Correlation of Internal Control Effectiveness and Corporate Social Responsibility

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Abstract: In this paper, we took Chinese listed food processing and manufacturing companies as research samples to discuss the correlation between internal control effectiveness and corporate social responsibility. According to COSO internal frame and "Guidelines for Enterprise Internal Control Application", this paper established the evaluation index system of enterprise internal control, based on which the correlation model between internal control effectiveness and corporate social responsibility was constructed by multiple regression method in order to make the empirical test. The results show that for the chosen listed food manufacturing companies in 2012, there is a significant correlation between control environment, control activities, information and communication, supervision and corporate social responsibility. Meanwhile, risk assessment and corporate social responsibility is not significantly correlated with corporate social responsibility.

Keywords: Internal control effectiveness, corporate social responsibility, evaluation index system

I. INTRODUCTION

In 2010, the Ministry of Finance and other relevant departments issued "Guidelines for Enterprise Internal Control Application No. 4 - Social Responsibility", within which the forth application guideline is about corporate social responsibility (CSR) [1]. On the one hand, it reflects the importance of social responsibility on the internal control; On the other hand, it stressed more emphasis that self-discipline of enterprise plays an important role in fulfilling social responsibility.

In recent years, with the gradual deepening research progress of enterprise internal control and corporate social responsibility, Chinese and foreign scholars start to explore the relevance between internal control and social responsibility from a single or some of the characteristics of internal control, trying to prove that internal control and corporate social responsibility are closely related [2-4]. However, in quantitative research, few scholars draw definitive conclusions that there is a significant correlation between internal control effectiveness and corporate social responsibility. Based on previous research, we took Chinese listed food processing and manufacturing companies as research sample, which matters people's health and life safety. In addition, from the perspective of basic theory of internal control, this paper constructed evaluation indicator system of internal control effectiveness. Afterwords, we made an empirical analysis on the correlation between effectiveness of internal control and corporate social responsibility validity of the evaluation index system

of internal control in Chinese listed food processing and manufacturing companies, in order to contribute to promote the overall level of its social responsibility through the improvement of internal control effectiveness.

II. MECHANISM ANALYSIS ON INTERNAL CONTROL EFFECTIVENESS AND CORPORATE SOCIAL RESPONSIBILITY

A. Internal Control Effectiveness

Based on the definition of internal control and the elements of COSO report, this paper considered that the overall effectiveness of internal control depends on all of the five elements effectiveness of internal control, good control environment, the successful implementation of control activities, correctly grasp of risk, smooth information and communication, moderate supervision are conductive to improve the overall level of effectiveness of internal control.

Referring to internal control evaluation methods constructed by domestic scholar Zhonggao Lin, this paper determines the overall effectiveness of internal control by measuring the five elements of internal control, including control environment, control activities, the effectiveness of risk assessment, smooth information and communication, moderate supervision [5]. The higher rating index represents, the higher level of corresponding overall effectiveness of internal control and the effectiveness of the various elements.

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B. Corporate Social Responsibility

In the early 20th century, the concept of corporate social responsibility already produced. Peter Drucker once said that the purpose of enterprise must be out of the enterprise itself, and Businesses enterprise is an organ of society [6]. As an important member of society, enterprises occupy huge social resources, it must respond to society's expectation and fulfill the corresponding social responsibilities.

Corporate social responsibility refers to that while the enterprise is creating profits, it should also safeguard the interests of shareholders, considering the responsibility to other stakeholders, that is, to bear on social responsibilities for consumers, employees, governments, communities and other stakeholders, such as safety, safeguard the legitimate rights and interests of employees, concerned about social welfare and environment protection. The basic requirement for corporate social responsibility of enterprise is to do its best to fulfill corresponding obligations of stakeholders, with the ultimate aim of achieving sustainable development.

C. Relationship between Internal Control Effectiveness and Corporate Social Responsibility

Internal control is a series of processes of supervision(the Board), operating decisions(senior managements) and collaboration(employees) jointly implement from the initial balance of power to the current overall internal control framework composed by control environment, risk assessment, control activities, information and communication, supervision [7]. Internal control caused by the principal-agent relationship, effective internal control agency can ease conflicts of interest between the two sides of principal-agent. In the case of well-operated mechanism of internal balances of rights, each of the stakeholders has the safeguard to protect its own interests and legitimate rights. In this case, companies

Table 1. Assignment of evaluating internal control effectiveness.

Internal Control Elements	Evaluating Indicators	Assignment
Control Environment CE	Ownership Property CE_1	State-owned Enterprises=1; Otherwise = 0
	Position Separation of Chairman, Vice Chairman and Manager CE2	Position Separation=1; Otherwise = 0
	Ratio of Independent Directors CE_3	Equivalent Interval Assignment, Maximum=2, Intermediate=1, Minimum=0
	Disclosure of Enterprise Culture CE_4	Disclosed=1; Undisclosed=0
Risk Assessment RA	Disclosure of Risk RA_1	Disclosed=1; Undisclosed=0
	Disclosure of Measures of Risk RA_2	Disclosed=1; Undisclosed=0
	Disclosure of Internal Control Self-Assessment Report RA_3	Disclosed=1; Undisclosed=0
Control Activities CA	Disclosure of Related-party Transaction CA_1	Disclosed=1; Undisclosed=0
	Disclosure of Salary System and Performance Evaluation CA_2	Disclosed=1; Undisclosed=0
Information and Communication IC	Number of Board Meeting IC_1	Equivalent Interval Assignment, Maximum=2, Intermediate=1, Minimum=0
	Independent Director Attending Percentage IC_2	Equivalent Interval Assignment, Maximum=2, Intermediate=1, Minimum=0
	Disclosure of Investor Relationship Management IC_3	Disclosed=1; Undisclosed=0
Supervision IS	Disclosure of Internal Control Mechanism IS_1	Disclosed=1; Undisclosed=0
	Types of Audit Report IS_2	Standard and Unqualified Auditor's Report=1, Otherwise=0
	Be Punished By the CSRC or Stock Exchange IS_3	Be punished=0; Otherwise=0

Data source: author manual sorting

would be more inclined to be responsible for the various stakeholders, including investors, employees, customers, creditors, environment and social. Consequently, internal control effectiveness provide a mechanism for the fulfillment of corporate social responsibility [8].

III. EMPIRICAL DESIGN OF INTERNAL CONTROL EFFECTIVENESS AND CORPORATE SOCIAL RESPONSIBILITY

A. Data Sources

This paper took Shanghai and Shenzhen A share food production and manufactured in 2012 as research sample, excluding the incomplete data of the companies. Finally, we got 30 companies as samples. The score data of the company's corporate social responsibility are acquired by Hexun Website Corporate Social Responsibility Professional Evaluation System, while the data of internal control information disclosure quality are acquired by the author's manual sorting of 30 listed companies reported financial reports; control variable of return on equity (ROE) is obtained by Sina Finance website.

B. Research Variables

Establishment of internal control effectiveness indicator: According to the provisions in Internal Control-Integrated Framework and the most authoritative COSO report, this paper divided the five elements of internal control into: control environment, risk assessment, control activities, information and communication, supervision. Based on the determination of evaluation indicators, we endowed indicators with corresponding weights, thus combining qualitative analysis with quantitative analysis, evaluating internal control effectiveness objectively [9]. Indicators and weights assignment are as shown in Table 1

Due to the various evaluating indicators have different effect on the same element of internal control. Combined with. According to the materiality principle and importance of evaluation indicators, this paper divided elements of the internal control evaluation indicators into three levels and endow different weights with them. The weight of first level indicators is 5, the second level weight is 3, the third level weight is 2, as illustrated in Table 2.

Table 2. Level classification of internal control effectiveness indicators.

Level	Evaluating Indicators
First Level Indicators	Ownership Property CE_1
	Position Separation of Chairman, Vice chairman and Manager CE_2
	Disclosure of Risk RA_1
	Disclosure of Measures of Risk RA_2
	Disclosure of Investor Relationship Management IC_3
	Types of Audit Report IS_2
First Second Indicators	Ratioof Independent Directors CE_3
	Disclosure of Internal Control Self-Assessment Report RA_3
	Disclosure of Related-party Transaction CA_1
	Disclosure of Salary System and Performance Evaluation CA_2
	Disclosure of Internal Control Mechanism IS_1
	Be Punished By the CSRC or Stock Exchange IS_3
First Third Indicators	Disclosure of Enterprise Culture CE_4
	Number of Board Meeting IC_1
	Independent Director Attending Percentage IC_2

Data source: author manual sorting

Based on the assignment corresponding weights of evaluation indicators of of internal control effectiveness five elements, the result of the five elements of internal control effectiveness can be obtained by the following computation formula.

$$CE=(CE1+CE2)\times5+CE3\times3+CE4\times2;$$

$$RA = (RA1+RA2)\times5 + RA3 \times3;$$

$$CA =(CA1+CA2)\times3;$$

$$IC =(IC1+IC2)\times2+IC3\times5;$$

$$IS=(IS1+IS3)\times3+IS2\times5.$$

1) Measurement of corporate social responsibility: In thia paper, the data of explained variables,corporate social responsibility, are obtained by HeXun Website Corporate Social Responsibility Professional Evaluation System. According to actual circumstance of Chinese companies, as well as the scores of the five major stakeholders of companies (shareholders, employees, customers, business partners, environment and social), this paper got the finally summary score of each sample company's corporate social responsibility.

2) Determination of control variable: Corporate social responsibility is influenced by many factors, in addition to the effectiveness of internal control, it is mainly related to financial performance. In that those in good financial performance enterprises are more likely to release more resources to fulfill corporate social responsibility [10]. Therefore, we took return on equity as control variable to control the financial performance's influence on corporate social responsibility.

In conclusion, this paper built the variables of empirical study as shown in Table 3.

Table 3.   Variables of empirical study.

Variable Types	Variables	Variable Smbol
Dependent Variable	Corporate Social Responsibility	CSR
Explanatory Variables	Control Environment	CE
	Risk Assessment	RA
	Control Activities	CA
	Information and Communication	IC
	Supervision	IS
Control Variable	Return on Equity	ROE

Data source: author manual sorting

C. Research Hypothesis

Based on the above analysis, the five elements of internal control effectiveness played important role for overall effectiveness of internal control and have different influence on corporate social responsibility. Thus, this paper put forward the following hypothesis:

H1: control environment is significantly related to corporate social responsibility. Effective control environment is is conducive to make potential risks of enterprise be in control. Thus providing proper environment for the fulfillment of corporate social responsibility and make it become a kind of normalized mechanism in the enterprises.

H2: risk assessment is significantly related to corporate social responsibility. the grasp of the risk assessment could help to control risk degree at the levels of security, thus ensuring the fulfillment of corporate social responsibility.

H3: control activities is significantly relevant to corporate social responsibility. The implementation of control activities and well-performing will provide some insurance for safe production, product quality, promote employment and other basic level of social responsibility [11].

H4: There is significant positive correlation between information and communication and corporate social responsibility. Information and communication can effectively reduce the risk of information asymmetry of enterprise stakeholders, thus constructing effective channels for stakeholders' right to know security.

H5: Supervision is significantly associated with corporate social responsibility. In that independent supervision can ensure the orderly conduct of business activities, as well as enabled the government, social, consumers and other stakeholders to supervise

the operating the enterprise effectively. It can also improve the truthfulness and completeness of the information, all of these elements are conducive to the overall level of corporate social responsibility.

IV. EMPIRICAL ANALYSIS OF INTERNAL CONTROL EFFECTIVENESS AND CORPORATE SOCIAL RESPONSIBILITY

A. Regression Analysis

This paper took the five elements effectiveness of internal control environment, risk assessment, control activities, information and communication, supervision as explained variables, while corporate social responsibility was taken as explained variable. And then this paper established a multivariate empirical regression model to verify the correlation of the effectiveness of the internal control and

corporate social responsibility. This paper mainly adopt EVIEWS 6. 0 Analysis Software to carry out the regression analysis by ordinary least squares (OLS). Therefore the equation is as follows:

$$CSR = \beta_0 + \beta_1 CE + \beta_2 ICR + \beta_3 CB + \beta_4 IIC + \beta_5 IS + \beta_6 ROE + u_t \tag{1}$$

In Equation (1), β_0, β_1, …, and β_6 are regression coefficients respectively; u_t is random disturbance.

Based on OLS regression analysis on 2012 data, the preliminary regression found that risk assessment (RA) is significantly associated with corporate social responsibility, so it is forced to remove RA from the equation, thus arriving at following regression results as shown in Table 4.

Table 4. Regression analysis results of the model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-21.39156	19.89521	-1.075212	0.2930
CE	7.12E-09	2.87E-09	2.481275	0.0205
CA	38.76289	16.47574	2.352725	0.0272
IC	-15.05294	5.735937	-2.624320	0.0149
IS	4.279641	2.065245	2.072219	0.0492
ROE	66.29335	31.96550	2.073909	0.0490
R-squared	0.481703	Mean dependent var		33.42667
Adjusted R-squared	0.373724	S.D.dependent var		21.62036
S.E.of regression	17.10983	AKaike info criterion		8.694040
Sum squared resid	7025.910	Schwarz criterion		8.974279
Log likelihood	-124.4106	Hannan-Quinn criter		8.783691
F-statistic	4.461098	Durbin-Watson stat		2.284586
Prob(F-statistic)	0.005143			

Data source: author manual sorting.

B. Modeling Verification

By F test and T test, $F=4.46 > F_{0.05}(5, 24)=2.62$, while $T_{0.025}(24)=2.06$, T-test proves that there is significant at the 0.05 level. The fitting degree of estimate equation is 48%, showing that the model is comparatively rational. Afterwards, we adopt White Test for heteroskedasticity test, comparing TR^2 and $\chi^2(g)$. $TR^2=24.67 < \chi^2_{0.05}(20) = 31.41$, showing that the model does not exist heteroskedasticity. Finally, we need to make autocorrelation test. By LM test, we know that $\chi^2_{0.05}(1) = 3.84$, $LM = TR^2 = 2.32 < 3.84$; $\chi^2_{0.05}(2) = 5.99$, $LM = TR^2 = 3.28 < 5.99$, indicating

that the equation does not exist in the first-order and second-order autocorrelation.

Therefore, a regression equation can be gained:

$$\hat{CSR} = -21.39 + 7.12*10^{-9}CE + 38.76CB - 15.05IIC + 4.28IS + 66.29ROE \tag{2}$$

C. Empirical Analysis Results

Based on the empirical analysis, all of the independent variable coefficient is not 0, as well as it exists significant correlation between internal control

elements of control environment, control activities, supervision and corporate social responsibility, while information and communication exists negatively correlated with corporate social responsibility, hypothesis 1, hypothesis 3 and hypothesis 5 come into existence. We can draw a conclusion that in the five elements of internal control effectiveness, for Chinese listed food processing and manufacturing companies, if they perform well in control environment, control activities, supervision of internal control, it will contribute to the improvement of corporate social responsibility.

V. CONCLUSIONS

From the empirical analysis results, it is observed that control environment is positively correlated with corporate social responsibility, showing that a good environment for the internal control can provide support for the fulfillment of corporate social responsibility; The effectiveness of the control activities also helps to enhance the level of social responsibility, including production safety, protection of employees' legitimate rights and interests, compliance with business ethics; The effectiveness of supervision provides the way of appeal for the interests of all stakeholders. Therefore, good execution of supervision is of great advantage for the fulfillment of corporate social responsibility and the development of Chinese listed food processing and manufacturing companies, while information and communication are negatively related to corporate social responsibility on the surface. Due to short-time-data for one year, enterprises will inevitably disclose management fluctuation and negative information, while subsequently affect the performance of corporate social responsibility. In addition, the empirical results show that return on equity has significant positive correlation on corporate

social responsibility, making it play an important role as control variable in accordance to the intention of selecting control variable.

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