Evaluation on Business Performance of Chinese Listed Securities Companies-Based on Factor Analysis

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ABSTRACT

As an important participant of capital market, security market plays an important role in promoting economic development. With the recovery of stock market, the successive introduction of favorable policies at the regulatory level and the progressive opening to the security market, security industry is faced with great opportunities as well as challenges since 2019. Therefore, this paper made an empirical research on the business performance of Chinese listed securities companies in 2018 by establishing a business performance evaluation system with a sample of 32. Finally, this paper put forward some effective proposals for the future development of securities companies based on the advanced experience of foreign investment banks so that they can better respond to future challenges.

Keywords: *Chinese listed securities companies, Business performance, Factor analysis.*

1. INTRODUCTION

The security market plays an important role in the development of a country's economy. It not only provides diversified investment methods for residents, but also serves as an important financing channel for enterprises and it's one of the important ways for government to optimize resource allocation. China's security industry has been developing and growing continuously, but there is still a big gap compared with the banking and insurance industry. Thus it can be seen that under the current economic situation, studying the operating performance of listed companies in China's security industry can not only improve the competitiveness of securities firms, but also promote the development of the whole security industry. Therefore, this paper proposes some constructive opinions and suggestions to improve the development level of the whole securities industry, so as to better serve the development of the real economy.

2. PRINCIPLE OF FACTOR ANALYSIS AND CONSTRUCTION OF INDEX SYSTEM

Factor analysis mainly studies the correlation between many variables and finds out a few variables to summarize their internal relations. It is a statistical method to simplify data by reducing dimension.

According to the data released by the Securities Association of China, there were 36 listed securities companies. Four of them were removed from the data collection. The data of 32 listed companies were selected for factor analysis.

In the construction of the performance evaluation index system, factors reflecting the financial innovation ability of enterprises are also taken into account, such as financial products and financial business innovation ability. Some indicators are difficult to quantify, so they are removed. In addition, 18 indicators were selected from six aspects. And they are operation scale, profitability, debt paying ability, development ability, market ability and risk control ability. Specific indicators and calculation methods are as follows:

Table1. List and stock code of listed securities companies

Number	Securities	Stock Code	Number	Securities	Stock Code
1	Citic Securities	600030.SH	17	Dongxing Securities	601198.SH
2	Huatai Securities	601688.SH	18	Caitong Securities	601108.SH
3	Guotai Junan Securities	601211.SH	19	Zheshang Securities	601878.SH
4	Haitong Securities	600837.SH	20	Nanjing Securities	601990.SH
5	Guangfa Securities	000776.SZ	21	Guoyuan Securities	000728.SZ
6	Shenwan Hongyuan Securities	000166.SZ	22	Huaxi Securities	002926.SZ
7	Merchants Securities	600999.SH	23	Dongwu Securities	601555.SH
8	Guosen Securities	002736.SZ	24	Southwest Securities	600369.SH
9	China Securities	601066.SH	25	First Capital	002797.SZ
10	Orient Securities	600958.SH	26	Sealand Securities	000750.SZ
11	Founder Securities	601901.SH	27	Huaan Securities	600909.SH
12	Everbright Securities	601788.SH	28	Shanxi Securities	002500.SZ
13	Tianfeng Securities	601162.SH	29	Northeast Securities	000686.SZ
14	Industrial Securities	601377.SH	30	Changjiang Securities	000783.SZ
15	Great Wall Securities	002939.SZ	31	Guojin Securities	600109.SH
16	Western Securities	002673.SZ	32	Hualin Securities	002945.SZ

Table 2. Business performance evaluation system of listed companies

Primary Index	Secondary Index	Name
operation scale	total assets	X1
	net assets	X2
	business income	X3
	net profit	X4
profit ability	net profit margin	X5
	ROE	X6
	ROA	X7
	ROIC	X8
debt paying ability	ratio of liabilities	X9
	equity ratio	X10

growth ability	total assets growth rate	X11
	growth rate of operating profit	X12
	growth rate of business income	X13
market ability	customer fund balance	X14
	market share of brokerage business	X15
	market share of underwriting and sponsorship business	X16
risk control ability	net capital	X17
	the ratio of net capital to liabilities	X18

3. THE PROCESS AND RESULTS OF FACTOR ANALYSIS

3.1. KMO and Bartlett's Test

Correlation test was conducted, and the KMO value was 0.737 and above 0.7. The observed value of Bartlett sphericity test statistics is 957.682, which suggests that the correlation coefficient matrix is significantly different from the identity matrix. It can be seen that the data in this paper are suitable for factor analysis.

3.2. Extract Common Factors

The principal component method was used to extract common factors, and the number of eigenvalues greater than 1 was selected as the number of common factors. The study shows that the cumulative variance contribution rate of the first 4 factors has reached 90.52%, so the 4 common factors are extracted for analysis.

Table 3. Rotated component matrix

Index	Component			
	1	2	3	4
X1	0.96	0.12	0.21	0.05
X2	0.97	0.12	0.11	0.01
X3	0.92	0.12	0.21	0.08
X4	0.93	0.3	0.09	0.08
X5	0.36	0.82	-0.25	0
X6	0.3	0.93	-0.01	0.02
X7	0.18	0.92	-0.31	-0.02
X8	0.03	0.9	-0.03	-0.34
X9	0.32	-0.22	0.87	-0.03
X10	-0.29	0.26	-0.89	-0.04
X11	0.2	-0.09	-0.04	0.92
X12	0.2	0.29	-0.16	0.85
X13	-0.33	0.13	0.47	0.55

X14	0.95	0.2	0.14	0.03
X15	0.94	0.19	0.14	0.03
X16	0.81	0.22	0.22	-0.12
X17	0.13	0.12	0.96	0.02
X18	-0.42	0.21	-0.81	-0.06

3.3. Rotated Component Matrix

The common factor is named by analyzing the load of each index on the factor, so that the common factor can explain more information. There are four common factors and they are F1, F2, F3 and F4. F1 factor is named as the market scale factor due to its large load on the four indicators reflecting the operation scale, such as total assets, net assets, business income and net profit, as well as indicators reflecting the market capacity, such as customer fund balance, market share of brokerage business and market share of underwriting and sponsorship business. F2 factor has a large load on four indicators reflecting profitability, such as return on equity, return on assets and return on invested capital. So it is named profitability factor. F3 is named as the solvency risk control factor due to its large load on some indexes reflect the risk control ability and debt paying ability.

F4 has a large load on the growth rate of total assets, growth rate of operating profit and growth rate of operating income, which reflect the development ability. So it is named as the development factor.

3.4. Calculate the Comprehensive Score and Make Comprehensive Evaluation

The score function of comprehensive factor is F=0.4911*F1+0.2590*F2+0.0830*F3+0.0720*F4

According to the score function of comprehensive factor, the comprehensive score of 32 listed security companies can be calculated. According to the factor scores of each company, the ranking of the factor scores of each company can be obtained. The ranking results are shown in the table below:

Table 4. Scores and rank of the listed security companies

Securities	Rank of F1	Rank of F2	Rank of F3	Rank of F4	Comprehensive Score	Rank of Comprehensive Score
Citic Securities	1	12	19	16	1.48	1
Guotai Junan Securities	2	11	26	14	1.08	2
Haitong Securities	3	17	10	11	0.85	3
Shenwan Hongyuan Securities	7	6	3	2	0.78	4
Huatai Securities	4	13	24	29	0.72	5
Guangfa Securities	5	15	15	15	0.71	6
Merchants Securities	6	8	21	9	0.7	7
Guosen Securities	8	5	7	12	0.56	8
China Securities	10	2	4	27	0.53	9
Guojin Securities	16	7	31	4	-0.06	10
Orient Securities	11	24	6	24	-0.08	11

Dongxing Securities	27	4	8	20	-0.1	12
Zheshang Securities	24	10	11	10	-0.12	13
Huaan Securities	28	9	20	5	-0.14	14
Hualin Securities	32	1	13	32	-0.15	15
Huaxi Securities	26	3	30	22	-0.18	16
Founder Securities	14	25	12	17	-0.19	17
Everbright Securities	9	32	17	23	-0.21	18
Great Wall Securities	21	14	27	6	-0.24	19
Caitong Securities	18	16	28	18	-0.29	20
Industrial Securities	12	31	14	26	-0.34	21
Guoyuan Securities	17	19	25	25	-0.34	22
Shanxi Securities	31	18	1	1	-0.34	23
Northeast Securities	30	22	2	3	-0.37	24
Tianfeng Securities	29	20	16	8	-0.4	25
Dongwu Securities	23	23	5	30	-0.44	26
Nanjing Securities	20	21	32	7	-0.51	27
Southwest Securities	19	27	23	13	-0.53	28
Changjiang Securities	13	30	22	31	-0.53	29
Western Securities	15	29	29	21	-0.61	30
First Capital	25	26	18	19	-0.62	31
Sealand Securities	22	28	9	28	-0.62	32

According to the law of increasing returns to scale, the operating profit of enterprises increases with the expansion of production scale within a certain limit. This law also exists in the securities industry, and the operating performance of large-scaled companies is often better than that of small-scaled companies. In addition, among the 32 listed companies in the securities industry, 50% of the enterprises' profitability factor score is negative, indicating that the profitability of listed companies in the security industry in China needs to be improved urgently. The comprehensive score and the rank of it shows that the overall development level of listed companies in the securities industry is not high and the development is not balanced. Among the 32 listed companies in the securities industry, there were 9 enterprises with positive comprehensive scores and 23 enterprises with negative comprehensive scores, accounting for 72% of the sample. Among them, Citic Securities got the highest comprehensive score of 1.48, while Western Securities, First Venture and Sealand Securities got the lowest comprehensive score of -0.62. There is a large gap between them.

4. POLICY RECOMMENDATIONS

First, large securities firms need to make full use of policy. Small and medium-sized securities firms are supposed to pay more attention to develop their business characteristics. The total assets of American investment bank Goldman Sachs is 6 trillion yuan and it's about 12 times of China's largest securities firm Citic Securities by the end of 2018. Large securities firms still have room for improvement. So they should expand business scale and enhance their own strength among security

companies. In addition, with the gradual acceleration of business integration in the securities industry, small and medium-sized securities firms should pay attention to the cultivation of characteristic business if they want to get rid of the fate of being merged and integrated. They need to focus on their comparative advantages and provide differentiated and personalized services for different customers, so as to form a unique profit model different from large securities firms.

Secondly, continue to promote financial technology innovation and build differentiated competitive advantages. Financial innovation is an important engine to promote the development of economy. Financial technology combines the traditional financial industry with the modern information technology to promote the development of companies. Therefore, continue to promote the financial technology innovation is particularly important. Securities companies, especially the listed securities firms shall pay more attention to the application of financial technology, such as artificial intelligence, big data, cloud computing, block chain and so on. According to China securities industry association, Guotai Junan is the top investor in information technology in 2018. Compared with the international investment Bank Morgan Stanley, there is still a big gap between them. So domestic securities companies should strengthen the use of information technology and create differentiated competitive advantage.

Thirdly, expand revenue sources and focus on high value-added business development. The income of China's securities firms is mainly composed of traditional business which is very vulnerable to market risk. While the income of large foreign investment banks and a financial institution mainly comes from the high value-added business such as consulting business and financial advisory business. Therefore, Chinese securities firms should strive for business innovation and pay attention to the development of high value-added business, so as to realize the transformation from "trading center" to "asset management center" as soon as possible.

5. CONCLUSION

The overall development level of Chinese listed securities companies is not high and uneven, so the profitability needs to be improved.Secondly, the overall debt scale of securities industry is on the rise, which puts forward high requirements for its liquidity management ability and risk control ability.Finally, due to the scale advantage, large securities firms tend to perform well, while small securities firms do not have the scale advantage, but their operation is more flexible. If they find a suitable development path, they can make a lot of improvement.

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