

# Research on the Impact of Executive Remuneration and Independent Director Ratio on Corporate Performance in Listed Companies

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## Abstract

This paper evaluates the impact of executive remuneration and the ratio of independent directors on corporate performance, using data from listed companies from 2008 to 2019. The findings reveal that (1) executive remuneration is significantly and positively related to corporate performance, while the ratio of independent directors is significantly and negatively associated with corporate performance. Higher executive remuneration notably enhances corporate performance, whereas a larger proportion of independent directors appears to correlate with a decline in corporate performance. (2) Regarding the underlying mechanism, Tobin's Q plays both a full and partial mediating role in the effects of executive remuneration and the ratio of independent directors on corporate performance, respectively. (3) Heterogeneity analysis shows that the positive impact of executive remuneration on corporate performance is more pronounced in state-owned listed firms than in non-state-owned listed firms. Lastly, based on both empirical and theoretical research, this paper proposes recommendations to help improve corporate performance and foster competitive advantages for enterprises.

Keywords: Executive Remuneration, Independent Directors Ratio, Corporate Performance, Mediating Effect, Multivariable Linear Regression Model

## 1. Introduction

In today's advanced economy, enterprises and executives have become increasingly interconnected. Entrepreneurs, as the driving force behind socio-economic development, require robust human capital to thrive, especially in a globally competitive environment. An enterprise is only as effective as its executives, who represent a unique form of human capital, bringing not only specialized expertise but also extensive management experience. This allows them to formulate strategies that enhance profitability and performance. To leverage this human capital, organizations must establish effective incentive structures that align executives' interests with corporate objectives, encouraging them to develop strategies that improve organizational performance. By investigating how executive compensation influences corporate performance, companies can establish a theoretical basis for crafting a reasonable incentive system that drives success.

The potential of an independent director ratio to improve corporate performance has garnered substantial academic interest. With the expansion and standardization of listed companies, many countries now mandate independent directors to ensure accountability and transparency. In today's market, the proportion of independent directors is a crucial factor in enhancing board independence and governance effectiveness. Studies suggest that a higher proportion of independent directors can lead to improved decision-making and increased oversight, which positively impacts corporate performance. Thus, it is necessary to examine this factor's effect on corporate performance.

Tobin's Q, an investment theory increasingly applied in recent years, offers a valuable tool for evaluating corporate performance, growth potential, and management efficiency. By linking financial and physical assets, Tobin's Q measures the societal wealth generated by a company's resource utilization. This dual perspective enables stakeholders to assess corporate efficiency and overall value, providing a crucial metric for analyzing corporate strategies, investment decisions, and performance.

This paper employs data from publicly listed companies from 2008 to 2019, using multiple linear regression models and fixed effects, to examine the impact of executive compensation and the independent director ratio on corporate performance, while also exploring the mediating effect of Tobin's Q. After a regression analysis of the entire sample, the sample is divided into state-owned and non-state-owned enterprises for heterogeneity analysis, offering a nuanced understanding of how ownership structures impact the influence of executive compensation and governance structures on corporate outcomes. The findings enhance the theoretical study of corporate governance mechanisms and offer practical insights for executives, shareholders, policymakers, and corporate leaders aiming to optimize performance and foster sustainable growth in a competitive landscape.

## 2. Literature Review

In recent years, a growing number of international scholars have explored the relationship between executive compensation and firm performance, generally concluding that executive compensation positively impacts firm

performance. For instance, Amarou (2017) found a positive correlation between executive compensation and financial performance, suggesting that accounting performance largely determines executive bonuses. Adam (2019) proposed a framework for understanding how executive monetary compensation affects financial performance, discovering partial support for a weighted effect of executive compensation on financial outcomes. Similarly, Zhao (2019) conducted an empirical analysis of the relationship between executive compensation and company performance in the real estate and information technology sectors, concluding that compensation incentives can positively affect firm performance. In China, many domestic companies have long linked executive pay to performance, indicating that higher executive pay generally corresponds with improved corporate performance. Wang (2020) identified a positive correlation between executive salary and company performance, emphasizing that adequate compensation for executives can effectively enhance performance and add greater value.

Building on the established link between executive compensation and corporate performance, this paper examines the relationship from the perspective of ownership structure. Zhang et al. (2021) studied state-owned enterprises and concluded that executive compensation incentives across government-regulated, naturally monopolistic, and free-market sectors can significantly enhance performance. However, Ren et al. (2019) found that the impact of executive compensation on performance is relatively limited in state-owned enterprises. Sun Chen et al. (2021) noted that the negative correlation between board network position and executive compensation is weaker in state-owned enterprises compared to non-state-owned ones.

The board of directors plays a vital role in corporate governance and decision-making, directly influencing performance. According to Sun et al. (2021), a higher proportion of independent directors on the board has a potentially adverse effect on firm performance. Specifically, independent directors with financial backgrounds tend to increase executive compensation, while those without financial backgrounds may reduce it (Shao et al., 2021). Luo (2014) argued that the social reputation mechanism of independent directors does not significantly enhance the effectiveness of executive compensation contracts, potentially diminishing company performance. Conversely, Qu (2014) believed that while independent directors positively impact performance in state-owned enterprises, the system does not necessarily promote long-term corporate performance.

Tobin's Q has been widely applied in studies concerning corporate performance and investment behavior. Cai et al. (2017) suggested that Tobin's Q—the hypothesis that the marginal Q value of corporate assets is a key investment determinant—may not be entirely valid in China's investment market, highlighting limitations in its application in domestic research. Pang et al. (2019) incorporated the financing and securities lending system with Tobin's Q, finding that this system enhances investment-Q sensitivity by reinforcing the private information available to investors. Fang (2022) constructed a Tobin's Q model to demonstrate that significant price distortions in stock prices can reduce Tobin's Q validity. Zhang et al. (2013), however, argued that using Tobin's Q to investigate the Growth Enterprise Board may be challenging due to insufficient model feasibility.

This paper aims to provide a reference for companies to develop a scientific and suitable executive compensation system and an optimal independent director framework, while considering the mediating role of Tobin's Q. This approach seeks to enhance the incentive role of executive compensation, establish an appropriate proportion of independent directors, and ultimately improve corporate performance, promoting stable and efficient development.

On one hand, this study underscores the importance of continuously evaluating and adapting governance practices in response to shifting market dynamics and competitive pressures. On the other hand, the findings offer guidance for companies looking to implement effective governance mechanisms. By aligning the interests of executives and independent directors with organizational goals, companies can establish a solid foundation for sustained success.

### 3. Research Design

#### 3.1 Empirical Model Design

Using data sourced from the CSMAR database, focusing on publicly listed companies in China from 2008 to 2019, this study employs a fixed effects (FE) analysis to empirically test the hypothesis of the impact of executive compensation and independent director proportion on corporate performance. The multiple regression model is defined as follows:

$$ROE_{it} = \alpha_0 + \alpha_1 Compensation_{it} + \alpha_2 RID_{it} + \alpha_3 X_{it} + \gamma_t + \mu_i + \varepsilon_{it} \quad (1)$$

In Equation (1),  $\alpha_1$  and  $\alpha_2$  represent the regression coefficients of primary interest in this study, indicating the effect levels of executive compensation and independent director ratio on corporate performance.  $X_{it}$  refers to the control variables, while  $\gamma_t$  and  $\mu_i$  denote time and regional dummy effects, respectively.  $\alpha_0$  is the intercept, and  $\varepsilon_{it}$  represents the random error term.

To examine whether Tobin's Q exhibits a mediating effect between executive compensation, independent director ratio, and corporate performance, the following mediation model is constructed as shown in Equation (2):

$$ROE_{it} = \alpha_0 + \alpha_1 Compensation_{it} + \alpha_2 RID_{it} + \alpha_3 X_{it} + \gamma_t + \mu_i + \varepsilon_{it}$$

$$Q_{it} = \beta_0 + \beta_1 \text{Compensation}_{it} + \beta_2 \text{RID}_{it} + \beta_3 X_{it} + \gamma_t + \mu_i + \varepsilon_{it} \quad (2)$$

$$\text{ROE}_{it} = \delta_0 + \delta_1 \text{Compensation}_{it} + \delta_2 \text{RID}_{it} + \eta Q_{it} + \delta_3 X_{it} + \gamma_t + \mu_i + \varepsilon_{it}$$

Here,  $Q_{it}$  serves as the mediating variable, Tobin's Q, demonstrating a mechanism that influences the relationship between executive compensation, the ratio of independent directors, and corporate performance. If the coefficient estimates of  $\beta_1$ ,  $\beta_2$ , and  $\eta$  are statistically significant and non-zero, it indicates the presence of a mediating effect via Tobin's Q.

### 3.2 Data description of variables

1. Executive Compensation (  $\text{Compensation}_{it}$  ) : The explanatory variable of this study, measured as the total compensation for executives, including salary, bonuses, and long-term incentives. A significantly positive coefficient indicates that increased executive compensation enhances corporate performance, whereas a negative coefficient suggests the opposite.
2. Ratio of Independent Directors (  $\text{RID}_{it}$  ) : An explanatory variable measured by the proportion of independent directors on the board. A significantly positive coefficient suggests that a higher proportion of independent directors improves corporate performance, while a negative coefficient indicates a potential decline.
3. Corporate Performance (  $\text{ROE}_{it}$  ) : The explained variable, measured by return on net assets (ROA), calculated as net profit divided by average equity.
4. Tobin's Q (  $Q_{it}$  ) : The mediating variable, defined as the enterprise's market price (share price) divided by its replacement cost, serving as an indicator of the market's valuation of the company's asset value relative to the cost of producing those assets.
5. Sales Revenue (  $\text{Revenue}_{it}$  ) : Measured by the growth rate of sales revenue, representing the ratio of the current year's increase in sales revenue to the previous year's total sales revenue. This variable reflects corporate growth potential and operational capability.
6. Control variables (  $X_{it}$  ) : 6. Several control variables are included to account for factors affecting corporate performance:

Asset Level: Measured by total assets, which includes all economic resources owned or controlled by the enterprise, encompassing property, debts, and rights.

Debt Ratio: Measured by the debt-to-asset ratio, indicating total liabilities as a percentage of total assets.

Equity Level: Measured by total owners' equity, reflecting investor ownership interest in the company's net assets.

Fixed Assets: Measured by total fixed assets, representing non-monetary assets held for production or service provision for more than 12 months, such as buildings, machinery, vehicles, and equipment.

Period Expense Ratio: Indicates the ratio of period expenses to operating income, reflecting cost control efficiency.

Intangible Asset Level: Measured by net intangible assets, accounting for original value, accumulated amortization, net value, impairment provisions, and net intangible asset values.

Current Assets: Representing assets realized or consumed within one year or business cycle, including cash, short-term investments, receivables, and other current assets.

Current Liabilities: Measured by total current liabilities, referring to debt obligations due within a year or an operating cycle.

For empirical analysis, all variables are logarithmically transformed.

### 3.3 Descriptive statistics

The mean, standard deviation, and correlation coefficients for the variables used in this study are presented in Table 1.

Table 1 Results of descriptive statistics of variables

Variable name	Definitions	Number	Mean value	Standard deviation	Minimum value	Maximum value
ROE	Corporate performance, which is the return on net worth	776	2.679-	1.084	7.086-	2.104
Compensation	executive compensation	855	15.157	1.090	11.623	18.779
RID	Ratio of independent director	925	1.003-	0.134	1.386-	0.511-
Asset	Total assets	931	22.009	1.881	16.704	29.002
ALR	asset-liability ratio	931	0.835-	0.748	4.088-	4.574
OE	Total owners' equity	899	21.271	1.783	14.529	26.469
FA	Fixed Assets	928	19.877	2.154	10.920	26.014
PC	Period expense ratio	905	1.702-	0.935	4.357-	4.163
IA	Net intangible assets	889	18.533	2.193	9.471	23.092
CA	Total current assets	908	21.088	1.788	15.138	27.995
CL	Total current liabilities	908	20.770	1.876	15.032	27.872
Q	Tobin's Q	918	0.417	1.139	3.055-	4.332
Revenue	Sales Revenue Growth Rate	615	-1.623	1.573	-9.611	7.311

Table 1 provides descriptive statistics for the explanatory, explained, control, and mediating variables, respectively. The logarithmic mean of return on net assets is -2.679, suggesting lower enterprise performance and a notable range between the maximum and minimum values. The logarithmic mean of executive compensation is 15.157, indicating relatively high executive compensation with expanded variability. The proportion of independent directors has a logarithmic mean of -1.003, with a small standard deviation, suggesting minimal deviation from the mean. Total assets, total owners' equity, fixed assets, net intangible assets, total current assets, and total current liabilities show moderate to high values. Overall, these statistics establish a foundation for understanding the variables in this study and highlight variability in corporate performance and compensation structures.

#### 4. Empirical analysis

##### 4.1 Benchmark regression

The data were managed and statistically analyzed using Stata 16.0, encompassing baseline regression, mediation effect analysis, heterogeneity analysis, and robustness analysis.

Table 2: Regression Results of Executive Compensation and Independent Director Ratio with Corporate Performance

VARIABLES	(1) ROE	(2) ROE
Compensation	0.275*** (2.82)	0.196* (1.84)
RID	-1.348** (-2.60)	-1.387** (-2.60)
Asset		0.095 (0.20)
ALR		-0.137 (-0.60)
OE		-0.439* (-1.86)
FA		-0.087 (-0.99)
PC		-0.204 (-1.49)
IA		0.050 (0.67)
CA		0.260 (1.05)
CL		0.098 (0.53)
Constant	-7.881*** (-5.25)	-6.744** (-2.38)
Year FE	YES	YES
Observations	709	663
R-squared	0.068	0.120
Number of id	81	79

Note: \*, \*\*, \*\*\* denote 10%, 5%, and 1% significance levels, respectively (not repeated below).

The regression results in Table 2 reveal significant associations between executive compensation, the proportion of independent directors, and corporate performance. In model (1), without control variables, executive compensation has a positive effect on corporate performance at the 1% significance level, and the independent director ratio has a negative effect on corporate performance at the 5% significance level. With the inclusion of control variables in model (2), executive compensation positively predicts corporate performance at the 10% significance level, while the independent director ratio continues to have a negative effect on corporate performance at the 5% significance level.

#### 4.2 Mediating effect analysis

The regression results in Table 3 indicate that executive compensation and the independent director ratio are significantly associated with corporate performance. In (1), using Tobin's Q as the dependent variable regressed on executive compensation and independent director ratio, executive compensation positively predicts Tobin's Q at the 10% significance level ( $\beta_1 = 0.124, p < 0.1$ ), while the independent director ratio has a negative and significant predictive effect on Tobin's Q at the 1% significance level ( $\beta_2 = -0.628, p < 0.01$ ).

In (2), with Tobin's Q and the independent variable as predictors of corporate performance, executive compensation does not significantly predict corporate performance ( $\delta_1 = 0.103, p > 0.1$ ), but Tobin's Q positively predicts corporate

performance ( $\eta = 0.834$ ,  $p < 0.01$ ), indicating that Tobin's Q fully mediates the relationship between executive compensation and corporate performance. When both the proportion of independent directors and Tobin's Q are used as predictors, the independent director ratio negatively predicts corporate performance ( $\delta_2 = -0.860$ ,  $p < 0.05$ ), while Tobin's Q positively predicts corporate performance ( $\eta = 0.834$ ,  $p < 0.01$ ), reflecting a partial mediation effect.

Table 3: Analysis of the Mediating Effect of Tobin's Q in the Impact of Executive Compensation and the Independent Director Ratio on Corporate Performance

VARIABLES	(1) Q	(2) ROE
Q		0.834*** (7.14)
Compensation	0.124* (1.95)	0.103 (1.06)
RID	-0.628*** (-2.81)	-0.860** (-2.14)
Asset	-0.958*** (-6.76)	0.827* (1.97)
ALR	0.004 (0.04)	-0.158 (-0.77)
OE	0.238*** (3.32)	-0.596** (-2.53)
FA	-0.023 (-0.59)	-0.041 (-0.52)
PC	-0.032 (-0.71)	-0.152 (-1.26)
IA	0.050* (1.72)	-0.020 (-0.33)
CA	0.208** (2.60)	0.046 (0.22)
CL	-0.046 (-0.58)	0.179 (1.04)
Constant	9.315*** (7.13)	-14.203*** (-5.34)
Year FE	YES	YES
Observations	757	661
R-squared	0.644	0.225
Number of id	80	79

#### 4.3 Heterogeneity analysis

Listed companies are categorized as "state-owned" and "non-state-owned" based on shareholding. This analysis splits listed companies accordingly, with results shown in Table 4.

Table 4 Heterogeneity analysis results of "state-owned listed companies" and "non-state listed companies".

VARIABLES	(1) ROE	(2) ROE
Compensation	0.214** (2.02)	-0.001 (-0.01)
RID	-0.890 (-1.67)	-1.430 (-1.21)
Asset	-1.223** (-2.21)	1.256* (1.71)
ALR	0.350 (1.24)	-0.271 (-1.05)
OE	0.282 (1.14)	-1.045** (-2.57)
FA	-0.175 (-1.37)	-0.044 (-0.39)
PC	-0.420** (-2.54)	-0.203 (-1.21)
IA	-0.049 (-0.43)	0.072 (1.03)
CA	0.664* (1.91)	0.014 (0.04)
CL	0.209 (0.93)	-0.067 (-0.28)
Constant	0.024 (0.01)	-8.993** (-2.24)
Year FE	YES	YES
Observations	348	315
R-squared	0.250	0.136
Number of id	45	48

Table 4 indicates that regardless of ownership type, the impact of the independent director ratio on corporate performance is not significant. In model (1), executive compensation positively predicts corporate performance in state-owned listed companies ( $\alpha_1=0.214$ ,  $p<0.05$ ), showing a significant effect at the 5% level. However, in model (2), executive compensation does not significantly predict firm performance in non-state-owned firms ( $p>0.1$ ).

#### 4.4 Robustness analysis

To test the robustness of the main regression results, this study replaces the original dependent variable, corporate performance (measured by return on equity, ROE), with sales revenue growth rate (SRS), keeping other variables constant. The regression results are displayed in Table 5.

Table 5 Regression results with sales revenue growth rate as the dependent variable

VARIABLES	(1) Revenue	(2) Revenue
Compensation	0.825*** (5.28)	0.261*** (2.93)
RID	-1.178* (-1.88)	-0.932** (-1.99)
Asset		0.892*** (4.50)
ALR		-0.214 (-1.36)
OE		0.083 (0.45)
FA		-0.010 (-0.17)
o.FL		-
PC		-0.303** (-2.62)
Constant	5.165** (2.16)	-7.903*** (-3.83)
Year FE	YES	YES
Observations	732	694
R-squared	0.319	0.538
Number of id	81	79

As shown in Table 5, when the dependent variable is replaced with the sales revenue growth rate (while keeping the independent variable unchanged and excluding control variables in model (1), executive compensation has a positive effect on sales revenue growth rate at the 1% significance level ( $\alpha_1=0.825$ ,  $p<0.01$ ), and the independent director ratio has a negative effect at the 1% significance level ( $\alpha_2=-1.178$ ,  $p<0.1$ ). With control variables included in model (2) under a bivariate fixed effect model, executive compensation continues to positively predict sales revenue growth rate at the 1% significance level ( $\alpha_1=0.261$ ,  $p<0.01$ ), while the independent director ratio has a negative effect at the 5% significance level ( $\alpha_2=-0.932$ ,  $p<0.05$ ). Among the control variables, total assets and the expense ratio show high significance, while the remaining control variables do not have notable significance. In summary, the robustness of the main regression results is demonstrated.

## 5. Conclusions and Recommendations

### 5.1 Conclusion

First, this study finds a significant association between executive compensation, the proportion of independent directors, and corporate performance. Specifically, higher executive compensation correlates with a lower proportion of independent directors, ultimately improving corporate performance. This suggests that adequately compensating executives unlocks their potential, which in turn enhances company performance. Implementing effective executive compensation incentives is therefore critical for promoting organizational growth and supporting company development. Furthermore, the analysis of ownership structure shows that the correlation between compensation and performance is stronger in state-owned companies than in non-state-owned ones, reinforcing the research findings.



Second, Tobin's Q plays a mediating role in the impact of executive compensation and the independent director ratio on corporate performance. Executive compensation has a positive effect on Tobin's Q, acting as a complete mediator in the relationship between executive compensation and corporate performance. Conversely, the proportion of independent directors negatively impacts Tobin's Q, suggesting a partial mediating effect in the relationship between independent directors and corporate performance.

## 5.2 Recommendations

### 1. Develop a Reasonable Compensation Policy

When designing executive compensation policies, regional and industry factors should be carefully considered. A comprehensive approach to assessing a company's internal conditions can help determine appropriate compensation levels that effectively motivate executives and improve corporate performance. Realizing the goal of inclusive policies remains a work in progress.

### 2. Increase Executive Compensation Incentives

Improving corporate performance through executive compensation incentives is particularly vital in state-owned enterprises, where executive compensation has a more pronounced impact on performance. By prioritizing executive salaries, appropriately raising pay levels, and offering non-monetary rewards, state-owned companies can motivate executives to better serve the organization, ultimately enhancing overall performance.

### 3. Optimize Compensation Structure and Incentive Mechanisms

Increasing executive compensation can substantially bolster company performance. Many industries currently lack adequate compensation incentives; therefore, businesses should establish fair compensation mechanisms to align executive interests with organizational goals. Addressing this will help resolve issues related to fairness and motivation, unleashing enthusiasm, drive, and creativity.

### 4. Enhance Systems Surrounding Independent Directors

As the proportion of independent directors grows in importance, efforts should focus on promoting sustainable development. Companies should appoint independent directors with professional backgrounds and determine an appropriate number of independent directors to ensure effective governance. Strengthening the independent director system supports responsible decision-making and fosters long-term corporate development.

### 5. Utilize Tobin's Q to Analyze Growth Opportunities

Tobin's Q can serve as a tool to analyze potential growth opportunities and assess market risks. Given that corporate development often involves uncertainty, Tobin's Q can provide insights into potential risks, supporting consolidation and 5.strategic planning. This range of entrepreneurial strategies has the potential to fuel economic growth both regionally and beyond.

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