



Research on the Correlation Between Internal Control and Corporate Performance of Listed Companies with the Use of Computer Technology

Based on the Analysis of Different Industrial Categories

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Abstract. The results of theoretical and practical analysis abroad show that internal control is very important to the development of enterprises. In order to promote China's economic development, this paper investigates the actual situation of China's listed companies to understand the impact of internal control on enterprise performance. Based on the data of listed companies on the A-share mainboard and small and medium-sized boards in the Shanghai and Shenzhen stock market from 2013 to 2018, this paper studies the relationship between internal control and enterprise performance. This paper combines computer technology, and its application is mainly reflected in two aspects: The first point is the collection and screening of sample data, that is, the author uses Shenzhen guotai'an database (CSMAR) and DIB internal control and risk management database to obtain the original samples. The second point is the empirical analysis of the sample data, that is, the author uses Stata 14 software to carry out regression analysis and robustness test. Firstly, the relationship between internal control and the corporate performance of sample listed companies is analyzed. Then, all listed companies are divided into three categories of labor-intensive, capital-intensive, and technology-intensive according to the industry category, to study whether there are differences in the impact of internal control on enterprise performance in different industry categories. Finally, through empirical analysis, it is concluded that there is a significant positive correlation between internal control and corporate performance. Further research also shows that the impact of internal control on corporate performance varies with different industrial categories. The impact of internal control on enterprise performance in technology-intensive and capital-intensive industries is significantly weaker than that in labor-intensive industries. But there is no significant difference between technology-intensive and capital-intensive industries.

Keywords: Listed Company · Internal Control · Enterprise Performance · Different Industrial Categories · Computer Technology and Application

1 Introduction

Nowadays, internal control is very important for the development of enterprises, both in theoretical research and in enterprise practice. Since July 1, 2006 and July 1, 2007,

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China's Shanghai Stock Exchange and Shenzhen Stock Exchange have implemented their respective internal control guidelines for listed companies. Since January 1, 2012, China's main board listed companies have implemented the Basic Norms of Enterprise Internal Control (Accounting [2008] No. 7) and Supporting Guidelines for Enterprise Internal Control (Accounting [2010] No. 11) (hereinafter referred to as internal control standard system) in batches according to industry categories. The original intention of issuing the above internal control standard system and guidelines in China is to hope that China's listed companies will establish an appropriate internal control system and implement it effectively, so as to improve enterprise performance and other objectives of implementing internal control.

So, in real life, does internal control improve the corporate performance of listed companies? Is there any difference in the impact of internal control on enterprise performance in different labor, capital and technology intensive industries? For the first question, scholars at home and abroad have made different answers. For the second question, only domestic Huang Xiaolin et al. conducted research and published articles [16]. The research objects were China's A-share main board and small and medium-sized board listed companies from 2008 to 2014. However, the research samples and conclusions of Huang Xiaolin et al. are far from now, so it is uncertain that the research conclusions of Huang Xiaolin et al. are still suitable for the actual situation of domestic enterprises [16]. Based on this, this paper takes China's listed companies on the Shanghai and Shenzhen A-share main board and small and medium-sized board from 2013 to 2018 as samples, divides the research samples into three categories: labor-intensive, capital intensive and technology intensive, and explores two questions, that are, "what is the impact of internal control on Enterprise performance in the overall listed companies?" and "is there any difference in the impact of internal control on enterprise performance in different industries? If so, what is the difference?".

2 Literature Review

2.1 Foreign Research Theory

Foreign empirical research on internal control and enterprise performance is mainly based on internal control information disclosure to test the impact of internal control defects on enterprise performance, capital cost and stock price.

2.1.1 Internal Control and Enterprise Performance

Ge W. et al. selected 145 listed companies with internal control defects from 1000 listed companies as the research objects and found that the more serious the internal control defects of an enterprise, the lower its profit level [14]. Dale stole et al. inquired about the report of SOX act of the United States from 2004 to 2006, obtained the data of evaluating the internal control of listed companies, and found that the existence of internal control defects of listed companies will inevitably affect the return on total assets (ROA) of the company, which is one of the indicators worried by the management, however, the existence of internal control defects may not affect the company's market value (MV) [8]. Beneish et al. found that if there is a problem in an enterprise's internal control,

the enterprise is likely to have a negative Cumulative Abnormal Return (CAR) [3]. In addition, Prawitt et al. quantified internal control by constructing a comprehensive internal control index and found that the higher the comprehensive internal control index of an enterprise, the better the operating performance of the enterprise [10].

2.1.2 Internal Control and Capital Cost

Ogneva et al. believe that internal control defects will lead to lower accounting information quality, increase information risk and operation risk, and lead to higher capital cost [5]. Kinney et al. found that companies with internal control defects have significantly high nonsystematic risk, systematic risk and cost of equity capital by examining companies that have not been audited before and after the promulgation of SOX act [6]. Ashbaugh-Skaife et al. found that the company's disclosure of internal control defects will lead to a significant increase in the cost of equity capital [18].

2.1.3 Internal Control and Stock Price

Beneish et al. found that after the implementation of SOX act, there was a negative correlation between internal control defects or major defects and stock prices [3]. While Ashbaugh-Skaife et al. got different results [6]. They found that minor internal control defects led to negative market reactions, but major control defects did not lead to such reactions.

In view of the correlation between the internal control of listed companies and their corporate performance, at present, no foreign scholars have classified listed companies according to different industrial categories and because they carried out relevant research on them.

2.2 Domestic Research Theory

There are two different conclusions in the domestic empirical research on internal control and enterprise performance.

2.2.1 There is a Positive Correlation Between Internal Control and Enterprise Performance

Lin Zhonggao innovatively proposed to use the method of constructing evaluation system to evaluate the advantages and disadvantages of enterprise internal control [2]. Finally, the analysis found that the higher the internal control index of an enterprise, the better the enterprise performance of the enterprise. Zhang Chuan et al. issued a questionnaire to 136 well-known large real estate companies in China to investigate the employees' views and suggestions on the effectiveness of their internal control [1]. The survey results show that the business situation of enterprises that can effectively implement internal control is much better than those that do not effectively implement internal control. Ye Chengang et al. selected China's A-share listed companies from 2007 to 2014 as samples for investigation [12]. After studying the relationship between corporate governance structure, internal control quality and corporate performance, they found that the internal control of A-share listed companies has a positive impact on their corporate performance,

but this view is not tenable in state-owned enterprises. Huang Xiaolin et al. selected the listed enterprises on the A-share main board and small and medium-sized board of Shanghai and Shenzhen stock exchanges from 2008 to 2014 as the object of investigation and research, and divided the overall listed enterprises according to different industrial categories [16]. First, they studied the overall listed enterprises, and then tested the correlation between internal control and enterprise performance in various industries, through the comparative analysis of the three industries, the following views are summarized: Firstly, the relationship between internal control and enterprise performance of all listed companies shows a significant positive correlation, and the relationship between internal control and enterprise performance shows a significant positive correlation in each industry. Secondly, among Listed Companies in different industries, the impact of an enterprise's internal control on enterprise performance will be different, that is, the impact of internal control in labor-intensive industries and technology-intensive industries on enterprise performance is significantly stronger than that in capital-intensive industries.

2.2.2 Internal Control Has No Significant Impact on Enterprise Performance

Zheng Shiqiao et al. found that different types of internal control structures do not have a certain symbiotic relationship with internal control objectives such as enterprise performance [11]. The empirical research of Zhang shuangpeng et al. based on contingency theory shows that when the adaptability between internal control and enterprise environmental contingency factors is poor, the impact of internal control on enterprise performance is not significant [19]. Based on the internal control self-evaluation report and audit report, Ye Zi found that there was no obvious correlation between internal control and enterprise performance measured by Tobin Q-value, Earnings Per Share and Discretionary Accruals (DA) [15]. Therefore, it was inferred that internal control did not play an effective role in adding value to the enterprise in enterprise practice.

2.3 Research Review

As for the correlation between the internal control of enterprises in various industries and their performance, a few literatures at home and abroad only discuss the correlation between the internal control of enterprises in a single industry and their performance, such as Zhang Chuan et al. for real estate companies, Zhong Wei et al. for banking companies, Huang Jianxin et al. and Yuan Xiaobo tested the correlation between internal control and performance of manufacturing companies, but only Huang Xiaolin et al. analyzed and compared the impact of internal control in different industries on enterprise performance at home and abroad [1, 4, 7, 16, 17].

To sum up, the existing literature has studied the correlation between internal control and enterprise performance from different angles, but there are still the following research gaps or problems: Firstly, there are differences in the research conclusions of the practical effect of internal control. The research on the relationship between internal control and enterprise performance by domestic scholars has two conclusions: positive correlation and insignificant correlation. Secondly, there are few studies about "Is there any difference in the impact of internal control on enterprise performance in different

industries? If so, what is the difference?”. At present, only Huang Xiaolin et al. study industry differences according to industry clustering at home and abroad [16]. However, the research samples and conclusions of Huang Xiaolin et al. are far from now, so it is uncertain that the research conclusions of Huang Xiaolin et al. are still suitable for the actual situation of domestic enterprises [16].

3 Research Design

3.1 Theoretical Analysis and Hypothesis

3.1.1 Correlation Between Internal Control and Corporate Performance of Overall Listed Companies

To judge whether an enterprise’s internal control is effective is generally to judge whether the enterprise can perceive risks in advance and avoid risks, or whether it can reduce losses caused by risks if risks cannot be avoided.

According to the enterprise capability theory and its branch theory [4], internal control is a kind of resource of the enterprise, which always provides the power for the development of the enterprise. This is because, first, internal control protects enterprises’ existing resources or advantages to a certain extent. Second, effective internal control indirectly helps enterprises find and identify upcoming risks as soon as possible and take timely measures to resist them; Even if it is impossible to resist, it can minimize the negative impact of risks on enterprises, such as the damage of risks to enterprise profits. Third, effective internal control can help enterprises detect risks in advance and help enterprises discover and seize opportunities in time to take the lead in the industry to seize or occupy a larger market.

From the enterprise capability theory and its branch theory, it is not difficult to notice that the enterprise maximizes the use of existing resources, avoids or weakens risks to reduce the loss of enterprises, and timely finds and seizes opportunities to expand the scope of profits. These three points push enterprises into a virtuous circle. Every business or other enterprise activity maximizes the profits earned by the enterprise, and then uses those profits to create more profits. In this way, the performance and value of the enterprise will continue to rise to achieve or maintain the best state. In conclusion, the following Hypothesis 1 is made:

H1: On the whole, the internal control of listed companies will significantly make an impact enterprise performance, and the relationship between them is positively correlated.

3.1.2 Correlation Between Internal Control and Corporate Performance of Listed Companies in Different Industrial Categories

Listed companies are divided into different categories by industry. For different industrial categories, the proportion of production factors such as capital and technology will be different. At the same time, the comprehensive quality of employees which may be affected by their educational background, professional knowledge and home education in various industries, enterprise operation processes and other enterprise characteristics

are also different. These differences lead to differences in the source, distribution, and impact of enterprise risks, resulting in the different matching of the enterprise's internal control.

It is of particular concern that, in most cases, internal control operates through the "people" of the enterprise. Therefore, internal control cannot be treated as a mere manual for policy coordination and related procedures. In most cases, internal control also involves employees and their behaviors, which means that "people" play a key role in implementing internal control. Moreover, in technology-intensive, labor-intensive and capital-intensive industries, employees' quality structure and quantity proportion are also different. The degree to which employees in different industries adapt to and implement the concept of handling daily business by internal control requirements will vary greatly.

However, the internal control standard system and criterion implemented in our country are all traditional management mode, that is, all relevant management systems apply to all listed companies in various regions and industries, without detailed differentiation, and without distinguishing the risk management needs and internal control characteristics of different industries. Based on the above content, the author creatively proposed hypothesis 2 on the premise of controlling other relevant factors:

H2: Horizontally, the impact of internal control on corporate performance will be different in different industry categories of listed companies.

3.2 Sample Selection and Data Source

In this study, listed companies on the A-share mainboard and small and medium-sized boards of Shanghai and Shenzhen stock Exchanges from 2013 to 2018 were selected as original samples. Then, the following companies are eliminated in turn by considering relevant factors: (1) Companies that retain the disclosure of internal control information; (2) * ST, S * ST, SST, ST companies; (3) Financial and insurance companies; (4) Other listed companies that do not meet the research needs, such as lack of research data. Finally, valid observations of 9120 listed companies were obtained.

The author's financial data and ownership structure data of listed companies in this article are found from Shenzhen Guotai'an Database (CSMAR). The DIB Internal Control Index is derived from the DIB Internal control and risk management database, the most authoritative database in the field. In this study, all relevant variable data showing the rule of continuity were winsorized at the level of (1%, 99%) [13]. This method is used because it can greatly reduce the influence of outliers on the final research results. In addition, the data processing software used in this empirical study is Stata 14 software.

3.3 Variable Design

3.3.1 Explained Variable

The enterprise performance (TobinQ) is expressed as the ratio of the enterprise's market value to its total assets. This paper uses two TobinQ values, and TobinQ2 is used for testing the robustness of TobinQ1. The calculation formulas [16] are shown in Table 1.

Table 1. Definition table of each variable

Variable type	Variable name	Variable symbol	Variable definition
Explained variable	Enterprise performance	TobinQ	TobinQ1 = [total number of shares * (share price of tradable shares + share price of non-tradable shares) + market value of net debt]/total assets at the end of the period. TobinQ2 = (number of tradable shares * share price of tradable shares + net assets + market value of net debt)/total assets at the end of the period.
Explanatory variable	Internal control level	IC	Measure the internal control level with DIB internal control index.
Control variable	Growth	GROWTH	Measured by the growth rate of operating revenue, (operating revenue of this year - operating revenue of last year)/operating revenue of last year.
	Material	MATERIAL	Total tangible assets at the end of the year/total assets at the end of the year.
	Shareholding ratio of direct controlling shareholders	SHARE	As a proxy indicator of equity concentration.
	Leverage	LEV	Total book liabilities at the end of the year/total book assets at the end of the year.
	Asset size	SIZE	It is represented by the natural logarithm of total assets at the end of the year.
	The company's listing age	AGE	Calculated based on time to market.

(continued)

Table 1. (continued)

Variable type	Variable name	Variable symbol	Variable definition
	Auditor quality	BIG4	If the accounting firm employed by the company belongs to the four largest international accounting firms (E&Y, Deloitte, PWC and KPMG), take 1, otherwise take 0.
	Industry variable	INDUSTRY	The industry classification is based on the guidelines for Industry Classification of listed companies issued by the CSRC.
	Year	YEAR	That is, the year of the period under investigation.

3.3.2 Explanatory Variable

Internal control level (IC) is measured by the DIB internal control index. And the quartile group was divided into 25% group spacing. The level of internal control in each group was 1, 2, 3 and 4 respectively from low to high.

3.3.3 Control Variable

Growth (GROWTH) is measured by the operating revenue growth rate, which can be expressed as the difference between the annual operating revenue and the previous year’s operating income divided by the previous year’s operating income. Leverage (LEV) can be expressed as the ratio between the total book liabilities at the end of the year and the total book assets. Material (MATERIAL) can be expressed as the ratio between the total tangible assets at the end of the year and the total assets at the end of the year. Asset size (SIZE) is represented by the natural logarithm of the total assets at the end of the year. The definitions of variables are shown in Table 1.

3.3.4 Model Construction

In order to investigate the impact of internal control on enterprise performance, referring to Huang Xiaolin's research theory and comprehensively considering the enterprise development background of domestic A-share main board and small and medium-sized board listed companies in Shanghai and Shenzhen stock market from 2008 to 2018 which is basically no great change, this paper directly quotes Huang Xiaolin's model, as shown in Formula (1) [16]. In Formula (1), the subscript i represents the enterprise; t represents the year; $TobinQ_{it}$ is the TobinQ of enterprise i in year t , and the subscripts of other variables have the same meaning. IC is the explanatory variable and CV is the control variable; α is the coefficient to be estimated and ε is the error term.

$$TobinQ_{it} = \alpha_0 + \alpha_1 IC_{it} + \sum_{j \geq 2} \alpha_j CV_{it} + \varepsilon_{it} \quad (1)$$

4 Empirical Analysis

4.1 Descriptive Statistical Analysis

In order to understand the data characteristics of each main variable, descriptive statistical analysis is conducted for each main variable, as shown in Table 2.

4.2 Correlation Analysis

In order to understand the correlation between variables, it is necessary to analyze the correlation between the two variables. As shown in Table 3, IC is significantly related to TobinQ1, and IC is significantly related to tobinQ2, which shows that the listed companies in the sample have a correlation between their internal control and corporate performance a whole.

Table 2. Descriptive statistics of main variables

variable	observed value	mean value	standard deviation	minimum value	maximum value
TobinQ1	9120	3.519	3.208	0.311	18.26
TobinQ2	9120	3.749	3.016	0.489	17.35
IC	9120	2.551	1.117	1	4
GROWTH	9120	0.169	0.429	-0.508	2.822
LEV	9120	0.456	0.201	0.0616	0.878
MATERIAL	9120	0.425	0.238	-9.083	0.981
SIZE	9120	22.52	1.298	19.99	26.39
SHARE	9120	0.356	0.153	0.0029	0.9
AGE	9120	12.69	6.394	1	28
BIG4	9120	0.072	0.258	0	1

Table 3. Correlation coefficient table

	TobinQ1	TobinQ2	IC	GROWTH	LEV	MATERIAL	SIZE	SHARE	AGE	BIG4
TobinQ1	1									
TobinQ2	0.985 ***	1								
IC	-0.047 ***	-0.053 ***	1							
GROWTH	0.050 ***	0.009	0.174 ***	1						
LEV	-0.489 ***	-0.524 ***	0.037 ***	0.036 ***	1					
MATERIAL	0.428 ***	0.466 ***	-0.025 **	-0.094 ***	-0.864 ***	1				
SIZE	-0.549 ***	-0.569 ***	0.237 ***	0.062 ***	0.512 ***	-0.488 ***	1			
SHARE	-0.095 ***	-0.102 ***	0.125 ***	0.002	0.091 ***	-0.053 ***	0.238 ***	1		
AGE	-0.153 ***	-0.127 ***	0.001	-0.014	0.240 ***	-0.211 ***	0.205 ***	-0.018 *	1	
BIG4	-0.144 ***	-0.142 ***	0.151 ***	-0.021 *	0.121 ***	-0.137 ***	0.377 ***	0.166 ***	0.063 ***	1

Note: “***”, “**”, “*” and “*” mean significant at the confidence level of 0.01, 0.05 and 0.1 respectively

4.3 Regression Analysis

4.3.1 Full Sample Analysis

The regression analysis results of the whole sample are shown in Table 4.

It can be seen from Table 4, the P-value of F value is less than 0.05, which means that the established model is meaningful as a whole. The internal control of listed companies has a significantly positive impact on enterprise performance, indicating that the overall impact of internal control of listed companies in China is obvious and positively correlated. H1 is supported.

4.3.2 Regression Analysis of Different Industrial Categories

4.3.3.1. Division of Different Groups

The primary premise of the comparative analysis of listed companies in different industry categories is to divide all listed companies into different industry groups. This paper is based on the Guidelines for Industry Classification of listed companies (revised in 2012) of China Securities Regulatory Commission, and draws on the industry cluster analysis method of Lu Tong et al. [9]. The principle of this method is to divide all sample listed companies into labor-intensive, capital-intensive, and technology-intensive industries according to their factor intensity. The final classification results are shown in Table 5.

Table 4. Regression analysis of the whole sample

	TobinQ1	TobinQ2
IC	0.135***(5.697)	0.136***(6.285)
GROWTH	0.578***(9.792)	0.578***(4.927)
LEV	-3.512***(-12.47)	-3.671***(-14.25)
MATERIAL	0.410*(1.703)	0.599***(2.719)
SIZE	-1.162***(-43.46)	-1.111***(-45.38)
SHARE	0.781***(4.442)	0.681***(4.230)
AGE	0.0035(0.772)	0.0201***(4.839)
BIG4	0.710***(6.847)	0.751***(7.911)
_cons	29.40***(47.68)	28.34***(50.21)
Year / Industry	control	control
F	164.476	121.789
Adjusted R-squared	0.505	0.53
N	10640	10640
Prob > F	0.000	0.000

Note: ***, **, * respectively means significant at the confidence level of 0.01, 0.05 and 0.1 respectively, the same below

Table 5. Classification results of industrial groups

group 1	group 2	group 3
Paper and paper products industry	Instrument manufacturing	Petroleum processing, coking and nuclear fuel processing industry
Electrical machinery and equipment manufacturing	Chemical raw materials and chemical products manufacturing	Culture, sports and entertainment
Rubber and plastic products industry Chemical fiber manufacturing	Comprehensive	Textile industry
Comprehensive utilization of waste resources	Furniture manufacturing	Food manufacturing
Pharmaceutical manufacturing	Information transmission, software and information technology services	Mining

(continued)

Table 5. (continued)

group 1	group 2	group 3
Computer, communication and other electronic equipment manufacturing	Wood processing and wood, bamboo, rattan, palm and grass products	Agricultural and sideline food processing industry
Special equipment manufacturing	General equipment manufacturing	Nonmetallic mineral products industry
Ferrous metal smelting and rolling processing industry	Culture and education, industrial beauty, sports and entertainment products manufacturing	Electricity, heat, gas and water production and supply
Manufacturing of railway, ship, aerospace and other transportation equipment	Other manufacturing	Leather, fur, feather and their products and shoemaking industry
Nonferrous metal smelting and calendaring industry	Construction	Education
	Printing and recording media reproduction industry	Real estate
	Automobile manufacturing	Textile and garment industry
		Scientific research and technology services
		Accommodation and catering
		Water conservancy, environment and public facilities management
		Wine, beverage and refined tea manufacturing
		Leasing and business services
		Health and social work
		Metal products industry
		Transportation, storage and postal services
		Agriculture, forestry, animal husbandry and fishery
		Wholesale and retail

4.3.3.2. Regression Analysis of Different Industrial Categories

The cost behavior model is based on the total cost and business volume, from which the highest and lowest business volumes are determined, and the total cost is decomposed to obtain.

According to the analysis in Table 6, firstly, TobinQ1 and TobinQ2 of the three industries significantly positively impact internal control, which means the impact of internal control of listed companies in the three industries on their enterprise performance is obvious and positive. Secondly, in both TobinQ1 and TobinQ2, the coefficient values of technology-intensive and capital-intensive industries are far lower than those of labor-intensive industries, indicating the influence of internal control of listed companies in

Table 6. Industry cluster regression results

	technology-intensive		labor-intensive		capital-intensive	
	TobinQ1	TobinQ2	TobinQ1	TobinQ2	TobinQ 1	TobinQ 2
IC	0.0876 *** (3.590)	0.0956 *** (4.309)	0.508 *** (3.907)	0.478 *** (3.841)	0.187 ** (2.129)	0.162 ** (2.019)
GROWTH	0.539 *** (8.951)	0.260 *** (4.754)	1.487 *** (4.016)	0.633 * (1.785)	0.459 ** (2.050)	0.120 (0.585)
LEV	-2.964 *** (-10.04)	-3.208 *** (-11.94)	-6.285 *** (-4.650)	-6.891 *** (-5.326)	-4.664 *** (-4.545)	-4.262 *** (-4.538)
MATERIAL	0.626 ** (2.471)	0.729 *** (3.164)	0.306 (0.279)	0.0596 (0.0567)	-0.355 (-0.405)	0.544 (0.677)
SIZE	-1.139 *** (-41.65)	-1.091 *** (-43.85)	-1.365 *** (-7.977)	-1.287 *** (-7.857)	-1.321 *** (-12.98)	-1.272 *** (-13.67)
SHARE	0.417 ** (2.312)	0.391 ** (2.385)	2.630 *** (2.732)	2.088 ** (2.267)	3.251 *** (4.490)	2.856 *** (4.309)
AGE	0.00869* (1.851)	0.0227 *** (5.309)	0.0289 (1.169)	0.0579 ** (2.444)	-0.0315 * (-1.851)	-0.00250 (-0.160)
BIG4	0.779 *** (7.456)	0.804*** (8.452)	-0.768 (-1.028)	-0.584 (-0.816)	0.838 * (1.962)	0.926 ** (2.366)
_cons	28.71 *** (45.58)	27.79 *** (48.48)	34.59 *** (9.331)	33.51 *** (9.444)	33.53 *** (14.24)	31.99 *** (14.84)
YEAR	control	control	control	control	control	control
F	121.789	128.261	116.928	125.898	109.234	126.728
Adjusted R-squared	0.509	0.536	0.361	0.342	0.511	0.530
N	2994	2994	2130	2130	3996	3996

Table 7. Robustness test

	technology-intensive VS labour-intensive	labour-intensive VS capital-intensive	technology-intensive VS capital-intensive
TobinQ1	[m1_1_mean]ic - [m1_2_mean]ic = 0	[m1_2_mean]ic - [m1_3_mean]ic = 0	[m1_1_mean]ic - [m1_3_mean]ic = 0
	chi2(1) = 4.12	chi2(1) = 7.84	chi2(1) = 0.00
	Prob > chi2 = 0.042**	Prob > chi2 = 0.005***	Prob > chi2 = 0.983
	significant difference	significant difference	No significant difference
TobinQ2	[m2_1_mean]ic - [m2_2_mean]ic = 0	[m2_1_mean]ic - [m2_3_mean]ic = 0	[m2_2_mean]ic - [m2_3_mean]ic = 0
	chi2(1) = 2.79	chi2(1) = 14.42	chi2(1) = 1.19
	Prob > chi2 = 0.095*	Prob > chi2 = 0.000***	Prob > chi2 = 0.276
	significant difference	significant difference	no significant difference

Note: m1_1, m1_2, m1_3 refers to technology intensive industries, labor-intensive industries and capital-intensive industries respectively
 m2_1, m2_2, m2_3 refers to technology-intensive industries, labor-intensive industries and capital-intensive industries respectively.

technology-intensive and capital-intensive industries on enterprise performance is far less than that of labor-intensive industries in the sample. This means that the internal control of listed companies in technology-intensive and capital-intensive industries has much less impact on corporate performance than in labor-intensive industries. Thirdly, although the coefficient values of technology-intensive and capital-intensive industries (TobinQ1 and TobinQ2) are relatively small, the coefficient values of capital-intensive industries (TobinQ1 and TobinQ2) are greater than those of technology-intensive industries, which means that the impact of internal control on enterprise performance of listed companies in technology-intensive industries in the sample is lower than that of capital-intensive industries. The results show that internal control in technology-intensive industries has less impact on corporate performance than in capital-intensive industries.

4.4 Robustness Test

In this paper, the robustness test is carried out by the Suest test method, and the results are shown in Table 7. It can be seen that there are industry differences in the impact of internal control on enterprise performance. The impact of internal control on technology-intensive and capital-intensive industries is weaker than that of labor-intensive industries, which verifies H2 again.

5 Conclusions

5.1 The Results of the Research

Based on the data of listed companies on the A-share mainboard and small and medium-sized boards of Shanghai and Shenzhen stock Exchanges from 2013 to 2018. This paper analyzes the relationship between internal control and corporate performance. The idea of empirical analysis is to conduct regression analysis on the sample population, divide all listed companies into different industrial categories, and then analyze the samples of each industry category. The empirical analysis finally draws the following conclusion:

First, overall listed companies (Tobin Q1 and Tobin Q2) have a significant positive correlation between internal control and corporate performance. Further research can verify a significant positive correlation between internal control and corporate performance in the three industries.

Second, the impact of internal control on enterprise performance varies with the types of industries. That is, the impact in technology-intensive and capital-intensive industries is significantly weaker than that in labor-intensive industries, but the impact difference between technology-intensive and capital-intensive industries is not significant.

5.2 Future Direction

Through the above series of research and analysis, the author concludes and provide the future direction:

On the one hand, the implementation of internal control by all enterprise employees will certainly promote the company's enterprise performance. This important conclusion provides practical and powerful support for China's securities authorities to forcibly require all China's main board listed companies to implement the internal control standard system following the regulations. Therefore, the author believes that China should advocate that both the regulatory authorities at the government level and the management at the company level should fundamentally strengthen the implementation of internal control. We should strengthen efforts to encourage listed companies on the small and medium-sized board and gem and large and medium-sized non listed enterprises to establish a standardized internal control system in the shortest time, to improve enterprise performance.

On the other hand, there are industry differences in the performance of enterprises implementing internal control. It is suggested that the management of technology-intensive and capital-intensive enterprises should form a matching enterprise internal control system as soon as possible according to the particularity of enterprise type, the source of enterprise risk and the possible consequences of risk. In addition, the enterprise's internal control supervision department should spend great efforts to analyze and evaluate the uniqueness of the internal control of technology-intensive and capital-intensive enterprises. They also should supervise the establishment of the enterprise's internal control system and the subsequent actual operation in the whole process, to ensure the real effectiveness of the internal control construction.

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