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Financial recognition of material misstatement risks of listed companies on GEM

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ABSTRACT: Listed companies on GEM are characterized by strong innovation, great growth ability, high risks and high yields. Starting from these characteristics, this paper carries out analysis by using the financial indicators that are effective to recognize the material misstatement risks and easy to be acquired, and combines with the sample data with high material misstatement risks on GEM in 2012 to 2014 to test the significance of spss difference, and finds that the material misstatement company and the normal company have significant difference in the profitability, solvency, growth ability and cash flow.

Keywords: recognition of material misstatement risks of listed companies on GEM

1 INTRODUCTION

GEM is a supplement to the main-board market, which is a security trading market specially designed for providing financing channels and growth space for the small and medium-sized enterprises that are temporarily unable to be listed on the main-board market. Listed companies on GEM are mostly engaged in high-tech industries, with a higher potential, while the enterprises generally have a lower qualification, a smaller scale, and unobvious performance advantages, but with a great growth space. In addition to the opportunities. GEM also has great risks. In addition to the difference between GEM and the main-board market in terms of the corresponding laws and regulations, the particularity of its listed companies also makes the audit of GEM more complex and more risky. The listing conditions of GEM are relatively loose, and listed companies are small and medium-sized enterprises, and mostly engaged in high-tech business, with better prospects and great uncertainty. Various conditions make the assessment of audit risks of listed companies on GEM particularly important.

The new audit risk model implemented in China in 2007 pays more attention to the risk recognition and assessment than the traditional audit risk model, and runs through the whole audit business process. Therefore, the important and difficult points of application for the new model lie in the recognition and assessment of material misstatement risks. The recognition and assessment of material misstatement risks is the most important task to improve the audit efficiency and guarantee the audit effect.

Domestic and foreign scholars have done a lot of researches on the recognition and assessment of material misstatement risks. Wang Guilan ^[1] used the case-based reasoning to assess the material misstatement. Zhang Wenxiang ^[2] assessed the material misstatement risks by dividing risk factors one by one and assigning weights. Wang Cuilin ^[3] conducted research by using BP neural network of LM algorithm, and selecting the financial indicators that are easy to be acquired as independent variables to achieve a higher risk recognition rate. Guo Yu ^[4] recognized and assessed the material misstatement risks through the transaction of financial indicators.

The relevant researches of above scholars have provided a solid foundation for the writing of this paper. Combined with the characteristics of companies on GEM, the influencing factors of the material misstatement risks are analyzed, and the indicators that are easy to be quantified and acquired are selected for comparison and identification of difference, in order to help recognize the material misstatement risks.

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2 GEM AND COMPANY CHARACTERISTICS

Listing conditions are relatively loose. Low entry threshold is one of the biggest characteristics of GEM, which is also a reason of appeal. GEM values the growth ability and development potential of small and medium-sized enterprises, which are the future situation, so its requirements on the current operating period, profitability and asset size and other aspects of these enterprises are lower than that of the main-board market.

Delisting systems are stringent. Compared with the main-board market, the listed companies on GEM with a diversified delisting standard system can be directly delisted, and start a quick delisting process for three special circumstances, and also strictly regulate the restructuring behavior. Listed companies on GEM have a higher growth potential, but its short operating period, small capital scale, unstable operating conditions and other characteristics also contain higher risks. Therefore, it is necessary to implement the delisting system that is more stringent than the main-board market, in order to promote the long-term steady development of GEM. Compared to the listed companies on the main-board market, listed companies on GEM are characterized by strong innovation, great growth ability, high risks and high yields.

2.1 Strong innovation

Different from listed companies on the main-board market, listed companies on GEM have a smaller scale. and most of them are small and medium-sized enterprises. However, these enterprises generally own advanced technology and belong to strategic emerging industries. It can be reflected in the data listed when Deng Ge, a press spokesman on China Securities Regulatory Commission (CSRC) disclosed the overall situation of GEM in the operating period since 2009 on the regular press conference. As of September 30, 2016, among 540 companies on GEM, 503 companies have had the qualifications of high-tech enterprises, 463 companies have owned core patented technology, 219 companies have undertaken national Torch Program projects, 63 companies have undertaken 863 national planned projects, and 54 companies have been the national innovation pilot enterprises. From 2009 to 2015, the average research and development intensity of the companies on GEM (the ratio of research and development expenditure to the operation revenue) reached 5%, higher than the average level of the market. In 2015, research and development intensity of 91 companies was more than 10%. On GEM, 384 companies are in the strategic emerging industry, accounting for 71%, forming a significant aggregation effect. GEM is widely covered in a new generation of information technology (152 companies), energy saving and environmental protection (56 companies), high-end equipment manufacturing industry (54 companies), new materials (43 companies), new energy (26 companies) and biology (53 companies) and other fields. It is not difficult to see that these enterprises are the hope of China's industrial transformation.

2.2 *Great growth ability*

GEM values the growth ability of the listed companies on GEM. According to the listing provisions of GEM, the objects of GEM are entrepreneurial companies with independent innovation and growth ability, and the initial public offering and the annual average profits and cumulative net profits of the listed companies on GEM should be more than RMB 10 million in the last two years and maintain a sustainable growth; or the profits in the last year and net profits should be more than RMB 5 million, operation revenue should be more than RMB 50 million, and the growth rate of operation revenue in the last two years should be more than 30%. In the actual level of listed companies on GEM, except for individual companies, the majority of listed companies on GEM have gradually highlighted its development potential, operation revenue and net profits are in a state of sustainable growth year by year, indicating that these companies are profitable, and the profit margin is also quite considerable.

2.3 High risks and high yields

The company's operation and development are affected by a variety of future uncertain factors. Compared to the companies on the main-board market, listed companies on GEM are more sensitive in terms of the policy, market fluctuations and other systemic risks. Meanwhile, the characteristics of high-tech enterprises, failure in research and development, lack of demand on market and other non-systemic risks also bring great changes to the enterprises. For example: research and development risks, in order to maintain technological superiority, research and development investment will be relatively high, but whether the research and development of new technology will be successful, and whether the research and development of new process and new products will be successful are very uncertain; it is difficult to restore the manpower, financial and material resources caused by the loss; the risks of putting into production, and dynamic conditions of attacking the competitors by successful technology that has obtained recognition after being launched on the market also bring production higher risks.

However, high risks often coexist with high yields. Once the company's research and development has been successful, after putting into production and obtaining market recognition, it would obtain more earnings than that of the traditional company. Its excess earnings are mainly from the excess profits relative to high intellectual value added, which is also a reason for the companies on GEM to attract investors to take greater risks for investment.

3 RELATIONSHIP BETWEEN FINANCIAL INDICATORS AND MATERIAL MISSTATEMENT RISKS

There is an inherent logical relationship between the financial statements and various items within the financial statements. If the data in the financial statement changes, one or more data in the financial statements will change accordingly.

Error and fraud are two reasons for the misstatement in the financial statements. Error refers to unintentional error, while fraud is a deliberate misstatement, means that the corporate governance layer and the management layer modify and develop false reports by various means, in order to achieve their goals. These two situations tend to undermine the logical relationship between financial data. No matter whether the material misstatement of the financial statements is caused by error or fraud, it will undermine the normal articulation of the financial statements.

The listing threshold of the listed companies on GEM is relatively low, so that some inferior companies may be mixed among them. Meanwhile, it is relatively complex to evaluate high-tech companies, and analysis of the financial characteristics of the company is very important for recognition of material misstatement, so analysis and judgment of the financial indicators can be more convenient and effective to recognize the potential material misstatement risks of the company.

4 SELECTION OF FINANCIAL INDICATORS

To select appropriate financial indicators based on the characteristics of listed companies on GEM can better recognize the material misstatement. This paper selects appropriate indicators from five aspects of profitability, solvency, growth ability, operation capacity and cash flow, and also recognizes the influencing factors of the material misstatement risks.

4.1 Profitability

Listed companies on GEM are characterized by high risks and high yields. Listed companies on GEM are mostly engaged in the emerging industry. Once the company seizes favorable market environment, and researches and develops a successful product, high intellectual value added of its products will make the enterprise gain higher profits than that of traditional companies. Profitability has a greater impact on whether there is material misstatement in the listed companies on GEM. Therefore, to select the indicators of x1 Return on equity, x2 Return on assets, x3 Operating profit ratio, x4 Net profit rate, x5Ratio of profits to cost, the profitability of the company can be reflected from the efficiency of net income obtained by the investment by the owner unit, utilization efficiency of assets, operating profit ability, utilization efficiency of total assets and profit of unit cost.

4.2 Solvency

Listed companies on GEM generally own advanced technology and belong to strategic emerging industries. In order to maintain superiority in the industry, the company has a great investment in research and development technology. However, for listing on GEM, there are provisions on using the raise funds only for developing the main business. Meanwhile, the size of the listed companies on GEM is generally small. It means that the listed companies on GEM have higher difficulty in diversified operation and are prone to unsatisfactory conditions, such as single product, single technology audience and single sales channel. For high-tech enterprises requiring to investing a large number of funds for technology research and development, the solvency affects the ability to resist risks. Therefore, to select the indicators of x6 Current ratio, x7 Quick ratio, x8Equity ratio, x9 Times interest earned, x10 Total of operating net cash flow / liabilities, x11 Long-term liabilities and working capital ratio, x12 Cash flow liability ratio, x13 Operating net cash flow / current liabilities, the solvency of the company can be reflected from long-term and short-term enterprise liquidation ability, ability to repay current liabilities via immediate realization in the current assets, stock equity of the shareholders, ability to repay interest on borrowings and ability to repay liabilities by the current net cash flow.

4.3 Growth ability

GEM is a security trading market specially designed for providing financing channels and growth space for the small and medium-sized enterprises that are temporarily unable to be listed on the main-board market and have a greater growth space. The industries engaged by the listed companies on GEM generally have a higher potential. Therefore, the growth ability is important indicator of the companies on GEM. If there is a problem in the growth ability, it will increase the company's material misstatement risks. Therefore, to select the indicators of x14 Growth rate of operation revenue, x15 Growth rate of net profits, x16 Growth rate of operating net cash flow, x17 Growth rate of net assets, x18Growth rate of total assets, the growth ability of the company can be reflected from the changing situation of the prime operating revenue, net profit, operating cash flow, net assets and total assets.

4.4 Operation capacity

The operation capacity of the company reflects the

level of enterprise to obtain profits through its own resources. The listing conditions of GEM are relatively loose, and listed companies are small and medium-sized enterprises, and mostly engaged in high-tech business, with higher yields and great uncertainty. The operation conditions of the corporate assets in the companies on GEM directly affect the ability of the company to resist risks of environment and other factors.

Therefore, to select the indicators of x19 Inventory turnover ratio, x20 Turnover of account receivable, x21 Turnover rate of shareholders' equity, x22 Total assets turnover, the operation capacity of the company can be analyzed from the enterprise inventory, accounts receivable, shareholders' equity and turnover of total assets.

4.5 Cash flow

Cash flow is different from profit, rarely affected by the accounting policy choice, which can truly and intuitively reflect the financial situation of the enterprise in a period of time. The listed companies on GEM have a smaller size than the companies on the main-board market, and are mostly engaged in the emerging industries, with uncertainty, so the current situation of the company can be better reflected by the cash flow. Therefore, to select the indicators of x23 Service income of sales goods / operation revenue, x24 Sales cash ratio, x25 Operating net cash flow / operating net income, the cash flow of the company can be analyzed from the operation revenue, enterprise sales quality level and the proportion of operating net cash flow to the net income.

5 SELECTION OF SAMPLE DATA

This paper obtains the data of material misstatement companies through looking up the administrative penalties announcement for the companies on GEM on the websites of CSMAR and China Securities Regulatory Commission and Shenzhen Stock Exchange, and screening the data disclosed in the data and related information in the financial statements in the year of violation.

In the announcement of violations of the listed companies on GEM disclosed by the China Securities Regulatory Commission and Shenzhen Stock Exchange, the material misstatement risks of listed companies are better displayed in previous years.

Erroneous records, material omissions, misleading statements and improper disclosure are four forms of violations, which are major punishment forms imposed by China Securities Regulatory Commission and the Exchange on the listed companies.

Erroneous records, material omissions and misleading statements disclosed in the penalty announcement reflect that the mentioned listed companies have material misstatement in the year of violation, while improper disclosure has other circumstances in addition to the material misstatement risks. The number of companies with such announcement in 2015 and 2016 is relatively small, so this paper selects the companies on GEM with erroneous records, material omissions, misleading statements and improper disclosure in the administrative penalty announcement in 2012 to 2014 as the samples of high material misstatement companies.

As the material misstatement conditions reflected in the announcement are lagging behind, the announcement in 2012 to 2014 mostly reflects the year of 2010, 2011, 2012 and 2013. Due to the existence of material misstatement of the companies in several years, for these companies, this paper just selects the first year of violations as the sample of high misstatement, with a total of 44 companies. For better comparison, the matching companies are placed in a similar environment. This paper selects the companies on GEM without violations, in the same fiscal year and the same industry with the misstatement companies based on the ratio of 1: 1 as the samples of low material misstatement companies.

6 PAIRED DIFFERENCES SIGNIFICANCE TEST

In order to test whether high misstatement company and low misstatement company have significant differences in the profitability, solvency, operation capacity, growth ability and cash flow, it is necessary to test the difference in the indicators selected by each factor.

This paper tests whether the indicators of two paired samples have significant differences by spss software. Prior to the significance test, it is necessary to first test whether the data is subject to the normal distribution. Generally, K-S test is used to verify the normal distribution condition of the data. Normal distribution conditions of the indicators are shown in Table 1.

In K-S test, p<0.05, indicates that the indicator does not obey the normal distribution. As can be seen from the above table, the indicators of x3, x5, x6, x7, x8, x10, x11, x12, x13, x15, x16, x17, x18, x19, x20 and x25 do not obey the normal distribution.

For the indicators that are in line with the normal distribution, this paper judges whether there are significant differences through T test. For the indicators that are not in line with the normal distribution, this paper selects Wilcoxon symbol rank test to judge the significance.

T test results are shown in Table 2. In T test, p<0.05, indicates that the there is a significant difference between the matched samples of the same indicator. Through the data table of T test results, it is found that the indicators of x1, x2, x4 and x24 have significant differences.

Table 1. Normal distribution table

	Normal parameters a, b		Most extreme difference			Asymptotic
Indicators	Mean value	Standard	Absolute	Positive	Negative	significance
		deviation	value		_	(bilateral)
Return on equity	9.440889	9.3065095	.168	.168	138	.014
Return on assets	7.657698	6.2991329	.100	.100	089	.348
Operating profit ratio	13.516401	17.8946514	.215	.144	215	.001
Net profit rate	5.532764	4.6389945	.147	.080	147	.044
Ratio of profits to cost	24.25401630	29.823260927	.218	.218	184	.000
Current ratio	7.7301956	10.87588580	.265	.236	265	.000
Quick ratio	7.06396977	10.808574722	.269	.230	269	.000
Equity ratio	33.69407356	34.349436768	.205	.205	173	.001
Times interest earned	22.08860076	29.219983831	.309	.309	171	.008
Total of operating net cash flow / liabilities	.276856	1.3242369	.299	.299	249	.000
Long-term liabilities and working capital ratio	.2223255	1.24339865	.429	.408	429	.000
Cash flow liability ratio	.30193939	1.348583544	.264	.264	241	.000
Operating net cash flow / current liabilities	.301942	1.3485863	.264	.264	241	.000
Growth rate of operation revenue	18.666049	31.3841052	.093	.093	069	.437
Growth rate of net profits	-6.644844	169.1700351	.310	.242	310	.000
Growth rate of operating net cash flow	22.350156	611.9826115	.300	.300	222	.000
Growth rate of net assets	105.794515	139.9643891	.281	.281	184	.000
Growth rate of total assets	70.591468	88.9749785	.205	.205	167	.001
Inventory turnover ratio	66.525192	574.1259713	.512	.512	454	.000
Turnover rate of shareholders' equity	.737972	.4674990	.139	.139	119	.066
Turnover of account receivable	6.629744	9.5041142	.289	.289	270	.000
Total assets turnover	.516628	.2681899	.112	.112	105	.217
Operating net cash flow / operating net income	-93.971395	992.4769236	.367	.367	359	.000
Service income of sales goods / operation revenue	91.990334	20.4735844	.110	.086	110	.236
Sales cash ratio	3.011287	19.4501933	.111	.061	111	.232

Table 2. T test results table

Indicators	Coupled difference						
	Mean value	Standard deviation	Standard error of mean value	95% of differential confidence interval		Sig.(bilateral)	
				Lower limit	Upper limit		
Return on equity	(3.7288)	10.2904	1.5513	(6.8574)	(0.6003)	.021	
Return on assets	(3.0043)	6.7893	1.0235	(5.0684)	(0.9402)	.005	
Net profit rate	(2.5276)	5.6825	0.8567	(4.2553)	(0.8000)	.005	
Times interest earned	9.7305	50.7044	20.7000	(43.4805)	62.9415	.658	
Growth rate of operation revenue	(10.9971)	40.3793	6.0874	(23.2736)	1.2793	.078	
Turnover rate of shareholders' equity	(0.0070)	0.5850	0.0882	(0.1848)	0.1709	.937	
Total assets turnover	(0.0303)	0.3595	0.0542	(0.1396)	0.0790	.579	
Service income of sales goods / opera-	(4.8222)	25.2821	3.8114	(12.5086)	2.8643	.213	
tion revenue							
Sales cash ratio	(7.9988)	26.5203	3.9981	(16.0617)	0.0641	.050	

Table 3 Wilcoxon symbol rank test results table

Indicators	Z	Asymptotic significance (bilateral)
Operating profit ratio	-3.116	.002
Ratio of profits to cost	-2.953	.003
Current ratio	-1.330	.183
Quick ratio	-1.190	.234
Equity ratio	222	.825
Total of operating net cash flow / liabilities	-2.521	.012
Long-term liabilities and working capital ratio	841	.400
Cash flow liability ratio	-2.392	.017
Operating net cash flow / current liabilities	-2.392	.017
Growth rate of net profits	-2.591	.010
Growth rate of operating net cash flow	-2.311	.021
Growth rate of net assets	513	.608
Growth rate of total assets	280	.779
Inventory turnover ratio	421	.674
Turnover of account receivable	-1.564	.118
Operating net cash flow / operating net income	-1.530	.126

Wilcoxon symbol rank test results are shown in Table 3. In Wilcoxon symbol rank test, p<0.05, indicates that there is a significant difference between the matched samples of the same indicator. Through the test results table, it is found that the indicators of x3, x5, x10, x12, x13, x15 and x16 have significant differences.

Finally, it is found that the material misstatement companies and non-material misstatement companies have significant differences in the profitability, solvency, growth ability and cash flow. Among them, the different significance level of 11 indicators of x1, x2, x3, x4, x5, x10, x12, x13, x15, x16 and x24 is relatively high.

7 CONCLUSION

With distinct characteristics, GEM is the security trading market specially designed for providing financing channels and growth space for the entrepreneurial enterprises, small and medium-sized enterprises and enterprises in the high-tech industry requiring financing and development. The market has relatively loose listing conditions and more stringent delisting system. Listed companies are mostly small and medium-sized enterprises, and mainly engaged in emerging industries, with independent innovation technology, and a broad market. Meanwhile, there are many problems, such as smaller scale of enterprises, unimproved internal governance and control, more single business, great dependence on the technology and funds and so on.

After selection of appropriate indicators according to the characteristics of GEM and implementation of paired test of the difference, it is found that there is a greater correlation between the recognition of material misstatement risks of companies on GEM and 11 indicators, namely, x1 Return on equity, x2 Return on assets, x3 Operating profit ratio, x4 Net profit rate, x5 Ratio of profits to cost, x10 Total of operating net cash flow/liabilities, x12 Cash flow liability ratio, x13 Operating net cash flow/current liabilities, x15 Growth rate of net profits, x16 Growth rate of operating net cash flow, x24 Sales cash ratio.

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