An Empirical Study on the Effects of Concentration of Managerial Power and Internal Control on Corporate Credit Risk

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Abstract

By using empirical research methods, we investigate concentration of managerial power effect on the relationship between internal control and corporate credit risk. As a result, it can be found that concentration of managerial power and internal control exist two curvilinear relationships, with the different degree of concentration of managerial power increasing, the supervisory role of internal control on credit risk is different. These results indicate that establishment of internal control and monitoring corporate credit risk lay an important theoretical and practical significance.

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1. Introduction

Credit risk is not only one of the fundamental causes of regional and global financial crisis, but also the main root of the enterprise liquidity crunch. In 2008, after the global financial crisis, when pondering the causes of the credit risk, it was found that because of the lack of internal control, which leads to a rapid increase of corporate default probability [1]. Therefore, good internal control is a medicine to reduce the credit risk. Internal control effect on credit risk is influenced by power allocation of the top executives. Executives of moderate centralization are conducive to use of the powerful means to pool the company resources, thereby reducing the corporate credit risk. While executives’ centralization degree exceeds a certain range, executives are above the internal control, internal controls can only constraint ordinary employees, but not the top executives, increasing the risk of centralized self-serving [2]. So that power allocation of top executives makes internal control is the most critical and the weakest link, in which internal control plays a role of risk management and control.

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2. Literature review and theoretical hypothesis

Owe to maternal weakness in internal control of China Aviation Oil (S)Corp Ltd, the general manager have siphoned off company funds, causing the company huge losses. Especially since the 2008 global financial crisis, upon further reflection, it is found that the quality of internal control goes hand in hand with credit risk [3]. China government has been issued a series of the trading regulations and laws to strengthen the construction of internal control. The relationship between internal control and corporate credit risk, which may affected by the allocation of internal executive powers. Centralization will help the executives to conduct a comprehensive and effective control on organizational and operational activities, develop and consolidate the organization's business strategy, play integration advantages of organizational resources, avoid the underlying managers for their own sectoral interests and make decisions contrary to the overall interests of the organization [4]. In order to pursue a common goal, the company need the executives have moderate centralization. In particular, when the company makes critical decisions, and most of these managers lower were poorly educated, the company executives are more likely to heavily centralized [5].

In the fight between centralization and decentralization of the organization, the former seem to have the upper hand among most foreign scholars [6]. As for decentralization, only a few foreign scholars like Frangos & Bennett pointed out that, it may reinforce the boundary between the teams, make it difficult to coordinate and conformity each kind of strength and the resources, and reduce the speed and execution force of decision-making [6]. The research is in question, like the foreign scholars had mixed reactions to the study; most of Chinese scholars also support enterprises to take the road of decentralization. Especially when companies get bigger, usually the distance between executive and the bottom of the corporate ladder goes greater, which may affect the accuracy, completeness, timeliness of the company decision-making disseminate, eventually lead to the company resilience has dropped significantly[7]. In Chinese enterprise management practice, most companies actively adopt centralized management mode, even the company has a significant scale [8]. Of course, there are definite social and historical reasons for this phenomenon. Since 1979, China had been progressively reforming its economic system, with the objective of establishing and improving the socialist market economy. But before that point, China's economy has a long time stay in a highly centralized planned economic system. Our country is in the transformation period from planned economic system to market economic system. Maintain a moderate centralization has historical tendency, but also contribute to, organizations to achieve decentralization mode smoothly. At present, internal control construction's spread in China; it was often a government-led initiative. If a strong team of executives is committed to promoting the construction of the internal control of the company, the higher the degree of centralization is conducive to the efficient allocation of various resources by the executives. Forcefully establish and improve the company's internal control system, make sure that the internal control system is used extensively and effectively in firm management [9]. Finally, it can effectively control the company's credit risk.

When more centralized power to executives, middle and lower managers become a mere executor of high-level decision, thus suppress their enthusiasm for work. In views of people bounded rational, on the one hand, the formation of the wrong decision by top executives with personal bias and inaccuracy may cause heavy losses to the enterprise. On the other hand, executive may take advantage of power, handle business with an arbitrary fashion, and have other acts; what's more, the more power allocated with the executive, the greater the likelihood that these will occur within the organization. This is due to the greater executive powers, the smaller restricting extent by corporate boards of checks and balances, internal control activities or internal oversight[10], and eventually make the company's credit risk dramatically increases. Especially when the executive is hold concurrently by the president, director, or by other means influence the board of directors, so that in the case of the control of management executives can also put pressure on the board of directors [11], reduces the checks and balances on the executive by the board of directors [12], making the internal control containment greatly reduced role [13]. Consequently, when executive’s centralization exceed a certain limit, he
has all of the control. For example, the company's chairman also serves as the company's CEO, etc. When the centralization executives and shareholders have conflicts of interests, in order to seek to maximize their own interests as the goal, centralization executives may make decisions contrary to the interests of shareholders, or use its position to override internal controls, pursue one's own self-interest through deception behavior, causes the internal control ineffective, ultimately impossible to effectively curb the credit risks of the company. So, executive’s centralization exceed a certain limit in a company, this phenomenon may reduce the quality of internal control, heightening the credit risk of the company. Add it all up; this research is based on the following hypothesis.

Hypothesis 1: The degree of executives’ centralization and internal control has conic shaped relationship.

Hypothesis 1a: With the increase of the degree of centralization executives, improve the quality of internal control level, making internal control effect on credit risk significantly enhanced.

Hypothesis 1b: Executives centralization exceeds a certain range, which may make a decline in the level of internal control quality, eventually lead to internal control effect on credit risk weakening.

3. Variables, data and model construction

The dependent variable is the company's credit risk; it is now referred to by letters EDF. We will use EDF model which developed by KMV company to measure the credit risk. The independent variable is the company's internal control; it is now referred to by letters Index. It can be calculated by the quality of internal control evaluation index developed by Dibo Enterprise Risk Management, Shenzhen Technology Co., Ltd. The regulated variable is the concentration of managerial power; it is now referred to by letters Power. Learn Quan Xiaofeng (2010) approach, from the five sub-indices of power of management structure, CEO tenure, board size, the proportion of inside directors in the board of directors and the level of Pyramid control chain, such as principal component level synthesis is calculated to obtain the power management integrated indicators, the larger the index, indicating the higher degree of executives centralization.

The corporate credit risk not only influenced by internal control, but also affected by many other factors, such as earnings, growth, leverage, scale, governance, industry attributes and annual effect. Therefore, the inclusion of these variables can be defined as control variables. The variables with the detailed definition and calculation are shown in Table 1.

To test hypothesis H1a and H1b, set up the following model to test:

\[ EDF_{i,t} = \beta_0 + \beta_1 \text{Power}_{i,t} + \beta_2 \text{Index}_{i,t} + \beta_3 \text{Power}_{i,t} \times \text{Index}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{Totassgrrt}_{i,t} + \beta_6 \text{Lev}_{i,t} + \beta_7 \text{Size}_{i,t} + \beta_8 \text{Dudong}_{i,t} + \text{Year effect} + \text{Industry effect} + \epsilon_{i,t} \]  

\[ EDF_{i,t} = \beta_0 + \beta_1 \text{SqPower}_{i,t} + \beta_2 \text{Index}_{i,t} + \beta_3 \text{SqPower}_{i,t} \times \text{Index}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{Lev}_{i,t} + \beta_6 \text{Totassgrrt}_{i,t} + \beta_7 \text{Size}_{i,t} + \beta_8 \text{Dudong}_{i,t} + \text{Year effect} + \text{Industry effect} + \epsilon_{i,t} \]

Table 1: Variable definitions and calculations

| Variable name                  | Variable symbol | Computational method |
|-------------------------------|-----------------|---------------------|
| Corporate credit risk         | EDF             | use EDF model and MATLAB programming iterative calculation of the value of delinquencies EDF |
| Internal controls             | Index           | Taking the natural logarithm of the quality of internal control evaluation index which developed by Dibo company |
| Executives centralization     | Plurality       | When the CEO does not serve as a director position, the value is 1; While part-time directors, the value is 2; While part-time chairman of the company, the value is 3. |
|                               | Years           | CEO tenure |
|                               | Board size      | the number of Board of Directors |
|                               | Percent         | The proportion of the board of directors of internal |
3.2 Sample selection and data sources

Based on the data of Chinese listed companies from 2009 to 2012, Data are from the GTA database (CSMAR), Rui Si database and annual reports of listed companies are collected by hand. When choosing sample, this paper carried out the following data processing:(1) Taking into account the company's sustainable management issues, taking the company in 2008 after listing;(2) Excluding ST and PT shares, because of the extreme value statistics will produce large errors;(3) Eliminate financial, securities and insurance industries listed companies, because the listing Corporation performance measure and risk measure is different from the general listing Corporation;(4) Remove the data is not complete during the sample listed companies. Finally we got 6796 sample observations, applying of Stata10.0 software for statistical analyses.

4 Empirical analyses

Table 2 is the empirical analysis results of model 1 and 2. In the empirical analysis results of model 1, evidences show a significant negative correlation between the degree of executive’s centralization and corporate credit risk, indicating that the increase of executive’s centralization, reducing the corporate credit risk. Simultaneously, internal control is negatively correlated with corporate credit risk, which proved that the correctness of the hypothesis 1.The cross-term of square degree of centralization executives and internal control with credit risk have a significant negative correlation, it means that appropriate to increase the degree of centralization executives, helping to reduce the corporate credit risk. So, the hypothesis 1a is proved. In the empirical analysis model 2, square degree of centralization executives and credit risk have showed positive correlation of, which indicates that enhance the degree of centralization executives above a certain level will increase the company's credit risk. Significant negative correlation of internal control and corporate credit risk has not been changed. The cross-term of square degree of centralization executives and internal control with credit risk no longer have a significant negative correlation, shows that executive centralization degree is too high, weakened the role of internal control to credit risk, suggesting hypothesis 1b proved.

Table 2: the concentration of managerial power, internal control and corporate credit risk

|                     | Model (1)          | Model (2)          |
|---------------------|-------------------|-------------------|
|                     | Regression coefficient | T Value | Regression coefficient | T Value |
| Constant term       | 0.4592***          | 15.90            | 0.4538***               | 15.70    |
| Power               | -0.0016**          | -3.98            | -0.0016**               | -3.98    |
| SqPower             | -0.0178**          | -4.70            | -0.0180**               | -4.75    |
| lndex               | -0.0049***         | -1.97            | -0.0049***              | -1.97    |
| Power_index         | -0.0178**          | -4.70            | -0.0180**               | -4.75    |
| SqPower_index       | -0.0049***         | -1.97            | -0.0049***              | -1.97    |
| ROA                 | -0.1183***         | -13.62           | -0.1183***              | -13.62   |
| Totassgtrt          | 0.0146***          | 7.49             | 0.0146***               | 7.49     |
| Lev                 | 0.0726***          | 23.86            | 0.0724***               | 23.80    |
5. The research conclusion and the limitations

From the perspective of credit risk, this paper excavates the regulating function of concentration of managerial power on the internal control of credit risk. Our research found, concentration of managerial power and internal control exist two curvilinear relationships. As the concentration of managerial power increases, the internal control quality rises significantly, which increases the role of internal control on credit risk; however, when executives’ centralization degree exceeds a certain range, the internal control quality decreases considerably, weaken the role of internal control on the credit risk.

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