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Intrinsic and Relative Valuation of Pfizer Inc.

Valuation of the Most Renowned Pharmaceutical
Company in Current Times

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Acknowledgements

We are pleased to present our valuation thesis, exploring the intrinsic and relative value Pfizer Inc. As the pandemic comes to an end, no other valuation seems more appropriate than of the biggest contributor, Pfizer Inc. The interest in exploring this topic is based upon the major ramifications the pandemic had on all industries, further highlighting the effects of the pharmaceutical industry. The pandemic exacerbated the focus on the pharmaceutical industry, further incentivizing this valuation thesis. We hope that the thesis will help shed light on Pfizer Inc. and the essential nature of the pharmaceutical industry.

This thesis symbolizes the end of our academic journey, further laying the foundation for our future careers. We appreciate the support and encouragement from our family and friends throughout the thesis, and we want to also express our gratitude towards our supervisor: Olga.

Eirik Garshol & Johannes Thornes, June 2023.

Executive Summary

The aim of the thesis was to estimate the intrinsic and relative value of Pfizer Inc. by analysing both: Pfizer and the pharmaceutical industry. To create a multitude of valuation estimates the following valuation methods were utilized: *Discounted Cash Flow (DCF) analysis*, *Comparable Company Analysis (CCA)*, and the *Precedent Transaction Analysis (PTA)*. This allowed for several estimates both for intrinsic and relative value, further choosing one valuation to be representative of the overall thesis.

The intrinsic valuations (DCF) returned estimated values per share ranging from roughly \$75-100 and the relative valuations (CCA & PTA) returned estimated values per share ranging from roughly \$58-158. The broad range of estimated values are representative of the 3 different valuation methods utilized. The relative valuations yielded the highest, most dispersed estimated values per share, as they were based upon current and prior market conditions for the pharmaceutical sector. The relative valuations were further skewed due to the current market conditions, as a result of the pandemic. The intrinsic valuations yielded more concise values per share, due to the lesser changes from the models applied.

The representative valuation for the thesis is the intrinsic valuation of \$88.71. This estimated value per share was calculated utilizing the DCF-analysis with projected cash flows reflective of the demand for Pfizer's COVID-19 portfolio and IQVIA's growth estimate regarding the future growth for the pharmaceutical industry. Overall, this intrinsic valuation is greater than the current market price of \$40.12 (8th March 2023), further indicating that the share price for Pfizer Inc. is undervalued by the market.

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1. Introduction

The pharmaceutical industry is currently one of the largest industries and plays a major role in the global economy, with no signs of slowing down. Furthermore, the pharmaceutical industry is essential for the health and well-being of individuals around the globe, thus making the industry itself essential. Pfizer Inc. is currently one of the largest and well-known companies within the industry, reinforced through a distinct portfolio of product as well as the COVID-19 portfolio consisting of the vaccine, *Comirnaty*, and the symptom treating *Paxlovid*.

Overall, the valuation of Pfizer Inc. is a great topic of interest as it will give insight into the company and the industry, as well as reviewing the future for Pfizer and the pharmaceutical industry. The thesis will highlight the effects of the pandemic on Pfizer's valuation, which have affected most industries negatively but not necessarily the pharmaceutical industry.

1.1. The Goal of the Thesis

The goal of the thesis is to discover the *intrinsic* and *relative* value of Pfizer Inc., further comparing this to their market price. This was done utilizing the valuation methods: *Discounted Cash Flow* analysis, *Comparable Company Analysis*, and the *Precedent Transaction Analysis*. The goal is also to capture how the different valuation methods stack up and to which extent they deviate from each other, as the valuation methods have their own distinctive features. Overall, the aim of the thesis is to generate a multitude of valuations, further evaluating which one of these is the most suitable valuation of Pfizer Inc.

1.2. Structure

The thesis will start with an introduction of the history and performance of Pfizer and the pharmaceutical industry, followed by a more in-depth look at the characteristics of the pharmaceutical industry. This will serve as the foundation for Pfizer's analysis, which in turn reinforces measures implemented in the valuation models. Following is the brief presentation of the theory utilized to conduct the valuations, further divided into each respective valuation. The next part entails the methodology of the valuation methods. This chapter introduces the calculations and estimations of the necessary components, conduction of the analyses, and reviewing the results. Summarizing the same chapter, is the overview of the valuations in comparison to Pfizer's share price. At the end of the thesis, these results and valuation models

will be discussed followed up by suggesting one valuation model, in the conclusion, to represent the overall thesis.

1.3. Limitations

As with any research project, this valuation thesis will have its own limitations. These limitations include everything from the *Availability of Data* to the *Subjectivity* regarding the valuation. These limitations can impact the overall quality and credibility of the valuation, as they interfere with the analysis, further impacting the results presented throughout this thesis. The following table displays the relevant limitations for this thesis, as well as their corresponding descriptions.

Factor	Description
Availability of Data	The valuations require accurate and reliable data and if this data is not publicly available or challenging to obtain, the scope and accuracy of the valuation may be limited.
Assumptions & Uncertainties	The valuation requires assumptions regarding the future performance of the company, market conditions, and other assumptions. If these assumptions are incorrect, the accuracy of the valuation may be reduced.
Regulation	As the pharmaceutical industry is subjected to a complex regulatory system, said system can affect the financial performance of the company, further impacting the valuation.
Competition	As with most other industries, the competition in the pharmaceutical industry can be impacted by the introduction of new products and/or mergers and acquisitions.
Subjectivity	As valuation analysis is not an exact science, the degree of subjectivity will differ from selection and use of valuation models. Furthermore, drawing different conclusions regarding the value of the company based upon different assumptions and analyses.

Table 1. Display of the limitations, and corresponding descriptions, relevant for the thesis.

2. Pfizer Inc.

Following chapter will focus on the history of both Pfizer and the pharmaceutical industry, further delving into the 10-year financial performance for Pfizer. The performance will be discussed overall but with a strong emphasis on the recent years revolving around the COVID-19 pandemic. Lastly, the future of the pharmaceutical industry will be briefly discussed and will give an idea of what the pharmaceutical industry can expect moving forward.

2.1. History of Pfizer Inc.

Pfizer *Incorporated (Inc.)* is a multinational pharmaceutical and biotechnology company headquartered in New York. Established in 1849, by Charles Pfizer and Charles F. Erhart, Pfizer initially produced the antiparasitic, *Santonin*, and citric acid. Further growth came from sales of antibiotics during World War II (Pfizer Inc., n.d.). Pfizer became incorporated in 1942, issuing 12 billion common shares at initial public offering at the price of \$0.05, in addition to 27 million preferred shares to an initial market capitalization of \$600 million (Pfizer Inc., 2004). As of March 8th 2023 their market capitalization was \$225,474 billion, with 5,62 billion shares outstanding. The change in outstanding shares comes from a combination of five stock splits, in addition to share repurchase programs. In addition, Pfizer has historically paid dividends quarterly, with the latest payment in January 2023 of \$0.41 per share (Pfizer Inc., n.d.). For 2022, the accumulated dividends paid out was \$1.60 per share (See Appendix A1).

Pfizer's stock has, since 2010, over tripled in value, adjusted for splits, dividends, and capital gains distribution. As of Jan 2010 to May 2023, Pfizer's adjusted share price has increased from roughly \$11 to \$38, yielding a return of around 346%. This return is primarily affected by Pfizer's all-time high share price of \$58.78 in December 2021 (See Appendix A2), further driven by their COVID-19 portfolio and bull-market throughout 2021. However, since their all-time high, the share price has been following a negative trend with overall high volatility. From the start of 2022 to May 2023, the share has dropped 35.26% as a reaction to rising levels of uncertainty among investors, mainly driven by high inflation, change in worldwide monetary policy, and the mainland war in Ukraine, as well as the declining demand for their COVID-19 portfolio. Following figure illustrates Pfizer's adjusted share price from Jan 2010 to May 2023 (Yahoo Finance, 2023a).

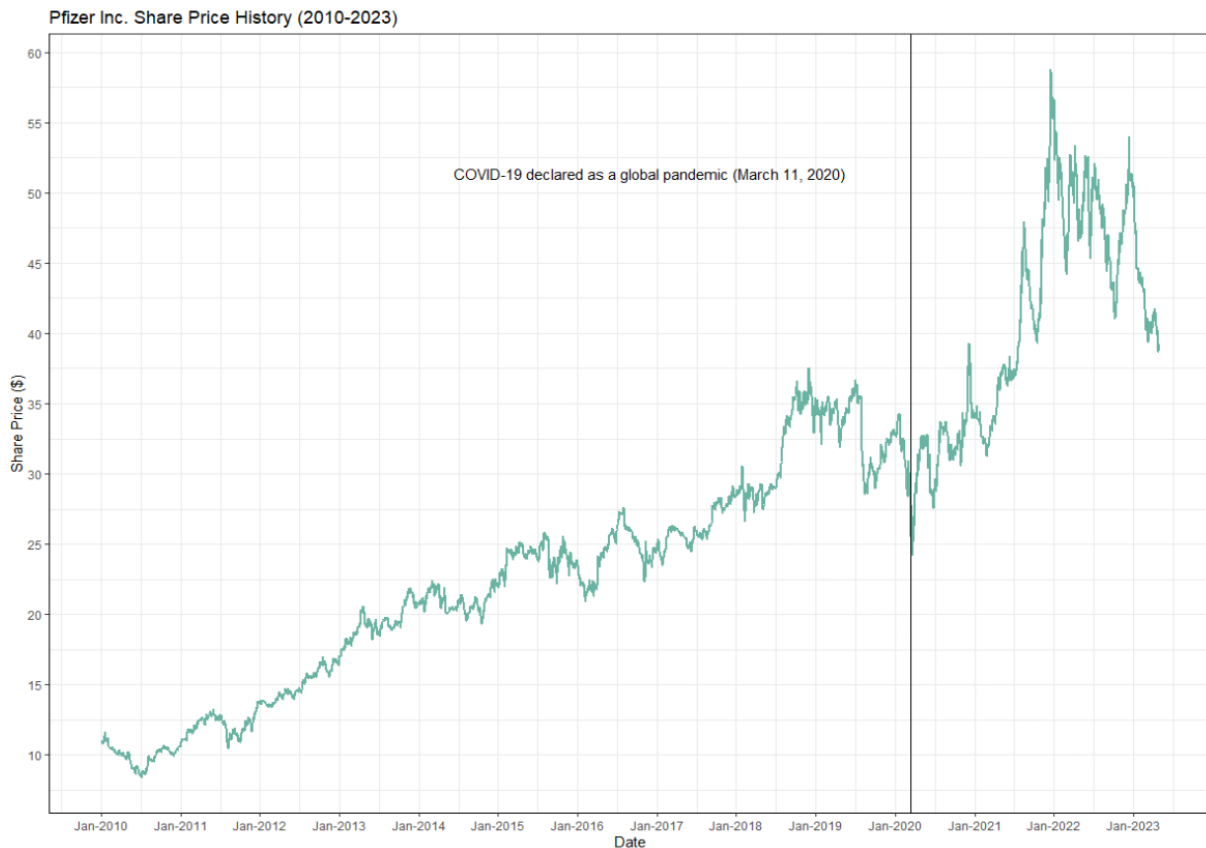


Figure 1. Pfizer's share price history from Jan 2010-May 2023. The share price is represented as the adjusted share price, thus negating the effects of payout policy.

To compare the returns of Pfizer Inc. in comparison to other securities, the following figure was generated. The figure illustrates the 10-year annualized return for each year for the following securities: *Pfizer Inc.*, *NYSE Arca Pharmaceutical Index* (Yahoo Finance, 2023a), and the industry standard: *S&P-500* (Yahoo Finance, 2023a). The highest return was achieved by Pfizer of 66.70% in 2021, reinforced by the all-time high presented in the prior section. However, Pfizer also has the lowest annualized return of -24.19% this far into 2023 (See Appendix A5). The highest average of the annualized returns is ranked as S&P-500, Pfizer Inc., and the NYSE Arca Pharmaceutical Index: 14.62%, 11.40%, and 8.85%, respectively. Furthermore, highlighting that the S&P-500 has performed better than Pfizer over the last 10 year on a year-to-year basis, but Pfizer has performed better than its peers in comparison to the pharmaceutical index.

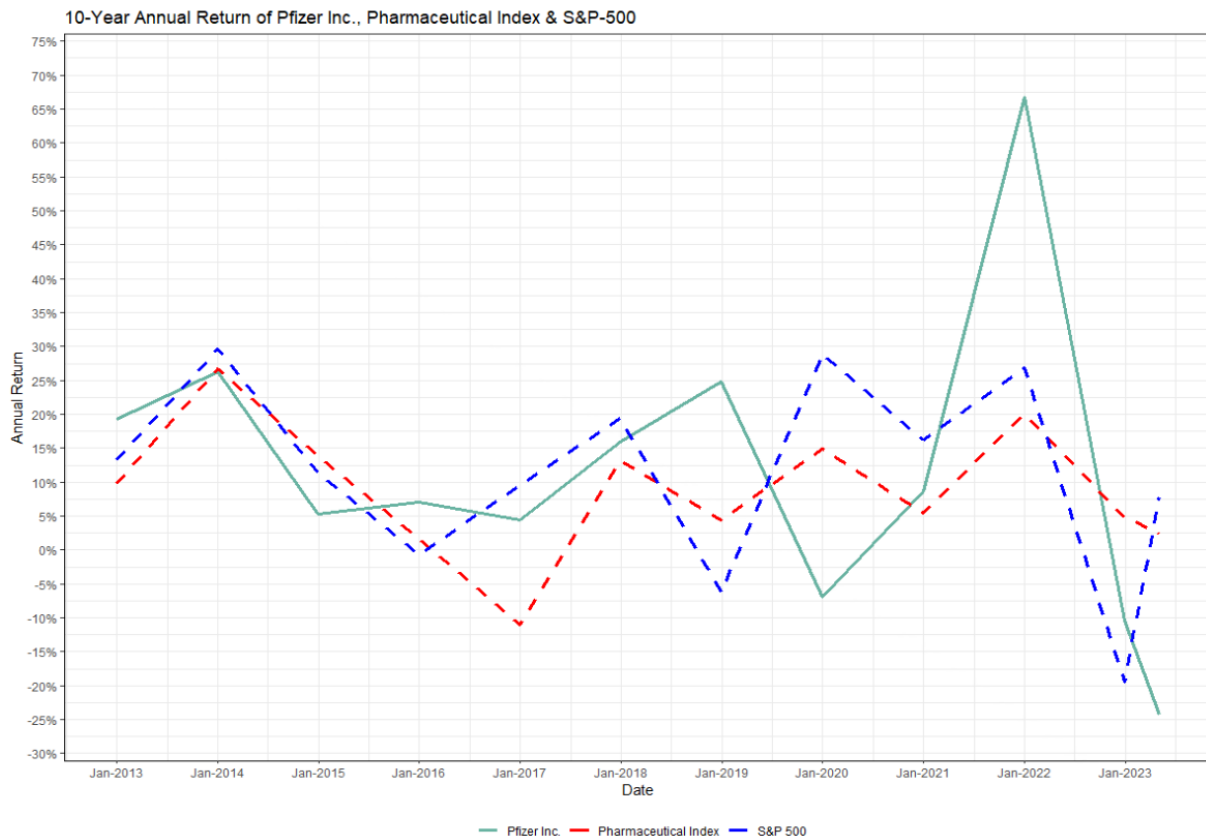


Figure 2. Annual returns for Pfizer Inc., NYSE Arca Pharmaceutical Index, and the S&P-500. The data is representative for 2013-2023.

Pfizer’s position as one of the biggest pharmaceutical companies globally is the result of heavy investments into *Research and Development (R&D)*, expansion beyond the U.S. market, and strategic *Mergers and Acquisitions (M&A)*. During the 1940’s and 50’s, Pfizer became one of the largest manufacturers of penicillin, which demanded for international expansion to South America and Europe. As a result, Pfizer crossed \$1 billion in annual sales by 1972. Successful R&D introduced products like the anti-inflammatory drug *Feldene* in 1980, the erectile dysfunction drug *Viagra* in 1998, and the mRCC inhibitor *Sutent* in 2006. More recently, in a partnership with *BioNTech*, Pfizer were detrimental in developing a response product for the COVID-19 pandemic, namely the *Comirnaty* vaccine, and the oral medicine *Paxlovid*, used for treatment of a COVID-19 infection (Pfizer Inc., n.d.).

M&As have played a key role in growth during the early 21st century, in addition to successful product development. In 2000 *Warner-Lambert* and Pfizer merged in a \$80 billion merger. Like Pfizer, Warner-Lambert had root to the 19th century, and were using M&A activity as a means for growth. Similar M&A-activity happened in 2003 with *Pharmacia*,

Wyeth in 2009, and Hospira in 2015 (Pfizer Inc., n.d.). Each with their own benefits towards Pfizer’s performance.

As of January 31st, they have 110 projects in their pipeline consisting of medication and vaccines, 16 of them advanced to registration. Their products are manufactured in 39 facilities and sold in 125 countries worldwide (Pfizer Inc., n.d.). Even with the declining demand for Pfizer’s COVID-19 portfolio, they remain one of the biggest competitors within the industry.

2.2. History of the Pharmaceutical Industry

The pharmaceutical industry has been, and is, a rapid growing industry. The industry has over tripled in value since 2003. Based on the exceptional growth, the pharmaceutical industry does not show signs of stagnation either (Torreya, 2021). Following figure depicts the development of the pharmaceutical industry from 2003-2020 expressed as the aggregate value of the global industry.

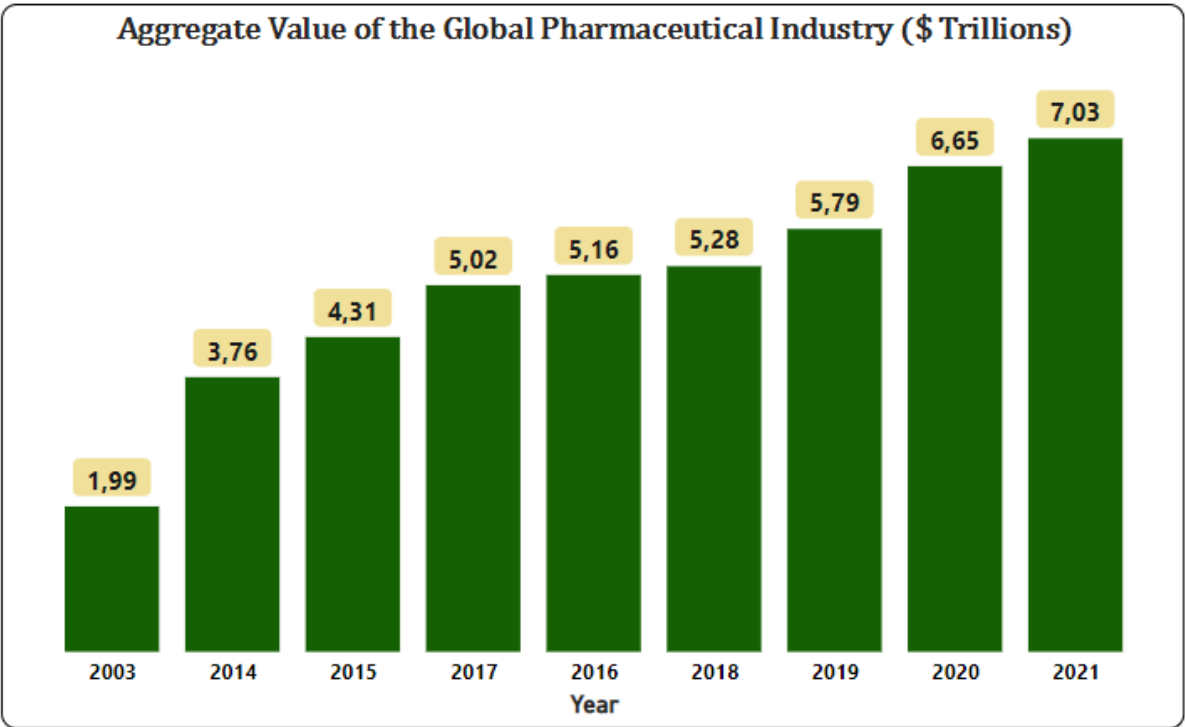


Figure 3. Bar Chart illustrating the development of the global pharmaceutical industry, expressed as the aggregate value of the global pharmaceutical industry \$ trillions. The data us gathered from the “Top Global Pharmaceutical Company Report” by Torreya, further redesigned into the bar chart depicted above (Torreya,2021).

The revenue from the pharmaceutical industry has also been growing at a significantly rate. Data gathered from Statista (2023), showcases the development of global revenues from the pharmaceutical market. Furthermore, the increase from 2001-2022 in revenues is equivalent to a roughly 280% increase in global revenues. Following figure illustrates the development of global revenues from the pharmaceutical market.

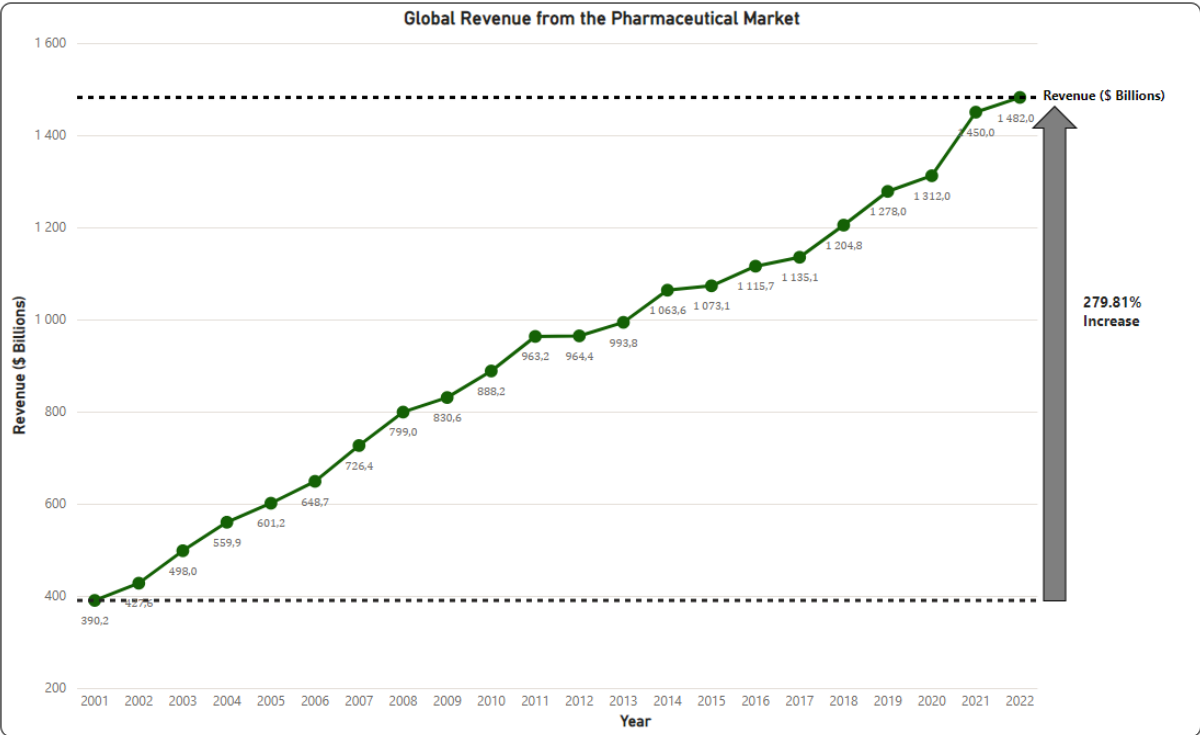


Figure 4. Development of global revenue from the pharmaceutical market, illustrating the values from 2001-2022 (Statista, 2023). The increase is the difference between the starting- and final value of revenue expressed as a percentage.

Overall, the aggregate value and revenue from the pharmaceutical industry have been growing at a significant rate over the past two decades. These measures illustrate the importance of the pharmaceutical industry, and the growth is not unexpected as the products are essential. In other words, most of the pharmaceuticals are essential for the users and the constant growth in value and revenues, indicate that the consumption of pharmaceuticals is also growing at a significant rate. The medicine use has grown over 36% the past decade, further driven by increases access to medicines around the world (Porwal et al., 2023). Furthermore, reinforcing the crucial role of the pharmaceutical industry.

2.3. Financial Performance of Pfizer Inc.

Pfizer has experienced abnormal growth in most financial metrics in recent years, as a result of successful R&D for COVID-19 response products. This growth however is expected to be short lived, as the need for products related to the pandemic is expected to decline. Further, implying that Pfizer will return to pre-pandemic performance as the pandemic fades away (Porwal et al., 2023).

The *Development of Key Performance Indicators (KPI)* were gathered from Pfizer’s annual reports (2012-2022) further using a reformulated version of these income statements (See Appendix B1 & B2). As illustrated by the following figure, most indicators were in a slight volatile state until 2020. The revenue increase in 2021 and 2022 can be attributed to the development and sales of Comirnaty and Paxlovid, both COVID-19 response products. As a result, Pfizer increased their revenues by 139% from 2020 to 2022. Pfizer state themselves in the 2022 annual report that revenue is expected to sharply decrease as a result of reduced need for these products as early as 2023, with an expected revenue range of \$67-\$71 billion for 2023, represented by an operational decrease of 31% (Pfizer Inc., 2022).

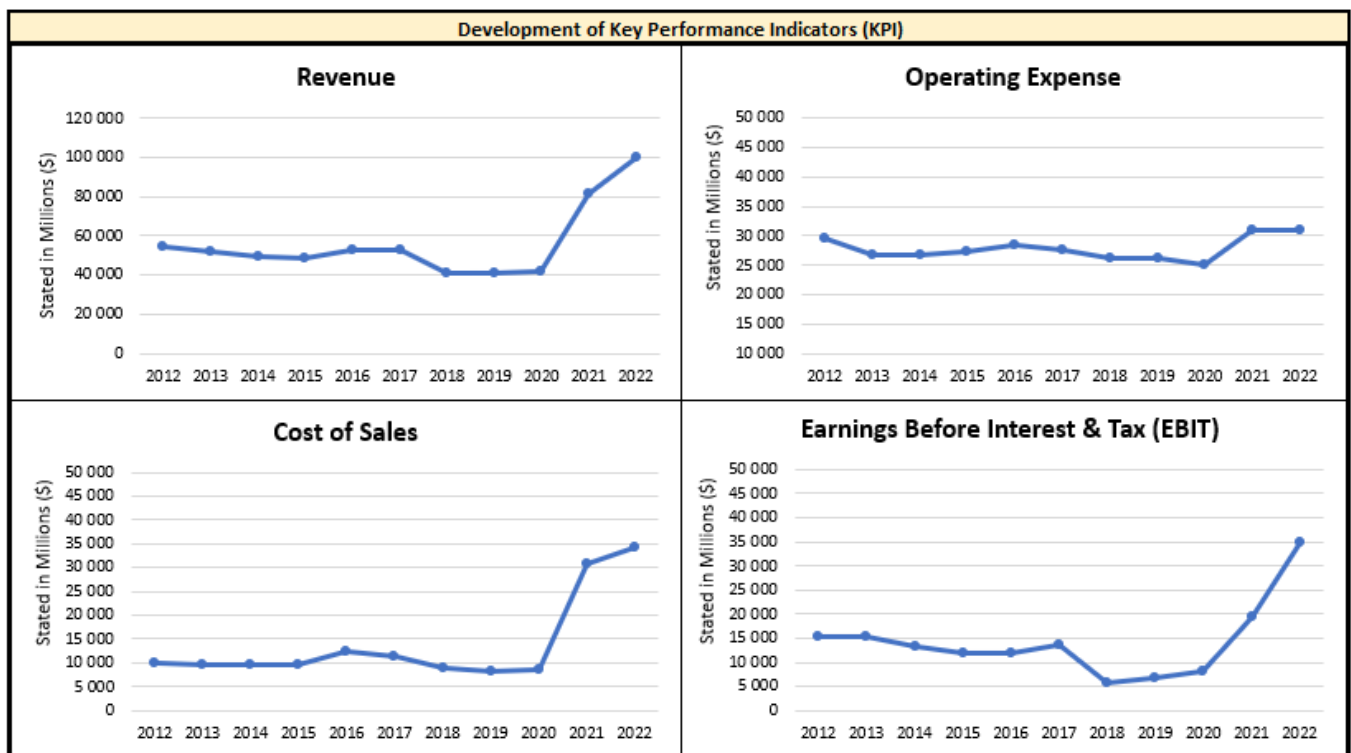


Figure 5. Pfizer's financial performance (2012-2022) gathered from the 10-year reformulated income statement.

Pfizer finalized the spin-off of the *Upjohn* business, the division primarily responsible for generic and expired patent products, in November 2020. The spin-off was accompanied by a merger with *Mylan* to create the new business *Viatrix*, in an all-stock structured *Reverse Morris Trust Transaction*, where Pfizer shareholders owned 57% of the new combined company. As a result of this, Pfizer had to restate their financial statements for 2020 to reflect this decrease in sales, as well as other key performance indicators. The *Upjohn* business was responsible for \$7.7 billion of Pfizer's revenue in the first 10 months of 2020, \$10.62 billion in 2019, and \$12.78 billion in 2018. The *Upjohn* portfolio included products such as *Lipitor*, *Lyrica*, *Norvasc*, *Celebrex* and *Viagra* (Pfizer Inc., 2020). Further, explaining the small decline in revenue and EBIT from 2017-2018 as the financial statements were updated accordingly.

Operating expenses were also stable in the time period before the COVID-19 pandemic, as *selling and administrative cost* were reduced in the 10-year period, and R&D spending were increased. As of 2021 a spike in the operating expense can be seen, as R&D increased in response to be the first provider of pandemic response products, in particular the oral COVID treatment program. As R&D cost for Comirnaty materialized in 2020, the increase for 2021 can be explained by the cost of development for Paxlovid. As costs for the products mostly materialized before 2022, except for the *Cost of Sales*, the operating expenses levelled out the following year. This also explains the reduction in operating expenses as a percentage of revenue for 2022, as revenue increased substantially compared to operating costs (Pfizer Inc., 2022).

Similar trends can be observed for the *Cost of Sales* as well, where Pfizer increased their sales cost by 255%, or \$22.3 billion. This increase can be explained by greater sales volume of non-pandemic products and unfavourable impact of foreign exchange and hedging activity but is mostly explained by the impact of Comirnaty. As a result of this, cost of sales as a percentage of revenue also increased (Pfizer Inc., 2022). Lastly, it is suitable to assume a highly correlated relationship between Pfizer's revenues and EBIT, further reinforced by their similar graphs.

To further evaluate their performance, it is important to view the KPIs according to the corresponding revenue (See Appendix B3). The *Cost of Sales Margin* increased alongside the revenues but the increase in the cost of sales resulted in a lower *Gross Profit Margin* for Pfizer. However, the *Operating Expense Margin* did not increase, further reinforcing the strong performance alongside a positive increase in the *EBIT Margin*. Following figure illustrates the KPIs in relation to the revenue.

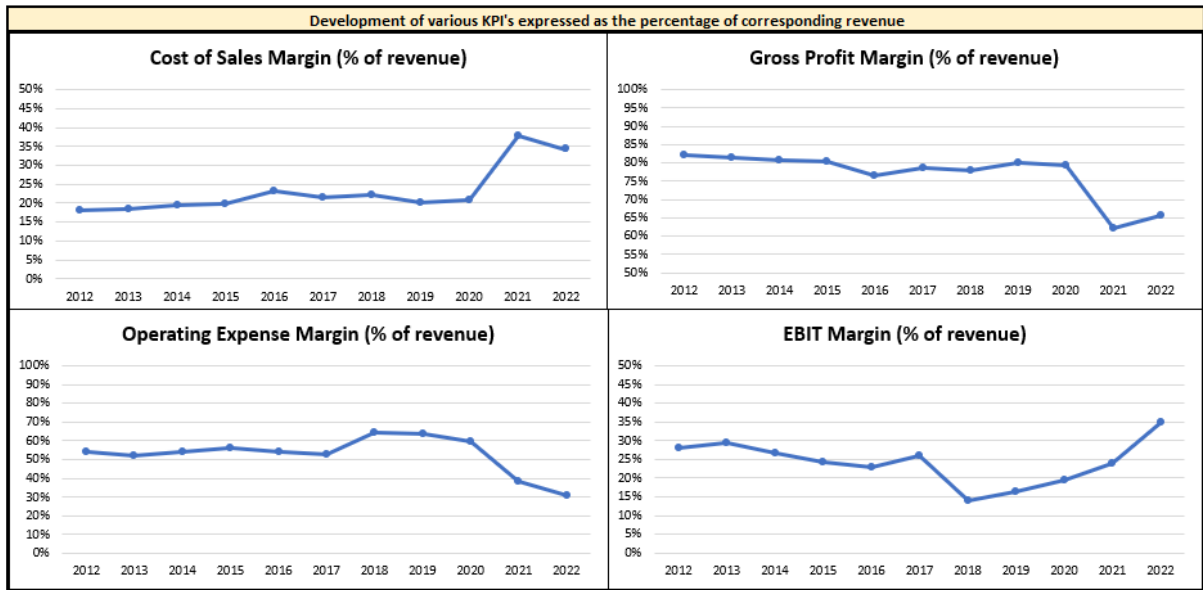


Figure 6. Pfizer's performance expressed as percentages of revenue.

The biggest market by revenue is the U.S. market, accounting for about 42% of Pfizer's global revenue. This is a decrease from 2017, when the U.S. market accounted for half of the revenue. However, the U.S. market still accounts for the majority of their revenues (See Appendix A10). According to Pfizer, the *Emerging markets* is important to their future strategy for global leadership, recognizing the fast-growing demographic and economic power (Pfizer Inc., 2018). Another explanation for the shift in demographics is their COVID-19 portfolio, yielding an increase in sales in all markets for 2021 and 2022. Following figure illustrates Pfizer's markets and the corresponding percentages of revenue for 2022.

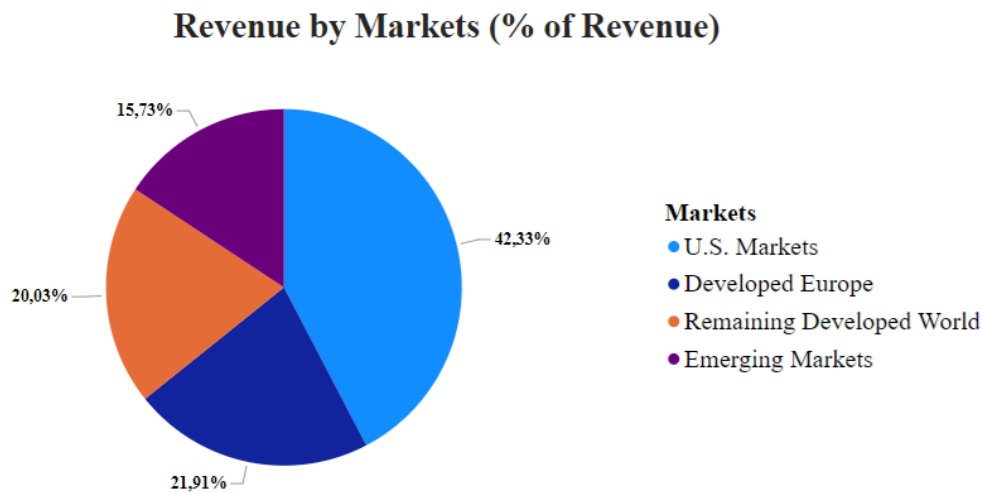


Figure 7. Pfizer's revenue expressed as percentages of each market for 2022.

2.3.1. Paxlovid & Comirnaty

Pfizer increased their revenue in 2022 compared to 2021 by \$19 billion, from roughly \$81.3 billion to \$100.33 billion. Revenue increases were mainly driven by growth of developed COVID-19 response products: Paxlovid and Comirnaty. Operational performance grew by 30%, or \$24.6 billion, but were impacted unfavourably by foreign exchange by \$5.5 billion. Excluding Paxlovid and Comirnaty, Pfizer's revenue grew by 2%, as a result of strong growth for *Pprevnar*, *Eliquis* and *Vyndaqel* (Pfizer Inc., 2022).

In 2022, Pfizer experienced an increase in the cost of sales, which amounted to \$3.5 billion. This rise was mainly attributed to the increased sales of Comirnaty, resulting in an unfavourable impact of \$4.0 billion due to the gross profit split with BioNTech and applicable royalty expenses. Additionally, inventory write-offs and other charges associated with Paxlovid and Comirnaty incurred a combined expense of \$1.7 billion. Nevertheless, the cost of sales increased by \$1.3 billion due to the surge in Paxlovid sales. However, the favourable impact of \$3.3 billion due to foreign exchange and hedging activity offset this increase. The decrease in the cost of sales as a percentage of revenues was primarily due to the favourable impacts of Paxlovid, foreign exchange, and higher *Alliance* revenues. This decrease was, however, partially offset by the increased sales of Comirnaty and the inventory write-offs and other charges related to Paxlovid and Comirnaty (Pfizer Inc., 2022).

2.4. Future of the Pharmaceutical Industry

Medicine spending is still expected to be heavily dictated by global COVID-19 vaccinations. However, the pandemic is not the only driving force behind said spending. As the pandemic enters its fourth year, the importance of the health industry has never been more prominent. The overall, global use and spending on medicine is expected to return to the pre-pandemic growth rates by 2024. Furthermore, indicating high levels of spending throughout 2023 regarding the pandemic. The overall volume, in the global medicine market, is expected to grow with a *Compound Annual Growth Rate (CAGR)* of 3-6% through 2027. This growth reflected in established markets growing at a slower rate and emerging market growing at a higher rate (Porwal et al., 2023). Overall, the pharmaceutical industry shows no long-term signs of slowing down and the future seems not to be subject for any stagnations regarding growth, except for the following couple of years as the pandemic fades away. However, this is only relevant for pharmaceutical companies with COVID-19 portfolios.

3. The Pharmaceutical Industry

The pharmaceutical industry is primarily based upon the development, production, and marketing of branded and generic pharmaceuticals, in which these pharmaceuticals are compounds that enhance a patient's quality of life (González Peña et al., 2021). Overall, this is accomplished by the prevention and treatment of diseases with the use of said pharmaceuticals: vaccines and medications, as well as medical devices and more.

The pharmaceutical industry is heavily reliant on transforming the fundamental research into viable prevention measures and treatments for various diseases. This is one of the primary characteristics of the pharmaceutical industry as the R&D expenses are, and have always been, high. Furthermore, reflected in the high rates of investments regarding R&D expenditures, as percentages of sales and profits (Council et al., 1983).

The majority of sales in the pharmaceutical sector are accounted for by the 25 largest pharmaceutical companies, amounting to 73% of total sales in 2015 and shows no signs of declining. Overall, the sector is significantly operated by the big companies. Throughout the same study, it was concluded that the profitability of large pharmaceutical companies was significantly greater than other, large companies listed in the S&P-500 (Ledley et al., 2020). Furthermore, indicating that despite of low levels of innovation, the pharmaceutical industry draws a lot of their revenue from existing products.

Torreya, an investment bank operating within the healthcare industry, write reports regarding the pharmaceutical industry and the companies operating within it. *Torreya*'s report from 2020 highlights the status and prospects of the pharmaceutical industry, including the aggregate value of the pharmaceutical industry in comparison to other industries (2020). The following table illustrates the ranking of industries based on aggregate enterprise value, in which the pharmaceutical industry is ranked as the third biggest, only counting public companies.

Rank	Sector	Aggregate Enterprise Value (\$ Trillions)
1	Banks, Insurance & Finance	18,50
2	E-Commerce + Internet Services	6,00
3	Pharmaceuticals (Public Companies)	5,65
4	Software	4,20
5	Integrated Oil & Gas	3,60
6	Technology Hardware	2,90
7	Semiconductors	2,40
8	Electric Utilities	2,40
9	Integrated Telecom Providers	2,20
10	Automobile Manufacturers	2,00

Table 2. Data gathered from the “Top Global Pharmaceutical Company Report” by Torreya regarding the aggregate enterprise value of the pharmaceutical- and other industries (2020). The data has not been altered, just redesigned into the format depicted in the table.

3.1. The Importance of Patents

With only a small, and declining, number of new patents being approved annually, the pharmaceutical industry is a major user of the patent system. Patents give exclusive rights regarding the production, sale, and use of the patented product, which also acts as a constraint on external competition and enables pricing strategies regarding similar competitive products. This is the purpose behind of the patent system, which further encourages the investments into both, new products and processes (Correa, 2007). Furthermore, explaining the high investment rates into R&D and why the pharmaceutical industry is heavily privatized.

The development of new medication requires substantial investments and long-term research, further combined with expensive clinical trials and regulatory approval procedures (WIPO, n.d.). The combination of these factors illustrates the riskiness behind the development of new products within the pharmaceutical industry, especially considering the clinical trials and regulatory approval. These two procedures can yield negative results or be denied, resulting in significant expenditures without any results.

The patents grant a 20-year protection for corresponding product from the date of application, in the country of the application. However, as pharmaceuticals are medical inventions, they

undergo a lengthy and expensive process regulated by the U.S. *Food and Drug Administration (FDA)*, which further shortens the effective lifetime of the patents. From a survey consisting of 100 different US firms in different industries regarding their estimations on the importance of patents, the pharmaceutical industry would not have introduced and/ or developed corresponding 65% and 60% of their products, if not for the protection which the patents provide (Vogel, 2002). Furthermore, confirming the importance of the patents in the pharmaceutical industry, especially considering the small amount and declining trend in new pharmaceuticals patents' annual approval rate.

Not only requires the pharmaceutical industry heavy investments in R&D but it is also a heavily regulated industry. The pharmaceutical industry is subject for varying degrees of price regulations depending on the country in question. Thus, the pricing policies reward to investment in pharmaceutical R&D, in different countries, can differ quite drastically and generate different incentives depending on the country in question (OECD, 2008). Thus, the way the performance of the pharmaceutical companies is heavily dependent on the healthcare and consumption of pharmaceuticals varying from country-to-country.

3.2. Divisions of the Industry

The pharmaceutical industry is subject to competition as most other industries. Furthermore, the industry can be divided into three primary competitive divisions: *Over-the-Counter Products*, *Patented Products*, and *Generic Products*. These divisions differ from each other in different aspects of sales, marketing, expenses, etc. (Council et al., 1983). There are also other divisions within the pharmaceutical industry, as with *Biosimilars* which can be viewed as a mixture of a patented and generic product, however this secondary division of the industry will be briefly discussed later in the *Analysis* (Chapter 4).

3.2.1. Over-the-Counter (OTC) Products

Over-the-Counter (OTC) drugs, or non-prescription drugs, are products which does not require a doctor's prescription. In other words, they are products sold directly to the consumers (FDA, 2017). Since OTC drugs are sold without a prescription, their primary use is to treat minor illnesses and symptom relief. Another characteristic of OTC drugs is that they can be sold through different channels, non-pharmacy outlets, as: supermarkets, gas stations,

and convenience stores (Jo et al., 2022). Competition in this segment is highly dictated by marketing of established brands, with occasionally new products being introduced. The new products introduced are generally reformulations of existing therapies which have switched status from a required prescription to an OTC-product. However, the OTC drug division only accounts for a small percentage of the pharmaceutical companies' total revenue (Council et al., 1983).

Overall, the OTC products is the first-line treatment option that consumers can utilize without consulting a physician. This combined with the availability of OTC products, generate an important division of the industry. However, they only account for a small percentage of the pharmaceutical companies' total revenue and should be acknowledged accordingly.

3.2.2. Patented Products

Even though OTC-products can be patented products, the majority of patented products are distributed by prescriptions. The patented products are the driving force behind the pharmaceutical industry, as they represent the new innovation within the industry (Council et al., 1983). As OTC-products are used to treat minor illnesses and symptom reliefs, the prescription products are prescribed by a physician and are used to treat illnesses and provide symptom reliefs to a greater extent than OTC-products (FDA, 2017). Overall, the patented products are the most R&D-investment heavy and thus the corresponding revenue for these products amounts to a significant portion of the total revenue for the pharmaceutical companies (IFPMA, 2022).

Overall, the patented drugs represent innovation and exclusivity within the market segment. However, they require heavy investments in R&D, as well as the risk related to studies and regulation, but they offer great rewards if they are successful.

3.2.3. Generic Products

Generic products are copies of patented drugs, in which these no longer have exclusivity in the market. The generic drugs work similar and provides the same clinical benefits as previously patented drug. Generic drugs cost a fraction of the price, due to lower R&D expenditures. With the generic drugs, the company does not need to repeat the animal- and human (clinical) studies, greatly reducing their R&D investment. This reduction in R&D

expenditure, is reflected in an 80-85% discount in price, compared to the patented counterpart (FDA, 2021). Overall, as the patent expires for the patented products the generic products emerge.

As the costs of healthcare and pharmaceutical treatments are growing, the generic products utilize this as their competitive advantage. Generics are also used as a measure to combat the increase in drug prices, with mixed results regarding the expenditure growth in the U.S. Even though generics helps in significantly reduce pharmaceutical expenditure, they do not drive innovation to the extent of the patented products (Castanheira et al., 2019).

Overall, the generics resemble more of a cost-savings strategy. Further, copying the previously patented drugs and discounting them to a fraction of the price. This allows for lower pharmaceutical expenditure and is suitable for countries and consumers with reduced healthcare capabilities, also developed markets looking to reduce the pharmaceutical spending.

3.2.4. Prescription vs Non-Prescription

As previously mentioned, prescription drugs make up a significant portion of revenue for the pharmaceutical companies, especially Pfizer. The following figure illustrates the top 25 pharmaceutical companies ranked after their prescription sales for 2021 (Statista, 2022), in which Pfizer is at the top and the revenue from prescription sales almost account for the total revenue they reported this financial year of about \$81.3 billion. Thus, it is safe to say that the revenues from the prescription-sales are a key indicator for pharmaceutical companies' performance, especially for Pfizer in this instance. It is important to note that these prescription-sales account for both patented and generic products.

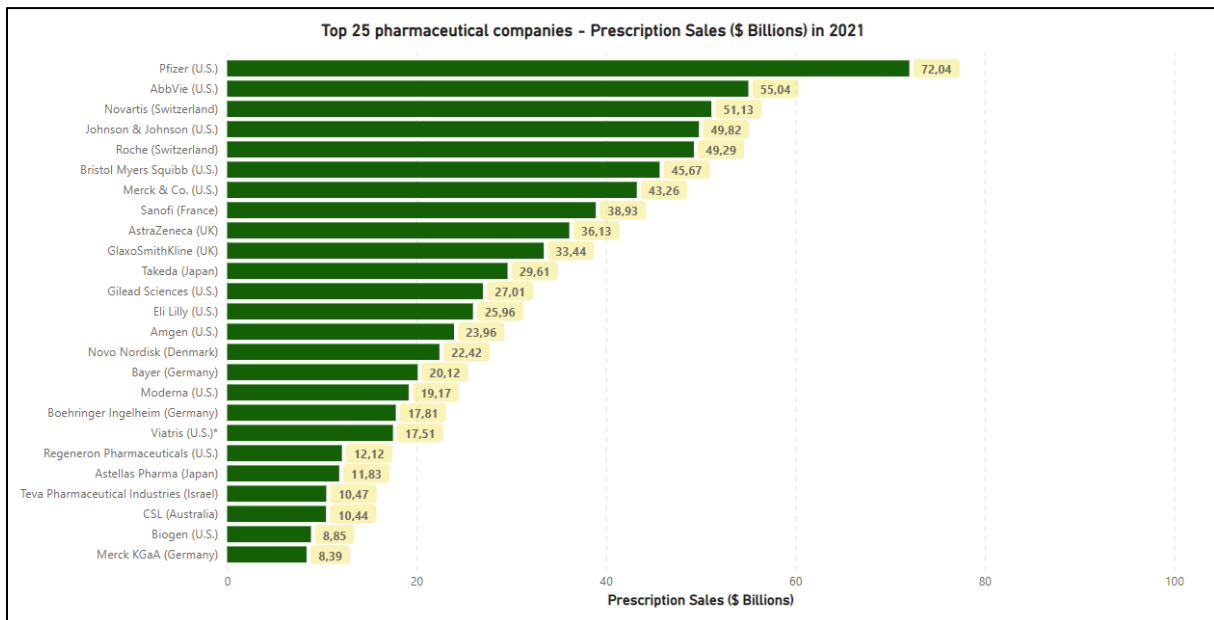


Figure 8. Pharmaceutical companies ranked upon their prescription sales for the year 2021.

3.3. Mergers & Acquisitions

Mergers and Acquisitions (M&A) are utilized to a great extent by the pharmaceutical companies. This strategy allows for improved *Innovation*, *Economics of Scale*, and/ or *Portfolio Realignment*. The pharmaceutical sector has more than doubled the numbers of global M&As from 2005-2019. As with the growth in the pharmaceutical industry, the M&A activity is not expected to slow down anytime soon either (Ascher et al., 2020). Following table displays the core motivations behind M&As in the pharmaceutical industry.

Factor	Description
Innovation	The large companies usually acquire smaller firms, more creative firms inside and outside of the industry. This allows for obtainment of new compounds and processes, new technologies, talent and/or regulation and policy expertise.
Economics of Scale	The pharmaceutical industry is characterized by the expensive nature of developing, manufacturing, and marketing pharmaceutical products. This serves as the incentive behind cutting costs, improving processes/ production, distribution, and other efficiencies. These actions allow for operational- and financial gains, further giving the companies competitive advantages.
Portfolio Realignment	Portfolio realignment allows for redefining of their product portfolios, further obtaining new or replacing prior cash flows. This also gives ground for breaking into new segments, as new therapeutic areas.

Table 3. Core reasons behind M&As in the pharmaceutical industry. The table is generated with information from McKinsey's M&A report (Ascher et al., 2020).

3.3.1. Innovation

Large pharmaceutical companies have used M&As for a long time to reinforce their innovation, and the trend does not seem to be slowing down. Research conducted by McKinsey has shown that revenues sourced from outside of *Big Pharma* has grown from roughly 25% in 2001 to roughly 50% in 2016. This trend is fuelled by the low probability of success when developing a new drug in the early stages. In other words, the early stages of development are sourced externally and the later stages of development are handled by the pharmaceutical companies (acquirer), as they have better capabilities regarding the regulatory work in the later stage of development. This generates an industry profile in which the

smaller, creative companies fund the innovation. Once the research becomes more advanced, the larger pharmaceutical acquires these companies, further funding the late-stage trials and commercial marketing campaigns (Bansal et al., 2018).

As highlighted earlier, the importance of patents is especially important regarding the pharmaceutical industry. The pharmaceutical companies' portfolios and pipelines need continuously refreshment, considering the decline in revenue from patents expiring as the exclusivity of manufacturing and marketing the pharmaceuticals is lost (Bansal et al., 2018).

3.3.2. Economics of Scale

M&As are also highly motivated by the potential financial and operational gains possible from consolidation. Large pharmaceutical companies with annual revenues exceeding \$1 billion, have EBITDA-margins ranging from 20-50% and biotech companies with annual revenues exceeding \$1 billion have EBITDA-margins ranging from 30-50%, indicating that companies with high margin spreads have great opportunities to capture synergies through acquisitions of subscale portfolios (Bansal et al., 2018).

3.3.3. Portfolio Realignment

As with the motivation behind sourcing innovation externally, portfolio realignment is a way to combat the decline in revenue from expiring patents by introducing new revenue. Instead of sourcing innovation externally, the portfolio alignment can be achieved by acquiring already existing assets. In other words, acquiring the rights for new product, further allowing for several revenue streams and market penetration (Bansal et al., 2018).

4. Analysis

Following chapter will provide an analysis of Pfizer utilizing the *Strengths Weaknesses Opportunities Threats (SWOT)* analysis and *Porter's Five Forces*, starting with an illustrated overview of the analyses then discussing them more in-depth. These analyses will highlight internal and external aspects for Pfizer, further used to reinforce the valuations later in the thesis.

4.1. SWOT-Analysis

The SWOT-analysis focuses on the recent strong financial performance of Pfizer and the corresponding sustainability of said performance, as well as reviewing the state of Pfizer's current portfolios. The analysis will also focus on the more external factors revolving around Pfizer, which have their own opportunities and threats that need to be accounted for.

Following figure displays a brief overview of the SWOT-analysis, in which these factors will be discussed more thoroughly in the following sections.

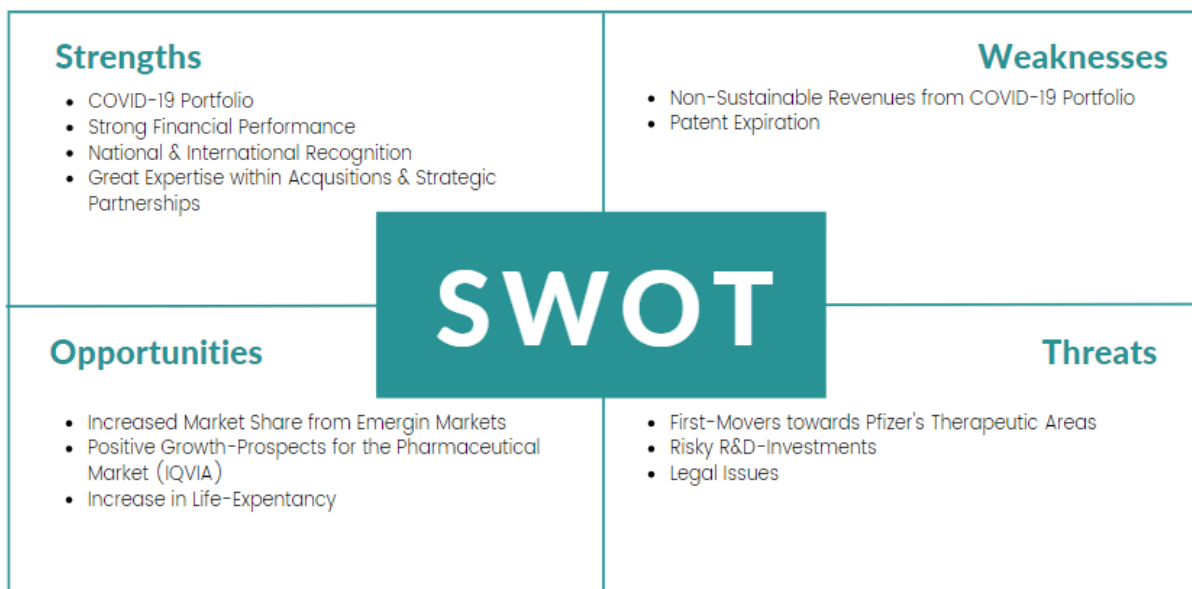


Figure 9. SWOT-Analysis for Pfizer, further highlighting the factors categorized as Pfizer's Strength, Weaknesses, Opportunities, and Threats.

4.1.1. Strengths

In recent years, Pfizer has shown strong financial performance as a result of strategic partnerships and abnormal growth in revenue due to the breakthrough COVID-19 portfolio: Paxlovid and Comirnaty. Pfizer reported revenues of \$100.3 billion for 2022, an increase of 140% from 2020, the highest reported by any pharmaceutical company in 2022 (Pfizer Inc., 2022). This gives Pfizer the advantage, as they can increase R&D spendings, make further strategic acquisitions, and increase their dividend payouts. Furthermore, the *Gross Profit*, *EBIT*, and *Net Income* are at an all-time high, further reinforcing said competitive advantage.

Pfizer have a well-diversified and positioned portfolio within the pharmaceutical market, having products or research within categories such as anti-infectives, oncology, vaccination, inflammation, and immunology. They also have the benefit of being a house-hold name, with strong ties and brand recognition to the American consumers. They are also recognized outside international, as 58% of their revenue is sourced from outside of the U.S. (Pfizer Inc., 2022). Overall, their current portfolio is rigid and under continuous improvement, further yielding revenue from the global market.

Pfizer has also benefitted previously in the past by their strategic collaborations or co-promotions. Their recent boost in revenue came from their partnership with BioNTech, as a result of the development of the Comirnaty-vaccine. The anti-thrombotic, Eliquis, is a jointly developed and commercialized product in partnership with BMS (Pfizer Inc., 2022). Future synergies are also to be expected of these partnerships, further strengthening Pfizer position as an industry leader. This statement is also relevant for future, potential acquisitions to further improve their portfolio.

These last 2 statements of strengths can be further depicted in the following figure illustrated by utilizing the reformulated income statement (See Appendix B3). R&D has been following a steady positive trend, with the exception of the capital-extensive COVID-19 portfolio, represented as the spike in R&D from 2020-2021. The decrease in R&D from 2021-2022 is to be expected as the prior year had a non-sustainable level of capital-intensive R&D. However, the corresponding revenue made up for the extensive R&D as its percentage of revenue decreased even though the R&D were at an all-time high during this 10-year period. As the *Restructuring and Certain Acquisition-Related (R&A) Expenses* have been quite volatile, as a results of prior strategic partnerships and such, the 4-year latest trend indicate positive prospects regarding future strategic partnerships and/or acquisitions. As with the R&D, these

expenses have increased but have not remained roughly the same as the percentage of revenue.

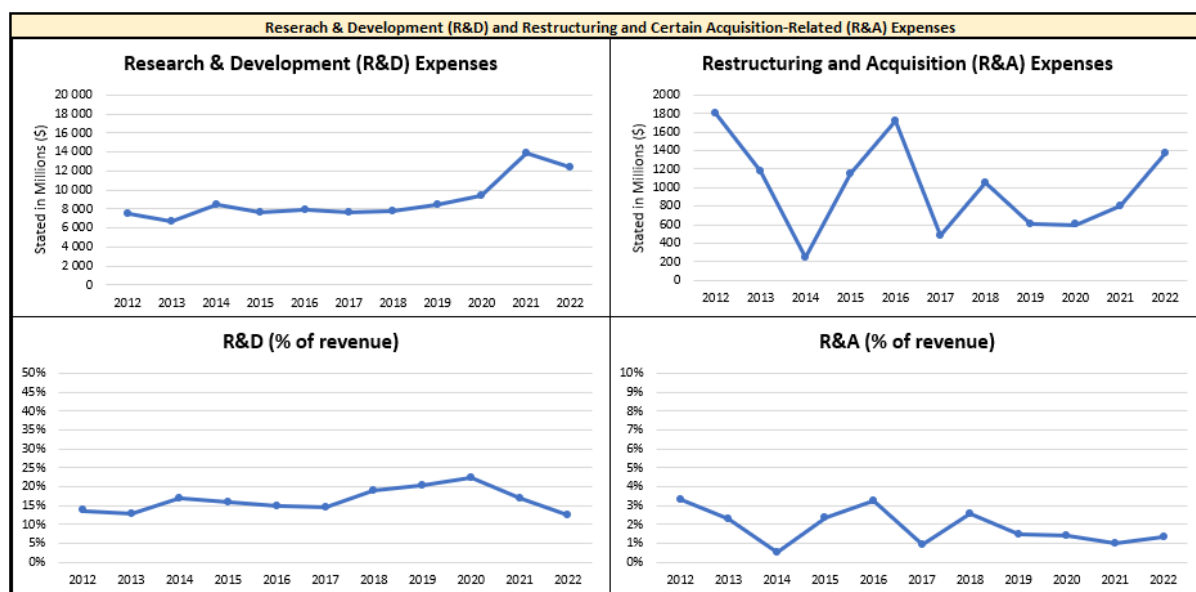


Figure 10. Research & Development (R&D) and Restructuring and Certain-Acquisition-Related (R&A) Expenses for 2012-2022, with their corresponding percentages of revenue.

4.1.2. Weaknesses

Although Pfizer increased their revenue during the pandemic, revenues from corresponding products are expected to decrease as soon as 2023. Their revenue range for 2023 is forecasted to be between \$67 billion to \$71 billion, a decrease by roughly 31% at the midway point. Pfizer's abnormal revenue is in other words not-sustainable as the demand for their COVID-19 portfolio will diminish over time. Even though they are well diversified in the pharmaceutical industry, they have key products making up most of their revenue. This is also evident in their 2022 annual report, where 9 stated products make up for 81% of revenue, where 7 of the 9 product patents expire by 2033 (Pfizer Inc., 2022).

Patent expiration is a risk for all parties in the biotechnical and pharmaceutical industry, including Pfizer. As patents expire, the tradenames and ingredients become public domain, and can be made, sold, and advertised without infringement by competitors. In other words, the competitors can utilize other companies' R&D efforts creating generic products to a fraction of the price of the original. During the next five years, five of Pfizer's oral medication face patent expiration, including *Eliquis*, *Xeljanz*, *Xtandi*, *Vyndaqel*, and *Ibrance*. Excluding

the COVID-19 portfolio, these medications currently make up 40% of Pfizer's revenue (Pfizer Inc., 2022).

4.1.3. Opportunities

A large portion of Pfizer's source of revenue in 2022 comes from the U.S. market, capturing \$42,473 billion of the roughly \$605 billion industry by revenue, or around 7,02% (Pfizer Inc., 2022; Statista, 2023). This is slightly higher than what they are able to capture worldwide, where \$100,33 billion of the \$1,482 trillion industry is captured by Pfizer, or about 6,7% (Statista, 2023). By targeting other developed markets worldwide, in addition to emerging markets, Pfizer has the opportunity to capture more of the generated revenue of this industry in the future.

Since the early 2000's, the median age of the U.S. population has increased by 3.5 years (Statista, 2022). Furthermore, it is reasonable to expect age-related diseases to increase as well, leading to an increased demand for age-related medications for conditions such as Alzheimer's disease, diabetes, and cardiovascular diseases. Cardiovascular medication like *Vyndaqel* and *Vyndamax* are already in Pfizer's product line (Pfizer Inc., 2022).

According to IQVIA's report, *Global Use of Medicine 2023*, the global medicine market is expected to grow at 3-6% continuing forward as the disruptions of the pandemic settles down (Porwal et al., 2023). This indicates that the pharmaceutical market has positive growth prospects, which in turn will be beneficial for Pfizer.

4.1.4. Threats

The pharmaceutical industry is a highly competitive industry, and first-movers are often rewarded if R&D leads to approved products. Pfizer experienced this with the COVID-19 vaccine and received a huge boost in revenue as a result of fast development of the vaccine. A lot of the funds that go into R&D end up as tax credits due to unsuccessful research efforts. This is a common problem in the pharmaceutical industries, as R&D success often is measured by the amount of product the R&D returns, as well as the revenue created by these products. But even with strategic partnerships or large fundings to R&D, there is no guarantee for payback regarding future revenue. Large investments into R&D pose a threat to future growth and revenue as the failure to generate future positive cash flow will reduce Pfizer's

competitive position in the pharmaceutical industry. These instances would pose even more of a threat if the competitors were developing products within the same therapeutic areas as Pfizer competes within, especially oncology amongst others.

As a company reliable for the safe use of their developed products, Pfizer is liable to lawsuits related to disclosure of side effects, illegal marketing, or health care fraud. Although many of these claims are dismissed before the court, there is still the threat of legal action with financial repercussions. An example of a previous lawsuit that ended in settlement or conviction is the *Trovan* lawsuit, when in 1996 Pfizer launched an unapproved clinical trial (Abdullahi v. Pfizer, 2009).

4.2. Porter’s Five Forces

Porter’s Five Forces were utilized to further analyze the industry in which Pfizer’s compete within. As the *Divisions of the Industry* gave an overview of the primary products within the pharmaceutical market, the following analysis will help evaluate this in regard to Pfizer’s position. From the *Industry Competition* to the *Power of Buyers*, the following analysis will further highlight key aspects that the SWOT-analysis failed to capture. The following figure displays the overview of the Porter’s Five Forces analysis.

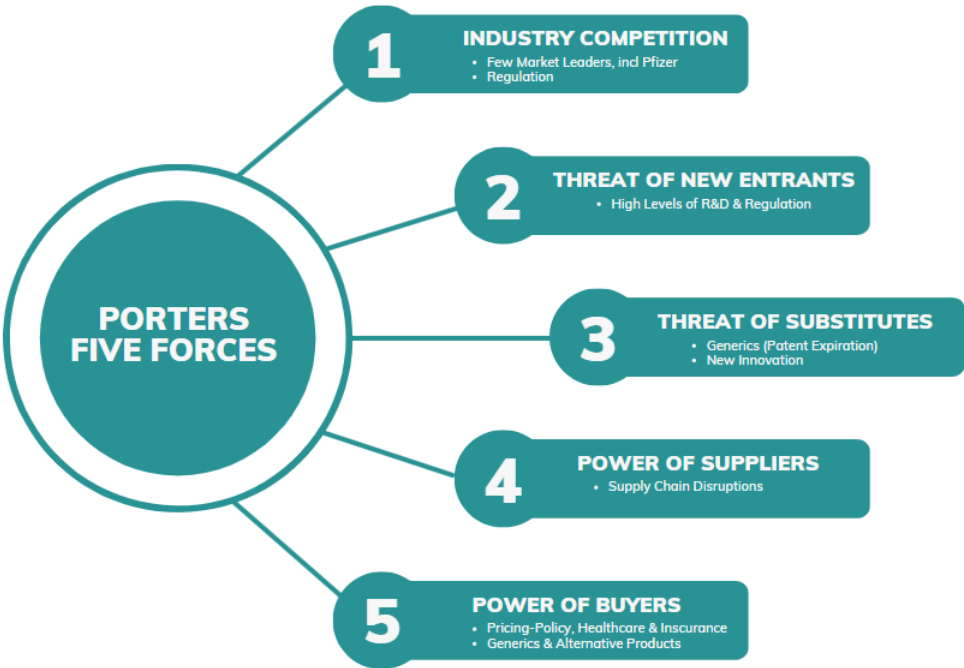


Figure 11. Porter's Five Forces analysis for Pfizer.

4.2.1. Industry Competition

The market entry of new medicine requires substantial investment in one of the most strictly regulated and R&D-intensive sectors. As a result, there is intense competition amongst pharmaceutical firms, with a select few major manufacturers controlling the market. These businesses engage in fierce competition for market share and use a variety of tactics to outperform their competitors (Pfizer Inc., 2022).

The protection of intellectual property through patents is one of the main forces fueling competition in the pharmaceutical sector. Patents provide businesses with a restricted monopoly on a drug, enabling them to set high prices and recuperate their sizable R&D expenditures. As a result, businesses are encouraged to make significant investments in the creation of novel medications and treatments, spurring industry innovation. As patents expire, competing businesses can release generic versions of the drug, which will spark severe price rivalry and a scramble for market share (Pfizer Inc., 2022).

Regulatory obstacles are another factor fueling rivalry in the pharmaceutical sector. Long and expensive clinical trials and testing are necessary during the approval procedure for new pharmaceuticals in order to prove their efficacy and safety. To get their medicines on the market, businesses must traverse complicated regulatory systems, including the FDA in the U.S. Due to the high entry hurdles this creates for new businesses, the market becomes highly competitive and dominated by a small number of major competitors.

Because of the fierce competition among pharmaceutical firms, aggressive strategies including undercutting, price warfare, and patent litigation may be used. These tactics are intended to outperform competitors and take market share. But, as businesses try to keep ahead of their rivals, they can also lead to cheaper costs for customers, better product quality, and more innovation.

4.2.2. Threats of New Entrants

The industry is marked by severe entry obstacles, such as capital-intensive R&D, drawn-out regulatory approval procedures, and the requirement for significant financial resources. The number of businesses that can realistically compete are constrained by these variables, which pose a considerable barrier for new entrants to the market.

The pharmaceutical sector may be significantly impacted by the threat of new entrants, spurring innovation, further posing new problems for current firms. New players may disrupt the market and threaten the dominance of current competitors when they provide novel products and therapies. More competition can lower costs and encourage established businesses to develop new products and services. Pfizer, like other participants in the pharmaceutical industry, use acquisition strategies to acquire new developments and to stop new entrants from capturing additional market shares (Pfizer Inc., 2022).

Overall, there are considerable entry hurdles, as the capital-intensive R&D and drawn-out regulatory approval procedures, further moderating the danger of new entrants (FDA, 2022). Everything from supply chain, distribution channels, name recognition, patent rights, R&D costs, and economies of scale, among others, are barriers new entrants have to overcome to be able to profit from new developments. Many governments also require applications that in turn require documentation and clinical trial results to be approved, like the FDA's new drug application (FDA, 2022). These obstacles reduce the number of prospective new entrants by making it challenging for new businesses to enter the market and compete with the incumbent companies.

4.2.3. Threats of Substitutes

As pharmaceutical products are distinctive and highly specialized, it is challenging for alternatives to have the same results or effects. Regulatory policies and intellectual property safeguards may prevent replacement products from entering the market. Clinical studies, production, and marketing all must adhere to strict regulations that are tightly enforced in the pharmaceutical sector. Before products are certified for sale, these standards make sure they are both secure and efficient. Pharmaceutical firms can also obtain patents that shield their products from direct rivalry, reducing the likelihood of replacements. However, there is a risk of biosimilars replacing the need for patent protected products, as consumers can choose similar products in term of health benefits, with a different biochemical formula from other providers (Pfizer Inc., 2022). However, the primary risk is patent expiration and the generic products that follow. As they have a clear cost-saving competitive advantage, they will further be favorable due to the lower cost than Pfizer's original.

4.2.4. Power of Suppliers

The business relies significantly on a vast network of suppliers for everything from raw materials to specialized tools and knowledge. As a result, suppliers' influence can have a big impact on the dynamics of the market, especially with the effects of the pandemic on the pharmaceutical supply chains. Pfizer continues to utilize mitigation strategies to reduce future or potential risk, by active supplier management, assessing the qualifications of potential new suppliers, and advance purchasing (Pfizer Inc., 2022).

The availability of raw materials is one of the major variables impacting the influence of suppliers in the pharmaceutical sector. Certain medications need specific chemical compounds or substances that are only offered by a small number of vendors. As a result, suppliers may be able to command higher pricing and negotiate more favorable conditions with pharmaceutical corporations.

Additionally, providers of specialized tools and knowledge, such those engaged in clinical trials, can have a lot of influence over pharmaceutical firms. These suppliers may possess specialized expertise or cutting-edge technology that is essential to the process of developing new drugs, giving them enormous negotiating power.

The pharmaceutical firms can also lessen the influence of their suppliers through a variety of tactics, such as solidifying their connections with them and broadening their networks of suppliers. Pharmaceutical businesses can access vital resources and knowledge while lowering the risk of supply disruptions by forging strong bonds with important suppliers and investing in long-term collaborations. Pfizer is constantly scouting for new vendors or suppliers to neutralize risk and use local providers to avoid supply chain disruptions (Pfizer Inc., 2022). However, the supply chain will always be limited to some capacity as Pfizer source revenues globally.

4.2.5. Power of Buyers

Pfizer encounter different types of buyers, with different threats to continuing operations. First, the general consumer of generics or biosimilar brand drugs, often choosing the cheapest alternative. However, it is important that the biosimilars will require their own prescription, further placing the *power of the buyer* with the physician and not the consumer. The consumers benefit from the availability of substitute and alternative products, resulting in a highly competitive market, as multiple companies fight for market shares. These consumers have low bargaining power in price but can choose cheaper substitute alternatives. This consumer segment poses a moderately to high risk for Pfizer (Pfizer Inc., 2022).

Pfizer faces pricing pressure from their commercial customers, including insurance companies, government agencies, and employer health plans, and U.S. health providers experience pressure to deliver healthcare at a lower cost with the same demonstrated health benefits. Some products may be patent protected but commercial customers can be prescribed alternative and cheaper patented, biosimilar, or generic products provided by other companies within the same therapeutic area. Pfizer is no exception and must reduce their price to continue to be competitive or gain new intellectual property. This market segment poses a high risk for Pfizer (Pfizer Inc., 2022).

Lastly, as companies scrambled to provide a vaccine for the pandemic, government agencies experiences lowered bargaining power, as there were few providers of vaccine and the shortage of available vaccines (Feinmann, 2021). This unique situation gave Pfizer a higher bargaining power against buyers than normal. However, this bargaining power is limited to their COVID-19 portfolio and is non-sustainable.

5. Valuation Methods

Following chapter will highlight the basics behind valuation as a concept and the following valuation methods: *Discounted Cash Flow*, *Comparable Company Analysis*, and *Precedent Transaction Analysis*. Furthermore, giving a brief description and how these analyses/valuations are conducted.

5.1. Valuation Concept

Valuation is defined by (Stowe et al., 2007) as estimation of an assets value by either two means; variables related to future investment returns (*intrinsic*) or by comparing similar assets (*relative*). Furthermore, it is argued for a five-step process to valuation. The first step is to understand the business of the underlying asset. Understanding prospects, competitors, and corporate strategies are crucial, in combination with financial statement analysis, to forecast future performance. Forecasting future performance is step two, which include forecasts of earnings, sales and financial position. Next step is to choose the appropriate valuation method. Depending on the circumstance, one method can be more appropriate than the other, or a combination of methods can be preferred. The final two steps are to convert the forecast to a valuation, and make an investment decision (Stowe et al., 2007).

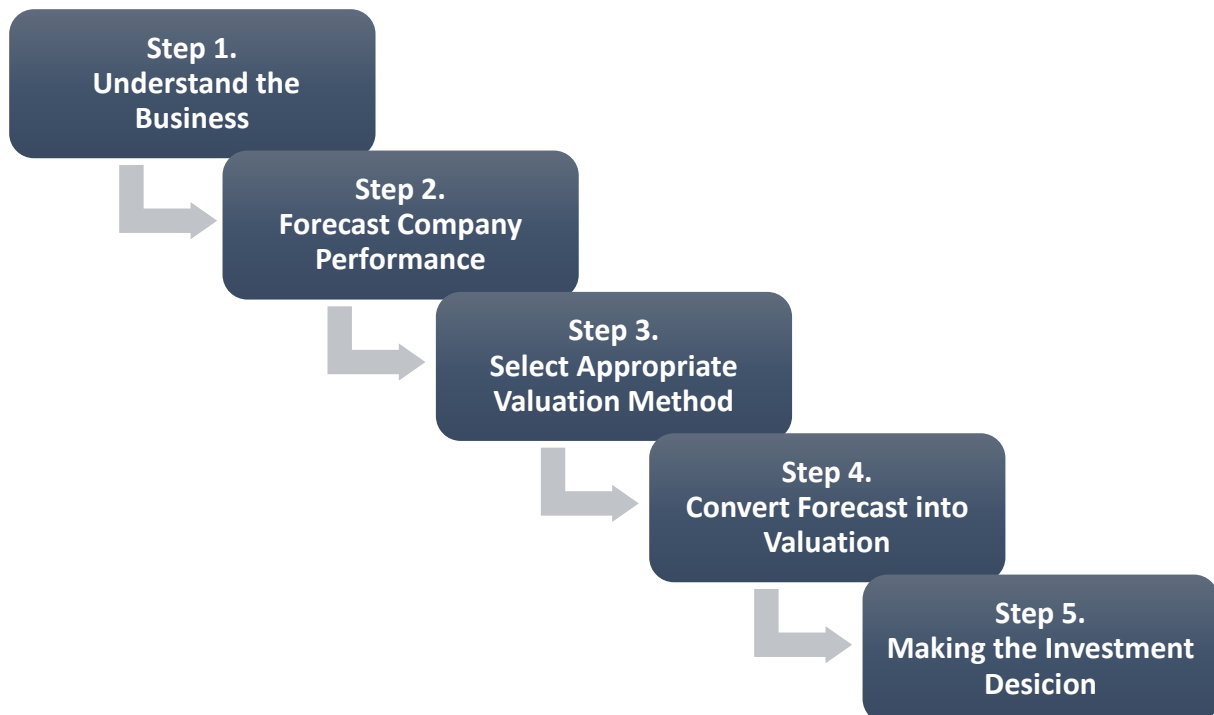


Figure 12. 5-Step process to valuation.

5.2. Discounted Cash Flow Analysis

The *Discounted Cash Flow (DCF)* analysis is a valuation method meant to find the intrinsic value of an asset by accounting for the fundamental values of an asset (Damodaran, 2012).

The model assumes that the intrinsic value of an asset is the *Present Value (PV)* of all expected future cash flows. The general formula can be stated as:

$$Present\ Value = \sum_{t=1}^{t=n} \frac{CF_t}{(1+r)^t} \quad (1)$$

Where n is the life of the asset, is the cash flow in period t , and r is the discount rate, determined by the risk associated with the future cash flows (Damodaran, 2012). The DCF model determines the value of an asset based upon the forecasted future cash flows and the time value of money, further highlighting the future values as one overall PV.

Following figure illustrates the steps to conduct a DCF-analysis, in which the figure displays a DCF-analysis utilizing the *Free Cash Flow to Firm (FCFF)*. This approach yields the implied *Enterprise Value (EV)* of the firm, and by subtracting the net debt, said approach will return the implied market value of equity. It is important to mention that the thesis' DCF-analysis will be based upon this approach.

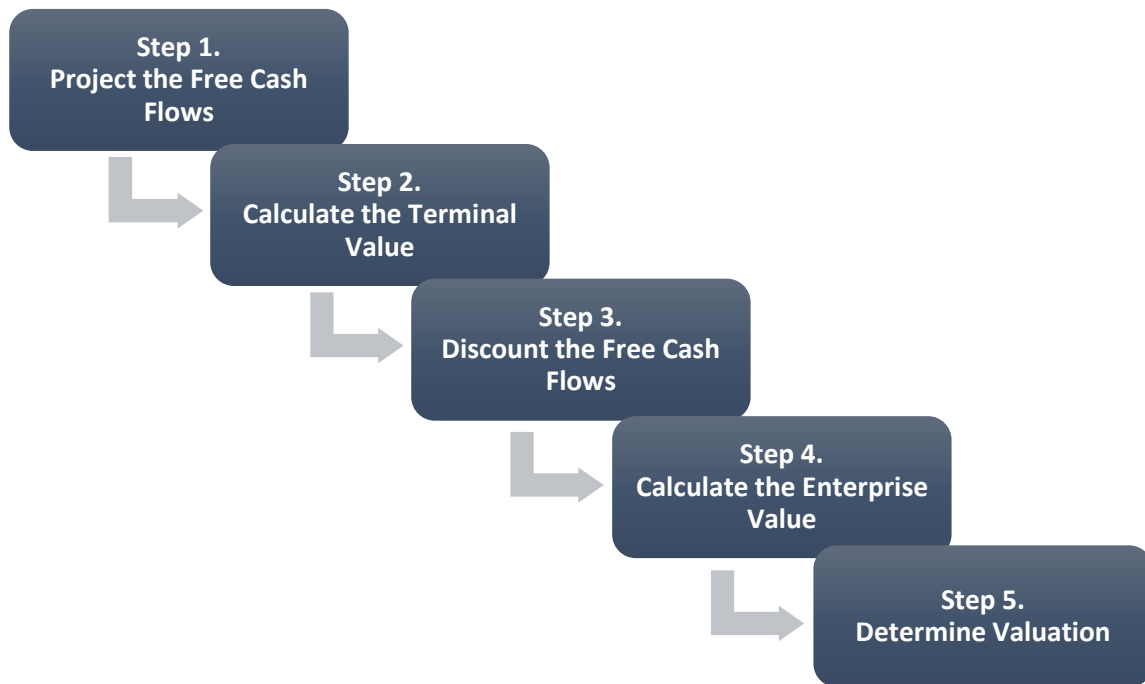


Figure 13. Discounted Cash Flow (DCF) analysis illustrated in steps. This DCF-analysis displays the calculation of value per share based upon the FCFF.

When determining the *Free Cash Flow (FCF)*, it is important to identify which part of the asset that is to be valued. This will be further reflected in what FCF utilized: FCFF or *Free Cash Flow to Equity (FCFE)*. Utilizing the FCFF will return the implied EV of the firm and the FCFE will return the implied market value of equity, discounted with their corresponding discount rates: *Weighted Average Cost of Capital (WACC)* and *cost of equity*, respectively (Damodaran, 2012).

A few assumptions are made when using the DCF model. First, is the assumption that future cash flows can be predicted with reasonable accuracy. Uncertainty increases with each year of the forecast, and there is no certainty that the cash flows are accurate. Related to this is also the capital expenditure assumptions. In addition, we assume that growth rates are perpetual, even though perpetuity is highly theoretical. This perpetual growth is assumed to gravitate towards economic growth, historically around 4% (Damodaran, 2012). As growth is a key component of terminal value, this assumption may yield inaccurate estimates for companies in high growth stages or recessive companies. The perpetual nature of the DCF-analysis also explains why a two-staged approach is necessary for conducting the analysis. The two-staged DCF accounts for the forecasted FCFs in the projected horizon and the perpetual values

beyond the forecast horizon, the *Terminal Value (TV)*. Following equation illustrates the forecasted horizon and the perpetual nature of the TV.

$$\sum CF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \dots + \frac{CF_n}{(1+r)^n} \quad (2)$$

The DCF model, when used correctly, can be a useful tool for analysts and investors. As the model is based on intrinsic value, there is no need for comparable companies when valuing the asset. The valuation method is independent from other assets in the market and benefits from the adjustments which can be taken regarding the cash flows and assumptions from year-to-year. Overall, the model is highly customizable and can be used to adjust to volatile company and market conditions, as with the effects of the pandemic.

The model does however have a few limitations and flaws. The estimates require accurate predictions, as small changes in the variables can have a big effect on the result. Furthermore, it requires positive cash flows, as is not often the case for firms in trouble, startups, or continuous cyclical assets. Thus, the model is not necessarily the best option for these scenarios. In addition, a large portion of the valuation rely on the TV, that is further affected by accurate cash flow estimates, discount rate, and growth. As this valuation method can be time consuming and complex compared to relative valuation, many investors choose to focus on comparable multiples and assets and base their valuation accordingly (Damodaran, 2012).

5.2.1. Free Cash Flow

The FCF is the amount of cash a company generates, net of taxes, after accounting for expenses related to operations and maintaining capital assets. These are usually distinguished between FCFF, cash flow available to the company's suppliers of capital, and FCFE, cash flow available to the company's common equity holders (Stowe et al., 2007). The FCF can be inserted into a firm or equity valuation framework, as it doesn't double count or omit any cash flows. Unlike EBIT or EBIDTA, FCF is an after-tax measure (Damodaran, 2012). We can define the FCFF with the following equation, further highlighting this calculation as the thesis' DCF-analysis utilizes the FCFF.

$$FCFF = EBIT(1 - Tax Rate) + Depreciation - CAPEX - Increase in NWC \quad (3)$$

Depreciation reduces the company's taxable income, and the tax liability will decrease as well. As a result of this, the company has more cash available to distribute to all providers of capital, thus an increase in FCFF. The investment in fixed capital represents the *capital expenditure (CAPEX)* necessary to maintain *Property, Plant and Equipment (PP&E)*. It represents a cash outflow when increased, and therefore leads to a decrease in FCFF. Conversely, it represents an increase to FCFF when CAPEX is reduced. The *Net Working Capital (NWC)* measures liquidity and short-term financial health and represents the difference between current assets and liabilities. Increased investments in working capital decreases FCF as it represents an outflow of cash and vice versa (Stowe et al., 2007).

5.2.2. Terminal Value

The DCF-analysis involves estimating the PV of all future cash flows of an asset or business, including projected cash flows beyond the projection period. To estimate the TV, two commonly used models is the *Gordon Growth Model (GGM)* and the *Exit Multiple* method. According to Penman (2012), the GGM assumes that cash flows will continue to grow at a constant rate into perpetuity, further calculating the TV by projecting cash flows beyond the projection period and then discounting those cash flows back to their PV using a discount rate that reflects the time value of money. Thus, the GGM is also referred to as the *Perpetuity Growth Model*. On the other hand, the exit multiple method assumes that a company's value can be estimated by applying a multiple to its earnings or cash flow in the year following the projection period. Thus, the exit multiple is more representative of what someone would be willing to pay for said company and is not discounted, as with the GGM TV. The following equation displays how to calculate the TV utilizing the GGM.

$$Gordon Growth Model = \frac{CF * (1 + g)}{r - g} \quad (4)$$

The TV is a crucial component of DCF valuation, as it accounts for a significant portion of the estimated value, particularly for companies with long projected growth periods. According

to Damodaran (2012) and Rosenbaum & Pearl (2013), accurately estimating the TV is essential to obtaining an accurate valuation of an asset or business. However, there is a great deal of uncertainty in this estimation, as it relies on projections of future cash flows and growth rates. Further reinforced by Brealey, Myers, & Allen (2017) noting estimations of the TV is subject to a high degree of uncertainty.

In addition, the choice of discount rate used to calculate the TV will have significant impact on the final valuation. According to Damodaran (2012), the discount rate reflects the riskiness of the cash flows and the investor's required rate of return and can be difficult to estimate accurately. As such, the TV is highly sensitive to changes in the discount rate, and small variations in the discount rate can lead to large changes in the estimated TV.

5.2.3. Discount Rate

The DCF-analysis requires the use of a discount rate, which is a critical input used to calculate the PV of future cash flows. The discount rate reflects the time value of money and the riskiness of the investment, and it is used to determine the amount that should be paid for a future stream of cash flows. Furthermore, the discount rate represents the required rate of return for an investor to compensate them for the time value of money and the risk associated with the asset. To compensate an investor for the time value of money, the future cash flows must be discounted back to their PV using a discount rate that reflects the cost of capital for the firm (Stowe et al., 2007).

Determining the appropriate discount rate for a DCF-analysis can be challenging, as it requires consideration of both the riskiness of the investment and the opportunity cost of capital. According to Damodaran (2012), the riskiness of the investment is typically reflected in the cost of equity, which incorporates the *risk-free rate*, the *market risk premium*, and the *company-specific risk premium*. The risk-free rate represents the return that investors can earn on a risk-free investment, such as a government bond. The market risk premium represents the additional return that investors require to invest in the stock market rather than a risk-free investment. The company-specific risk premium reflects the additional return required to compensate for the specific risks associated with investing in the company, expressed as the *beta* representative of the company. The *Capital Asset Pricing Model (CAPM)* takes these variables into account and returns the cost of equity when utilizing these metrics.

$$CAPM = r_f + \beta(r_m - r_f) \quad (5)$$

The *cost of debt* is another factor that affects the determination of the discount rate. According to Penman (2012), the cost of debt represents the interest rate that a company must pay to its lenders, and it reflects the riskiness of the company's debt. The cost of debt is typically lower than the cost of equity, as debt is considered less risky than equity. However, the cost of debt can increase if the company's credit rating declines or if interest rates rise.

The WACC is the commonly used discount rate in DCF-analyses. The WACC is calculated by applying the cost of equity and the cost of debt accordingly to their proportionate weights in the capital structure of the firm. The WACC reflects the overall cost of capital for the firm and represents the minimum rate of return required by claimholders to compensate them for investing in the company (Damodaran, 2012). Following equation displays the WACC (after-tax) calculation, further highlighting the tax benefit from financing with debt.

$$WACC = \frac{E}{E + D} * R_E + \frac{D}{D + E} * R_D * (1 - T) \quad (6)$$

5.2.4. Growth

When estimating the future cash flows and TV of an asset, a key input is the growth rate. Estimating this can be difficult, as there is no certainty that historic growth is reflective of future growth. Many valuations rely on the forecast done previously by analysts, that actively follow these assets. These estimates can vary depending on the analyst and may result in an inconsistent prediction. In addition, the accuracy of the prediction is affected by the projection horizon, as longer periods often lead to an increase in deviations. To accurately estimate the FCF of the company, we need an appropriate growth rate (Damodaran, 2012), reinforcing the crucial component that is growth.

There are several methods of calculating growth. A common method is to use *historical data* to estimate the future growth rate, in which the *Compound Annual Growth Rate (CAGR)* handles low measures of volatility and provides a long-term perspective. The CAGR can be utilized towards the metrics like revenue, earnings, dividends, to estimate a growth rate. Revenue growth tend to be more predictable than earnings growth, as accounting choices

have a smaller effect on revenue than earnings (Damodaran, 2012). CAGR is representative of the change throughout a period, in which the CAGR returns the *geometric average*. Instead of averaging past growth rate, like *arithmetic* growth rates, the geometric average takes the effects of compounding into consideration. (Damodaran, 2012). Following equation displays the calculation of the CAGR.

$$CAGR = \left(\frac{\text{Ending value}}{\text{Beginning value}} \right)^{\frac{1}{n}} - 1 \quad (7)$$

Lastly, it is important to take company size into account. An expanding small firm may experience unsustainable high growth, as it becomes increasingly more difficult to maintain this growth. As growth is carried into perpetuity, it is important not to overestimate the growth rate. A company located within an economy is not likely to exceed the GDP growth rate of said economy, or else it would exceed the GDP. It is therefore reasonable not to expect the growth rate of a company to exceed this in perpetuity (Stowe et al., 2007). Overall, both company and market conditions are variables which affect growth and need to be dealt with accordingly.

5.3. Comparable Company Analysis

A common relative valuation method is the *Comparable Company Analysis (CCA)*. This method uses the market price or EV of the asset and compares it to chosen variables, such as earnings, revenue, or book value. This ratio represents a *multiple*, which serves as the foundation behind the CCA. Furthermore, these multiples are calculated for comparable companies, further benchmarking these metrics in the analysis. Utilizing the average or median of the multiples will be representative of the industry, further allowing for estimation of both implied EV and implied market value of equity. The EV-multiples allows for calculation of the implied EV of the company and the market price-multiple allows for calculation of the implied market value of equity. Utilizing these two market-based models, both EV and market value of equity will be included, in which the corresponding valuations are connected to the corresponding multiples (Damodaran, 2012). The thesis' CCA will

benchmark the following multiples: *EV/Revenue*, *EV/EBITDA*, and *EV/EBIT* to calculate the implied EV of Pfizer and the *P/E* to directly calculate the implied market value of equity.

The CCA offers several advantages for investors and analysts. One key advantage is the ease of use compared to absolute valuation methods, which can be complex and can require significant data inputs. This makes it a more accessible method (Damodaran, 2012).

Furthermore, by comparing key financial metrics, investors can gain insight into how the market value one asset compared to the rest of the industry, possibly identifying investment opportunities (Stowe et al., 2007). Tracking these metrics over time can also give indications about how the market perceives the growth prospects in the future.

While the CCA can be a useful method for assessing value, it also has severe limitations. If the comparable companies have different accounting practices or operate in different industries, their financial metrics may not be directly comparable. Furthermore, the CCA does not count for qualitative factors that may impact the value, such as quality of management or competitive advantages (Penman, 2012). Following figure illustrates how the CCA is conducted in steps.

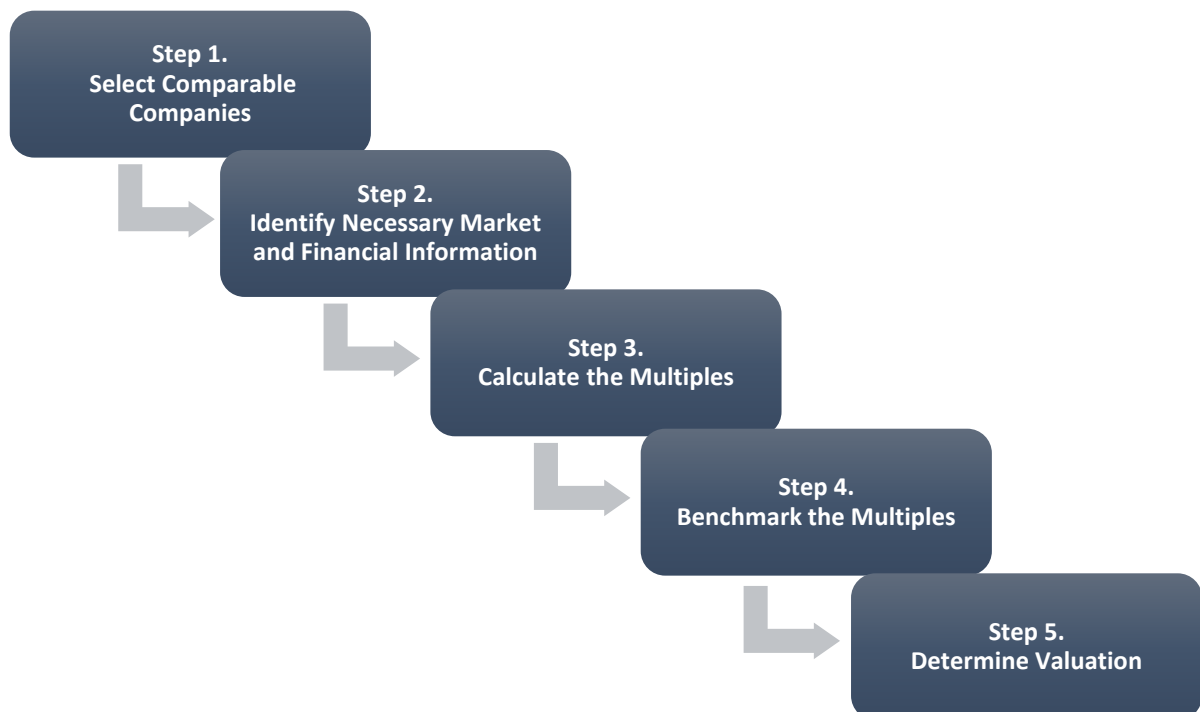


Figure 14. Comparable Company Analysis (CCA) illustrated in steps.

CCA is one of many valuation methods and may be more useful in conjunction with other valuation methods to arrive at a more accurate assessment of an asset's value (Stowe et al., 2007). Combining it with valuation methods that take future cash flows and time value of money, as with the DCF-analysis, into account might prove more insightful.

5.4. Precedent Transactions Analysis

Precedent Transactions Analysis (PTA) entails utilizing a multiples-based approach towards a valuation, as with the CCA. The premise of said multiples are previously multiples paid for comparable companies in prior transactions, in which these transactions depict historical acquisitions. PTA is best suited for companies on similar fundamental levels, as well as recent transactions since they most likely represent similar market conditions. The PTA can also include the premium paid in the acquisition as means of valuation. The idea is that the premium can be used to determine the value of the assets in consideration (Pearl & Rosenbaum, 2013), further applying this paid premium towards the market price of the company in question. Following figure illustrates the process behind conducting the PTA.

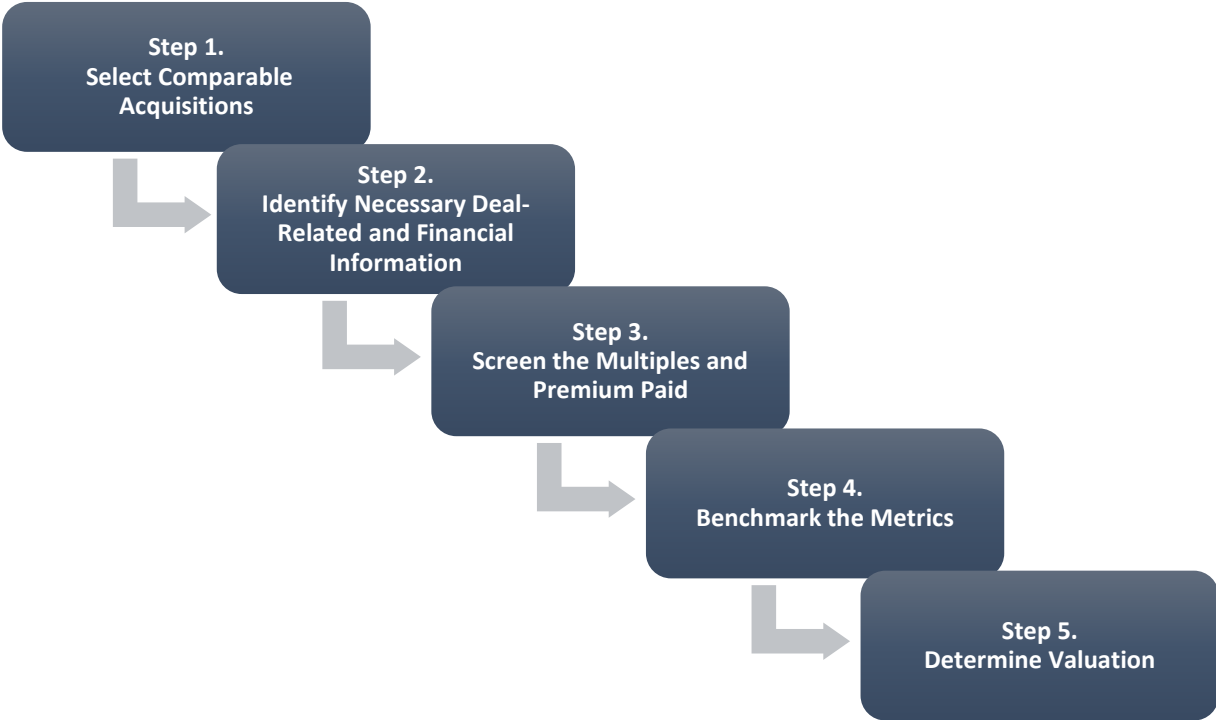


Figure 15. Precedent Transaction Analysis (PTA) illustrated in steps.

The benefit of the PTA is that it is market based, meaning that the analysis is based upon actual acquisitions multiples and premiums paid for similar companies. The analysis tends to be current, as this is a great way to capture the market conditions. However, the PTA can also be applied with historical data, at the cost of a more uncertain valuation. Lastly, the precedent-nature of the valuation does not rely on future performance (Pearl & Rosenbaum, 2013).

However, the negative aspect of the model resembles the benefit, as the PTA is market based, meaning that multiples and premiums might be skewed due to the market conditions. The transactions are historical, and dependent on the time frame, may not be reflective of current market conditions. Availability of information and existence of comparable acquisitions creates challenges regarding finding suitable and robust transactions to utilize. Lastly, no transaction is the same and the incentives behind prior acquisitions are usually company specific and not industry specific (Pearl & Rosenbaum, 2013). Overall, the PTA can be a great valuation tool to include alongside other valuation methods. However, it should not be utilized solely on its own.

6. Valuation Methodology

Following chapter shows the calculation of necessary components for each valuation method, how the analysis is conducted, and reviewing the results for each corresponding valuation method utilized. Lastly, all results are displayed and discussed in comparison to Pfizer's share price of 8th March 2023, as well as highlighting these valuations and Pfizer's 3-year share price history.

6.1. Discounted Cash Flow Analysis

The DCF-analysis was done reformulating Pfizer's financial statements combined with projecting revenue, allowing for the calculation of the FCF. This chapter highlights more aspects of the financial statements, compared to the graphic illustration at the start of the thesis. Furthermore, the appropriate discount rate and TV was calculated further allowing for calculation of the implied EV. Lastly, the net debt is subtracted and the implied market value of equity for Pfizer is divided by the shares outstanding, yielding the estimated value per share. This analysis generated 4 different estimates, as there are 2 growth rates and 2 TVs utilized.

6.1.1. Reformulated Financial Statements

To conduct the DCF-analysis, Pfizer's financial statements were gathered from the annual reports for the year 2018-2022. The statements utilized in the DCF-analysis are the following: income statements, balance sheets, and cash flow statements. Further allowing for calculation of necessary components to conduct the DCF-analysis.

Following table displays Pfizer's *Consolidated Income Statement*, based upon the time horizon from 2018-2022. The data and presentation of the statement is directly gathered from Pfizer's annual reports. The statement shows the distribution of revenues and costs among continuing and discontinued operations and disclosing the *Net Income* at the end.

Consolidated Income Statement	2018	2019	2020	2021	2022
Revenues	40 825	41 172	41 908	81 288	100 330
Costs and expenses:					
Cost of sales	8 987	8 251	8 692	30 821	34 344
Selling informational and administrative expenses	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 058	601	600	802	1 375
(Gain) on completion of Consumer Healthcare JV transaction	-	(8 086)	(6)	-	-
Other (income)/deductions—net	2 077	3 314	669	(4 878)	217
Income from continuing operations before provision for taxes on income	3 595	11 486	7 497	24 311	34 727
Provision for taxes on income	(266)	618	477	1 852	3 328
Income from continuing operations	3 861	10 868	7 020	22 459	31 399
Discontinued operations:					
Income from discontinued operations—net of tax	7 328	5 435	2 631	-	6
Gain/(loss) on sale of discontinued operations—net of tax	-	-	-	-	-
Discontinued operations—net of tax	7 328	5 435	2 631	(434)	6
Net income before allocation to noncontrolling interests	11 189	16 303	9 651	22 025	31 405
Less: Net income attributable to noncontrolling interests	36	29	36	45	35
Net income attributable to Pfizer Inc.	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

Table 4. Consolidated income statement for Pfizer displaying their performance over the last 5 years (2018-2022)

Furthermore, the consolidated income statement was reformulated to be better suited for the DCF-analysis. This was done by incorporating *Gross Profit* and isolating the costs which make up the *Operating Expense*, further allowing for calculation of the *Earnings Before Interest and Tax (EBIT)*. It is important to mention that *Restructuring charges and certain acquisition related costs* are included under *Operating Expense*, as this is a continuous measure of Pfizer's operations. This reformulation of the prior income statement is necessary due to the use of EBIT in the DCF-analysis. It also gives a different perspective of Pfizer's sources of revenues and expenses in terms of operations. Following table illustrates the *Reformulated Income Statement* for 2018-2022.

Reformulated Income Statement	2018	2019	2020	2021	2022
Revenues	40 825	41 172	41 908	81 288	100 330
Cost of sales	8 987	8 251	8 692	30 821	34 344
Gross Profit	31 838	32 921	33 216	50 467	65 986
Selling informational and administrative expenses	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 058	601	600	802	1 375
Operating Expense	26 166	26 207	25 056	31 034	31 042
Earnings Before Interest & Tax (EBIT)	5 672	6 714	8 160	19 433	34 944
Other (income)/deductions—net	2 077	3 314	669	(4 878)	217
(Gain) on completion of Consumer Healthcare JV transaction	-	(8 086)	(6)	-	-
Pre-Tax Income	3 595	11 486	7 497	24 311	34 727
Income Taxes	(266)	618	477	1 852	3 328
Income from continuing operations after Taxes	3 861	10 868	7 020	22 459	31 399
Income from Discontinued Operations - Net of Tax	7 328	5 435	2 631	(434)	6
Net income attributable to noncontrolling interests	36	29	36	45	35
Net Income	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

Table 5. Reformulated income statement for Pfizer utilized in calculating the EBIT in the FCF (2018-2022)

As with the consolidated income statement, the consolidated balance sheet is necessary to conduct the DCF-analysis. This is primarily due to the calculation of NWC as this DCF-component is based upon *Accounts receivable*, *Accounts payable*, and *Inventories*, as well as the calculation of the discount rate. Pfizer has utilized different accounting lines for relatively similar items over the years, thus the consolidated balance sheet has been altered to include these accounting items under one common accounting line. The one exception to this is the *Current deferred tax assets and other current assets* and *Other current assets*, as they are both included but adjusted for, giving the correct *Total assets*. The consolidated balance sheet has also been altered to include the *Total current assets* and *Total non-current assets* (See Appendix E3). As with the previous consolidated balance sheet regarding the assets, the liabilities have also been altered to include the *Total current liabilities* and *Total non-current liabilities* (See Appendix E4). Finally, the last component of the consolidated balance sheet is the *Equity*, displaying the source and distribution of Pfizer's equity (See Appendix E5).

With the previous tables illustrating the detailed allocation of assets, liabilities, and equity, the following table gives an overview of these accounting items in relation to each other. The table includes the current and non-current assets and liabilities, as well as equity, to display the equaling amounts of assets and liabilities and equity, with the time horizon of 2018-2022.

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Assets:					
Total current assets	49 926	32 803	35 066	59 693	51 259
Total non-current assets	109 496	134 791	119 162	121 782	145 946
Total assets	159 422	167 594	154 228	181 475	197 205
Liabilities:					
Total current liabilities	31 857	37 303	25 921	42 672	42 139
Total non-current liabilities	63 806	66 844	64 836	61 342	59 149
Total liabilities	95 663	104 147	90 757	104 014	101 288
Equity:					
Total shareholders' equity	63 759	63 447	63 471	77 461	95 917
Total liabilities and shareholders' equity	159 422	167 594	154 228	181 475	197 205

* Numbers are stated in \$ millions

Table 6. Consolidated Balance Sheet displaying assets, liabilities, and equity (2018-2022)

Lastly, the cash flow statement is used to gather necessary components of the DCF-analysis, in which these values include *Depreciation and amortization* gathered from the operating activities and the *CAPEX* from the investing activities. It is important to mention that *CAPEX*

is equal to the *Purchase of property, plant and equipment* in the investing activities, thus it is renamed as *CAPEX* throughout the thesis (See Appendix E7).

6.1.2. Projected Revenue

Pfizer stated that they expect an operational decline of 31% for 2023, based upon the revenues from 2022, mainly due to the decrease in demand for their COVID-19 portfolio (Pfizer Inc., 2022). Thus, the projected revenue for 2023 was calculated utilizing this decrease in revenue. Furthermore, the revenue for 2024 was calculated as Pfizer's 2022 revenue, excluding their COVID-19 portfolio, which in turn constituted 57% of Pfizer's revenue in 2022 (Pfizer Inc., 2022). This estimate is reinforced by IQVIA's report, further stating that the global medicine use will return to pre-pandemic levels and the demand of COVID-19 products will be close to zero (Porwal et al., 2023). From 2025 and beyond, the projected revenues have been divided up into 2 sections: IQVIA's CAGR estimate of 4.6% (Porwal et al., 2023) and Pfizer's own growth estimate of 8% (Pfizer Inc., 2022). These projected revenues can be viewed in the referenced tables in the next section, *Calculating the Free Cash Flow*. The crucial component of these projections is the impact of the pandemic. The pandemic served as a significant boost to their revenue, however, it is not appropriate to assume this growth going forward. Overall, the projections are based upon the remaining revenue left for Paxlovid and Comirnaty before returning to pre-pandemic levels of revenue, with 2 different growth estimates to accompany these revenues going forward.

6.1.3. Calculating the Free Cash Flow

Following the projected revenues are the remaining components for calculating the FCF. The following components are estimated as percentages of the projected revenue, rather than projected on their own. These percentages are based on the ratios between revenue and said components in 2022, thus contextualizing the projected values and creating a link between the components and the corresponding revenues.

The EBIT is calculated by adding the *Gross Profit* and *Operating Expense* (See Appendix E8) further utilizing the effective tax rate to calculate *Net Operating Profit After Taxes (NOPAT)*, which serves as the base for the remaining FCF-components. The *Depreciation* and *CAPEX* were gathered from the consolidated cash flow statement, further expressed as their

percentages to the corresponding revenue. The NWC for 2022 was calculated utilizing the information from the consolidated balance sheet, further calculating the change in NWC by subtracting current year's NWC from the prior year. It is important to mention that the NWC is also expressed as a percentage of the corresponding revenue. However, the change in NWC for 2023 is reliant on calculating the NWC in 2022 (See Appendix E9). As *Depreciation* is added and *CAPEX* is subtracted, note that a negative change in NWC is added to the FCF and vice versa. Thus, the negative values for change in NWC in 2023-2024 are cash inflows, further meaning that they are added back in rather than subtracted from the FCF (See Appendix E10).

6.1.4. Weighted Average Cost of Capital (WACC)

To find the appropriate discount rate for the DCF-analysis, the necessary components were gathered and calculated, further allowing for the calculation of the WACC. The market value of equity and interest-bearing debt were identified, in which the market value of equity/market cap was calculated by multiplying the shares outstanding with the current share price. The debt was calculated by adding the short-term borrowings and long-term debt, since these items are the only interest-bearing items on Pfizer's balance sheet. These values were added, and the equity and debt ratios were calculated followed by the cost of capital and effective tax rate. Finally, these components were combined to calculate the WACC, which will be presented at the end of the chapter.

The cost of debt is expressed as the *Average Effective Interest Rate* with the time horizon of 2018-2022. The *Effective Interest Rate* is calculated by dividing the *Interest Expense* over the *Total Debt*. The *Interest Expense* was found in the notes of the accounting line, *Other (income)/ deductions-net*", in the income statement. The *Total Debt* was calculated by adding up the short and long-term, interest-bearing debt, same as the debt used in the weight's calculations of the WACC, further yielding a cost of debt of 3.32% (See Appendix E11).

The cost of equity was calculated utilizing the CAPM. The *Risk-Free Rate* is expressed as the government 10-year bond (Trading Economics, 2023) and the *Market Risk Premium* is represented as the equity risk premium for the U.S. (Damodaran, 2023). As Pfizer's primary source of revenue is from the U.S. market, the corresponding risk-free rate and equity risk premium is utilized. Lastly, the *Beta* was calculated utilizing a 5-year, linear regression analysis, based upon the daily return of the Pfizer stock and the S&P-500 (See Appendix

E12). Overall, these values served as inputs to the CAPM, further resulting in a cost of equity of 7.03% (See Appendix E13).

The *Effective Tax Rate* is calculated by finding the ratio between the *Income Taxes* and the *Pre-Tax Income*, further reflecting Pfizer’s actual tax rate. Due to the expanding gap between the *Income Taxes* and the *Pre-Tax Income* since 2012, the lesser the *Effective Tax Rate* has become. Therefore, the utilized *Effective Tax Rate* is expressed as the average of the last three years, 2020-2022 (See Appendix E14).

Lastly, these values were entered into the WACC-formula and generated a WACC of 6.49%. Following table illustrates the calculation of the WACC, further highlighting the weights, cost of capital, and tax rate utilized in the calculation.

Weighted Average Cost of Capital (WACC)			
Capital		Cost of Capital	
Equity	225 474	Cost of Equity (Re)	7.03 %
Debt	35 829	Cost of Debt (Rd)	3.32 %
Value	261 303	Effective Tax Rate (T)	7.85 %
Capital Structure			
E/V		86 %	
D/V		14 %	
WACC (After-tax)		6.49 %	

* Numbers are stated in \$ millions

Table 7. Calculation of WACC, displaying all components of said calculation.

The low WACC can be explained as the *Debt-to-Value (D/V)* only amount to 14% of the capital structure and the cost of debt is low, which in turn returns the low discount rate. Overall, debt financing for Pfizer is cheap and only amounts for a small share of the capital structure, further reinforced with an *Interest Coverage Ratio* of 28.23, yielding Pfizer a synthetic AAA-rating (See Appendix E16) (Damodaran, 2000). However, the *Interest Coverage Ratio* is primarily related to the cost of debt, as it is a ratio of the ability for Pfizer to pay its debt through an EBIT-multiple, not representative of the cost of equity.

It is important to highlight the beta value of 0.59 representative of the last 3 years, as this remains a key component in the calculation of the cost of equity. In other words, the lower the beta the lesser the impact of the market risk premium, further yielding a lower cost of equity. The beta reflects the effects of the pandemic; thus it needs to be interpreted carefully and might not be the best representative beta for the long-term WACC, especially due to the volatility of Pfizer's share price over this period. However, calculating the beta using pre-pandemic market conditions is also not recommended, especially considering that Pfizer hit their all-time high in December 2021. The primary concern with the utilizing this WACC as the discount rate is that the cost of equity is calculated utilizing U.S. bonds and market premiums, as well as the market-effects of the pandemic. However, as the majority of revenue is captured in the U.S. market, this solution seems suitable for the cost of equity.

Overall, the WACC indicate that Pfizer has a low cost of financing and is appropriate as the discount rate to be utilized in the DCF-analysis. It might not be a sustainable long-term WACC, but it is still suitable for the analysis.

6.1.5. Calculating the Terminal Value

After the FCF was calculated and discounted by the WACC, the TV was the next step in the DCF-analysis. The conducted DCF-analysis utilizes 2 different TV calculated by using: the GGM and an exit multiple.

Calculating the TV using the GGM was done by using the forecasted FCF for the following year at the end of the projected horizon. This FCF was discounted by the WACC, while subtracting the growth from the WACC (See Appendix E17). The growth was based upon a 3-year average (2020-2022) growth in revenue, excluding the effects of Pfizer's COVID-19 portfolio. The exclusion of the COVID-19 portfolio is due to the abnormal growth in earnings related to these products, as well as the revenue growth not being sustainable with the decline in demand for the portfolio.

Calculating the TV using an exit multiple was done by multiplying the projected EBITDA for 2023 with the EV/EBITDA-multiple utilized in the CCA (See Appendix E18). The calculation regarding this multiple will be highlighted in the next section of the thesis, explaining the valuation methodology behind the CCA. The projected EBITDA was calculated, as the rest of the components, by utilizing the EBITDA ratio to revenue expressed as a percentage and multiplied with the corresponding projected revenue in 2023. Since the

projected EBITDA is in the current year of the valuation (2023), as well as the EV/EBITDA-multiple being a current ratio, the TV does not need to be discounted as with the GGM.

6.1.6. Conducting the Analysis

The PV of the FCF and the PV of the TV are added together to return the estimated *Enterprise Value*, the *Net Debt* is subtracted, finally resulting in the analysis' estimated *Equity Value*. The *Net Debt* is calculated by subtracting the cash and cash equivalents from the total debt, further returning the *Equity Value* on its own. The calculated *Net Debt* is gathered from the CCA; thus it will be illustrated in the corresponding section. Finally, the estimated *Equity Value* is divided by the amount of *Shares Outstanding*, returning the estimated *Value per Share*. Following table illustrates the structure of the DCF-analysis, in which the table illustrates the analysis with IQVIA's growth estimate, and a TV calculated using the GGM. Furthermore, returning a *Value per Share* of \$88.71.

	Current	Projections					
Year	2023	2024	2025	2026	2027	2028	Terminal Value
Revenues	69 228	43 142	45 127	47 202	49 374	51 645	54 021
Cost of Sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)	(18 492)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966	35 529
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)	(16 714)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987	18 815
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)	(1 478)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575	17 337
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607	2 727
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)	(1 742)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756	7 066
Change in NWC (ΔNWC)	(4 068)	(3 412)	260	272	284	297	311
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550	21 495
PV (Sum of FCF)	106 340						
WACC	6.49 %						
Growth	1.46 %						
PV (Terminal Value)	427 598						
Enterprise Value	533 938						
Net Debt	(35 413)						
Equity Value	498 525						
Shares Outstanding	5 620						
Value per Share	88.71						

* Numbers stated in \$ millions, except for Value per Share

Table 8. DCF-analysis returning an estimated Value per Share for Pfizer of \$88.71. The DCF is conducted utilizing IQVIA's growth estimate from 2025 and onwards, as well as utilizing the GGM when calculating the TV.

6.1.7. Reviewing the Results

Since both *Revenues* and *TVs* were estimated 2 different ways, the complete DCF-analysis yielded 4 estimated values per share for Pfizer. The revenues were projected from 2025 and onwards utilizing 2 different growth estimates: IQVIA's and Pfizer's own estimate. Pfizer's growth estimate is larger than IQVIA's (8% > 4.6%), further resulting in an increase of the FCF discounted and utilized in the GGM calculating the TV. This returned a greater EV compared to using IQVIA's growth estimate. This scenario returned the highest *Value per Share* for the 4 scenarios used with an estimated *Value per Share* of \$99.84 (See Appendix E20). The lowest *Value per Share* was returned by utilizing IQVIA's growth estimate in combination with calculating the TV using an exit multiple. This scenario yielded a *Value per Share* of \$75.12, the lowest *Value per Share* (See Appendix E21). As the projected EBITDA is not affected by the growth rates, these 2 *TVs* remains the same unaffected by the projected revenue from 2025 and onwards. Thus, the lower projected revenue from IQVIA's growth estimate, is what yields the lower *Value per Share* in comparison to using Pfizer's own estimate which yielded a *Value per Share* of \$75.87 (See Appendix E22). Following table displays the valuations, as well as the corresponding descriptive statistics.

Discounted Cash Flow (DCF) Analysis	
Valuation	
Gordon Growth Model:	
IQVIA	88.71
Pfizer (Estimate)	99.84
Exit Multiple:	
IQVIA	75.12
Pfizer (Estimate)	75.87
Descriptive Statistics	
Max	99.84
Percentile (75th)	91.49
Average	84.88
Median	82.29
Percentile (25th)	75.68
Min	75.12

Table 9. Estimated Values per share from the DCF-analysis and the corresponding descriptive statistics.

6.2. Comparable Company Analysis

The CCA was conducted by comparing Pfizer to their competitors, in which the competitors were gathered based on rank and size in comparison to Pfizer. Furthermore, the relevant multiples were calculated and utilized to return estimated values per share for Pfizer.

6.2.1. Collecting and Structuring Comparable Data

To conduct the CCA, five companies from the top ten pharmaceutical companies were chosen. These companies are ranked as five of the ten most valuable pharmaceutical companies throughout 2018, 2020, and 2021; in which they all operate within the *Big Pharma/ Large Pharma* sector (Torreya, 2021). Even though they all operate within the same segment, their portfolios differ from each other, further pointing out a key aspect of the CCA. However, no company is the same and said limitation is self-evident in the majority of CCAs.

The data was collected from *Yahoo Finance*, even though Yahoo Finance is not necessarily addressed as a reputable source. Due to limitations of available sources of data, Yahoo Finance served as a good substitute, even though they state that the data should only be used for informational purposes only. However, their data is collected from a variety of sources as *S&P Global Market Intelligence*, *Morningstar*, *Commodity Systems Inc.* etc. (Yahoo Finance, n.d.), which are reputable sources on their own. As the aim of thesis is not intended for trading or investing purposes, this limitation will be acknowledged but also not directly addressed as a problem for the thesis. The data was collected throughout 8 and 9 of March, thus the CCA is based upon those values, returning the estimated value per share for this period. As for the references, the year followed by a *b* represents the statistics and the *c* represents the financials.

The companies used in the CCA are the following: *AbbVie Inc.* (Yahoo Finance, 2023b, 2023c), *Roche Holding AG* (Yahoo Finance, 2023b, 2023c), *Johnson & Johnson* (Yahoo Finance, 2023b, 2023c), *Novartis AG* (Yahoo Finance, 2023b, 2023c), and *Merck & Co. Inc.* (Yahoo Finance, 2023b, 2023c). Even though all the companies operate within the Big Pharma segment, they can be further divided into their respected sectors. *Merck*, *Novartis*, and *Roche*, including Pfizer, are all ranked as the top 5 pharmaceutical companies within the oncology-sector, further specialising in the diagnosis and treatment of cancer (Torreya, 2021). Thus, they can be more relevant than the remaining companies in the CCA. However, these companies, including Pfizer, have large portfolios within almost all the different sectors.

Therefore, the most important thing when conducting the analysis is to look at size and rank in the overall pharmaceutical industry.

Furthermore, the *Market Data* and *Financials* for the companies were gathered. The *Market Data* represents the calculation of the *Equity Value* and *Enterprise Value (EV)*, in which the *Equity Value* is the *Share Price* multiplied with the *Shares Outstanding* and the *Enterprise Value (EV)* is the sum of *Equity Value* and *Total Debt* less the *Cash and Cash Equivalents*. The *Financials* displays the *Revenue*, *EBITDA*, *EBIT*, and *Net Income* for the companies, in which the *Multiples* is the ratio between these metrics and the *Enterprise Value* and the *Net Income*. Thus, further creating the ratios which will be used to determine the multiples to benchmark. Following table displays these metrics for Pfizer and the comparable companies.

Market Data						
Company	Share Price	Shares Outstanding	Equity Value	Total Debt	Cash and Cash Equivalents	Enterprise Value (EV)
Pfizer Inc.	40.12	5 620	225 474	35 829	416	260 887
Abbive Inc.	149.60	1 770	264 792	64 580	9 201	320 171
Roche Holding AG	34.99	6 390	223 586	26 700	6 850	243 436
Johnson & Johnson	151.24	2 600	393 224	40 960	14 127	420 057
Novartis AG	80.03	2 120	169 664	27 960	7 517	190 107
Merck & Co., Inc.	107.60	2 540	273 304	31 990	12 624	292 670
Financials						
Company	Revenue	EBITDA	EBIT	Net Income		
Pfizer Inc.	100 330	40 008	34 944	31 370		
Abbive Inc.	58 054	24 174	15 707	11 836		
Roche Holding AG	64 383	23 081	19 007	14 657		
Johnson & Johnson	94 943	28 971	23 703	17 941		
Novartis AG	51 828	16 389	9 208	6 955		
Merck & Co., Inc.	59 283	21 315	17 406	14 519		
Multiples						
Company	EV/Revenue	EV/EBITDA	EV/EBIT	P/E		
Pfizer Inc.	2.60	6.52	7.47	7.19		
Abbive Inc.	5.52	13.24	20.38	22.37		
Roche Holding AG	3.78	10.55	12.81	15.25		
Johnson & Johnson	4.42	14.50	17.72	21.92		
Novartis AG	3.67	11.60	20.65	24.39		
Merck & Co., Inc.	4.94	13.73	16.81	18.82		

* Numbers are stated in \$ millions, except for Share Price and Multiples

Table 10. Overview over "Market Data", "Financials", and "Multiples" utilized in the CCA for Pfizer and the comparable companies. Note, the P/E-ratio was calculated utilizing both the ratio of "Equity Value" to "Net Income", as well as "Share Price" to "EPS", in which both methods yielded the same ratios.

As displayed above, Pfizer's revenue is the highest, followed by Johnson & Johnson (J&J) and Roche. J&J and Roche both have their own COVID-19 portfolio, further explaining their high revenue as well. The gap between Pfizer's and J&J's revenues is quite small, further explained as J&J also developed their own vaccine (J&J, 2021). Roche also increased revenue for 2022 with their COVID-19 portfolio consisting of: diagnostics tests and *RoActemra* (Roche, 2023), in which *RoActemra* is used similarly as *Paxlovid*. However, it is important to

point out that RoActemra is not COVID-19 specific drug, as it is also used to treat other illnesses, on the contrary to Paxlovid which is only used to treat COVID-19 infections (Felleskatalogen, 2022). Similarly, Novartis also utilized their current portfolios towards COVID-19 use, however, Roche’s diagnostics tests were responsible for the abnormal increase in revenue (Roche, 2023).

As Pfizer’s COVID-19 portfolio returned abnormal revenues, the CCA was also conducted utilizing an estimate of Pfizer’s revenue excluding Paxlovid and Comirnaty. This is done utilizing the same values as calculated in *Projected Revenue*, in the DCF analysis. Even though J&J and Roche have COVID-19 portfolios, their financials will not be altered, thus returning the same multiples. Overall, the same multiples will be utilized but towards Pfizer’s new estimated values, returning another set of estimated values per share.

6.2.2. Choosing the Best Suited Multiples

After calculating the multiples, the next step is to choose the best suited multiples. As the multiples utilized are a representation of the collective, comparable companies, choosing the correct multiple becomes essential. Following table illustrates the descriptive statistics of the multiples calculated, in which the *Average* of the multiples were utilized. This was due to the small range of values from *Min* to *Max*, further indicating that the data does not necessarily contain any extreme outliers. The average is also the lowest multiple to be benchmarked in 3 of the 4 valuation-metrics. Thus, the average of the multiples seems suitable and representative for the data, in all 4 instances.

Descriptive Statistics (CCA)				
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25

Table 11. Descriptive statistics for the CCA, including highlighted "Average" multiples, as they are the ones utilized in the analysis.

6.2.3. Conducting the Analysis

With the best suited multiples selected, the rest of the analysis can be conducted. It is important to mention that the *Implied Market Value* is the implied market value of equity. Utilizing the EV-metrics, we can calculate their corresponding *Implied Enterprise Value*, in which we further subtract the *Net Debt*. This returns the *Implied Market Value*, which then is divided by the *Shares Outstanding*, finally yielding the *Value per Share*. As the P/E-multiple is an equity market model, the *Implied Market Value* is directly calculated, negating the effects of debt. Following table illustrates the CCA and the estimated *Value per Share* for each of the models utilized.

Company	Financials			
	Revenue	EBITDA	EBIT	Net Income
Pfizer Inc.	100 330	40 008	34 944	31 370
Descriptive Statistics	Multiples			
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25
Valuation				
Implied Enterprise Value	447 979	509 070	617 625	
Net Debt	35 413	35 413	35 413	
Implied Market Value	412 566	473 657	582 212	644 731
Shares Outstanding	5 620	5 620	5 620	5 620
Value per Share	73.41	84.28	103.60	114.72

* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

Table 12. CCA with 4 different values per share with their corresponding multiples.

As mentioned earlier, Pfizer’s COVID-19 portfolio returned abnormal earnings and the CCA will also be conducted excluding these effects. Following table displays the CCA, with the same multiples, applied to Pfizer’s new estimated financials.

Financials				
Company	Revenue	EBITDA	EBIT	Net Income
Pfizer Inc. (excl. Paxlovid & Comirnaty)	43 142	17 203	15 026	13 489
Multiples				
Descriptive Statistics	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25
Valuation				
Implied Enterprise Value	192 631	218 901	265 579	
Net Debt	35 413	35 413	35 413	
Implied Market Value	157 218	183 488	230 166	277 235
Shares Outstanding	5 620	5 620	5 620	5 620
Value per Share	27.97	32.65	40.95	49.33

* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

Table 13. Alternative CCA with new estimated "Financials" for Pfizer, excluding Paxlovid and Comirnaty.

6.2.4. Reviewing the Results

The original CCA returns estimated values per share within the \$73-114 range, further showcasing a large spread in estimated values between utilizing the different valuation metrics. The highest value per share was estimated utilizing the equity market-based model, *P/E*-multiple, with an estimated value per share of \$114.72. The lowest value per share was estimated benchmarking the *EV/Revenue*-multiple, further returning an estimated value per share of \$73.41. As the *P/E*-multiple is an equity market-based model, the high value per share indicates that the market has high expectations of the future earnings of the pharmaceutical industry, including Pfizer in this statement.

The alternative CCA, excluding the effects of Paxlovid and Comirnaty, returned lower estimated values per share. This is to be expected, as the financials decrease roughly 57% due to the exclusion of said products. Utilizing the same multiples, the alternative CCA returned estimates values per share within the \$27-49 range, which have a lesser spread compared to the original CCA. The lowest value per share estimated was naturally from the same valuation metric as prior, *EV/Revenue*-multiple, and the highest estimated value per share was from the *P/E*-multiple. It is important to mention that the alternative CCA has the only valuation range,

which Pfizer’s current share price of \$40.12 (8th March) is within. However, this will be discussed in further detail later in the *Overview of Valuations*. The following table displays the estimated value per share for both CCAs, as well as their corresponding descriptive statistics.

Comparable Company Analysis (CCA)		
Valuation	Original	Excluding Paxlovid & Comirnaty
EV/Revenue	73.41	27.97
EV/EBITDA	84.28	32.65
EV/EBIT	103.60	40.95
P/E	114.72	49.33
Descriptive Statistics		
Max	114.72	49.33
Percentile (75th)	106.38	43.05
Average	94.00	37.73
Median	93.94	36.80
Percentile (25th)	81.56	31.48
Min	73.41	27.97

Table 14. Overview over estimated value per share for both CCAs, as well as their corresponding descriptive statistics.

6.3. Precedent Transactions Analysis

The first step in conducting the PTA is to select the comparable acquisitions. The PTA is based upon different premium statistics and comparable multiples from large, historical acquisitions in the pharmaceutical industry. Furthermore, benchmarking these metrics to yield estimated values per share for Pfizer.

6.3.1. Historical Premium Paid

The historical premium paid for pharmaceutical acquisitions were gathered utilizing the 2022 Biopharma M&A report from *HBM Partners*. This report contains data regarding deals from 2005-2022, in which these deals are acquisitions. The deals are further detailed through variables as *Total Deal Value (TDV)*, *Private/ public*, *Region*, *Premium*, *Buyer Type* etc. (Geilinger et al., 2023). Further, the data was transformed to only include the U.S. region and the buyer type *Large Pharma (LP)*, as the U.S. is responsible for the majority of the pharmaceutical market and Pfizer is a large company, thus classifying it within the LP-sector. It is important to mention that *Big Pharma* and LP only differ in terms, thus making them representative of the same sector within the pharmaceutical industry.

Furthermore, this dataset was divided into three segments: *Complete Dataset*, *Total Deal Value (TDV) > 10 000*, and *Total Deal Value (TDV) < 10 000*. This alteration was done to highlight the different premiums paid in context of the TDV, thus generating three estimates applicable for the valuation. Following table displays the descriptive statistics for the premium paid regarding the three segments. The data highlighted, *Median*, is the metric benchmarked to determine Pfizer's value per share.

Descriptive Statistics (PTA)					
Complete Dataset		Total Deal Value (TDV) > 10 000		Total Deal Value (TDV) < 10 000	
Max	500 %	Max	118 %	Max	500 %
Percentile (75th)	90 %	Percentile (75th)	61 %	Percentile (75th)	100 %
Average	76 %	Average	48 %	Average	84 %
Median	55 %	Median	45 %	Median	66 %
Percentile (25th)	39 %	Percentile (25th)	31 %	Percentile (25th)	42 %
Min	2 %	Min	7 %	Min	2 %

Table 15. Summary statistics premium paid within the three segments: Complete Dataset, Total Deal Value (TDV) > 10 000, and Total Deal Value (TDV) < 10 000.

The reasoning behind utilizing different intervals of the TDV was based on generating three distinct estimates. Furthermore, the estimates were divided into TDV-values greater and lesser than 10 000, as well as the total data series of TDV. Following table displays the descriptive statistics of the TDV in the dataset. The *Max* and *Min* value of the TDV is \$ 80 000 and \$27 million, respectively, which symbolizes a huge spread in the cost of pharmaceutical acquisitions. Thus, utilizing 3 different scenarios reinforces the credibility behind the valuation estimates.

Descriptive Statistics (PTA)	
Total Deal Value (TDV)	
Max	80 000
Percentile (75th)	8 400
Average	8 779
Median	3 500
Percentile (25th)	1 350
Min	27

** Numbers are stated in \$ millions*

Table 16. Distribution and summary statistics of Total Deal Value (TDV) in dataset utilized to calculate historical premium paid.

6.3.2. Acquisition Multiples

The acquisition of Wyeth conducted by Pfizer is one of the largest pharmaceutical acquisitions of all time. The cash-and-stock transactions were valued at \$50.19 per share, resulting in a TDV of \$68 billion. The acquisition took place in 2009 and was incentivized by a cost-saving strategy of \$4 billion annually (Pfizer Inc., 2009). The acquisition documents/*Form S-4* posted by the *United States Security and Exchange Commission (SEC)* depicts the relevant acquisition-multiples of said acquisition, presented through a *fairness opinion* by *Evercore*. These implied transaction multiples were calculated using 15 historical acquisition transactions in the pharmaceutical industry (SEC, 2009). Thus, the same multiples are applied for this thesis' PTA. Following table displays the relevant acquisition multiples used to perform the PTA, in which the *Median* is the benchmarked multiple.

Implied Pharmaceutical Transaction Multiples				
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
High	12.3	34.1	62.5	51.4
Average	5.4	19.4	24.9	31.2
Median	4.7	18.2	20.2	28.4
Low	1.5	10.6	10.3	13.7

Table 17. Implied transaction multiples for precedent pharmaceuticals/ biotechnology M&A transactions. The table displays the ratios with Enterprise Value (EV) and price (P) in nominator compared to the stated metrics.

6.3.3. Conducting the Analysis

Utilizing the historical premium paid entails adding the median for premium paid towards Pfizer's current share price \$40.12 (8th March). This will, in all instances, increase Pfizer's estimated value per share, based on what has previously been paid for other pharmaceutical companies, in the context of an acquisition. This is directly calculated and will, thus, be presented later in *Reviewing the Results*.

Benchmarking the multiples is done identical to the CCA, also utilizing the same valuation-metrics to calculate the estimated values per share. Following table displays the PTA utilizing the median of the transaction multiples.

Company	Financials				
	Revenue	EBITDA	EBIT	Net Income	
Pfizer Inc.	100 330	40 008	34 944	31 370	
Descriptive Statistics	Transaction Multiples				
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E	
	Max	12.3	34.1	62.5	51.4
	Average	5.4	19.4	24.9	31.2
	Median	4.7	18.2	20.2	28.4
Min	1.5	10.6	10.3	13.7	
Valuation					
Implied Enterprise Value	471 551	728 146	705 869		
Net Debt	35 413	35 413	35 413		
Implied Market Value	436 138	692 733	670 456	890 908	
Shares Outstanding	5 620	5 620	5 620	5 620	
Value per Share	77.60	123.26	119.30	158.52	

* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

Table 18. PTA utilizing the median, transaction multiples to calculate the estimated value per shares.

6.3.4. Reviewing the Results

Utilizing the historical premium paid, the PTA estimated values per share within the range of roughly \$57-62. The lowest estimated value per share is from TDV's over 10 thousand,

indicating that the bigger the deal, the lesser the premium, as these companies most likely were big competitors within the market. As the premiums benchmarked were all positive, the estimated value per share can only increase from the current share price. This is a great problem behind utilizing the historical premium paid, as all acquisitions will pay a premium, further indicating that all valuations should be more than the current share price. However, in this case the historical premium paid is spread out over roughly 17 years' worth of pharmaceutical acquisitions. The pharmaceutical industry has been growing at a constant rate, so this is still not the best indicator of estimated value per share, but it does in fact take a timeframe into consideration.

Utilizing the transaction multiples, the PTA estimated values per share within the range of \$77-158. This spread is mainly due to an almost similar EV/Revenue-multiple to the CCA and a higher P/E-multiple. These multiples are not reflective of the current market conditions in comparison to the CCA, which accounts for current available data. Most surprisingly is that the transaction multiples are higher than the current multiples, however the pharmaceutical industry has more than doubled in value since these market conditions (2009). Overall, the PTA gives a great perspective of the current industry by utilizing prior market conditions, but the results should be interpreted carefully.

Following table displays the results and descriptive statistics from the PTA: *Transaction Multiples* and *Historical Premium Paid*, with the P/E-multiple returning the highest estimated value per share and the premium from TDV more than 10 thousand returning the lowest.

Precedent Transaction Analysis (PTA)		
Valuation	Transaction Multiples	Historical Premium Paid
Transaction Multiples:		
EV/Revenue	77.60	
EV/EBITDA	123.26	
EV/EBIT	119.30	
P/E	158.52	
Historical Premium Paid:		
Complete Dataset		62.19
Total Deal Value (TDV) > 10 000		57.97
Total Deal Value (TDV) < 10 000		66.60
Descriptive Statistics		
Max	158.52	66.60
Percentile (75th)	132.08	64.39
Average	119.67	62.25
Median	121.28	62.19
Percentile (25th)	108.87	60.08
Min	77.60	57.97

Table 19. Overview over estimated values per share and the corresponding descriptive statistics for the 2 PTAs.

6.4. Overview of Valuations

Following figure illustrates the relationship between the valuation results and Pfizer's share price as of 8th March, in which the *boxes* are the range between the min and max value for each valuation method. All valuation methods returned higher estimated values per share than Pfizer's share price, except when conducting the CCA excluding the effects of their COVID-19 portfolio. The closest of these values is returned utilizing the EV/EBIT-multiple, which yielded a value per share of \$40.32, only cents away from Pfizer's share price at \$40.12. One way to interpret these values is that the market perceives Pfizer's COVID-19 revenue hiatus to be close to gone or zero, otherwise it can be perceived as expected decrease in their other portfolios. However, the other valuations return higher estimated value per shares, further indicating that Pfizer's share price is undervalued by the market.

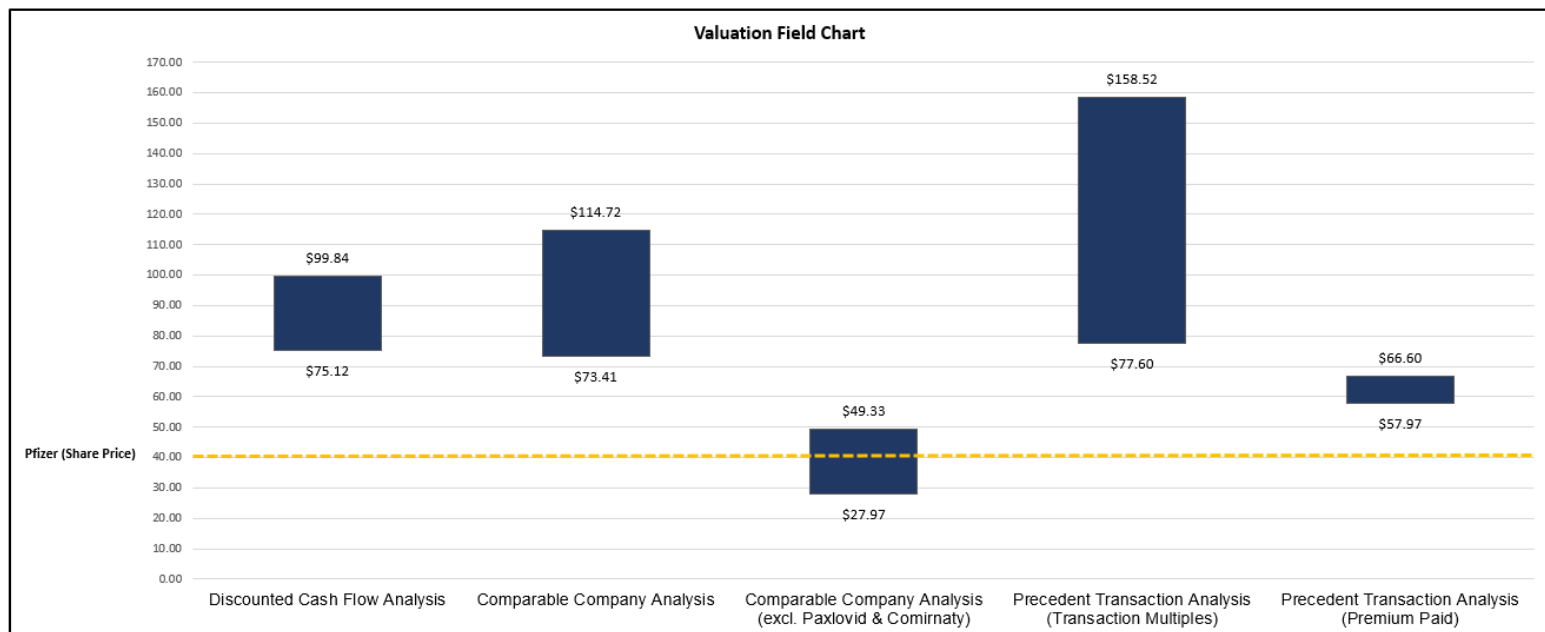


Figure 16. Valuation field chart illustrating the results from the valuation methods in comparison to Pfizer's share price (8th March).

As the current section entails the results in comparison to Pfizer's share price on 8th March, it can be beneficial to also look at the valuations in comparison to an expanded timeframe. Reviewing the results with an expanded timeframe will help eliminate any confusion around short-term, volatility which might have occurred to Pfizer's share price around 8th March. This volatility can either inflate or deflate Pfizer's share price for a short amount of time, thus including a short timeframe will justify these potential periods. Following figure illustrates the

median of the estimated values per share for each corresponding valuation method, further illustrated alongside Pfizer’s 3-year share price history, expressed as the adjusted close price. As proven by the valuation field chart, all estimated values per share are above Pfizer’s share prices, except for the CCA excluding Paxlovid and Comirnaty. The graph shows that Pfizer’s share price has never been above the estimated valuations, which can be combined with the valuation field chart, to reinforce the suggestion that Pfizer’s share price is undervalued by the market. That last statement is primarily applicable to the ranges of Pfizer’s share price throughout March-May 2023, as this was the time the valuations were conducted and are representative of. It is also important to mention that this period includes Pfizer’s all-time highest adjusted close price in December 2021 of \$58.78, further indicating that Pfizer is worth more than ever according to the valuations.

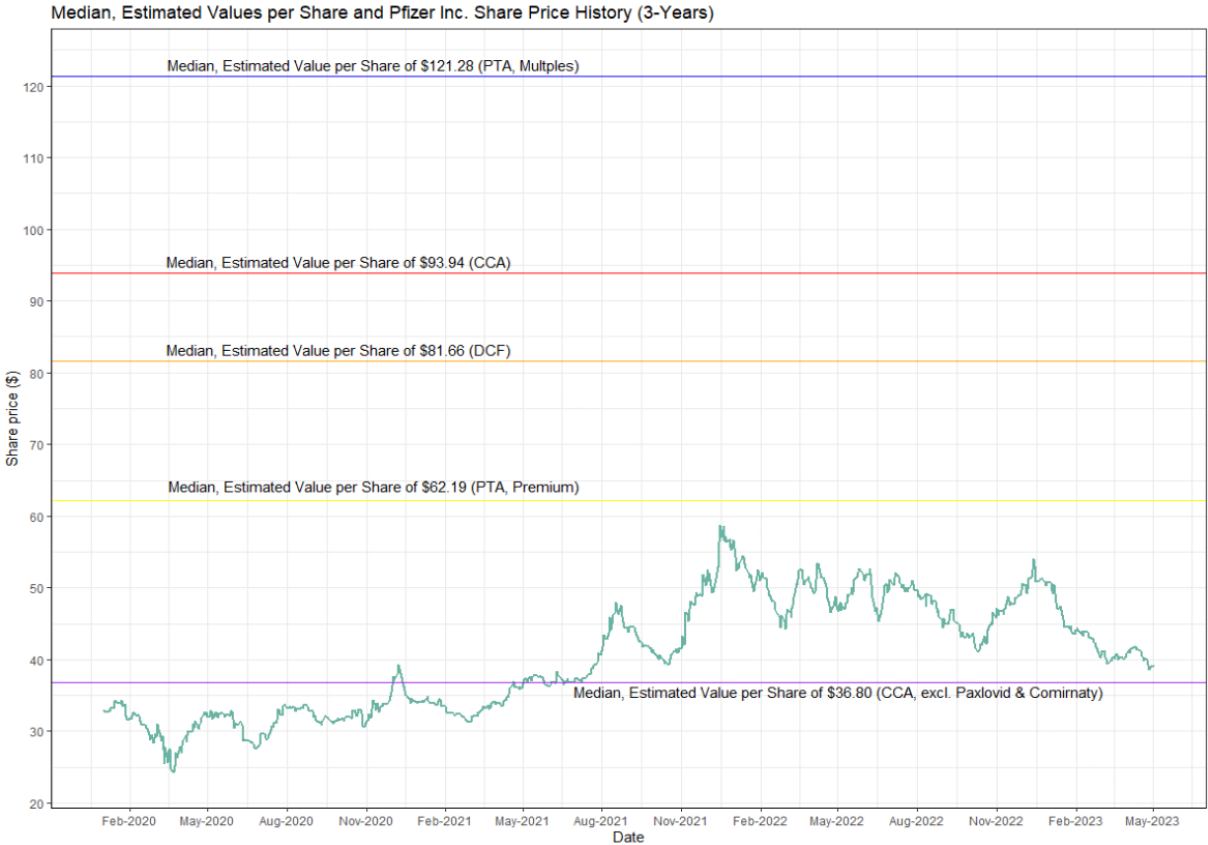


Figure 17. Overview of the median estimated value per shares of corresponding valuation methods and Pfizer's 3-year share price history. The share prices are from January 2020 to May 2023.

7. Discussion

Following chapter will highlight the key aspects of the different analyses, further discussing the pros and cons related to each of the valuation methods. The discussion will also aid in determining one valuation model most appropriate for the overall thesis, further reinforcing the choice of one estimated value per share to be representative for the thesis.

7.1. Discounted Cash Flow Analysis

As with all DCF analyses, the estimated cash flows are the most crucial components. The estimated cash flows included projected revenue with the remaining components expressed as historical percentages of the revenue. This can create a big uncertainty, as every component in calculating the FCF is based upon the projected revenue. However, this creates a connection between the estimates since they are a function of the revenue and not projected by themselves. The most challenging aspect of the analyses was to forecast the appropriate revenue fitting of Pfizer's COVID-19 portfolio. The revenue was forecasted according to the expected demand of the portfolio, afterwards using a constant growth rate for further projections as of 2024. The growth estimate from IQVIA seems more suitable as it is not influenced by bias, which can be the case for Pfizer's own growth estimate. This approach to handling the effects of the pandemic seems suitable, and is a reasonable way to project revenue, without overestimating Pfizer's future revenues.

The WACC is also subject for discussion with a focus on the cost of equity. The metrics utilized in the CAPM were solely from the U.S. market, due to the majority of revenues being from said market. This means that the cost of equity in the WACC is only representative of the U.S. market and not the remaining markets from which Pfizer sources their revenue. However, the effects on utilizing other market metrics for the CAPM would be miniscule and the best option is still to use the metrics from the U.S. market due to the revenue-majority.

The next component of the DCF-analysis to be discussed is the TV. As 2 different models were utilized to calculate the TV, the models have their distinctive features. The use of the GGM presupposes that the FCF will grow in perpetuity, as well as the WACC remaining constant. Overall, this model is applicable for stable and continuous firms which operate upon a strong foundation. The TV, calculated as an exit multiple, is representative of what someone would pay for the company. Thus, this TV is more suitable for companies which have a limited *life-expectancy* or are subject to M&As, as the TV does not account for operations

necessarily being continuous. With Pfizer's current market position and no significant signs of threats to their businesses, the GGM seems more suitable than the exit multiple.

Overall, the DCF-analysis is the best option for dealing with volatile revenues due to the customizable nature of the model. The DCF-analysis is the only model in the thesis which can circumvent the volatile revenues connected to the COVID-19 portfolio and still generate appropriate cash flows beyond this point. As the CCA and PTA are based upon their corresponding market conditions, the DCF-analysis is able to represent market conditions from year-to-year making it the best suited valuation model for the valuation of Pfizer Inc.

7.2. Comparable Company Analysis

Even when utilizing the recent financial metrics for Pfizer, and the comparable companies, the valuation will still not completely represent the current conditions. One running theme throughout the thesis is the abnormally high financials for Pfizer in 2022, significantly higher than most of the comparable companies. Benchmarking the multiples with these values generates valuations ranging from 2-3 times the current share price, further indicating that the Pfizer stock is severely undervalued in the current market. However, utilizing the financials, excluding Paxlovid and Comirnaty, the valuation-range drops severely, and Pfizer's share price is actually within this range of the current price. As Pfizer have stated that their COVID-19 products will decline in revenue, as well as the pandemic coming to an end in general, the market might have valued Pfizer accordingly.

The comparable companies, on which the analysis is based upon, were gathered from Torrey's report based upon global rank and all categorized within the LP segment. Even though Pfizer had the highest revenue, it was still the penultimate regarding EV, with J&J having the largest EV and near identical revenue, separated by roughly 6 million. J&J also generated revenue from their COVID-19 vaccine, further explaining the close gap in revenues compared to Pfizer. Roche also generated abnormal revenues from their COVID-19 portfolio but not to the extent of Pfizer and J&J. Except for Pfizer and J&J, the other companies resemble each other on a more level playing field. This means the calculated multiples from these companies will be higher than normal, as they are based upon non-sustainable metrics, indirectly increasing the valuation for Pfizer Inc. However, this is still appropriate as the CCA is representative of current market conditions.

The valuations were calculated by benchmarking the average of the calculated multipliers. The average was utilized as the distribution of the values indicated no extreme outliers. Thus, the average represents the dataset to a greater extent than the median. The average was also lower than the median, further incentivizing the use of the average to not create a higher estimation bias. It is also important to mention that the P/E-ratio is a market-based model, negating the effects of implied EV and net debt. Therefore, this market-based model directly calculates the implied market value and is also the highest ratio utilized. Furthermore, this model does not account for the complete capital structure and only the *Net Income*, not necessarily the operations, as with the EV/EBITDA.

Overall, the CCA is a good second option to be used in conjunction with the DCF-analysis. The CCA allows for valuation of Pfizer utilizing the current market conditions. However, it does not deal with Pfizer's COVID-19 portfolio to the extent that the DCF-analysis is able to. Furthermore, the DCF-analysis remains the better choice of the 2 valuation methods.

7.3. Precedent Transaction Analysis

The PTA is the least commonly applied valuation method, due to the current market and company conditions in play at the transaction period. The acquisition multiples, in which the Pfizer valuation was based upon, are from 2009 and therefore not representative of the current market conditions. As highlighted previously in the thesis, the global aggregate value and global revenues of the pharmaceutical industry have been growing at a significant pace over the years. From 2009, both these metrics have doubled, further indicating that transaction multiples are not the most suitable options when benchmarking multiples. However, the transaction multiples are higher than the ones calculated in the CCA. This should be acknowledged and is subject for research but will not be discussed further in the thesis.

The pharmaceutical industry has grown substantially since 2009 and it is important to contextualize the transaction multiples, as they will change depending on the market conditions. Even though the transaction multiples applied were from Evercore's fairness opinion, depicting 15 historical acquisitions in the pharmaceutical industry, it is not reasonable to fully trust these results. It is also important to highlight the use of the median, instead of median as in the CCA, since the maximal and minimal values of the multiples indicate a wide array of values.

The estimated premium paid was based upon deals from 2005-2022. As the data set did not specify the time of when these transactions took place, the estimated historical premiums paid are representative of this overall period and not current market conditions. Furthermore, the deals were categorized into TDV generating 3 estimates of premiums paid, which highlights historical premium paid accordingly to the size of the acquisitions. For this valuation, the TDVs over 10 000 million would be the most relevant, as a potential acquisition of Pfizer would have been one of the largest pharmaceutical acquisitions of all time. Furthermore, all the estimated historical premiums paid were applied, and the TDVs greater than 10 thousand yielded the lowest implied value per share. Further indicating that smaller pharmaceutical acquisitions, as indicated by a lower TDV, has a greater premium paid in comparison to bigger pharmaceutical acquisitions. The historical premiums paid are heavily motivated by innovation, economics of scale, and portfolio realignment, presented earlier. Thus, the implied values per share needs to be interpreted carefully and in conjunction with other valuations.

Overall, the PTA is not a suitable valuation method to be utilized alone. Basing the valuation on prior market conditions and company-specific incentives is not appropriate. However, the PTA is based upon real transactions which the others are not, further allowing for a different perspective on the industry. Thus, the PTA would be more applicable if the data was from current market conditions.

8. Conclusion

All valuation models returned values per share over Pfizer's share price, further indicating that Pfizer is undervalued in the current market. These high valuations are heavily fueled by the returns from Pfizer's COVID-19 portfolio, as they have brought abnormal, non-sustainable growth in revenues. The CCA, excluding the revenues from the COVID-19 portfolio, returns estimated values per share within the range of the share price, contrary to the other valuation models returning roughly 2-4 times higher estimated values per share. Taking this into consideration the complete valuation range, including all models, returns an interval of estimated values per share of roughly \$28-158. The CCA, excluding the COVID-19 portfolio, does not account for the remaining revenues from said portfolio. Removing these undisputable revenues is not appropriate when conducting the valuation, even if they are abnormal revenues, they are still revenues. Taking this into consideration, the new valuation range is roughly \$58-158.

The aim of the thesis was to find one suitable valuation, further choosing said valuation from the range of estimated values per share. The DCF-analysis has an advantage over the other valuation methods, as it allows for projection of revenues for each year of the forecast horizon. This allowed for a suitable approach to the abnormal revenue from the COVID-19 portfolio. In other words, the DCF analyses handles the decline of demand for the portfolio further returning to estimated, pre-pandemic revenue levels. The other relative valuation models work from the current data available at that point in time, only representing a snapshot of the corresponding conditions, in contrary to the DCF-analysis. Thus, the CCA and PTA are excluded as for one overall valuation for Pfizer Inc, further limiting the valuation range.

The remaining DCF analyses yielded 4 estimated values per share ranging from roughly \$75-100. To limit this valuation range further, it is best to look at the scenarios which utilize the most reasonable assumptions. IQVIA's growth estimate is representative of the pharmaceutical industry as a whole and not necessarily subject to bias, as with Pfizer's own growth estimate. In other words, representing Pfizer's projected revenue as a reflection of the future pharmaceutical industry seems more suitable, as well as limiting the over-projection of revenues. The next step was to choose the best suited TV for Pfizer. As Pfizer is dominant within the pharmaceutical industry, it would be self-evident that the TV calculated using the GGM, is the best option. As the exit multiple is representative of what Pfizer could be bought for in a potential sale, it is not the best suited TV to use as Pfizer will most likely never fall within this situation due to their size and market position.

Overall, the valuation, which is most concise with the thesis, is the estimated value per share of \$88.71, calculated utilizing IQVIA's growth estimate and the GGM for the TV. This intrinsic valuation indicate that Pfizer is currently undervalued in the market, further suggesting that Pfizer Inc. is more valuable than their all-time high in December 2021.

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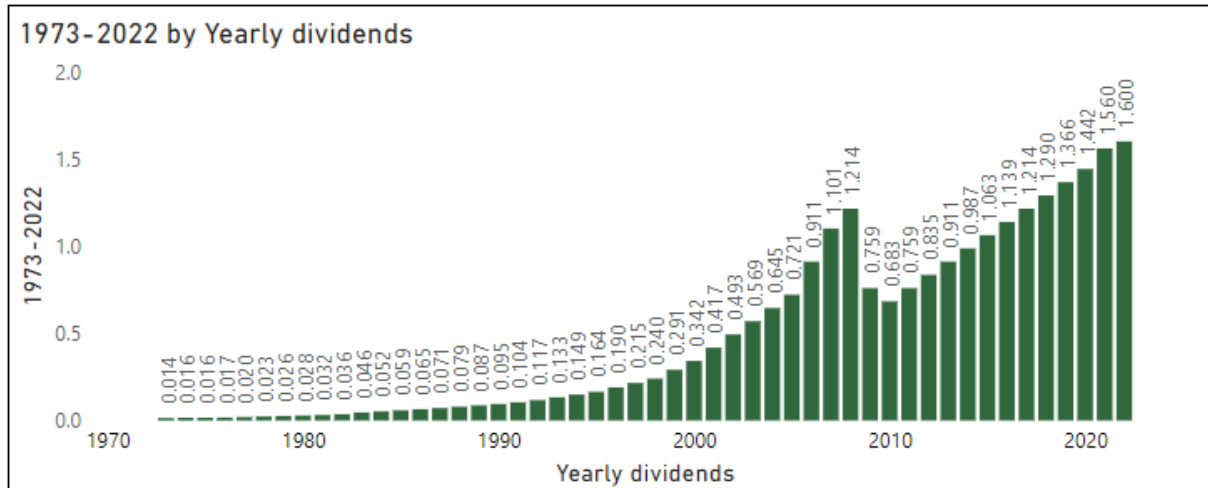
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Appendices

Appendix A: Pfizer and the Pharmaceutical Industry

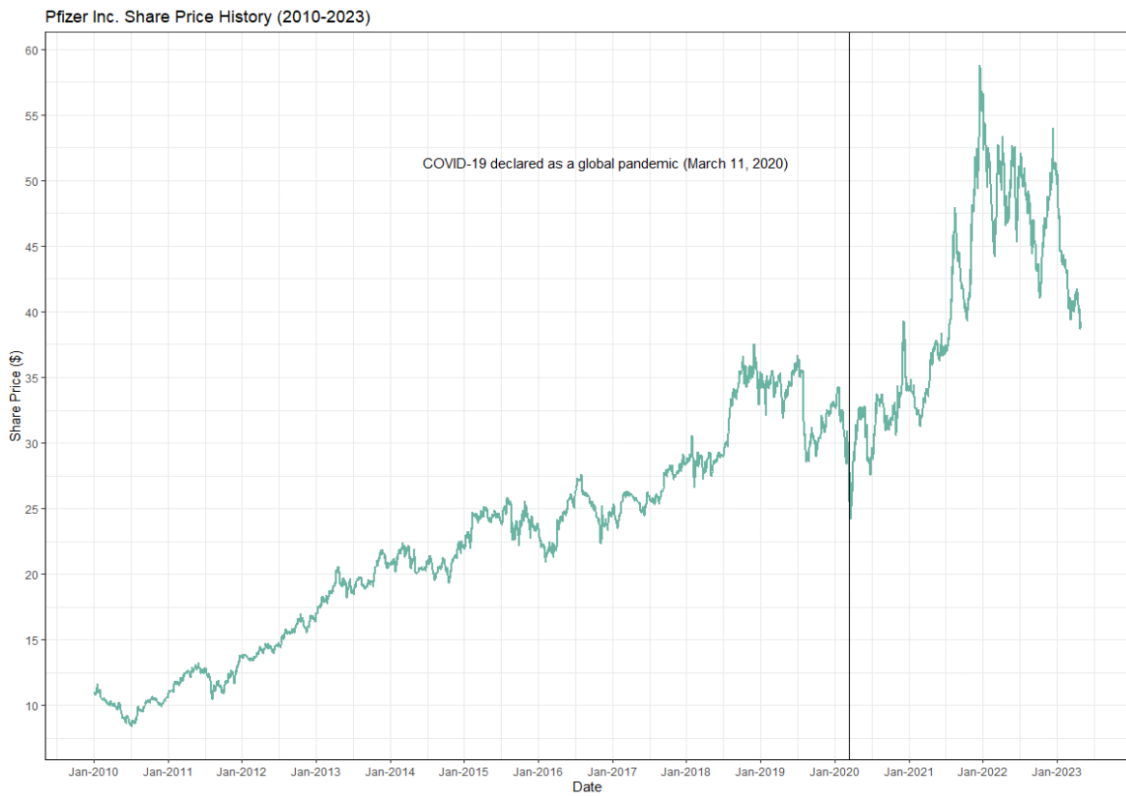
A1: Accumulated dividends paid distributed for each year (1973-2022)



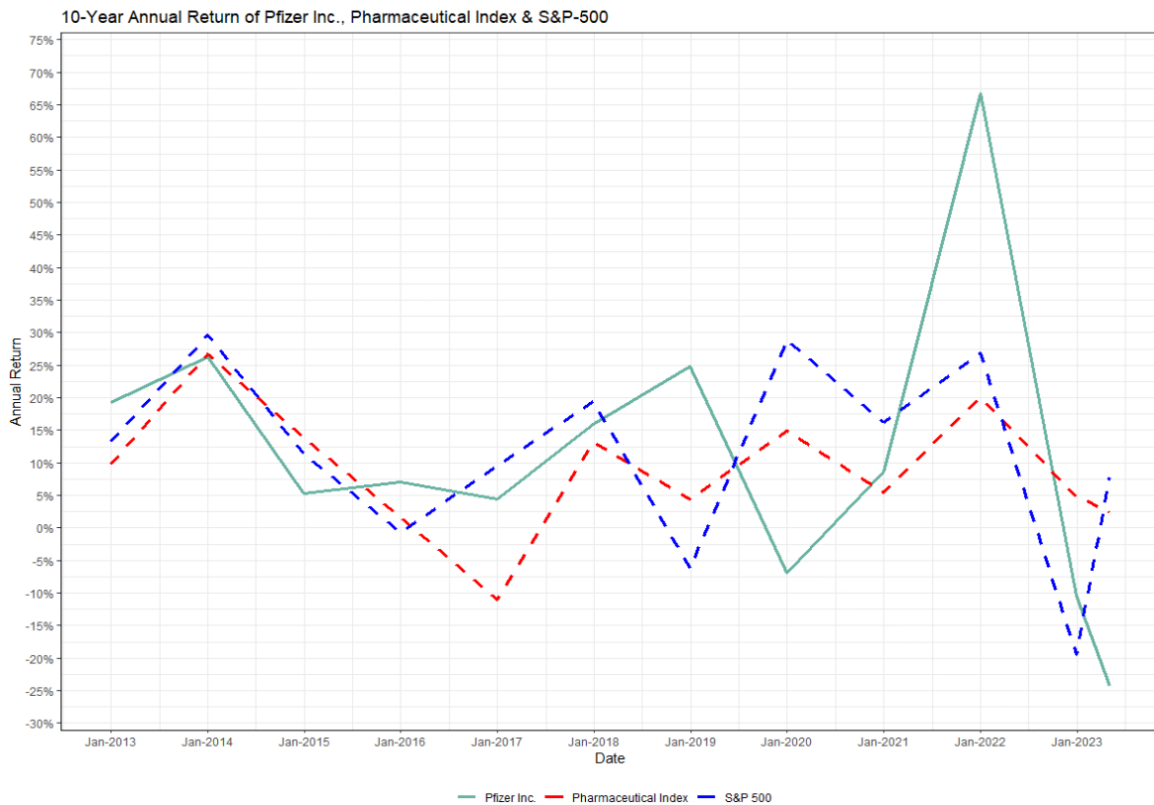
A2: Descriptive statistics for Pfizer's complete share price history expressed as the adjusted close price

Descriptive Statistics for Pfizer Inc. (Complete Share Price History)					
Statistic	N	Mean	St. Dev.	Min	Max
Adjusted Share Price	12,842	10.825	12.121	0.096	58.784

A3: Pfizer's share price history expressed as the adjusted close price (2010-2023)



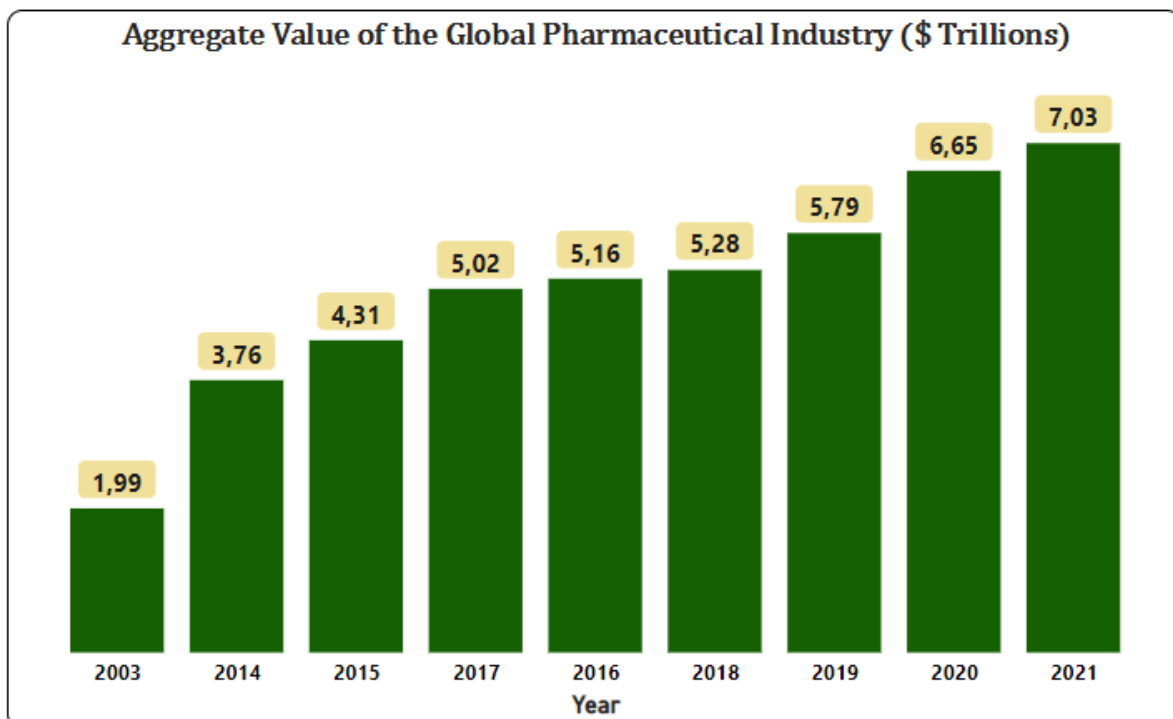
A4: 10-year annual return for Pfizer, the NYSE Arca pharmaceutical index, and the S&P-500



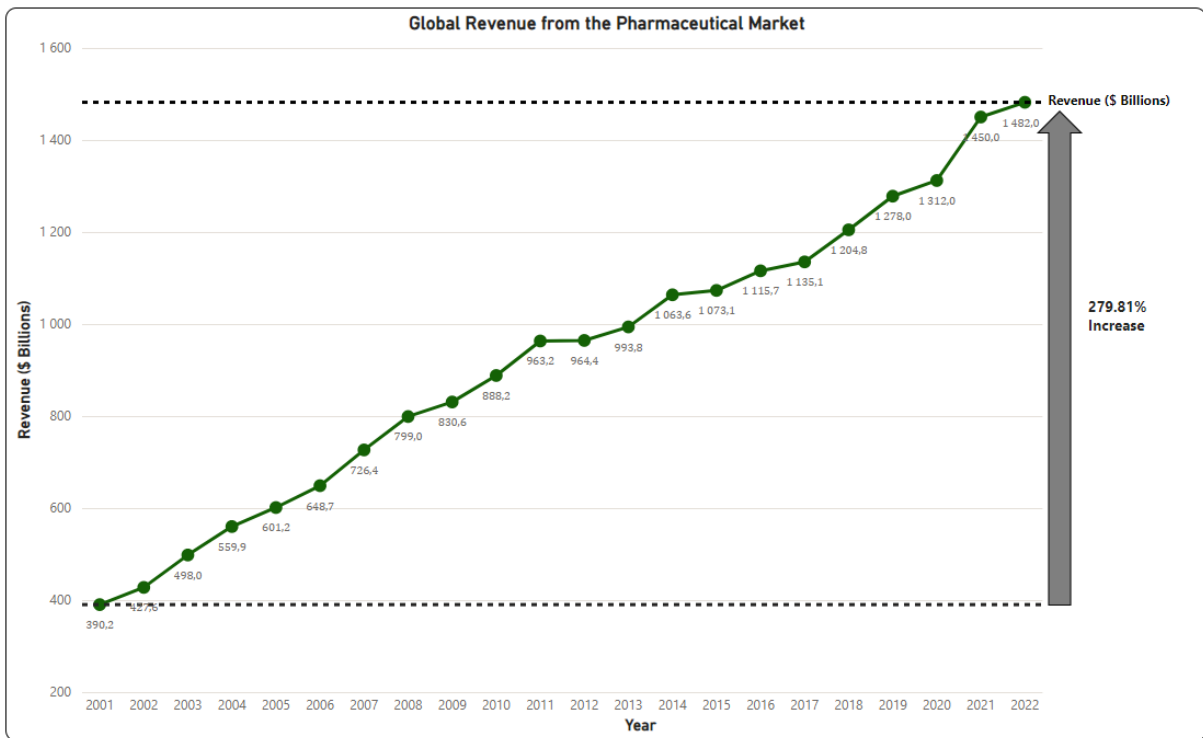
A5: 10-year annual returns for Pfizer, the NYSE Arca pharmaceutical index, and S&P-500 expressed as a table, highlighting the returns for each year (2012-2022)

Annual Returns for Pfizer Inc., Pharmaceutical Index & S&P-500			
Date	Pfizer Inc.	Pharmaceutical Industry	S&P-500
2012-12-31	19.21%	9.84%	13.29%
2013-12-31	26.21%	26.65%	29.60%
2014-12-31	5.28%	13.83%	11.39%
2015-12-31	7.09%	1.62%	-0.73%
2016-12-30	4.42%	-11.06%	9.54%
2017-12-29	15.90%	13.16%	19.42%
2018-12-31	24.82%	4.38%	-6.24%
2019-12-31	-6.91%	14.92%	28.88%
2020-12-31	8.64%	5.48%	16.26%
2021-12-31	66.70%	19.99%	26.89%
2022-12-30	-10.41%	4.91%	-19.44%
2023-05-05	-24.19%	2.42%	7.73%

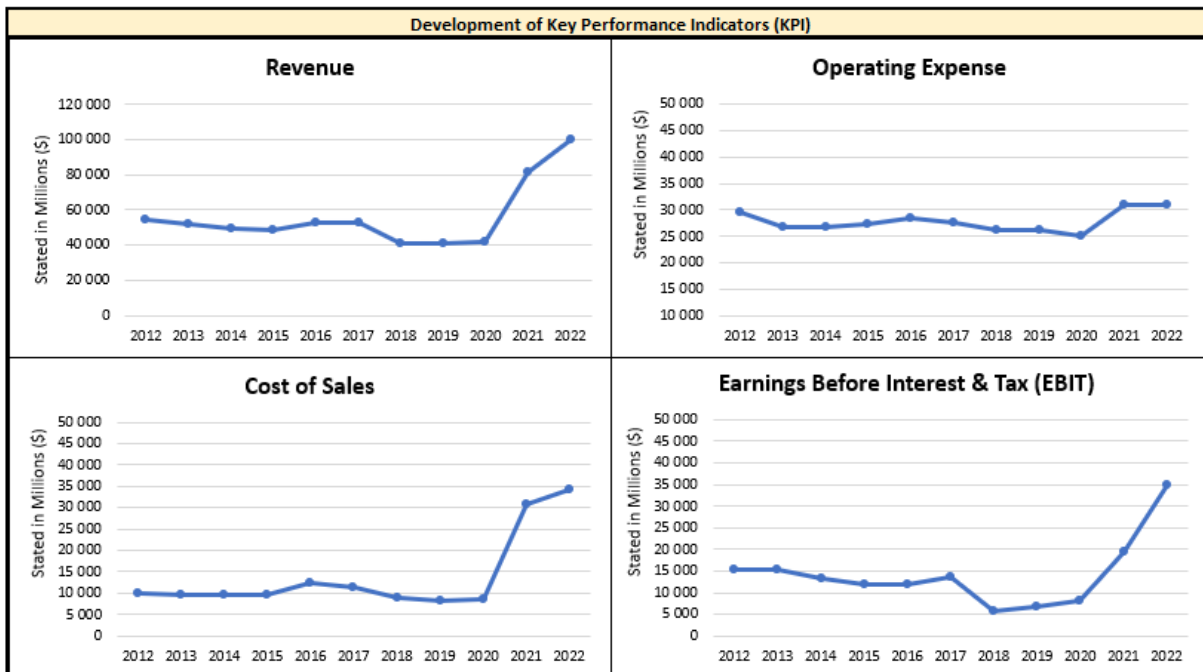
A6: Aggregate value of the global pharmaceutical industry, in \$ trillions (2003-2021)



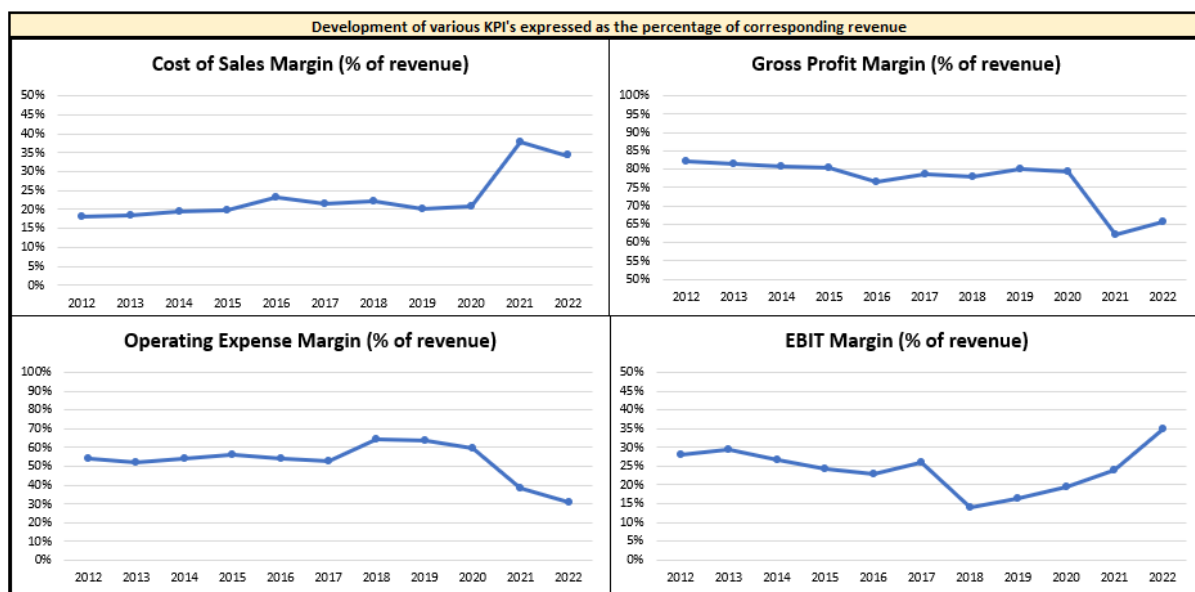
A7: Global revenue from the pharmaceutical market (2001-2022)



A8: Development of Key Performance Indicators (KPI) for Pfizer (2012-2022)



A9: Development of Key Performance Indicators (KPI) expressed as percentages of revenue (2012-2022)

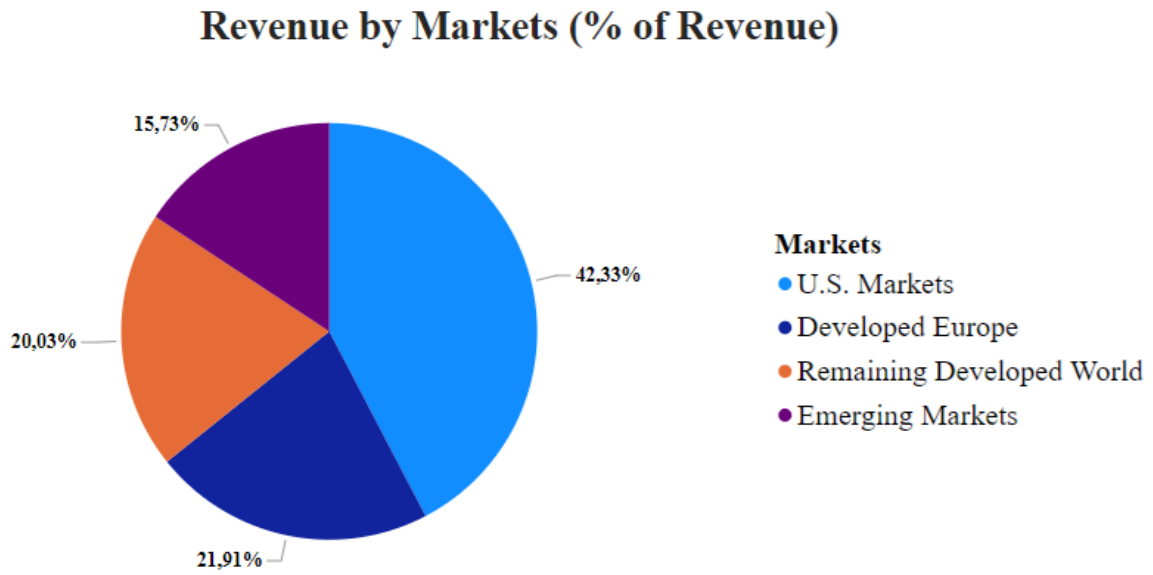


A10: Pfizer's revenue and the corresponding markets, further expressed as the percentages of total revenue for that financial (2018-2022)

Year	2018	2019	2020	2021	2022
United States	20 119	20 593	21 712	29 746	42 473
<i>% of Revenue</i>	49 %	50 %	52 %	37 %	42 %
Developed Europe	7 997	7 729	7 788	18 336	21 982
<i>% of Revenue</i>	20 %	19 %	19 %	23 %	22 %
Developed Rest of World	4 090	4 022	4 036	12 505	15 778
<i>% of Revenue</i>	10 %	10 %	10 %	15 %	16 %
Emergin Markets	8 619	8 828	8 372	20 701	20 097
<i>% of Revenue</i>	21 %	21 %	20 %	25 %	20 %
Total Revenues	40 825	41 172	41 908	81 288	100 330

** Numbers are stated in \$ millions*

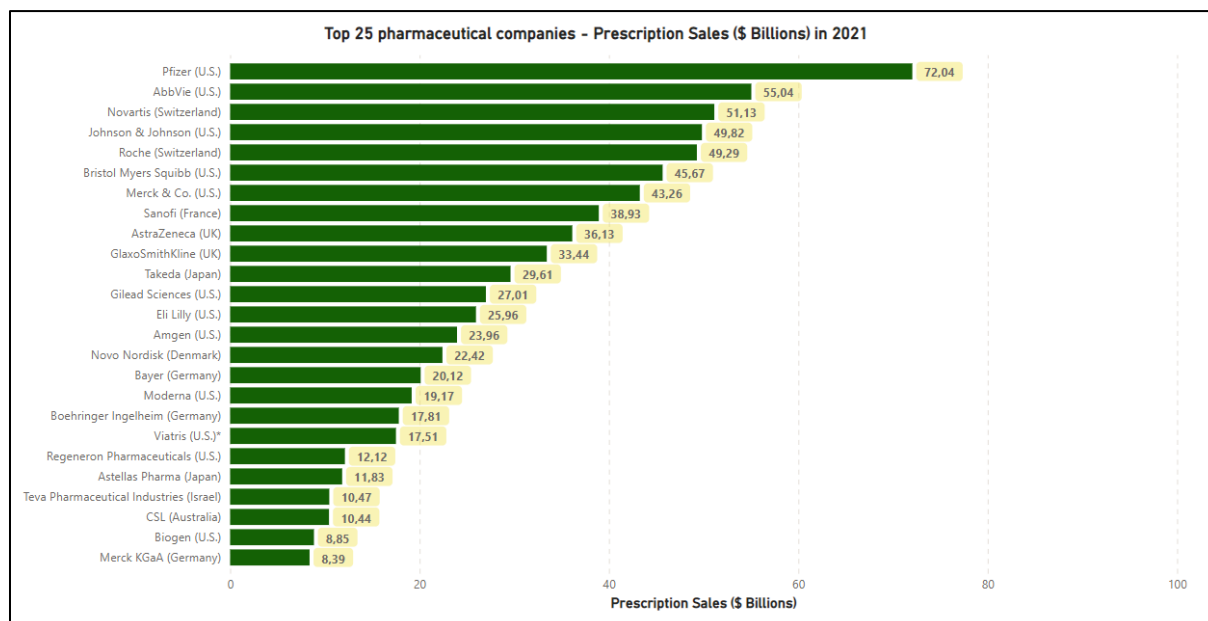
A11: Source of Pfizer’s revenues with corresponding markets



A12: Aggregate enterprise value expressed for different sectors, further ranking the public pharmaceutical companies in third

Rank	Sector	Aggregate Enterprise Value (\$ Trillions)
1	Banks, Insurance & Finance	18,50
2	E-Commerce + Internet Services	6,00
3	Pharmaceuticals (Public Companies)	5,65
4	Software	4,20
5	Integrated Oil & Gas	3,60
6	Technology Hardware	2,90
7	Semiconductors	2,40
8	Electric Utilities	2,40
9	Integrated Telecom Providers	2,20
10	Automobile Manufacturers	2,00

A13: Top 25 pharmaceutical companies ranked, based on their prescription sales in 2021



A14: The 3 factors incentivizing Mergers & Acquisitions (M&A) in the pharmaceutical industry

Factor	Description
Innovation	The large companies usually acquire smaller firms, more creative firms inside and outside of the industry. This allows for obtainment of new compounds and processes, new technologies, talent and/or regulation and policy expertise.
Economics of Scale	The pharmaceutical industry is characterized by the expensive nature of developing, manufacturing, and marketing pharmaceutical products. This serves as the incentive behind cutting costs, improving processes/production, distribution, and other efficiencies. These actions allow for operational- and financial gains, further giving the companies competitive advantages.
Portfolio Realignment	Portfolio realignment allows for redefining of their product portfolios, further obtaining new or replacing prior cash flows. This also gives ground for breaking into new segments, as new therapeutic areas.

Appendix B: Financial Performance

B1: Consolidated income statement gathered from Pfizer's annual reports (2012-2022)

Consolidated Income Statement	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenues	54 657	51 584	49 605	48 851	52 824	52 546	40 825	41 172	41 908	81 288	100 330
Costs and expenses:											
Cost of sales	9 821	9 586	9 577	9 648	12 329	11 240	8 987	8 251	8 692	30 821	34 344
Selling informational and administrative expenses	15 171	14 355	14 097	14 809	14 837	14 784	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 482	6 678	8 393	7 690	7 872	7 657	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	5 109	4 599	4 039	3 728	4 056	4 758	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 810	1 182	250	1 152	1 724	487	1 058	601	600	802	1 375
(Gain) on completion of Consumer Healthcare JV transaction	-	-	-	-	-	-	-	(8 086)	(6)	-	-
Other (income)/deductions—net	4 022	(532)	1 009	2 860	3 655	1 315	2 077	3 314	669	(4 878)	217
Income from continuing operations before provision for taxes on income	11 242	15 716	12 240	8 964	8 351	12 305	3 595	11 486	7 497	24 311	34 727
Provision for taxes on income	2 221	4 306	3 120	1 990	1 123	(9 049)	(266)	618	477	1 852	3 328
Income from continuing operations	9 021	11 410	9 120	6 974	7 228	21 354	3 861	10 868	7 020	22 459	31 399
Discontinued operations:											
Income from discontinued operations—net of tax	794	308	(6)	17	16	(1)	7 328	5 435	2 631	-	6
Gain/(loss) on sale of discontinued operations—net of tax	4 783	10 354	55	(6)	-	3	-	-	-	-	-
Discontinued operations—net of tax	5 577	10 662	49	11	16	2	7 328	5 435	2 631	(434)	6
Net income before allocation to noncontrolling interests	14 598	22 072	9 169	6 985	7 244	21 356	11 189	16 303	9 651	22 025	31 405
Less: Net income attributable to noncontrolling interests	28	69	32	26	31	47	36	29	36	45	35
Net income attributable to Pfizer Inc.	14 570	22 003	9 137	6 959	7 213	21 309	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

B2: Reformulated income statement based upon Pfizer's consolidated income statement (2012-2022)

Reformulated Income Statement	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenues	54 657	51 584	49 605	48 851	52 824	52 546	40 825	41 172	41 908	81 288	100 330
Cost of sales	9 821	9 586	9 577	9 648	12 329	11 240	8 987	8 251	8 692	30 821	34 344
Gross Profit	44 836	41 998	40 028	39 203	40 495	41 306	31 838	32 921	33 216	50 467	65 986
Selling informational and administrative expenses	15 171	14 355	14 097	14 809	14 837	14 784	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 482	6 678	8 393	7 690	7 872	7 657	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	5 109	4 599	4 039	3 728	4 056	4 758	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 810	1 182	250	1 152	1 724	487	1 058	601	600	802	1 375
Operating Expense	29 572	26 814	26 779	27 379	28 489	27 686	26 166	26 207	25 056	31 034	31 042
Earnings Before Interest & Tax (EBIT)	15 264	15 184	13 249	11 824	12 006	13 620	5 672	6 714	8 160	19 433	34 944
Other (income)/deductions—net	4 022	(532)	1 009	2 860	3 655	1 315	2 077	3 314	669	(4 878)	217
(Gain) on completion of Consumer Healthcare JV transaction	-	-	-	-	-	-	-	(8 086)	(6)	-	-
Pre-Tax Income	11 242	15 716	12 240	8 964	8 351	12 305	3 595	11 486	7 497	24 311	34 727
Income Taxes	2 221	4 306	3 120	1 990	1 123	(9 049)	(266)	618	477	1 852	3 328
Income from continuing operations after Taxes	9 021	11 410	9 120	6 974	7 228	21 354	3 861	10 868	7 020	22 459	31 399
Income from Discontinued Operations - Net of Tax	5 577	10 662	49	11	16	2	7 328	5 435	2 631	(434)	6
Net income attributable to noncontrolling interests	28	69	32	26	31	47	36	29	36	45	35
Net Income	14 570	22 003	9 137	6 959	7 213	21 309	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

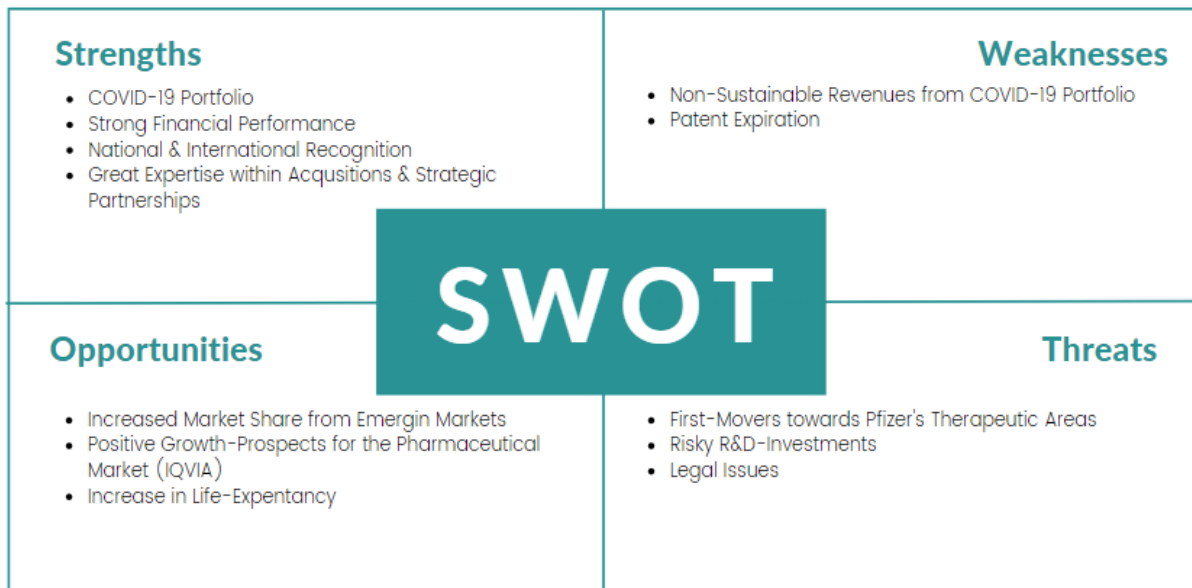
B3: Reformulated income statement which also highlights the components as percentages of revenue (2012-2022)

Reformulated Income Statement	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenues	54 657	51 584	49 605	48 851	52 824	52 546	40 825	41 172	41 908	81 288	100 330
Cost of sales	9 821	9 586	9 577	9 648	12 329	11 240	8 987	8 251	8 692	30 821	34 344
<i>% of revenue</i>	18 %	19 %	19 %	20 %	23 %	21 %	22 %	20 %	21 %	38 %	34 %
Gross Profit	44 836	41 998	40 028	39 203	40 495	41 306	31 838	32 921	33 216	50 467	65 986
<i>% of revenue</i>	82 %	81 %	81 %	80 %	77 %	79 %	78 %	80 %	79 %	62 %	66 %
Selling informational and administrative expenses	15 171	14 355	14 097	14 809	14 837	14 784	12 612	12 750	11 615	12 703	13 677
<i>% of revenue</i>	28 %	28 %	28 %	30 %	28 %	28 %	31 %	31 %	28 %	16 %	14 %
Research and development (R&D) expenses	7 482	6 678	8 393	7 690	7 872	7 657	7 760	8 394	9 405	13 829	12 381
<i>% of revenue</i>	14 %	13 %	17 %	16 %	15 %	15 %	19 %	20 %	22 %	17 %	12 %
Amortization of intangible assets	5 109	4 599	4 039	3 728	4 056	4 758	4 736	4 462	3 436	3 700	3 609
<i>% of revenue</i>	9 %	9 %	8 %	8 %	8 %	9 %	12 %	11 %	8 %	5 %	4 %
Restructuring charges and certain acquisition-related costs	1 810	1 182	250	1 152	1 724	487	1 058	601	600	802	1 375
<i>% of revenue</i>	3.31 %	2.29 %	0.50 %	2.36 %	3.26 %	0.93 %	2.59 %	1.46 %	1.43 %	0.99 %	1.37 %
Operating Expense	29 572	26 814	26 779	27 379	28 489	27 686	26 166	26 207	25 056	31 034	31 042
<i>% of revenue</i>	54 %	52 %	54 %	56 %	54 %	53 %	64 %	64 %	60 %	38 %	31 %
Earnings Before Interest & Tax (EBIT)	15 264	15 184	13 249	11 824	12 006	13 620	5 672	6 714	8 160	19 433	34 944
<i>% of revenue</i>	28 %	29 %	27 %	24 %	23 %	26 %	14 %	16 %	19 %	24 %	35 %
Other (income)/deductions—net	4 022	(532)	1 009	2 860	3 655	1 315	2 077	3 314	669	(4 878)	217
(Gain) on completion of Consumer Healthcare JV transaction	-	-	-	-	-	-	-	(8 086)	(6)	-	-
Pre-Tax Income	11 242	15 716	12 240	8 964	8 351	12 305	3 595	11 486	7 497	24 311	34 727
<i>% of revenue</i>	21 %	30 %	25 %	18 %	16 %	23 %	9 %	28 %	18 %	30 %	35 %
Income Taxes	2 221	4 306	3 120	1 990	1 123	(9 049)	(266)	618	477	1 852	3 328
Income from continuing operations after Taxes	9 021	11 410	9 120	6 974	7 228	21 354	3 861	10 868	7 020	22 459	31 399
<i>% of revenue</i>	17 %	22 %	18 %	14 %	14 %	41 %	9 %	26 %	17 %	28 %	31 %
Income from Discontinued Operations - Net of Tax	5 577	10 662	49	11	16	2	7 328	5 435	2 631	(434)	6
Net income attributable to noncontrolling interests	28	69	32	26	31	47	36	29	36	45	35
Net Income	14 570	22 003	9 137	6 959	7 213	21 309	11 153	16 274	9 615	21 980	31 370
<i>% of revenue</i>	27 %	43 %	18 %	14 %	14 %	41 %	27 %	40 %	23 %	27 %	31 %

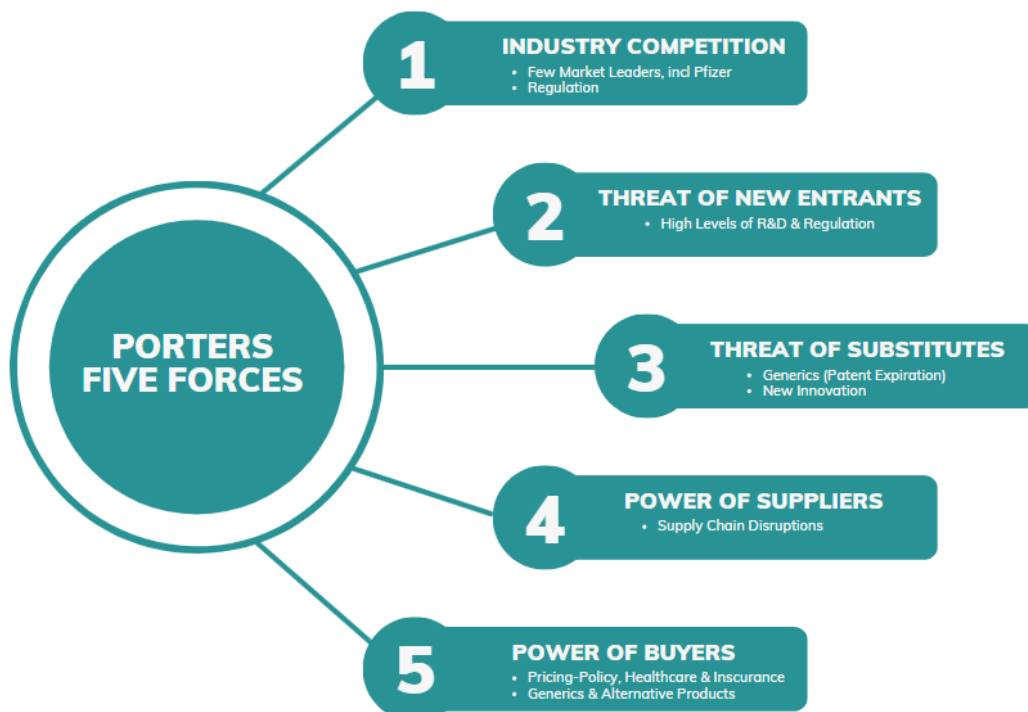
* Numbers are stated in \$ millions

Appendix C: Analysis

C1: Strength Weaknesses Opportunities Threats (SWOT) analysis for Pfizer

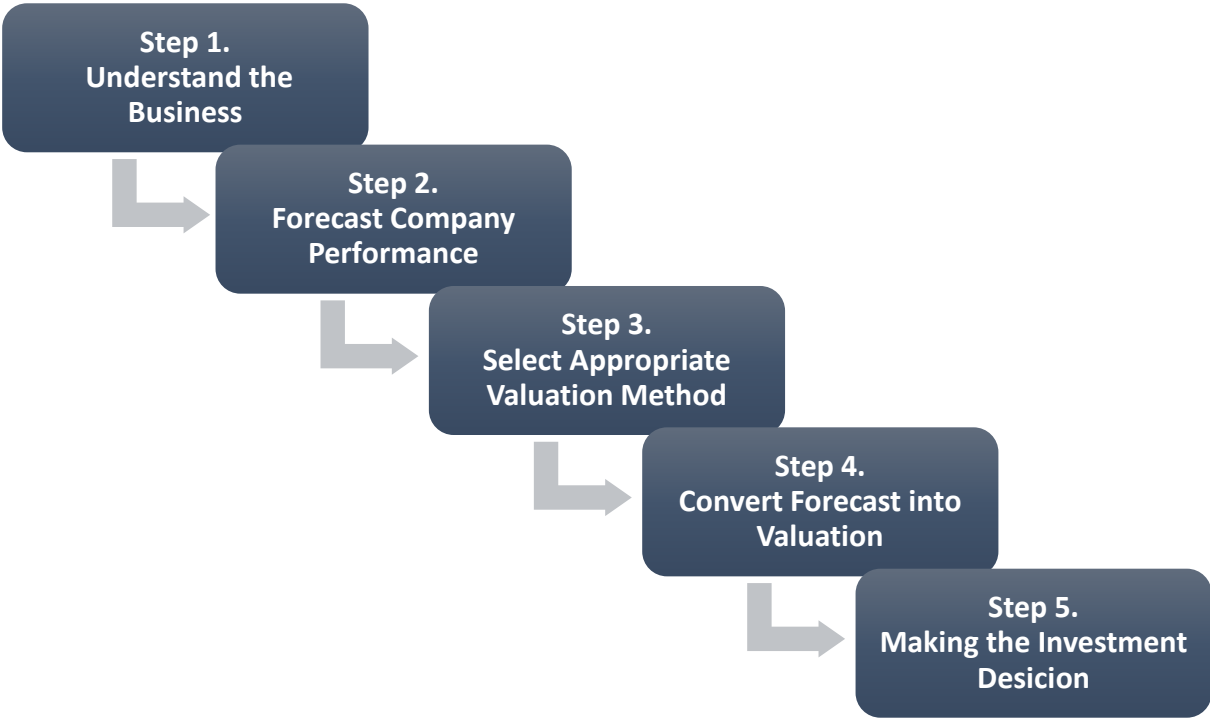


C2: Porter's Five Forces analysis for Pfizer

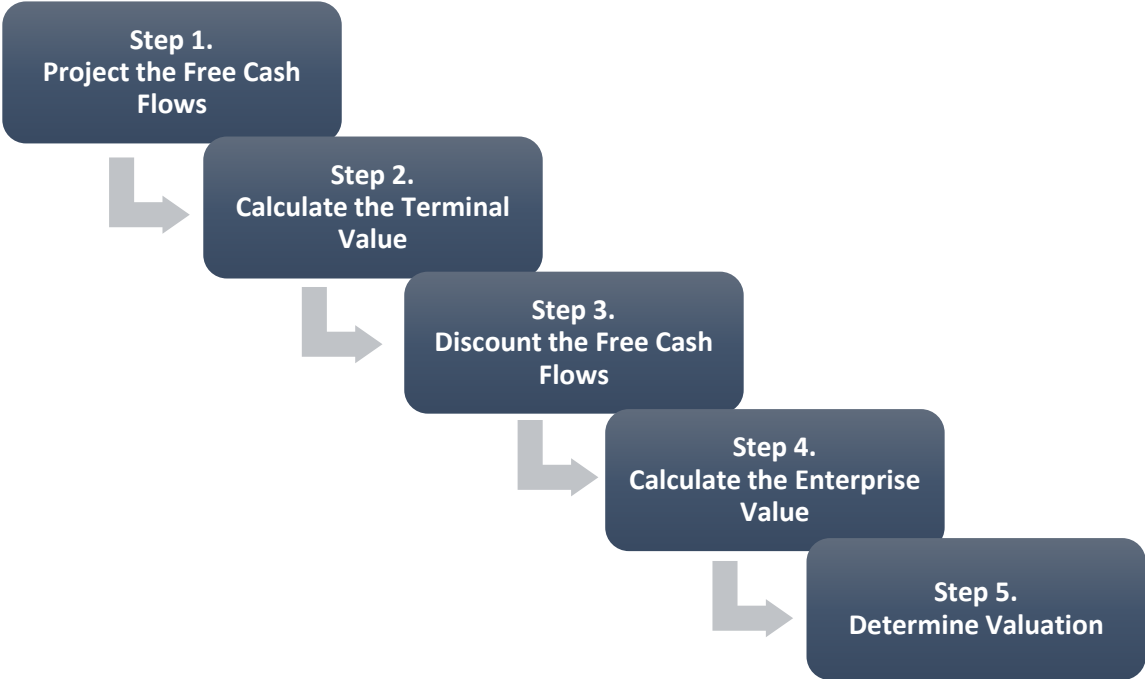


Appendix D: Valuation Methods

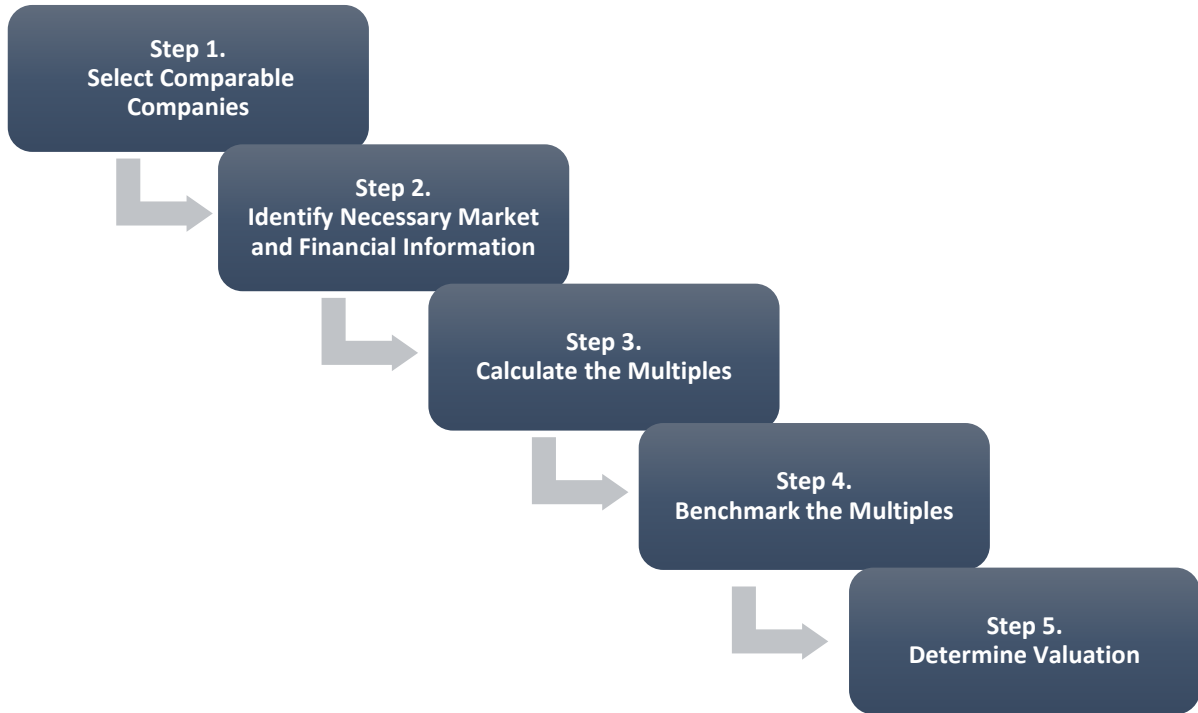
D1: Valuation as a concept illustrated in 5 steps



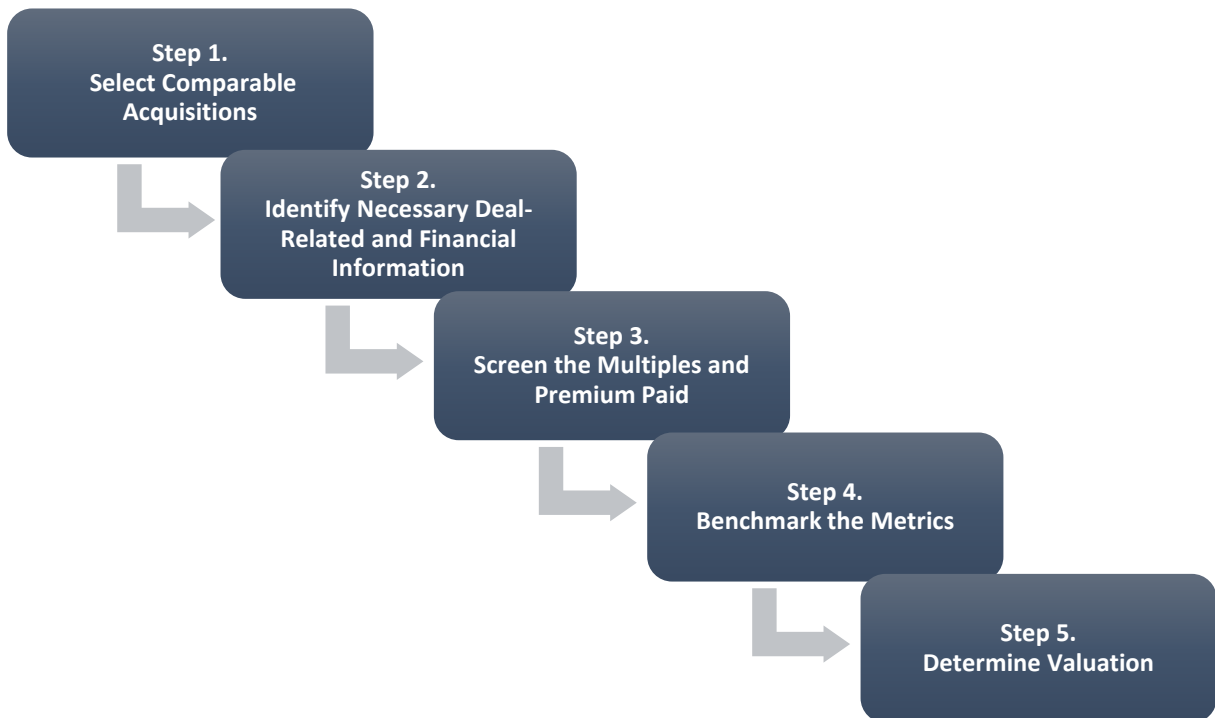
D2: Discounted Cash Flow (DCF) analysis utilizing the Free Cash Flow to Firm (FCFF) illustrated in 5 steps



D3: Comparable Company Analysis (CCA) illustrated in 5 steps



D4: Precedent Transaction Analysis (PTA) illustrated in 5 steps



Appendix E: Discounted Cash Flow Analysis

E1: Consolidated income statement used as foundation for reformulated income statement in DCF-analysis (2018-2022)

Consolidated Income Statement	2018	2019	2020	2021	2022
Revenues	40 825	41 172	41 908	81 288	100 330
Costs and expenses:					
Cost of sales	8 987	8 251	8 692	30 821	34 344
Selling informational and administrative expenses	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 058	601	600	802	1 375
(Gain) on completion of Consumer Healthcare JV transaction	-	(8 086)	(6)	-	-
Other (income)/deductions—net	2 077	3 314	669	(4 878)	217
Income from continuing operations before provision for taxes on income	3 595	11 486	7 497	24 311	34 727
Provision for taxes on income	(266)	618	477	1 852	3 328
Income from continuing operations	3 861	10 868	7 020	22 459	31 399
Discontinued operations:					
Income from discontinued operations—net of tax	7 328	5 435	2 631	-	6
Gain/(loss) on sale of discontinued operations—net of tax	-	-	-	-	-
Discontinued operations—net of tax	7 328	5 435	2 631	(434)	6
Net income before allocation to noncontrolling interests	11 189	16 303	9 651	22 025	31 405
Less: Net income attributable to noncontrolling interests	36	29	36	45	35
Net income attributable to Pfizer Inc.	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

E2: Reformulated income statement utilized in the DCF-analysis (2018-2022)

Reformulated Income Statement	2018	2019	2020	2021	2022
Revenues	40 825	41 172	41 908	81 288	100 330
Cost of sales	8 987	8 251	8 692	30 821	34 344
Gross Profit	31 838	32 921	33 216	50 467	65 986
Selling informational and administrative expenses	12 612	12 750	11 615	12 703	13 677
Research and development (R&D) expenses	7 760	8 394	9 405	13 829	12 381
Amortization of intangible assets	4 736	4 462	3 436	3 700	3 609
Restructuring charges and certain acquisition-related costs	1 058	601	600	802	1 375
Operating Expense	26 166	26 207	25 056	31 034	31 042
Earnings Before Interest & Tax (EBIT)	5 672	6 714	8 160	19 433	34 944
Other (income)/deductions—net	2 077	3 314	669	(4 878)	217
(Gain) on completion of Consumer Healthcare JV transaction	-	(8 086)	(6)	-	-
Pre-Tax Income	3 595	11 486	7 497	24 311	34 727
Income Taxes	(266)	618	477	1 852	3 328
Income from continuing operations after Taxes	3 861	10 868	7 020	22 459	31 399
Income from Discontinued Operations - Net of Tax	7 328	5 435	2 631	(434)	6
Net income attributable to noncontrolling interests	36	29	36	45	35
Net Income	11 153	16 274	9 615	21 980	31 370

* Numbers are stated in \$ millions

E3: Consolidated balance sheet, illustrating assets, utilized in the DCF-analysis (2018-2022)

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Assets:					
Cash and cash equivalents	1 139	1 121	1 784	1 944	416
Short-term investments	17 694	8 525	10 437	29 125	22 316
Accounts receivable	8 025	6 772	7 930	11 479	10 952
Short-term loans	-	-	-	-	-
Inventories	7 508	7 068	8 046	9 059	8 981
Current deferred tax assets and other current assets	3 374	2 736	3 264	4 266	3 577
Assets of discontinued operations and other assets held for sale	9 725	4 224	167	-	-
Other current assets	2 461	2 357	3 438	3 820	5 017
Total current assets	49 926	32 803	35 066	59 693	51 259
Equity-method investments	-	17 133	16 856	16 472	11 033
Long-term investments and loans	2 767	3 014	3 406	5 054	4 038
Property plant and equipment less accumulated depreciation	13 385	12 969	13 900	14 882	16 274
Identifiable intangible assets less accumulated amortization	35 211	33 936	28 471	25 146	43 370
Goodwill	53 411	48 202	49 577	49 208	51 375
Noncurrent deferred tax assets and other noncurrent assets	1 924	1 911	2 383	3 341	6 693
Other non-current assets	2 798	4 199	4 569	7 679	13 163
Noncurrent assets of discontinued operations	-	13 427	-	-	-
Total non-current assets	109 496	134 791	119 162	121 782	145 946
Total assets	159 422	167 594	154 228	181 475	197 205

* Numbers are stated in \$ millions

E4: Consolidated balance sheet, illustrating liabilities, utilized in the DCF-analysis (2018-2022)

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Liabilities:					
Short-term borrowings	8 831	16 195	2 703	2 241	2 945
Accounts payable	4 674	3 887	4 309	5 578	6 809
Dividends payable	2 047	2 104	2 162	2 249	2 303
Income taxes payable	1 265	980	1 049	1 266	1 587
Accrued compensation and related items	2 397	2 390	3 058	3 332	3 407
Current deferred tax liabilities and other current liabilities	-	-	-	-	-
Deferred revenues	-	-	-	3 067	2 520
Current liabilities of discontinued operations	-	2 413	-	-	-
Liabilities held for sale	1 890	-	-	-	-
Other current liabilities	10 753	9 334	12 640	24 939	22 568
Total current liabilities	31 857	37 303	25 921	42 672	42 139
Long-term debt	32 909	35 955	37 133	36 195	32 884
Pension benefit obligations	5 272	5 291	4 766	3 489	2 250
Postretirement benefit obligations	1 338	926	645	235	-
Noncurrent deferred tax liabilities	3 700	5 652	4 063	349	1 023
Other taxes payable	14 737	12 126	11 560	11 331	9 812
Other noncurrent liabilities	5 850	6 894	6 669	9 743	13 180
Total non-current liabilities	63 806	66 844	64 836	61 342	59 149
Total liabilities	95 663	104 147	90 757	104 014	101 288

* Numbers are stated in \$ millions

E5: Consolidated balance sheet, illustrating equity, utilized in the DCF-analysis (2018-2022)

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Equity:					
Preferred stock	19	17	-	-	-
Common stock	467	468	470	473	476
Additional paid-in capital	86 253	87 428	88 674	90 591	91 802
Employee benefit trusts	-	-	-	-	-
Treasury stock	(101 610)	(110 801)	(110 988)	(111 361)	(113 969)
Retained earnings	89 554	97 670	96 770	103 394	125 656
Accumulated other comprehensive income/(expense)	(11 275)	(11 640)	(11 688)	(5 897)	(8 304)
Total Pfizer Inc. shareholders' equity	63 408	63 142	63 238	77 200	95 661
Equity attributable to non-controlling interests	351	305	233	261	256
Total shareholders' equity	63 759	63 447	63 471	77 461	95 917

* Numbers are stated in \$ millions

E6: Consolidated balance sheet, including all components, utilized in the DCF-analysis (2018-2022)

Consolidated Balance Sheet	2018	2019	2020	2021	2022
Assets:					
Total current assets	49 926	32 803	35 066	59 693	51 259
Total non-current assets	109 496	134 791	119 162	121 782	145 946
Total assets	159 422	167 594	154 228	181 475	197 205
Liabilities:					
Total current liabilities	31 857	37 303	25 921	42 672	42 139
Total non-current liabilities	63 806	66 844	64 836	61 342	59 149
Total liabilities	95 663	104 147	90 757	104 014	101 288
Equity:					
Total shareholders' equity	63 759	63 447	63 471	77 461	95 917
Total liabilities and shareholders' equity	159 422	167 594	154 228	181 475	197 205

** Numbers are stated in \$ millions*

E7: Consolidated cash flow statement, highlighting the depreciation and CAPEX, utilized in the DCF-analysis (2018-2022)

Consolidated Cash Flow Statement	2018	2019	2020	2021	2022
Operating activities:					
Depreciation and amortizations	6 150	5 795	4 777	5 191	5 064
Investing activities:					
CAPEX	1 984	2 072	2 252	2 711	3 236

** Numbers are stated in \$ millions*

E8: Calculation of Earnings Before Interest & Tax (EBIT) by calculating the gross profit and subtracting the operating expense

Year	2022
Revenues	100 330
Cost of sales	(34 344)
<i>% of revenue</i>	34.23 %
Gross Profit	65 986
Operating Expense	(31 042)
<i>% of revenue</i>	30.94 %
EBIT	34 944

** Numbers are stated in \$ millions*

E9: Calculation of Net Working Capital (NWC) by subtracting the accounts payable from the accounts receivable and inventories, further highlighting the percentage of revenue. Table also displays the percentages of revenue for both: depreciation and CAPEX

Year	2022
Revenues	100 330
Accounts receivable	10 952
<i>% growth</i>	-4.59 %
Accounts payable	6 809
<i>% growth</i>	22.07 %
Inventories	8 981
<i>% growth</i>	-0.86 %
NWC	13 124
<i>% of revenue</i>	13.08 %
Operating activities:	
Depreciation and amortizations	5 064
<i>% of revenue</i>	5.05 %
Investing activities:	
CAPEX	3 236
<i>% of revenue</i>	3.23 %

** Numbers are stated in \$ millions*

E10: Calculation of the projected Free Cash Flow (FCF) for 2023-2028

Year	2023	2024	2025	2026	2027	2028
Revenues	69 228	43 142	45 127	47 202	49 374	51 645
Cost of Sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756
Change in NWC (Δ NWC)	(4 068)	(3 412)	260	272	284	297
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550

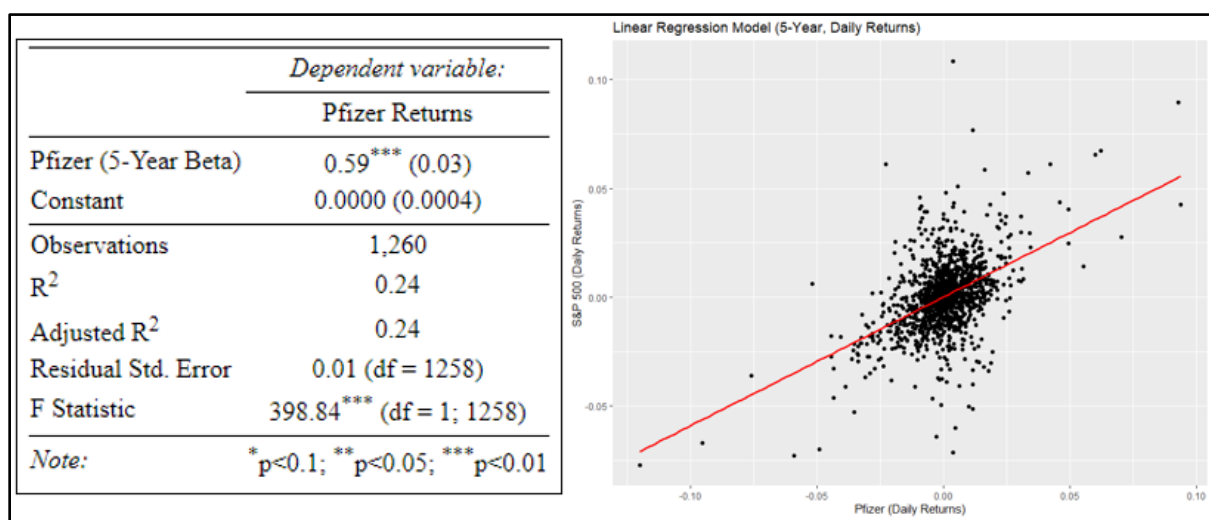
** Numbers stated in \$ millions*

E11: Calculation of the cost of debt (Rd) expressed as the average effective interest rate for Pfizer (2018-2022)

Year	2018	2019	2020	2021	2022
Interest Expense	1 316	1 573	1 449	1 291	1 238
Total Debt	41 740	52 150	39 836	38 436	35 829
Effective Interest Rate	3.15 %	3.02 %	3.64 %	3.36 %	3.46 %
Average Effective Interest Rate					3.32 %

* Numbers are stated in \$ millions

E12: Linear regression analysis returning the estimated beta used to calculate the cost of equity (Re). The analysis is based upon daily return for Pfizer and the S&P-500



E13: Calculation of the cost of equity (Re) utilizing the Capital Asset Pricing Model (CAPM)

Capital Asset Pricing Model (CAPM)	
Risk-free Rate	3.53 %
Market Risk Premium	5.94 %
Beta (5-Year)	0.59
Cost of Equity	7.03 %

E14: Calculation of the average effective tax rate (T) for 2020-2022

Year	2020	2021	2022
Pre-Tax Income	7 497	24 311	34 727
Income Taxes	477	1 852	3 328
Effective Tax Rate	6.36 %	7.62 %	9.58 %
Average Effective Tax Rate			7.85 %

* Numbers are stated in \$ millions

E15: Calculation of the after-tax Weighted Average Cost of Capital (WACC) utilizing the capital structure and the cost of capital, as well as the effective tax rate

Weighted Average Cost of Capital (WACC)			
Capital		Cost of Capital	
Equity	225 474	Cost of Equity (Re)	7.03 %
Debt	35 829	Cost of Debt (Rd)	3.32 %
Value	261 303	Effective Tax Rate (T)	7.85 %
Capital Structure			
E/V		86 %	
D/V		14 %	
WACC (After-tax)		6.49 %	

** Numbers are stated in \$ millions*

E16: Calculation of the interest coverage ratio, further enabling to estimate a synthetic rating for Pfizer. The interest coverage ratio is the ratio between Pfizer's EBIT and interest expense as of 2022

EBIT (2022)	34 944		
Interest Expense (2022)	1 238		
Interest Coverage Ratio	28.23		
Estimated Default Spread	0.69 %		
Estimated Bond Rating	AAA		
For large non-financial service firms			
If interest coverage ratio is			
>	≤ to	Rating is	Spread is
-100000	0.2	D2/D	20.00 %
0.2	0.65	C2/C	17.50 %
0.65	0.8	Ca2/CC	15.78 %
0.8	1.25	Caa/CCC	11.57 %
1.25	1.5	B3/B-	7.37 %
1.5	1.75	B2/B	5.26 %
1.75	2	B1/B+	4.55 %
2	2.25	Ba2/BB	3.13 %
2.25	2.49999	Ba1/BB+	2.42 %
2.5	3	Baa2/BBB	2.00 %
3	4.25	A3/A-	1.62 %
4.25	5.5	A2/A	1.42 %
5.5	6.5	A1/A+	1.23 %
6.5	8.5	Aa2/AA	0.85 %
8.50	100000	Aaa/AAA	0.69 %

E17: Calculation of the Terminal Value (TV) utilizing the Gordon Growth Model (GGM)

Year	2023	2024	2025	2026	2027	2028	Terminal Value
Revenues	69 228	43 142	45 127	47 202	49 374	51 645	54 021
Cost of Sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)	(18 492)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966	35 529
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)	(16 714)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987	18 815
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)	(1 478)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575	17 337
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607	2 727
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)	(1 742)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756	7 066
Change in NWC (Δ NWC)	(4 068)	(3 412)	260	272	284	297	311
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550	21 495
PV (Sum of FCF)	106 340						
WACC	6.49 %						
Growth	1.46 %						
PV (Terminal Value)	427 598						

* Numbers are stated in \$ millions

E18: Calculation of the Terminal Value (TV) utilizing the exit multiple, in which the multiple is based upon the EV/EBITDA-multiple from the Comparable Company Analysis (CCA)

Year	2023	2024	2025	2026	2027	2028
Revenues	69 228	43 142	45 127	47 202	49 374	51 645
Cost of sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756
Change in NWC (Δ NWC)	(4 068)	(3 412)	260	272	284	297
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550
PV (Sum of FCF)	106 340					
EBITDA (2023)	27 606					
EV/EBITDA Multiple (CCA)	12.72					
Terminal Value	351 260					

* Numbers are stated in \$ millions

E19: DCF-analysis utilizing the IQVIA growth estimate and calculation of the Terminal Value (TV) by utilizing the Gordon Growth Model (GGM)

Year	Current	Projections					
	2023	2024	2025	2026	2027	2028	Terminal Value
Revenues	69 228	43 142	45 127	47 202	49 374	51 645	54 021
Cost of Sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)	(18 492)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966	35 529
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)	(16 714)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987	18 815
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)	(1 478)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575	17 337
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607	2 727
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)	(1 742)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756	7 066
Change in NWC (ΔNWC)	(4 068)	(3 412)	260	272	284	297	311
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550	21 495
PV (Sum of FCF)	106 340						
WACC	6.49 %						
Growth	1.46 %						
PV (Terminal Value)	427 598						
Enterprise Value	533 938						
Net Debt	(35 413)						
Equity Value	498 525						
Shares Outstanding	5 620						
Value per Share	88.71						

* Numbers stated in \$ millions, except for Value per Share

E20: DCF-analysis utilizing Pfizer's own growth estimate and calculation of the Terminal Value (TV) by utilizing the Gordon Growth Model (GGM)

Year	Current	Projections					
	2023	2024	2025	2026	2027	2028	Terminal Value
Revenues	69 228	43 142	46 593	50 321	54 346	58 694	61 394
Cost of sales	(23 697)	(14 768)	(15 949)	(17 225)	(18 603)	(20 092)	(21 016)
Gross Profit	45 531	28 374	30 644	33 095	35 743	38 603	40 378
Operating Expense	(21 419)	(13 348)	(14 416)	(15 569)	(16 815)	(18 160)	(18 995)
EBIT	24 111	15 026	16 228	17 526	18 928	20 443	21 383
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 275)	(1 377)	(1 487)	(1 606)	(1 680)
NOPAT	22 218	13 846	14 953	16 150	17 442	18 837	19 703
Depreciation	3 494	2 178	2 352	2 540	2 743	2 962	3 099
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 503)	(1 623)	(1 753)	(1 893)	(1 980)
Net Working Capital (NWC)	9 056	5 643	6 095	6 582	7 109	7 678	8 031
Change in NWC (ΔNWC)	(4 068)	(3 412)	451	488	527	569	353
Free Cash Flow (FCF)	32 013	20 827	18 356	19 825	21 411	23 124	24 429
PV (Sum of FCF)	110 536						
WACC	6.49 %						
Growth	1.46 %						
PV (Terminal Value)	485 964						
Enterprise Value	596 500						
Net Debt	(35 413)						
Equity Value	561 087						
Shares Outstanding	5 620						
Value per Share	99.84						

* Numbers stated in \$ millions, except for Value per Share

E21: DCF-analysis utilizing the IQVIA growth estimate and calculation of the Terminal Value (TV) by utilizing the exit multiple

Year	Current	Projections				
	2023	2024	2025	2026	2027	2028
Revenues	69 228	43 142	45 127	47 202	49 374	51 645
Cost of sales	(23 697)	(14 768)	(15 447)	(16 158)	(16 901)	(17 679)
Gross Profit	45 531	28 374	29 679	31 044	32 473	33 966
Operating Expense	(21 419)	(13 348)	(13 962)	(14 604)	(15 276)	(15 979)
EBIT	24 111	15 026	15 717	16 440	17 196	17 987
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 235)	(1 291)	(1 351)	(1 413)
NOPAT	22 218	13 846	14 483	15 149	15 846	16 575
Depreciation	3 494	2 178	2 278	2 382	2 492	2 607
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 455)	(1 522)	(1 592)	(1 666)
Net Working Capital (NWC)	9 056	5 643	5 903	6 174	6 458	6 756
Change in NWC (Δ NWC)	(4 068)	(3 412)	260	272	284	297
Free Cash Flow (FCF)	32 013	20 827	17 956	18 782	19 646	20 550
PV (Sum of FCF)	106 340					
EBITDA (2023)	27 606					
EV/EBITDA Multiple (CCA)	12.72					
Terminal Value	351 260					
Enterprise Value	457 600					
Net Debt	(35 413)					
Equity Value	422 187					
Shares Outstanding	5 620					
Value per Share	75.12					

* Numbers stated in \$ millions, except for Value per Share

E22: DCF-analysis utilizing Pfizer's own growth estimate and calculation of the Terminal Value (TV) by utilizing the exit multiple

Year	Current	Projections				
	2023	2024	2025	2026	2027	2028
Revenues	69 228	43 142	46 593	50 321	54 346	58 694
Cost of sales	(23 697)	(14 768)	(15 949)	(17 225)	(18 603)	(20 092)
Gross Profit	45 531	28 374	30 644	33 095	35 743	38 603
Operating Expense	(21 419)	(13 348)	(14 416)	(15 569)	(16 815)	(18 160)
EBIT	24 111	15 026	16 228	17 526	18 928	20 443
Taxes (ETR. 7.85%)	(1 894)	(1 180)	(1 275)	(1 377)	(1 487)	(1 606)
NOPAT	22 218	13 846	14 953	16 150	17 442	18 837
Depreciation	3 494	2 178	2 352	2 540	2 743	2 962
Capital Expenditure (CAPEX)	(2 233)	(1 391)	(1 503)	(1 623)	(1 753)	(1 893)
Net Working Capital (NWC)	9 056	5 643	6 095	6 582	7 109	7 678
Change in NWC (Δ NWC)	(4 068)	(3 412)	451	488	527	569
Free Cash Flow (FCF)	32 013	20 827	18 356	19 825	21 411	23 124
PV (Sum of FCF)	110 536					
EBITDA (2023)	27 606					
EV/EBITDA Multiple (CCA)	12.72					
Terminal Value	351 260					
Enterprise Value	461 796					
Net Debt	(35 413)					
Equity Value	426 383					
Shares Outstanding	5 620					
Value per Share	75.87					

* Numbers stated in \$ millions, except for Value per Share

E23: Overview and descriptive statistics for the estimated values per share returned from the DCF-analysis

Discounted Cash Flow (DCF) Analysis	
Valuation	
Gordon Growth Model:	
IQVIA	88.71
Pfizer (Estimate)	99.84
Exit Multiple:	
IQVIA	75.12
Pfizer (Estimate)	75.87
Descriptive Statistics	
Max	99.84
Percentile (75th)	91.49
Average	84.88
Median	82.29
Percentile (25th)	75.68
Min	75.12

Appendix F: Comparable Company Analysis

F1: Foundation of the CCA with Pfizer and the comparable companies, further including the relevant metrics and calculated multiples

Market Data						
Company	Share Price	Shares Outstanding	Equity Value	Total Debt	Cash and Cash Equivalents	Enterprise Value (EV)
Pfizer Inc.	40.12	5 620	225 474	35 829	416	260 887
Abbvie Inc.	149.60	1 770	264 792	64 580	9 201	320 171
Roche Holding AG	34.99	6 390	223 586	26 700	6 850	243 436
Johnson & Johnson	151.24	2 600	393 224	40 960	14 127	420 057
Novartis AG	80.03	2 120	169 664	27 960	7 517	190 107
Merck & Co., Inc.	107.60	2 540	273 304	31 990	12 624	292 670
Financials						
Company	Revenue	EBITDA	EBIT	Net Income		
Pfizer Inc.	100 330	40 008	34 944	31 370		
Abbvie Inc.	58 054	24 174	15 707	11 836		
Roche Holding AG	64 383	23 081	19 007	14 657		
Johnson & Johnson	94 943	28 971	23 703	17 941		
Novartis AG	51 828	16 389	9 208	6 955		
Merck & Co., Inc.	59 283	21 315	17 406	14 519		
Multiples						
Company	EV/Revenue	EV/EBITDA	EV/EBIT	P/E		
Pfizer Inc.	2.60	6.52	7.47	7.19		
Abbvie Inc.	5.52	13.24	20.38	22.37		
Roche Holding AG	3.78	10.55	12.81	15.25		
Johnson & Johnson	4.42	14.50	17.72	21.92		
Novartis AG	3.67	11.60	20.65	24.39		
Merck & Co., Inc.	4.94	13.73	16.81	18.82		

* Numbers are stated in \$ millions, except for Share Price and Multiples

F2: Descriptive statistics for the comparable companies' multiples, further highlighting the average as this was the multiple utilized to further conduct the CCA

Descriptive Statistics (CCA)				
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25

F3: The CCA for Pfizer with estimated values per share corresponding to each applied multiple

Company	Financials			
	Revenue	EBITDA	EBIT	Net Income
Pfizer Inc.	100 330	40 008	34 944	31 370
Descriptive Statistics	Multiples			
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25
Valuation				
Implied Enterprise Value	447 979	509 070	617 625	
Net Debt	35 413	35 413	35 413	
Implied Market Value	412 566	473 657	582 212	644 731
Shares Outstanding	5 620	5 620	5 620	5 620
Value per Share	73.41	84.28	103.60	114.72

* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

F4: The CCA for Pfizer excluding the effects of their COVID-19 portfolio: Comirnaty and Paxlovid

Company	Financials			
	Revenue	EBITDA	EBIT	Net Income
Pfizer Inc. (excl. Paxlovid & Comirnaty)	43 142	17 203	15 026	13 489
Descriptive Statistics	Multiples			
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	5.52	14.50	20.65	24.39
Percentile (75th)	4.94	13.73	20.38	22.37
Average	4.47	12.72	17.67	20.55
Median	4.42	13.24	17.72	21.92
Percentile (25th)	3.78	11.60	16.81	18.82
Min	3.67	10.55	12.81	15.25
Valuation				
Implied Enterprise Value	192 631	218 901	265 579	
Net Debt	35 413	35 413	35 413	
Implied Market Value	157 218	183 488	230 166	277 235
Shares Outstanding	5 620	5 620	5 620	5 620
Value per Share	27.97	32.65	40.95	49.33

* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

F5: Overview and descriptive statistics for the estimated values per share returned from the CCA

Comparable Company Analysis (CCA)		
Valuation	Original	Excluding Paxlovid & Comirnaty
EV/Revenue	73.41	27.97
EV/EBITDA	84.28	32.65
EV/EBIT	103.60	40.95
P/E	114.72	49.33
Descriptive Statistics		
Max	114.72	49.33
Percentile (75th)	106.38	43.05
Average	94.00	37.73
Median	93.94	36.80
Percentile (25th)	81.56	31.48
Min	73.41	27.97

Appendix G: Precedent Transaction Analysis

G1: Descriptive statistics for the historical premium paid further categorized by Total Deal Value (TDV). The highlighted median was the metrics utilized in the PTA

Descriptive Statistics (PTA)					
Complete Dataset		Total Deal Value (TDV) > 10 000		Total Deal Value (TDV) < 10 000	
Max	500 %	Max	118 %	Max	500 %
Percentile (75th)	90 %	Percentile (75th)	61 %	Percentile (75th)	100 %
Average	76 %	Average	48 %	Average	84 %
Median	55 %	Median	45 %	Median	66 %
Percentile (25th)	39 %	Percentile (25th)	31 %	Percentile (25th)	42 %
Min	2 %	Min	7 %	Min	2 %

G2: Descriptive statistics for the Total Deal Value (TDV)

Descriptive Statistics (PTA)	
Total Deal Value (TDV)	
Max	80 000
Percentile (75th)	8 400
Average	8 779
Median	3 500
Percentile (25th)	1 350
Min	27

** Numbers are stated in \$ millions*

G3: Implied transaction multiples utilized in the PTA from Evercore's fairness opinion

Implied Pharmaceutical Transaction Multiples				
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
High	12.3	34.1	62.5	51.4
Average	5.4	19.4	24.9	31.2
Median	4.7	18.2	20.2	28.4
Low	1.5	10.6	10.3	13.7

G4: PTA utilizing the transaction multiples further returning estimated values per share corresponding to each transaction multiple

Company	Financials			
	Revenue	EBITDA	EBIT	Net Income
Pfizer Inc.	100 330	40 008	34 944	31 370
Descriptive Statistics	Transaction Multiples			
	EV/Revenue	EV/EBITDA	EV/EBIT	P/E
Max	12.3	34.1	62.5	51.4
Average	5.4	19.4	24.9	31.2
Median	4.7	18.2	20.2	28.4
Min	1.5	10.6	10.3	13.7
Valuation				
Implied Enterprise Value	471 551	728 146	705 869	
Net Debt	35 413	35 413	35 413	
Implied Market Value	436 138	692 733	670 456	890 908
Shares Outstanding	5 620	5 620	5 620	5 620
Value per Share	77.60	123.26	119.30	158.52

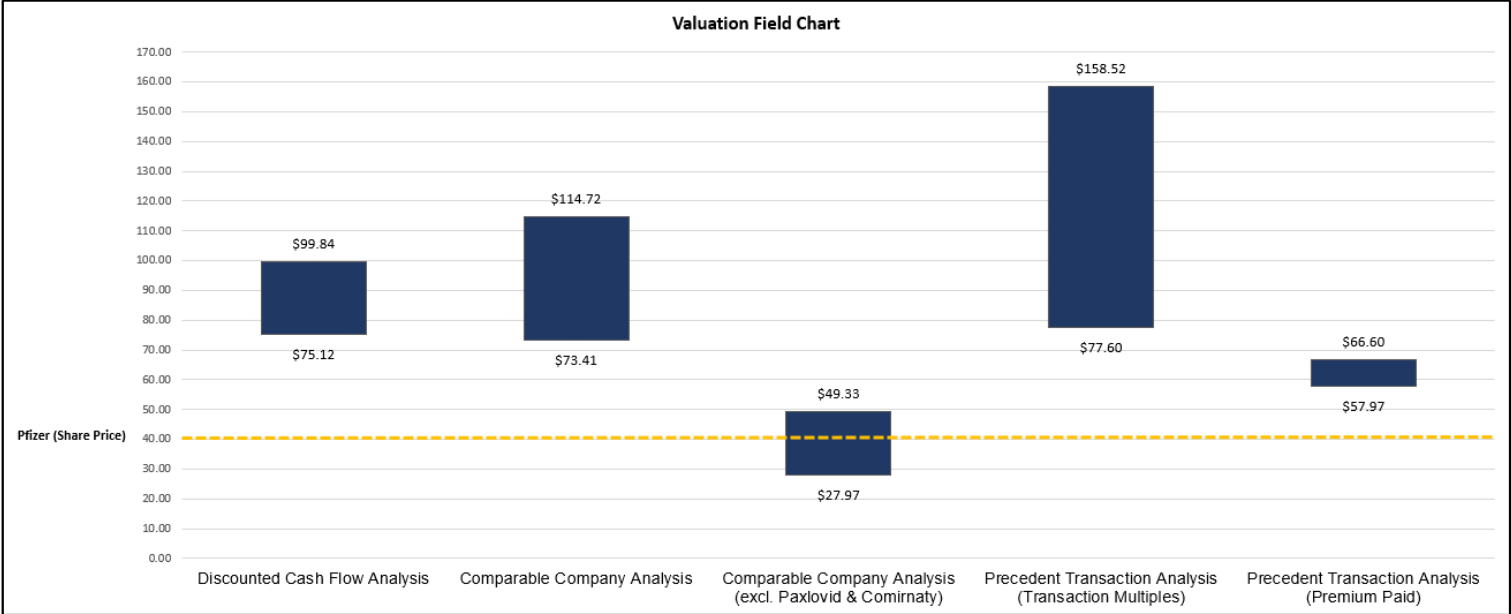
* Numbers are stated in \$ millions, except for Descriptive Statistics & Value per Share

G5: Overview and descriptive statistics for the estimated values per share returned from the PTA

Precedent Transaction Analysis (PTA)		
Valuation	Transaction Multiples	Historical Premium Paid
Transaction Multiples:		
EV/Revenue	77.60	
EV/EBITDA	123.26	
EV/EBIT	119.30	
P/E	158.52	
Historical Premium Paid:		
Complete Dataset		62.19
Total Deal Value (TDV) > 10 000		57.97
Total Deal Value (TDV) < 10 000		66.60
Descriptive Statistics		
Max	158.52	66.60
Percentile (75th)	132.08	64.39
Average	119.67	62.25
Median	121.28	62.19
Percentile (25th)	108.87	60.08
Min	77.60	57.97

Appendix H: Overview of Valuations

H1: Valuation field chart highlighting the estimated values per share from the valuation models and Pfizer share price as of 8th March, 2023



H2: Estimated values per share for each valuation model in comparison to Pfizer’s 3-year share price history (adjusted close price)

