

# A comparative study of the manipulation effects of CEO ownership on executive-employee pay gap between the fresh CEO and the senior CEO: evidence from the knowledge-based enterprises

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## **Abstract**

Facing the research gap in the relationship between CEO ownership and executive-employee pay gap, drawing on the insights from the tournament theory and behavioral theory, the paper empirically examines and compares the effects of the ownership of the fresh CEOs and senior CEOs on executive-employee pay gap, by taking the knowledge-based enterprises as the research sample. Empirical results show that the senior CEO's ownership in a knowledge-based enterprise is positively related to the executive-employee pay gap, while there is no significant linear relationship between the fresh CEO's ownership and the executive-employee pay gap.

**Key words:** *CEO ownership; executive - employee pay gap; knowledge-based enterprise*

## **1 Introduction**

In recent years, the gap between executives and employees has become a global hot issue, it has aroused fierce controversy and challenge from all walks of life. The pay gap with other people will directly affect the mood, attitude and effort of employees working in the company. Up to now, the practice of pay gap management between executives and employees is undoubtedly inefficient, so it is urgent for academic circles to give a clear theoretical guidance.

Tournament theory was put forward by Lazear and Rosen in 1981, and it's a kind of work motivation system to avoid the laziness of employees and the management inaction<sup>1</sup>. Lazear's research shows that the competitive pressures associated with the pay gap can make executives work harder to get higher pay. Bishop (1987) found the pay gap can motivate employees to continue efforts to improve firm performance, it can more easily attract talented people and reduce the cost of enterprises looking for excellent employees<sup>2</sup>. On the contrary, behavioral theory holds that a smaller pay gap can improve firm performance. If the pay gap is small, employees will feel fair, thereby enhanced the awareness of cooperation among employees and improve the firm performance.

The above analysis of the impact of the pay gap between executives and employees proves the importance and substantive value of the executive-employee pay gap for enterprise

operations management and strategic performance. There is a lack of special attention to knowledge-based enterprises in the existing research, and the study of the pay gap between executives and employees is absent.

## **2 Literature and hypothesis**

CEO autonomy includes position right, ownership, the relationship between rights, industry autonomy, resource operation rights and so on (Chen. J, 2011, Thorsten D.& Gunther, 2011 )<sup>3,4</sup>. As an important measurement dimension of CEO autonomy, CEO ownership is mainly related to whether CEO holding shares and the degree of concentration of ownership. Cheng Xiao-ke (2015) showed that CEO shareholding can produce synergistic effects to some extent, and reduce the possibility of CEO to improve their own interests<sup>5</sup>. Core's (1999) empirical tests showed that the pay of CEO who holds shares is higher than the CEO that does not own the company's shares, which also explains why CEO with corporate shares has a bigger pay gap with other employees<sup>6</sup>.

As we all know, CEO holds shares will stimulate synergy between CEO and shareholders, which will show more consistent with the interests of shareholders. As senior CEO, when senior CEO has ownership, not only does it substantially increase the power of senior CEO to control the enterprise, but it also provides a more convenient way for senior CEO to upgrade their pay<sup>7</sup>. Some scholars believe that the concentration of ownership has a greater impact on the CEO ownership. In general, the higher the concentration of ownership, the greater the power of shareholders to supervise CEO. For senior CEO, if shareholder's supervisory effect is weak, it will make senior CEO more unscrupulous in terms of pay manipulation<sup>8</sup>.

As for knowledge based enterprises, in order to hold on to the CEO with most advanced knowledge and skills, shareholders are more demanding in their professional skills when choosing them, and more dependent on the professional skills of these managers. In this case, shareholders are more likely to let CEO hold shares, in order to "kidnap CEO" and stimulate CEO, even hope that CEO synergistically with shareholders in position and maximize the interests of shareholders. Therefore, the following hypotheses are proposed in this paper:

### **H1: in a knowledge-based enterprise, senior CEO ownership positive manipulate the executive-employee pay gap**

CEO itself has a high ownership, and if given a certain stake on this basis, will make the power of CEO further enlarged. For the fresh CEO, on the one hand, companies are offering equity incentives to encourage the fresh CEO, in order to achieve synergy between CEO and shareholders, on the other hand, it may also provide more favorable conditions to fresh CEO in interest seeking. After the fresh CEO has ownership, its control of enterprise is enhanced and the strength of this control will be lower than that of senior CEO because of its shorter tenure and less familiarity with the business, and gradually leads to the increase of the pay gap between executives and employees.

The greater the concentration of stock right, the greater the power of the shareholder to

oversee the fresh CEO, and the power of the fresh CEO is undermined at this point. And when stock right is more dispersed, corporate shareholders will reduce the intensity of monitoring the fresh CEO. This will allow the fresh CEO to have greater control over the major decisions, including decisions on its own pay. Motivated by self-interest, the fresh CEO raises its pay levels, thereby enlarge the pay gap between executives and employees. However, the fresh CEO is inferior to senior CEO in terms of corporate relationships and business operations, thus, overall, the fresh CEO has less control over executive-employee pay gap than senior CEO.

**H2: in a knowledge-based enterprise, the fresh CEO ownership positive manipulate the executive-employee pay gap, and this correlation is lower than that of senior CEO**

### 3 Experimental

Independent variable: CEO ownership (OSP) is measured by the average of the following three indicators. Whether CEO holds shares as the first indicator, when he or she holds, the value set at 1, if not set at 0. The number of CEO Holdings (OSP2) as the second indicator. (the number of shares held by CEO) / ( the maximum number of shares held by someone except CEO) (OSP3) as the third indicator. In order to facilitate data processing, the logarithm is added after the ratio is increased by 1.

The dependent variable: executives-employee pay gap (AGAP) including the absolute pay gap and relative pay gap these two measure methods. In this paper, the absolute pay gap is used as the main index<sup>8</sup>, as follows:

$$AGAP = LN(\text{the average pay of executive} - \text{the average pay of employee})$$

$$= LN\left(\frac{\text{The total of the top three executive pay}}{3} - \frac{\text{Total staff pay}}{\text{the number of employees} - \text{the number of executives}}\right)$$

Control variables: this paper selects the following control variables to avoid interference with the conclusions of the study. Respectively, setting time (FIRM), regional (EAST), property rights (STATER), ownership Concentration (FIRS), asset liability ratio (ZCFZ), number of board of supervisors(SUP), independent director ratio (IDR), enterprise scale (SIZE), executive scale (GGGM).

#### 3.1 Descriptive statistics and correlation analysis

Table 1 shows that the average value of CEO ownership is 0.27, and the average pay gap between executives and employees is 459.9 thousand yuan. The average degree of ownership concentration is 0.34. As a whole, the correlation coefficient between the major explanatory variables and the control variables is no more than 0.5, indicating that there is no multicollinearity at all, which is beneficial to the regression analysis below.

**Table 1**– descriptive statistics and correlation analysis of research variables

variable	average	standard deviation	1	2	3	4	5	6	7	8	9	10	11
1 OSP	.27	.191	1										
2 AGAP	12.70	.811	.010	1									
3 FIRM	12.60	5.284	-.188**	.130**	1								
4 EAST	.69	.461	.091**	.160**	-.082**	1							
5 STATER	.17	.377	-.131**	.038	.013	-.063**	1						
6 FIRS	.34	.144	-.081**	.010	-.166**	.065**	.046*	1					
7 ZCFZ	0.35	.193	-.225**	.111**	.237**	-.090**	.122**	-.025	1				
8 SUP	3.42	.978	-.097**	.048*	.100**	-.139**	.167**	-.064**	.216**	1			
9 IDR	0.37	.05	.090**	-.021	-.056**	.043*	-.087**	.076**	-.034	-.107**	1		
10 SIZE	9.32	.453	-.108**	.452**	.212**	-.050**	.171**	.053**	.482**	.226**	-.014	1	
11 GGGM	6.39	2.381	-.016	.224**	.010	-.104**	.078**	-.019	.195**	.152**	-.039*	.361**	1

Note: N=2624. \*\* Significant degree level is 0.01 (two tailed); \* Significant degree level is 0.05 (two tailed).

In order to explore the influence of CEO ownership on executive-employee pay gap, we should take OSP as independent variable and AGAP as dependent variable. After adding control variables, we construct multiple regression model 1.

$$AGAP = \alpha + \sigma_1 OSP_{it} + \sigma_2 FIRM_{it} + \sigma_3 EAST_{it} + \sigma_4 STATER_{it} + \sigma_5 ZCFZ_{it} + \sigma_6 SUP_{it} + \sigma_7 IDR_{it} + \sigma_8 SIZE_{it} + \sigma_9 GGGM_{it} + \varepsilon_{it} \tag{1}$$

**4 Results and Discussion**

**Table 2** – regression analysis results of fresh and senior CEO ownership and executive-employee pay gap

	Model 1		Robustness Test	
	Senior CEO	Fresh CEO	Senior CEO	Fresh CEO
OSP	.059** (2.391)	-0.008 (-0.290)		
OSP1			.078** (3.170)	-0.001 (-0.041)
FIRM	.091*** (3.709)	.063** (2.339)	.093*** (3.839)	0.064** (2.434)
EAST	.219*** (9.334)	.146*** (5.817)	.221*** (9.430)	.145*** (5.796)
STATER	-0.038 (-1.573)	-0.013 (-0.529)	-0.038 (-1.576)	-0.013 (-0.509)
FIRS	.051** (2.143)	-0.072** (-2.854)	0.059** (2.427)	-0.071** (-2.812)
ZCFZ	-0.120*** (-4.457)	-0.132*** (-4.580)	-0.117*** (-4.373)	-0.131*** (-4.545)
SUP	.016 (0.678)	-0.086** (-3.256)	.012 (.511)	-0.086** (-3.241)
IDR	.017 (0.720)	-0.070** (-2.806)	.016 (0.694)	-0.070** (-2.818)
SIZE	.489*** (16.204)	.424*** (15.969)	.481*** (15.818)	.465*** (16.036)
GGGM	.105*** (4.021)	.090*** (3.490)	.018*** (4.131)	.090** (3.472)
R <sup>2</sup>	.309	.228	.311	.227
Adjust R <sup>2</sup>	.304	.222	.306	.222
F	58.148	38.321	58.772	38.311
Sig	.000	.000	.000	.000

Note: N=1312; t in parentheses; \* /\*\* /\*\*\* respectively significant at 0.1,0.05 and 0.01 levels

The results are shown in *Table 2*. it found that senior CEO ownership has a significant positive impact on executive-employee pay gap (Beta=0.059, P=0.017), so hypothesis H1 is established; and fresh CEO ownership had no significant influence on the executive-employee pay gap (Beta=-0.008, P>0.1), so hypothesis H2 was not valid.

#### ***4.1 Robustness Test***

In order to ensure the reliability and validity of the regression results, use “whether CEO holding shares”(OSP1) as an alternative indicator of the robustness test. Therefore, replace OSP in model 1 with OSP1 to perform robustness tests. The results are shown in *Table 2*. Senior CEO ownership has a significant positive impact on the executive-employee pay gap; the fresh CEO ownership has no significant impact on the executive-employee pay gap. The results of Robustness test are consistent with the conclusions of this study.

#### ***4.2 Discussion***

(1) Senior CEO ownership is significantly positively related to executive-employee pay gap. As a senior CEO, they have much interpersonal relationship, and if they have ownership at the same time, it will increase the possibility of using power to seek-rent. Second, CEO holds shares will have synergies with shareholders in decision-making and management, in this case, the company naturally reduces the supervision of the CEO, so as to provide a convenient for CEO to seek personal interests by the power they have, eventually expanding the executive-employee pay gap. From the perspective of knowledge-based enterprises, for senior CEO, the company in order to "kidnap" CEO to coordinate and enhance the efforts of CEO, shareholders are more willing to let CEO hold shares in order to maximize the interests of shareholders. in this context, senior CEO's power will be inflated, for self motivated, they will increase their pay levels, thereby expanded the executive-employee pay gap. Overall, senior CEO driven by interest will eventually increase executive-employee pay gap as its ownership increase, hypothesis 1 is verified.

(2) The fresh CEO ownership has no significant impact on the executive-employee pay gap. Fresh CEO ownership will release a signal to the enterprise that a part of the enterprise belongs to the them. Power is virtually magnified, not only in the daily management of the absolute control, it also has a certain control in the major decision-making, which includes the decision-making of fresh CEO's own pay levels. Because fresh CEO has a short tenure and credibility is not high, if now they use power to improve pay, it will be difficult to obtain the trust of shareholders, and then cause other executives and employee's dissatisfaction and affect career development in the future. Therefore, from a long-term perspective, they will use their rights to do something beneficial for the enterprise to consolidate their position and improve their reputation and prestige. Compared to senior CEO, the fresh CEO would like to win shareholder confidence and secure positions. As a result, the fresh CEO ownership has no significant impact on the executive-employee pay gap, hypothesis 2 is not be validated.

## 5 Conclusions

On the basis of existing research, through empirical research and comparison, the conclusion shows that for senior CEO, their ownership have positive effect on executive-employee pay gap. And because of their relatively stable position, senior CEO will be more inclined to seek benefits for themselves. However, in order to obtain the recognition and trust of the board of directors and improve their reputation, fresh CEO will focus more on how to improve firm performance. So the fresh CEO ownership have no significant effect on executives-employee pay gap.

In subsequent research, we can try adding other types of enterprises such as the traditional enterprise, to compare between the knowledge-based enterprise and other types of enterprises whether there is a similar conclusion, and further enrich the research perspective of executives - employees pay gap.

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