Research on the relationship between ownership structure and corporate performance of pharmaceutical industry

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ABSTRACT

Ownership structure and corporate performance has been a hot topic of scholars at home and abroad. Based on the comprehensive relevant references，this paper does descriptive statistics and correlation analysis on the shareholding structure and company performance of the pharmaceutical industry. The final results of this paper is that ownership concentration and corporate performance showed a significant positive correlation, at the same time, equity restriction and corporate performance also has a positive relationship in a certain degree, which provide a reference for the future development of the pharmaceutical industry.

Keywords: Ownership Structure; Corporate Performance; Pharmaceutical Industry
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INTRODUCTION

In China, the pharmaceutical industry plays an important role in the economy of the country. And along with rapid economic development, population aging intensifies and pharmaceutical companies become increasingly important. Therefore, the development of the pharmaceutical industry has good prospects. However, what affects the corporate performance of Chinese pharmaceutical industry?

Ownership structure is an indicator which shows status and decision-making power of shareholders. And it directly affects the quality of internal control. Reasonable and complete ownership structure formulate clearly the division of risks, responsibilities and ultimately resulting benefits of all stakeholders, including shareholders, creditors, management and staff etc. Besides, ownership structure balances the interests of all parties, so it has an important impact on corporate performance. Therefore, this article does the research on the relationship between ownership structure and corporate performance of the pharmaceutical industry on the basis of the relative literatures in order to explore the impact of ownership structure on corporate performance and provide relevant and feasible recommendations. And this research will enable companies of pharmaceutical industry to get healthy and rapid development in the future.

THE LITERATURE REVIEW
1. Foreign Research
In abroad, study of the relationship between ownership structure and corporate performance began earlier, as early as the 1930s, Berle and Means proposed the "separation of ownership and control," they said that there is a conflict between the interests of managers and shareholders' interests in widely held companies, so it is difficult to make the value of the business to be maximized. After this, a lot of scholars made in-depth studies on the relationship between ownership structure and corporate performance. But the conclusions are quite different, there are four perspectives: the ownership structure and corporate performance are in positive correlation, negative correlation, no correlation or there is a nonlinear relationship.

Demsetz and Villalonga selected 223 companies in USA, they used Tobin's Q to show corporate performance and used the least squares method to do their research. As a result, they found that corporate performance and the ratio of managerial ownership showed a significant positive correlation. [1] But at the same time, Thomsen and Pedersen selected 435 largest European companies as a sample to study, and they found that ownership concentration and corporate performance presented a non-linear relationship, this relationship makes ownership concentration negatively impact the corporate performance beyond a certain point.[2]

In addition, Drakos and Bekiris used the panel data of 146 listed companies in Greece and took the differences between Greek capital market and developed capital markets into consideration. In their research, they divided the equity ownership into internal and external shareholders. The results showed that there is a positive correlation between insider ownership and corporate performance, but the relationship of company performance and external people is not significant. [3]

2. Domestic research
Compared with the studies in aboard, the research system of ownership structure in our country is thin, and there is no agreement of the findings.

Yang Tingyan selected 153 listed companies on the GEM as a sample to do the research between ownership structure and corporate performance. He found that there is no significant correlation between the proportion of state-owned shares and Corporate Performance. However, the proportion of executives holding and corporate performance showed significantly positive correlation while the proportion of outstanding shares and corporate performance are significantly negatively correlated. [4]

Wen Yuechun and Ye Meilin built a multiple linear regression model for the relationship between corporate governance structure and corporate performance based on the data of 123 companies in 2010. As a result, they found that the company's governance structure and corporate performance are correlated, but this relationship is not significant. In addition, the ratio of the largest shareholder and corporate performance inverted U-shaped relationship. [5]

In summary, the relationship between ownership structure and corporate performance has no unified conclusion. Therefore, the research of ownership structure and corporate performance of the pharmaceutical industry is targeted and it has a certain practical significance for the pharmaceutical industry.

THE STUDY DESIGN
1. Sample selection
Pharmaceutical industry refers to companies engaged in drug research, production, sale, provision and related services business. In the rapid development of science and technology today, people's living standards have greatly improved, and the requirement of drugs is also increasing. Drugs with fewer side effects become everyone chase which can improve physical health efficiently. So China's pharmaceutical industry is in constant research and innovation. The future of pharmaceutical industry is mixed of development and competition.

Therefore, this paper selects the pharmaceutical industry as a research object, tries to investigate the effect of ownership structure on corporate performance which have a practical significance for the progress and development of the pharmaceutical industry. We use GTA database to gather the relevant data of the pharmaceutical industry in 2013, excluding the ST companies and enterprises with incomplete information disclosure, a total of 134 companies.

2. The study hypothesis
In the companies with high concentration of equity, the major shareholder holds the most equity has a higher desire to participate in business, and they supervise the agents more actively. What's more, the major shareholders use rational motivation methods and monitoring mechanisms to promote the agents to complete the task given by shareholders. However, if the concentration of equity is low, the cost of exercising the powers will higher, so hey tend to be lazy with their rights and ignore the supervision of managers which is not good to improve the corporate performance. Therefore, we make the first assumption H1: ownership concentration and corporate performance is proportional. [6]

And, in today's enterprise, the phenomenon of information asymmetry is universal, which is likely to make the controlling shareholder to grab the interests of other shareholders. Therefore, a high degree of equity restriction can effectively reduce the incidents against the interests of small shareholders. Accordingly, we make the second hypothesis H2: equity restriction and corporate performance is proportional.

3. The variables design

This paper focuses on three main variables: the interpreted variables, the explanatory variables and control variables, specifically shown in the following table: [7]

Table 1   The variables design

Variable attributes	Variable name	Variable symbol	Formula
Interpreted variables	EPS	EPS	Net profit / total number of shares
	ROA	ROA	EBIT / average total assets
	ROE	ROE	Profit after tax / Total Equity
Explanatory variables	The ratio of the largest shareholder	CR1	The shares number of the largest shareholder / Total equity
	H5 index	H5	Quadratic sum of the top five shareholders' shares
	Z index	Z	The share ratio of the largest shareholder / second largest shareholder
Control variables	Company size	SIZE	The natural logarithm of the company's total assets
	Asset-liability ratio	FZ	Total liabilities / total assets * 100%

(1) The interpreted variables: corporate performance refers to operating results during a certain period. The common evaluation indicators of corporate performance include: return on equity (ROE), earnings per share (EPS), Tobin's Q value. In order to reflect the company's performance more fully and accurately, this paper selects EPS, ROA and ROE to measure the company's operating performance.

(2) The explanatory variables: this paper selects the ratio of the largest shareholder to measure the concentration of ownership. In the equity restriction, this paper selects H5 index and Z index. H5 is the Herfindahl index. When H5 index is closer to 1, this means that the equity restriction is lower. Z index shows the proportion of the largest shareholder and the second largest shareholder, the bigger Z value is , the greater the power of the largest shareholder and the lower the level of equity restriction.

(3) We take the relevant factors which would affect the argument of this paper into consideration; this paper selects two control variables, the company size and the corporate debt scale, and we use asset-liability ratio to express the debt scale.

THE EMPIRICAL ANALYSIS
1. Descriptive statistics

Before performing correlation tests in this article, we describe the selected variables under analysis at first: [8]

Table 2   Descriptive statistics

Indicator	N	Minimum	Maximum	Mean	Std. Deviation
EPS	134	-.74	3.34	.5169	.56336
ROA	134	-.26	.25	.0724	.07087
ROE	134	-.57	.42	.0987	.11445
CR1	134	.04	.75	.3386	.15359
H5	134	.00	.56	.1560	.11751
Z	134	1.03	166.27	8.7157	16.22454
FZ	134	.02	.86	.3277	.20443
SIZE	134	19.31	24.11	21.6469	.92143

As can be seen from Table 2, the average revenue of EPS is 0.52, ROA is 0.0724 and ROE is 0.0987. Besides, the discrete of corporate performance is small, this means development of pharmaceutical industry trends more consistent. However, we can see that some companies show negative number of EPS, ROA and ROE, it is necessary to remind these companies to take actions to improve their performance.

In addition, the largest ratio of the largest shareholder is up to 75 percent while the smallest ratio of the largest shareholder is only 4%, indicating a greater dispersion in the largest shareholder's share of the pharmaceutical industry. And, in equity restriction, the gap between the pharmaceutical industry enterprises is relatively large.

In terms of control variables, the debt scale of each enterprise in the pharmaceutical industry is from 0.02 to 0.86. There is a clear difference between companies of the pharmaceutical industry. The mean is 0.3277, slightly set at 0.5, indicating that the debt scale of the pharmaceutical industry is smaller compared to other sectors. From the size of the company, the gap between the pharmaceutical companies is small and the size is more concentrated.

2. Pearson correlation analysis

Table 3   Pearson correlation analysis

		EPS	ROA	ROE	CR1	H5	Z	FZ	SIZE
EPS	Pearson Correlation	1	.650**	.606**	.181*	.151	.004	-.257**	.400**
	Sig. (2-tailed)		.000	.000	.036	.081	.963	.003	.000
	N	134	134	134	134	134	134	134	134
ROA	Pearson Correlation	.650**	1	.870**	.178*	.187*	-.023	-.414**	.172*
	Sig. (2-tailed)	.000		.000	.040	.030	.790	.000	.047
	N	134	134	134	134	134	134	134	134
ROE	Pearson Correlation	.606**	.870**	1	.189*	.189*	.009	-.272**	.273**
	Sig. (2-tailed)	.000	.000		.029	.029	.914	.001	.001
	N	134	134	134	134	134	134	134	134
CR1	Pearson Correlation	.181*	.178*	.189*	1	.961**	.457**	-.156	.198*
	Sig. (2-tailed)	.036	.040	.029		.000	.000	.072	.022
	N	134	134	134	134	134	134	134	134
H5	Pearson Correlation	.151	.187*	.189*	.961**	1	.471**	-.195*	.167
	Sig. (2-tailed)	.081	.030	.029	.000		.000	.024	.054
	N	134	134	134	134	134	134	134	134
Z	Pearson Correlation	.004	-.023	.009	.457**	.471**	1	.012	.087
	Sig. (2-tailed)	.963	.790	.914	.000	.000		.890	.320
	N	134	134	134	134	134	134	134	134
FZ	Pearson Correlation	-.257**	-.414**	-.272**	-.156	-.195*	.012	1	.232**
	Sig. (2-tailed)	.003	.000	.001	.072	.024	.890		.007
	N	134	134	134	134	134	134	134	134
SIZE	Pearson Correlation	.400**	.172*	.273**	.198*	.167	.087	.232**	1
	Sig. (2-tailed)	.000	.047	.001	.022	.054	.320	.007	
	N	134	134	134	134	134	134	134	134
** *. Correlation is significant at the 0.01 level (2-tailed).*									
* *. Correlation is significant at the 0.05 level (2-tailed).*									

From the Pearson correlation analysis table, we can see that, the ratio of the largest shareholder and EPS show a positive correlation at the 0.05 level, which means the higher the ownership concentration, the greater the earnings per share. The relationship between the H5 index and EPS or Z index and EP is not significant, illustrating the effect of the degree of equity restriction on EPS is not significant. In addition, asset-liability ratio and EPS at 0.01 confidence level negatively correlated and the size of the company and EPS are positive correlation.

Secondly, from the perspective of ROA, the ratio of the largest shareholder and ROA show a positive correlation at 0.05 confidence level, also H5 index and ROA are positively correlated, indicating that the higher ownership concentration and smaller equity restriction means greater corporate performance. However, the relationship between Z index and ROA is not significant. Also, the debt scale is negatively correlated with ROA and the size of companies and ROA are significant positive correlation.

In addition, three corporate performance variables EPS, ROA and ROE, show a significant positive correlation between each other. The explanatory variables of ownership structure, there are also a significant positive correlation between CR1, H5 index and Z index. Also, the debt scale is negatively correlated with EPS, ROA and ROE. In addition, the size of companies and EPS, ROA, ROE are significant positive correlation. Therefore, the variables we selected are in a big co linearity, so it is not suitable for multiple linear regression analysis.

CONCLUSION

Based on the Pearson correlation analysis, ownership concentration and corporate performance show a significant positive correlation in the pharmaceutical industry. In the above analysis, we can see, there is a significant positive correlation between CR1 and EPS, CR1 and ROA, CR1 and ROA. Therefore, the first hypothesis H1 of this paper established, that is to say higher concentration of the company's equity bring the better performance of the company. In addition, H5 and ROA, H5 and ROE show a positive correlation, but the relationship between Z and corporate performance is not significant. We can make a conclusion that, in a certain degree, equity restriction and corporate performance show a significant positive correlation, which is opposite to the second hypothesis H2.

Through the above study, we can say that a way to improve corporate performance of the pharmaceutical industry is to improve the ownership concentration and reduce equity restriction. Therefore, some companies with lower ownership concentration can improve their performance by increasing the concentration of ownership. That means major shareholders can increase their stakes in improving corporate ownership concentration and lowing equity

restriction, in order to improve business performance.

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