Research on Influencing Factors of M&A Performance in China' Listed Companies
——Based on the Perspective of Property

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Abstract—This paper studied the differences of mergers and acquisitions' performances between state-owned and private enterprises using the factor analysis, following this was the regression analysis of the factors affecting the performance of M&A from the perspective of government intervention. The empirical results show that there are differences between state-owned and non-state-owned listed companies in M&A performance. Financing quantity is positively related to the M&A performance. Free cash flow and degree of social responsibility are negatively related to the M&A performance. Controlling shareholder equity ratio has heterogeneity effect on M&A performance.

Keywords: M&A performance; nature of property; government intervention

I. INTRODUCTION

Mergers and acquisitions, collectively known as a method of efficient resource allocation, have an important role in promoting the development of productivity of the entire community. By the financial crisis in 2009, in order to stimulate economic development, Chinese government promulgated the "four trillion" investment plan and issued ten industrial revitalization plan, which "mergers and acquisitions" was referred to a high position. Because state-owned enterprises obtained the "four trillion" investment program support, while private enterprises were affected by the financial crisis and the liquidity crunch, the performance of state-owned enterprises and private enterprises is very different in M & A market. Thus, the controversy of "national progress, people regress" reached a climax stage. Whether the performance of state-owned enterprises after the merger is superior to Non-state-owned enterprises has become the focus of controversy. In this case, exploring whether there are differences in acquisition performance between the state and non-state-owned enterprises, and researching the factors that caused these differences have important significance.

In the M&A performance study, scholars have come to inconsistent conclusions. Dodd (1980) found that in (-1,0), (-40,0), (+1, +40) window period acquirers have received positive abnormal returns. Agrawal(1992) found that the cumulative abnormal returns of the acquiring party were negative within three years after the merger. Zhang Xin (2003) findings suggested that the cumulative abnormal returns acquirer was -16.76%. Yu Li and Liu Ying(2004) found that the acquiring party obtained cumulative abnormal returns but not significantly. However, at this stage in the country, literature on mergers and acquisitions from the perspective of property rights is not much, which analyzed mergers and acquisitions from the point of view of state-owned enterprises and local government. Results of Li Zengquan , Yu Qian and Wang Xiaokun (2005) indicated that the behavior of the controlling shareholder and local government would have a significant impact on the nature of listed companies acquisitions. Pan Hongbo's (2008) study showed that for profit companies, government intervention made the acquirer performance decline; for loss companies, government intervention can enhance the performance of the acquiring party. Li Tianxiang, Gan Shengdao and Tan Shunping(2012) using Tobin's Q value method found that the M&A performance of non-state-owned listed company is better than state-owned listed companies, and proposed to improve the performance of state-owned listed companies merger proposal from the aspect of internal governance mechanisms etc.

II. HYPOTHESIS

In terms of government intervention, because of the large costs of state-owned enterprises, Government is more likely to achieve its own ends by affecting the business activities of state-owned enterprises. First of all, government is the ultimate investor of state-owned enterprises and the ultimate bearers of operating results, which allows banks and other financial institutions tend to lend to state-owned enterprises. Secondly, government is in favor of state-owned enterprises in mergers and acquisitions in the allocation of resources and

barriers to entry and other aspects. The government will promote their corporate mergers and acquisitions. They will provide preferential policies in taxation and other aspects and also seek funding support for enterprises through their influence. (such as the impact on banks' credit decisions tend to state-owned enterprises). So state-owned enterprises are easier to loan in the M&A activity than non-state-owned enterprises. In the case of monetary tightening in 2009, the corporate which loan easily and has more free cash flow mergers quality assets more easily, then enhances M&A performance. Therefore, the paper puts forward the first hypothesis:

A. Hypothesis 1:

Borrower number and free cash flow impact M&A performance, and put a positive correlation with the M&A performance.

The government usually requires the enterprises of state-owned to maintain the scale of their employees to prevent the social problems caused by layoffs; Increasing revenues is one of the government's key objectives, and the government will require state-owned enterprises to maintain their tax level. From these two aspects, the state-owned enterprises in the "ratchet effect" are more seriously than the non state-owned enterprises. When some local enterprises are troubled in mismanagement, the government will generally require state-owned enterprises to merger and regroup them in order to prevent bankruptcy employment and social stability, thereby it also increases the state-owned corporate social responsibility. Therefore, when companies undertake more social responsibility, their objectives and the pursuit of profit goal are inconsistent, which will affect enterprises' performance. In other words, the higher the degree of social responsibility, the lower the performance of mergers and acquisitions performance. Therefore, the paper puts forward the second hypothesis:

B. Hypothesis 2:

The degree of corporate social responsibility impacts M&A performance, and puts a negative correlation with the M&A performance.

Government has the motivation of supporting and intervening state-owned enterprises. But because listed companies have more perfect governance mechanism, the realization of government will be affected by the corporate internal governance structure. When shareholders who hold position in listed companies have low shareholding proportion, the motivation of private benefits of control is stronger. In state-owned enterprises, the losses of companies' interests caused by the transfer of Government policy burden are born by all shareholders. But a lower stake makes the motivation of government rejected by other shareholders and it can't be achieved smoothly. When the controlling shareholder's stake is higher, the ability of obtaining private benefits of control is higher, but they must bear the most of the losses and make its motivation of obtaining private benefits diminished. Therefore, when the controlling shareholder in a lower shareholding, the motivation of merger and acquisition further deviate from

the goal of profit, while controlling shareholder have a higher motivation of profit when at a higher stake. Therefore, the paper puts forward the third hypothesis:

C. Hypothesis 3:

Under the lower shareholding, mergers and acquisitions' performance is negatively related to the controlling shareholder's ownership; under the higher stake, mergers and acquisitions' performance is positively related to the controlling shareholder's stake.

III. RESEARCH AND DESIGN

A. Sample and Data Sources

This paper takes the listed companies occurring mergers and acquisitions in 2009 as the objects of study. The information and financial indicators of them are from GTA database "China Stock Market Research Database". The samples remove unsuccessful mergers and acquisitions transactions, financial and other enterprises to give 267 listed companies, including 144 state-owned listed companies and 123 non-state-owned listed companies.

B. Explanatory Variables (financial performance) Measurement

1) The design of index system: This paper using financial index method studied before and after M&A financial performance of listing corporation in China. The selected indicators are as follows: ROE (X1), return on total assets (X2), earnings per share (X3), cash flow per share (X4), and total assets turnover (X5), which can reflect the company's financial performance from the aspects of profitability, cash capability and operational capacity, etc.

2) Test the suitability of factors: This paper using SPSS17.0 software draws that the KMO values of the pre-merger year (F^{-1}), then M (F^0), one year after the merger (F^1), two years *after* the merger (F^2) are 0.758, 0.72, 0.698, 0.758, and the description sig is less than 0.01, which testifies there is a correlation between the data and factor analysis of sample data.

3) Determine the number of common factors: The results show that after each rotation of the cumulative variance contribution rate reaches more than 85%, which proves the extracted factor can well explain and interpret the raw data. Then following the common factor variance contribution *rate*, we calculated the factor scores and came to each company's composite score of the year. Composite score model is as follows:

$$F_i = b_{i1}Y_{i1} + b_{i2}Y_{i2} + b_{i3}Y_{i3} .$$

F_i represents the i-th company's overall score, likewise, b_{ij} is the i-factor j companies' variance contribution rate and Y_{ij} is the i-factor j companies' scores.

4) Comprehensive factor score calculation

TABLE I. COMPONENT SCORES FOR EACH YEAR

2008	Y1	Y2	Y3
X1	0.438	-0.207	-0.071
X2	0.403	-0.12	0.027
X3	0.318	0.153	-0.067
X4	-0.173	1.008	-0.084
X5	-0.083	-0.095	1.025
2009	Y1	Y2	Y3
X1	0.397	-0.104	-0.052
X2	0.408	-0.198	-0.018
X3	0.31	0.187	-0.072
X4	-0.137	0.96	-0.036
X5	-0.105	-0.043	1.026
2010	Y1	Y2	Y3
X1	0.413	-0.108	-0.067
X2	0.383	-0.058	-0.029
X3	0.339	0.073	-0.044
X4	-0.077	1.017	-0.101
X5	-0.101	-0.102	1.039
2011	Y1	Y2	Y3
X1	0.397	-0.128	-0.084
X2	0.359	-0.006	0.012
X3	0.369	0.015	-0.035
X4	-0.091	1.017	-0.081
X5	-0.081	-0.082	1.02

According to the table, we can draw the scores for each of the factors, and in accordance with each factor variance contribution rate we can reach the composite score for listed companies of the year.

$$F_i^{-1} = 48.83\% \, Y_{i1}^{-1} + 21.82\% \, Y_{i2}^{-1} + 20.34\% \, Y_{i3}^{-1}$$

$$F_i^0 = 51.73\% \, Y_{i1}^0 + 22.08\% \, Y_{i2}^0 + 20.27\% \, Y_{i3}^0$$

$$F_i^1 = 48.92\% \, Y_{i1}^1 + 20.36\% \, Y_{i2}^1 + 20.21\% \, Y_{i3}^1$$

$$F_i^2 = 49.61\% \, Y_{i1}^2 + 20.39\% \, Y_{i2}^2 + 20.25\% \, Y_{i3}^2$$

According to the composite score, we obtain the mean score for each year. As shown in the table below:

TABLE II. COMPOSITE SCORE TABLE (MEAN)

	F^{-1}	F^0	F^1	F^2	F^0-F^{-1}	F^1-F^0	F^2-F^1	F^2-F^0
All listed companies	0.0483	0.0458	0.0435	0.0496	-0.0025	-0.0023	0.0062	0.0039
Listed Companies	0.0157	0.0091	0.0206	0.0642	-0.0066	0.0115	0.0436	0.0552
Non-state-owned listed companies	0.0864	0.0888	0.0703	0.0325	0.0023	-0.0185	-0.0377	-0.0562

As can be seen from the table:

For all the listed companies, mergers and acquisitions performance is worse than the previous year, while performance of the year after the merger and post-merger has been improved.

The performance of state-owned listed companies began to been improved steadily after the year of mergers.

The M&A performance of Non-state-owned listed companies is poor, but their mean composite scores of 2008,2009,2010 are higher than the state-owned listed companies, however in 2011 the scores show a larger reversal.

C. Model Construction

To verify the hypothesis, we establish the following regression model:

$$\Delta F = \beta_0 + \beta_1 Debt + \beta_2 Cash + \beta_3 DShr + \beta_4 UShr + \beta_5 Sor + \beta_6 Large + \beta_7 Sma + \varepsilon$$

ΔF represents M&A performance, which is obtained 2011 composite score minus the 2009 composite score; $Debt$ represents the number of financing, that is $Debt =$ (Long-term borrowings + Short-term borrowings) / Equity; $Cash$ represents free cash flow, that is $Cash =$ Free cash flow / Equity; $DShr$ and $UShr$ represents the largest proportion of shareholding, which draws the segmentation method of Li Zengquan and others(2004).Their paper studies the relationship of the controlling shareholder stake and the M&A performance. The standard of $DShr$'s value is that when the first largest shareholding ratio is higher than 50%, the proportion of the largest shareholder minus 50%, conversely, the value is 0; Sor represents the degree of corporate social responsibility commitments, which considers a cash benefit ratio of workers, employee profit ratios and the proportion of income taxes paid. Then we obtained the composite score of the degree of corporate social responsibility commitments. Employee cash benefit ratio = (Cash payments to employees) / (Cash receiving from Enterprise selling goods or services); Employee cash profit ratio = (Cash payments to employees) / (Enterprises operating income); Proportion of income taxes paid = Cash payment of taxes / Revenue. $Large$ represents the scale of the enterprises, which is the total assets removing the natural logarithm and eliminating the differences in dimension; Sma means to belong to the jurisdiction. If the merger parties are the same province, the value is 1, otherwise, the value is 0. This variable to a certain extent reflects the existence of government intervention in M&A events.

The economic significance of the model is worthy to be considered. ΔF represents the performance of M&A and $Debt$, $Cash$, $DShr$, $UShr$, Sor represents the factors of M&A performance, which have an impact on M&A when the merger occurs. So we select the data acquisition beginning of the year, which has a cross-sectional nature.

IV. EMPIRICAL RESULTS AND ANALYSIS

A. Sample descriptive statistics

Levene test and F test shows that the difference of each variable is significant in the state-owned enterprises and non-state-owned enterprises. so it is necessary to distinguish the regression results of state-owned enterprises and Non-state-owned enterprises.

B. Regression results and analysis

TABLE III. REGRESSION RESULTS

Variable name		Mean	Standard deviation	Levene test (F)	Two independent samples' t-test
ΔF	State-owned enterprises	0.0552	0.5636	1.980	1.82*
	Non-state-owned enterprises	-0.0562	0.4122		
$Debt$	State-owned enterprises	0.6157	0.6950	3.20**	-2.55**
	Non-state-owned enterprises	0.4908	0.3547		
$Cash$	State-owned enterprises	0.3860	0.4559	20.79***	-1.89**
	Non-state-owned enterprises	0.2776	0.2110		
$DShr$	State-owned enterprises	0.3764	0.1212	1.140	2.77***
	Non-state-owned enterprises	0.3360	0.1158		
$UShr$	State-owned enterprises	0.0280	0.0659	2.330	1.173
	Non-state-owned enterprises	0.0190	0.0570		
Sor	State-owned enterprises	0.2365	0.1302	7.59**	1.59*a
	Non-state-owned enterprises	0.2131	0.1097		
$Large$	State-owned enterprises	0.2216	0.0143	18.62**	4.91***
	Non-state-owned enterprises	0.2146	0.0085		

Note: ***, **, *, *a is significant for the 1%,5%,10% and 15% confidence level respectively.

Regression results show that $Debt$ positively related to the mergers and acquisitions performance, which supports the hypothesis 1. $Cash$ negatively related to the mergers and acquisitions performance, and the coefficient of all state-owned listed companies and non-state-owned listed companies is not significant, which goes against the assumption of this article and consistent with Jensen (1986) free cash flow hypothesis. In other words, the more free cash flow, mergers and acquisitions are more likely to over-investment, thus the performance of mergers and acquisitions declined. The regression results of $Debt$ and $Cash$ shows that limiting the level of free cash flow hold and moderate debt can improve business performance.

Sor negatively related to the M&A performance, which verifies the hypothesis 2 of this study. This means that if the enterprises take more social responsibility, the performance of mergers and acquisitions will be decreased. $DShr$ positively related to the mergers and acquisitions performance, and $UShr$ negatively related to the mergers and acquisitions performance, which verified the hypothesis 3. Sma's coefficient of all listed companies and state-owned listed companies is positive and significant, but the coefficient of Non-state-owned listed companies is negative and not significant, which shows that the state-owned listed companies belonging to the jurisdiction have a positive impact on M&A performance, and to some extent, government's support for mergers and acquisitions of state-owned listed companies will increase their acquisition performance.

V. CONCLUSIONS

The empirical results show that a high degree of enterprises' social responsibility reduces the acquisition performance. Companies should bear the social responsibility, but they should distinguish between corporate responsibilities and the policy burden. Policy burdens transferred from government belong to the scope of social management functions, so it should be returned to the government and be undertaken by the government.

When the controlling shareholder's ownership percentage is low, acquisition performance is negatively related to the controlling shareholder equity ratio; on the contrary, acquisition performance is positively related to the controlling shareholder equity ratio. The heterogeneity of Shareholding ratio and M&A Performance shows that good internal governance structure can effectively suppress the controlling shareholder "tunneling" of listed companies through acquisition, and it can reduce the impacts of government intervention on the mergers and acquisitions. M&A supported by the Government improves the business performance, which does not mean that the government should be more involved in merger and acquisition activity. When the government's objectives and improve business performance deviate, the government intervention is likely to reduce the M&A performance.

REFERENCES

[1] Li Zeng-quan, Yu Qian, Wang Xiao-kun.Hollowed out, support, mergers and acquisitions - from empirical evidence of listed companies in China [J]. Economic Research, pp,95-104, January 2005.

[2] Li Zeng-quan, Sun Zheng, Wang Zhi-wei. "Hollowed out" and the ownership arrangements - from major shareholders of listed companies funds used empirical evidence [J]. Accounting Research, pp,3-13, December 2004.

[3] Pan Hong-bo, Xia Xin-ping, Yu Ming-gui.Government intervention, political association and mergers and acquisitions of local state-owned enterprises [J]. Economic Research, pp,41-52,April 2008.

[4] Lin Yi-fu, Cai Fang, Li Zhou. On China's gradual economic reform path[J]. Economic research, September 1993.

[5] Zhang Xin. Whether mergers and acquisitions create value [J]. Economic Research, pp,20-29, June 2003.

[6] Zhu Hong-jun, Wang Hui.The long-term wealth effect of acquisition [J]. Financial Research, pp,102-113, September 2005.

[7] Yu Li, Liu Ying. M&A Performance's empirical analysis of Chinese listed companies[J]. Modern Economic Science, pp,68-74, April 2004.

[8] Coase. R.H. The Nature of the firm[J]. Economica, pp,384-405, April 1937

[9] P. Dodd. Merger Proposals, Management Discretion and Stockholder Wealth[J].Journal of Financial Economics,pp,105-138, August 1980.