors to the sample variance is 86.549%, that is, the first five common factors can reflect the original index of 86.549% for the information, and so extract five factors are used to make a better explanation of the problem.

D. The factor load matrix is established

TABLE V. PRE-ROTATION MATRIX[A]

	Ingredients				
	1	2	3	4	5
X1	0.676	-0.244	0.535	-0.083	0.062
X2	0.806	-0.232	0.35	-0.221	0.081
X3	0.889	-0.068	0.317	-0.005	0.042
X4	0.195	-0.34	0.648	-0.387	0.058
X5	0.545	0.11	-0.757	-0.049	0.049
X6	0.588	0.12	-0.698	-0.065	0.108
X7	-0.87	0.092	0.204	0.22	0.088
X8	-0.795	-0.104	0.449	0.133	0.116
X9	0.299	-0.19	0.084	0.293	-0.853
X10	0.151	0.902	0.206	0.104	0.115
X11	0.445	0.736	0.334	0.202	0.028
X12	0.264	0.895	0.26	0.117	0.004
X13	0.304	-0.53	-0.073	0.529	0.46
X14	0.439	-0.312	0.123	0.665	0.014

Extraction method: principal component.
A. Five ingredients have been extracted

Orthogonal rotation of the factor load matrix using the variance maxima makes the factor has a naming explanatory. In the table, the factor load matrix before rotation is given. In the factor analysis, the factors are usually rotated based on the intuition of the explanatory results and the convenience of the factor naming.

TABLE VI. ROTATE THE COMPOSITION MATRIX[A]

	Ingredients				
	1	2	3	4	5
X1	0.025	0.86	0.097	0.229	0.106
X2	0.269	0.884	0.053	0.15	0.055
X3	0.33	0.786	0.261	0.281	0.154
X4	-0.331	0.759	-0.152	-0.12	-0.053
X5	0.932	-0.11	0.004	0.074	-0.028
X6	0.92	-0.039	0.041	0.092	-0.077
X7	-0.735	-0.54	-0.021	-0.05	-0.168
X8	-0.876	-0.255	-0.123	-0.021	-0.169
X9	0.06	0.115	-0.047	0.079	0.959
X10	0.023	-0.067	0.931	-0.129	-0.121
X11	0.083	0.203	0.915	0.058	0.069
X12	0.052	0.027	0.966	-0.124	0.011
X13	0.115	0.142	-0.258	0.863	-0.161
X14	0.056	0.195	0.033	0.78	0.311

Extraction method: principal component.
Rotation method: Orthogonal rotation with Kaiser Normalization.
A. The rotation converges after 5 iterations.

Take F be the extracted factor, then the five factors can be expressed as F1, F2, F3, F4, F5, F6, respectively. From the table we can see that the coefficients of the first principal factor F1 on X5, X6, X7, and X8 are larger than those of other variables, that is, the four indexes such as flow ratio, quick ratio, property right ratio and asset-liability can be summarized as solvency factor; the coefficients of the second principal factor F2 on X1, X2, X3 and X4 are large, that is, the four indexes of return on assets, gross profit margin, earnings per share and sales profit rate can be summarized as profitability factor; the coefficient of the third principal factor F3 on X10, X11 and X12 is large, which is the cash sales ratio, the cash flow per share, the cash recovery of the total assets, and can be summarized as cash acquisition factor; the coefficient of the fourth principal factor F4 on X13 and X14 is large, which is the total asset turnover rate and the sales revenue growth rate, and which can be summarized as the growth factor. The fifth main factor F5 in the X9 coefficient is large, which is the total asset turnover rate, and this indicator can be summarized as the asset operating capacity factor.

E. Each factor score

Through the above analysis, the factor analysis expression can be expressed as:

$$F_1 = 0.025X_1 + 0.269X_2 + 0.330X_3 - 0.331X_4 + 0.932X_5 + 0.92X_6 - 0.735X_7 - 0.876X_8 + 0.06X_9 + 0.023X_{10} + 0.083X_{11} + 0.052X_{12} + 0.115X_{13} + 0.056X_{14}$$

$$F_2 = 0.86X_1 + 0.884X_2 + 0.786X_3 + 0.759X_4 - 0.11X_6 - 0.54X_7 - 0.255X_8 + 0.115X_9 - 0.067X_{10} + 0.203X_{11} + 0.027X_{12} + 0.142X_{13} + 0.195X_{14}$$

$$F_3 = 0.097X_1 + 0.053X_2 + 0.261X_3 - 0.152X_4 + 0.004X_5 + 0.041X_6 - 0.021X_7 - 0.123X_8 - 0.047X_9 + 0.931X_{10} + 0.915X_{11} + 0.966X_{12} - 0.258X_{13} + 0.033X_{14}$$

$$F_4 = 0.229X_1 + 0.15X_2 + 0.281X_3 - 0.12X_4 + 0.074X_5 + 0.092X_6 - 0.05X_7 - 0.021X_8 + 0.079X_9 - 0.126X_{10} + 0.058X_{11} - 0.124X_{12} + 0.863X_{13} + 0.78X_{14}$$

$$F_5 = 0.106X_1 + 0.055X_2 + 0.154X_3 - 0.053X_4 - 0.028X_5 - 0.077X_6 - 0.168X_7 - 0.169X_8 + 0.959X_9 - 0.121X_{10} + 0.069X_{11} + 0.011X_{12} - 0.161X_{13} + 0.311X_{14}$$

$$F = (F_1 \times 23.878 + F_2 \times 22.874 + F_3 \times 20.182 + F_4 \times 11.284 + F_5 \times 8.331) \square 86.539$$

V. CONCLUSION

The company's profitability and solvency can be used as a concrete manifestation of financial viability, that is, financial viability includes profitability, short-term solvency and long-term solvency. The ability of cash acquisition and operational capacity of enterprises can be used as the concrete manifestation of financial development force, and the growth ability of enterprises can be used as the specific performance of financial potential. The ranking of comprehensive factor scores of agricultural listed companies is highly similar to that of profitability factor scores, which shows that profitability plays a leading role in the comprehensive evaluation of financial competitiveness for enterprises. Financial viability can be used to assess the level of the current financial results and the safety in the use of funds; it is the basic premise of healthy development for enterprises. Financial development is an ability developed and expanded by the enterprise on the basis of survival and the rational use of cash flow. Financial potential is an expectation of the ability to achieve the sustainable development of corporate financial resources. Agricultural listed companies can increase the company's cash acquisition capacity by increasing financial expenditure and allocating cash dividends. Agricultural listed companies rely on scientific and technological research and development integration of upstream and downstream resources to extend the industrial chain and expand the marketing market space, which can be the company's new profit growth point.

VI. RECOMMENDATION

A. Optimizing the capital structure

Combined with the status of China's agricultural listed companies, most of the company's asset-liability ratio, current debt ratio and profitability are negatively correlated, therefore, it is very important to optimize the capital structure of agricultural listed companies and determine the reasonable structure of assets and liabilities. Making full use of the company's financial leverage, the company should also take full account of the financial risk changes brought about by the proportion of debt in the realization of corporate interests to maximize. China's agricultural listed companies should determine the debt ratio and choose a reasonable way to ensure the balance of long-term financing to avoid high risk, simultaneously; these companies should reduce capital costs and improve the company's profitability.

B. Increasing the intensity of capital investment

Financial competitiveness is a combination of asset management capacity, profitability and solvency. The profitability factor has the greatest influence on the comprehensive factor score, the solvency factor and the asset management ability factor are the second, and the development ability factor is the weakest in the comprehensive evaluation of the financial competitiveness of listed companies. Therefore, China's agricultural listed companies focusing on profitability should also strengthen the asset management and capital investment efforts. Through the diversification of leading enterprises and private capital to support the expansion of scale for agriculture leading enterprises, so enhance the financial competitiveness of enterprises.

C. Establishing a financial capacity system

Combined with China's market situation, the private enterprise ownership concentration situation is more complex for China's agricultural listed companies, both single shareholders or family holdings accounted for more than 50% of the total share capital, and less than 20%.The financial situation is uneven for China's agricultural listed companies, the vast majority of equity are relatively concentrated. Agricultural listed companies need to establish a basic financial capacity system to improve the innovation mechanism and enhance the company's financial competitiveness, the establishment of a comprehensive financial capacity evaluation system is to obtain more room for the point of view of development in the solvency, profitability and operational capacity.

REFERENCES

[1] YIN Rui.Study on the Financial Competitiveness of Agricultural Listed Companies [D]: Huazhong Agricultural University .2015.(In Chinese)

[2] Amit, R. and P. J. H. Schoemaker. Strategic Assets and Organizational Rent [J]. Strategic Management Journal, 1993, 14:33-46.

[3] MENG Li-rong. Study on the Development of China's Agricultural Listed Companies [J]. Commercial Research,2001(11) .56-57.(In Chinese)

[4] Fan Li-fang. The evaluation and application research of financial competitiveness based on the comprehensive index method for listed companies [D]:Tianjin University of Finance and Economics .2011.(In Chinese)

[5] F.A. Hayek. The use of knowledge in society [J]. The American Economic Review.1945.35 (4): 519-530.

[6] WANG Huai-ming, YAN Xin-feng. Study on Asset Structure and Corporate Performance of Agricultural Listed Companies [J]. East China Economic Management. 2007 (2), 40-4.(In Chinese)