Empirical Analysis and Examination of Executive Compensation Incentive Mechanism in Chinese Listed Companies—From the Perspective of Compensation Determinants

(Thesis submitted for the degree of Executive Doctorate in Business Administration)

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25th March, 2016
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ABSTRACT

Studies on executive compensation started from 1970s and gained further development in 1990s with new research perspectives gradually extended from the disciplines of management to other fields such as economics, psychology, and organizational behavior (MURPHY, 1999). In the 21st century, more researches on executive compensation tended to identify the relevance between compensation and the performance of companies (COLLINS, 2001; DAINES, 2005). As research results came out, more scholars began to show interests on the topic and had conducted many academic studies. On one hand, the popularity of this topic shows how executive compensation influence company’s growth and development is of great practice significance. On the other hand, it also reflects the fact that with the change of corporate internal structure, individual executive style and external environment, current studies cannot fully meet the demand of practice. The lacks and limitations of current studies need to be fulfilled by both academia research and practical efforts.

In recent years, although the relationship between executive compensation and company’s performance draw higher interests from academics and management practitioners, consensus on this issue has never been reached. Many theorists believe that there is no necessary relevance between the two (MEREDITH, 1992; Wei Zhengang, 2000; Yao Zhenghai, 2005). This is not one-sided statement. Listed companies with declining performance and raising executive salary are not uncommonly seen. According to the data center of caixin.com.cn, statistics from 495 A-share listed company’s corporate annual reports showed that in 2014, 164 companies produced negative net profit growth. However, 92, or 56.1% of them provided higher compensations for their senior executives. In response to this phenomenon, the State-owned Assets Supervision and Administration Commission (SASAC) issued the Notice on Conducting Business Performance Appraisals of Persons-in-Charge at Central Enterprises 2015 to take corresponding measures and strategies. Giving such a context, conducting researches on incentive compensation mechanism of senior executives is particularly necessary. By analyzing the effectiveness of China’s incentive compensation mechanism for senior executives, this paper studied major determinants for current incentive compensation and further explored the essential relationship between corporate performance and executives’ behaviors, provided a reliable theoretical basis for the construction of better incentive compensation structure and its restraint mechanism.

Under the background of listed companies in China, by looking at compensation determinant factors, this paper build a theoretical analysis framework underpinned by diversified theories, including agency theory and tournament theory from an economic perspective, stewardship theory from a sociological perspective, prospect theory and social comparison theory from a psychological perspective and human capital theory and property right theory from a combined perspective. This paper also proposes a research hypothesis based on analysis and summery of overseas and domestic reference, analyzes and exams with scientific statistic instruments, to explore the determinant factors of compensations for executives in listed
companies and its relationships with the executives’ and the companies’ performances. The paper aims at providing theoretical underpinning for the design of executives’ compensation mechanism, rectifying the shortages in the current mechanisms in China, providing bases to improve executives’ value and the company performance and providing solid references for the government and competent authorities to enact applicable laws and regulations.

Key Words: Executive compensation, company performance, executive behavior, determinant of compensation, safeguard Mechanism
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Chapter I Introduction

1.1 Background and Significance

1.1.1 Background

A fair, reasonable and effective compensation incentive mechanism is a significant contributor to the continuous and stable development for companies. Compensation incentive mechanism concerns the tangible interests of all the staff and thus has the attention from throughout the company. Since the subprime crisis in 2008, the high compensation for executives of listed companies has once again grasped the attention from the academic world and the practitioners.

It is generally opined that JENSEN and MECKLING (1967) opened up the research on compensations for executives by adopting the agency theory. The research in this particular field had not achieved substantial progress since the 1990s, at which time when the studies expanded from management science to multiple disciplines including economics, psychology and organizational behavior studies (MURPHY, 1999). Since the 21st century, studies in this filed had usually connected compensation for executives with corporate performance (COLLINS, 2001; DAINES, 2005), opining that outstanding executives could maintain or even improve corporate performance. The studies also opined and proved that compensations for executives had a significant positive correlation with corporate performance (MURPHY, 2005; Jianan ZHOU and Shideng HUANG, 2006; Junyao HE and Qiaohui Li, 2014). However, the academia has not reached a consensus on this matter. Moreover, media and the general public think that executives are paid way more than they deserve and there is no correlation between the compensation for executives and the corporate performance (MEREDITH, 1992; WEI Gang, 2000; YAO Zhenghai, 2005). It is not uncommon that executives are paid more when corporate performance declines. And this is not just an argument from the academic community. According to the data center of Caixin.com in 2014, the statistics obtained from the performance reports of 495 A-share listed companies showed that 164 listed companies had negative growth rate, however, the total compensations for executives from 92 out 164 were even higher, which accounting for 56.1% of the companies under observation. This is, undoubtedly, detrimental to the investors’ and shareholders’ interests. As a counter measure, the Chinese State Council has sent a document A Notice to State-owned Enterprises: Pay Attention to the Evaluation on Management Performance, explicitly stating that state-owned enterprises should not increase the total compensation if their total revenues in 2015 declined. Although only 277 stated-owned enterprises went public in the A-share market, it meant that China had taken some actions regarding the executive’s compensation mechanism.

However, if we look at all the listed companies in China, performance evaluation is not common. It is obvious that an issue arisen from the marketization process should be tackled from a market-driven perspective. There shouldn’t be a versatile standard on executive
compensation incentive mechanism as each listed companies has its own features, different sizes, governance structure and is facing a difference market landscape. All features should be factored into the design of its own compensation incentive mechanism. Under this backdrop, it is necessary to study compensation incentive mechanism in China and to look at the relationships between the determinants of the mechanism, the executives’ performance and corporate performance to provide a solid theoretical underpinning to build and improve the compensation incentive mechanism for listed companies in China.

1.1.2 Significance

1.1.2.1 Theoretical Significance

(1) This study can deepen and expand the theories in executive compensation. The theory regarding executives’ compensations originated from the West and were improved as companies in the West develops. The theories regarding executives’ compensation prevalent in China were learned from developed companies, of which the market landscape was quite different. Using listed companies in China as a study subject can deepen and expand the theories in this regard.

(2) This study can refine the entrepreneurs’ compensations theory. The current studies tend to focus on the effect economic factors have on entrepreneurs’ compensations and neglect the social, demographic and environmental effects. This study constructed a comprehensive framework that factored perspectives from inside and outside the corporate structure and human resources capital to refine the entrepreneurs’ compensations theory.

(3) This study can also refine the corporate governance theories. Executive compensation was a focus among the modern Western academia as it concerned the survival and development of a company. This study looks at the executive compensation mechanism specifically in China and explores the design for executive compensation mechanism in a different social background to refine the corporate governance theories.

1.1.2.2 Practical Significance

(1) This study can contribute to the effective use of executive human resources. An effective and comprehensive compensation incentive mechanism can make good use of the value of executive human resources and build a correlation between human resources and corporate performance, which is to achieve better performance for the Company while maximizing the value of executive human resources.

(2) This study can contribute to upgrade the governance and improve performance. As the executives’ compensations are constrained by the corporate governance and managerial power, setting up an effective executives’ compensation incentives mechanism could motivate executives, improve the governance structure and corporate performance.

(3) This study can also be informative for regulatory bodies to enact regulations and measures. Executives’ compensations are constrained by various factors, therefore, the implementation of the mechanism should be oversight by the government and regulated by the applicable laws. The conclusions of this study combined the theories and practice, which could be an
informative reference for the government and competent authorities.

1.2 Terms and Concepts

This research focuses “Executive Compensation Incentives”. What are “Compensation Incentives”? This section defines “Compensation Incentives”, “corporate executives” and “compensations for executives” based on the specific subjects in the paper.

1.2.1 Compensation Incentives

The emergence of compensation incentives originated from the classic proposition “the separation of ownership and management” (BERLE and MEANS, 1932). From then on, scholars had been focusing on the studies on compensation incentives and corporation performance. However, the studies of actual initiative significance were the Agency Theory by JENSEN and MECKLING (1976), GROSSMAN and HART (1983). The agency incentive mechanism between shareholders and executives had then become a fundamental matter of corporate governance.

Based on the separation of ownership and management, it has developed into a norm in corporate structure that shareholders entrusted executives to manage and operation the companies. The goal for companies is to maximize the shareholders' interest. As the agencies, executives should share this goal. However, if we factor in Hypothesis of Economic Man, executives could damage the company and shareholders' interests while seeking for their own. This inconsistency is defined as agency cost. As an answer to reduce, even avoid agency cost and prevent executives' moral risks, compensation incentives emerged. It aims to synchronize executives' interests and the shareholders' by using compensations as incentives to motivate executives to serve the company and minimize the agency costs incurred due to different interests.

Compensation Incentives have been a focus of study in economics and management. Under different economic hypothesis, some typical theories regarding compensation incentives were formed, including agency theory, contribution allocation theory, knowledge value theory and human capital theory. These theories justified the effectiveness of compensation incentives from different perspectives. As the theories in this regard developed, the hypothesis had been changed from “economic man” to “social man”. Management science believes that in reality, people behave like “social man”, however, some theories believe that “self-actualizing man” makes more practical sense. Regardless disagreements among different theories, it is commonly acknowledged that salary is the foundation of material incentives among corporate incentives mechanism.

The concept of compensation incentives should be specifically divided into compensation and incentives. In economics, compensation refers to the total returns gained from labor; in management, incentives motivate employees and release potentials. Generally speaking, compensation systems are designed to motivate initiatives. For example, a guarantee on promotion is a strong motivator. This thesis discusses incentive mechanisms that adopted in forms of compensation that are used as various remunerations including salary, bones, annual
pay, welfare, stock and options rewarded to motivate executives and employees and unify their interests with the company's goal. There are various remuneration means including salary incentive (HEALY, 1985), bonus incentives (HOLTHAUSE et al., 1995), stock ownership incentive (CHENG and WARFIELD, 2005), stock option incentive (BERGSTRESSER and PHILIPPON, 2006) and welfare and allowance incentives.

1.2.2 Corporate Executives

The daily operation in a company relies on management members; however, there are differences between them. The study subject in this paper is executives in listed companies. Who are they? Generally speaking, executives are those who undertake senior management work, namely, Chairmen of the Board, CEOs and Board Directors. In a more generalized sense, General Managers, Deputy General Managers, Chief Accounts, Board Secretaries are also regarded as executives. LI Yuntao (2006) defined executives as experts who were specialized corporate operation and management, whose responsibility was to operate assets to maintain and increase the value of the Company capitals.

The academic community did not reach a consensus on the definition of executives. There were several theories: Chairmen; CEOs; Chairmen and CEOs; Chairmen, CEOs and CPC Party Secretary and the Chair of the Union; Chairmen, CEOs and all the Deputies.

Outside China, as the shares are highly dispersed, CEOs are vital in the daily operation and their data are accessible, scholars usually use CEOs to represent executives in their studies (MCGUIRE et al., 1962). Chinese scholars, XU Xiangyi et al. (2007) defined CEOs as Chairman and General Managers. In the theoretical and empirical studies, due to the accessibility of data, especially in empirical studies, scholars had different definition on executives' compensations. MURPHY (1985) expanded the study subject from CEOs to the whole management team, stating that only management members who have on the power of attorney issued by shareholders for at least five consecutive years; Chinese scholar, WEI Gang (2000) defined executives as Board Directors, General Managers, CEOs, Deputy General Managers, Vice-CEOs, CFOs, Chief Engineers, Chief Economists, Chief Agronomists, Board Secretaries and members of Board of Supervisors.

The Chinese academia has not reached a consensus on the definition and scope of executives in listed companies. Please refer to the definitions and scopes of executives under different regulatory systems in China (see Table 1-1):

<table>
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<th>Year</th>
<th>System</th>
<th>Definition</th>
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<tr>
<td>1994</td>
<td>Special Stipulations on Overseas Share Offering and Listing for Limited Liability Companies by State Council</td>
<td>Board Directors, Supervisors, Managers, Head of Finance and other executives as stipulated in the Article of Associations</td>
</tr>
<tr>
<td>1997</td>
<td>Transactions between Affiliated Parties</td>
<td>Chairman of the Board, Board Directors, CEO, Chief Account, Head of Finance and Deputy GMs who are the heads of various business</td>
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</tbody>
</table>
The above table has listed various definitions on executive, but neglected high level management personnel in subsidiaries of listed companies, who may play significant roles when subsidiaries converge to separate legal entities. With reference to the definitions given by the overseas and domestic academia, this study defined executives as: senior management members who are put in charge of the Company’s operation and under the oversight and supervision of the Board, including all the senior management members disclosed in the Annual Reports. In a listed company, executives should include Chairman of the Board, CEOs, Head of Finance, vice-chairman of the Board, Board of Directors, Board of Supervisors and Board Secretary.

The data about executives’ compensations obtained for this study were based on the definition stated above. The definition given in this study was underpinned by two reasons: (1) the listed companies in China were the study subject in this paper, of which the governance was not only affected by CEOs but also senior management members of various departments; (2) as this study involved quantitative analysis, indices under the definition given above were accessible in financial reports of the listed companies, therefore, the data was accurate, contained no unnecessary errors, making the conclusion of this study more reliable.

1.2.3 Executives’ Compensation

The academic community did not reach a consensus on substance of compensations. There were three main theories: first, compensations were returns, that was, the internal and external returns employees gained from their work (JOSEPH, 2004); second, compensations’ existence was based on employment, that was, economic income, tangible services and welfares gained from employers, including direct returns and indirect returns (DESSLER, 2004); last, compensations meant currency remunerations, excluding indirect compensations, that was, welfares.

Compensations were tangible human capitals, reflecting the financial situation and social status of employees (KARL and RAY, 1999). Considering employees, especially executives' vital positions in the company, and the development of company relied on the contribution and dedication of executives, the company should reward them accordingly. As the types of compensation varied, increasing number of companies expanded from currency compensations to diversified compensation systems.

Traditionally, compensations in listed companies consist of base salary and annual bonus, which is decided upon the company's or employee's performance. However, the drawback of
these short-term incentives revealed. To motivate executives' in the long haul, stocks and options were brought into the compensation system. Long-term incentives, especially stock and option ownership plans developed fast and became increasingly important in the compensation system. Therefore, in practice, listed companies usually regard direct remuneration, indirect remuneration and long-term remuneration, such as stock and option, as total compensation. OVERTON and STOFFER (2001) explicitly defined the structure of executives' compensations, including base salary, annual incentives, welfares, allowances and long-term incentives.

The compensations for executives in listed companies in China generally consist of base salary, bonus and long-term incentive compensations. Long-term incentives compensations are normally stocks or stock options, which can only be redeemed after a number of years. Given the accessibility of data and feasibility of the study, most of Chinese scholars only included currency remunerations as compensation variable (DU Xingqiang, 2007; LI Yanxi et al., 2007; FANG Junxiong, 2011); part of Chinese scholars used direct currency salary and stock ownership remunerations as quantitative instruments (XU Xiangyi et al., 2007), but did not exclude total compensation variable, such as base salary, short-term compensation, long-term compensation, allowances, subsidies and welfares(WANG Sujuan, 2014).

By and large, the substances and effects of compensations of different compositions varied and can be used to satisfy the differentiated needs for executives (see Table 1-2).

Table1-4: The Composition and Effects of Executives' Compensation (Sujuan WANG, 2014)

<table>
<thead>
<tr>
<th>Type of Compensation</th>
<th>Substance</th>
<th>Role and Function</th>
<th>Manifestation</th>
<th>Risk Level</th>
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<tbody>
<tr>
<td>Base Salary</td>
<td>Guaranteed compensation based on capabilities, seniority and experience</td>
<td>Focus on key skills; career development</td>
<td>Stable Cash</td>
<td>Low</td>
</tr>
<tr>
<td>Short-term Bonus</td>
<td>Variable compensations based on the accomplishment of short-term performance</td>
<td>Focus on short-term performance, implementation of policies and strategies</td>
<td>Annual, Quarterly, and Monthly bonus and profit-sharing</td>
<td>Mid</td>
</tr>
<tr>
<td>Long-term Compensation</td>
<td>Compensations based on long-term performance objectives</td>
<td>Long-term performance objectives, connect with the shareholders' interests</td>
<td>Stocks, option, restricted stocks and other long-term compensations</td>
<td>Mid-to-High</td>
</tr>
<tr>
<td>Allowance</td>
<td>Compensate employees for their Attentive to special dedication</td>
<td>Healthcare allowance.</td>
<td>Low</td>
<td></td>
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</tbody>
</table>
There were generally three classes of executives’ compensations, including guaranteed compensation and risk compensation, short-term and long-term compensations and explicit and implicit compensation. Given the compositions listed above, the first two classes were virtually the same (Minghua GAO et al., 2011). Executive’s compensations discussed in this thesis refer to the annual total amount of compensation. Considering the accessibility, the thesis selects fixed compensation indicators from annual reports of listed companies. The total amounts and the average level of the top 3 executives’ compensation were used as datum indicator in analyses (Deming YANG and Zhen ZHAO, 2012; Song TANG and Sun Zheng, 2014).

1.3 Research Approach and Structure

1.3.1 Research Approach

Under the background of listed companies in China, by looking at compensation determinant factors, this paper build a theoretical analysis framework underpinned by diversified theories, including agency theory and tournament theory from an economic perspective, stewardship theory from a sociological perspective, prospect theory and social comparison theory from a psychological perspective and human capital theory and property right theory from a combined perspective. This paper also proposes a research hypothesis based on analysis and summery of overseas and domestic reference, analyses and exams with scientific statistic instruments, to explore the determinant factors of compensations for executives in listed companies and its relationships with the executives’ and the companies’ performances. The paper aims at providing theoretical underpinning for the design of executives' compensation mechanism, rectifying the shortages in the current mechanisms in China, providing bases to improve executives’ value and the company’s performance and providing solid references for the government and competent authorities to enact applicable laws and regulations.

1.3.2 Research Structure

This paper consists of six chapters.

Chapter One: Introduction. This is the introductory section of the paper, stating the research background and significance of this paper and explaining the structure, technical route and
methodology.

Chapter Two: Literature Review. This section reviews the overseas and domestic literature in this field. The chapter focuses on the determinant factors of executives’ compensation and the relationships between compensations, executives’ performance and the company’s performance, summarizes the previous research methods and conclusion and finally finds out the drawbacks of the previous researches and explicitly explains the research direction in this paper.

Chapter Three: Theory Framework and Research Hypothesis of Executives’ Compensation Incentives in Listed Companies. This chapter lays the theoretical foundation for this paper. After a review on agency theory, tournament theory, stewardship theory, prospect theory, social comparison theory, human capital theory and property right theory, the chapter builds up a theoretical analysis framework from a diversified perspective. This chapter also puts forward the hypothesis for this research after conducting a theoretical analysis on the models elaborated in literature review.

Chapter Four: Empirical Analysis and Examination of Executive Compensations in Listed Companies. This chapter first conducts a descriptive analysis on the level and structure of executives' compensations; then conducts a regression analysis on the determinant factors of executives' compensation to verify the hypothesis; and finally conducts a quantitative analysis on relationship between the executives' and the companies' performance.

Chapter Five: Optimization and Security Mechanisms of Executive Compensation in Listed Companies. Based on the conclusions of the theoretical models and empirical analysis in the previous chapters, this section analyses the solutions and trends of the current compensation mechanisms in China, focuses on studying the subject, objectives and substances of executives' compensation mechanism in listed companies and puts forward a generalizable and pragmatic system to secure the operation of executives' compensation mechanism.

Chapter Six: Research Conclusions and Discussion. This chapter summarizes the conclusions in this paper, analyses the limitations and points out the directions for further studies.

1.3.3 Technical Route
1.4 Methodology

From economic, management, sociological and psychological perspectives and by inter-discipline theories related to executives' compensations, this paper conducted an in-depth analysis on the determinant factors of executives’ compensations in listed companies and their relationships with the executive and company performance. The methodologies in this paper include literature research, theory research and quantitative research.

(1) Literature Research: this paper reviewed the previous literature related to determinant factors of executives' compensations and their influences on executive and the company performance, summarized the features and limitations of the previous studies and provided theoretical underpinning to build up hypothesis in this paper.

(2) Theory Research: this paper reviews agency theory, tournament theory, stewardship theory,
prospect theory, social comparison theory, human capital theory and property right theory, build up a theoretical framework and conducts theoretical analysis, which constituted the foundation for empirical study and quantitative analysis.

(3) Quantitative Analysis: the paper adopted the research methods in econometrics, built up an econometrical model. Through descriptive analysis, relevance analysis and recession analysis, the paper conducted an empirical analysis on determinant factors of executives' compensation and the dynamics between executives' and the companies' performances, providing bases for the design of compensation incentive mechanism and the relevant security mechanism.
Chapter II  Literature Review

TAUSSING and BAKER started study of executive compensation as early as 1925. Ninety years of research history has extended the study to multiple disciplines such as management, economics and behavioral science, and therefore executive compensation study is growing in both depth and range, and meanwhile has produced many valuable research results.

This chapter reviews research literature on determinants of executive compensation and the relationship between executive pay and company performance with brief comment.

2.1 Research on Determinants of Executive Compensation

What are the determining or affecting factors of executive compensation? Scholars at home and abroad have conducted a series of studies on this topic, and analyzed determining factors of executive pay from different perspectives. In general, though scholars haves studied determinants of executive pay from various angles, their researches are still in short of comprehensive and in-depth analysis.

Determinants of executive compensation can be roughly classified into the following three depending on nature of determinants and comprehensive literature:

(1) Internal factors of an enterprise, such as company size, company strategies, ownership structure, characteristics of Board of Directors and Board of Supervisors, separation/Concurrent of Chairman and CEO, executive power, top management turnover.

(2) Personal factors, such as age, tenure, gender, education.

(3) External factors of an enterprise, such as region, industry, market and other external factors.

Literature review on determinants of executive compensation in this chapter is also based on above classification. Researchers home and abroad had employed various methodologies on different samples from various perspectives, and reached their conclusion, which are summarized in Table 2-1.

Table 2-2: Major theories on determinant factors of executive compensation

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Major theories and representative scholars</th>
</tr>
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<tbody>
<tr>
<td>Company size</td>
<td>in positive correlation with executives’ compensation (BARRO, 1990; JOSCOW and etc, 1993); ② negatively correlated to executives’ compensation (LALA-BELKAOUI and PAVLIK, 1993); ③ no significant correlation between the two (Zengquan LI, 2000).</td>
</tr>
</tbody>
</table>
| Company strategies | ① diversification strategy is an important determinant of executive compensation (LU Haifan, 2007);  
② Merge and acquisitions have positive impact on executive compensation (Zhang Long et al, 2006; Fu Qi et al, 2014). |
| ownership structure | ① managerial ownership has incentive effect (KAPLAN, 1989; MEHRAN, 1995);  
② this effect of managerial ownership may only play its role under certain conditions (MCCONNEL and SERVAES, 1990; HERMALIN and WEISBACH, 1991);  
③ the number of external shareholders is negatively correlated to executive compensation (HAMBRIC and FINKCSTLEIN, 1995; CORDEIRO and VELIYATH, 2003)  
④ executive compensation is negatively correlated to the shareholding ratio of the biggest shareholder (SHLEIFER and VISHNY, 2003; CHOUROU and etc, 2008; HUANG Zhizhong, 2009)  
⑤ correlation between executive compensation and institutional ownership: positive (CLAY, 2000; FENG and etc, 2010); negative (KAN and etc, 2005; MIN and etc, 2008);  
⑥ correlation between proportion of state-owned shares and executive compensation: negative (DU Shengli and Zhai Yanling, 2005); uncorrelated (SU Fangguo, 2011). |
| characteristics of Board of Directors and Board of Supervisor s | ① correlation between the size of Board of Directors and executive compensation: not significantly correlated (LI Yajing and etc, 2005); negatively correlated (SHI Xiaoming and NI Chujun, 2011);  
② there is a positive correlation between external director proportion and executive compensation incentive (MEHRAN, 1995; HARVEY and SHRIEVES, 2001)  
③ proportion of directors and executive compensation is positively correlated (VELIYATH, 1995; CORDEIRO, 2003; LI Jinfei and WANG Zhen, 2011);  
④ remuneration committee was in positive correlation with executive compensation (ZHANG Biwu and SHI Jintao, 2005; SHI Xiaoming and Ni Chujun, 2011; LIU Xiyou and HAN Jinhong, 2012) |
| characteristics of Board of Supervisor s | The Board of Supervisors is an alternative to executive compensation (ALCHIAN and DEMSETZ, 1972; LIU Yinguo, 2004; QING Shisong, 2008). |
| separation/Concurrent of Chairman and CEO | concurrent of Chairman and CEOP usually means higher compensation (YONG and BUCHHOLTZ, 2002; ZHANG Biwu and ZHANG Biwu and SHI Jintao, 200);  
② there is no correlation (KAN Xinmin and LIU Shanmin, 2003) |
| Executive power | Executive power is in positive correlation with executive compensation (FANLENBRACH, 2009; WANG Qinggang and HU Yajun, 2011; LIU Xing and XU Guangwei, 2012; CHEN Zhen and WANG Jing, 2014). |
As summarized by scholar’s home and abroad in the Table 2-1, there is no unified conclusion achieved even for the same determinant. The reasons can be traced to differences of research perspectives and methodologies. Sample screening process may also cause variances of the research result. This thesis discusses the above listed factors in the following sections.

### 2.1.1 Internal Factors of a Company

Generally speaking, executive pay is the economic manifestation of executive’s management
and quality, and it is influenced by many factors, such as company size, company strategy, ownership structure, characteristics of Board of Directors and Board of Supervisors, separation of Chairman and CEO, executive power, top management turnover, etc. This chapter classifies all these factors as internal factors of an enterprise.

2.1.1.1 Company Size

Many researches regard company size as an important determinant of executive compensation, so scholars usually introduce it into analysis model of quantitative study as an important variable. This is quite easy to understand even based on experience because increased number of staff and fund are very likely to bring more complicated management work, and as a result of this more time will be invested and also higher requirements regarding executive quality, capability and experience. So it is logical to have higher compensation in such cases.

In the process of literature analysis, scholars often use sales volume, stock market value, number of employee, total assets and other quantified indicators to replace the indicator of company size.

Research based on sales volume indicates significant correlation between company size and executive compensation (CISCEL, 1974), after analyzing the internal management mechanism, scholars point out that executives improve sales performance via increasing sales volume and costs control, during which they also increase their own compensation level (CISCEL and CARROLL, 1980). For companies assessed by sales volume, compensation change caused by company size could be 40% (TOSI et al, 2000).

Research based on stock market value shows that companies with higher stock market value generally pay more to executives, so company size is a significant variable to executive compensation (MALLETTE, 1995; Li Zengquan, 2000).

Research based on number of employee also shows significant correlation between executive compensation and number of employee, and quantitative study of OFFSTEIN and GNYAWALI (2005) in pharmaceutical industry proves that company size is the only significant determinant and predictor.

Research based on total assets suggests that company size is closely related to executive compensation, which was proved by MCGUIRE (1962) in the analysis of 45 large companies. Later an increasing number of scholars have accepted this indicator, and positive correlation was concluded as well, so scholars have reached some basic consensus on company size’s positive impact on executive compensation (KERSH, 1974; ROSEN, 1982; KERSTUKE, 1983; BARRO, 1990; JOSCOW, 1993).

Significant positive correlation between company size and executive compensation is not only concluded from economic perspective, but also from social point of view (SIMON, 1975), and starting from here, CORE et al (1999) and CYERT et al (2002) have reached the same conclusion even though using different parameters and from various points of view.

Studies have shown that company size and executive compensation are in positive correlation, but extensive literature review also reveals an opposite finding, such as the negative
correlation showed in empirical study of RIAHIBELKAOUI and PAVLIK (1993). Although their result were not widely supported by many.

So there is no consensus on the influence of company size, but in any case, significant positive correlation is still the mainstream research finding, and in-depth studies on this positive correlation indicates linear relationship and average increase of 3% in executive compensation when company size expands 10% (BAKER, 1988; KOSTIUK, 1990).

2.1.1.2 Company Strategy

Company strategy is consistent with company goals and includes all sub-strategies of production, marketing, human resources and so on. Company strategy directly affects successful fulfillment of company goals. Executives play a crucial role in implementation of company strategy, while different company strategies also influence their compensation by differentiating their range of work, problems encountered and risk faced.

Companies usually decide their strategies based on strength, nature and size of the company. For listed companies of a certain size, diversification strategy is the most common choice in recent years, which has a direct impact on executive compensation through change of company environment and value. Scholars across the world also show interest in diversification strategy, study of DURU and REEB (2002) shows that diversification strategy is an important determinant of executive compensation and level of compensation, empirical analysis of domestic scholar LU Haifan (2007) also indicates that increased business correlation and number of business in diversification strategy will widen compensation gap within senior management team.

In terms of specific company strategy implementation, some domestic scholars are more interested in merger and acquisition strategy’s impact on executive pay, and study from this perspective is more relevant to company size. Merger and acquisition will expand company size in general, which means more work and space for improvement, and consequently higher executive compensation. Taken China’s listed companies as an example, study have shown positive correlation between merger and acquisition and executive compensation, and executive compensation will also affect merger and acquisition strategy of a company (Zhang Long et al, 2006); comparative study of state holding and private holding companies finds that state holding companies, driven by remuneration package, are more likely to have large merger and acquisition, followed by higher executive compensation (Fu Qi et al, 2014).

2.1.1.3 Ownership Structure

Current research analyzes ownership structure’s influence over executive compensation from four perspectives: managerial ownership, ownership dispersion, shareholder’s ownership proportion and type of controlling shareholder.

(1) Managerial ownership

Offering company stock to executives as a form of remuneration actually links executive’s personal interest with company interest. Generally speaking, managerial ownership will change company performance, which in turn affects executive pay, so managerial ownership’s
decisive influence over executive compensation is reflected via company performance.

Early overseas studies have shown that managerial ownership is in positive correlation with company performance (LEWELLEN, 1977), and is able to significantly improve company performance (KAPLAN, 1989), company performance is also positively related to equity-based CEO remuneration (MEHRAN, 1995). However STULZ (1988) did not agree with this idea and his study showed that initial positive relationship between company performance and managerial ownership would turn to negative correlation after certain point. Based on this study, some scholars believe that managerial ownership will have positive incentive effect only when executive shareholding proportion is appropriate, otherwise it could be the opposite (RRONI and SAFIDDINE, 1999).

In response to this proposition, scholars carried out a series of studies using TOBIN Q as the measurement index of company performance. Thought they have achieved different conclusions, a basic consensus on shareholding proportion’s different impacts on executive pay has been reached (MORCK et al, 1988; MCCONNEL and SERVAES, 1990; HERMALIN and WEISBACH, 1991), which is U-shaped relation with optimal ratio and turning point.

Of course, there are scholars denied relations between the two, believing that no correlation existed and therefore no influence over executive pay (DEMSETZ, 1983). YERMARK (1997) also questioned equity incentive as a way of compensation incentive.

Domestic study started from Wei Gang (2000), who carried out quantitative analysis on indicators such as China listed company’s performance and executive pay. His analysis indicated neither significant correlation between these two indicators nor obvious interval effect. Research of SHI Chenxiao (2012) however showed interval effect between managerial ownership and company performance, to be more specific, these two factors were in positive correlation when within a reasonable range and in negative correlation when outside that range. So there is no decisive conclusion on this determinant’s impact.

(2) Ownership dispersion

Dispersed equity ownership may also affect executive compensation as the level of dispersion is likely to influence Board of Directors’ decision and therefore also executive compensation.

Scholars analyzed external shareholders’ equity ownership and concluded that dispersion of equity to external shareholders would further reduce control of executives (DAVID et al, 1998). Studies showed that the higher level of dispersion, the greater influence it would have over compensation incentive (KHAN et al, 2004). According to HAYE (1997), increased equity dispersion would bring more transaction cost and weaken executive supervision (KHAN et al, 2004). In such case, high compensation incentive is the only way to control executives’ work.

Some scholars studied the relationship between different levels of equity dispersion and executive compensation under the condition that external shareholders and preferred stock exist. The findings showed that with external shareholders, executives generally received less
compensation (HAMBRIeCK and FINKELSTEIN, 1995); the number of shareholders holding over 5% preferred stocks was in negative correlation with executive pay (CORDEIRO and VELIYATH, 2003).

(3) Shareholder’s ownership proportion
Generally speaking, in case of concentrated ownership, major shareholders will have more power over the company’s compensation system and executive pay as well. But there is no agreed conclusion at home and abroad regarding the exact impact.

In the study of major shareholders’ ownership proportion, scholars tend to analyze the relation between proportion of the largest shareholder and executive compensation. Study results showed that the higher proportion of the largest shareholder, the more incentive he or she has to supervise mangers and refrain mangers to have high compensation (DAILY and SCHWENK, 1996; SHLEIFER and VISHNY, 2003).

MEHRAN (1995) found that major shareholders’ ownership proportion could be the substitute factor of executive compensation, major external shareholder and executive pay were in very weak relation, and existence of big shareholders could affect executive compensation structure and level of compensation. Study of CYERT et al (2002) showed that the largest external shareholder’s equity was in negative relation with executive shareholding. Major shareholder may supervise executive work in consideration of profit, so large external shareholder’s equity proportion was in negative correlation with executive’s stock option incentive (RYAN and WIGGINS, 2001; CHOUROU et al, 2008).

Domestic scholars’ research on listed companies also reached different conclusions. HUANG Zhizhong (2009) studied 2002-2004 data of listed companies in China, and found negative correlation between executive compensation and the largest shareholder’s shareholding proportion; however, study of He Jie and Wang Guo (2011) and Su Fangguo (2011) found no correlation evidence between these two. Wang Qi and Wu Chong (2013) studied private listed companies and found that the higher proportion of large shareholder’s ownership, the greater influence of executive compensation over company performance.

(4) Type of controlling shareholder
Overseas research suggests that type of controlling shareholder is an important factor in executive compensation (FIRTHEAL, 2006; CONYON and HE, 2008). There are focused studies on the role of institutional investor in executive compensation, early study on institutional investor found both direct and indirect influence on executive pay (JENSEN et al, 1976). Indirect influence mainly refers to stock-picking tendency and stock trading (HARTZELL et al, 2003); while direct influence depends on Director’s independence.

There are mixed findings on institutional investors’ influence over executive compensation. HEARD (1995) confirmed institutional investors could indeed affect executive pay, and based on this finding, some research indicated lower executive pay in existence of institutional investors (USEEM,1999). While study of COSH (1999) and SHORT et al (1999) did not reach the same conclusion, i.e. institutional investors did not lead to decrease of
executive pay.

Academics still pay close attention to the relationship between institutional investors and executive compensation in 21st century, and empirical data shows gradual increase of institutional ownership proportion (KHAN, 2005). Though their exact relationship is still in dispute, studies have confirmed they are related (HARTZEL et al, 2003; KHAN et al, 2005). Some researchers agree with positive correlation (CLAY, 2000; FENG et al, 2010); while others hold the opposite idea (HARTZELL et al, 2003; KHAN et al, 2005; MIN et al, 2008).

Domestic studies show similar results, study on listed companies believes positive correlation between China’s institutional investors and executive compensation (Chen Yan, 2006), and institutional investors effectively improve level of executive compensation and executive compensation-performance sensitivity (Li Shanmin, 2007; Mao Lei, 2011).

Some domestic scholars studied the correlation between proportion of state-owned shares and executive compensation, but no agreed conclusion as well. Some studies suggest that proportion of state-owned shares affect executive annual compensation, with managers of state-owned holding companies receive minimum annual compensation (Li Zengquan, 2000); while others indicate negative correlation (Du Shengli and Zhai Yanling, 2005) or no significant correlation (Su Fangguo, 2011).

2.1.1.4 Characteristics of Board of Directors

Characteristics of Board of Directors mainly include size and structure of the Board and composition of remuneration committee. Studies at home and abroad also focus on these areas.

(1) Size of Board of Directors

Research suggests that the bigger the Board of Directors, the more likely it affects organization operation, and due to limitations in exchange mechanism, it is easily controlled by CEO (HENSEN, 1990; LIPTON and LORSCH, 1992), that's why CYERT et al (2002) argue that size of Board of Directors is an important determinant for variable compensation, and number of non-executive directors is in significant positive relation with director compensation (FIRTH et al, 1999).

Domestic studies use listed companies as sample base to discuss the relation between Board size and executive compensation. Study based on companies listed in 2001 found no significant correlation between these two factors (Li Yajing et al, 2005); while another study based on 1179 companies listed in 2007-2009 indicated improved executive compensation–performance sensitivity if Board size was controlled (Shi Xiaoming and Ni Chujun, 2011).

(2) Structure of Board of Directors

Research on this determinant mainly focuses on proportion of external director and independent director and gender of director.

Studies on external directors suggest that they play a significant role in supervising corporate
executives, and poor performing executives are very likely to be fired when there is high proportion of external directors (WEISBACH, 1988). This also demonstrates positive correlation between external director proportion and executive compensation incentive (MEHRAN, 1995; HARVEY and SHRIEVES, 2001). However in terms of executive compensation, external director proportion is found negatively related to executive pay (VELIYATH, 1995).

As more researchers become interested in the relation between independent directors and executive compensation, they have found that independent directors are in positive relation with executive compensation, especially cash compensation (CORDEIRO, 2003). This conclusion is also agreed by many domestic scholars (Du Shengli and Zhai Yanling, 2005; Zhang Biwu and Shi Jintao, 2005; Li Jinfei and Wang Zhen, 2011; Shi Xiaoming and Ni Chujun, 2011). However no all findings are consistent with this conclusion, study of Li Yajing et al (2005) pointed out that there was no significant correlation between independent director proportion in the Board of Directors and executive compensation.

In addition to that, GUO Keqi (2014) first introduced gender factor into executive compensation study, and found that female directors were likely to limit over-compensation to listed company executives, while this limit is subject to governance environment, so there will be no such limit when strong governance power is present.

(3) Composition of remuneration committee

Remuneration committee could also influence executive compensation, but there is no unified agreement on this conclusion. Taken study on companies listed in the US between 1991 and 1994 as an example, remuneration committee’s impact on executive compensation was very limited (CONYON and PECK, 1998). Another study on domestic companies listed in 2001 found that remuneration committee was in positive correlation with executive compensation (Zhang Biwu and Shi Jintao, 2005); while Yang Weigu and Wu Bangzheng (2013) argued that remuneration committee reduced executive’s monetary compensation. There are also similar overseas studies, for instance, CYERT et al (2002) found a strong negative correlation between variable compensation and proportion of remuneration committee ownership when analyzing relation between remuneration committee and variable compensation.

Some foreign scholars carried out focus analysis on the relation between proportion of external director in remuneration committee and executive compensation, and analysis result showed positive correlation, i.e. the higher proportion of external directors, the stronger compensation-performance sensitivity (CONYON and PECK, 1998). Findings of ANDERSON and BIZJAK (2003) are also consistent with this conclusion. EZZAMEL and WATSON (1998) studied from the perspective of remuneration committee and found that the committee with executive insider would like to increase executive compensation, Zhang Qixiu and Ge Jing (2012) also confirmed that remuneration committee with executives inside might influence executive compensation to some extent.

Relation between remuneration committee and executive compensation-performance sensitivity opens up a new study perspective, and domestic study following this thought
believed that remuneration committee could increase executive compensation-performance sensitivity (Shi Xiaoming and Ni Chujun, 2011; Liu Xiyou and Han Jinhong, 2012), however as independent director system is still in initial stage, remuneration committee’s effectiveness has not yet been revealed (Zhang Qixiu and Ge Jing, 2012), so its impact on compensation sensitivity is not significant at all (Yang Weiguo and Wu Bangzheng, 2013). Latest study suggests that remuneration committee indeed affects the effectiveness of listed companies’ executive compensation contract, but the effectiveness differs between state-owned and private listed companies (Jiang Wei et al, 2013).

2.1.1.5 Characteristics of Board of Supervisors

As an internal monitor mechanism, Board of Supervisors monitor executive behavior and therefore is closely related to executive compensation. In order to motivate supervisors, some scholars proposed that Board of Supervisors should benefit from company residual (ALCHIAN and DEMSETZ, 1972; Liu Yinguo, 2004). Empirical study also shows that properly motivate member of Board of Supervisors could effectively prevent executives from conspiring (LAFONT, 1999).

There are very little research on Board of Supervisors’ role in executive compensation, but similar to overseas studies, domestic research also agrees that Board of Supervisors could be the problem handling agency within the company (Xue Zuyun and Huang Tong, 2004), while Li Jie (2002) argues that Board of Supervisors Meeting could be only a formality without having any effective influence on executive compensation. Study of Li Weian and Wang Shiquan (2005) on the situation of Board of Supervisors in domestic listed companies found that overall quality of China’s Board of Supervisors was generally low, with variations among regions and industries, but this would not affect Board of Supervisors’ influence over executive pay. Similarly, domestic scholar Qing Shisong (2008) confirmed that Board of Supervisors could effectively reduce executive power abuse and damage caused to shareholder and company interest.

2.1.1.6 Separation/concurrent of Chairman and CEO

Due to interest factor, separation of Chairman and CEO could ensure objective executive evaluation, and also affect executive compensation (WEIDENBAUM, 1986), while Chairman and CEO duality will generally lead to higher executive compensation (SRIDHARA, 1996; BRICKLEY, 1997; YONG and BUCHHOLTZ, 2002). It is also widely agreed among researchers that duality will result in lower supervision efficiency (BOYD, 1994; YERMACK, 1996; HAMBRICK, 1998), which will further increase executive compensation, including that for CEO.

Domestic studies on Chairman-CEO concurrent show mixed results. In case of Chairman and CEO concurrent, some researchers found that managers’ annual compensation, shareholding proportion and performance were not significantly related (Kan Xinmin and Liu Shanmin, 2003); while others argued that significant positive influence on executive compensation (Zhang Biwu and Shi Jintao, 2005). In case of Chairman and CEO separation, Shi Xiaoming and Ni Chujun (2011) believed this could enhance executive
compensation-performance sensitivity; while study on duality and compensation gap found increased gap in state-owned enterprises and decreased gap in non-state-owned enterprises (Rao Yulei and Huang Yulong, 2013).

2.1.1.7 Executive power

Executives, through interfering with and influencing Board of Directors and remuneration committee, have the power to set up compensation decision-making system (FINKCSTLEIN, 1992). As for executive compensation, early study believed that in companies with strong executive power, executive compensation increased faster (HAMBRI+CK and FINKCSTLEIN, 1995). If executive controls remuneration committee and Board of Directors, executive compensation will increase significantly (CONYON and PECK, 1997; CORE et al, 1999). FAHLENBRACH (2009) also confirmed the above idea by using a number of indicators to assess administrative power. There are even studies believe that executive power will help executives determine their own compensation, regardless of company performance (WEISBACH, 2007; DUFFHUES and KABIR, 2008).

Domestic researchers are also interested in the idea of executives setting up their own compensation via executive power, studies on listed companies found that due to unclear powers and responsibilities of executives, compensation assessment and incentive are always overlapping, which provides opportunities for executives to determine their own compensation (Tong Weihua and Pan Fei, 2005).

In recent two years, domestic studies focus on quantitative analysis of the relationship between power and compensation. The findings suggest that the greater power executives have, the more likely to see exceptional executive compensation (Wang Qinggang and Hu Yajun, 2011). Executives use their power to influence their compensation contracts, which results in downward rigidity and upward flexibility in executive compensation (Liu Xing and Xu Guangwei, 2012). While no such improvement in compensation-performance sensitivity indicates that executives use their power for self-interest (Chen Zhen and Ding Zhongming, 2011). In conclusion, executives can improve compensation through executive power, avoid compensation-performance sensitivity, and reduce compensation risk (Chen Zhen and Wang Jin, 2014).

2.1.1.8 Change of executive

Generally speaking, higher executive compensation could better attract and retain talents, which mean low possibility of executive change. Overseas research on this topic starts with company share price, so share price in last tenure will have obvious influence on executive change (COUGHLAN and SCHMIDT, 1985), and adequately reflect executive change expectation (WEISBACH, 1988; HERMALIN and WEISBACH, 1998).

Some overseas scholars prefer to analyze China listed companies’ executive change through the perspective of share price. Research showed that executive change in 80% of listed companies kept the same pace with share price (MORCK, 2000), which is the overall status in Chinese market rather than individual firms (CHANG and WONG, 2009), meanwhile data
also suggested no significant correlation between stock return and executive change (FIRTH et al, 2006).

Domestic researches analyze the relation between executive change in listed companies, compensation and company performance from different perspectives. Zeng Yi (2009) found in research that listed companies with serious executive compensation stickiness would experience more significant changes in company value in case of executive change, compared with listed private company, executive replacement for state-owned listed companies with compensation stickiness were more likely to increase company value. While after analyzing the relation between accounting performance and executive change, Zhang Xingliang (2013) found that these two were negatively related, and decreasing executive compensation stickiness would bring in greater influence of accounting performance over executive change.

2.1.2 Personal Factors

Apart from internal enterprise factors, some scholars start to explore how personal factors influence executive compensation, and believe executives with more human capital are able to better finish their work and therefore receive higher compensation.

Most scholars’ research on personal factors’ influence over executive compensation focuses on executive’s human capital features, represented by the study of HOGAN and MCPHETERS (1980), MURPHY (1986) and so on. Relevant domestic studies have shown that executive compensation of listed companies is in significant positive correlation with executive’s human resource capital (Qin He and Wang Guangliang, 2014). Specific research perspective includes age, term of office, gender and education.

2.1.2.1 Age

Research based on top 45 executives listed on Forbes in 1975 found that age was in positive correlation with executive compensation (HOGAN and MCPHETERS, 1980); taken UK enterprises as an example, MCKNIGHT et al (2000) also confirmed the strong relation between executive compensation and age.

As for compensation incentive, research showed that executives far from retiring did not need strong incentive; actually compensation incentive should grow along with age (GIBBONS and MURPHY, 1992). Before this study, WECHOW and AFOAN (1991) already found that older executives tend to pay more attention to short-term profits, so increase these executives’ share and reduce cash compensation could help ease this problem.

Empirical research of some of China’s listed companies also supported the positive correlation between executive age and compensation (Duan Haiyan and Zhong Weizhou, 2008; Su Fangguo, 2011). Since working experience is accumulated through age, age therefore becomes an indirect indicator to assess experience and compensation standard (Du Shengli and Zhai Yanling, 2005). Scholars also reached different conclusions in various industries, for instance, study on 2006-2009 data of banks listed in Shanghai and Shenzhen stock exchange found that age of listed bank executives were in significant positive correlation with executive compensation (Zhu Mingxiu and Xiong Jun, 2012); Li Bin and
Zhao Fangfang (2011) carried out research on information technology industry and found inverted U-shaped relationship between executive age and compensation.

2.1.2.2 Gender

Studies have confirmed that executive gender is indeed an important determinant of executive compensation (MOHAN and RUGGIERO, 2003). By comparing compensation of 47 female executives and male executives at similar situation in 2000, researchers have found that when working experience and sales amount were controlled, male executives’ salary was significantly higher than that of female executives, but if equity incentive is excluded, then the difference between them are not that obvious. Domestic scholar Su Gangguo (2011) also confirmed this conclusion with his research, he found that executive gender was in significant positive correlation with executive compensation, and male executives were more likely to receive higher compensation.

BOWLIN et al (2003) studied US S&P 500 companies from fairness perspective, and found that female executive’s compensation fairness was much higher than that of male executives. The research also suggested that gender was not the determinant of pay gap, and different compensation level was caused by a variety of factors reflected on gender.

2.1.2.3 Term of office

Though tenure and age, to some extent, could be indirect indicators reflecting executive’s working capability, in reality individual enterprises always have tacit knowledge (POLANYI, 1962) and organizational routines formed in long term (NELSON and WINTER, 1982), so even with age advantage, it would be difficult to understand without specific knowledge and experience, therefore term of office is another important determinant of executive compensation.

Effect of learning in doing proposed by ARROW (1962) actually emphasized the importance of tenure, later scholars clearly pointed out that term of office was the important human capital indicator and decisive to compensation (HOGAN and MCPHETERS, 1980). So the longer executive tenure is, the clearer of their individual preferences reflected through compensation (HILL and PHAN, 1991), increasing influence over Board of Directors and the ability to control or avoid detriment directors (FINKELSTEIN and HAMBRICK, 1989; HILL and PHAN, 1991). There are certain rules for executive tenure and compensation change, short tenure usually means low compensation due to tight supervision and weak connection to Board of Directors, but along with growth of tenure, the correlation will turn from negative to positive (HILL and PHAN, 1991).

Domestic scholars verified the relation between term of office in listed companies and compensation through measurement, and different samples reached different conclusion. Study on central regional sample showed that tenure of senior managers from listed companies were in positive correlation with compensation but not significant (Wang Jinlong and Li Chuangfei, 2007); research based on 2007-2009 listed companies suggested significant positive correlation (Su Fangguo, 2011); while study based on listed banks indicated no
2.1.2.4 Education background

There has already been academic consensus on education’s influence over executive compensation. Studies have shown that executive compensation grows with education level (LAZEAR, 1981) and therefore they are positively related (AGERWAL, 1981). In a research that studied 215 electronics enterprises, half executives were found with master degree (ATTAWAY, 2000), which not only means improvement in terms of knowledge, but also range and level of social network (BELLIVEAU and others, 1996).

Domestic studies also discussed the relation between executive education and compensation from region, type and education background. Taken 82 listed companies in central region as an example, executive education and compensation are in positive correlation (Wang Jinlong and Li Chuangfei, 2007); while study on listed private companies indicated significant positive correlation (Sun Qianlu, 2009); regression coefficient between executive education and compensation is increasing with master degree bringing the maximum regression coefficient (Su Fangguo, 2011). Executives with master degree and above and their compensation are also in positive correlation (Li Bin and Zhao Fangfang, 2011). But research results are not consistent, as Zhu Mingxiu and Xiong Jun (2012) argued no significant relation between two them in executives of listed bank.

2.1.3 External Factors

In addition to internal and personal factors, executive compensation is also affected by external factors, though the impact may be not strong, but still not negligible. Studies on this are mainly based on region, industry, market demand and other external factors.

2.1.3.1 Region

Regional economic differences usually play an important role in regional consumption and income levels, causing cost changes in human resource market, and executive compensation is included. Studies have shown that location of a company has direct impact on executive compensation, so executives in economically developed area generally receive more compensation than that of others (Chen Zhiguang, 2002; Li Qi, 2003). Li Qi (2003) further analyzed the reasons and argued there were two main reasons: first, design of executive compensation will take into account living index of working location; second, high compensation in economically developed area is also to attract and retain talents as competition is fierce. Yue Xiang and Hong Min (2007) also concluded similar views in their research.

2.1.3.2 Industry

Overseas studies have already confirmed industry’s role in executive compensation (GOMEZ-MEJIA and WISEMAN, 1997). It is understandable as production process and profit distribution differs from industry to industry, which inevitably results in different compensation structure and level. But does executive compensation of different companies within the same industry affect each other? There are studies suggesting that
compensation level of an industry is also a potential reason to explain executive pay rise (BIZJAK, 2003), and offering high executive compensation is also a way to enhance the company’s reputation in the industry, which in turn affects compensation incentive of other companies in the same business, finally results in spiral increase of benchmark compensation (ELSON, 2003). So industrial competition will directly lead to higher executive compensation.

SCHAEFER and HAYES (2009) studied stock price and pointed out that if companies had a strong preference for high short-term stock price, then their CEO compensation could be higher than industrial benchmark. While domestic studies have looked into compensation gap and found that type of industry and location of an enterprise have certain influence over compensation gap (DING et al, 2009), external compensation gap’s positive incentive effect on non-state-owned enterprises only exists when executive compensation is above industrial average (Li Wenjing et al, 2014).

2.1.3.3 Market demand

According to general supply and demand theory of economics, demand exceeds supply will cause price rise. Similarly executive demand could also directly affect executive compensation. Studies have shown that fast growth of US executive compensation reflected urgent demand for top management (MURPHY and ZABOJNIK, 2007), so market demand could be the reason to continuous rise of US executive compensation (GABAIX and LANDIER, 2008). Lu Haifan (2007) has carried out an empirical analysis on panel data of Shanghai and Shenzhen Stock Exchange A-share listed companies in 2001-2005, and findings have shown that executive compensation is mainly determined by Board of Directors and CEO, and in case of high collaborative demand, compensation gap reflects that they hope internal competition could help overcome agency problems.

2.1.3.4 Other factors

In addition to the above mentioned external factors, government intervention, nature of enterprise and other factors may also affect executive pay. Studies on government intervention and control have shown lower executive compensation in industries under such kind of intervention and control than those without (JOSEOW et al, 1993), and local government intervention has reduced executive compensation-performance sensitivity of local SASAC-controlled SOE (Cai Di and Wan Difang, 2011); policy burden due to government intervention could also affect micro-enterprises’ executive compensation incentive (Shen Yongjian and Ni Tingting, 2014). After comparing executive pay gap between capital-intensive and labor-intensive enterprises, domestic scholar Xu Yixuan (2010) argued that since output of capital-intensive enterprises relied more on capital gains and labor-intensive enterprises on employee cooperation, so capital-intensive enterprises were more likely to have wider compensation gap, and expected capital intensity and the gap should be positively related.
2.2 Research on Relationship between Executive Compensation and Relevant Company Index

Executive compensation, on the one hand, is affected by many internal, external and personal factors, on the other hand, influences important company indexes as dependent variable. Performance as determining standard of executive compensation actually assesses the final result of managerial behavior. Literature review on this topic focuses on the relation of executive compensation with two indicators: company performance and executive behavior.

2.2.1 Studies on Relation between Executive Compensation and Company Performances

With the rise of the principal-agent theory and financial data becomes public, scholars at home and abroad start to study relation between executive compensation and company performance by means of empirical measurement. Scholars have conducted correlation analysis between the forms of compensation and the performance of company. This summarizes and discusses research results on both explicit and total compensation.

Table 2-3: Research results on the relation between executive compensation and company performance

<table>
<thead>
<tr>
<th>Forms of compensation</th>
<th>major theories and representative scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explicit form</strong></td>
<td></td>
</tr>
<tr>
<td>Cash compensation</td>
<td>①cash compensation is not linked with performance of the company; bonus may cause short-term behaviors (CHEN Xuebin, 2009); ②no significant positive correlation found between annual cash compensation of executives and performance of the company (REHBEIN and KATHLEEN, 2007; ZHAN Haoyong and FENG Jinli, 2008; LIU Baoliang, 2012).</td>
</tr>
<tr>
<td>Stock compensation</td>
<td>①with a reasonable shareholding ratio, stock compensation and company performance are positively correlated (AGRAWAL and MANDELKER, 1987; STULZ, 1988; MOECK and etc, 1988); with various sampling data, models and proxy variables, three theories were formed: positive correlation (ZHANG Jinlin and ZHAO Jing, 2010; LIU Baoliang, 2012); no correlation (XIANG Chaojin and XIE Ming, 2003; TAO Jinyuan, 2007); non-linear correlation (MCCONNELL and SERVAES, 1990; YANG Mei, 2004).</td>
</tr>
<tr>
<td>Option compensation</td>
<td>Option compensation imposes positive impact on both company performance (CHOUROU and etc, 2008) currently and in the future (SUN and etc, 2009).</td>
</tr>
<tr>
<td>Implicit compensation</td>
<td>Implicit compensation has negative impact on the performance of company (YERMACK, 2006; LIU and YERMACK, 2007).</td>
</tr>
<tr>
<td>Total compensation</td>
<td>①quantitative data cannot prove significant positive correlation between executive compensation and company performance (Wei Gang, 2000; Geng Mingzhai, 2004; Yaozheng Hai, 2005); ②executive compensation is in significant positive correlation with company performance (MURPHY, 2005; ZHOU Jianan and HUANG Dengshi, 2006; HE Junyao and LI Qiaohui, 2014).</td>
</tr>
</tbody>
</table>

2.2.1.1 Relation between Executive Compensation and Company Performances

Studies have shown that executive compensation-performance sensitivity could change
between explicit form (mainly cash compensation, stock compensation, and option compensation) and implicit form (MURPHY, 1999).

(1) Relation between cash compensation and company performance

In the structure of executive compensation, a large proportion is taken up by cash compensation in the form of fixed annual compensation. Annual compensation consists of salary and bonus, in which salary is not associated with performance, and bonus comes from last year’s operating performance, so bonus is very easy to lead to short-term behavior (Chen Xuebin, 2009). Foreign research confirms that there is correlation between executive cash compensation and company performance (LAMBERT and LARCKER, 1987; SLOAN, 1993), however fixed salary and bonus are not significantly related to company performance (JENSEN and MURPHY, 1990). So some scholars have carried out focus study on cash compensation and long-term incentive and found fast-growing companies usually offer low proportion of fixed salary but high proportion of long-term incentive (JENNIFER KENNETH, 1998), but this long-term incentive is not commonly seen in Chinese enterprises (Zheng Xiaofang, 2009).

After further study on annual cash compensation and company performance, overseas scholars found no significant correlation between SOE executive annual compensation and performance (REHBEIN, 2007). This is also confirmed by domestic researchers (Wei Gang, 2000; Li Zengquan, 2000; Zhan Haoyong and Feng Jinli, 2008; Liu Baoliang, 2012).

(2) Relation between stock compensation and company performance

Due to high security of cash compensation, it lacks incentive effects to executives, so some scholars believe stock compensation is better in terms of motivation (REHNER, 1985). BERLE and MEANS (1932) started early study on relation between stock compensation and company performance, later JENSEN and MECKLING (1976) demonstrated managerial ownership could increase incentive effect, thus affecting company performance.

In further researches, scholars start to build models to discuss their relation (MURPHY, 1985), study based on Forbes data in the same year found positive correlation between executive compensation and company performance (COUGHLAN and SCHMIDT, 1985). This conclusion is also confirmed by many other scholars, but most of them have set reasonable boundary to stock incentive, and believed that positive correlation was only possible when managerial ownership was appropriate (AGRAWAL and MANDELKER, 1987; STULZ, 1988). MCCONNELL and SERVAES (1990) found in empirical study that this correlation was nonlinear: starting with positive correlation, and then turn to negative correlation with managerial ownership reached certain level, after that return to positive correlation when the ownership arrives at another level.

In recent years, many domestic researchers also studied the relation of stock compensation and company performance, but no consistent conclusion is reached due to different sample data, models and agent variables. Domestic research roughly reached three conclusions: positive correlation (Xu Xiaonian and Wang Yang, 1997; Liu Guoliang and Wang Jiasheng,
2000; Yu Dongzhi, 2003; Song Zengji and Pu Haiquan, 2003; Pu Weidong and Xu Chengming, 2003; Chen Yong, 2005; Gao Lei and Song Shunlin, 2007; Zhang Jinlin and Zhao Qing, 2010; Liu Baoliang, 2012); no significant correlation (Li Zengquan, 2000; Xu Erming and Wang Zhihui, 2000, Gao Minghua, 2001; Xiang Chaojin and Xie Ming, 2003; Tao Jinyuan, 2007); non-linear correlation (curve) (Wu Shuhun, 2002; Bai Zhonglin, 2002; Yang Mei, 2004).

(3) Relation between stock option compensation and company performance

The difference between cash compensation and stock and stock option compensation is that the last two are dynamic compensation mechanism based on the ever-evolving Agency Theory (WELSON, 1969; ROSS, 1973; MIRRLEES, 1976; HOLMSTROM, 1979; GROSSMAN and HART, 1982). The adoption of stock option compensation mechanism highlights the significance of human capital value (Yang Xiaokai, 1994; Zhou Qiren, 1996). As shown in results of agency model, observed compensation was not in line with the agency model of the optimal contract (JENSEN and MECKLING, 1990); studies on the correlation between stock option incentive and agency cost also failed to explain compensation incentives in the form of stock option, indicating that there is no significant correlation between stock option incentive and company performance (YERMACK, 1995).

Similar to the aforementioned drawback of cash compensation, stock option compensation also focus on short term incentives. Some scholars tried to link stock option compensation with executive retirement plan with the purpose of highlighting long-term incentive effect of this compensation mode (DAHIYA and YERMACK, 2008). However, this research perspective was denied by China’s own scholar Xia Fan (2009), whose study re-emphases that stock option compensation encourage short term performance of the company, rather than long term one.

Studies on the relationship between stock option compensation and company performance showed that stock option incentive was indeed emerged to reduce agency costs (TZIOUMIS, 2008). Moreover, according to previous researches, stock option incentive as dependent variable has positive impact on both current performance (CHOUROU et al, 2008) and the future performance of the company (SUN et al., 2009). This point of view is supported by Chinese scholars Wu Jinglian (2001), who agrees that stock option incentive aims for the future and associates executives with the company's future performance. However, since stock option compensation is not widely implemented in China, only few studies regarding this topic were conducted, most of which put stock compensation and stock option compensation together as one topic. Among these studies, Zhang Xinzi’s research (2002) on S&P500 companies of year 1998 found that 40% of CEO's income came from stock options.

(4) Relation between implicit compensation and company performance

As an important component of executive compensation, implicit compensation usually is quite random and usually shown in the form of extra allowance or duty expenses. It is seen as a major way of company surplus embezzlement among scholars (JENSEN and MECKLING, 1976; GROSSMAN and HART, 1980; JENSEN, 1986). Only recently, some scholars point
out that additional allowance might only be offered to promote management productivity and should not be deemed as managerial over-consumption by occasional distortions (RAGHURAM and JULIE, 2006).

Foreign studies on the correlation between implicit compensation and company performance reach some conclusions. Companies providing executive addition allowances maintain average annual earning at least 4% lower than market reference point. After disclosure of the allowance, the companies’ share price further fell by an average 1% (YERMACK, 2006). In the later research of LIU and YERMACK (2007) on property purchasing behavior of executives from S&P500 found that when executives bought real estate property, company's performance suffered significant decline. Data is difficult to obtain for this topic and there is no empirical study on China’s listed companies. The most relevant research on implicit compensation only discussed about control of duty expense (Chen Pingping and Zhang Wenxian, 2008).

2.2.1.2 Relationship between executive total compensation and company performance

Performance of the company has been a key factor to measure the effectiveness of executives’ work, and therefore scholars hold a common view that executive pay and company performance are intrinsically linked. It is how particular the two are related that draw interests in academia. TAUSSINS and BAKER’s study (1925) on company performance and executive compensation was the earliest the academic research on this aspect.

Many scholars conducted great number of correlation researches on executive compensation and company performance with different variables and methods and gained diverse conclusions. ABOWD (1990) believes that executive compensation may affect the company's performance in the way that not related to company's history performance. ABOWD’s view did not cause much academic discussion. Earlier studies show that executive compensation and company performance are relevant, but the correlation is relatively weak, reflected in lower pay performance sensitivity (JENSEN and MURPHY, 1990). This weakly correlated view was also discussed by studies of CREGG and others (1993). However, MURPHY’s study (2005) confirmed that there is a significant and positive correlation can be found between executive pay and company performance.

More scholars did not discuss the relationship between the two factors, but chose to probe how their relation may change with under different conditions and the states. Through analyzing regulation changes such as the disclosure of executive pay, PERRY and ZENNER (1993) found that with new regulations, company performance tends to be more sensitive to the increase on executives’ total compensation.

MEHRAN (1995) states that the positive correlation effect of executive pay on company performance is not from the payment level but the structure of compensation. CORE and other researchers (1997) argue that the correlation depends on the structural efficiency of the owner and board of directors. Executive compensation rises when efficiency is low, resulting a negative significance on the relationship between company performance and compensation.
Chinese scholars tend to use quantitative methods to study the relationship between executive pay and company performance, and the results did not reflect any consistency on positive correlation. Researches show that quantitative data cannot prove significant positive correlation between executive compensation and company performance (Wei Gang, 2000; Geng Mingzhai, 2004; Yaozheng Hai, 2005). Geng Mingzhai (2004) further suggests that the non-significance is caused by the fact that many listed companies in China did not establish an operating mechanism that fits the conditions of a market economy. Of course, other scholars did find significant positive correlation between the two (Hu Wanli et al., 2004; Zhou Jianan and Huang Dengshi, 2006; He Junyao and Li Qiaohui, 2014). With the development of China’s market economy and the maturity of Chinese enterprises, a positive correlation emerged.

Foreign studies are not only limited to positive and negative correlation between executive compensation and company performance. Scholars taking luck as a research perspective state that compensation reflects the good luck side of the company's performance, but cannot reflect the time of bad luck punishment (BERTRAND and MULHANANTHAN, 2001); and incentive gained from good luck rewards are far greater than the penalty from bad luck (GARVEY and MILBOURN, 2006).

Some scholars understand this phenomenon as a type of asymmetry that may become more obvious after merger and acquisition (HARFORD and LI, 2006). Again, this theory can be proved from income statement—executive compensation is significantly correlated with corporate gains but has no correlation with loss (GAVE, 1998). However, when taking stock returns as a measure of corporate performance, the conclusion changes since executive compensation tends to be more sensitive to stock returns (LEONE et al., 2006).

### 2.2.2 Studies on Relationship between Executive Compensation and Executive Behavior

Previous section briefly reviewed literatures on the relationship between executive pay and corporate performance and found that the correlation exists mainly because executive compensation affects the behavior of executives and thereby affects business performance. Some scholars believe that it is executives’ behavior that influences corporate performance and causes different findings in studying how executive compensation associated with company performance (TOSI et al., 2000). Thus it is necessary to explore the relationship between executive compensation and executive behavior.

Table 2-4: Research results on the relation between executive compensation and executive behavior

<table>
<thead>
<tr>
<th>Factors</th>
<th>Major theories and representative scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive behavior</td>
<td></td>
</tr>
<tr>
<td>Strategic decision-making</td>
<td>① long-term compensation incentive tends positively correlated to the adoption of diversified strategy (CARPENTER, 1998); while short-term compensation incentive may encourage executives to take actions that generate higher rates of return (SANDERS, 2001). ② Executive compensation is positively correlated to aggressive and risky behaviors (ZHU Yanjuan, 2012).</td>
</tr>
<tr>
<td>Risk tendency</td>
<td>Executive compensation is positively correlated to risks (DATTA and etc, 2001; CADENILLAS and etc, 2004; REN Guoliang, 2010).</td>
</tr>
</tbody>
</table>
2.2.2.1 Relationship between executive compensation and strategic decision-making

Studies suggest that through compensation incentives, executives may encourage to take actions that benefits company’s performance. CHO and HAMBRICK (2006)’s study used executive team from aviation industry as a research sample to prove this statement. Considering the fact that the fundamental reason of executives’ actions is personal gain, many scholars analyze the effect of compensation from the perspective of equity compensation. Research shows that executives hold stock options tend take opportunistic actions (YERMACK, 1997), and 30 days within actions, abnormal stock rise appeared (ABOODY and KASZNIK, 2000). Generally, the company's share price experience a tended from unusually low to abnormally high (LIE, 2005) before and after executives’ action. With such phenomenon, scholars conclude, executives may sacrifice long-term business strategy to obtain short-term profit maximization (GUIDRY et al., 1999) and may also choose to gain more equity at lower stock prices to reap higher benefits (COLES et al., 2006). The above literature suggests that short-term incentives will encourage executives to take risky strategy, and also explains popularity of equity incentive (CONYON, 2006; HALL and MURPHY, 2002).

On executive compensation’s impact on strategic preference, prospect theory gives valuable findings (LARRAZA-KINTANA, 2009). When facing potential losses such as employment risk and cash compensation fluctuation, senior executives tend to choose active and adventurous strategies. Under profit environment such as good stock performance, executives prefer to take a conservative and safe strategy for risk aversion. Based on empirical data from listed companies of real estate industry, Chinese scholars HaoYunhong and Zhu Yanjuan (2012) found that with higher executive compensation and greater cost of sales, listed companies are more inclined to adopt aggressive marketing strategies.

Generally speaking, studies on the relationship between executive compensation and decisions on strategies found that the type of strategies adopted by executives is inextricably linked to their personal interests. That is to say, long-term compensation incentive tend is positively correlated to the adoption of diversified strategy (CARPENTER, 1998); while short-term compensation incentive may encourage executives to take actions that generates higher rate of return (SANDERS, 2001).

2.2.2.2 Relationship between executive compensation and risk tendency

As mentioned above, the executive compensation incentive especially short-term incentives increase the risk level of executives. Clearly, there must be a certain connection between executive compensation and risk tendency, since interests of executives and the company linked and executives may try their best to mitigate the risk (JENSEN and MECKLING, 1976). In fact, some of the shareholders’ risk trend is neutral, making consistency of executives and shareholders' risk status necessary. Studies have shown that although it is difficult make executives maintain a neural risk attitude, compensation incentive can reduce the risk preference (HOLMSTROMS, 1979). Also in 1979, study of KAHNEMEN and TVERSKY (1979) suggested that risk tendency of executive is directly associated with the
environment. Executives in negative environment tend to take risks, not for risks mitigation, but to minimize losses (WISEMAN and GOMEZ-MEJIA, 1998).

Scholars also carry out a series of studies on how executive compensation incentives affect executives’ risk. A study on the executive equity incentive and acquisitions actions found that incentive degree is positively correlated with both acquisitions decisions and its risk level (DATTA et al., 2001).

Findings from the relationship between executives’ equity and stock options and risk-taking responsibility in oil companies showed that equity and options incentive indeed can promote executives’ risk profile (RAJGOPAL and SHEVLIN, 2002). This statement is verified by CADENILLAS and others (2004) with mathematical model. His research indicates that performance-based incentives may encourage executives to take more risks. However, this theory works only for executives who believe in their ability and those with poor ability will not have their risk profile influenced by incentive.

Scholars Ren Guoliang (2010) conducts a research on relevant topic and believes that with the increasing accumulation of executive compensation and stronger stock option incentive, executives of listed company may see a decline for their entrepreneur risk features. Thus, it is necessary to pause the exponential soaring of executive compensation. Wang Jia’s study (2013) found that risk and compensation-performance sensitivity changes inversely. Compare with non-state-owned enterprises, impact of risks on executive compensation-performance sensitivity is more obvious in state-owned companies.

2.3 Conclusion on Literature Review

Literatures reviewed above show that the study on executive compensation started quite early and achieved a large number of research results, attracting more and more scholars to enter the field of academic research. It is partly because the executive compensation is closely related to the company’s growth and development and is of great significance. On the other hand, it reflects that with the ever changing internal structure, individual features and external environment, current studies can not fully meet demands of practice. Insufficiency and limitation of studies need to be improved through efforts from the academia and industry.

Many aspects of executive compensation have been concerned, studied and explored through theoretical and empirical research. This summarized major directions of previous studies in the following aspects: First, studies on factors that impact executive compensation and the degree of the impact; Second, reasons for executive compensation being higher than the company performance, and how executive compensation influence company performance and behaviors of executives; Last but not least, why existed executive compensation mechanism fail to play its role.

Scholars of executive compensation incentives have begun to adopt diversified research directions by adopting multi-discipline angles from company strategies, corporate governance, and human capital, greatly promoted the development of executive compensation. However, there are still limitations and deficiency. Firstly, without taking comprehensive analysis, most
researches focused only on the decisive role of a single factor especially economic factor but ignored the influence of social or human resource characteristics of senior executive as an individual. Secondly, results and findings of many foreign researches are not totally applicable for Chinese corporations. Compared with developed countries, the developing market economy system, cultural differences and differences on mindset may cause differences on the research results.

This requires scholars to take more comprehensive perspectives to further explore decisive factors of executive compensation in Chinese companies within the background of China’s market economy. Though analyzing how executive compensation correlated to company performance and executive behavior, reasonable compensation models and mechanisms can be formulated to achieve effective encouragement and management on senior executives.
Chapter III Theoretical Framework and Research Hypotheses of Executive Compensation Incentive in Listed Companies

In the study of executive compensation incentive theories, using company performance to determine executive compensation has become the mainstream conclusion of in western studies. Some representative scholars who support this view believe that the executive compensation should be closely linked to a company’s performance. In other words, an executive’s contribution to the company determines his/her compensation (JENSEN & MECKLING, 1976; HOLMSTROM, 1979 et al.) However, some studies find no significant correlation between compensation and performance (MULL, 1969 et al.), and several other factors (eg. a company’s internal factors, external factors and human capital characteristics) also will impact the level and structure of executive compensation. A large number of empirical researches on executive compensation obtain inconsistent, mixed and biased conclusions (FINKELSTEIN & HAMBRICK, 1996; GOMEZ-MEJIA & BALKIN, 1990).

Therefore, many scholars start to question the mainstream compensation theory and conduct diversified studies with broader perspectives, in an attempt to explain executive compensation with different theories and in different angels. This chapter reviews related theories such as agency theory, tournament theory, stewardship theory, prospect theory, social comparison theory, human capital theory and property rights theory and on this basis, utilizes diversified study perspectives to establish a comprehensive and objective theoretical framework. A model based on the above-mentioned literature review will be built and research hypotheses will be proposed.

3.1 Theoretical Basis

Scholars home and abroad had related executive compensation incentive to economic, sociological and psychological theories. To be more specific, the agency theory and tournament theory are concluded from economic perspective, the stewardship theory from sociological perspective, the prospect theory and social comparison theory from psychological perspective and the human capital theory and property rights theory from a mixed perspective.

3.1.1 Agency Theory

The agency theory put forward by BERL and MEANS (1932) is generally considered as the foundation of compensation theories and has been influencing the development of relevant studies. This theory changes previous opinion that regards owners and executives as a whole and advocates separation of ownership and management in a company. Being put forward and developed after the 1960s (WILSON, 1968; SPENCE & ZECKHAUSER, 1971; ROSS, 1973), the agency theory became a dominant theory to base on when determining executive compensation in western countries and was regarded as the foundation of corporate governance and strategic management (DONALDSON & DAVIS, 1991).

According to traditional financial theories, an executive should act in the best interests of the
shareholders and the company (BRIGHAM et al., 1999). That is to say, executive compensation is essentially an investment of the shareholders. However, the agency theory’s separation of ownership and management may lead to direct conflicts between the two parties (JENSEN & MECKLING, 1976), which are mainly reflected in the executive’s pursuit for activities that benefit him/her rather than the company’s shareholders (DYL, 1988; TRAICHAL et al., 1999).

The principal-agent relation in the agency theory is revealed in two ways. First, a company’s owner or shareholders hire an executive as an agent to manage the company. Second, a company’s executive hires a middle-management-level personnel as an agent to manage a subsidiary. Three hypotheses exist in the principal-agent relation in any circumstances: (1) the agent’s behavior is difficult to observe; (2) the information is asymmetrical; (3) the agent pursues maximum personal interest. The three objectively existed hypotheses inevitably increase the cost between shareholders and the agent (executive), and such cost is generally regarded as “agency cost”. Also, there are three forms of agency cost arise due to the above-mentioned three hypotheses: 1) Monitoring cost, generated to observe and monitor the agent; Bonding cost generated by the agent to win the shareholders’ trust when the information is asymmetrical; and Residue cost, generated when the agent’s pursuit of maximum personal benefit is in conflict with the shareholders’ benefit.

The study of agency theory is mainly involved with reducing agency costs and resolving the principle-agent relationship (FAMA & JENSEN, 1983). Scholars have summarized specific solutions, which mainly include monitoring agent’s behavior (JENSEN & MECKLING, 1976; DYL, 1988), controlling the agency’s compensation (TRAICHAL et al., 1999) and motivating the agent’s behavior via compensation means (KIM & GU, 2005). It might be effective to design an incentive contract that links a company’s performance with the executive compensation (WALSH & SEWARD, 1990; RUPP & SMITH, 2002) or determine the executive compensation via visible standards such as market return rate (GRINSTEIN & HRIBAR, 2004). In the study of executive compensation incentive using the agency theory, scholars have drawn some research conclusions worth learning from. Means like the variable pay compensation strategy based on performance (EISENHARDT, 1989; BEATTY & ZAJAC, 1994) and increased executive stock options in the executive compensation structure (JENSEN & MECKLING, 1999; GOMEZ-MEJIA, 1998; BEBEHUK & FRIED, 2003) will effectively avoid agency costs generated by the inconsistent interests of shareholders and executives in the agency theory.

It can be found from the above-mentioned studies conducted by scholars abroad that the design of executive compensation incentive that based on the agency theory should mainly meet the following conditions: 1) A reasonable executive compensation structure that ensures the existence of compensation risks; 2) effective monitoring towards executives; and 3) performance comparison before determining the executive compensation incentive. Therefore, this theory requires diversified design of executive compensation incentive.
3.1.2 Tournament Theory

The tournament theory was presented due to compensation gaps between executives. An early research of SIMON (1957) found that there is about 30% compensation difference existed among the executive team in different levels. A further study showed that the compensation gaps will influence the quality of executives, which directly impacts the compensative incentive (JENSEN & MECKLING, 1976). Besides, the compensation gaps in different levels are larger than those in the same level (MEDOFF & ABRAHAM, 1980). Therefore, many western scholars started to study compensation gaps, all of which have laid a theoretical foundation for the emergence of the tournament theory.

The tournament theory, first developed by ROSEN (1986) and LAZEAR (1992), states that executive compensation gaps do not relate to the amount of work being done, but rather depends on the performance difference among executives, which shares the same view with one of the conditions of the agency theory. It is safe to say that an executive may cares more about gaps between himself/herself and his/her competitors instead of personal capability, which also draws attention of some scholars. Studies show that the compensation incentive obtained by an executive is not depends on personal performance, but on whether he/she is better than the others (REILLY et al., 1988; HARTFORD, 2006). However, the tournament theory ignores company’s external factors when measuring executive compensation, and the executive compensation incentive proposed by this theory can effectively reduce the monitoring cost (SHAUGHNESSY, 1995). Compensation incentive given based on comparison usually has longer encouraging power and greater motivating effects (GIBBONS & MURPHY, 1990).

However, many researchers believe that some executive will work less efficiently when their compensations are solely composed by executive behavior incentive. Because when an executive finds it impossible to be promoted no matter how hard he/she works, they tend to lose confidence and accept reality. At this point, incentives based on the tournament theory will have little impact on them and these incentives will become invalid.

To avoid such phenomenon, compensation design based on the tournament theory needs to let the executives know that their hard work might be paid off as long as the incentive results such as promotion are not determined. When designing executive compensation, a company’s internal factors (e.g. promotion) should not be the only factors. The company should also take external and individual factors into consideration to design compensation gaps reasonably.

Plays various roles when applied in different companies. For non-technology companies of low R&D investment, tournament theory is good approach to improve their performance through rising executive compensation. For high-tech companies, considering the balance between monetary rewards incentives and bottomline bonus and the coordination within management team, more prudent approaches should be adopted. A wider gap of compensation would not necessarily lead to better company performance (LIN Yingfeng and etc, 2013).
3.1.3 Stewardship Theory

The above-mentioned two theories were put forward based on the hypothesis of “economic man”, while the stewardship theory was developed on the basis of seeing executive as “social man”, who seeks personal fulfillment, enriches and improves related theories of corporate governance and is becoming an important research perspective in corporate governance theories (DONALDSON, 1990; BARNEY, 1990; DAVIS et al., 1997). This theory is built on sociology, regarding executives as the “stewards” in a company and that the objectives of the executive are inconsistent with those of the company’s owner. When conflicts occur, the executive will, more often than not, put the company’s interest ahead of his/hers (ZHANG Huihua et al., 2005). It is thus evident that this theory implicitly indicates that the company’s shareholders and its executives share a cooperative and trusted relationship.

From this perspective, the stewardship theory is an alternative view of the agency theory. Therefore, the key of corporate governance under this theory is not about monitoring executives, but about motivating the executives via trust and empowerment so as to enhance their working enthusiasm and motivate them to work harder to improve performance and create profits. Of course, although this perspective has filled some research gaps, pure steward behavior hypothesis is as impractical as the agent opportunistic behavior hypothesis (GRANDORI, 2004), for putting undue emphasis on cooperation and trust easily leads to the groupthink phenomenon (JANIS, 1972) and influence the overall working efficiency and judgment (SUNDARAMYRTH & LEWIS, 1999). Afterall, full trust itself is insufficient to drive the improvement of company performance, other factors such as the establishment of compensation committee and the Board of Supervisors have more direct influence on executives’ behaviors and company performance.

More studies center on comparing the stewardship theory with the agency theory. The former works better for startups when conflicts of interest between shareholders and executives are not that obvious (ARTHURS & BUSENITZ, 2003). However, as the company grows, the conflicts of interest also increase. At this time, the latter becomes more practical (WASSERMAN, 2006). However, in view of China’s special culture and interpersonal relationships, as well as social, cultural and psychological factors, the stewardship theory is more helpful in building Chinese corporate governance models (TIAN & LAU, 2001).

3.1.4 Prospect Theory

In order to make up the absence of rationality hypotheses in traditional economic theories, KAHNEMAN and TVERSKY (1979) introduced personal perception and decision-making into personal behavior from the psychological perspective and developed the prospect theory. This theory was being perfected as it evolved and developed from the original property theory (OPT) to the cumulative prospect theory (OPT), then to the third-generation prospect theory (PT3) and gradually entered into the theoretical improvement stage. Meanwhile, it is also the first theory that studies economic problems from the psychological perspective.

The prospect theory states that people’s attitude towards risks is based on the potential value of gains and losses. People tend to avoid risks in case of gains and seek risks in case of losses.
Besides, people’s risk perception in case of gains and losses is also different. In general, they are far more sensitive to losses than to gains. Related academic studies find that a company’s executive’s attitude towards risks depends on the degree of monitoring he/she receives (WISEMAN & GOMEZ-MEJIA, 1998). Predicting risks can lead to different decision-making and behavior of the executive, while the outcome of his/her previous decision will also influence his/her attitude towards risks and behavioral decision making. Often, the previous gains will enhance the degree of risk tolerance and the previous losses will generate risk aversion in later period.

The prospect theory has promoted the development of risk decision-making theories. Scholars’ continuous efforts in improving and developing the prospect theory also extend it to different economic and management fields. Domestically, there are insufficient studies employing the prospect theory. However, the development of each industry will certainly provide broad theoretical and practical space for the psychology-based prospect theory.

3.1.5 Social Comparison Theory

The social comparison theory, proposed by FESTINGER (1954), states that from psychological perspective, people involuntarily compare their income contributions with others’. In terms of executive compensation, this theory centers on the influence that other people exert on executive compensation.

According to researchers, there are three kinds of social comparison, namely downward comparison, upward comparison and parallel comparison (XING Shufen & YU Guoliang, 2005). Downward comparison is the comparison between us and others who are worse off than us (HAKMINER, 1962). Upward comparison is when we compare ourselves with those who we believe are better than us with a purpose to find our own shortcomings (WHEELER, 2002). In such process, individual differences generate two totally different effects, namely the assimilation effect and the contrast effect (COLLINS, 1996). Parallel comparison is when we compare with those who are similar with ourselves in order to make an objective self-evaluation (FESTINGER, 1954). The more similarities they share, the greater the influence will be.

More researches are conducted to understand how this perspective can influence the remuneration committees’ decision on executive compensation. The remuneration committee in a company often regards the compensation level in the executive market as a benchmark, and each remuneration committee tends to set the executive compensation a little bit higher than the average compensation, which also contributes to the growing executive compensation (EZZATNEL & WATSON, 1999). Some scholars believe that the remuneration committee often compares their compensation with the executive’s when setting the executive compensation. Therefore, there is a close connection between the composition of the remuneration committee and the level and structure of the executive compensation (KREN & KERR, 1997). SANDERS (1995) and other researchers conducted an analysis and test on the executive compensation incentive by several theories such as the social comparison theory and the agency theory, the results of which fully supported the research hypotheses of the
social comparison theory.

3.1.6 Human Capital Theory

The human capital theory was created by SCHULTZ and BECKER, two American economists, in the 1960s. It was until the 1990s that scholars started to apply this theory into related researches of executives (CASTANIAS & HELFAT, 1991), believing that the human capital theory centers more on personal characteristics, capabilities and skills of the executives and employees, but less on the external environment (LAZEAR, 1995).

The executives manage a company with their experience, capabilities and education, and thus should receive matched compensation (GOMEZ-MEJIA & BALKIN, 1992). However, some scholars consider of both personal factors and corporate factors, believing that the bigger the company is, the more the executive need to pay out in terms of capability, time and experience. Compensation reflects the comprehensive characteristics of the executive and is inseparable with the corporate governance environment (COMBE & SKILL, 2003). It is evident that using the human capital theory to study executive compensation will inevitably be influenced by factors such as corporate governance.

To design the executive compensation from the human capital’s perspective, human capital value should be fully considered. Generally, the human capital value is composed of the explicit value and the implicit value. The explicit value refers to measurable value that has been realized and is generally expressed by the regular compensation. The implicit value is risky and immensurable, and is often associated with a company’s performance in the compensation system and expressed by the floated compensation. Therefore, different human capital value composition needs to adopt different compensation incentive means and the composition of compensation should be determined according to the executive’s human capital characteristics and structure.

According to the human capital theory, the value of a company’s executive is presented by his/her knowledge, experience and capabilities, all of which indicate that a company need to provide the compensation necessary to maintain the executive’s performance. Adopting indicators such as education background, time of serving and working experience to reflect human capital characteristics and design reasonable and objective executive compensation can effectively motivate executive behavior.

3.1.7 Property Rights Theory

The modern property rights theory believes that all economics problems can be analyzed under the framework of the property rights theory. The property rights theory pays attention to material incentives, with no spiritual incentives being involved. In reality, the executive compensation incentive should not only consider material incentives, but also meet the psychological feature of each individual. Like the hierarchy of needs and the self-actualization theory, when the executives reach a certain level in their material life, they seek psychological satisfaction spiritually via diversified and challenged work and realize self-development via the company’s performance. It is clear that spiritual incentive is the long-term incentive.
According to the property right theory, property right privatization, a form of material incentive, will significantly enhance productivity. However, this view is not fully agreed. As the property right theory developed and improved, the beyond property rights theory was proposed. This theory believes that the growth of a company’s performance is related to its competitiveness. Studies that are for this opinion find that a company’s performance is related to its competitiveness and the industry’s competitiveness directly impacts a company’s performance (TITTENBRUN, 1996). This is the most fundamental factor that promotes the corporate governance mechanism and improves a company’s operating performance. This view was also verified by MARTIN and PARKER (1997) using the operating achievements made by private companies in the UK. The fierce the competition of the industry in which the company is in, the more efforts the executive will make to improve its performance.

It is obvious that the beyond property rights theory not only affirm the role of the material incentives, but also stresses the influence the external competition environment has on executive incentives and the company’s performance.

3.2 Building the Theoretical Framework

All the compensation incentive theories from different perspectives indirectly emphasize decisive role and effect on the company’s performance and executive behavior. After reviewing the above-mentioned theories and the document research from the previous chapter, it can be found that there is not a unified conclusion of research results on executive compensation. To some extent, the research samples and methods lead to the inconsistent results. However, the main reason lies in the fact that most researches based on different disciplinary perspectives such as economics, management, sociology and psychology were conducted from one angel and lack comprehensive and overall analysis. All of these directly impact the final results of researches, which lead to different conclusions.

In regard to researches of executive compensation, the existence form of the executive needs to be identified first. An individual executive possesses human capital characteristics, which will directly impact the executive’s thoughts, decision-making and behavior, while different human capital characteristics shared of several executives will directly influence the company’s behavior and development. Although an executive is one individual, in a company, he/she, in most cases, is also a member of the board of directors, board of supervisors and remuneration committee. As the company’s executive in this team, his/her behavior will affect the team’s decision and performance and the company’s governance structure. Therefore, it is necessary to analyze different internal organizations from the team level. The executive, as an important part of a company, inevitably plays a key role in the company’s performance, decision-making and development, and therefore, analysis and researches need to be conducted from the overall level of a company.

In order to make the research results of executive compensation more comprehensive, objective and effective, researches need to integrate individuals, teams and organizations from all levels and incorporate different research perspectives. This paper makes the following theoretical framework based on the related theories and research results. Please see Figure 3-1
for the specific theoretical framework.

Figure 3-1: Theoretical framework of executive compensation incentive in listed companies

This research framework, which is formulated by taking both personal factors of a company’s executive and the company’s internal and external factors into account, fully analyzes determinants of executive compensation, and on this basis, studies the relationship between executive compensation, behavior and the company’s performance. Firstly, a descriptive analysis can be conducted from two aspects, i.e. the level and structure of executive compensation in listed companies, to understand the situation of executive compensation. Besides, the executive compensation is influenced by internal and external factors of the company, as well as the executive’s human capital characteristics. Furthermore, the executive compensation and executive behavior are interactional. In view of the executive’s pursuit of maximum self-interests, the current compensation level and structure will affect his/her behavior, which, more often than not, is expressed in his/her decision-making capability and attitude towards risks. Lastly, the executive compensation and the company’s performance are interactional. Executive compensation affects executive behavior, which further impacts the executive’s performance and the company’s performance. Meanwhile, the company’s performance will influence executive compensation. The degree of impact is related to the executive’s power and internal and external environment factors.
In conclusion, several factors including a company’s internal and external factors and individual characteristics determine the level and structure of executive compensation, which, together with the company’s internal and external environment factors, directly impacts executive behavior, and such behavior affects the company’s performance. A company formulates executive compensation of the year based on executive behavior and the company’s performance, and this compensation incentive again impacts the executive’s behavior and strategy of next year. In this way, a closed and dynamic loop system is formed.

3.3 Theoretical Analysis and Research Hypotheses

In view of the above-mentioned theoretical framework, theoretical researches of this study combine research with empirical evidence and is divided into three parts, namely analysis on determinants of executive compensation in listed companies, analysis on relationships between executive compensation and executive behavior in listed companies and analysis on relationships between executive compensation and the company’s performance in listed companies. In this section, research hypotheses are proposed based on the above-mentioned theoretical framework, the research achievements and the related theoretical analysis of each factor.

3.3.1 Research Hypotheses of the Determinants of Executive Compensation in Listed Companies

In order to make the research results of executive compensation more comprehensive, objective and effective, the research hypotheses in this section fully consider the decisive effects of the internal factors of a listed company, personal characteristics of the company’s executive and the company’s external factors have on executive compensation.

3.3.1.1 Internal decisive factors in listed companies

(1) Company size. In general, the bigger a company is, the demanding it is towards the executive capability, and the more time and experience the executive will pay. The executive is justified in asking for the corresponding compensation. Most researches also state that the size of a company is positively correlated to the executive compensation (KERSH, 1974; ROSEN, 1982; KERSTUKE, 1983; BARRO, 1990; JOSCOW et al., 1993).

Hypothesis 1: Company size is positively correlated to the executive compensation

(2) Growth potential of the company. Under normal circumstances, companies with strong growth have a strong upward momentum in the industry, possess bigger development space and higher market share. Therefore, the company, for its development, has the capability and is willing to offer higher compensation to its executive (BEKLEY, 1993).

Hypothesis 2: Growth Potential of a company is positively correlated to executive compensation

(3) Company strategy. Researches indicate that diversified strategy is an important decisive factor of the structure and level of executive compensation (DURU & REEB, 2002; LU Haifan, 2007). The more diversified the company’s strategy is, the more complicated the
market environment is, and the stronger information processing and business capability are required from the executive.

Hypothesis 3: A diversified strategy is positively correlated to the executive compensation

(4) Executive shareholding rate. Executive compensation is composed of regular compensation and risk compensation. Different structure of such composition will lead to different executive behavior. Although the scholars domestic and abroad share different views on the such relationship, they believe, considering shareholding incentive is a long-term incentive form, that the more shares the executive holds, the higher his/her compensation is.

Hypothesis 4: The executive shareholding rate is positively correlated to the executive compensation

(5) Stock ownership concentration. When the shareholding is concentrated, the major shareholders, with a purpose to increase self-interests, will be motivated to monitor executive behavior. Besides, major shareholders, in most cases, have professional knowledge that the minority shareholders do not possess. In such case, the monitoring cost is reduced and the overwhelming power of the executive due to scattered stock rights can be avoided.

Hypothesis 5: Stock ownership concentration is negatively correlated to the executive compensation.

(6) Controlling shareholders. Researches indicate that the state-owned shareholding rate is negatively correlated to the executive compensation (DU & ZHAI, 2005). However, some researches also indicate that the two are uncorrelated (SU, 2011). In general, there are more incentive methods in state-holding companies than in non-state-holding companies. Apart from compensation incentives, the state-holding companies also provide company-paid consumption, subsidy and reputation etc.

Hypothesis 6: state-owned shares ownership is negatively correlated to the executive compensation.

(7) Characteristics of the board of directors. Scholars’ views are much divided on researches in this area. The percentage of outside directors is positively correlated to the executive compensation (MEHRAN, 1995; HARVEY & SHRIEVES, 2001), and the percentage of independent directors is positively correlated to the executive compensation (VELIYATH, 1995; CORDEIRO, 2003; LI Jinfei & WANG Zhen, 2011). These two views are opposite. However, in fact, independent directors share common interests with the executive, and re-elected directors often do not monitor the executive behavior (TEJADA, 1997).

Hypothesis 7: The percentage of independent directors is positively correlated to the executive compensation.

(8) Remuneration committee. The purpose of the remuneration committee is to make executive compensation fair and reasonable. According to researches, the remuneration committee significantly and positively influences the level of executive compensation (ZHANG Biwu & SHI Jintao, 2005; SHI Xiaoming & NI Chujun, 2011; LIU Xiyou& HAN
Hypothesis 8: The remuneration committee is positively correlated to the executive compensation.

(9) Concurrent appointment of Chairman and CEO. When the CEO act also as a Chairman, he/she has more power, is hard to be monitored by the board of director and it will be easier for him/her to obtain higher compensation by manipulating the remuneration committee. According to researches, being both the CEO and Chairman means higher compensation (YONG and BUCHHOLTZ, 2002; ZHANG Biwu & SHI Jintao, 2005).

Hypothesis 9: concurrent appointment of CEO and a director is positively correlated to the executive compensation.

(10) Executive change. Executive turnover is actually the result of monitoring from the board of directors and board of supervisors. When this happens, the board of directors will pay more attention to executive behavior and strengthen their degree of supervision.

Hypothesis 10: Executive turnover is negatively correlated to the executive compensation.

3.3.1.2 Decisive factors of personal characteristics in listed companies

(11) Age of the executive. Elder executives generally have abundant working experience and can solve problems the company encounters, and the company should naturally offer higher compensation. Researches also show that the age of an executive is positively correlated to the executive compensation (DUAN Haiyan and ZHONG Weiezhou, 2008; SU Guofang, 2011).

Hypothesis 11: The age of an executive is positively correlated to the executive compensation.

(12) Executive’s term of office. The longer an executive is in office, the more he/she understands about the company and work procedures, the easier to manipulate the board of directors and the remuneration committee to get higher compensation. In addition, similar to working years, the longer the executive is in office, the higher his/her compensation is.

Hypothesis 12: Executive’s term of office is positively correlated to the executive compensation.

(13) Education background of the executive. The higher education the executive receives, the stronger collection and processing capabilities he/she has and the easier he/she finds to make accurate and reasonable decisions. Researches indicate that the level of education of the executive is significantly and positively correlated to the executive compensation (BELLIVEAU et al., 1996; ATTAWAY, 2000; WANG Jinlong & LI Chuangfei, 2007; LI Bin & ZHAO Fangfang, 2011). The company should share such education cost with the executive.

Hypothesis 13: Education background of the executive is positively correlated to the executive compensation.

3.3.1.3 External decisive factors in listed companies

(14) Region. Different regions have different level of economic development. Generally,
executive compensation should be related to the standards of consumption in which the company is located. According to researches, the location of the company will significantly affect executive compensation (CHEN Zhiguang, 2002; LI Qi, 2003; YUE Xiang & HONG Min, 2007).

Hypothesis 14: Regional economic level is positively correlated to the executive compensation.

(15) Industry. The level and structure of executive compensation in different industries differ. The industry the company is in affects executive compensation (GOMEZ-MEJIA & WISEMAN, 2012; DING et al., 2009; LI et al., 2014). Besides, the fast-growing industries have huge demand of executives, which will increase executive compensation.

Hypothesis 15: Industry compensation level is positively correlated to the executive compensation.

3.3.2 Research Hypotheses on the Relationship between Executive Compensation and Executive Behavior in Listed Companies

The theoretical framework shows that executive compensation will directly influence executive behavior. Meanwhile, executive behavior also determines his/her level of compensation. The executive behavior is expressed in two aspects, the executive’s decision on the company’s strategy and the executive’s attitude towards the company’s risks. This section, on the basis of decisive factors theories, proposes research hypotheses on the relationship between executive compensation and behavior and the company’s performance.

3.3.2.1 Relationships between executive compensation and a diversified strategy

A company has varied strategic behavior, and the diversified strategy is an important strategic form among them. An executive realizes the company’s growth and continuous development via the diversified strategy, which meets the interests of the shareholders and the company. When the executive succeeds by adopting this strategy, the board of director and remuneration committee will offer him/her a higher compensation as a reward. However, due to industry factors, the company’s characteristics and external environment, the executive needs take higher risks when adopting the diversified strategy. When executive compensation significantly motivates executive behavior, the executive will have the driving force to choose the diversified strategy.

Hypothesis 1: Executive compensation is positively correlated to the adoption of diversified strategy.

3.3.2.2 Relationships between executive compensation and innovative behavior

Innovative behavior plays an important role in a company’s long-term development and can help consolidate industry status and improve market competitiveness. However, in terms of executive behavior, adopting innovative behavior will not bring short-term performance improvement for an executive. Instead, it will consume the company’s short-term resources. In general, executives who seek maximum personal interests will avoid such risks. However,
under reasonable executive compensation incentives, executives will choose appropriate
innovative behavior to obtain long-term interests.

Hypothesis 2: Executive compensation is positively correlated to innovative behavior.

3.3.2.3 Relationships between executive compensation, complexity of operation and level of
risks

Executive behavior is primarily to avoid risks, while the shareholders hold a neutral attitude
towards risks. This is where the conflict between the shareholders and the executive on
operation risks come from. Shareholders motivate the executive to shift his/her attitude
towards risks through compensation incentives. In general, the bigger the company is, the
more complicated its operation is, and the bigger the risks for the executive when making
decisions. At this moment, higher compensation incentive is needed to shift the original risk
aversion attitude the executive holds.

Hypothesis 3: Executive compensation is positively correlated to the complexity of operation.

Hypothesis 4: Executive compensation is positively correlated to the level of risks.

3.3.2.4 Relationships between executive compensation and growth potential and growth
opportunities

A company needs long-term development goals and plans to grow, and they are inseparable
from the executive’s strategic vision. However, when considering the company’s long-term
interests, the short-term interests and resources are usually compromised and various risks are
posed in the process of development. A company’s executive pays more attention to his/her
self-interests, while companies that develop well need the executive to abandon short-term
interests, face and solve operational risks. Therefore, the executive should be capable and
courageous, and comparatively higher compensation and reasonable compensation structure
should be in place to motivate the executive.

Hypothesis 5: Executive compensation is positively correlated to the growth potential of the
company.

Hypothesis 6: Executive compensation is positively correlated to the growth opportunities of
the company.

3.3.3 Research Hypotheses on the Relationship between Executive Compensation and
Company Performances in Listed Companies

When executive compensation influences a company’s performance, many factors play a
regulating role. This section provides theoretical analysis based on the regulating role the
external, internal and human capital decisive factors of executive compensation play in this
process. The decisive factors of executive compensation are regarded as moderator variables
when study the relationship between executive compensation and the company’s performance
to conduct theoretical research hypotheses.
3.3.3.1 Research hypotheses on the relationship of executive compensation and the company’s performance in listed companies

According to the theoretical framework, the level and structure of executive compensation in listed companies directly influence executive behavior, which affects the company’s performance. Under normal circumstances, when the executive gets satisfying compensation, in order to keep such compensation and position and get more compensation and promotion opportunities in the next term, he/she will work harder to improve the company’s performance.

Hypothesis 0: Executive compensation is positively correlated to the company’s performance.

3.3.3.2 Research hypotheses on the executive compensation moderating factors in listed companies

Moderating factors, based on the above-mentioned analysis, can be divided into internal factors, external factors and human capital factors. A company’s internal factors are mainly reflected in the power of the executive. Although the power of the executive cannot be measured directly, the degree of it is influenced by the company’s characteristics and internal governance structure. The corporate governance structure reflects the degree of monitoring on the executive, as well as the scope and level of the executive’s power in function. The company’s internal factors, on the other hand, reflect the restricted conditions of the executive’s power in function from an objective perspective.

Since the regression analysis on the executive compensation decisive factors has yet to be conducted, this section will conduct research hypotheses on all possible executive compensation decisive factors. The empirical analysis in the following chapter will, based on the results of quantitative analysis of the decisive factors, only choose significant decisive factors as moderating variables. It incorporates the analysis of decisive factors research hypotheses to carry out a brief research hypothesis on the executive compensation moderating factors.

(1) Size of the company. In general, the bigger the company is, the abundant capitals it possesses to resist external threats and grasp more opportunities.

Hypothesis 1: The size of the company plays a positive moderating role.

(2) Growth potential of the company. In general, companies with strong growth potential have a strong upward momentum in the industry, possess larger development space and higher market share. Therefore, the performance will be promoted significantly.

Hypothesis 2: The growth of the company plays a positive moderating role.

(3) Company strategy. The more diversified the company’s strategy is, the more complicated the market environment is. The company can grasp more opportunities to promote its diversified development.

Hypothesis 3: A diversified strategy plays a positive moderating role.

(4) Executive shareholding rate. Considering shareholding incentive is a long-term incentive
form, that the more shares the executive holds, the higher his/her compensation is. The performance will directly influence the executive’s personal interests.

Hypothesis 4: Executive shareholding rate plays a positive moderating role.

(5) Ownership concentration. When the shareholding is concentrated, the major shareholders, with a purpose to increase self-interests, will be motivated to monitor executive behavior. While scattered stock rights will empower the executive to set compensation to avoid compensation loss caused by performance decline.

Hypothesis 5: Ownership concentration plays a negative moderating role.

(6) Controlling shareholders. There are more incentive methods in state-holding companies than in non-state-holding companies. Apart from compensation incentives, the state-holding companies also provide company-paid consumption, subsidy and reputation etc.

Hypothesis 6: State-owned shares ownership play a negative moderating role.

(7) Characteristics of the board of directors. Independent directors share common interests with the executive, and re-elected directors often do not monitor the executive behavior. Instead, they rely on the executive.

Hypothesis 7: The percentage of independent directors plays a positive moderating role.

(8) Remuneration committee. The purpose of the remuneration committee is to make executive compensation fair and reasonable. A fair compensation system can effective reduce agency cost.

Hypothesis 8: The remuneration committee plays a positive moderating role.

(9) Concurrent appointment of Chairman and CEO. When the CEO act also as a Chairman, he/she has more power, a greater sense of mission and tends to work hard to improve the company’s performance.

Hypothesis 9: Being both the CEO and a director plays a positive moderating role.

(10) Executive turnover. Executive turnover is actually the result of monitoring from the board of directors and board of supervisors. When this happens, the board of directors will pay more attention to executive behavior and strengthen their degree of supervision.

Hypothesis 10: Executive turnover plays a negative moderating role.

(11) Age of the executive. As the executive grows older, he/she will be less sensitive to compensation incentives and is more willing to have a stable job instead of facing risks.

Hypothesis 11: The age of an executive plays a negative moderating role.

(12) Executive’s term of office. The longer an executive is in office, the more he/she knows about the company and work procedures, and the less sensitive he/she is towards compensation. However, he/she tends to think more of the company’s performance and development.

Hypothesis 12: Executive’s term of office plays a positive moderating role.
(13) Education background of the executive. The higher education the executive receives the stronger collection and processing capabilities he/she has. Besides, the natural of “social man” will be more obvious and the executive tends to be more active in seeking self-actualization.

Hypothesis 13: Education background of the executive plays a negative moderating role.

(14) Region. Different regions have different level of economic development. Different economic development levels will inevitably influence executive compensation and the company’s performance. Executives based in well-developed regions need higher compensation to maintain their living standard and are easier to be motivated by compensation to promote the company’s performance and growth.

Hypothesis 14: Regional economic level plays a positive moderating role.

(15) Industry. The level and structure of executive compensation in different industries differ. Industries with higher level of compensation will attract more high-quality personnel, which will promote the company’s performance.

Hypothesis 15: Industry compensation level plays a positive moderating role.
Chapter IV Empirical Analysis and Examination of Executive Compensations in Listed Companies

According to the data center of Caixin.com in 2014, the statistics obtained from the performance reports of 495 A-share listed companies showed that 164 listed companies had negative growth rate, however, the total compensation for executives from 92 out 164 were increased, which accounting for 56.1% among the 164 listed companies. The questions are what directions were the tendencies for levels and structures executives' compensation in Chinese listed companies in recent years? And what are their patterns? Based on descriptive analysis, the chapter studies the data from listed companies in China as subjects, conducts quantitative analysis to study the determinant factors of executives' compensations and the relationship between compensation incentives, executives' and the companies' performance and examines the research hypothesis.

4.1 Descriptive Analysis on Executive Compensation in Listed Companies

Deloitte Executive Compensation Research Center has conducted surveys on executive compensation in A-share Companies for six consecutive years and produced systematic research reports. The descriptive analysis in the chapter analyzed and summarized the Deloitte reports and annual reports of listed companies.

The data was from A-share listed companies as of December 31, 2013, of which effective samples are 2509 listed companies, which had disclosed their 2013 annual reports in July 2014. The amount of executive compensations was their income before taxes.

4.1.1 Analysis on Total Labor Costs in Listed Companies

Total labor cost to operation revenue indicated the ratio total labor cost took in operation revenue. In recent three years, this number increased from 6.9% to 7.7%, showing that the pressure from labor costs for listed companies was increasing. This number varied among different industries: the financial and insurance industry was the highest with 14.8%, transportation and storage industry the second highest with 13.2%, the lowest three were evacuation, real estate, distribution and retail commerce, which were 4.6%, 4.1% and 3.1% respectively.

The input-output analysis on total labor cost was evaluated by cost-profitability indicator (net profit/total labor cost), showing that the amount of profit made by every 1 Yuan. In 2013, the average net profit was 1.19 Yuan per person with 1 Yuan input, showing a slight increase compared to 2012. Real estate had the highest figure in this regard, which was 3.25, whilst the lowest number came from agriculture, forestry, animal husbandry and fisheries, 0.24. The highest industry was 14 times of the lowest, showing a significant difference between industries.

4.1.2 Analysis on Executives Compensation Level on the Market

As a general trend in 2013, the average highest compensations for executives in listed
companies increased, from 722,000 Yuan in 2011 to 810,500 Yuan in 2013, with annual growth rate of 6.1%. Across the market, among 13 industries, except for evacuation industry and electricity, gas and water production and supplier industry, decreased by 18.63% and 0.23% respectively, other 11 industries increased by various rates. The obvious decrease in evacuation was mainly due to the high loss in coal companies. Financial industries, once again, had the highest number in the average highest compensations for executives (3.193 million Yuan), real estate seconded (1.3853), and third place was distribution and retail commerce (1.0682 million Yuan). Excluding financial and insurance industry, the differences among other industries were not significant.

4.1.3 Fairness Analysis on Executive Compensations in Listed Companies

The external fairness for executives’ compensations in listed companies was essentially the differences in compensations for executives across industries. The usual practice took the industry with the lowest executives’ compensations of the year to compare with others. The agriculture, forestry, animal husbandry and fisheries industry had always been the industry with lowest compensation for executives and the financial and insurance industry had always been with the highest, of which the number was 6.75 when compared to the lowest industry. Excluding the financial and insurance industry, the differences between other industries were not significant. Among 13 industries under analysis, excluding financial and insurance (6.75), real estate (2.93) and distribution and retail commerce (2.26), the figures for the rest were within 2. However, looking at the coefficient ranges (1.12-2.38) since 2011, the differences between industries showed a slight increase.

The internal fairness for executives’ compensations in listed companies was essentially the differences in compensations for executives in one listed companies. As a whole, the internal fairness coefficient in 2013 further decreased compared to in 2012, showing a downtrend in the differences between the executives in one companies. As a general phenomenon, the fairness differences in compensations among executives in listed companies were not significant. The industry with the highest internal fairness coefficient in 2013 was distribution and retail commerce (2.25) and the one with the lowest number was electricity, gas and water production and supplier industry.

4.1.4 Analysis on Compensations for Typical Positions in Listed Companies

In the data of executives’ compensations in 2509 listed companies in 2013, almost half of the companies, 44.8% to be specific, gave the highest compensations to the Chairmen of the Boards, which decreased by 5.5% compared to 2012. There were 859 listed companies that gave General Managers or CEOs the highest compensations, increasing 197 companies, accounting for 34.4%. Apart from Chairmen and General Managers, research reports classified deputy General Managers (CEOs and Vice-chair) into one category, Deputies, which accounted for 22.9% and leveled with 2012.

In 2013, average compensations for General Managers (CEOs) alone in listed companies reached 689,600 Yuan, increasing by 9.9% compared to 2012. Financial and Insurance Companies gave the highest average compensations for GMs, reaching 2,369,590 Yuan, Real
Estate was the second highest, 1,205,900 Yuan. The lowest industry remained to be agriculture, forestry, animal husbandry and fisheries (411,600 Yuan), however, due to the high increase rate, its differences with other industries was narrowing.

For the Heads of Finance (including similar positions such as Heads of Finance, Chief accounts and CFOs), the average compensations was 429,800 Yuan, with the highest growth rate of 13.4% compared to 2012. Financial and Insurance Industry still had the highest compensation for this position, 2.1 million Yuan, and a significant increase rate of 60.3% in 2013. Other industries also had increases of various rates in 2012.

4.1.5 Analysis on Compensations for Executives in Listed Companies in Different Areas

This study divided China into seven areas, namely Southern, Northern, East, West, Central, Southwest and Northwest China, and compares the executives’ compensations in these areas. As a general trend, the increase of executives’ compensations in all seven areas slowed down in 2013. Southwest China had the relative high growth rate, still only 7.7%, which was much lower than in 2012 (19.9%). Southern China remained the area with the highest compensation, reaching 1.024 million Yuan and Northwest China remained the lowest (583,000 Yuan). As for cities, Guangdong, Beijing and Shanghai were the top 3 areas with the highest compensations for executives. Guangdong had the highest number of 1.076 million Yuan, 34.39% higher that national average, and Beijing and Shanghai were in the second and third places, with 976,000 Yuan and 893,000 Yuan respectively.

4.1.6 Analysis on Compensations for Executives in Listed Companies of Different Controlling Shareholders

There were five different companies according to the ownerships of their controlling shareholders, including local state-owned enterprises, non-SASAC-managed stated-owned enterprises (State-owned Assets Supervision and Administration Commission), SASAC-managed stated-owned enterprises, private companies and foreign enterprises. Among them, the average compensations for executives in foreign-invested listed companies were the highest, reaching 1.3557 million Yuan in 2013 and state controlling listed companies were the second highest. The compensations for executives in non-SASAC-managed stated-owned enterprises and SASAC-managed state-owned enterprises were 1.111 million Yuan and 894,600 Yuan. The average highest compensations in local stated-owned listed companies increased steadily, reaching 804,100 Yuan. Although the private listed companies were the lowest, only 746,900 Yuan, they had the highest increase rate, narrowing the differences with the local state-owned enterprises.

4.1.7 Analysis on Stock Ownership Incentives for Executives in Listed Companies

China has started to regulate stock ownership incentives in A-share listed companies since 2006. As of the end of 2013, 604 listed companies published their stock ownership incentives plans. The development was particularly rapid in the recent three years since 2011. 546 listed companies published their stock ownership incentives plans, including 114 in 2011, 122 in 2012 and 156 in 2013. According to the statistics, there were 123 companies in 2013 adopted
single incentive instrument (announced that they adopted only stock option or restricted stock as incentive instrument). Looking at the number of staff received incentives to the total number of staff at the time of announcement published, over sixty percent of plans only motivated less than 10% of staff, indicating that stock ownership incentives plans mainly motivated key staff (executives). As for the incentive stock to the total amount of stocks in the company, only 8.13% plans had over 5% of stock as incentives and 49.59% had less than 2.5%, showing that the incentives strength was not significant.

4.2 Empirical Analysis and Examination of Determinant Factors for Executives Compensation in Listed Companies

4.2.1 Sample Selection and Data Source

The samples were from the data of A-share listed companies in Shanghai and Shenzhen stock market during 2011 to 2014. To ensure the validity of the sample, the study screened the sample data:

(1) As shown in the previous analysis, there were significant differences between the financial and insurance industries and the rest in executives’ compensations and in the services provided, therefore, the study excluded the data of financial and insurance to ensure the validity of data.

(2) The study excluded the T-shares\(^1\). The data of these companies was extreme and hard to obtain. Moreover, the information disclosed was lack of credibility. Therefore, to avoid extreme values, the study excluded ST and PT companies.

(3) The study excluded the data when the compensation for executives was 0. The study focus on the executives’ compensations, therefore, required executives’ compensation as its indicator.

(4) The study excluded data from companies that also issued B-and-H shares. Considering the significant differences between A-share, B-share and H-share market, to ensure the comparability of the data, the Company excluded B-shares and H-shares.

(5) The study also excluded the companies with incomplete and abnormal data.

(6) The study excluded companies listed for less than a year.

The data sources in this study were financial research database RESSET, Guotai Junan database CSMAR, annual reports of listed companies and announcements. The data was collected by EXCEL and analyzed by SPSS18.0.

\(^1\) ST (Special Treatment) company refers to companies with abnormal financial conditions or other conditions, which are mainly in two types: One, audited net profit of the listed companies were negative for two consecutive fiscal years. Two, audited BVPS of the most recent fiscal year was lower than per value of the shares. PT (Particular Transfer) companies refers to listed companies that listed through “special transfer”. Generally, PT companies may loss profits in 3 consecutive years. To take off the T label, listed companies will take earning management measures such as assets realization and nonrecurring items sell off to regulate profits, causing lower quality of accounting information and false data. Therefore, to ensure the reliability and validity of the regression analysis, T-shares were excluded from the study.
4.2.2 Variables Selection and Reasons

4.2.2.1 Dependent Variable

Executives’ Compensations (PAY): this paper chose total compensations of the top three executives as the indicator to measure executives’ compensation. Since this chapter employs multiple linear regression, to ensure the accuracy and validity of the fitting function of the linear regression model, data should match or approximate math normal distribution. As can be found in Figure 4-1, Q-Q plots are used for analyzing.

![Figure 4-1 original data on executive compensation and normal distribution Q-Q plot after changing logarithm](image)

Sample points in the left diagram do not present along the diagonal line across the first quadrant, indicating that original data of executive compensation is not normally distributed. After processing, all data formed a diagonal line in the first quadrant, showing that the processed data follow normal distribution. Thus, natural logarithm of the total compensations of top 3 executives are selected as one of the analysis variables. The same process was also carried out on data related to the size of company (SIZE). In China, researchers have used the total amount and average of top 3 executives’ compensation as data indicators when analyzing executive compensation (YANG Demign and ZHAO Can, 2012; TANG Song and SUN Zheng, 2014); other scholars adopted the total amount and mean value of all executives’ compensation as their data (XIA Ning and DONG Yan, 2014; ZHANG Weijing and etc. 2015). Both approaches employed natural logarithm processing for quantitative analysis with considerations on the validity and accuracy of multiple regression analysis.

4.2.2.2 Independent Variable

(1) Internal Determinant Factors

Company Size (SIZE): to use natural logarithm of total asset as an index.

Growth Potential (CG): to use the growth rate of operation revenues as an index.

Company Strategy (CS): to use entropy evaluation method, the equation was $CS = \sum_{i=1}^{n} P_i \ln(\frac{1}{P_i})$, 

Where $P_i$ represents the probability of strategy $i$. This equation measures the entropy of the set of strategies, which indicates the diversity and uniformity of the strategies employed by the company.

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was the income ratio of the industry the company involved in (select income ratio \( P_i \geq 10\% \)).

Executive’s shareholding rate (MSR): to choose ratio of the total shares held by all executives to the total shares of the company as an index.

Stock Ownership Concentration (TOP1): to choose the ratio of the shares held by the largest shareholder to the total shares of the company as an index.

Controlling Shareholder (CST): to use this indicator as dummy index, the actually controller of the company should be considered. When companies are state-owned enterprises, state run agencies and public institutions, the value was 1, otherwise 0. 1 means the listed company was a listed SOE and 0 means the listed company is a listed non-SOE.

Independent Directors’ Percentage: to choose the ratio of the number of independent directors to total number of directors as an index.

Remuneration Committee (RC): to use this indicator as dummy index, if the company had RC, the value was 1, otherwise was 0.

Concurrent Positions of Chairman and CEO (TPS): to use this indicator as dummy index, if the company had the same executive concurrent as Chairman and CEO, the value was 1, otherwise was 0.

Executive Change (EC): to use this indicator as dummy index, if the company had changes of executives, the value was 1, otherwise was 0.

(2) Personal Features-related Determinant Factors

Executive Age: to choose the average age of all executives as an index.

Executives’ Terms of Office (EO): to choose the average duration of terms of offices as an index.

Executives’ Education background: to use assignments to evaluate education, 1 for technical secondary school and below, 2 for bachelor’s diplomas, 3 for bachelor’s degrees, 4 for master’s degrees and dual bachelor’s degrees and 5 for doctor’s degrees. The study chose the average number of executive education as an index.

(3) External Determinant Factors

Locating Area (CA): ZHANG Junxi (2004)’s study classified Beijing, Tianjin, Shandong, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Guangdong and Hainan as developed provinces and cities in China. If any company under analysis in this study was located in one of these provinces and cities, the value was 1, otherwise was 0.

Company Industry (CI): according to analysis on executives’ compensation across the market, the top four industries were: financial and insurance industry, real estate, distribution and retail and social service. The sample excluded the financial and insurance industry and if the company in this study was in one of the three industries, the value was 1, otherwise was 0.
Considering the executives’ compensations were affected by corporate performance and the empirical analysis latter would discuss the relationship between the two in depth, therefore, the chapter added the company’s performances (ROA) as variable: to choose the return on total assets as an index.

4.2.2.3 Control Variable

To ensure the result’s accuracy and validity, the study chose asset-liability ratio as a control variable. It was often involved in quantitative analysis on executives’ compensations.

Asset-liability Ratio (AR): to choose ratio of the company’s total liability to the total capital as an index.

To be more straightforward, based on the above description on dependent variables, independent variables and control variables, Table 4-1 summaries names, codes, and calculation methods of all variables involved.

Table 4-1: Determinant Factors for Executives Compensation in Listed Companies: Variable and Calculation methods

<table>
<thead>
<tr>
<th>variable</th>
<th>Name</th>
<th>code</th>
<th>Calculation methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Executives’ Compensation</td>
<td>PAY</td>
<td>Natural logarithm of the Total Compensations of Top 3 Executives</td>
</tr>
<tr>
<td></td>
<td>Company Size</td>
<td>SIZE</td>
<td>Natural logarithm of the Total Asset</td>
</tr>
<tr>
<td></td>
<td>Growth Potential</td>
<td>CG</td>
<td>Growth Rate of Operation Revenue</td>
</tr>
<tr>
<td></td>
<td>Company Strategy</td>
<td>CS</td>
<td>Diversified Entropy Index Method</td>
</tr>
<tr>
<td></td>
<td>Executives’ shareholding rate</td>
<td>MSR</td>
<td>Ratio of Shares Held by Executives to Total Shares of the Company</td>
</tr>
<tr>
<td></td>
<td>Stock Ownership Concentration</td>
<td>TOP1</td>
<td>Ratio of Shares Held by the Largest Shareholder to Total Shares of the Company</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Controlling Shareholder</td>
<td>CST</td>
<td>State-owned company value 1, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>Percentage of Independent Directors</td>
<td>IDP</td>
<td>Ratio of the Number of Independent Directors to the Total Number of Directors</td>
</tr>
<tr>
<td></td>
<td>Remuneration Committee</td>
<td>RC</td>
<td>If the company has Remuneration Committee, the value is 1, otherwise is 0.</td>
</tr>
<tr>
<td></td>
<td>Concurrent of Chairman and CEO</td>
<td>TPS</td>
<td>If the company had the same executive concurrent as Chairman and CEO, the value was 1, otherwise was 0.</td>
</tr>
<tr>
<td></td>
<td>Executive Change</td>
<td>EC</td>
<td>If there are changes of executives, the value is 1, otherwise is 0.</td>
</tr>
<tr>
<td></td>
<td>Executives’ Age</td>
<td>EA</td>
<td>Average Age of All Executives</td>
</tr>
<tr>
<td></td>
<td>Executives’ Terms of Office</td>
<td>EO</td>
<td>Average Duration of Executives’ Terms of Office</td>
</tr>
</tbody>
</table>
Executive background
---
**EE** The Average Education of All Executives

Locating Area
---
**CA** If the company locates in one of the 11 developed provinces or cities, the value is 1, otherwise is 0

Company Industry
---
**CI** If the company is in real estate, retail, and social service sectors the value is 1, otherwise is 0

Corporate Performance
---
**ROA** Total Return on Asset

Control Variable
---
**AR** Ratio of Total Liability to Total Asset

### 4.2.3 Model Construction

The previous theoretical analysis studied the effects various determinant factors had on executives' compensations. The section constructed a multiple regression model to exam the correlations between variables:

\[
PAY = \alpha + \beta_1 SIZE + \beta_2 CG + \beta_3 CS + \beta_4 MSR + \beta_5 TOP + \beta_6 CST + \beta_7 IDP + \beta_8 RC + \beta_9 TPS + \beta_{10} EC + \beta_{11} EA + \beta_{12} EO + \beta_{13} EE + \beta_{14} CA + \beta_{15} CI + \beta_{16} AR + \epsilon
\]

where \(\alpha\) is intercept term, \(\beta_i (i = 1, 2, 3 \cdots)\) are regression coefficients for each determinant factors and \(\epsilon\) is error term.

### 4.2.4 Quantitative Analysis and Results

#### 4.2.4.1 Descriptive Analysis on Sample

As the requirements previously stated and the completion of data, the study selected 2682 listed company samples during 2011 to 2014, including 502 from 2011, 653 from 2012, 724 from 2013 and 803 from 2014. To ensure the consistency of data, indices of the same category were extracted from the same database. PAY, SIZE, CG, MSR, TOP1, CST, AR and IDP were from RESSET database and ROA, RC, CS, TPS, EC, EA, EO, EE, CA and CI were from CSMAR database. The results are presented in Table 4-2.

Table 4-2: Descriptive Statistics of Determinant Factors for Executives Compensation in Listed Companies

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Mean</th>
<th>STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAY</td>
<td>2682</td>
<td>10.54</td>
<td>17.17</td>
<td>14.1211</td>
<td>.67601</td>
</tr>
<tr>
<td>SIZE</td>
<td>2682</td>
<td>15.58</td>
<td>27.39</td>
<td>22.0163</td>
<td>1.09722</td>
</tr>
<tr>
<td>CG</td>
<td>2682</td>
<td>-.91</td>
<td>52.27</td>
<td>.1731</td>
<td>1.08586</td>
</tr>
<tr>
<td>CS</td>
<td>2682</td>
<td>.00</td>
<td>1.67</td>
<td>.2126</td>
<td>.32484</td>
</tr>
<tr>
<td>MSR</td>
<td>2682</td>
<td>.00</td>
<td>.89</td>
<td>.1400</td>
<td>.20327</td>
</tr>
<tr>
<td>TOP1</td>
<td>2682</td>
<td>.00</td>
<td>.82</td>
<td>.3415</td>
<td>.14739</td>
</tr>
<tr>
<td>CST</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.35</td>
<td>.477</td>
</tr>
<tr>
<td></td>
<td>2682</td>
<td>10.00</td>
<td>75.00</td>
<td>37.3036</td>
<td>9.04939</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
<td>-------</td>
<td>-------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>IDP</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.38</td>
<td>.486</td>
</tr>
<tr>
<td>RC</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.24</td>
<td>.427</td>
</tr>
<tr>
<td>TPS</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.15</td>
<td>.358</td>
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<tr>
<td>EC</td>
<td>2682</td>
<td>29.60</td>
<td>58.53</td>
<td>48.7034</td>
<td>2.91058</td>
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<tr>
<td>EA</td>
<td>2682</td>
<td>.01</td>
<td>9.01</td>
<td>3.5772</td>
<td>1.41885</td>
</tr>
<tr>
<td>EE</td>
<td>2682</td>
<td>2.00</td>
<td>5.00</td>
<td>3.4040</td>
<td>.45257</td>
</tr>
<tr>
<td>CA</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.69</td>
<td>.464</td>
</tr>
<tr>
<td>CI</td>
<td>2682</td>
<td>0</td>
<td>1</td>
<td>.15</td>
<td>.355</td>
</tr>
<tr>
<td>AR</td>
<td>2682</td>
<td>.01</td>
<td>1.56</td>
<td>.4355</td>
<td>.21155</td>
</tr>
<tr>
<td>ROA</td>
<td>2682</td>
<td>-.40</td>
<td>.52</td>
<td>.0478</td>
<td>.05527</td>
</tr>
</tbody>
</table>

There were several features of the samples revealed in descriptives:

(1) The differences on executives’ compensations between companies were insignificant. The highest one was 1.63 times of the lowest one (after logarithms were taken). But the gap between real compensation level was 755 times.

(2) In general, the growth rates of the sample companies were admirable; however, the differences between companies were relatively large. Among samples, the average growth rate was around 17%, however, there were companies had 91% loss.

(3) Only 35% samples are listed state-owned companies, 40% had remuneration committee, 24% had the same executive concurrent as chairman and CEO, 15% had changes of executives, 69% was located in coastal developed areas and 15% was from real estate, distribution and retail and social service.

(4) In terms of human capital features, the average age of sample executives was around 48, among which the youngest sample was 30 and the oldest 58. The average duration of terms of office was 3.5 years, among which the longest term of office was 9 year. The average education of sample executives was above bachelor’s degree.

4.2.4.2 Multiple Regression Analysis on Full Sample

Before conducting multiple regression analysis, the study needed to conduct a correlation analysis to exam the relationship between variables and see if they have multicollinearity. The result (did not elaborated in this paper) showed that the correlation coefficients between indices were all below 0.8. Both the tolerance measured by multicollinearity and VIF showed that indices in the regression models did not have multicollinearity, however, the correlations between variables needed to be analyzed and examined by the regression model. Before conducting OLS regression, regression residuals were tested to check whether they are in normal distribution. As can be seen from the following Figure, regression parameters are in normal distribution.
The study chose stepwise multiple regression analysis and set the approaching probability of F value as 0.1. See Table 4-3.

Table 4-3: Variables used in stepwise multiple regression analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-squared</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>Adjusted statistic</th>
<th>Adjusted statistic (adj)</th>
<th>F(adj)</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F (adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.169&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.029</td>
<td>.028</td>
<td>.66642</td>
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<td>78.665</td>
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<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.188&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.035</td>
<td>.035</td>
<td>.66424</td>
<td>.007</td>
<td>18.601</td>
<td>1</td>
<td>2677</td>
<td></td>
<td>.000</td>
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<tr>
<td>3</td>
<td>.200&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.040</td>
<td>.039</td>
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<td>13.134</td>
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<td>.000</td>
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<td>4</td>
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<td>.043</td>
<td>.042</td>
<td>.66183</td>
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<td>2675</td>
<td></td>
<td>.004</td>
</tr>
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<td>5</td>
<td>.214&lt;sup&gt;e&lt;/sup&gt;</td>
<td>.046</td>
<td>.044</td>
<td>.66103</td>
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<td>6</td>
<td>.220&lt;sup&gt;f&lt;/sup&gt;</td>
<td>.048</td>
<td>.046</td>
<td>.66022</td>
<td>.003</td>
<td>7.489</td>
<td>1</td>
<td>2673</td>
<td></td>
<td>.006</td>
</tr>
<tr>
<td>7</td>
<td>.224&lt;sup&gt;g&lt;/sup&gt;</td>
<td>.050</td>
<td>.048</td>
<td>.65966</td>
<td>.002</td>
<td>5.616</td>
<td>1</td>
<td>2672</td>
<td></td>
<td>.018</td>
</tr>
<tr>
<td>8</td>
<td>.229&lt;sup&gt;h&lt;/sup&gt;</td>
<td>.052</td>
<td>.049</td>
<td>.65910</td>
<td>.002</td>
<td>5.511</td>
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<td>2671</td>
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<td>.019</td>
</tr>
<tr>
<td>9</td>
<td>.232&lt;sup&gt;i&lt;/sup&gt;</td>
<td>.054</td>
<td>.051</td>
<td>.65869</td>
<td>.002</td>
<td>4.283</td>
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<td>.039</td>
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<td>.055</td>
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<td>.65829</td>
<td>.002</td>
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<td>.038</td>
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<td>.052</td>
<td>.65805</td>
<td>.001</td>
<td>2.874</td>
<td>1</td>
<td>2668</td>
<td></td>
<td>.090</td>
</tr>
</tbody>
</table>

a. Predictive Variable: (Constant), SIZE.
b. Predictive Variable: (Constant), SIZE, ROA.
c. Predictive Variable: (Constant), SIZE, ROA, CST.
d. Predictive Variable: (Constant), SIZE, ROA, CST, RC.
e. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1.
f. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA.
g. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA, AR.

h. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA, AR, CI.

i. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA, AR, CI, TPS.

j. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA, AR, CI, TPS, EO.

k. Predictive Variable: (Constant), SIZE, ROA, CST, RC, TOP1, CA, AR, CI, TPS, EO, CG.

As can be seen in Table 4-3, 11 variables entered the regression function. Beside CG, the other 10 variables entered the function when the entry criteria F value was 0.05, they are: Company size (SIZE), Company performance (ROA), Controlling shareholder (CST), Remuneration Committee (RC), Stock Ownership Concentration (TOP1), locating area (CA), Asset-liability Ratio (AR), Company industry (CI), Concurrent of Chairman and CEO (TPS) and Executives’ Terms of Office (EO). Only when F reach to 0.1, Growth potential (CG) may enter the function.

To have a more straightforward observation on the correlations between each of the independent variables and the dependent variable, the study then put all 11 variables in one multiple regression model and conducted a quantitative analysis. The variance analysis results (Table 4-4) showed that the F value was 16.526 and the P value was less than 0.01, meaning that the model, in general, was significant.

Table 4-4: Variance Analysis on the significance of variables that entered the function

<table>
<thead>
<tr>
<th>Model</th>
<th>Quadratic Sum</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>68.948</td>
<td>11</td>
<td>6.268</td>
<td>14.475</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>1155.341</td>
<td>2668</td>
<td>.433</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1224.289</td>
<td>2679</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictive Variable: (Constant), ROA, RC, CI, CG, EO, CA, TPS, TOP1, SIZE, CST, AR.
b. Dependent Variable: PAY

Therefore, the study could adopt multiple regression analysis to process the data and results were presented in Table 4-5. The results showed that the tolerance and VIF were in reasonable ranges; therefore, there was no multicollinearity. The t value and p value showed that SIZE, ROA, CA, TPS and RC were significant at 1% significance level, TOP at 5%, CG, EO and CI at 10%. The paper regarded variables that under 10% significance level as significant.

Table 4-5: Results of multiple regression analysis for variables in the function

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-standard Coefficient</th>
<th>Standard Coefficient</th>
<th>t</th>
<th>Sig.</th>
<th>Multicollinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard Error</td>
<td>Trial</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>10.999</td>
<td>.304</td>
<td>36.171</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>.142</td>
<td>.015</td>
<td>.230</td>
<td>9.358</td>
<td>.000</td>
</tr>
<tr>
<td>CG</td>
<td>-.020</td>
<td>.012</td>
<td>-.032</td>
<td>-1.695</td>
<td>.090</td>
</tr>
</tbody>
</table>
As of internal determinant factors, Company Size (SIZE) showed significant positive correlation with executives’ compensations, with the regression coefficient of 0.23; Growth Potential (CG) showed significant negative regression coefficient with executives’ compensations, which was -0.032; Stock Ownership Concentration (TOP1) showed significant negative regression coefficient with executives’ compensation, which was -0.062; the type of controlling shareholders (CST) has a significant negative regression coefficient with executive compensation, which was -0.048; Remuneration Committee (RC) showed significant positive regression coefficient with executives’ compensation, which was 0.058; Concurrent Positions of Chairman and CEO (TPS) showed significant positive regression coefficient with executives’ compensation, which was 0.042; and Company Performance (ROA) showed significant positive regression coefficient with executives’ compensations, which was 0.063.

As of personal-related determinant factors, only executives’ Terms of Office (EO) finally entered the model. Executives’ Terms of Office (EO) showed significant positive correlation with executives’ compensation, regression coefficient was 0.038.

As for external determinant factors, Company Area (CA) showed significant positive correlation with executives’ compensation, regression coefficient was 0.045; Company Industry (CI) showed significant positive regression coefficient with executives’ compensation, which was 0.046.

(2) Direct Entry of Multiple Regression Analysis

The analysis above showed the significant variables’ effect on executives’ compensation, however, whether other variables had effects on executives’ compensations was unknown. To answer this question, the section put all variable into the multiple regression models. As had been down in the previous sections, this section conducted a variance analysis first.

Table 4-6: Significance analysis on all variables that direct entered multiple regression

<table>
<thead>
<tr>
<th>Model</th>
<th>Quadratic Sum</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP1</td>
<td>-0.285</td>
<td>0.090</td>
<td>0.062</td>
<td>3.152</td>
<td>0.002</td>
</tr>
<tr>
<td>CST</td>
<td>-0.068</td>
<td>0.029</td>
<td>0.048</td>
<td>2.306</td>
<td>0.021</td>
</tr>
<tr>
<td>RC</td>
<td>0.080</td>
<td>0.026</td>
<td>0.058</td>
<td>3.054</td>
<td>0.002</td>
</tr>
<tr>
<td>TPS</td>
<td>0.067</td>
<td>0.031</td>
<td>0.042</td>
<td>2.146</td>
<td>0.032</td>
</tr>
<tr>
<td>EO</td>
<td>0.018</td>
<td>0.009</td>
<td>0.038</td>
<td>2.001</td>
<td>0.046</td>
</tr>
<tr>
<td>CA</td>
<td>0.066</td>
<td>0.028</td>
<td>0.045</td>
<td>2.362</td>
<td>0.018</td>
</tr>
<tr>
<td>CI</td>
<td>0.087</td>
<td>0.038</td>
<td>0.046</td>
<td>2.325</td>
<td>0.020</td>
</tr>
<tr>
<td>AR</td>
<td>-0.193</td>
<td>0.084</td>
<td>0.060</td>
<td>-2.289</td>
<td>0.022</td>
</tr>
<tr>
<td>ROA</td>
<td>0.774</td>
<td>0.260</td>
<td>0.063</td>
<td>2.972</td>
<td>0.003</td>
</tr>
</tbody>
</table>

a. Dependent Variable: PAY
The variation analysis on total regression model of all indices still showed that (Table 4-6) the model, in general, was significant. Therefore, the section conducted multiple regression analysis and the results were presented in Table 4-7. R2 of direct multiple regression for all variables is 0.057, and the adjusted R2 is 0.051.

Table 4-7 results of multiple regression analysis on variables that direct entered multiple regression model

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-standard Coefficient B</th>
<th>Standard Error</th>
<th>Standard Coefficient Trial</th>
<th>t</th>
<th>Sig.</th>
<th>Multicollinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>10.996</td>
<td>.368</td>
<td></td>
<td>29.892</td>
<td>000</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>.142</td>
<td>.015</td>
<td>.231</td>
<td>9.214</td>
<td>000</td>
<td>.563</td>
</tr>
<tr>
<td>CG</td>
<td>-.020</td>
<td>.012</td>
<td>-.033</td>
<td>-1.717</td>
<td>086</td>
<td>.972</td>
</tr>
<tr>
<td>TOP1</td>
<td>-.278</td>
<td>.092</td>
<td>-.061</td>
<td>-3.038</td>
<td>002</td>
<td>.889</td>
</tr>
<tr>
<td>CST</td>
<td>-.056</td>
<td>.033</td>
<td>-.039</td>
<td>-1.707</td>
<td>088</td>
<td>.671</td>
</tr>
<tr>
<td>RC</td>
<td>.083</td>
<td>.027</td>
<td>.060</td>
<td>3.115</td>
<td>002</td>
<td>.961</td>
</tr>
<tr>
<td>TPS</td>
<td>.061</td>
<td>.032</td>
<td>.039</td>
<td>1.918</td>
<td>055</td>
<td>.876</td>
</tr>
<tr>
<td>EO</td>
<td>.020</td>
<td>.009</td>
<td>.042</td>
<td>2.126</td>
<td>034</td>
<td>.894</td>
</tr>
<tr>
<td>CA</td>
<td>.063</td>
<td>.028</td>
<td>.043</td>
<td>2.241</td>
<td>025</td>
<td>.944</td>
</tr>
<tr>
<td>CI</td>
<td>.090</td>
<td>.038</td>
<td>.047</td>
<td>2.371</td>
<td>018</td>
<td>.898</td>
</tr>
<tr>
<td>AR</td>
<td>-.182</td>
<td>.085</td>
<td>-.057</td>
<td>-2.142</td>
<td>032</td>
<td>.500</td>
</tr>
<tr>
<td>ROA</td>
<td>.765</td>
<td>.262</td>
<td>.063</td>
<td>2.922</td>
<td>004</td>
<td>.773</td>
</tr>
<tr>
<td>CS</td>
<td>-.021</td>
<td>.040</td>
<td>-.010</td>
<td>-1.516</td>
<td>060</td>
<td>.964</td>
</tr>
<tr>
<td>MSR</td>
<td>.098</td>
<td>.077</td>
<td>.030</td>
<td>1.272</td>
<td>203</td>
<td>.654</td>
</tr>
<tr>
<td>IDP</td>
<td>-.001</td>
<td>.001</td>
<td>-.017</td>
<td>-1.845</td>
<td>398</td>
<td>.916</td>
</tr>
<tr>
<td>EC</td>
<td>.006</td>
<td>.037</td>
<td>.003</td>
<td>.153</td>
<td>879</td>
<td>.949</td>
</tr>
<tr>
<td>EA</td>
<td>-.001</td>
<td>.005</td>
<td>-.005</td>
<td>-.252</td>
<td>801</td>
<td>.807</td>
</tr>
<tr>
<td>EE</td>
<td>.021</td>
<td>.030</td>
<td>.014</td>
<td>7.000</td>
<td>484</td>
<td>.890</td>
</tr>
</tbody>
</table>

a. Dependent Variable: PAY
The results showed that apart from the 11 significant variables, the other 6 variables are not correlated to executive compensation. These 6 variables are Company Strategy (CS), shareholding ratio of executive (MSR), Independent Directors’ Percentage (IDP), Executives’ Age (EA), Executives’ Education (EE) and Change of Executives (EC).

4.2.4.3 Multiple Regression Analysis on SOE and Non-SOE listed Companies

The above analysis has clearly identified determinant factors of executive compensation in listed companies. To understand whether these factors have significant influence on both State-owned and non-state-owned listed companies, multiple regression analysis should be adopted. Type of controlling shareholder (CST) is the indicator that distinguish SOE and non-SOE. Stepwise regression method was adopted here again and the entry F value was set at 0.1. After conducting regression analysis on variables entered the function, results are shown in Table 4-8.

Many variables have significant correlation with executive compensation when all samples were considerate. However, when categorize all samples into state-owned listed company and non-state owned listed company, significance of variables changed. Basically variables entered full sample regression function also entered regression function of non-SOE listed companies, except only 3 variables entered regression function of listed SOE, namely company size (SIZE), Stock Ownership Concentration and company industry (CI). Other variables do not have significant influence on executive compensation of state-owned listed companies. Backed by their size and stability, SOEs can offer generous executive compensation, making other variables limited influence on compensation. But for non-SOEs of diversified forms, company size may have the biggest impact on their executive compensation, but other variables still affect executive compensation in different degrees.

Table 4-8: Regression results on Determinant Factors for executive compensation in SOEs and non-SOEs

<table>
<thead>
<tr>
<th>Model</th>
<th>Samples of SOEs</th>
<th></th>
<th>Samples of non-SOEs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(constant)</td>
<td>23.278</td>
<td>.000</td>
<td>31.402</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.320</td>
<td>8.584</td>
<td>.000</td>
<td>.158</td>
</tr>
<tr>
<td>CG</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.047</td>
</tr>
<tr>
<td>TOP1</td>
<td>-.063</td>
<td>-1.880</td>
<td>.060</td>
<td>-.060</td>
</tr>
<tr>
<td>RC</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.068</td>
</tr>
<tr>
<td>TPS</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.054</td>
</tr>
<tr>
<td>EO</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.043</td>
</tr>
<tr>
<td>CA</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.047</td>
</tr>
<tr>
<td>CI</td>
<td>.061</td>
<td>1.934</td>
<td>.053</td>
<td>.046</td>
</tr>
<tr>
<td>ROA</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.073</td>
</tr>
<tr>
<td>AR</td>
<td>-.153</td>
<td>-4.279</td>
<td>.000</td>
<td>—</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.077</td>
<td></td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>R-squared  (adj)</td>
<td>0.073</td>
<td></td>
<td></td>
<td>—</td>
</tr>
</tbody>
</table>
4.2.4.4 Regression Analysis on relation between company size and executive compensation in listed companies

Company size (SIZE) is an important factor to explain dependent variables for both full sample analysis and analysis on SOE and non-SOE companies. In the full sample analysis, the explanation degree of company size was 29%. When analyzing with non-SOE listed companies, the explanation degree of company size was 23%, and 53% for listed SOE companies. This section focuses on analyzing relation between company size and executive compensation.

(1) Influence in different regions. As ZHANG Junxi proposed in his study, 11 provinces and municipals including Beijing, Tianjin, Shandong, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Guangdong, Hainan were set as developed regions. Companies based in these areas take the value of 1, otherwise 0. Both stepwise regression method and direct regression were employed to analyze degree of impact of company size in various regions (Table 4-9). Depends on economic level of various regions, Company size has different degree of influence on executive compensation. Different from previous analysis result, executive compensations of listed companies that based in developed regions were positively impact by education background. In terms of degree of influence of company size, for listed companies based in less developed regions, company size has greater influence on the compensation of executives.

Table 4-9: results of multiple regression for regional differences

<table>
<thead>
<tr>
<th>Model</th>
<th>Developed Regions</th>
<th>Less Developed Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Coefficient</td>
<td>t</td>
</tr>
<tr>
<td>(constant)</td>
<td>35.143</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.181</td>
<td>7.201</td>
</tr>
<tr>
<td>CG</td>
<td>-.046</td>
<td>-2.008</td>
</tr>
<tr>
<td>TOP1</td>
<td>-.061</td>
<td>-2.541</td>
</tr>
<tr>
<td>CST</td>
<td>-.061</td>
<td>-2.475</td>
</tr>
<tr>
<td>RC</td>
<td>.069</td>
<td>2.989</td>
</tr>
<tr>
<td>EE</td>
<td>.047</td>
<td>1.930</td>
</tr>
<tr>
<td>CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>.083</td>
<td>3.599</td>
</tr>
<tr>
<td>AR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>.044</td>
<td></td>
</tr>
<tr>
<td>R-squared (adj)</td>
<td>.041</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>12.073</td>
<td>15.839</td>
</tr>
</tbody>
</table>

a. dependent variable: PAY

(2) Influence on different industries. According to the analysis on relation between executive compensation and industries conducted in previous section, Top 4 industries with the highest
payments are finance and insurance, real estate, wholesale and retail and social service. After excluding financial and insurance sector from the sample, companies of the other three industries take value as 1, otherwise 0. Stepwise regression method was adopted combined with direct regression to analyze impact of industry on executive compensation (Table 4-10). That is to say, companies of different industries, their executive compensation may be impacted by different factors.

Table 4-10: results of multiple regression for industrial difference

<table>
<thead>
<tr>
<th>Model</th>
<th>Industries with high compensation</th>
<th>Other industries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Coefficient</td>
<td>t</td>
</tr>
<tr>
<td>(constant)</td>
<td>18.556</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>.305</td>
<td>6.169</td>
</tr>
<tr>
<td>TPS</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>TOP1</td>
<td>-.143</td>
<td>-2.902</td>
</tr>
<tr>
<td>CST</td>
<td>-.087</td>
<td>-1.820</td>
</tr>
<tr>
<td>RC</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>EO</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CA</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>ROA</td>
<td>.083</td>
<td>1.710</td>
</tr>
<tr>
<td>AR</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>R-squared</td>
<td>.101</td>
<td></td>
</tr>
<tr>
<td>R-squared (adj)</td>
<td>.092</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>11.014</td>
<td>14.816</td>
</tr>
</tbody>
</table>

a. dependent variable: PAY

4.2.5 Analysis of Conclusion and Verification of Hypothesis

Through rounds of model analysis on data from listed companies, this thesis found that 11 of 16 selected variables entered the model and have significant correlation with the dependent variable. Type of controlling shareholder is one the key factors that impact executive compensation of listed companies. Thus, analysis on both state-owned enterprises and non-state-owned enterprises was conducted with full sample. Results showed that only 3 variables including company size (SIZE), stock ownership concentration (TOP1) and company industry (CI) were significantly correlate to executive compensation of state-owned listed companies. This also indicated that with its great size and good stability, SOE can provide generous compensation for its executives. Other independent variables entered model of full sample have significant correlation with executive compensation in listed non-SOEs. In addition, company size (SIZE) the most influential variable of executive compensation. Regression analysis shown that for listed state-owned companies based in less developed regions and in high salary industries, company size not only can best explain executive compensation but also impact the compensation to the biggest degree.

Based on the quantitative analysis results of the regression models on 2682 samples and the previous hypothesis, conclusions on the relations between the determinant factors and
executives’ compensations and the verification results were presented in Table 4-11.

Table 4-11: Hypothesis and verification results on determinant factors for executive compensation

<table>
<thead>
<tr>
<th>No. of hypothesis</th>
<th>Null hypothesis</th>
<th>Hypothetic relationship</th>
<th>Analysis results</th>
<th>significance</th>
<th>Reject the null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Company Size and Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>***</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Growth Potential and Executives’ Compensations</td>
<td>Positive</td>
<td>Negative</td>
<td>*</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Diversified Company Strategy and Executives’ Compensations</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>Management Shareholding Ownership and Executives’ Compensations</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>Stock Ownership Concentration and Executives’ Compensations</td>
<td>Negative</td>
<td>Negative</td>
<td>**</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>controlling shareholder type and Executives’ Compensations</td>
<td>Negative</td>
<td>Negative</td>
<td>**</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>Independent Directors’ Percentage and Executives’ Compensations</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>Remuneration Committee and Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>***</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>Concurrent Positions and Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>**</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>Change of Executives and Executives’ Compensations</td>
<td>Negative</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>11</td>
<td>Executives’ Age and Executives’ Compensations</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>Executives' Terms of Office and Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>**</td>
<td>No</td>
</tr>
<tr>
<td>13</td>
<td>Executives’ Education and Executives’ Compensations</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>14</td>
<td>Regional Economic Development Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>**</td>
<td>No</td>
</tr>
<tr>
<td>15</td>
<td>Industrial Compensations and Executives’ Compensations</td>
<td>Positive</td>
<td>Positive</td>
<td>**</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: “—” means the results do not show significant correlations with the two. ***, **, * means significance shows at the level of 1%, 5%, 10%.

From the results, we can see that:
1) Diversified Company Strategy, Management shareholding ownership, Independent Directors’ Percentage, Change of Executives, Executives’ Age and Executives’ Education did not show significant correlation with Executives’ Compensations. However, for listed companies based in more developed regions, educational background of executives have significant positive correlation with their compensation.

2) Company Size, Type of Controlling Shareholders, Remuneration Committee, Concurrent Positions of Chairman and CEO, Executives’ Terms of Office, Economic Development of the Locating Area and Industrial Compensation’s correlations with Executives’ Compensation’s correlations were proven. Larger Company had greater payment capacity and therefore had high compensations for executives; when controlling shareholder is the state, in other words, the company is state-owned, executive compensation tends to be relatively low; higher Executives’ shareholding rate meant higher Executives’ Compensations; higher Stock Ownership Percentage gave less power to executives and therefore gave lower compensations for executives; if a company had Remuneration Committee, the compensations for executives would be more reasonable and be higher; concurrent positions of Chairman and CEO gave more power to the executive and therefore the compensations were higher; the longer of terms of offices were, the higher compensation for executives would be; if the company was in a more developed area or in an industry where higher compensations were given to executives, the compensations for executives were higher.

3) The correlation between Growth Potential and Executives’ Compensation was different from the hypothesis. The original hypothesis assumed that if the company had better growth potential, it should pay more for executives. However, the results showed the opposite. Generally speaking, companies with promising growth potential are capable of affording higher compensations for their executives (BEKLEY, 1993). But in reality, executives who chose to work for such companies focus more on the future development of the enterprises. It is possible that companies with huge potential are not big corporations or fail to provide high payment for executives. Instead, these companies attack talents and stimulate executives with future development and vision. This can explain the negative correlation between company growth and executive compensation that shown in the research result.

4.3 Empirical Analysis and Examination on Executives Compensation and Performance in Listed Companies

4.3.1 Sample Selection and Data Source

The sample is also from the data of A-share listed companies in Shanghai and Shenzhen stock market during 2011 to 2014. To ensure the validity of the sample, the study screened the sample data:

1) There were significant differences between the financial and insurance industries and others in executives’ compensations and in the services provided, therefore, the study excluded the data of financial and insurance to ensure the validity of data.

2) The study excluded the T-shares. The data of these companies was extreme and hard to
obtain. Moreover, the information disclosed was lack of credibility. Therefore, to avoid extreme values, the study excluded ST and PT companies.

(3) The study excluded the data when the compensation for executives was 0. The study focus on the executives’ compensations, therefore, required executives’ compensation as its indicator.

(4) The study excluded data from companies that also issued B-and-H shares. Considering the significant differences between A-share, B-share and H-share market, to ensure the comparability of the data, the Company excluded B-shares and H-shares.

(5) The study also excluded the companies with incomplete and abnormal data.

(6) The study excluded companies listed for less than a year.

The data sources in this study were financial research database RESSET, Guotai Junan database CSMAR, annual reports of listed companies and announcements. The data was collected by EXCEL and analyzed by SPSS18.0.

4.3.2 Variables Selection and Reasons

4.3.2.1 Dependent Variable
Compensation (PAY): this paper chose total compensations of the top three executives as the indicator to measure executives’ compensation. To ensure normality of dependent variable, the study used natural logarithm as analyzing variables.

4.3.2.2 Independent Variables
Diversified Company Development Strategy (CS): to use entropy evaluation method to measure, the equation was \( CS = \sum_{i=1}^{n} P_i \ln \left( \frac{1}{P_i} \right) \), \( P_i \) is the income ratio of the \( i \) industry the company involved in (select income ratio \( P_i \geq 10\% \)).

Innovative Behavior: as the index was difficult to measure directly, the study set development expenses as the dummy index. If the company had development expenses, the value was 1, otherwise was 0.

Business Complication (BC): to use the number of industries the company involved in as a measurement (the chosen industry should contribute no less than 10% of the total income)

Risk Level (CL): to choose overall leverage coefficient as an index.

Growth Potential (GP): to use the growth rate of operation revenue as an index.

Business Growth Opportunity (BM): to choose the company’s book value as an index.

4.3.2.3 Control Variable
To make the results more accurate, the analysis chose Company size as a control variable.

Company Size (SIZE): to use natural logarithm of total asset as an index.

Company Performance (ROA): Return on asset was chose to measure the performance of
Table 4-12: Variable Indices and Calculation for the relation between executive compensation in listed companies and executives’ behaviors

<table>
<thead>
<tr>
<th>variable</th>
<th>Name</th>
<th>code</th>
<th>Calculation methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Executives’ Compensations</td>
<td>PAY</td>
<td>Logarithm of the total compensations of the top 3 executives</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Diversified strategies</td>
<td>CS</td>
<td>Entropy Evaluation Method</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Innovative Behavior</td>
<td>RD</td>
<td>If the company had development expenses, the value was 1, otherwise was 0.</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Business Complication</td>
<td>BS</td>
<td>The number of industries the company involved in</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Risk Level</td>
<td>CL</td>
<td>Overall Leverage coefficient</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Growth Potential</td>
<td>CG</td>
<td>Growth Rate of Operation Revenue</td>
</tr>
<tr>
<td>Independent Variable</td>
<td>Business Growth Opportunity</td>
<td>BM</td>
<td>Ratio of Book Value</td>
</tr>
<tr>
<td>Control Variable</td>
<td>Company Size</td>
<td>SIZE</td>
<td>Natural Logarithm of Total Asset</td>
</tr>
<tr>
<td>Control Variable</td>
<td>Company Performance</td>
<td>ROA</td>
<td>Return on asset</td>
</tr>
</tbody>
</table>

4.3.3 Model Construction

According to the theoretical analysis, the study constructed a model to study the correlations between executives’ compensations and performance. The section constructed a multiple regression model to exam the correlations between variables:

\[
PAY = \alpha + \beta_1 CS + \beta_2 RD + \beta_3 BS + \beta_4 CL + \beta_5 CG + \beta_6 BM + \beta_7 SIZE + \beta_8 ROA + \epsilon
\]

\(\alpha\) is intercept term, \(\beta_i (i = 1, 2, 3 \cdots)\) are regression coefficients for each determinant factors and \(\epsilon\) is error term.

4.3.4 Quantitative Analysis and Results

4.3.4.1 Descriptive Analysis of Sample

As the requirements previously stated and the completion of data, the study selected 1879 listed company samples during 2011 to 2014, including 502 from 2011, 653 from 2012, 724 from 2013 and 803 from 2014. To ensure the consistency of data, indicators of the same category were extracted from the same database. PAY, SIZE, and CG were from RESSET database and CS, RD, BS, CL and BM were from CSMAR database. The results are listed in Table 4-13.

Table 4-13: Descriptive Statistics for the relation between executive compensation in listed companies and executives’ behavior

<table>
<thead>
<tr>
<th>N</th>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Mean</th>
<th>STD</th>
</tr>
</thead>
</table>
4.3.4.2 Multiple Regression Analysis and Results

Before conducting multiple regression analysis, the study needed to conduct a correlation analysis to examine the relationship between variables and see if they have multicollinearity. The result (not elaborated) showed that the correlation coefficients between indices were all below 0.8. Both the tolerance measured by multicollinearity and VIF showed that indices in the regression models did not have multicollinearity; however, the correlations between variables needed to be analyzed and examined by the regression model.

The study chose stepwise regression analysis and set the approaching probability of F value as 0.1. Table 4-14 is a summary of models. There were 5 variables in the regression equations, including Company Size (SIZE), Company Performance (ROA), Innovative Behavior (RD), Company Growth (CG) and Growth Opportunity (BM).

Table 4-14: variables entered stepwise regression function

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-squared</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>R-squared (adj)</th>
<th>Adjusted statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F(adj)</td>
</tr>
<tr>
<td>1</td>
<td>.169a</td>
<td>.029</td>
<td>.028</td>
<td>66642</td>
<td>.029</td>
<td>78.665</td>
</tr>
<tr>
<td>2</td>
<td>.188b</td>
<td>.035</td>
<td>.035</td>
<td>66424</td>
<td>.007</td>
<td>18.601</td>
</tr>
<tr>
<td>3</td>
<td>.192c</td>
<td>.037</td>
<td>.036</td>
<td>66381</td>
<td>.002</td>
<td>4.489</td>
</tr>
<tr>
<td>4</td>
<td>.195d</td>
<td>.038</td>
<td>.037</td>
<td>66354</td>
<td>.001</td>
<td>3.221</td>
</tr>
<tr>
<td>5</td>
<td>.198e</td>
<td>.039</td>
<td>.037</td>
<td>66326</td>
<td>.001</td>
<td>3.204</td>
</tr>
</tbody>
</table>

a. Predictive Variable: (Constant), SIZE.
b. Predictive Variable: (Constant), SIZE, ROA.
c. Predictive Variable: (Constant), SIZE, ROA, RD.
d. Predictive Variable: (Constant), SIZE, ROA, RD, CG.
e. Predictive Variable: (Constant), SIZE, ROA, RD, CG, BM.

The results showed that the multiple regression coefficients of the 5 variables that finally entered the model was 0.198 and the explanation degree of dependent variables was 37%, meaning that the model should predict the 37% variability of the executives' compensations. According to the changes on $R^2$, Company size (SIZE) and performance (ROA) could explain 2.9% and 0.7% of changes on the dependent variable. Innovative Behavior (RD), Company...
Growth (CG) and Growth Opportunity (BM) could explain 0.2%, 0.1% and 0.1% of the dependent variable respectively.

To have a more straightforward observation on the correlations between variables and the dependent variable, the study then put all 5 independent variables in the function. Also, considering various types of controlling shareholders, SOE and non-SOE was analyzed respectively. Regression model is formed and shown in Table 4-15.

In Model 1, the variance analysis results showed that the F value was 18.243, and the P value was less than 0.01, meaning that the model, in general, was significant. The results showed that the tolerant and VIF were in reasonable ranges, therefore, there was no multicollinearity. The t value and p value showed that RD, CG, BM were significant at 10% significance level. Results of Model 2 indicated that only BM is correlated to executive compensation; while Model 3 showed that BM and CL were significant under 1% significant level, CG was significant under 5% significant level.

Table 4-15: results of multiple regression on relation between executive compensation of listed companies and executives’ behaviors

<table>
<thead>
<tr>
<th></th>
<th>Model 1: full sample</th>
<th>Model 2: listed SOEs</th>
<th>Model 3: listed non-SOE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized Coefficient</td>
<td>t</td>
<td>sig.</td>
</tr>
<tr>
<td>(constant)</td>
<td>41.226</td>
<td>.000</td>
<td>22.237</td>
</tr>
<tr>
<td>CS</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>RD</td>
<td>.035</td>
<td>1.802</td>
<td>.072</td>
</tr>
<tr>
<td>BS</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CL</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CG</td>
<td>-.036</td>
<td>-1.887</td>
<td>.059</td>
</tr>
<tr>
<td>BM</td>
<td>-.043</td>
<td>-1.790</td>
<td>.074</td>
</tr>
<tr>
<td>SIZE</td>
<td>.190</td>
<td>8.481</td>
<td>.000</td>
</tr>
<tr>
<td>ROA</td>
<td>.070</td>
<td>3.429</td>
<td>.001</td>
</tr>
<tr>
<td>R-squared</td>
<td>.039</td>
<td>.058</td>
<td></td>
</tr>
<tr>
<td>R-squared (adj)</td>
<td>.037</td>
<td>.056</td>
<td>.033</td>
</tr>
<tr>
<td>F</td>
<td>18.243</td>
<td>28.664</td>
<td>15.679</td>
</tr>
</tbody>
</table>

From the above results, we can find that Company growth opportunity (BM) was the only variable that has significant correlation in all three models. Company growth (CG) was significant in both model 1 and model 3. Results also shown that company grow and Company Growth Opportunity (BM) were negatively correlated to executive compensation.
Moreover, with full sample, Innovative Behavior (RD) showed significant positive correlation with executives’ compensation, regression coefficient was 0.035; with samples of non-SOEs, Risk Level (CL) showed significant negative correlation with executives’ compensation and the regression coefficient was -0.056.

4.3.5 Analysis of Conclusion and Verification of Hypothesis

Based on the quantitative analysis results of the regression models and the previous hypothesis, conclusions on the relations between the determinant factors and executives’ compensations and the verification results were presented in Table 4-16. Hypothesis of this these were proposed based on full sample, so conclusion and analysis here also take a full sample perspective.

Table 4-16: Results of Hypothesis Verification on relation between executive compensation of listed companies and executive behaviors

<table>
<thead>
<tr>
<th>No. of hypothesis</th>
<th>Null hypothesis</th>
<th>Hypothetic relationship</th>
<th>Analysis results</th>
<th>significance</th>
<th>Reject the null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Executives’ Compensations and Diversified Company Development Strategy</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Executives’ Compensations and Innovative Behavior</td>
<td>Positive</td>
<td>Positive</td>
<td>Significant</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Executives’ Compensations and Business Complication</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>Executives’ Compensations and Risk Level</td>
<td>Positive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>Executives’ Compensations and Growth Potential</td>
<td>Positive</td>
<td>Negative</td>
<td>Significant</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Executives’ Compensations and Business Growth Opportunity</td>
<td>Positive</td>
<td>Negative</td>
<td>Significant</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: “—” means the results do not show significant correlations with the two. “Significant” means significant shows at the level of 10%.

The results showed that:

(1) Quantitative analysis results showed a large disparity with the hypothesis. Only the hypothetical positive correlation between the Innovative Behavior and executives’ compensation was proven by the model, meaning that executives’ compensation incentives can motivate executives to adopt innovative actions and thereby drive the rise of compensation.

(2) There was no correlation between executives’ compensations, Diversified Company Strategy and Business Complications. The addition of executives’ compensations was neither able to motivate executives to adopt diversified development strategies, nor encourage executives to expand the variety of businesses. So when companies adopt diversified strategies, executive compensation and bonus will not be influenced.
(3) Executive compensation is in significant positive correlation with company’s growth opportunities and growth potential. However, China’s growth may have exceeded the turning point in the growth curve, so the growth opportunity is overvalued. Normally, when executives have high future prospects for the company, they may reduce their demands on compensation. Considering the reality of overvalued growth opportunity, a compensation mechanism that developed based on this conclusion may cause insufficient incentives for executives.

(4) Although Risk Level showed significant correlations with executives’ compensations, the correlations were, in fact, contradicted with the hypothesis. The hypothesis proposed that with higher compensation, executives were more willing to take risks. However, the increase of compensation failed to encourage executives to choose risky strategies. In a company where the risk level was high or when an executive served in such company and the pay was relatively low, the addition of compensations was not able to encourage the executives to take more risks; the addition of compensations did not motivate executives to improve the growth potential or seek more growth opportunities for the company. This conclusion is in line with the Prospect theory, which also indicates that when facing gains, people normally take actions to avoid risks.

4.4 Empirical Analysis and Examination of Correlation between Executives Compensation and Company Performances

4.4.1 Sample Selection and Data Source

The samples were from the data of A-share listed companies in Shanghai and Shenzhen stock market during 2011 to 2013. To ensure the validity of the sample, the study screened the sample data:

(1) The study excluded the data of financial and insurance to ensure the validity of data.
(2) The study excluded the T-shares. The data of these companies was extreme and hard to obtain. Moreover, the information disclosed was lack of credibility. Therefore, to avoid extreme values, the study excluded ST and PT companies.
(3) The study excluded the data when the compensation for executives was 0.
(4) The study excluded data from companies that also issued B-and-H shares.
(5) The study also excluded the companies with incomplete and abnormal data.
(6) The study excluded companies listed for less than a year.

The data sources in this study were financial research database RESSET, Guotai Junan database CSMAR, annual reports of listed companies and announcements. The data was collected by EXCEL and analyzed by SPSS18.0.

4.4.2 Variables Selection and Reasons

4.4.2.1 Dependent variable

In the previous session, quantitative analysis on determinants of executive compensation in
listed company took company performance as one of the independent variables in the model. In this session, corporate performance will be seen as dependent variable. Here company performance (ROA) was measured by return on asset.

4.4.2.2 Independent variable

Executives’ Compensations (PAY): this paper chose total compensations of the top three executives as the indicator to measure executives’ compensation. To ensure normality of dependent variable, the study used natural logarithm as analyzing variables.

4.4.2.3 Moderating variables

Moderating variables were significant determinants from quantitative analysis according to their sequence in the regression model and the relevance. There are several variables, including company size (SIZE), type of controlling shareholder (CST), Remuneration Committee (RC), stock ownership concentration (TOP1), locating area (CA), duality of chairman and CEO (TPS), executive’s term of office (EO), growth potential (CG).

Company Size (SIZE): to use natural logarithm of total asset as an index.

Type of Controlling Shareholders (CST): used as dummy index, if the nature of controlling shareholders are SOEs, state-owned institutions and public institutions, the value is 1, otherwise 0. 1 means the company is a listed SOE, 0 means that this listed company is not a SOE.

Remuneration Committee (RC): to use this indicator as dummy index, if the company had RC, the value was 1, otherwise was 0.

Stock ownership concentration (TOP1): to choose the ratio of the shares held by the largest shareholder to the total shares of the company as an index.

Locating Area (CA): Junxi ZHANG (2004)’s study classified Beijing, Tianjin, Shandong, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Guangdong and Hainan as developed provinces and cities in China. If any company under analysis in this study was located in one of these provinces and cities, the value was 1, otherwise was 0.

Company Industry (CI): according to analysis on executives’ compensation across the market, the top four industries were: financial and insurance industry, real estate, distribution and retail and social service. The sample excluded the financial and insurance industry and if the company in this study was in one of the three industries, the value was 1, otherwise was 0.

Concurrent Positions of Chairman and CEO (TPS): to use this indicator as dummy index, if the company had the same executive concurrent as Chairman and CEO, the value was 1, otherwise was 0.

Executives’ Terms of Office (EO): to choose the average duration of terms of offices as an index.

Growth Potential (CG): to use the growth rate of operation revenues as an index.

Table 4-17: variables and calculation methods for relation between executive compensation in
listed companies and company performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Name of variables</th>
<th>code</th>
<th>calculation methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>Company performance</td>
<td>ROA</td>
<td>Return on asset</td>
</tr>
<tr>
<td>Independent variable</td>
<td>Executive compensation</td>
<td>PAY</td>
<td>Logarithm of the Total Compensations of Top 3 Executives</td>
</tr>
<tr>
<td></td>
<td>Company size</td>
<td>SIZE</td>
<td>Natural logarithm of the total asset</td>
</tr>
<tr>
<td></td>
<td>Type of controlling shareholder</td>
<td>CST</td>
<td>1 for SOE, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>Remuneration Committee</td>
<td>RC</td>
<td>1 for the existence of Chairman-CEO duality, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>Stock ownership concentration</td>
<td>TOP1</td>
<td>Ratio between number of shares of the biggest shareholder and the company’s total number of shares.</td>
</tr>
<tr>
<td></td>
<td>locating area</td>
<td>CA</td>
<td>1 for the above listed region, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>industry</td>
<td>CI</td>
<td>1 for being in one of the listed industries, otherwise 0</td>
</tr>
<tr>
<td>Moderating variable</td>
<td>Duality of Chairman and CEO</td>
<td>TPS</td>
<td>1 for the existence of Chairman-CEO duality, otherwise 0</td>
</tr>
<tr>
<td></td>
<td>executive’s term of office</td>
<td>EO</td>
<td>average tenure of all executives</td>
</tr>
<tr>
<td></td>
<td>growth potential</td>
<td>CG</td>
<td>Revenue growth rate</td>
</tr>
</tbody>
</table>

4.4.3 Model Construction and Analysis Methods

4.4.3.1 Model construction

The basic model: \( Y = \alpha X + \beta M + \gamma XM + \epsilon \), where \( X \) is the independent variable, \( M \) is the moderating variable and \( \epsilon \) is the error.

Meaning: the relationship between variable \( Y \) and variable \( X \) is affected by variable \( M \); coefficient \( \gamma \) measures the size and direction of regulating effect. Generally speaking, significant \( \gamma \) indicates an obvious regulating effect.

4.4.3.2 Analysis method

Variables type of samples need to be considered. Both dependent variable (ROA) and the independent variable (PAY) are continuous variable. Among moderating variables, such as company size (SIZE), stock ownership concentration (TOP1), the company’s growth potential (CG), executive’s term of office (EO) are also continuous variable. Type of controlling shareholder (CST), Remuneration Committee (RC), Locating area (CA), industry (CI) and duality of chairman and CEO (TPS) are categorical variables.

Moderating effect analysis requires centralized transformation between independent variables and moderating variables.

(1) When moderating variable served as categorical variables, grouped regression analysis
need to be taken. Grouped by the value of categorical variable $M$, regression analysis on variable $Y$ and variable $X$ were conducted. A regression coefficient indicates significant moderating effect.

(2) When moderating variable are continuous variables, centralized transformation between independent variables and moderating variables need to done before conducting hierarchy regression analysis according to $Y = \alpha X + \beta M + \gamma XM + \varepsilon$. To be more detailed, firstly a regression for variable $Y$, variable $X$ and variable $M$ was calculated to gain the determine coefficient $R^2_1$, another round of regression was conducted with variable $Y$, variable $X$, variable $M$ and variable $XM$ to calculate another determine coefficient $R^2_2$. Moderating effect will be significant if $R^2_2$ is significantly higher than $R^2_1$. Moderating effect can also be obtained by testing regression coefficient of variable $XM$—significant coefficient indicates significant moderating effect.

4.4.4 Quantitative Analysis and Results

4.4.4.1 Regression analysis on executive compensation and company performance

Before analyzing moderating effects of moderating variables, regression analysis on executive compensation and company performance need to conduct. Although in previous session, ROA has entered regression analysis and the significant correlation between the two has been proved, regression analysis on these two factors was calculated again with company performance (ROA) as dependent variable and executive compensation (PAY) as independent variable. Results are shown in Table 4-18. As can be seen from adjusted R2, executive compensation could explain 0.6% of the changes in the performance of the company, and the standardized coefficient was 0.081.

Table 4-18: executive compensation and company performance: Regression analysis results

<table>
<thead>
<tr>
<th>Model</th>
<th>Non-standardized coefficients $B$</th>
<th>Standard error</th>
<th>standardized coefficients $B$</th>
<th>t</th>
<th>Sig.</th>
<th>R2(adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(constant)</td>
<td>-.046</td>
<td>.022</td>
<td>-2.046</td>
<td>.041</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>PAY</td>
<td>.007</td>
<td>.002</td>
<td>4.196</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

a. dependent variable: ROA

4.4.4.2 Regression analysis, company size as moderating variable

Before analyzing moderating variable, company size (SIZE) and executive compensation (PAY) should be centralized. Model 1 was the regression model of company performance (ROA) on company size (SIZE) and executive compensation (PAY) and the adjusted R-squared was 0.006; model 2 was the regression model of the company's performance (ROA) to company size (SIZE), executive compensation (PAY), and the product (SIZE * PAY) of the two. The adjusted R-squared was still 0.006, bringing significant change. With a P value of 0.526, it is obvious that company size has no significant moderating effect in the relationship between executive compensation and corporate performance.

Table 4-19: results of regression analysis-company size as moderating variable
4.4.4.3 Regression analysis, controlling shareholder type as moderating variable

Type of controlling shareholder is a categorical variable, so it was categorized based on its value and analyzed with regression. Model 1 and Model 2 were used as regression models of ROA to executive compensation (PAY) for CST value at 0 and 1 respectively. Results shown that both groups of regression analysis past significant test, indicating that the type of controlling shareholders has significant regulating function on the impact of executive compensation upon company performance. As for regression coefficients, we can tell that when CST is 0, in other words, the company is a non-state-owned listed company, regression coefficient was 0.006; when CST is 1, regression coefficient of listed SOE was 0.008. Thus type of controlling shareholder has a moderating effect on positive direction.

Table 4-20: results of regression analysis- type of controlling shareholder as moderating variable

<table>
<thead>
<tr>
<th>CST</th>
<th>Model</th>
<th>Non-standardized coefficients</th>
<th>standardized coefficients</th>
<th>Non-standardized coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>(constant) -.028</td>
<td>.028</td>
<td>-2.501</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>PAY</td>
<td>.006</td>
<td>.002</td>
<td>.069</td>
<td>2.871</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>(constant) -.071</td>
<td>.037</td>
<td>-1.933</td>
<td>.054</td>
</tr>
<tr>
<td></td>
<td>PAY</td>
<td>.008</td>
<td>.003</td>
<td>.099</td>
<td>3.048</td>
</tr>
</tbody>
</table>

4.4.4.4 Regression analysis, Remuneration Committee (RC) as moderating variable

As categorical variable, remuneration committee (RC) variables should be analyzed with grouped regression method. Model 1 and 2 were regression models of company performance (ROA) to executive compensation (PAY) but used for RC variable of 0 and 1 respectively. According to the results, regression analyzes of both groups passed significance test, indicating that the set-up of remuneration committee pose moderating effect on the correlation between company performance and executive compensation. By examining regression coefficients, we can see that when RC variable is 0 (no exist of remuneration committee), regression coefficient is 0.004; and when use 1 as the value of RC (the company may has remuneration committee), regression coefficient reaches to 0.01—remuneration committee has positive moderating effect.

Table 4-21: results of regression analysis, Remuneration Committee (RC) as moderating variable

<table>
<thead>
<tr>
<th>RC</th>
<th>models</th>
<th>Non-standardized coefficients</th>
<th>standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
</table>

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Before analyzing moderating variable, stock ownership concentration (TOP1) and executive compensation (PAY) should be centralized. Model 1 was the regression model of company performance (ROA) stock ownership concentration (TOP1) and executive compensation (PAY); and the adjusted R-squared was 0.02; model 2 was the regression model of the company's performance (ROA) to stock ownership concentration (TOP1), executive compensation (PAY), and the product (TOP1 * PAY) of the last two factors. The adjusted R-squared was still 0.02, bringing no significant change. The results indicate that stock ownership concentration has no significant moderating effect in the relationship between executive compensation and corporate performance.

Table 4-22: results of regression analysis, stock ownership concentration as moderating variable

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>R-squared (adj)</th>
<th>F(adj)</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F (adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.169a</td>
<td>.029</td>
<td>.028</td>
<td>.029</td>
<td>27.648</td>
<td>2</td>
<td>1876</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.171b</td>
<td>.029</td>
<td>.028</td>
<td>.001</td>
<td>1.168</td>
<td>1</td>
<td>1875</td>
<td>.280</td>
</tr>
</tbody>
</table>

a. predictive variables: (constant), TOP1, PAY.

b. predictive variables: (constant), TOP1, PAY, TOP1*PAY.

Company area is a categorical variable, regression analysis had to be done with the grouped value of CA. Model 1 and 2 were regression models of company performance (ROA) to executive compensation (PAY) but used for CA variable of 0 and 1 respectively.

The results showed that regression analyzes of both groups passed significance test, indicating that company area plays significant moderating role in the correlation between company performance and executive pay.

According to the regression coefficients, when CA variable is 0, the company may located in underdeveloped regions, the regression coefficient is 0.007; while when the CA variable is 1, the company is in the area with better economic condition, regression coefficients is 0.006, indicating a negative moderating effect.

Table 4-23: results of regression analysis, company area as moderating variable

<table>
<thead>
<tr>
<th>CA</th>
<th>model</th>
<th>Non-standardized coefficients</th>
<th>standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
</table>

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4.4.4.7 Regression analysis, company industry as moderating variable

Company industry (CI) is a categorical variable, grouped regression analysis should be employed. Model 1 and 2 were regression models of company performance (ROA) to executive compensation (PAY) but used for Company industry (CI) variable of 0 and 1 respectively. According to the results, only when CI variable equal to 0, the regression equation passed significance test, while with 1 as CI variable the equation did not show significance. The results indicate that industrial compensation level does not have moderating effect on the correlation between company performance and executive compensation.

Table 4-24: results of regression analysis, company industry as moderating variable

<table>
<thead>
<tr>
<th>CI</th>
<th>model</th>
<th>R</th>
<th>R-squared</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>Adjusted statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>.089</td>
<td>.008</td>
<td>.007</td>
<td>.05761</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.203</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.033</td>
<td>.001</td>
<td>-.001</td>
<td>.03703</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>440</td>
</tr>
</tbody>
</table>

predictive variables: (constant), PAY; only for cases when CI=0.
predictive variables: (constant), PAY; only for cases when CI=1.

4.4.4.8 Regression analysis, Concurrent Appointment of Chairman and CEO as moderating variable

Since the variable of Concurrent Appointment of Chairman and CEO (TPS) is a categorical variables, grouped regression analysis should be taken. Model 1 and 2 were regression models of company performance (ROA) to executive compensation (PAY) but used for TPS variable of 0 and 1 respectively. As can be found form the results, regression analyzes of both groups passed significance test. In other words, Concurrent Appointment of Chairman and CEO have moderating effect on the correlation between company performance and executive compensation.

When TPS variable is 0 (no exist of concurrent appointment of chairman and CEO), regression coefficient is 0.006; and when use 1 as the value of TPS (the concurrent appointment of chairman and CEO exist), regression coefficients reaches to 0.01, indicating that the concurrent appointment of chairman and CEO has positive moderating effect.

Table 4-25: results of regression analysis, Concurrent Appointment of Chairman and CEO as moderating variable

<table>
<thead>
<tr>
<th>TPS</th>
<th>models</th>
<th>Non-standardized coefficients</th>
<th>standardized coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Standard error</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>(.constant)</td>
<td>-0.032</td>
</tr>
</tbody>
</table>
a. dependent variable: ROA

4.4.4.9 Regression analysis, Executive’s term of office as moderating variable

Before analyzing moderating variable, executive’s term of office (EO) and executive compensation (PAY) should be centralized. Model 1 was the regression model of company performance (ROA) to executive’s term of office (EO) and executive compensation (PAY); and the adjusted R-squared was 0.009; model 2 was the regression model of the company's performance (ROA) to executive’s term of office (EO), executive compensation (PAY), and the product (EO * PAY) of the last two factors. The adjusted R-squared was still 0.009. There was no significant changes happened to R-squared and P value was 0.461, indicating that executive’s term of office has no significant moderating effect in the relationship between executive compensation and corporate performance.

Table 4-26: results of regression analysis, Executive’s term of office as moderating variable

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>R-squared (adj)</th>
<th>F(adj)</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F (adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.097a</td>
<td>.0093</td>
<td>.05504</td>
<td>.009</td>
<td>12.611</td>
<td>2</td>
<td>2677</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.098b</td>
<td>.010</td>
<td>.05504</td>
<td>.000</td>
<td>543</td>
<td>1</td>
<td>2676</td>
<td>.461</td>
</tr>
</tbody>
</table>

a. predictive variables: (constant), EO, PAY .

b. predictive variables: (constant), EO, PAY , EO*PAY

4.4.4.10 Regression analysis, growth potential as moderating variable

Before analyzing moderating variable, growth potential (CG) and executive compensation (PAY) should be centralized. Model 1 was the regression model of company performance (ROA) to growth potential (CG) and executive compensation (PAY); and the adjusted R-squared was 0.013; model 2 was the regression model of the company's performance (ROA) to growth potential (CG), executive compensation (PAY), and the product (CG * PAY) of the last two factors. The adjusted R-squared was still 0.024. Model 2 acquired a significantly higher R-squared and 0 for P value, indicating that growth potential has significant moderating effect in the relationship between executive compensation and corporate performance.

Table 4-27: results of regression analysis, growth potential as moderating variable

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-squared (adj)</th>
<th>Estimate standard error</th>
<th>R-squared (adj)</th>
<th>F(adj)</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F (adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.114a</td>
<td>.013</td>
<td>.05493</td>
<td>.013</td>
<td>17.753</td>
<td>2</td>
<td>2677</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.156b</td>
<td>.024</td>
<td>.05464</td>
<td>.011</td>
<td>30.430</td>
<td>1</td>
<td>2676</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. predictive variables: (constant), CG, PAY .
Regression coefficient of model 2 is 0.279, passing the significance test with coefficient of PAY * CG being 0.009 and indicating that the company's growth potential has a significant positive moderating effect on the relationship between executive compensation and company performance.

Table 4-28: results of regression analysis, growth potential as moderating variable

<table>
<thead>
<tr>
<th>models</th>
<th>Non-standardized coefficients</th>
<th>standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(constant)</td>
<td>.048</td>
<td>.001</td>
<td>45.022</td>
<td>.000</td>
</tr>
<tr>
<td>PAYZH</td>
<td>.007</td>
<td>.002</td>
<td>.083</td>
<td>4.303</td>
</tr>
<tr>
<td>CGZH</td>
<td>.004</td>
<td>.001</td>
<td>.081</td>
<td>4.217</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(constant)</td>
<td>.048</td>
<td>.001</td>
<td>45.398</td>
<td>.000</td>
</tr>
<tr>
<td>PAYZH</td>
<td>.007</td>
<td>.002</td>
<td>.082</td>
<td>4.270</td>
</tr>
<tr>
<td>CGZH</td>
<td>.014</td>
<td>.002</td>
<td>.279</td>
<td>6.861</td>
</tr>
<tr>
<td>PAY * CG</td>
<td>.009</td>
<td>.002</td>
<td>.225</td>
<td>5.516</td>
</tr>
</tbody>
</table>

a. dependent variable: ROA

4.4.5 Results Analysis and Hypothesis Verification

Quantitative results of determinants’ regression analysis showed that among many factors, company size, type of controlling shareholder, the existence of the Remuneration Committee, stock ownership concentration, region and industry of the company, Concurrent Appointment of Chairman and CEO, executive’s term of office, and growth potential have significant correlation with executive compensation and company's growth. Thus, this session only discussed hypothesis related to the above 9 variables. Other moderating factors were ignored here. Table 4-29 summarized the results of analysis and conclusion.

Table 4-29: relation between executive compensation of listed companies and company performance: Research results and hypothesis verification

<table>
<thead>
<tr>
<th>No. of hypothesis</th>
<th>Null hypothesis</th>
<th>Hypothetic relationship</th>
<th>Analysis results</th>
<th>significance</th>
<th>Reject the null hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Executive compensation</td>
<td>positive</td>
<td>positive</td>
<td>significant</td>
<td>No</td>
</tr>
</tbody>
</table>
and company performance are correlated

<table>
<thead>
<tr>
<th></th>
<th>and company performance are correlated</th>
<th>correlation</th>
<th>correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Company size has moderating effect</td>
<td>positive</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Growth potential has moderating effect</td>
<td>positive</td>
<td>positive</td>
</tr>
<tr>
<td>5</td>
<td>Stock ownership concentration has moderating effect</td>
<td>Negative</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>Type of Controlling Shareholder has moderating effect</td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>8</td>
<td>Remuneration Committee has moderating effect</td>
<td>positive</td>
<td>positive</td>
</tr>
<tr>
<td>9</td>
<td>Two posts concurrent has moderating effect</td>
<td>positive</td>
<td>positive</td>
</tr>
<tr>
<td>11</td>
<td>executive’s term of office has moderating effect</td>
<td>positive</td>
<td>—</td>
</tr>
<tr>
<td>14</td>
<td>Regional economic level has moderating effect</td>
<td>positive</td>
<td>negative</td>
</tr>
<tr>
<td>15</td>
<td>Industrial compensation level has moderating effect</td>
<td>positive</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: “—” means the results do not show significant correlations with the two. “Significant” here refers being significant at the level of 10%

As can be found from results in Table 4-29:

(1) Only 5 variables—growth potential, type of controlling shareholders, concurrent appointment of chairman and CEO, Remuneration Committee and regional economic level has significant moderating effect on the how executive compensation influence company performance.

(2) The company's growth potential, chairman-CEO concurrent and the existence of remuneration committee will play a significant positive moderating role as the hypothesis prosed. Growth potential and the chairman-CEO concurrent enhance the sense of mission among senior executives and the setting of a Remuneration Committee will safeguard reasonable and fair compensation management, prompting executives’ efforts on improving company performance.

(3) Moderating effect and direction of controlling shareholder type is inconsistent with hypothesis. As results shown, compensation incentive poses strong impact on the performance of state-owned listed companies. Although the hypothesis was proposed based on the reason that state-owned enterprises may provide more diversified forms compensation incentive, executives of the highest compensations are still mainly from SOEs. Since SOEs are stable,
their executives are more focused on annual salary, partly resulted to higher impact of compensation on company performance.

(4) The economic level of company’s locating area has a significant negative moderating role between executive compensation and company performance. To the opposite of the hypothesis, in underdeveloped regions, executives are more sensitive to compensation incentive mechanism.

The foregoing hypothesis believed that in developed regions with higher consumer price index, to maintain and enhance their standard of living, executives usually work hard for higher pay. When considering marginal effect of compensation, marginal effect plays a stronger and more sensitive role on executive compensation in less developed regions.
Chapter V Optimization and Security Mechanism of Executive Compensation in Listed Companies

According to the data center of caixin.com.cn, statistics from 495 A-share listed company’s corporate annual reports showed that in 2014, 164 companies produced negative net profit growth. However 92, or 56.1% of them provided higher compensations for their senior executives. In response to this phenomenon, the State-owned Assets Supervision and Administration Commission (SASAC) issued the Notice on Conducting Business Performance Appraisals of Persons-in-Charge at Central Enterprises 2015 to take corresponding measures and strategies. Although only 277 stated-owned enterprises went public in the A-share market, it meant that China had taken some actions regarding the executive’s compensation mechanism. However, among more than 2000 listed companies, central enterprises accounted for only one-tenth. To take a comprehensive study on this problem fundamentally requires a thorough understanding of exactly why there is such a situation, if it arose in development or implementation phase, and how to solve problems in these phase.

As showed in previous quantitative analysis results, many factors did not impact the compensation mechanism in China’s listed companies, for example ownership proportion of executives, the proportion of independent directors, and age and education background of executives. Compensation paid to executives failed to push them adopting more diversified strategies or facing risk instead of avoiding. Obviously, there are some problems within compensation mechanism in China’s listed companies and optimization is necessary. Therefore, combining empirical findings of preceding 2682 listed companies in recent 4 years, this chapter suggests that innovation and reform of the current executive compensation mechanism in listed companies needs to start from two aspects: one is optimization of executive compensation program design to ensure effectiveness and feasibility of compensation incentives in development phase; the other is security mechanism of executive compensation implementation to ensure effectiveness and feasibility of compensation incentives in implementation phase.

5.1 Optimization of Executive Compensation in Listed Companies

In development phase, we must first make clear which body plays an important role, and then propose specific objectives and contents of the optimized design to ensure and improve effectiveness of executive compensation incentives in listed companies.

5.1.1 Key Participants

In the majority of listed companies, compensation standards including executive compensation are developed by Remuneration Committee and implemented with approval of board of directors, which indicates exactly which body plays an important role in designing & developing executive compensation mechanism in listed companies. Earlier we also found
that Remuneration Committee is of great importance for executive compensation, but different personal characteristics of senior executives and corporate governance structure in various companies highlights obvious gap in influencing degree. Senior executive does play an important role in Remuneration Committee and board of directors. The reason why the role of aforementioned determinants has not been validated in the research sampling from China’s listed companies shows executive compensation development doesn’t follow a unified pattern. Remuneration Committee’s positive effect on executive compensation means senior executive is the main body developing compensation in listed companies, which led to declining performance and rising compensation.

Listed companies is the product of developing market economy, so executive compensation scale, structure and relevant standards should be formed in market competition and economic development, that is, manager market serves as the main body designing and deciding executive compensation. In fact, since China’s market lags behind, a sound manager market requires long-term development. At this time, entirely dependence on market forces has not been fully effective, government laws and policies are required to offset market mechanism deficiency due to market imperfection so as to ensure healthy and orderly development of manager market.

Inefficiency of existing market mechanisms is mainly because of executives controlling Board of Directors and Remuneration Committee. The aforementioned research findings also show that the proportion of independent directors in Board of Directors didn’t play a decisive role in executive compensation of listed companies. Therefore, it’s necessary to increase the proportion of independent directors and ensure relevant decisions can be made independently with effectiveness. Calls of Shareholders and the public against the rising executive compensation result from imperfection of pay level and structure disclosure mechanism. Partial loss of shareholders’ right to know will lead to possible secret operations, requiring listed companies to make public executive compensation plan available to the public. This requires listed companies to make public executive compensation program, and shareholders determine and supervise implementation of the program according to corporate performance and development opportunities.

Therefore, a sound manager market is the main body designing executive compensation, and government laws and policies will offset mechanism deficiency of the imperfect market to some extent. Reasonable and effective guidance of executive compensation in listed companies also requires to consider internal decision making and supervision of Board of Directors and shareholders, and then to design and perfect executive compensation incentive mechanism in listed companies.

5.1.2 Specific Objectives

The purpose of optimizing executive compensation in listed companies is to make it more scientific and standardized. Scientific allocation decisions are to establish salary distribution system suited to China’s national conditions and modern corporate system and use multiple allocation modes to mobilize enthusiasm of senior executives in listed companies and to
improve company performance and social benefits; system standardization means exerting the role of government and market in building executive compensation incentive mechanism for listed companies under market economy system and government needs to play inescapable supervision and administration function in constraining senior executives from interfering reasonable market economy and facilitating standardization of executive compensation in listed companies. Under this guidance and direction, specific objectives of the optimization are formed so as to ensure effectiveness and feasibility of executive incentive compensation.

One is to realize effective incentive of executive compensation and change incentive method to long-term pattern from short-term pattern and regulate compensation structure according to individual situation of executives and company governance; the second is to combine executive compensation and company performance, since simply increasing executive compensation can’t affect executive behaviors directly and senior executives’ behavior doesn’t match corporate development objectives until their compensation is linked to company performance. Growth of executive compensation should keep proportional correlation with company performance; the third is to ensure effective supervision of executive compensation, specifically disclosing details of executive compensation in listed companies regularly and improving executive compensation supervision mechanism and giving more rights down to Board of Directors to avoid excessive interference of government and play the role of manager market mechanism; the fourth is to adapt executive compensation to China’s national conditions. Listed companies are the product of China’s market economy and its executive compensation incentives need to be designed fully considering our national political system, economy and culture with reasonable compensation level and structure based on position duty and contribution.

5.1.3 Main Content

The main content of executive compensation optimization for listed companies includes compensation level and structure. The preceding analysis has clearly pointed out that executive compensation in listed companies needs to match company performance and contribution, and compensation level directly affects executive behavior and the role of compensation structure is also not negligible. It was mentioned in concept of executive compensation that executive compensation consists of the guaranteed salary and risk salary, and the former is taken as the variable for executive compensation research considering availability of data. In fact, the fact that risk salary will adjust inconsistency of shareholder’s and senior executive’s targets and attitude of risk aversion needs to be considered while optimizing executive compensation. Guaranteed salary as a short-term incentive method can quickly mobilize enthusiasm of executives and is commonly adopted by China’s listed companies. But it will lead to short-term and short-sighted behaviors of executives, while risk salary links executive compensation and company performance mostly in the form of stock options and becomes an important means of long-term compensation incentives. As proposed in the prospect theory, when executives see a good prospect from fix compensation, they may tend to take actions to avoid risk.
Therefore, it is necessary to combine short-term and long-term incentives to develop executive compensation incentive mechanism suited to development of listed companies. Although long-term incentives link company performance and executive compensation, thus unifying shareholders’ and executives’ targets, this drives many executives to use deception to obtain stocks at a lower price from stock market and will not have a positive effect on executives’ behavior, and executives won’t make consideration for company performance and future development, fully maximizing individual interests. In response to this situation, restricted stock means can be used to defer to pay executive salary, so as to make incentives effective.

It can be seen that optimization of executive compensation for listed companies will effectively adjust executive’s behavior and attitude and give full play to the role of compensation. To achieve different effects requires choose and combine incentive mode and content pointedly. Combining aforementioned research findings, we found significant determinants of executive compensation in listed companies include company size, company growth, type of controlling shareholder, concentration of ownership, existence of Remuneration Committee, concurrent appointment of Chairman and CEO, executive tenure, regional economic level and industrial compensation level. These factors can be based to evaluate executive compensation level and structure. Although some executives’ compensation determinants didn’t show significant role in empirical analysis of listed companies, with continuous improvement of executive compensation mechanism, these determinants’ influence will gradually unify. In addition, different from foreign countries, China’ compensation gap has always been influencing social and public reaction. It’s necessary to consider social reaction to avoid unnecessary damage to company social image and performance while designing and optimizing executive compensation based on listed companies’ actual situation and determinants.

5.2 Security Mechanism of Executive Compensation in Listed Companies

Without effective system as a guarantee, compensation incentives can hardly play its role even though the listed company has designed highly effective compensation incentive means consistent with its actual situation. Therefore, it’s very necessary to design a reasonable security mechanism for implementing executive compensation in listed companies, to ensure effectiveness of compensation incentives in implementation phase.

5.2.1 Enhance Compensation Disclosure Mechanism

Currently among the determinants of executive compensation in China’s listed companies, the proportion of independent directors and other governance factors are not significant determinants, and numerous factors didn’t play a significant regulatory role on executive compensation and company performance. This is directly related to the inconsistency of shareholders’ and executives’ interests and shareholders fail to supervise and regulate executives’ behavior effectively.

Strengthening compensation disclosure mechanism will change the disadvantage of shareholders in information gap in executive compensation incentive plan, reduce
shareholders’ costs for gaining related information and facilitate communication between shareholders and Board of Directors, Board of Supervisors and Remuneration Committee to adjust and supervise development and implementation of executive compensation incentive plan. Foreign experience shows that strengthening disclosure mechanism does not reduce executive compensation, but will raise it. After reinforcing compensation disclosure mechanism, executive compensation and company performance will be significantly associated together, conformance of shareholders’ and executives’ interests requires a large proportion of long-term incentive component in incentive compensation, such as performance salary and risk salary. These salaries will significantly increase individual risk of executives, and executives risk attitudes are usually risk averse. To let executives improve company performance facing risks requires enhancing executive compensation level and mitigating interest conflict, and changing risk aversion to risk facing.

Compared to other means, compensation disclosure mechanism is the product of the developing market and a direct reflection of the market economy operation rule. Although the disclosure mechanism of China’s listed companies began to implement in 1996, but the disclosure mechanism on information regarding executive compensation is not perfect, and a lot of information did not form a unified standard. Therefore, it is necessary to make a comprehensive information disclosure (such as Board of Directors, Board of Supervisors and Remuneration Committee’s standard on executive compensation, implementation method and correlation with company performance) to ensure open and fair operation of compensation incentive mechanism.

5.2.2 Improve Tax Regulation Mechanism

Currently executive compensation contradiction is primarily due to excessively artificially high levels of executive compensation and a weak correlation with company performance. Many scholars believe that China should adopt tax rules and norms for executive compensation in Chinese listed companies. Implementation of the system to regulate and restrict government intervention through company income tax and personal income tax has been relatively mature in foreign countries.

Improving tax regulation mechanisms can limit the compensation level of executives in listed companies through imposing high tax rate on executive pay more than a reasonable level, and on the other hand, make tax policy correlated with company performance to increase correlation of compensation and performance. However, studies have pointed out a contradiction, that is, rising correlation degree will lead to synchronous increase in compensation level, which will likely result in failure of tax regulation mechanism. When to improve correlation of compensation and performance, tax regulation mechanism tends to performance pay, and then the proportion of stock options and other long-term incentives increases, while in order to reduce tax, the company will adjust compensation structure and replace guaranteed salary by variable pay which has small effect on executive behavior under the same amount due to high risk. Therefore, it requires more variable pays to achieve same degree of effect on executive behavior. Obviously, perfection of tax regulation mechanism can
effectively control executive compensation level, and enhance correlation between executive compensation and company performance. However, it is necessary to adjust executive compensation structure according to actual situation of listed companies and appropriately promote more variable pays such as performance pay in compensation structure.

5.2.3 Exert Opinion Supervision Mechanism

As influence of public opinions on executive compensation increases, if artificially high executive compensation does harm to public interest, it will arouse great resentment and affect social stability. Therefore, the public opinion supervision mechanism plays an effective role in preventing unreasonable level and structure of executive compensation in listed companies.

To play the role of public opinion supervision mechanism requires the media guiding correctly so that relevant information of listed companies can be conveyed accurately and timely. Of course, this should be based on a more complete information disclosure mechanism. It’s necessary to make public executives compensation levels, structures and position-related consumption. When falsification happens, the company and its legal person shall be punished according to relevant laws accordingly, and for the circumstance seriously disturbing market order, investigation and punishment should be reinforced. Meanwhile, a steady and healthy development of economy requires sustainable development of listed companies and sound market order and a transparent executive compensation incentive mechanism under supervision of the public.

5.2.4 Adopt Legal Binding Mechanism

Normally, issues arising under market economy circumstance need to be regulated and corrected via market. When executive compensation and company performance almost have no correlation and the role of information disclosure, tax and public opinion mechanism can’t be changed, it’s necessary to appropriately use legal binding mechanism to reconcile interest relationship between shareholders and executives. This legal binding mechanism can be adopted as a guarantee when other mechanisms fail to work. Because of the imperfect legal system, Improving the “Company Law” and other relevant laws and specifying executive award and punishment regulations, executives effectively avoids loss caused by inaction and speculation of executives, and objectively constrains executives from using improper means to maximize their own interests, and helps to standardize manager market to ensure steady and healthy development of compensation levels. It is clear that legal binding for executive compensation and behavior is conducive to realizing effective and healthy development of executive compensation in listed companies.
Chapter VI Conclusion and Discussion

6.1 Conclusion and Suggestion

Literatures reviewed above show that the study on executive compensation started quite early and achieved a large number of research results, attracting more and more scholars to enter the field of academic research. It is partly because the executive compensation is closely related to the company’s growth and development and is of great significance. On the other hand, it reflects that with the ever changing internal structure, individual features and external environment, current studies cannot fully meet demands of practice. Insufficiency and limitation of studies need to be improved through efforts from the academia and industry.

Under the background of listed companies in China, by looking at compensation determinant factors, this paper build a theoretical analysis framework underpinned by diversified theories, including agency theory and tournament theory from an economic perspective, stewardship theory from a sociological perspective, prospect theory and social comparison theory from a psychological perspective and human capital theory and property right theory from a combined perspective. This paper also proposes a research hypothesis based on analysis and summery of overseas and domestic reference, analyzes and exams with scientific statistic instruments, to explore the determinant factors of compensations for executives in listed companies and its relationships with the executives’ and the companies’ performances. The paper aims at providing theoretical underpinning for the design of executives’ compensation mechanism, rectifying the shortages in the current mechanisms in China, providing bases to improve executives’ value and the company performance and providing solid references for the government and competent authorities to enact applicable laws and regulations.

Key conclusions include:

(1) Through reviewing Agent Theory, Tournament Theory, Stewardship Theory, Prospect Theory, social comparison theory, human capital theory and property right theory, the study constructed a theoretical framework for analysis and research hypotheses from pluralistic perspectives. Several factors including a company’s internal and external factors and individual characteristics determine the level and structure of executive compensation, which, together with the company’s internal and external environment factors, directly impacts executive behavior, and such behavior affects the company’s performance. A company formulates executive compensation of the year based on executive behavior and the company’s performance, and this compensation incentive again impacts the executive’s behavior and strategy of next year. In this way, a closed and dynamic loop system is formed.

(2) Major determinants of executive compensation in China’s listed company include company size, type of controlling shareholder, concentration of ownership, compensation committee, duality of chairman and CEO, executive tenure, regional economic development, industrial salary level, company’s growth potential, performance and ratio of liability to assets.
56% variability of the executive compensation was predicted. Among all these variables, correlation between company growth and executive compensation is the only one that was not in accordance with the hypothesis. Correlations between executive compensation and all other determinant factors were verified. Results can be based to build a reasonable executive compensation incentive system.

(3) Correlation lies between executive compensation and behavior.

There is a big gap between results from quantitative analysis and research hypothesis. Hypothesis on the positive correlation between innovative behaviors is the only one that verified by the model, indicating that compensation can encourage senior executives to adopt innovative actions, which in return may promote executives’ compensation. There is no correlation between executive compensation and diversified strategies or complexity of business operations. In other words, the increase of compensation may fail to encourage them to employ diversified strategy or increase frequency of complex business practices. Executive compensation is in significant positive correlation with growth opportunity and growth potential. This is because when senior executives see high prospect for the future of the company, they may reduce their demands on compensation. However, considering the possibility of overvalued prospect, if executives made their compensation based on such result, they may end up with a compensation that is insufficient to encourage senior managers.

For listed non-SOEs, risk level is significantly correlated to executive compensation—which is also in accordance with the risk avoidance idea proposed by the prospect theory.

(4) Executive compensation is highly correlated with company performance and explains 7% of performance changes. Factors like growth potential, type of controlling shareholder, concurrent appointment of chairman and CEO, the existence of remuneration committee and regional economic development plays a regulating role within the relationship between executive compensation and corporate performance. Consistent with the hypothesis, growth potential, concurrent appointment of chairman and CEO and the existence of remuneration committee will play a significant positive moderating function. The growth potential and the chairman-CEO duality may enhance the sense of mission among senior managers and the setting of remuneration committee guarantee reasonable and fair payment, driving the improvement of corporate performance.

Moderating function and direction of controlling shareholder type were different from the hypothesis. As results shown, compensation incentive poses strong impact on the performance of state-owned listed companies. Although the hypothesis was proposed based on the reason that state-owned enterprises may provide more diversified forms compensation incentive, executives of the highest compensations are still mainly from SOEs. Since SOEs are stable, their executives are more focused on annual salary, partly resulted to higher impact of compensation on company performance. The economic level of company’s locating area has a significant negative moderating role between executive compensation and company performance, which is also different from the hypothesis. Executives of less developed regions are more sensitive to the above factors. The foregoing hypothesis believed that in
developed regions with higher consumer price index, to maintain and enhance their standard of living, executives usually work hard for higher pay. When considering marginal effect of compensation, marginal effect plays a stronger and more sensitive role on executive compensation in less developed regions.

Combined with research and analysis results, suggestions are given below:

(1) It is a complex process to build executive compensation incentive system since it requires considering various internal and external company factors and individual characteristics which determined executive compensation level and structure. Therefore, Executive compensation system in listed companies needs to be built pointedly according to actual situation of the company.

(2) Existing executive compensation incentive system has a few problems and fails to exert the role of some determinants in executive compensation, which causes executives to take strategy of risk aversion and lowers correlation executive compensation and company performance. While designing executive compensation, it is necessary to make clarify functions of the main body and specific objectives and standardize compensation incentive structure.

(3) Without effective system as a guarantee, compensation incentives can hardly play its role even though the listed company has designed highly effective compensation incentive means consistent with its actual situation. Therefore, it’s necessary to develop a reasonable security mechanism for implementing executive compensation. Incentive mechanism should be built in line with China’s situation and characteristics of the individual company. Through enhancing disclosure, tax regulation, public supervision and legal constraints, effectiveness of compensation incentive mechanism can be safeguarded.

6.2 Limitation and Outlook

Combined with actual situation of China’s listed companies, this paper concludes executive compensation determinants and correlation between company performance and executive behavior, but there are still many aspects to be further improved and worthy of study.

(1) Considering availability and unity of data, this paper only studies executive compensation in narrow sense and the effect of short-term incentives and doesn’t take into account stock options and other long-term incentives. As compensation structure develops, the long-term incentives also play a significant role in executive behavior and company performance and need to be further studied.

(2) Calculation and access methods of the research indicators do not form unified research findings. Based on numerous researches of various scholars, this paper has chosen representative calculation method and measured indicators considering availability of data. But it remains to be studied and practiced which measuring aspects can really represent indicator meaning. In addition, conclusions of this dissertation have reference significance only for compensation incentive system in listed companies and don’t involve that in non-listed companies.
To this conclusion we will include the comments by Professor Romelaer, mentioned in the text below. The author of this thesis agrees with the text below.

As indicated by Table 4.3 and similar results, the regressions explain between 3 and 5% of the independent variables. This means that when we want to explain the pay of the executive group and we use 11 variables, these variables explain only 3 to 5% of what the pay is. This also means that our model does not explain 95 to 98% of what the pay is. In these conditions, although we have identified many relations that are statistically significant, the practical conclusions that we derive from these relations must be taken with enormous precautions.

Also, as established in Tables 4.4 and 4.29, only 12 relations of the 20 that we predicted are proved true. This means also that the scientific literature and our initial analysis still require many improvements. For this reason we can state that science has not yet well explained what explains executive compensations, and it has not well explained how pay executive influences the performance of the firm.


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DECLARATION

I solemnly declare: the submitted thesis is the result of independent research work under the guidance of my supervisor. To the best of my knowledge, unless already noted the contents of references, the research results of this thesis does not contain any copyright content enjoyed by other people. Other individual and collective, who contributed to the research work of the thesis, have been clearly indicated in the document.

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