Study on Merger and Acquisition Performance in Industries with Overcapacity-Based on the Comparative Analysis before and after the Financial Crisis

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Abstract: In the study results of the stage before the financial crisis, many conclusions tend to believe that China lacks the conditions for market-oriented merger and acquisition, and the merger and acquisition performance in industries with overcapacity is poor. The explosion of the international financial crisis in 2008 profoundly changed the implementation of the international financial operation and regulation system and global economic policies and also destructively promoted the deep adjustment of many economic systems and industrial structures. Will the merger and acquisition performance in industries with overcapacity under the new background be different? The author has studied 10 industries with long-term overcapacity and conducted empirical study on the merger and acquisition performances before and after the crisis. The results show that compared with that before the crisis, the merger and acquisition performance in industries with overcapacity has improved significantly after the crisis, but the effect is not significant in the long run. At the same time, the merger and acquisition performance in industries with overcapacity in heavy industry has no significant change before and after the crisis, but that in industries with overcapacity in light industry has significantly improved after the crisis. The conclusions above are of reference significance for the target development of relevant policies and strategies for supply-side reform.

1. Introduction

Overcapacity is a normal and dynamic issue inevitably caused by market imbalances. Merger and acquisition and reorganization are important means to change the supply relationship and promote market equilibrium. Most of existing studies on merger and acquisition and overcapacity are theoretical analysis, few are quantitative studies, and most of empirical studies are those on the merger and acquisition performance in an industry with overcapacity [1-5]. In addition, there are no dynamic examinations on the merger and acquisition performance in industries with overcapacity in the existing empirical studies. However, with the acceleration of national structural adjustment and deeper understanding of means for market-oriented merger and acquisition, there must be dynamic differences in the merger and acquisition performance in industries with overcapacity, especially in the current new situation that exogenous shocks dominated by the financial crisis have changed the normality of economic operations, which is most likely to cause dynamic changes in the merger and acquisition performance.

2. Analysis of Influence Factors and Study Hypotheses

It is believed in this paper that changes in the following three aspects may drive that industries with overcapacity have a higher merger and acquisition performance in the post-crisis era: Firstly, China has accelerated the establishment of a multi-level capital market since the financial crisis, which is conducive to reducing the search costs of enterprises for merger and acquisition and increasing the success rate of matching. Secondly, under strict financial supervision in the post-crisis era, the credit investment has changed, which is conducive to strictly controlling merger and acquisition transactions in the capital supply and promoting the improvement of merger and acquisition performance [6-9]. Finally, in merger and acquisition transactions in the post-crisis era, the administrative intervention has been reduced, which contributes to improving the merger and acquisition performance.

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The development of the capital market, the strict supervision of the financial system, and the reduction of government intervention in the post-crisis era compared with those before the crisis are conductive to reducing search costs for merger and acquisition, optimizing credit allocation, innovating financing channels, and strengthening market-oriented operations, thereby ultimately improving the merger and acquisition performance. Based on this, the paper has made the following hypotheses:

H1: Compared with the pre-crisis era, industries with overcapacity in the post-crisis era have a higher merger and acquisition performance.

H2: There is a heterogeneity in the changes in merger and acquisition performance in industries with overcapacity between the heavy industry and light industry.

3. Empirical Analysis

3.1 Data Sources

China has had relatively complete merger and acquisition transaction data of listed companies since 2004 for disclosure, therefore this paper takes A-share merger and acquisition data and financial data from 10 industries with overcapacity in 2004-2016 as the initial samples and obtains 433 observed values finally after multi-condition screening [10-14]. The data involved in this paper is from the China Stock Market & Accounting Research Database (CSMAR). In addition, to avoid the interference of outliers, all continuous variables have been winsorized for ± 1% in this paper.

3.2 Variable Definition

3.2.1 Merger and Acquisition Performance

In this paper, the merger and acquisition performance is measured at different time windows in short-term and long-term aspects. For the short-term merger and acquisition performance, the first merger and acquisition announcement date is taken as the base date to calculate the cumulative abnormal return (CAR) of trading days before and after the base date and the estimation of the expected return rate is made by reference to the market model of Brown and Warner (1985), with details as below:

$$R_{i,t} = \alpha_i + \beta_i \times R_{m,t} + \varepsilon \tag{1}$$

Wherein, $R_{i,t}$ is the daily return rate of an individual share and $R_{m,t}$ is the daily return rate of the composite market. With reference to the treatment methods of Jianxin TANG and Dong CHEN (2010) and Huacheng WANG (2010), the estimation window is 150 to 30 trading days before the base date. In addition, 3 and 5 trading days before and after the base date are selected as the event windows for calculating the cumulative abnormal return, and further defined respectively as the Variables CAR_3 and CAR_5.

In long-term merger and acquisition performance, with reference to the treatment methods of Cai and Sevilir (2012) and Shihua CHEN (2013), the changes in return on total assets and return on net assets (ΔROA and ΔROE) are taken as proxy variables.

3.2.2 Dividing Node for Pre-crisis and Post-crisis Eras

The existing literatures usually name the period after the financial crisis in 2008 as the post-crisis era, which refers to the relative stability and uncertainty after the crisis has eased. This paper also takes this as the dividing note for pre-crisis and post-crisis eras. When the sample year is that after 2007 (excluding 2007), the variable is defined as Crisis 1, otherwise the variable is defined as Crisis 0.

3.2.3 Control Variables

The specific definitions of relevant variables are shown in Table 1.

Table 1 Variable Definition Table.

Variable Name	Variable Symbol	Calculation Method
Short-term merger and acquisition performance	CAR_3	Cumulative abnormal return during the [-3,3] window period before and after the merger and acquisition announcement
	CAR_5	Cumulative abnormal return during the [-5,5] window period before and after the merger and acquisition announcement
Long-term merger and acquisition performance	ΔROA	Changes in return on total assets in two years before and after the merger and acquisition
	ΔROE	Changes in return on net assets in two years before and after the merger and acquisition
Crisis division node	Crisis	1 for years after 2007 and 0 for others
Payment method	Method	1 for merger and acquisition transaction in cash payment, otherwise 0
Financial consultant	Consultant	1 for financial consultant employed for the merger and acquisition transaction, otherwise 0
ROTFAM	Ind	Ratio of independent directors to total directors
Major shareholder's shareholding	First	Shareholding of the largest shareholder
Combination of two titles as one	Plu	1 if the Chairman serves concurrently as the general manager, otherwise 0
Listed age	Age	Difference between the current year and listing year
Asset-liability ratio	Lev	Ratio of total liabilities to total assets
Cash flow	Cash	Ratio of cash flow from operating activities to total assets
Asset turnover ratio	Tat	Ratio of operating incomes to total assets
Executive Hubris	Hubris	Ratio of total remuneration of top three senior executives to that of all senior executives of the acquirer
Year	Year	13 years from 2004 to 2016, set to 12 dummy variables
Industry	Industry	Set 9 dummy variables based on the secondary code in the manufacturing industry

3.3 Modeling

With reference to the models of Xuesong LIU and Zheng HONG (2017), the model below is established in this paper to identify the changes in merger and acquisition performance in industries with overcapacity before and after the crisis.

$$AP = \alpha + \beta_1 \times Crisis + \sum_i \beta_i \times Control_i + \varepsilon \quad (2)$$

Wherein, the explained variable AP represents the merger and acquisition performance, and is measured respectively by the short-term merger and acquisition performance (CAR_3 and CAR_5) and the long-term merger and acquisition performance (ΔROA and ΔROE). The variable Crisis is a dummy variable that characterizes the node dividing before and after the crisis. Control is a series of control variables defined above. This paper mainly focuses on the symbol and significance of the regression coefficient β_1 of the variable Crisis. If the significance of β_1 is positive, it indicates that the merger and acquisition performance in industries with overcapacity in China has improved after the crisis. Otherwise, if the significance of β1 is negative, it indicates that the merger and

acquisition performance in industries with overcapacity is deteriorating. According to the hypothesis H1 proposed in this paper, β_1 is expected to be positive in this paper.

In addition, considering the heterogeneity of industries with overcapacity in the heavy industry and light industry, this paper will perform group regression based on model (2) and identify the changes in merger and acquisition performance of the two types of industries by comparing the regression coefficients and significance of the heavy industry and light industry groups, thereby verifying the hypothesis H2.

4. Analysis of Empirical Results

4.1 Descriptive Statistics

Table 2 shows the descriptive statistical results of the main variables, in which Panel A is the complete sample statistics, and Panel B and Panel C are the sub-sample statistics in industries with overcapacity in heavy industry and light industry respectively. First, from complete sample statistics, the means of short-term merger and acquisition performances CAR_3 and CAR_5 are 0.014 and 0.016, and the standard deviations are 0.089 and 0.108, respectively, which indicate that the market's response to merger and acquisition announcements is quite different; Meanwhile, the median values of both variables are negative, which indicates that more than half of merger and acquisition transactions have not been recognized by the market. In long-term performance, the means of Variables ΔROA and ΔROE are -0.016 and -0.022, and the standard deviations are 0.054 and 0.126 respectively, which indicate that there is a great difference in the accounting performance of the acquirer on the one hand and that the merger and acquisition has not effectively improved the company's profitability as for the mean on the other hand, with consistence to the low recognition in the market.

Table 2 Descriptive Statistics.

	Observed Value	Mean	Standard Deviation	Minimum Value	Maximum Value	Median
Panel A complete sample						
CAR_3	433	0.014	0.089	-0.201	0.425	-0.001
CAR_5	433	0.016	0.108	-0.199	0.584	-0.002
ΔROA	433	-0.016	0.054	-0.248	0.146	-0.009
ΔROE	433	-0.022	0.126	-0.508	0.682	-0.013
Crisis	433	0.940	0.238	0.000	1.000	1.000
Method	433	0.915	0.280	0.000	1.000	1.000
Consultant	433	0.097	0.296	0.000	1.000	0.000
Ind	433	0.370	0.051	0.300	0.571	0.333
First	433	33.188	13.381	7.482	74.536	32.255
Plu	433	0.335	0.472	0.000	1.000	0.000
Age	433	6.252	3.162	1.000	15.000	5.000
Lev	433	0.425	0.192	0.061	1.002	0.424
Cash	433	0.037	0.065	-0.166	0.185	0.038
Tat	433	0.684	0.391	0.075	2.151	0.604
Hubris	433	0.400	0.113	0.147	0.736	0.393
Panel B Industries with overcapacity in heavy industry						
CAR_3	348	0.019	0.095	-0.201	0.425	0.003
CAR_5	348	0.020	0.115	-0.199	0.584	-0.002
ΔROA	348	-0.016	0.057	-0.248	0.146	-0.010
ΔROE	348	-0.022	0.135	-0.508	0.682	-0.015
Crisis	348	0.943	0.233	0.000	1.000	1.000
Method	348	0.908	0.289	0.000	1.000	1.000
Consultant	348	0.101	0.301	0.000	1.000	0.000
Ind	348	0.370	0.050	0.300	0.571	0.333

First	348	33.382	13.598	7.482	74.536	32.211
Plu	348	0.336	0.473	0.000	1.000	0.000
Age	348	6.342	3.210	1.000	15.000	5.000
Lev	348	0.451	0.193	0.085	1.002	0.434
Cash	348	0.040	0.072	-0.123	0.185	0.046
Tat	348	0.652	0.412	0.075	1.733	0.584
Hubris	348	0.402	0.115	0.147	0.736	0.395
Panel C Industries with overcapacity in light industry						
CAR_3	85	-0.006	0.064	-0.201	0.150	-0.006
CAR_5	85	-0.001	0.073	-0.199	0.140	-0.001
ΔROA	85	-0.016	0.036	-0.132	0.049	-0.007
ΔROE	85	-0.023	0.084	-0.503	0.137	-0.010
Crisis	85	0.929	0.258	0.000	1.000	1.000
Method	85	0.929	0.245	0.000	1.000	1.000
Consultant	85	0.094	0.294	0.000	1.000	0.000
Ind	85	0.370	0.055	0.333	0.571	0.333
First	85	32.393	12.498	10.716	62.687	32.468
Plu	85	0.329	0.473	0.000	1.000	0.000
Age	85	5.882	2.946	2.000	15.000	5.000
Lev	85	0.318	0.188	0.061	0.886	0.397
Cash	85	0.026	0.064	-0.166	0.157	0.037
Tat	85	0.814	0.290	0.102	2.151	0.642
Hubris	85	0.395	0.107	0.208	0.736	0.388

Secondly, from the sub-sample statistics in industries with overcapacity in heavy industry and light industry, most of the merger and acquisition transactions during the sample period are in the heavy industry, and there are few merger and acquisition samples in the light industry, accounting for only 19.63% of the complete samples. Further from the statistical results of the variables, the market has a relatively high degree of recognition on mergers and acquisitions in industries with overcapacity in the heavy industry and in the heavy industry sample, the means of variables CAR_3 and CAR_5 are positive, but those in the light industry sample are negative [15-20]. On the other hand, in terms of long-term accounting performance, there is no obvious difference between the samples in heavy industry and light industry, which indicates that the market may have irrational reactions to the prospects of merger and acquisition in different fields. One possible reason is the preference of the market for major merger and acquisition scale.

4.2 Mean Test

Table 3 shows the mean test of merger and acquisition performances before and after the crisis, in which, Panel A is based on the complete sample analysis, and Panel B and Panel C are samples in industries with overcapacity in heavy industry and light industry respectively. Firstly, in the complete sample, means of short-term merger and acquisition performances CAR_3 and CAR_5 after the crisis are 0.017 and 0.019 respectively, both of which are significantly higher than those before the crisis at 10%, indicating that compared with the merger and acquisition before the crisis, those after the crisis has a better short-term performance and that the market has higher expectations and recognition for the merger and acquisition in the post-crisis era. However, in long-term merger and acquisition performance, although the means of variables ΔROA and ΔROE after the crisis are higher than those before the crisis, the difference is not statistically significant, which indicate that although the long-term merger and acquisition accounting performance has improved in the post-crisis era, the improvement effect is not obvious, and that the market has over-reaction.

Table 3 Mean Test of Merger and Acquisition Performances Before and After the Crisis.

Panel A complete Sample			
	Crisis=1	Crisis=0	Value t
CAR_3	0.017	-0.039	-1.81*
CAR_5	0.019	-0.043	-1.84*
ΔROA	-0.016	-0.019	-0.72
ΔROE	-0.021	-0.037	-1.05
Panel B Industries with overcapacity in heavy industry			
	Crisis=1	Crisis=0	Value t
CAR_3	0.020	-0.003	-1.56
CAR_5	0.020	0.014	-0.98
ΔROA	-0.016	-0.018	-0.75
ΔROE	-0.022	-0.025	-0.73
Panel C Industries with overcapacity in light industry			
	Crisis=1	Crisis=0	Value t
CAR_3	0.005	-0.159	-2.37**
CAR_5	0.015	-0.233	-2.88***
ΔROA	-0.016	-0.022	-1.19
ΔROE	-0.017	-0.077	-2.04**

Note: *, ** and *** indicate significant at 10%, 5%, and 1%, respectively.

Let's take a closer look at the sub-sample results in industries with overcapacity in heavy industry and light industry. Firstly, in heavy industry, although both the short-term merger and acquisition performance and the long-term merger and acquisition performance have improved after the crisis, there is no significant difference compared with those before the crisis, which indicate that the merger and acquisition performance in industries with overcapacity in heavy industry in the post-crisis era has still not effectively promoted. The reason may be that the government introduced economic stimulus plans to strengthen administrative intervention in the heavy industry after the crisis [21-24]. The light industry shows different results. In short-term merger and acquisition performance, the means of variables CAR_3 and CAR_5 after the crisis are 0.005 and 0.015, and are significantly higher those before the crisis at 5% and 1%, respectively, which indicate that the performance improvement effect is more obvious.; However, in long-term merger and acquisition performance, the means of variables ΔROA and ΔROE after the crisis are also higher than those before the crisis and the difference between groups of ΔROE is statistically significant at 5%, which preliminarily indicate that the post-crisis era has higher long-term performance on the one hand and that changes in variables ΔROA and ΔROE with different amplitudes imply that financial leverage has improved in the post-crisis era on the other hand.

In summary, the short-term merger and acquisition performance after the crisis has improved significantly compared with that before the crisis, but the long-term merger and acquisition performance has not changed significantly. The changes of the performances in industries with overcapacity in heavy industry and light industry before and after the crisis are heterogeneous, and the performance improvement is mainly reflected in the light industry. Therefore, the results above preliminarily validate the hypotheses H1 and H2 in this paper, but since other influence factors aren't considered in the results above, more reliable results need to be developed based on regression analysis. In addition, according to Table 3, variables ΔROA and ΔROE are negative even after the crisis, which indicates that the current merger and acquisition performance in industries with overcapacity is still poor [25-31].

4.3 Changes in Merger and Acquisition Performance in Industries with Overcapacity: Before and After the Crisis

Table 4 shows the regression results of model (2), in which the short-term merger and acquisition performance is explained as the variable in the first two columns, while the long-term

merger and acquisition performance is explained as the variable in the last two columns. Firstly, from the first two columns, the coefficient values of the variable Crisis are 0.065 and 0.063, respectively, and are statistically significant at 5%, which indicate that the short-term merger and acquisition performance in industries with overcapacity after the crisis has improved significantly compared with that before the crisis [32-40]. In addition, in terms of economic significance, the coefficient value of the variable Crisis is about five times of the means of variables CAR_3 and CAR_5, which indicates that the improvement of short-term merger and acquisition performance after the crisis is very obvious. Secondly, from the last two columns, the coefficient values of the variable Crisis are also positive, but the significance is reduced, especially in the regression of changes in return on total assets ΔROA, the coefficient value of the variable Crisis is only 0.005 and not significant, indicating that although the long-term merger and acquisition performance has improved to some extent after the crisis, the effect is not significant. In fact, in the last two columns, the coefficient values of the variable Crisis are lower than the means of variables ΔROA and ΔROE (meaning of absolute value), which also indicates a limited improvement of the merger and acquisition performance after the crisis. In summary, the results in Table 4 reflect more effective changes in short-term merger and acquisition performance and possible over-reactions in the market on the one hand, and also indicate certain improvement of the merger and acquisition performance in industries with overcapacity after the crisis, on the other hand, supporting H1.

Table 4 Changes in Merger and Acquisition Performance in Industries with Overcapacity: Before and After the Crisis.

	Short-term Merger and Acquisition Performance		Long-term Merger and Acquisition Performance	
	CAR_3	CAR_5	ΔROA	ΔROE
Crisis	0.065**	0.063**	0.005	0.012*
	(2.05)	(1.98)	(1.58)	(1.84)
Method	-0.008	-0.008	0.006	0.002
	(-0.40)	(-0.29)	(0.64)	(0.09)
Consultant	0.109***	0.133***	0.016*	0.038*
	(5.43)	(4.87)	(1.76)	(1.78)
Ind	-0.025	0.090	-0.006	-0.136
	(-0.21)	(0.57)	(-0.10)	(-1.04)
First	-0.001	-0.001	0.001	-0.001
	(-0.28)	(-0.91)	(0.20)	(-0.44)
Plu	-0.014	-0.019	-0.005	0.015
	(-1.05)	(-1.07)	(-0.85)	(1.02)
Age	0.001	0.003	-0.001	-0.002
	(0.07)	(1.14)	(-1.42)	(-0.98)
Lev	0.022	0.006	-0.009	0.018
	(0.66)	(0.14)	(-0.57)	(0.48)
Cash	-0.059	-0.037	0.093**	0.054
	(-0.69)	(-0.33)	(2.23)	(0.55)
Tat	0.007	0.009	0.003	0.020
	(0.47)	(0.44)	(0.39)	(1.09)
Hubris	0.136**	0.166**	-0.025	0.075
	(2.50)	(2.26)	(-0.99)	(1.27)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	433	433	433	433
Adj.R^2	0.170	0.114	0.027	0.025

Note: *, ** and *** indicate significant at 10%, 5%, and 1%, respectively. That in parentheses is the

Heteroskedasticity-Robust+Standard+ Error and the same in the table below.

4.4 Changes in Merger and Acquisition Performance of Industries with Overcapacity: Heavy Industry and Light Industry

To test the heterogeneity of changes in the merger and acquisition performance in heavy industry and light industry to further verify H2, Table 5 shows the sub-sample regression results in industries with overcapacity in the heavy industry and the light industry. In summary, the results in Table 5 show that there is no significant change in the merger and acquisition performance in industries with overcapacity in heavy industry before and after the crisis, and only the merger and acquisition performance in industries with overcapacity in light industry has significantly improved after the crisis, which thereby support the heterogeneity of changes in the performance in heavy industry and light industry, with consistence to H2 [41-45]. In addition, whether in heavy industry or light industry, the greater changes in short-term merger and acquisition performance indicate that the market has higher expectations for merger and acquisition transactions in industries with overcapacity in the post-crisis era. However, in heavy industry, it may be difficult to deliver accounting results due to more administrative interventions under the government's stimulus plan,

Table 5 Changes in Merger and Acquisition Performance in Industries with Overcapacity: Heavy Industry and Light Industry.

	Short-term Merger and Acquisition Performance		Long-term Merger and Acquisition Performance	
	CAR_3	CAR_5	ΔROA	ΔROE
Panel A Industries with overcapacity in heavy industry				
Crisis	0.048	0.044*	0.003	0.007
	(1.56)	(1.80)	(0.55)	(1.18)
Controls	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	348	348	348	348
Adj.R^2	0.216	0.180	0.103	0.115
Panel B Industries with overcapacity in light industry				
Crisis	0.122***	0.135**	0.009***	0.041***
	(2.89)	(2.20)	(3.15)	(3.56)
Controls	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	85	85	85	85
Adj.R^2	0.029	0.089	0.251	0.198

5. Conclusions and Enlightenments

Compared with that before the crisis, in the short term, the merger and acquisition performance in industries with overcapacity has improved significantly after the crisis, which indicates that the reduction of government intervention in merger and acquisition after the financial crisis or the strict financial supervision and development of the capital market have indeed improved the merger and acquisition performance among enterprises. In the long term, although the merger and acquisition performance has improved to some extent after the crisis, the effect is not significant. In summary, this reflects more effective changes in short-term merger and acquisition performance and possible over-reactions in the market on the one hand, and also indicates certain improvements of the merger and acquisition performance in industries with overcapacity after the crisis, on the other hand. There are significant differences between industries with overcapacity in heavy industry and light industry in terms of capacity utilization rate, revenue profit rate, industry concentration, geographical

distribution, corporate governance, etc. and their responses to the economic cycle are also different. There is no significant change in the merger and acquisition performance in industries with overcapacity in heavy industry before and after the crisis, and only the merger and acquisition performance in industries with overcapacity in light industry has significantly improved after the crisis, which thereby support the heterogeneity of changes in the performance in heavy industry and light industry.

References

[1] Jiangtao LI. "Overcapacity" and the Solution Mechanism [A]. China National School of Administration, 2006 (05): 32-34.

[2] Yifu LIN et al. Economic Study on the Formation Mechanism of "Wave Phenomenon" and Overcapacity, 2010 (10): 14-16.

[3] Qiaobin FENG and Kang JIA. Analysis of "Government Price Signal": Formation Mechanism and Solution of Systematic Overcapacity in China. Public Finance Research, 2014 (04): 4-5.

[4] Liguo WANG and Rixu ZHANG. Study on Overcapacity under the Background of Fiscal Decentralization- Based on Empirical Analysis in Steel Industry [A]. Research on Financial and Economic Issues, 2010 (12): 1-3.

[5] Xishun LIU. Overcapacity, Enterprise Symbiosis and Credit Rationing [A]. Journal of Financial Research, 2006 (03): 2-6.

[6] Xinhai ZHANG. Quantitative Measurement and Solution by Classification of Overcapacity. Macroeconomic Management, 2010 (01).

[7] Jin ZHOU and Baozong FU. Connotation of Overcapacity-Evaluation System and Performance Characteristics in Industrial Field in China. Economic Perspectives, 2011 (10).

[8] Zhengwang LI and Jing Zhou. Formation and Resolution of Overcapacity-Observation from Fiscal and Tax Policies. Financial and Monetary, 2014 (05): 4-6.

[9] Shengyong CHEN and Shiqi SUN. Chinese Characteristics, Formation Mechanism and Governance Countermeasures of Overcapacity - Taking the Steel Industry since 1996 as an Example [A]. Social Sciences in Nanjing, 2013 (05): 3-5.

[10] Ye LIU and Weiqi GE. Study on Overcapacity Evaluation Index System and Early-warning System [A]. Economic Issues, 2010 (11).

[11] Jidong HE and Zhongliang SHI. Analysis of Enterprise Expansion Behavior under Overcapacity -Taking the Steel Industry in China as an Example [A]. Jiangxi Social Sciences, 2012 (03):

[12] Lili ZHAO and Xinjian HUANG. Analysis of Merger and Acquisition Performance of Iron and Steel Enterprises in China under Overcapacity [A]. Jiangxi Social Sciences, 2010 (10).

[13] Zhen SHI. International Experience in Overcapacity Governance and the Enlightenment to China [A]. Reform of the Economic System, 2014 (04).

[14] Qijia WEI. Giving Full Play to the Role of Financial Policies in Managing Overcapacity. Macroeconomic Management, 2013 (09).

[15] Shusong BA and Yafang YU. Market-oriented merger and acquisition and Policy Coordination under Current De-capacity. Tax Study, 2015 (11).

[16] Yueping WANG. Progress of Industrial Policy and Structural Adjustment in China since the 16th CPC National Congress. Macroeconomic Management, 2007 (12).

[17] Liguo WANG and Lei JU. Local Government Intervention, Enterprise Overinvestment and Overcapacity: 26 Industrial Samples. Industrial Economics Research, 2012 (12).

[18] Feitao JIANG, Qiang GENG, Daguo LV and Xiaoping LI. Regional Competition-Institutional Distortion and Formation Mechanism of Overcapacity [A]. China Industrial Economics, 2012 (06): 3-5.

[19] Xiuyun HAN. Analysis of New Energy Overcapacity in China and Policy Suggestions-Taking the Wind and Solar Industry as an Example. Management World, 2012 (08).

[20] Baozong FU. A Review of Study on Overcapacity. Economic Perspectives, 2011 (05).

[21] Lei YUAN. Study on Merger and Acquisition Behavior of Chinses Enterprises under International Financial Crisis. Macroeconomic Management, 2010 (07): 5-7.

[22] Jian LIU and Dianchun JIANG. Influences of International Crude Oil Price Fluctuations on the Factory Prices of Industrial Products in China - Based on Empirical Analysis at the Industry Level. Economic Review, 2010 (02): 8-10.

[23] Yanmei WANG and Yongchun YU. Industrial Upgrading and Competitive Advantage Construction under the International Vertical Division of Labor-Taking the Chemical Raw Material Manufacturing Industry in China as an Example. Economist, 2009 (03): 88-89.

[24] Mei FENG and Chuiying KONG. A Review of Studies on Overcapacity at Home and Abroad [A]. Economic Review, 2013 (10).

[25] Guogao HAN and Liguo WANG. Will the Excessive Investment Growth in the Industry Slow Down Due to the Existence of Overcapacity? -Analysis Based on 1999-2010 Data in Industries with Overcapacity in China. Review of Investment Studies, 2013 (08).

[26] Chaoxun SHENG. International Experience and Strategies to Resolve Overcapacity. Globalization and China, 2013 (08).

[27] Zhen YANG. Study on the Formation Mechanism of Overcapacity from the Perspective of Incentive Distortion and Solution [A]. Economist, 2013 (10).

[28] Mei SHI. Discussion on Risks of Overcapacity to the Banking Industry. Journal of Shanxi University of Finance and Economics, 2007 (11).

[29] Chaoxun SHENG. New Experience and Enlightenment from the United States to Resolve Overcapacity. Macroeconomic Management, 2013 (08).

[30] Liqi ZHAO and Tao TANG. Influences of Corporate Merger and Acquisition on the Transformation of Industrial Structure in China. Economic Management, 2008 (10).

[31] Tie LV. Japan's Approach on Governance of Overcapacity and Enlightenments. QStheory Journal, 2011 (05).

[32] Feitao JIANG and Jianhai CAO. Market Failure or Institutional Distortion-Controversies, Defects and New Progress in the Study of the Formation Mechanism of Repeated Construction [A]. China Industrial Economics, 2009 (01).

[33] Yueping WANG. Analysis of Characteristics in Industries with Overcapacity in China and Countermeasures. Macroeconomic Management, 2006 (06).

[34] Wenxiang WANG and Yanxin SHI. Formation-Path-Mechanism of Photovoltaic Industry in China and Policy Reflection [A]. Contemporary Finance & Economics, 2014 (01): 5-7.

[35] Li WANG and Liguo WANG. Effectiveness Analysis of the System for Restraining Overcapacity and Repeated Construction-Based on Empirical Study in Steel Industry [A]. Productivity Research, 2013 (02).

[36] Qiang GENG, Feitao JIANG and Tan FU. Policy Subsides -Energy Overcapacity and Economic Fluctuation in China - An Empirical Test of Introducing the RBC Model for Energy Utilization Rate [A]. China Industrial Economics, 2011 (05).

[37] Fengrong WANG and Fei GAO. Government Intervention-Corporate Life Cycle and Merger and Acquisition Performance-Based on Empirical Data of Local State-owned Listed Companies in China [A]. Journal of Financial Research, 2012 (12): 3-8.

[38] Li YU and Jie ZHANG. Fundamental Cause and Solution of China's Overcapacity-Non-market Factors and Three-step Strategy. Industrial Economics Research, 2014 (02).

[39] Baoda YIN. Rethinking of Overcapacity Governance in China [A]. Economic Review, 2012 (04).

[40] Mei FENG and Peng CHEN. Analysis of Factors Affecting Overcapacity in Steel Industry in China [A]. China Soft Science, 2013 (05).

[41] Qun ZHANG, Mei FENG and Kehui YU. Analysis of Factors Affecting Overcapacity in Steel Industry in China [A]. Journal of Applied Statistics and Management, 2014 (03).

[42] Guogao HAN, Tiemei GAO, Liguo WANG et al. Study on Measurement-fluctuation and Cause of Overcapacity in Manufacturing Industry in China. Economic Research, 2011 (12): 2-10.

[43] Rixu ZHANG. Out of Heavy Chemical Industrial Overcapacity Dilemma: Analyzing on Electrolytic Aluminum Industry. Industrial Economics Research, 2012 (11): 3-5.

[44] Yeliang ZHOU and Wenjun SHENG. Analysis of Causes and Policy Choices of Overcapacity in China during the Transition Period [A]. Journal of Financial Research, 2007 (02).

[45] Lei SHI. Distortion of Capital Market and Overcapacity-Evidence from Micro Enterprises [A]. Finance and Trade Research, 2013(05).