Research on the Performance of Private Pharmaceutical Logistics Enterprises by Statistical Data Analysis

Xiao Liping¹, Huang yafang¹, Yubo*¹

¹Department of humanities and management, Yunnan University of Traditional Chinese Medicine, Kunming, Yunnan, 650500, China
*¹Yubo, Corresponding Author.
Corresponding author’s e-mail: 381506827@qq.com

Abstract: This paper uses statistical data analysis method to compare the financial report data of Jiuzhou Tong Pharmaceutical Group Co., Ltd. (hereinafter referred to as Jiuzhoutong) for the past five years, analyzes its operation status, and puts forward the prospect of pharmaceutical logistics industry.

1. Introduction
Since the reform and opening up in China, the current development of pharmaceutical logistics is still immature, and there is a phenomenon that the concentration of the pharmaceutical industry is increasing and the industrial pattern of “multiple, small and scattered” coexists. Its performance is high cost, low efficiency and backward technology. In the existing literature, China's research on pharmaceutical logistics enterprises is mainly macro. This paper takes Jiuzhoutong as an example in the micro-angle of view, and analyzes the operation mode and development prospects of pharmaceutical logistics enterprises based on financial reports.

Jiuzhoutong is a pharmaceutical distribution enterprise with pharmaceutical wholesale and retail as its main business and market distribution as its main business model. It was established in 1999 and listed in November 2010. Its headquarters is located in Wuhan, Hubei. The Harvard Analytical Theory Framework is a relatively complete financial reporting analysis system. This paper is based on this theoretical framework to analyze the financial report of Jiuzhoutong for nearly 5 years.

2. Strategic analysis
2.1 Analysis of Industry Strategy
Pharmaceutical logistics is in the growth stage. This paper uses Potter's five-force model. According to the data of the Ministry of Commerce in 2017, Sinopharm Group, China Resources Pharmaceutical, Shanghai Pharmaceutical and Jiuzhoutong are the leading enterprises in the four major countries in the industry. Their main business income accounts for 37.6% of the national pharmaceutical market in the same period, and the top 100 in the industry accounted for 70.7%. Compared with the concentration of the pharmaceutical market in the United States and Japan, the existing competition in the industry has little effect on Jiuzhoutong. However, in recent years, China's third-party logistics companies and
some foreign logistics companies have tried pharmaceutical logistics, and the competition is increasingly fierce. Jiuzhoutong is one of the few pharmaceutical retail logistics companies with relatively complete distribution network and high quality assurance. After multi-party analysis, under the background of the implementation of national medical reform and pharmaceutical separation and macro-control, China's pharmaceutical logistics industry has Great profit margins.

2.2 Analysis of competitive strategy
Jiuzhoutong adopts the total cost leading strategy. It has more than 900 chain pharmacies across the country. It has won the honorary titles of “5A Logistics Enterprise” and “Top Ten Logistics Enterprise” and has a good reputation in the industry. Kyushu is in line with the development of the times and cooperates with online app operators. The emphasis on logistics technology and its own nationwide distribution network help the company implement this strategy.

3. Accounting analysis

3.1 Asset Class

| Table 1. Balance Sheet (Partial) Fixed Base Index |
|-----------------------------------------------|
| 2012  | 2013  | 2014  | 2015  | 2016  | 2017   |
| Money funds | 100%  | 133.41% | 149.48% | 254.53% | 218.21% | 355.88% |
| Receivables | 100%  | 137.62% | 216.98% | 299.40% | 399.86% | 560.38% |
| Total current assets | 100%  | 127.36% | 167.09% | 228.87% | 270.42% | 365.50% |
| Total non-current assets | 100%  | 118.50% | 146.08% | 184.31% | 225.60% | 294.68% |
| Total assets | 100%  | 125.62% | 162.96% | 220.11% | 261.61% | 351.58% |

It can be seen from Table 1 that the various asset projects of Jiuzhoutong have increased significantly in 2013-2017. At the end of 2017, all kinds of assets were 3-6 times of the end of 2012, and the total assets were 3.5 times.

Monetary funds are the most liquid in the company, but the profitability is the weakest. In the past five years, Jiuzhoutong’s monetary funds continued to increase. From 2012 to 2017, it increased by 3.6 times. There are two reasons. First, the inevitable result of the expansion of the company’s business scale. Second, the company paid about 3 billion acceptance bonds in 2017. The mutation in 2015 was mainly due to the increase in the proportion of accounts receivable and cash recovery at the end of the year.

Among the accounts receivable, Jiuzhoutong has experienced a growth of more than five times in the past five years, especially after 2014. The above table shows that the scale of business operations has expanded, and the management level of accounts receivable of enterprises has to be improved.

According to the data in Table 1, the growth of current assets is slightly faster than that of non-current assets. Compared with Sinopharm's growth of 4.4 times in current assets and 1.9 times in non-current assets, Jiuzhoutong's asset growth structure is more reasonable.

3.2 Debt category

| Table 2 Balance Sheet (Partial) Fixed Base Index |
|-----------------------------------------------|
| 2012  | 2013  | 2014  | 2015  | 2016  | 2017   |
| short-term loan | 100%  | 162.33% | 147.09% | 224.01% | 150.58% | 269.61% |
| Payable | 100%  | 138.68% | 202.05% | 281.61% | 379.27% | 448.34% |
| Total current liabilities | 100%  | 139.78% | 173.50% | 253.75% | 305.07% | 370.81% |
| Bonds payable | 100%  | 100.31% | 100.64% | 100.91% | 80.87% | 84.11% |
| Total non-current liabilities | 100%  | 99.71% | 99.05% | 102.43% | 86.41% | 107.14% |
| Total Liabilities | 100%  | 132.99% | 160.89% | 228.12% | 268.04% | 326.15% |
| Total owner's equity | 100%  | 110.41% | 167.23% | 203.60% | 248.36% | 404.01% |
From the debt data of Table 2 in Jiuzhoutong, the short-term loan balance decreased in 2014 and 2016 compared with the previous year. The decrease in 2016 was due to the repayment of part of the borrowings after the settlement of the company's year-end receivables; the significant increase in 2015 and 2017 was mainly due to the expansion of sales and the increase in required current assets. However, most of the loans were brought by sub-enterprise or indirectly controlled sub-business activities, and the parent company's borrowings decreased during the 2017 reporting period. Accounts payable has continued to grow over the past five years. The overall change in non-current liabilities is small. The overall debt growth rate is very low. The growth of owner's equity is stable and the growth rate is high, which is conducive to attracting investment.

Based on the data in Tables 1 and 2, the company's accounts receivable and accounts payable grew at the same rate in the same period, and the purchase and sales model adopted was more reasonable, but the recovery of accounts receivable should be strengthened.

3.3 Profit and Loss Category

| Table 3 Income statement (part) | chain base index |
|--------------------------------|-----------------|
|                                | 2013     | 2014     | 2015     | 2016     | 2017     |
| Operating income               | 13.32%   | 22.82%   | 20.75%   | 24.13%   | 20.12%   |
| Operating cost                 | 13.33%   | 22.25%   | 20.13%   | 23.78%   | 19.34%   |
| sales expense                  | 16.30%   | 34.59%   | 15.38%   | 33.27%   | 39.37%   |
| Management costs               | 19.78%   | 38.43%   | 39.73%   | 17.64%   | 28.99%   |
| Financial expenses             | 26.27%   | 9.11%    | 29.27%   | 30.15%   | 7.13%    |
| Investment income              | -36.84%  | -28.43%  | 15.17%   | -81.63%  | 356.82%  |
| operating profit               | 4.16%    | 24.98%   | 34.05%   | 22.00%   | 85.06%   |
| Total profit                   | 9.83%    | 24.16%   | 26.87%   | 15.68%   | 74.08%   |
| Net profit                     | 14.12%   | 20.68%   | 23.86%   | 28.48%   | 62.87%   |
| Basic earnings per share       | 17.24%   | 5.88%    | 19.44%   | 25.58%   | 61.11%   |

The business revenue and operating costs of the company have increased by about 20% per year since 2014. The management costs continue to grow rapidly due to human and technology investments, with a five-year average growth rate of 28.91%. The growth rate of financial expenses in 2016 exceeded 30% mainly due to the expansion of financing scale during the reporting period.

The rise and fall of investment income depends more on the investment projects and operating conditions. The larger growth in 2017 is affected by non-recurring gains and losses such as compensation for Hanyang Land. Basic earnings per share rose 61.11 percentage points in 2017 compared with 2016, but after deducting non-recurring gains and losses, it only increased by 19.61% compared with last year, which is a good growth rate.

4. Financial analysis

4.1 Analysis of Solvency

The solvency indicator values calculated by the financial statements issued by Jiuzhoutong in 2013-2017 are shown in Table 4:

| Table 4 solvency indicators | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------------------------|------|------|------|------|------|
| Current ratio                | 1.31 | 1.38 | 1.30 | 1.27 | 1.42 |
According to the data in Table 4, the short-term solvency of enterprises in 2014-2016 has been slightly reduced. In 2017, there has been a significant increase, but overall there is still a short-term debt repayment risk.

The property rights ratio of Jiuzhou tong is in the range of 1.5-2.5. Self-owned assets have lower risk guarantees for liabilities and repayment of long-term debt. The company's asset-liability ratio is much higher than 50%. The significant decrease in the asset-liability ratio in 2014 and 2017 is mainly the result of non-public offering of shares and non-recurring gains and losses. Under normal operating conditions, the company's debt level is relatively high, long-term compensation. Debt capacity is low. In recent years, the company's operating income is in good condition, which can gradually reduce the proportion of borrowing, while reducing the concerns of shareholders and potential investors on investment risks.

4.2 Analysis of Operational Capability
The operating capacity index value is calculated from the financial statements issued by Jiuzhoutong in 2013-2017, as shown in Table 5:

| Table 5 Operational Capability Indicators |
|------------------------------------------|
|                                             |
| Inventory turnover rate (times)            |
| 2013: 6.87                                 |
| 2014: 6.78                                 |
| 2015: 6.35                                 |
| 2016: 6.20                                 |
| 2017: 6.05                                 |
| Accounts receivable turnover rate (times)  |
| 2013: 15.09                                |
| 2014: 10.46                                |
| 2015: 7.69                                 |
| 2016: 7.30                                 |
| 2017: 6.38                                 |
| Total asset turnover rate (times)          |
| 2013: 2.00                                 |
| 2014: 1.92                                 |
| 2015: 1.75                                 |
| 2016: 1.73                                 |
| 2017: 1.63                                 |

The inventory turnover has decreased linearly in the past five years. In 2014, the accounts receivable turnover rate dropped sharply by 31% compared with 2013, mainly due to the company's expansion of hospital sales business during the reporting period. The turnover of accounts receivable decreased by nearly 60% in 5 years, the turnover rate was lower than the industry average, and the risk of bad debt loss was high.

By combining three operational indicators, the company's operating turnover capability cannot effectively utilize all of the company's resources. Appropriate inventory management methods should be adopted to develop appropriate incentive systems for corporate management to increase the total number of asset turnover.

4.3 Analysis of Profitability
Calculate the profitability indicator value from the financial statements issued by Jiuzhoutong in 2013-2017:

| Table 6 Profitability indicators |
|---------------------------------|
| Operating margin                |
| 2013: 1.81%                    |
| 2014: 1.83%                    |
| 2015: 1.93%                    |
| 2016: 1.80%                    |
| 2017: 2.60%                    |
| Return on Total Assets          |
| 2013: 2.82%                    |
| 2014: 2.66%                    |
| 2015: 2.48%                    |
| 2016: 2.54%                    |
| 2017: 3.25%                    |
| Rate of Return on Common Stockholders' Equity (ROE) |
| 2013: 8.82%                    |
| 2014: 7.03%                    |
| 2015: 7.15%                    |
| 2016: 7.53%                    |
| 2017: 7.54%                    |

The sales profit rate, total return on assets and return on net assets are all indicators reflecting the ability of enterprises to generate income. In the past four years, the sales profit rate has increased by more than 40%, indicating that the profitability of the company is rising, but the profitability of Jiuzhoutong is generally weak. The sales profit margin of Sinopharm in the same period of 2013-2017 ranged from 4.80% to 5.60%.. In the same period, the total return on assets and the return on net assets
are more than twice that of Jiuzhoutong. The profitability of the company needs to be further improved.

5. Prospect analysis

In summary, Jiuzhoutong basically has problems such as high debt repayment risk, long payable period of receivables, and low profitability. In this regard, enterprises should improve the capital structure and improve the recovery rate of accounts receivable; use modern inventory management methods, establish a strict investment and financing system, make full use of the sales network, improve the informationization degree of the supply chain and reduce costs; adopt appropriate business methods.

Private pharmaceutical logistics companies similar to Jiuzhoutong should pay attention to these problems in their operations. In fact, pharmaceutical distribution companies should use the sales network to achieve healthy development. Enterprises should formulate a reasonable employment policy and continuously improve operational efficiency. Secondly, the operation will start from a circulation point, expand from the region to the region, expand the sales network with benefits and business reputation, and achieve overall reduction by improving the supply chain technology level. This synergy achieving information sharing helps management to make business decisions and improve operational efficiency.

References

[1] Wang Yong, Gan Rongfu. Thinking about the development opportunities and challenges of pharmaceutical business based on the dimension of pharmaceutical industry chain [J]. Shanghai Pharmaceutical, 2016, (7): 63-67.

[2] Department of Market Order of the Ministry of Commerce. 2017 Statistical Analysis Report on the Operation of Drug Distribution Industry [r]. Beijing: Ministry of Commerce of the People's Republic of China, 2018.

[3] Liu Baolin. 2017 Annual Report of Jiuzhou Tong Pharmaceutical Group Co., Ltd. [r]. Wuhan: Jiuzhou Tong Pharmaceutical Group Co., Ltd., 2018.

[4] Liu Baolin. 2017 Annual Report of Jiuzhou Tong Pharmaceutical Group Co., Ltd. [r]. Wuhan: Jiuzhou Tong Pharmaceutical Group Co., Ltd., 2018.