Assessment of factors influencing financial risks of company mergers and acquisitions

Yan MA, Konstantins KOZLOVSKIS, and Guna CIEMLEJA
Faculty of Engineering Economics and Management, Riga Technical University
Riga, 6 Kalnciema Str., LV-1048, Latvia

ABSTRACT

This article explores and analyzes the types, characteristics of mergers and acquisitions (M&A) of companies. In addition, the causes of financial risks of M&A of companies and ways to prevent and control these risks are analyzed, as well as the factors affecting the financial risk of M&A of companies are analyzed. Listed Chinese companies that completed M&A deals in 2017 were selected as sample companies. The Z-Score model is used to calculate financial risks. A multiple linear regression model is used to assess the factors influencing financial risk.

Keywords: mergers and acquisitions, financial risk, Z-Score model, multiple linear regression model

1. INTRODUCTION

Up to now, mergers and acquisitions (M&A) is still the main ways and approaches for companies to expand and enlarge their business scale and improve their profits. The American magazine *Businessweek* once published relevant statistics about company M&A cases, and the results showed that in the recorded M&A cases, 75% of the companies have failed to achieve their M&A goals, or even failed completely. Many companies through M&A not only failed to achieve the purpose of expansion and profit at the time, but also put the company into a variety of dangerous situations and faced many losses caused by M&A, which hindered the development of the company. The main reason for the failure of M&A of these companies is financial risk. However, there are many factors that have influence on financial risk, since the company cannot effectively control or avoid the factors influence on financial risk, which triggers or exacerbates the financial risk of company M&A, makes M&A activities unable to achieve the expected goal, and ultimately leads to M&A failure. Furthermore, the failure of M&A activities affected the normal operation of the company, plunged the company into crisis and caused huge losses to the company.
The research aim is to assess the factors influence on financial risk of company M&A, and through investigate factors influence on financial risks, to help companies avoid these factors in M&A, so as to better reduce the financial risk in M&A.

2. THE THEORETICAL FRAMEWORK

M&A refers to the acquisition of the ownership or property rights of the merged company in the form of cash, creditor's rights, equity, and other transactions in accordance with fair and voluntary criteria in market relations [1].

Borghese defined M&A as an activity in which an enterprise occupies the superior resources of another enterprise, to achieve the purpose of expanding market share or even industry monopoly [2]. M&A are a way for enterprises to rapidly expand and grow. It is also the integration and optimization of social resources [3]. M&A of enterprises is the behavior of acquiring resources from the other party through mutual consultation, and merger and acquisition is an important manifestation of the business activities of the company. To a certain extent, it can realize the diversification of the enterprise and reduce the business risk of the enterprise [4]. Enterprise M&A is essentially the acquisition or merger of inferior enterprises by superior enterprises [5].

According to the industry division of the company, M&A can be divided into horizontal, vertical and conglomerate mergers and acquisitions those three types. Horizontal M&A refer to mergers and acquisitions between companies in the same industry. This kind of M&A is beneficial to the resource integration and sharing of both companies, which can increase benefits, expand production scale, improve productivity, and expand the market to gain a higher market share.

On the contrary, vertical M&A are mergers and acquisitions between different industries, but the two companies are connected by business or production links. The M&A of these two companies in the same company can achieve the integration of production and sales, effectively manage supply and demand relations, improve collaboration between industrial chains, and reduce costs, such as reducing costs in transportation, storage, and other aspects.

Conglomerate M&A are mergers and acquisitions between two unrelated companies that are not in the same industry,, nor have any business or production connection. The advantage of this kind of M&A is that it can realize diversified development, expand the business scope, and develop various businesses together, and disperse the risks brought by single business.

M&A play a very important role in many aspects for companies, mainly in the following four aspects:

1. *Role in operating efficiency:* after M&A, companies can expand their business scope, increase the return on investment of the acquirer and reduce operating risks [6]. Many statistical results show that the new company formed after the M&A is far better than either of the two companies before the M&A in terms of operating efficiency and performance.
2. *Role in production scale:* M&A will increase the scale effect and expand the production scope, so as to obtain a

ISBN: 978-1-950492-64-0
ISSN: 2771-0947

https://doi.org/10.54808/WMSCI2022.01.103

synergistic effect and increase the value of M&A companies [7].

3. *Role in market share:* Companies choose M&A mainly to improve their market share, increase their market influence, and hope to gain dominance and make more profits through monopoly [8].
4. *Role in diversification:* companies should grasp the degree of diversification, diversification can improve the ability to resist risks and improve performance, but excessive pursuit of diversification may be counterproductive [9, 10, 11].

The financial risk of M&A refers to the risk of financial loss or poor financial condition caused by the decisions made by companies in the evaluation, financing, payment and integration of the whole process of M&A, which leads to the results that the company is in conflict with its original intention and puts the company in a crisis [12].

M&A financial risk can be distinguished from two angles, one is a narrow angle, the other is a broad angle. In the narrow sense, financial risk refers to the financial risk caused by financing and liabilities during M&A. The broad sense of financial risk involves many factors, such as payment method, accuracy of evaluation, integration after M&A, etc., in the whole process of M&A by a variety of factors, and the actual financial income after M&A and the expected deviation caused by the financial risk.

M&A of companies will have a lot of risks to its negative impact, among which the financial risk is the most negative impact, a little careless may make the company bankrupt. Most of the failure cases in the M&A market are due to ignoring the financial risks in the process of M&A. M&A companies ignore financial risks and pursue business expansion blindly to make profits, which will eventually lead to M&A failure [13].
Theoretical basis of financial risk of company M&A:

(1) Asymmetric Information theory: Information asymmetry refers to the fact that individuals obtain information from different sources and the amount of information collected will be different. The party who obtains more information is always in an advantageous position. Based on the hypothesis of "rational economic man", the party with information advantage may damage the interests of the other party [14].
(2) Risk management theory: Each link between M&A may have corresponding risks. If these risks cannot be controlled, they will result in huge losses for companies. Therefore, the management of these risks is particularly important. Risk management is critical for the sustainable and healthy development of a company. In order to achieve better development in the market, it is necessary to carry out comprehensive research on risk management, and risk identification is the primary link of effective risk control. Through risk identification, various factors that affect risks can be found, to take targeted measures to prevent the emergence of risks [15].
(3) Dynamic risk control theory: risk control is divided into dynamic risk control and static risk control. Static risk control ignores the dynamic nature of the degree and source of risks, so it may lead to ineffective risk control. Dynamic risk control performs dynamic real-time monitoring of risks, collects and analyzes the latest information according to the changes of market and development stage, and develops effective risk control measures accordingly. Dynamic risk theory aims to timely monitor the potential financial risks and dynamic updates of information in each stage of the M&A process and make timely adjustments according to the monitored information [16].

The financial risk of the company is jointly determined by many factors, among which the company scale, asset-debt ratio, profitability and capital liquidity are particularly critical. Andrade, Mitchell and Stafford in *New Evidence and Perspectives on Mergers* proposed that factors affecting financial risk of corporate M&A may be related to some characteristics of companies themselves [17]. When the scale of the company expands, the scale of operation will also expand, and the marginal effect will decrease. M&A will inevitably expand the original scale of business, but according to the law of diminishing marginal effect, it will lead to the reduction of the marginal income of the company, which will affect the level of profitability and then the financial risks [18]. Accordingly, this thesis proposes hypothesis 1:
H1. The company scale has a positive correlation with financial risk, which will adversely influence financial risk of company M&A.

A highly concentrated ownership structure will weaken some unique functions of the company, such as capital accumulation, risk avoidance,, and so on. To a certain extent, highly centralized ownership would mean holding shareholders participating in company affairs too much, leading to the directors, supervisors" lack of independence, leading to the manager's decision-making rights dispersed,, or absence. In this situation, the company for the financial management will be chaos, especially at the time of company M&A. It is difficult for the company to reach a consensus on decision-making, and it cannot timely deal with all kinds of emergencies during M&A, resulting in operational and financial crises [19]. Accordingly, this thesis proposes hypothesis 2:
H2. Ownership concentration has a positive correlation with financial risk, which will adversely influence financial risk of company M&A.

Equity payment of company M&A will dilute shareholders' equity, weaken the control of dispersed shareholders over the company, and change the company's equity structure, which may weaken the rights of some major shareholders or even lose their equity. The company's short-term resource integration and long-term interests will have a great impact. Zheng (2016) proposed that the adoption of equity payments in M&A will lead to a decrease in earnings per share, and may also lead to an imbalance in the capital structure and cause a a financial crisis [20]. Accordingly, this thesis proposes hypothesis 3:
H3. Equity payment has a positive correlation with financial risk, which will adversely influence financial risk of company M&A.

According to the "signaling theory", if a company pays the required amount of acquisition in cash, it will send a signal to investors that the company has a good financial situation and high enterprise value. This will make investors more confident in the company, which will help the company obtain more financial support and better complete the M&A activities. Also according to the above analysis, it can be seen that if the company chose cash payment that will have high efficiency, convenient operation can reduce the acquisition time to form scale effect in time. Relative to equity and bond payment, cash payment will not dilution, influenced the stability of the company equity structure,

also won't increase company debt levels, affect the debt paying ability, that can reduce the merger of a company's financial risk. Accordingly, this thesis proposes hypothesis 4:

H4. Cash payment has a negative correlation with financial risk, which will favorably influence financial risk of company M&A.

According to the above theoretical analysis, it can be seen that both debt financing will increase the company's debt pressure, increase the company's debt level, affect the company's debt-to-assets ratio, weaken its solvency, and increase the company's financial burden. If the company does not operate well in the later stage and cannot repay its debts on time, it will bring financial risks to the company. Accordingly, this thesis proposes hypothesis 5:

H5. Debt financing has a positive correlation with financial risk, which will adversely influence financial risk of company M&A.

In the final stage of M&A, many resources need to be integrated, such as finance resources, human resources, business resources, etc. Sun (2016) [21] proposed that if the company's resource integration has a good effect, which can promote the synergistic effect and enhance the company's operation effect, business efficiency, and net operating profit rate, thus reducing financial risks. Accordingly, this thesis proposes hypothesis 6:

H6. Resource integration has a negative correlation with financial risk, which will favorably influence financial risk of company M&A.

3. THE METHODOLOGY

Data Sources and sample selection:

Chinese listed companies that completed M&A in 2017 are selected as sample companies in this research. In order to assess factors influencing on financial risks of company mergers and acquisitions, the relevant financial data of sample companies from 2015 to 2018 were selected. In addition, sample companies collected are divided into two parts: same industry M&A and cross-industry M&A. The data needed for the research came from CSMAR China financial database [22]. The acquiring company is listed on the Shanghai and Shenzhen stock exchanges. Data for 59 sample companies for M&A in the same industry and 36 sample companies for cross-industry M&A were collected.

In the first step, financial risk was quantified using the Altman Z-score model using Formula (1) [23].

Altman Z-score model

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5, \quad (1)$$

where X_1- working capital/total assets;
X_2- retained earnings/total assets;
X_3- earnings before interest and taxes/total assets;
X_4- market value of equity/total liabilities;
X_5- sales/total assets.

In the second step, 10 measures (debts to assets ratio – V1, current ratio – V2, quick ratio – V3, cash flow per share – V4, earnings per share – V5, operating profit margin – V6, total asset turnover – V7, current asset turnover – V8, return on assets – V9, return on equity – V10) over the period of time the period of time 2015 – 2018 were used to define common factors. Factor analysis was performed using SPSS software.

On the third step linear regression analysis was performed according to Formula (2)

$$Z_{it} = \beta_0 + \beta_1 Scale_{it} + \beta_2 Own_{it} + \beta_3 CaP_{it} + \sum_{n=1}^{N} \beta_{3+n} F_{nit} + \varepsilon_{it}, \quad (2)$$

where i - i-th company (1, 2, …, 95);
t - years (2015, 2016, …, 2018);
Z - financial risk;
$\beta_0, \ldots, \beta_n$ – parameters to be estimated;
F – factors obtained from factor analysis;
N – number of factors;
$Scale$ - company scale;
Own ownership concentration;
CaP - cash payment;
ε – error term.

4. THE EMPIRICAL PART AND THE MAIN FINDINGS

4.1. Quantification of financial risk by the Altman Z-score

In the first step, financial risk was quantified using the Altman Z-score model using Formula (1) for all years from 2015 to 2018. Table 1 presents some basic statistics on the Altman Z-scores obtained through calculations.

Table 1
Descriptive statistics of the Altman Z-scores

Year	N	Mean	SD	Max	Min
Cross-industry M&A					
2015	36	13.39	18.48	106.69	1.21
2016	36	13.64	21.79	106.65	0.95
2017	36	5.80	7.46	43.20	0.86
2018	36	4.70	7.29	45.74	-0.02
Within-industry M&A					
2015	59	15.46	17.65	87.89	-0.75
2016	59	13.33	15.68	81.83	0.56
2017	59	7.41	6.93	29.08	0.70
2018	59	5.60	5.90	33.91	0.74

According to the results presented in Table 1, the mean Z scores Z scores of companies with cross-industry M&A showed a downward trend from 2015 to 2018 (according to the interpretation of the Altman Z score, the lower the score, the higher is financial risk). This phenomenon shows that company M&A activities had a negative impact on the company's financial risk and probably will continue to increase it. Besides, the standard deviation was significantly decreased signalizing about concentrating values closer to the mean. However, a score closer to 3 still suggests that that a company is in solid financial position. Having analyzed three other parameters (standard deviation, maximal, and minimal value), the authors concluded that such large spread in values of the Z-scores could be explained by differences in the ability to manage and control financial risk facing M&A activity. Absolutely the same conclusions are made in case of within-industry M&A.

4.2. Factor analysis

Performing factor analysis in SPSS software the following results were obtained:

1) The values of Kaiser-Meyer-Olkin measure of sampling adequacy are greater than 0.7 indicating about adequate sampling (see in Table 2).

2) The p-value (Sig.) of the Bartlett's test of sphericity is less than 0.05 signalizing about statistically significant difference between the observed correlation matrix and the identity matrix, i.e., there is correlation between 10 measures used in factor analysis (see in Table 2).

Table 2
Results of KMO and Bartlett's tests

		Cross-industry	**In the same industry,**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.72	0.73
Bartlett's Test of Sphericity	Approx. Chi-Square	364.01	647.75
	df	45	91
	Sig.	0.00	0.000

Table 3 shows the fragment of the table of total variation explained by SPSS. As seen, four factors were found based on the eigenvalues greater than 1. In total, more than 91% of initial variance (Cumul. %) can be explained by these four factors in both cases: cross-industry M&A and within-industry M&A.

Table 3
Rotation sums of squared loadings

#	**Cross-industry**			**In the same industry**		
	Total	**% of Var.**	**Cumul. %**	**Total**	**% of Var.**	**Cumul. %**
1	2.92	29.21	29.21	2.88	28.79	28.79
2	2.61	26.14	55.35	2.55	25.53	54.32
3	2.03	20.32	75.67	2.08	20.84	75.15
4	1.53	15.33	91.01	1.77	17.71	92.87

The rotating component matrix displayed in Table 4 shows the structure of each factor taking into account the cut-off value of 0.5 for the loadings of each variable in the factor.

Table 4
Rotated component matrix (case of cross-industry M&A)

	Component			
	F_1	F_2	F_3	F_4
V1	-0.15	**0.71**	-0.06	0.06
V2	0.37	**0.89**	-0.09	0.03
V3	0.36	**0.90**	-0.04	0.06
V4	0.07	0.16	0.13	**0.92**
V5	0.49	-0.06	0.08	**0.76**
V6	**0.82**	0.35	-0.13	0.09
V7	0.04	-0.04	**0.98**	0.07
V8	0.16	-0.11	**0.97**	0.12
V9	**0.93**	0.18	0.16	0.20
V10	**0.91**	0.01	0.25	0.20

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

In the same way, the rotated component matrix was obtained for the case of within-industry M&A (see in Table 5).

Table 5
Rotated component matrix (case of within-industry M&A)

	Component			
	F_1	F_2	F_3	F_4
V1	**0.82**	-0.00	-0.03	-0.01
V2	**0.91**	0.09	-0.34	-0.03
V3	**0.95**	0.07	-0.28	-0.02
V4	-0.17	0.03	**0.97**	0.06
V5	-0.35	-0.11	**0.90**	0.09
V6	0.22	**0.81**	-0.13	-0.43
V7	-0.05	0.22	-0.04	**0.90**
V8	0.03	-0.20	0.17	**0.86**
V9	0.03	**0.96**	-0.23	0.09
V10	-0.03	**0.94**	0.24	0.15

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Based on the component score coefficient matrix produced by SPSS (see in Table 6) new variables (factors) can be calculated.

Table 6
Component score coefficient matrix (case of cross-industry M&A)

	Component			
Variable	**F1**	**F2**	**F3**	**F4**
V1	**-0.22**	0.32	0.08	0.08
V2	**0.04**	0.34	0.01	-0.07
V3	**0.02**	0.35	0.04	-0.05
V4	-0.22	0.05	**-0.03**	0.73
V5	0.06	-0.11	**-0.10**	0.51
V6	0.33	**0.01**	-0.11	-0.11
V7	-0.08	0.08	0.53	**-0.07**
V8	-0.02	0.03	0.50	**-0.05**
V9	0.36	**-0.05**	0.00	-0.08
V10	0.37	**-0.12**	0.04	-0.08

For example, the values of the first factor F_1 are calculated as follows:

$$\boldsymbol{F_1 = 0.82 \cdot Z_1 + 0.91 \cdot Z_2 + 0.95 \cdot Z_3} \quad (3)$$

where Z_i – the normalized (standardized) variable V_i.

The same statistics and calculations are obtained in the case of within-industry M&A. Table 7 shows the coefficients used to calculate the values of the factors.

Table 7
Component score coefficient matrix (case of within-industry M&A)

	Components			
Variable	**F1**	**F2**	**F3**	**F4**
V1	**-0.22**	0.32	0.08	0.08
V2	**0.04**	0.34	0.01	-0.07
V3	**0.02**	0.35	0.04	-0.05
V4	-0.22	0.05	**-0.03**	0.73
V5	0.06	-0.11	**-0.10**	0.51
V6	0.33	**0.01**	-0.11	-0.11
V7	-0.08	0.08	0.53	**-0.07**
V8	-0.02	0.03	0.50	**-0.05**
V9	0.36	**-0.05**	0.00	-0.08
V10	0.37	**-0.12**	0.04	-0.08

For example, the values of the second factor F_2 are calculated as shown below:

$$\boldsymbol{F_2 = 0.01 \cdot Z_6 - 0.05 \cdot Z_9 - 0.12 \cdot Z_{10}} \quad (4)$$

Analyzing the essence of each financial indicator merged into the factors, the authors came to the following conclusions.

- Three financial indicators V6, V9, and V10 are related to the profitability of the company and can reflect the influence of profit integration in resource integration on the financial risk of company mergers and acquisitions. Therefore, the common factors F1 (in case of cross-industry M&A) and F2

(in case of within-industry M&A) can be named as profit integration.

- Three financial indicators V1, V2, and A3 are mainly related to the level of company liabilities. This factor can reflect the influence of debt financing on the financial risk of company mergers and acquisitions. Thus, the common factor F2 (in case of cross-industry M&A) and F1 (in case of within-industry M&A) can be named as debt financing.
- Two financial indicators V7 and V8 are related to the company's operating capacity, which can reflect the influence of operational integration in resource integration on the financial risk of company mergers and acquisitions. Therefore, the common factors F3 (in case of cross-industry M&A) and F4 (in case of within-industry M&A) can be named operational integration.
- Two financial indicators V4 and V5 reflect the profits obtained by shareholders holding the company's share capital and the cash flow obtained on average per share, which is the maximum cash dividend amount that the company is able to pay to shareholders. These two indicators are closely related to the stock price, the company's profit level, and its stock value, and are the key indicators to measure the impact of equity payment on the financial risk of company mergers and acquisitions. Therefore, the common factor F4 (in case of cross-industry M&A) and F3 (in case of within-industry M&A) can be named as equity payment.

4.3. Linear regression analysis

Integrating new variables (factors) into the linear regression model according to Formula (2) the following results were obtained:

1) Both models have a relatively high coefficient of determination (R-square) that is more than 50% (approx. 73%) and the Durbin-Watson statistic is about 2 signalizing about the absence of serial correlation in the residuals (see in Table 8).

Table 8

Summary of two models

Model	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
Cross-industry	0.72	0.68	4.30	1.73
Within-industry	0.73	0.71	3.77	2.13

2) All statistically insignificant variables with Sig. > 0.05 were excluded from the models: two variables *CaP* (cash payment) and *Scale* (company scale) in the case of M&A and three variables *CaP*, *Scale*, and *Own* (ownership concentration) in the case of M&A (see in Table 9).

Table 9

Excluded variables

Model	**B**	**t**	**Sig.**	**Collinearity Statistics**	
				Tolerance	**VIF**
Cross industry					
CaP	-2.77	-1.45	0.16	0.91	1.10
Scale	0.81	0.87	0.39	0.79	1.27
Within-industry					
CaP	0.07	0.96	0.34	0.92	1.09
Scale	-0.09	-1.10	0.28	0.72	1.39
Own	-0.07	-1.01	0.32	0.96	1.04

3) Both models are statistically significant (Sig. = 0 < 0.05) (see in Table 10).

Table 10

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Cross-industry					
Regression	1450.04	5	290.01	15.72	0.00
Residual	553.51	30	18.45		
Total	2003.55	35			
Within-industry					
Regression	2063.74	4	515.93	36.24	0.00
Residual	768.75	54	14.24		
Total	2832.48	58			

4) Estimating model parameters for both cases (cross-industry M&A and within-industry M&A) it can be clearly seen that all new variables F_1, F_2, F_3, and F_4 are statistically significant (Sig. ≤ 0.05) (see in Table 11).

Table 11

Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**	**VIF**
	B	Std. Error	Beta			
Cross-industry						
(Constant)	13.68	3.25		-0.02	0	
Own	-0.12	0.05	-0.28	-2.49	0.02	1.38
F1	0.13	0.06	0.30	2.11	0.04	1.42
F2	-2.89	1.20	-0.38	-2.41	0.02	1.77
F3	1.50	0.54	0.38	2.78	0.01	1.24
F4	-3.20	0.85	-0.42	-3.78	0	1.41
Within-industry						
(Constant)	2.19	2.63		0.83	0.41	
F1	-2.46	0.52	-0.35	-4.75	0	1.10
F2	0.13	0.06	0.24	2.24	0.03	1.31
F3	-1.80	0.65	-0.32	-2.75	0.01	1.34
F4	0.19	0.05	0.34	3.44	0	1.04

Checking the model assumptions

Linear regression analysis has to meet a number of assumptions related to this type of analysis:

1) The mean of the residuals is zero. In both models, the assumption is satisfied.
2) No multicollinearity. In Table 11, it is clearly seen that all VIF values are less than 5 signalizing about the absence of multicollinearity problem.
3) No serial correlation in the residuals. The Box-Ljung test and the autocorrelation function of the residuals (see in Figure 1 and Figure 2) did not show any presence of serial correlation in the residuals of the two models.

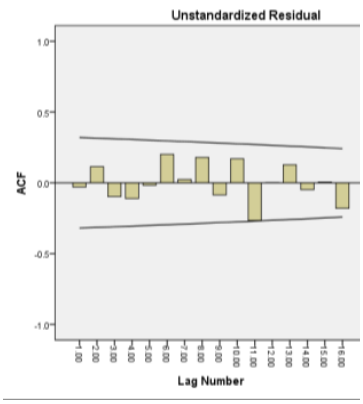

Figure 1 ACF of residuals (case of cross-industry M&A)

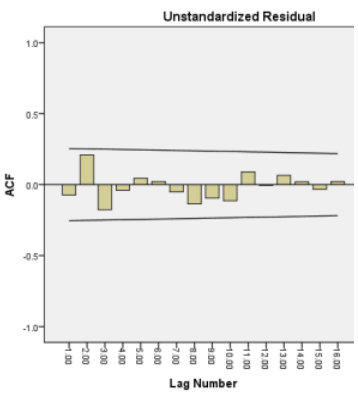

Figure 2 ACF of residuals (case of within-industry M&A)

4) Homoscedasticity of the residuals.

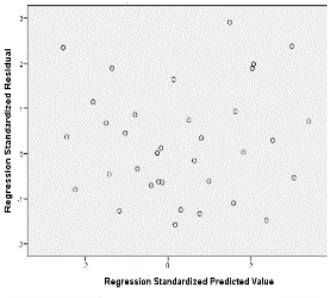

Figure 3 Regression standardized residuals vs. Regression standardized predicted values (case of cross-industry M&A)

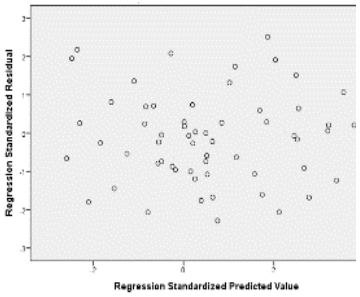

Figure 4 Regression standardized residuals vs. Regression standardized predicted values (case of within-industry M&A)

5. CONCLUSIONS

Through the analysis six factors (resource integration, debt financing, equity payment, cash payment, ownership concentration and company scale) have influence on financial risk, and through assessment of this six factors, results shows that company scale and cash payments have no significant relationship with the financial risk, which will not influence on financial risk of company M&A. Debt financing, equity payment and resource integration have significant relationship with financial risk, which will influence on financial risks of company M&A. Ownership concentration has influence on financial risk of company cross-industry M&A, but not influence on financial risk of company same industry M&A.

6. REFERENCES

1. Y. Q. Ni, Y.Q. "Research on mergers and acquisitions logic of Chinese Internet enterprises-comparative analysis of BAT merger strategy based on resource view", **Times Finance**, No. 15, pp. 56-57, 2018.
2. R. Borghese, P. Borgese, **M&A From Planning to Integration: Executing Acquisitions and Increasing Shareholder Value.** New York: McGraw-Hill Education. 304p, 2001
3. H. Y. Xie, "Analysis of merger and acquisition of third-party logistics enterprises", **Heilongjiang Science and Technology Information**, No. 36, pp.155, 2009.
4. Y. H. Lu, "Financial Risk and Control of Mergers and acquisitions in China", **Enterprise Economics**, No. 8, pp. 185-188, 2014.
5. Y. Wu, Y. "Prevention and Control of Financial Risks in Mergers and Acquisitions of Private enterprises", **China Business Theory**, No. 18, pp.64-65, 2017.
6. S. C. Myers, N. S. Majluf, "Corporate financing and investment decisions when firms have information that investors do not have it", **Journal of Financial Economics**, Vol. 13, No. 2, pp. 187-221, 1984.
7. X. Zhang, "Do mergers and acquisitions create value? -- Theoretical and empirical research on China's securities market", **Economic Research Journal**, No. 6, pp. 20-29, 2003.
8. M. L. Mitchell, J. H. Mulherin, "The impact of industry shocks on takeovers and restructuring activity", **Journal of financial Economics**, No. 1, pp. 193-229, 1996.
9. R. P. Rumelt, **Strategy, structure, and economic performance**. Cambridge, Mass.: Harvard University Press. 249 p, 1974.
10. M. C. Jensen, "Agency costs of free cash flow, corporate Finance, and Takeovers", **American Economic Review**, Vol. 76, No. 2, pp. 323-329, 1986.
11. J. Al-Khasawneh, "Pairwise X-efficiency Combination of Merging Banks: analysis of the fifth merger wave", **Review of Quantitative Finance and Accounting**, Vol. 41, No. 1, pp. 1-28, 2013.
12. X. D. Li, "Research on M&A efficiency of listed companies based on DEA". **Economic Research Journal**, Iss. 10, pp. 5-23, 2003.
13. P. H. Mirvis, M. L.Marks, **Managing the merger: making it work**. New York: Prentice Hall. 400p, 1992.
14. G. A. Akerlof, "The Market for Lemons: Quality Uncertainty and the Market Mechanism", **The Quarterly Journal of Economics**, Vol. 84, No. 3, pp. 488-500, 1970.
15. P. J. Sobel, K. F. Reding, **Enterprise Risk Management: Achieving and Sustaining Success,** The IIA Research Foundation. 240 p, 2012.
16. Y. Vertakova, I. Vselenskaya & V. Plotnikov, "Mergers and Acquisitions Risk Modeling". **Journal of Risk and Financial Management**, Vol. 14, No. 9, 451, 2021.
17. G. Andrade, M. Mitchell, E. Stafford, "New Evidence and Perspectives on Mergers", **The Journal of Economic Perspectives**, Vol. 15, No. 2, pp. 103–120, 2021.
18. Y. C. Zheng, "Analysis of the application of the law of diminishing marginal effect in the expansion of enterprise management scale", **Policy research and exploration**, No. 8, pp. 46-50, 2010.
19. J. Pu, "Research on the relationship between Ownership structure and global strategy". **Modern Business**, No. 5, pp. 116–118, 2019.
20. P. F. Zheng, **Empirical study on financial risk of mergers and acquisitions of listed enterprises.** Sichuan: Sichuan Normal University Press. 63p, 2016.
21. X. S. Sun, **Research on financial risk assessment of enterprise mergers and acquisitions.** Beijing: China University of Geosciences Press. 62p, 2016.
22. China Stock Market & Accounting Research Database, https://cn.gtadata.com/
23. E. I. Altman, "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", **The Journal of Finance**, Vol. 23, No. 4 pp. 589-609, 1968.