

The research of negotiated acquisition's premium of listed companies

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Abstract

In recent years, the mergers and acquisitions premium rate has been rising rapidly, totally beyond the rational expectations of the capital market and investors. Thus, this paper constructs the theoretical model based on the features of target companies in negotiated acquisition. The study found that: the relationship between the target company's scale and the premium of the negotiated acquisition changes with the nature of the equity, which also happens on the relationship between the asset liability ratio and the premium. In addition, the state-owned equity obtains acquisition premium which is significantly lower than the non-state owned equity.

Key words: *the negotiated acquisition's premium, equity nature, company scale, asset liability ratio, empirical analysis*

1 Introduction

Looking back on the history of mergers and acquisitions in China, the failure of M&A is so prevalent that we have to find the root of it. Tracing the track of the history, one of the factors can't be neglected is the higher and higher M&A premium rate. In recent years, the M&A premium rate has been rising so rapidly, totally beyond the rational expectations of the capital market and investors. Over the past 10 years, the average M&A premium rate in China has been as high as 40 to 60 per cent, sometimes even more than 100 per cent, which has made the investors feel incredible and questioned whether the payment of M&A premium is reasonable. Therefore this article quantifies the premium of the negotiated acquisitions and makes an empirical analysis of the relevant variables involved in the deal based on the Chinese and foreign scholars' theory and the study of the status quo, hoping to provide some suggestions for the acquirers to give a reasonable acquisition premium during the merger.

Here is the structure of the paper. The second part will be the literature review and the research hypothesis. In the third part, we will do the empirical analysis. And the last part will show the conclusions.

2 Theoretical basis and research hypothesis

There are two main theories about the size of the target company: over-confidence theory and principal-agent theory. Malmendier and Tate found that managers are always overconfident and easy to overvalue the benefits they can get from larger target companies¹. Dai Hongyao found that the large scale of the company leads to the higher position in both the business and social level and the higher acquisition premium². Taking the previous study, the overconfidence theory and principal-agent theory into consideration, this paper puts forward hypothesis 1:

H1: There is a positive correlation between the negotiated acquisition's premium of listed companies and the size of target company.

Although the principal-agent theory and the control theory are from the different angle, they reach the same conclusion about the nature of equity. By studying the 138 M&A transactions the state-owned shares in 2002-2003, Pan Yan found that there is a positive correlation between the controlling stake and the acquisition premium³. Yu Jian studied the foreign M&A of Chinese listed companies in 2002-2009, found that compared with state-owned shareholders, non-state-owned shareholders acquire a higher premium of foreign acquirers⁴. Considering these studies, the principal-agent theory and the control theory, this paper puts forward hypothesis 2:

H2: The premium of the state-owned shares is lower than that of the non-state-owned shares.

The theory of supervision hypothesis and the assumption of occupation hypothesis are all related to the concentration degree of equity. The study of Hu Wenxiu and Jia Lina proved the theory of supervision hypothesis, they used stepwise regression to empirically test the 101 M&A events in 2005-2013, and found that the higher the proportion of major shareholders, the higher the premium of mergers and acquisitions⁵. However, the assumption of occupation hypothesis is on the opposite. This article is more inclined to believe that the higher ownership concentration degree, the lower the M&A premium. Therefore, this paper makes hypothesis 3:

H3: There is a negative correlation between the negotiated acquisition's premium of listed companies and the concentration degree of equity.

Except those three variables, there are another two variables the firm value and the asset-liability ratio. Theories about the firm value and the asset-liability ratio are much easier. Apparently, acquirers are more willing to pay more for a company with a higher value and a lower asset-liability ratio. Therefore, this paper makes hypothesis 4 and hypothesis 5:

H4: There is a positive correlation between the value of target company and the acquisition premium.

H5: There is a negative correlation between the asset liability ratio of target company and the acquisition premium.

3 Empirical analysis

3.1 Data sources and sample selection

This paper uses 212 negotiated acquisition samples from 2002 to 2012 which takes the listed company's equity as the subject and transfers the control right, recorded in the Chinese enterprise mergers and acquisitions yearbook. All those data are matched by CSMAR database. In addition, the initial samples are screened according to the following criteria:

- (1) Eliminate negotiated acquisitions in the financial industry
- (2) Eliminate samples with negative net assets
- (3) Eliminate the 0.5% special value of the main variable

3.2 The variables' definitions and the model design

3.2.1 The variables' definitions

In addition to the five explanatory variables, a series of control variables are also set up. More details are displayed by table 1.

Table 1– The variables' definitions

symbol	definitions	Measurement	
explained variable			
<i>Prem</i>	the negotiated acquisition's premium	(transaction price per share - net assets per share) / net assets per share	
explanatory variables			
<i>Valu</i>	the firm value	Tobin Q	
<i>Scal</i>	the firm scale	Ln(the firm's total assets)	
<i>Stoc</i>	the nature of the target equity	dummy variable, the value of state-owned shares is 1, others is 0	
<i>Herf</i>	the ownership concentration degree	Shareholding ratio of the largest shareholder	
<i>Debt</i>	the asset-liability ratio	the asset-liability ratio	
controlled variable			
<i>Artr</i>	average accounts receivable turnover ratio	<i>Dtl</i>	Comprehensive leverage
<i>Wctr</i>	working capital turnover	<i>Naps</i>	Net assets per share growth rate
<i>Totc</i>	turnover of total capital	<i>PE</i>	P/E (price/earning) ratio
<i>Roa</i>	Net profit margin of total assets	<i>Betj</i>	in the same jurisdiction or not
<i>Npcf</i>	Net cash profit	<i>Retr</i>	related transaction or not

3.2.2 the model design

In order to test the research hypothesis above, the econometric model designed in this paper is as follows. According to the above theoretical analysis, this paper predicts that $\beta_1 < 0$, $\beta_2 < 0$, $\beta_3 > 0$, $\beta_4 < 0$, $\beta_5 < 0$.

Model1:

$$\text{Prem} = \beta_0 + \beta_1 \text{Scal} + \beta_2 \text{Stoc} + \beta_3 \text{Valu} + \beta_4 \text{Herf} + \beta_5 \text{Debt} + \beta_6 \text{Artr} + \beta_7 \text{Wctr} + \beta_8 \text{Totc} + \beta_9 \text{Roar} + \beta_{10} \text{Npcf} + \beta_{11} \text{Dtl} + \beta_{12} \text{Naps} + \beta_{13} \text{PE} + \beta_{14} \text{Betj} + \beta_{15} \text{Retr} + \epsilon \quad (1)$$

Model2:

$$\text{Prem} = \beta_0 + \beta_1 \text{Scal} + \beta_3 \text{Valu} + \beta_4 \text{Herf} + \beta_5 \text{Debt} + \beta_6 \text{Artr} + \beta_7 \text{Wctr} + \beta_8 \text{Totc} + \beta_9 \text{Roar} + \beta_{10} \text{Npcf} + \beta_{11} \text{Dtl} + \beta_{12} \text{Naps} + \beta_{13} \text{PE} + \beta_{14} \text{Betj} + \beta_{15} \text{Retr} + \epsilon \quad (2)$$

3.3 Empirical results and analysis

3.3.1 Descriptive statistics

In table 2, the average of the premium is 221.5735%. In addition to the descriptive statistics, the correlation analysis shows that there is no correlation between the explanatory variables and the control variables.

Table 2– the descriptive statistics of the main variables

	<i>Prem</i>	<i>Valu</i>	<i>Scal</i>	<i>Stoc</i>	<i>Herf</i>	<i>Debt</i>
Mean	2.215735	3.226055	20.59213	0.443396	0.327498	0.769789
Median	0.451501	1.862028	20.58176	0	0.282093	0.545586
Maximum	5.640516	43.05011	23.24501	1	0.849672	15.98083
Minimum	-0.987817	0.315319	16.71232	0	0.014844	0.050642
Std.Dev.	41.65888	5.603263	1.023568	0.497962	0.169714	1.596143
Skewness	11.85927	5.312151	-0.497176	0.22788	0.858612	7.933933
Kurtosis	154.6521	33.34274	4.498946	1.051929	26.04891	70.67771
Jarque-Bera	208121.6	9129.761	28.58091	35.35715	0.000002	42683.21

3.3.2 Multiple regression analysis

Table 3 shows the results of the multiple regression, the second column shows the regression results of model 1, the third column is the regression results of model 2 when the equity is state-owned while the fourth column is the regression results of model 2 when the equity is non-state-owned.

The relationships between the firm value, the nature of the equity, the ownership concentration degree, the asset liability ratio and the acquisition premium are all within expectation. Beyond what we expected is that there is a significant negative correlation between the size of target company (Scal) and the acquisition premium (Prem), which is completely contrary to the assumptions made above, but consistent with the research

conclusion of Gorton et al., Alexandridis et al.⁶ and Li yishi⁷. The potential acquirers shrink back at the sight of large company scale, which results in the lower levels of competition and the lower acquisition premium. In addition to the lower levels of competition, mergers and acquisitions of large companies are likely to bring value risks. During this process, the acquirer will have to bear great costs and uncertainties, which make them take the great risks into consideration. That is why a high premium will not be offered when it comes to large-scale target companies.

When we comparing the model 2 (1) and model 2 (2) in table 3, what confused us is that the significant correlation between the firm size and the acquisition premium suddenly disappears

Table 3– The regression results

Variables	Model1	Model2(1)	Model2(2)
C	80.28088*** (2.639498)	-7.763507 (-0.473601)	106.0707*** (2.159469)
Scal	-3.503854*** (-2.420872)	0.142475 (0.186304)	-4.783529*** (-2.026787)
Stoc	-3.910621* (-1.53972)	/	/
Herf	-5.815514 (-0.801689)	-3.377239* (-1.335665)	-5.040367 (-0.308846)
Valu	0.653428*** (2.380954)	1.280167*** (4.13014)	0.766838*** (1.960368)
Debt	-2.621345*** (-3.343)	9.989649*** (4.951599)	-3.059196*** (-2.869311)
Artr	-0.002334 (-0.913659)	0.010532 (0.55644)	-0.00221 (-0.649601)
Wctr	-0.02193 (-0.568893)	-0.000869 (-0.072582)	-0.122806 (-0.759)
Totc	-0.020668 (-0.009674)	-0.42722 (-0.418327)	-0.267305 (-0.048891)
Roa	25.20916*** (30.81498)	-0.953786 (-0.143709)	24.90095*** (22.46736)
Npcf	-0.000362 (-0.005602)	0.048391 (0.711102)	-0.011368 (-0.126502)
Dtl	-0.021863 (-0.157604)	0.03824 (0.412875)	-0.032639 (-0.147021)
Naps	-0.930681** (-1.086267)	0.254008* (1.456954)	-3.718524* (-1.586153)
PE	-0.001389 (-0.971701)	-0.002716 (-0.998923)	-0.001404 (-0.731528)
Betj	-2.547702 (-1.109405)	-0.823676 (-0.95274)	-2.564566 (-0.59219)
Retr	5.800351* (1.455315)	-0.670647 (-0.425909)	11.45416* (1.590785)

when the equity is state-owned and that relationship completely reverses when the equity is non-state-owned. This strange reversal forces us to pause and think. This results delivers the message that when the equity is state-owned, there will be no excessive consideration of the

size of the target company, while the equity is non-state-owned, the acquirer will be more concerned about the risk of the deal and expected synergistic effect.

The same phenomenon happens on the relationship between the asset-liability ratio and the premium of negotiated acquisition. The difference of the nature of the equity directly leads to different relationship. The relationship between those two variables is totally on the opposite of our hypothesis but consistent with the studies of Harris, Raviv and Stulz. It is undeniable that, from the shareholders' point of view, shareholders want to invest less, make the asset liability ratio higher, and expand the basis for enterprise profits, then just control the whole enterprise with a smaller investment. This explains why there exists a positive relationship between the asset-liability ratio and the premium of negotiated acquisition.

We also do the robustness test, the results are not changed which suggests that the model is relatively stable.

4 Conclusions

This paper constructs the theoretical model based on the features of target companies in negotiated acquisition, and found that: the acquisition premium state-owned equity obtains is significantly lower than the non-state owned equity. And also, between the target company's scale and the acquisition premium, there exists a negative correlation and this relationship changes with the nature of the equity. The same phenomenon also happens on the relationship between the asset-liability ratio and the acquisition premium.

In this paper, less attention is paid to the relevant indicators of acquirers. In the follow-up study of mergers and acquisitions premium, we can pay more attention to the relevant indicators of the acquirers. Moreover, more attention be paid to other kinds of acquisitions.

References

1. *Malmendier, Ulrike; Tate, Geoffrey*. Who makes acquisitions? CEO overconfidence and the market's reaction. *J. Journal of Financial Economics*. **89** (2008) 20-43.
2. *Dai Hongyao*, an empirical study on the factors affecting the acquisition premium of Listed Companies in China. D. Changchun: Master's degree thesis of Jilin University, 2013.
3. *Pan Yan*. Study on the transfer of state-owned shares. M. Beijing: Science Press, 2007.18-42.

4. *Yu Jian*. Property right nature, corporate value and foreign acquisition premium -- An empirical study of equity acquisition of foreign listed companies in 2002 - 2009.J.Journal of Liaoning University.**38** (2010): 29-36.
5. *Hu Wenxiu, Jia Lina*. Research on factors affecting merger premium from the perspective of M & A motivation.J..Journal of Xi'an University of Technology, **30** (2014): 238-245.
6. *G.Alexandridis,D.Petmezas,N.G.Travlos*.Gains from mergers and Acquisitions Around the World: New Evidence,J.Financial Management.**39** (2010) 1671-1695.
7. *Li Yishi*. Research on the relationship between M&A premium and the company's scale.J.Journal of Guangxi University of Finance And Economics, **27** (2014) 20-23.