

# The Impact of Equity Incentives on the Performance of Listed Companies

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**Abstract:** With the formal implementation of the Administrative Measures for Equity Incentives of Listed Companies, the scope of equity incentives for listed companies in China has been expanding, and the equity incentive system has been gradually improved. Among them, executive equity incentive and employee equity incentive are two important subjects in the incentive plan, and their respective impacts on corporate performance have also attracted much attention, which part has a greater impact, and whether the two are opposed has become a question discussed by many scholars. Based on human capital theory and entrusted agent theory, this paper selects A-share listed companies that implemented equity incentive plans from 2011 to 2020 as a sample, and uses a fixed-effect regression model to investigate the impact of different equity incentives on company performance. It is found that executive equity incentive can have a positive impact on the company's performance, and executive equity incentive enables them to join the enterprise management decision-making as the "master", share the surplus value of the enterprise with the owner, promote the enthusiasm and creativity of senior executives, reduce the agency cost between shareholders and executives, and meet the needs of long-term development of enterprises. Second, the effect of employee equity incentives is better than that of executives. Employees can only receive the benefits of equity incentives by working hard to meet the conditions for exercise (unlocking). As the most direct participants and executors in the company's business activities, employees have the motivation and ability to work hard to achieve equity incentive conditions and realize their own benefits. That is, the incentive effect of large-scale employee equity incentive is better, and the effect on the performance of listed companies is more significant.

**Keywords:** Employee equity incentive; Executive equity incentive; Company performance; Principal-agent theory.

## 1. Introduction

On August 13, 2016, the Administrative Measures for Equity Incentives of Listed Companies came into effect, marking the continuous expansion of the scope of equity incentives for listed companies in China and the gradual improvement of the equity incentive system. As early as December 31, 2005, the China Securities Regulatory Commission (CSRC) issued the Administrative Measures for Equity Incentives of Listed Companies (for Trial Implementation), and many companies have tried to introduce equity incentive plans. According to Wind Information's statistics, as of June 30, 2016, A-share listed companies have issued a total of 1211 equity incentive plan announcements, and finally 924 equity incentive plans of 688 A-share companies have been implemented. Among them, from 2014 to the first half of 2016 alone, 412 companies issued 500 equity incentive plan implementation announcements.

According to a series of previous relevant research literature, the investment behavior of companies that implement equity incentives is more effective and more efficient than that of companies that do not implement them, and there are positive governance effects of executive equity incentives, which have a positive impact on business activities and performance [1]. However, with the practice of equity incentives in companies, the positive impact of executive equity incentives on corporate operating performance has been increasingly questioned. Most of the previous literature has assumed that the choice of corporate financial policy is based on maximizing shareholder wealth, while the choice of corporate financial policy from the

perspective of management defense is more influenced by the manager's personal goals and preferences. According to Morck et al. (1988), 371 large American companies were used to examine the relationship between insider stock ownership and company performance, and found that there was a nonlinear relationship between the two, that is, as the proportion of insider shareholding increased, Tobin's Q value (company performance) showed a trend of rising first and then decreasing. The theoretical explanation for this phenomenon is that as the shareholding ratio of managers increases and exceeds a certain level, the market (manager market, company control market) has a decrease in the binding force on managers, and the manager's position in the company will be very solid, prompting him to pursue the goal of maximizing non-corporate value, which will inevitably lead to the reduction of enterprise value. From the perspective of the degree of equity incentive of the company, with the increase of the scale and number of equity incentives of executives, the company's performance does not necessarily change in the same direction [2].

In the above context, the core issue of this paper is whether employee equity incentive is conducive to improving the business performance of the enterprise and whether expanding the scope of employee equity incentive is more conducive to the improvement of the long-term value of the enterprise, that is, whether the employee equity incentive and the executive equity incentive cooperate with each other to play a remedial effect on the improvement of the company's performance.

Due to the short implementation time of the equity incentive system of listed companies in China, most of the

research focuses on the relationship between the equity incentive of Chinese executives and the company's performance, and less attention is paid to the equity incentive of employees. Some scholars believe that when the interests of shareholders and executives are inconsistent, executives may use their rights to make profits through earnings management or influence the formulation and implementation of equity incentive plans, but the future performance of the company fails to improve; while employees do not have the rights and influence of executives on the board of directors, employees can only improve their risk-taking ability by working hard in order to obtain the benefits of equity incentives of listed companies. Realize the company's performance and individual performance conditions required by the equity incentive plan, and strive to improve the company's performance. In the listed companies that currently implement equity incentives in China, while implementing equity incentives for executives, it has become a trend to expand the scope of incentive targets and implement equity incentives for employees, so it is of great significance to study the impact of employee equity incentives on company performance.

The main contributions of this paper are reflected in two aspects: first, the use of human capital theory and entrusted agent theory to construct a theoretical analysis framework to explain the positive significance of employee equity incentives; second, the in-depth study of equity incentive intensity, and analyze the interaction effect between employee equity incentive and executive equity incentive strength, which verifies that employee equity incentive intensity has a more obvious improvement effect on business performance.

## **2. Theoretical Analysis and Research Hypotheses**

### **2.1. Theoretical analysis of the factors influencing the business performance of enterprises**

Under normal circumstances, the factors affecting the business performance of enterprises include external environmental factors and internal factors. External environmental factors include many aspects, among which socio-economic environmental factors are crucial, such as economic cycles, inflation and government industrial policies.

The internal factors of the enterprise mainly include resource factors, governance factors and innovation factors. Resource factors include the types of assets and intangible resources owned by an enterprise. Return on enterprise assets is an important indicator to measure the business performance of enterprises, within a certain range, the larger the scale of enterprise assets, the easier it is to produce scale effects and asset portfolio effects, and then improve the use of assets. In addition to tangible assets and intangible assets, enterprises also have intangible resources that are not included in the scope of accounting, the most typical of which is human resources, which can also be called human capital. The theory of human capital was first proposed by the American economists Schultz and Becker in the sixties of the twentieth century. Schultz and Becker point out that capital in economics can be divided into two types of capital: physical capital and human capital. Material capital generally refers to the company's land, plant, machinery and equipment, means of transportation and other tangible assets, while human

capital mainly refers to human resources that integrate human knowledge, labor, experience, physical fitness and so on. In the company's production and operation process, the value created by human capital for the company is far greater than that of physical capital, and how to attract and retain talents and maximize the value of the company's executives and employees is an issue that the company needs to pay attention to when making relevant decisions. The value of human capital in the company's business process mainly refers to the value that can be created for the company by using executives and employees as the carrier. How to leverage and increase the motivation of executives and employees is a key issue that companies need to consider when entering into contractual contracts with them.

The significance of corporate governance factors to enterprise business performance lies in improving the governance structure and governance means to achieve the purpose of reducing agency costs and improving the utilization efficiency of enterprise resources. In modern corporate enterprises, in order to improve the company's operating efficiency, shareholders, as company owners, will be willing to hire professional managers as company operators to maximize the interests of shareholders. However, with this comes the pervasive issue of proxy between executives and shareholders. The core reason for the existence of the principal-agent problem is that the information asymmetry between shareholders and executives due to the "separation of powers" will lead to "moral hazard" and "adverse selection" of executives, and lead to inconsistent interests between executives and shareholders. To reduce agency costs, companies can employ measures such as supervision and incentives. As companies grow in size, the cost of supervising agents is high due to the limited time, energy and capacity of shareholders, and the use of incentives as a solution to reduce agency costs is generally recognized. An appropriate equity incentive system may weaken management's self-interested behavior, promote management's investment decisions in accordance with the criteria of maximizing enterprise value, and improve investment efficiency and effectiveness. At the same time, the great importance attached to the remuneration of the company's management and core employees and the implementation of incentive measures such as equity incentives can alleviate the conflict of interest between shareholders, management and employees, enable management and employees to devote themselves to the production and management control of the enterprise, and improve the business performance of the enterprise.

Innovation theory mainly emphasizes that investment in intellectual capital is extremely important for the development of enterprises. The accumulation of intellectual capital and human capital is an important factor affecting enterprise innovation, through intellectual capital investment and R&D investment, it can enhance the technological innovation and product innovation results of enterprises, enhance the market competitiveness of enterprises to obtain good business performance.

### **2.2. Equity Incentives and Enterprise Performance**

#### **2.2.1. Resource Factors**

Innovative human capital is especially critical to growth. Those core employees who have specialized technology,

master the core business, control key resources, and have an important impact on the operation and development of the enterprise are the important subjects of experience, knowledge and technology creation, and are the carriers and executors of the core competitiveness of the enterprise in R&D, design, manufacturing, marketing, service and other links, thus becoming the most important driving force for enhancing the value of the enterprise. Due to the intensification of competition for core talent demand by enterprises, the loss of core employees will reduce the competitiveness of enterprises, increase the replacement cost of human resources, and lose core technology and key resources. In order to prevent the loss of core employees who create most wealth and profits and enhance the core competitiveness of enterprises, enterprises should build effective long-term incentive mechanisms for core employees. Therefore, this paper presents hypothesis 1.

H1: Employee equity incentives are positively correlated with enterprise performance.

### 2.2.2. Governance Factors

In the 30s of the 20th century, Burleigh and Mynnes put forward the "principal-agent theory", which believed that the right to operate and the ownership of enterprises should be separated, and the integration of the two rights has a greater impact on the development of enterprises. The enterprise owner can retain the remaining claim rights and transfer the management rights to more professional and powerful managers [3]. The core of the principal-agent theory is the "economic man" hypothesis, the shareholders and executives of the enterprise belong to the so-called "economic man" in social activities, and each role will tend to take some actions to seek benefits and avoid disadvantages to realize their own interests in economic activities as much as possible. Generally speaking, the shareholders of an enterprise seek the appreciation of invested capital, that is, to optimize the value of the company, while the executives seek high compensation and low risk, that is, the maximization of personal value, and the agency cost is caused by the conflict of interests between the two. It is precisely because the separation of ownership and management rights can easily lead to differences in the interests of the two, increase agency costs, and affect enterprise performance.

In listed enterprises with relatively concentrated equity, there is generally a phenomenon of "double entrusted agent", and the theoretical system established based on this phenomenon is called "double entrusted agent theory", the core of which is to build an optimal governance mechanism and structure, which can not only promote operators to make decisions in line with the rights and interests of shareholders, but also prevent malicious acts of controlling shareholders, and then protect the legitimate rights and interests of minority shareholders [4]. With the emergence of equity incentives, corporate executives have been taken seriously, and this conflict of interest between corporate shareholders and executives has been eased and changed. Equity incentives enable the executives of an enterprise to obtain certain shareholder rights and interests, so that the relationship between them and the original shareholders changes, and the two can enjoy the value of enterprise development as a community of interests.

Hanson and Song (2000) point out that equity incentives can effectively suppress the first type of agency costs between shareholders and managers [5]. Tzioumis (2008) conducted a

sample of listed companies in the United States that implement equity incentives and found that the implementation of equity incentive plans can significantly reduce the first type of agency costs of companies [6]. Chou Jianzhong et al. (2008) believe that executive equity incentives can significantly reduce the second type of agency costs between large shareholders and small and medium-sized shareholders [7]. When the majority shareholder "digs the tunnel" and "hollows out" the company's value and makes decisions that infringe on the interests of minority shareholders, the senior management has a greater incentive to resist the wrong guidance of the majority shareholder, so as to make decisions that are conducive to improving the company's business performance. The implementation of equity incentives makes executives a member of minority shareholders, increases their willingness to improve the company's performance, reduces their willingness to collude with controlling shareholders, and inhibits the second type of agency conflict. Therefore, this paper presents hypothesis 2.

H2: Executive equity incentives are positively correlated with corporate performance.

### 2.2.3. Innovation Factors

According to Manso (2011), the implementation of long-term equity incentive plans for corporate executives can lead to a longer-term focus on investment and innovation by management, which ultimately improves business performance [8]. Burns et al. (2015) concluded through a large number of literature studies that the implementation of equity incentive plans significantly improved the tolerance of enterprises to risks, thereby improving the performance level of enterprises [9]. Xu Ning and Xu Xiangyi (2012) started from the financial industry, and after research, they concluded that the implementation of equity incentives did reduce agency costs, thereby increasing the level of corporate financial performance [10]. The empirical research of Liu Baohua and Wang Lei (2018) concluded that the shareholding ratio of management has a positive correlation with the R&D investment (R&D) and performance of enterprises, that is, the implementation of equity incentive mechanism can strengthen the rationality of enterprises' R&D investment, so as to improve the financial performance of enterprises [11]. In people's inherent concepts and thinking, "executives or authorities know best", the incentive effect on executives should be better than the incentive effect on employees, although there is no literature to provide good evidence to support this concept or give corresponding theoretical explanations. According to Gary Hamel, a master of strategic management, "if you want to free up employees and let them contribute more, you must tie the hands of management." Hammer cites executives' investment in innovation as an example, "Executives' initial concern will interpret innovation opportunities as implausible and illogical and gradually rule them out." In summary, this paper presents hypothesis 3.

H3: The effect of employee equity incentive is greater than that of executive equity incentive.

## 3. Research Design and Data Description

### 3.1. Sample selection and data source

This paper selects A-share listed companies that implemented equity incentive plans from 2011 to 2020 as a

sample, and the financial data related to corporate performance involved in the sample are obtained through the CSMAR database. In order to ensure the validity of the data and reduce the interference of abnormal data, this paper processes the sample data as follows: (1) If a company issues equity incentive announcements multiple times within three years, select the first equity incentive announcement and successful implementation as the sample. (2) Because the accounting standards of the financial industry are quite different from those of the non-financial industry and are not comparable, financial and insurance listed companies are excluded. (3) exclude ST and \*ST companies, that is, companies with delisting risk of losing money for two consecutive years of operation and losing money in the company's operation for three consecutive years. (4) Exclude companies with incomplete data information. After screening the samples in the above way, the sample of eligible listed companies was 1444, and 9370 valid samples were used as research objects, and a regression model was established for empirical research. All variables were studied with 1% tail reduction.

## 3.2. Variable definition and selection

### 3.2.1. Variables to be explained

The explanatory variables in this paper are firm performance, and most domestic and foreign studies use Tobin's Q value and return on assets to measure. At present, there is still a large asymmetry between the stock price of enterprises in China's capital market and the actual performance level, so this paper refers to the research of Chen Wenqiang and Jia Shenghua (2015), and does not use Tobin's

Q value to measure corporate performance, but adopts the return on net assets indicator, that is, net profit after tax/net assets [12].

### 3.2.2. Explanatory variables

This paper refers to the practices of Lu Tong, Dang Yin (2014) and Liang Shangkun (2016), and uses the ratio of the number of stock options and restricted shares actually granted to executives or employees to the total number of shares of the company announced in the equity incentive grant plan of listed companies, respectively, as a proxy variable for the equity incentive strength of executives (exeratio) and employee equity incentive intensity (empratio) [13]. At the same time, referring to the research of Jiang Yingbing and Yu Yaping (2017), the number of equity incentives granted by the company is non-cumulative, and the strength of equity incentives is measured by the number of new grants each year [14]. Take whether to carry out executive equity incentive or employee equity incentive in the current year as a virtual variable.

### 3.2.3. Control variables

Referring to the research of Lu Tong and Dang Yin (2014) and Jiang Yingbing and Yu Yaping (2017), this paper mainly controls the factors affecting the effect of equity incentives, such as executive salaries, employee salaries, management shareholding ratio, integration of two positions, and company growth, and also controls corporate governance variables such as leverage level, board size, and proportion of independent directors [13,14]. Table 1 describes the specific variables. Table 1 describes the names and definitions of each variable.

**Table 1.** Definition of Variables

|                              | The variable name                       | symbol       | Variable definitions   |
|------------------------------|---|--------------|--|
| The variable being explained | Return on equity                        | roe          | Net profit / net assets  |
| Explanatory variables        | Executive equity incentives             | exeincentive | The dummy variable, the equity incentive for executives is 1 in the current year, and the equity incentive for executives who are not implemented is 0                   |
|                              | Employee equity incentives              | empincentive | For dummy variables, the equity incentive for employees in the current year is 1, and the equity incentive for employees who are not implemented is 0                    |
|                              | Executive equity incentive strength (%) | exeratio     | Executives are granted stock options (restricted number of shares) / total number of company shares  |
|                              | Employee equity incentive strength (%)  | empratio     | Stock options (number of restricted shares) granted to employees / total number of company shares  |
| Control variables            | Employee salaries                       | lnempwage    | ( cash paid to and for employees - total annual salary of executives) / ( number of employees in the enterprise - number of executives), then take the natural logarithm |
|                              | Executive salaries                      | lnexewage    | The average annual salary of executives, taken as the natural logarithm  |
|                              | Board size                              | bsize        | The natural logarithm of the number of board members   |
|                              | Company size                            | size         | The natural logarithm of total assets at the end of the year   |
|                              | Gearing ratio                           | Leverage     | Total liabilities / total assets   |
|                              | Capital Intensity (%)                   | Tangibility  | Net fixed assets / total assets  |
|                              | Total cash recovery rate                | Cash         | Net cash flow from operating activities / closing balance of assets  |
|                              | Percentage of management shareholding   | exeshare     | Number of management holdings / number of shares in the company  |
|                              | Two jobs in one                         | Dual         | Whether the chairman is also the general manager, it is 1, otherwise it is 0   |
|                              | The largest shareholder's shareholding  | top1         | Number of shares held by the largest shareholder / total number of shares in the company   |
|                              | Company growth                          | Growth       | The growth rate of the company's operating income  |

### 3.3. Model design

To test the hypothesis, this paper constructs the following regression model:

$$ROE_{i,t} = \alpha + \beta_1 exeincentive_{i,t-1} + \beta_2 empincentive_{i,t-1} + \beta_3 exeratio_{i,t-1} + \beta_4 empratio_{i,t-1} + \gamma X_{i,t-1} + \varepsilon_{i,t}$$

Among them, due to the lagging effect of equity incentives, this paper adopts lag treatment for both explanatory variables and control variables. X represents the control variable. The model controls for both annual and industry fixed effects.

## 4. Empirical results and analysis

### 4.1. Descriptive Statistics

Table 2. Descriptive Statistics

| variable     | N    | mean   | sd     | min    | p50    | .max  |
|--------------|------|--------|--------|--------|--------|-------|
| roe          | 9370 | 0.0600 | 0.130  | -0.730 | 0.0700 | 0.310 |
| exeincentive | 9370 | 0.180  | 0.380  | 0      | 0      | 1     |
| empincentive | 9370 | 0.240  | 0.420  | 0      | 0      | 1     |
| exeratio     | 9370 | 0.0700 | 0.290  | 0      | 0      | 5.790 |
| empratio     | 9370 | 0.300  | 0.830  | 0      | 0      | 9.500 |
| lnempwage    | 9370 | 11.39  | 0.550  | 9.680  | 11.38  | 12.81 |
| lnexewage    | 9370 | 15.43  | 0.720  | 13.66  | 15.39  | 17.40 |
| bsize        | 9370 | 2.100  | 0.190  | 1.610  | 2.200  | 2.560 |
| size         | 9370 | 22.25  | 1.230  | 19.83  | 22.07  | 26.09 |
| Leverage     | 9370 | 0.410  | 0.190  | 0.0500 | 0.410  | 0.870 |
| Tangibility  | 9370 | 2.260  | 1.460  | 0.410  | 1.880  | 9.410 |
| Cash         | 9370 | 0.0500 | 0.0700 | -0.150 | 0.0500 | 0.240 |
| exeshare     | 9370 | 17.67  | 20.16  | 0      | 7.870  | 71.77 |
| Dual         | 9370 | 0.330  | 0.470  | 0      | 0      | 1     |
| top1         | 9370 | 31.91  | 13.93  | 8      | 30     | 70.03 |
| Growth       | 9370 | 0.360  | 0.760  | -0.570 | 0.160  | 5.210 |

Table 3. Basic regression results

| VARIABLES      | (1)<br>y             | (2)<br>y             | (3)<br>y             | (4)<br>y             |
|----------------|----------------------|----------------------|----------------------|----------------------|
| L.exeincentive | 0.012***<br>(3.05)   |                      |                      |                      |
| L.empincentive |                      | 0.014***<br>(3.70)   |                      |                      |
| L.exeratio     |                      |                      | 0.012**<br>(2.52)    |                      |
| L.empratio     |                      |                      |                      | 0.006***<br>(3.55)   |
| L.lnempwage    | -0.008<br>(-1.26)    | -0.008<br>(-1.24)    | -0.008<br>(-1.24)    | -0.008<br>(-1.29)    |
| L.lnexewage    | 0.012**<br>(1.97)    | 0.012*<br>(1.89)     | 0.012**<br>(2.01)    | 0.012**<br>(1.99)    |
| L.bsize        | -0.038**<br>(-2.01)  | -0.038**<br>(-1.99)  | -0.037**<br>(-1.97)  | -0.037**<br>(-1.97)  |
| L.size         | -0.032***<br>(-5.49) | -0.032***<br>(-5.55) | -0.031***<br>(-5.40) | -0.031***<br>(-5.44) |
| L.Leverage     | -0.021<br>(-0.78)    | -0.021<br>(-0.79)    | -0.021<br>(-0.81)    | -0.021<br>(-0.78)    |
| L.Tangibility  | -0.008***<br>(-2.60) | -0.008**<br>(-2.56)  | -0.008***<br>(-2.65) | -0.008***<br>(-2.61) |
| L.Cash         | 0.231***<br>(6.58)   | 0.230***<br>(6.56)   | 0.231***<br>(6.57)   | 0.230***<br>(6.55)   |
| L.exeshare     | 0.001***<br>(2.68)   | 0.001***<br>(2.64)   | 0.001***<br>(2.68)   | 0.001***<br>(2.68)   |
| L.Dual         | -0.005<br>(-0.83)    | -0.006<br>(-0.88)    | -0.005<br>(-0.81)    | -0.006<br>(-0.85)    |
| L.top1         | 0.002***<br>(4.98)   | 0.002***<br>(4.98)   | 0.002***<br>(5.02)   | 0.002***<br>(5.00)   |
| L.Growth       | 0.016***<br>(5.54)   | 0.016***<br>(5.52)   | 0.017***<br>(5.58)   | 0.017***<br>(5.57)   |
| Constant       | 0.687***<br>(5.90)   | 0.696***<br>(5.98)   | 0.672***<br>(5.77)   | 0.679***<br>(5.83)   |
| Observations   | 7,629                | 7,629                | 7,629                | 7,629                |
| R-squared      | 0.067                | 0.068                | 0.067                | 0.068                |
| Number of id   | 1,444                | 1,444                | 1,444                | 1,444                |
| Company FE     | YES                  | YES                  | YES                  | YES                  |
| Year FE        | YES                  | YES                  | YES                  | YES                  |

pval in parentheses

p<0.01, \*\* p<0.05, \* p<0.1

In this paper, Stata16 was used to perform descriptive statistical analysis of the filtered sample data. From the results, the firm performance (ROE) ranges from -0.730 to 0.310 with a standard deviation of 0.380, indicating that the sample is not highly dispersed. The average equity incentive value of independent variable employees was 0.240, which was higher than 0.180 of executive equity incentive, and the strength of employee equity incentive of listed enterprises was higher than that of executive equity incentive. Descriptive statistics for other variables are detailed in Table 2.

## 4.2. Basic regression results and analysis

Table 3 shows that regressions 1 and 3 indicate the regression results of executive equity incentive and ROE, and regressions 2 and 4 indicate the regression results of employee equity incentive and ROE. Among them, the regression coefficient of executive equity incentive intensity

is 0.012 and significant, and the regression coefficient of whether or not to carry out executive equity incentive is also significant, which shows that executive equity incentive plays the expected role and has a positive impact on the company's performance. At the same time, the regression coefficient of employee equity incentive intensity was 0.006, which was significant at the 1% level, and whether or not employee equity incentive was carried out was positively correlated with ROE at the 1% level, which showed that the company's performance could be significantly improved with the increase of employee equity incentive intensity. The results initially support hypotheses 1 and 2 of this paper.

## 4.3. Robustness Test

### 4.3.1. Consider substituting the explanatory variable and adding the missing variable

**Table 4.** Replacing the explained variable and adding missing variables

| VARIABLES      | (1)<br>y              | (2)<br>y              | (3)<br>y              | (4)<br>y              |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| L.exeincentive | 0.021<br>(0.55)       |                       |                       |                       |
| L.empincentive |                       | 0.071**<br>(2.06)     |                       |                       |
| L.exeratio     |                       |                       | 0.045<br>(0.73)       |                       |
| L.empratio     |                       |                       |                       | 0.012<br>(0.64)       |
| L.lnempwage    | -0.048<br>(-0.81)     | -0.048<br>(-0.81)     | -0.047<br>(-0.79)     | -0.048<br>(-0.81)     |
| L.lnexewage    | 0.137***<br>(2.65)    | 0.132**<br>(2.56)     | 0.137***<br>(2.64)    | 0.137***<br>(2.64)    |
| L.bsize        | -0.105<br>(-0.61)     | -0.104<br>(-0.61)     | -0.104<br>(-0.61)     | -0.104<br>(-0.61)     |
| L.size         | -0.697***<br>(-12.24) | -0.701***<br>(-12.28) | -0.696***<br>(-12.18) | -0.697***<br>(-12.19) |
| L.Leverage     | 0.098<br>(0.49)       | 0.097<br>(0.48)       | 0.096<br>(0.47)       | 0.098<br>(0.49)       |
| L.Tangibility  | -0.049**<br>(-2.36)   | -0.048**<br>(-2.29)   | -0.049**<br>(-2.37)   | -0.049**<br>(-2.36)   |
| L.Cash         | 1.562***<br>(4.88)    | 1.556***<br>(4.86)    | 1.562***<br>(4.88)    | 1.560***<br>(4.86)    |
| L.exeshare     | -0.006***<br>(-2.69)  | -0.006***<br>(-2.70)  | -0.006***<br>(-2.68)  | -0.006***<br>(-2.68)  |
| L.Dual         | -0.051<br>(-0.99)     | -0.053<br>(-1.03)     | -0.051<br>(-0.99)     | -0.051<br>(-0.99)     |
| L.top1         | 0.001<br>(0.25)       | 0.001<br>(0.23)       | 0.001<br>(0.25)       | 0.001<br>(0.25)       |
| L.Growth       | 0.084***<br>(2.86)    | 0.084***<br>(2.83)    | 0.085***<br>(2.86)    | 0.085***<br>(2.86)    |
| lnage          | 0.324***<br>(3.68)    | 0.331***<br>(3.76)    | 0.324***<br>(3.67)    | 0.325***<br>(3.68)    |
| Constant       | 15.755***<br>(11.59)  | 15.879***<br>(11.69)  | 15.720***<br>(11.54)  | 15.744***<br>(11.56)  |
| Observations   | 7,629                 | 7,629                 | 7,629                 | 7,629                 |
| R-squared      | 0.084                 | 0.085                 | 0.084                 | 0.084                 |
| Number of id   | 1,444                 | 1,444                 | 1,444                 | 1,444                 |
| Company FE     | YES                   | YES                   | YES                   | YES                   |
| Year FE        | YES                   | YES                   | YES                   | YES                   |

pval in parentheses

p<0.01, \*\* p<0.05, \* p<0.1

In this paper, Tobin's Q value is first used instead of ROE as the explanatory variable. Secondly, considering that the

company's equity incentive experience may have a mediating effect on the impact of equity incentive implementation on the company's performance, this paper introduces  $\ln age$ , that is, the logarithm of the company's founding year, as a variable to measure the equity incentive experience. The above results are presented in Table 4. According to Table 4, the effect of employee equity incentive is still significant, and other

independent variables are not significant, which to some extent indicates that the effect of employee equity incentive is better than that of executive equity incentive Verification hypothesis 3.

#### 4.3.2. Year of adjustment

**Table 5.** Adjust Year

| VARIABLES      | (1)<br>y             | (2)<br>y             | (3)<br>y             | (4)<br>y             |
|----------------|----------------------|----------------------|----------------------|----------------------|
| L.exeincentive | 0.008*<br>(1.71)     |                      |                      |                      |
| L.empincentive |                      | 0.012**<br>(2.48)    |                      |                      |
| L.exeratio     |                      |                      | 0.014*<br>(1.86)     |                      |
| L.empratio     |                      |                      |                      | 0.005**<br>(2.35)    |
| L.lnempwage    | -0.022**<br>(-2.52)  | -0.022**<br>(-2.51)  | -0.022**<br>(-2.51)  | -0.023**<br>(-2.57)  |
| L.lnexewage    | 0.005<br>(0.62)      | 0.005<br>(0.55)      | 0.005<br>(0.62)      | 0.005<br>(0.59)      |
| L.bsize        | -0.029<br>(-1.12)    | -0.029<br>(-1.13)    | -0.029<br>(-1.12)    | -0.028<br>(-1.09)    |
| L.size         | -0.040***<br>(-4.62) | -0.040***<br>(-4.64) | -0.039***<br>(-4.58) | -0.039***<br>(-4.59) |
| L.Leverage     | 0.046<br>(1.35)      | 0.044<br>(1.31)      | 0.046<br>(1.35)      | 0.046<br>(1.34)      |
| L.Tangibility  | -0.008**<br>(-2.20)  | -0.008**<br>(-2.16)  | -0.008**<br>(-2.25)  | -0.008**<br>(-2.21)  |
| L.Cash         | 0.174***<br>(4.38)   | 0.173***<br>(4.35)   | 0.174***<br>(4.37)   | 0.173***<br>(4.35)   |
| L.exeshare     | 0.001<br>(1.40)      | 0.000<br>(1.38)      | 0.001<br>(1.40)      | 0.001<br>(1.39)      |
| L.Dual         | -0.007<br>(-0.76)    | -0.007<br>(-0.80)    | -0.007<br>(-0.77)    | -0.007<br>(-0.78)    |
| L.top1         | 0.002***<br>(3.31)   | 0.002***<br>(3.30)   | 0.002***<br>(3.33)   | 0.002***<br>(3.35)   |
| L.Growth       | 0.015***<br>(4.48)   | 0.015***<br>(4.46)   | 0.015***<br>(4.50)   | 0.015***<br>(4.52)   |
| Constant       | 1.092***<br>(5.69)   | 1.100***<br>(5.74)   | 1.085***<br>(5.65)   | 1.091***<br>(5.67)   |
| Observations   | 5,871                | 5,871                | 5,871                | 5,871                |
| R-squared      | 0.047                | 0.048                | 0.047                | 0.048                |
| Number of id   | 1,432                | 1,432                | 1,432                | 1,432                |
| Company FE     | YES                  | YES                  | YES                  | YES                  |
| Year FE        | YES                  | YES                  | YES                  | YES                  |

Robust t-statistics in parentheses

p<0.01, \*\* p<0.05, \* p<0.1

The data in this paper starts in 2011 and focuses on equity incentives. Considering the lack of experience in equity incentive plans of listed companies in the early years, the impact on the company's performance may be biased, so the year of the research data is adjusted to 2014-2020 as a

robustness test, and the results of Table 5 further verify the conclusion of this paper.

#### 4.3.3. Replace the model

**Table 6. Replacement Model**

| VARIABLES      | m1<br>roe                | m2<br>roe                | m3<br>roe                | m4<br>roe                |
|----------------|--------------------------|--------------------------|--------------------------|--------------------------|
| L.exeincentive | 0.0133***<br>(0.000745)  |                          |                          |                          |
| L.empincentive |                          | 0.0165***<br>(4.31e-06)  |                          |                          |
| L.exeratio     |                          |                          | 0.0130**<br>(0.0187)     |                          |
| L.empratio     |                          |                          |                          | 0.00708***<br>(9.43e-05) |
| L.lnempwage    | -0.0182***<br>(9.66e-10) | -0.0186***<br>(3.88e-10) | -0.0180***<br>(1.58e-09) | -0.0184***<br>(5.28e-10) |
| L.lnexewage    | 0.0185***<br>(0)         | 0.0182***<br>(0)         | 0.0188***<br>(0)         | 0.0186***<br>(0)         |
| L.bsize        | 0.0153*<br>(0.0667)      | 0.0158*<br>(0.0571)      | 0.0150*<br>(0.0715)      | 0.0153*<br>(0.0658)      |
| L.size         | 0.00730***<br>(0.000256) | 0.00735***<br>(0.000229) | 0.00743***<br>(0.000203) | 0.00739***<br>(0.000214) |
| L.Leverage     | -0.0544***<br>(1.44e-07) | -0.0540***<br>(1.74e-07) | -0.0553***<br>(9.06e-08) | -0.0551***<br>(9.94e-08) |
| L.Tangibility  | -0.0129***<br>(0)        | -0.0128***<br>(0)        | -0.0130***<br>(0)        | -0.0128***<br>(0)        |
| L.Cash         | 0.407***<br>(0)          | 0.406***<br>(0)          | 0.408***<br>(0)          | 0.408***<br>(0)          |
| L.exeshare     | 0.000206**<br>(0.0114)   | 0.000187**<br>(0.0217)   | 0.000220***<br>(0.00675) | 0.000206**<br>(0.0114)   |
| L.Dual         | -0.00506<br>(0.126)      | -0.00550*<br>(0.0964)    | -0.00486<br>(0.142)      | -0.00533<br>(0.107)      |
| L.top1         | 0.00125***<br>(0)        | 0.00125***<br>(0)        | 0.00125***<br>(0)        | 0.00126***<br>(0)        |
| L.Growth       | 0.0187***<br>(0)         | 0.0185***<br>(0)         | 0.0189***<br>(0)         | 0.0187***<br>(0)         |
| Constant       | -0.235***<br>(2.61e-07)  | -0.229***<br>(5.19e-07)  | -0.243***<br>(1.15e-07)  | -0.235***<br>(2.64e-07)  |
| Observations   | 7,629                    | 7,629                    | 7,629                    | 7,629                    |
| R-squared      | 0.114                    | 0.115                    | 0.113                    | 0.114                    |
| F              | 81.52                    | 82.44                    | 80.97                    | 81.88                    |

pval in parentheses

p<0.01, \*\* p<0.05, \* p<0.1

In order to avoid the research bias caused by the single model, this paper uses OLS to regress the equity incentive strength of executives and employees. The regression results in Table 6 show that the conclusions of this paper still hold.

## 5. Conclusion

This paper takes the companies of A-share listed companies that implemented equity incentives from 2011 to 2020 as a sample to study the impact of equity incentive targets on the company's performance. Different incentive targets, the equity incentive mechanism is different, and the impact on the company's performance will be different. We can draw the following conclusions:

First, high-management equity incentive can bring positive impact on the company's performance, based on the principal-agent theory, the executive's equity incentive enables them to join the enterprise management decision-making as the "master", share the surplus value of the enterprise with the owner, so as to form a community of interests with the

enterprise, promote the enthusiasm and creativity of senior executives, reduce opportunistic behavior, reduce the agency cost between shareholders and executives, and meet the needs of long-term development of enterprises.

Second, the effect of employee equity incentives is better than that of executives. The biggest difference between the company's employees and executives is that they have different rights in their hands, and executives can influence the formulation and implementation of their own equity incentive plans through the board of directors, and maximize their own interests through earnings management when their performance indicators are not expected to meet the requirements, but they have not actually promoted the company's future performance. Employees can only reap the benefits of equity incentives by working hard to meet the conditions for exercising (unlocking). As the most direct participants and executors in the company's business activities, employees have the motivation and ability to work hard to achieve equity incentive conditions and realize their

own benefits. It is found that the incentive effect of large-scale employee equity incentive is better, and the effect on the performance of listed companies is more significant.

Based on the research conclusions of this paper, in order to better play the incentive and constraint role of equity incentive plan, the following suggestions are put forward:

First, encourage listed companies to implement employee equity incentives. Following the issuance of the Guiding Opinions on the Implementation of Employee Stock Ownership Plans by Listed Companies in 2014, the CSRC issued the Administrative Measures for Equity Incentives of Listed Companies in 2016, which further improved the incentive conditions and incentive targets, and these policies and regulations all reflect the supportive attitude towards employee equity incentives. Therefore, the implementation of equity incentives for employees should become a key factor to be considered in the company's equity incentive plan, and the scope of employee equity incentives should be appropriately expanded.

Second, pay attention to the formulation of equity incentive plans based on the characteristics of different incentive targets. Therefore, it is necessary to design the elements in the equity incentive plan, formulate an incentive plan that meets the characteristics of the incentive object, and motivate employees to work hard to create value for the company.

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