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The impact of executive compensation, property rights and firm performance

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Abstract: *Taking a-share listed companies in Shanghai and Shenzhen from 2011 to 2020 as research samples, this paper conducts an in-depth study on the relationship between executive compensation and corporate performance of Listed companies in China. The results show that executive compensation has a positive impact on firm performance. Further research shows that, for enterprises with different property rights, the increase of executive compensation is conducive to the improvement of enterprise performance, and compared with non-state-owned enterprises, the increase of executive compensation has a greater positive effect on enterprise performance.*

Keywords: *Property rights; Executive compensation; Enterprise performance*

1. Introduction

The problem of executive compensation and enterprise performance is concerned by all circles of society.In modern enterprises, business owners do not directly participate in the operation and management of the enterprise, but entrust the management of senior executives[1].However, the information asymmetry between enterprise owners and executives will cause a series of principal-agent problems. In order to effectively solve the agency problem, reasonable executive compensation incentive is very important to enterprise performance. In view of this, based on the Shanghai and shenzhen a-share listed companies from 2011 to 2020 of the related data as the research sample, first of all, the empirical test on the overall sample, executive compensation effects on enterprise performance, secondly, after considering the nature of property right of the sample data grouping study, contrast test in the different nature of property rights of enterprises, the relationship between executive compensation and corporate performance, It is of great significance for enterprises to formulate incentive measures[2].

2. Theoretical analysis and research hypothesis

2.1 Relationship between executive compensation and corporate performance

In principal-agent theory, in order to alleviate the principal-agent relationship between the owners of the principal-agent problems, reduce the agent risk, so the business owners and executive compensation performance of the contract, so that executives have how much salary will be directly linked to enterprise performance, namely enterprise executives if you want to get higher pay, you must work hard, Increase investment to improve enterprise performance. To put it simply, improving corporate performance is an important means for executives to obtain high compensation[3].Higher compensation will stimulate the enthusiasm of executives and create higher value for the enterprise, which indicates that there should be a positive correlation between executive compensation and enterprise performance. Based on this, the paper proposes hypothesis 1: H1: there is a positive correlation between executive compensation and corporate performance[4].

2.2 Relationship between executive compensation, property rights and corporate performance

There are great differences between state-owned enterprises and non-state-owned enterprises in ownership nature, rules and regulations. Shi Chunling found in her research that the nature of corporate property rights would have an impact on the relationship between executive compensation and corporate performance. Specifically, the government is the final controller of state-owned enterprises and pays more attention to social benefits. This natural advantage can encourage senior managers to be more willing to improve corporate performance in order to maximize their own interests and reduce their own

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risks[5].Moreover, in private enterprises, the executive compensation incentive system is not perfect, and the compensation information disclosure is not transparent, so executives are more prone to speculation, which makes the incentive effect invalid. Therefore, hypothesis 2:H2: Compared with non-state-owned enterprises, the improvement of executive compensation in state-owned enterprises has a greater positive effect on corporate performance.

3. Research design

3.1 Research samples and data sources

Based on the above literature review and research assumptions, this paper selects a-share listed companies in Shanghai and shenzhen stock markets as research samples. The sample period is from 2011 to 2020, and the data samples are screened :(1) excluding ST and*ST company;(2) Deleting seriously missing samples from relevant data;(3) In order to avoid the influence of outliers, this paper conducts tail indentation, which is carried out on 1% and 99% levels of variables in the sample.After the above processing, a total of 39157 observations were finally obtained.The above data comes from the Guotai 'an database.In this paper, Stata software and Excel are used for quantitative processing of the obtained data[6].

3.2 Definition of Variables

(1) Dependent variable

Enterprise Performance (ROA).In this paper, return on total assets (ROA) is used as an index to measure the financial performance of enterprises.The return on total assets in this paper is expressed by the ratio of net profit divided by total assets[7].

(2) Independent variables

Executive compensation (LnPay).Executive monetary compensation refers to the monetary income that executives receive from the enterprise, such as basic salary, bonus, welfare and dividends.Referring to the research of Ma Lianfu and Chen Xia (2017), this paper selects the logarithm of the total compensation of the top three executives disclosed by sample companies to measure the monetary compensation of executives[1].

(3) Control variables

The paper selects enterprise Size (Size), asset-liability ratio (Lev), total asset turnover (ATO), Cashflow ratio (Cashflow), number of directors (Board) and shareholding ratio of the largest shareholder (Top1).See Table 1 for the definitions of the above variables[8].

Table 1: Variable definition table

Variable types	Variable symbol	The variable name	Variable meaning
The dependent variable	ROA	Return on total assets	Net profit after tax/total assets
The independent variables	LnPay	Executive compensation	Log of the total compensation of the top three executives
Control variables	Size	The enterprise scale	The natural log of total assets
	Lev	Asset-liability ratio	Total liabilities/total assets
	ATO	Total asset turnover	Net operating income/total average assets
	Cashflow	Cash flow ratio	Net cash flow/total assets
	Board	directors	Take the natural logarithm of the number of board members
	Top1	Shareholding ratio of the largest shareholder	Number of shares held by the largest shareholder/Total number of shares

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3.3 Model Construction

Based on the hypothesis proposed above, the following model is constructed:

$ROA=\beta_0+\beta_1 LnPay+\beta_2 Size+\beta_3 Lev+\beta_4 ATO+\beta_5 Cashflow+\beta_6 Board+\beta_7 Top1+\varepsilon$

Where, ROA is enterprise performance;LnPay is executive compensation;Control variables include enterprise size, asset-liability ratio, total asset turnover, cash flow ratio, number of directors and shareholding ratio of the largest shareholder[9].

4. Empirical results and analysis

4.1 Descriptive Statistics

Descriptive statistics of relevant data from 2011 to 2020 are shown in Table 2.

Table 2: Descriptive statistics

	N	The mean	The standard deviation	The minimum value	The maximum
ROA	39157	0.0385	0.0715	0.298	0.228
lnPay	39157	14.28	0.832	12.10	16.47
Size	39157	22.03	1.432	19.24	27.05
Lev	39157	0.450	0.225	0.0511	1.076
ATO	39157	0.647	0.467	0.0265	2.673
Cashflow	39157	0.0447	0.0751	0.203	0.254
Board	39157	2.149	0.208	1.609	2.708
Top1	39157	34.71	14.99	8.580	73.90

As can be seen from Table 2, for ROA, the mean value is 0.0385, the minimum value is -0.298, the maximum value is 0.228, and the standard deviation is 0.0715, indicating that there are certain differences in corporate performance levels among different listed companies.The return on total assets of some listed companies is at a low level, or even a part of it is negative.The standard deviation of executive compensation (lnPay) in the sample is 0.832, the mean value is 14.28, the minimum value is 12.10, and the maximum value is 16.47, indicating that the monetary compensation gap of executives in the sample is relatively large.Among the control variables, the minimum value and maximum value of the logarithm (Size) of enterprise asset Size are 19.24 and 27.05 respectively, indicating a large gap between the two values, indicating that listed enterprises in China differ greatly in terms of Size.The mean value of total asset turnover (ATO) was 0.647, and the standard deviation was 0.467, indicating that the difference of total asset turnover among enterprises was small and kept within a reasonable level.The standard deviation of Cashflow ratio is 0.0751, the mean value is 0.0447, the minimum value is -0.203, and the maximum value is 0.254, indicating that there is a large gap in cash holding level among enterprises in the sample[10].

4.2 Correlation Analysis

Table 3: Correlation analysis

	ROA	lnPay	Size	Lev	ATO	Cashflow	Board
ROA	1						
lnPay	0.188 * * *	1					
Size	0.013 * * *	0.521 * * *	1				
Lev	0.402 * * *	0.00600	0.400 * * *	1			
ATO	0.188 * * *	0.039 * * *	0.025 * * *	0.056 * * *	1		
Cashflow	0.332 * * *	0.108 * * *	0.046 * * *	0.157 * * *	0.134 * * *	1	
Board	0.00600	0.073 * * *	0.287 * * *	0.181 * * *	0.010 *	0.034 * * *	1
Top1	0.134 * * *	0.035 * * *	0.166 * * *	0.00600	0.102 * * *	0.096 * * *	0.016 * * *

Note: *, ** and *** represent significant at the confidence level of 10%, 5% and 1% respectively.

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Table 3 is the correlation analysis of the main variables. It can be seen from Table 3 that the correlation coefficient between executive compensation (lnPay) and enterprise performance (ROA) is 0.188, passing the significance level of 1%.In addition, the asset-liability ratio (Lev) of enterprises is negatively correlated at the significance level of 1%.Enterprise size (LNSIZE), total asset turnover (ATO), Cashflow ratio (Cashflow ratio) and shareholding ratio of the largest shareholder (Top1) are positively correlated with enterprise performance at the significance level of 1%.Moreover, most of the coefficients between variables are below 0.5, and there is no serious collinearity, which can be analyzed in the next step.

4.3 Regression analysis

4.3.1 Impact of executive compensation on corporate performance

In this paper, OLS regression model was used to conduct an empirical study, and multiple regression analysis was conducted on dependent variable enterprise performance, independent variable executive compensation, and enterprise size, asset-liability ratio, total asset turnover ratio, cash flow ratio, number of directors and shareholding ratio of the largest shareholder as control variables, and the analysis results in Table 4 were obtained.This clearly shows us the influence relationship between variables, based on which we make the following analysis:

The regression results in Table 4 are to study the relationship between corporate performance and executive compensation. The first column only contains corporate performance and executive compensation, and control variables are added in the second column.In the regression of column (1), before the addition of control variables, the coefficient of cash holding level is 0.016, which is significant at 1% level, indicating that executive compensation has a positive effect on corporate performance.In column (2) regression, the regression coefficient of executive compensation is still significantly positive at the level of 1% after controlling enterprise micro variables such as enterprise size, asset-liability ratio, total asset turnover ratio, cash flow ratio, number of directors and shareholding ratio of the largest shareholder.It indicates that executive compensation has a positive impact on corporate performance, and that higher monetary compensation for executives is conducive to the improvement of corporate performance, which also confirms hypothesis 1.The regression analysis results are shown in Table 4.The regression analysis of different enterprise properties is shown in Table 5.

Table 4: Regression analysis

	- 1	2 -
VARIABLES	ROA	ROA
lnPay	0.016 * * *	0.010 * * *
	37.98	21.62
Size		0.005 * * *
		15.6
Lev		0.134 * * *
		(86.61)
ATO		0.026 * * *
		39.74
Cashflow		0.206 * * *
		49.75
Board		0.013 * * *
		8.53
Top1		0.000 * * *
		19.64
Constant	0.193 * * *	0.210 * * *
	(31.61)	(34.27)
Observations	39157	39157
R-squared	0.036	0.309
r2_a	0.0355	0.309

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Table 5: Regression analysis of different enterprise properties

		State-owned enterprises	The state-owned enterprises
VARIABLES	ROA		ROA
lnPay	0.013 * * *		0.005 * * *
	21.87		7.66
Size	0.004 * * *		0.007 * * *
	9.96		14.07
Lev	0.115 * * *		0.144 * * *
	(52.82)		(67.50)
ATO	0.015 * * *		0.037 * * *
	19.08		37.06
Cashflow	0.198 * * *		0.216 * * *
	35.36		37.52
Board	0.012 * * *		0.019 * * *
	5.79		8.69
Top1	0.000 * * *		0.001 * * *
	9.63		20.01
Constant	0.240 * * *		0.205 * * *
	(30.44)		(22.41)
Observations	15444		23676
R-squared	0.33		0.308
r2_a	0.33		0.308

Note: *, ** and *** represent significant at the confidence level of 10%, 5% and 1% respectively.

4.3.2 Test the relationship between executive compensation, property rights and corporate performance

In addition to the above full-sample regression analysis, this paper also divides enterprises according to the nature of property rights, conducts regression on the above models again, and discusses the impact of executive compensation on enterprise performance for enterprises with different property rights.Table 5 is the result of regression analysis after dividing enterprises into state-owned enterprises and non-state-owned enterprises according to property rights. According to the regression result we can see that the state-owned enterprises and non-state-owned enterprises regression coefficients of executive pay and have passed the test of significance, that is to say, both state-owned enterprises and non-state-owned enterprises, executive pay is advantageous to the promotion enterprise's performance, and the non-state-owned enterprises, state-owned enterprises improve executive pay positive promoting effect on enterprise performance even more significant.

As can be seen from Table 5, the regression coefficient of the monetary remuneration of senior executives of state-owned enterprises is 0.013, passing the significance level test of 1%; the regression coefficient of the monetary remuneration of senior executives of non-state-owned enterprises is 0.005, passing the significance level of 1%.The regression coefficient of state-owned enterprises is larger than that of non-state-owned enterprises, indicating that in listed enterprises, monetary compensation of executives of state-owned enterprises has a greater impact on corporate performance, which is consistent with hypothesis 2.Possible reason is that compared with the state-owned enterprises, the non-state-owned enterprise executive compensation generally includes basic salary and performance bonus, non-state enterprise executive compensation structure diversification, non-state enterprise executives monetary compensation accounted for the proportion of total compensation is low, so the non-state enterprises between executive compensation and corporate performance correlation coefficient is smaller than state-owned enterprises. Meanwhile, in order to retain senior executives, state-owned enterprises also need to pay more, so that senior executives can work harder to improve corporate performance, which makes the positive effect of executive compensation of state-owned enterprises on corporate performance more obvious.

5. Conclusions and recommendations

In this paper, enterprise performance (ROA) and executive compensation (lnPay) are selected as explained variables and explanatory variables, and the relationship between executive compensation and corporate performance of Listed companies in China is studied in depth by taking a-share listed companies in Shanghai and Shenzhen from 2011 to 2020 as research samples. Empirical tests are

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conducted by establishing OLS multiple regression model. The research draws the following two important conclusions: First, executive compensation will have a positive impact on corporate performance. Second, for enterprises with different property rights, the increase of executive compensation will improve corporate performance. Meanwhile, compared with non-state-owned enterprises, the increase of executive compensation has a greater positive effect on corporate performance.

According to the above conclusions, the enterprise can formulate a more targeted compensation incentive system according to its actual situation, promote the improvement of enterprise performance level, and further strengthen and optimize management: Compared with non-state-owned enterprises, the executive compensation of state-owned enterprises has a greater significant impact on enterprise performance, indicating that the reform of State-owned enterprises in China has achieved initial results, and the modern enterprise system of clear property rights, clear rights and responsibilities, separation of government from enterprise and scientific management has been gradually improved in State-owned enterprises in China.For state-owned enterprises, we should continue to accelerate the pace of reform, mobilize the enthusiasm of employees, hire marketing managers, realize the marketization and openness of executive compensation, and accelerate the reform of state-owned enterprises.

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