The Influence of Internal Control Quality on Enterprise Performance of Chinese Listed Companies

Yang Bai
Nanjing University of Science and Technology, Nanjing, China
*Corresponding author: 1729568171@qq.com

Abstract. With the further deepening of the internationalization of Chinese capital market, the various risks faced by enterprises are becoming more and more serious. Internal control can help companies reduce risks and provide effective protection to achieve strategic and operational goals. Therefore, research on the relationship between internal control quality and enterprise performance will help increase enterprises’ attention to internal control, and will promote the development of internal control in China. Based on the internal control objectives, this paper studies the relationship between internal control quality and enterprise performance. Taking the data of 2012-2018 of listed companies in China as the research sample, the empirical research and analysis are carried out by means of entropy method, regression analysis and robustness test. The results show that the completion degree of the five objectives of internal control is significantly positively correlated with enterprise performance and the quality of internal control is significantly positively correlated with enterprise performance. Finally, based on the conclusions, this paper proposes some suggestions for improving the internal control quality.

Keywords: Internal Control, Internal Control Quality, Enterprise Performance.

1. Introduction

1.1 Research background and significance

With the deepening of the internationalization of China's capital market, enterprises are facing more and more serious risks, and financial fraud is also increasingly concerned by the public. The importance of internal control gradually highlights that it helps enterprises achieve their business management goals and improve the integrity and authenticity of reports and information.

The United States issued the SOX act in 2002, requiring the management of enterprises listed in the United States to regularly disclose internal control evaluation reports, and requiring enterprises to hire accounting firms to verify the internal control of enterprises. This has pushed the importance of internal control to a new height. Britain, Japan and other countries have also introduced relevant laws and policies, which have increased the importance of domestic enterprises on their internal control from the policy level.

China's domestic degree of control began to develop later, but it developed faster. Since 2008, relevant departments in China have successively issued a series of policies and regulations, such as the “basic norms of enterprise internal control”. So far, the internal control norms and system construction objectives of Chinese enterprises have been preliminarily completed.

This paper mainly studies the correlation between the quality of internal control and enterprise performance of listed enterprises in China. The research results will help to improve the importance of internal control of Chinese enterprises, and will further promote the development and improvement of the internal control system of Chinese enterprises.

1.2 Research methods

The research methods of this paper can be summarized as the following two points:

1) Combine theory with practice. Before starting empirical research, this paper has studied and sorted out a large number of theories and materials, mastered the latest development trends of this research direction, and learned from previous experience and achievements to enrich this paper. On
the basis of theoretical research, combined with the actual data of Listed Companies in China, this paper studies the impact of internal control quality of listed companies on enterprise performance.

(2) Qualitative and quantitative. This paper uses the method of qualitative analysis to select the appropriate evaluation method of internal control quality and enterprise performance, combined with the data of a large number of listed enterprises, uses the entropy method to calculate the scores of various internal control objectives, and uses SPSS17 software to carry out correlation test, regression analysis and robustness test, so as to further prove the relevant conclusions from a quantitative perspective. The cooperation between qualitative analysis and quantitative research not only improves the authenticity and reliability of quantitative research results, but also enhances the persuasion and practical role of qualitative analysis.

2. Theoretical review and literature review

2.1 Definition, elements and objectives of internal control

2.1.1 Definition of internal control

COSO committee proposed “internal control - overall framework” in 1992 and defined “internal control is a process that is affected by the board of directors, management and other personnel of an enterprise to provide reasonable assurance for the realization of objectives such as the efficiency and effectiveness of operations, the reliability of financial reports, and the compliance with relevant laws and regulations.”

In 2008, China issued the “basic norms of enterprise internal control”, which said: “internal control is a process to achieve control objectives, which needs to be jointly implemented by the board of directors, the board of supervisors, managers and all employees. This definition emphasizes that enterprise internal control is not a static result, but a dynamic process of continuous optimization.”

2.1.2 Elements and objectives of internal control

Due to the wide scope of internal control, the position of internal control in the daily activities of enterprises has also been infinitely enlarged. The “basic norms of enterprise internal control” defines the five elements of internal control as follows:

(1) Internal environment. The internal environment is the cornerstone of other internal control elements, which will have an impact on the corporate culture, corporate discipline and corporate structure, and imperceptibly affect the control consciousness of employees.

(2) Risk assessment. It refers to the accurate identification and careful analysis of the risks that may occur in the process of achieving enterprise goals.

(3) Control activities. It refers to the policies and procedures to ensure that the necessary measures issued by the enterprise management to deal with risks can be implemented.

(4) Information and communication. It refers to the identification and feedback of internal control related information by the enterprise, and ensures the timely communication of information within the enterprise, between the enterprise and the outside.

(5) Internal supervision. It refers to the whole process of appointing appropriate personnel to evaluate the design and operation of internal control under the premise of appropriate and timely.

China's “basic norms of enterprise internal control” also clearly puts forward the objectives that China's enterprise internal control should achieve:

(1) Maintain asset security. Enterprises should strengthen asset management, ensure the safety of their own assets, and prevent losses caused by asset loss.

(2) Improve operation efficiency and effect. Every enterprise hopes to maximize benefits and achieve sustainable and steady development, and improving business efficiency and effectiveness is a necessary means to achieve these goals.

(3) Ensure the legality and compliance of enterprise operation and management. Enterprises are prohibited from taking illegal means to operate, make profits and operate.
(4) Ensure that the report and information are true and complete. Financial reports and other information can be used by enterprise stakeholders to predict the development trend of enterprises and obtain useful information for decision-making, which is the embodiment of corporate social responsibility.

(5) Promote enterprises to realize development strategies. Development strategy is the ultimate goal pursued by every enterprise, which plays a guiding role for the enterprise. Effective internal control is the basis for enterprises to achieve this ultimate goal.

The five elements and the five goals complement each other and combine beneficially to form a complete internal control system, which is conducive to people's systematic understanding of internal control.

2.2 Definition and evaluation of internal control quality

2.2.1 Definition of internal control quality

Ao Hui et al. (2017) [1] wrote in the article: the quality of internal control can reflect whether the design of an enterprise's internal control system is reasonable, and can also reflect the efficiency and effect of the actual operation of its internal control system. It is the standard to evaluate the internal control work of an enterprise.

Wang Ling (2017) [2] believes that the quality of internal control is a comprehensive evaluation. It not only reflects the ability of enterprise internal control, but also reflects the implementation effect of enterprise internal control.

So far, academia has not formed a unified definition of internal control quality, but academia generally believes that internal control quality includes two aspects of information, one is the consideration of the enterprise's internal control system itself, and the other is the evaluation of the implementation effect of internal control.

2.2.2 Evaluation method and selection of internal control quality

Based on a large amount of information, this paper classifies the evaluation methods of internal control quality into three types below.

(1) Evaluate internal control quality according to internal control defect information

Shan Huajun (2010) [3] measures the quality of internal control based on the number of internal control defects and whether to disclose internal control defects.

Li Wanfu et al. (2011) [4] used whether the enterprise has internal control defects to construct virtual variables to further study the correlation between internal control and investment efficiency.

The advantage of this evaluation method is that it is simple and feasible, while the disadvantage is that it is too simple and lacks rigor. Because the defect view is formed on the basis of completely relying on the disclosure of internal control information, if the information is defective, it will lead to deviation in the evaluation. Considering the actual situation of our country, due to the weak internal control and supervision of listed enterprises in our country, the mandatory disclosure stops at the form, which leads to the lack of foundation for the application of defect view in our country. In addition, only using virtual variables without considering the elements and processes of internal control, we can not comprehensively and accurately evaluate the quality of internal control, which is not convincing.

(2) Evaluate the quality of internal control according to the completion of internal control elements

The research group of Xiamen University once built an evaluation system based on the five elements of internal control in 2009. The index system contains four levels of indicators in total, and then calculated the value that can measure the quality of internal control by using analytic hierarchy process.

Lin Zhonggao (2007) [5] selected appropriate corporate governance indicators, made a basic summary of the five elements under the COSO framework, and established a comprehensive evaluation index of internal control of listed enterprises in China.
The advantages of the concept of elements are as follows: as a mature system, the COSO framework has been formed after repeated deliberation by many experts and scholars. We can rest assured to use it as the basis to make the evaluation work reasonable, reasonable and reliable. Its shortcomings are mainly manifested in: first, it is difficult to obtain data, and the efficiency of adopting field research methods is low; Secondly, the measurement of internal control elements needs to go through the process from qualitative evaluation to quantitative data, which may cause subjective deviation of the original data and affect the research conclusion.

(3) Evaluate the quality of internal control according to the completion of internal control objectives.

Lin bin et al. (2014) [6] selected appropriate indicators based on the five objectives of internal control, and divided the internal control objectives into three levels: operation, foundation and strategy, so as to establish the internal control quality evaluation index system. Zhang Xianzhi et al. (2011) [7] selected four indicators to represent the four major objectives of internal control proposed by COSO, and further used the hierarchical fuzzy processing method to obtain the internal control quality index.

The internal control index published by China Dibo enterprise risk management database is also the internal control quality evaluated according to the completion of the five major objectives of internal control.

The biggest advantage of the objective view is that the evaluation results are objective and reliable. From a series of data in the final financial statements of the enterprise, we can judge whether the internal control objectives of the enterprise have been achieved. It has the characteristics of digitization and accuracy, and the data acquisition is easy to operate. However, there are also some deficiencies in the concept of objectives. The final business results of enterprises are also affected by the macro environment, competitive strategies and other factors, not only by the impact of business objectives, there are systematic deviations.

After comprehensively analyzing the above three internal control quality measurement standards, combined with the advantages and disadvantages of each method, the available range of human and material resources, the difficulty of data collection and the actual situation of internal control in China, this paper decides to measure the internal control quality from the perspective of internal control objectives, using the completion of the five objectives of internal control.

2.3 Evaluation and influencing factors of enterprise performance

In a narrow sense, enterprise performance refers to the operating efficiency and performance of an enterprise during a certain period of operation. After consulting the relevant literature, this paper divides the research on enterprise performance into two categories: evaluation methods and influencing factors.

2.3.1 Evaluation method of enterprise performance

Based on previous studies and literatures, there are generally two kinds of methods for evaluating enterprise performance.

(1) Single indicator evaluation method refers to the method of evaluating enterprise performance by using single indicators such as return on total assets (ROA) and earnings per share (EPS). This method is mostly used by domestic scholars.

(2) Comprehensive evaluation methods, including wall scoring method, modern comprehensive evaluation method and other comprehensive evaluation methods.

2.3.2 Influencing factors of enterprise performance

Mao Ying (2010) [8] based on the sample data of listed enterprises in Shanghai, this paper studies the internal relationship between enterprise capital structure and enterprise performance under EVA by industry. The research shows that the capital structure of enterprises (except for hydropower and gas supply industry) has a negative impact on enterprise performance.
Zhao Mei (2016) [9] believes that the asset liability ratio of China's real estate enterprises is positively related to enterprise performance.

Li Qiaofeng (2016) [10] based on the research conclusion of Chinese gem enterprises from 2009 to 2015, the ownership concentration is positively correlated with enterprise performance.

Chen Cong (2015) [11] based on the actual data of listed enterprises in China from 2010 to 2013, it was found that there was a significant negative correlation between the proportion of independent directors and Tobin Q value and return on total assets (ROA) of private enterprises.

Zhu Yujie et al. (2016) [12], MI Xue et al. (2018) [13] found through research that the integration of two jobs has a positive impact on enterprise performance, which is consistent with the view of modern housekeeper theory.

2.4 Overview of research on the relationship between internal control quality and enterprise performance

Kim (2008) [14] found that enterprises with internal control defects are more difficult to enjoy financing preferences, and the amount of financing is significantly smaller than enterprises with sound internal control.

Ashbaugh skaife (2010) [15] believes that the venture capital and equity capital costs of enterprises with internal control defects are relatively high.

Altamuro et al. (2010) [16] found that improving the internal control system of enterprises will reduce the bad debt rate of bank loans, enhance the predictability of cash flow and the sustainability of income, further improve the quality of accounting information, and then promote the improvement of enterprise performance.

Li yuanxia (2013) [17] based on China's listed enterprises from 2008 to 2011, the study believes that the impact of equity checks and balances on enterprise performance is entirely achieved through the effectiveness of internal control.

Shaotingting (2013) [18] selected Chinese pharmaceutical manufacturing enterprises, and the research confirmed that the level of internal control of enterprises has a positive impact on enterprise performance.

Xiao Hua et al. (2013) [19] expressed the view that the internal control of listed enterprises in China has achieved initial results, which can not only help enterprises improve the quality of earnings, but also help enterprises improve corporate performance.

Chen Yujie et al. (2017) [20] believe that if the internal control evaluation is included in the performance evaluation of the agent, it can effectively reduce the principal-agent cost, weaken the principal-agent problem, and promote the sustainable development and performance improvement of the enterprise.

Wang Cheng et al. (2017) [21] believe that at present, enterprise stakeholders are more willing to explore a more efficient and transparent internal control system to support the sustainable development of enterprises.

Zhang Yulan et al. (2018) [22] based on the analysis of 16 categories of heavy pollution industries in Shanghai and Shenzhen stock exchanges from 2014 to 2016, the study found that the quality of internal control is positively correlated with enterprise value.

2.5 Research review

The development of internal control system in foreign countries started earlier, and the relevant policies and regulations are relatively perfect. Although the development of internal control system in China started late, it has developed rapidly. For the definition, elements and objectives of internal control, China has successively issued relevant policies, which have clear provisions. However, there is no unified, authoritative and widely recognized statement about the definition and evaluation of internal control quality in domestic academia, which shows that China's internal control system and theory need to be further improved.
The theoretical circle has rich research results on enterprise performance, and the classification of evaluation methods of enterprise performance is relatively clear, which is generally divided into two evaluation methods: single index method and comprehensive evaluation method. In the existing literature, the effects of corporate governance, capital structure, social responsibility, ownership concentration, the proportion of independent directors, and the integration of two positions on corporate performance are all involved. This also provides a reference for this paper to select control variables.

In recent years, foreign research on the relationship between internal control quality and enterprise performance has gradually decreased, while domestic research has increased year by year. Based on the literature collected in this paper, most scholars agree that there is a positive correlation between internal control quality and enterprise performance. However, in the existing studies, the research objects are mostly concentrated in a certain industry or region, the number of research samples is limited, and the research results may lack universality.

Based on the previous literature, this paper intends to adopt the objective oriented evaluation method of internal control quality, and use the return on total assets to measure enterprise performance. According to the real data of Chinese listed enterprises from 2012 to 2018, this paper studies the relationship between internal control quality and enterprise performance.

3. Institutional background and assumption

3.1 Development of China's internal control system

In the late 1990s, the Ministry of Finance issued the "internal accounting control norms", requiring all units to pay attention to the construction of internal accounting and accounting related control systems, and form a perfect internal containment, supervision and restriction mechanism to prevent financial fraud, reduce risks, and promote the healthy development of enterprises.

In 2008, five ministries and commissions issued the “basic norms of enterprise internal control”, which became a major breakthrough in the history of China's internal control construction. The general office of the Ministry of Finance and the CSRC issued the notice on the implementation of the enterprise internal control standard system by main board listed enterprises in 2012, requiring all state-owned holding listed enterprises to fully implement the enterprise internal control standard system in 2012, and disclose the self-evaluation report of enterprise internal control and the internal control audit report of financial report issued by certified public accountants at the same time of disclosing the 2012 annual report; As of December 31, 2011, the non-state-owned holding main board listed enterprises with a total market value of more than 5billion yuan and an average net profit of more than 30million yuan from 2009 to 2011 should disclose the self-assessment report of enterprise internal control and the internal control audit report of financial report issued by certified public accountants at the same time of disclosing the 2013 annual report; For other main board listed enterprises, they should disclose the self-assessment report of enterprise internal control and the internal control audit report of financial report issued by certified public accountants at the same time of disclosing the 2014 annual report.

Since 2012, China's main board listed enterprises have begun to disclose the internal control evaluation of enterprises. Therefore, this paper defines 2012 as a dividing point, and China has entered the stage of mandatory internal control information disclosure since 2012.

3.2 Theoretical analysis and hypothesis proposal

3.2.1 Internal control quality and enterprise performance

High quality internal control of enterprises can effectively reduce the daily management risks of enterprises and the possibility of financial fraud. According to the principal-agent theory, the separation of ownership and management rights of modern enterprises is conducive to improving the efficiency of business management and daily operations, but the attendant agency problems have also
become the focus of attention of enterprises. The high-quality internal control of enterprises can effectively prevent managers from illegally manipulating earnings management in order to forge profits, so as to reduce agency problems and agency costs to a certain extent, and then have a positive impact on improving enterprise performance. In addition, high-quality internal control of enterprises helps to improve the quality of accounting information disclosure. According to the signal transmission theory, high-quality accounting information disclosure can enhance the investment confidence of external investors, optimize the corporate image, and help the development of enterprises. Therefore, this paper makes the following assumptions:

H1: the internal control quality of Listed Companies in China is positively related to corporate performance.

3.2.2 Asset safety and enterprise performance

Internal control is essentially a process, which is a means to achieve goals. Therefore, the quality of internal control can be achieved by measuring the completion of the five objectives of internal control. A good internal control system of an enterprise can effectively reduce abnormal losses of enterprise assets and ensure the safety and integrity of necessary assets for daily operation of the enterprise. As a resource expected to bring economic benefits to enterprises, the safety and integrity of assets will ultimately affect enterprise performance. Based on the above analysis, this paper makes the following assumptions:

H1-1: there is a positive correlation between asset safety and corporate performance of Listed Companies in China.

3.2.3 Business efficiency and effect and enterprise performance

Enterprises create and accumulate wealth in the process of daily operation, and the predetermined business objectives point out the direction for the production and operation of enterprises. High quality internal control can ensure the good efficiency and effect of business activities, and then help enterprises accumulate wealth, create profits, and ultimately have an impact on enterprise performance. Based on the above analysis, this paper puts forward assumptions:

H1-2: the operating efficiency and effect of Listed Companies in China are positively related to corporate performance.

3.2.4 Legal compliance degree of operation and management and enterprise performance

If an enterprise can establish a perfect internal control system and implement it effectively, it can reduce the risk of violations in the business process of the enterprise itself, and can also put an end to the favoritism and fraud of employees at all levels within the enterprise, so as to ensure the legal compliance of the daily production and business activities of the enterprise. The compliance of production and operation can avoid the damage to the reputation of enterprises, and avoid the punishment of enterprises due to violations, resulting in unnecessary expenses. These will eventually be brought to the level of enterprise performance. Based on the above analysis, this paper puts forward assumptions:

H1-3: there is a positive correlation between the degree of legal compliance of operation and management of Listed Companies in China and enterprise performance.

3.2.5 Authenticity and integrity of reports and information and enterprise performance

Internal control provides a strong guarantee for enterprises to realize the authenticity and integrity of reports and information, and the degree to which enterprises realize the authenticity and integrity of reports and information also reflects the quality of internal control. Whether the financial report is reliable or not will have a direct and significant impact on the decision-making of investors and other stakeholders, which will ultimately affect the performance of enterprises. Therefore, this paper proposes assumptions:

H1-4: the report of Listed Companies in China is positively related to the authenticity and integrity of information and corporate performance.
3.2.6 Degree of realizing development strategy and enterprise performance

Enterprises fully mobilize various resources to achieve strategic goals, and the realization of strategic goals can reflect the quality of internal control in a sense. Because only when the internal control of the enterprise is designed effectively from the source and implemented effectively, the internal operation of the enterprise can be orderly, the strategic objectives set by the enterprise can be achieved, and ultimately have an impact on the performance of the enterprise. Based on the above analysis, this paper puts forward assumptions:

H1-5: there is a positive correlation between the degree of development strategy achieved by Chinese listed companies and corporate performance.

4. Research design

4.1 Sample selection and data source

This paper selects the real data of Chinese listed enterprises from 2012 to 2018, and uses Excel and SPSS17 software to analyze and process the data. All the real data in this paper are from CSMAR database.

According to the purpose of empirical research, the collected data are processed as follows:

1. Exclude enterprises with ST shares, SST shares, *ST shares and S*ST shares. Because the financial situation of such enterprises is abnormal, it is not suitable to be used as sample data.
2. Exclude financial industry enterprises. Because the financial industry is relatively special, its financial indicators are less comparable.
3. Eliminate enterprises with incomplete data. Because samples with incomplete data will reduce the reliability of conclusions.
4. Eliminate enterprises with obvious abnormal data. Eliminate the abnormal data in the sample, make the sample data more pure, and reduce the error interference.

After the above processing of the sample data, a total of 11605 groups of data are finally obtained as the research samples.

4.2 Index selection

The accuracy and practical significance of empirical research are often affected by the selection of indicators. Combined with the purpose and content of the study, taking into account the feasibility of the data obtained in the research process and the reality of our country, this paper selects the following variable indicators.

4.2.1 Explained variables

The explanatory variable of this paper is enterprise performance. The rate of return on total assets (ROA) contains information about the production efficiency, financial leverage, profitability, sales efficiency and other aspects of the enterprise, reflects the profitability of the total assets of the enterprise, and is also an important indicator to determine whether the enterprise should borrow money to operate. Therefore, this paper uses return on total assets (ROA) to evaluate enterprise performance.

4.2.2 Explanatory variables

Due to the asymmetry of information, it is difficult for researchers outside the enterprise to obtain relevant evidence if they want to directly, thoroughly and comprehensively understand and evaluate the internal control quality of the enterprise. However, relatively speaking, the realization degree of various objectives that provide reasonable assurance for enterprise internal control is an object that can be measured directly, and it is also relatively easy to obtain relevant evaluation information. Therefore, this paper selects a series of evaluation indicators with availability and objectivity to measure the completion of the five objectives of internal control, so as to evaluate the quality of internal control.
(1) Maintain asset security (CAP). Effective internal control can reduce unnecessary losses of enterprise assets, thereby promoting the increase of enterprise net assets. Therefore, this paper mainly selects the growth rate of net assets to evaluate the realization of enterprise asset safety goals.

(2) Improve operational efficiency and effectiveness (OPE). Effective internal control will improve the operating efficiency and effect of enterprises. This paper selects five indicators: inventory turnover rate, accounts receivable turnover rate, total asset turnover rate and net operating interest rate to evaluate the degree of realization of business objectives, and then uses entropy method to determine the weight of the five indicators to obtain the index.

(3) Ensure the legal compliance of enterprise operation and management (LAW). This paper mainly determines the legal compliance of enterprise operation and management by whether the enterprise has been punished or publicly punished by the CSRC and the stock exchange.

(4) Ensure that the report and information are true and complete (REP). As an embodiment of corporate social responsibility, enterprises must ensure the authenticity and integrity of financial reports and related information. This paper selects the audit opinions of financial statements issued by external independent certified public accountants every year to measure the realization of internal control reporting objectives.

(5) Promote the enterprise to realize the development strategy (STR). For the completion degree of the enterprise's internal control strategic objectives, this paper mainly selects four indicators: the amount of operating revenue, the growth rate of operating revenue, the sustainable growth rate and the growth rate of net profit to evaluate, and then uses the entropy method to determine the weight of the four indicators to obtain the score of the enterprise's development strategy, so as to measure the realization degree of the strategic objectives.

(6) Internal control quality (ICQ). This paper measures the quality of internal control through the completion of the five objectives of internal control. The weight of each objective is determined by entropy method, and the internal control quality index is finally obtained.

### Table 1. Explanatory variables

<table>
<thead>
<tr>
<th>Target</th>
<th>Symbol</th>
<th>Index</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal control quality</td>
<td>ICQ</td>
<td>Measured by the completion of internal control objectives</td>
<td>Calculated by entropy method</td>
</tr>
<tr>
<td>Maintain asset security</td>
<td>CAP</td>
<td>Growth rate of net assets</td>
<td>Current growth value of net assets / net assets at the end of last year</td>
</tr>
<tr>
<td>Improve operation efficiency and effect</td>
<td>OPE</td>
<td>Total asset turnover</td>
<td>Operating income / average total assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Operating net interest rate</td>
<td>Net profit / operating income</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inventory turnover rate</td>
<td>Operating cost / average inventory occupancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turnover rate of accounts receivable</td>
<td>Operating income / average occupancy of accounts receivable</td>
</tr>
<tr>
<td>Operation and management compliance</td>
<td>LAW</td>
<td>Whether the company has been punished or held accountable by the CSRC or the stock exchange</td>
<td>Be punished or condemned, take 1; Otherwise, take 0</td>
</tr>
<tr>
<td>The report and information are true and complete</td>
<td>REP</td>
<td>Audit opinion on financial statements</td>
<td>The unqualified opinion of the standard is taken as 1; 0 for other opinions</td>
</tr>
<tr>
<td>Realize the development strategy</td>
<td>STR</td>
<td>Operating income</td>
<td>Operating income</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growth rate of operating revenue</td>
<td>Current growth value of operating income / closing value of operating income last year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sustainable growth rate</td>
<td>Return on shareholders' equity × (1 - dividend payment rate) / (1 - return on shareholders' equity × (1 - dividend payment rate))</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Net profit growth rate</td>
<td>Net profit growth value in the current period / net profit value at the end of last year</td>
</tr>
</tbody>
</table>
4.2.3 Control variables

There are many influencing factors of enterprise performance, and other factors other than independent variables may affect the results of this study. Therefore, in the process of empirical research, it is necessary to control other influencing factors and control their impact on enterprise performance, so that this paper can draw relevant conclusions about the impact of enterprise internal control quality on enterprise performance more accurately. Referring to the previous research results, the control variables selected in this paper mainly include:

(1) Proportion of independent directors (INDE)

Through research, scholars at home and abroad have found that the establishment of independent directors helps to improve enterprise value and accounting transparency, reduce the occurrence of earnings management activities to a certain extent, and has positive significance for enterprise performance.

(2) Dual (DUAL)

The information advantage and communication efficiency of the integration of two jobs promote the improvement of enterprise performance. Therefore, in the complex external environment, the combination of chairman and general manager is more conducive to enterprise management. This paper uses the part-time situation of the chairman and general manager to judge the differentiation of the two positions in the enterprise. The same person is taken as 1, and the non same person is taken as 0.

(3) Nature of enterprise (SOE)

China's market economy is not yet mature, and the government often adopts macro-control to regulate the market. There are differences between state-owned enterprises and non-state-owned enterprises in terms of rules and regulations, supervision and policy support. Therefore, controlling the variable of enterprise nature can avoid the influence of enterprise nature and research results. This paper judges the nature of the enterprise from the perspective of the actual controller of the enterprise. The state-owned enterprise is taken as 1, and the rest of the enterprises are taken as 0.

(4) Equity concentration (TOP3)

Some studies have shown that the higher the degree of ownership concentration of enterprises, the more obvious the supervisory role of managers, which can reduce agency costs and improve enterprise performance. This paper uses the shareholding ratio of the top three shareholders to measure the equity concentration of enterprises.

(5) Capital structure (LEVER)

The financing cost of relative equity cost is sometimes lower than that of enterprise debt financing. The rational use of financial leverage can save the capital cost of enterprises and improve the performance of enterprises. This paper uses asset liability ratio to measure the capital structure of enterprises.

(6) Enterprise size (SIZE)

A large number of literatures have shown that enterprise size will have an impact on enterprise performance. This is mainly due to the existence of economies of scale, which enables large-scale enterprises to produce and operate at a lower cost. There is no doubt that low-cost production and operation can have a certain impact on enterprise performance. This paper refers to the treatment methods in the previous scholars' literature, and selects the natural logarithm of the total assets of the enterprise at the end of the year to measure the size of the enterprise.
Table 2. Variables selected in this paper

<table>
<thead>
<tr>
<th>Variable type</th>
<th>Variable name</th>
<th>Symbolic representation</th>
<th>Calculation formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explained variable</td>
<td>Return on total assets</td>
<td>ROA</td>
<td>Net profit / average total assets</td>
</tr>
<tr>
<td></td>
<td>Internal control index</td>
<td>ICQ</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintain asset security</td>
<td>CAP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve operation efficiency and effect</td>
<td>OPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operation and management compliance</td>
<td>LAW</td>
<td>Calculated by entropy method</td>
</tr>
<tr>
<td></td>
<td>The report and information are true and complete</td>
<td>REP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Realize the development strategy</td>
<td>STR</td>
<td></td>
</tr>
<tr>
<td>Explanatory variables</td>
<td>Proportion of independent directors</td>
<td>INDE</td>
<td>Number of independent directors / total number of directors</td>
</tr>
<tr>
<td></td>
<td>Concurrent appointment of chairman and general manager</td>
<td>DUAL</td>
<td>1 for the same person; Take 0 if not the same person</td>
</tr>
<tr>
<td></td>
<td>Nature of enterprise</td>
<td>SOE</td>
<td>1 for state-owned enterprises; Other enterprises take 0</td>
</tr>
<tr>
<td></td>
<td>Shareholding ratio of the top three shareholders</td>
<td>TOP3</td>
<td>Sum of shareholding proportions of the top 3 shareholders</td>
</tr>
<tr>
<td></td>
<td>Asset liability ratio</td>
<td>LEVER</td>
<td>Total liabilities / total assets</td>
</tr>
<tr>
<td></td>
<td>Logarithm of total assets</td>
<td>SIZE</td>
<td>Ln (total assets)</td>
</tr>
</tbody>
</table>

4.3 Model construction

This paper mainly studies the relationship between internal control quality and enterprise performance of Listed Companies in China. Considering the influence of all control variables on dependent variables, when there is a linear relationship between independent variables and dependent variables, the following multiple regression analysis model is generated:

$$ROA = k_0 + k_1 X + k_2 INDE + k_3 DUAL + k_4 SOE + k_5 TOP3 + k_6 LEVER + k_7 SIZE + \varepsilon$$

Where $k_i$ ($i=0,1,2,3,4,5,6,7$) is a constant, $\varepsilon$ is a random error term, and $X$ represents the independent variables ICQ, CAP, OPE, LAW, REP and STR respectively.

5. Empirical research

5.1 Entropy method

In this paper, the entropy method is used to determine the weight of each index, and the score of the five major objectives of internal control and the comprehensive internal control index are obtained. Entropy method determines the weight according to the variation degree of each index value. This method is completely objective and effectively avoids the influence of subjective factors.

The specific calculation steps of entropy method are as follows:
Suppose there are \( n \) samples and \( m \) indicators, and \( X_{ij} \) is the value of the \( j \)th indicator of the \( i \)th sample, where \( i = 1,2,\ldots,n \); \( j = 1,2,\ldots,m \).

1. **Dimensionless treatment**
   - **Positive indicators:** \( Y_{ij} = \frac{x_{ij} - x_{min}}{x_{max} - x_{min}} \times 60 + 40 \)
   - **Negative indicators:** \( Y_{ij} = \frac{x_{max} - x_{ij}}{x_{max} - x_{min}} \times 60 + 40 \)

   Where \( Y_{ij} \) is the result of dimensionless data processing, \( x_{max} = \max(X_{1j}, X_{2j}, \ldots, X_{nj}) \), \( x_{min} = \min(X_{1j}, X_{2j}, \ldots, X_{nj}) \).

2. **Calculate specific gravity**
   \[ P_{ij} = \frac{Y_{ij}}{\sum_{i=1}^{n} Y_{ij}} \]

3. **Calculate entropy**
   \[ e_j = -k \sum_{i=1}^{n} P_{ij} \ln P_{ij} \]
   \[ k > 0, \quad k = \frac{1}{\ln(n)}, \quad e_j \geq 0 \]

4. **Calculate the difference coefficient**
   \[ g_j = \frac{1 - e_j}{m - E_j} \]
   \[ E_j = \sum_{j=1}^{m} e_j, \quad 0 \leq g_j \leq 1 \]

5. **Calculate weight**
   \[ w_j = \frac{g_j}{\sum_{j=1}^{m} g_j} \]

According to the above calculation steps, this paper obtains the internal control target score and internal control quality index of the enterprise.

### 5.2 Descriptive statistics

This paper makes descriptive statistics to understand the basic characteristics of the sample data.
Table 3. Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean value</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>11605</td>
<td>-10.826</td>
<td>0.042</td>
<td>4.524310</td>
<td>4.165366</td>
</tr>
<tr>
<td>ICQ</td>
<td>11605</td>
<td>41.331797</td>
<td>79.582540</td>
<td>53.801344</td>
<td>7.390228</td>
</tr>
<tr>
<td>CAP</td>
<td>11605</td>
<td>40</td>
<td>100</td>
<td>45.678684</td>
<td>3.594453</td>
</tr>
<tr>
<td>OPE</td>
<td>11605</td>
<td>41.575174</td>
<td>93.642736</td>
<td>59.852644</td>
<td>7.152302</td>
</tr>
<tr>
<td>LAW</td>
<td>11605</td>
<td>40</td>
<td>100</td>
<td>93.83</td>
<td>18.223</td>
</tr>
<tr>
<td>REP</td>
<td>11605</td>
<td>40</td>
<td>100</td>
<td>99.56</td>
<td>5.116</td>
</tr>
<tr>
<td>STR</td>
<td>11605</td>
<td>40.989219</td>
<td>87.215189</td>
<td>62.586797</td>
<td>4.740588</td>
</tr>
<tr>
<td>INDE</td>
<td>11605</td>
<td>.181818</td>
<td>.800000</td>
<td>.373983</td>
<td>.055400</td>
</tr>
<tr>
<td>DUAL</td>
<td>11605</td>
<td>0</td>
<td>1</td>
<td>.26</td>
<td>.439</td>
</tr>
<tr>
<td>SOE</td>
<td>11605</td>
<td>0</td>
<td>1</td>
<td>.14</td>
<td>.347</td>
</tr>
<tr>
<td>TOP3</td>
<td>11605</td>
<td>2.671800</td>
<td>98.290400</td>
<td>48.927677</td>
<td>15.364119</td>
</tr>
<tr>
<td>LEVER</td>
<td>11605</td>
<td>.7969</td>
<td>94.1317</td>
<td>41.491895</td>
<td>20.141288</td>
</tr>
<tr>
<td>SIZE</td>
<td>11605</td>
<td>18.594071</td>
<td>28.508727</td>
<td>22.188215</td>
<td>1.263089</td>
</tr>
</tbody>
</table>

It can be seen from table 3 that due to the preliminary processing of the data, the sample data obtained is relatively complete and pure, effectively controlling the standard deviation of variables. Among them, the standard deviation of LEVER, LAW, TOP3 and ICQ is greater than 10, which is more discrete than other indicators, indicating that there are great differences in the capital structure of listed enterprises in China, the legal compliance of enterprise operations, the concentration of enterprise equity and the quality of internal control.

The standard deviation of the five target indexes that measure the quality of internal control is also large, all of which are greater than 3, indicating that there are great differences in the completion of internal control objectives of listed enterprises in China, which is consistent with the dispersion of internal control quality.

The minimum value of ROA is negative, indicating that there may be enterprises with low corporate performance and declining corporate development in China's listed enterprises, which are facing greater risks.

5.3 Correlation analysis

This paper uses Pearson correlation analysis to test the degree of correlation between variables.
### Table 4. Pearson correlation coefficient table

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>ICQ</th>
<th>CAP</th>
<th>OPE</th>
<th>LAW</th>
<th>REP</th>
<th>STR</th>
<th>INDE</th>
<th>DUAL</th>
<th>SOE</th>
<th>TOP3</th>
<th>LEVE</th>
<th>SIZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICQ</td>
<td>.097**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAP</td>
<td>.123**</td>
<td>0.012</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPE</td>
<td>.105**</td>
<td>.153*</td>
<td>-0.002</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAW</td>
<td>.055**</td>
<td>.986*</td>
<td>-0.015</td>
<td>-0.004</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REP</td>
<td>.065**</td>
<td>.044*</td>
<td>0.009</td>
<td>0.012</td>
<td>.021*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STR</td>
<td>.747**</td>
<td>.094*</td>
<td>.145**</td>
<td>.209**</td>
<td>.027**</td>
<td>.049**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDE</td>
<td>-0.016*</td>
<td>0.006</td>
<td>-0.006</td>
<td>-0.001</td>
<td>0</td>
<td>-0.002</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DUAL</td>
<td>.059**</td>
<td>0.011</td>
<td>.037**</td>
<td>-.068*</td>
<td>-.002</td>
<td>0.012</td>
<td>0.117*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOE</td>
<td>-.068*</td>
<td>.039*</td>
<td>-.028*</td>
<td>.077**</td>
<td>.028**</td>
<td>.023*</td>
<td>0.013</td>
<td>-.170*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOP3</td>
<td>.131**</td>
<td>.061*</td>
<td>-.012</td>
<td>.046**</td>
<td>.052**</td>
<td>.033**</td>
<td>.092*</td>
<td>.054*</td>
<td>-.007</td>
<td>.069*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEVE</td>
<td>-.382*</td>
<td>0.003</td>
<td>.291**</td>
<td>-.048*</td>
<td>-.037*</td>
<td>.050*</td>
<td>-.133*</td>
<td>.139*</td>
<td>0.002</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-.095*</td>
<td>.024*</td>
<td>.073**</td>
<td>.135**</td>
<td>-.003</td>
<td>0.014</td>
<td>.137*</td>
<td>.017</td>
<td>-.183*</td>
<td>.218*</td>
<td>.177*</td>
<td>.573**</td>
<td>1</td>
</tr>
</tbody>
</table>

**, There was significant correlation at the .01 level (bilateral).
*, Significant correlation at the .05 level (bilateral).

It can be seen from Table 4 that all explanatory variables in this paper have passed the correlation test with enterprise performance, and the test result is significant at the level of 0.01. Except that INDE is significant at the level of 0.05, other control variables have passed the significance test at the level of 0.01, which also verifies the scientificity of the control variables selected in this paper. Next, regression analysis can be carried out.
5.4 Regression analysis

5.4.1 Test H1-1

First of all, it can be seen from Table 5 that the tolerance of the seven variables is approximately 1, the minimum value is 0.605, which is far more than 0.1, and the variance expansion factor VIF is also approximately 1, the maximum value is 1.652, which is far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by using the model, and the regression result must be effective.

Secondly, Table 5 shows that the regression coefficient between asset safety and enterprise performance is 0.094, which indicates that there is a positive correlation between them. The adjusted $R^2$ is 0.191, the $F$ value is 392.858, and the $P$ value is 0.000, indicating that the fitting effect of the regression model is good, and the impact of asset safety on enterprise performance is significant.

In conclusion, assuming that H1-1 is established, there is a significant positive correlation between asset safety and corporate performance of Listed Companies in China. The better the asset safety of listed companies, the higher the enterprise performance.

5.4.2 Test H1-2

First of all, it can be seen from Table 6 that the tolerance of the seven variables is close to 1, far more than 0.1, while the variance expansion factor VIF is also close to 1, with the maximum value of...
1.630, far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by the model, and the regression result must be effective.

Secondly, the regression coefficient between business efficiency and effect and business performance is 0.240, which shows that there is a positive correlation between them. The adjusted $R^2$ is 0.235, the F value is 509.638, and the P value is 0.000, indicating that the fitting effect of the regression model is good, and the impact of enterprise operation efficiency and effect on enterprise performance is significant.

To sum up, assuming that H1-2 is established, that is, there is a significant positive correlation between enterprise operation efficiency and effect and enterprise performance, that is, the better the enterprise operation efficiency and effect, the higher the enterprise performance.

### 5.4.3 Test H1-3

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient of non standardization</th>
<th>Standard error</th>
<th>Standard coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Collinear statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-.049</td>
<td>.008</td>
<td>-6.432</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAW</td>
<td>6.504E-5</td>
<td>.000</td>
<td>.028</td>
<td>3.381</td>
<td>.001</td>
<td>.994</td>
</tr>
<tr>
<td>INDE</td>
<td>-.026</td>
<td>.006</td>
<td>-.035</td>
<td>-4.103</td>
<td>.000</td>
<td>.982</td>
</tr>
<tr>
<td>DUAL</td>
<td>.002</td>
<td>.001</td>
<td>.025</td>
<td>2.857</td>
<td>.004</td>
<td>.934</td>
</tr>
<tr>
<td>SOE</td>
<td>-.005</td>
<td>.001</td>
<td>-.044</td>
<td>-5.095</td>
<td>.000</td>
<td>.933</td>
</tr>
<tr>
<td>TOP3</td>
<td>.000</td>
<td>.000</td>
<td>.106</td>
<td>12.314</td>
<td>.000</td>
<td>.948</td>
</tr>
<tr>
<td>LEVER</td>
<td>-.097</td>
<td>.002</td>
<td>-.470</td>
<td>45.433</td>
<td>.000</td>
<td>.659</td>
</tr>
<tr>
<td>SIZE</td>
<td>.006</td>
<td>.000</td>
<td>.170</td>
<td>15.946</td>
<td>.000</td>
<td>.616</td>
</tr>
</tbody>
</table>

| Adjusted R-squared | .183 |
| F | 372.964 |
| Sig | 0.000 |

First of all, from table 7 we can see that the tolerance of the seven variables is close to 1, far more than 0.1, while the variance expansion factor VIF is also close to 1, with the maximum value of 1.624, far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by the model, and the regression result is bound to be effective.

Secondly, the regression coefficient between the legal compliance degree of operation and management of Listed Companies in China and enterprise performance is 0.028, which shows that there is a positive correlation between them. The adjusted $R^2$ is 0.183, the F value is 372.964, and the P value is 0.000, indicating that the fitting effect of the regression model is good, and the impact of the legal compliance of the operation and management of Listed Companies in China on enterprise performance is significant.

To sum up, assuming that H1-3 is established, there is a significant positive correlation between the degree of legal compliance of the operation and management of Listed Companies in China and corporate performance. That is, the higher the degree of legal compliance of the operation and management of Listed Companies in China, the higher the enterprise performance.
5.4.4 Test H1-4

Table 8. H1-4 regression results

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient of non standardization</th>
<th>Standard coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Collinear statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td>Trial version</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.077</td>
<td>.010</td>
<td>-7.704</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>REP</td>
<td>.0003</td>
<td>.000</td>
<td>.042</td>
<td>5.032</td>
<td>.000</td>
</tr>
<tr>
<td>INDE</td>
<td>-.026</td>
<td>.006</td>
<td>-.035</td>
<td>-4.099</td>
<td>.000</td>
</tr>
<tr>
<td>DUAL</td>
<td>.002</td>
<td>.001</td>
<td>.024</td>
<td>2.777</td>
<td>.005</td>
</tr>
<tr>
<td>SOE</td>
<td>-.005</td>
<td>.001</td>
<td>-.044</td>
<td>-5.117</td>
<td>.000</td>
</tr>
<tr>
<td>TOP3</td>
<td>.000</td>
<td>.000</td>
<td>.106</td>
<td>12.367</td>
<td>.000</td>
</tr>
<tr>
<td>LEVER</td>
<td>-.097</td>
<td>.002</td>
<td>-.469</td>
<td>45.366</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.006</td>
<td>.000</td>
<td>.169</td>
<td>15.818</td>
<td>.000</td>
</tr>
</tbody>
</table>

Adjusted R-squared: .184
F: 375.393
Sig: .000

First of all, it can be seen from table 8 that the tolerance of the seven variables is close to 1, far more than 0.1, while the variance expansion factor VIF is also close to 1, with the maximum value of 1.626, far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by the model, and the regression result is bound to be effective.

Secondly, the regression coefficient between the truthfulness and completeness of reports and information of Listed Companies in China and enterprise performance is 0.042, which shows that there is a positive correlation between them. The adjusted $R^2$ is 0.184, the F value is 375.393, and the P value is 0.000, indicating that the fitting effect of the regression model is good, and the impact of the authenticity and integrity of the reports and information of Listed Companies in China on enterprise performance is significant.

In conclusion, assuming that H1-4 is established, there is a significant positive correlation between the authenticity and integrity of reports and information of Listed Companies in China and corporate performance. The higher the authenticity and integrity of the reports and information of Listed Companies in China, the higher the enterprise performance.

5.4.5 Test H1-5

Table 9. H1-5 regression results

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient of non standardization</th>
<th>Standard coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Collinear statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td>Trial version</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.373</td>
<td>.005</td>
<td>-79.133</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>STR</td>
<td>.007</td>
<td>.000</td>
<td>.756</td>
<td>157.939</td>
<td>.000</td>
</tr>
<tr>
<td>INDE</td>
<td>-.020</td>
<td>.004</td>
<td>-.026</td>
<td>-5.478</td>
<td>.000</td>
</tr>
<tr>
<td>DUAL</td>
<td>.001</td>
<td>.000</td>
<td>.008</td>
<td>1.656</td>
<td>.098</td>
</tr>
<tr>
<td>SOE</td>
<td>-.004</td>
<td>.001</td>
<td>-.031</td>
<td>-6.285</td>
<td>.000</td>
</tr>
<tr>
<td>TOP3</td>
<td>.000</td>
<td>.000</td>
<td>.057</td>
<td>11.726</td>
<td>.000</td>
</tr>
<tr>
<td>LEVER</td>
<td>-.092</td>
<td>.001</td>
<td>-.447</td>
<td>-76.730</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.002</td>
<td>.000</td>
<td>.056</td>
<td>9.203</td>
<td>.000</td>
</tr>
</tbody>
</table>

Adjusted R-squared: .741
F: 4732.455
Sig: .000
First of all, it can be seen from table 9 that the tolerance of the seven variables is close to 1, far more than 0.1, while the variance expansion factor VIF is also close to 1, with the maximum value of 1.648, far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by the model, and the regression result is bound to be effective.

Secondly, the regression coefficient between the degree of development strategy and corporate performance of Listed Companies in China is 0.756, which shows that there is a positive correlation between them. The adjusted $R^2$ is 0.741, the F value is 4732.455, and the P value is 0.000, indicating that the fitting effect of the regression model is good, and the degree of China's listed companies' realization of development strategy has a significant impact on enterprise performance.

To sum up, assuming that H1-5 is established, that is, there is a significant positive correlation between the degree of development strategy achieved by Chinese listed companies and corporate performance, that is, the higher the degree of development strategy achieved by Chinese listed companies, the higher the corporate performance.

5.4.6 Test H1

The test results of the above five hypotheses H1-1, H1-2, H1-3, H1-4 and H1-5 show that the completion of the five major objectives of internal control has a significant positive impact on enterprise performance. From the side, H1 can be verified that the quality of internal control is positively related to enterprise performance. The following is the regression analysis of the variables in H1, and the following analysis results are obtained:

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient of non-standardization</th>
<th>Standard coefficient</th>
<th>$t$</th>
<th>Sig.</th>
<th>Collinear statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td></td>
<td></td>
<td>Tolerance  VIF</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.069</td>
<td>0.008</td>
<td>-8.763</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>ICQ</td>
<td>0.003</td>
<td>0.000</td>
<td>10.417</td>
<td>.000</td>
<td>0.995</td>
</tr>
<tr>
<td>INDE</td>
<td>-0.026</td>
<td>0.006</td>
<td>-4.046</td>
<td>.000</td>
<td>0.982</td>
</tr>
<tr>
<td>DUAL</td>
<td>0.002</td>
<td>0.001</td>
<td>2.899</td>
<td>.004</td>
<td>0.934</td>
</tr>
<tr>
<td>SOE</td>
<td>-0.006</td>
<td>0.001</td>
<td>-5.360</td>
<td>.000</td>
<td>0.933</td>
</tr>
<tr>
<td>TOP3</td>
<td>0.000</td>
<td>0.000</td>
<td>11.941</td>
<td>.000</td>
<td>0.948</td>
</tr>
<tr>
<td>LEVER</td>
<td>-0.097</td>
<td>0.002</td>
<td>-4.70</td>
<td>.000</td>
<td>0.660</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.006</td>
<td>0.000</td>
<td>15.930</td>
<td>.000</td>
<td>0.616</td>
</tr>
</tbody>
</table>

Adjusted $R^2$ .190
F 389.940
Sig .000

First of all, it can be seen from table 10 that the tolerance of the seven variables is close to 1, far more than 0.1, while the variance expansion factor VIF is also close to 1, with the maximum value of 1.624, far less than 10, which shows that there is no multicollinearity problem in each variable, which can be measured by the model, and the regression result is bound to be effective.

Secondly, the regression coefficient between internal control quality and enterprise performance is 0.087, which shows that there is a positive correlation between them. The adjusted $R^2$ is 0.190, the F value is 389.940, and the P value is 0.000, indicating that the fitting effect of the regression model is good, and the impact of internal control quality on enterprise performance is significant.

In conclusion, H1 is true. There is a significant positive correlation between the quality of internal control of listed companies and corporate performance, that is, the better the quality of internal control of listed companies, the higher the corporate performance.
5.5 Robustness test

In this paper, earnings per share (EPS) is used to test the robustness of the model instead of the return on total assets (ROA). EPS reflects the after tax profits created per share. The higher the EPS, the more profits created.

Correlation analysis shows that the six explanatory variables and EPS are significant at the level of 0.01, and further regression analysis is carried out. The regression analysis results of each variable are summarized as follows:

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient of non-standardization</th>
<th>Standard coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Overall model inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard error</td>
<td>Trial version</td>
<td></td>
<td>Adjusted R-squared</td>
</tr>
<tr>
<td>1</td>
<td>ICQ</td>
<td>.003</td>
<td>.000</td>
<td>.079</td>
<td>9.087</td>
</tr>
<tr>
<td>2</td>
<td>CAP</td>
<td>.008</td>
<td>.001</td>
<td>.073</td>
<td>8.285</td>
</tr>
<tr>
<td>3</td>
<td>OPE</td>
<td>.012</td>
<td>.000</td>
<td>.225</td>
<td>25.276</td>
</tr>
<tr>
<td>4</td>
<td>LAW</td>
<td>.001</td>
<td>.000</td>
<td>.025</td>
<td>2.876</td>
</tr>
<tr>
<td>5</td>
<td>REP</td>
<td>.004</td>
<td>.001</td>
<td>.052</td>
<td>5.967</td>
</tr>
<tr>
<td>6</td>
<td>STR</td>
<td>.056</td>
<td>.001</td>
<td>.675</td>
<td>108.309</td>
</tr>
</tbody>
</table>

It can be seen from the table that there is a significant positive correlation between ICQ, CAP, OPE, LAW, REP, STR and EPS, and the stability and assumptions of the model have been further verified.

6. Research conclusions and policy recommendations

6.1 Research conclusion

6.1.1 There is a positive correlation between asset safety and corporate performance of Listed Companies in China, assuming that H1-1 is established.

Assets can bring economic benefits to enterprises in the future, and the loss or damage of enterprise assets will naturally affect the economic interests of enterprises. Only by building a perfect internal control system and effectively implementing it, can enterprises ensure the realization of the safety goal of enterprise assets, so as to avoid the loss of enterprise assets.

6.1.2 The operating efficiency and effect of Listed Companies in China are positively related to corporate performance, assuming that H1-2 is true.

In daily business activities, enterprises have achieved value creation in the process of constantly achieving business objectives. The establishment and implementation of a scientific and perfect internal control system can effectively promote enterprises to improve business efficiency and effect, help enterprises create and accumulate value, and finally achieve the purpose of improving enterprise performance.

6.1.3 There is a positive correlation between the degree of legal compliance of the operation and management of Listed Companies in China and enterprise performance, assuming that H1-3 is established.

Enterprises must pay more attention to the internal control system to achieve legal compliance in the process of enterprise operation. The realization of enterprise compliance goals can prevent enterprises from being punished by relevant competent departments due to violations of laws and regulations, and the realization of compliance goals is conducive to maintaining their own image, establishing brand influence and market reputation, thus affecting enterprise performance.
6.1.4 The reports of Listed Companies in China are positively related to the authenticity and integrity of information and corporate performance, and H1-4 is assumed to be true.

An enterprise should establish a scientific and perfect internal control system and effectively implement the internal control system, disclose all kinds of information of the enterprise accurately, timely and accurately, and improve the quality of information disclosure, so as to optimize the social image of the enterprise, establish the investment information of investors, and promote the significant improvement of enterprise performance from the positive side.

6.1.5 There is a positive correlation between the degree of development strategy achieved by Chinese listed companies and corporate performance, assuming that H1-5 is established.

The pre-set strategic goal of the enterprise is to realize the value-added of the enterprise, to promote the improvement of enterprise performance, and to create wealth for shareholders. Internal control plays an important role in this process. High-quality internal control can ensure that all necessary links and key elements can operate reliably in the process of achieving strategic objectives. Only in this way can we achieve the strategic objectives of the enterprise, and finally realize the value-added of the enterprise and the growth of enterprise performance.

6.1.6 The internal control quality of Listed Companies in China is positively related to corporate performance, and H1 is established.

Based on the previous five conclusions, it shows that there is a significant positive correlation between the five objectives of internal control of listed enterprises in China and their enterprise performance. Through empirical research, it further verifies that there is a direct positive correlation between the quality of internal control and enterprise performance of listed enterprises in China, and H1 is true. Therefore, it is very necessary for enterprises to establish and improve the internal control system and improve the overall internal control quality of enterprises. The full realization of the five objectives of internal control will ultimately have a significant positive effect on the improvement of enterprise performance.

6.2 Policy recommendations

6.2.1 Strengthen the understanding of internal control and optimize the internal control environment

This paper finds that the quality of internal control of listed enterprises in China is positively related to enterprise performance, which shows that internal control is of great significance for enterprises to improve their own performance. All enterprises should strengthen their understanding of internal control ideologically and pay more attention to internal control; Pay attention to the construction of internal control system in actual business, start with the five elements of internal control, and take the five objectives of internal control as the guidance to formulate a perfect internal control system and a reasonable corporate governance structure.

In order to establish and improve the internal control system, enterprises should pay attention to the control of key areas and core links in business activities in order to achieve scientific and reasonable control activities. In practical work, enterprises should focus on the control of various activities and procedures, distinguish the core control points of the procedures, and take corresponding control activities to ensure the effectiveness of the procedure implementation process. In the face of various risks that may occur, enterprises should comprehensively estimate their size and impact, conduct objective analysis and appropriate disclosure, and warn many investors to pay attention to investment risks to prevent the gains outweigh the losses. When risks occur, enterprises should also start the risk early warning mechanism and emergency treatment mechanism.

A reasonable corporate governance structure can play an important role in promoting and supervising each other, and can ensure the effective implementation of the internal control system. Therefore, enterprises should establish and improve a scientific governance structure to promote the healthy growth of enterprises. In addition, the corporate culture and social responsibility formed in
the development process of the enterprise require every employee to abide by and carry forward, so as to ensure the stable and healthy development of the enterprise from the spiritual level.

6.2.2 Strengthen internal and external supervision and increase the cost of violations

China's internal control system started late, and the relevant policies and regulations are not perfect. On the whole, the quality of internal control of listed enterprises in China is different, and there are also great differences in the progress of internal control construction. Therefore, we need to strengthen internal and external supervision of enterprises and work together to promote the development of China's internal control system.

For internal enterprises, enterprises should increase the audit of control activities, strengthen the supervision of the separation of duties, and formulate enterprise emergency risk response system and major risk early warning mechanism. By strengthening internal supervision, reduce the possibility of violating laws and regulations, and reduce the cost of violating laws and regulations.

For the external of enterprises, the government and relevant national departments should strengthen the external supervision of the internal control of enterprises, and strengthen the inspection and supervision of the internal control reports and audit reports of enterprises. The government and relevant national departments should improve relevant policies and regulations. On the one hand, they should clarify the punishment methods for enterprises' violations of laws and regulations and increase the cost of enterprises' violations; On the other hand, we can establish incentive policies to actively encourage all enterprises to disclose their internal control related information, so as to promote the development of enterprises and promote the improvement of market economy.

6.2.3 Strengthen the importance of financial information disclosure and improve the quality of financial information disclosure

This study shows that the authenticity and integrity of reporting information is positively related to enterprise performance, that is, the more authentic, complete and reliable the reports and information provided by enterprises, the higher the enterprise performance will be. Therefore, enterprises should strengthen the attention and recognition of financial information disclosure, comprehensively publish the relevant information of financial reports, and ensure the transparency and openness of normal business activities. When an external organization audits an enterprise, the audit committee should fully communicate with the external auditors. For the important defects found, the general meeting of shareholders and the meeting of the board of directors should be held, and in-depth communication with all parties should be carried out at the meeting to avoid wrong decisions due to misunderstanding and harm the interests of all parties. By providing stakeholders with true, complete and reliable financial information, we can establish a positive corporate image and further improve corporate performance.

7. Conclusion

In recent years, many financial scandals have been constantly disclosed, which gave birth to the internal control system of enterprises. In order to make enterprises more reasonable and effective in business management activities, the establishment of internal control system can be regarded as a necessary method. This system enables the operation plan to further protect all assets of the enterprise from infringement. In addition, it can also ensure that the enterprise can correctly and comprehensively disclose relevant information to the public, and ensure the effectiveness and timeliness of the provision of management information.

Based on the real data of Chinese listed enterprises from 2012 to 2018, this paper measures the quality of internal control with the completion of internal control objectives, and measures the performance of enterprises with the return on total assets. Through correlation analysis, regression analysis and robustness test, it is concluded that there is a significant positive correlation between the completion of the five objectives of internal control and the quality of internal control of Chinese listed enterprises and their enterprise performance.
According to the research conclusion of this paper, we put forward policies and suggestions, China's listed enterprises should strengthen the understanding of internal control and optimize the internal control environment; At the same time, strengthen internal and external supervision and increase the cost of violations; Strengthening the importance of financial information disclosure and improving the quality of financial information disclosure are conducive to the development of enterprises.

Acknowledgements

The time is too narrow and the finger gap is too wide. In a blink of an eye, four years of college time will come to an end. I spent four unforgettable and substantial years in Nanjing University of Science and Technology.

First of all, I want to express my thanks to Ms Song. From the topic selection and opening of the thesis to the writing, revision and finalization of the thesis, Ms Song's painstaking efforts to preach, teach and solve puzzles are condensed. Ms Song is rigorous, approachable and knowledgeable. She not only carefully guides my thesis knowledge, but also teaches me the correct attitude of being serious and rigorous in learning.

Secondly, I would like to express my gratitude to my classmates and friends who have been getting along day and night. They make me gain friendship, memories and a mature attitude towards life. Finally, I want to thank my parents for their hard work in cultivating me. They have paid too much effort to cultivate me, and thank them for their ardent care for me and selfless dedication to me.

Gathering is a fire, scattering is full of stars. I hope my classmates have a bright future. I will also continue to forge ahead, in order to become better myself!

References


