Accounting and Financial Analysis on Pfizer Inc.

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Abstract. This article targets at analyzing the performance and future trend prediction of Pfizer Inc. under the situation of the COVID-19 pandemic. The impacts brought by this pandemic have led to great economic turmoil and will continuously make an enormous difference to economical growth. As one of the most related industries, the pharmaceutical industry undoubtedly is closely linked with the shifting of the economy. Therefore, Pfizer Inc., one of the most influential biotech corporate, is a perfect choice to analyze the future trend of the pharmaceutical industry as a typical case. Analysis of this paper is based on Pfizer Inc.'s and another three similarly-sized biotech corporates' consecutive three-year annual reports. After calculating key ratios from four perspectives, which are profitability, solvency, liquidity, and turnover ratios, clear interpretation and rational future interpretation will be present according to the general performance of Pfizer Inc.. Based on horizontal and vertical comparisons of Pfizer, the general future trend is positive. However, decreasing demand for vaccines after the peak of the pandemic, coupled with the diversified and frequently updated medical services provided by other biotech giants and newly-developed businesses intensifies the competition of Pfizer Inc.. Therefore, the performance of Pfizer Inc. probably fluctuates between the situation of pre-pandemic and post-pandemic eras.

Keywords: Pharmaceutical industry; Pfizer Inc.; future trends; COVID-19 pandemic.

1. Introduction

COVID-19 has impacted the global economy severely since 2020, and various industries have suffered different degrees of influence in such a depressed economic condition. The pharmaceutical industry undergoes enormous shifts in this circumstance as well. At present, due to the limited and incomplete research materials related to COVID-19 and the fast rate of virus mutation and multiplication, there is still a long way to go in the post-epidemic era. Unquestionably, one of the most connected businesses is the medical field, will encounter unknown challenges. Concerning the future trends of the pharmaceutical industry, this paper mainly focuses on Pfizer, one of the giants in the pharmaceutical industry, and compares it with the other three pharmaceutical enterprises with similar market capitalizations in several aspects.

Pfizer's mission and vision statements emphasize the relentless scientific discoveries and innovation to breakthrough products for their essential partnerships all over the world and their commitment to quality healthcare for every individual. Pfizer primarily develops novel prescription medications, vaccines, and treatments for uncommon diseases and infections in five key areas: cancers, vaccines, anti-infection, inflammation, and immunology. Pfizer has consistently vowed to "become a significant element of the medical and health system," utilizing international medical resources and collaborating with all spheres of society to actively advance the cause of global health. Concerning the size of publicly traded companies, Pfizer with 261.25 billion dollars ranks third according to biotech companies' market capitalization on November 02, 2022. AbbVie with a market capitalization of 258.849 billion dollars, Merck with a market capitalization of 256.368 billion dollars, and Novo Nordisk with a market capitalization of 246.301 billion dollars are considered to be comparative rivals.

The Pfizer Foundation assists IRC in pursuing an urgent expansion of health access in humanitarian circumstances on October 28th, 2022. Pfizer and BioNTech acquire a favorable CHMP opinion for COMIRNATY® in children aged 6 months to under 5 years in the European Union on October 19, 2022. In the last three months, updates on Pfizer's official website have mentioned the key keyword COVID-19 many times, and it reveals the aftereffects and implies future trends in the post-epidemic era. Continuous news hints to the public that the epidemic times don't pass away, there are numerous medical facilities to enhance, unknown biotech fields to explore and a depressed economy to recover.

2. Accounting Analysis

Global biopharmaceutical search-based firm Pfizer Inc. Sales of its products and scientific patents generate the majority of company income. Thus, the accounting analysis is mainly concentrated on revenue and expense recognition, research and development, and acquisition. The analysis below is based on Pfizer's annual reports in 2019, 2020 and 2021. To compare relevant accounting items in the pharmaceutical industry, three peers with similar market capitalizations, including AbbVie from the United States, Merck from the United States and Novo Nordisk from Denmark, are mentioned to assist the prediction of pharmaceutical industry future trends. The four companies are in accordance with the U.S. GAAP.

2.1 Revenue and Expense Recognition

Based on Pfizer Inc. and subsidiary companies' consolidated statements of income in the annual report publicized on December 31, 2021, the revenue Pfizer earned is 81,288 million dollars, which is nearly double compared with 41,651 million dollars in 2020 and 40,905 million dollars in 2019. Under the background of the outbreak of COVID-19, the revenue doubled mainly because of the enormous COVID-19 vaccine demand in 2021. The point can be supported by the Figure 1 collected from the website "Our World in Data" from 2020 to 2022 [1]. The share of people vaccinated against COVID-19, on Jan 1, 2021, is 0.093% worldwide and the share increased to 49% worldwide, on Jan 1, 2022. The most recent data shows a 63% worldwide vaccination rate on Nov 20, 2022.

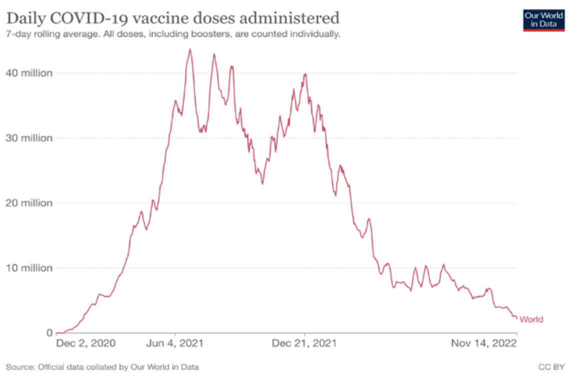

Fig. 1 COVID-19 vaccination doses from 2020 to 2022 [1]

However, the item "Costs of sales" in 2021 is 30,821 million dollars, which is about 3.6 times larger than "Costs of sales" in 2020 (8,484 million dollars) and 3.8 times larger than that of 2019 (8,054 million dollars). The article "Demand Creation for COVID-19 Vaccination: Overcoming Vaccine Hesitancy through Social Marketing" written by William Douglas Evans and Jeff French, implies the possibility of vaccine hesitancy, which leads to the dilemma of selling vaccines with a higher cost per dose [2]. Based on the data abstracted from financial statements for three consecutive years and the perspectives provided by William Douglas Evans and Jeff French, it is actually more difficult for Pfizer to get profits under the attack of COVID-19 in 2021.

In addition to the accounting item "Costs of sales", "Research and development expenses" increased apparently compared with the last two years. This important item indicates that the unreliability of quickly-developed vaccines and the rapidity of virus mutation led to a huge amount of the budget in 2021. Meanwhile, inconvenient logistics and transportation during the epidemic make Pfizer spend more budgets on selling, informational and administrative expenses. What's more, the money spent on innovation and the development of effective vaccines also takes a big portion of the budget.

2.2 Revenue and Development

For Pfizer, and indeed the entire pharmaceutical industry, the discovery of a medication or biological product takes a long time and may take several decades, from the initial stages of development to any prospective regulatory approval. Pfizer had 89 experimental medicines in its portfolio as of February 8, 2022, including 27 experimental medicines tested for the first time in human clinical trials, 25 trials focusing on the effectiveness, ideal dosage, and delivery method of medicines, 27 tests of earlier trials results on larger populations in randomized trials and analysis of risks and benefits, and 10 applications filed with appropriate regulatory authorities when trial results warranted.

As they endeavor to transform cutting-edge research and technology into the medications that could have the greatest positive impact on patients, R&D is at the core of Pfizer's mission to create breakthroughs that change patients' lives. Drug, vaccine, and biological product development is an expensive, unpredictable, and time-consuming process. In addition to identifying and creating new goods, R&D makes an effort to find methods that enhance the effectiveness and usability of already existing products while also looking for potential additional indications. As is revealed in the part of revenue and expense recognition, the research and development expense occupies a huge amount of costs of sales in the 2021 annual report, nearly one-third of the total costs of sales (13,829 million dollars). Only by the means of exploring the potential patents and advanced biotechnology to maintain the competitive advantages can Pfizer stay in the status of a giant.

2.3 Acquisition and Merger

On October 3rd, 2022, Pfizer Inc. announced that it had finished the purchase of Biohaven Pharmaceutical Holding Company Ltd., the company behind the novel migraine medicine NURTEC® ODT, which is authorized for both acute treatment and adult episodic migraine prevention [3]. Through 2030 and beyond, Pfizer's cutting-edge internal medicine portfolio will be strengthened by the success of NURTEC® ODT and Biohaven's CGRP program. This purchase boosts Pfizer's ability to offer additional treatment choices to migraine patients—a condition that affects more than 1 billion people worldwide—by extending Pfizer's global reach. Global Blood Therapeutics, Inc. (GBT), a biopharmaceutical business devoted to the research, development, and delivery of life-changing therapies that bring hope to underserved patient communities starting with sickle cell disease, was acquired by Pfizer Inc. on October 5th (SCD). The acquisition strengthens Pfizer's dedication to SCD and builds on the company's 30-year history in the field of uncommon hematology [4].

It is more realistic to expedite research and quickly provide numerous possible best-in-class therapies to people with sickle cell disease now that Global Blood Therapeutics' skills, portfolio, and pipeline are a part of Pfizer. The sickle cell disease community's unmet needs will be attended to in accordance with Pfizer's commitment to equity. In a nutshell, to some extent, the acquisition contributes to not only the potentially bright future of Pfizer, but also the research and development capability of Pfizer. Taking good advantage of R&D capability and acquisition impact, which are the main future trends determinants, Pfizer will probably do well in the following future.

3. Performance Evaluation based on the Financial Ratios

Along with serving a crucial role in improving human health, the pharmaceutical business in the US is also one of the most competitive, lobbying-prone, and important sectors of the economy [5]. When vaccine demand peaked in 2021, the revenue of companies producing vaccines and related products was very significant, but with the advent of the post-pandemic era, vaccine demand is gradually moving towards pre-pandemic levels. Therefore, based on present market demand, it is difficult to maintain such an ideal performance in 2021 for the pharmaceutical industry. The following ratios indicate a future trend of stable but difficultly-increasing profitability and overall company performance [6-11].

3.1 Profitability

In Table 1, it can be seen that Pfizer locates in the lower middle level after accounting for four categories of profitability ratios. Referring to the market capitalization of Pfizer (261.25 billion dollars), Pfizer ranks third among the four companies mentioned in the introduction section. The profitability is consistent with the common size statement, and thus the situation is normal and reasonable.

Table 1. Profitability ratios of Pfizer and its peers in 2021(%)

	Gross profit ratio	Net profit ratio	Operating profit ratio	Return on asset
Pfizer	62.0842	27.0384	23.9064	12.3757
AbbVie	68.9556	20.5385	31.8949	7.8817
Merck	27.1004	26.7925	27.1004	11.6922
Novo Nordisk	83.1975	33.9183	41.6506	24.5527
Average	60.3344	27.0719	31.1381	14.1256

In Table 2, the gross profit ratio and net profit ratio in 2021 are below the average level, while the operating profit ratio and return on asset rank first among the recent three years. This little inconsistency is attributed to the plenty of trials and errors in the early development phase and distrust of newly-developed vaccines from the public, which undoubtedly costs more in the marketing stage. Although the expenses of preparing the vaccines in a saleable condition rise over the three years, the large quantity of demand guarantees increasing total profits. Therefore, based on ROA, Pfizer generated more with per asset in 2021.

Table 2. Profitability ratios of Pfizer in recent three years (%)

	Gross profit ratio	Net profit ratio	Operating profit ratio	Return on asset
2021	62.0842	27.0384	23.9064	12.3757
2020	79.6307	21.9899	19.8075	4.3221
2019	80.3105	39.1876	16.4039	6.4072
Average	74.0085	29.4053	20.0392	7.7017

3.2 Solvency

In Table 3, after excluding AbbVie, whose debt ratio is considered abnormal, Pfizer’s debt ratio is below the average level and regarded acceptable and normal. Approximately half sources of funds for Pfizer come from equity and the rest portion comes from debiting. Pfizer is estimated with the capability to cope with payables.

Table 3. Solvency ratios of Pfizer and its peers (%)

	Debt-equity ratio
Pfizer	49.62
AbbVie	496.79
Merck	86.53
Novo Nordisk	37.66
Average (except AbbVie)	57.94

In Table 4, the ability to pay back for Pfizer improved over the three years. Accounting for the significant profits earned in 2021, which increased the capital enormously, debt pressure in the previous years is relieved to some extent. Thus, the ratios shown in table 4 decreased apparently in the time series.

Table 4. Solvency ratios of Pfizer in recent three years (%)

Pfizer	Debt-equity ratio
2021	49.62
2020	62.76
2019	82.19
Average	64.86

3.3 Liquidity

In Table 5, both the current ratio and the quick ratio for Pfizer exceed the average level. Meanwhile, these two indicators are between 1.0 to 2.0, so the short-term abilities to satisfy debts and make agreements whole of Pfizer are considered acceptable and reasonable.

Table 5. Liquidity ratios of Pfizer and its peers (%)

	Current ratio	Quick ratio
Pfizer	140.00	119.00
AbbVie	79.35	71.00
Merck	126.78	127.00
Novo Nordisk	86.01	66.00
Average	108.04	95.75

In Table 6, the liquidity of Pfizer increased apparently in the past three years, and there was an abrupt increase between 2019 and 2020. Pfizer had significantly increased its capacity to turn assets into cash without hurting its stock price in order to pay short-term debt obligations. This result indicated a continuously well-done performance for Pfizer under the circumstance of the large demand for COVID-19 vaccines since the first breakout of the epidemic.

Table 6. Liquidity ratios of Pfizer in recent three years (%)

	Current ratio	Quick ratio
Pfizer	140.00	119.00
AbbVie	79.35	71.00
Merck	126.78	127.00
Novo Nordisk	86.01	66.00
Average	108.04	95.75

3.4 Turnover

In Table 7, it can be indicated that for the pharmaceutical industry inventory like vaccines are supposed to possess a high level of turnover rate to be within their guarantee period, and thus the inventory ratios shown are acceptable for all companies. Meanwhile, the receivable turnover ratios for listed companies are all above 3.0, which means good corporate performance for all of them. Pfizer is located in the upper middle level and thus had a nice performance.

Table 7. Turnover ratios of Pfizer and its peers (%)

	Assets turnover ratio	Inventory turnover ratio	Receivable turnover ratio
Pfizer	44.79	340.23	708.15
AbbVie	38.35	557.74	563.27
Merck	46.08	228.89	527.67
Novo Nordisk	72.39	120.57	300.86
Average	50.40	311.86	524.99

In Table 8, the inventory turnover ratio increased enormously compared with the previous two years and the receivable turnover ratio still stayed at a high level. At the peak of the quantity of vaccine demand in 2021, the inventory turnover rate nearly trebled.

Table 8. Turnover ratios of Pfizer in recent three years (%)

	Assets turnover ratio	Inventory turnover ratio	Receivable turnover ratio
2021	44.79	340.23	708.15
2020	27.01	105.79	526.36
2019	24.41	113.95	604.03
Average	32.07	186.66	612.85

4. Conclusion

Considering the four types of ratios above together, estimated based on the 2021 annual report, the general performance of Pfizer is excellent and its future is probably bright. Due to the decreasing demand for the COVID-19 vaccine, there is another opportunity and challenge for Pfizer in the post-epidemic era. In order to maintain Pfizer's status in the pharmaceutical industry, Pfizer focused on strategies and future plans. Written on the 2021 annual report, Pfizer is driven by five strategies: (1) Unleash the potential of our workforce; (2) Produce world-class science; (3) Alter our approach to going to market; (4) Win the pharmaceutical industry's digital race; and (5) Take the initiative. By putting them to use, Pfizer has the potential to provide patients breakthroughs while generating value for shareholders and other stakeholders. Additionally, Pfizer continues to enhance its ESG strategy, paying more attention to six fields: advancement in products; guaranteed access to and price of products; quality and security of products; diversification, equity, and inclusiveness; global warming; and commercial ethics.

Apart from doing a good job of maximizing revenues to attract or maintain investors and getting a good reputation only in business, Pfizer is strongly suggested to develop a corporate culture climate of humanistic elements to cultivate relationships among consumers and add this idea into the process of research and development. By applying this, not only reputation in the pharmaceutical industry is strengthened, but also a united organization exploring for world health advancement is formed. The future of Pfizer is generally positive. However, as the massive demand for a COVID-19 vaccine in 2021 wanes, Pfizer and the biotechnology industry as a whole will face lower performance compared with the performance in 2021. However, due to the rapid mutation characteristics of the coronavirus, medical technology companies will continue to develop new vaccines to meet market demand. The future overall performance is between the level before the epidemic and the level in the post-epidemic era. On the basis of Pfizer's good research and development and adherence to strategies, Pfizer will have great potential and prospects compared with now.

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