

The Determinants and Consequences of the Dynamic Compensation Inconsistency in Top Management Teams: Evidence from Chinese Listed Firms *

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Abstract

The literature on the incentives of top management teams (TMT) mainly focuses on pay-level dispersion. This paper examines the dispersion of the incentive structure in TMTs by using dynamic compensation inconsistency as a proxy. We examine the determinants of the inconsistency and find that powerful non-CEOs, large TMTs, and a volatile external environment reduce the probability of inconsistency. Furthermore, TMT dynamic compensation inconsistency dampens a corporation's further performance. In Chinese state-owned enterprises (SOEs), changes in executives' compensation in opposite directions significantly damage subsequent corporate performance, while the extent of the change in inconsistency makes no difference in corporate performance. However, inconsistencies in both the direction and extent of the dynamic compensation change do dampen non-SOEs' subsequent performance. The results show that against the Chinese institutional background, social comparison theory and managerial power theory are able to explain differences in the TMT compensation structure.

Keywords: TMT Pay Incentive, Pay-level Dispersion, Pay-structure Dispersion, Dynamic Compensation Change

CLC Codes: F230, F24, F272.5

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I. Introduction

Corporate performance is the result of the collective wisdom and hard work of the entire top management team (TMT). In recent years, practitioners have focused on the incentives of top management executives other than CEOs. For example, the China State-owned Assets Supervision and Administration Commission (SASAC) issued *The Guidance on Further Strengthening Performance Appraisal of Deputy Heads in Central Enterprises* on 17 January 2012, which focuses on the incentives for and appraisal of deputy top managers in central enterprises. However, academics primarily focus on the incentive compensation design of CEO pay alone or treat the TMT as a single agent. Few studies discuss the incentive compensation design of other non-CEO executives in TMTs. The TMT incentive compensation design is not an addition to individual compensation contracts; thus, the interrelationships and synergies within an executive team should be considered in addition to the individual agency costs, and further studies on the compensation structure of TMTs are needed.

Since 2005, it has been mandatory for China's listed firms to disclose their executives' compensation, but only the pay levels of top executives are required. We can obtain the pay package for each top executive, but the pay structure is unknown. However, we can observe each top executive's dynamic compensation changes (except for the pay levels) and their interrelationships. Executive compensation in China's listed companies is primarily composed of basic salary and performance-based pay. The former is relatively fixed, while the latter is the main source of dynamic compensation change. Moreover, top executives with multiple terms care more about the dynamic growth of their payments across the terms than the static pay levels in each term. The differences in the dynamic compensation changes within a TMT capture the difference in the compensation structure, which can reflect the incentive differences among the top executives to some extent. Therefore, this paper uses TMT dynamic compensation change inconsistency as a proxy for differences in TMT compensation structure. We first discuss the determinants of dynamic compensation change inconsistency and then analyse the inconsistency's consequences on future performance. It should be noted that part of the dynamic compensation change is caused by corporate performance variation, because top executives are motivated by performance-based incentives. In a given TMT incentive contract, we call this part of the dynamic compensation inconsistency a normal difference. We are interested in the effects besides corporate performance that can distort the normal difference, including executives' characteristics, the TMT's characteristics, and the external environment. For example, two Chinese listed companies, CATIC Real Estate (stock ID: 000043) and Shenzhen SED (stock ID: 000032), experienced performance declines in 2013. All the executives should have had their compensation decline according to the pay-for-performance mechanism. The CEO

compensation at CATIC Real Estate decreased by 16%, and non-CEO executives' compensation decreased by 4%. In contrast, CEO compensation at Shenzhen SED grew by 25% and non-CEO executives' compensation decreased by 25%. The increase in CEO compensation at Shenzhen SED might not have come from CEO power because the CEO did not hold the position of chairman concurrently. However, one-third of the non-CEO top executives at CATIC Real Estate also held a seat on the board, while none of the non-CEO top executives in Shenzhen SED held a seat on the board. Thus, the power of the non-CEO top executives seems to have some effect on the dynamic compensation inconsistency of TMTs.

We examine the determinants of the dynamic compensation inconsistency of TMTs on the basis of China's listed companies' executive compensation from 2005 to 2014. We find that powerful non-CEO top executives, large TMTs, and a volatile external environment can reduce the probability of the inconsistency. Furthermore, TMT dynamic compensation inconsistency dampens a corporation's performance. In state-owned enterprises (SOEs), dynamic compensation changes in inconsistent directions can significantly damage corporate performance, while the extent of the change inconsistency has no effect. However, inconsistencies in both the direction and the extent of the dynamic compensation change can dampen non-SOEs' performance. The results show that under the Chinese institutional background, social comparison theory and managerial power theory are applicable to explaining differences in TMT compensation structure.

This study makes several contributions. First, it enriches the empirical literature on multi-agent contract theory. The literature mainly focuses on a single agent's incentive contract design, such as that of a CEO, or treats the TMT as a whole. Moreover, theoretical studies of multi-agent contract design focus on solving moral hazard problems, such as the free-rider issue (Holmstrom, 1982). Few empirical studies analyse multi-agent contract design. Using listed Chinese companies' TMT compensation change data, this study provides empirical evidence and a new perspective on multi-agent contract theory.

Second, this study contributes to the literature on TMT incentive contract design. Empirical research on TMT incentives focuses on the determinants and implications of the distribution of pay levels across top executives (Lazear and Rosen, 1981; Main *et al.*, 1993; Kale *et al.*, 2009; Lin *et al.*, 2003; Milgrom and Roberts, 1988; Lazear, 1989; Fredrickson *et al.*, 2010; Zhang, 2007, 2008). The dispersion of managerial incentive components such as the pay-performance sensitivity (PPS) also plays a critical role in TMT contract design. This study extends the literature by using a measure of dynamic compensation inconsistency across top executives as a proxy for differences in TMT compensation structure to capture the dispersion of the managerial incentive component. We then use this measure to examine the determinants that may affect the TMT compensation structure design. Next, we assess the consequences of different TMT compensation structures on future corporate

performance.

The remainder of this paper is organised as follows. Section II reviews the related literature and develops the predictions. Section III presents the research design. Section IV discusses the results of the empirical analyses. Section V concludes the paper.

II. Literature Review and Predictions

2.1 Related Literature on TMT Incentives

TMT incentives have been studied extensively by economists, sociologists, and management researchers. The literature primarily discusses the incentive diversity in TMTs using tournament theory, social comparison theory, and managerial power theory.

Economists commonly argue that solving the multi-agent incentive problem is one of a firm's major objectives, and they model this issue from the traditional agency perspective of moral hazard problems, such as the free-rider problem, with unobservable individual performance (Alchian and Demsetz, 1972; Holmstrom, 1982). If individuals' performance can be observed, incentives based on relative performance, such as rank-order tournaments, can be powerful. Rank-order tournaments treat the difference between a CEO's incentive and non-CEO executives' incentives² as a prize to be won. Increasing this prize not only attracts and keeps capable executives but also motivates team members to exert greater effort to win (Lazear and Rosen, 1981; Green and Stokey, 1983). However, from the perspective of social comparison theory, sociologists and management researchers argue that people pay close attention to equity and that excessive competition within TMTs could cause unfair behaviour, such as sabotaging other team members' performance or being unwilling to collaborate (Milgrom and Roberts, 1988; Lazear, 1989; Bolton and Dewatripont, 2005, Chapter 8). Therefore, a large incentive difference among executives can make them feel unfairly treated and decrease their willingness to exert high effort (O'Reilly *et al.*, 1988; Pfeffer and Langton, 1993; Finkelstein and Hambrick, 1997; Henderson and Fredrickson, 2001). Finally, from the perspective of managerial power theory, an executive's incentive reflects his or her bargaining power. When corporate governance is weak, a large difference between a CEO's incentive and other non-CEO executives' incentives always indicates an entrenched CEO, which is associated with a more severe agency problem during the CEO's tenure (Bebchuk and Fried, 2003; Bebchuk *et al.*, 2011).

The literature primarily adopts the pay-level difference between the CEO and non-CEO executives as a proxy for the incentive difference. Some studies that follow tournament theory use the pay-level difference between CEO and non-CEO executives as the prize for winning the contest and find that ability of executives, TMT size, promotion probability,

² The incentive difference between the CEO and non-CEO executives includes the differences in pay levels and pay structures, such as performance-based pay.

monitoring cost, economic efficiency, and national culture are all determinants of the tournament prize (Pfeffer and Davis-Blake, 1987; O'Reilly *et al.*, 1988; Conyon *et al.*, 2001; Bloom and Michel, 2002; Kale *et al.*, 2009; Kato and Long, 2011; Shin *et al.*, 2015). Moreover, increasing the tournament prize motivates executives to exert more effort, thereby improving firm performance, but the empirical evidence is not consistent (Main *et al.*, 1993; Ericksson, 1999; Kale *et al.*, 2009, Lee *et al.*, 2008 and Conyon *et al.*, 2001). In the same vein, the social comparison theory literature finds that task interdependence, external munificence, and industry norms are all determinants of the pay-level difference between the CEO and non-CEO executives, which is used as the main signal of TMT unfairness (Henderson and Fredrickson, 2001; Finkelstein and Hambrick, 1997; Shin *et al.*, 2015). Moreover, increasing the difference may lead to more conflicts and turnover (Bloom, 1999; Henderson and Fredrickson, 2001; Bloom and Michel, 2002; Trevor and Wazeter, 2006; Wade *et al.*, 2006), lower-quality products (Cowherd and Levine, 1992), reduced labour productivity (Faleye *et al.*, 2010), and worse firm performance (Carpenter and Sanders, 2004). Finally, researchers following managerial power theory adopt the percentage of the CEO's pay level in the top five executives' total pay level (CEO Pay Slice (CPS)) as a proxy for the agency cost of the incentive difference within TMTs and find that higher CEO power is associated with higher CPS when corporate governance is weak (Bebchuk and Fried, 2003). Moreover, higher CPS may lead to higher equity costs as well as lower firm value and performance (Bebchuk *et al.*, 2011; Chen *et al.*, 2011).

In addition to the pay-level differences, pay-structure differences in TMTs play a critical role in TMT incentives. Although the multi-agent incentive structure design is widely discussed in theoretical models, the empirical evidence is scant. The literature mainly uses the dispersion of executives' PPS as a proxy for the TMT pay-structure difference. For example, Murphy (1986) does not find a significant difference in performance-based pay between the CEO and other non-CEO top executives, while Ang *et al.* (2002) find that bank CEOs have higher pay levels than non-CEO bank executives and receive more performance pay. Aggarwal and Samwick (2003) compare the performance pay of CEO from headquarters, non-CEO top executives from headquarters, CEO from divisions, and non-CEO top executives from divisions, and find that headquarters' CEOs get the highest performance pay, followed by the non-CEO top executives from headquarters. Bushman *et al.* (2015) argue that there is an optimal PPS distribution within the TMT—that the actual PPS dispersion always deviates from the optimal level and that due to adjustment costs, firms can only partially close the gap between the target and actual dispersion.

Since 2005, it has been mandatory for China's listed firms to disclose their executives' compensation, but only the pay levels of the top executives are required. We can only obtain the pay package for each top executive; the pay structure remains unknown. As almost all the top executives in China's listed companies receive cash compensation, Chinese

researchers have not calculated a measure of PPS dispersion to act as a proxy for the pay-structure difference. Thus, TMT incentive studies in China focus primarily on the pay-level difference of TMTs, and most of the empirical evidence supports tournament theory (Lin *et al.*, 2003; Chen and Zhang, 2006).³ Recently, Chinese researchers have begun to focus on the pay-structure differences among different levels of staff, but they consider only the difference between executives and employees. For example, they study the asymmetry of compensation changes between managers and workers when a company's performance improves (Fang, 2011) and the effects of compensation change consistency between managers and workers on future firm performance (Chen *et al.*, 2015). However, managers and workers naturally diverge in responsibility and ability, while the top executives in the same TMT have more similarities and are more comparable. Thus, further studies of the compensation structure within TMTs are necessary. Under the current pay disclosure policy, we can observe each top executive's dynamic compensation changes and their interrelationships, apart from the pay levels. As the tenure of a top executive often involves multiple terms, he or she may care more about the dynamic growth of his or her payments across the terms than the static pay level in each term. Moreover, the executive compensation of China's listed companies primarily consists of basic salary and performance-based pay. The former is relatively fixed, while the latter is the main source of dynamic compensation change. Thus, the difference in the dynamic compensation changes within a TMT captures the difference in the compensation structure, which can better reflect the incentive differences among the top executives to some extent. In this study, using TMT dynamic compensation change inconsistency as a proxy for TMT compensation structure differences, we first discuss the possible determinants of the inconsistency and then analyse the inconsistency's effects on future performance.

2.2 Determinants of Dynamic Compensation Change Inconsistency in TMTs

Differences in dynamic compensation change in TMTs result from the team incentive allocation and are a direct reflection of the pay-structure differences among team executives. Like pay-level difference, pay-structure difference in TMTs is also affected by series factors at the executive individual, organisational, and external levels. We therefore examine the determinants of dynamic compensation change inconsistency in TMTs, including executives' power, the TMT's size, and the volatility of the external environment.

Executive power. At the executive level, in addition to the separate individual agency costs, the individual differences should be considered when setting the TMT incentive

³ Other major studies, such as Zhang (2007, 2008) find a negative relationship between TMT pay-level difference and firm performance. Xu *et al.* (2016) find that the tournament incentives in Chinese TMTs are moderated by the total TMT pay level, which means that a higher TMT pay-level difference would motivate executives when they are paid more than their peers, but would decrease their incentive when they are paid less than their peers.

contract (Gerhart *et al.*, 2009). Executives' performance-based compensation should vary according to their responsibilities and objectives. The interrelationships and synergies within an executive team should also be considered (Edmans *et al.*, 2013; Alchian and Demsetz, 1972).⁴ Because the amount of influence executives have varies, the principal generally wants more influential executives—like the CEO—to work harder, and thus gives them larger incentives. It is therefore reasonable that executives in a TMT have different pay structures. However, managerial power theory argues that large pay-structure differences across executives could be a result of the agency problem. Executives' pay incentives reflect their bargaining power: the greater the power, the more influence an executive can exert over his or her compensation contract. For example, a CEO who simultaneously serves as the chairperson can obtain more power and may influence his compensation upward relative to other non-CEO executives (Burns *et al.*, 2017). However, a powerful CEO may be counterbalanced if non-CEOs also serve on the board or have more seniority. In other words, the difference in incentives between the CEO and non-CEO executives could be reduced when non-CEOs have certain bargaining power regarding the compensation contract. We thus predict that the dynamic compensation change inconsistency becomes greater when the CEO is powerful and decreases when the non-CEOs are also powerful.

TMT size. At the organisational level, the number of executives in a TMT is a critical factor when determining team incentives. Tournament theory argues that the tournament incentive is determined by the size of the prize and the probability of promotion. When the size of the prize is given, a higher probability of promotion strengthens the tournament incentive (Kale *et al.*, 2009). Companies with large TMTs have more competitors for the CEO position, which lowers each executive's probability of winning the contest. To maintain the tournament incentive, the tournament prize should increase, in which case the difference between the CEO and non-CEO executives also becomes larger (Main *et al.*, 1993; Kale *et al.*, 2009). From this view, we can predict that if large TMTs want to motivate non-CEOs, the CEO's compensation should grow much more quickly than that of non-CEOs. However, social comparison theory argues that some companies objectively require more executives to coordinate their business activities, so communication and cooperation in the TMT are important, and large incentive differences among executives are detrimental to the communication process (Henderson and Fredrickson, 2001). From this perspective, relatively lower CEO and non-CEO compensation change inconsistency is better for a large TMT.

Volatility of the external environment. Tournament theory argues that when the

⁴ For example, the effort by a manager has a direct productive effect but may also reduce the marginal cost of effort for one or more colleagues, and the effort of these colleagues may reciprocally reduce the manager's marginal cost of effort (Che and Yoo, 2001; Kremer, 1993; Ramakrishnan and Thakor, 1991; Edmans *et al.*, 2013).

external environment is noisy, it is costly for the principal to monitor the managers. The principal therefore gives the CEO a higher incentive instead (Core and Guay, 1999), which also increases the tournament prize (Kale *et al.*, 2009) and incentive disparity in the TMT. However, competition within the team may bring better solutions when a volatile external environment is confronted (Finkelstein and Hambrick, 1997). From this point of view, the inconsistency in the compensation change between the CEO and non-CEOs increases with the volatility of the external environment. However, social comparison theory argues that team members' communication and cooperation are critical when the company faces an unstable external environment. Thus, a large incentive disparity among executives decreases team members' communication and cooperation (Rajgopal and Srinivasan, 2006), and a noisy external environment may also reduce the inconsistency of the compensation change of the TMT.

2.3 Consequences of Dynamic Compensation Change Inconsistency in TMTs

In this section, we discuss whether TMT dynamic compensation change inconsistency is associated with subsequent firm operating performance. As stated previously, a manager's effort may reduce the marginal cost of effort for other colleagues or increase other colleagues' productivity, thus achieving a synergistic effect. A reasonable pay structure disparity among executives would therefore improve firm performance. For example, Bushman *et al.* (2015) argue that there exists an optimal level for executives' PPS dispersion and that any deviation from the optimal level decreases firm performance. However, the predictions of the suitable incentive disparity in TMTs are different from the preceding three perspectives.

Tournament theory argues that a large tournament prize can increase non-CEOs' promotion incentive and increase the retention of talented CEOs. A large incentive disparity between the CEO and non-CEOs could bring the executives a higher tournament prize expectation, especially when the monitoring cost is high for the principal. Thus, a large incentive difference within a TMT is beneficial for subsequent firm performance. However, social comparison theory argues that a large incentive difference within a TMT impairs communication and cooperation between team members and can foster organisational politics. Thus, a smaller incentive disparity in a TMT with more consistent compensation changes is accompanied by better future firm performance. Finally, managerial power theory argues that if a large incentive disparity comes from a powerful CEO or other agency problems, the inconsistency of TMT compensation changes is detrimental to subsequent firm performance.

Although there are countervailing theoretical predictions and mixed empirical evidence precludes us from making an unambiguous signed prediction on the performance effects of pay-change inconsistency, the theories are not contradictory; they vary by organisational

circumstances. This contingency view has received a great deal of empirical support (Cowherd and Levine, 1992; Pfeffer and Langton, 1993; Henderson and Fredrickson, 2001; Siegel and Hambrick, 2005; Chen *et al.*, 2011; Li *et al.*, 2014). In this study, we provide large-sample evidence for the factors associated with the pay-structure difference and its economic consequences under China's institutional background, and we examine the applicability of each theory to Chinese listed companies.

III. Research Design

3.1 Data Resource and Sample Selection

Our initial sample consists of all listed Chinese firms from 2005 to 2014. We define TMT members as all of those who occupy a management position. Any members of the board of directors or supervisors who receive only a fixed bonus are excluded. The top managers in our sample include general managers, deputy general managers, chief engineers, chief accountants, and chief financial officers. The general manager, president, or CEO of a firm is defined as the CEO (Liao *et al.*, 2009), and all the other managers as non-CEOs. It has been mandatory for Chinese listed firms to disclose their executives' compensation details since 2005, and we require the executives to have at least two consecutive years of compensation data; thus, the sample actually starts from 2006.

We use the following procedures to select our sample. First, we sort out effective TMT samples to ensure that all of the executives have complete annual compensation data. Based on the initial disclosed TMTs, we drop the executives (including CEO and non-CEOs) who changed in the current year and have less than one year of tenure. Then we drop the executives who do not disclose their compensation or who received only a fixed bonus. We obtain 15,032 effective TMT observations, which include 86,115 executive observations. Second, we remove (1) 143 firm-year observations from the financial sector because their financial data are not directly comparable with those of other firms, (2) 4,383 firm-year observations for which the CEO does not have at least two consecutive years of compensation data,⁵ and (3) 1,449 firm-year observations with missing values for other variables. Finally, our sample contains 9,057 effective firm-year observations. Executive compensation data and other firm characteristic data are obtained from the China Stock Market and Accounting Research (CSMAR) database. We screen the non-CEO compensation data manually according to position titles.

3.2 Measure of Dynamic Compensation Change Inconsistency

In this paper, we use the difference in the CEO's and non-CEOs' compensation growth

⁵ We require the firm to have at least two consecutive years of compensation data because we need to calculate the compensation change. Because we drop the TMTs for which CEOs changed in the current year, there will be more missing values in this step.

rates to measure the inconsistency of their compensation change. The executive compensation in China's listed companies is primarily composed of basic salary and performance-based pay. The former is relatively fixed, while the latter is the main source of dynamic compensation change. Thus, for executives who face the same firm performance, the difference in the compensation growth rate is the difference of their share of firm profits.⁶

It should be noted that an executive's compensation change includes two dimensions: change direction and change extent. When the CEO's and non-CEOs' compensations change in different directions, the ratio of their pay growth rates is not comparable with the ratio of their pay growth rates when they change in the same direction. We therefore discuss the two dimensions separately. We first consider the direction inconsistency of the dynamic compensation change in TMT (*DPAY*). We define the compensation change direction as consistent (*DPAY*=0) when CEO pay increases (decreases or remains unchanged) and non-CEOs pay also increases (decreases or remains unchanged). Other pay-change situations are defined as compensation change direction inconsistent (*DPAY*=1). The interactions of the CEO's and non-CEOs' compensation changes are shown in Table 1. There are also two sub-situations in which the compensation change direction is inconsistent. We define *DPAY_CN*=1 when CEO pay increases and non-CEO pay decreases (or remains unchanged) or when CEO pay remains unchanged and non-CEO pay decreases. We define *DPAY_NC*=1 when CEO pay decreases and non-CEO pay increases (or remains unchanged) or when CEO pay remains unchanged and non-CEO pay increases.

Table 1 Interactions of the CEO's and Non-CEOs' Compensation Change

CEO Pay Change	Non-CEO Pay Change		
	Decrease	Unchanged	Increase
Decrease	1,396	41	669
Unchanged	224	755	389
Increase	731	92	4,760

Next, we consider the extent of the inconsistency of the dynamic compensation change in TMT (*EDPAY*). (1) We define a continuous variable *DCHPAY* as the ratio of the CEO pay growth rate to the non-CEO pay growth rate.⁷ (2) We divide the sample into three groups according to the ascending order of *DCHPAY* values: *GROUP_L*, *GROUP_M*, and *GROUP_H*. For *GROUP_M*, the *DCHPAY* value is approximately 1, which means that the pay growth rates of the CEO and non-CEOs are nearly the same and the compensation

⁶ For example, if the firm's performance increases by 1%, the CEO's pay increases by $a\%$, and non-CEOs' pay increases by $b\%$, the difference in their share in profit is $a:b$.

⁷ It should be noted that *DCHPAY* is only defined when the pay-change directions are consistent, which means that *DPAY*=0.

change is rather small. In contrast, in *GROUP_L* and *GROUP_H*, the extent of the compensation change difference is high and inconsistent. (3) We define the extent of compensation change as consistent ($EDPAY=0$) when $GROUP_M=1$ and inconsistent otherwise ($EDPAY=1$).

3.3 Variable Definitions and Model Specification

In accordance with the foregoing theoretical analysis and relevant research on TMT incentive design (Rajgopal and Srinivasan, 2006), we use the following model (1) to examine the factors that influence the dynamic compensation change inconsistency between the CEO and non-CEOs:

$$\begin{aligned}
 DPAY_t / EDPA_t = & \beta_0 + \beta_1 DUAL_t + \beta_2 NCEOBOARD_t + \beta_3 LNNCEOAGE_t \\
 & + \beta_4 LNNCEOTENURE_t + \beta_5 NUM_t + \beta_6 RET_VOL_t + \beta_7 D_t \\
 & + \beta_8 SOE_t + \beta_9 TOPI_t + \beta_{10} SIZE_t + \beta_{11} LEV_t + \beta_{12} FIRMAGE_t \\
 & + \beta_{13} BOARD_t + \beta_{14} RATIO_t + \beta_{15} TMTSEX_t + \beta_{16} LNMTMPAY_t \\
 & + \beta_{17} MTMTHOLD_t + \sum Industry_t + \sum Year_t + \varepsilon_t,
 \end{aligned} \tag{1}$$

where the dependent variable is the dynamic compensation change inconsistency, which is measured in terms of direction and extent. $DPAY$ represents the direction inconsistency of pay change and is subdivided into $DPAY_CN$ and $DPAY_NC$. $EDPAY$ represents the extent of the inconsistency of the pay change. Because all the dependent variables are dummies, we use the logistic regression method in model (1).

We consider the determinants of the dynamic compensation change inconsistency in TMTs. At the executive level, according to managerial power theory, executives' power reflects their bargaining power and may affect their pay changes. *DUAL* indicates that a CEO simultaneously serves as the chairperson; we use this measure as a proxy for CEO power, and we expect that high CEO power is associated with high pay-change inconsistency. *NCEOBOARD* represents the proportion of non-CEOs that hold seats on the board, where the higher the ratio, the greater influence non-CEOs can exert on their compensation design. We expect that higher *NCEOBOARD* is associated with smaller pay-change inconsistency. In the same vein, *LNNCEOAGE* and *LNNCEOTENURE* represent non-CEOs' age and tenure, respectively, and also reflect non-CEOs' bargaining power regarding their compensation. We also expect that higher *LNNCEOAGE* and *LNNCEOTENURE* are associated with smaller pay-change inconsistency. At the organisational level, *NUM* is the size of the effective TMT based on the aforementioned sample selection process. At the external level, *RET_VOL* is the volatility of the external environment, and we use the time-series standard deviation of monthly stock returns over the prior 60 months (Kale *et al.*, 2009; Shin *et al.*, 2015). According to the theories, we

cannot make specific signed predictions for these two factors.

Other control variables, including TMT characteristics, firm characteristics and firm governance, are defined as in the literature (Rajgopal and Srinivasan, 2006; Kale *et al.*, 2009; Shin *et al.*, 2015). For example, firm governance includes board size (*BOARD*) and the ratio of independent directors (*RATIO*). TMT characteristics include the ratio of female executives in the TMT (*TMTSEX*), the average pay level of the executives (*LNMTMTPAY*), and the average shareholdings of the executives (*MTMTHOLD*). Moreover, in China's listed firms, state-owned property rights and ownership concentration have substantial effects on executive compensation design (Core *et al.*, 1999). In model (1), we use two variables to control for their effects: whether the firm is state-owned (*SOE*), and the largest shareholder's proportion of ownership (*TOP1*). Other firm characteristics include firm performance (*D*), firm assets (*SIZE*), the liability–asset ratio (*LEV*), and the number of years that the firm has been listed (*FIRMAGE*). The specific variable definitions are presented in Table 2. We also control for industry and year fixed effects in model (1).

In addition to identifying the determinants of compensation change inconsistency in TMTs, we examine its effects on subsequent performance by developing model (2) following the literature (Chen *et al.*, 2015; Bushman *et al.*, 2015).

$$\begin{aligned}
 ROA_t = & \beta_0 + \beta_1 DPAY_{t-1} / EDPAY_{t-1} + \beta_2 SOE_t + \beta_3 DUAL_t + \beta_4 BOARD_t \\
 & + \beta_5 RATIO_t + \beta_6 TOP1_t + \beta_7 DRTMTPAY_t + \beta_8 LNMTMTPAY_t \\
 & + \beta_9 MTMTHOLD_t + \beta_{10} SIZE_t + \beta_{11} LEV_t + \beta_{12} FIRMAGE_t \\
 & + \beta_{13} BM_t + \beta_{14} H_t + \sum Industry_t + \sum Year_t + \varepsilon_t,
 \end{aligned} \tag{2}$$

where the dependent variable is firm performance. We use a firm's return on assets (*ROA*) and firm value (*TOBINQ*) in our robustness tests. The coefficients on *DPAY_{t-1}* and *EDPAY_{t-1}* reflect the effects of the inconsistency on subsequent firm performance. According to tournament theory, increasing CEO pay to an extent higher than that of non-CEOs benefits firm performance, while social comparison theory argues that a CEO pay change that is more consistent with that of non-CEOs is better for the firm. Moreover, managerial power theory argues that if the large inconsistency between CEO and non-CEO pay change comes from an entrenched CEO or another agency problem, it is detrimental to firm performance. As we cannot theoretically predict the effects of the inconsistency exactly, the coefficients on *DPAY* and *EDPAY* cannot be predicted; thus, a large-sample examination is necessary. In accordance with the literature, the other control variables include TMT characteristics, firm characteristics, and firm governance. The specific variable definitions are presented in Table 2. We also control for industry and year fixed effects in model (2).

Table 2 Definition of Variables

Variable	Definition
Dynamic Compensation Change Inconsistency in TMT	
<i>DPAY</i>	Direction inconsistency of the dynamic compensation change in TMT. We define <i>DPAY</i> =0 if CEO pay increases (decreases or remains unchanged) and non-CEO pay also increases (decreases or remains unchanged), and 1 otherwise.
<i>DPAY_CN</i>	Direction inconsistency when CEO pay increases and non-CEO pay does not increase. We define <i>DPAY_CN</i> =1 when CEO pay increases and non-CEO pay decreases (or remains unchanged) or when CEO pay remains unchanged and non-CEO pay decreases, and 0 otherwise.
<i>DPAY_NC</i>	Direction inconsistency when CEO pay does not increase and non-CEO pay increases. We define <i>DPAY_NC</i> =1 when CEO pay decreases and non-CEO pay increases (or remains unchanged) or when CEO pay remains unchanged and non-CEO pay increases, and 0 otherwise.
<i>DCHPAY</i>	When CEO and non-CEO pay change in the same direction, we define <i>DCHPAY</i> as the ratio of the CEO pay growth rate to the non-CEO pay growth rate.
<i>GROUP_L</i>	When CEO and non-CEO pay change in the same direction and the pay growth rate of the CEO is smaller than that of non-CEOs. We divide the sample into three groups by ascending order of <i>DCHPAY</i> values and define the lowest <i>DCHPAY</i> group as <i>GROUP_L</i> =1, while the other groups are 0.
<i>GROUP_M</i>	When CEO and non-CEO pay change in the same direction and the pay growth rates of the CEO and non-CEOs are nearly the same. We divide the sample into three groups by ascending order of <i>DCHPAY</i> values and define the middle <i>DCHPAY</i> group as <i>GROUP_M</i> =1, while the other groups are 0.
<i>GROUP_H</i>	When CEO and non-CEO pay change in the same direction and the pay growth rate of the CEO is larger than that of non-CEOs. We divide the sample into three groups by ascending order of <i>DCHPAY</i> values and define the highest <i>DCHPAY</i> group as <i>GROUP_H</i> =1, while the other groups are 0.
<i>EDPAY</i>	Inconsistency of the dynamic compensation change in TMT. We define <i>EDPAY</i> =0 when CEO pay growth is consistent with non-CEO (<i>GROUP_M</i> =1), and other conditions as <i>EDPAY</i> =1.
Executive Compensation	
<i>DCEOPAY</i>	CEO pay change = (CEO compensation in period <i>T</i>) – (CEO compensation in period <i>T</i> -1)
<i>DNCEOPAY</i>	Non-CEO pay change = (non-CEO compensation median value in period <i>T</i>) – (non-CEO compensation median value in period <i>T</i> -1)
<i>DRCEOPAY</i>	CEO pay growth rate = CEO pay change / (CEO compensation in period <i>T</i> -1)
<i>DRNCEOPAY</i>	Non-CEO pay growth rate = non-CEO pay change / (non-CEO compensation median value in period <i>T</i> -1)
<i>DRTMTPAY</i>	TMT pay growth rate = ((TMT compensation in period <i>T</i>) – (TMT compensation in period <i>T</i> -1)) / (TMT compensation in period <i>T</i> -1)
<i>MTMTPAY</i>	TMT average pay level = TMT compensation / TMT size
<i>MTMTHOLD</i>	TMT average shareholdings = TMT shareholdings / TMT size

TMT Characteristics	
<i>NCEOAGE</i>	ln(the median value of non-CEOs' age)
<i>NCEOTENURE</i>	ln(the median value of non-CEOs' tenure years)
<i>TMTSEX</i>	The ratio of female executives in TMT = female executives / TMT size
<i>NUM</i>	TMT size: the effective executives in the TMT after the sample selection
Firm Governance and Characteristics	
<i>DUAL</i>	1 when the CEO also serves as the chairperson, and 0 otherwise.
<i>NCEOBOARD</i>	The proportion of non-CEOs also holding seats on the board = the number of non-CEOs also holding seats on the board / the number of non-CEO executives
<i>BOARD</i>	Board size
<i>RATIO</i>	The number of independent directors / board size
<i>TOP1</i>	The number of shares owned by the largest shareholder divided by the total shares outstanding
<i>ROA</i>	Net income / total assets
<i>D</i>	Whether performance declined. We define $D=1$ if the current period's ROA is lower than the last period's ROA, and 0 otherwise.
<i>BM</i>	Total assets / market value
<i>RET_VOL</i>	The volatility of the external environment. We use the time-series standard deviation of monthly stock returns over the prior 60 months.
<i>H</i>	We define $H=1$ if the firm is listed in Hong Kong at the same time, and 0 otherwise.
<i>SOE</i>	We define $SOE=1$ if the firm is state-owned, and 0 otherwise.
<i>SIZE</i>	ln(total assets)
<i>LEV</i>	Total debts / total assets
<i>FIRMAGE</i>	ln(years the firm has been listed)

IV. Empirical Results

4.1 Descriptive Statistics

Figure 1 shows the pay growth rate of CEOs and non-CEOs over the sample period. Overall, both CEOs and non-CEOs experience steady and consistent increasing pay trends, while CEOs' average pay growth is higher than that of non-CEOs. In 2007, both the CEO and non-CEO pay growths peak, with the average CEO pay increasing by 38% and that of non-CEOs increasing by 32%. However, in 2008, both groups' average pay growth rates drop sharply. The pay growth rates increase again in 2010 but then decline until 2014.

Figure 2 shows the ratio of direction inconsistency over the sample period. More than 20% of the sample firms have their CEOs' and non-CEOs' pay change in opposite directions in each year. In 2007 and 2010, the ratio of direction inconsistency is lowest, while the average pay growth rates in 2007 and 2010 are relatively higher than in other years, corresponding to Figure 1. Moreover, with the pay growth rate declining from 2011 to 2014,

the direction inconsistency rate continues to increase. In other words, the direction inconsistency is more likely to occur when the pay growth rate is down. Figure 2 also presents the direction inconsistency of $DPAY_CN=1$, which comprises about half of the total direction inconsistency. The trend of $DPAY_CN=1$ is close to that of $DPAY=1$, and $DPAY_CN=1$ is also more likely to occur when the pay growth rate is down.

Table 3 presents the distribution of the pay growth rates under different pay-change groups (*GROUP*). In $DPAY_CN=1$ and $DPAY_NC=1$, the CEOs' and non-CEOs' pays change in opposite directions; thus, their pay growth rate ratios are not comparable to those of the direction-consistent groups. We divide the sample into three groups (*GROUP_L*, *GROUP_M*, *GROUP_H*) according to the ratios of the pay growth rates when the CEOs' and non-CEOs' pays change in the same direction ($DPAY=0$). In *GROUP_L*, the CEOs' average pay growth rate is 12% and the non-CEOs' average pay growth rate is 26%, which means that CEOs' pay changes more slowly than that of non-CEOs. Similarly, in *GROUP_H*, CEOs' average pay growth rate is 38% and non-CEOs' average pay growth rate is 18%, which means that CEOs' pay changes more quickly than that of non-CEOs. In *GROUP_M*, CEOs' and non-CEOs' average pay growth rates are both around 16%; thus, the pay change is more consistent in this group.

Figure 1 Pay Growth Rates of CEOs and Non-CEOs Over the Sample Period

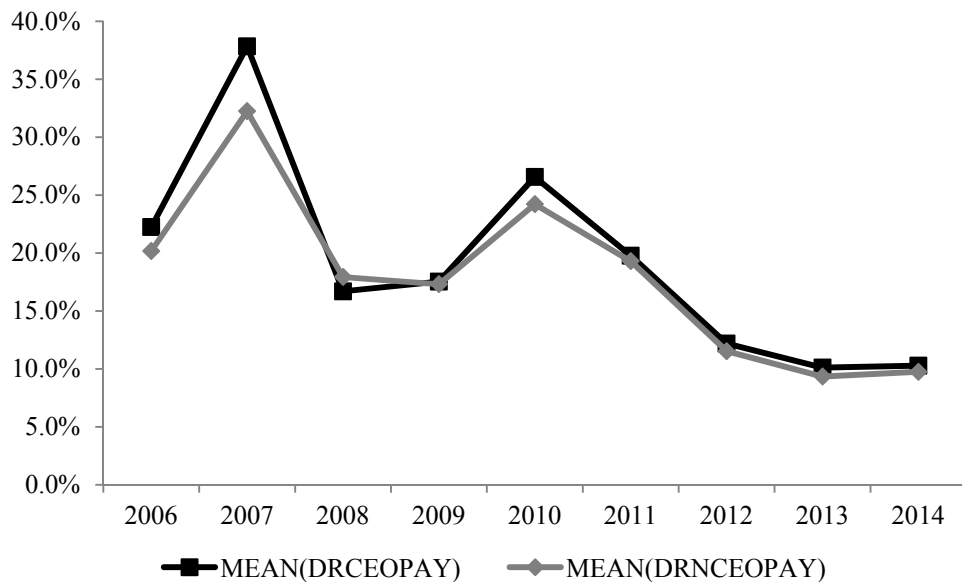
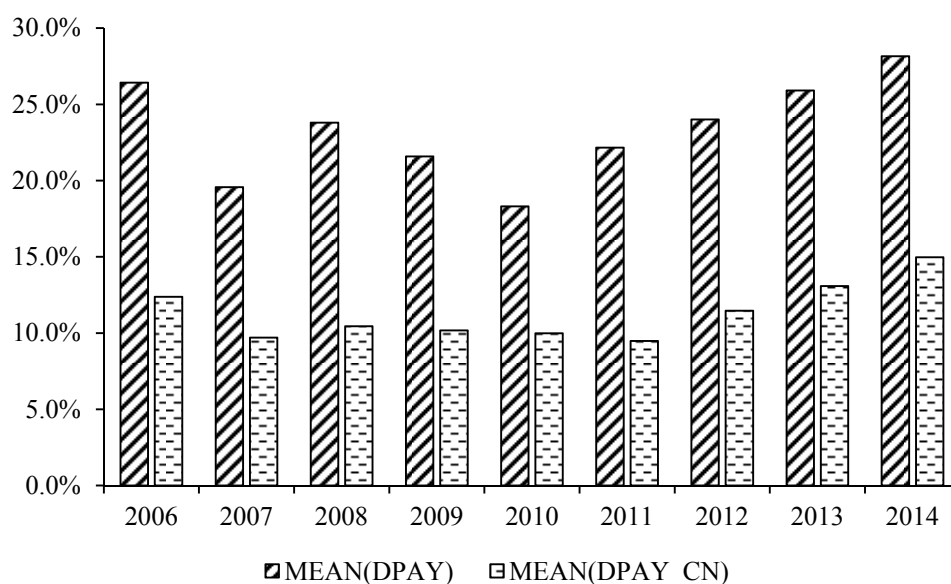


Figure 2 Ratios of Direction Inconsistency Over the Sample Period**Table 3 Distributions of Pay Growth Rates Under Different Pay-Change Groups**

Group	Variable	Observations	Mean	Median	Std. Dev.	25%	75%
<i>DPAY_CN</i>	<i>DRCEOPAY</i>	1,047	15.14%	5.26%	31.20%	0.21%	16.67%
	<i>DRNCEOPAY</i>	1,047	-10.10%	-6.03%	11.31%	-14.38%	-1.69%
<i>DPAY_NC</i>	<i>DRCEOPAY</i>	1,099	-7.99%	-1.91%	12.78%	-10.66%	0.00%
	<i>DRNCEOPAY</i>	1,099	17.92%	10.10%	24.78%	3.52%	21.31%
<i>GROUP_L</i>	<i>DRCEOPAY</i>	2,075	11.77%	6.00%	25.82%	0.36%	16.28%
	<i>DRNCEOPAY</i>	2,075	26.19%	17.94%	43.11%	2.90%	39.54%
	<i>DCHPAY</i>	2,075	0.434	0.457	0.235	0.235	0.640
<i>GROUP_M</i>	<i>DRCEOPAY</i>	2,809	16.77%	5.38%	41.80%	0.00%	26.00%
	<i>DRNCEOPAY</i>	2,809	16.56%	5.47%	38.81%	0.00%	26.25%
	<i>DCHPAY</i>	2,054	0.993	1.000	0.100	0.921	1.063
<i>GROUP_H</i>	<i>DRCEOPAY</i>	2,027	37.82%	21.05%	64.72%	2.27%	51.54%
	<i>DRNCEOPAY</i>	2,027	17.52%	8.56%	33.61%	0.37%	24.80%
	<i>DCHPAY</i>	2,027	3.963	1.897	5.239	1.440	3.468

Table 4 shows the descriptive statistics for the main variables. *DPAY* is the inconsistency of the pay-change direction and *EDPAY* is the inconsistency of the pay-change extent. The mean value of *DPAY* is 0.237, which means that about 23.7% of the sample firms have their CEOs' and non-CEOs' pays change in opposite directions. The mean value of *DPAY_CN* is 0.116, which means that about 11.6% of the sample firms' CEO pay is increasing and non-CEO pay is decreasing. The mean value of *DPAY_NC* is 0.121, which

means that about 12.1% of the sample firms' CEO pay is decreasing and non-CEO pay is increasing. The mean value of *EDPAY* is 0.690, which means that 69% of the sample firms have larger pay-change extent inconsistency than other firms.

For the variables related to executive compensation, the mean (median) values of *DCEOPAY* and *DNCEOPAY* are 52.022 (18.000) and 35.878 (17.000), respectively, which means that CEOs' pay increases by an average of 50,000 yuan and that of non-CEOs increases by an average of about 36,000 yuan. Moreover, the mean value of the CEO (non-CEO) pay growth rate is 0.171 (0.161), while the median value of the CEO (non-CEO) pay growth rate is 0.050 (0.073), which means that executives' pay growth rates vary widely across the sample. For the whole TMT, the average pay level is 420,000 yuan, the average shareholding is 1.008%, and the average pay growth rate is 0.204. The average age of non-CEOs is 45.7, and their average tenure is 5.3 years. About 14.2% of the TMT executives are female (mean *TMTSEX*=0.142), and the average TMT size is about six members (mean *NUM*=5.84).

Looking at firm governance and characteristics, the mean value of *DUAL* is 0.239, which means that about 23.9% of the sample firms have a single person as both CEO and chairperson. About 28.1% of non-CEOs also hold a seat on the board (mean *NCEOBOARD*=0.281). The average size of the board is around nine members (mean *BOARD*=8.976), about 36.7% of whom are independent directors (mean *RATIO*=0.367). The largest shareholder (*TOP1*) holds about 35% of the shares on average, and the average *ROA* is 4%. About 54% of the sample firms experienced a performance decline in the current year (mean *D*=0.54). *RET_VOL* is the time-series standard deviation of the monthly stock returns over the prior 60 months and reasonably distributed with a mean (median) value of 0.146 (0.143). About 3% of the sample firms are listed in Hong Kong simultaneously, and 47.1% of the sample firms are state-owned. Finally, firm size is distributed evenly with a mean (median) value of 21.781 (21.631), the leverage is 0.458 on average, and the average listed years of the sample firms is about 10 (mean *FIRMAGE*=9.750).

Table 5 presents the differences in firm governance and characteristics between different pay-change inconsistency groups. When the CEO's and non-CEOs' pays change in opposite directions (*DPAY*=1), the CEO is more powerful and the non-CEOs are less powerful. Such a TMT may be smaller and more likely to have a stable external environment. These firms have smaller boards, higher proportions of independent directors, lower largest shareholders, and lower firm performance; they are also more likely to experience performance decline. In addition, the direction inconsistency is more common in more recently listed non-SOEs. Although these firms have lower average executive pay levels, they are always associated with higher average executive shareholdings. Furthermore, we subdivide the direction inconsistency into *DPAY_CN* and *DPAY_NC* and find that more

non-CEOs serve on the board when the CEO's pay is decreasing and non-CEOs' pay is increasing.

Table 4 Descriptive Statistics

Variable	Observations	Mean	Median	Std. Dev.	25%	75%
Dynamic Compensation Change Inconsistency in TMTs						
<i>DPAY</i>	9,057	0.237	0.000	0.425	0.000	0.000
<i>DPAY_CN</i>	9,057	0.116	0.000	0.320	0.000	0.000
<i>DPAY_NC</i>	9,057	0.121	0.000	0.327	0.000	0.000
<i>EDPAY</i>	9,057	0.690	1.000	0.463	0.000	1.000
Executive Compensation						
<i>DCEOPAY(thousands)</i>	9,057	52.022	18.000	186.599	0.000	90.400
<i>DNCEOPAY(thousands)</i>	9,057	35.878	17.000	109.886	-1.000	65.750
<i>DRCEOPAY</i>	9,057	0.171	0.050	0.441	0.000	0.234
<i>DRNCEOPAY</i>	9,057	0.161	0.073	0.366	-0.004	0.253
<i>DRTMTPAY</i>	9,057	0.204	0.094	0.469	-0.056	0.355
<i>MTMTPAY(thousands)</i>	9,057	420.442	337.050	318.925	209.860	529.983
<i>MTMTHOLD</i>	9,057	1.008	0.001	2.506	0.000	0.262
TMT Characteristics						
<i>NCEOAGE</i>	9,057	45.679	45.750	4.050	43.000	48.500
<i>NCEOTENURE</i>	9,057	5.338	5.009	2.112	3.750	6.615
<i>TMTSEX</i>	9,057	0.142	0.125	0.163	0.000	0.250
<i>NUM</i>	9,057	5.843	6.000	2.280	4.000	7.000
Firm Governance and Characteristics						
<i>DUAL</i>	9,057	0.239	0.000	0.427	0.000	0.000
<i>NCEOBOARD</i>	9,057	0.281	0.250	0.264	0.000	0.500
<i>BOARD</i>	9,057	8.976	9.000	1.773	8.000	9.000
<i>RATIO</i>	9,057	0.367	0.333	0.052	0.333	0.400
<i>TOPI</i>	9,057	0.353	0.336	0.149	0.233	0.459
<i>BM</i>	9,057	0.946	0.676	0.845	0.409	1.164
<i>ROA</i>	9,057	0.041	0.037	0.051	0.015	0.066
<i>D</i>	9,057	0.540	1.000	0.498	0.000	1.000
<i>RET_VOL</i>	9,057	0.147	0.144	0.045	0.116	0.171
<i>SOE</i>	9,057	0.471	0.000	0.499	0.000	1.000
<i>H</i>	9,057	0.030	0.000	0.171	0.000	0.000
<i>SIZE</i>	9,057	21.781	21.631	1.181	20.944	22.443
<i>LEV</i>	9,057	0.458	0.462	0.222	0.291	0.618
<i>FIRMAGE</i>	9,057	9.750	10.000	5.532	4.000	14.000

Table 5 Differences in Firm Governance and Characteristics Between Different Pay Change-Inconsistent Groups

Variable	DPAY=0		DPAY=1		DIFF (A-B)		DPAY_CN=1		DIFF (A-C)		DPAY_NC=1		DIFF (A-D)		EDPAY=0		EDPAY=1		DIFF (E-F)	
	(A)	(B)	(B)	(A)	(A-B)	(C)	(C)	(A-C)	(A-C)	(D)	(D)	(A-D)	(A-D)	(E)	(E)	(F)	(F)	(E-F)	(E-F)	
<i>DUAL</i>	0.226	0.283	0.283	0.226	-0.057***	0.259	0.259	-0.033**	0.306	0.306	-0.080***	0.196	0.196	0.259	0.259	0.259	0.259	-0.063***	-0.063***	
<i>NCEOBOARD</i>	0.280	0.287	0.287	0.280	-0.007	0.275	0.275	0.005	0.298	0.298	-0.018**	0.281	0.281	0.282	0.282	0.282	0.282	-0.001	-0.001	
<i>NCEOAGE</i>	45.841	45.156	45.156	45.841	0.685***	45.069	45.069	0.771***	45.239	45.239	0.602***	46.176	46.176	45.455	45.455	45.455	45.455	0.721***	0.721***	
<i>NCEOTENURE</i>	5.413	5.096	5.096	5.413	0.317***	5.085	5.085	0.328***	5.106	5.106	0.307***	5.617	5.617	5.213	5.213	5.213	5.213	0.405***	0.405***	
<i>NUM</i>	5.918	5.601	5.601	5.918	0.317***	5.575	5.575	0.343***	5.626	5.626	0.292***	5.967	5.967	5.787	5.787	5.787	5.787	0.180***	0.180***	
<i>RET_VOL</i>	0.147	0.144	0.144	0.147	0.003**	0.143	0.143	0.005***	0.146	0.146	0.001	0.147	0.147	0.146	0.146	0.146	0.146	0.000	0.000	
<i>BOARD</i>	9.014	8.854	8.854	9.014	0.161***	8.882	8.882	0.133**	8.827	8.827	0.187***	9.110	9.110	8.916	8.916	8.916	8.916	0.194***	0.194***	
<i>RATIO</i>	0.366	0.370	0.370	0.366	-0.003**	0.370	0.370	-0.004**	0.369	0.369	-0.003	0.364	0.364	0.368	0.368	0.368	0.368	-0.004***	-0.004***	
<i>TOPI</i>	0.355	0.347	0.347	0.355	0.008**	0.348	0.348	0.007	0.346	0.346	0.008*	0.349	0.349	0.354	0.354	0.354	0.354	-0.005	-0.005	
<i>D</i>	0.532	0.566	0.566	0.532	-0.034***	0.550	0.550	-0.018	0.581	0.581	-0.048***	0.535	0.535	0.542	0.542	0.542	0.542	-0.007	-0.007	
<i>ROA</i>	0.042	0.037	0.037	0.042	0.005***	0.035	0.035	0.008***	0.039	0.039	0.003**	0.039	0.039	0.042	0.042	0.042	0.042	-0.002**	-0.002**	
<i>BM</i>	0.942	0.957	0.957	0.942	-0.015	0.984	0.984	-0.042	0.931	0.931	0.011	0.954	0.954	0.942	0.942	0.942	0.942	0.013	0.013	
<i>SOE</i>	0.499	0.382	0.382	0.499	0.118***	0.396	0.396	0.103***	0.368	0.368	0.132***	0.552	0.552	0.435	0.435	0.435	0.435	0.117***	0.117***	
<i>SIZE</i>	21.793	21.741	21.741	21.793	0.052*	21.746	21.746	0.047	21.737	21.737	0.056	21.789	21.789	21.777	21.777	21.777	21.777	0.012	0.012	
<i>LEV</i>	0.459	0.452	0.452	0.459	0.007	0.455	0.455	0.004	0.449	0.449	0.010	0.470	0.470	0.452	0.452	0.452	0.452	0.018***	0.018***	
<i>FIRMAGE</i>	9.829	9.496	9.496	9.829	0.333**	9.780	9.780	0.048	9.225	9.225	0.604***	10.172	10.172	9.560	9.560	9.560	9.560	0.611***	0.611***	
<i>LNMTMPAY</i>	12.715	12.673	12.673	12.715	0.041**	12.631	12.631	0.083***	12.714	12.714	0.001	12.611	12.611	12.747	12.747	12.747	12.747	-0.136***	-0.136***	
<i>MTMTHOLD</i>	0.935	1.246	1.246	0.935	-0.311***	1.184	1.184	-0.250***	1.305	1.305	-0.370***	0.685	0.685	1.154	1.154	1.154	1.154	-0.469***	-0.469***	

The preceding differences are almost the same when the pay-change extents of the CEO and non-CEOs are largely inconsistent. Specifically, when $EDPAY=1$, firms have a more powerful CEO and less powerful non-CEOs and the TMT is smaller, but there is no difference in the external environment. Moreover, firms with large inconsistency have smaller boards and higher independent director ratios, and are more likely to be young listed non-SOEs. However, these firms' performance is always better than that of firms with consistent pay changes. Finally, the average executive pay level and shareholdings are both higher when the pay-change extent is inconsistent.

4.2 Determinants of Dynamic Compensation Change Inconsistency in TMTs

In this paper, we discuss the determinants of dynamic compensation change inconsistency in TMTs, including executives' power, TMT size, and the volatility of the external environment. Table 6 presents the estimation results of model (1). The results in columns 1-3 report the determinants of pay-change direction inconsistency. The coefficients on executive power-related variables, such as CEO power ($DUAL$), are significantly positive in columns 1 and 3 and positive but not significant in column 2, which means that powerful CEOs are more likely to cause the pay-change direction inconsistency in TMTs, especially the situation of CEO pay decreasing and non-CEO pay increasing.⁸ The coefficients on non-CEO power ($NCEOBOARD$, $LNNCEOAGE$, $LNNCEOTENURE$) are all significantly negative in columns 1 and 2, but only non-CEO tenure ($LNNCEOTENURE$) is significantly negative in column 3, which means that non-CEO power may reduce the probability of pay-change direction inconsistency. The coefficients on TMT size (NUM) are all significantly positive in columns 1-3, which means that more contestants reduce the pay-change direction inconsistency in TMTs. The coefficients on the external environment (RET_VOL) are significantly negative in columns 1 and 2 and positive but not significant in column 3, which means that a volatile external environment would reduce the probability of pay-change direction inconsistency.

The results in column 4 of Table 6 report the determinants of pay-change extent inconsistency. The coefficients on the executive power-related variables, such as CEO power ($DUAL$), are significantly positive, and those on non-CEO power ($NCEOBOARD$, $LNNCEOAGE$, $LNNCEOTENURE$) are all significantly negative, which means that powerful CEOs can increase the probability of pay-change extent inconsistency, while powerful non-CEOs can reduce the probability of inconsistency. The coefficient on TMT size (NUM) is significantly negative, which means that more contestants reduce the

⁸ This may be because CEO pay decreases and non-CEO pay increases are more likely when firm performance is declining. For example, column 3 of Table 6 shows that the coefficient on D is significantly positive. When firm performance is bad, a CEO who also serves as the chairperson may cut his or her compensation voluntarily to motivate other executives. We are grateful for the advice of an anonymous reviewer.

Table 6 Determinants of Pay-Change Inconsistency (Logistic Regression)

Variable	(1) <i>DPAY</i>	(2) <i>DPAY_CN</i>	(3) <i>DPAY_NC</i>	(4) <i>EDPAY</i>
<i>CONSTANTS</i>	1.930 (1.451)	3.428* (1.940)	-2.203 (-1.285)	1.685 (1.356)
<i>DUAL</i>	0.200*** (3.067)	0.0346 (0.393)	0.290*** (3.531)	0.141** (2.173)
<i>NCEOBOARD</i>	-0.251** (-2.389)	-0.353** (-2.554)	-0.0776 (-0.575)	-0.305*** (-3.057)
<i>LNNCEOAGE</i>	-0.772** (-2.403)	-1.111*** (-2.636)	-0.205 (-0.492)	-1.152*** (-3.815)
<i>LNNCEOTENURE</i>	-0.370*** (-5.053)	-0.425*** (-4.401)	-0.198** (-2.143)	-0.446*** (-6.200)
<i>NUM</i>	-0.0599*** (-4.323)	-0.0548*** (-2.896)	-0.0475*** (-2.680)	-0.0356*** (-3.190)
<i>RET_VOL</i>	-1.541** (-2.298)	-3.542*** (-3.874)	0.540 (0.655)	-0.424 (-0.642)
<i>D</i>	0.103** (1.985)	0.0170 (0.249)	0.156** (2.325)	-0.00378 (-0.079)
<i>SOE</i>	-0.446*** (-6.830)	-0.330*** (-3.831)	-0.440*** (-5.142)	-0.345*** (-5.784)
<i>TOPI</i>	-0.244 (-1.290)	-0.165 (-0.666)	-0.242 (-0.970)	0.345** (1.986)
<i>SIZE</i>	0.0994*** (3.241)	0.0747* (1.857)	0.0935** (2.362)	-0.00310 (-0.109)
<i>LEV</i>	0.00569 (0.040)	0.0145 (0.076)	0.000107 (0.001)	0.0671 (0.513)
<i>FIRMAGE</i>	0.196*** (3.800)	0.288*** (4.266)	0.0503 (0.759)	0.161*** (3.242)
<i>BOARD</i>	0.0197 (1.119)	0.0426* (1.870)	-0.00799 (-0.340)	-0.00112 (-0.073)
<i>RATIO</i>	0.573 (1.097)	0.971 (1.414)	0.0307 (0.045)	0.111 (0.227)
<i>TMTSEX</i>	0.157 (0.991)	0.362* (1.770)	-0.0954 (-0.460)	0.280* (1.892)
<i>LNMTMTPAY</i>	-0.133*** (-3.057)	-0.258*** (-4.570)	0.0223 (0.393)	0.324*** (7.836)
<i>MTMTHOLD</i>	0.0122 (1.003)	0.0182 (1.161)	0.00307 (0.196)	0.0417*** (3.143)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	9,054	9,054	9,044	9,054
adj. R-sq	0.0257	0.0255	0.0206	0.0333

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed.

Table 7 Determinants of Pay-Change Inconsistency (Logistic Regression with Fixed Firm Effects)

Variable	(1) <i>DPAY</i>	(2) <i>DPAY_CN</i>	(3) <i>DPAY_NC</i>	(4) <i>EDPAY</i>
<i>DUAL</i>	0.0196 (0.125)	-0.00455 (-0.023)	0.147 (0.711)	0.168 (1.098)
<i>NCEOBOARD</i>	-0.638*** (-3.033)	-1.068*** (-4.117)	0.129 (0.472)	-0.271 (-1.290)
<i>LNNCEOAGE</i>	-0.809 (-1.192)	-2.159** (-2.524)	1.155 (1.379)	0.0633 (0.091)
<i>LNNCEOTENURE</i>	-0.444*** (-3.227)	-0.591*** (-3.474)	-0.108 (-0.595)	-0.608*** (-4.319)
<i>NUM</i>	-0.0418 (-1.552)	-0.0386 (-1.139)	-0.0310 (-0.897)	-0.0757*** (-2.949)
<i>RET_VOL</i>	-1.455 (-1.039)	-3.888** (-2.073)	0.711 (0.411)	-0.281 (-0.214)
<i>D</i>	0.0486 (0.787)	-0.0757 (-0.959)	0.172** (2.201)	-0.0419 (-0.715)
<i>SOE</i>	0.0520 (0.174)	-0.0872 (-0.219)	0.128 (0.352)	-0.167 (-0.668)
<i>TOP1</i>	-0.397 (-0.563)	-0.381 (-0.438)	0.445 (0.466)	0.332 (0.484)
<i>SIZE</i>	0.157 (1.487)	0.0658 (0.496)	0.294** (2.156)	-0.0368 (-0.369)
<i>LEV</i>	-0.648* (-1.846)	-0.762* (-1.697)	-0.506 (-1.104)	-0.479 (-1.476)
<i>FIRMAGE</i>	0.545** (2.355)	0.367 (1.219)	0.456 (1.597)	0.526** (2.344)
<i>BOARD</i>	0.0451 (1.046)	0.0592 (1.091)	0.0374 (0.682)	-0.00150 (-0.039)
<i>RATIO</i>	-0.115 (-0.108)	0.771 (0.572)	-0.847 (-0.626)	-1.079 (-1.056)
<i>TMTSEX</i>	0.0524 (0.140)	0.916* (1.921)	-0.772* (-1.661)	-0.202 (-0.528)
<i>LNMTMTPAY</i>	-1.111*** (-8.604)	-1.208*** (-7.097)	-0.640*** (-4.024)	0.197* (1.895)
<i>MTMTHOLD</i>	0.0284 (0.781)	0.0501 (1.115)	-0.0251 (-0.538)	0.0399 (0.835)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	5,740	4,034	4,004	6,012

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed.

pay-change extent inconsistency in TMTs. The coefficient on the external environment (RET_VOL) is positive but not significant, which means that the volatility of the external environment has no effect on the pay-change extent inconsistency in TMTs.

In sum, the determinants of pay-change inconsistency are in line with the predictions of social comparison theory and managerial power theory. The more powerful non-CEOs are, the larger the TMTs, and the more volatile the external environment, the less likely dynamic compensation change is to be inconsistent. Moreover, to reduce endogeneity, we also re-examine model (1) with logit regressions by controlling for firm fixed effects. The results are presented in Table 7 and are consistent with those in Table 6.

4.3 Consequences of Dynamic Compensation Change Inconsistency in TMTs

We use model (2) to examine the influence of dynamic compensation change inconsistency on subsequent firm performance. The results are presented in Table 8. The results in columns 1-3 report the influence of pay-change direction inconsistency. The coefficients on $DPAY_{t-1}$ are all significantly negative. This means that if CEO pay changes in an opposite direction from non-CEO pay, subsequent firm performance decreases regardless of whether CEO pay increases (and non-CEO pay decreases) or decreases (and non-CEO pay increases). The results in column 4 report the influence of pay-change extent inconsistency. The coefficient on $DPAY_{t-1}$ is also negative and significant at the 5% level, which means that high inconsistency is harmful to subsequent performance. Overall, the results in Table 8 indicate that both the direction and extent of pay-change inconsistency damage subsequent firm performance, which supports the prediction of social comparison theory.

To strengthen the robustness of the preceding results, we use $TOBINQ$ as an alternative measure of firm performance and re-examine model (2). The results are presented in Table 9. In columns 1-3, all of the coefficients on $DPAY_{t-1}$ are negative but only significant in columns 1 and 2. This means that if CEO pay changes in an opposite direction from non-CEO pay, especially when CEO pay increases and non-CEO pay decreases, the inconsistency is harmful to the subsequent firm value. In column 4, the coefficient on $DPAY_{t-1}$ is negative and significant at the 5% level as in Table 8, which means that high inconsistency damages future firm value. In sum, the results in Table 9 are consistent with those in Table 8 and support social comparison theory.

We also add past performance (ROA_{t-1}) in model (2) to control for any other endogenous factors that might affect current firm performance. The results are shown in Table 10, and they generally agree with Table 8. The coefficients on $DPAY_{t-1}$ in columns 1 and 4 are significantly negative, which indicates that both the direction and extent of the dynamic pay-change inconsistency damages future performance.

Table 8 Consequences of Dynamic Compensation Change Inconsistency

Independent Variable	Dependent Variable: <i>ROA</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	-0.400*** (-23.483)	-0.401*** (-23.525)	-0.402*** (-23.601)	-0.402*** (-23.647)
<i>DPAY_{t-1}</i>	-0.00414*** (-3.306)			
<i>DPAY_CN_{t-1}</i>		-0.00416** (-2.547)		
<i>DPAY_NC_{t-1}</i>			-0.00304* (-1.830)	
<i>EDPAY_{t-1}</i>				-0.00260** (-2.243)
<i>SOE</i>	-0.00806*** (-5.888)	-0.00785*** (-5.755)	-0.00787*** (-5.774)	-0.00796*** (-5.839)
<i>DUAL</i>	-0.00522*** (-3.816)	-0.00531*** (-3.874)	-0.00526*** (-3.846)	-0.00528*** (-3.855)
<i>BOARD</i>	-0.000421 (-1.189)	-0.000409 (-1.156)	-0.000422 (-1.191)	-0.000428 (-1.208)
<i>RATIO</i>	-0.0352*** (-3.403)	-0.0352*** (-3.397)	-0.0352*** (-3.407)	-0.0350*** (-3.378)
<i>TOPI</i>	0.0219*** (5.740)	0.0218*** (5.706)	0.0218*** (5.705)	0.0220*** (5.753)
<i>DRTMTPAY</i>	0.00538*** (4.399)	0.00539*** (4.409)	0.00529*** (4.332)	0.00532*** (4.349)
<i>LNMTMTPAY</i>	0.0181*** (18.005)	0.0181*** (17.991)	0.0182*** (18.117)	0.0183*** (18.247)
<i>MTMTHOLD</i>	0.000594** (2.444)	0.000577** (2.384)	0.000585** (2.396)	0.000597** (2.448)
<i>SIZE</i>	0.0130*** (14.933)	0.0130*** (14.964)	0.0130*** (14.948)	0.0129*** (14.915)
<i>LEV</i>	-0.0818*** (-14.607)	-0.0818*** (-14.619)	-0.0817*** (-14.597)	-0.0817*** (-14.620)
<i>FIRMAGE</i>	-0.00215** (-2.013)	-0.00219** (-2.051)	-0.00222** (-2.083)	-0.00221** (-2.070)
<i>BM</i>	-0.0172*** (-17.913)	-0.0172*** (-17.910)	-0.0172*** (-17.970)	-0.0172*** (-17.966)
<i>H</i>	-0.0201*** (-5.520)	-0.0204*** (-5.636)	-0.0202*** (-5.568)	-0.0203*** (-5.560)
Industry/Year	Yes	Yes	Yes	Yes
N	6,567	6,567	6,567	6,567
adj. R-sq	0.328	0.327	0.327	0.327

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed.

Table 9 Consequences of Dynamic Compensation Change Inconsistency

Independent Variable	Dependent Variable: <i>TOBINO</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	9.410*** (17.083)	9.390*** (17.082)	9.356*** (16.995)	9.358*** (17.035)
<i>DPAY_{t-1}</i>	-0.100*** (-2.763)			
<i>DPAY_CN_{t-1}</i>		-0.133*** (-2.900)		
<i>DPAY_NC_{t-1}</i>			-0.0442 (-0.925)	
<i>EDPAY_{t-1}</i>				-0.0680** (-1.981)
<i>SOE</i>	-0.0784** (-1.961)	-0.0744* (-1.869)	-0.0725* (-1.815)	-0.0765* (-1.913)
<i>DUAL</i>	-0.0307 (-0.787)	-0.0326 (-0.837)	-0.0322 (-0.826)	-0.0319 (-0.818)
<i>BOARD</i>	0.00425 (0.418)	0.00456 (0.448)	0.00431 (0.424)	0.00405 (0.398)
<i>RATIO</i>	1.487*** (4.432)	1.489*** (4.437)	1.488*** (4.434)	1.495*** (4.448)
<i>TOPI</i>	0.612*** (5.233)	0.609*** (5.216)	0.609*** (5.203)	0.615*** (5.255)
<i>DRTMTPAY</i>	0.0564 (1.621)	0.0573* (1.649)	0.0543 (1.564)	0.0549 (1.580)
<i>LNMTMTPAY</i>	0.230*** (6.778)	0.229*** (6.761)	0.232*** (6.848)	0.237*** (7.009)
<i>MTMTHOLD</i>	0.0102 (1.213)	0.00981 (1.171)	0.00984 (1.172)	0.0103 (1.224)
<i>SIZE</i>	-0.457*** (-13.663)	-0.457*** (-13.647)	-0.457*** (-13.642)	-0.458*** (-13.686)
<i>LEV</i>	-0.747*** (-3.655)	-0.748*** (-3.659)	-0.746*** (-3.651)	-0.745*** (-3.644)
<i>FIRMAGE</i>	0.158*** (4.705)	0.158*** (4.694)	0.156*** (4.649)	0.157*** (4.666)
<i>BM</i>	-0.631*** (-17.439)	-0.631*** (-17.425)	-0.633*** (-17.486)	-0.631*** (-17.438)
<i>H</i>	0.566*** (7.001)	0.558*** (6.910)	0.560*** (6.921)	0.562*** (6.965)
Industry/Year	Yes	Yes	Yes	Yes
N	6,567	6,567	6,567	6,567
adj. R-sq	0.443	0.443	0.442	0.442

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed.

Table 10 Consequences of Dynamic Compensation Change Inconsistency

Independent Variable	Dependent Variable: <i>ROA</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	-0.207*** (-12.349)	-0.207*** (-12.367)	-0.207*** (-12.401)	-0.207*** (-12.401)
<i>DPAY_{t-1}</i>	-0.00219** (-1.980)			
<i>DPAY_CN_{t-1}</i>		-0.00205 (-1.423)		
<i>DPAY_NC_{t-1}</i>			-0.00175 (-1.182)	
<i>EDPAY_{t-1}</i>				-0.00205** (-2.014)
<i>ROA_{t-1}</i>	0.497*** (24.555)	0.497*** (24.560)	0.498*** (24.604)	0.498*** (24.573)
<i>SOE</i>	-0.00465*** (-3.722)	-0.00453*** (-3.645)	-0.00455*** (-3.665)	-0.00465*** (-3.750)
<i>DUAL</i>	-0.00272** (-2.212)	-0.00276** (-2.245)	-0.00273** (-2.227)	-0.00273** (-2.222)
<i>BOARD</i>	-0.000363 (-1.184)	-0.000357 (-1.163)	-0.000363 (-1.186)	-0.000370 (-1.208)
<i>RATIO</i>	-0.0223** (-2.482)	-0.0223** (-2.477)	-0.0223** (-2.483)	-0.0221** (-2.458)
<i>TOPI</i>	0.0110*** (3.484)	0.0110*** (3.460)	0.0110*** (3.463)	0.0112*** (3.518)
<i>DRTMTPAY</i>	0.00591*** (5.327)	0.00591*** (5.331)	0.00586*** (5.287)	0.00588*** (5.298)
<i>LNMTMTPAY</i>	0.00909*** (10.059)	0.00908*** (10.050)	0.00913*** (10.108)	0.00926*** (10.238)
<i>MTMTHOLD</i>	0.000337* (1.798)	0.000328* (1.755)	0.000333* (1.766)	0.000345* (1.833)
<i>SIZE</i>	0.00693*** (8.350)	0.00694*** (8.366)	0.00693*** (8.350)	0.00690*** (8.315)
<i>LEV</i>	-0.0424*** (-7.510)	-0.0424*** (-7.510)	-0.0423*** (-7.495)	-0.0423*** (-7.503)
<i>FIRMAGE</i>	-0.000387 (-0.429)	-0.000408 (-0.453)	-0.000422 (-0.468)	-0.000405 (-0.449)
<i>BM</i>	-0.00928*** (-10.942)	-0.00929*** (-10.949)	-0.00931*** (-10.963)	-0.00925*** (-10.942)
<i>H</i>	-0.0107*** (-3.371)	-0.0109*** (-3.432)	-0.0108*** (-3.390)	-0.0107*** (-3.373)
Industry/Year	Yes	Yes	Yes	Yes
N	6,567	6,567	6,567	6,567
adj. R-sq	0.483	0.483	0.483	0.483

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed.

4.4 Additional Tests

Chinese SOEs are dualist, which means that in addition to seeking their own profitability, they should help the government achieve social or political goals (Lu *et al.*, 2012; Song and Meng, 2012). Thus, the executive compensation design in Chinese SOEs is affected by the government's intervention and strictly controlled by the government. In the last 30 years, reforms have greatly increased Chinese SOEs' degree of marketisation, but the original state-owned economy and the administrative resource allocation system have not ceased completely. The government retains powerful influence over Chinese SOEs, especially regarding the internal income distribution in TMTs (Lu *et al.*, 2012). For example, the China SASAC issued *The Procedures of Operational Performance Appraisal for the Heads of the Central Enterprises* in 2003, which required compliance from all executives in the central SOEs. The procedures give executives discretion regarding the distribution coefficients based on their responsibilities and contributions. Due to the absence of owners in SOEs, managers without effective motivation and monitoring easily become entrenched and form alliances (Qian, 1999). Thus, managers' discretion regarding their compensation distribution may make it difficult to differentiate their incentives according to their responsibilities and contributions. In addition, most of the CEOs in SOEs are appointed by the government, and some may be less influential and capable. A large incentive disparity between the CEO and non-CEOs causes a sense of injustice. From the results shown in Table 6, the coefficients on SOEs are significantly negative in columns 1 and 4, which means that the SOEs are less likely to experience pay-change inconsistency.

We therefore argue that the influence of dynamic compensation inconsistency should be different between SOEs and non-SOEs. We re-examine model (2) in the SOE and non-SOE subsamples separately, and the results are presented in Table 11. Columns 1-4 of Table 11 report the results for the SOEs. The coefficients on $DPAY_{t-1}$, $DPAY_{NC_{t-1}}$ and $DPAY_{CN_{t-1}}$ in columns 1-3 are all significantly negative, while the coefficient on $EDPAY_{t-1}$ in column 4 is negative but not significant. This means that in Chinese SOEs, pay-change direction inconsistency is harmful to subsequent firm performance, while pay-change extent direction inconsistency has no effect.

Columns 5-8 of Table 11 report the results for non-SOEs. All the coefficients on $DPAY_{t-1}$, $DPAY_{NC_{t-1}}$, and $DPAY_{CN_{t-1}}$ in columns 5-7 are negative, but only the coefficients on $DPAY_{t-1}$ and $DPAY_{NC_{t-1}}$ are significant at the 10% level. In column 8, the coefficient on $EDPAY_{t-1}$ is significantly negative at the 5% level, which means that in Chinese non-SOEs, both pay-change direction inconsistency (especially when CEO pay increases and non-CEO pay decreases) and pay-change extent inconsistency are harmful to subsequent firm performance.

Finally, all of the preceding results are based on the inconsistency between CEO pay

change and the median value of non-CEO pay changes. To relieve the influence of TMT size on non-CEOs' pay change, we also measure non-CEOs' pay change by the median value of the top three or five non-CEO executives' pays. The results of the determinants and consequences remain the same after we use the alternative inconsistency measures. We omit these results for brevity.

V. Conclusions

Prior empirical research on TMT incentives focuses on the determinants and implications of the distribution of pay levels across top executives. However, the dispersion of managerial incentive components such as PPS also plays a critical role in TMT contract design. In China, executive compensation is primarily composed of basic salary and performance-based pay, and the current pay disclosure policy only requires the executives' pay level to be public. However, apart from the pay levels, we can observe each top executive's dynamic compensation changes and their interrelationships. A multi-term executive may care more about the dynamic growth of payments across the terms instead of the static pay level in each term. In addition, the main source of an executive's dynamic compensation change is the performance-based component. Therefore, the difference between the dynamic compensation changes within a TMT captures the differences in the compensation structure, which can better reflect the incentive differences among the top executives. In this paper, we use TMT dynamic compensation change inconsistency as a proxy for TMT compensation structure differences. First, we analyse the determinants of the dynamic compensation change inconsistency and find that powerful non-CEOs, large TMTs, and a volatile external environment can reduce the probability of inconsistency. Furthermore, TMT dynamic compensation inconsistency decreases the corporation's future performance. In Chinese SOEs, executives' compensation changing in opposite directions could significantly damage subsequent corporate performance, while the extent of the change inconsistency makes no difference. However, both the direction and extent of the dynamic compensation change inconsistency can dampen non-SOEs' subsequent performance. The preceding results show that against the Chinese institutional background, social comparison theory and managerial power theory are readily applicable to explaining the TMT compensation structure differences.

Our study enriches the empirical literature on multi-agent contract theory and the literature on TMT incentive contract design, but it has some limitations. For example, top executives in Chinese listed companies are mainly paid via cash compensation, and their performance-based pay is not required to be public under the current disclosure policy. Therefore, researchers cannot calculate an individual executive's PPS level, we can only obtain the implicit PPS level for a group of executives using a regression model. We are

Table 11 Consequences of Dynamic Compensation Change Inconsistency Under Different Ownership Subgroups

ROA	(1)	SOEs			Non-SOEs			(8)
		(2)	(3)	(4)	(5)	(6)	(7)	
<i>Constants</i>	-0.399*** (-18.240)	-0.401*** (-18.294)	-0.401*** (-18.304)	-0.402*** (-18.390)	-0.428*** (-15.110)	-0.428*** (-15.075)	-0.430*** (-15.205)	-0.430*** (-15.182)
<i>DPAY_{t-1}</i>	-0.00633*** (-3.419)				-0.00304* (-1.821)			
<i>DPAY_CN_{t-1}</i>		-0.00544** (-2.250)				-0.00415* (-1.856)		
<i>DPAY_NC_{t-1}</i>			-0.00589** (-2.370)				-0.00121 (-0.569)	
<i>EDPAY_{t-1}</i>				-0.00154 (-0.983)				-0.00412** (-2.458)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3,025	3,025	3,025	3,025	3,542	3,542	3,542	3,542
adj. R-sq	0.385	0.384	0.384	0.383	0.296	0.296	0.295	0.296

Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively; two-tailed. We do not present the control variables for brevity.

therefore unable to calculate a measure of PPS dispersion to represent the pay-structure difference. We expect that with long-term incentive schemes such as stock options becoming universal in China, and with a more refined compensation disclosure policy, we could obtain abundant data to further analyse TMT incentive design.

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References

- Aggarwal, R. K. and Samwick, A. A. (2003), ‘Performance Incentives within Firms: The Effect of Managerial Responsibility’, *The Journal of Finance* 58 (4): 1613-1650.
- Alchian, A. A. and Demsetz, H. (1972), ‘Production, Information Costs, and Economic Organization’, *The American Economic Review* 62 (5): 777-795.
- Ang, J., Lauterbach, B., and Schreiber, B. Z. (2002), ‘Pay at the Executive Suite: How do US Banks Compensate their Top Management Teams?’, *Journal of Banking and Finance* 26 (6): 1143-1163.
- Bebchuk, L. A., Cremers, K. J., and Peyer, U. C. (2011), ‘The CEO Pay Slice’, *Journal of Financial Economics* 102 (1): 199-221.
- Bebchuk, L. A. and Fried, J. M. (2003), ‘Executive Compensation as an Agency Problem’, *Journal of Economic Perspectives* 17 (3): 71-92.
- Bloom, M. (1999), ‘The Performance Effects of Pay Dispersion on Individuals and Organizations’, *Academy of Management Journal* 42 (1): 25-40.
- Bloom, M. and Michel, J. G. (2002), ‘The Relationships among Organizational Context, Pay Dispersion, and among Managerial Turnover’, *Academy of Management Journal* 45 (1): 33-42.
- Bolton, P. and Dewatripont, M. (2005), *Contract Theory*, MIT press.
- Burns, N., Minnick, K., and Starks, L. T. (2017), ‘CEO Tournaments: A Cross-Country Analysis of Causes, Cultural Influences and Consequences’, *Journal of Financial and Quantitative Analysis* 52 (2): 519-551.
- Bushman, R. M., Dai, Z., and Zhang, W. (2015), ‘Management Team Incentive Dispersion and Firm Performance’, *The Accounting Review* 91 (1): 21-45.
- Carpenter, M. A. and Sanders, W. G. (2004), ‘The Effects of Top Management Team Pay and Firm Internationalization on MNC Performance’, *Journal of Management* 30 (4): 509-528.
- Che, Y. K. and Yoo, S. W. (2001), ‘Optimal Incentives for Teams’, *American Economic*

- Review* 91 (3): 525-541.
- Chen, J., Ezzamel, M., and Cai, Z. (2011), 'Managerial Power Theory, Tournament Theory, and Executive Pay in China', *Journal of Corporate Finance* 17 (4): 1176-1199.
- Chen, D., Fan, C., and Shen, Y. (2015), 'Gaoguan yu Yuangong: Jili Youxiaoxing zhi Bijiao yu Hudong' (Executives and Employees: Comparison and Interaction of Incentive Effectiveness), *Management World*, Issue 5: 160-171.
- Chen, Z. and Zhang, M. (2006), 'Gaoguanceng Neibu de Jicha Baochou Yanjiu' (A Research on Top Executives' Pay Distribution), *China Accounting Review* 4 (1): 15-28.
- Canyon, M. J., Peck, S. I., and Sadler, G. V. (2001), 'Corporate Tournaments and Executive Compensation: Evidence from the UK', *Strategic Management Journal* 22 (8): 805-815.
- Core, J. and Guay, W. (1999), 'The Use of Equity Grants to Manage Optimal Equity Incentive Levels', *Journal of Accounting and Economics* 28 (2): 151-184.
- Core, J. E., Holthausen, R. W., and Larcker, D. F. (1999), 'Corporate Governance, Chief Executive Officer Compensation, and Firm Performance', *Journal of Financial Economics* 51 (3): 371-406.
- Cowherd, D. M. and Levine, D. I. (1992), 'Product Quality and Pay Equity between Lower-level Employees and Top Management: An Investigation of Distributive Justice Theory', *Administrative Science Quarterly* 37 (2): 302-320.
- Edmans, A., Goldstein, I., and Zhu, J. (2013), 'Contracting With Synergies', CEPR Discussion Papers.
- Eriksson, T. (1999), 'Executive Compensation and Tournament Theory: Empirical Tests on Danish Data', *Journal of Labor Economics* 17 (2): 262-280.
- Faleye, O., Reis, E., and Venkateswaran, A. (2010), 'The Effect of Executive-Employee Pay Disparity on Labor Productivity', Working paper.
- Fang, J. (2011), 'Gaoguan Quanli yu Qiye Xinchou Biandong de Feiduichengxing' (Managerial Power and Asymmetry of Compensation Change in China's Public Companies), *Economic Research Journal*, Issue 4: 107-120.
- Finkelstein, S. and Hambrick, D. C. (1997), 'Strategic Leadership: Top Executives and Their Effects on Organizations', *Academy of Management Review* 22 (3): 802-805.
- Fredrickson, J. W., Davis Blake, A., and Sanders, W. M. (2010), 'Sharing the Wealth: Social Comparisons and Pay Dispersion in the CEO's Top Team', *Strategic Management Journal* 31 (10): 1031-1053.
- Gerhart, B., Rynes, S. L., and Fulmer, I. S. (2009), 'Pay and Performance: Individuals, Groups, and Executives', *The Academy of Management Annals* 3 (1): 251-315.
- Green, J. R. and Stokey, N. L. (1983), 'A Comparison of Tournaments and Contracts', *The Journal of Political Economy* 91 (3): 349-364.
- Henderson, A. D. and Fredrickson, J. W. (2001), 'Top Management Team Coordination

- Needs and the CEO Pay Gap: A Competitive Test of Economic and Behavioral Views', *Academy of Management Journal* 44 (1): 96-117.
- Holmstrom, B. (1982), 'Moral hazard in teams', *The Bell Journal of Economics* 13 (2): 324-340.
- Kale, J. R., Reis, E., and Venkateswaran, A. (2009), 'Rank-Order Tournaments and Incentive Alignment: The Effect on Firm Performance', *The Journal of Finance* 64 (3): 1479-1512.
- Kato, T. and Long, C. (2011), 'Tournaments and Managerial Incentives in China's Listed Firms: New Evidence', *China Economic Review* 22 (1): 1-10.
- Kremer, M. (1993), 'The O-ring Theory of Economic Development', *The Quarterly Journal of Economics* 108 (3): 551-575.
- Lazear, E. P. (1989), 'Pay Equality and Industrial Politics', *Journal of Political Economy* 97 (3): 561-580.
- Lazear, E. P. and Rosen, S. (1981), 'Rank-Order Tournaments as Optimum Labor Contracts', *The Journal of Political Economy* 89 (5): 841-864.
- Lee, K. W., Lev, B., and Yeo, G. H. H. (2008), 'Executive Pay Dispersion, Corporate Governance, and Firm Performance', *Review of Quantitative Finance and Accounting* 30 (3): 315-338.
- Li, F., Minnis, M., Nagar, V., and Rajan, M. (2014), 'Knowledge, Compensation, and Firm Value: An Empirical Analysis of Firm Communication', *Journal of Accounting and Economics* 58 (1): 96-116.
- Liao, L., Liao, G., and Shen, H. (2009), 'Jingying Fengxian, Jinsheng Jili yu Gongsì Jixiao' (Operating Risk, Promotion Incentive and Corporate Performance), *China Industrial Economics*, Issue 8: 119-130.
- Lin, J., Huang, Z., and Sun, Y. (2003), 'Gaoguan Tuandui Nei Xinchou Chaju, Gongsì Jixiao he Zhili Jiegou' (TMT Pay Gap, Firm Performance and Corporate Governance), *Economic Research Journal*, Issue 4: 31-40.
- Lu, Z., Wang, X., and Zhang, P. (2012), 'Guoyou Qiye Zhifu le Genggao de Zhigong Gongzhi ma?' (Do Chinese State-Owned Enterprises Pay Higher Wage?), *Economic Research Journal*, Issue 3: 28-39.
- Main, B. G. M., O'Reilly, C. A., and Wade, J. (1993), 'Top Executive Pay: Tournament or Teamwork?', *Journal of Labor Economics* 11 (4): 606-628.
- Milgrom, P. and Roberts, J. (1988), 'An Economic Approach to Influence Activities in Organizations', *American Journal of Sociology* 94 (Supplement): S154-S179.
- Murphy, K. J. (1986), 'Incentives, Learning, and Compensation: A Theoretical and Empirical Investigation of Managerial Labor Contracts', *The Rand Journal of Economics* 17 (1): 59-76.
- O'Reilly, C. A., Main, B. G., and Crystal, G. S. (1988), 'CEO compensation as tournament

- and social comparison: A tale of two theories', *Administrative Science Quarterly* 33 (2): 257-274.
- Pfeffer, J. and Davis-Blake, A. (1987), 'Understanding Organizational Wage Structures: A Resource Dependence Approach', *Academy of Management Journal* 30 (3): 437-455.
- Pfeffer, J. and Langton, N. (1993), 'The Effect of Wage Dispersion on Satisfaction, Productivity, and Working Collaboratively: Evidence From College and University Faculty', *Administrative Science Quarterly* 38 (3): 382-407.
- Qian, Y. (1999), 'Jili yu Yueshu' (Incentives and Constraints), *Comparative Economic and Social Systems*, Issue 5: 7-12.
- Rajgopal, S. and Srinivasan, S. (2006), 'Pay Dispersion in the Executive Suite', Working Paper.
- Ramakrishnan, R. T. S. and Thakor, A. V. (1991), 'Cooperation Versus Competition in Agency', *Journal of Law, Economics, and Organization* 7 (2): 248-283.
- Shin, J. Y., Kang, S. C., Hyun, J. H., and Kim, B. J. (2015), 'Determinants and Performance Effects of Executive Pay Multiples: Evidence from Korea', *ILR Review* 68 (1): 53-78.
- Siegel, P. A. and Hambrick, D. C. (2005), 'Pay Disparities within Top Management Groups: Evidence of Harmful Effects on Performance of High-technology Firms', *Organization Science* 16 (3): 259-274.
- Song, J. and Meng, D. (2012), 'Guoyou Qiye Gaoguan Xinchou Zhidu Gaige Lujing Yanjiu' (A Study on the Reform Path of TMT Pay System in State-Owned Enterprises), *Management World*, Issue 2: 181-182.
- Trevor, C. O. and Wazeter, D. L. (2006), 'A Contingent View of Reactions to Objective Pay Conditions: Interdependence among Pay Structure Characteristics and Pay Relative to Internal and External Referents', *Journal of Applied Psychology* 91 (6): 1260.
- Wade, J. B., O'Reilly, C. A., and Pollock, T. G. (2006), 'Overpaid CEOs and Underpaid Managers: Fairness and Executive Compensation', *Organization Science* 17 (5): 527-544.
- Xu, Y., Liu, Y. G., and Lobo, G. J. (2016), 'Troubled by Unequal Pay Rather than Low Pay: The Incentive Effects of a Top Management Team Pay Gap', *China Journal of Accounting Research* 9 (2): 115-135.
- Zhang, Z. (2007), 'Gaoguan Guanli Tuandui Xiezuo Xuyao, Xinchou Chaju he Qiye Jixiao: Jingsai Lilun de Shijiao' (Top Management Team Coordination Needs, Compensation Dispersion and Firm Performance: A Perspective of Tournament Theory), *Nankai Business Review*, Issue 10: 4-11.
- Zhang, Z. (2008), 'Qiye Neibu Xinchou Chaju dui Zuzhi Weilai Jixiao Yingxiang de Shizheng Yanjiu' (Empirical Research on the Effect of Corporate Internal Compensation Gap on Future Organizational Performance), *Accounting Research*, Issue 9: 81-87.

高管团队内薪酬变动差异：影响因素与经济后果*

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摘要

现有研究高管团队激励的文献聚焦于高管薪酬的水平差异，本文采用高管之间薪酬变化的不一致情况研究高管薪酬的结构差异。首先分析高管团队内薪酬变动不一致的影响因素，进而讨论该不一致对企业绩效的影响。结果发现：非CEO权力越大、高管团队规模越大以及外部环境越波动时，高管团队内薪酬变动不一致的概率越低。进一步地，高管团队内薪酬变动不一致显著降低了企业绩效。国有企业中，虽然高管团队内薪酬变动的方向不一致显著降低了企业绩效，但变动的程度不一致对企业绩效无显著影响；非国有企业中，高管团队内薪酬变动方向和程度不一致都会对企业绩效不利。

关键词：团队薪酬激励、薪酬水平差异、薪酬结构差异、薪酬变动

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一、引言

近年来实务界开始关注除 CEO 外的其他高管薪酬的激励。如 2012 年 1 月 17 日国资委发布《关于进一步加强中央企业负责人副职业绩考核工作的指导意见》，要求加强中央企业高管副职的考核和激励。企业绩效是高管团队集体智慧和努力的结果。而在理论研究中，研究者常把高管团队视为一个整体，或仅仅关注 CEO 的薪酬结构设置，对高管团队内其他高管的薪酬结构设置研究不足。但高管团队的薪酬结构安排并不等于各高管薪酬结构的机械加总，除了要考虑高管各自的代理成本，还需考虑高管之间的互动影响。因此，要正确有效地激励高管团队，便须对高管团队内的薪酬结构进一步分析。

中国上市公司自 2005 年起被要求披露所有高管的薪酬，但只强制性要求披露各个高管的薪酬总体水平，高管薪酬的构成依然是个黑箱。然而除了高管的薪酬水平之外，我们同时也能观测到各高管的薪酬变动及其之间的互动情况。由于中国上市公司的高管薪酬主要由基本薪酬与绩效薪酬构成，前者较为固定，后者便是薪酬变动的主要来源。因此，对多任期的高管来说，相比每一期的薪酬水平，他们更在乎薪酬的动态增长，且各高管间薪酬变动的差异传递的是高管间薪酬结构的差异，在一定程度上更能反映高管之间受到的激励差异情况。因此，本文采用高管之间薪酬动态变化的不一致情况来反映高管间薪酬结构的差异。首先分析高管团队内薪酬变动不一致的影响因素，进而讨论该不一致对企业绩效的影响。需要注意的是，企业绩效会带来高管的薪酬变动，在团队内既定的结构下会有客观的薪酬变动差异，但高管的个人特征、团队的特征以及外部的环境等契约外因素会对高管团队内客观应有的薪酬变动差异产生影响和偏离。例如，同样是 2013 年公司业绩下降，中航地产（000043）的高管薪酬普遍发生下降，其中 CEO 的薪酬下降 16%，非 CEO 高管的薪酬下降约 4%；而深桑达（000032）的 CEO 薪酬却在 2013 年业绩下降的情况下，增长了 29%，与此同时的非 CEO 高管薪酬却下降了 25%。值得注意的是，两家公司的 CEO 都并未同时担任董事长，但中航地产（000043）的非 CEO 高管中有三分之一在董事会担任席位，而深桑达（000032）的非 CEO 高管并没有在董事会占有席位。因此，非 CEO 高管在董事会的权力似乎会一定程度上影响高管团队内的薪酬变动的差异。

鉴于此，本文以 2005-2014 年所有上市公司高管团队的薪酬变动数据作为大样本检验的基础，探讨影响高管团队内薪酬变动不一致的因素。结果发现：非 CEO 权力越大、高管团队规模越大以及外部环境越波动时，高管团队内薪酬变动不一致的概率越低。进一步地，高管团队内薪酬变动不一致显著降低了企业绩效。国有企业中，虽然高管团队内薪酬变动的方向不一致会显著降低企业绩效，但变动的程度不一致对企业绩效无显著影响；非国有企业中，高管团队内薪酬变动方向和程度不一致都会对企业绩效不利。以上结果表明，在中国制度背景下，社会比较理论和管理层权力理论更适合用来分析高管团队内的薪酬结构差异。

本文贡献主要有：第一、丰富了多代理人契约理论的经验研究。现有文献多集中在讨论单代理人情境下的契约结构，如 CEO 个人或将高管团队视为一个整体；且多代

理人情境下的契约理论也多聚焦在搭便车等道德风险问题的理论解决方案上 (Holmstrom, 1982 等), 从经验数据来分析多代理人情境下的契约问题较少。本文采用中国上市公司的高管薪酬变动数据, 从经验上为多代理人契约理论提供了新的视角和证据。第二、丰富了高管团队激励的相关研究。现有文献多讨论高管团队激励下的薪酬水平差异 (Lazear and Rosen, 1981; Main *et al.*, 1993; Kale *et al.*, 2009; 林俊清等, 2003; Milgrom and Roberts, 1988; Lazear, 1989; Fredrickson *et al.*, 2010; 张正堂, 2007、2008), 而并未深入剖析构成薪酬水平的薪酬结构差异。本文采用高管薪酬变动的不一致情况来反映高管团队内薪酬结构的差异, 讨论了影响团队内薪酬结构差异的个人、团队以及外部的因素, 并进一步分析不同结构差异造成的薪酬变动不一致的经济后果。

本文的其他部分安排如下: 第二部分是文献回顾与研究预测, 第三部分是研究设计, 第四部分是实证结果, 第五部分是本文的结论。

二、文献回顾与研究预测

(一) 高管团队薪酬理论及相关文献

高管团队激励一直是经济学、社会学、社会心理学和管理学等多学科的热点话题。现有文献主要从锦标赛理论、社会比较理论和管理层权力理论三个视角来讨论高管团队内的薪酬分布问题。

Alchian and Demsetz (1972) 率先指出解决多代理人的激励问题是公司的主要目标之一。Holmstrom (1982) 采用传统讨论委托代理问题的道德风险视角, 将多代理人的激励问题模型化, 讨论了当个人绩效不可测时存在的“搭便车”问题; 而当个人绩效可观测时, 以各代理人的相对业绩进行考核也可能达到最优。如 Lazear and Rosen (1981), Green and Stokey (1983) 讨论的锦标赛激励模式, 以相对业绩作为考核标准, 将 CEO 与其他高管间的激励差异² 作为锦标赛胜利的奖励, 以此促进多代理人之间相互竞争; 竞争成功的奖励愈大, 愈能吸引和保留更有能力的高管 (Bloom and Michael, 2002)。然而社会学家认为, 过于强调组织内竞争关系也可能会诱发不正当竞争, 如对其他代理人产出的破坏、拒绝合作等 (Milgrom and Roberts, 1988; Lazear, 1989; Bolton and Dewatripont, 2005, chapter 8)。尤其是当多代理人之间需要密切合作如企业的高管团队, 团队内过大的高管激励差异可能会带来不公平的感觉 (Finkelstein and Hambrick, 1997)。管理学学者强调人们对公平和正义的需求, 从心理学的社会比较理论和公平理论视角, 考虑人对公正的反应, 阐述了过度强调竞争会破坏组织之间的合作, 不利于对代理人的激励 (O'Reilly, Main and Crystal, 1988; Pfeffer and Langton, 1993; Henderson and Fredrickson, 2001 等)。另一方面, 管理层权力理论认为高管的激励水平反映的是高管个人的议价能力, 在公司治理机制较弱时, 较大的 CEO 与其他高管激励的差异意味着 CEO 有更强的议价能力, 更大的权力和更长的在位时间, 从而有可能加重公司的代理成本, 使得 CEO 与其他高管的激励差异本身成为代理问题的一部分

² 本文中的高管之间的激励差异不仅仅指高管薪酬水平上的差异, 也包括薪酬结构上的差异, 如绩效薪酬的差异。

(Bebchuk and Fried, 2003; Bebchuk *et al.*, 2011)。

现有文献多采用 CEO 与其他高管的薪酬水平 (pay level) 的差异作为高管内部激励差异的代理变量。从锦标赛理论的角度, 将 CEO 与其他高管的薪酬水平 (pay level) 的差异作为团队内的锦标赛奖励, 并发现高管的能力、高管团队的规模、晋升的概率、监督成本、经济效率以及国家文化等都是影响该锦标赛奖励大小的因素 (Pfeffer and Davis-Blake, 1987; O'Reilly *et al.*, 1988; Conyon *et al.*, 2001; Bloom and Michel, 2002; Kale *et al.*, 2009; Kato and Long, 2011; Shin *et al.*, 2015)。而当锦标赛奖励越大时, 对其他高管的晋升激励会越大, 从而有利于企业绩效的提升, 但并未得到一致的实证结果。如 Main *et al.* (1993)、Ericksson (1999)、Kale *et al.* (2009)、Lee *et al.* (2008) 等发现高管内部薪酬水平的差异与企业绩效正相关, 支持锦标赛理论的结果; 但 Conyon *et al.* (2001) 没有发现支持锦标赛理论的证据。在此基础上, 其他研究致力于讨论不同情境下锦标赛激励的效果 (Cowherd and Levine, 1992; Henderson and Fredrickson, 2001; Siegel and Hambrick, 2005)。如 Chen *et al.* (2011) 检验了锦标赛理论在中国上市公司的适用性, 并发现在中国国有持股比例较高的环境下, 国有持股比例越高会弱化锦标赛理论的结果。

同样的, 许多研究从社会比较理论的角度, 将 CEO 与其他高管的薪酬水平 (pay level) 的差异作为团队内薪酬不公平程度的衡量, 发现高管团队所面临的任务依赖程度 (task interdependence)、企业面临的外部环境资源的富余程度 (munificence) 以及同行业的激励差异规则 (industry norm) 等会影响高管团队内的薪酬水平的差异 (Henderson and Fredrickson, 2001; Finkelstein and Hambrick, 1997; Shin *et al.*, 2015)。且 CEO 与其他高管的薪酬水平的差异越大会增加冲突从而带来更多的离职 (Bloom, 1999; Henderson and Fredrickson, 2001; Bloom and Michel, 2002; Trevor and Wazeter, 2006; Wade *et al.*, 2006); 更低的产品质量 (Cowherd and Levine, 1992) 和更低的劳动生产力 (Faleye *et al.*, 2010), 对企业绩效有负向影响 (Carpenter and Sanders, 2004)。此外, 部分研究也探讨不同情境下团队内薪酬激励差异的负面影响程度。如在高任务依赖的情境下 (Pfeffer and Langton, 1993), 或需要更多的团队合作和协调的情境下 (Pfeffer and Langton, 1993; Henderson and Fredrickson, 2001; Siegel and Hambrick, 2005), 团队内薪酬水平的差异对企业绩效的负向影响会更为显著。

最后, 部分文献从管理层权力的角度, 采用 CEO 的薪酬水平在总高管团队薪酬水平中的比例 (CEO pay slice) 来衡量由于团队内激励的差异带来的代理成本。发现当公司治理较差时, CEO 权力越大, CEO 与其他高管的薪酬水平的差异越大 (Bebchuk and Fried, 2003)。³ 在经济后果方面, 越大的 CEO 薪酬占比会带来更高的融资成本、更低的企业价值和企业绩效 (Bebchuk *et al.*, 2011; Chen *et al.*, 2011)。在此基础上, Li *et al.* (2014) 构造了高管团队内知识分布的代理变量, 并发现 CEO 的薪酬比例越高对企业价值的负面影响在团队内的知识集中在 CEO 时会有所减弱。

³ 然而当公司治理较好时, 各高管能获得与其职位能力相符的薪酬, 也可能会带来较大的 CEO 与其他高管的薪酬水平的差异 (Burns *et al.*, 2017)

然而,高管团队内的薪酬结构差异(*pay structure*)也是团队激励的重要组成部分。虽然理论上对多代理人情境下的薪酬结构设计讨论较为广泛,但来自经验研究的证据并不多。国外的文献多采用各高管间的薪酬业绩敏感度(*PPS*)差异衡量高管团队内的薪酬结构差异。如 *Murphy* (1986) 并没有发现 CEO 与其他高管的绩效薪酬有显著性差异; *Ang et al.* (2002) 利用银行前五名高管的薪酬数据发现 CEO 不但有更高的薪酬水平,而且还有更高的绩效薪酬; *Aggarwal and Samwick* (2003) 比较了总部 CEO、总部非 CEO 高管以及分部 CEO 等四种职位的高管绩效薪酬之后发现:总部 CEO 的绩效薪酬最高,其次是总部非 CEO 高管; *Bushman et al.* (2015) 则认为高管团队间有一个最优的绩效薪酬差异,而现实中因为调整成本等原因使得有偏的绩效薪酬差异无法调整至最优。

自 2005 年起中国上市公司被要求披露所有高管的薪酬,但基本只披露高管现金薪酬的总体水平,高管的薪酬结构仍然是个打包的黑箱。且中国上市公司高管的薪酬大多是现金薪酬,不能像国外研究一样计算出各高管的 *PPS* 差异来衡量团队内的薪酬结构差异。因此国内研究高管团队激励的文献也大多集中在薪酬水平的差异这个领域,且大多支持锦标赛理论的预测结果,如林俊清等(2003)、陈震和张鸣(2006)等。⁴ 近年来国内学者也开始关注企业内不同职位员工的薪酬结构的差异,但主要聚焦在高管与员工之间。如分析高管和职工的薪酬随业绩变动的差异和不对称性(方军雄,2011),或分析高管和职工的薪酬同步性对未来业绩的影响(陈冬华等,2015)等。但由于高管和职工不论是责任、能力等都存在较大差异,而同处管理层的高管成员之间反而具有更多的类似性和可比性,因此对高管团队内各高管间薪酬结构的差异的研究更为必要。在现有的薪酬披露政策下,除了高管的薪酬水平(*pay level*)之外,我们同时也能观测到各高管的薪酬变动及其之间的互动情况。首先,由于高管任职于公司的任期往往涉及到多个期间,因此相较于薪酬每一期的存量来说,他们更加关注任期内薪酬的增量,即薪酬的动态变化。其次,构成薪酬水平的基本薪酬和绩效薪酬,前者较为固定,而后者与企业绩效挂钩,是薪酬变动的主要来源,因此,高管薪酬变动的差异传递的是高管间薪酬结构的差异,在一定程度上更能反映高管之间受到的激励差异情况。本文采用高管之间薪酬动态变化的不一致情况来反映高管间薪酬结构的差异,探讨可能影响高管团队内薪酬结构差异的因素,并进一步讨论该结构差异对企业未来绩效的影响,以期补充高管团队薪酬激励的相关文献。

(二) 高管团队内部薪酬变动不一致的影响因素

高管团队内薪酬变动的差异,是高管团队激励配置的结果,也是高管间激励结构差异的直接体现。类似于高管团队内薪酬水平的差异,高管团队内薪酬结构的差异亦受到来自高管层面、公司层面以及外部层面的影响。因此,本文分别从高管个人的权力、公司高管团队的规模以及外部环境的波动来分析影响高管团队内薪酬变动不一致

⁴ 张正堂(2007、2008)发现高管团队内薪酬水平差异与企业绩效负相关的结果; *Xu et al.* (2016) 则发现中国上市公司高管团队内薪酬水平差异与企业绩效的关系受团队相对同行的薪酬水平高低有关,当团队整体在同行中支付水平较低,那么此时团队内并不适宜太大的薪酬水平差异。

的因素。

高管的权力。在高管层面，设置团队激励契约时除了要考虑各高管的代理成本，还须意识到个体在完成团队目标中的差异性（Gerhart *et al.*, 2009），根据不同的责任、目标而设置具有差异性的激励薪酬。此外，高管之间会相互影响产生协同效应（Edmans *et al.*, 2013; Alchian and Demsetz, 1972）。⁵ 由于不同高管能施加的“影响力”不同，那些能带来较大影响力的高管如 CEO 应当得到较大的激励。总之，高管团队内的高管具有不同的薪酬结构是合理的。但代理理论认为高管之间的激励差异也可能是代理成本的结果。由于高管的薪酬水平反映的是高管个人的议价能力，当高管的权力较大时，对自己的薪酬设定能施加一定影响。比如若 CEO 同时也是董事长，那么该 CEO 便具有较大的权力，更容易提高其自身的薪酬，而拉大与其他高管之间的激励差异（Burns *et al.*, 2017）；但若非 CEO 高管同样也兼任一定的董事席位，或者非 CEO 高管的资历较长拥有一定的议价能力时，便能制衡 CEO 在董事会决定高管薪酬时的影响，从而减少 CEO 与其他高管之间的激励差异。因此，CEO 权力越大时，高管团队内薪酬变动越不一致；而当非 CEO 权力越大时，会减少高管团队内薪酬变动的不一致。

高管团队的规模。在公司层面，高管团队的规模是影响高管团队激励设置的重要因素。锦标赛理论认为锦标赛激励的大小由奖金的多少和晋升概率同时决定，若非 CEO 高管预计得到的奖励是固定的，那么晋升概率越高会加大该锦标赛激励的强度（Kale *et al.*, 2009）。对于高管团队规模较大的公司来说，参与 CEO 竞争的人数较多，会降低非 CEO 高管晋升成功的概率，此时应当增大晋升的奖励才能维持原有的锦标赛激励效果（Main *et al.*, 1993; Kale *et al.*, 2009）。因此，当高管团队规模较大时，CEO 相对非 CEO 高管的薪酬增长应该更多才会对非 CEO 有一定的晋升激励作用。然而，社会比较理论认为，部分公司由于需要雇佣较大规模的非 CEO 高管来协调他们的业务活动，而此时团队之间的沟通、协调就非常重要，较大的激励差异会不利于沟通过程的进行（Henderson and Fredrickson, 2001）。因此当高管团队规模较大时，适当减少 CEO 与非 CEO 高管薪酬变动的不一致会更有利于团队内部的沟通和交流。

高管团队外部环境的波动性。在外部环境层面，锦标赛理论认为当公司所处的外部环境越嘈杂时，委托人监督 CEO 行为的成本越高，会给予 CEO 较强的激励（Core and Guay, 1999），同时也会增大锦标赛奖励的大小（Kale *et al.*, 2009）从而增大团队内部的激励差异，而团队内部的竞争冲突在面临不稳定的外部环境时可能会带来更好的解决方案（Finkelstein and Hambrick, 1997）。因此，当高管团队所处的外部环境越波动时，CEO 与其他高管的薪酬变动会越不一致。然而社会比较理论认为，当公司面临不稳定的外部环境时，作为一个团队的高管此时更加需要倾力合作、互相沟通，而较大的高管激励的差异并不利于沟通合作的推进（Rajgopal and Srinivasan, 2006），因此外部环境越嘈杂也有可能带来更小的团队薪酬变动不一致。

（三）高管团队内部薪酬变动不一致的经济后果

⁵ 如某高管付出努力同时提升了其他代理人的边际产出或生产率，或同时减少了其他代理人的努力成本（Che and Yoo, 2001; Kremer, 1993; Ramakrishnan and Thakor, 1991; Edmans *et al.*, 2013）。

除了讨论可能影响高管团队内薪酬变动不一致的因素之外, 本文还进一步分析高管团队内薪酬变动不一致的经济后果。诚如上文所述, 高管付出努力的同时, 相互之间会互相影响, 或提高其他队友的边际生产率, 或降低其他队友的生产成本, 达到 $1+1>2$ 的效果。因此, 高管团队内激励结构差异若设置合理, 会有利于企业绩效的提升。如 Bushman *et al.* (2015) 便指出高管团队内的激励薪酬存在一个最优点, 偏离此最优点时会对企业绩效不利。而对何种状况下才是合理的高管团队内激励结构差异, 不同的理论有不同的预测。

锦标赛理论认为, 较大的锦标赛奖金能激励非 CEO 高管为晋升而努力, 同时也能保留高能力的 CEO, 尤其在监督成本较高时, CEO 的激励高于非 CEO 高管的激励能带来一个较大的锦标赛奖金预期。因此较大的高管团队内激励差异对提升未来企业绩效更有利。社会比较理论认为, 高管团队内若激励差异过大会不利于成员之间的沟通与合作, 有时还会带来一些组织政治的问题, 因此应当减少高管团队内激励的差异, 使团队内薪酬变动趋于一致才更有利于企业未来绩效增长。最后, 管理层权力理论认为如果较大的高管团队激励差异来源于 CEO 的权力或其他代理问题, 那么此时的团队内薪酬变动不一致对未来企业绩效会有不利的影响。

综上, 不同理论对影响高管团队薪酬变动不一致的因素以及高管团队薪酬变动不一致的经济后果有不同的预期, 但并不代表这些理论之间相互矛盾, 可能只是分别适用于不同的情境。因此本文采用实证的方法, 在中国制度背景下分析影响高管团队薪酬变动不一致的系列因素, 并进一步分析高管团队薪酬变动不一致对企业绩效的影响, 以检验各个理论在中国情境下的适用性。

三、 研究设计

(一) 数据来源与样本选择

本文的研究样本包括 2005-2014 年间的上市公司的高管团队, 我们将高管团队界定为担任具体管理职务的除董事、监事以外的公司管理层, 包括总经理、副总经理、总工程师、总会计师、财务总监等, 其中将职位名称是总经理、总裁以及 CEO 的界定为公司 CEO (廖理等, 2009), 其他职位的高管统称为非 CEO 高管。由于上市公司自 2005 年起才开始披露每个高管的年度薪酬, 且本文需要至少有连续两年的各高管年度薪酬数据, 因此本文样本实质从 2006 年开始。

样本筛选过程如下: 首先整理出有效的高管团队样本。在现有的披露了所有高管薪酬观测值的样本下, 剔除 CEO 或非 CEO 高管发生变更、任期不满一年的观测值;⁶ 剔除未披露当年 CEO (或其他高管) 薪酬或高管仅在公司领取津贴的观测值, 得到 15,032 个高管团队观测值, 包括 86,115 个高管观测值; 然后按照以下程序剔除不符合要求的观测值: (1) 金融业公司 143 个公司观测值; (2) 没有连续两年的高管薪酬数

⁶ 若高管当年发生变更, 那么高管当年所领取的薪酬并不是一个完整年度, 故剔除。

据 4,383 个公司观测值；⁷（3）其他变量缺失 1,449 个，最后得到 9,057 个有效公司观测值。高管个人薪酬数据来自 CSMAR 数据库，其中非 CEO 高管薪酬根据职位名称手工整理和筛选，其他公司特征、财务和治理变量数据均来自 CSMAR 数据库。

（二）高管团队内部薪酬变动不一致的衡量

本文采用 CEO 与其他高管的薪酬增长率的差异来衡量团队内部薪酬变动不一致。由于中国上市公司的高管薪酬主要由基本工资与绩效工资构成，而变动部分主要来源于绩效工资，对面临同样的公司业绩的高管来说，他们之间的薪酬增长率的差异便是二者分享企业利润的差异。即若企业绩效增长 1%，CEO 薪酬增长 a%，非 CEO 高管薪酬增长 b%，二者分享企业利润之比便是 a:b。

值得注意的是，高管的薪酬变动包括方向和程度两个维度。当 CEO 与非 CEO 高管变动方向不一致时，两者的薪酬变动率之比和 CEO 与非 CEO 高管变动方向一致时不具有可比性。因此我们需要分别考量这两个维度。首先是高管团队内部薪酬变动方向的不一致 (*DPAY*)，我们将 CEO 与非 CEO 薪酬同增同减或同时不变的情况定义为高管团队内薪酬变动方向一致 (*DPAY=0*)，而将其他的情况定义为变动方向不一致 (*DPAY=1*)。样本中的 CEO 与非 CEO 高管变动情况如表 1 所示。此外，当高管团队内薪酬变动方向不一致时，也存在两种不同的情况。当 CEO 薪酬增加，非 CEO 薪酬减少（不变）时；或 CEO 薪酬不变，非 CEO 薪酬减少时，定义为 *DPAY_CN=1*；而当 CEO 薪酬减少，非 CEO 薪酬增加（不变）时；或 CEO 薪酬不变，非 CEO 薪酬增加时，定义为 *DPAY_NC=1*。

其次是高管团队内部薪酬变动程度的不一致 (*EDPAY*)。具体衡量方法如下：（1）首先设计 CEO 与非 CEO 薪酬变动的连续变量 *DCHPAY*，定义为 CEO 薪酬增长率/非 CEO 薪酬增长率。⁸（2）然后将 *DCHPAY* 按取值大小均分为三组，并分别定义为 *GROUP_L*、*GROUP_M*、*GROUP_H*。其中 *GROUP_M* 中 *DCHPAY* 取值位于 1 左右，表明 CEO 与非 CEO 的薪酬增长趋于一致，二者薪酬变动差异较小；而 *GROUP_L* 和 *GROUP_H* 中 CEO 与非 CEO 的薪酬变动差异较大，较为不一致。（3）若高管团队的薪酬变动程度处于 *GROUP_M=1*，则定义高管团队内薪酬变动程度一致，*EDPAY=0*，反之则定义为薪酬变动程度不一致，*EDPAY=1*。

表 1 CEO 与非 CEO 高管薪酬变化的互动情况

		NCEO 薪酬变动		
		减少	不变	增加
CEO 薪酬变动	减少	1396	41	669
	不变	224	755	389
	增加	731	92	4760

⁷ 因为要计算薪酬的变化，所以需要样本中的公司至少有连续两年的薪酬数据，由于剔除了 CEO 变更的数据，所以没有连续两年的薪酬数据的公司会比较多

⁸ 注意本文只在当 CEO 与非 CEO 薪酬变动方向一致时，对变量 *DCHPAY* 进行定义。即只有当 *DPAY=0* 时，*DCHPAY* 才取值。

(三) 计量模型与变量定义

为检验上文中可能影响高管团队内部薪酬变动不一致的因素，本文参照现有的研究影响高管团队激励因素的文献（Rajgopal and Srinivasan, 2006 等），采用以下模型进行检验：

$$\begin{aligned}
 DPAY_i / EDPAY_i = & \beta_0 + \beta_1 DUAL_i + \beta_2 NCEOBOARD_i + \beta_3 LNNCEOAGE_i \\
 & + \beta_4 LNNCEOTENURE_i + \beta_5 NUM_i + \beta_6 RET_VOL_i + \beta_7 D_i \\
 & + \beta_8 SOE_i + \beta_9 TOPI_i + \beta_{10} SIZE_i + \beta_{11} LEV_i + \beta_{12} FIRMAGE_i \\
 & + \beta_{13} BOARD_i + \beta_{14} RATIO_i + \beta_{15} TMTSEX_i + \beta_{16} LNMTMTPAY_i \\
 & + \beta_{17} MTMTHOLD_i + \sum Industry_i + \sum Year_i + \varepsilon_i
 \end{aligned} \tag{1}$$

其中，被解释变量是高管团队内部薪酬变动的不一致，根据上文所述分别从方向和程度两个维度进行衡量。 $DPAY$ 表示方向的不一致，并进一步细分为 $DPAY_CN$ 、 $DPAY_NC$ 。 $DPAY_CN$ 表示方向不一致时，CEO 薪酬增长而非 CEO 薪酬下降； $DPAY_NC$ 表示方向不一致时，CEO 薪酬下降而非 CEO 薪酬增长。 $EDPAY$ 表示高管团队内部薪酬变动程度的不一致。由于所有解释变量均为 0/1 的虚拟变量，因此模型（1）采用 logit 方法进行回归。

高管团队内部薪酬变动不一致的影响因素。在高管层面，根据管理层权力理论，高管的权力会影响到他们的议价能力，从而影响薪酬变动。 $DUAL$ 表示 CEO 是否同时也是董事长，用来衡量 CEO 的权力，若 CEO 的权力越大越容易发生薪酬变动不一致的情况。 $NCEOBOARD$ 表示的是非 CEO 高管中同时也担任董事职务的比例，这个比例越高，表明非 CEO 高管越有能力影响他们自身的薪酬，发生薪酬变动不一致的概率会越小。同理， $LNNCEOAGE$ 和 $LNNCEOTENURE$ 表示的是非 CEO 高管的权力，非 CEO 高管年龄越大，任期越长，说明他们越有影响薪酬制定的能力，会减少与 CEO 之间薪酬变动的不一致性。在公司层面， NUM 表示高管团队的规模，即按照上文样本筛选过程后的有效高管团队中高管的人数；在外部层面， RET_VOL 表示的是高管团队外部环境的波动性，采用上市公司 T 期前 60 个月的股票回报的波动率（Kale *et al.*, 2009; Shin *et al.*, 2015）。根据上文的描述，这两个因素分别在锦标赛理论和社会比较理论的预测下，对高管团队内薪酬变动的方向并不一致，因此难以预测这两个变量的系数方向。

其他控制变量。参照现有文献（Rajgopal and Srinivasan, 2006; Kale *et al.*, 2009; Shin *et al.*, 2015），本文还控制了其他的高管团队特征、公司特征和公司治理因素。公司治理方面如董事会规模（ $BOARD$ ），独立董事的比例（ $RATIO$ ）；团队特征方面如团队中女性高管的比例（ $TMTSEX$ ），团队的平均薪酬水平（ $LNMTMTPAY$ ）和团队的平均持股比例（ $MTMTHOLD$ ）。在中国上市公司中，国有产权属性及所有权的集中程度都对高管的薪酬设置有很大影响（Core *et al.*, 1999），模型（1）中采用两个变量来控制这些因素：是否为国有企业 SOE 、第一大控股股东持股比例 $TOPI$ 。其他公司特征方面包括公司业绩（ D ）、资产规模（ $SIZE$ ）、资产负债率（ LEV ）、公司上市年数（ $FIRMAGE$ ）。

详细的变量定义参见表 2，模型（1）同时控制了行业、年度的影响。

除了检验可能影响高管团队内薪酬变动不一致的因素，本文还进一步检验了高管团队内薪酬变动不一致的经济后果，即对企业未来绩效的影响。参照现有文献如陈冬华等（2015），Bushman *et al.*（2015）等，采用以下模型进行检验：

$$\begin{aligned}
 ROA_t = & \beta_0 + \beta_1 DPAY_{t-1} / EDPAY_{t-1} + \beta_2 SOE_t + \beta_3 DUAL_t + \beta_4 BOARD_t \\
 & + \beta_5 RATIO_t + \beta_6 TOP1_t + \beta_7 DRTMTPAY_t + \beta_8 LNMTMTPAY_t \\
 & + \beta_9 MTMTHOLD_t + \beta_{10} SIZE_t + \beta_{11} LEV_t + \beta_{12} FIRMAGE_t \\
 & + \beta_{13} BM_t + \beta_{14} H_t + \sum Industry_t + \sum Year_t + \varepsilon_t
 \end{aligned} \tag{2}$$

其中，被解释变量为企业绩效，采用总资产收益率（*ROA*）进行衡量，在稳健性检验中也采用了企业价值（*TOBINQ*）进行衡量。本文关注的是高管团队内薪酬变动不一致的指标 *DPAY* 和 *EDPAY* 的系数，即上一期的高管团队内薪酬变动不一致对未来绩效的影响。*DPAY* 和 *EDPAY* 的定义同上。根据锦标赛理论，CEO 的薪酬增长越快过非 CEO 高管时对未来绩效越有效；根据社会比较理论，CEO 的薪酬增长与非 CEO 高管越一致对未来绩效越有利；而管理层权力理论认为，过大的 CEO 与非 CEO 薪酬变动差异是来源于 CEO 的权力或其他代理问题，因此对未来绩效会有不利的影响。由于理论上无法对高管团队内薪酬变动差异对未来绩效的影响做出一致的预测，因此 *DPAY* 和 *EDPAY* 的系数不能预测，需要实证的检验。其他控制变量参考现有文献，同样控制了高管团队特征、公司特征以及公司治理的相关变量。具体定义参考表 2，此处不再赘述。同样，模型（2）控制了行业、年度的影响。

四、实证结果

（一）描述性统计

图 1 是样本期间内，CEO 与非 CEO 高管薪酬增长率随时间的变化。总体来说，无论是 CEO 还是非 CEO 高管的薪酬都一直在增长，增长的趋势也较为一致，且 CEO 的平均薪酬增长率要高于非 CEO 高管。在 2007 年时两者的增长达到一个顶峰，CEO 的平均薪酬增长了约 38%，非 CEO 高管的平均薪酬增长了约 32%；2008 年高管的平均薪酬增长率急剧下降，在 2010 年重新加速增长后，到 2014 年增长率都是下降的趋势。

图 2 是样本中高管团队内薪酬变动方向不一致的比例随时间变动的趋势。平均来说，样本期间内每年都有超过 20% 的公司发生 CEO 与非 CEO 高管薪酬变动方向相反的现象，有趣的是，*DPAY*=1 的比例在 2007 和 2010 年最低，对应上图 1，这两年所有高管的平均薪酬增长率相对样本期间来说是最高的；而在 2011-2014 年所有高管的平均薪酬增长率下降的趋势下，*DPAY*=1 的比例也逐年在增长。换句话说，高管团队内薪酬变动方向不一致的情况更可能出现在薪酬增长率下降的时候。另外，图 2 还列示出了薪酬变动方向不一致中的 CEO 增长而非 CEO 下降的情况，即 *DPAY_CN*=1 的比

例随时间变动的趋势。每年这部分变动不一致的比例大约都占据所有变动方向不一致的一半左右，且随时间变动的趋势与 *DPAY* 基本一致，即在所有高管薪酬增长率下降的时候，越容易发生 CEO 薪酬增长而非 CEO 薪酬下降的情况。

表 3 是不同的高管团队薪酬变动情况 (*GROUP*) 下的薪酬增长率分布情况。其中 *DPAY_CN* 中的 CEO 平均薪酬增长，而非 CEO 的平均薪酬下降；*DPAY_NC* 中的 CEO 平均薪酬下降，而非 CEO 的平均薪酬增长。这两组的薪酬变动之比并没有可比性。薪酬变动方向一致 (*DPAY=0*) 时不同变动程度差异的三组：*GROUP_L*、*GROUP_M*、*GROUP_H*。其中 *GROUP_L* 的 CEO 平均薪酬增长率约为 12%，非 CEO 的平均薪酬增长率约为 26%，显著高于 CEO，因此 *GROUP_L* 中的 CEO 平均增长要慢于非 CEO 高管。同样 *GROUP_H* 的 CEO 平均薪酬增长率约为 38%，非 CEO 的平均薪酬增长率约为 18%，显著低于 CEO，因此 *GROUP_H* 中的 CEO 平均增长要快于非 CEO 高管。*GROUP_M* 中 CEO 与非 CEO 高管的薪酬增长率都约为 16%，两者的薪酬增长比较一致。

表 2 变量定义表

变量	定义
高管团队内薪酬变动不一致	
<i>DPAY</i>	CEO 与非 CEO 高管薪酬变动方向不一致。 将 CEO 与非 CEO 薪酬同增同减或同时不变的情况定义为高管团队内薪酬变动方向一致 (<i>DPAY=0</i>)，而将其他的情况定义为变动方向不一致 (<i>DPAY=1</i>)。
<i>DPAY_CN</i>	CEO 与非 CEO 高管薪酬变动方向不一致且 CEO 薪酬增长而非 CEO 薪酬不增长。具体来说：当 CEO 薪酬增加，非 CEO 薪酬减少（不变）时；或 CEO 薪酬不变，非 CEO 薪酬减少时，定义为 <i>DPAY_CN=1</i> ，否则为 0。
<i>DPAY_NC</i>	CEO 与非 CEO 高管薪酬变动方向不一致且 CEO 薪酬不增长而非 CEO 薪酬增长。具体来说：当 CEO 薪酬减少，非 CEO 薪酬增加（不变）时；或 CEO 薪酬不变，非 CEO 薪酬增加时，定义为 <i>DPAY_NC=1</i> ，否则为 0。
<i>DCHPAY</i>	当 CEO 与非 CEO 薪酬变动方向一致时，两者薪酬变动的程度差异。取值为 CEO 薪酬增长率 / 非 CEO 薪酬增长率。
<i>GROUP_L</i>	表示 CEO 与非 CEO 薪酬变动方向一致，且 CEO 变动比非 CEO 变动更慢。将 <i>DCHPAY</i> 按大小等分为 3 组，取值最小的一组定义为 1，否则为 0。
<i>GROUP_M</i>	表示 CEO 与非 CEO 薪酬变动方向一致，且 CEO 变动与非 CEO 变动趋于一致。将 <i>DCHPAY</i> 按大小等分为 3 组，取值位于中间的一组定义为 1，否则为 0。
<i>GROUP_H</i>	表示 CEO 与非 CEO 薪酬变动方向一致，且 CEO 变动比非 CEO 变动更快。将 <i>DCHPAY</i> 按大小等分为 3 组，取值最大的一组定义为 1，否则为 0。
<i>EDPAY</i>	CEO 与非 CEO 高管薪酬变动程度不一致。 若公司处于 <i>GROUP_M</i> ，即薪酬变动方向和程度都一致，那么定义 <i>EDPAY=0</i> ，否则定义为不一致，取值为 1。
高管薪酬	
<i>DCEOPAY</i>	CEO 薪酬的增长幅度 = T 期 CEO 薪酬 - T-1 期 CEO 薪酬
<i>DNCEOPAY</i>	非 CEO 高管薪酬的增长幅度 = T 期非 CEO 高管薪酬中值 - T-1 期非 CEO 高管薪酬中值
<i>DRCEOPAY</i>	CEO 的薪酬增长率 = (T 期 CEO 薪酬 - T-1 期 CEO 薪酬) / T-1 期 CEO 薪酬
<i>DRNCEOPAY</i>	非 CEO 高管的薪酬增长率 = (T 期非 CEO 高管薪酬中值 - T-1 期非 CEO 高管薪酬中值) / T-1 期非 CEO 高管薪酬中值

<i>DRTMPAY</i>	整个高管团队的薪酬增长率 = (T 期高管团队薪酬 - T-1 高管团队薪酬) / T-1 高管团队薪酬
<i>MTMPAY</i>	整个高管团队的平均薪酬水平 = 整个高管团队的薪酬总额 / 高管团队人数
<i>MTMHOLD</i>	整个高管团队的平均持股 = 整个高管团队的持股总额 / 高管团队人数
高管团队特征	
<i>NCEOAGE</i>	非 CEO 高管的年龄的对数 = ln (非 CEO 高管的年龄的中值)
<i>NCEOTENURE</i>	非 CEO 高管的任期的对数 = ln (非 CEO 高管的任期的中值)
<i>TMTSEX</i>	高管团队中的女性高管比例 = 高管团队中的女性高管人数 / 高管团队人数
<i>NUM</i>	高管团队的人数, 按照文中高管定义和样本筛选后的有效高管人数
公司治理和公司特征	
<i>DUAL</i>	总经理是否同时也是董事长, 若二职合一取值为 1, 否则为 0。
<i>NCEOBOARD</i>	非 CEO 高管中同时担任董事的比例 = 非 CEO 高管中的董事人数 / 非 CEO 高管人数
<i>BOARD</i>	董事会规模
<i>RATIO</i>	独立董事占所有董事的比例
<i>TOP1</i>	公司第一大股东持股比例
<i>ROA</i>	净利润 / 总资产
<i>D</i>	当期业绩 <i>ROA</i> 是否下降, 若当期 <i>ROA</i> 小于上期 <i>ROA</i> 时定义为 1, 否则为 0。
<i>BM</i>	资产总计 / 市值
<i>RET_VOL</i>	高管团队外部环境的波动性, 采用上市公司 T 期前 60 个月的股票回报的波动率。
<i>H</i>	公司是否同时在香港上市。
<i>SOE</i>	若为国企取值为 1, 非国企取值为 0。
<i>SIZE</i>	公司规模 = 总资产取自然对数
<i>LEV</i>	总资产负债率 = 负债总额 / 资产总额
<i>FIRMAGE</i>	公司上市年数的自然对数

图 1 CEO 与非 CEO 高管薪酬增长率的时间趋势

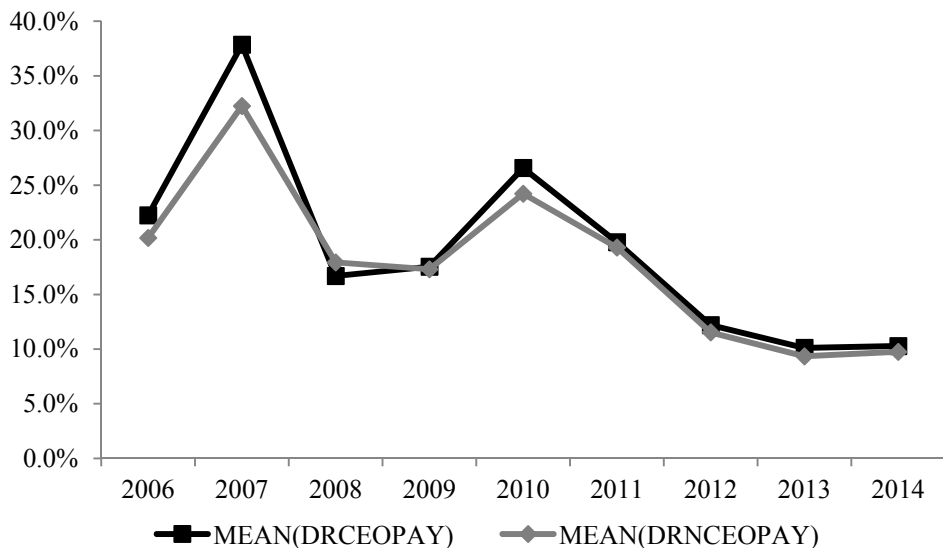


图 2 高管团队内薪酬变动方向不一致的比例的时间趋势

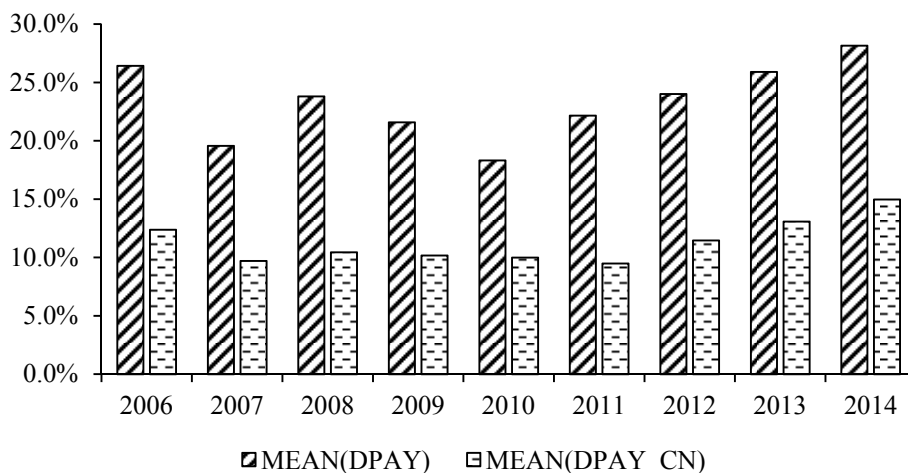


表 3 不同高管团队内薪酬变动互动情况 (GROUP) 下的薪酬增长率分布情况

GROUP	变量名	观测值	均值	中位数	标准差	1/4 分位数	3/4 分位数
DPAY_CN	<i>DRCEOPAY</i>	1047	15.14%	5.26%	31.20%	0.21%	16.67%
	<i>DRNCEOPAY</i>	1047	-10.10%	-6.03%	11.31%	-14.38%	-1.69%
DPAY_NC	<i>DRCEOPAY</i>	1099	-7.99%	-1.91%	12.78%	-10.66%	0.00%
	<i>DRNCEOPAY</i>	1099	17.92%	10.10%	24.78%	3.52%	21.31%
GROUP_L	<i>DRCEOPAY</i>	2075	11.77%	6.00%	25.82%	0.36%	16.28%
	<i>DRNCEOPAY</i>	2075	26.19%	17.94%	43.11%	2.90%	39.54%
	<i>DCHPAY</i>	2075	0.434	0.457	0.235	0.235	0.640
GROUP_M	<i>DRCEOPAY</i>	2809	16.77%	5.38%	41.80%	0.00%	26.00%
	<i>DRNCEOPAY</i>	2809	16.56%	5.47%	38.81%	0.00%	26.25%
	<i>DCHPAY</i>	2054	0.993	1.000	0.100	0.921	1.063
GROUP_H	<i>DRCEOPAY</i>	2027	37.82%	21.05%	64.72%	2.27%	51.54%
	<i>DRNCEOPAY</i>	2027	17.52%	8.56%	33.61%	0.37%	24.80%
	<i>DCHPAY</i>	2027	3.963	1.897	5.239	1.440	3.468

表 4 是对相关变量的描述性统计。分别采用 *DPAY* 和 *EDPAY* 两个指标来衡量薪酬变动方向、程度的不一致。*DPAY* 的均值为 0.237, 表明样本平均有 23.7% 的高管团队内薪酬变动方向不一致。其中 *DPAY_CN* 的均值为 0.116, 表明样本平均有 11.6% 的高管团队中 CEO 薪酬增长而非 CEO 薪酬下降; *DPAY_NC* 的均值为 0.121, 表明样本平均有 12.1% 的高管团队中 CEO 薪酬下降而非 CEO 薪酬增长。*EDPAY* 的均值为 0.690, 表明样本平均有 69% 的高管团队 CEO 和非 CEO 薪酬变动程度不一致。

在高管薪酬相关变量中, *DCEOPAY* 的均值(中值)为 52.022 (18.000), 表明样本中 CEO 薪酬平均增长了 5 万元左右(1.8 万元), *DNCEOPAY* 的均值(中值)为 35.878 (17.000), 表明样本中非 CEO 薪酬平均增长了 3.6 万元左右(1.7 万元)。CEO 的薪

酬增长率 (*DRCEOPAY*) 均值为 0.171, 而中位数为 0.050, 非 CEO 的薪酬增长率 (*DRNCEOPAY*) 均值为 0.161, 而中位数为 0.073, 表明样本中所有高管的薪酬增长率分布差异较大。对高管团队薪酬来说, 团队的总薪酬增长率为 0.204, 平均总薪酬约为 42 万元, 平均总持股为 1.008%。高管团队的其他特征, 非 CEO 高管的平均年龄为 45.7 岁, 平均任期约为 5.3 年。*TMTSEX* 的均值为 0.142, 表明高管团队中平均约有 14.2% 的女性高管。*NUM* 的均值为 5.84, 表明样本中的平均高管团队规模是 6 人左右。

表 4 主要变量的描述性统计

变量名	观测值	均值	中位数	标准差	1/4 分位数	3/4 分位数
高管团队内薪酬变动不一致						
<i>DPAY</i>	9057	0.237	0.000	0.425	0.000	0.000
<i>DPAY_CN</i>	9057	0.116	0.000	0.320	0.000	0.000
<i>DPAY_NC</i>	9057	0.121	0.000	0.327	0.000	0.000
<i>EDPAY</i>	9057	0.690	1.000	0.463	0.000	1.000
高管薪酬						
<i>DCEOPAY(thousands)</i>	9057	52.022	18.000	186.599	0.000	90.400
<i>DNCEOPAY(thousands)</i>	9057	35.878	17.000	109.886	-1.000	65.750
<i>DRCEOPAY</i>	9057	0.171	0.050	0.441	0.000	0.234
<i>DRNCEOPAY</i>	9057	0.161	0.073	0.366	-0.004	0.253
<i>DRTMTPAY</i>	9057	0.204	0.094	0.469	-0.056	0.355
<i>MTMTPAY(thousands)</i>	9057	420.442	337.050	318.925	209.860	529.983
<i>MTMTHOLD</i>	9057	1.008	0.001	2.506	0.000	0.262
高管团队特征						
<i>NCEOAGE</i>	9057	45.679	45.750	4.050	43.000	48.500
<i>NCEOTENURE</i>	9057	5.338	5.009	2.112	3.750	6.615
<i>TMTSEX</i>	9057	0.142	0.125	0.163	0.000	0.250
<i>NUM</i>	9057	5.843	6.000	2.280	4.000	7.000
公司治理和公司特征						
<i>DUAL</i>	9057	0.239	0.000	0.427	0.000	0.000
<i>NCEOBOARD</i>	9057	0.281	0.250	0.264	0.000	0.500
<i>BOARD</i>	9057	8.976	9.000	1.773	8.000	9.000
<i>RATIO</i>	9057	0.367	0.333	0.052	0.333	0.400
<i>TOPI</i>	9057	0.353	0.336	0.149	0.233	0.459
<i>BM</i>	9057	0.946	0.676	0.845	0.409	1.164
<i>ROA</i>	9057	0.041	0.037	0.051	0.015	0.066
<i>D</i>	9057	0.540	1.000	0.498	0.000	1.000
<i>RET_VOL</i>	9057	0.147	0.144	0.045	0.116	0.171
<i>SOE</i>	9057	0.471	0.000	0.499	0.000	1.000
<i>H</i>	9057	0.030	0.000	0.171	0.000	0.000
<i>SIZE</i>	9057	21.781	21.631	1.181	20.944	22.443
<i>LEV</i>	9057	0.458	0.462	0.222	0.291	0.618
<i>FIRMAGE</i>	9057	9.750	10.000	5.532	4.000	14.000

表 5 高管团队内薪酬变动不一致的公司与其他公司主要变量的均值差异分析

变量	DPAY=0		DPAY=1		DIFF (A-B)		DPAY_CN=1		DIFF (A-C)		DPAY_NC=1		DIFF (A-D)		EDPAY=0		EDPAY=1		DIFF (E-F)	
	(A)	(B)	(B)	(A)	(A-B)	(C)	(C)	(A-C)	(D)	(D)	(A-D)	(E)	(E)	(F)	(F)	(E-F)				
DUAL	0.226	0.283	-0.057***	0.259	-0.033**	0.306	-0.080***	0.196	0.259	-0.063***										
NCEOBOARD	0.280	0.287	-0.007	0.275	0.005	0.298	-0.018**	0.281	0.282	-0.001										
NCEOAGE	45.841	45.156	0.685***	45.069	0.771***	45.239	0.602***	46.176	45.455	0.721***										
NCEOTENURE	5.413	5.096	0.317***	5.085	0.328***	5.106	0.307***	5.617	5.213	0.405***										
NUM	5.918	5.601	0.317***	5.575	0.343***	5.626	0.292***	5.967	5.787	0.180***										
RET_VOL	0.147	0.144	0.003**	0.143	0.005***	0.146	0.001	0.147	0.146	0.000										
BOARD	9.014	8.854	0.161***	8.882	0.133**	8.827	0.187***	9.110	8.916	0.194***										
RATIO	0.366	0.370	-0.003**	0.370	-0.004**	0.369	-0.003	0.364	0.368	-0.004***										
TOP1	0.355	0.347	0.008**	0.348	0.007	0.346	0.008*	0.349	0.354	-0.005										
D	0.532	0.566	-0.034***	0.550	-0.018	0.581	-0.048***	0.535	0.542	-0.007										
ROA	0.042	0.037	0.005***	0.035	0.008***	0.039	0.003**	0.039	0.042	-0.002**										
BM	0.942	0.957	-0.015	0.984	-0.042	0.931	0.011	0.954	0.942	0.013										
SOE	0.499	0.382	0.118***	0.396	0.103***	0.368	0.132***	0.552	0.435	0.117***										
SIZE	21.793	21.741	0.052*	21.746	0.047	21.737	0.056	21.789	21.777	0.012										
LEV	0.459	0.452	0.007	0.455	0.004	0.449	0.010	0.470	0.452	0.018***										
FIRMAGE	9.829	9.496	0.333**	9.780	0.048	9.225	0.604***	10.172	9.560	0.611***										
LNMTPAY	12.715	12.673	0.041**	12.631	0.083***	12.714	0.001	12.611	12.747	-0.136***										
MTMTHOLD	0.935	1.246	-0.311***	1.184	-0.250***	1.305	-0.370***	0.685	1.154	-0.469***										

在公司治理和公司特征变量中, *DUAL* 的均值为 0.239, 表明样本中有约 23.9% 的 CEO 同时也担任董事长; *NCEOBOARD* 的均值为 0.281, 表明高管团队中平均约有 28.1% 的非 CEO 高管同时担任董事职位; *BOARD* 的均值为 8.976, 表明样本公司的董事会规模约为 9 人; *RATIO* 的均值为 0.367, 表明样本公司董事会的独董比例平均约为 36.7%。 *TOP1* 的均值为 0.353, 表明样本公司平均第一大股东持股比例约为 35%; *ROA* 是总资产收益率, 样本中的均值约为 4%; *D* 的均值为 0.54, 表明样本中有 54% 的公司发生业绩下降; *RET_VOL* 是前 60 个月股票回报率的标准差, 均值为 0.146, 中位数为 0.143, 分布较为均匀。 *H* 的均值为 0.03, 表明样本中有 3% 的公司同时也在 H 股上市。 *SOE* 的均值为 0.471, 表明样本中有 47.1% 的公司为国有控股企业。样本公司的资产规模对数 *SIZE* 的均值为 21.781, 中位数为 21.631, 分布比较均匀。 *LEV* 的均值为 0.458, 表明样本公司的平均资产负债率为 45.8%, *FIRMAGE* 的均值为 9.750, 表明样本公司的平均上市年限约为 10 年。

表 5 列示了高管团队内薪酬变动方向不一致或变动程度差异较大的公司与其他公司在公司特征及公司治理上的差异。当高管团队内薪酬变动方向不一致 (*DPAY=1*) 时, CEO 的权力越大, 非 CEO 高管的权力越低, 高管团队规模更小, 且所处的外部环境更稳定。其他特征方面, 高管团队内薪酬变动方向不一致的公司有更小的董事会规模, 更高的独立董事比例, 更低的第一大股东持股比例, 业绩越差且更容易发生业绩下降的情况; 另外, 薪酬变动方向不一致的情况也更可能发生在非国有、且上市年限较短的公司, 虽高管的平均薪酬水平较低, 但却拥有较高的平均持股比例。此外, 对高管团队薪酬变动方向不一致进行细分, 发生 CEO 薪酬下降而非 CEO 薪酬增长的公司有更多的非 CEO 高管同时兼任董事。当高管团队内薪酬变动程度不一致 (*EDPAY=1*) 时, 同样具有更大的 CEO 权力、更低的非 CEO 权力以及较小的团队规模, 但外部环境的波动性与薪酬变动程度一致时无显著差异。其他公司特征方面, 高管薪酬变动程度不一致的公司同样具有更小的董事会规模和更高的独立董事比例, 更容易发生在上市的年限较短的非国有企业中, 但公司的业绩往往会比薪酬变动程度一致时会更好。虽然薪酬变动程度不一致时高管的平均持股会更高, 但平均薪酬水平比薪酬变动程度一致时更高。

(二) 多元回归分析

1. 高管团队内薪酬变动不一致的影响因素

本文从不同理论视角, 探讨高管权力、团队规模以及外部环境波动三个方面对高管团队内薪酬变动不一致的影响。采用模型 (1) 对不一致指标的 logit 回归结果如表 6 所示。第 1-3 列是高管团队内薪酬变动方向不一致的影响因素, 其中第 1 列是 *DPAY* 的回归结果。第 1 列回归结果中衡量高管权力的指标, 如 CEO 权力 (*DUAL*) 的系数在第 1 列中为 0.200 且在 1% 水平显著为正, 在第 2 列中为正但并不显著, 在第 3 列中显著为正, 表明 CEO 权力越大时越容易出现高管团队薪酬变动方向不一致, 且主要是

表 6 高管团队内薪酬变动不一致的影响因素 logit 回归结果

自变量	(1) <i>DPAY</i>	(2) <i>DPAY_CN</i>	(3) <i>DPAY_NC</i>	(4) <i>EDPAY</i>
<i>CONSTANTS</i>	1.930 (1.451)	3.428* (1.940)	-2.203 (-1.285)	1.685 (1.356)
<i>DUAL</i>	0.200*** (3.067)	0.0346 (0.393)	0.290*** (3.531)	0.141** (2.173)
<i>NCEOBOARD</i>	-0.251** (-2.389)	-0.353** (-2.554)	-0.0776 (-0.575)	-0.305*** (-3.057)
<i>LNNCEOAGE</i>	-0.772** (-2.403)	-1.111*** (-2.636)	-0.205 (-0.492)	-1.152*** (-3.815)
<i>LNNCEOTENURE</i>	-0.370*** (-5.053)	-0.425*** (-4.401)	-0.198** (-2.143)	-0.446*** (-6.200)
<i>NUM</i>	-0.0599*** (-4.323)	-0.0548*** (-2.896)	-0.0475*** (-2.680)	-0.0356*** (-3.190)
<i>RET_VOL</i>	-1.541** (-2.298)	-3.542*** (-3.874)	0.540 (0.655)	-0.424 (-0.642)
<i>D</i>	0.103** (1.985)	0.0170 (0.249)	0.156** (2.325)	-0.00378 (-0.079)
<i>SOE</i>	-0.446*** (-6.830)	-0.330*** (-3.831)	-0.440*** (-5.142)	-0.345*** (-5.784)
<i>TOPI</i>	-0.244 (-1.290)	-0.165 (-0.666)	-0.242 (-0.970)	0.345** (1.986)
<i>SIZE</i>	0.0994*** (3.241)	0.0747* (1.857)	0.0935** (2.362)	-0.00310 (-0.109)
<i>LEV</i>	0.00569 (0.040)	0.0145 (0.076)	0.000107 (0.001)	0.0671 (0.513)
<i>FIRMAGE</i>	0.196*** (3.800)	0.288*** (4.266)	0.0503 (0.759)	0.161*** (3.242)
<i>BOARD</i>	0.0197 (1.119)	0.0426* (1.870)	-0.00799 (-0.340)	-0.00112 (-0.073)
<i>RATIO</i>	0.573 (1.097)	0.971 (1.414)	0.0307 (0.045)	0.111 (0.227)
<i>TMTSEX</i>	0.157 (0.991)	0.362* (1.770)	-0.0954 (-0.460)	0.280* (1.892)
<i>LNMTMPAY</i>	-0.133*** (-3.057)	-0.258*** (-4.570)	0.0223 (0.393)	0.324*** (7.836)
<i>MTMTHOLD</i>	0.0122 (1.003)	0.0182 (1.161)	0.00307 (0.196)	0.0417*** (3.143)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	9054	9054	9044	9054
adj. R-sq	0.0257	0.0255	0.0206	0.0333

注：***、**、*分别表示 1%、5%、10%统计水平显著，括号内为稳健 Z 值。

CEO 薪酬降低而非 CEO 薪酬增长的情况。⁹ 非 CEO 权力($NCEOBOARD / LNNCEOAGE / LNNCEOTENURE$) 系数在第 1 列结果都显著为负, 同时也在第 2 列中显著为负, 但在第 3 列中只有非 CEO 的任期 ($LNNCEOTENURE$) 显著为负。表明当非 CEO 权力较大时, 越不可能出现团队薪酬变动方向不一致的情况。高管团队的规模 (NUM) 的系数为 -0.0599 , 且在 1% 水平显著为负, 同时也在第 2、3 列中亦显著为负, 表明高管团队规模越大时, 越不可能出现高管团队内薪酬变动方向不一致的情况。外部环境波动 (RET_VOL) 的系数在第 1 列中为 -1.541 且在 5% 水平显著为负, 在第 2 列中亦显著为负, 在第 3 列中为正并不显著, 表明外部环境越波动时, 越不可能发生高管团队方向变动不一致的情况, 且更不可能发生 CEO 薪酬增长而非 CEO 薪酬减少的现象。

第 4 列表示的是高管团队薪酬变动程度不一致的影响因素。CEO 权力 ($DUAL$) 的系数在第 4 列结果中为 0.141 且在 5% 水平显著, 表明 CEO 的权力越大时, 越可能使得其薪酬变动与非 CEO 不一致。此外, 非 CEO 权力 ($NCEOBOARD / LNNCEOAGE / LNNCEOTENURE$) 的系数在第 4 列都显著为负, 表明非 CEO 权力越大时, 越不可能使得 CEO 的薪酬增长快过非 CEO 的增长。高管团队规模 (NUM) 的系数为 -0.0356 , 且在 1% 水平显著, 表明高管团队人数越多时团队内薪酬变动程度不一致的概率越小。外部环境波动 (RET_VOL) 系数在第 4 列中虽然为正但并不显著, 表明外部环境的波动对高管团队内薪酬变动程度的不一致无显著影响。

总体来说, 中国上市公司高管团队内薪酬变动的差异更符合社会比较理论和管理层权力理论的预期。高管团队内非 CEO 权力越大, 团队规模越大, 外部环境越波动时, 高管团队薪酬变动不一致的概率越低。为减少部分内生性, 对模型 (1) 采用固定效应的 logit 回归重新对各个不一致指标进行检验, 结果如表 7 所示。回归结果与表 7 基本一致, 不再赘述。

2. 高管团队内薪酬变动不一致的经济后果

本文采用模型 (2) 检验高管团队内薪酬变动不一致对企业未来绩效的影响。将不一致指标分别加入模型 (2) 中的回归结果如表 8 所示。第 1-3 列是高管团队内薪酬变动方向不一致对企业未来绩效的影响。第 1 列的结果显示 $DPAY_{t-1}$ 的系数为 -0.00414 且在 1% 水平显著, 表明若上一期的高管内薪酬变动方向相反, 相对上一期高管内薪酬变动方向一致时对企业当期绩效更为不利。进一步的, 第 2 和第 3 列 $DPAY_CN_{t-1}$ 、 $DPAY_NC_{t-1}$ 的系数分别为 -0.00416 和 -0.00304 , 且分别在 5% 和 10% 水平显著, 表明无论是上一期 CEO 薪酬增长而非 CEO 薪酬下降, 还是上一期 CEO 薪酬下降而非 CEO 薪酬增长导致的薪酬变动方向相反, 相对其他情况对当期的企业绩效都更为不利。第 4 列是高管团队内薪酬变动程度不一致对企业未来绩效的影响。结果显示 $EDPAY_{t-1}$ 的系数为 -0.00260 , 且在 5% 水平显著, 表明高管团队薪酬变动程度不一致不利于企业绩效。总之, 表 8 的结果表明, 高管团队内薪酬变动的方向、程度不一致, 不利于企

⁹ 由于 CEO 薪酬降低而非 CEO 薪酬增长更有可能是出现在业绩下降的公司, 如表 6 第 3 列结果中 D 的系数显著为正, 当 CEO 同时是董事长时, 有可能会为了激励其他高管而自降薪酬, 感谢匿名审稿人的建议。

业未来绩效，符合社会比较理论的预测。

表 7 高管团队内薪酬变动不一致的影响因素的固定效应 logit 回归结果

自变量	(1) <i>DPAY</i>	(2) <i>DPAY_CN</i>	(3) <i>DPAY_NC</i>	(4) <i>EDPAY</i>
<i>DUAL</i>	0.0196 (0.125)	-0.00455 (-0.023)	0.147 (0.711)	0.168 (1.098)
<i>NCEOBOARD</i>	-0.638*** (-3.033)	-1.068*** (-4.117)	0.129 (0.472)	-0.271 (-1.290)
<i>LNNCEOAGE</i>	-0.809 (-1.192)	-2.159** (-2.524)	1.155 (1.379)	0.0633 (0.091)
<i>LNNCEOTENURE</i>	-0.444*** (-3.227)	-0.591*** (-3.474)	-0.108 (-0.595)	-0.608*** (-4.319)
<i>NUM</i>	-0.0418 (-1.552)	-0.0386 (-1.139)	-0.0310 (-0.897)	-0.0757*** (-2.949)
<i>RET_VOL</i>	-1.455 (-1.039)	-3.888** (-2.073)	0.711 (0.411)	-0.281 (-0.214)
<i>D</i>	0.0486 (0.787)	-0.0757 (-0.959)	0.172** (2.201)	-0.0419 (-0.715)
<i>SOE</i>	0.0520 (0.174)	-0.0872 (-0.219)	0.128 (0.352)	-0.167 (-0.668)
<i>TOPI</i>	-0.397 (-0.563)	-0.381 (-0.438)	0.445 (0.466)	0.332 (0.484)
<i>SIZE</i>	0.157 (1.487)	0.0658 (0.496)	0.294** (2.156)	-0.0368 (-0.369)
<i>LEV</i>	-0.648* (-1.846)	-0.762* (-1.697)	-0.506 (-1.104)	-0.479 (-1.476)
<i>FIRMAGE</i>	0.545** (2.355)	0.367 (1.219)	0.456 (1.597)	0.526** (2.344)
<i>BOARD</i>	0.0451 (1.046)	0.0592 (1.091)	0.0374 (0.682)	-0.00150 (-0.039)
<i>RATIO</i>	-0.115 (-0.108)	0.771 (0.572)	-0.847 (-0.626)	-1.079 (-1.056)
<i>TMTSEX</i>	0.0524 (0.140)	0.916* (1.921)	-0.772* (-1.661)	-0.202 (-0.528)
<i>LNMTMTPAY</i>	-1.111*** (-8.604)	-1.208*** (-7.097)	-0.640*** (-4.024)	0.197* (1.895)
<i>MTMTHOLD</i>	0.0284 (0.781)	0.0501 (1.115)	-0.0251 (-0.538)	0.0399 (0.835)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	5740	4034	4004	6012

注：***、**、*分别表示 1%、5%、10%统计水平显著。

表 8 高管团队内薪酬变动不一致的经济后果的回归结果

自变量	因变量: <i>ROA</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	-0.400*** (-23.483)	-0.401*** (-23.525)	-0.402*** (-23.601)	-0.402*** (-23.647)
<i>DPAY_{t-1}</i>	-0.00414*** (-3.306)			
<i>DPAY_CN_{t-1}</i>		-0.00416** (-2.547)		
<i>DPAY_NC_{t-1}</i>			-0.00304* (-1.830)	
<i>EDPAY_{t-1}</i>				-0.00260** (-2.243)
<i>SOE</i>	-0.00806*** (-5.888)	-0.00785*** (-5.755)	-0.00787*** (-5.774)	-0.00796*** (-5.839)
<i>DUAL</i>	-0.00522*** (-3.816)	-0.00531*** (-3.874)	-0.00526*** (-3.846)	-0.00528*** (-3.855)
<i>BOARD</i>	-0.000421 (-1.189)	-0.000409 (-1.156)	-0.000422 (-1.191)	-0.000428 (-1.208)
<i>RATIO</i>	-0.0352*** (-3.403)	-0.0352*** (-3.397)	-0.0352*** (-3.407)	-0.0350*** (-3.378)
<i>TOPI</i>	0.0219*** (5.740)	0.0218*** (5.706)	0.0218*** (5.705)	0.0220*** (5.753)
<i>DRTMTPAY</i>	0.00538*** (4.399)	0.00539*** (4.409)	0.00529*** (4.332)	0.00532*** (4.349)
<i>LNMTMTPAY</i>	0.0181*** (18.005)	0.0181*** (17.991)	0.0182*** (18.117)	0.0183*** (18.247)
<i>MTMTHOLD</i>	0.000594** (2.444)	0.000577** (2.384)	0.000585** (2.396)	0.000597** (2.448)
<i>SIZE</i>	0.0130*** (14.933)	0.0130*** (14.964)	0.0130*** (14.948)	0.0129*** (14.915)
<i>LEV</i>	-0.0818*** (-14.607)	-0.0818*** (-14.619)	-0.0817*** (-14.597)	-0.0817*** (-14.620)
<i>FIRMAGE</i>	-0.00215** (-2.013)	-0.00219** (-2.051)	-0.00222** (-2.083)	-0.00221** (-2.070)
<i>BM</i>	-0.0172*** (-17.913)	-0.0172*** (-17.910)	-0.0172*** (-17.970)	-0.0172*** (-17.966)
<i>H</i>	-0.0201*** (-5.520)	-0.0204*** (-5.636)	-0.0202*** (-5.568)	-0.0203*** (-5.560)
Industry/Year	Yes	Yes	Yes	Yes
N	6567	6567	6567	6567
adj. R-sq	0.328	0.327	0.327	0.327

注：***、**、*分别表示 1%、5%、10%统计水平显著，括号内为稳健 Z 值。

表9 高管团队内薪酬变动不一致的经济后果的回归结果

自变量	因变量: <i>TOBINO</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	9.410*** (17.083)	9.390*** (17.082)	9.356*** (16.995)	9.358*** (17.035)
<i>DPAY_{t-1}</i>	-0.100*** (-2.763)			
<i>DPAY_CN_{t-1}</i>		-0.133*** (-2.900)		
<i>DPAY_NC_{t-1}</i>			-0.0442 (-0.925)	
<i>EDPAY_{t-1}</i>				-0.0680** (-1.981)
<i>SOE</i>	-0.0784** (-1.961)	-0.0744* (-1.869)	-0.0725* (-1.815)	-0.0765* (-1.913)
<i>DUAL</i>	-0.0307 (-0.787)	-0.0326 (-0.837)	-0.0322 (-0.826)	-0.0319 (-0.818)
<i>BOARD</i>	0.00425 (0.418)	0.00456 (0.448)	0.00431 (0.424)	0.00405 (0.398)
<i>RATIO</i>	1.487*** (4.432)	1.489*** (4.437)	1.488*** (4.434)	1.495*** (4.448)
<i>TOPI</i>	0.612*** (5.233)	0.609*** (5.216)	0.609*** (5.203)	0.615*** (5.255)
<i>DRTMTPAY</i>	0.0564 (1.621)	0.0573* (1.649)	0.0543 (1.564)	0.0549 (1.580)
<i>LNMTMTPAY</i>	0.230*** (6.778)	0.229*** (6.761)	0.232*** (6.848)	0.237*** (7.009)
<i>MTMTHOLD</i>	0.0102 (1.213)	0.00981 (1.171)	0.00984 (1.172)	0.0103 (1.224)
<i>SIZE</i>	-0.457*** (-13.663)	-0.457*** (-13.647)	-0.457*** (-13.642)	-0.458*** (-13.686)
<i>LEV</i>	-0.747*** (-3.655)	-0.748*** (-3.659)	-0.746*** (-3.651)	-0.745*** (-3.644)
<i>FIRMAGE</i>	0.158*** (4.705)	0.158*** (4.694)	0.156*** (4.649)	0.157*** (4.666)
<i>BM</i>	-0.631*** (-17.439)	-0.631*** (-17.425)	-0.633*** (-17.486)	-0.631*** (-17.438)
<i>H</i>	0.566*** (7.001)	0.558*** (6.910)	0.560*** (6.921)	0.562*** (6.965)
Industry/Year	Yes	Yes	Yes	Yes
N	6567	6567	6567	6567
adj. R-sq	0.443	0.443	0.442	0.442

注: **、*、*分别表示 1%、5%、10%统计水平显著, 括号内为稳健 Z 值, 且控制了行业年度。

表 10 高管团队内薪酬变动不一致的经济后果的回归结果

自变量	因变量: <i>ROA</i>			
	(1)	(2)	(3)	(4)
<i>Constants</i>	-0.207*** (-12.349)	-0.207*** (-12.367)	-0.207*** (-12.401)	-0.207*** (-12.401)
<i>DPAY_{t-1}</i>	-0.00219** (-1.980)			
<i>DPAY_CN_{t-1}</i>		-0.00205 (-1.423)		
<i>DPAY_NC_{t-1}</i>			-0.00175 (-1.182)	
<i>EDPAY_{t-1}</i>				-0.00205** (-2.014)
<i>ROA_{t-1}</i>	0.497*** (24.555)	0.497*** (24.560)	0.498*** (24.604)	0.498*** (24.573)
<i>SOE</i>	-0.00465*** (-3.722)	-0.00453*** (-3.645)	-0.00455*** (-3.665)	-0.00465*** (-3.750)
<i>DUAL</i>	-0.00272** (-2.212)	-0.00276** (-2.245)	-0.00273** (-2.227)	-0.00273** (-2.222)
<i>BOARD</i>	-0.000363 (-1.184)	-0.000357 (-1.163)	-0.000363 (-1.186)	-0.000370 (-1.208)
<i>RATIO</i>	-0.0223** (-2.482)	-0.0223** (-2.477)	-0.0223** (-2.483)	-0.0221** (-2.458)
<i>TOPI</i>	0.0110*** (3.484)	0.0110*** (3.460)	0.0110*** (3.463)	0.0112*** (3.518)
<i>DRTMTPAY</i>	0.00591*** (5.327)	0.00591*** (5.331)	0.00586*** (5.287)	0.00588*** (5.298)
<i>LNMTMTPAY</i>	0.00909*** (10.059)	0.00908*** (10.050)	0.00913*** (10.108)	0.00926*** (10.238)
<i>MTMTHOLD</i>	0.000337* (1.798)	0.000328* (1.755)	0.000333* (1.766)	0.000345* (1.833)
<i>SIZE</i>	0.00693*** (8.350)	0.00694*** (8.366)	0.00693*** (8.350)	0.00690*** (8.315)
<i>LEV</i>	-0.0424*** (-7.510)	-0.0424*** (-7.510)	-0.0423*** (-7.495)	-0.0423*** (-7.503)
<i>FIRMAGE</i>	-0.000387 (-0.429)	-0.000408 (-0.453)	-0.000422 (-0.468)	-0.000405 (-0.449)
<i>BM</i>	-0.00928*** (-10.942)	-0.00929*** (-10.949)	-0.00931*** (-10.963)	-0.00925*** (-10.942)
<i>H</i>	-0.0107*** (-3.371)	-0.0109*** (-3.432)	-0.0108*** (-3.390)	-0.0107*** (-3.373)
Industry/Year	Yes	Yes	Yes	Yes
N	6567	6567	6567	6567
adj. R-sq	0.483	0.483	0.483	0.483

注：***、**、*分别表示 1%、5%、10%统计水平显著，括号内为稳健 Z 值，且控制了行业、年度。

为加强上述结果的稳健性,本文同时采用企业价值 *TOBINQ* 来替代 *ROA* 衡量企业的绩效情况,重新将不一致指标加入模型(2)中得到的结果如表9所示。同样第1-3列表示高管团队内薪酬变动方向不一致对未来企业价值的影响。第1列和第2列结果中 $DPAY_{t-1}$ 和 $DPAY_{CN_{t-1}}$ 的系数分别为 -0.100 和 -0.133,且都在 1%水平显著,第3列结果中 $DPAY_{NC_{t-1}}$ 的系数为 -0.0442 但并不显著。表明上一期的高管团队内薪酬变动方向不一致,尤其是当上一期的 CEO 薪酬增长而非 CEO 薪酬下降时,对当期企业价值提升有不利影响。第4列表示高管团队内薪酬变动程度不一致对未来企业价值的影响。和表8一样,第4列的结果显示 $EDPAY_{t-1}$ 的系数为 -0.0680,且在 5%水平显著,表示若高管团队内薪酬变动程度不一致对未来企业价值同样不利。表9与表8的结果一致,同样符合社会比较理论的预期。

除此之外,为控制部分内生性,在模型(2)中加入了上一期的绩效 ROA_{t-1} ,以控制其他可能影响当期企业绩效的因素。重新将不一致指标代入模型(2)中后得到的结果如表10所示。第1-3列表示上一期高管团队薪酬变动方向不一致对当期企业绩效的影响,第4列表示薪酬变动程度不一致对企业绩效的影响。结果和表8基本一致, $DPAY_{t-1}$ 和 $EDPAY_{t-1}$ 的系数分别为 -0.00219 和 -0.00205,且在 5%水平显著,结果同样表明高管团队内薪酬变动的方向、程度的不一致不利于企业未来绩效,符合社会比较理论的预测。

3. 不同产权下的高管团队薪酬变动不一致的经济后果分析

中国背景下的国有企业具有“二重性”,即国有企业除了要实现自身盈利性目标,同时还要帮助政府实现一定的社会和政治目标(陆正飞等,2012;宋晶和孟德芳,2012)。因此国有企业的高管薪酬机制受政府干预影响,处于政府严格的管制之下。虽然近三十多年来一系列的国有企业改革措施一方面极大提高了国企职工工资机制的市场化程度,但另一方面,原有的国有经济和行政命令配置资源的体制却并未完全退出,对国企内部尤其是高管团队内部收入分配仍然具有重要影响(陆正飞等,2012)。2003年国资委首次颁布《中央企业负责人经营业绩考核暂行办法》,要求所有高管采用同一套绩效考核办法,其中CEO的分配系数为1,而其他高管的分配系数根据责任和贡献由企业自行确定。由于国有企业的所有者缺位,很容易形成内部人控制,在缺乏有效激励和监督机制情境下,国企内部控制人可能会形成结盟(钱颖一,1999),给予他们团队内部的自主分配权可能难以将各高管的激励差异化;加之若国企CEO来自行政任命,并不一定具备更大的“影响力”或能力,拉大与其他高管之间的激励程度会引起较大的不公平感。上表6的结果中,*SOE*的系数在第1和第4列中显著为负,表明国有企业的高管发生薪酬变动不一致的概率越低。

鉴于此,高管团队内部薪酬变动不一致对企业绩效的影响在国有企业和非国有企业应当存在差异。将模型(2)分别在国有企业和非国有企业样本中进行回归,分析不一致指标对未来企业绩效的影响在不同产权下的差异,回归结果如表11所示。第1-4列为国有企业样本的结果,其中第1-3列表示国企高管上一期的薪酬变动方向不一致对当期绩效的影响, $DPAY_{t-1}$ 、 $DPAY_{NC_{t-1}}$ 、 $DPAY_{CN_{t-1}}$ 的系数都显著为负,表明国企

表 11 不同产权下的高管团队薪酬变动不一致的经济后果分析回归结果

<i>ROA</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		国有企业				非国有企业		
<i>Constants</i>	-0.399*** (-18.240)	-0.401*** (-18.294)	-0.401*** (-18.304)	-0.402*** (-18.390)	-0.428*** (-15.110)	-0.428*** (-15.075)	-0.430*** (-15.205)	-0.430*** (-15.182)
<i>DPAY_{t-1}</i>	-0.00633*** (-3.419)				-0.00304* (-1.821)			
<i>DPAY_CN_{t-1}</i>		-0.00544** (-2.250)				-0.00415* (-1.856)		
<i>DPAY_NC_{t-1}</i>			-0.00589** (-2.370)				-0.00121 (-0.569)	
<i>EDPAY_{t-1}</i>				-0.00154 (-0.983)				-0.00412** (-2.458)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3025	3025	3025	3025	3542	3542	3542	3542
adj. R-sq	0.385	0.384	0.384	0.383	0.296	0.296	0.295	0.296

注：***、**、*分别表示1%、5%、10%统计水平显著，括号内为稳健Z值，为简洁未列出控制变量的结果。

高管若薪酬变动方向不一致对未来绩效会有负面影响。第 4 列表示国企高管上一期的薪酬变动程度不一致对当期绩效的影响， $EDPAY_{t-1}$ 的系数不显著，表明国企高管薪酬变动的程度不一致并不影响企业未来绩效。

第 5-8 列为非国有企业样本的结果，其中第 5-7 列表示非国企高管上一期的薪酬变动方向不一致对当期绩效的影响。 $DPAY_{t-1}$ 、 $DPAY_{NC_{t-1}}$ 的系数为负且在 10% 水平显著， $DPAY_{NC_{t-1}}$ 的系数为负但不显著，表明非国企高管团队内薪酬变动方向不一致，且尤其是 CEO 薪酬增加非 CEO 薪酬下降时，对提升企业绩效不利；第 8 列表示非国企高管上一期的薪酬变动程度不一致对当期绩效的影响， $EDPAY_{t-1}$ 的系数显著为负，表明对非国企高管来说，若高管团队内薪酬变动程度不一致对企业绩效是不利的。

总之，表 11 的结果表明，国有企业中，虽高管团队内薪酬变动的方向不一致会显著降低企业绩效，但变动的程度不一致对企业绩效无显著影响；非国有企业中，高管团队内薪酬变动方向和程度不一致都会对企业绩效不利。

最后，上文中非 CEO 高管的薪酬变动采用的是所有非 CEO 高管薪酬的中位数的变动，为降低团队人数带来的影响，本文分别采用前三位和前五位非 CEO 高管薪酬中位数的变动作为非 CEO 高管薪酬的变动并与 CEO 的薪酬变动作比较，重新对二者差异的影响因素及其经济后果进行检验。检验的结果与上文基本一致，限于篇幅不予列示。

五、研究结论与局限

经验文献在探讨高管团队激励设置时，大多聚焦在团队内部的薪酬水平差异，而未深入涉及高管间的薪酬结构差异。在现有的高管薪酬披露制度下，除了高管的薪酬水平之外，我们同时也能观测到各高管的薪酬变动及其之间的互动情况。由于多任期的高管更关注薪酬的动态增长，且高管的薪酬变动主要来源于绩效薪酬，因此高管间的薪酬变动差异更能体现高管间的激励差异情况。本文采用高管之间薪酬变化的不一致来反映其薪酬结构的差异，首先分析高管团队内薪酬变动不一致的影响因素，进而讨论该不一致对企业绩效的影响。结果发现：非 CEO 权力越大，高管团队规模越大以及外部环境越不稳定时，高管团队内薪酬变动不一致的概率越低。进一步地，高管团队内薪酬变动不一致显著降低了企业绩效。国有企业中，虽高管团队内薪酬变动的方向不一致会显著降低企业绩效，但变动的程度不一致对企业绩效无显著影响；非国有企业中，高管团队内薪酬变动方向和程度不一致都会对企业绩效不利。以上结果表明，在中国制度背景下，社会比较理论和管理层权力理论更适合用来分析高管团队内的薪酬结构差异。

本文丰富了多代理人契约理论的经验研究，同时也丰富了高管团队激励的相关文献，但仍存在一定的局限。例如，由于中国高管薪酬的绩效薪酬以短期现金薪酬为主，绩效薪酬的衡量仍然是采用回归的方式计算出薪酬业绩敏感性系数，即内涵的激励，也因此不能构造一个直接衡量团队内薪酬结构差异的指标以检验其影响因素及经济后果。随着长期激励计划如期权等在中国的普及，以及薪酬披露制度的完善，未来将会

有更丰富的数据供以打开、解构高管团队薪酬激励设计这个黑箱子。

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参考文献

- 陈冬华、范从来、沈永建，2015，“高管与员工：激励有效性之比较与互动”，《管理世界》第5期，160-171。
- 陈震、张鸣，2006，“高管层内部的级差报酬研究”，《中国会计评论》第1期，15-28。
- 方军雄，2011，“高管权力与企业薪酬变动的非对称性”，《经济研究》第4期，107-120。
- 廖理、廖冠民、沈红波，2009，“经营风险，晋升激励与公司绩效”，《中国工业经济》第8期，119-130。
- 林浚清、黄祖辉、孙永祥，2003，“高管团队内薪酬差距，公司绩效和治理结构”，《经济研究》第4期，31-40。
- 陆正飞、王雄元、张鹏，2012，“国有企业支付了更高的职工工资吗？”，《经济研究》第3期，28-39。
- 钱颖一，1999，“激励与约束”，《经济社会体制比较》第5期，7-12。
- 宋晶、孟德芳，2012，“国有企业高管薪酬制度改革路径研究”，《管理世界》第2期，181-182。
- 张正堂，2007，“高层管理团队协作需要，薪酬差距和企业绩效：竞赛理论的视角”，《南开管理评论》第10期，4-11。
- 张正堂，2008，“企业内部薪酬差距对组织未来绩效影响的实证研究”，《会计研究》第9期，81-87。
- Aggarwal, R. K. and Samwick, A. A. (2003), ‘Performance Incentives within Firms: The Effect of Managerial Responsibility’, *The Journal of Finance* 58 (4): 1613-1650.
- Alchian, A. A. and Demsetz, H. (1972), ‘Production, Information Costs, and Economic Organization’, *The American Economic Review* 62 (5): 777-795.
- Ang, J., Lauterbach, B., and Schreiber, B. Z. (2002), ‘Pay at the Executive Suite: How do US Banks Compensate their Top Management Teams?’, *Journal of Banking and Finance* 26 (6): 1143-1163.
- Bebchuk, L. A., Cremers, K. J., and Peyer, U. C. (2011), ‘The CEO Pay Slice’, *Journal of Financial Economics* 102 (1): 199-221.
- Bebchuk, L. A. and Fried, J. M. (2003), ‘Executive Compensation as an Agency Problem’, *Journal of Economic Perspectives* 17 (3): 71-92.
- Bloom, M. (1999), ‘The Performance Effects of Pay Dispersion on Individuals and

- Organizations', *Academy of Management Journal* 42 (1): 25-40.
- Bloom, M. and Michel, J. G. (2002), 'The Relationships among Organizational Context, Pay Dispersion, and among Managerial Turnover', *Academy of Management Journal* 45 (1): 33-42.
- Bolton, P. and Dewatripont, M. (2005), *Contract Theory*, MIT press.
- Burns, N., Minnick, K., and Starks, L. T. (2017), 'CEO Tournaments: A Cross-Country Analysis of Causes, Cultural Influences and Consequences', *Journal of Financial and Quantitative Analysis* 52 (2): 519-551.
- Bushman, R. M., Dai, Z., and Zhang, W. (2015), 'Management Team Incentive Dispersion and Firm Performance', *The Accounting Review* 91 (1): 21-45.
- Carpenter, M. A. and Sanders, W. G. (2004), 'The Effects of Top Management Team Pay and Firm Internationalization on MNC Performance', *Journal of Management* 30 (4): 509-528.
- Che, Y. K. and Yoo, S. W. (2001), 'Optimal Incentives for Teams', *American Economic Review* 91 (3): 525-541.
- Chen, J., Ezzamel, M., and Cai, Z. (2011), 'Managerial Power Theory, Tournament Theory, and Executive Pay in China', *Journal of Corporate Finance* 17 (4): 1176-1199.
- Canyon, M. J., Peck, S. I., and Sadler, G. V. (2001), 'Corporate Tournaments and Executive Compensation: Evidence from the UK', *Strategic Management Journal* 22 (8): 805-815.
- Core, J. and Guay, W. (1999), 'The Use of Equity Grants to Manage Optimal Equity Incentive Levels', *Journal of Accounting and Economics* 28 (2): 151-184.
- Core, J. E., Holthausen, R. W., and Larcker, D. F. (1999), 'Corporate Governance, Chief Executive Officer Compensation, and Firm Performance', *Journal of Financial Economics* 51 (3): 371-406.
- Cowherd, D. M. and Levine, D. I. (1992), 'Product Quality and Pay Equity between Lower-level Employees and Top Management: An Investigation of Distributive Justice Theory', *Administrative Science Quarterly* 37 (2): 302-320.
- Edmans, A., Goldstein, I., and Zhu, J. (2013), 'Contracting With Synergies', CEPR Discussion Papers.
- Eriksson, T. (1999), 'Executive Compensation and Tournament Theory: Empirical Tests on Danish Data', *Journal of Labor Economics* 17 (2): 262-280.
- Faleye, O., Reis, E., and Venkateswaran, A. (2010), 'The Effect of Executive-Employee Pay Disparity on Labor Productivity', Working paper.
- Finkelstein, S. and Hambrick, D. C. (1997), 'Strategic Leadership: Top Executives and Their Effects on Organizations', *Academy of Management Review* 22 (3): 802-805.
- Fredrickson, J. W., Davis Blake, A., and Sanders, W. M. (2010), 'Sharing the Wealth: Social Comparisons and Pay Dispersion in the CEO's Top Team', *Strategic Management*

- Journal* 31 (10): 1031-1053.
- Gerhart, B., Rynes, S. L., and Fulmer, I. S. (2009), 'Pay and Performance: Individuals, Groups, and Executives', *The Academy of Management Annals* 3 (1): 251-315.
- Green, J. R. and Stokey, N. L. (1983), 'A Comparison of Tournaments and Contracts', *The Journal of Political Economy* 91 (3): 349-364.
- Henderson, A. D. and Fredrickson, J. W. (2001), 'Top Management Team Coordination Needs and the CEO Pay Gap: A Competitive Test of Economic and Behavioral Views', *Academy of Management Journal* 44 (1): 96-117.
- Holmstrom, B. (1982), 'Moral hazard in teams', *The Bell Journal of Economics* 13 (2): 324-340.
- Kale, J. R., Reis, E., and Venkateswaran, A. (2009), 'Rank-Order Tournaments and Incentive Alignment: The Effect on Firm Performance', *The Journal of Finance* 64 (3): 1479-1512.
- Kato, T. and Long, C. (2011), 'Tournaments and Managerial Incentives in China's Listed Firms: New Evidence', *China Economic Review* 22 (1): 1-10.
- Kremer, M. (1993), 'The O-ring Theory of Economic Development', *The Quarterly Journal of Economics* 108 (3): 551-575.
- Lazear, E. P. (1989), 'Pay Equality and Industrial Politics', *Journal of Political Economy* 97 (3): 561-580.
- Lazear, E. P. and Rosen, S. (1981), 'Rank-Order Tournaments as Optimum Labor Contracts', *The Journal of Political Economy* 89 (5): 841-864.
- Lee, K. W., Lev, B., and Yeo, G. H. H. (2008), 'Executive Pay Dispersion, Corporate Governance, and Firm Performance', *Review of Quantitative Finance and Accounting* 30 (3): 315-338.
- Li, F., Minnis, M., Nagar, V., and Rajan, M. (2014), 'Knowledge, Compensation, and Firm Value: An Empirical Analysis of Firm Communication', *Journal of Accounting and Economics* 58 (1): 96-116.
- Main, B. G. M., O'Reilly, C. A., and Wade, J. (1993), 'Top Executive Pay: Tournament or Teamwork?', *Journal of Labor Economics* 11 (4): 606-628.
- Milgrom, P. and Roberts, J. (1988), 'An Economic Approach to Influence Activities in Organizations', *American Journal of Sociology* 94 (Supplement): S154-S179.
- Murphy, K. J. (1986), 'Incentives, Learning, and Compensation: A Theoretical and Empirical Investigation of Managerial Labor Contracts', *The Rand Journal of Economics* 17 (1): 59-76.
- O'Reilly, C. A., Main, B. G., and Crystal, G. S. (1988), 'CEO compensation as tournament and social comparison: A tale of two theories', *Administrative Science Quarterly* 33 (2): 257-274.
- Pfeffer, J. and Davis-Blake, A. (1987), 'Understanding Organizational Wage Structures: A

- Resource Dependence Approach', *Academy of Management Journal* 30 (3): 437-455.
- Pfeffer, J. and Langton, N. (1993), 'The Effect of Wage Dispersion on Satisfaction, Productivity, and Working Collaboratively: Evidence From College and University Faculty', *Administrative Science Quarterly* 38 (3): 382-407.
- Rajgopal, S. and Srinivasan, S. (2006), 'Pay Dispersion in the Executive Suite', Working Paper.
- Ramakrishnan, R. T. S. and Thakor, A. V. (1991), 'Cooperation Versus Competition in Agency', *Journal of Law, Economics, and Organization* 7 (2): 248-283.
- Shin, J. Y., Kang, S. C., Hyun, J. H., and Kim, B. J. (2015), 'Determinants and Performance Effects of Executive Pay Multiples: Evidence from Korea', *ILR Review* 68 (1): 53-78.
- Siegel, P. A. and Hambrick, D. C. (2005), 'Pay Disparities within Top Management Groups: Evidence of Harmful Effects on Performance of High-technology Firms', *Organization Science* 16 (3): 259-274.
- Trevor, C. O. and Wazeter, D. L. (2006), 'A Contingent View of Reactions to Objective Pay Conditions: Interdependence among Pay Structure Characteristics and Pay Relative to Internal and External Referents', *Journal of Applied Psychology* 91 (6): 1260.
- Wade, J. B., O'Reilly, C. A., and Pollock, T. G. (2006), 'Overpaid CEOs and Underpaid Managers: Fairness and Executive Compensation', *Organization Science* 17 (5): 527-544.
- Xu, Y., Liu, Y. G., and Lobo, G. J. (2016), 'Troubled by Unequal Pay Rather than Low Pay: The Incentive Effects of a Top Management Team Pay Gap', *China Journal of Accounting Research* 9 (2): 115-135.