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Research on Capital Structure and Investment Value of the Healthcare Industry

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Abstract: This paper makes an in-depth study of the US healthcare industry from both empirical and theoretical aspects of capital structure and investment value. By calculating the WACC (weighted average cost of capital) for three of the most representative public companies in the US healthcare industry (Johnson & Johnson, Pfizer, and UnitedHealth Group) and reviewing the literature, it is concluded that the company's business and capital flows have been affected due to the impact of the COVID-19 pandemic. At the same time, due to some differences in the main business and nature of the three companies, United Health Group found that it has the highest investment risk. Based on the analysis of the investment value and investment risk of Johnson & Johnson, Pfizer, and UnitedHealth Group, this paper provides more appropriate investment recommendations for investors with different preferences, to further understand the future development trend of the American medical industry.

Keywords: capital structure, investment value, healthcare industry

1. Introduction

1.1. Background

According to the American Medical Frontiers survey, the U.S. healthcare industry is undergoing a long-awaited and far-reaching transformation. In 2022, two full years into the pandemic, the pandemic remains a top priority for the global healthcare system. As a result, Johnson & Johnson, Pfizer, and the Healthcare Group, three of the most powerful companies in the American medical industry, have all made changes. By studying these changes, we can not only see the changes in its own capital structure and investment value but also see the future development trend of the medical industry.

1.2. Related Research

Reiter and Smith present findings from a study of 294 hospital CFOs regarding their assessment of capital investment proposals. Their findings include how capital budgets are used, risk treatment, consideration and impact of qualitative factors, and medical staff engagement. Also noted are the many challenges healthcare systems face in developing and implementing capital investment strategies, including capital budgeting techniques, risk-adjustment methods, and investment decisions

[1]. Kerry and her firm's research found that capital flows into U.S. digital health companies are at an all-time high, with 440 deals worth more than $14 billion in investments. With this influx of capital and a growing consumer outcry, the current healthcare ecosystem should be ready for constant innovation. In addition, influenced by COVID-19, healthcare's key investment directions for the future are focused on telemedicine, the consumerization of digital health, and health equity and community-centered innovation. At the same time, healthcare investment trends will also influence the economic changes in the market in the coming year [2]. Richard and Schiffer analyze the impact of increased private equity investment in healthcare on the healthcare system, arguing that the explosion of private equity investment in healthcare poses a threat to both the structure and goals of the healthcare system. While there may be examples of private equity firms creating value for the healthcare system, it is difficult to find conclusive evidence of these benefits. Until now, it has been clear from studies of private equity in healthcare that the practice of this business has caused significant harm to individual healthcare companies, patients, and the marketplace, which can further impact the capital structure of the healthcare industry [3]. Johnson's analysis of a report by the Commonwealth Fund of New York City on the quality of U.S. healthcare found that U.S. healthcare spending is among the highest in the world, but that the United States lags behind other countries on virtually every indicator of healthcare and is not getting a good return on its investment. And, compared to other industrialized countries, the U.S. healthcare system scored lower in this report - 66 out of 100 on 37 indicators of health outcomes, quality, access, efficiency, and equity [4].

Turner's two-stage approach to predicting long-term debt use after understanding the appropriate capital structure of healthcare companies proves that it can provide valuable insight into the determinants of leverage. In contrast, the traditional determinants of debt are shown to account for less than 6% of the overall variation, suggesting that long-term debt in the healthcare sector includes many bonds payable and long-term borrowings, among others [5]. Zucchi provides a more comprehensive perspective detailing the disparities between the various healthcare sectors, from pharmaceuticals and devices to health insurance and hospitals, each of which has different dynamic characteristics. At the same time, investment in each sector is influenced by many factors. As a result, healthcare investing requires understanding its underlying drivers to help investors be able to profit from the sector as a whole or even the industry as a whole [6]. Micca focuses on the investment value and future trends of the healthcare sector by comparing investments in the sector before and after the new crown epidemic. Overall, funding for MedTech organizations has reached record levels and shows no signs of slowing down. Investors poured $21.6 billion into digital health companies in 2020, which is more than double the amount invested before. As a result, the epidemic presents both opportunities and challenges for the healthcare industry [7].

Togtokhsuren's analysis of annual financial statements shows that Johnson & Johnson currently operates in the medical device, pharmaceutical, and consumer packaged goods industries, with more than 250 subsidiaries and brands that make a difference in people's daily lives through the company's products. Johnson & Johnson's corporate credo of "accountability to all who use their products" and its statement that the "company's ultimate responsibility is to company's shareholders" attracted many investors and increased the value of its investments and investor confidence. In the end, Johnson & Johnson has maintained good profits and continued to innovate as a US-based pharmaceutical company [8]. Kapar summarizes Pfizer's investment after having product development through the reaction of the U.S. stock market to the news of Pfizer and Biontech's successful vaccine development on November 9, 2020. Specifically analyzes the impact of the vaccine announcement on 11 sector indices and 79 segment indices. It proves that it attracted more capital after the development of a vaccine capable of dealing with new coronaviruses [9]. Stroh explores United Health's risk management practices. The business risk management plan in the enterprise is the focus, as it enhances the corporate governance process and helps to establish a risk management culture within

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the organization, making the internal capital structure of the enterprise more orderly. Stroh also said that a strong business risk management plan can give an enterprise a significant advantage in the fierce market competition [10].

1.3. Objective

The purpose of this paper is to compare the WACC, market value of equity, leverage/debt to equity ratio, business risk, and all equity expected to be invested in three healthcare companies, Johnson & Johnson, Pfizer, and UnitedHealth Group. Furthermore, under COVID-19 to analyze their different equity structures and investment values to provide investors with more appropriate investment recommendations. In the process of calculating these items, we can see that the cost of debt and the ability to bear the risk of debt are different among the three companies, and there are significant differences in their future directions after the epidemic. This paper analyzes and compares these differences while predicting the future trends of the US healthcare industry represented by Johnson & Johnson, Pfizer, and United Healthcare.

2. Method Introduction and Development Environment

2.1. WACC

This paper estimates the average value of the healthcare industry by calculating the WACC of different companies, which is usually used to measure the price of financing cost of a company and is obtained from:

$$(E / V) \times R e + (D / V) \times R d \times (1 - T c) \tag{1}$$

By comparing and analyzing the WACC of different companies in the healthcare industry, it is possible to see the financing cost of a company and make better investment decisions. Therefore, companies can use WACC as the minimum return on investment to ensure that the return on investment projects is at least higher than WACC, thus ensuring the effectiveness of the investment.

2.2. The State of American Medical Companies Under the COVID-19

The value generated by U.S. healthcare services and its contribution to the U.S. economy in terms of employment represent a significant portion of the U.S. national economy. It's medical research and biomedical industry is in the world's leading position. The U.S. leads the world in managing and overseeing healthcare quality, which is very strict. In 2015, United State healthcare spending reached $3.2 trillion, this rate has been on an upward trend for the past 10 years and is likely to continue. 2022 U.S. healthcare spending will reach $5 trillion, or 23% of GDP. In addition, the manufacturing and production of medical drugs and devices in the United States is done by private companies and corporations. According to several international pharmaceutical trade organizations, the high cost of patented drugs in the U.S. has prompted pharmaceutical companies and firms to invest heavily in pharmaceutical research and development. However, due to the passage from PPACA in 2010, U.S. pharmaceutical companies have been forced to sell drugs at lower prices, and if this situation continues, U.S. private pharmaceutical companies may have to reduce their investment in U.S. pharmaceutical research and development in the future.

In addition, this paper categorizes and analyzes the common problems faced by the healthcare industry development environment represented by Johnson & Johnson, PEF, and UNH. First is the aspect of collaboration or other partnerships with third parties, all three companies work closely with third parties, including research, development, manufacturing, and commercialization of products,

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processing, storage, and transmission of data. Problems and losses due to errors by third-party manufacturers have the potential to cause material delays and increased costs, which could adversely affect their business. In addition, personal information, privacy, and data leakage from third parties may damage their reputation, operations, and other negative impacts. Second, the COVID-19 pandemic has hurt and may continue to hurt certain aspects of the companies' business, operating results, and financial condition, including lower sales and reduced customer demand for and use of some of the companies' products. The extent of the impact of COVID-19 on their future business will depend on many factors, and both companies have made operational planning and financial projections for COVID-19 by making certain assumptions. In addition, concerning legal issues, all three companies are frequently involved in various legal proceedings, such as liability for product sales, disputes over patent rights, and claims that the company's sales, marketing, and pricing of products have violated antitrust laws. This is likely to damage their reputation. Therefore, if not properly resolved, the company may be liable for substantial fines, which will have a material adverse effect on the company's operations, financial condition, and cash flow. Finally, in terms of laws and regulations and government supervision, their business activities on a global scale are strictly regulated by the government. The reform of old regulations or the enactment of new regulations is likely to hurt the company's business development. In addition, any ban on the medical industry may also affect the company's business and results of operations.

3. Comparative Analysis

In recent years, the competition in the healthcare industry has become increasingly fierce. Johnson & Johnson, Pfizer, and UnitedHealth, as the top three listed companies in the healthcare industry, have shown different trends in terms of profitability, WACC, and future development direction driven by their main products. They are all showing different trends in profitability, cost of capital, and future direction, driven by their main products. First, Johnson & Johnson is the most diverse healthcare and consumer care company in the world. Its products cover a wide range of areas, including nursing products, pharmaceutical products, medical devices, and diagnostic products markets. In addition, if the company continues to be subdivided by the medical device industry, the orthopedic implant revenue of the company will reach 8.885 billion dollars in 2022, with a market share of about 36%, ranking first. The cardiac intervention segment, with revenues of $2.646 billion and a market share of approximately 18%, ranks third. Pfizer, on the other hand, manufactures drugs in large medical fields, including immunology, cardiology, neurology, and so on. As we all know, Pfizer is a science-based, innovation-based, patient-oriented multinational bio-pharmaceutical company and the world's largest pharmaceutical company by revenue. The chart below shows Pfizer's top 10 products by revenue in 2022. In 2022, Pfizer's global revenue exceeded $100 billion. That same year, Pfizer earned $37.8 billion in alliance and direct sales revenue from its top product, the COVID-19 vaccine Comirnaty. Unlike Johnson & Johnson and Pfizer, UnitedHealth is a healthcare group. The main business is prescription solutions, data release, health optimization, and medical services, to provide comprehensive medical services for medical institutions in various fields. UnitedHealth consists of two business units: UnitedHealth ($187.4 billion, 57% of 2022 revenue, 51% of 2022 pretax profit), which focuses on health insurance; Optum ($139.4 billion, 43% of revenue, 49% of pretax profit) focuses on healthcare services, services, and care optimization. UnitedHealth provides services to individual consumers, employers, governments, and medical device manufacturers, as shown in Table 1.

Table 1: Companies capital information.

	Johnson and Johnson	Pfizer Inc.	UnitedHealth Group Incorporated
The market value of equity	461.85B	287.63B	495.37B
The market value of debt	52.91B	62.45B	70.59B
leverage/debt to equity ratio	13.51	21.71	31.02
The marginal corporate tax rate	21%	21%	21%
The expected cost of equity capital(rE)	6.45%	6.402%	7.5the 1%
The expected cost of debt capital(rD)	5.00%	4.90%	4.50%
WACC	0.0619	0.0595	0.0701
business risk(βA) & all equity expected return on assets(rA)	0.486, 0.0625	0.495, 0.0607	0.611, 0.0716

Finally, there is a difference regarding the future trends of Johnson & Johnson, Pfizer, and UnitedHealth. The most important thing for Johnson & Johnson is to respond to the increasing number of patent challenges promptly and to obtain patent protection for new products and developed technologies. And to continue to build a better supply chain and strengthen the supervision of the supply chain to prevent the negative impact of supply chain disruption. Finally, it is also important to properly address a large number of claims and lawsuits, such as those arising from talc-containing talcum powder, which can require companies to pay large amounts of money in damages. For Pfizer, the company should work to address the impact of the 2019 coronavirus disease, including plans and Comirnaty, as well as any potential future vaccines or treatments; projected revenues, production, and supply of Comirnaty and Paxlovid, including the commercial market for Paxlovid. The development of new drugs and vaccines is a long-term and uncertain process, so it is a top priority to continuously bring in advanced technology and talent to improve the success rate of new drug and vaccine development. Finally regarding UNH, continuously broadening the market scope and increasing the business base and portfolio will be more conducive to diversifying risks, thus avoiding huge losses caused by fluctuations in a single market. Moreover, strengthening the talent pool and increasing investment in industry and market forecasting is more effective in avoiding policy changes and market competition from having a significant impact on its health insurance business.

4. Investment Advice and Inspiration

4.1. WACC of Johnson & Johnson, Pfizer, and UnitedHealth

Overall, the three companies have different major products, leading to a big difference in their WACC and investment value. As is evident from Table 1, UnitedHealth's WACC is significantly higher than that of the other two companies, indicating that its cost of financing is higher and its return on capital must be improved if it is to generate profits for the company's owners. At the same time, in the process of calculating WACC, the comparison found that by the end of 2022, UnitedHealth's expected cost of equity capital is higher than that of the other two companies, indicating a relative increase in the company's cost. In addition, in terms of debt-to-equity ratio and expected cost of debt capital, Johnson & Johnson is significantly lower than UnitedHealth and Pfizer, indicating that Johnson & Johnson has less debt risk and more secure debt income. The company operates with full financial leverage of debt. Better positioned for future growth. In terms of the expected cost of debt, however, Johnson &

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Johnson has higher expected debt than the other two companies, suggesting that the expenses or costs of the company will increase relatively more in 2022. Pfizer's expected cost of equity capital is the lowest among the three companies, indicating that its investment risk is the lowest, investors are less likely to get losses in the future, and its cost of equity is low. Pfizer is also the smallest of the three companies for the WACC, which means it has lower funding costs and easier access to profits for investors.

4.2. Different Investment Risks of Johnson & Johnson, Pfizer, and UnitedHealth

However, Johnson & Johnson, Pfizer, and UnitedHealth have different investment risks beyond what the numbers suggest. For its part, Johnson & Johnson and its subsidiaries have faced several claims and lawsuits in recent years over a variety of issues. Such as product liability, patent disputes and claims about the sale of their products, unfair trade laws, or consumer protection laws. For example, the company is a defendant in numerous lawsuits over the use of human subjects containing talc, mostly baby powder, and Johnson & Johnson's sale, manufacture, and marketing of opioids. Although Johnson & Johnson is willing to believe it is likely to win the case, the future outcome of the ruling is unknown. Given the likelihood that Johnson & Johnson will have to pay a substantial judgment over the accrued amount in these matters in the future as a result of the settlement or litigation, as well as the non-affirmative damages and damage to the Company's reputation as a result of the loss, investors are hesitant about the company's prospects, and some shareholders may choose to withdraw their funds for fear that the Company will lose the litigation and thus reduce the company's future market value. For Pfizer, much of its rapid growth and success in recent years has to do with research and investment in COVID-19 vaccines and drugs. A gradual decline in demand for COVID-19 products as the impact of the pandemic wanes could negatively impact the company's earnings. In January 2023, Pfizer shares had their biggest one-month decline since June 2020. Since 2023, the monthly volume of stock trading has continued to decline, except for a slight uptick in March. Pfizer's future revenues may struggle to rebound to the levels of the past few years due to uncertainty over new drug development and optimism that the impact of the pandemic will wane.

Furthermore, UnitedHealth is the riskiest of the three results for several reasons. Firstly, UnitedHealth's business is concentrated in the United States, while the other two companies have a near-global footprint. When the U.S. market and economy wobble, UNH suffers much more than the other two companies. In addition, UnitedHealth's main source of income is the health insurance business. The profitability of UnitedHealth's products is largely dependent on the company's internal forecasting ability, an area subject to multiple risks such as policy changes and market competition. Finally, UnitedHealth has a high percentage of intangibles, about 44 percent, which makes it hard for investors to predict. When the market deteriorates, investors may question the value of these assets and discount their market value, resulting in a deterioration in the company's financial position. In addition, if UnitedHealth is unable to maintain a competitive advantage or adapt to market changes promptly, or in the event of a cyber attack or information breach, the value of its intangible assets could be impaired, resulting in significant losses.

4.3. Investor Advice

Therefore, for balanced investors, who consider both risk and return, have a moderate risk tolerance, and can try to buy a money fund plus stock/foreign exchange portfolio, Johnson & Johnson and Pfizer would be a better fit. Because Johnson & Johnson is a giant healthcare company, their earnings numbers are going up. Sales in the three months to the end of March were more than $24 billion, up 3% from a year earlier, and those figures would have been even better without the impact of foreign exchange. And on the operational side, the company's sales growth rate is 8%, and it expects full-year marketing sales growth of between 6.5% and 7.5%. Johnson & Johnson's strength is mainly due to its diversity. Its major divisions, including consumer health, pharmaceutical, and medical technology, all achieved positive growth during this period. In addition, half of Johnson & Johnson's revenue comes from markets outside the United States, which is very competitive. Therefore, even if there are legal disputes, it is still in stable growth, with less risk. Likewise, Pfizer's total debt-to-equity ratio is less than 1, which indicates that Pfizer does not have financial risks associated with debt repayment. In addition, the improved credit rating also reduces Pfizer's exposure to the Fed's continued tightening policy and shows the company's ability to repay debt, which could further increase investor confidence in Pfizer. However, for active investors, that is, those who tend to have high-risk but high-return financial investments, are not afraid of risk, and are suitable for stock or partial stock fund investment, UnitedHealth Group is a good investment object. UnitedHealth's financial position has continued to improve in recent years, and investments in technology and data analytics through its Optum division provide further optimism for the company's future. The company's increasing profit margin demonstrates its ability to convert revenue into profit and manage potential financial risks. In addition, UnitedHealth's substantial free cash flow after paying out $3.5 billion to shareholders in the first quarter of 2023 points to a potential increase in its current 28.75% payout ratio.

5. Conclusion

In conclusion, this paper mainly analyzes the Capital Structure and Investment Value of Johnson & Johnson, Pfizer, and Healthcare Group, which are the representatives of the American medical industry, through data calculation and literature review method. It is found that Johnson & Johnson's financial and market conditions are good, the investment strategy is reasonable, and the risks are under control. And Pfizer will likely continue to increase its dividend over the next few years, which is a big plus for long-term investors considering the company's stock is currently trading at just $41.390. At The same time, many medical device industry policymakers are trying to mitigate the impact of American legal, which will affect companies' pricing choices and how to deal with tight margins and payment issues. In general, the development of the US medical industry is mainly showing a good trend, and it is necessary to continue to change its shortcomings and improve market competitiveness while paying attention to national policies.

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