

An Empirical Analysis of M & A Performance of Chinese Listed Companies

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Abstract—This paper chooses the listed companies of M & A events in Shanghai and Shenzhen stock markets in 2012 as research samples, using factor analysis to analyze the performance of the two years before the M & A and the three years after the M & A. The results show that: M & A short-term is effective, long-term is invalid. In addition, using the multiple regression model to analyze the influence factors of M & A performance of listed companies, the empirical results show that the related party transactions have no significant impact on the performance of M & A, the cash payment as a way of payment to improve corporate performance in the short term.

Keywords-M&A; factor analysis; long-term performance

I. INTRODUCTION

Enterprise growth can be achieved through internal accumulation and M & A, compared to internal accumulation, M & A can

achieve faster capital concentration, economies of scale, cross-sectoral business and industrial chain expansion. Whether the M & A behavior of listed companies will increase shareholders' wealth has received wide attention from all sectors of society.

The study by Eckbo and Thorburn (2010) shows that the ratio of target firm to acquisition firm has a significant effect on the excess returns of the acquirer, Rau and Vermaelen (2012) found that the merger did not receive excess returns. [1] Muller (2010) and Raven use the comparison of operating results to show that the earnings of the company after M & A decline year after year. [2] there are differences in the findings of domestic M & A performance, Wang Songtao and Wen Xian yuan argue that different research conclusions are mainly due to different research methods. [3] Zhang xin research that after the acquisition, target corporate profitability has improved, While mergers and acquisitions have declined. [4] Tang Jianxin and He Hong studied the M & A events of listed companies from 2008 to 2010, found that there were positive synergies in the short term and negative synergies in the long run. [5] Zhang Yi and Qiao Yuanbo found that mergers and acquisitions of listed companies is inefficient and did not achieve the integration of both resources and value creation. [6]

The current scholars' research on M & A performance is mainly focused on the one year after M & A and less on the

performance of M & A in the three years after M & A. In order to better detect the factors of M & A, This paper selects 36 M & A events in 2012 as a sample to study the M & A performance of listed companies, study the performance changes of M & A two years ago and three years later, validate the hypothesis by regression analysis, And draws the influence of each factor on the long-term and short-term performance of M & A performance of Chinese listed companies.

II. M & A PERFORMANCE EVALUATION

A. Selecting Sample

Studying the M & A performance of listed companies by comparing the performance change of listed companies, the paper selects 36 M & A events of listed companies in China in 2012 as a sample. Screening criteria: (1) Selecting the M&A events that M&A companies accounted for more than 30% stake after the merger; (2) excluding ST companies, to avoid the special type of financial data of ST company interference analysis results; (3) excluding the acquisition of the remaining shares of the holding company by the M & A company, because the business activities of the target enterprise have been significantly influenced by the M & A company before the M & A, and included in the consolidated statement; (4) Due to the special nature of the industry indicators, excluding mergers and acquisitions enterprises belong to the financial and integrated industry; (5) In order to avoid the impact of multiple acquisitions on corporate performance, excluding the acquisition of two years before and after three years occurred in other mergers and acquisitions of the company; (6) excluding B shares, H shares, because this paper focuses on the performance of A-share listed companies. The data of this paper are from: CSMAR M & A Research Database of Chinese Listed Companies, M & A Disclosure Report, 2012 M & A Financial Report Data and Juchao Website.

Payment means the payment method used by the buyer to obtain the seller's assets: Q1602 = Cash payment, Q1603 = Stock payment, Q1607 = Mixed payment of cash and stock items.

TABLE I. TYPES OF MERGERS AND ACQUISITIONS AND INDUSTRY DISTRIBUTION

number	Security Code	payment method	number	Security Code	payment method
1	000100	Q1602	19	600649	Q1602
2	600132	Q1602	20	600754	Q1602
3	000712	Q1602	21	000698	Q1603
4	600823	Q1602	22	002269	Q1602
5	000616	Q1602	23	002114	Q1603
6	600458	Q1602	24	600988	Q1602
7	600030	Q1602	25	000938	Q1603
8	601600	Q1602	26	002577	Q1602
9	000718	Q1602	27	000999	Q1602
10	000918	Q1602	28	002065	Q1607
11	600466	Q1602	29	000547	Q1607
12	600325	Q1602	30	600596	Q1602
13	600208	Q1602	31	600141	Q1602
14	000553	Q1602	32	600398	Q1602
15	002146	Q1602	33	600594	Q1602
16	600970	Q1602	34	600340	Q1602
17	002305	Q1602	35	002567	Q1602
18	601958	Q1602	36	002230	Q1602

B. Selecting the Financial Indicators

The purpose of M & A of listed companies is mainly reflected in the aspects of improving profitability and development ability, enhancing debt repayment ability, improving capital operation efficiency and value creation ability. Li Shanming, Xu Guoxiang evaluate on M & A Performance from five aspects: Capital Structure, Solvency, Profitability, Development Capability and Asset Management Capability, [7] Zhang Yi and Qiao Yuanbo

studied from the first four aspects. Taking into account the disclosure of listed companies may be unrealistic data, so increase the value of the creation of indicators EVA, Because of the scale difference of listed companies, in order to unify the scale, we adopt EVA per share and total assets EVA relative index to express the value of listed companies. Select the listed companies M & A performance evaluation indicators in table 1.

TABLE II. SELECTION OF FINANCIAL PERFORMANCE INDICATORS OF M & A PERFORMANCE OF LISTED COMPANIES

Indicator type	Index selection	Indicator type	Index selection
Solvency	Current ratio	Operating capacity	Receivable turnover ratio
	Tangible asset - liability ratio		Inventory turnover
	Equity - to - liability ratio		Comprehensive income per share
	Net cash flows / liabilities arising from operating activities		Earnings per share before interest and tax
Development capacity	Capital accumulation rate	Value - added ability of shareholders' equity	Net assets per share
	Total Assets Growth Rate		EVA per share
	Rate of return on net assets		Total assets EVA rate
	Sustainable growth rate		

C. Performance Evaluation Process and Results

TABLE III. KMO TEST AND BARTLETT TEST

Kaiser-Meyer-Olkin measures sampling appropriateness.		0.740
Bartlett test	chi-square	433.038
	df	105
	Significance	0.000

According to using spss22.0 analysis software test result: the KMO value is 0.74, which is suitable for factor analysis. In order to facilitate the comparison of the performance of listed companies before M & A and after M & A, this paper constructs comprehensive score function by using the main factors. The comprehensive score function is the sum of variance contribution of the factor using the sum of the product of the weight and the factor score. The results show that the comprehensive performance scores in one year after M & A are significantly improved, but the performance score in three years after M & A declines, indicating that M & A effect of listed companies in the short term But the long-term effect is not obvious and there is a downward trend.

III. AN EMPIRICAL ANALYSIS OF M & A PERFORMANCE

A. Theoretical Analysis and Research Hypothesis

The term "related party" means that in a business operation and financial decision, if one party can directly or indirectly control another party or exert a significant influence on the other party, the criterion regards it as a related party. "The reorganization of assets between affiliated enterprises can rapidly improve the operating results and financial position of listed companies. Xi Xin

study shows that the performance of related party transactions and acquisition are related, [8] Hence the hypothesis:

H1: There is a positive correlation between related party transactions and M & A performance.

At present, the main means of M & A are asset payment, cash payment, stock payment, bond payment, debt, cash and Mixed payment of asset items, mixed payment of cash and stock items, mixed payment of cash items and commitment of debts, and other payment methods. Free cash flow theory from the perspective of the possibility of M & A explain the relationship between payment and M & A performance that cash payment is superior to other payment methods in the short term to improve the performance of mergers and acquisitions have a certain role. Ge jiege study that: cash payments, cash and asset payment portfolio performance have no significant impact on M & A performance improvement [9] Zhou Shaoni and Wang Huitong study that the stock payment method to improve the performance of M & A to be significantly better than cash payments. [10] Hence the hypothesis:

H2: Cash payments have no significant impact on M & A performance improvement.

TABLE IV. DEFINITION OF VARIABLES

The type of the variable	Variable name		Variable description
Dependent variable	M & A performance of the first two years before the average	Y-1	The arithmetic average of the two years' performance of the acquired company acquired by the factor analysis method
	M & A and M & A after the first year performance average	Y0	Factor analysis of the acquisition of the acquisition of mergers and acquisitions and M & A year after the first year performance average
	M & A performance of the second and third year after the average	Y1	Factor analysis method to obtain the acquisition of the second and third year after the merger performance average
	Short-term performance changes	Ys	Y0-Y-1, the average performance of the acquisition in the first year after M & A is compared with the average of the two years before M & A.
	Interim performance changes	Ym	Changes in the average of the performance averages of the second and third years after M & A of the acquired company compared to the two years before the merger: Y1-Y-1,
	Long-term performance change	Yl	Y2-Y-1. The change of the average of the performance of the fourth and fifth years after acquisition is relative to the average of the two years before the merger.
Independent variable	Related party transactions	Re	Dummy variable, the related party transaction is 1, and the non-related party transaction is 0
	payment method	Pay	The dummy variable, the cash payment is 1, and the non-cash payment is 0

B. Data Sources and Model Settings

In this study, the 36 M & A events from Shanghai and Shenzhen stock markets in 2012 are still used as initial research samples. Data are derived from the CSMAR database and the juchao website. The corresponding variables are set based on the above assumptions. In order to analyze the influence factors of M & A performance, this paper adopts the multiple linear regression method to test the effect of variables on M & A performance. The research model is:

$$Y_t = \beta(0, t) + Re\beta(2, t) + Pay\beta(3, t) \quad (1)$$

Where Y_t is Y_s , Y_m , Y_l .

C. Empirical Results and Analysis

Table 3 shows the descriptive statistics of the sample data of 36 M & A companies in 2012. It can be seen from the table that there is an upward trend in the overall performance of the acquisition companies from short-term to long-term after acquisition (average value of Y_s is 0.3326, Y_l is 0.743), indicating that mergers and acquisitions have good business results, resulting in synergies.

TABLE V. DESCRIPTIVE STATISTICAL TABLES OF ACQUIRED COMPANY DATA

	N	Minimum	Maximum	average	standard deviation
Y_s	32	-1.2249	0.7629	0.3326	0.4061
Y_m	32	-0.6024	0.5344	0.570	0.2593
Y_l	32	-0.7684	0.6131	0.7430	0.2932
Re	32	.0	1.0	0.156	0.3689
Pay	32	.0	1.0	0.844	0.3689
EffectivN (listwise)	32				

TABLE VI. MULTIPLE LINEAR REGRESSION RESULTS OF THE FACTORS AFFECTING M & A PERFORMANCE

	Y_s	Y_m	Y_l
_cons	-0.113 (0.227)	0.176 (0.334)	0.158 (0.367)
Re	0.081* (0.099)	-0.221 (0.198)	-0.015 (0.177)
Pay	0.269** (0.049)	-0.105** (0.037)	-0.186 (0.223)
R^2	0.726	0.69	0.54
F	72.33	67.33	60.693
DW	1.431	1.76	2.13

According to the regression results in Table 4, the R^2 of Y_l in the three regression equations is the lowest, which is 0.54, meaning that 54% of the long-term M & A performance of listed companies can be explained by the selected variables.

In the short term, The M & A of cash transactions has a positive effect on short-term M & A performance, which is not consistent with the hypothesis 2, that is cash payment transaction has significant effect on M & A .the influence of the relationship between M & A enterprises on the M & A performance of the M & A results: at the significance level of 0.1, rejecting the original hypothesis, that is the related

party transaction and the M & A performance is not a positive correlation.

In the medium term, Cash payment has significant effect on M & A performance, cash payment is opposite to the change of M & A performance, which is not consistent with the hypothesis 2, This situation may arise because the enterprise to obtain the target business assets and undertake a new debt, a large number of cash outflows in the early stages of mergers and acquisitions, the company's cash "hematopoietic" function is affected, and a large number of mid-term debt also affected the performance of the enterprise.

In the long run, related party transactions, payment methods on the long-term performance is not significant, indicating that China's listed companies mergers and acquisitions in the long term is inefficient.

IV. CONCLUSIONS

Based on the study of the short-term performance (the first year after acquisition), the mid-term performance (the second year after acquisition) and the long-term performance (the third year after acquisition) of 36 M & A samples in 2012, It is found that the M & A of the listed companies in our country has a positive effect on the operating performance in the short term, but the long-term impact on the performance is not optimistic. Cash payment can only improve M & A performance in the short term, and it is inefficient in the long run and the related party transaction and the M & A performance is not a positive correlation after the acquisition.

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