

# Analysis of the Impact of Equity Incentives on Corporate Performance and Innovation Capability

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## Abstract:

As an important part of the incentive mechanism of modern enterprises, equity incentive plays an important role in improving enterprise performance, stimulating employees' innovation motivation and enhancing enterprise competitiveness. Based on literature research and basic theories, this study selects all A-shares listed on the Shanghai, Shenzhen, and Beijing stock exchanges from 2019 to 2023 as the research object, employing an empirical approach to investigate the influence of equity incentives on both corporate performance and innovation capability. The findings indicate that the implementation of stock-based incentives can notably enhance corporate performance. However, it is also observed that such incentives tend to diminish innovative ability. Furthermore, a significant negative correlation is found between innovation capability and corporate performance.

**Keywords:** Equity Incentives, Corporate Performance, Innovation Capability, Mediating Effect

## 1. Introduction

Equity incentive strategies, as a crucial combination of measures for national and local administrative bodies to drive corporate innovation and attract and retain high-quality human resources, have consistently garnered deep attention and active promotion from domestic regulatory authorities. To guide listed companies in optimizing their growth paths and quality through equity incentives, regulatory bodies frequently introduce new policies aimed at invigorating market vitality. For instance, the China Securities Regulatory Commission's "Pilot Guidelines for Strengthening Supervision of Listed Companies" explicitly encourages enterprises to establish long-term

incentive mechanisms, with a particular emphasis on the rationality of equity incentive pricing. The scientific nature of performance appraisal standards is aimed at enhancing their market adaptability. Meanwhile, the "New Nine Articles" policy of the State Council explicitly instructs to guide listed companies to focus on their core businesses and flexibly utilize mergers, integrations, and equity incentives as means to significantly improve the overall development quality. Additionally, the joint announcement on tax treatment of equity incentives issued by the Ministry of Finance and the State Administration of Taxation provides detailed guidance on the tax compliance of this incentive mechanism, further promoting its standardization and regulation. Globally, equity in-

centives have become a common practice in the business world. Management strategies widely adopted by large listed companies, SMEs, and startups. Large listed companies often employ mature models such as restricted stock and stock options, aiming to deeply motivate employee potential and drive performance leaps; while SMEs may prefer flexible incentive methods such as stock appreciation rights, as key strategies to attract and retain core talents, to adapt to their rapid growth needs.

In recent years, both the global and domestic markets have witnessed a continuous surge in the popularity of equity incentives, especially against the backdrop of accelerated registration system reforms and the emergence of new listed companies like mushrooms after rain. Equity incentives have increasingly become a key incentive strategy favored by enterprises. In light of this, this paper selects A-shares of Shanghai, Shenzhen, and Beijing stocks from 2019 to 2023 as the research object to empirically study the impact of equity incentives on corporate performance and explore the role of innovation capability in this context.

## 2. Literature Review

Existing research on equity incentives, innovation capability, and corporate performance generally revolves around the following three aspects.

Regarding the relationship between equity incentives and corporate performance, academia has explored from multiple perspectives, which can be roughly summarized into three different scenarios. Zi Hongfa's (2023) research reveals that in enterprises with continuous innovation and R&D, equity incentives accelerate the growth of net profit and accounts receivable, enhance R&D efficiency and capital utilization efficiency, thereby significantly improving corporate financial performance. [1] On the other hand, Jing Yijia's (2024) research sample focuses on companies implementing equity incentives, finding that such incentive measures effectively enhance the performance of these enterprises. Operating performance indicators have played a positive and significant role in maintaining the continuous growth of enterprises and achieving long-term strategic objectives. [2] However, Song Zhiwen's (2010) early research presents a different perspective. Focusing on 39 state-owned listed companies that had implemented equity incentives before 2007, he constructed a performance evaluation system using factor analysis. The results indicated that, in these companies, the effect of management equity incentives on performance improvement was not significant. [3] Additionally, Li Zijia (2011) conducted a cross-year analysis (2005-20) The financial data of Chinese listed companies in 2009, combined with time series

comparison, factor analysis, and correlation analysis, further corroborated the relatively weak direct link between equity incentives and corporate performance. [4] Although the above studies differ in their specific conclusions, the mainstream academic trend still tends to agree that there is a positive correlation between equity incentives and corporate performance, although the strength and manifestation of this correlation may vary due to differences in corporate characteristics, market environment, and implementation strategies.

The relationship between equity incentives and innovation capability. Qiao Meixin (2021) concluded, after a thorough analysis of key indicators such as R&D expenditures, international patent outputs, and net sales margins at ZTE Corporation, that equity incentives have a significant positive effect on stimulating and enhancing a company's innovation capability. [5] Gao Xiumei (2024), relying on empirical research and case studies, further confirmed the positive role of equity incentive strategies in unleashing employees' innovative potential and improving the overall innovation capability of the enterprise. [6] In contrast, Sun Hui and Yang Wangwei (2019) Using Poisson fixed-effects model regression analysis, it is revealed that executive equity incentives may have a negative impact on innovation performance. [7] Huang Zhijun (2006) explored from the perspective of endogeneity the complex relationship between operator equity incentives and corporate value in high-tech enterprises, revealing a typical inverted U-shaped curve effect, where an increase in the proportion of operator shares initially drives up corporate value, but beyond a specific threshold (12.89%), corporate value may show a downward trend. [8] Additionally, Li Yao and Wang Wei (2015) also independently supports the inverted U-shaped relationship hypothesis between equity incentives and technological innovation investment through empirical research. They point out that when the management's shareholding ratio is within a low to moderate range (0%~30.73%), equity incentives are an effective driving force for the growth of technological innovation investment; however, once the shareholding ratio exceeds this range, its incentive effect will gradually weaken and may even inhibit the growth of technological innovation investment. [9]

The relationship between innovation capability and corporate performance. Yang Yang (2014) analyzed the multidimensional impact paths of corporate innovation activities on corporate performance under the framework of the resource-based theory, using hypothesis verification strategies, revealing that corporate innovation not only directly contributes to performance improvement but also indirectly enhances corporate performance through the mediating effect of entrepreneurial capabilities. This finding strong-

ly supports the view that there is a significant positive correlation between corporate innovation and corporate performance. [10] Li Jing, He Xiaogang, and Mao Jian (2010) empiricallyThe study also independently verified the positive role of innovation capability in driving corporate performance, further reinforcing the above argument. [11] However, Wang Wei and Liu Wei (2016) pointed out in their specific analysis of the information technology industry that, due to the lag in the impact of R&D investment on performance, technological innovation showed a significant negative correlation with corporate performance within the same year, revealing the moderating effect of industry characteristics on the relationship between innovation and performance.[12] Additionally, Liu Xia and Wang Yunlong (2018) used 46 listed companies on the Shanghai Stock Exchange A-share main board as a sample.In the context of open innovation, quantitative analysis reveals that due to insufficient efficiency in capital utilization, the R&D investment of these enterprises has not been immediately translated into improved operational performance; instead, it shows a negative correlation. This finding provides a new perspective on understanding the complexity of the relationship between capital utilization and performance under different innovation models.

### 3. Theoretical Analysis and Research Hypotheses

#### 3.1 Equity Incentives and Corporate Performance

The principal-agent relationship and its impact on corporate performance are key research areas for enhancing corporate performance. Within the framework of information asymmetry and divergent interests, principals use contract design to incentivize agents, aiming to achieve their own economic interactions for maximizing benefits. The principal-agent theory posits that principals seek the optimization of overall interests, while agents may be inclined towards maximizing personal benefits, creating potential conflicts of interest between the two. Equity incentives, as an effective means, grant agents the right to claim a portion of residual value, thereby motivating them. Individuals, after holding more equity, actively commit to improving corporate performance, thereby effectively alleviating the principal-agent problem. Zhang Rui's (2024) comparative case study shows that the equity incentive mechanism can effectively reconcile the inconsistent interests between shareholders and management, build a unified interest community, and thereby enhance operational performance. [14] Zi Hongfa's (2023) research further found that the implementation of equity incentives

significantly accelerated the R&D process, improved the efficiency of R&D funds utilization, and ultimately promoted the improvement of financial performance. [1] Zhu JunYi (2023) points out that equity incentives significantly reduce agency costs and enhance the core competitiveness of enterprises. [15] Zhang Xintong (2023) conducted a thorough analysis of how equity incentives tightly connect employees' personal interests with the long-term development of the enterprise, stimulating employees' maximum potential. This not only attracts high-quality technical talents but also significantly enhances the enterprise's innovation and research capabilities, accelerating its transformation and upgrading. [16] Liu Ting (2023) revealed through empirical analysis on A-share listed companies the impact of equity incentives. Multi-dimensional positive effects: It not only greatly enhances employees' enthusiasm and engagement, but also significantly promotes the innovation capabilities of the enterprise, and drives the optimization and upgrading of the corporate governance structure. The synergy of these factors collectively builds a solid foundation for the long-term performance growth of the enterprise.

Based on the above analysis, this paper proposes Hypothesis 1:

H1 Equity incentives positively affect corporate performance

#### 3.2 Equity Incentives and Innovation Capability

Zhang Meng's (2022) research reveals that implementing equity incentive strategies for both senior executives and core employees within high-tech enterprises can stimulate a mutually reinforcing, synergistic mechanism, thereby significantly increasing enterprise innovation output. [18] Yu Jian (2021) focuses on state-owned enterprises, finding that the active implementation of equity incentive policies can motivate enterprise executives to make more proactive decisions in the field of R&D innovation, thereby effectively enhancing the enterprise's independent R&D and innovation capabilities. [19] Furthermore, Wu Ziyu, Liu Zhangfa, and Jiang Jie (2021) adopt the conceptual framework of difference-in-differences methodology, supplemented by a case comparison analysis of ZTE and Nanjing Panda within the same industry, emphasizing the importance of core employees as the core driving force of enterprise operations. They point out that equity incentive measures for core employees not only promote the quantitative growth of innovation output but also play a key role in significantly improving innovation quality, laying a solid foundation for the comprehensive enhancement of enterprise innovation capabilities. [20]

Based on the above analysis, this paper proposes Hypothesis

esis 2:

H2 Equity incentives have a positive effect on improving enterprise innovation capabilities

### 3.3 Enterprise performance and innovation capabilities

Wang Xiangyu (2023) drew on the three-stage validation process proposed by Wen Zhonglin et al. (2004) in his research, confirming the existence of partial mediating effects through model testing. [21] Jia Qin (2023) further explored, revealing that technological innovation played a mediating role in the transmission path from executive and core employee equity incentives to corporate performance, but the mediating effects exhibited differences between the two.

Therefore, this paper proposes Hypothesis 3:

H3 Corporate performance has a strong correlation with innovation capability, and the enhancement of innovation capability is conducive to optimizing corporate performance,

## 4. Variable and Model Design

### 4.1 Sample Data Description

The sample selected relevant financial data of all A-shares in Shanghai, Shenzhen, and Beijing stocks from 2019 to 2023 for a continuous five-year period. All data were sourced from the CSMAR database and were screened according to the following criteria: Excluding ST, \*ST, S\*ST, PT stocks, i.e., stocks that have been specially treated due to abnormal financial conditions or other exceptional situations, as they generally carry higher investment risks. Excluding delisted companies.

After the above conditions were screened, a total of 1,183 companies and 5,915 sample data points were obtained over 5 years. Data analysis was conducted using SPSS 24.0.

## 4.2 Variable Design

### 4.2.1 Dependent Variable

In this paper, different dependent variables are selected in different research sections.

Corporate performance is typically assessed through two major dimensions: one is market-oriented performance indicators, such as main business profit, which intuitively shows the operational effectiveness of the enterprise in the market; the other is financial dimension financial indicators, among which return on assets is a commonly used representative. Although market performance indicators are more intuitive and closer to market reality in revealing corporate performance, given that China's capital market is still in the development stage, the completeness and accuracy of data may be affected, potentially leading to bias risks. In view of this, this paper tends to adopt a more comprehensive and robust indicator of corporate profitability—return on assets (ROA)—as the core variable to measure corporate performance.

This paper uses the R&D expense ratio, i.e., the ratio of R&D expenses to operating income, to measure innovation capability.

### 4.2.2 Explanatory Variable

The explanatory variable is equity incentive. Compared to the single dimension of the number of shares held, the shareholding ratio shows stronger comparative advantages and can more accurately quantify the depth and breadth of equity incentives. Therefore, this paper selects the executive shareholding ratio (Mps) as the core indicator to measure the intensity of equity incentives to ensure the accuracy and depth of the analysis.

### 4.2.3 Control Variables

Drawing on existing research, this paper selects enterprise size, asset-liability ratio, equity concentration, and growth rate as control variables. The definitions and calculation methods of the variables are shown in Table 1.

**Table 1 Variable Definitions**

Variable Type	Variable Name	Variable Symbol	Calculation Method
Explanatory Variable	Corporate Performance	ROA	Net Profit / Total Assets at the End of the Period
	Innovation Capability	R&D	R&D Expense Ratio = R&D Expenses / Operating Income
Explanatory Variable	Equity Incentive	MPS	Executive Shareholding Ratio = Number of Shares Held by Executives / Total Shares
Control Variable	Enterprise Size	Size	Natural Logarithm of Total Assets at the End of the Period
	Asset-Liability Ratio	Lev	Total Liabilities/Total Assets
	Equity Concentration	1%	Number of Shares Held by the Largest Shareholder/Total Shares
	Growth Rate	Growth	Revenue Growth Rate

### 4.3 Measurement Model

To verify the hypotheses proposed in this paper, the following regression model is designed:

$$Roai, t = a_0 + a_1 Mpsi, t + a_2 Size, t + a_3 Lev, t + a_4 1\%, t + a_5 Growth, t + \varepsilon(1)$$

$$R\&Di, t = b_0 + b_1 Mpsi, t + b_2 Size, t + b_3 Lev, t + b_4 1\%, t + b_5 Growth, t + \varepsilon(2)$$

$$Roai, t = c_0 + c_1 Mpsi, t + c_2 Size, t + c_3 Lev, t + c_4 1\%, t + c_5 Growth, t + d_1 R\&Di, t + \varepsilon(3)$$

Where  $Roai, t$  represents the performance level of company  $i$  in year  $t$ ;  $Mpsi, t$  represents the equity incentive of senior executives, indicating the intensity of equity incentives for company  $i$  in year  $t$ ;  $R\&D i, t$  represents the innovation capability of company  $i$  in year  $t$ ;

## 5. Empirical Results Analysis and Model Testing

### 5.1 Descriptive Statistics

Table 2 presents an overview of the descriptive statistics for each variable. In terms of corporate performance (Roa), the difference between the maximum and minimum values is as high as 1.843, and there are negative values, revealing significant differences and diversity in the operational capabilities of different companies. Further observation of the R&D expense ratio (R&D) shows that the average value is 0.03741, with a maximum value of 2.423 and a minimum value almost zero (0.000). This significant gap

not only reflects different strategies in R&D investment among companies but also highlights the significant differences in their emphasis on technological innovation and R&D.

As for the intensity of equity incentive (Mps), its average value is 31.50134, with a maximum of 82.462 and a minimum of only 0.038, resulting in a range of 82.424. This data significantly indicates that there is a large cross-enterprise difference in the implementation of equity incentives among listed companies.

In the descriptive statistics of control variables, the standard deviation of firm size (Size) reaches 1.489649, indicating that the size distribution of listed companies in China is relatively dispersed, with significant size differences. The average asset-liability ratio (Lev) is 0.45158, which reveals that the selected listed company samples generally exhibit a high level of debt. In terms of equity concentration, measured by the shareholding ratio of the largest shareholder (1%), the mean is 36.60569, indicating that the equity structure of the selected sample companies is generally concentrated. Further analysis of the operating income growth rate (Growth) shows that its mean and median are 0.36347 and 0.09837, respectively, while the maximum and minimum values are as high as 291.230 and -3.080, respectively. This significant range indicates that, although the average growth level is positive, the operating income growth rate of most companies in the selected sample is actually negative, and the growth rate differences among companies are very obvious.

Table 2 Descriptive Statistics

	Sample Size	Mean	Median	Standard Deviation	Minimum	Maximum
Roa	5915	0.03823	0.03794	0.072149	-1.239	0.602
R&D	5915	0.03741	0.03113	0.052764	0.000	2.423
Mps	5915	31.50134	30.07720	17.082835	0.038	82.462
Size	5915	22.85798	22.60861	1.489649	18.600	28.697
Lev	5915	0.45158	0.45006	0.194532	0.030	1.604
1%	5915	36.60569	34.61890	15.313686	3.981	88.235
Growth	5915	0.36347	0.09837	4.563482	-3.080	291.230

### 5.2 Correlation Test

This paper conducts a Spearman correlation analysis on all variables, as shown in Table 3. Equity incentives are significantly positively correlated with corporate perfor-

mance at the 0.021 level, while innovation capability is significantly negatively correlated with corporate performance at the 0.001 level, and innovation capability is negatively correlated with the intensity of equity incentives. Further regression analysis is conducted below.

Table 3 Correlation Analysis

	Roa	R&D	Mps	Size	Lev	1%	Growth
Roa	1.000						
R&D	-0.039**	1.000	-0.113**				
Mps	0.026*	-0.113**	1.000				
Size	0.035**	-0.190**	0.245	1.000			
Lev	-0.374	-0.153**	0.049**	0.455**	1.000		
1%	0.119	-0.133**	0.673**	0.192**	-0.012*	1.000	
Growth	0.017*	0.007	-0.039**	-0.009	0.022	0.001	1.000

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*\*Correlation is significant at the 0.05 level (2-tailed).

### 5.3 Regression Analysis

To verify hypotheses H1, H2, and H3, Table 4 presents the regression results. The R<sup>2</sup> is 0.206, indicating weak model explanatory power. The standard errors are relatively small, suggesting accurate predictions. The p-values are all far below 0.05, indicating that the model is statistically significant overall. Through the implementation of multi-

ple linear regression analysis, this study reveals a significant positive effect of equity incentive measures on corporate performance, which resonates with previous theories and some empirical research. However, in contrast, the impact of innovation capability on corporate performance in this model shows a significant negative trend. This finding may point to some obstacles or misalignments in the process of converting innovation capability into actual performance under the current market environment or corporate internal management mechanisms, which warrants further in-depth exploration.

Table 4 Multiple Linear Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Significance	VIF	R2	Adjusted R2	F
	B	Standard Error	Beta						
(Constant)	-0.158	0.014		-11.278	0.000		0.206	0.206	256.089
Mps	0.000	0.000	-0.100	-6.298	0.000	1.883			
R&D	-0.085	0.016	-0.062	-5.209	0.000	1.056			
Size	0.012	0.001	0.246	18.170	0.000	1.369			
Lev	-0.181	0.005	-0.489	-37.190	0.000	1.289			
1%	0.001	0.000	0.125	7.882	0.000	1.861			
Growth	0.000	0.000	0.027	2.306	0.021	1.004			
Dependent Variable: Equity Incentive									

## 6. Research Conclusions

Based on the principal-agent theory and innovation theory, this paper takes all A-shares of the Shanghai, Shenzhen, and Beijing stock markets as the research object, conducting an empirical study on the relationship between equity incentives, innovation capability, and corporate performance. The following conclusions are drawn: The following conclusions were drawn: First, the implementation of equity incentives significantly improves corporate performance. Second, equity incentives reduce innovation capabilities. For every 1% increase in the holding ratio of

senior executives, the R&D expense ratio of the enterprise will decrease by 0.0062%. Third, innovation capabilities and corporate performance have a significant negative relationship. The higher the proportion of equity incentives, the weaker the innovation capabilities of the enterprise, and thus the lower the corporate performance.

Regarding the deviation of research results from most previous conclusions, the root cause may be attributed to potential defects in data quality or the limitations in the selection of mediating variables. It is first emphasized that the investment in R&D expenses, as an indispensable cornerstone for corporate technological innovation

and product development, is of undeniable importance. A higher R&D expense ratio often directly reflects a company's enthusiasm and investment strength in R&D activities, serving as a key driving force for technological innovation and rapid product iteration. Therefore, from this perspective, the R&D expense ratio is undoubtedly an important indicator with reference value when assessing a company's innovation capability. However, it is noteworthy that viewing the R&D expense ratio in isolation as the sole standard for measuring innovation capability is one-sided. Innovation capability is essentially a multi-dimensional and comprehensive category, not only reflected in the investment of R&D funds but also deeply rooted in the perfection of the corporate R&D management system, the careful cultivation and stability of the talent team, the profound accumulation of technology, and the company's ability to keenly capture and lead market changes, among other dimensions. In light of this, future research should strive to explore a more diverse range of mediating variables in order to more comprehensively and profoundly reveal the intrinsic nature of corporate innovation capability and its driving mechanisms.

## 7. References

- [1] Zi, H.F. (2023) The Impact of Equity Incentives on the Performance of Continuous R&D Enterprises – A Case Study of Huawei Company Small and Medium Enterprises Management and Technology, 03: 67-69.
- [2] Jing, Y.J.(2024) Research on the Impact of Equity Incentives on Corporate Performance at Company S Market Weekly, 37 (08).
- [3] Song, Z.W. (2010) Research on the Relationship Between Management Equity Incentives and Corporate Performance in State-owned Listed Companies Southwest University.
- [4] Li, Z.J. (2011) An Empirical Study on the Correlation Between Equity Incentives and Corporate Performance China Securities and Futures.
- [5] Qiao, M.X. (2021) A Brief Analysis of the Impact of Equity Incentives on the Innovation Capability of ZTE Communications Old Brand Marketing, 10: 107-108.
- [6] Gao, X.M. (2024) Research on the Impact and Mechanism of Equity Incentive Policies on Corporate Innovation Capability National Circulation Economy, 04: 77-80.
- [7] Sun, H.and Yang, W.W. (2019) Executive Incentives, Innovation Investment and Innovation Performance—Based on the Moderating Effect of Executive's 'Dual' Capital Science and Technology Management Research, 39(10): 9-16.
- [8] Huang, Z.J. (2006)Equity Incentives for Operators and Corporate Value Jinan University.
- [9] Li, Y.and Wang, W. (2015) Equity Incentives, Compensation Incentives and Technological Innovation Investment—Based on the Empirical Data of Growth Enterprises Board Finance and Accounting Monthly, 35.
- [10] Yang, Y. (2014) Entrepreneurial Ability, Corporate Innovation Ability and Corporate Performance Academic Exploration, 10.
- [11] Li, J., He, X.G and Mao, J. (2013) Kinship, Innovation Capability and Corporate Performance. Nankai Business Review, 13(03): 117-124.
- [12] Wang, W.ei and Liu, W. (2016) The Impact of Technological Innovation and Human Capital on Corporate Performance—An Empirical Analysis Based on Listed Companies in the Information Technology Industry. Business and Management, 08.
- [13] Liu, X.and Wang, Y.L. (2018) Empirical Study on Enterprise Technological Innovation Investment and Enterprise Performance from the Perspective of Open Innovation. Journal of Nandu, 38(01).
- [14] Zhang, R. (2024) Research on the Implementation Effect of Tangchen Bensheng Equity Incentive. Shenyang University.
- [15] Zhu, J.Y. (2023) Research on the Impact of Equity Incentive on Corporate Performance in the Biopharmaceutical Industry Guangzhou University.
- [16] Zhang, X.T. (2023) The Impact of Midea Group's Equity Incentive Plan on Corporate Performance. Modern Business,06.
- [17] Liu, T.(2023) Research on the Impact of Equity Incentive on Corporate Performance – A Case Study of A-Share Listed Companies. Financial Tribune, 08: 115-117.
- [18] Zhang, M.(2022) High-tech Enterprises' Senior Management-Core Employee Compound Equity Incentive, Innovation Output and Corporate Performance. Shaoxing University of Arts and Sciences.
- [19] Yu, J. (2021) Research on the Relationship between Equity Incentive, Innovation Investment and State-owned Enterprise Performance. Nanjing University of Information Science & Technology.
- [20] Wu, Z.Y, Liu, Z.F and Jiang, J. (2021) Core Employee Equity Incentives and Corporate Performance from the Perspective of Case Comparison: An Analysis Based on Innovation Statistics and Consultation, 05: 39-42.
- [21] Wang, X.Y. (2023) Analysis of the Impact of Core Employee Equity Incentives on the Performance and Innovation Capability of A-Share Listed High-Tech Enterprises. Shanghai University of Finance and Economics.
- [22] Jia, Q. (2023) Research on the Relationship between Equity Incentives, Technological Innovation, and Corporate Performance in High-Tech Enterprises. Taiyuan University of Technology.