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Research on the reasons for the continued decline in corporate performance:evidence from SMEs of China

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Abstract. Nowadays, the domestic economic situation is changing rapidly, and many small and medium-sized board listed companies have been in a state of long-term decline in performance due to the impact of the domestic and foreign economic environment and their own structure. The performance is in a state of continuous decline, which means that there are problems in the corporate governance structure and management methods. Over time, the market share of the company will decline, the competitiveness will be reduced, and the company's reputation will be affected, which is not conducive to the sustainable development of the company in the rising period. The establishment of small and medium-sized board is an important measure for the country to improve the capital market, so it is necessary to analyze and improve the related research on the performance decline of small and medium-sized board companies. This paper proposes research hypotheses on the basis of previous research. The research results show that technological innovation, executive shareholding ratio, executive compensation and enterprise size have a negative impact on the continuous decline of performance, fixed assets are positively related to the continuous decline of performance, and there is no significant correlation between costs and corporate performance. Finally, on the basis of theoretical analysis and empirical test, some suggestions are put forward to effectively avoid the continuous decline of performance and improve the performance of enterprises.

Keywords: component; performance decline, small and medium-sized board listed companies, technology innovation, executive compensation

1. Introduction

In May 2004, a small and medium-sized enterprise board was established on the Shenzhen Stock Exchange. The listed companies on the small and medium-sized board have the following characteristics and advantages: (1) Most of the small and medium-sized board companies are in the growth stage of the enterprise life cycle, with the characteristics of high growth and high income. (2) Most of the small and medium-sized board enterprises are located in economically developed areas such as the southeast coast, and the economic development of the coastal areas provides huge space for the development of small and medium-sized enterprises. (3) Most of the small and medium-sized board enterprises have their own patented technologies. The national development plan emphasizes the independent innovation capability of high technology, and the small and medium-sized board enterprises with high technology content will usher in a favorable market development environment. As the economic situation continues to be sluggish, my country's economic growth rate is also slowing down, and the problem of declining financial performance of small and medium-sized companies has gradually become prominent, and even some companies have been in a state of declining performance for a long time.

Many domestic and foreign scholars have conducted relevant analysis and research on the continuous decline of performance from various factors and perspectives. Scholars believe that there are many reasons for the continuous decline of enterprises. Among them, Li Zhongbin and Wang Guijun believe that the state of continuous decline in corporate performance is It is affected by both subjective and objective factors, including economic environment and internal structure[1]. Wang Daohua constructed a theoretical model of enterprise performance, studied and analyzed what factors affect the continuous decline of enterprise performance, and proposed that the main reasons for the decline of enterprise performance are enterprise scale, industry structure, production

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technology development, enterprise economic development, location Regional economic differences and technological innovation[2]. Robbins and Pearce proposed that the reasons for the decline of enterprises can be divided into strategic level and operational level. For the deficiencies at the operational level, such as cost pressure, improper resource allocation and management defects, these problems are easily detected, and there is room for adjustment and compensation. Problems at the strategic level are mostly related to environmental factors, and enterprises need to act quickly to adapt to changes in the environment.

This article mainly starts with some relevant factors that affect the decline of performance, draws on relevant experience at home and abroad, and analyzes the reasons and influences of the continuous decline in the performance of small and medium-sized board listed companies from various aspects, hoping to provide some suggestions for the declining small and medium-sized board companies.

2. Literature Review and Development of Hypotheses

2.1 Technological Innovation

Nowadays, many studies have confirmed that innovation has a positive impact on improving corporate performance. Declining companies should pay more attention to the importance of scientific innovation to corporate performance, increase investment in innovative technologies, so that companies have stronger independent innovation and improve market competitiveness. Change the status quo of the continuous decline of corporate performance. Pratali (2003) found that technological innovation can help enterprises, especially declining enterprises, to improve their market competitiveness through research on product innovation. Roberts (1999) conducted a long-term study and observation of the US pharmaceutical industry and found that technological innovation has a positive impact on improving corporate profits, and improving innovation capabilities can effectively reverse the continued decline in performance. In addition to the manufacturing industry, Salavou (2002) and Prajogo (2006) analyzed the service industry and found that technological innovation is an important factor in determining the growth, progress and profitability of enterprises. Therefore, this paper proposes:

Hypothesis 1: Technological innovation is negatively correlated with continued decline in performance.

2.2 Corporate Governance

The shareholding ratio of executives reflects the degree of equity concentration of the company, and the shareholding ratio of executives has an effect on the company's performance by affecting the organizational structure and operation and management mode. Mehran (1995) found that the continuous decline of company performance is negatively related to the shareholding ratio of corporate management, and it is also negatively related to the proportion of equity compensation in CEO compensation [3]. Kaplan (1989), through a long-term study on executive shareholding, found that increasing executive shareholding ratio can significantly improve the performance of declining companies [4]. Coughlan and Schmidit (1985) conducted a long-term observation of listed companies whose performance continued to decline, and the results proved that executive compensation incentives were negatively correlated with the continuous decline of corporate performance [5]. The higher the shareholding ratio of executives, the higher the correlation between corporate profits and executives' profits, and the management will make decisions to improve the overall performance of the company in order to obtain greater benefits for itself, which is conducive to the reversal of declining performance. Executive compensation is an important measure for corporate executives to motivate. Increasing compensation can stimulate the enthusiasm and potential of managers, and is conducive to improving the level of management and performance. Agency theory believes that executive compensation is sensitive to changes in corporate

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performance. For companies with poor performance, increasing executive compensation can improve declining performance. Therefore, this paper proposes:

Hypothesis 2: The shareholding ratio of executives is negatively correlated with the continued decline in performance.

Hypothesis 3: Executive compensation is negatively correlated with continued decline in performance.

2.3 Cost

The cost-benefit analysis theory believes that the purpose of an enterprise is to pursue the maximization of utility. In order to obtain the best performance level, the enterprise will reduce costs through various means to obtain the maximum benefit. Zhao Qun (2014) proposed that if enterprises in recession should control and reduce costs, they can improve capital liquidity and thus increase corporate profits [6]. In the fierce competition in the industry, in order to reverse the decline in performance and occupy more market share, declining companies must have advantages in product pricing, and cost is the fundamental condition for determining commodity pricing. Enterprises can take technological innovation, change suppliers, and simplify commodity production processes to reduce commodity costs. Expenses are a gray area that many employees use for personal gain. Measures must be taken to strictly control corporate management expenses and strengthen internal control of costs and expenses. Therefore, this paper proposes:

Hypothesis 4: Costs are positively correlated with continued decline in performance.

2.4 Fixed Assets

To a certain extent, the proportion of fixed assets reflects the level of productivity. Excessive fixed assets will lead to idle resources, and the proportion of fixed assets is too large, reflecting the unreasonable capital structure and the problem of enterprise asset allocation, which is not conducive to the current production and production of enterprises. Investing in activities and therefore cannot optimize performance. Domestic scholars Guo Xuewei and Xue Jiasheng pointed out that improving and optimizing the utilization efficiency of fixed assets is an important means for the reversal of declining enterprises [7]. Excessive proportion of fixed assets reflects the lack of current assets of the enterprise. Relying on too little current assets cannot make the enterprise operate normally, and the enterprise is prone to fall into a vicious circle of insufficient funds for a long time. Fixed assets are often not easy to monitor and control, and cannot be used in a short period of time. Internal income for the enterprise, the higher the proportion of fixed assets, the more likely the enterprise performance will fall into a long-term decline. Therefore, this paper proposes:

Hypothesis 5: Fixed assets are positively correlated with continued decline in performance.

2.5 Enterprise Size

The size of the enterprise affects the scope of production and operation and market influence of the enterprise. It can be considered that the increase in the income of the enterprise and the increase in the number of employees indicate that the scale of the enterprise is getting bigger and bigger, reflecting the better and better operation effect. With the continuous changes in the economic situation, if the scale of the enterprise does not expand according to market adjustment and continues to produce and sell at the existing scale, it will affect the market competitiveness and market share of the enterprise, which will lead to a long-term decline in performance. Bai Guiyu (2015) studied various industry markets and found that the scale of enterprises was positively correlated with competitive behavior, and the competitive behavior was also positively correlated with performance improvement, and it was concluded that the size of enterprises had a negative correlation with performance decline [20]. Therefore, this paper proposes:

Hypothesis 6: Firm size is negatively correlated with continued decline in performance.

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3. Research Method

3.1 Data Sources

This paper selects 922 small and medium-sized board listed companies as the initial sample, and the research year is from 2018-2020. In order to ensure the accuracy of the data, the following aspects have been done to determine the final research sample of this paper: (1) Exclude the samples whose corporate performance has increased or not significantly declined for three consecutive years from 2017 to 2020; (2) Excluded annual report disclosures Insufficient, incomplete enterprise information and serious lack of required data samples; (3) Exclude samples that have been issued negative opinions or have problems in the audit process; (4) Exclude remuneration, equity or other required financial data that are incomplete and samples at extreme values. Finally, 103 research samples were obtained that met the requirements with complete information and performance declined for three consecutive years, and 103 comparative samples of the same scale in the same industry were retained. Finally, a total of 206 full-text research samples were obtained. The salary, cost, expense, profit and other data used in this paper are manually extracted from the annual report; other financial data and enterprise information are taken from the Guotai'an CSMAR database.

3.2 Variable Design

3.2.1 Dependent variables

This part mainly selects the dependent variable indicators that indicate the continuous decline of performance. In related research, there are many indicators to measure the performance level of enterprises. The main purpose of enterprises is to make profits. Therefore, the most suitable indicator to measure whether the performance of enterprises continues to decline is profitability. In this paper, earnings per share (EPS), also known as after-tax profit per share, is used as an indicator for judging the continuous decline in performance. the amount of profit. The size of earnings per share can be used to judge the level of performance of the company in this year. The continuous decline of earnings per share indicates that the performance of the company has been declining for many years, and there are problems in the operation of the company. This paper chooses earnings per share as the dependent variable. Since this paper studies small and medium-sized board companies whose performance has continued to decline for many years, in the three-year financial data of small and medium-sized board listed companies from 18 to 20 years, the selection is based on the continuous three-year decline in earnings per share. A sample of continued decline in performance.

3.2.2 Independent variable

The independent variables of this paper are technological innovation, corporate governance, cost, fixed assets, and enterprise scale. Technological innovation refers to the act of introducing new technologies or developing new products. Internationally, the size of R&D is usually used to indicate the level of scientific and technological strength. The size of R&D of an enterprise reflects the core level of the enterprise; the salary of executives reflects the human capital of the enterprise. The shareholding ratio of executives reflects the degree of ownership concentration. In this paper, the ratio of corporate executives' shareholding to the total number of shares and the logarithm of the top three executives' remuneration are used to represent the level of corporate governance (EI). Expense factor (COST), the cost and expense profit rate is the size of the profit obtained by the company for each additional cost or expense. The higher the value, the greater the profit rate; this paper uses the fixed asset ratio to indicate that the fixed asset factor (FS) has a continuous impact on the company's performance. The impact of the decline, the fixed asset ratio is the ratio of fixed assets to the total assets of the enterprise; the size of the enterprise (SIZE) is measured by taking the logarithm of the total assets of the enterprise at the end of the period.

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3.2.3 Control variables

Factors that affect the continuous decline of corporate performance include external environment and internal environment. Based on previous scholars' related research, this paper selects four factors as the control variables of this paper. The four control variables are (1) the nature of equity. The sample will be divided into foreign state-owned enterprises and non-state-owned enterprises, and the influence of the explanatory variables will be judged by controlling the nature of equity; (2) the region of the enterprise. Enterprise areas are classified as developed areas in Beijing, Shanghai, Guangdong and other southeastern areas, and other areas are classified as undeveloped areas; (3) Industry types, according to the different industries in which the samples are located, are divided into four parts: industry, commerce, public utilities and Comprehensive industry; (4) Whether the shareholders are related, that is, whether the top ten shareholders of the enterprise in the sample data are related. The descriptions and calculation methods of independent variables, dependent variables and control variables are shown in Table 1.

Table 1 Variable definition

Variable typles	The variable name	Variable symbol	Variable definitions
Explained variable	Continued decline in performance	EPS	Continuous decline is 1, no continuous decline is 0
Explanatory variables	Technological innovation	RD	R&D investment/operating revenue
	Corporate Governance	EI	Number of shares held by executives/total shares
			The logarithm of the salary of the top three executives
	Cost	COST	Sales Profit Margin/Total Cost Expenses
	Financial structure	FS	Fixed Assets/Total Assets
	Company Size	SIZE	Take the natural logarithm of total assets at the end of the period
Control variables	Shareholding structure	EN	1 for SOEs, 0 for non-SOEs
	Enterprise area	AREA	1 for developed regions and 0 for undeveloped regions
	Industry type	ID	1 for industry, 2 for business, 3 for utilities, 4 for general
	Shareholder relationship	CT	0 for unrelated, 1 for related

4. Data Analysis

4.1 Descriptive Statistics

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Table 2. Descriptive statistics

	N	Min	Max	Mean	Stdev
EPS	206	0	1	0.50	0.501
RD	206	0.000	0.260	0.018	0.036
EI(1)	206	0.000	1.000	0.500	0.370
EI(2)	206	12.520	16.610	14.380	0.580
COST	206	-0.240	1.180	0.120	0.150
FS	206	0.003	0.710	0.240	0.130
SIZE	206	19.290	25.660	22.080	0.910
EN	206	0	1	0.450	0.499
AREA	206	0	1	0.680	0.468
ID	206	1	4	1.620	0.879
CT	206	0	1	0.730	0.443

According to the description results in Table2, it can be known that the average value of R&D of technological innovation factor is 0.018, the standard deviation is 0.0362, and the skewness CV=0.018/0.036*100%=50%. Large, indicating that the selected sample has a high degree of dispersion; the average shareholding ratio of executives is 0.50, the standard deviation is 0.37, the skewness CV=0.37/0.5*100%=74%, the average executive compensation is 14.38, and the standard deviation is 0.58 , the calculated skewness is 4%, indicating that in the selected sample data, the shareholding ratio of executives who manage structural factors has a large degree of dispersion, while the level of executive compensation is basically the same; The difference is 1.42, the average is 0.12, and the standard deviation is 0.15. It can be seen that this factor has great dispersion; the average of the fixed assets ratio is 0.24, and the standard deviation is 0.13. It can be seen that the degree of dispersion is not different from the technological innovation factor. Large; the mean of enterprise size is 22.08, the standard deviation is 0.91, the standard deviation is much smaller than the mean, indicating that the variable of enterprise size in the sample is relatively concentrated. On

the whole, technological innovation, executive shareholding ratio, and cost and expenses in the sample data are relatively discrete, and executive compensation and enterprise scale are relatively concentrated.

4.2 Correlation Analysis

Table 3 ANOVA

		Mean	Stdev	F	Sig
EN	Non state enterprise	0.800	0.404	152.119	0.000
	State-owned enterprise	0.140	0.349		
AREA	Underdeveloped	0.680	0.469	13.562	0.000
	Developed	0.410	0.494		
ID	Industry	0.750	0.434	50.588	0.000
	Business	0.030	0.183		
	Utilities	0.090	0.294		
	Hybrid enterprise	0.250	0.500		
CT	Irrelevant	0.090	0.290	65.780	0.000
	Related	0.650	0.479		
	Total	0.500	0.501		

According to the table 3 about ANOVA test results, the significant $p=0.00<0.05$ of the four factors of ownership nature, region, industry type, and shareholder relationship shows that there are significant differences between groups of each factor, which proves that the selected four control

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variables and explanations The variables have strong correlation, that is, these four factors can be selected as control variables to further explore the relationship between each variable and the continuous decline of the performance of declining enterprises.

Table 4 Correlation Test.

	EPS	RD	EI(1)	EI(2)	COST	FS	SIZE
EPS	1						
RD	-0.4330**	1					
EI(1)	-0.2590***	-0.2590**	1				
EI(2)	-0.1120*	-0.0367	-0.0385	1			
COST	-0.0009	0.1490**	-0.1052	0.0858	1		
FS	0.2640***	0.0023	0.1221	-0.1360	-0.1920***	1	
SIZE	-0.1380**	0.0409	-0.0001	0.2250***	0.0600	-0.0874	1

According to the correlation analysis results, the correlation coefficient r=-0.433 between the continuous decline in performance and technological innovation is obtained, and the significance is at the 0.01 level, indicating that there is a strong negative correlation between the two. Stronger inhibition, validating the existence of Hypothesis 1. The results of correlation analysis show that the correlation coefficient between executive shareholding ratio and performance decline is r=-0.259, and it is significant at the level of 0.01, indicating that the sample data collected in this paper has a significant negative relationship between executive shareholding ratio and performance decline. Correlation relationship, which proves that there is indeed a negative relationship between executive shareholding ratio and corporate performance decline. The correlation coefficient between executive compensation and performance decline is r=-0.113, and there is a weak negative relationship. Executive shareholding ratio and executives Compensation is not related to each other. Taken together, there is a negative correlation between corporate governance (executive shareholding ratio and executive compensation) and the decline in corporate performance, which verifies that Hypotheses 2 and 3 are correct.

According to the results of the correlation analysis between cost profit rate and performance decline, the correlation coefficient between the two is r=-0.00086, and the significance coefficient is greater than 0.01, indicating that the correlation between the two is not significant, and corporate costs and expenses do not directly affect corporate performance. Significant effect, negative hypothesis 4. The correlation coefficient between the ratio of fixed assets and the decline in corporate performance is 0.264, and it is significantly correlated at the level of 0.01, indicating that there is a significant positive correlation between the fixed assets and the decline in performance in the sample data. Corporate performance is affected by fixed assets. The larger the proportion of fixed assets in corporate assets, the easier the corporate performance declines. The verification hypothesis 5 is correct. The correlation coefficient between the continuous decline in performance and the size of the enterprise is -0.138, which is significantly correlated at the level of 0.05, and the r value is negative. , which verifies that hypothesis 6 is correct.

Through the above analysis, it can be concluded that in addition to cost, other factors have a significant impact on the continuous decline of performance, and there is no multicollinearity problem between variables, so the selected variables meet the requirements.

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4.3 Analysis of Regression Results

In this paper, the two-class logistic regression model is used to test and predict the dependent variable of the type. 1 means that the performance continues to decline, and 0 means that the performance does not continue to decline.

According to Model 1, it can be seen that the correlation coefficients of ownership nature, region, industry type and shareholder relationship are -4.043, -0.577, -1.704 and 2.538 respectively, and at the level of 0.05, it is significantly related to the continuous decline in performance. This paper uses it as a control variable, In-depth analysis of the relationship between variables and the continued decline in corporate performance.

Model 2 is the test result of technological innovation and corporate performance decline. It can be seen that under the condition of a significance level of 0.01, technological innovation and continuous decline in performance are significantly negatively correlated, verifying that null hypothesis 1 is correct.

Table 5 Regression results

	（1）	（2）	（3）	（4）	（5）	（6）	（7）
	Bate	Bate	Bate	Bate	Bate	Bate	Bate
RD		-51.610***					
		(15.545)					
EI(1)			-1.086***				
			(1.954)				
EI(2)				-0.017*			
				(0.001)			
COST					0.453		
					(0.105)		
FS						11.000***	
						(12.460)	
SIZE							-0.180**
							(4.676)
EN	-4.043***	-4.279***	-4.090***	-4.046**	-4.052***	-4.597***	-3.985***
	（43.617）	(29.141)	（42.846）	（43.025）	（43.584）	（35.724）	（41.693）
AREA	-0.577**	-0.314***	-0.502**	-0.583***	-.618***	-1.125**	0.984***
	（1.127）	(0.219)	（0.832）	（1.038）	(1.223)	（3.252）	（1.094）
ID	-1.704***	-1.555***	-1.592***	-1.703***	-1.698***	-2.046***	-1.700***
	（24.669）	(14.952)	(20.57)1	（24.147）	（24.575）	（22.746）	（24.504）
CT	2.538***	3.509**	2.523***	2.540***	2.561***	2.993***	2.593***
	（12.261）	（16.732）	（11.459）	（12.141）	（12.172）	（10.301）	（12.408）
COX	185.191	212.047	187.208	185.192	185.290	203.097	185.537

Note: *, **, *** indicate significant at the level of 0.1, 0.05, and 0.01.

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Models 3 and 4 show the test results of executive shareholding ratio, executive compensation and performance decline, respectively, and the results verify that null hypotheses 2 and 3 are correct. According to the results of Model 3 and Model 4, it can be concluded that there is a negative correlation between corporate governance and the continuous decline of corporate performance.

Model 5 shows the results of the cost and performance decline test. It can be seen that the correlation in the figure is greater than the significance level of 0.1, and the null hypothesis 4 is rejected, indicating that the continuous decline of cost and performance is not related. This may be due to the fact that there are certain risks in the internal control of costs and expenses of enterprises and the control of costs and expenses is restricted by various factors. Investments such as technology investment and executive equity incentives have an inhibitory effect on cost and expense control.

Model 6 shows the test results of fixed asset indicators. Assuming the significance level $\alpha=0.01$, it can be obtained that fixed assets and performance continue to decline significantly and positively. The null hypothesis 5 is verified to be correct, and the regression coefficient is 11.000, indicating that the linear relationship between fixed asset ratio and performance continues to decline under the condition that the significance level is 0.01 There is a significant positive correlation, the more fixed assets an enterprise has, the more likely its performance will continue to decline.

Model 7 examines the correlation results between firm size and continued decline in performance. Under the conditional significance level $\alpha=0.05$, the probability corresponding to the Wald observation value of the significance test is less than the significance level, verifying that the null hypothesis 6 is correct, and the regression coefficient is negative, indicating that the linear relationship between enterprise scale and performance continues to decline at a significant level Under the condition of 0.05, there is a significant negative correlation. The larger the enterprise scale, the easier it is to change the state of continuous decline in enterprise performance.

5. Conclusions and Implications

Through the analysis and empirical research on the reasons that affect the continuous decline of corporate performance, the following conclusions are drawn: There is a negative correlation between technological innovation, corporate governance, enterprise scale and the continuous decline of corporate performance, and there is a positive correlation between fixed assets and the continuous decline of corporate performance.

Most of the companies listed on the SME board are in the growth stage, but the development speed and scale of many companies are not ideal, and even the performance of most companies has declined for many years, indicating that the existing system and management of listed companies on the SME board need to be improved. In the past, domestic and foreign scholars did not have much systematic research on the performance decline of listed companies on the small and medium-sized board. Through the research in this paper, it is found that the decline of corporate performance is not only affected by the domestic and foreign economic situation, but more importantly, by the company's scientific and technological innovation ability, management structure and financial structure and other internal circumstances.

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