

Investment Research of China Medical Device Industry under the Concept of Corporate Finance — Take Yuyue Medical Co., Ltd. as Example

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Abstract:

With the optimization of China's healthcare policy, the rise of the aging population, the increasing health awareness of society, and the impact of the global epidemic, China's medical device industry has become a key market for investors. However, compared with the mature and well-funded medical device companies in overseas developed countries, China's local medical device companies have apparent disadvantages and jumping battles. Yuyue Medical Co., Ltd. is a prominent player in the medical device industry in China, having sustained a significant profit margin over an extended period. Its profitability has changed over the post-epidemic period, in any case. Given Yuyue Medical Co., Ltd.'s exceptional standing in the medical equipment sector, an analysis of the company as an industry investment case makes sense. Based on Yuyue Medical Co., Ltd. as the industry investment benchmark, the study analyses the industry's competitive development situation, financial performance, and impact on the external environment by adopting Porter's Five Forces, ratio analysis, and PESTEL. The study found that China's medical device industry has growth potential due to the low bargaining power of customers and suppliers, high technological barriers, and low threat of substitution by new entrants. Yuyue Medical Co., Ltd. has healthy financial performance and several advantages from the external environment, so Yuyue Medical Co., Ltd. is worthy of investment.

Keywords: Yuyue Medical Co., Ltd., Chinese Medical Device Industry, Porter's Five Forces Analysis, Corporate Finance.

1. Introduction

Artificial intelligence, software, hardware, and other cutting-edge technologies are all combined in the high-tech medical device sector. The medical device sector has strict divisions within each of its fields and strong technological criteria. The aging population in China is accompanied by progressively better healthcare legislation, rising living standards, growing social awareness of health issues, and a growing demand for medical gadgets on the market. The "China Medical Device Industry Development Status and Trends" research by Roland Berger projects that the country's medical device industry would increase at a compound annual growth rate of roughly 17.5% over the next seven years, to reach RMB 958.2 billion in 2022. With the exception of the US, China now has the second-largest medical device market globally [1]. Because of this, the medical device sector in China has drawn the interest of numerous local and international investors, who have great hopes for their financial returns. However, Although

China's medical device market shows positive trends, including more complete product types, better technology development, and higher market demand than in the past, leading international medical companies still occupy leadership and advantages in the market. This technological backwardness can cause investors to remain skeptical of the investment potential of local Chinese companies. Yuyue Medical Co., Ltd. is one of the most representative companies in China's local smart medical device industry. Focusing on R&D, manufacturing, and selling high-end medical devices, Yuyue Medical Co., Ltd. is trying to improve its core competitiveness and actively explore the high-end and international markets. With more than 500 product categories, Yuyue Medical Co., Ltd. is active in several product segments, including medical and domestic equipment. Some of its best-selling items in China are stethoscopes, blood pressure monitors, and oxygen concentrators. Yuyue Medical Co., Ltd. continuously expands its product lines externally through ongoing mergers and

acquisitions and constantly improves its product lines internally to increase technological innovation of current products and expand new products, increasing its competitiveness in the industry [2]. Using Porter's Five Forces, ratio analysis, and PESTEL, this study will undertake an investment analysis on Yuyue Medical Co., Ltd. with an emphasis on the competitive development scenario, financial performance, and impact on the external environment of the industry, thereby helping investors analyze the development of China's medical device industry and the feasibility of investing in Yuyue Medical Co., Ltd. to make a profit from an objective perspective.

2. Methodology

This research will introduce three methods for analyzing the medical device industry and Yuyue Medical Co., Ltd.: Porter's Five Forces Analysis, Ratio Analysis, and PESTEL.

2.1 Porter's Five Forces Analysis

Michael Porter's innovative Five Forces model, which he created in the early 1980s, has dramatically impacted global business strategy development. Porter argues that an industry's competitiveness is characterized by five fundamental competitive forces and initial rivals. The level of competition in an industry is determined by the status and overall intensity of these five fundamental competitive forces. This, in turn, determines the industry's potential for profit and the amount of capital flowing into it, both of which ultimately determine an enterprise's ability to maintain a high level of profitability [3]. The five forces are the capacity of buyers and suppliers to negotiate terms, the ability of new competitors to enter the market, the ability of substitutes to fill in for lost revenue, and the ability of current competitors to compete. Shifting combinations of the five drivers ultimately impact the industry's potential for profit.

Porter's five forces analysis is a component of the external environment analysis's micro-environmental analysis, primarily used to examine how businesses compete and how their sector interacts with other industries. Corporate marketing managers must manage the company from the standpoint of strategic analysis to implement Porter's Five Forces model, a management concept in the practice of enterprise marketing management at the strategic level of applying tools. Porter's Five Forces Model strongly emphasizes strategic thinking or awareness.

2.2 Ratio analysis

The ratio analysis method mainly compares the critical data of some significant items in the enterprise's financial statements with each other and calculates various financial

ratio indicators. Analyzing these ratio indicators helps executives comprehensively understand and analyze the enterprise's past and present operating conditions, providing them with the basis for decision-making and business advice [4]. Financial ratios are divided into liquidity, profitability, and efficiency. Profitability reflects the ability of an enterprise to obtain income through operation; liquidity demonstrates the ability of an enterprise to repay funds when debts are due; efficiency reflects the efficiency of utilizing assets and managing liabilities.

2.3 PESTEL

Francis J. Aguilar introduced the concept of PEST in 1967 in his book "Scanning the Business Environment." The concept of PEST was used to describe the P (political), E (economic), S (social), and T (technological) environments faced by an organization. As the theory was refined and developed, E (environmental factors) and L (legal factors) were added, known as PESTEL analysis, which describes the internal and external environments an organization faces and their impact on the organization [5]. The PESTEL model is not just a situational analysis method. It is a strategic tool. It comprehensively lists, analyses, and extrapolates information about an organization's internal and external environments, proposing constructive countermeasures for future development. It strategically analyzes the development of the research subject and provides recommendations by combining the macro-environment (policy, economic, social, technological, environmental, and legal) with the research subject's overall environmental strengths, weaknesses, opportunities, and threats. The model's strategic orientation highlights the significance of its suggestions for the study's subject's future growth.

3. Investment Analysis of Yuyue Medical Co., Ltd.

3.1 Analysis of the Medical Device Industry

3.1.1 Competition among Existing Firms in the Medical Device Industry

The current state of China's medical device industry is characterized by "complete products, poor substitutability of local products, and fierce competition between domestic and foreign enterprises." Due to China's medical device industry's late start and short development time, domestic enterprises have focused on the low-end medical equipment market. With China's continuous promotion of innovation and technology in recent years, enterprises have gathered in the high-end medical equipment market and have completed the domestic substitution of biochemical, molecular, and qualitative immunodiagnostics in IVD

[2]. However, the industry still prioritizes imported products, especially in the field of high-value medical consumables. It is difficult for China's domestic products to completely replace overseas imported medical equipment. Chinese products are still primarily focused on low-end medical devices such as bandages, followed by high-value medical materials such as cardiac stents. With the rapid development of medical device segments, the number of local listed companies is increasing, and the revenue share of listed companies is gradually growing. Mergers and acquisitions have become a meaningful way to realize business growth. Local companies will compete fiercely with international multinationals.

3.1.2 Bargaining Power of Consumers

Medical equipment purchasers mainly include individual households, hospitals, and medical institutions. Generally speaking, tertiary hospitals with more complete medical facilities will focus more on purchasing sizeable medical equipment. Consumers, due to the asymmetry of information, need more channels to obtain information, mainly through the communication of family and friends. They need to learn more about the large-scale medical equipment in hospitals so consumers are less sensitive to price. In addition, as people's awareness of health increases, with the reform of China's medical policy and the rise in the number of sub-healthy people, the market for home medical equipment is also developing rapidly [6]. Price will be one of many factors that consumers will consider. Consumers will also look at the safety and reliability of medical devices. Therefore, consumers are less sensitive to price and have less bargaining power. Furthermore, because medical institutions and hospitals usually purchase in large quantities, they still have a higher bargaining power.

3.1.3 Bargaining Power of Supplier

The upstream of China's medical device industry is manufacturing medical device components, medical raw materials, processors, and third-party services, and involves industries such as electronic component manufacturing, machinery manufacturing, software systems, and raw materials. The medical device industry has strong bargaining power. The suppliers have strong bargaining power because the medical device industry attaches importance to the safety and quality of raw materials and equipment, and most high-end medical raw materials rely on overseas imports. However, some raw materials, such as steel and components, need strong bargaining power. Steel and components are the primary materials for medical devices. For steel suppliers, because the steel industry is a resource-based price that rises or falls with the economic

environment, suppliers have substantial control over steel prices [7]. However, in recent years, China's domestic steel prices have been relatively stable, so the bargaining power of steel suppliers is not strong. As for components, the bargaining power of suppliers is lower than that of medical devices, which is a high knowledge value-added industry, due to their production capacity.

3.1.4 Threat of Potential Entrants

The medical device sector is characterized by significant obstacles pertaining to talent, technology, market, and marketing. It is a technology-intensive industry. To be more precise, China has established strict regulations and a high management system for the medical device business since the usage of these devices must take user health into account and take into account the safety and quality of the equipment. Businesses have to invest a lot of time and resources in creating and expanding medical technology and marketing platforms. Medical technology and marketing channels require a significant investment of time and resources from companies [8]. For newcomers, it requires time to swiftly build ideal medical technology and marketing channels. As a result, the majority of possible rivals are businesses operating in the same or similar industries. However, a growing number of startups possessing essential innovation and technology development skills have started to enter the medical device market as a result of China's medical policy reform, which promotes technological advancement. Furthermore, overseas companies enter the domestic market through acquisitions or joint ventures. These potential entrants will bring new competition to China's medical device industry.

3.1.5 Substitution Threatening Power of Substitutes

Prior to 2015, the development of low-cost, high-consumption medical consumables including disposable syringes, surgical blades, and medical masks dominated China's medical device market. Market substitutability was therefore quite high. Because it is difficult to achieve substitutability, China primarily buys high-end medical equipment from foreign businesses. The medical device business is experiencing rapid growth in terms of innovation thanks to China's legislative backing. With its wide range of industrial categories, growing ability for innovation, and robust market demand, China's medical device industry is now a rising star in the country's economy. As medical technology continues to advance, new treatment modalities like gene and cell therapy have emerged that have the potential to replace conventional medical devices, even though the majority of high-value medical consumables have little degree of substitution and are primarily imported from abroad [9]. To conclude, the medical

machine industry is an industry that has a bright future, with the advantage of lower bargaining power from customers and suppliers, and there is a high requirement for technology, patents, and initial capital and a low threat of substitution for the new entrance.

Yuyue Medical Co., Ltd. has attracted many industry investors to specific companies with its medical technologies, such as respiratory therapy solutions, home-based electronic testing, and in vitro diagnostics, rehabilitation, and clinical devices. Next, this research will analyze whether Yuyue Medical Co., Ltd. is a proper investment choice for investors by analyzing its financial performance and external environment.

3.2 Analysis of the Financial Performance of Yuyue Medical CO., Ltd.

3.2.1 Analysis of Liquidity Ratio

The liquidity ratio, which primarily consists of the current and quick ratios, can show how well-equipped a busi-

ness is to pay down its short-term debt. The current ratio, which is determined using the current assets / current liabilities principle, can show how well a company is able to liquidate its current assets in order to repay its debts before they mature. Furthermore, the corporation can pay off its existing loans more easily the greater the current ratio. According to Table 1, Yuyue Medical Co., Ltd.'s present ratio indicates an upward tendency between 2020 and 2023. When it is larger than 1, it indicates a lesser financial risk and a more significant short-term repayment ability for Yuyue Medical Co., Ltd.

The Quick Ratio's purpose is to assess how well current assets can be used to pay down current liabilities in an instant. $(\text{Current Assets} - \text{Inventory}) / \text{Current Liabilities}$ is the calculating formula. The ability of the business to pay back short-term obligations is correlated with the Quick Ratio. Since the Quick Ratio is more significant than 1 and typically maintains an upward trend, Yuyue Medical Co.

Table 1. Liquidity Ratio of Yuyue Medical Co., Ltd.

Ratio	2020	2021	2022	2023
Current Ratio	2.29	3.751	3.099	3.266
Quick Ratio	1.874	3.059	2.625	2.775

3.2.2 Analysis of Efficiency Ratio

The Efficiency Ratio, which comprises the Inventory Turnover Ratio, Asset Turnover Ratio, and Account Receivable Turnover Ratio, gauges a business's capacity to use assets and handle obligations effectively. Businesses with high-efficiency ratios are investment-worthy. The Inventory Turnover Ratio, derived from the $\text{Cost of Goods Sold} / \text{Average Inventory}$, gauges how effectively a business turns over its inventory. According to Table 2, the Inventory Turnover Ratio shows a general trend of increasing and then decreasing, which indicates that the inventory management method of the company is not perfect and the company's competitiveness is decreasing from 2022 to 2023. Therefore, Yuyue Medical Co., Ltd. needs to increase the promotion of its medical products, and it is crucial to accelerate the flow of capital to achieve higher economic efficiency.

The Asset Turnover Ratio demonstrates how well a busi-

ness generates revenue from its assets. $\text{Net Sales} / \text{Average Total Assets}$ is the formula. From Table 2, the asset turnover ratio of Yuyue Medical Co. turnover ratio of Yuyue Medical Co., Ltd. shows a decreasing trend, which indicates that Yuyue Medical Co., Ltd. may be due to the changes in the market environment, the effectiveness of the utilization of assets and the profitability of the company in four years has deteriorated.

Account Receivable Turnover, determined by dividing net credit sales by average accounts receivable, is a gauge of an organization's management effectiveness. According to Table 2, there is a general increase trend in the account receivable turnover ratio, suggesting that Yuyue Medical Co. Table 2's account receivable turnover ratio, representing Yuyue Medical Co.'s account receivable turnover rate, indicates an overall trend. The quality of account receivables management is improving, and turnover days are declining.

Table 2. Efficiency Ratio of Yuyue Medical Co., Ltd.

Ratio	2020	2021	2022	2023
Inventory Turnover Ratio	3.4	3.2	2.7	2.6
Asset Turnover Ratio	0.7	0.6	0.5	0.5

Account Receivable Turnover Ratio	8.8	13	12.2	14.6
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3.2.3 Analysis of Profitability Ratio

The ability of the business to turn a profit is gauged by the profitability ratio. The three primary components of a profitability ratio are return on equity, return on assets, and net profit margin. A higher profitability ratio shows that profits can be made by the business. The formula for calculating Net Profit Margin is Net Profit/Total income, which expresses the proportion of income earned by the business. The formula for calculating Net Profit Margin is Net Profit/Total income, which expresses the proportion of income earned by the business. According to Table 3, Yuwell's net profit margin shows an overall trend of decreasing and then increasing, which indicates that in the first two years, Yuyue Medical Co.'s impact and customers' desire to buy reduced. From 2022 onwards, the company has developed a series of measures to enhance its management level and profitability in production and operation.

Return on Assets is mainly used to show how the company utilizes assets to generate profit, and the formula is Net

Income/Average Total Assets. According to Table 3, from 2020 to 2023, the Return on Assets of Yuyue Medical Co. Ltd.'s Return on Assets shows an overall decreasing and then increasing trend, indicating a decrease in profit from assets and a decrease in operating efficiency in the first three years. In 2023, the company's operating efficiency improved due to increased innovation, which introduced more competitive medical products and optimized asset allocation.

Return on Equity (ROE) reflects the return on shareholders' equity, calculated by the Net Income/Total Equity formula. From 2020 to 2022, the ROE of Yuyue Medical Co., Ltd. also shows an overall trend of decreasing and then increasing. In the first three years, Yuyue Medical Co., Ltd. could only partially utilize the benefits of effective asset management due to the market impact, which led to a decrease in the net profit brought to the enterprise by the investment and operating activities. In 2023, ROE has risen to some extent, indicating that the enterprise has taken measures to revitalize the efficiency of capital operation, and the income brought by investment.

Table 3. Profitability Ratio of Yuyue Medical Co., Ltd.

Ratio	2020	2021	2022	2023
Net Profit Margin	26.1	21.5	22.1	29.8
Return on Assets (ROA)	19.4	13.5	11.6	15.3
Return on Equity (ROE)	26	18.9	17.6	22.2

3.3 Analysis of the External Environmental of Yuyue Medical Co., Ltd.

3.3.1 Social Factor

Increased health awareness among social groups can contribute to the growth of sales of Yuyue Medical Co.'s home medical equipment products. With the fast-paced work life and economic pressure, the subhealth group is growing by leaps and bounds year after year. By 2021, sub-healthy people have grown to 568.4 million from 557.9 million in 2017 [10]. As a result, people gradually realize the importance of health and are more willing to spend money on their health. In addition, with the accelerated aging of society's population, the daily care and treatment of common diseases among the older will receive more attention from society and families. As a result, the overall health awareness of society has led to a continuous increase in the attention to home medical equipment such as blood glucose meters and blood pressure monitors,

which has contributed to the development of home medical equipment products of Yuyue Medical Co.

3.3.2 Economic Factor

There is now a great deal of space for growth for Yuyue Medical Co., Ltd. due to the rise of the medical device market in China. The "China Medical Device Industry Development Status and Trends" research by Roland Berger projects that the country's medical device industry would increase at a compound annual growth rate of roughly 17.5% over the next seven years, to reach RMB 958.2 billion in 2022. The "China Medical Device Industry Development Status and Trends" research by Roland Berger projects that the country's medical device industry would increase at a compound annual growth rate of roughly 17.5% over the next seven years, to reach RMB 958.2 billion in 2022. With the exception of the US, the medical device market has grown to become the second largest in the world [1]. As investors are drawn to expanding markets, Yuyue Medical may continue to raise capital

to fund its research and development as well as its market expansion.

Furthermore, rising corporate revenues typically follow market expansion, and Yuyue Medical might achieve revenue growth by raising sales volume and market share. However, because Yuyue Medical Co., Ltd. concentrates on high-value medical consumables, the company's products are priced in the middle to high range of the industry and the market, respectively. As a result, their products are in the mid-to-high range. The products of Yuyue Medical Co., Ltd. are priced within the middle to top range of the industry, meaning that only a select few can afford them. Consumers frequently opt to purchase goods that perform similarly to Yuyue Medical Co.'s products but at a lesser cost. Therefore, Yuyue Medical Co., Ltd. will see a jump in price.

3.3.3 Technical Factor

Regarding technology, Yuyue Medical Co., Ltd.'s use of AI technology has helped develop intelligence and digitalize its medical device products. Specifically, AI technology is increasingly used in the medical field, including assisted diagnosis, patient monitoring, and intelligent image recognition. In 2023, Yuyue Medical accelerated its clinical and home product intelligence. It launched hundreds of new products, such as intelligent blood pressure monitors, AEDs (automated external defibrillators), and ventilators equipped with big data and 5G technologies [11]. With the introduction of intelligent products, Yuyue Medical Co., Ltd. will see its brand image enhanced by innovative products, be recognized as a technology leader, and expand its market share by attracting new customers and increasing the loyalty of existing customers. Therefore, the continued development and utilization of AI and 5G technologies will help Yuyue Medical Co., Ltd. enhance the technological content of its products and strengthen its competitiveness in the global market.

3.3.4 Environmental Factor

The possibility of environmental contamination exists in the manufacturing process of medical devices. During the manufacturing process of medical devices, if the environment is not strictly controlled or cleaned correctly, the products may be contaminated due to corrosion caused by chemical impurities and hazardous substances entering the soil and groundwater. However, Yuyue Medical Co., Ltd. pays excellent attention to controlling pollution during manufacturing. On April 26, 2024, Yuyue Medical Co., Ltd. released the "Sustainability Report 2023", which stated that in 2023, Yuyue Medical Co., Ltd. invested 7,016,800 RMB in environmental protection and was awarded the honor of "Green Factory in Jiangsu Prov-

ince" [12]. technologies to promote low energy consumption in its products, thus ensuring that the production of its products is environmentally friendly. In addition, Yuyue Medical Co., Ltd. adopts new materials and technologies to promote low energy consumption of its products, thus reducing the environmental impact during production. Therefore, Yuyue's environmental policy can strengthen its brand image to enhance consumer trust and develop the market.

3.3.5 Legal Factor

On February 18, 2022, China's State Administration for Market Regulation issued the Measures for the Supervision and Administration of Medical Device Manufacturing that aims to strengthen the supervision and administration of medical device manufacturing, standardize manufacturing activities, and ensure the safety and effectiveness of medical devices [13]. The regulations require companies to comply with the quality management standard for medical device production, which helps Fish Leap Medical to standardize the production process, improve production efficiency and quality, and help improve consumer trust in the medical device industry. Secondly, implementing the regulation provides a level playing field for all medical device enterprises, which is conducive to Yuyue Medical to stand out through the high standard of product quality and service to attract more consumers and investors.

4. Conclusion

China's medical device industry has significant growth potential, driven by factors such as the low bargaining power of customers and suppliers, high technological barriers, and a low threat of new entrants. Yuyue Medical Co., Ltd., a key player in this sector, demonstrates solid financial performance, including excellent liquidity and profitability. Additionally, the company benefits from favorable external conditions, such as increasing public health awareness, rapid market expansion, early adoption of AI technology, and a growing focus on environmental protection. Given these strengths, Yuyue Medical Co., Ltd. presents a compelling investment opportunity for potential investors.

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