

The Coupled and Coordinated Relationship between Corporate Internal Control and Social Responsibility Fulfillment

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Abstract

A good internal control environment is the foundation for enterprises to assume social responsibility, and fulfilling social responsibility can effectively promote the improvement of internal control system. Internal control and social responsibility influence and promote each other, which is beneficial to the stable development of enterprises. Based on the existing evaluation index system of internal control and social responsibility fulfillment, this paper applies the coupling and coordination theory to calculate the coupling and coordination degree between internal control and social responsibility fulfillment of the A-share listed companies in China, and finds that there is a certain interaction between the two, and the development level of both is in a mild disorder in general. The purpose of this study is to discover the interactive relationship between internal control and social responsibility fulfillment of enterprises, and to make feasible suggestions for the realization of positive interaction between the two.

Keywords

Internal Control; Social Responsibility Fulfillment; Coupling Relationship; Coordinate Relationship.

1. Introduction

Corporate internal control is always closely related to compliance operation, risk management and corporate governance, and is the cornerstone of enterprise survival and development. On March 2, 2022, the Ministry of Finance and the Securities Regulatory Commission jointly issued the Notice on Further Improving the Effectiveness of Internal Control over Financial Reporting of Listed Companies, proposing that listed companies should ensure the effectiveness of their internal control, especially the internal control over financial reporting, which shows that internal control now remains the focus of attention, and the stability and effectiveness of the internal control environment are the keys to the development of enterprises, and it is a hot spot for scholars to study the factors affecting internal control from different perspectives.

With the improvement of the information disclosure system, information related to the fulfillment of corporate social responsibility is becoming more and more transparent. This is because the behavior is closely related to the rights and interests of various stakeholders, including employees within the enterprise, consumers and suppliers outside the enterprise, as well as the social public environment. The economic effects generated by CSR fulfillment have received attention from scholars. For example, Jiayou L and Shen Z[1] found through an empirical study that CSR fulfillment could alleviate the degree of financing constraints, and Zhibin L et al[2] pointed out that CSR would promote enterprise value appreciation. In 2010, the Ministry of Finance promulgated the Guideline on the Application of Enterprise Internal Control No. 4 - Social Responsibility, which marked the first time that CSR fulfillment was stipulated in the form of clear regulations, and further enhanced the role of CSR fulfillment in corporate behavior.

Studying the relationship between corporate internal control and social responsibility fulfillment is helpful to clarify the mutual promotion effect between the two. For example, Zeng and Zhang[3] found that the improvement of internal control effectiveness is beneficial to the fulfillment of CSR through empirical tests, and Yunqi W[4] further pointed out that the more effective the internal control of enterprises, the greater the promotion of the fulfillment of social responsibility by improving internal control, and Kim et al[5] concluded that companies that fulfill social responsibility have more effective internal control through empirical studies. In addition, the coupled and coordinated relationship between internal control and social responsibility fulfillment is expected to achieve a "1+1>2" effect. Internal control emphasizes the stability and health of the internal environment and the control of managers, while social responsibility emphasizes the concern for the external environment, including the environmental protection and the contribution to consumers. As Liu[6] said, an internal control system that integrates social responsibility is more conducive to achieving the goal of sustainable development than the traditional internal control system, and only by truly realizing the importance of social responsibility fulfillment can the interests of all stakeholders be truly satisfied.

Regarding the research on the coupled and coordinated relationship between internal control and social responsibility fulfillment, JiaCan W and XiaoQia S[7] pointed out that incorporating social responsibility into corporate management strategies can effectively improve the effectiveness of internal control, which in turn is a prerequisite guarantee for fulfilling social responsibility. Xiulian L[8] studied the interaction between social responsibility and internal control with private SMEs and proposed corresponding management strategies for the problems of fulfilling social responsibility in the development of SMEs. However, the aforementioned scholars only conducted theoretical analysis and lacked empirical tests. After that, a large number of scholars focus on the unidirectional causal relationship between the two, especially the study of internal control promoting the fulfillment of social responsibility is predominant[3-4]. Meanwhile, few scholars have used coupled coordination theory to study the mutual influence and linkage between the two. In this paper, internal control and social responsibility are treated as two systems, and the comprehensive evaluation value is calculated on the basis of the existing mature evaluation index system, and then the coupling degree C, coordination degree T and coupling coordination degree D are calculated to judge the coupling and coordination relationship between the two systems. The innovations of this paper are: firstly, applying the coupling coordination theory to analyze the relationship between internal control and social responsibility fulfillment; secondly, using empirical data to calculate the coupling coordination level of internal control and social responsibility fulfillment, and to make suggestions for achieving a positive interaction between them.

2. The Coupling Relationship between Internal Control and CSR Fulfillment

Coupling theory, which first appeared in physics, refers to the phenomenon that two and more systems achieve synergy by interacting and influencing each other. In recent years, more and more scholars have applied coupling theory to humanities and social sciences fields such as economic management and auditing to study the relationship between green investment and circular economy[9], scientific and technological innovation and high-quality economic development[10], and state audit and internal audit[11]. Specifically, measuring the coupling degree alone can only reflect the degree of connection between the systems, the comprehensive development of both needs to be further explained by the coupling coordination degree.

2.1. Internal Control is the Guarantee of Social Responsibility Fulfillment

Corporate behavior is the external manifestation of the state of internal control, and in general, companies with good internal control perform more socially responsible behaviors and have a higher level of CSR fulfillment. Xie et al [12] discussed this from three aspects: firstly, one of the goals of internal control is to make enterprises achieve sustainable development, and the realization of this goal motivates enterprises to actively fulfill their social responsibility; secondly, an effective internal control system requires attention to production processes, product quality and other risk points, which are the performance of enterprises actively fulfilling their social responsibility; Thirdly, effective internal control can restrain the management, reduce moral risks and improve the quality of social responsibility performance. On the contrary, enterprises with deficient internal control are more risky in operation, and the quality of accounting information is not guaranteed, so they are more likely to harm the rights and interests of investors and other stakeholders[13]; at the same time, if enterprises have internal control deficiencies, they will invest more energy in regulating operations and solving internal problems rather than taking social responsibility. Thus, it is clear that internal control is a guarantee for the fulfillment of corporate social responsibility.

2.2. Social Responsibility Fulfillment is a Means to Improve Internal Control

Jianping P[14] pointed out that the motives of corporate social responsibility fulfillment include altruistic motives, managers' self-interest motives, and strategic motives, except for the first motive is a devotion, the latter two are done to enhance managers' personal social image and win reputation for the company. When the corporate image is enhanced, the company receives more social attention, and consumers' expectations of the company will be higher, thus the monitoring role of the public is more obvious, it can motivate the company to improve internal control. Xiulian L[7] believes that fulfilling social responsibility can protect the rights and interests of employees and enhance their sense of belonging to the company, on the other hand, it also can improve product quality and obtain consumers' recognition of the company, thus enabling the company to achieve benign development. This is conducive to the construction and implementation of the internal control system of enterprises, which means that the fulfillment of social responsibility by enterprises is the basis and guarantee of the construction of the internal control environment. Therefore, enterprises' active fulfillment of social responsibility helps to improve their internal control level.

2.3. The Interaction between Internal Control and Social Responsibility Fulfillment

Internal control and social responsibility are consistent in many ways, for example, in terms of objectives, they are aimed to improve corporate management and promote corporate development; in terms of functions, they both enable companies identify and respond to some risks in advance through making regulations. At the same time, they have their own focus, internal control emphasizing responsibility for the internal aspects of the enterprise and social responsibility emphasizing responsibility for the external aspects of the enterprise. The combination of both helps to coordinate the relationship between internal and external stakeholders. In addition, the internal control and social responsibility fulfillment of enterprises are a mutually reinforcing and co-improving relationship. According to JiaCan W and XiaoQia S[8], "the effectiveness of internal control is the guarantee for enterprises to fulfill their social responsibility, and corporate social responsibility is the motivation to promote the improvement of internal control". The effective implementation of the internal control system gave birth to the Guideline on the Application of Internal Control of Enterprises No. 4 - Social Responsibility, and this guideline motivates enterprises to continuously improve their internal management by clarifying and standardizing specific measures. Wang et al [15] pointed out that

an internal control system that takes into account social responsibility is the only one with good execution, and the concept of social responsibility should be carried out throughout the internal control, and the construction and improvement of internal control has a counterforce on the practice of social responsibility, so that enterprises can fulfill their social responsibility at a higher level. Therefore, this paper considers that the internal control of enterprises and the fulfillment of social responsibility are coupled relationship, and they can influence and promote each other.

3. Empirical Studies

3.1. Data Source

In this paper, all A-share listed companies in China are selected as samples, relevant data are obtained from the CSMAR database.

3.2. Data Standardization

The nature difference of the data is huge, in order to eliminate the quantitative relationship between the data and ensure the index data are more comparable, the original data are standardized using the polarization method, as follows:

Positive Standardization:

$$X_{ij} = \frac{X_{ij} - X_{\min}}{X_{\max} - X_{\min}} \tag{1}$$

Negative standardization:

$$X_{ij} = \frac{X_{\max} - X_{ij}}{X_{\max} - X_{\min}} \tag{2}$$

where X_{ij} denotes the normalized data, x_{ij} denotes the original data, x_{\max} denotes the maximum value in the sample, and x_{\min} denotes the minimum value in the sample.

3.3. Evaluation Index System and its Weights

At present, the evaluation index system of scholars on internal control and CSR fulfillment is more mature. Based on the principles of comprehensiveness, importance, effectiveness and risk management orientation, Hong S and Hongyan G [16] took the five elements of internal control as the primary indicators, then subdivided as 24 secondary indicators and 53 specific evaluation indicators, assigned certain weights to each indicator to obtain the internal control evaluation index system, the result is shown in Table 1.

Table 1. Internal control evaluation indicators

Target layer	Weights	primary indicators	Weights	Secondary indicators
Internal Control	0.2624	Control Environment	0.0989	Organizational Development
			0.0776	Development Strategy
			0.0452	Corporate Culture
			0.0140	Human Resources
			0.0268	Social Responsibility
	0.4815	Risk Assessment	0.2001	Liquidity Risk
			0.1332	Market Risk
			0.0245	Compliance and Legal Risks
			0.0847	Credit Risk
			0.0390	Operational Risk

	0.1514	Control Activities	0.0058	Innovative Business
			0.0177	Investment Banking
			0.0130	Financing Business
			0.0225	Self-employed Business
			0.0362	Brokerage Business
			0.0080	Information System Control
			0.0482	Financial Control
	0.042	Information Communication and Disclosure	0.0161	Information Technology Platform
			0.0129	Information Collection and Transmission
			0.0074	Anti-fraud Mechanism
			0.0057	Complaint Reporting System
	0.0626	Internal Oversight	0.0205	Problem Rectification Mechanism
			0.0163	Internal Control Deficiency Determination
0.0258			Supervisory Organization Setting	

Regarding the evaluation index system of CSR fulfillment, this paper borrows the results of Qiulin Y and Boqiao F [17]. The system they constructed includes five primary indicators and 20 secondary indicators of financial performance, environmental governance, resource utilization, employee welfare, and social contribution, and the results are shown in Table 2 after assigning weights to each indicator.

Table 2. Corporate social responsibility evaluation system

Target layer	Weights	primary indicators	Weights	Secondary indicators
Corporate Social Responsibility	0.21	Financial Performance	0.07	Capital Preservation and Appreciation Rate
			0.04	Gearing Ratio
			0.04	Sales Margin
			0.06	Return on Net Assets
	0.24	Environmental Governance	0.08	Three Waste Discharge Rate to Meet the Standard
			0.04	Sales Revenue to Three Waste Emission Ratio
			0.03	Three Waste Emissions Relative to Sales Revenue Growth Ratio
			0.05	Environmental Protection Expenditure as a Percentage of Sales Revenue
			0.04	Environmental Protection Equipment Investment Rate
	0.27	Resource Utilization	0.07	Integrated Energy Consumption Ratio Per Unit of Revenue
			0.05	Raw Material Consumption Ratio Per Unit of Revenue
			0.05	Wastewater Recycling Rate
			0.05	Recycling Rate of Waste Materials

			0.05	New Water Consumption Ratio Per Unit of Revenue
	0.15	Employee Welfare	0.04	Annual Employee Training Expenses as a Percentage of Salary and Wages
			0.05	Growth Rate of Employee Wages and Benefits for the Year
			0.06	Workplace Accident Rate
	0.13	Social Contribution	0.06	Social Contribution Rate
			0.03	Social Donation Rate
			0.04	Asset Tax Rate

3.4. Overall Evaluation Index

By standardizing the data and assigning weights to the indicators, the comprehensive evaluation index of the system can be measured.

The measured integrated internal control evaluation function value is $U_x = \sum_{i=1}^n a_i X_{ij}$.

The value of the comprehensive evaluation function of social responsibility fulfillment is measured as $U_y = \sum_{i=1}^n b_i Y_{ij}$.

Where U_x and U_y denote the comprehensive benefits of internal control and social responsibility fulfillment respectively. a_i and b_i denote the weights of each index of the two systems, X_{ij} and Y_{ij} denote the data after standardization of each index of internal control and social responsibility fulfillment respectively. According to the above comprehensive evaluation index measurement formula, the comprehensive evaluation index U_x of internal control is 0.28 and the comprehensive evaluation index U_y of social responsibility fulfillment is 0.25.

3.5. Coupling Coordination

Drawing on the concept of capacity coupling in physics and the capacity coupling coefficient model, the coupling degree model for different subsystems is obtained as $C_n = \sqrt[n]{\frac{(u_1 u_2 \dots u_n)}{|\prod(u_i + u_j)|}}$.

Then the coupling degree between two subsystems is modeled as $C = \sqrt{\frac{U_x \times U_y}{(U_x + U_y)(U_x + U_y)}}$. The

coupling coordination degree model is $D = \sqrt{C \times T}$, Where D is the coupling coordination degree, taking the value range of 0-1. C is the coupling degree, taking the value range of 0-1. T is the comprehensive evaluation index of the coupling coordination development level, and the formula of T is $T = \alpha \times U_x + \beta \times U_y$.

The evaluation criteria of the coupling degree are: (0.0-0.3) for low coupling, [0.3-0.5) for coupling antagonism, [0.5-0.8) for benign coupling, and [0.8-1.0) for high coupling. The levels of coupling coordination were classified as follows: (0.0-0.1) for extreme dissonance, [0.1-0.2) for severe dissonance, [0.2-0.3) for moderate dissonance, [0.3-0.4) for mild dissonance, [0.4-0.5) for near dissonance, [0.5-0.6) for barely coordinated, [0.6-0.7) for primary coordination, [0.7-0.8) for intermediate coordination, [0.8-0.9) as good coordination, and [0.9-1.0) as quality coordination.

According to the measurement results, the overall coupling degree of internal control and social responsibility fulfillment of Chinese enterprises is 0.5, which is in a benign coupling state; the coupling coordination degree is 0.36, which is in a mild dysfunctional state. The coupling degree of internal control and social responsibility fulfillment of all sample enterprises was found to be between 0.3 and 0.8, and concentrated around 0.5; the coupling coordination degree was

distributed between 0.32 and 0.41, which was in a mild disorder. In a comprehensive view, the geographical differences among enterprises are not significant.

4. Research Findings and Insights

4.1. Research Findings

Through theoretical analysis, this paper believes that the internal control and social responsibility fulfillment of enterprises should be a coupled and coordinated relationship of mutual influence and mutual promotion. Based on the existing evaluation index system of internal control and social responsibility fulfillment, the coupling degree of internal control and social responsibility fulfillment of enterprises in China is 0.5 and the coupling coordination degree is 0.36. From the coupling degree, the internal control and social responsibility fulfillment of enterprises in China are at the level of benign coupling or coupling antagonism. In terms of coupling coordination, most provinces are at the level of mild disorder with little difference, indicating that the internal control and social responsibility fulfillment of enterprises in each province do not achieve the development of healthy interaction.

To a certain extent, the coupling degree means the interdependence between systems, and too low or too high coupling degree is not conducive to the overall development. A low coupling degree means that the system is less interrelated, which is not conducive to the sharing of information and resources; a high coupling degree is prone to the situation of "one loss is all loss". The coupling degree of internal control and social responsibility in China is 0.5, which is in the middle level and is relatively stable. The higher the coupling coordination degree is, the more the system can promote each other and realize the benign interaction. It can be seen that the coupling coordination degree of internal control and social responsibility fulfillment of listed companies in China is low, and there is more room for improvement.

4.2. Management Insights

4.2.1. Completing Internal Control System

The system of internal control should include all aspects of the enterprise, from the construction of management to the management of employees, including the construction of corporate culture and public environmental protection, and only by making each activity based on standards can we maximize the efficiency of the activity. Although the internal control system of Chinese enterprises has been improving, the construction of internal control system is not a one-time thing, and the system should be added, deleted and improved at any time to adapt to the change of environment. From the data collected, more than two-thirds of listed companies have not established an environmental management system, while the number of companies that have not carried out environmental education and training activities is ten times the number of companies that have carried out this activity, which shows that the management system of companies related to environmental protection is still lacking, and environmental protection is an important aspect of the fulfillment of corporate social responsibility. Therefore, enterprises should improve the internal control system of environmental protection and green production, and train their employees to improve the level of social responsibility of environmental protection, to achieve the positive promotion of social responsibility by improving internal control.

4.2.2. Integrating Social Responsibility Fulfillment into Corporate Culture

Corporate culture is the core of an enterprise and is the general basis for corporate behavior. A positive corporate culture will enhance the recognition and confidence of employees and contribute to the long-term healthy development of the enterprise. Social responsibility requires enterprises to go beyond the excessive pursuit of profits and pay more attention to human values and contributions to the environment, consumers and society. By incorporating

the fulfillment of social responsibility into corporate culture, it can show the humanistic concern of the enterprise, and by always keeping the sense of responsibility to employees, consumers and the public in mind, and by integrating this sense of responsibility into various activities of the enterprise, it can better coordinate the relationship among various stakeholders, alleviate agency problems, mobilize the work motivation of employees, improve the stability of customers, thus promoting the good conduct of various activities of the enterprise. At the same time to achieve the purpose of promoting the improvement of the internal control system of the enterprise.

4.2.3. Minimizing the Gap of CSR Fulfillment

Among the collected data, the number of enterprises disclosing the construction of social responsibility system and improvement measures is 1013, while the number of enterprises not making disclosure is as high as 9076. The vast majority of enterprises are unable to disclose relevant information precisely because they do not fulfill social responsibility, which shows that the degree of fulfillment of social responsibility of listed companies in China is low. Enterprises can start from the following aspects to make up for the shortage of social responsibility fulfillment: firstly, raise the attention of the personnel in and out of the enterprise to fulfill social responsibility and make them realize that fulfilling social responsibility can achieve win-win situation; secondly, control the risk of fulfilling social responsibility. Enterprises' fulfillment of social responsibility is different from their daily business activities and has different risk points. Enterprises should collect and predict possible risk points and formulate countermeasures in advance to better assume social responsibility; finally, strengthen the information disclosure on fulfillment of social responsibility, pass the good behavior of enterprises to external stakeholders through information disclosure, and the reliability of the disclosed information should be enhanced by third-party audits such as accounting firms.

4.3. Insufficient Research

The evaluation index system of internal control and social responsibility fulfillment drawn from this paper was constructed earlier, and the weight of each index may have changed slightly over time, and the coupled coordination relationship between the two can be remeasured based on a newer and more mature system in the future. In addition, corporate behavior is diverse and has its own focus. In addition to the internal control and social responsibility fulfillment studied in this paper, it also includes various economic activities such as risk management, internal audit, and investment and financing behavior, and discovering and studying the interactive influence relationship between each activity is the direction for further exploration.

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