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Corporate Governance, Internal Control and over Investment under Insider Control: Evidence from Listed Manufacturing Companies in China

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Abstract: At present, there are more serious over investments in China's listed companies. Based on corporate governance and internal control, we build a driven framework of two paths of “direct driver” and “internal control driver”. With 3002 manufacture samples from 2008 to 2011, we investigate the relationships between internal control and overinvestment, management control and internal control, overinvestment and between various corporate governance factors and overinvestment. Empirical result shows that sound internal control restrains over investment enormously, management control weakens internal control and promotes over investment. Executive compensation also significantly improves the quality of internal control and facilitates corporate investment behaviors. We suggest that companies should reduce over investment by enhancing internal control system, refrain from insider control possibility and improve the incentive mechanism of high executives.

Keywords: Insider control, internal control, over investment, path analysis

INTRODUCTION

Investment, one of the three major economic activities of corporations, decides the growth and profitability of the future. Proper investment behavior will lead to corporate value maximization, while improper investment impairs corporate value. Improper investment behavior can be divided into two categories: underinvestment and overinvestment (Holmstrom and Weiss, 1985; Stephen, 1973). Over investment indicates that free cash flow is invested in projects whose NPV is negative; when the free cash flow of companies is abundant, overinvestment seems to be more serious. Listed companies in China stock market have serious problems in over investment. This phenomenon is quite common (Tang *et al*., 2007). Investment efficiency needs to be improved for listed companies in China (Jiang *et al*., 2009), because too much inefficient investment will twist the efficient allocation of economic resource, thus influencing the overall development of national economics. So solving the problem of overinvestment and promoting proper investment have become a significant issue nowadays.

At the same time, internal control, an important mechanism of corporate inside governance, is drawing more and more attention. In 1992 COSO issued Internal Control Integrated Framework, emphasizing on control environment, risk evaluation, control activities, information and communication, surveillance and the interaction between the five factors. In 2002, Sarbanes-Oxley Act set strict rules for internal control. Then COSO connect internal control and risk management and identify internal control as an implanted process to set Enterprise Risk management Framework in 2004. Though internal control mechanism in China starts late, now more and more attention is paid to this issue. Enterprise Internal Control Basic Standard of 2008 and Enterprise Internal Control Supporting Guidance of 2010 is China’s Internal Control framework. Internal control is a process of realizing the goal which is practiced by the board of directors, board of supervisors, executives and all stuff. A sound internal control clarifies rights and responsibilities and promotes corporate operation process, performance and investment efficiency, thus becoming a vital guarantee for corporate strategy realization and share holder’s interest protection (Li *et al*., 2011). In the meanwhile, corporate governance system and internal control mechanism are closely related with each other and influence each other. The China securities supervision and management committee published Corporate Governance Standards of Listed Company's in 2002, which sets the basic principle of listed company’s governance, implementation model of share holder’s rights and the basic code of conduct and professional ethics of high executives. Corporate governance is a mechanism balancing interests of different groups, mainly aiming at guaranteeing investors’ investment (Andrei and Robert, 1997).

Now academic community has conducted widespread research of corporate investment behavior from various aspects, including ownership property, management compensation (Xin *et al*., 2007) debt covenant (Wang, 2009), institutional environment

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(Yang and Hu, 2007) and government control (Wei and Liu, 2007; Ang *et al*., 2000), etc. Regarding internal control's role in standardizing corporate investment behavior, existing results shows that the quality of internal control and overinvestment are significantly correlated (Gopalan and Jayaraman, 2012). Li Wanfu's research finds that when a corporation is possibly about to confront overinvestment, poor internal control aggravates overinvestment; Ejusdem, if a corporation is possibly about to confront under- investment, poor internal control promotes underinvestment. In one word, corporations of poor internal control are more likely to conduct extreme investments. Apart from that, agency cost of external professional managers are strikingly lower than inside managers; For corporations controlled by insiders, earnings management problems intends more probably to occur (Li *et al*., 2011). Insider Control, a pervasive phenomenon in China stock market, forms a specific critical agency cost.

In fact, insider control is a problem of both corporate governance and internal control. Insider control in form means executives hold the company's share, Insider control in essence means executives have control over the company through means other than share holding (Chen *et al*., 2000). In this sense, Insider control is an issue of corporate governance. But Insider control also influences all five internal control factors, namely control environment, risk evaluation, control activities, information and communication and supervision, furthering impacting the validity of internal control. Insider control brings defect in form to internal control system, providing opportunities for managements' exceeding internal control system, thus brings defect in essence. So insider control also belongs to an issue of internal control. Our research is set under this "insider control" scene as the basic premise and we calculate the overinvestment, analyzed by"direct driver" and "internal control driver" with Richardson's (2006) model. We sample on 2008-2012 manufacturing listed companies in China stock market (Shanghai and Shenzhen Stock Market) to evaluate the effects of various corporate governance factor on corporate overinvestment and their transmission driver. This research can provide some suggestions on reducing overinvestment facilitate proper investment behavior and further on decreasing overlapping investment in the microeconomic level.

LITERATURE REVIEW

The reasons for overinvestment behavior forming can be explained by two theories:

- **Corporate governance theory:** It explains overinvestment by information asymmetry and agency theory. When ownership and management right are separated, target utility function of executives and owners not being completely same, executives' moral hazard and incomplete contract lead to agency problem. For example, executives' pursuing for large scale, opportunistic motives and overconfidence tendency. Summarily agency costs include supervision cost, agents' guarantee cost and value loss derived from agents' decisions. High quality accounting information reduces information asymmetry, moral hazard and adverse selection, thus significantly improving corporation's investment efficiency. This phenomenon is more common in countries where debt play as the major role in corporate financing (Biddle *et al*., 2006). Apart from that, short term target's shortening executives' visions also leads to overinvestment, especially when investors cannot tell the optimal project from non-optimal ones. Even executives tend to overinvestment, outside investor are not able to restrict their abuse of cash flow control rights (Zhang, 2007). Executives draw water to their own mill by overinvestment. Researches in China demonstrate that under the corporate governance framework, executive motivation and restraint mechanism's in validness results in executives' overinvestment, a magnificent form impairing corporate value; Information asymmetry contributes to the overinvestment tendency more (Narayanan, 1988). So in the sense of corporate governance, overinvestment is a kind of economic consequence of corporate governance defects.
- **Internal control theory:** According to COSO, internal control is a mechanism arrangement for corporate behavior to correspond with laws to insure financial reports' reliability and efficiency of operating. Empirical research of Chinese scholars proves that poor internal control results in overinvestment (Li *et al*., 2011). Strict internal control reduces debtor's loss, enhances the profitability robustness and cash flow's predictability and restrains earnings management (Altamuro and Beatty, 2010); it decreases unintended accounting misstatement and improves accrual quality (Ashbaugh-Skaife *et al*., 2008). Investors' negative reaction to internal control mass defects' disclosure means capital market values internal control's role in a corporation (Beneish *et al*., 2008). So we conjecture that sound internal control reduces agency cost by bettering financial reports' quality, thus indirectly influences corporations' investment behavior. Of course in practice, strict implementation of internal control raises executor costs greatly. Overinvestment can be identified as the economic consequence of internal control defects as well.

RESEARCH HYPOTHESIS

Insider control means executives control the corporation operation totally and aggravate information asymmetry; then investors drop in a situation with no

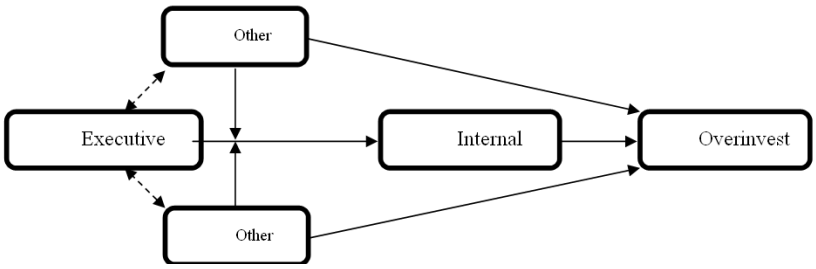

Fig. 1: Two drivers for various factors influencing overinvestment transformation

Table 1: Rules for grouping various overinvestment influencing factors

Scenario	Driver	Explanation
1. Positively or negatively related with both overinvestment and internal control.	Direct driver internal control driver	This factor influences overinvestment through two synergy divers.
2. Positively (negatively) related with overinvestment; negatively (positively) with internal control.	Direct driver internal control driver	This factor influences overinvestment through two antagonism divers.
3. Positively (negatively) related with overinvestment; not related with internal control.	Direct driver	This factor influences overinvestment through direct driver.
4. Positively (negatively) related with internal control; not related with overinvestment.	Internal control driver	This factor influences overinvestment through internal control driver.
5. Not related with internal control and overinvestment.	Non	This factor doesn't influence overinvestment through any driver.

decision rights and control rights in reality, in which investors are most helpless. Generally investors can limit agency cost and overinvestment by refraining executives' access to economic resources, but under insider control, investors cannot carry out this right anymore. So corporate decisions under insider control are usually not scientific enough, largely due to agency cost caused by executives' overriding over internal control. Economic consequences of insider control could be very serious, for instance, over expansion's leading to corporation value impairment and easing the tendency of related parties' unfair and inefficient investments. So we suggest:

Hypothesis 1: Insider control weakens internal control system and promotes overinvestment.

Poor investment lowers the quality of accrual income (Doyle *et al*., 2007). Researches show that four of all five internal control factors, namely risk management, control activities and information communication, play restraint role in overinvestment; only internal supervision's role is not significant. Corporations of poor internal control system even aggravate overinvestment when corporations are very likely to overinvestment and underinvestment when they are very likely to underinvestment (Li *et al*., 2011). To sum up, poor internal control contributes to both overinvestment and under investment. Under risky scenes like this, corporate are most probably to overinvestment. So we suggest:

Hypothesis 2: Internal control is related with investment, namely the more incomplete the internal control, the more tendency corporations have to overinvestment.

Basing on the theory framework and hypotheses above, we suppose there are two drivers for various factors influencing overinvestment transformation (Fig. 1) and we set rules deciding different factors' dives under various conditions (Table 1). Driver one, "direct driver", means factors belonging to this group directly influences overinvestment; driver two, "internal control driver", means the ones influence internal control system, further indirectly influence overinvestment.

As part of total compensation package, executives' sharing holding is an important motive mechanism regulating interests between executives and shareholders. Management power theory believes that information asymmetry and high management cost lead to board directors' limited access to every detail of the company. Thus executives are needed to run the company, but they charge more out of their own interests (Bebchuk and Fried, 2004). Executives' share holding helps executives to think over problems in shareholders' shoes, thus greatly reducing agency cost and promotes corporate performance. But compensation system is not proper now in China stock market, the share holding percentage is shocking low compared to some other, not to say that zero share holding is quite common situation. Under the dynamic perspective of "Management power-free cash flow investment-performance-compensation" and with the reforms of non tradable shares and compensation marketization, high compensation is highly positive with performance; monetary compensation can improve performance on a certain level. Sound compensation incentives, critical in corporate governance mechanism, regulates different parties' interests (Tang *et al*., 2007). When compensation contract doesn't pay and motivate an

executive as supposed to, public companies controlled by local governments tend to overinvestment due to compensation contract failure (Gopalan and Jayaraman, 2012). So we suggest:

Hypothesis 3: General managements' share holding percentage is positively connected with internal control and overinvests. Namely, the higher general managements' share holding percentage, more sound a corporation's internal control system, it's much less likely to overinvestment.

Hypothesis 4: Executives' compensation is negatively related with internal control and overinvestment. Namely, the higher executives' compensation, a corporation's internal control is sounder and it's less likely to overinvestment.

State property shareholders always pursue uneconomic efficient administration intervention out of nature. State owned public companies usually tend to overinvestment due to governmental backgrounds, especially the case in China stock market (Wei and Liu, 2007). State shareholders transfers their control rights to executives and they themselves conduct pure supervised administration, thus resulting in the issue of insider control. So we suggest:

Hypothesis 5: State share percentage is positively related with internal control and overinvestment. Namely, the higher state share percentage, the poorer a corporation's internal control and it's more likely to overinvestment.

Independent directors perform supervisory roles in the board aiming at the executive level. In theory independent directors' fair decisions should not be interfered by the company and its main shareholders who hire them, thus guaranteeing corporate governance's efficiency in regulating overinvestment. But some prior empirical researches seem to indicate independent directors' function seems to be weak (Jiang *et al*., 2009). Anyway, we suggest:

Hypothesis 6: Independent director percentage is negatively related with internal control and overinvestment. Namely, the higher the independent director percentage, more sound is internal control, thus a company is less likely to overinvestment.

Strategy committee is an authority which is especially in charge of decision and investment plan auditing under the guidance of director boards. Theoretically speaking, the setting up of strategy committee indicates a corporation's decision making process is perfect in internal control system. A company with a strategy committee should less likely to overinvestment. However, under insider control, strategy committee's role is most likely to fail. For the present, the setting up of strategy committees of Chinese listed companies is still in the "Negative compliance" phase. Strategy committees fail to improve corporate performance and also fail to play the supposed role in a company's strategy decision and material investment plan. On the contrary, the existence of strategy committees refrain corporate performance and promotes overinvestment. So we suggest:

Hypothesis 7: Strategy committee is negatively related with internal control and overinvestment. Namely, if a company has a strategy committee, then the company's internal control should be sounder and less likely to overinvestment than that which doesn't.

MODEL CONSTRUCTION AND SAMPLE SELECTION

- **Model construction:** We construct the following Logistic Models based on the theory analysis and hypotheses above:

$$P(OverInvest) = \frac{e^{Z_1}}{1+e^{Z_1}} \qquad P(InternalControl) = \frac{e^{Z_2}}{1+e^{Z_2}}$$

$$P(OverInvest) = \frac{e^{Z_3}}{1+e^{Z_3}}$$

$$Z_1 = \alpha_0 + \alpha_1 * Internal\ Control \tag{1}$$

$$Z_2 = \alpha_0 + \alpha_1 * InsiderControl + \alpha_2 * InsiderControl * GenermaneShare + \alpha_3 * InsiderControl * Compensation + \alpha_4 * InsiderControl * StateShare + \alpha_5 * InsiderControl * IndepPercent + \alpha_6 * InsiderControl * StrateCom \tag{2}$$

$$Z_3 = \alpha_0 + \alpha_1 * InsiderControl + \alpha_2 * InsiderControl * GenermaneShare + \alpha_3 * InsiderControl * Compensation + \alpha_4 * InsiderControl * StateShare + \alpha_5 * InsiderControl * IndepPercent + \alpha_6 * InsiderControl * StrateCom \tag{3}$$

With Ashbaugh-Skaife *et al*. (2008) model the excluding industry variable; we use the following formula to calculate investment related variables:

$$Investment_t = a_0 + a_1 Growth_{t-1} + a_2\ Leverage_{t-1} + a_3\ Cash_{t-1} + a_4\ Age_{t-1} + a_5\ Size_{t-1} + a_6\ Ret_{t-1} + a_7\ Investment_{t-1} + a_8\ Year_t + \varepsilon_\circ$$

$Investment_t$ is newly added fixed asset expense for year t and its calculation is "divide the number of original value sum of fixed assets, engineering material and construction by year t end minus those by year t-1 by total asset value at the beginning in year t"; $Growth_{t-1}$ is operating receipt growth rate for year t-1; $Leverage_{t-1}$ is the debt ratio for year t-1;$Cash_{t-1}$ is cash holding level for year t-1 and its calculation is "divide the sum of monetary capital and short term investment's averages by average total assets; Age_{t-1} is the year a company has gone public in year t-1; $Size_{t-1}$ is corporation scale in year t-1; Ret_{t-1} is stock yield in

Table 2: Variables

Abbreviation	Meaning
Overinvest	1 = A company has overinvestment behavior, namely that year's actual amount of investment- the amount should be invested for that year>0; 0 = the opposite of the above.
Internal control	1 = Non standard non reservation auditing opinions, poor internal control; 0 = standard non reservation auditing opinions, sound internal control.
Insider control	1 = (Vice) chair of the board or board directors double play the general manager. 0 = board directors and the general manager are completely separated.
Generman share	General management share number/the company's total share number.
Compensation	Natural logarithm of executives' total yearly compensation.
State share	State share number/the company's total share number.
Indep percent	Independent director number/board member's total number.
Stratecom	1 = A company has a strategy committee; 0 = A company doesn't have a strategy committee.
Overinvest ratio	Overinvest ratio = Overinvest/ investment, namely overinvestment in year t/ total investment amount in year t.

Executives include board directors, supervisors and managers

year t-1; $Investment_{t-1}$ is newly added fixed asset expense in year t-1; $Year_t$ is annual effect; residual ε is OverInvest.

We refer to Li Wanfu's method to measure the internal control variable (Li *et al*., 2011). Accounting firms are especially strict with internal control when performing auditing, in which internal control risk evaluation acting as the key. We believe that a company's internal control is sound only when it is given standard non reservation opinions. Companies given auditing reports of other opinions, including non reservation opinion with additional notice, opinion disclaimer and adverse opinion, are more likely have poor internal control systems. Because we think that accounting firms might give those kinds of opinions only out of weighing the risk and profit. These companies might have internal control problems in different levels.

- **Variables setting:** Variables and their meanings in this study are listed in Table 2.
- **Sample selection:** This is how we select the sample: We follow 2001 "The listed company industry classification guide" to select manufacturing companies; on the other side, manufacturing industry need large amount of asset investing on some level. What's more, listed manufacturing companies in China overinvestment generally. So we select all the listed A stock Chinese manufacturing companies whose first character in industry code is C. Financial data and corporate governance of sample companies from 2008 to 2011 is accessible through CSMA and CCER databases, excluding data missing sample. Altogether we get 3002 sample of 988 companies according to the requirement above. We settle and analyze the data with Excel and SPSS.

EMPIRICAL TESTS

- **Descriptive statistics:** From Table 3 we can see the descriptive statistics results. 42% of the sample have overinvestment, indicating this is a pervasive; there exists internal control problems in 6% of the sample; Insider control is also severe, reaching at 19%; Generman Share is a little bit too flat with average1%; IndepPercent's mean is 36%; 76% of the sample have set a strategy committee.
- **Regression analysis:** Table 4 shows that internal control is significantly positive with overinvestment, which is consistent with the relevant prior hypothesis. Internal control does refrain a corporation's overinvestment motive.

Table 3: Descriptive statistics results

	Mean	Median	SD	Min.	Max.
Over Invest	0.42	0.00	0.49	0.00	1.00
Internal control	0.06	0.00	0.25	0.00	1.00
Insider control	0.19	0.00	0.39	0.00	1.00
Generman share	0.01	0.00	0.06	0.00	0.69
Compensation	14.58	14.61	0.81	10.71	17.39
State share	0.10	0.00	0.18	0.00	0.84
Indep percent	0.36	0.33	0.05	0.09	0.67
Strate com	0.76	1.00	0.43	0.00	1.00

Table 4: Logistic regression results

Variable	B	Sig.
(1)		
Internal control	0.684	0.000***
(2)		
Insider control	17.322	0.000***
Insider control*Genermane share	-0.072	0.133
Insider control*Compensation	-1.311	0.000***
Insider control*State share	-0.006	0.658
Insider control*Indep percent	0.050	0.102
Insider control*Strate com	-0.360	0.341
(3)		
Insider control	7.592	0.000***
Insider control*Genermane share	-0.006	0.484
Insider control*Compensation	-0.523	0.000***
Insider control*State share	-0.001	0.852
Insider control*Indep percent	0.011	0.529
Insider control*Strate com	0.047	0.819

***: Indicates significance is less than 0.01, ** less than 0.05,* less than 0.1

That insider control is critical positive related with internal control and overinvestment is also within our prediction. So insider control promotes overinvestment by direct driver and internal control driver synergeticly, proving that insider control influences the effectiveness of internal control, thus further promoting overinvestment.

Under insider control, *GenermanShare* has no significant relation with either internal control or overinvestment. So *GenermanShare* doesn't act through direct driver and internal control driver. On the one hand, maybe executives' shareholding doesn't make

Table 5: Classification of variables

Influence factor	Transition driver
Insider control, compensation	Direct driver; internal control driver synergy
None	Direct driver; internal control driver antagonism
None	Direct driver
None	Internal control driver
Genermane share, state share, indep percent, strate com	None

Table 6: Robustness test results

Variable	B	Sig.
(4)		
Internal control	219785.232	0.000***
(5)		
Insider control	535017.047	0.070*
Insider control*Genermane share	-420.987	0.761
Insider control*Compensation	-36059.507	0.045**
Insider control*State share	-1064.649	0.372
Insider control*Indep percent	848.693	0.775
Insider control*Strate com	-34605.225	0.336

***: Indicates significance is less than0.01, **: less than 0.05,*: less than 0.1

sense in settling agency problem; on the other hand, generally executives' shareholding hardly exists in Chinese companies, or is quite small comparing to those in developed capital markets, contrary to most cases in western countries, thus hardly making it enough to state whether executives' shareholding influences internal control or overinvestment.

Under insider control, *Compensation* is negatively related with both internal control and overinvestment; namely, *Compensation* refrain overinvestment by direct driver and internal control driver synergistically. This indicates that compensation system improves internal control system and refrain overinvestment, thus brings value to deal with the agency issue. Even under the circumstance of insider control, Market-oriented compensation can still play a role.

Under insider control, *StateShare* has no significant relationship with internal control and overinvestment; namely, *StateShare* doesn't power overinvestment by any driver, totally different from our expectation, which signifies that our share reform might have had some effect because *StateShare* of most companies is relatively low (Table 3); State shareholders usually grant right to executives more flexible operating and independent decision making right. These above two points contribute to *StateShare*'s no-significance-relationship with overinvestment if *StateShare* is within certain level. Of course, other explanations might be that executives of state property companies might gain interests in other ways more than overinvestment.

Under insider control, *IndepPercent* also has no significant relationship with internal control and overinvestment; namely, *IndepPercent* doesn't influence overinvestment by any driver, completely different from prediction draw from theory analysis. That independent directors in China might not be so independent to carry out their supervise duties as expected might explain the situation. Under insider control, general manager might control the board at the same time, thus violating the basic internal control standard. Maybe this could indulge overinvestment in a company. So the effectiveness of independent directors in China should be enhanced.

Under insider control, *StrateCom* has no significant relationship with internal control and overinvestment, too; namely, *StrateCom* doesn't influence overinvestment by any driver. This result is consistent with some prior researches' conclusions, which means strategy committee's function needs to be strengthened.

Rebustness test: We replace *OverInvest* with *OverInvestratio* in formula (1) and (3) to get the following formula (4) and (5), with which we do robustness test. The result in Table 6 is accord with that in Table 5, demonstrating that sound internal control could refrain overinvestment; *Compensation* provides significant motive function, promotes internal control and reduces overinvestment.

$$OverInvestratio = \alpha_0 + \alpha_1 * Internal\ Control \quad (4)$$

$$OverInvestratio = \alpha_0 + \alpha_1 * InsiderControl + \alpha_2 * InsiderControl * GenermaneShare + \alpha_3 * InsiderControl * Compensation + \alpha_4 * InsiderControl * StateShare + \alpha_5 * InsiderControl * IndepPercent + \alpha_6 * Insider\ Control * StrateCom \quad (5)$$

CONCLUSION

Overinvestment not only impairs corporate value and causes shareholders and other interest related parties great economic losses, but also allocates macroscopic resources effectively. Internal control, as an important internal governance mechanism, is considered as an effective grantee to promote corporation performance. But insider control, pervasive in China stock market, certainly has weakened internal control effectiveness. Targeting overinvestment in China, we conduct research with the point on how overinvestment happens and their transmission driver; in the meanwhile we analyze related factors' influencing direction and significance.

Our research demonstrates that sound internal control reduces overinvestment; insider control significantly weakens internal control and boost overinvestment; insider control and executive compensation directly influence corporate investment behavior and indirectly through internal control system with two drivers synergistically; *GenermaneShare*, *StateShare*, *IndepPercent* and *StrateCom* have no critical relationships with overinvestment behavior, suggesting that the function of governance mechanisms in Chinese public companies needs to be enhanced.

To reduce overinvestment and improves public companies' investment efficiency, we should set proper compensation and motive system, barring executives from rent seeking in overinvestment; a reasonable amount of share motive might bring some progress, too. Last but not least, we have to ban insider control, which usually can be identified in whether the general manager doubles the board chairman and makes up insider control environment which severely influence internal control effectiveness and corporate overinvestment. We must forbid insider control, which eases executives to override internal control. Thus five factors in internal control can never be emphasized enough. With sound internal control, a company can balance rights and supervision literally, avoids insider control and management overriding. Other than that, we need to pay attention to the duties of independent director and strategy committees to improve their performance in supervision and decision making.

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