

## An Empirical Analysis of the Impact of the Board of Directors on the Profitability of the Real Estate Industry

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### Abstract

It mainly studies the relationship between the characteristics of the board of directors of real estate listed companies and the profitability of enterprises. The real estate industry is the pillar industry of the national economy. The development level is an important indicator of China's economic development level, social development level and national comprehensive strength. The real estate industry's contribution and influence to the national economy is expanding, and it has strong industry relevance, covering more than 50 industries, including construction, steel, cement and other building materials industries, as well as credit, insurance and other financial services industries, real estate. The benign development of the industry will help promote the healthy development of relevant industries and the entire national economy. The impact of the real estate industry on the national economy is also reflected in the demand pull. At present, real estate investment has become an important support for expanding investment demand, effectively stimulating the growth of the national economy. The development level of the real estate industry mainly depends on its profitability. Its profitability also directly reflects the quality of corporate governance in China's real estate industry. High-quality corporate governance is necessarily related to good company performance and sustainable development capability. Corporate governance is still a relatively new concept in China, and it is still in the stage of continuous development in promoting the theoretical research and practical operation of corporate governance. From this perspective, the research topic of the governance structure of the board of directors of listed companies in China's real estate industry and the company's profitability has important theoretical and practical significance.

### Keywords

Real Estate Listed Company, Board Characteristics, Profitability.

### 1. The definition and description of the characteristics of the board of directors of listed companies in China's real estate industry and the profitability of enterprises

#### 1.1 Definition and description of the characteristics of the board of the real estate industry

##### 1.1.1 Definition of board characteristic variable

Based on the previous scholars' research methods, based on the comprehensive collation of relevant theoretical literatures, and considering the availability of relevant data of the research objects, the board characteristics are subdivided into the size of the board of directors, the proportion of independent directors, and the number of annual meetings. Variables are detailed in Table 1 below.

##### 1.1.2 Definition of Characteristic Variables of Board of Directors of Real Estate Listed Companies

Table 1 Definition of Characteristic Variables of Board of Directors of Real Estate Listed Companies

Feature dimension	Variable name and code	Variable meaning and value
Structure	Board size (X1)	Total number of board members
Structure	Proportion of independent directors (X2)	The ratio of independent directors to the total number of directors

Incentive feature	Board Compensation (X3)	The sum of the remuneration of the top three directors with the highest annual salary
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As can be seen from Table 1 above, this paper mainly selects two representative features of the board's characteristics, a total of three variables, each feature and corresponding variable interpretation are defined and described in detail in Table 1.

## 1.2 Descriptive analysis of the characteristics of the board of directors of listed companies in China's real estate industry

In 2016, China's real estate industry A-share listed companies were selected as research objects, and ST samples were excluded. After statistical screening, a total of 77 research samples were selected. The data in this article comes from the Guotai An CSMAR series of research databases and the annual report of A-share real estate listed companies. The relevant data missing in the paper are obtained through the relevant annual reports of listed companies and Sina Finance and other sources, and the data obtained are summarized and organized. The relevant data in this paper is processed by SPSS and Excel statistical software.

### 1.2.1 Descriptive analysis of the size of the board of directors of listed companies in the real estate industry

Table 2 describes the statistics

	N	Minimum	maximum	Mean		Standard deviation	variance
				Statistics	Standard error		
	Statistics	Statistics	Statistics	Statistics	Standard error	Statistics	Statistics
X1	77	5.00	18.00	8.6104	.20432	1.79294	3.215
X2	77	2.00	6.00	3.1688	.05963	.52321	.274
X3	77	75000.00	4267240.00	4190934.42	700111.19672	6143450.818	3.7742E+13
SIZE	77	123121627.5	8.30674E+11	34871517183	11435753832	1.00348E+11	1.007E+22
SR	77	.0571120	.9559780	.603923779	.0238943998	.2096725075	.044
Effective N	77						

From the above Table 2, we can find that in the sample of China's 16-year real estate industry A-share listed companies studied in this paper, the number of board members is basically concentrated between 5 and 15 people, which is in line with the relevant laws of China. The company has reached 18 people. From Table 3, we can see that among the selected real estate sample companies, more than 80% of the company's board of directors is between 7 and 11 people, of which the 9-person system is particularly prominent, accounting for more than 50% of the survey sample.

From the above table 3, we can also see that the size of the board of directors of China's real estate listed companies is mainly based on the 7-person system, the 9-person system and the 11-person system. They account for about 15%, 50%, and 10% of the total sample of the year. In addition, it can be seen that the size of the board of directors is a significant advantage of odd-numbered arrangements, accounting for more than 80% of the total sample, which effectively avoids the occurrence of deadlock.

The China Securities Regulatory Commission requires all domestic listed companies to hire suitable personnel to serve as independent directors, including at least one accounting professional, and the board of directors includes at least one-third of independent directors. It can be seen from Table 2 and Table 3 that the average proportion of independent directors of China's A-share real estate listed companies in 2016 is above 36%, which is in line with the requirements of the proportion of independent directors required by listed companies. Overall, the proportion of independent directors

in most real estate sample companies is higher than 33.33% (only a few of them do not meet the requirements of the China Securities Regulatory Commission, which accounts for less than 3% of the sample), but about half of them. The proportion of independent directors of the sample company is exactly 33.33%, which seems to be established only in order to meet the requirements of the CSRC. It can be seen that the independent director system of China's real estate listed companies needs further improvement in scale construction.

As can be seen from Table 2 and Table 3, in 2016, the remuneration of the board of directors of China's real estate listed companies was mainly concentrated within 2 million yuan, accounting for more than 80% of the total sample. Mainly considering that the selected sample, most of the board members and the manager level, the salary level is significantly higher. Among them, the difference in salary of individual listed companies' board of directors is relatively large, only a few hundred thousand, and many have reached tens of millions.

### 1.3 China's real estate industry listed companies profitability assessment methods and indicators selection

#### 1.3.1 The choice of performance indicators of real estate companies in China

The measurement of multiple indicators has certain advantages. For example, it can measure multiple levels of corporate profitability, and it is easier to avoid the bias of individual subjective evaluation, so that it is easy to achieve relatively complete and accurate requirements.

Therefore, this representative single index ROE is chosen to reflect the profitability of listed companies in China's real estate industry.

Indicator name	Code	Meaning
Roe	Y	It refers to the ratio of net profit to average net assets of a company within a certain period of time, which highlights the relationship between investment and compensation, and is the core indicator for evaluating corporate performance.

## 2. An Empirical Analysis of the Correlation between Board Characteristics and Corporate Performance of Listed Companies in China's Real Estate Industry

### 2.1 Research Design

#### 2.1.1 Data source and sample selection

The listed companies in the A-shares of China's real estate industry in 2016 were selected as research objects, and the ST samples were excluded. After statistical screening, a total of 77 research samples were selected. The data in this article are from the CSMAR series of research databases of Guotai An and the annual report of China's A-share real estate listed companies in 2016. The missing relevant data are obtained through the relevant annual reports of listed companies and Sina Finance, and the data obtained are summarized. sort out. The relevant data was processed using SPSS16.0 and Excel statistical software.

#### 2.1.2 Related variables

##### 2.1.2.1 Independent variables: board characteristic variables

Determine three variables that reflect the characteristics of the board of directors of listed companies in the real estate industry in China, including the size of the board of directors, the proportion of independent directors, the number of annual meetings, the structure of leadership, the remuneration of the board of directors, the annual allowance for independent directors, and the proportion of shares held by the board of directors.

##### 2.1.2.2 Dependent variable: company performance

From the perspective of the profitability of listed companies, choose a corresponding corporate financial indicators, such as operating profit margin and return on assets.

##### 2.1.2.3 Control variables

(1) company size

Experience has shown that the board of directors of large companies often spend a lot of time making decisions, so their coordination costs are usually higher; but large-scale companies are also more likely to form economies of scale and easy access to external resources, so it can be seen that the company's size is profitable to the company. The impact is not negligible.

## (2) Asset-liability ratio

The asset-liability ratio is the ratio of the company's total liabilities to total assets. Generally speaking, the larger the ratio, the higher the company's operating risk. It can be seen that the asset-liability ratio will also have a greater impact on corporate performance. Therefore, it is necessary for us to choose the asset-liability ratio as the control variable for the study.

## 2.2 Research hypothesis

### 2.2.1 Research hypothesis about board size and company profitability

The relevant theory put forward above points out that a large-scale board of directors will not only generate high agency costs, but also increase communication barriers between directors or “free riders”. It is further believed that a large-scale board of directors is not conducive to Improve the company's performance. In view of this, propose:

Hypothesis 1: The size of the board of directors of real estate listed companies is negatively related to ROE. The scale of board of directors of real estate listed companies is negatively related to the profitability of enterprises.

### 2.2.2 Research hypothesis on the proportion of independent directors and the company's profitability

Many scholars have suggested from an empirical point of view that an appropriate increase in the proportion of independent directors can effectively improve the company's profitability. Most of their research is based on the theory of resource dependence, because the introduction of independent directors can bring more professional knowledge and more important to enterprises. External resources to provide strategic support for the development of the enterprise. Therefore, propose:

Hypothesis 2: The proportion of independent directors in real estate listed companies is positively related to ROE. The proportion of independent directors in real estate listed companies is positively related to corporate profitability.

### 2.2.3 Research hypothesis about the relationship between board compensation and company performance

We learned from the agency theory that modern corporate governance consists of a three-tiered proxy relationship between the shareholders' meeting-board-management level. It can be seen that the board of directors has a dual identity and is at the core of such a relationship, so how to effectively motivate the board and Its active performance of duties has become the key to reducing agency costs. Numerous studies have shown that giving incentives to the board can effectively motivate them to work harder, thereby increasing the company's profitability. Therefore proposed:

Hypothesis 3: The remuneration of the board of directors of real estate listed companies is positively related to ROE.

## 2.3 Correlation analysis between the characteristics of the board of directors of listed companies in China's real estate industry and the company's profitability

In order to preliminarily test the rationality of the model, it is necessary to analyze the correlation of the variables. In this paper, SPSS is used to analyze the correlation of the data. After simplification, the following correlation table is obtained (see Table 5 below).

Table 5. Correlation analysis

		X1	X2	X3	Y	DR	SIZE
X1	Pearson correlation	1	.786	.583	-.006	.010	-.016
	Significant (bilateral)		.000	.000	.961	.931	.889
	N	77	77	77	77	77	77
X2	Pearson correlation	.786	1	.547	.056	.023	.003
	Significant (bilateral)	.000		.000	.626	.840	.979
	N	77	77	77	77	77	77
X3	Pearson correlation	.583	.547	1	.091	.124	.041
	Significant (bilateral)	.000	.000		.432	.282	.722
	N	77	77	77	77	77	77
Y	Pearson correlation	-.006	.056	.091	1	.123	.035
	Significant (bilateral)	.961	.626	.432		.288	.761
	N	77	77	77	77	77	77
DR	Pearson correlation	.010	.023	.124	.123	1	.198
	Significant (bilateral)	.931	.840	.282	.288		.084
	N	77	77	77	77	78	77
SIZE	Pearson correlation	-.016	.003	.041	.035	.198	1
	Significant (bilateral)	.889	.979	.722	.761	.084	
	N	77	77	77	77	77	77

\*\*. Significantly correlated at .01 level (both sides).

The Pearson correlation coefficient reflects the correlation between variables to some extent. According to the Pearson correlation coefficient in the above table, there is a certain correlation between the total net asset return rate (ROE), X1 and X2 and the board's characteristic variables. According to the correlation coefficient and significance test, it can be seen that the relationship between the characteristic variables of the board of directors of China's real estate listed companies and the profitability indicators of enterprises is:

- (1) The size of the board of directors (X1) is negatively correlated with ROE and negatively related to corporate profitability, which is consistent with our previous assumptions.
- (2) The proportion of independent directors (X2) is positively related to ROE and positively related to corporate profitability, which is consistent with our previous assumptions.
- (3) Annual Board Remuneration (X3) is positively related to ROE and positively related to corporate profitability, which is consistent with our previous assumptions.

## 2.4 Regression Analysis of the Characteristics of Board of Directors and Profitability of Companies in China's Real Estate Industry

### 2.4.1 Model Design

Based on the above three assumptions, the following multiple regression model is established:

$$Y1=a0+a1X1+a2X2+a3X3+\varepsilon1 \quad (1)$$

$$Y_2 = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + \varepsilon_2 \quad (2)$$

## Model summary

model	R	R <sup>2</sup>	Adjust the R <sup>2</sup>	Standard estimated error
1	.177 <sup>2</sup>	.031	-.037	.7724169753

a. Predictors: (constant), SIZE, X2, DR, X3, X1.

Anova<sup>b</sup>

model		sum of square	df	Mean square	F	Sig.
1	return	1.367	5	.273	.458	.806 <sup>2</sup>
	Residual	42.361	71	.597		
	total	43.727	76			

a. Predictors: (constant), SIZE, X2, DR, X3, X1.

b. Dependent variable: Y

coefficient<sup>2</sup>

model		Non-standardized coefficient		Standard coefficient	t	Sig.
		B	Standard error	trial version		
1	(constant)	-.286	.682		-.420	.676
	X1	-.072	.084	-.171	-.861	.392
	X2	.189	.279	.130	.679	.499
	X3	.000	.000	.106	.715	.477
	DR	.386	.435	.107	.888	.378
	SIZE	.000	.000	.007	.055	.957

a. Dependent variable: Y

As can be seen from the summary of the table model, R<sup>2</sup> is 0.2 < 0.4, and the value is small, indicating that the equation fit is low. And the Sig value is < 0.05, indicating that the coefficient test is significant. The Sig values of DR and D1 are less than 0.05, indicating a significant impact on the total net profit margin. The Sig value of other variables is greater than 0.05, indicating that it is not significant.

## 2.5 Empirical results and analysis

Taking the A-share listed company in China's real estate industry as a research sample in 2016, an empirical analysis was made on the correlation between the characteristics of the board of directors and the company's profitability. Through empirical analysis, it can be seen that the research model constructed in this paper has certain statistical significance, some of which have passed the significance test. It can be seen that the selected regression model can explain the relationship between the board characteristics of the real estate listed companies and the company's profitability. Relationship. The empirical results show that the profitability indicators of China's real estate listed companies and the company's board of directors have been able to establish a certain quantitative relationship. The characteristics of the board of directors of China's real estate listed companies can affect the company's profitability to a certain extent.

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