

RELATIVE VALUATION OF PFIZER INC.



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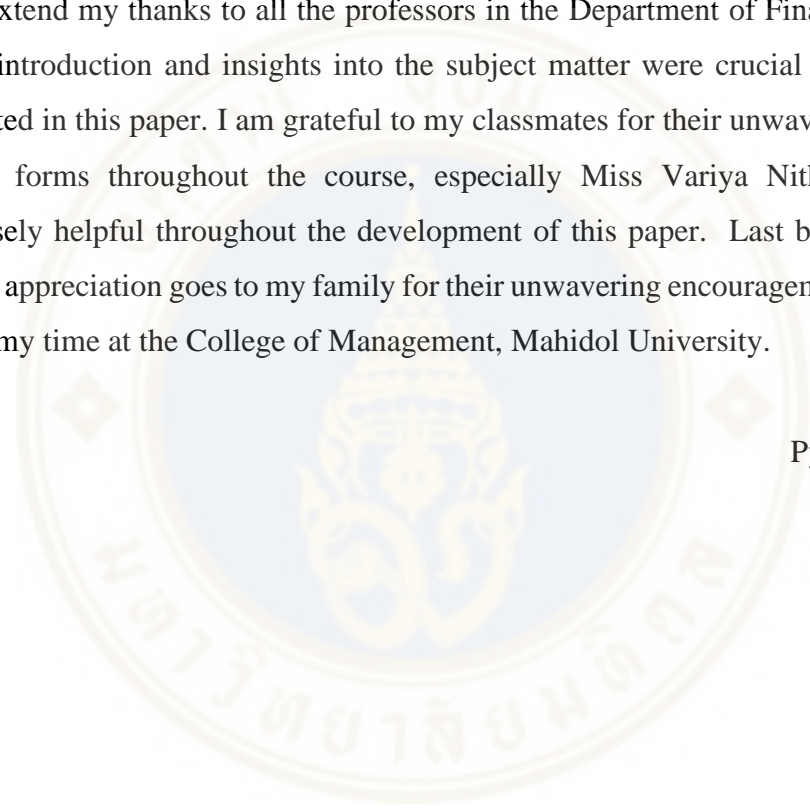
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DISCOUNTED CASH FLOW VALUATION OF PFIZER INC.

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M.M. (CORPORATE FINANCE)

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PROF. ROY KOUWENBERG, Ph.D., CFA, EAKAPAT MANITKAJORNKIT, Ph.D.**ABSTRACT**

This paper evaluates the valuation of Pfizer (PFE) through a comparative analysis with peer companies such as GSK, SAN, JNJ, ROG, and LLY, all prominent multinational pharmaceutical companies in the healthcare industry. As of December 2024, the target price for PFE is USD 41 per share. However, the current market price as of November 10, 2023, is USD 29.68 per share, indicating an undervaluation relative to its peers. This undervaluation is attributed to a decline in PFE's share price due to a decrease in COVID-19 cases. Despite the expected decrease, the extent of the share price decline suggests that, in relative terms, the current share price is undervalued. On the other hand, a Discounted Cash Flow (DCF) valuation conducted by Variya provides a more reliable assessment based on fundamental factors. The target price for PFE using the DCF approach is USD 48.9 for December 2024, aligning with the relative valuation and implying a potential increase in PFE's share price next year. The investment risk level for PFE is considered moderate, with acceptable tolerance levels for risks related to Research and Development (R&D) and foreign exchange. However, cyber risk and patent risk are deemed intolerable. In summary, based on a comprehensive evaluation of its valuation, performance, and associated risks, the recommendation for PFE is to BUY.

KEY WORDS: RELATIVE VALUATION/ PFIZER/ PFE

58 pages

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LIST OF ABBREVIATIONS

BPS	Book Value per Share
CAGR	Compound Growth Rate
COVID-19	Coronavirus disease starting in 2019
DCF	Discounted Cash Flow
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EPS	Earnings per Share
EV	Enterprise Value
GBP	Great Britain Pound
LOE	Loss of Exclusivity
NOPAT	Net Operating Profit After Taxes
PC1	Pfizer CentreOne
PBV	Price to Book Value
PE	Price to Earnings
R&D	Research and Development
RORC	Return on Research Capital
USD	U.S. Dollar
WRDM	Worldwide Research, Development, and Medical Organization

CHAPTER I

PFIZER EXPLORED: INSIDE THE PHARMACEUTICAL POWERHOUSE

In this first chapter, we provide a detailed overview of Pfizer, tracing its background and examining its current stature as a key pharmaceutical industry leader. This chapter covers Pfizer's introduction (1.1), its company ownership details (1.2), a deep dive into its diverse business operations (1.3), Research and Development (R&D) pillar (1.4), strategic vision and financial performance (1.5), and a SWOT analysis (1.6), offering a complete view of its position and influence in the worldwide health sector.

1.1 Introduction to Pfizer

Pfizer's journey from a 19th-century chemical company to a 21st-century pharmaceutical leader reflects its dedication to healthcare innovation and global reach (Pfizer, 2023). From pioneering penicillin production during World War II to developing life-changing medications like Viagra, Pfizer has consistently been at the forefront of medical breakthroughs.

Today, as a global entity addressing a range of health concerns—from cardiovascular diseases to cancer—Pfizer stands as an example of scientific excellence and patient-centered care (Hoover's Inc., a Dun & Bradstreet Company, 2023). With operations in over 185 countries, Pfizer's commitment extends beyond treatment development to ensure that these advances are accessible to patients around the world, striving to create a healthier future for all.

1.2 Pfizer's Ownership

Pfizer's ownership is characterized by a significant institutional presence, with entities like the Vanguard Group Inc. holding a substantial portion of its shares—70.99% of the company's equity is in the hands of institutional investors, a prominent figure in the pharmaceutical industry (Bloomberg, 2023). The remaining 29.01% is owned by individual shareholders, reflecting a balanced investor base (Bloomberg, 2023). This structure underlines the confidence of professional investors in Pfizer's market leadership and strategic direction.

1.3 Business Overview

This section provides an in-depth look at Pfizer's various business segments, how they contribute to the company's revenue, and the company's marketing strategies.

1.3.1 Operational Segments and Revenue Streams

After the organizational changes in the third quarter of 2022, Pfizer's commercial operations are strategically divided into two main segments, Biopharma and Pfizer CentreOne as shown in Figure 1.1. Each plays a significant role in the company's revenue generation and market positioning.

1.3.1.1 Biopharma

Biopharma, the primary segment, accounts for approximately 98% of Pfizer's total revenue, underscoring its dominance in the company's portfolio. Biopharma focuses on science-based medicines and serves three key customer groups: primary care, specialty care, and oncology (Pfizer, 2023).

- **Primary Care:** This group includes a diverse range of products such as internal medicine, innovative vaccines, and treatments for COVID-19. Pfizer is also exploring future potential in mRNA and antiviral domains, anticipating growth in these areas.

- **Specialty Care:** Focused on targeted treatments, the products emphasis on inflammation and immunology, rare diseases, and hospital care solutions.

- **Oncology:** A critical component of Pfizer's portfolio, this group involves a set of oncology products, emphasizing Pfizer's commitment to cancer treatment and research.

1.3.1.2 Pfizer CentreOne (PC1) and Other Business Activities

PC1, the second operational segment, contributes around 2% to Pfizer's total revenue. As a global contract development and manufacturing organization, PC1 specializes in producing specialty active pharmaceutical ingredients. This segment, while smaller in revenue contribution, plays a key role in supporting Pfizer's broader product range and supply chain.

In addition to these core segments, Pfizer's operational strategy includes significant R&D investments managed by the Worldwide Research, Development, and Medical (WRDM) organization (Pfizer, 2023). The organization provides initial research projects for the Biopharma portfolio until proof-of-concept, at which point they transition to the Global Product Development (GPD) organization for clinical and commercial development (Pfizer, 2023). These investments are important for the continuous development of new and innovative treatments, maintaining Pfizer's competitive edge in the pharmaceutical industry.

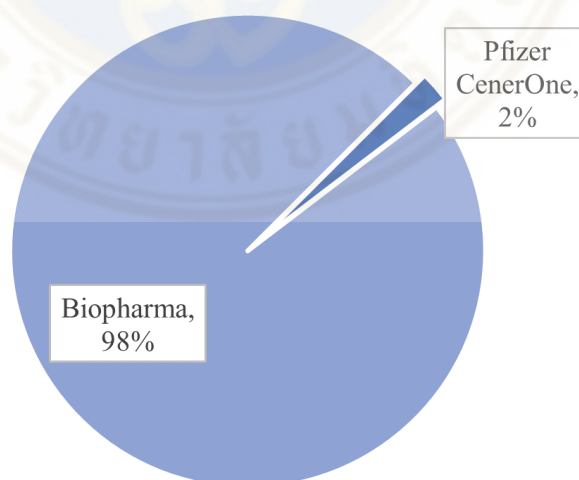


Figure 1.1 Pfizer's Commercial Operation and Revenue Contribution

Source: From 2022 Form 10-K by Pfizer, 2023, p.32

1.3.2 Global Reach and Market Diversification

Pfizer's global strategy is characterized by an expansive and strategic diversification, with the U.S. remaining the predominant market, contributing 42% to total revenue in 2022, as shown in Figure 1.2. The company's operations expand across various economic landscapes, with emerging and developed markets each playing a pivotal role in the revenue structure.

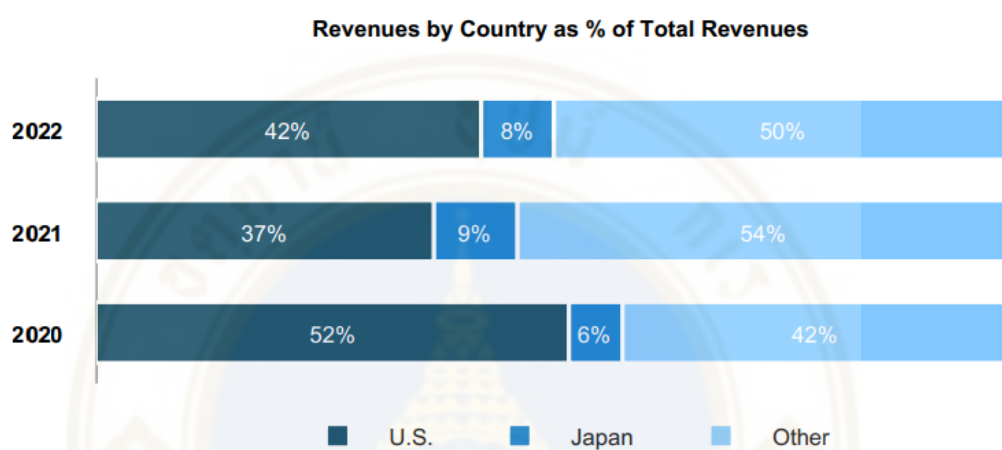


Figure 1.2 Revenues by Country as Percentage of Total Revenue

Source: From 2022 Form 10-K by Pfizer, 2023, p.6

Emerging Markets: Pfizer has strategically expanded into emerging markets across Asia, Latin America, Eastern and Central Europe, the Middle East, Turkey, and Africa. Collectively, these regions account for a significant slice of revenue, indicative of Pfizer's ability to leverage growth opportunities in areas experiencing rapid economic development.

Developed European Market: With over 20% revenue contribution (Pfizer, 2023), developed European markets, including Western Europe, Scandinavia, and Finland, remain essential to Pfizer's international portfolio, benefiting from the company's strong brand presence and established healthcare infrastructure.

Broader Developed Countries: Japan, Canada, South Korea, Australia, and New Zealand contribute significantly to Pfizer's revenue, making up approximately 15% of the revenue (Hoover's Inc., a Dun & Bradstreet Company, 2023). These countries provide stable markets for Pfizer's advanced and specialized healthcare products.

Pfizer's presence in more than 185 countries and territories proves their global presence. Notably, Figure 1.2 shows a shift in revenue distribution with a decrease in the U.S. revenue share from 52% in 2020 to 42% in 2022, while the contributions from Japan and other countries have remained stable or increased, highlighting the importance of Pfizer's international market strategies. The company's adaptability to treatments and various regions, combined with its strategic partnerships, strengthens its global distribution of vaccines and treatments, and ensures a strong international market presence.

1.3.3 Marketing Strategies and Sales Channels

Pfizer's marketing strategies and sales channels are vital to its global success as they demonstrate a tailored approach to different market needs. The company has created a direct sales network that targets key healthcare providers, including hospitals, clinics, and government agencies.

Targeted U.S. Distribution: In the United States, Pfizer's distribution strategy is robust, with the company serving as a primary vaccine provider to the federal government, the Centers for Disease Control and Prevention (CDC), pharmacies, and healthcare providers (Pfizer, 2023). These channels are vital for ensuring widespread access to essential medications.

Global Sales Reach: Internationally, Pfizer approaches both governmental and private sectors. Strategic partnerships with leading wholesale distributors like McKesson, Cardinal Health, and AmerisourceBergen are pivotal, accounting for 20% of their revenue (Hoover's Inc., a Dun & Bradstreet Company, 2023). These relationships underline the importance of a strong distribution network for Pfizer's global operations.

Advertising and Public Engagement: Pfizer's commitment to public health education is reflected in its substantial advertising budget, which has seen a consistent increase from \$1.8 billion in 2020 to approximately \$2.8 billion in 2022 (Pfizer, 2023). These investments in advertising show Pfizer's strategy to not only promote its products but also to educate the public on health issues, disease prevention, and wellness.

Healthcare Collaboration and Digital Innovation in Marketing: To enhance healthcare affordability, Pfizer collaborates with payers and insurers, integrating its products into healthcare solutions that are financially accessible. During the COVID-19 pandemic, the company demonstrated agility by using digital platforms to engage with

healthcare professionals and consumers, ensuring the continuous flow of critical health information (Pfizer, 2023).

1.4 Research, Development, and Innovation

This section explores Pfizer's R&D activities, highlighting the strategic role of innovation in sustaining their competitive edge and addressing future healthcare challenges.

1.4.1 Pfizer's R&D Dynamics

Pfizer's R&D division harnesses advanced science and technology to not only create new therapies but also enhance existing treatments and identify novel applications for established drugs (Pfizer, 2023). They collaborate with universities, biotech companies, and other firms, sharing knowledge and resources to foster an ecosystem where knowledge and resources are pooled to accelerate product development. Pfizer structures R&D operations into various units —WRDM, which is responsible for early-stage development, and GPD, which manages clinical trials and regulatory submissions—facilitating a whole transition from laboratory insights to market-ready solutions. The company manages R&D operations globally, adapting resource allocation to meet the demands of their expansive project portfolio, which includes 110 diverse R&D initiatives as of January 2023, as illustrated in Figure 1.3.

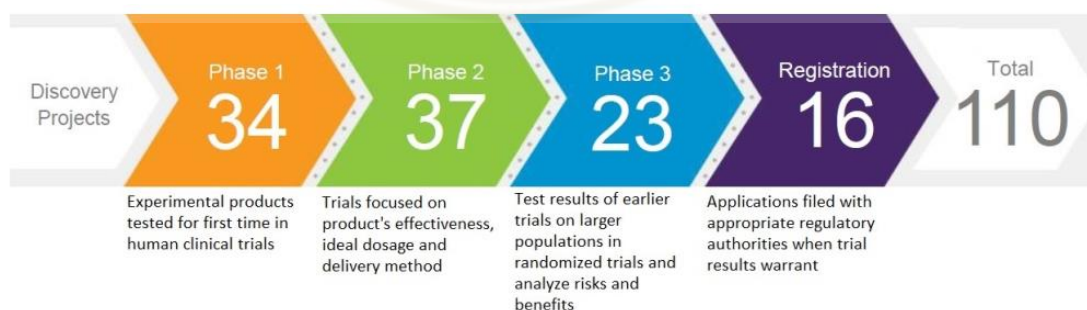


Figure 1.3 Discovery Projects Pipeline 2022

Source: From 2022 Form 10-K by Pfizer, 2023, p.5

This extensive project array reflects their commitment to developing future medications despite drug discovery and development's lengthy, costly, and unpredictable nature.

1.4.2 Navigating the Patent Landscape

Pfizer's intellectual property rights are their business's foundation, including patents covering various products, formulations, uses, and manufacturing processes. The duration of these patents is varied by several factors, including the initial filing date, the patent laws of each country, and regulatory exclusivity that often accompanies new drug approvals (Pfizer, 2023). Pfizer's patent portfolio in 2023 includes nineteen critical product patents, such as the patent for the COVID-19 vaccine, which are integral to the company's revenue, given the competitive landscape they operate in (Pfizer, 2023).

However, the pharmaceutical industry is marked by the perpetual risk of patent expiration. This reality could lead to an increase in cheaper generic and biosimilar products, potentially weakening Pfizer's market share and revenue. In response to these challenges, Pfizer actively engages in defending its patent rights against infringement. However, despite these efforts, Pfizer's revenues remain vulnerable as it has experienced patent expiration, and they expect more in the upcoming years (Pfizer, 2023).

1.5 Strategic Outlook

This section highlights Pfizer's principal business strategies, including its focus on research, patient-centric models, and market expansion.

1.5.1 Pfizer's Strategic Vision

Pfizer's strategic vision is committed to enhancing its product pipeline and maximizing the value of its existing products through sustained R&D efforts (Pfizer, 2023). The company's guiding principle is to broaden the accessibility and affordability of its medical solutions globally, prioritizing fair distribution. By forging partnerships across the healthcare ecosystem, Pfizer aims to improve healthcare delivery and access.

Innovating for the Future: Pfizer put significant investment into R&D, fostering a culture of innovation and creating strategic alliances with leading scientists (Pfizer, 2023).

Expanding Horizons: The company's approach to diversification mitigates market-specific risks and ensures revenue stability. Global expansion, particularly into emerging markets, is a key aspect of Pfizer's growth strategy.

Collaboration for Advancement: Strategic partnerships strengthen Pfizer's R&D pipeline, speeding up the development and launch of breakthrough treatments (Pfizer, 2023).

Focus on Patients: Central to Pfizer's philosophy is a patient-centric approach, ensuring treatments not only adhere to regulatory standards but also meet patient needs.

1.5.2 A Record of Growth: Financial Milestones

This section looks at a snapshot of Pfizer's recent financial performance and emphasizing revenue growth and operational achievements.

1.5.2.1 Total Revenue Growth

Pfizer's financial track has been marked by strong growth, with the total revenue climbing from \$41.7 billion in 2020 to \$100.3 billion in 2022 (Pfizer, 2023). This upward trend, as illustrated in Figure 1.4, reflects a substantial operational increase, driven by the success of COVID-19 treatments like Paxlovid medicine and the Comirnaty vaccine.

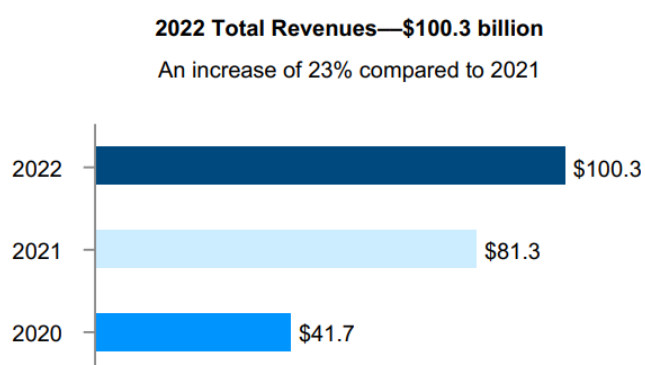


Figure 1.4 2022 Total Revenues

Source: From 2022 Form 10-K by Pfizer, 2023, p.26

1.5.2.2 Net Cash Flow from Operations

Pfizer's financial strength is not only in its revenue growth but also in its operational cash flow. Despite a 10% decrease from 2021, the 2022 net cash flow from operations remained strong at \$29.3 billion, down from \$32.6 billion the previous year but still significantly higher than the \$14.4 billion reported in 2020 (Pfizer, 2023). This performance, as depicted in Figure 1.5, reflects Pfizer's operational efficiency and ability to generate cash despite market fluctuations.

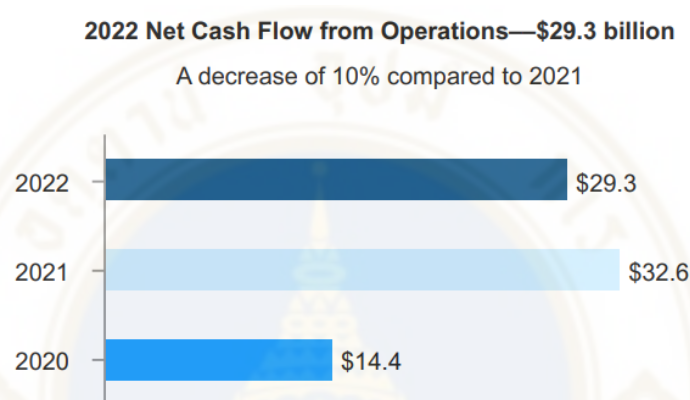


Figure 1.5 Pfizer's 2022 Cash Flow from Operations

Source: From 2022 Form 10-K by Pfizer, 2023, p.26

1.6 Comprehensive SWOT Analysis

In this section, a SWOT analysis is conducted to assess Pfizer's strengths, weaknesses, opportunities, and threats in the current pharmaceutical landscape.

"Innovative Research" and "Brand Recognition and Global Presence" are strengths that speak to Pfizer's R&D expertise and its extensive market reach (Pfizer, 2023).

Weaknesses such as "Dependency on Patents" and "Regulatory Challenges" highlight potential areas of vulnerability (Pfizer, 2023).

Opportunities like "Emerging Markets" and "Technological Advancements" indicate areas for growth and innovation.

Threats, including "Generic Competition" and "Market Competition", are challenges Pfizer must overcome in the pharmaceutical industry.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Innovative Research • Brand Recognition and Global Presence 	<ul style="list-style-type: none"> • Dependency on Patents • Regulatory Challenges • R&D Risks
Opportunities	Threats
<ul style="list-style-type: none"> • Emerging Markets • Technological Advancements • Strategic Partnerships • Focus on Rare Diseases 	<ul style="list-style-type: none"> • Generic Competition • Market Competition • Regulatory Changes

Figure 1.6 Pfizer's SWOT Analysis

Source: Own Elaborate



CHAPTER II

INDUSTRY ANALYSIS: MACROECONOMICS AND BENCHMARK

This chapter offers an insight into the macroeconomic factors that shape the pharmaceutical industry and their influence on Pfizer's strategies. It will begin with a historical perspective, illustrating how the industry has evolved and highlighting Pfizer's prominence in the current market, substantiated by significant R&D investment figures (2.1). It then explores the broader economic trends, demographic shifts, and technological advances that have shaped Pfizer's competitive environment, leading to an assessment of key benchmarks against industry peer's figures (2.2 and 2.3).

2.1 Overview of the Pharmaceutical Industry

This section will go through the pharmaceutical industry's journey from its essential role during historical conflicts to its status as an example of innovation, highlighting the industry's market capitalization to underscore its economic significance.

2.1.1 Historical Significance and Current Landscape

Growing in prominence from the American Civil War to the world wars, the pharmaceutical industry has been an integral part of modern society since the 19th century and advancing through intense competition and significant research and development efforts. These advancements have not only improved global health but have also created a dynamic business landscape (Pharmaphorum, 2023).

Today, the industry stands on the frontier of innovation, diving into new territory like genomics and advanced cancer treatments, underscoring its critical role in our lives. In 2022, the industry's market capitalization reached \$1.48 trillion (Figure 2.1), indicating its impact and importance.

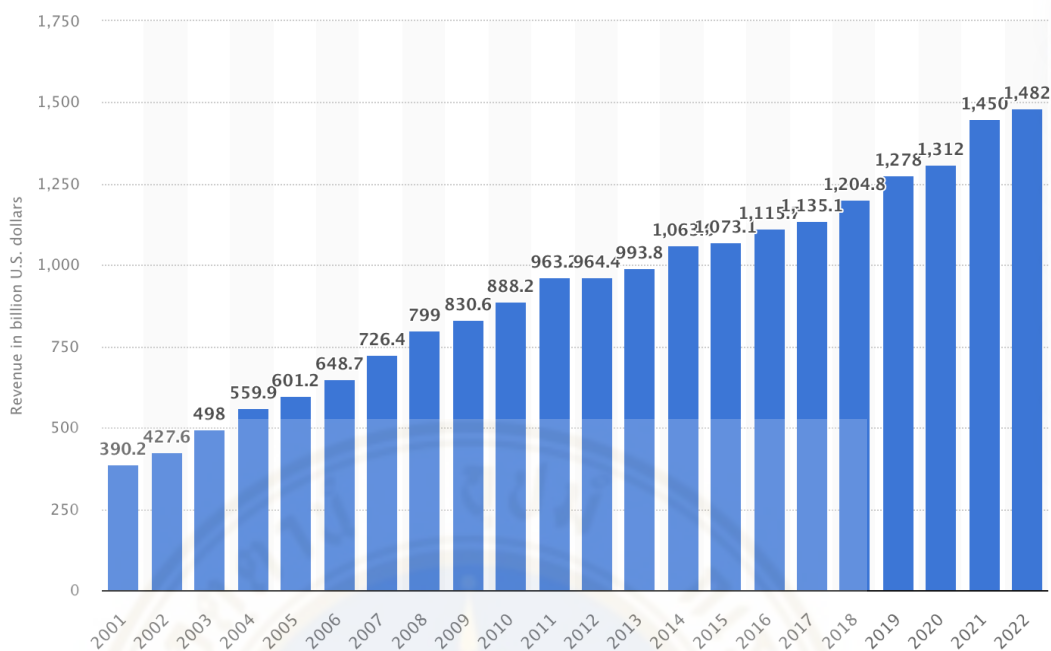


Figure 2.1 Pharmaceutical Market: Worldwide Revenue 2001-2022

Source: From Statista “Revenue of the worldwide pharmaceutical market from 2001 to 2022 (in billion U.S. dollars)” by Matej Mikulic, 2023

2.1.2 R&D as a Competitive Edge

R&D is considered the lifeblood of the pharmaceutical sector, fueling competitive advantage through innovation, product development, and differentiation. U.S. pharmaceutical firms have steadily increased their R&D investment, from \$48.6 billion in 2011 to over \$100 billion by 2022 (Figure 2.2), reflecting the sector's commitment to progress.

Moreover, the pharmaceutical industry leads in R&D investment compared to other sectors (Figure 2.3), with Pfizer ranking among the top global pharmaceutical companies in R&D spending (Figure 2.4), cementing its position as an industry leader in innovation.

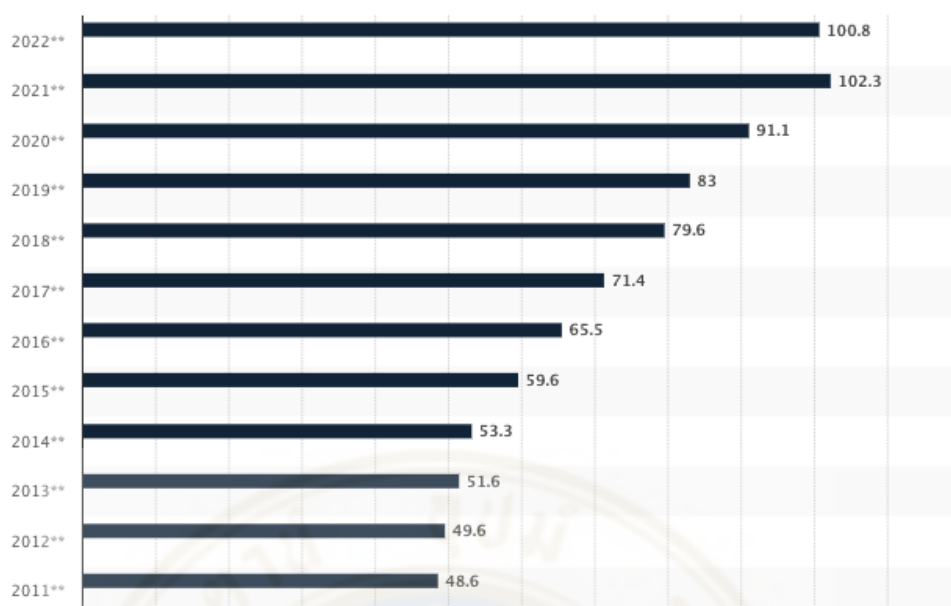


Figure 2.2 Research and Development Expenditure: U.S. Pharmaceutical Industry 1995-2022

Source: From Statista “R&D Expenditure of Total U.S. Pharmaceutical Industry From 1995 To 2022 (In Billion U.S. Dollars)” by Matej Mikulic, 2023

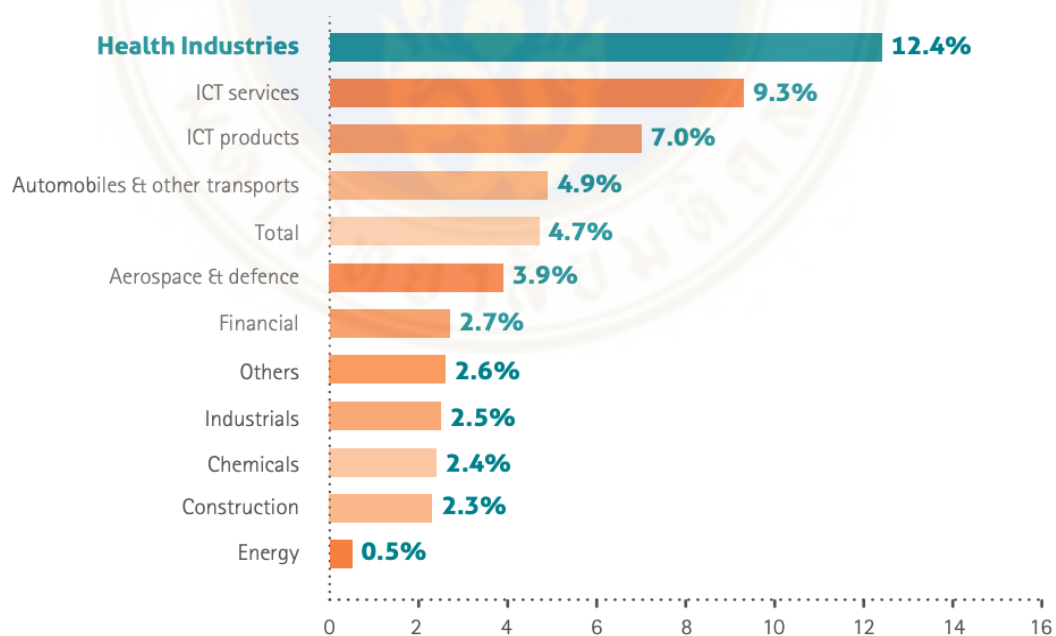


Figure 2.3 Ranking of Industrial Sectors by Overall Sector R&D Intensity

Source: From EFPIA report “The pharmaceutical Industry in Figures - Key Data 2023”, 2023, p.10

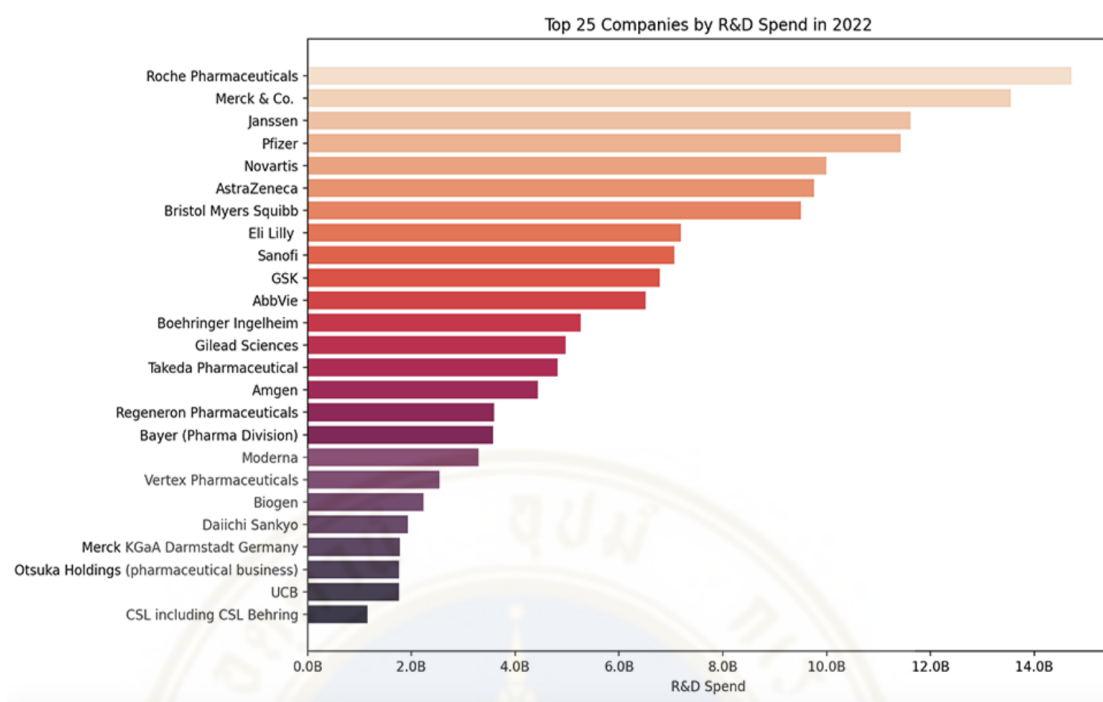


Figure 2.4 Top Pharmaceutical Companies Based on Their Absolute R&D Spending Levels In 2022

Source: From Drug Discovery & Development “The big spenders: The top 25 pharma companies in R&D investments” by Brian Buntz, 2023

2.2 Key Macroeconomic Influences

This section will explore the external factors that significantly affect industry’s growth and opportunity.

2.2.1 Demographic Shifts

The global population is aging at an unprecedented rate, leading to substantial changes in pharmaceutical demands. With an increasing need for medications directed toward older individuals, pharmaceutical companies have found opportunities to explore new markets and develop drugs specifically designed for age-related and chronic conditions like Alzheimer's, Parkinson's disease, and osteoarthritis. (WHO, 2022)

2.2.2 Technological Advancements

The pharmaceutical sector is a key driver of innovation in healthcare, channeling significant resources into research and development, especially in genetics and biotechnology. R&D is a critical investment for large pharmaceutical companies to maintain their competitive edge (Pfizer, 2023). Such investments bring the betterment of healthcare for the people in terms of personalized medicine and in the frontier of cancer. However, these advancements come with high costs and inherent risks. As the industry progresses, pharmaceutical companies face the dual challenge of funding intensive R&D and navigating the competitive pressures from emerging biotech and genomics firms that are introducing alternative medical solutions.

2.2.3 Pandemic Response and Adaptation

There have been several pandemics throughout history from black death and Spanish flu to HIV, SARS and recently COVID-19. In each pandemic wave, pharmaceutical companies are on the front lines. However, these periods often witness a decline in revenue growth due to economic slowdowns, as observed during the COVID-19 pandemic (Frontiers, 2023). Moreover, due to substantially high R&D cost, a pharmaceutical company's markup price for the vaccines would also be so huge that it becomes the subject of controversy and is questioned for ethics. Thus, pharmaceutical companies must be proactive and responsible during these periods to contribute to public welfare and maintain their financial performance and ethical standing.

2.2.4 Changing Healthcare Behaviors

The rise in chronic diseases due to sedentary lifestyles and poor dietary habits has boosted the demand for medications to treat conditions like obesity, diabetes, and cardiovascular disorders. Pharmaceutical companies are responding by innovating in these areas. Additionally, the focus on preventive medicine and health awareness has driven demand for lifestyle-related health products and medications, leading pharmaceutical companies to develop products like vitamins, supplements, and vaccines to meet this need (WHO, 2022).

2.3 Economic and Market Dynamics

This section will review the stability of the U.S. economy and its influence on the pharmaceutical sector, providing background for Pfizer's financial health.

2.3.1 U.S. Economic Resilience

The U.S. has generally maintained a stable Gross Domestic Product (GDP) growth rate, with only a minor dip during the COVID-19 pandemic (Figure 2.5). This resilience mirrors the pharmaceutical industry's performance and the swift, coordinated efforts of major pharmaceutical companies worldwide in addressing the global crisis. As of 2022, the economy has made a significant recovery, resulting in a notable increase in GDP per capita (Figure 2.6).

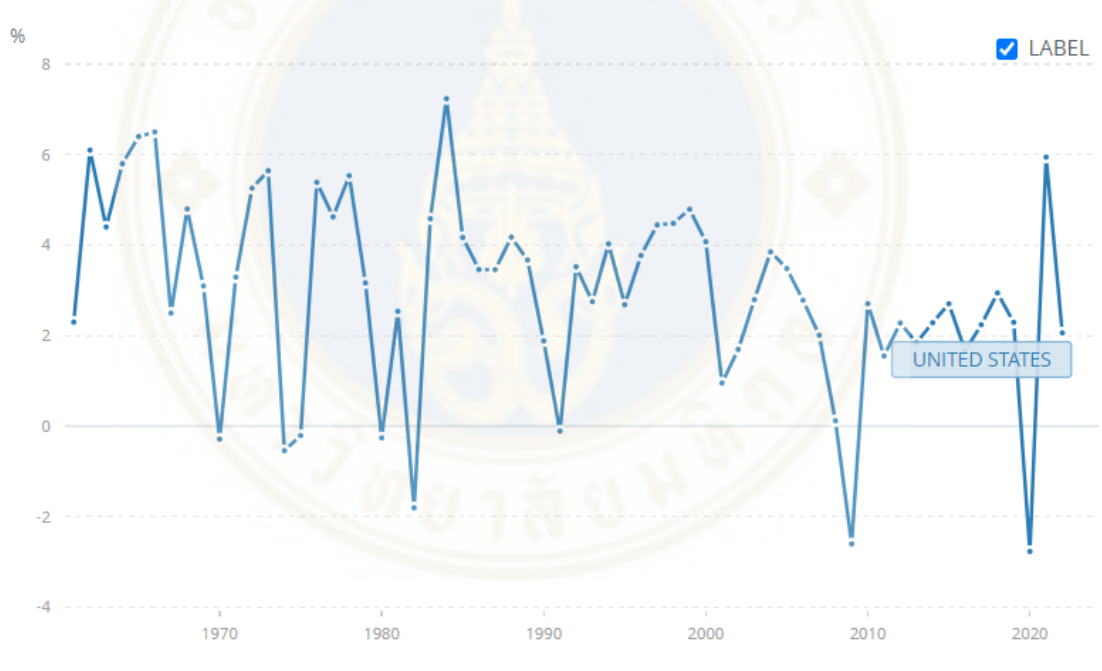


Figure 2.5 GDP growth (annual %) - United States

Source: From World Bank, “GDP growth (annual %) - United States”, 2023 (<https://data.worldbank.org/>)



Figure 2.6 The U.S. GDP per Capita

Source: From World Bank, “GDP per capita growth (annual %) - United States”, 2023 (<https://data.worldbank.org/>)

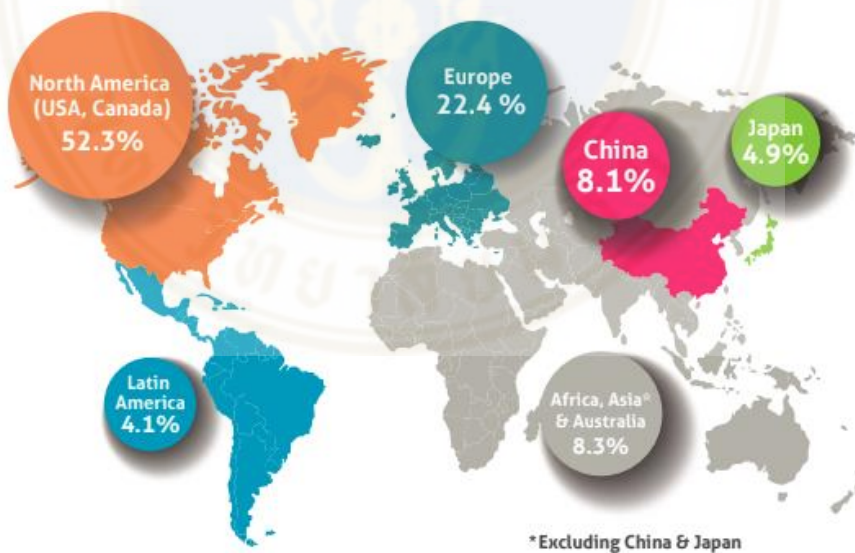


Figure 2.7 Breakdown of the world pharmaceutical market - 2022 Sales

Source: From EFPIA report “The pharmaceutical Industry in Figures - Key Data 2023”, 2023, p.14

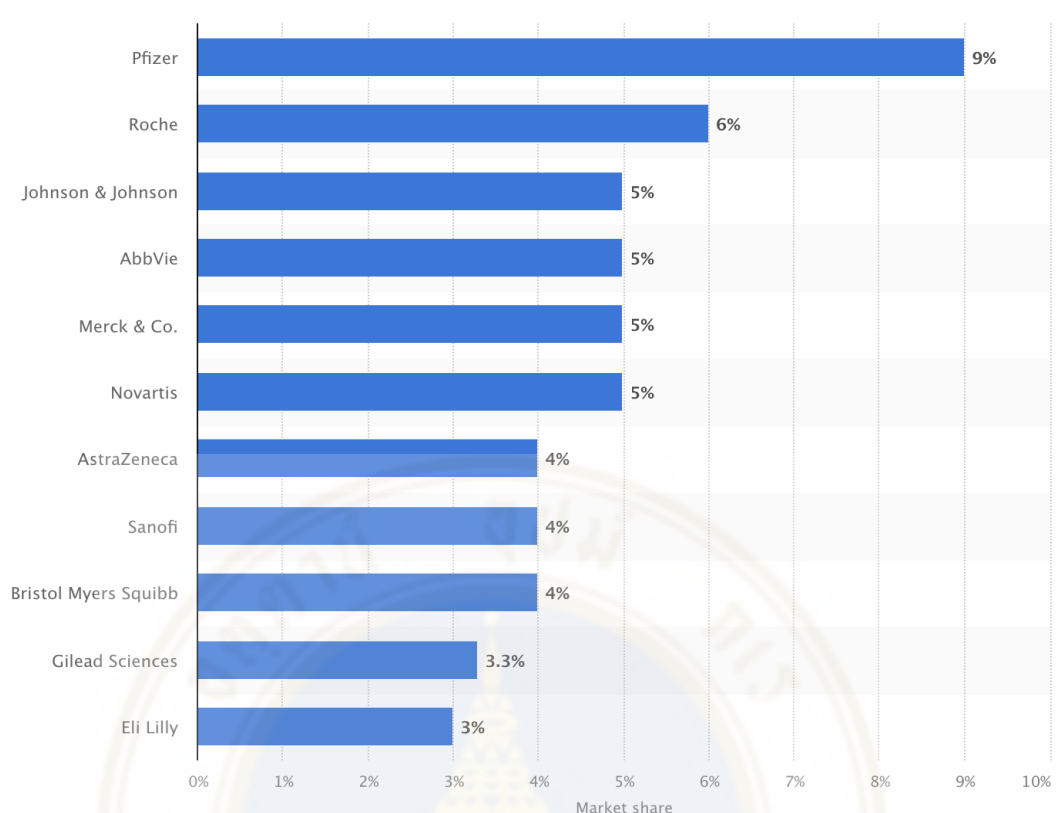


Figure 2.8 Global Pharma Market Share by Top Companies 2022

Source: From Statista “Leading pharmaceutical companies worldwide based on market share in 2022” by Matej Mikulic, 2023 (<https://www.statista.com>)

The U.S. pharmaceutical sector contributes 45% of the global share and accounts for 22% of worldwide production (Atradius, March 2022). Furthermore, it reveals that as of 2022, North America constitutes 52.3% of total pharmaceutical sales (Figure 2.7). In terms of healthcare spending as a percentage of GDP, the OECD health statistics for 2022 indicate that the U.S. allocates 17.8% of its GDP to healthcare. Among them, Pfizer stands as the top global pharmaceutical company with a market share of 9% (Figure 2.8).

2.3.2 Population and Healthcare Consumption Trends

This section will examine the interplay between U.S. population growth, healthcare spending, and Pfizer's sales and marketing strategies.

Over the years, the U.S. population has shown a steady growth trend, indicating an upward trajectory in overall consumption (Figure 2.9). Simultaneously,

healthcare expenditure has also risen, reflecting an increased demand for pharmaceutical products in the market, which has been consistently on the rise. Consequently, examining the country's import and export dynamics in this context is essential.

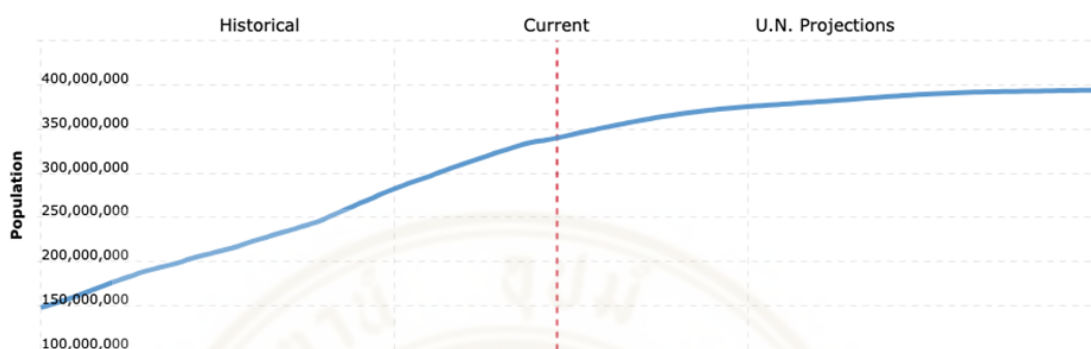


Figure 2.9 The U.S. Population growth rate 1950-2023

Source: United Nations, World Population Prospects, 2023 (<https://www.macrotrends.net>)

As depicted in Figure 2.10, the United States has held a prominent position as both an exporter and importer of pharmaceutical products globally. This phenomenon may be, in part, due to the appreciation of the USD following the post-COVID pandemic reopening. Nevertheless, the market and trade of the pharmaceutical industry have been the biggest in the U.S. compared to other countries across the globe, and the pharmaceutical companies, including Pfizer, can enjoy this benefit along the way.

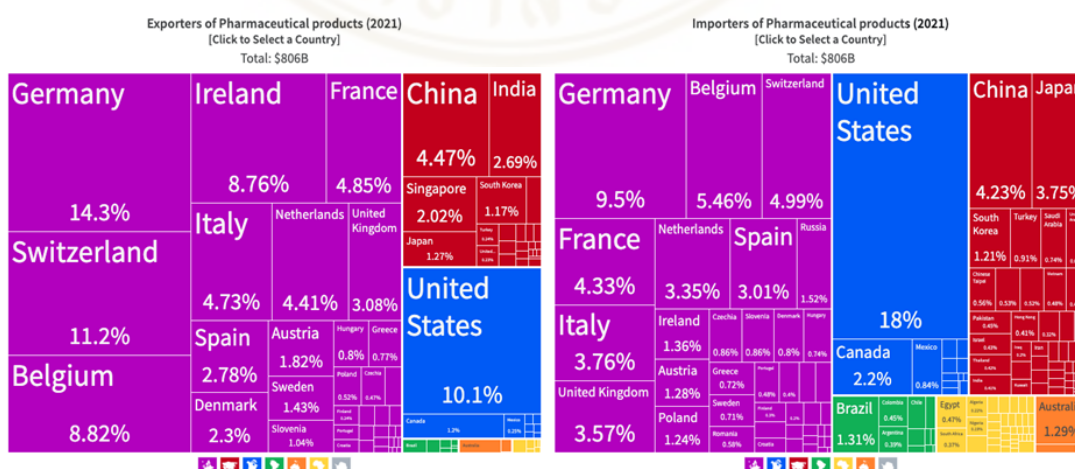


Figure 2.10 Exporters and Importers of Pharmaceutical Products

Source: From BACI HS6 REV. 1992 (1995 - 2021), 2023 (<https://oec.world/>)

2.4 Selecting Benchmark Companies

This section will justify the selection of benchmark companies based on criteria such as geographical reach and product range, which will serve as a comparative basis for evaluating Pfizer's performance.

The selection of benchmarks for Pfizer is based on the following key criteria:

1. Geographical Coverage: As Pfizer is a multinational company with outreach to almost all countries across the globe, the companies with similar geographical coverage are taken.

2. Range of Products: Pfizer's diverse product portfolio, encompassing primary care, specialty care, and oncology products, prompted the selection of benchmark companies with a wide range of offerings.

3. Company Size: Considering Pfizer's substantial market capitalization of 170 billion USD, we take benchmark companies of comparable or bigger market capitalization.

4. Age: Pfizer's rich history dates back to 1849. Being one of the pioneers in the modern pharmaceutical industry led to the choice of benchmark companies with a similarly prestigious company age (Pfizer, 2023).

Based on these considerations, the benchmark companies are as follows:

- GlaxoSmithKline (GSK)

A British multinational company listed on the London Stock Exchange, GSK is known for its focus on vaccines, prescription medicines, and consumer health products. Their research areas include respiratory, HIV, vaccines, and global health improvement, with a market capitalization of 63 billion GBP.

- Sanofi (SAN)

Sanofi is listed on Euronext Paris with a market capitalization of 224.28 billion USD. They specialize in pharmaceuticals, vaccines, and healthcare solutions, with a focus on areas such as diabetes, cardiovascular diseases, oncology, and vaccines. Founded in 1896, Sanofi has a history that aligns with Pfizer's prestigious background.

- Johnson & Johnson (JNJ)

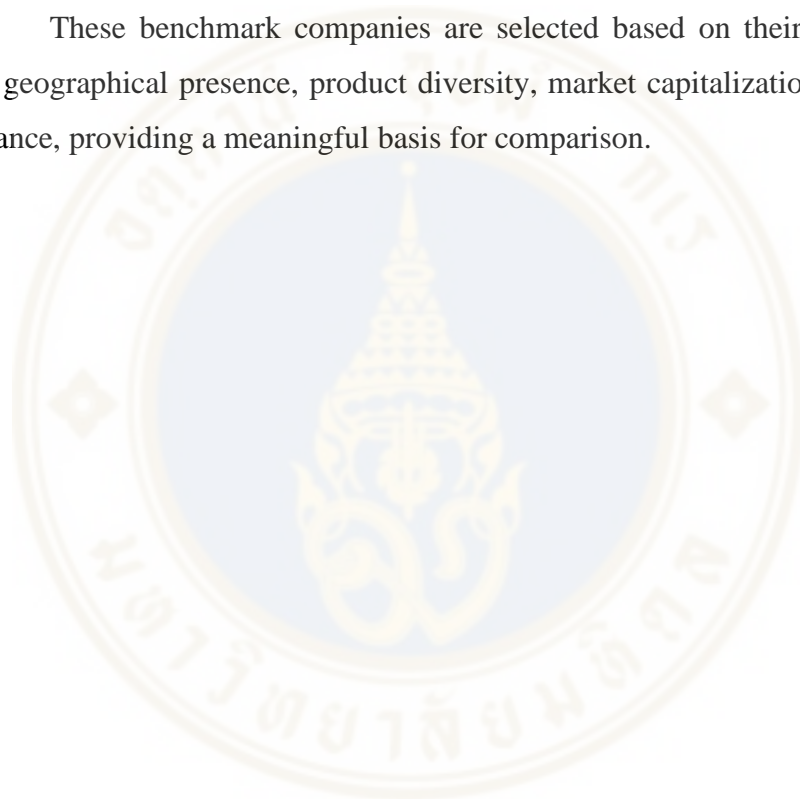
An American pharmaceutical giant listed on the New York Stock Exchange (NYSE), JNJ has a diverse portfolio ranging from pharmaceuticals and medical devices to consumer health products. Their focus includes pharmaceutical research and development,

medical innovation, and wellness. With a market capitalization of 383 billion USD and being founded back in 1886, JNJ aligns with Pfizer's historical significance in the industry.

- Roche (ROG)

Roche is a Swiss multinational healthcare company founded in 1886, specializing in pharmaceuticals and diagnostics. They are particularly renowned for their innovations in oncology, where they provide a broad range of cancer therapies and diagnostics. Roche also works in areas such as neuroscience, immunology, and infectious diseases. It is listed on the Swiss Exchange with a market cap of 383 billion USD.

These benchmark companies are selected based on their alignment with Pfizer's geographical presence, product diversity, market capitalization, and historical significance, providing a meaningful basis for comparison.



CHAPTER III

FINANCIAL ANALYSIS

This chapter will examine various financial metrics, providing insights into Pfizer's growth trends of its critical financial indicators (3.1). It also includes a comprehensive competitor analysis, comparing Pfizer's financial health with its benchmark companies to contextualize its market position and prospects (3.2). This chapter offer a clear understanding of Pfizer's financial landscape and competitive environment.

3.1 Growth Analysis

To begin our financial analysis, we start with a growth analysis of key figures extracted from the income statement and key ratios. It is also important to note Pfizer's critical role as a major pharmaceutical player globally, particularly in the context of the COVID-19 pandemic. Consequently, our subsequent analysis will separate the periods before and after the pandemic, realizing the substantial impact on Pfizer's operations.

3.1.1 Sales Revenue Growth

Pfizer revenue stream is coming from the U.S. and the rest of the world. Over the 10-year period from 2013 to 2022, a significant turning point was the COVID-19 pandemic, which happened in 2020 and marked a pivotal moment for the company. The impact of this event can be seen in the sales revenue, particularly following the successful development of the COVID-19 vaccine in 2021. On August 23, 2021, Pfizer is the first company to be approved by the U.S. FDA to produce the vaccine leading to the substantial increment in its revenue.

Before the pandemic, the international market experienced a significant decline, with a Compound Annual Growth Rate (CAGR) of -6.76% from 2013 to 2019, contrasting with the relatively stable the U.S. market. The overall CAGR also saw a

decrease to -3.69%. This decline can be attributed, in part, to new entrants in the pharmaceutical sector, lifestyle changes, and challenging conditions in 2019 and 2020, marked by the onset of the COVID-19 pandemic. During the initial pandemic year, sales revenue declined considerably as the company prioritized vaccine development (Figure 3.1)



Figure 3.1 Pfizer's Sales Growth 2013-2022

Source: Own Calculation

Table 3.1 Pfizer's Sales Revenue and CAGR Before and During the Pandemic

Sales Revenue	Total CAGR	CAGR before Pandemic (2013-2019)	CAGR during Pandemic (2020-2022)
United States	8.56%	0.26%	40.70%
The rest of the world	7.06%	-6.76%	69.26%
Total	7.67%	-3.69%	55.20%

Source: Own Calculation

Fortunately, Pfizer emerged as the first company to successfully develop a COVID-19 vaccine, leading to a remarkable increase in revenue. The CAGR for these two years alone represents an impressive 55.2%. However, growth decelerated sharply in 2022, indicating a potential future decline in revenue. This suggests that when the

COVID-19 trend decreases and vaccine sales drop in the next year or two. As such, investors can anticipate a decline in overall revenue.

3.1.2 Research and Development Expense

R&D holds a pivotal role, especially in major pharmaceutical companies, serving as the frontline in looking for solutions for diseases and pathogens (Donald Light, 2012).

Pfizer's R&D expenses have increased, particularly in response to the pandemic in 2020. The surge in R&D expenditure continued in the subsequent two years, 2021 and 2022, as this became a crucial factor for competitive advantage in the pharmaceutical sector (Figure 3.2).

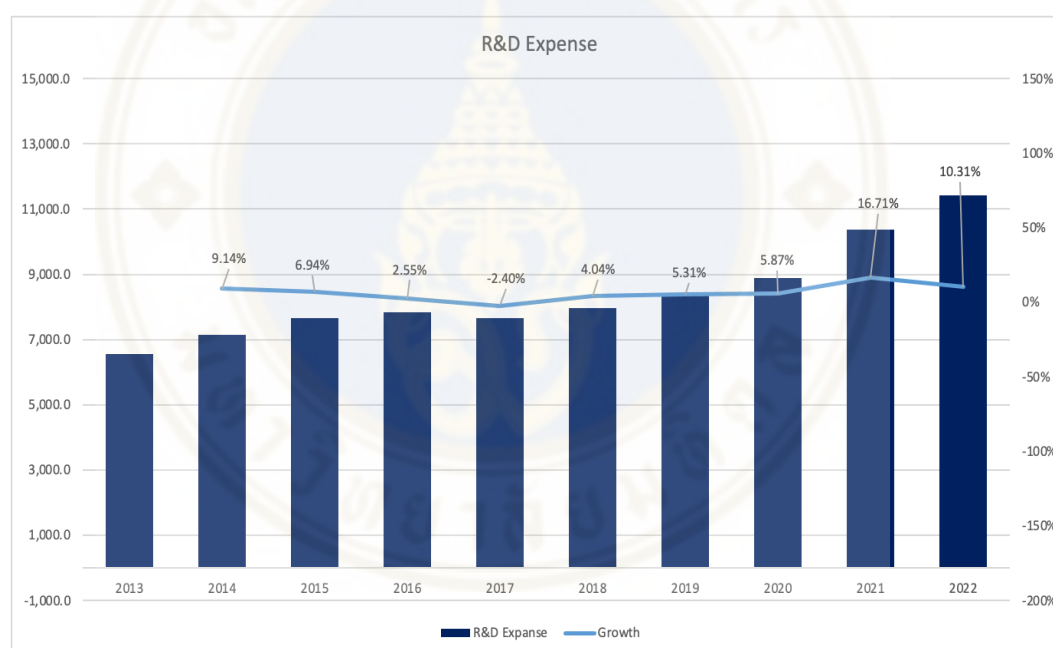


Figure 3.2 Pfizer's R&D Expense Growth 2013-2022

Source: Own Calculation

Table 3.2 Pfizer's R&D Expense CAGR Before and During the Pandemic

Total CAGR	CAGR before Pandemic (2013-2019)	CAGR during Pandemic (2020-2022)
6.38%	4.20%	13.46%

Source: Own Calculation

Before the pandemic, CAGR for R&D expenses was only 4.2% over a six-year period. However, there has been a significant increase with a CAGR of +13.46% over the past two years. This upward trend is expected to persist in the coming years, as the company needs to consistently invest in R&D to align with the increased revenue from the preceding two years. Failure to do so may negatively impact investor sentiment, leading to unfavorable outcomes for the firm.

3.1.3 Goodwill and Intangible Assets

Another crucial aspect for pharmaceutical companies is the goodwill and intangible assets from the balance sheet. This primarily includes the cost of patents, which are essential for developing medications and protecting Intellectual Property (IP). The competitive advantage of these companies lies in the innovation and development of drugs based on these IP; for those, the trend for patents is relatively stable for Pfizer.

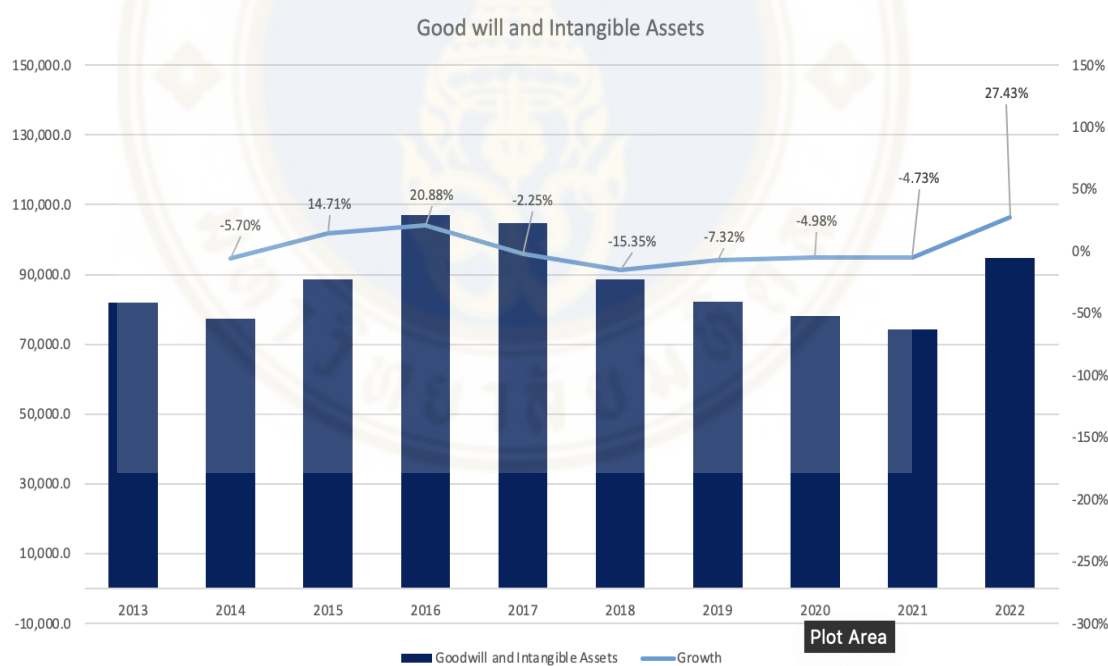


Figure 3.3 Pfizer's Goodwill and Intangible Assets Growth 2013-2022

Source: Own Calculation

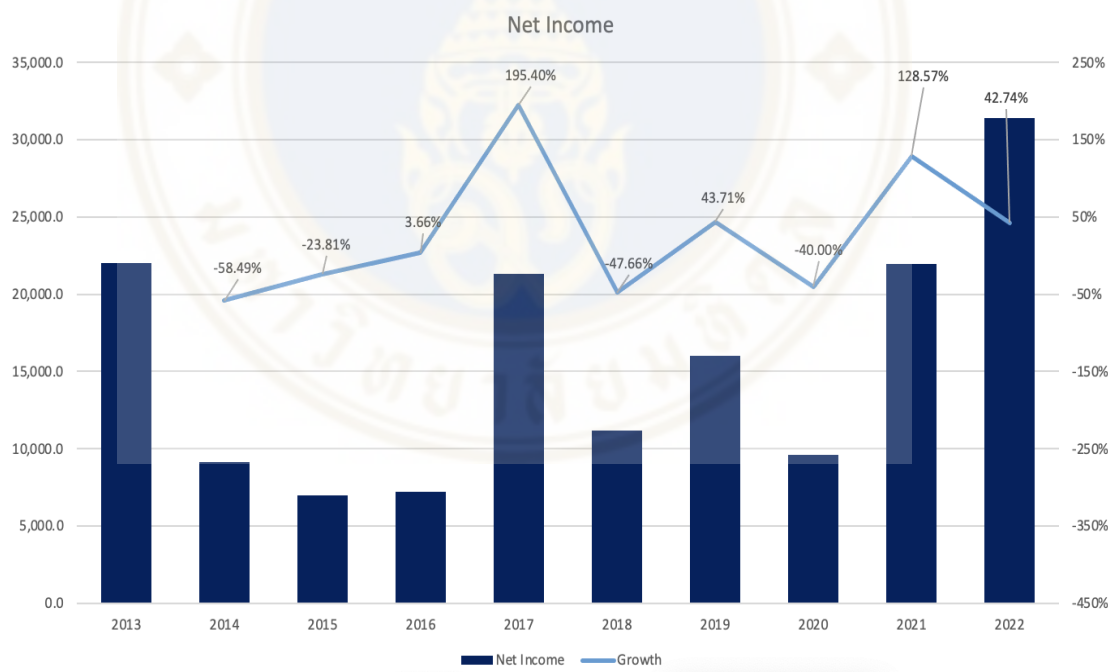
Table 3.3 Goodwill and Intangible Assets CAGR Before and During the Pandemic

Total CAGR	CAGR before Pandemic (2013-2019)	CAGR during Pandemic (2020-2022)
1.63%	0.05%	10.18%

Source: Own Calculation

3.1.4 Net Income

Prior to the pandemic, Pfizer's net income experienced a continuous decline until 2020. However, following the pandemic and the subsequent introduction of the Covid vaccine, there was a significant increase in net income. This is evident in the Compound Annual Growth Rate (CAGR) of +80.62% observed from 2020 to 2022. Before the pandemic, net income growth faced unfavorable conditions, even reaching -5.14% over the six-year period.

**Figure 3.4 Pfizer's Net Income Growth 2013-2022**

Source: Own Calculation

Table 3.4 Pfizer's Net Income CAGR Before and During the Pandemic

Total CAGR	CAGR before Pandemic (2013-2019)	CAGR during Pandemic (2020-2022)
4.02%	-5.14%	80.62%

Source: Own Calculation

3.1.5 Earnings per Share

As a result, the Earnings Per Share (EPS) has shown a consistent increase over the years, providing investors with positive returns during the two years of the pandemic. Looking ahead, it is crucial for the company to sustain these positive outcomes in the coming years. Failure to do so may lead to a decline in net income, aligning with the downward trend of the COVID-19 pandemic.

**Figure 3.5 Pfizer's EPS Growth 2013-2022**

Source: Own Calculation

3.2 Competitor Ratios Analysis

After examining Pfizer's growth, we continue to assess the company's ratios alongside those of its main industry competitors, as mentioned in Chapter 2.4. The selected competitors are GlaxoSmithKline plc (GSK) from the United Kingdom and Johnson & Johnson (JNJ) from the U.S.

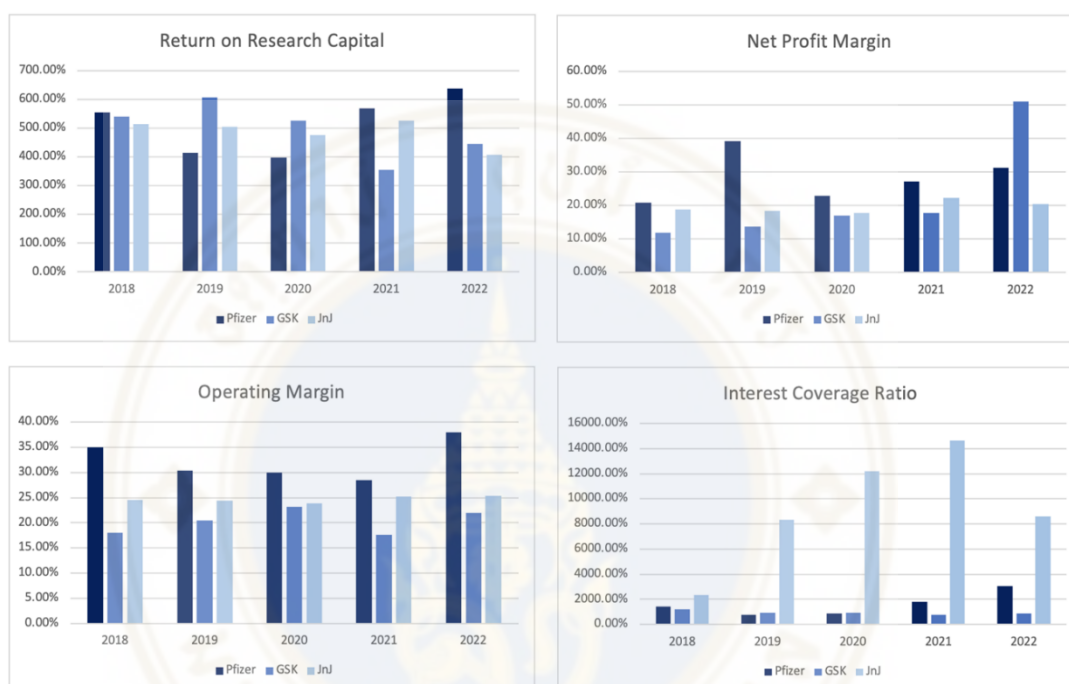


Figure 3.6 Pfizer and its Competitor Ratios Analysis

Source: Own Calculation

All three competitors operate in similar product lines and have comparable market capitalization. GSK, with a market cap exceeding 63 billion GBP, focuses on healthcare product and vaccine research and development. JNJ, a pharmaceutical giant with a market cap of 383 billion USD, engages in pharmaceutical research and wellness products. Notably, all these companies experienced significant benefits and turning points due to the pandemic.

An essential ratio for pharmaceutical companies is the return on research capital which indicates how much revenue the company generates from its investment in research and development. This ratio reflects the company's productivity from R&D investments, calculated by dividing the current year's revenue by the previous year's

R&D cost. Pfizer stands out among competitors, particularly in the post-pandemic years, attributed to the successful development and global commercial production of the Covid vaccine.

In terms of operating profit, Pfizer has consistently outperformed its competitors over the past five years. Regarding net profit margin, GSK leads in 2022, benefiting from a substantial non-operating income due to its demerger with Haleon plc (GSK, 2022).

For the interest coverage ratio, JNJ holds the highest position, followed by Pfizer. This ratio reflects a company's capacity to repay debt, which is crucial for capital-intensive pharmaceutical businesses. As these companies require leverage, their ability to cover interest costs with operating profit is pivotal for credit ratings and liquidity.

3.2.1 Dupont Analysis

Another crucial ratio is Dupont ROE, which involves breaking down the components of ROE for analysis. At first glance, GSK has the highest ROE, followed by Pfizer and JNJ. However, a detailed breakdown reveals that the increase in GSK's ROE is mainly due to its high leverage ratio, reaching almost 600%. This indicates that GSK is using a substantial amount of debt compared to Pfizer and JNJ.

Table 3.5 Pfizer and its Competitors Dupont Analysis

Pfizer	2018	2019	2020	2021	2022
ROA	34%	24%	27%	45%	51%
Leverage Ratio	250%	264%	243%	234%	206%
Net Profit Margin	21%	39%	23%	27%	31%
DuPont ROE	17%	25%	15%	28%	33%
GSK	2018	2019	2020	2021	2022
ROA	53%	42%	42%	31%	49%
Leverage Ratio	1581%	434%	387%	371%	596%
Net Profit Margin	12%	14%	17%	18%	51%
DuPont ROE	99%	25%	28%	21%	148%
JNJ	2018	2019	2020	2021	2022
ROA	53%	52%	47%	52%	43%
Leverage Ratio	256%	265%	276%	246%	244%
Net Profit Margin	19%	18%	18%	22%	20%
DuPont ROE	26%	25%	23%	28%	21%

Source: Own Calculation

Pfizer stands out with the highest Return on Assets (ROA) among the three, reflecting their efficiency in utilizing assets. Simultaneously, Pfizer also has the highest net profit margin organically in the last year of 2022, while GSK's increase in net margin is attributed to the demerger process.

This analysis shows that Pfizer has benefited most from the pandemic, as its ROA increased significantly in the last two years, whereas GSK and JNJ maintained relatively stable figures over the years.

In summary, this detailed analysis provides more information about ROE, offering potential investors valuable insights for making informed decisions.



CHAPTER IV

VALUATION – RELATIVE METHOD

The upcoming chapter will evaluate the current stock price, recorded as \$29.68 per share as of November 10, 2023. Relative valuation methods will be used to determine whether the current share price is overvalued or undervalued, and to estimate potential price movements in 2024, considering potential upside and downside scenarios. This assessment will utilize two key methods: Historical Band Valuation Method (4.1) and Peers Valuation (4.2). Peer companies' multiples will be used as a reference point to calculate the estimated price of Pfizer. The assessment in general will include Price to Earnings per Share ratio (PER), Price to Book Value (PBV), and Enterprise Value to Operating Profit (EBITDA) ratio (EV/EBITDA).

4.1 Historical multiple band valuation

This method involves analyzing the stock's historical price movements and data to estimate both the present and future fair value of the stock.

4.1.1 Trailing Price to Earning Ratio Band

The following shows the trailing PE ratio movement along the standard deviation of +1,+2 and -1,-2.

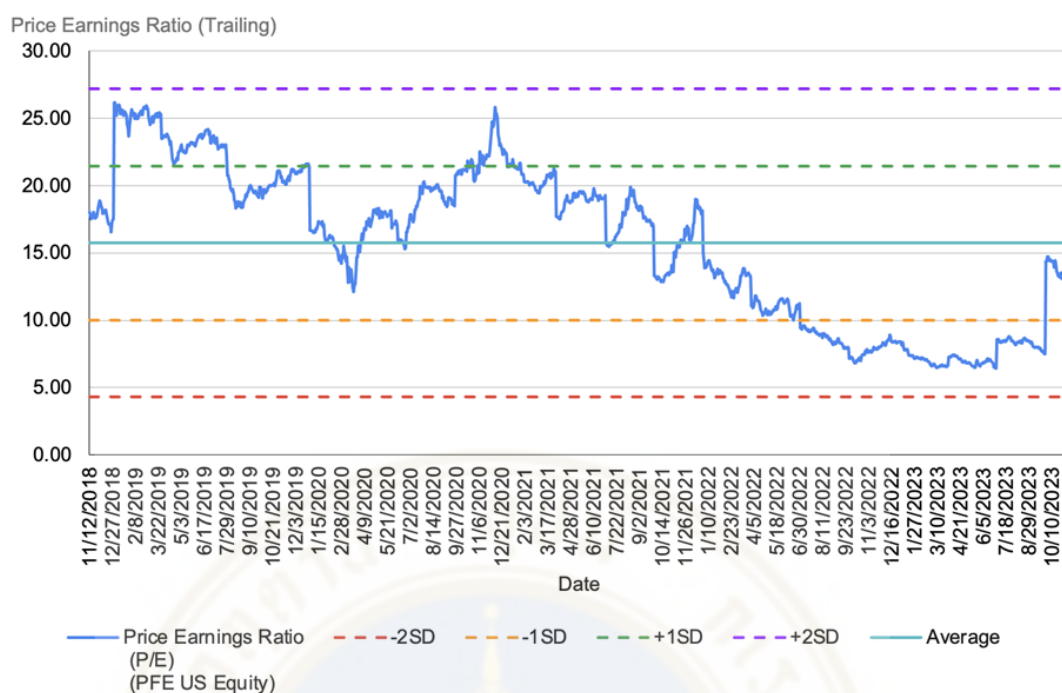


Figure 4.1 Pfizer's trailing PE Ratio

Source: Own Calculation

The trailing PE ratio for the past five years can be derived from the current share price divided by the quarterly earnings per share. Generally, the PE ratio indicates the extent to which the stock's cost exceeds the company's actual earnings. In other words, a higher PE ratio suggests better sentiments among investors and indicates how many years it would take to recover the investment in the company. For instance, a PE ratio of 2 means a break-even period of 2 years for your investment.

As of November 11, 2023, the PE ratio stands at 12.81, slightly below the average of 15.74 over the past five years. The declining trend in the PE ratio indicates that the company's stock is undervalued, suggesting a likelihood of future price increases. However, there was a slight increase after the release of the earnings report in September 2023. The positive earnings during the third quarter signal a recovery of investor sentiment for the upcoming period.

4.1.2 Trailing P/BV Band

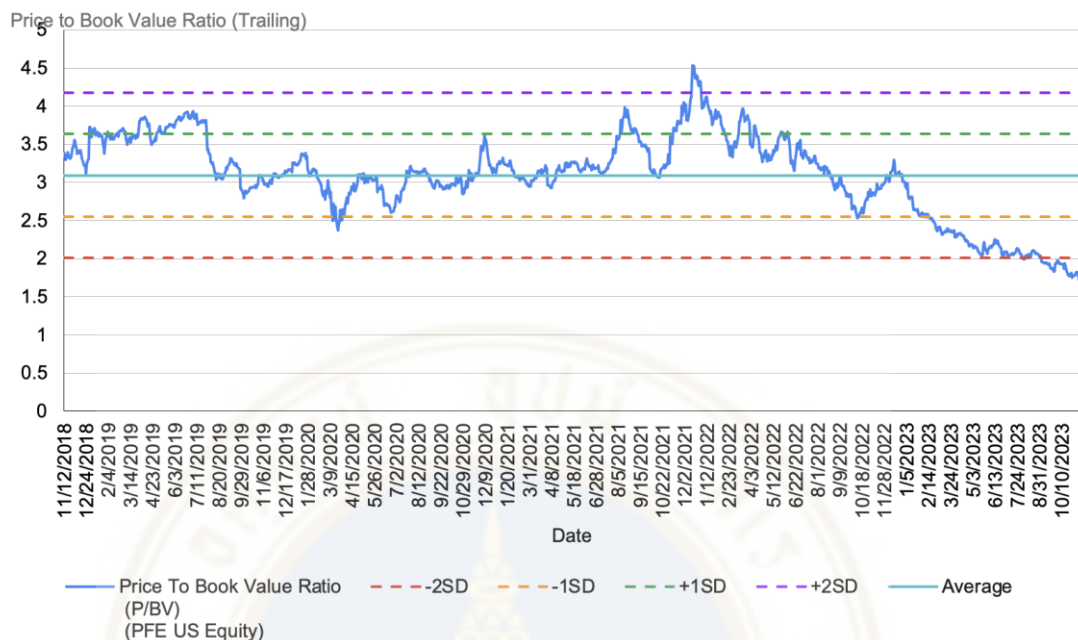


Figure 4.2 Pfizer's trailing PBV Ratio

Source: Own Calculation

This data shows the trailing Price to Book Value per share, obtained by dividing the share price by the book value per share. Notably, the recent Price to Book Value (PBV) has fallen below the -2 standard deviations (SD) of 2, currently at 1.17 (as of November 11, 2023). This indicates that the price is decreasing more rapidly than the book value per share, suggesting the stock is currently undervalued. The Price to Book Value was at its peak in 2022, reflecting positive investor sentiment during the discovery of Covid Vaccines.

4.1.3 Trailing EV/EBITDA Band

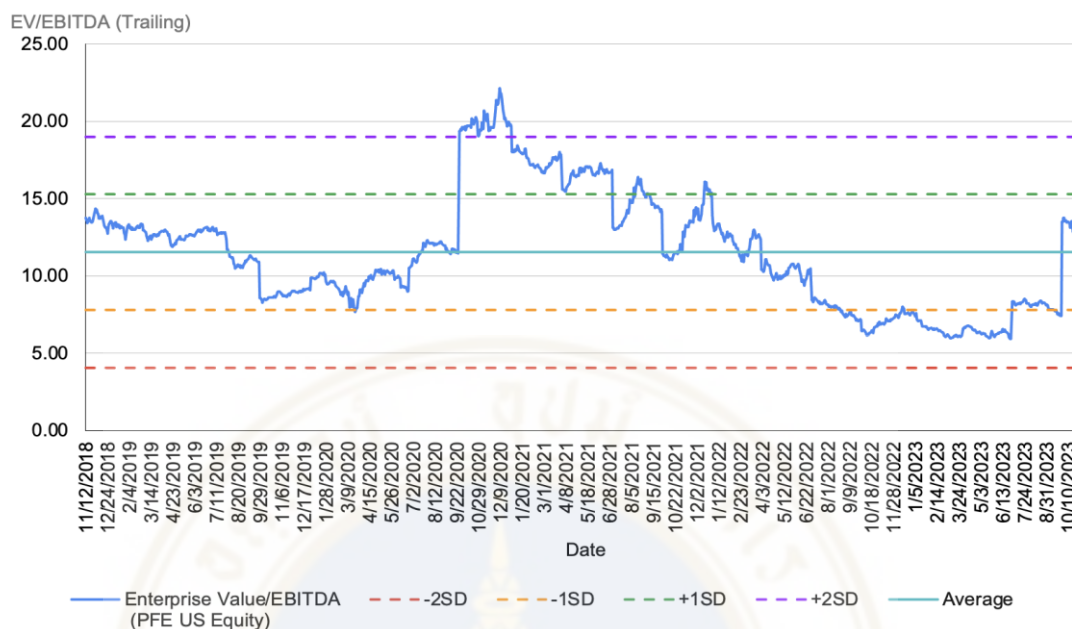


Figure 4.3 Pfizer's trailing EV/EBITDA Ratio

Source: Own Calculation

This data shows the EV/EBITDA, which represents the company's operating performance. Enterprise Value (EV) is simply the true value of the company, considering debt and cash, while EBITDA represents the pure operating profit, excluding interest, tax, or amortisation. A higher EV/EBITDA suggests overvaluation, indicating a higher value than the increase in operating profit.

As of November 11, 2023, Pfizer's latest trailing EV/EBITDA is 12.12, slightly exceeding the average trailing EV/EBITDA of 11.53. This increase occurred following the recent earnings release in September.

In summary, the historical multiple valuations indicate that the stock was likely undervalued until the recent earnings report. This suggests that investors have recently started recognizing the stock's relative undervaluation.

4.2 Forward Multiple Band Valuation

After finishing trailing multiple bands, the following chapter encompasses the forward multiple. Forward multiples are taken by using the ratios based on the forward estimates such as EPS, BPS and EBITDA.

4.2.1 Forward PE Ratio

Forward PE is calculated by dividing the current stock price by the estimated earning per share of the coming year.

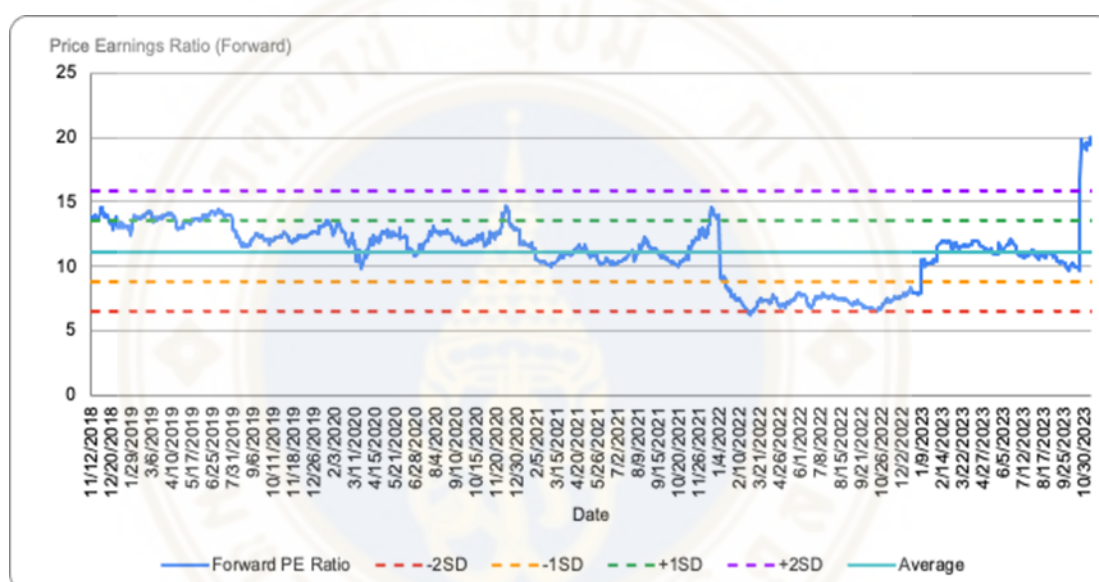


Figure 4.4 Pfizer's forward PE Ratio

Source: Own Calculation

In the forward PE ratio, the chart doesn't fluctuate as much as in the trailing PE ratio and the standard deviation isn't as wide as that of the trailing PE ratio. Typically, the forward PE ratio stays within one standard deviation above and below the average until the latest earnings report. This might be because investors are more optimistic about the upcoming year or because the company exceeded expectations despite a slowdown in revenue.

4.2.2 Forward P/BV Band

Forward price to book value (PBV) is obtained through dividing the future price by the estimated book value in a coming year.

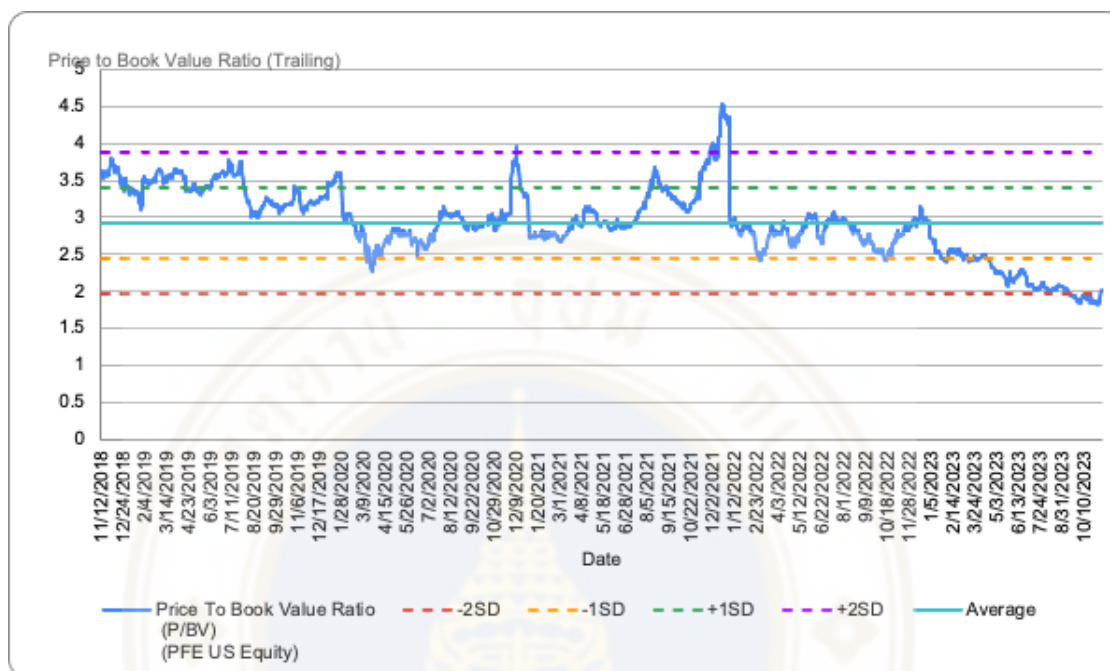


Figure 4.5 Pfizer's forward PBV Ratio

Source: Own Calculation

In this graph, the trend closely resembles the trailing PBV chart. This could be because the present book value and the estimated book value don't differ much. There's an exception in the year 2022, likely because of the gains from the Covid pandemic. However, presently, the PBV ratio is below the usual range, around -2SD, indicating the stock is undervalued with potential for an increase.

4.2.3 Forward EV/EBITDA band

Forward EV/EBITDA is obtained by dividing the current EV with the projected EBITDA of the next year.



Figure 4.6 Pfizer's forward EV/EBITDA Ratio

Source: Own Calculation

This chart shows the movement of forward EV/EBITDA. The graph does not really close to the trailing EV/EBITDA. This may be due to the fact that the actual EBITDA and the estimated EBITDA differ. Currently, the ratio is above +2 SD and considered to be overvalued.

4.3 Target price from Band Valuation

Table 4.1 Target price from Band Valuation

Multiple Band Valuation (Base Case) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	24.72	48.01	24.94	35.04	46.60	41.95	36.88
Upside/Downside Potential	-16.72%	61.77%	-15.98%	18.06%	57.01%	41.35%	9.69%

Source: Own Calculation

From the historical band and forward bands, we get the target price by multiplying the average of PER, PBV and EV/EBITDA over the past 5 years and estimated EPS, BV and EBITDA.

4.3.1 Sensitivity Analysis

The following table shows the sensitivity analysis of the band valuation.

Table 4.2 Band Valuation - Sensitivity Analysis

Multiple Band Valuation (-20% EPS, BV, EBITDA) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	19.77	38.41	20.42	28.03	37.28	34.03	29.66
Upside/Downside Potential	-33.38%	29.42%	-31.21%	-5.55%	25.61%	14.66%	-11.72%

Multiple Band Valuation (-10% EPS, BV, EBITDA) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	22.25	43.21	22.68	31.54	41.94	37.99	33.27
Upside/Downside Potential	-25.05%	45.59%	-23.60%	6.25%	41.31%	28.00%	-1.02%

Multiple Band Valuation (+10% EPS, BV, EBITDA) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	27.19	52.81	27.20	38.54	51.26	45.91	40.49
Upside/Downside Potential	-8.39%	77.95%	-8.37%	29.86%	72.71%	54.69%	20.39%

Multiple Band Valuation (+20% EPS, BV, EBITDA) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	29.66	57.62	29.46	42.05	55.92	49.87	44.10
Upside/Downside Potential	-0.06%	94.12%	-0.76%	41.67%	88.41%	68.04%	31.10%

Current Price (10 Nov 2023) = 29.68 USD

Source: Own Calculation

For every case, we evaluate potential positive and negative scenarios with respect to the share price of \$29.68 USD (as of November 10, 2023). Sensitivity analysis of the target price for each scenario is conducted by applying adjustments of -20%, -10%, +10%, and +20% to EPS, BV, and EBITDA.

4.4 Peer Group Multiple Valuation

Peer group multiple analysis involves assessing the valuation by comparing multiples with companies operating in the same industry. In this case, we evaluate Pfizer's price by comparing it companies such as GSK, Sanofi, Johnson & Johnson, Roche Pharmaceuticals, and Eli Lilly and Co. These companies not only have a global presence but also have market capitalizations in the billions.

Table 4.3 Peer Multiples (Trailing)

Ticker	Company Name	Country	Market Capital	Currency	Closing Price	Trailing PE	Trailing P/BV	Trailing EV/EBITDA	Forward PE
					10 Nov 2023	Nov 2023	Nov 2023	Nov 2023	Nov 2023
GSK	GlaxoSmithKline plc	UK	57,411,000,000	GBP	14.15	9.84	4.62	7.23	9.29
SAN	Sanofi SA	France	107,934,229,961	EUR	86.08	11.79	1.47	8.39	10.65
JNJ	Johnson & Johnson	USA	354,470,000,000	USD	147.42	27.63	4.98	14.64	13.95
ROG	Roche	Switzerland	190,670,000,000	CHF	238.1	17.28	7.13	10.93	13.11
LLY	Eli Lilly and Co	USA	537,520,000,000	USD	591.32	108.28	50.57	72.34	51.464
PFE	Pfizer	USA	170,000,000,000	USD	29.68	12.81	1.72	12.12	19.92
	Peer Average					34.96	13.75	22.71	19.69
	Peer Median					17.28	4.98	10.93	13.11
	Min					9.84	1.47	7.23	9.29
	Max					108.28	50.57	72.34	51.464

Source: Own Calculation

Pfizer's trailing price-to-earnings (PE) ratio is in line with industry standards, ranking fourth among competitors. This suggests that Pfizer is traded at an optimum PE ratio, though slightly undervalued. In terms of trailing PBV, Pfizer's stock is undervalued compared to its competitors, trading below the book value. Additionally, Pfizer's trailing EV/EBITDA ratio falls in the middle range among its competitors, indicating it is trading reasonably compared to others in the industry.

Table 4.4 Peer Multiples (Forward)

Ticker	Company Name	Country	Market Capital	Currency	Closing Price	Forward PE	Forward P/BV	Forward EV/EBITDA
					10 Nov 2023	Nov 2023	Nov 2023	Nov 2023
GSK	GlaxoSmithKline plc	UK	57,411,000,000	GBP	14.15	9.29	5.36	7.182
SAN	Sanofi SA	France	107,934,229,961	EUR	86.08	10.65	0.616	
JNJ	Johnson & Johnson	USA	354,470,000,000	USD	147.42	13.95	4.65	11.19
ROG	Roche	Switzerland	190,670,000,000	CHF	238.1	13.11		14.27
LLY	Eli Lilly and Co	USA	537,520,000,000	USD	591.32	51.464	51.46	43.4
PFE	Pfizer	USA	170,000,000,000	USD	29.68	19.92	2.02	16.35
	Peer Average					19.69	15.52	19.01
	Peer Median					13.11	5.005	12.73
	Min					9.29	0.616	7.182
	Max					51.464	51.46	43.4

Source: Own Calculation

In addition to examining trailing multiples, we assess forward ratios for PFE and its industry counterparts. Due to data limitations, forward PBV and forward EV/EBITDA are not considered for further analysis. Nonetheless, in terms of forward PE, which relies on earnings estimates for the next 12 months, PFE holds the second position among competitors, suggesting a slight overvaluation. However, this valuation remains comparable to that of its industry peers.

For all scenarios, we calculate Pfizer's target price using the median, minimum, and maximum values of its competitors (excluding Pfizer itself). The average is disregarded due to the presence of an outlier, LLY, among the comparisons.

4.4.1 Target Price from Peers' multiples

Table 4.5 Target Price from Peer Multiples

Current Price of PFE	29.68		
	2023 Q3	2023 F	2024 F
EPS	2.3	1.57	3.14
Book Value per share	17.17	15.52	15.9
EBITDA	18,011.00	11,066	23,639
No of Shares	5,646.00	5,646.00	5,646.00

	Multiples			
	Trailing P/E	Trailing P/BV	Trailing EV/EBITDA	Forward P/E
Peer Median	17.28	4.98	10.93	13.11
Min	9.84	1.47	7.23	9.29
Max	108.28	50.57	72.34	51.464

Table 4.5 Target Price from Peer Multiples (cont.)

Target Price of 2024				
	Trailing P/E	Trailing P/BV	Trailing EV/EBITDA	Forward P/E
Median	54.26	79.18	45.76	41.17
Min	30.90	23.37	30.27	29.17
Max	340.00	804.06	302.88	161.60

Upside/Downside Potential				
	Trailing P/E	Trailing P/BV	Trailing EV/EBITDA	Forward P/E
Median	83%	167%	54%	39%
Min	4%	-21%	2%	-2%
Max	1046%	2609%	920%	444%

Source: Own Calculation

Taking the median multiple from peers as standard, we calculate the target price by using EPS, book value per share, EBITDA and no of shares with its related peers multiples. Analysis reveals an uptrend in price for Pfizer for the year 2024, ranging from 41.17 USD to 79.18 USD.

4.4.2 Selecting multiples and target price estimation

For the selection of multiple, we use the analysis from both band valuation and peer multiple valuation since both factors are significant in their way. From historical valuation, we can see the historical data from Pfizer itself, which is important. At the same time, the peer valuation holds a significant value as Pfizer's peer companies are very much comparable and have been long standing competitors in the industry.

Table 4.6 Target Price Summary

Multiple Band Valuation (Base Case) - 2024							
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER	Forward PBV	Forward EV/EBITDA	Average
Target Price	24.72	48.01	24.94	35.04	46.60	41.95	36.88
Upside/Downside Potential	-16.72%	61.77%	-15.98%	18.06%	57.01%	41.35%	9.69%

Peer Multiple Valuation - 2024				
	Trailing PER	Trailing PBV	Trailing EV/EBITDA	Forward PER
Target Price	54.26	79.18	45.76	41.17
Upside/Downside Potential	82.81%	166.79%	54.19%	38.70%

Source: Own Calculation

Among these methods, forward multiples are employed, given that the trailing multiple encompasses the tumultuous years of COVID-19 for Pfizer. For forward ratios, the expectation for Pfizer is relatively stable, with investors and analysts anticipating a return to consistent growth after the period of volatility. Utilizing earnings estimates is considered more reliable than relying on historical values.

Consequently, two target prices are derived for Pfizer:

1. Forward Price-to-Earnings Ratio (PER) from the band valuation method: \$35.04 USD per share (reflecting an 18.06% upside potential).
2. Forward PER from the peer multiple method: \$41.17 USD per share (indicating a 38.7% upside potential).

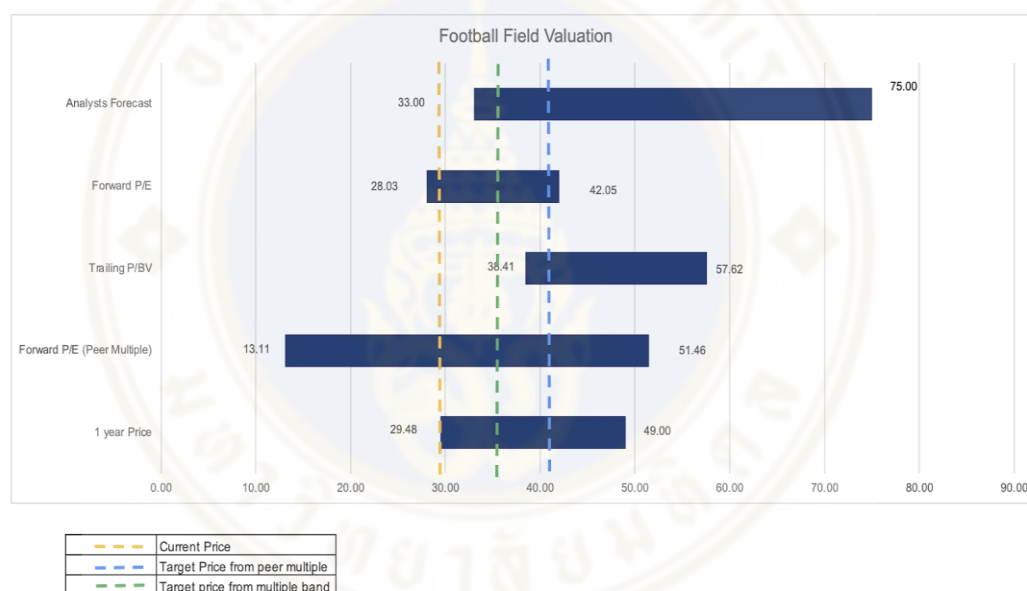


Figure 4.7 Football Field Valuation

Source: Own Calculation

Both the football field analysis and estimates from analysts indicate that the current assessments from peer valuation and historical valuation are closely aligned. Given the relative valuation I previously discussed, my recommendation is to consider buying the shares. Presently, the data suggests that the shares are undervalued, and there appears to be room for growth in the coming year of 2024.

CHAPTER V

INVESTMENT RISKS

In this chapter, we will talk about the risks the company might face because of both internal and external factors. It's important for investors to know about these risks because every industry has its share of uncertainties. The risks can be grouped into three categories: 1. Business risk, 2. Market risk, 3. Geographical risk, and 4. Financial risk.

5.1 Business Risk

5.1.1 Research and Development risk

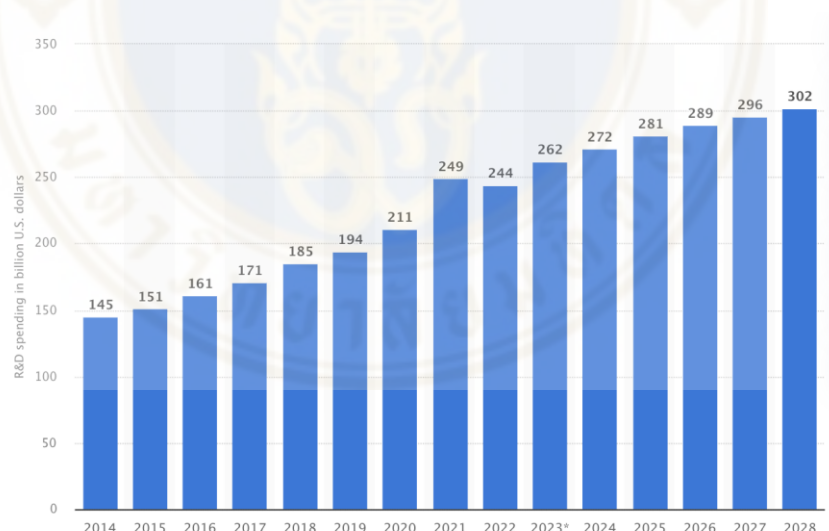


Figure 5.1 Total global pharmaceutical R&D spending 2014-2028

Source: From Statista “Total global spending on pharmaceutical research and development from 2014 to 2028” by Matej Mikulic , 2023

Research and development play a crucial role in the pharmaceutical industry, and it requires a significant amount of capital and is a vital investment for pharmaceutical

companies. Over the past years, spending on research and development in the pharmaceutical sector has been on the rise (see Figure 5.1). However, this increase doesn't always correlate with improved industry productivity. Companies must invest in research and development to stay competitive, even though the outcomes may not always align with their expectations.

For Pfizer, as indicated in the figure (3.6), the return on research capital (RORC) had been decreasing until the recent COVID outbreak. The company witnessed a positive turn with the commercial production of vaccines and the subsequent sales. Despite this, the dropping of post-COVID revenue and the ongoing expense for research and development remains a significant liability and risk for the company.

5.1.2 Patent risk

Patents hold significant value in the pharmaceutical industry, particularly for large companies like Pfizer. They represent intellectual property, granting the company exclusive rights to produce a specific type of drug. However, it's important to note that patents don't last forever and they come with expiry dates. The expiry of patents poses a substantial liability for the pharmaceutical industry, especially for products that the company typically profits from. Pfizer, too, faces significant risks related to the loss of exclusivity (LOE), as illustrated in Figure 5.2.

Key Products Included in the Expected ~\$17 Billion in LOE Revenue Declines from 2025-2030

Product	2021 WW Revenues (\$ millions)	2021 U.S. Revenues (\$ millions)	2021 Dev. EU Revenues (\$ millions)	Year of Expected U.S. LOE	Year of Expected EU LOE
Eliquis ¹	\$5,970	\$3,160	\$1,520	2026*	2026
Inlyta	\$1,002	\$599	\$181	2025	2025
Ibrance	\$5,437	\$3,418	\$1,044	2027	2028
Xeljanz	\$2,455	\$1,647	\$308	2025	2028
Xtandi ²	\$1,185	\$1,185	N/A	2027	N/A
Vyndaqel family ³	\$2,015	\$909	\$572	2024 (2028 pending PTE)	2026

* Date is based on the composition of matter patent. See Pfizer's 2021 Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission for more information about potential scenarios that could affect the timing of generic entry in the U.S.

¹ Eliquis alliance revenues & direct sales.

² Xtandi alliance revenues.

³ Vyndaqel family includes global revenues from Vyndaqel, as well as revenues for Vyndamax in the U.S. and Vyndac in Japan.

PTE=Patent Term Extension LOE=Loss of Exclusivity



Fourth Quarter 2022 Earnings

36

Figure 5.2 Pfizer's LOE from 2025 to 2030

Source: From Pfizer annual presentation

It states that the company is going to lose 17 billion worth of revenue just because of the expiry of the patents of certain drugs which are generating a large amount of revenue.

5.1.3 Cybersecurity risk

Pharmaceutical companies, with their substantial intellectual property and patents, heavily depend on research and clinical trials. This reliance is crucial for earning the trust of the public, as these companies are often seen as front liners during pandemic and against diseases. A data breach would jeopardise their reputation and the trust of the public in them. Subsequently, such a breach would have a negative impact, reflecting in the company's overall performance.

5.2 Market Risk

5.2.1 Competitor risk

The risk of competition is ever-present, especially from generic brands offering similar products at a lower cost, taking away the exclusivity of the product. Global competition is also very intense, leading to significant marketing expenses aimed at gaining a competitive edge. In the pharmaceutical industry, the competition often shifts to pricing rather than quality, particularly in the private healthcare sector where prescriptions are the primary demand. Companies engage in regular marketing efforts towards doctors to enhance brand awareness and secure prescriptions, typically following a more push approach than a pull.

Furthermore, competition faces potential disruption with the entry of new players, such as the rapid development of the biopharmaceutical industry, which holds the potential to replace the existing chemical pharmaceutical industry in the future.

5.2.2 Outbreak risk

The constant threat of major pandemics or global outbreaks directly affects pharmaceutical companies. The recent example of the COVID-19 outbreak showed its profound impact on the entire global pharmaceutical industry. Such incidents not only

require significant investments in research and development and a race to produce medication but also disrupt the global supply chain, posing substantial challenges for global brands like Pfizer.

Although Pfizer benefited during the COVID-19 pandemic by being the first to commercially produce a vaccine, every time a global pandemic occurs, the company faces immediate obligations and potential risks, putting a company in a vulnerable position.

5.2.3 Counterfeit risk

Pfizer's strong brand reputation and promising product pipeline make it susceptible to counterfeiters. These counterfeit products not only endanger patients' lives but also pose a significant threat to Pfizer's business, leading to substantial financial and reputational losses.

5.3 Geographical risk

5.3.1 Political risk

Since Pfizer is a multinational firm, it's crucial to recognize that the political situation in a country can influence the company's profits and earnings. Additionally, the GDP per capita of a country plays a role in determining the price point of Pfizer's products, impacting overall earnings.

5.3.2 Regulatory and legal risk

Along with the political risks, the regulatory and legal challenges are significant for global brands like Pfizer. Any alterations in U.S. healthcare laws, such as those governing Medicare and Medicaid, as well as other subsidiary programs, can impact Pfizer's performance. Furthermore, changes and restrictions in regulations regarding intellectual property, patents, trade, and insurance processes constitute regulatory risks.

Compliance and legal risks are also present, especially concerning legal filings and ethical considerations. Pfizer has faced a huge fine of 2.3 billion USD for fraudulent marketing (US Department of Justice, 2009), highlighting the existence of such risks. It's crucial for investors to be aware of these types of potential pitfalls.

Beyond the U.S., there are additional regulatory risks tied to government-imposed restrictions and new legal proceedings resulting from foreign policy and monetary policies, among other factors.

5.4 Financial risk

5.4.1 Foreign exchange risk

With a significant surge in revenue growth outside the USA in recent years (see Figure 3.1), where approximately 60% of the total revenue is generated from international markets, it becomes crucial for the company to pay close attention to foreign exchange matters. Managing volatile foreign exchange rates remains a pivotal risk for the firm.

5.4.2 Interest rate risk

Pfizer faces risks related to its interest-bearing obligations. Historically, about 50% of their capital structure is made up of debt. This imposes a certain level of risk related to interest, and the company needs to handle this carefully, particularly in the current situation where sales are declining, and investor confidence has weakened following the impact of the COVID downsizing. Additionally, the company is susceptible to changes in government monetary policy and potential interest rate hikes influenced by various factors.

5.5 Risk Matrix

This figure 5.3 maps the possibility of the risk compared with the severity of the impact the risk may occur.

Risk Matrix		Severity		
		Acceptable	Moderate	Intolarable
Probability	Unlikely			Cybersecurity Risk
	Possible	Interest rate risk	Outbreak Risk Political Risk Regulatory Risk	
	Probable	Competitor Risk Couterfiet Risk	R&D risk Foreign Exchange risk	Patent Risk

Figure 5.3 Pfizer's risk matrix

Source: Own Calculation

CHAPTER VI CONCLUSIONS

In this chapter, we would like to integrate the two aspects mentioned above: risks and valuation.

Currently, Pfizer faces the risks mentioned earlier, with the most pressing being the patent risk as the Loss of Exclusivity (LOE) is anticipated in the coming years, potentially resulting in a loss of 17 billion USD (figure 5.2). Additionally, sales have stabilized following the decline in COVID cases, and the sales of the COVID vaccine has slowed down. Investors have noted these factors already incorporated, which led to a decrease in the stock price from approximately 50 USD at the beginning of the year to the current value of around 30 USD per share.

Nevertheless, from our valuation, we would suggest to put in BUY position for Pfizer for the year 2024.

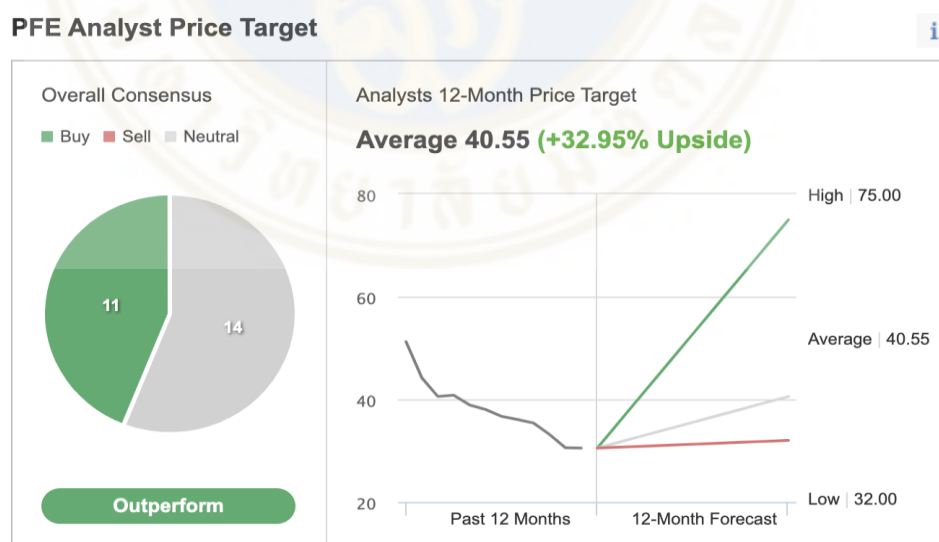


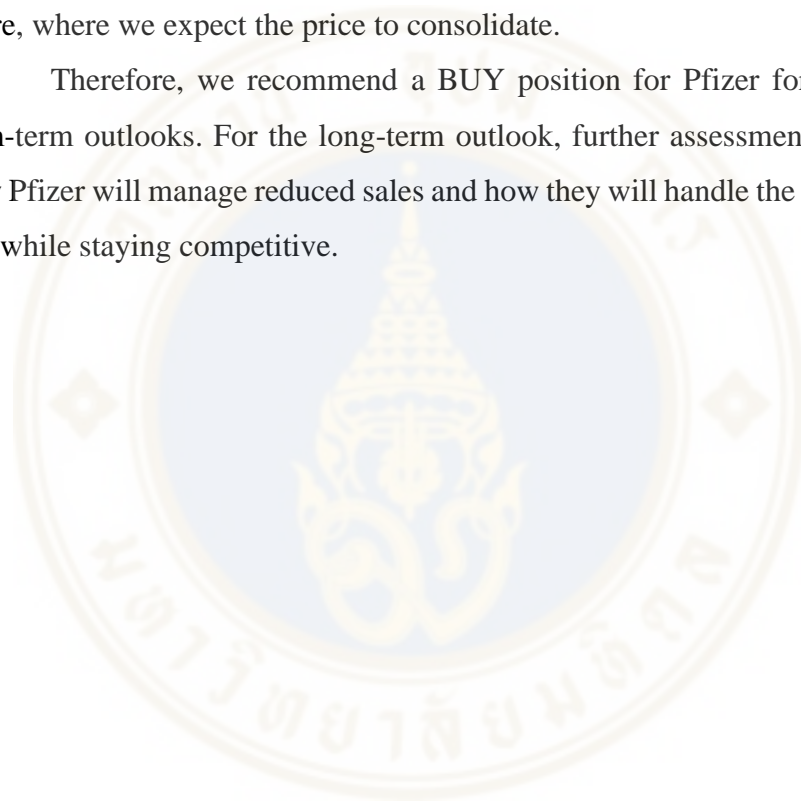
Figure 6.1 Pfizer's target price by analysts

Source: From Investing.com, PFE Analyst Price Target

According to analyst ratings (figure 5.3), Pfizer's stock price is anticipated to go above the current value of 29.68 USD per share. Our target price is also determined by historical band valuation and relative valuation with peer competitors. As a result, our target price is around 35 USD and 41 USD per share. With the current price of around 30 USD per share, we expect the stock to grow in the coming year.

While Pfizer is not entirely risk-free, particularly given its performance during Covid-19 pandemic, our valuation analysis suggests that the current price is still undervalued. This implies an opportunity for an upward movement towards the 35 USD or 41 USD per share, where we expect the price to consolidate.

Therefore, we recommend a BUY position for Pfizer for short-term and medium-term outlooks. For the long-term outlook, further assessment is necessary to see how Pfizer will manage reduced sales and how they will handle the upcoming patent expires while staying competitive.



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