



Research Article

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## Asset restructuring research in pharmaceutical industry of China's listed company

Bing Lian

Department of Accounting, School of Business, Hohai University, Nanjing, China

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### ABSTRACT

*In October 2010, <Adjustment guidance about speeding up the pharmaceutical industry structure> point out that "Encouraging competitive enterprises to implement cross-regional, cross-ownership acquisition and joint restructuring." This adjustment guidance finds the right development way for pharmaceutical industry. To scramble for market share in China, foreign capital is launching offensive on domestic pharmaceutical business by right of abundant capital. Some studies show that some district's pharmaceutical business will surge a tidal wave of M&A when it suffers from pressure from the exterior. In addition, domestic pharmaceutical enterprises need recombining in a large-scale way due to the business actuality of high production costs, low-level scientific technology and small scale of enterprises. So, this article wants to explore the theory and the performance of assets reorganization action, based on our medical listed companies. This research will have the theoretical meaning and operational value for improving our medical industry. This paper analysis and innovate the key issues on our medical industry's action of Assets reorganization in the future.*

**Key words:** pharmaceutical industry; assets reorganization; performance; empirical analysis

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### INTRODUCTION

With the rapid development of economy involving various fields, pharmaceutical industry development mode in the process of the development of capital market also has a big change. The pharmaceutical industry is an important part of national economy and it is closely related with the people's life and health and quality of life. At the same time, it is the important content of building a socialist harmonious society. So far the number of pharmaceutical enterprises in our country is large, but the scale is small. Compared with the international large pharmaceutical companies, there is significant gap at the term of size, benefit and management. It is difficult to participate in international competition and, at the same time, domestic market faces with the large challenge. The problem of long term unreasonable structure, weak innovation ability, environmental governance vulnerability and sever waste of resources increasingly serious. In that case, the implementation of enterprise merger and assets restructuring is in line with the requirements of domestic pharmaceutical industry structure adjustment and it is also the only way for the revitalization of national pharmaceutical industry. The article aims to study the issues of motivation of the assets reorganization of the pharmaceutical industry listed companies, the way of assets reorganization, the characteristics of the assets reorganization and the performance after implementation of the restructuring. In that way, we can deeply understand the situation of the pharmaceutical industry listed company asset restructuring practices.

The meaning of assets reorganization is accompanied by China's economic growth mode transformation. There are different points among the concept of asset restructuring. In our country, the typical assets reorganization concept has the following kinds. The first kind of concept is from the perspective of factors of production integration. In this kind of concept, Companies have a variety of specific production factors providing for production and service operation, such as machinery, equipment, buildings, tools, capital, raw materials and power and so on. In addition, the composition of information resources and human resources can also be included in the category. According to the

certain purpose, rule and order, the enterprises put these factors together. When the business environment or operation targets changes, the enterprises will adjust and change the original one in order to meet the actual needs. This is the most common ways of asset restructuring. The second kind of assets restructuring is from the perspective of the business integration. In this concept, assets reorganization is that the enterprises use various channels to integrate and combine internal and external existing business in order to improve the quality and the profitability of the company. External acquisition and expansion is one of the core content of asset reorganization. The third kind of concept is the integration of property rights, equity structure. In this concept, assets reorganization is a kind of recombination behavior which is involved in the legal person property rights and the investor ownership adjustment. It aims to seek competitive advantages through resource optimization configuration so as to realize the maximization of the benefit of restructuring the main body.

Combined with current situation of development of industry and the national industrial policy, assets reorganization of our country medicine industry has its own characteristics which can be concluded as following points.

The first kind is that the government plays a leading role in the restructuring. In a large part of the integration process in pharmaceutical industry can be concluded as the integration of state-owned assets. On September 16, 2009, the state council formally approved the joint restructuring of national medicine group and biological technology group co., LTD in China. The joint reorganization of the two groups laid a solid foundation for the national medicine group to be the top one in its field. The state-owned assets supervision and administration commission of Shanghai takes into action. On October 15, 2009, Shanghai industrial group co., LTD announced its pharmaceutical assets restructuring: the new medicine takes the Shanghai industrial medicine as its platform and it will merger on Shanghai medicine and Chinese and western medicine and purchase Shanghai medicine group and Shanghai medical asset holdings. After the transaction, the total market value will exceed 22 billion Yuan. Government-led restructuring events have a strong demonstration effect and they will have a certain degree of prosper on the integration of other enterprises. The role of government is to create a good market atmosphere and to provide the market environment of openness, fairness and justice.

The second kind is that there is increasing transnational merger, acquisition and reorganization. After the international financial crisis, the shadow is not completely dispelling still hanging over the international market which affects the growth of the pharmaceutical market in the developed countries. Our country pharmaceutical market is huge, cheap labor force and low clinical trial resources cost and with the implementation of the new health care plan attracting the multinational pharmaceutical companies to expand in China. Merger and reorganization is increasing in the number. For example, In December 2008, the United States Medtronic Inc. spends HK \$1.726 billion to purchase Shandong Weigao medical polymer products co., LTD. 15% stake and set up a joint venture. At the same time of the massive influx of foreign capital, the pharmaceutical enterprises in our country should go abroad and conduct overseas mergers and reorganization to acquire overseas advanced technology resources and make up for the scarcity of new drug development so as to promote the development of domestic pharmaceutical industry.

The third kind is that restructuring in different enterprises ownership types. With state-owned enterprise system reform continues to deepen, state-owned pharmaceutical enterprise needs to introduce private capital and foreign strategic investors in order to bring the modern management system. For example, Shenzhen Taitai Pharmaceutical Industry Co., LTD acquires control right of Livzon Pharmaceutical Group Inc. Fosun Group acquires the holding of friends of Chongqing medicine. Corporation and stated-owned enterprises should make advantages of each other so as to form a relatively complete industrial structure in large medical pattern.

## EXPERIMENTAL SECTION

Taking 2008 composite indicator as an example illustrates the calculation process. The indicators from x1 to x8 respectively show liquidity ratio, equity ratio, inventory turnover ratio, turnover of account receivable, earnings per share, net assets income rate, increase rate of business revenue and total assets growth rate. In the process of analysis we use SPSS16.0 for Windows software.

(1) The data preprocessing is demonstrated in chart 1.

Chart 1: Result of KMO&Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.656
Bartlett's Test of Sphericity	Approx. Chi-square	86.925
	df	28
	sig	.000

Moderate sampling determination of KMO test is 0.656 which is greater than standard determination 0.6 given by the Statistician Kaiser. It is suitable for factor analysis.

(2) We choose the factor analysis. The results of program run are demonstrated in chart 2.

**Chart 2: Total Variance Explained**

	Initial Eigenvalues			Extraction Sum of Squared Loading			Rotation Sums of Squared Loading		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.204	40.048	40.048	3.204	40.048	40.048	3.154	39.429	39.429
2	1.995	24.939	64.987	1.995	24.939	64.987	2.004	25.055	64.484
3	1.003	12.542	77.530	1.003	12.542	77.530	1.044	13.045	77.530
4	0.598	7.476	85.005						
5	0.582	7.270	92.275						
6	0.266	3.327	95.602						
7	0.213	2.667	98.268						
8	0.139	1.732	100.000						

We choose the first three factors to replace the former eight target variable which can be used as a comprehensive index for the assets reorganization evaluation.

(3) We use maximum variance for the factor rotation which is demonstrated in chart 3.

**Chart 3: Component Matrix**

	Component		
	1	2	3
liquidity ratio	0.757	-0.259	0.078
equity ratio	0.883	-0.158	0.199
inventory turnover ratio	0.009	0.902	-0.047
account receivable turnover	0.268	0.882	-0.093
earnings per share	0.844	-0.207	0.008
net assets income rate	0.844	0.018	-0.086
increase rate of business revenue	0.245	0.447	0.755
total assets growth rate	0.541	0.261	-0.608

**Chart 4: Rotated Component Matrix**

	Component		
	1	2	3
liquidity ratio	0.796	-0.114	0.024
equity ratio	0.905	-0.015	0.163
inventory turnover ratio	-0.168	0.877	0.136
account receivable turnover	0.088	0.918	0.086
earnings per share	0.867	-0.033	-0.035
net assets income rate	0.820	0.202	-0.082
increase rate of business revenue	0.184	0.329	0.829
total assets growth rate	0.455	0.478	-0.543

The statistics in chart 3 is relatively high load in variance. After the rotation in chart 4, the factors clearly reflect the correlation between principle component and the original variables. Part1 reflects the debt paying ability and profitability. Part2 reflects operation. Part3 reflects the development of the enterprise.

(4) According to the scores of the factors analysis, we use function for the regression analysis

**Chart 5: Component Score Coefficient Matrix**

	Component		
	1	2	3
liquidity ratio	0.260	-0.093	0.050
equity ratio	0.294	-0.060	0.179
inventory turnover ratio	-0.087	0.444	0.046
account receivable turnover	0.088	0.459	-0.002
earnings per share	0.279	-0.049	-0.013
net assets income rate	0.253	0.078	-0.082
increase rate of business revenue	0.062	0.082	0.782
total assets growth rate	0.115	0.279	-0.567

According to the scores of the factors, we establish three principal components scores formula:

$$F1=0.260X1+0.294X2-0.087X3-0.008X4+0.279X5+0.253X6+0.062X7+0.115X8$$

$$F2=-0.093X1-0.060X2+0.444X3+0.459X4-0.049X5+0.078X6+0.082X7+0.279X8$$

$$F3=0.050X1+0.179X2+0.046X3-0.002X4-0.013X5-0.082X6+0.782X7-0.567X8$$

The comprehensive scores formula in 2008:

$$F= (39.429*F1+25.055*F2+13.045*F3)/77.530$$

(5)After the compute, we acquire the comprehensive scores of the sample company in 2008 in chart 6

**Chart 6: Aggregative score for sample companies 2008**

Company code	F1	F2	F3	F
000078	-1.2088	-0.1381	-1.0452	-0.8352
000423	0.7346	0.1358	0.1695	0.4460
000538	1.1150	0.9171	-0.4112	0.7942
000590	-0.3888	-0.5990	-0.0740	-0.4038
000605	-0.8217	-0.9155	1.8287	-0.4061
000623	1.3399	-0.7980	0.0216	0.4272
000650	0.2330	3.5763	-0.7206	1.1530
000766	-0.1563	-0.9573	-0.2143	-0.4249
000788	-0.8095	-0.3498	-0.8211	-0.6629
000999	0.1112	-0.5728	1.4463	0.1148
002004	0.3514	-0.4904	0.1548	0.0463
002020	-1.3779	-0.4695	-1.0437	-1.0281
600080	-1.2110	1.8259	3.0237	0.4829
600129	-1.1218	0.1132	-0.4746	-0.6138
600276	1.8369	-0.7439	0.5159	-0.2583
600436	0.8043	-0.6218	-0.3310	0.1524
600479	1.0200	-0.0552	0.5547	0.5942
600518	0.6242	-0.0472	0.3751	0.3653
600535	0.0129	0.2785	0.2294	0.1351

Using the same methods above computes the aggregative score in 2007 which is demonstrated in chart7:

Company code	F1	F2	F3	F
000078	-0.7533	0.1432	-1.1270	-0.5577
000423	-0.1753	0.1743	1.1990	0.3031
000538	0.7200	0.1844	-0.2841	0.2782
000590	-0.5314	-0.6854	-0.1573	-0.4829
000605	-0.5896	-0.5573	-1.4113	-0.7966
000623	3.9380	-0.3581	-0.7205	1.2930
000650	0.1414	4.5092	0.3498	1.6316
000766	-0.7263	-0.9663	0.5539	-0.4662
000788	-0.4881	-0.3130	-0.8154	-0.5173
000999	0.2195	-0.4415	-0.6992	-0.4195
002004	1.6143	-0.2895	-0.3017	0.4815
002020	-0.3318	-0.2374	-0.9157	-0.4515
600080	-0.6878	0.3824	-1.1588	-0.4610
600129	-0.4252	0.0032	-1.1747	-0.4829
600276	0.5644	-0.5050	1.6530	0.5013
600436	0.1269	-0.6445	1.1682	0.1492
600479	0.4123	0.0021	1.7984	0.6446
600518	0.2714	-0.1341	0.7504	0.2650
600535	-0.4014	0.4202	-0.2540	-0.0925

Repeating the same steps, we can acquire sample companies aggregative score in 2009. The statistics we get in chart8 is the summary of aggregative scores in 2007, 2008 and 2009.

Chart8: Aggregative Score for Sample Companies 2007 2008 2009

Company code	F07	F08	F09
000078	-0.5577	-0.8352	-0.5703
000423	0.3031	0.4460	0.8357
000538	0.2782	0.7942	0.3504
000590	-0.4829	-0.4038	-1.3563
000605	-0.7966	-0.4061	-0.7758
000623	1.2930	0.4272	0.8939
000650	1.6316	1.1530	1.4780
000766	-0.4662	-0.4249	-0.4621
000788	-0.5173	-0.6629	0.0838
000999	-0.4195	0.1148	0.2093
002004	0.4815	0.0463	-0.0056
002020	-0.4515	-1.0281	-0.7994
600080	-0.4610	0.4829	-.8302
600129	-0.4829	-0.6138	-0.6645
600276	0.5013	-0.2583	1.1360
600436	0.1492	0.1524	0.0662
600479	0.6446	0.5942	0.2344
600518	0.2650	0.3653	0.3088
600535	-0.0925	0.1351	0.0500

## RESULTS AND DISCUSSION

The article use F07, F08, F09 to reflect the previous year of the restructuring, the year of the restructuring and the second year after the restructuring. Using F08-F07 reflects the score difference between the previous year and the year of the restructuring. F09-F08 reflects score difference between the year and the second year of the restructuring. F09-F07 reflects the score difference between the second year and the previous year of the restructuring. If the score difference is positive, it shows that the restructuring improves the corporation performance. If the score difference is negative, it shows that the restructuring cannot improve the performance. We compare sample companies 'aggregative scores and the statistical results are demonstrated in chart9.

Chart9: compared analysis of the sample companies

F(difference)	F08-F07	F09-F08	F09-F07
Improvement	57.69%	50%	53.85%
unimprovement	42.31%	50%	46.15%

The statistics show that 57.69% corporation performance improved after the restructuring and 42.31% corporation performance not improved. It illustrates that greater part of the corporations improved after restructuring and assets restructuring is positive. To sum up, the assets restructuring on the overall sample company is valid, but the valid restructuring performance is not significant. In that way, the improvement after the restructuring is not significant.

## CONCLUSION

There are many factors influencing the empirical results. For example, the choice of the sample statistics, the determination of the study method, the situation of the industrial development. All these may have an impact on the results. The conclusion can be summed up in four points.

The first one is that the relevant legal system is not sound in the pharmaceutical industries. Assets reorganization of listed companies need perfect the legal system of securities market as a guarantee. Only in the sound legal environment, it can go stronger. After years of development, our country's legal system is gradually perfect. Multiple legal departments have adjusted for assets restructuring for the listed companies. But, there is no special law for corporate restructuring. Lacking of pertinence and operability in laws and legislations in assets restructuring makes situation cannot be in accordance with. As a result, the government should establish sound laws and legislations to protect the development of the pharmaceutical industries.

The second one is that the information disclosure is not standard in pharmaceutical industries. There are many problems existing in incomplete disclosure content, insufficiency and low transparency. If the restructuring is involved in affiliate transaction, it is easier to appear this kind of circumstance. It is hard for external personnel of the enterprise to know the real state and substance after the restructuring which may seriously affect the flow of information and make it easy to cause the insider trading and damage the interests of the investors. At the same time, it can undermine the public image of the listed companies in pharmaceutical industries and cause information asymmetry of investors of listed companies. If there is no timely relevant disclosure information in pharmaceutical industries, information

insider can buy and sell stocks in in the secondary market in order to obtain the benefit. The ordinary investor is hard to know the process and cannot get full and effective information so as to make the right investment points. However, the speculators get the profit by speculation which increases the difficulty for the regulators management in pharmaceutical industries. The problems in information disclosure reflect the low capital market efficiency to some extent. In that case, it is important to further improve the standardization of information disclosure in assets reorganization activities.

The third one is excessive government intervention in pharmaceutical industries. In enterprise assets restructuring activities, the government reasonable and moderate behavior of the merger and acquisition activities is necessary for effective intervention and guidance which can improve the efficiency and reduce friction in the process of restructuring in pharmaceutical industries. Since the government is different from the general market main body, excessive government intervention will often result in corporate restructuring influenced by government policy which may cause deviation from enterprise's own development need. The government formulated the preferential tax and other various preferential policies to encourage corporate restructuring. The government's preferential policies play a role in expanding capital scale and realize spanning development through assets restructuring in pharmaceutical industries. In addition, the government leads to make the good performance enterprises to merger poor performance enterprises. Government economic function is mix with non-economic function which obeys the market discipline in pharmaceutical industries.

The fourth one is the further development of intermediary order. The intermediary agencies in enterprise assets reorganization activities mainly include investment bank, Securities Company and commercial banks. These organizations conduct pre-research, financial assessment, scheme design, supporting financing arrangement and restructuring plan. China's commercial Banks and non-bank financial institutions lending capacity is limited. Restructuring needs large funds and limited lending capacity bring certain difficulty to the restructuring. In western countries, intermediary service institutions serve as conduction of supply and demand information, makers of strategic plan and the discovery of the transaction price. They all have rich knowledge and experience, creative planning and design and abundant capital strength to promote restructuring work smoothly. However, financial institutions engaging in investment banking in our country are Securities Company and trust and investment companies. Compared with foreign investment companies, the characteristics of these financial institutions are small fund scale, unclear business scope and the management level falling behind. All these reasons restrict the assets reorganization activities in China.

Suggestion in asset restructuring in pharmaceutical industries are listed in four aspects. It includes strengthening the rule of legal system in pharmaceutical industries, improving the information disclosure of asset reorganization in pharmaceutical industries, correctly defining government's role in pharmaceutical industry and strengthening the intermediary institution in pharmaceutical industry.

The first aspect is strengthening the rule of legal system in pharmaceutical industries. To establish a complete set of legal security system includes property rights trading market order, policies and regulations, management of state-owned property, financial system and restructuring procedure in pharmaceutical industries. All these need complete rules and regulations. In order to accelerate the pace of financial instrument innovation, means of merger, acquisition and reorganization, market innovation to eliminate legal obstacles, providing a legal basis and guarantee in restructuring market, we should actively encourage listed companies obtain the high quality assets through a variety of innovative way from major shareholders or enterprises in pharmaceutical industries. In this way, we can improve the asset quality of listed companies and main business profitability. At the same time, securities regulators should improve and optimize the listed company merger, acquisition and reorganization for examination and approval procedures and standards of behavior in pharmaceutical industries. Giving the preference to those who have good market prospects for local industry structure optimization and upgrading of the high-tech, low energy consumption enterprise restructuring.

The second aspect is improving the information disclosure of asset reorganization in pharmaceutical industries. Improving our country's information disclosure measures makes it better for pharmaceutical enterprises to have more choices and information on the ways of asset restructuring in pharmaceutical industries. At the same time, the enterprises fully understand the basic asset situation of other enterprises before asset restructuring. Perfecting the information disclosure must standardize assets reorganization temporary announcement. The procedures should be open and capital markets should be open, fair and just. The legal responsibility of the information disclosure system should be clear and definite. Increasing the penalties for not timely disclosure behavior and regulating the behavior of asset restructuring of related transactions in pharmaceutical industries. We should make the regulatory institution such as stock exchange to play a role in supervision. At the same time, the media should be involved in supervision. The regulatory departments in our country's market are mainly afterwards regulation. The consciousness of market

participants of the securities market supervision is weak. In that case, media supervision is particularly important. Generally, the specifying information disclosure is basically positive media reports which may weaken its supervision function. Afterwards, we should not only make it a rule for the specifying media to play a part in supervision, but also make it a rule for the other media to play a part in supervision in pharmaceutical industries. In that way, the information from media can be effectively conveyed to the vast number of investors in a timely way and reducing the information asymmetry degree between investors and listed companies in pharmaceutical industries.

The third aspect is incorrectly defining government's role in pharmaceutical industry. First and foremost, the government should be clear of its status and role and change the asset restructuring activities of direct administrative intervention to the foster of effective market mechanism. At the same time, the government should formulate the relevant laws and regulation for the asset restructuring. Coordinating and restricting the restructuring relationship between the parties and making up for the market failure. The auxiliary function of the government in asset restructuring is guidance, supporting, specification, supervision and service. The enterprises can decide the details of the restructuring in accordance with the laws of the market and its will. In the second place, the governments should standard securities trading market, strengthen the construction of intermediary institution, provide information consulting services and establish a social security system and other measures which can provide perfect service as much as possible for the each link of assets restructuring of the listed company. For the more, improving the coordinating role of the government is important. As a job of coordination of the identity of the arbitration restructuring, the government should coordinate and restructure the interests of all parties' contradiction and conflict and promote the smooth implementation of the restructuring. Last but not the least, Government should actively guide and promote the listed company in accordance with the national pharmaceutical industry industrial structure adjustment and optimization of industrial organization direction for merger, acquisition and reorganization.

The forth aspect is strengthening the intermediary institution in pharmaceutical industry. In recent years, the intermediary agency in China securities market is not perfect. Compared with western countries, the power of our country is weak. In that case, we should establish the investing bank system in our country, specify the intermediary organization in the securities market, and improve the strength of the intermediary organization and the level of business which adapts the needs of the development of the asset restructuring of the listed companies. Dominated by investment banks, we should make full use of the investment bank capital operation advantages, resource advantages, and human advantages. In this way, the assets reorganization of listed companies is under the guidance of economic principles. At the same time, this kind of behavior can reduce the transaction costs on both sides and make the two sides pass the information more smoothly to the market and investor and protect the interests of the investors and prevent fraud in restructuring. The concrete suggestion is listed as following. Firstly, through system innovation function reconstruction, some existing strong securities companies gradually develop into an investment bank. Secondly, fostering and standardizing accounting assessment audit legal intermediary service organizations and providing standard and efficient intermediary services for asset restructuring of listed companies.

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