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The study of internal control and over-investment on corporate credit risk

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Abstract

This paper is based on a sample of A-stock Chinese listed firms in Shanghai and Shenzhen stock exchanges from year 2009 to 2013, studying the impact of over-investment on the corporate credit risk, testing whether the improvement of the internal control quality can effectively control the credit risk resulted from the over-investment. The basic method adopted in this paper is to combine the theoretical analyses with the demonstration proof-test, while including the model of linear regression.

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Keywords: Internal control, Over-investment, Corporate credit risk, The agency problem

1. Introduction

At present, Chinese government has realized the problems of duplicate construction and over-investment(Peihong Yang, 2006) [1], and taken innovation as a new strategy to promote the enterprise growth, while a majority of managers take self-profit maximization as the goal and continue to over-investment. The economic consequences generated from the over-investment can not only lead to performance decline (Lei Zan and Yaoyao Wang, 2013) [2], but also increase the corporate credit risks. By studying the impact of over-investment on the credit risks in the thesis, it can sound a alarm for enterprise managers. What's more, the thesis will discuss how to reduce the economic consequences generated from the over-investment.

There's a heated debate among academics about how to eliminate these factors to effectively control the managerial over-investment behaviors. Some start from the external factors, like the improvement of the governance environment (Yang, 2010)[3], the enhancement of the monitoring effect of bank (Luo, 2012) [4], while others from the internal factors, such as the largest shareholder (Zhang, 2008)[5], the improvement of the governance of corporation (Fang & Jin, 2013)[6], and strengthen of internal control (Li, 2011) [7], etc. Though Li and others have found that the promotion of internal control quality is beneficial to reduce the over-

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investment, yet they don't make a further study in its economic consequences. Chinese economy is now in the process of transforming, executives don't lay emphasis on the role that internal control has played in the risk control, and the internal control construction is still led and promoted by the government (Liu, 2012)[8]. Based on the fact that over-investment can result in credit risks, this paper mainly discuss that the internal control can effectively control these risks, thus not only presenting the vital function of internal control to the executives, but providing a theoretical basis for internal control construction by the government.

2. Literature review and theoretical hypothesis

2.1. Internal control, the agency problem and the corporate investment decision: theoretical analysis

Managers have impulse to establish a "private kingdom". The expansion of that impulse leads to over-investment, which may result from managers pursuing the utility maximization. In order to gain more profits, managers will expand the scale of investment. It can be seen that the over-investment does harm to enterprise value. How to reduce the over-investment so as to reduce the harm on enterprise value? Internal control is a high-profile system that protects the added value of enterprises. Based on this, by establishing models, this paper analyzes the motivation of managers to over-invest, and the effects that internal control construction has laid on the over-investment.

Drawing on the method of Aggarwal and Samwick(2006)[9], we make A as the asset value, I as the capital investment, and m as the investment-output ratio, $m \sim N(0,\sigma^2)$. The corporate value is as following if there's no agency problem:

$$f(I) = A + I - \frac{1}{2m} I^2 \tag{1}$$

Take a derivative of the model (1), and when the corporate value reaches the maximization, the best

$$I^{best} = m \tag{2}$$

investment is:

Consider the existence of the principal-agent problem, assuming the managers' expected wealth consists of three parts, as the fixed salary (ω_0), holding the stock value (share holding rate is ∂) and expense in-office (θlnI), where θ represents the coefficient of managerial power. When considering the agency problem, the firm value is, $f(I)_g = A + I - \frac{1}{2m} I^2 - w_0 - \theta lnI$ (3)

The managers' expected wealth can be,

$$E(I)_g = w_0 + \partial(A + I - \frac{1}{2m} I^2 - w_0 - \theta lnI) + \theta lnI \tag{4}$$

Furthermore, make derivation of model (4), we can obtain the best investment while the managers' expected wealth reach its maximization,

$$I^{g\_best} = \frac{m + \sqrt{m^2 + 4m\theta(\frac{1}{\partial} - 1)}}{2} \tag{5}$$

After the company has established an internal control system, which may reduce agency costs, especially has certain restraint for the managers' expense in-office. Assuming the restraint role of internal control to the managerial abuse power is γ （$0 \le \gamma \le 1$） ,if γ =1, which means that the construction of internal control to managers' expense in-office with full binding effect; If γ =0, which means that the construction of internal