

Analysis of the capital structure of the pharmaceutical industry

—— Take Hengrui Pharmaceutical as an example

Hui Deng^{1, a}

Abstract.

Capital structure results from the enterprise's financing mix in a certain period, reflecting the value composition and proportionality of the enterprise's various types of capital. As an important indicator for judging the financial status of an enterprise, capital structure reflects, to a large extent, the enterprise's ability to repay debt and refinance. Reasonable capital structure can effectively play the regulatory role of financial leverage, reduce enterprises' financing costs, and improve their profitability. Whether the capital structure is reasonable affects the future development of the enterprise. Therefore, the management of the company should adjust the capital structure according to the actual situation of the enterprise and the market situation, and how to achieve the optimal capital structure is a problem worth discussing. This paper takes Hengrui Pharmaceutical as an example and analyzes the capital structure of the pharmaceutical industry. The in-depth study of the historical data and financial report of Hengrui Pharmaceutical reveals the capital structure and influencing factors of Hengrui Pharmaceutical, as well as how these factors affect the company's financial performance. By analyzing the capital structure of Hengrui Pharmaceutical, we can understand the company's debt level, debt ratio, asset structure, and capital source.

Keywords: capital structure; pharmaceutical industry; Hengrui Pharmaceutical.

1. Current capital structure of listed companies in China's pharmaceutical industry

1.1 Industry introduction

The pharmaceutical industry market demand is stable and belongs to the defensive industry. Compared with other industries, the pharmaceutical industry has a special market position because, at this stage, medical products have gradually become the rigid necessities of people's lives and are an important guarantee for people's health. The rigid market demand determines that economic development will not affect its development. Therefore, the rapid development of China's national economy can promote people's demand for drugs to a certain extent, and the fluctuation of drug prices on drug demand is not significant. Secondly, the pharmaceutical industry pays attention to technological development and is a high-tech industry. In the process of social development, the progress of science and technology and the improvement of medical levels have inculcated strong vitality in the pharmaceutical industry, and treatment plans and symptomatic drugs for many difficult diseases have gradually been developed. Finally, the pharmaceutical industry has a long production cycle, complex procedures, and high investment capital. The high investment of the pharmaceutical industry is mainly reflected in the research and development of new drugs. Compared with the products of other industries, the pharmaceutical industry

requires a long production cycle, complex production procedures, high investment capital, and rich technology content. Compared with the research and development of products in other industries, the research and development of listing new products in the pharmaceutical industry requires a very complex process. The development cycle of pharmaceutical products is very slow, and the time from the beginning to the end of clinical research is relatively long, as short as 8-15 years, or may take decades. High risk mainly depends on the pharmaceutical enterprises' characteristics or efficacy of the drugs developed or produced. Drugs with better characteristics and efficacy will occupy a large market share, thus bringing more benefits to enterprises. However, if the quality or efficacy of drugs is poor, their market competitiveness will be relatively weak, and the profit margin will be greatly compressed, which brings certain risks to the enterprise(Wu Cuixia,2018).

In recent years, the development of China's pharmaceutical industry has been unprecedentedly rapid. A survey report by the National Bureau of Statistics pointed out that during the four years from 2015 to 2022, the number of domestic pharmaceutical enterprises above designated size has been increasing, from 7,392 in 2015 to 8,814 in 2022, with 1,422 pharmaceutical enterprises above designated size established in just seven years. According to the development of the industry scale, the number of large-scale enterprises in China's pharmaceutical industry is increasing rapidly every year. The scale of

the industry is constantly expanding, and the degree of industry concentration is also constantly improving. Now, affected by the novel coronavirus epidemic, the efficacy of traditional Chinese medicine in China has been affirmed, and its recognition has increased, bringing an opportunity for its export. In the treatment of COVID-19, Chinese medicine was proven to have an obvious curative effect; many foreign countries recognize this, and the World Health Organization revised international disease statistics and related health problems, which contains the content of traditional Chinese medicine, which makes the international recognition of traditional Chinese medicine get further promotion.

On the other hand, due to the impact of COVID-19, residents' awareness of vaccination will further increase. Compared with some developed countries, China's vaccination rate is far lower than theirs, and the demand for pneumonia and influenza vaccines is expected to further expand in the future. Under the influence of these factors, China's pharmaceutical listed companies will be further upgraded and have better investment value overall.

1.2 Industry capital structure

1.2.1 Total capital

The pharmaceutical industry is one of the important industries affecting economic development in China, and it is also the key strategic development industry in the 13th Five-Year Plan. A series of medical reform policies issued

by the state since the 13th Five-Year Plan has pressured the industry's development in the short term. However, from the perspective of population aging, the accelerated urbanization process, the importance of medical care, and the deepening of national medical and health system reform, it benefits the long-term development of China's medical industry.

If companies in the pharmaceutical industry want to increase their competitiveness, they must maintain innovation and continuous investment in research and development, which requires a lot of money. Moreover, if the success or failure of research is the risk the company needs to bear, it can be said to be a high investment and risk. It is these two characteristics that, once the innovative drug research is successful, will give the company a monopoly advantage in the research of this project, which will bring high benefits. It is precisely because the pharmaceutical industry is an industry of national economy and people's livelihood, which is related to human health, that every country has a quite comprehensive management of the pharmaceutical industry and strictly controls every step. Hence, the barriers to entering the pharmaceutical industry market are high. In the top six leading enterprises in the pharmaceutical industry in the context of the rising market and intensified competition (See Figure 1), the total amount of capital continues to increase.

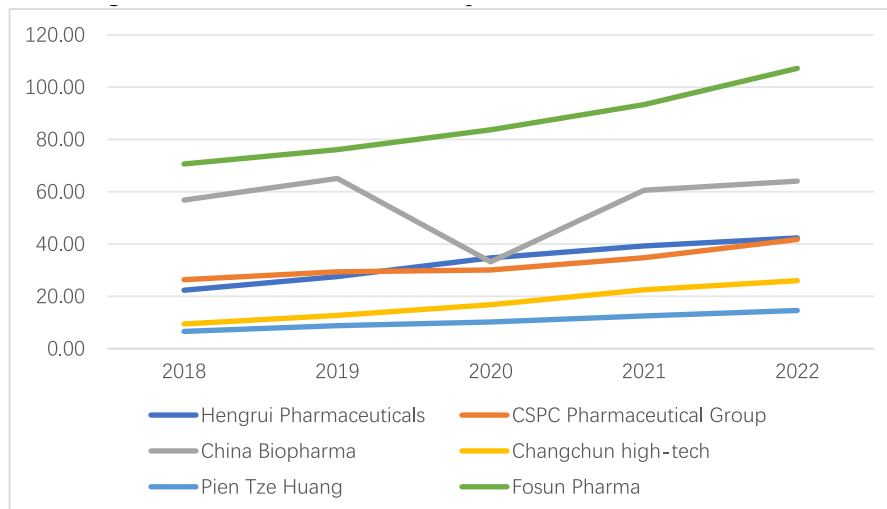


Fig 1. The total capital volume of the leading enterprises in the pharmaceutical industry (Unit: One billion yuan)

1.2.2 Debt-to-asset ratio

From the listed companies in the pharmaceutical industry, the asset-liability ratio of most companies is less than 50%. According to Western scholars' research, enterprises' asset-liability ratio is the best at around 60%, so it can be

seen that the listed companies in China's pharmaceutical industry are still far away from this. The average asset-liability ratio of the industry is about 35%, and the asset-liability ratio of the top six companies by market value is also below 50%. However, the capital-debt ratio of Hengrui Pharmaceutical Company, the highest in recent

years, is only 11.62%, far lower than the industry's average level.

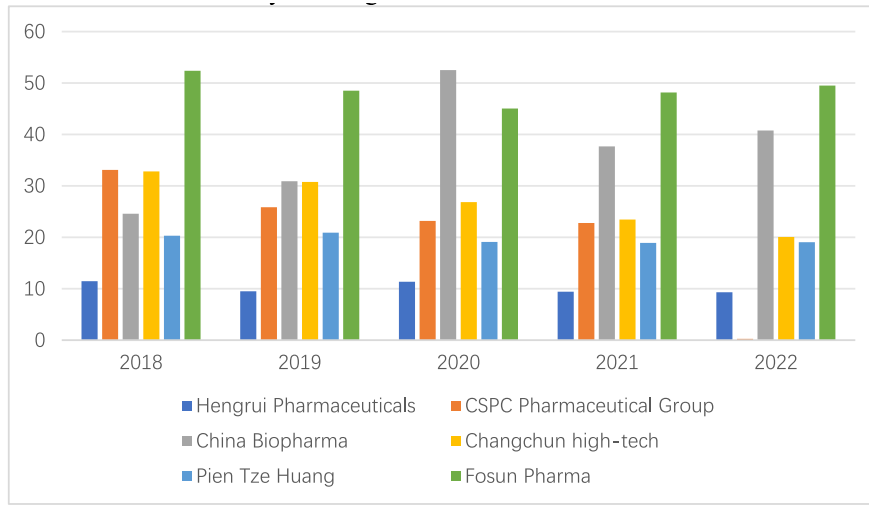


Fig 2. Performance of the asset-liability ratio of the pharmaceutical industry

1.2.3. Liability composition

If the leverage of Hengrui Pharmaceutical is less, it indicates that the enterprise relies less on the debt of capital acquisition. The possible reason is that Hengrui Pharmaceutical obtains endogenous financing through

better operating performance or capital in the capital market through equity financing. In terms of industry comparison, we can see that the liabilities of Hengrui Pharmaceutical are generally smaller than those of other leading enterprises, mainly with current liabilities.

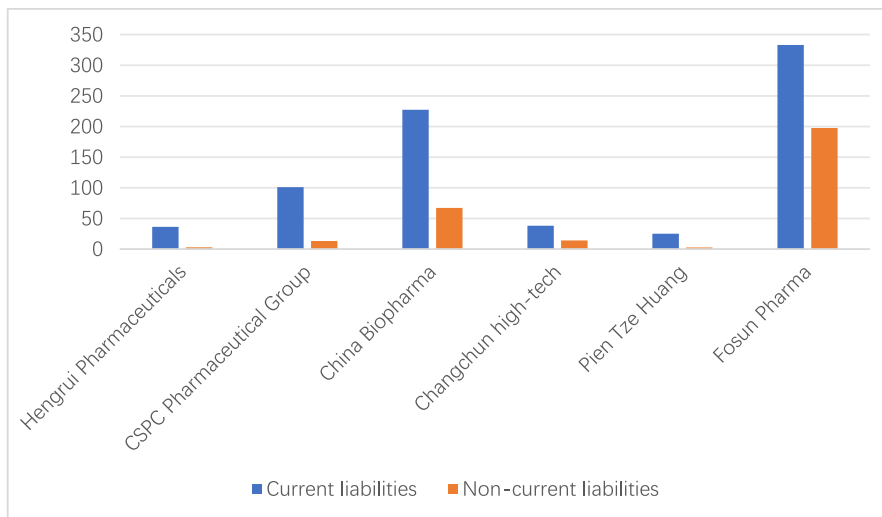


Fig3. Comparison of the debt structure of pharmaceutical peers (Unit: 100 million yuan)

1.2.4. Shareholding structure

Our medical import and export quantity presents an increasing trend year by year; according to the General Administration of Customs, 2014-2020, the total import and export of medical present growth year by year; in 2020 China's medical import and export volume reached \$59.1 billion, but China's medical foreign trade deficit, including 2020 China's medical industry trade deficit reached \$14.901 billion, 1-February 2021, the total trade of \$5.4 billion, the trade surplus of \$1.86 billion.

China's economic development is in a critical period of transformation. The international market's rapid development has put pressure on China's pharmaceutical industry, and its trade scale is difficult to expand quickly. Despite this, China's pharmaceutical industry has long-term cooperation with many foreign enterprises under the trend of globalization, so it will maintain a relatively stable speed of development in foreign trade activities. The opening of China's capital market will also fully integrate domestic and foreign market resources to

improve and develop itself. As shown in the figure, in the shareholding structure of the pharmaceutical industry, the legal person holds the majority, and foreign legal persons are constantly introduced so that the pharmaceutical

enterprises can invest in more forward-looking projects and bear more risks in the process of strategic layout.

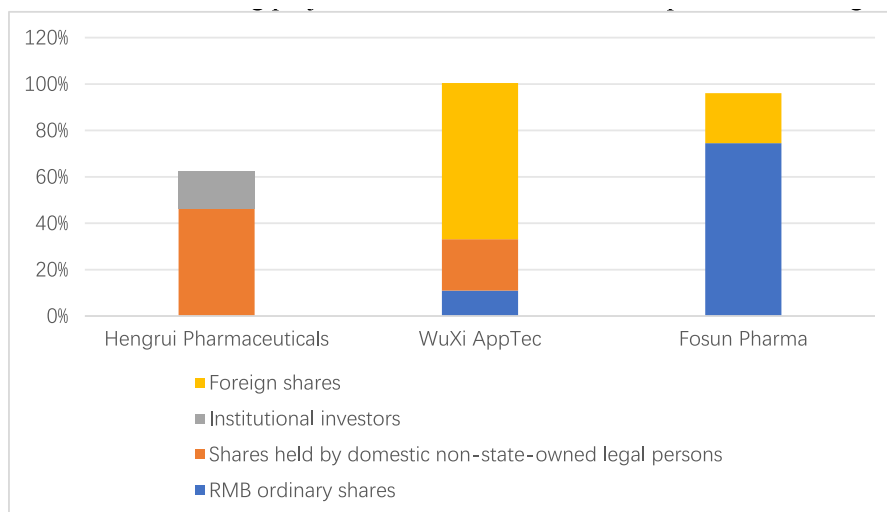


Fig 4. Comparison of the shareholding structure of pharmaceutical enterprises in 2022

2. The current situation of the capital structure of Hengrui Pharmaceutical

2.1 Hengrui Pharmaceutical profile

Jiangsu Hengrui Pharmaceutical Co., Ltd. is a pharmaceutical and health enterprise engaged in pharmaceutical innovation and high-quality drug research, development, production, and promotion. It was founded in 1970 and listed on the Shanghai Stock Exchange in 2000 (stock code: 600276). With a total of 15,000 global employees, it is one of the largest R&D enterprises in China. The company is committed to innovatively developing anti-tumor drugs, surgical drugs, contrast drugs, electrolyte infusion, cardiovascular drugs, and anti-infective drugs. Currently, it is the largest research and production base of anti-tumor and surgical drugs in China and one of the most innovative large-scale pharmaceutical enterprises in China.

Based on the business principle of “honesty and trustworthiness, quality first,” the company’s market share of anti-tumor drugs, surgical anesthetics, special infusion, and contrast agents is among the top in the domestic market. Currently, the company has more than ten preparations, including injections, oral preparations, and inhalation anesthetics, listed in Europe, America, and Japan and has realized large-scale sales of domestic injections in Europe, America, and Japan markets.

Hengrui Pharmaceutical adheres to innovation as the driving force to build core competitiveness in market competition. The company has established four research

and development centers in Lianyungang, Shanghai, the United States, Chengdu, and Shanghai Medical Science Department, and the independent research and development system has been established. The company has established an innovative drug research and development system integrating new drug discovery, screening, evaluation, preclinical research, clinical development, pilot-scale research, process verification, and so on. In May 2018, Forbes released the list of the world’s top 100 most innovative companies, with seven Chinese companies on the list, and Hengrui Pharmaceutical ranked 64th.

2.2 Financing structure

When the company needs financing, if it chooses according to the optimal order financing theory, it should be endogenous financing, debt financing, and equity financing. The market performance in many developed countries has confirmed this theory. The measurement of endogenous financing is expressed as the sum of the two financial statement data of undistributed profit and surplus reserves. Debt financing in external financing is the sum of short-term borrowing, long-term borrowing, and bonds payable, and the data of equity financing is the sum of equity and capital reserves. The data analysis of Hengrui Pharmaceutical shows that Hengrui Pharmaceutical mainly uses endogenous financing to support enterprise capital expansion, equity financing, and support for developing Hengrui Pharmaceutical by introducing strategic investors. However, the reasons behind Hengrui

Pharmaceutical’s low asset-liability ratio are diverse.

2.3 Liability composition

Henrui pharmaceutical liabilities internal structure of the data analysis shows that in recent years, our country’s pharmaceutical industry listed companies with current

liabilities of about 70%, and constant Rui pharmaceutical current liabilities of total liabilities of basic above 90%, visible the company capital structure of the current debt ratio is low, but the proportion of current liabilities of total liabilities in a slow downward trend.

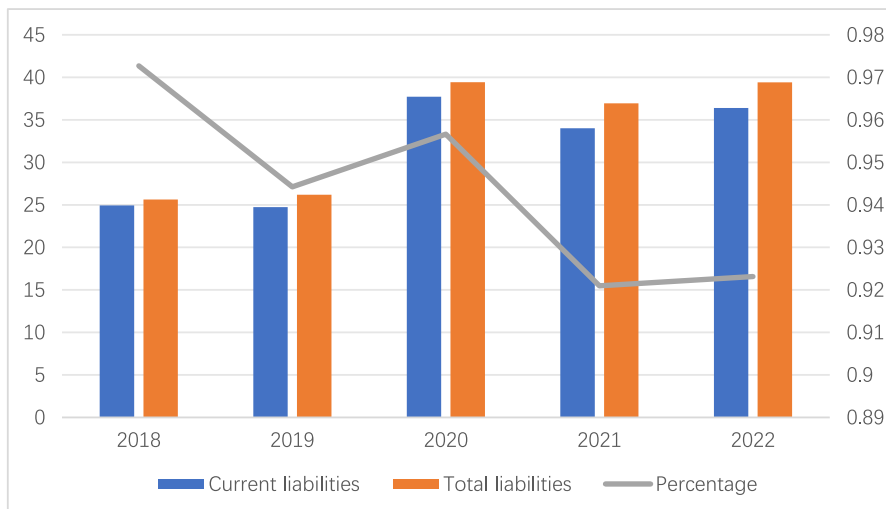


Fig 5. Debt structure of Hengrui Pharmaceutical(Unit: 100 million yuan)

2.4 Shareholder structure

From the perspective of the specific shareholder structure of Hengrui Pharmaceutical, the investment of

institutional investors and legal entities enables Hengrui Pharmaceutical to continuously expand its capital scale and get professional management guidance for a more long-term development.

Table 1 Shareholding situation of Hengrui Pharmaceutical shareholders

Name of shareholder	End-of-term holdings	shareholding ratio (%)	nature of shareholders
Jiangsu Hengrui Pharmaceutical Group Co., LTD	1068183463	24.15	A non-state-owned legal person in China
Xizang Dayuan Enterprise Management Co., Ltd	661633544	14.96	A non-state-owned legal person in China
Hong Kong Central Clearing Company Limited	524529539	11.86	else
Lianyungang Hengchuang Medical Technology Co., LTD	215355594	4.87	A non-state-owned legal person in China
China Pharmaceutical Investment Co., Ltd	185119427	4.19	State-owned legal person
Lianyungang Financial Holding Group Co., Ltd	149194088	3.37	nationality
Shanghai Youwo Technology Co., LTD	112533430	2.54	A non-state-owned legal person in China
Oppenheimer Fund Company — China Fund	78695271	1.78	else
China Securities and Finance Corporation Limited	66249992	1.5	else

China Huijin Asset Management Co., Ltd	41054758	0.93	else
--	----------	------	------

2.5 Henrui Pharmaceutical internal source financing capacity

Fosun's pharmaceutical asset-liability ratio is in a relatively leading position among the top six leading pharmaceutical enterprises. Therefore, we contrast

constant pharmaceutical and found pharmaceutical self-blood ability and found constant pharmaceutical; although the asset-liability ratio is low, the advanced performance and profitability are good, showing that the capital structure of low debt characteristics did not affect the constant pharmaceutical capital expansion.

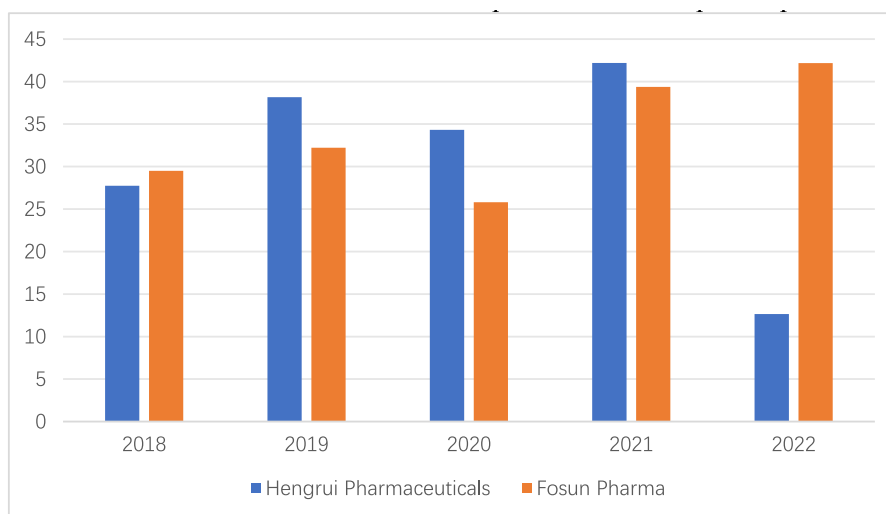


Fig 6. Cash flow from operating activities(Unit: 100 million yuan)

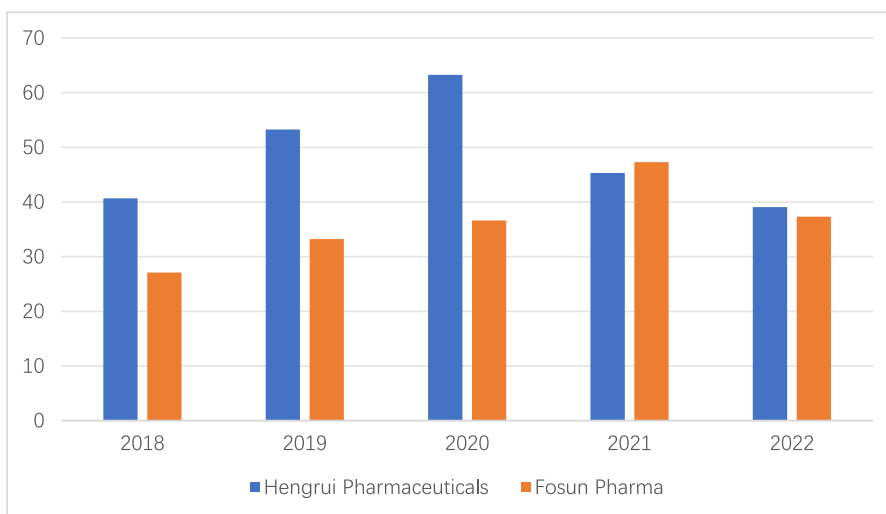


Fig 7. Net profit(Unit: 100 million yuan)

3. Henrui pharmaceutical capital structure has problems

3.1 Low asset-liability ratio

The asset-liability ratio reflects the safety degree of the company in investing in creditors in its business activities. Because gearing is the ratio of total liabilities

to total assets, if the gearing is too large, the company will increase the investment risk for creditors. They will worry about the principal and interest, which will increase the threshold of debt financing and the company; if the asset-liability ratio is too low, the debt is too small, and appropriate liabilities will benefit the company through the effect of financial leverage. They may bring tax effect

to the company, so the low asset-liability ratio may affect the interests of the company’s investors. Most and now companies will adopt the way of debt management; moderate liabilities will bring potential benefits to the company and are conducive to the company’s sustainable development because the debt will give the company tax revenue and financial leverage. Corporate liabilities will pressure company managers, form a good incentive effect, to urge the company to properly operate, improve the company’s value, and improve the company shareholders’ earnings.

As shown in Figure 8 2018, the industry average asset-liability ratio in 2022 was about 34.18%. Still, the capital-liability ratio of Hengrui Pharmaceutical Company, as the first in market value, was the highest in recent years, only

10.21%, far lower than the industry’s average level. This is an unreasonable phenomenon; the industry’s average level represents the company’s development direction; the asset-liability ratio of Hengrui Pharmaceutical Company is so low that it is necessary to keep up with the industry average. Reasonable debt operation will bring potential benefits to the company because when the interest expense generated by the debt is lower than the profit margin brought by the investment, the company is in a profitable state, and the company’s profit before interest and tax minus the interest expense to be repaid, which the investors will own. This is the company’s financial leverage gains. Hengrui Pharmaceutical company has low debt and does not reasonably use financial leverage to increase returns and reduce investors’ interests.

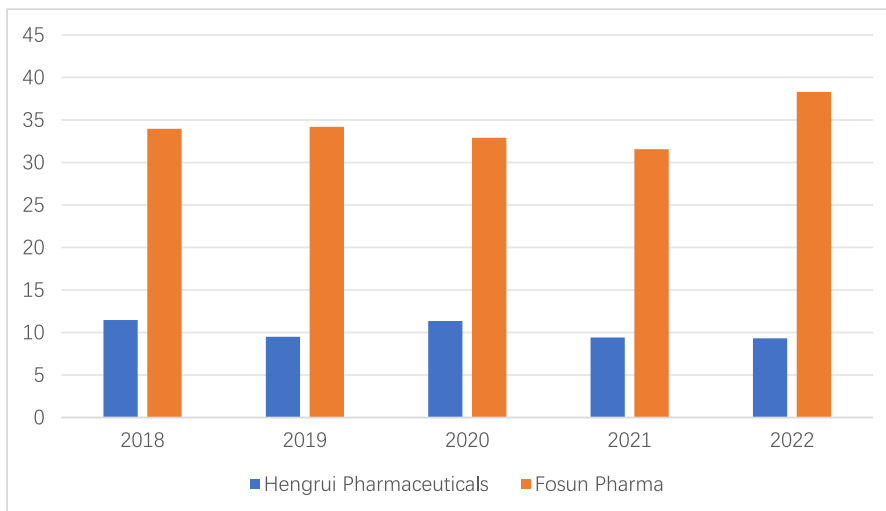


Fig 8. Comparison of the average asset-liability ratio of Hengrui Pharmaceutical and the pharmaceutical industry

3.2 The current debt ratio is high.

The company’s operation needs the support of funds, and the different nature of funds will bring uncertain effects to the company’s operation. Hence, the company needs to raise funds reasonably, make reasonable arrangements for the debt structure, and ensure the reasonable proportion of current and non-current liabilities. If current liabilities accounted for more, the source of capital is very unstable, is likely to be to meet the needs of the company management and borrowing to make up for the debt, and excessive by the current liabilities management company; the company will increase the financial risk, increased the pressure of debt, if the financial market adverse situation serious will lead to the company capital turnover difficulties, the company business target also produces potential threats. Therefore, the proportion of

the current liabilities in the total liabilities needs to be within a reasonable range, while in general, the value of the current liabilities ratio is about 50%. According to the current situation analysis of Hengrui Pharmaceutical in recent years, it is found that its current debt ratio is generally high. Although the high current debt ratio of the industry indicates that the pharmaceutical industry tends to have short-term debt, the current debt ratio of Henrui Pharmaceutical is always high, and the lowest current debt ratio is not lower than 90%. The high ratio of current liabilities is not a reasonable way to raise funds because once other external factors, such as interest rates, change, the company may face difficulties in capital turnover and eventually cause a series of unnecessary troubles, affecting the long-term healthy and stable development of the company.

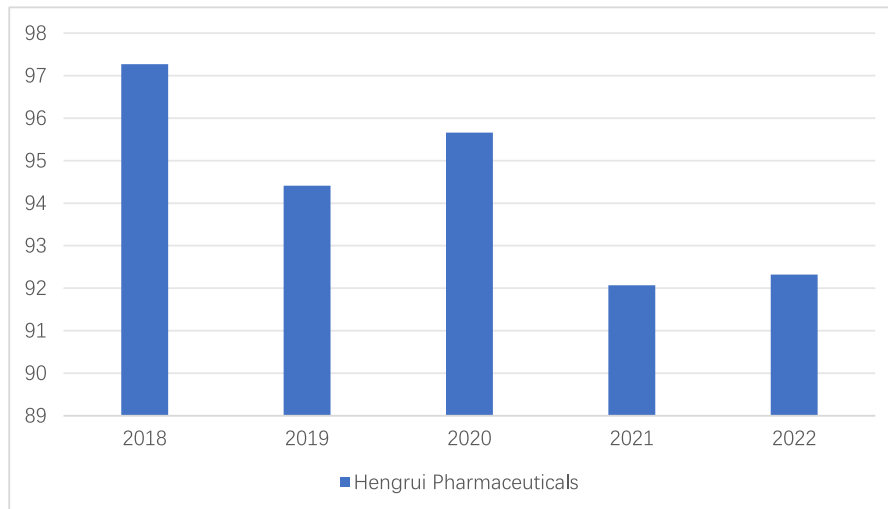


Fig 9. The current debt ratio of Hengrui Pharmaceutical in the past five years

4. Analysis of the causes of the capital structure problem of Hengrui Pharmaceutical

4.1 The nature and characteristics of the pharmaceutical industry

High risk in the pharmaceutical industry always goes hand in hand with high investment. With the sustained and stable development of the market economy and the gradual improvement of people’s living standards, the pursuit of quality of life is increasing. Therefore, people pay more and more attention to improving health quality. Under implementing national medical policies, the pharmaceutical industry has also put forward higher requirements. In a competitive environment, pharmaceutical companies want to have a place in the pharmaceutical industry; you need to constantly innovate new drugs, and the applicability is high for the creation of scientific research takes a lot of time and input cost from the development of new drugs to experiment, clinical and sales promotion, each of the link need to bear the huge risk of failure. Once there is a failure, all the previous investment is wasted. So, for companies in the pharmaceutical industry, taking on too much debt virtually increases their own risk. For risk-averse pharmaceutical companies, they will choose to give up the potential benefits, such as financial leverage brought by liabilities. According to the capital structure of Hengrui Pharmaceutical, it can be found that the company should be risk-averse.

Hengrui Pharmaceutical, like most pharmaceutical enterprises, has the same source of funds, mainly self-raised funds. Pharmaceutical companies need to invest a lot of money in the research and development of new

products, and most pharmaceutical companies will borrow money from banks. In the past two years, to reduce their risks, banks have increased the difficulty of corporate loans and raised the standards of corporate loans and the cost of financing, which will have a certain impact on the capital structure of pharmaceutical enterprises.

4.2 The company’s capital structure optimization system is not perfect.

The managers of Henrui Pharmaceutical did not realize the importance of dynamic optimization of capital structure and ignored the necessity of dynamic optimization of capital structure. Because Henrui Pharmaceutical Company chose equity financing and gave up debt financing, it does not have a strong awareness of optimizing capital structure. It ignores the leverage income brought by debt. The capital structure includes one aspect of the financing structure and other more complex indicators, such as the asset-liability ratio and equity multiplier, after excluding the advance payment. However, Hengrui Pharmaceutical lacks the management department to monitor and optimize the capital structure. In addition to the financial annual report, data found that Hengrui Pharmaceutical has not reached the optimal capital structure; the company also does not consider adjusting its capital structure according to the dynamic changing factors over time, which is not in line with the business philosophy of sustainable development.

4.3 The proportion of accounts payable is relatively large.

Current liabilities include accounting accounts such as short-term borrowings, notes payable, accounts payable, accounts receivable in advance, employee compensation payable, and non-current liabilities due within one

year. In analyzing the financing structure of Hengrui Medicine, it was found that the company's current short-term borrowing account amounted to \$0, and its current liabilities were mainly concentrated in accounts payable. Because accounts payable is a commission that the company should pay to suppliers or others but does not, liabilities of this nature are mainly from inconsistent time between the parties. It is a reasonable existence, but if the number of accounts payable is relatively large, it will affect the company's reputation when buying raw materials and other items.

5. Henrui Pharmaceutical's capital structure optimization strategy

5.1 Reasonably increase the proportion of debt financing.

In daily production and business operation activities, Heng Rui Medicine should, according to their own specific development form and development trend, adjust the capital structure within the appropriate scope to reduce the equity of the enterprise cost of capital in the proportion of total capital, increase the proportion of debt capital cost in total capital, to reduce the cost of enterprise financing, makes the financial leverage play the biggest adjustment function, using tax function tax benefit. The debt financing method adopted by Hengrui Pharmaceutical can transmit signals of business performance to the enterprise's investors. While increasing the proportion of the debt capital cost of the enterprise, it also needs to adjust the long-term and short-term interest-paying debt structure to minimize the enterprise's weighted average capital cost. Increasing the proportion of debt financing of enterprises and rationally allocating various economic resources owned by enterprises is beneficial to promoting the improvement of the business performance of Hengrui Pharmaceutical(Zhang Rui,2021).

In addition, one of the characteristics of the pharmaceutical industry is that the long cycle, the research and development process needs a long time and requires a large amount of research and development funds. Under the characteristics of this industry, for Hengrui Pharmaceutical Company, non-current liabilities can provide a relatively stable financing channel, ensure the company's capital chain, provide support for the company to make decisions, and make the company's business process more reasonable, which is conducive to the company's arrangement of production plan. However, the current liability ratio of Hengrui Pharmaceutical Company is relatively high, the company's debt structure is not very reasonable, and the capital is not stable enough. Therefore, Henrui Pharmaceutical Company needs to

reasonably adjust the current and long-term liabilities and reasonably improve the company's debt financing ratio to provide a strong guarantee for the company's governance and development.

5.2 Static optimization of capital structure is combined with dynamic optimization.

With the constant change of time, the company's operating environment is also constantly changing, and the influencing factors of the company's capital structure are also constantly changing. This is a dynamic change process, so optimizing the company's capital structure is also dynamic. When optimizing the capital structure, Hengrui Pharmaceutical Company should combine both static and dynamic aspects so that the capital structure of the company can not only meet the static optimal capital structure but also ensure certain elasticity.

Hengrui Pharmaceutical company can be optimized through the following aspects. First of all, the company needs to ensure that it has a good credit rating to obtain the corresponding support when it needs financing. In addition, the company also needs to enhance its operating ability; its size and growth ability will stimulate the increase of debt. Therefore, the company can appropriately expand its scale, increase its market share of products, and improve its competitiveness. Finally, a reasonable collocation of various financing methods.

5.3 Reasonably determine the speed of capital structure adjustment.

When the actual capital structure of a company is different from the optimal capital structure, the company needs to make a choice. One is to adjust the optimal capital structure or not to take adjustment measures, and the other is whether to adopt a rapid change or a gradual optimization method if adjusted. If the actual capital structure ratio of the company is low, the debt ratio can be increased by borrowing and repurchasing shares. Otherwise, it can be borrowed by issuing shares and selling assets to repay debts. For example, when the actual capital structure ratio is too low, the pharmaceutical company can start with the research project analysis to improve the debt ratio over a period. As good scientific research projects, the company can increase investment through borrowing to bear the benefits of the investment success, so the company can not only modify the present situation of the capital structure and optimize the capital structure but also get additional benefits from the project. Suppose the company does not invest in good research projects. In that case, it can reduce the negative effects of increasing debt by buying back shares or overpaying dividends over some time.

For Henrui Pharmaceutical Company, it is necessary to appropriately increase the debt amount, fully consider the feasibility of the company's investment projects, and weigh the adjustment speed of the capital structure optimization to ensure that the company can obtain more profits while adjusting the capital structure.

5.4 Improve the internal safeguard measures.

An internal control system is needed for every company because it will affect the company of each link; perfect internal control can reduce the risk of the company, etc., and also make the company's business decisions and investment decisions more scientific, make the company healthy development, so the company should establish a perfect internal control system.

In terms of systems, we should strengthen the management system of the company to be strengthened, so that the company can give full play to the supervisory role of internal audit and the board of supervisors and strengthen the management of the financial system to standardize the financial personnel and financial behavior, to prevent the occurrence of fraud. Strengthen training management in terms of personnel, not only for financial personnel but also for senior executives and managers and other employees, so that they can participate in relevant training regularly and make continuous progress with the changes of The Times, to adapt to the market changes. For the company's important projects and departments, it needs to have relevant professional management, such as legal professionals. Like Henrui medicine low asset-liability ratio, the low company needs a special team for capital management to study the reasonable financing scheme to ensure that the company in the optimization of capital structure of steady development(Wang Huihui,2017). The company should establish a set of perfect supervision and assessment systems because, with more and

more complex social relations, the company's human resource management has become complicated; various departments will cooperate to finish the work, and there will be a division of division is not clear, so to establish a perfect evaluation system, strict assessment of each employee is clear, rewards and punishments, motivate employees to work enthusiasm, attitude into active work. Through the implementation of the above specific measures, the process of capital structure optimization of Hengrui Pharmaceutical Company can be more perfect and smooth, which is conducive to the company's long-term development.

References

- [1] . Annual reports of Hengrui Pharmaceutical in 2018,2019,2020,2021 and 2022
- [2] . Annual reports of CSPC Pharmaceutical Group in 2018,2019,2020,2021 and 2022
- [3] . Annual reports of China Biopharma in 2018,2019,2020,2021 and 2022
- [4] . Annual reports of Changchun's high-tech in 2018,2019,2020,2021 and 2022
- [5] . Annual reports of Pien Tze Huang in 2018,2019,2020,2021 and 2022
- [6] . Annual reports of Fosun Pharma in 2018,2019,2020,2021 and 2022
- [7] . Wu Cuixia. Capital structure analysis of the biomedical industry [J]. Construction of old areas, 2018 (8): 24-27
- [8] . Zhang Rui. Financial strategy selection based on value creation- -take Henrui Pharmaceutical as an example [J]. China market, 2021 (28): 139-141
- [9] . Wang Huihui. Analysis and suggestions on the capital structure of listed companies in the pharmaceutical industry [J]. Modern Business, 2017 (4): 75-76