Research on the Relationship Between Equity Structure and Corporate Performance of Internet Industry Listed Companies

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Abstract: With the high-quality development of the socio-economic landscape and under the support of national policies, the internet industry has rapidly emerged. In the era of the internet, the development potential and prospects of listed companies in the internet sector are closely related to the overall trend of societal development. The equity structure of a company is the cornerstone of corporate governance and thus affects the company's operational performance. Therefore, this paper conducts an empirical analysis to explore the relationship between the equity structure and corporate performance of listed companies in the internet sector from two dimensions: the nature of equity and the concentration of equity, in hopes of providing references for the sound development of listed companies in the internet industry.

Keywords: Internet industry, Equity structure, Equity attributes, Equity concentration, Corporate performance

1. Introduction

In the context of high-quality socio-economic development, the internet industry permeates all aspects of people's lives. In 2022, the business income of internet enterprises reached 1.459 trillion yuan, with a profit of 141.5 billion yuan. As of the end of June 2023, the number of internet users in China had reached 1.079 billion, with an internet penetration rate of 76.4%, indicating that a digital China is gradually maturing. Listed companies in the internet industry, as pioneers of the sector, have development potential and prospects closely related to the overall trend of societal development.

The equity structure refers to the proportion of various types of shares in the total capital of a company and their interrelationships. The equity structure of a company constitutes the cornerstone of corporate governance, and the governance structure has its specific operating modes, which in turn affect the business performance of the enterprise. Through research, it has been found that focusing on the relationship between the equity structure and corporate performance of listed companies in the internet industry is still to be enriched, possessing great research value and potential.

In light of the above analysis, this paper constructs regression models through empirical analysis and studies the relationship between equity structure and corporate performance from two dimensions: the nature of equity and the concentration of equity. By adopting a new perspective of "quantity" and

"quality," this paper aims to provide insights for the positive development and performance enhancement of listed companies in the internet industry.

2. Literature Review and Hypothesis Development

2.1. Literature Review

The relationship between equity structure and corporate performance has always been a focus of academic attention, with research primarily addressing the nature of equity and the concentration of equity. Studies by Morck, Vishny, and Shleifer have revealed a nonlinear relationship between the proportion of management's holdings and corporate performance. Specifically, a positive correlation between management's shareholding ratio and Tobin's Q value is observed when the shareholding ratio is less than 5% and greater than 25% [1]. Huaina and Majian, based on cross-sectional data of retail enterprises, concluded that both state-owned capital and legal person shares have an insignificant impact on corporate governance performance [2]. Regarding equity concentration, different levels of equity concentration have varied impacts on corporate performance. Wu Shukun, using statistical data from 1997 to 2000, found an inverted U-shaped relationship between the concentration of equity of listed companies and their business performance [3]. Qin Lei and other scholars analyzed the financial data of China's listed manufacturing companies for the year 2008 and found a positive correlation between the top three shareholders and corporate governance performance [4]. Johnson noted that, in terms of business performance, companies with dispersed equity perform better than those with concentrated equity [5].

Existing studies also differ in sample selection and data indicators. In terms of industry types, Dai Yu focused on the media industry [6], and Tang Xia on the tourism industry [7]. In sample selection, there is a growing focus on small and medium-sized listed companies, private listed companies, and companies listed on the Growth Enterprise Market [8].

Through analysis of existing literature, it is expected that differences in conclusions arise due to varying indices selected, focused industries, and methods of data selection. The internet industry is a rapidly developing hot industry, and whether the relationship between the equity structure of its listed companies and corporate governance performance follows the findings of existing research remains to be verified. Therefore, this paper chooses listed companies in the internet industry as the analysis sample, focusing on the dimensions of equity nature and equity concentration. By utilizing market value indicators and corporate financial performance indicators and employing panel data, this paper aims to empirically analyze the relationship between equity structure and corporate performance and draw conclusions.

2.2. Hypothesis Development

2.2.1. Equity Nature and Corporate Performance

Based on the principal-agent theory, in listed companies, the primary agents of state-owned equity are usually government officials, which contradicts the objective of maximizing corporate profits. The operation mode of state-owned equity in listed companies in the internet industry is similar to that of conventional enterprises, leading to the proposal of hypothesis H1:

Hypothesis H1: There is a significant negative correlation between the proportion of state-owned equity in listed companies in the internet industry and corporate performance.

Compared to state-owned equity, corporate shares have clear ownership relations and are under capital control. Corporate shareholders prioritize their own interests, which aligns with the overall interest of the company. Thus, hypothesis H2 is proposed:

Hypothesis H2: There is a significant positive correlation between the proportion of corporate shares in listed companies in the internet industry and corporate performance.

Different from state-owned and corporate shares, the shareholders of circulating shares are predominantly retail investors who aim for short-term profits and rarely focus on the company's long-term governance. The rise of the internet industry has attracted a large number of retail investors, thereby increasing their impact on the overall corporate performance. Thus, hypothesis H3 is proposed:

Hypothesis H3: There is a significant negative correlation between the proportion of circulating shares in listed companies in the internet industry and corporate performance.

Senior management's shareholding, by allocating a portion of their earnings in the form of company stocks, positively influences corporate performance. This method is commonly used to resolve the conflict of interest between principals and agents and is applicable to listed companies in the internet industry. Hence, hypothesis H4 is proposed:

Hypothesis H4: There is a significant positive correlation between the proportion of shares held by senior management in listed companies in the internet industry and corporate performance.

2.2.2. Equity Concentration and Corporate Performance

The shareholding percentage of the largest shareholder is a crucial indicator of the concentration of equity in listed companies. In most internet industry listed companies in China, where the largest shareholder is often state-controlled, infringements on the rights of minority shareholders for their own benefit are not uncommon. Thus, hypothesis H5 is proposed:

Hypothesis H5: There is a significant negative correlation between the proportion of the largest shareholder in listed companies in the internet industry and corporate performance.

This paper selects the shareholding percentage of the top ten shareholders as an indicator. In listed companies, if the shareholding ratio of the top ten shareholders is low, their ability to monitor and make decisions within the company will be weakened; if their shareholding is too high, it could lead to manipulation of the company, rendering the board of directors and supervisory board ineffective. Overall, this suggests a quadratic relationship, leading to the proposal of hypothesis H6:

Hypothesis H6: There is a significant inverted U-shaped relationship between the shareholding percentage of the top ten shareholders in listed companies in the internet industry and corporate performance.

3. Research Design

3.1. Sample Selection and Data Source

This study selects sample data from listed internet companies between 2012 and 2022, including financial data and corporate governance structure data. To ensure the validity and reliability of the conclusions of this study, the data were processed as follows: companies listed as ST or *ST were excluded; companies missing key data were excluded; companies that changed the nature of their equity during the survey period were also excluded. A final sample of 411 observations from 58 complete sample companies was obtained.

The data for this study were selected based on the "Listed Company Industry Classification Guidelines," primarily sourced from the CSMAR database and the Wind database.

3.2. Variable Definitions

3.2.1. Dependent Variable

The performance of listed internet companies is used as the dependent variable in this study, including two main indicators: ROA, which measures the profitability of a company, and BM, which measures market value.

3.2.2. Independent Variables

The equity structure of listed internet companies is selected as the independent variable. The indicators for a company's equity nature include the proportion of state-owned shares, legal person shares, circulating shares, and senior management shareholding; the indicators for a company's equity concentration include the shareholding percentage of the largest shareholder and the top ten shareholders.

3.2.3. Control Variables

To account for other factors that may affect the operational performance of listed companies, control variables are added to the research model, including company size, company growth as indicated by net profit growth rate, and financial leverage as indicated by the debt-to-asset ratio.

Table 1: Variable Definitions

Variable Symbol	Meaning of Variable	Measurement
ROA	Return on Total Assets	Net profit after tax / Total assets
BM	Book-to-Market Value	Shareholders' equity / Company market value
GY	State-owned Share Proportion	State shares / Total shares
FY	Legal Person Share Proportion	Legal person shares / Total shares
LY	Circulating Share Proportion	Circulating A shares + Circulating B shares) / Total shares
MY	Senior Management Shareholding	Senior management shares / Total shares
CR1	Proportion of Largest Shareholder	Shares of the largest shareholder / Total shares
CR10	Proportion of Top Ten Shareholders	Shares of the top ten shareholders / Total shares
LNSIZE	Company Size	Natural logarithm of total company assets
GROW	Net Profit Growth Rate	(Net profit of the current year - Last year's net profit) / Last year's net profit
DAR	Financial Leverage	End of year total debt / Total assets

3.3. Model Design

To verify the impact of equity nature on corporate operational performance, model (1) is constructed:

$$PER = \alpha + \beta_1 SY + \beta_2 LNSIZE + \beta_3 GROW + \beta_4 DAR + \varepsilon \qquad (1)$$

Where:

PER is represented by ROA and BM. SY represents equity nature indicators, substituted by GY, FY, LY, MY. ε represents the error term, thus forming the identification of the data.

To verify the impact of equity concentration on corporate operational performance, model (2) is constructed:

$$PER = \alpha + \beta_1 CONC + \beta_2 LNSIZE + \beta_3 GROW + \beta_4 DAR + \varepsilon \qquad (2)$$

Where:

CONC represents equity concentration indicators, indicated by CR1, CR10.
The article employs OLS (Ordinary Least Squares) regression analysis.

4.   Empirical Results and Analysis

4.1.   Descriptive Statistics

Table 2: Descriptive Statistics for Variables

Variable	Observed Value	Mean Value	Median	Standard Deviation	Minimum Value	Maximum Value
ROA	411	0.0360	0.0500	0.115	-0.495	0.292
BM	411	0.481	0.478	0.220	0.0350	0.920
GY	411	0.0220	0	0.106	0	0.646
FY	411	0.103	0	0.190	0	0.792
LY	411	0.658	0.676	0.286	0.100	1
MY	411	0.142	0.0420	0.179	0	0.647
CR1	411	0.291	0.265	0.141	0.0670	0.652
CR10	411	0.571	0.615	0.171	0.234	0.859
LNSIZE	411	21.52	21.45	1.051	18.49	23.85
GROW	411	-0.411	0.111	4.520	-27.02	13.72
DAR	411	0.315	0.269	0.208	0.0250	0.975

The descriptive statistics show that for the company performance indicator ROA, the mean is 0.036, the minimum is -0.495, and the maximum is 0.292. This indicates a significant variation in ROA, suggesting a stratification phenomenon among internet companies. Regarding equity nature, in listed internet companies, the equity structure is dominated by circulating shares, followed by the proportion of shares held by senior management, and then by state-owned shares. As for equity concentration, equity tends to be concentrated. The descriptive statistics for other control variables are all within a reasonable range.

4.2.   Regression Analysis

4.2.1. Linear Regression Analysis of Equity Nature and Company Performance

Table 3: Regression Results of Equity Nature on Company Performance

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) BM	(6) BM	(7) BM	(8) BM
GY	0.0449* (1.952)				0.0757 (1.011)			

Table 3: (continued).

FY		0.0455** (2.583)				0.2466*** (4.982)		
LY			-0.0694*** (-5.602)				-0.2872*** (-8.067)	
MY				0.0911*** (5.005)				0.1641*** (2.860)
LNSIZE	0.0075 (1.561)	0.0071 (1.486)	0.0079* (1.687)	0.0091* (1.889)	0.0846*** (9.092)	0.0815*** (8.833)	0.0857*** (10.315)	0.0875*** (9.644)
GROW	0.0143*** (8.241)	0.0142*** (8.231)	0.0136*** (8.045)	0.0142*** (8.170)	-0.0010 (-0.434)	-0.0018 (-0.750)	-0.0040* (-1.671)	-0.0013 (-0.575)
DAR	-0.0999*** (-4.024)	-0.0946*** (-3.701)	-0.0718*** (-2.784)	-0.0857*** (-3.467)	-0.0535 (-1.132)	-0.0199 (-0.413)	0.0660 (1.412)	-0.0278 (-0.580)
Constant	-0.0884 (-0.899)	-0.0853 (-0.878)	-0.0598 (-0.616)	-0.1399 (-1.402)	-1.3262*** (-6.531)	-1.2945*** (-6.504)	-1.1980*** (-6.524)	-1.4185*** (-7.115)
Observations	411	411	411	411	411	411	411	411
R-squared	0.375	0.379	0.400	0.393	0.165	0.207	0.285	0.180
F	23.58	27.84	31.66	27.47	21.74	30.62	55.39	25.41

Note: ***, **, and * represent significance levels at 1%, 5%, and 10%, respectively. Parentheses report t-values adjusted by the Huber-White Sandwich method.

Table 3 reports the linear regression results of equity nature on company performance:

First, the regression coefficient of GY on ROA is 0.0449, significant at the 10% level, indicating a positive correlation; there is no significant positive correlation with BM. This suggests that a higher proportion of state-owned shares may lead to better company performance, contrary to Hypothesis H1, indicating that H1 is not supported. This could be due to the increased regulation and support from the state for the internet industry, leading to a positive effect on company performance as state-owned shares become more regulated.

Second, the regression coefficient of FY on ROA is 0.0455, significant at the 5% level, and on BM is 0.2466, significant at the 1% level. This indicates a significant positive relationship between the proportion of legal person shares and company performance, supporting Hypothesis H2.

Third, the regression coefficient of LY on ROA is -0.0694, significant at the 1% level, and on BM is -0.2872, also significant at the 1% level. This suggests a significant negative relationship between the proportion of circulating shares and company performance, supporting Hypothesis H3.

Fourth, the regression coefficient of MY on ROA is 0.0911, significant at the 1% level, and on BM is 0.1641, also significant at the 1% level. This indicates a significant positive relationship

between the proportion of shares held by senior management and company performance, supporting Hypothesis H4.

4.2.2. Linear Regression Analysis of Equity Concentration and Company Performance

Table 4: Regression Results of Equity Concentration on Company Performance

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) BM	(5) BM	(6) BM
CR1	0.0863***			0.1463**		
	(2.933)			(1.985)		
CR10		0.1404***			0.2772***	
		(6.015)			(4.415)	
LNSIZE	0.0096**	0.0076	0.0096**	0.0883***	0.0847***	0.0899***
	(1.981)	(1.607)	(2.003)	(9.576)	(9.635)	(9.935)
GROW	0.0141***	0.0133***	0.0140***	-0.0014	-0.0030	-0.0018
	(8.246)	(7.931)	(8.185)	(-0.585)	(-1.230)	(-0.735)
DAR	-0.0850***	-0.0594**	-0.0821***	-0.0284	0.0267	-0.0077
	(-3.289)	(-2.251)	(-3.177)	(-0.592)	(0.553)	(-0.161)
Constant	-0.1636	-0.1827*	-0.1570	-1.4537***	-1.5112***	-1.4954***
	(-1.590)	(-1.830)	(-1.559)	(-7.031)	(-7.889)	(-7.451)
Observations	411	411	411	411	411	411
R-squared	0.384	0.409	0.384	0.171	0.202	0.182
F	24.57	32.48	25.22	23.79	31.37	26.21

Note: Same as Table 3

Table 4 reports the linear regression results of equity concentration on company performance:

First, the regression coefficient of CR1 on ROA is 0.0863, significant at the 1% level, and on BM is 0.1463, significant at the 5% level. This suggests that a reasonable proportion of shares held by the largest shareholder has a positive effect on company performance. Hypothesis H5 is not supported. A possible explanation is that the largest shareholders in internet companies often are the founders or actual owners, whose interests are closely linked to the company's operation, thus they have a strong incentive to supervise and improve company performance.

Second, the regression coefficient of CR10 on ROA is 0.1404, significant at the 1% level, and on BM is 0.2772, also significant at the 1% level. This indicates a significant positive relationship between the proportion of shares held by the top ten shareholders and company performance. The more shares the top ten shareholders hold, the more aligned their interests with the company, motivating them to supervise and improve company operations. This result does not support the hypothesis of an inverted U-shaped relationship between CR10 and company performance, indicating that Hypothesis H6 is not supported.

4.3. Robustness Check

To ensure the reliability of the empirical findings of this paper, the following controls were performed:

Data were adjusted and categorized by different standards to verify whether the results still hold significant meaning and significance; when using OLS, considering that regression model coefficients are linear, all independent variables are uncorrelated with the residuals, and residuals have constant variance; different profitability and market value indices were used for regression, selecting ROE as an alternative to ROA for profitability analysis.

After testing, most of the regression results were consistent with the original analysis, with some differences in the significance of MY, but these differences were not substantial.

5.   Conclusion and Discussion

5.1.   Research Conclusions

This paper derives conclusions about the relationship between the equity structure and corporate performance of listed companies in the internet industry through empirical analysis, focusing on two dimensions: equity nature and equity concentration. From the perspective of equity nature, it is found that the proportions of state-owned shares (GY), legal person shares (FY), and senior management shares (MY) all have a significant positive correlation with corporate performance; while the proportion of circulating shares (LY) has a significant negative correlation with corporate performance. From the perspective of equity concentration, the shareholding percentages of both the largest shareholder (CR1) and the top ten shareholders (CR10) have a significant positive correlation with corporate performance.

5.2.   Policy Recommendations

5.2.1. Optimizing Corporate Equity Structure

Firstly, it is advisable to appropriately increase the proportion of legal person shares and senior management shareholding, as they more rationally focus on the company's long-term development while aligning with the interests of the owners, serving as a dual insurance for both corporate performance and personal benefits. Secondly, small and medium investors should recognize the shareholder rights granted by law; listed companies should improve the information disclosure mechanism; regulatory bodies can use networks, media, and other means to strictly crackdown on behaviors that harm the interests of small and medium investors. Finally, it is recommended to appropriately increase the concentration of equity. Since most internet industry listed companies are in their growth phase and face fierce market competition, a moderate concentration of equity can enable corporate leaders to make quick and rational decisions, seizing market opportunities.

5.2.2. Enhancing Corporate Governance

In the transmission mechanism between equity structure and corporate performance, the level of corporate governance plays a pivotal role, acting as a continuous internal driving force for the company. This paper suggests focusing on its internal growth from three aspects: establishing effective incentive and restraint mechanisms, optimizing internal control, and excelling in innovation based on the characteristics of the internet industry.

5.3.   Limitations and Future Research

The rapid development and quick iteration of the internet industry mean that conclusions drawn solely from empirical research may be biased. In future studies, which are primarily quantitative, it would be valuable to delve into the impact of qualitative indicators on corporate performance that are not easily quantifiable, such as corporate culture, historical background, and organizational structure. Considering both qualitative and quantitative aspects may lead to more rigorous research findings.

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