Can High Quality Internal Control Reduce SMEs' Cost of Equity Financing?

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***Abstract*—Identifying a sample of listed companies of SMEs, based on voluntary internal control assurance reports, this paper examines whether high quality internal control of listed companies affect the cost of equity financing, under Chinese environment of information disclosure. The main finding is: internal control assurance information disclosed voluntarily by listed companies can play a signal function, and reduce significantly their cost of equity capital. Especially for listed companies that acquired reasonable guarantee of internal control assurance reports, they have even lower cost of equity financing. It is useful to guide companies evaluate internal control construction and disclosure, and promote internal control systems to implement smoothly.**

***Index Terms*—internal control assurance, voluntary disclosure, reasonable guarantee, the cost of equity financing**

I. Introduction

Auditors issued assurance reports on the effectiveness of internal control is still controversial. Many of the accusations focus on internal control assurance will increase the cost of business, and is not conducive to improve the quality of financial statements. Auditors have also been severely criticized for taking the opportunity to increase their income [1]. Whether the small and medium-sized enterprises should enforce the internal control assurance has been a hot topic in the field of theory and practice. By the end of 2010, China's continuous introduction of the internal control system are not mandatory for small and medium-sized listed companies, therefore, they hired auditors for internal control assurance belongs to the subjective and complete voluntary behavior. Through the listed companies in our country's annual report of the data found that in the optional internal control auditing stage, a number of listed companies in Shenzhen small and medium-sized board not only disclosed internal control self assessment report, but also hired auditors to audit the effectiveness of internal control. This provides an opportunity to measure the internal control quality of listed companies, and study the motivation to voluntary disclosure of information and the reaction to market.

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II. The Literature Review, Theory Analysis and Research Assumptions

Whether the voluntary information disclosure can reduce a company's the capital cost of equity is one of the key areas of financial accounting research in recent years. The existing theoretical and empirical studies (Leuz, and Verrecchia, 2000; Francis, LaFond, Olsson, and Schipper, 2005; Lambert, Leuz, and Verrecchia, 2007; Gao, 2010) have shown that firms that rely on external financing are more likely to adopt a higher level of disclosure decision. The lower the financing cost, the higher the level of information disclosure, and the quality improvement will help reduce the company's equity capital costs [2, 3, 4, and 5]. After the disclosure of internal control self-assessment and external assurance information was required by the SOX Act of the United States, foreign scholars have began to study the relationship between the internal control disclosure and the financing cost. In recent years, many studies have found that the disclosure of internal control deficiencies will lead to a negative reaction to stock prices, and then improve the cost of equity financing and the cost of debt financing [6]. Most of the domestic literatures focus on the determinants of internal control assurance reports disclosed voluntarily, economic motivation, and the impact of internal control information disclosure on earnings management. As far as we know, there is no empirical research on the internal control quality and SMEs' financing cost. Using the asymmetric information theory and signal transmission theory, the paper examines the relationship between the internal control quality and the cost of equity financing, which is revealed by the voluntary information disclosure of small and medium-sized companies in China. This enriches and expands the existing research in terms of content and methods of research.

The effectiveness of internal control is of great importance to the quality of financial reporting and the control of business risk. This paper learns from Hongxing Fang and Yuna Jin (2011), taking voluntary disclosure of internal control assurance reports and reasonable guarantee of internal control audit reports as the proxy variable of the quality of internal control[7]. Companies with high internal control quality can use the disclosure of positive opinion internal control audit reports as a strong signal that conveys to the market the managers'

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confidence over the quality of internal control, thereby positively influencing investors' evaluation on company value and risks, and lowering their expected rate of return required by the equity investment. Therefore, we propose the hypothesis H1:

H1：Under the premise of controlling the influence of other factors, positive opinion internal control audit reports disclosed voluntarily by listed companies can reduce significantly their cost of equity capital.

Compared with the limited guarantee of internal control audit, the reasonable guarantee of internal control audit has a higher guarantee degree, this requires auditors to invest more energy, collect more evidence and take greater professional risks, thereby reducing professional risks to a low level that the business environment can accept. So it can be used as the company's internal control signals with higher quality. The company which gets this opinion should have higher quality internal control. Therefore, we propose the hypothesis H2:

H2：Under the premise of controlling the influence of other factors, reasonable guarantee of internal control audit reports acquired by listed companies can reduce significantly their cost of equity capital.

III. THE MODEL DESIGN AND DATA SOURCES

In this paper, in order to test the hypotheses H1 and H2, we respectively construct the multiple linear regression model (1) and model (2), as follows:

$$Coe = \beta_0 + \beta_1 Ica + \beta_2 Beta + \beta_3 Lev + \beta_4 Bm + \beta_5 Eg + \beta_6 Liq + \beta_7 Var + \beta_8 Size + \varepsilon \tag{1}$$

$$Coe = \beta_0 + \beta_1 Pica + \beta_2 Nica + \beta_3 Beta + \beta_4 Lev + \beta_5 Bm + \beta_6 Eg + \beta_7 Liq + \beta_8 Var + \beta_9 Size + \varepsilon \tag{2}$$

In this paper, learning from the measuring method of Francis, LaFond, Olsson, and Schipper (2005), Fu Xin and Donghua Chen (2009), we use the reciprocal of Price to Earnings ratio (E/P) to estimate cost of equity financing. Price to Earnings ratio itself reflects for the company's net profit of 1RMB, investors are willing to pay the price, if Price to Earnings ratio is lower, in the case of raising the same capital, the listed company must issue more shares, which will lead to the higher the cost of its refinancing. E/P as the reciprocal of Price to Earnings ratio, the smaller E/P value indicates that the company has a lower financing cost [3, 8, 9]. *Ica* represents the company voluntarily disclosed the positive opinion of the internal control audit reports, *Pica* represents the company acquired the reasonable guarantee of internal control audit reports, *Nica* represents the company acquired the limited guarantee of internal control audit reports. Referring to study results of Zhengfei Lu, Kangtao Ye (2004), Wei Wang, Gaofeng Jiang (2004), Juanjuan Huang, Min Xiao (2006) and Cassell, Myers and Zhou (2011) and so on, taking *Beta* (systemic risk), *Lev* (financial risk), *Bm* (bankruptcy risk), *Eg* (growth capacity), *Liq* (liquidity), *Size* (company size) and other significant influence factors of equity financing costs of listed company as control variables[10, 11, 12, 13]. For these variables, except the size of the company, domestic and foreign scholars' study results are basically consistent. See Table I for detailed explanations of the variables.

TABLE I. DESCRIPTION OF THE VARIABLES

Variable properties	Variable identification	Variable Name	Definition
Dependent Variable	Coe	Cost of equity financing	The reciprocal of a company's price-earnings ratio （E/P）
Independent Variable	Ica	Voluntary disclosure of positive internal control audit report	Disclosure of positive opinion in the internal control audit report has a value of 1, otherwise 0
	Pica	Voluntary disclosure of reasonable audit in internal control audit report	The company obtains reasonable guarantee in the internal control audit report is 1, otherwise 0
Control Variables	Nica	Voluntary disclosure of limited audit in internal control audit report	The company obtains limited guarantee in the internal control audit report is 1, otherwise 0
	Beta	System risk	The 24-month market Beta coefficient from the end of year
	Lev	Financial risk	Asset - liability ratio at the end of the year
	Bm	Bankruptcy risk	Book value / market value of equity
	Eg	Growth capacity	Net assets growth rate（the last two years）
	Liq	Liquidation	Stock exchange rate of the year
	Var	Volatility	Annualized volatility（the last 60 months）
	Size	Company Size	The natural logarithm of the company's asset size

The paper makes cross-section data of small and medium-sized listed companies at Shenzhen stock exchange in 2009 and 2010 as samples of research. Firstly, Estimating cost of equity financing (E/P) requires the reciprocal of Price to Earnings ratio, so we remove from the sample firms with missing Price to Earnings ratio; Secondly, ST companies' disclosure requirements are different from those of other listed companies, therefore we remove these firms to ensure the consistency of the nature of the sample; Thirdly, to eliminate the influence of extreme value, we remove about 1% quantile extreme value for the *Coe* index annually. Fourthly, we remove these firms which disclose non-standard unqualified opinion of internal control audit report, and finally obtain 443 sample firms. Internal control audit report information of listed companies is collected by hand through annual report of 2008 and 2009. Financial data of listed companies all come from the Wind Database.

IV. Empirical Testing and Analysis of the Results

A. Descriptive Statistics

In the study sample, there are 278 companies disclosing positive opinions of internal control audit reports, among them, 233 companies received the reasonable audit of internal control audit reports, 45 companies received the limited guarantee of the internal control audit reports, accounting for 83.8% and 16.2% of the total number of voluntary disclosure of internal control audit reports respectively.

Here, we group the research samples according to the disclosure of the internal control audit reports and the categories of the reports: Group 1 is the company that discloses positive opinions of internal control audit reports, which is further subdivided into the company that is issued the reasonable guarantee of internal control audit reports (Group 2) and the company that is issued the limited guarantee of internal control audit reports (Group 3), and the remaining company that not disclose the internal control audit reports is Group 4.The comparison of the mean difference of the main variables in each group is shown in Table II.

As can be seen from Table I, it is discovered that there are significant differences in the cost of equity capital among the sample group that voluntarily disclose internal control audit reports and the sample group that acquires the reasonable guarantee internal control audit reports and the sample group that not disclose internal control audit reports, but the company that acquires the limited guarantee internal control audit reports, there is no significant difference between the cost of equity capital and the company that not disclose internal control audit reports.

B. Correlation Analysis

In the process of correlation test, we perform Pearson and Spearman correlation analysis for each variable, the results show that *Ica* is significantly negatively correlated with *Coe* at the 5% level. Except *Beta*, the control variables are significantly correlated with the equity financing cost variable *Coe*, it is necessary to control these characteristics of listed companies when testing the impact of voluntary internal control audit on the cost of equity financing. (See Table III).

TABLE II. Descriptive Statistics（difference between groups）

Variables	G1	G2	G3	G4	G1VSG4	G2VSG4	G3VSG4
	Mean	Mean	Mean	Mean	T value	T value	T value
Coe	0.015	0.010	0.020	0.021	-2.084**	-2.778***	-0.602
Beta	0.844	0.839	0.891	0.953	-3.538***	-3.871***	-0.665
Lev	0.396	0.391	0.441	0.433	-2.076**	-2.295**	0.212
Bm	0.433	0.432	0.441	0.448	-0.500	-0.513	-0.101
Eg	0.311	0.312	0.303	0.338	-0.663	-0.636	-0.366
Liq	5.149	5.141	5.229	5.849	-3.108***	-3.044***	-1.284
Var	0.496	0.493	0.534	0.581	-6.458***	-6.668***	-1.678*

Note：***, **, * Significant at 1%, 5%, and 10% levels.

TABLE III. Correlation Coefficient

Variables	Coe	Ica	Beta	Lev	Bm	Eg	Liq	Var	Size
Coe	1.000	-0.093*	0.043	0.090*	0.123**	0.444**	-0.357**	-0.170**	0.310**
Ica	-0.098*	1.000	-0.074	-0.077	-0.047	0.038	-0.058	-0.298**	0.096*
Beta	0.045	-0.066	1.000	-0.156**	0.234**	-0.152**	0.328**	0.703**	-0.165**
Lev	0.089*	-0.075	0.171**	1.000	0.171**	-0.030	0.039	0.097*	-0.057
Bm	0.229**	-0.024	0.228**	0.196**	1.000	-0.053	0.065	0.015	-0.591**
Eg	0.462**	-0.035	-0.062	0.040	0.156**	1.000	-0.333**	-0.091*	0.422**
Liq	-0.319**	-0.046	0.322**	0.013	-0.002	-0.269**	1.000	0.454**	-0.456**
Var	-0.085*	-0.094*	-0.177**	-0.040	-0.010	.013	0.450**	1.000	-0.067
Size	0.295**	0.082*	0.666**	0.096*	-0.457**	0.317**	-0.452**	-.056	1.000

Note: Left side of diagonal is Pearson correlation coefficients and right side is Spearman correlation coefficients, ***, **, * Significant at 1%, 5%, and 10% levels.

C. Multiple Linear Regression Analysis

In order to examine the influence of internal control quality on the cost of equity financing, we construct the model (1) taking small and medium-sized listed companies at Shenzhen Stock Exchange that voluntarily disclosure positive opinions of internal control audit reports as test samples, taking companies without disclosing internal control audit reports in that year as control samples. This paper examines whether the cost of equity financing in the next year will be influenced by the previous year's voluntary internal control audit report. In order to make the conclusion more robust, we further use reasonable guarantee of internal control audit reports as the proxy variable of internal control quality, use the data from sample companies to analyze the mode by multiple linear regression, the regression results are shown in Table IV.

The regression coefficients of the test variables *Ica* and *Pica* in the two models are -0.002 and -0.003 respectively, and are significant at the 5% level. After adjusting the model, the R^2 reaches 34% and 33.9%, which shows that the two models have a goodness of fit and have acceptable explanation ability. The regression results show that companies with voluntary disclosure of internal control audit reports and companies with reasonable guarantee of internal control audit reports have significantly lower cost of equity financing than companies without disclosing internal control audit reports, hypothesis H1 and H2 are verified; in contrast, the companies that acquired the limited guarantee internal control guarantee report have no significant effect on reducing the cost of equity financing. In addition, in order to avoid the impact of uneven distribution in the sample, we also choose the listed manufacturing companies to conduct the robustness test, the empirical results remain unchanged.

V. THE CONCLUSIONS AND REVELATION

Based on the cross-section data of small and medium-sized board listed companies at Shenzhen Stock Exchange in 2009 and 2010 as the research sample, this paper examines the impact of internal control quality on the cost of equity financing of listed companies, and the empirical research shows that:

(1) Positive opinion of internal control audit reports disclosed voluntarily by listed companies can convey a positive signal of internal control and information quality to the market.

(2) The internal control audit reports issued by the auditor has a higher guarantee degree for the effectiveness of the internal control of the company, and which is the signal of the company with higher quality internal control. Reasonable guarantee of internal control audit reports acquired by listed companies can reduce significantly their cost of equity capital.

The above conclusions support the rationality and necessity of internal control audit and corresponding information disclosure regulation of listed companies. It is useful to guide companies evaluate internal control construction and disclosure, and promote the intrinsic motivation of listed companies that disclose the internal control audit report. This is of great practical significance for the small and medium-sized companies to improve their internal control quality to reduce their financing costs.

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TABLE IV. MULTIPLE REGRESSION ANALYSIS

Regression result	Model（1）（sample N=443）			Model（2）（Sample N=443）		
	coefficients	*T value*	*VIF*	*coefficients*	*T value*	*VIF*
Intercept	0.001	0.265		0.001	0.241	
Ica	-0.002	-1.954**	1.114			
Pica				-0.003	-1.982**	1.417
Nica				-0.002	-1.303	1.099
Beta	0.008	3.328***	2.065	0.008	3.316***	2.066
Lev	0.000	0.050	1.070	0.000	0.073	1.074
Bm	0.013	5.526***	1.715	0.013	5.525***	1.715
Eg	0.011	6.891***	1.320	0.012	6.874***	1.320
Liq	0.000	-1.711*	1.778	0.000	-1.716*	1.779
Var	-0.017	-2.880***	2.374	-0.017	-2.844***	2.384
Size	0.005	5.709***	2.046	0.005	5.708***	2.048
AdjR^2	34.0%			33.9%		
F	29.47			26.17		
D-W	1.883			1.881		

Note：***, **, * Significant at 1%, 5%, and 10% levels

REFERENCES

[1] H. X. Fang and J. K. Shi, "Voluntary internal control audit and cost of equity capital-empirical evidences from the Shanghai a-share of non-financial listed companies," *Economic Management Journal*, pp. 128-134, Dec. 2011.

[2] C. Leuz and R. E. Verrecchia, "The economic consequences of increased disclosure," *Journal of Accounting Research*, vol. 38, pp. 91-124, August, 2000.

[3] J. Francis, R. LaFond, P. Olsson, and K. Schipper, "The market pricing of accruals quality," *Journal of Accounting and Economics*, vol. 39, pp. 295-327, 2005.

[4] R. Lambert, C. Leuz, and R. E. Verrecchia, "Accounting information, disclosure, and the cost of capital," *Journal of Accounting Research*, vol. 45, no. 2, pp. 385-420, 2007.

[5] P. Gao, "Disclosure quality, cost of capital, and investor welfare,". *The Accounting Review*, vol. 85, no. 1, pp. 1–29, 2010.

[6] M. Ogneva, K. R. Subramanyam, and K. Raghunandan, "Internal control weakness and cost of equity: Evidence from SOX section 404 disclosures," *The Accounting Review*, vol. 82, no. 5, pp. 1255–1297, 2007.

[7] H. X. Fang and Y. Jin, "Can high quality internal control prevent earnings management?-Empirical study based on voluntary internal control audit report," *China Accounting Research*, no. 8, pp. 60-70, 2011.

[8] F. Xin and D. H. Chen, "Earnings quality, institutional environment and equity capital costs: Evidence from Chinese Securities Market," *Contemporary Accounting Review*, vol. 2, no. 1, pp. 38-60, 2009.

[9] J. K. Shi, "Internal control assurance, auditor reputation and cost of equity capital: An empirical analysis based on a-share listed companies from 2009 to 2010," *Journal of Yunnan University of Finance and Economics*, 2012, 08, pp. 139-147.

[10] Z. F. Lu, K. T. Ye, "The puzzle of equity financing preference in China's listed companies," *Economic Research Journal*, no. 8, pp. 50-59, 2004.

[11] W. Wang, G. F. Jiang, "Information disclosure, transparency and capital costs," *Economic Research Journal*, no. 7, pp. 107-114, 2004.

[12] J. J. Huang and M. Xiao, "Information disclosure, earnings opacity and equity capital cost," *Contemporary Accounting Review*, vol. 4 no. 1, pp. 69-84, 2006.

[13] C. A. Cassell, L. A. Myers, and J. Zhou. (Feb. 2013). The Effect of Voluntary Internal Control Audits on the Cost of Capital. *SSRN Electronic Journal*. [Online]. 27(12). pp. 203-249. Available at: http://ssrn.com/abstract=1734300.

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