# Equity valuation – Pfizer Inc

Miguel Gomes

Dissertation written under the supervision of Professor José Tudela Martins

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## Abstract

The Covid-19 pandemic brought unparalleled global challenges, during which the world has placed all its hopes within the pharmaceutical industry, making this industry one of the most impacted industries by the pandemic. Therefore, the purpose of this dissertation is to analyze the intrinsic value of Pfizer, INC, one of the key players in the industry to form an investment recommendation.

To establish the best practices for forming the investment recommendation, a literature review was conducted. Subsequently, the final investment recommendation was formulated by applying a weighted average of two Discounted Cash Flow Valuation Models and the Relative Valuation Model achieving a final share price of $34,37 as of 13th December of 2023 and leading to a Buy recommendation.

Acknowledging the potential impact with uncertainties provided by the possible evolution of Covid-19, a sensitivity analysis and a scenario analysis were also conducted considering different possible scenarios that can affect the company's share price.

Finally, the conducted valuation was compared with the equity valuation research made by the analyst Chris Shibutani, from Goldman Sachs on 12th December 2023. Despite different assumptions and perspectives, Shibutani's report concluded with the same final Buy recommendation, even though with a distinct final price target of $37,00.

## Abstrato

A pandemia de Covid-19 fez emergir desafios globais sem paralelo, pelo que todas as esperanças de prevenção e cura da doença foram depositadas na indústria farmacêutica, tornando-a numa das indústrias mais impactadas pela pandemia. Por isso, o propósito desta dissertação é analisar o valor intrínseco da Pfizer, INC, um dos *key players* da indústria, de forma a recomendar um investimento.

Para definir as melhores práticas para formulação de recomendações ao nível dos investimentos, foi elaborada uma revisão de literatura. Consequentemente, a recomendação final de investimento foi formulada através da aplicação de uma média ponderada de dois *Discounted Cash Flow Valuation Models* e de um *Relative Valuation*

*Model*, atingindo um preço final de ações de $34,37 a 13 de dezembro de 2023, conduzindo a uma recomendação de Compra.

Ciente do impacto potencial das incertezas inerentes à possível evolução da pandemia de Covid-19, foram também realizadas uma análise de sensibilidade e uma análise de cenários, considerando os diferentes possíveis cenários que podem afetar o preço das ações da empresa.

Por fim, a avaliação realizada foi comparada com a *equity valuation research* desenvolvida a 12 de dezembro de 2023 pelo analista Chris Shibutani, da Goldman Sachs. Apesar dos diferentes pressupostos e perspetivas, o relatório de Chris Shibutani também concluiu com uma recomendação final de Compra, embora com um *price target* final de $37,00.

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## List of Abbreviations

APV - Adjusted Present Value

CAPM - Capital Asset Pricing Model

DCF - Discounted Cash Flow

DDM - Dividing Discount Model

Ebitda – Earnings before interest, taxes, depreciation, and amortization

ESG - Environmental, Social, and Governance

FCFE - Free Cash Flow to Equity

FCFF - Free Cash Flow to the Firm

GDP - Gross Domestic Product

IMF - International Monetary Fund

ITS - Interest Tax Shield

LMIC - Low- and Middle-Income Countries

NGO - Non-Governmental Organization

OHI - Other High Income

OECD - Organization for Economic Co-operation and Development

PT – Price Target

PV - Present Value

SARD - Sum of Absolute Rank Differences

TV - Terminal Value

WACC - Weighted Average Cost of Capital

WHO - World Health Organization

# 1 Introduction

The current financial value of a company is reflected in its share price, which is subject to continuous fluctuations, as investors seek to incorporate the financial impact of the latest information into the stock valuation. Equity valuations are commonly used by investors to uncover the inherent value of a company's stock, forming the basis for investment decisions, and playing a pivotal role in the financial system.

In the rapidly evolving landscape of the pharmaceutical industry, few companies have experienced such transformative shifts as Pfizer. The Covid-19 pandemic tested not only the resilience of healthcare systems worldwide but also presented unprecedented challenges and opportunities for pharmaceuticals. Among them, Pfizer emerged as a key player, wielding its scientific expertise to develop groundbreaking vaccines, Comirnaty, and oral antiviral treatment, Paxlovid, that reshaped the industry dynamics. Therefore, this dissertation's objective is to analyze the fair value of Pfizer and form a potential investment decision.

The first chapter is a review of the literature to give the models used in the dissertation the theoretical basis upon which they need to be applied. The second chapter presents an outline of the industry and explores macroeconomic patterns that may affect Pfizer, thereby providing background information regarding the company's operational environment. The third chapter provides an overview of Pfizer. The fourth chapter discusses the company's valuation and establishes the assumptions utilized to determine its fair value.

# 2 Literature Review

“A cynic is the one who knows the price of everything and the value of nothing" a conviction by Oscar Wilde (n.d.) that perfectly demonstrates why valuation is crucial not just in the stock markets but in everything in our lives. Warren Buffet (2008) further distinguishes between value and price, highlighting that “Price is what you pay. Value is what you get". For that reason, equity valuation is a technique used by all investors to find whether a company is correctly priced considering its intrinsic value. Equity valuation ultimately answers the central question of the stock markets: "How much should I pay for this stock?". As Benjamin Graham (1949) states in his book *The Intelligent Investor*, "stocks do well or poorly in the future because the businesses behind them do well or poorly, nothing more or less". Therefore, companies with solid fundamentals will naturally receive a premium, while companies with weak fundamentals will be penalized in the long term. However, equity valuation is subject to assumptions that can be affected by prior bias or unexpected events, since even if valuation models are quantitative, valuation is not an exact science.

The purpose of this literature review is to examine the three most used models for equity valuation: discounted cash flow and relative valuation, and how each approach measures value. Furthermore, this literature review will assess which models fit better or worse than others in which cases.

## 2.1 Discounted Cash Flow Models

The Discounted Cash Flow (DCF) models are widely regarded as the foundation of all other equity valuation approaches because it is based on the fundamental principle of finance that the value of an investment is equal to the present value of its expected future cash flows. The DCF model computes the present value of future cash flows by accounting for the time value of money and the firm's cost of capital.

Discounted cash flow models rely on projections of cash flows and discount rates. However, it is not possible to estimate cash flows forever. Therefore, forecasts are divided into two phases. The initial phase focuses on forecasting the company's financial statements for a determined period. After this period, the terminal value is calculated assuming the company will grow at a consistent rate indefinitely. While the accuracy of financial forecasts diminishes over extended periods, the terminal value remains extremely sensitive to fluctuations in discount rates.

The most common Discounted Cash-flow models are the Free cash-flow to the firm (FCFF), Free cash-flow to Equity (FCFE), Adjusted present value (APV) and the dividend discount model (DDM).

### 2.1.1 Free Cash Flow to the Firm

The Free Cash Flow to the Firm (FCFF) is a method of valuing a company based on the cash flow available to the company's capital suppliers. This value is obtained by discounting the Free cash-flow to the firm by the weighted average cost of capital (Damodaran, 2006).

Therefore, to use this method it is required to compute the three main inputs. The first one refers to the free cash flow to the firm, that is obtained by subtracting all operating expenses (including taxes) and the necessary investments in working capital and fixed capital to the company´s Ebitda. (Jerald E. Pinto et al., 2010)

*Equation 1*

$$FCFF = \text{Ebitda} - \text{Taxes} - \Delta\text{NW}C - Net\ Capex$$

The free cash flow to the firm does not incorporate any of the tax benefits from interest payments (Damodaran, 2012). Those benefits will be incorporated in the discount rate, that will consider the after-tax cost of debt in the cost of capital.

The second input is to calculate the discount rate, that is the weighted average cost of capital. All the inputs for the Weighted Average Cost of Capital (WACC), are further developed below.

The last input is the Terminal Value (TV), which is the value of a project's remaining free cash flows beyond the forecast horizon (J. Berk & P. DeMarzo, 2017).

*Equation 2*

$$TV = \frac{Free\ Cash\ Flow\ for\ the\ last\ forecasted\ year * (1 + perpetuity\ growth\ rate)}{(Wacc - perpuity\ growth\ rate)}$$

Finally, with all the inputs required computed it is possible to achieve the enterprise value of the company as:

*Equation 3*

$$Enterprise\ Value = \sum_{t=1}^{n} \frac{FCFFt}{(1\ +\ \mathrm{RWACC})^{\ t}} + \frac{\mathrm{TV}}{(1\ +\ \mathrm{RWACC})^{t}}$$

### *2.1.1.1 Weighted Average Cost of Capital*

The WACC is the rate of return on investment demanded by the company's debt and equity investors, and thus the suitable discount rate for free cash flow to the firm (Koller, Goedhart & Wessels, 2000). The WACC is calculated as:

*Equation 4*

$$WACC = \frac{D}{(D+E)} * R(d) * (1-T) + \frac{E}{(D+E)} * \ R(e)l$$

Where:

R(d) – Cost of debt

R(e) – Cost of equity

T – Tax rate

E - Market value of Equity

D - Market value of Debt

This formula accounts for the Interest Tax Shield (ITS) that provides a corporate tax benefit each year. Thus, theoretically, the higher the firm’s leverage, the more the firm exploits the tax advantage of debt, and the lower its WACC (Jonathan Berk et al., 2017). The WACC is weighted on the market value of debt and equity.

### *2.1.1.2 Cost of Equity*

The cost of equity is the rate of return demanded by an investor of the firm in exchange for both opportunity costs and the risks connected with that firm. (Damodaran, 2016) states that this cost, unlike the cost of debt, is something implicit that cannot be observed and can change from investor to investor. Equity financing is often more expensive for the firm, since has lower liquidation preference in the event of bankruptcy what makes equity investors more exposed to possible losses, requiring higher returns.

To estimate the cost of equity, the most common model used is the Capital Asset Pricing Model (CAPM). Since it was the first model that answered the one fundamental question, that is, how the risk of an investment should affect its expected return (A. Perold, 2004) and is calculated as:

*Equation 5*

$$R(e) = Risk\ free + B(L) * Market\ Risk\ Premium$$

As it is possible to see from the formula above, the return on equity is risk-free plus a premium. That premium is given by the relation of company-specific risk relative to the market (Beta) and the market risk premium.

##### 2.1.1.2.1 Beta

Inherent to the cost of equity is the concept of beta. Beta is a concept that aims to define how volatile a stock price is when compared to the overall stock market. According to Damodaran (2012) beta is defined as a standardized risk measure obtained by dividing the covariance of each asset with the market portfolio by the variance of the market portfolio.

Therefore, Beta is obtained via regression analysis, in which the returns on the asset are regressed against the returns on the benchmark such as the S&P 500. This regression line's slope shows the asset's beta.

A beta larger than one indicates that the asset is more volatile than the market, meaning that it may provide higher rewards but also carries a higher risk. A beta less than one, on the other hand, indicates that the asset is less volatile than the market, implying a more consistent, although potentially lower, return (Damodaran, 2012).

##### 2.1.1.2.2 Market Risk Premium

"The market risk premium is the difference between the expected return on a market portfolio and the risk-free rate, and it provides a quantitative measure of the extra return demanded by market participants for the increased risk" (J. Chen, 2022). Researchers have long struggled to find the optimal risk premium, but Mayfield (2004) found that approximately 50% of the measured risk premium is related to the risk of future changes in investment opportunities.

#### *2.1.1.3 Cost of Debt*

The cost of debt measures the cost to the firm of borrowing money and reflects the effective interest rate that a company pays on its debt (A. Hayes, 2022). The cost of debt is observable in the market since it reflects the company's default risk. For companies with no public debt this value must be estimated.

The cost of debt is affected by the payback period since shorter-term debt is less exposed to risky events such as an increase in interest rates or company default.

#### *2.1.1.4 Market Value of Equity and Market Value of Debt*

The market value of equity is calculated by multiplying the current stock price by the total number of outstanding shares (J. Chen, 2020). On the other hand, the market value of debt is more challenging, since usually companies don´t have all their debt as public debt. Then the most common way of calculating the market value of debt is assuming the whole debt of the company to be a one-coupon bond (CFA Journal, 2022). Therefore, the book value of debt is converted to market value using the following formula:

*Equation 6*

$$Market\ Value\ of\ Debt = Interest\ Expense * [\left(\frac{1-\frac{1}{(1+R(d)^{t})}}{R(d)}\right) + \frac{Total\ Debt}{(1+R(d)^{t})}]$$

#### *2.1.1.5 Environmental, Social, and Governance*

Environmental, social, and governance (ESG) criteria are a set of guidelines for a company's behavior that are used to assess possible investments by socially concerned investors. Environmental criteria evaluate how a corporation protects the environment. Social criteria look at how the company maintains connections with its workers, suppliers, consumers, and the communities in which it works. Governance is concerned with the leadership of a corporation (T. Brock, 2022).

"The business of business is business". For decades, this statement was followed as a rule. However, nowadays, investors seek to align their portfolio with their norms and beliefs while improving the portfolio's risk-return characteristics; this is only possible with ESG concerns.

Giese et al. (2019) show that good ESG scores have affected the valuation and performance of companies, both through their systematic risk profile, lowering costs of capital, and their idiosyncratic risk profile with higher profitability.

Businesses with solid ESG characteristics typically have above-average risk management and compliance standards throughout the organization and in their supply chain management reducing their idiosyncratic risk. Moreover "companies with a strong ESG profile are less vulnerable to systematic market shocks and therefore show lower systematic risk. As a result of decreased systematic risk, a company's stock has a lower beta value, and investors require a lower rate of return. This ultimately results in a decreased cost of capital for a corporation (Giese et al., 2019).

### 2.1.2 Free Cash Flow to Equity

Differently to Free Cash Flow to Equity (FCFF), Free Cash Flows to Equity (FCFE) are the cash flows left over after all financial commitments, such as debt payments, have been met and after covering capital expenditures and working capital needs.

*Equation 7*

$$\text{FCFE} = \text{Net Income} + \text{Depreciation} - \text{CAPEX} - \text{Changes in Working Capital} - (\text{Debt Repayments} - \text{New Debt Issued})$$

Moreover, the FCFE uses the cost of equity as the discount rate, instead of the WACC used in the FCFF. Therefore, instead of the enterprise value, the FCFE will lead to the company's equity value. (Janiszewski, 2011).

*Equation 8*

$$Equity\ Value = \sum_{t=1}^{n} \frac{FCFFt}{(1 + \mathrm{R(e)})^{t}} + \frac{\mathrm{TV}}{(1 + \mathrm{R(e)})^{t}}$$

Even though both models rely on assumptions and theoretically should give us the same estimates, the FCFF model is best suited and superior to the FCFE method in settings where companies have either a high degree of leverage or during periods of significant changes in capital structure.

### 2.1.3 Adjusted Present Value

Another discounted cash flow model is the Adjusted Present Value (APV), which was first announced by Myers (1974). This model determines the levered value of an investment by first calculating its unlevered value, which is its value without any leverage, and then adding the value of the interest tax shield (J. Berk & P. DeMarzo, 2017) and reducing the value of possible bankruptcy costs:

*Equation 9*

$$APV = \text{Value Unlevered} + PV\ (\text{Interest Tax Shield}) - \text{Bankruptcy Costs}$$

The unlevered value of the firm is obtained by discounting the expected free cash flow to the firm at the unlevered cost of equity calculated with the unlevered beta of the firm, as:

*Equation 10*

$$Beta(u) = \frac{B(l)}{1 + (1 - T) * \frac{D}{E}}$$

The interest tax shield represents the expected tax benefits from a certain level of debt and can be calculated as:

*Equation 11*

$$PV(ITS) = \frac{Tax\ rate * Cost\ of\ debt * Debt}{Cost\ of\ debt}$$

Finally, figuring out the expected bankruptcy cost is one of the main APV method challenges being commonly calculated as:

*Equation 12*

$$Bankrupcy\ costs = Probability\ of\ default * \ Default\ costs$$

While for the probability of default, independent rating agencies like S&P Global Ratings, Fitch Ratings, and Moody's Investors Service infer a probability of default for businesses based on their credit rating (Kenton, 2023), it is more complicated to understand the dimension of the default costs of the company. Reindl, Stoughton and Zechner (2017) identified key determinants of bankruptcy costs, such as asset volatility, growth options, labor intensity, tangibility, size, and corporate governance, observing an average of 20% of unlevered asset values as the value for bankruptcy costs.

### 2.1.4 Dividend Discount Model

Using the present value of a stock's future dividend payments, the Dividing Discount Model (DDM) is a valuation technique used in finance to determine a stock's intrinsic value. The main idea of DDM is that a stock's actual value can be determined by the cash flows it distributes to shareholders as dividends. The model assumes that dividend payments will grow steadily over time and that investors' primary motivation is to receive them. By applying a discount rate that is frequently based on the company's cost of equity, the DDM formula reduces these projected future dividends to their present value, thereby determining their present value.

## 2.2 Relative Valuation

In relative valuation, instead of obtaining the present value of expected future cash flows as the DCF, the value of an asset is derived from the pricing of comparable assets (Damodaran, 2002). This method assumes a rationale that is used often in our daily lives, that similar assets should have similar prices.

In our daily lives, we always try to compare the characteristics and the price of an asset with similar assets to get the best deals possible. However, finding the most similar assets can be sometimes as challenging as key to apply our decisions.

Similarly, according to Damodaran (2002), to apply a relative valuation is needed to identify comparable assets. Following Arfold (1992), one of the effective criteria for selecting comparable firms is “industry membership”, therefore this dissertation only considered companies within the industry. Together with “industry membership”, Damodaran (2002) states that size, capital structure, profitability and growth rate should be considered. Moreover, (Knudsen, Kold, & Plenborg, 2017) found that “a combination of the Sum of Absolute Rank Differences (SARD) approach and the industry classification approach results in even more accurate valuation estimates, suggesting that the two approaches capture different aspects of peers’ fundamentals”.

After choosing the comparable assets, according to Damodaran (2002), is needed to standardize their market values. usually through four common variables: Earnings, cash flows, book value, and revenues, to make all the assets comparable and to be able to make a decision.

Two types of multiples can be chosen to proceed with the valuation: trailing multiples and forward-looking multiples. Trailing multiples are calculated using historical data, often from the most recent financial records of the company. They provide a firm foundation for valuation based on past outcomes, but they might not always be a reliable predictor of future success, particularly if the business or sector is going through outlier events like Pfizer with Covid-19.

The forward-looking multiples, focus on future earnings estimates and are frequently considered to be more precise in predicting a company's intrinsic value, especially for industries undergoing rapid change or companies that have experienced recent anomalies in their financials as it was the case of Covid-19 in biopharmaceuticals. Even though they are also subject to the uncertainties inherent in any kind of forecast, they will be used since Pfizer faced anomalies’ events in past years that affected their performance.

### 2.2.1 P/E

The use of an industry-average price-earnings ratio to evaluate a corporation is one of the most used relative valuation multiple (A. Tuovila, 2020). This ratio measures its current share price relative to its earnings per share (J. Fernando, 2021) An excessively high P/E may indicate that a stock is overpriced. Alternatively, a low P/E could mean that the stock price is low right now in comparison to earnings.

### 2.2.2 EV/Ebitda

EV to Ebitda is also one of the most important multiples that tells how much each dollar of Ebitda is worth to the investor. Enterprise value is an indicator of a business's economic worth, and it is widely used to estimate a company's acquisition value. Since it considers both the cash an acquirer would receive and the debt they would have to take on, it is thought to be a more accurate valuation metric for M&A transactions than market cap.

Enterprise multiples can fluctuate based on the industry, where growing sectors such as biopharmaceutical might have higher multiples and lower slower growth industries.

## 2.3 Valuation Model Decision

The main goal of this paper is to observe the intrinsic value of Pfizer, INC for the long term. Then DCF is chosen to be the primary model for this dissertation. Even if evaluate a biopharmaceutical is not straightforward because this industry relies strongly in R&D to discover new drugs that often fail to achieve the coveted results, “discounted cash flow method has been shown to work well when evaluating biotech’s” (Mclure. B, 2022). Moreover, the DCF allows analyzing the different revenue streams of Pfizer, what is important due to the impacts of the Covid-19 vaccine and pill.

The DCF will be calculated through two different methods, the most used FCFF and the APV, since according to Koller, Goedhart and Wessels (2000), this method fits better when the company is expected to change their debt-to-equity ratio significantly.

Since DCF strongly relies on assumptions (Kaplan et al., 1995) found that more than a substitute of DCF, relative valuation can be useful to complement it. This method has the advantage of being easier to apply and widely recognized by investors (Jerald E. Pinto et al., 2010). Then it will be considered as a complement in this dissertation.

# 3 Pharmaceutical Industry Analysis

## 3.1 Definition

The pharmaceutical industry involves both private and public organizations in the process of discovering, developing, and manufacturing drugs. It arose in the nineteenth century aiming to research the medicinal properties of plants, minerals, and animals in response to several health challenges. The industry is valued at $300 billion per year, being expected to rise (Tannoury & Attieh, 2017). Due to its exceptionally high R&D to revenues ratio, the pharmaceutical industry is often characterized as a technology- and science-driven sector (Becker & Lillemark, 2006).

According to Evaluating Pharma (2021), the number of annual prescriptions is increasing and is expected to increase at a CAGR of 6.4% until 2026, revealing the high potential of the industry in the following years especially because of the increased reputation of the industry due to the Covid-19.

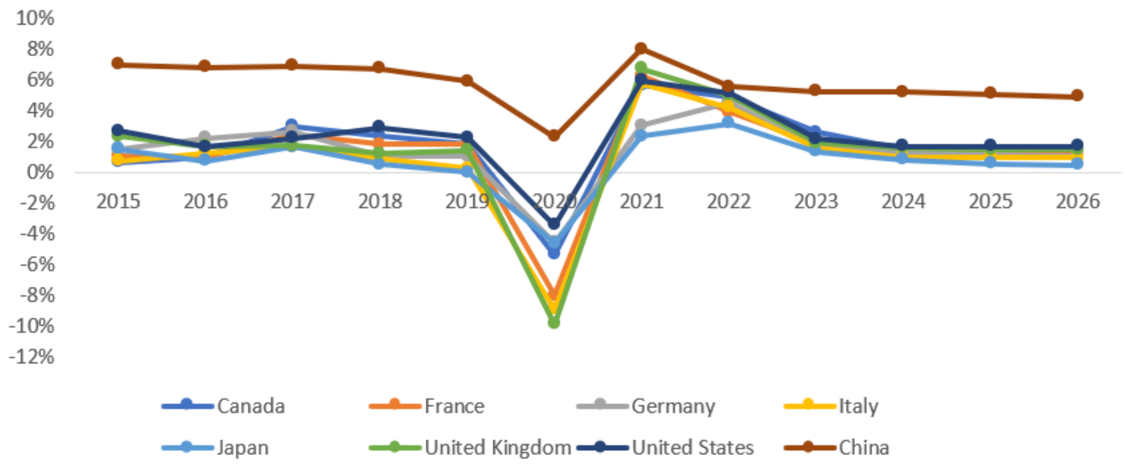
## 3.2 Macroeconomic Analysis

### 3.2.1 Gross Domestic Product

Global spending on health more than doubled in real terms over the past two decades, reaching US$ 8.5 trillion in 2019, representing 9.8% of global Gross Domestic Product (GDP). However, it was unequally distributed, with high-income countries accounting for approximately 80% (World Health Organization, 2021), confirming that the economic situation of each country has a strong relationship with the pharmaceutical industry (Pérez et al., 2018). So as the GDP increases, the investment in health is most likely to increase.

As seen in Figure 1, the GDP in the G7 countries is expected to increase after the decrease suffered because of the Covid-19 crisis. That situation can be beneficial for the whole economy and the pharmaceutical industry is no exception. In Figure 1, it can also be seen that China is growing much faster than the other countries and it even grew during the Covid-19 period, which suggests that there is an enormous potential for biopharmaceuticals investments in China.

*Figure 1: Gross Domestic Product (GDP) y-o-y growth rate by country*




*Source: International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD), and German Federal Statistical Office*

## 3.3 Demographics

More than any other factor people are the ones who change the world. Around 108 billion people have lived on planet Earth but today´s population represents 6.5% of all time population, and there are as many people turning 80 as newborn babies and more 65-year-olds than children under 15 in North America (Euromonitor, 2022). Those facts make geopolitics more important than ever and provide opportunities and challenges for the biopharmaceutical sector.

### 3.3.1 Peak Fertility

The average number of children per women decreased from 5 in 1960´s to 2.5 in 2019 and is expected to reach 2.2 in 2050. Due to that global population growth is slowing down and is globally expected to reach the peak of children under 15 years old in 2050 (United Nations, 2018).

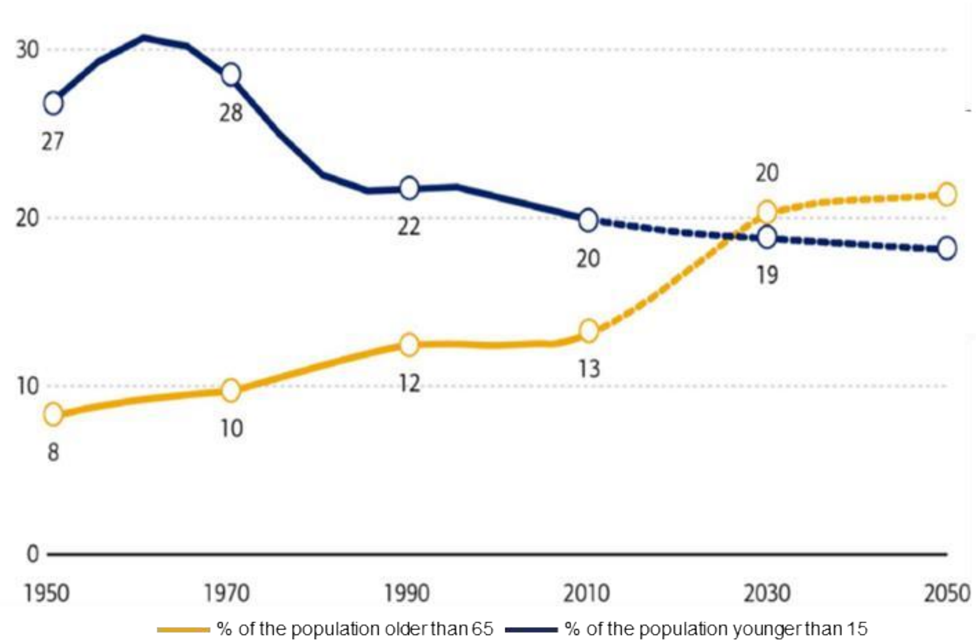
There are differences between countries related to fertility policies. While half of the emerging countries have policies to lower fertility rates, developed countries seek to have higher ones. Although, many emerging countries are already suffering from the trend of having less children, with countries such as Brazil, China and Russia already below the replacement level (2.1 children per women). Those lower birth rates are a consequence of social, medical, and mainly economic factors.

Moreover, the number of countries that started policies to increase fertility rates quadrupled from 13 in 1980 to 56 in 2023 with biotechnology playing a key role. Indeed, countries rely on new health technologies such as assisted reproductive services, in vitro fertilization, genetic testing, and donor services to get higher-quality fertility care. Today it is reported that 1/3 of US Adults have used fertility treatments or know someone who has (Pew Research, 2018).

### 3.3.2 Population Ageing

A demographic shift between the younger and older populations is currently taking place in society (Figure 2). Globally, the number of people 65 or older is expected to more than double between 2019 and 2050, while the number of people under 25 is anticipated to peak and then fall. The biggest growth in terms of aging is seen at 80+ years old since it is expected to triple and reach 426 million (World Health Organization, 2021).

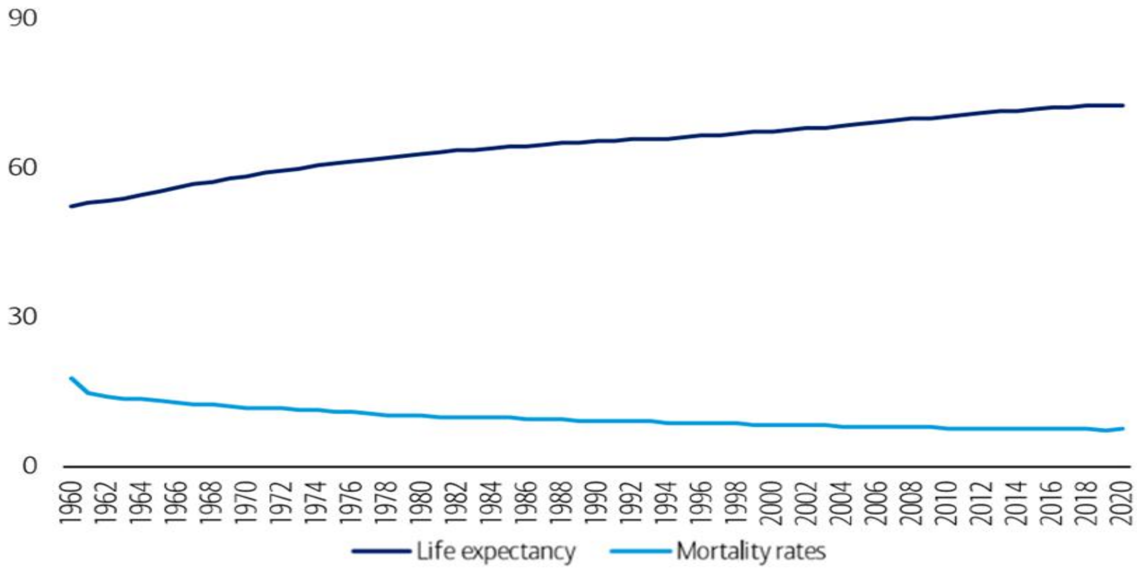
*Figure 2: Evolution of Percentage of Population older than 65 years and younger thar 15 years old*




*Source: Pew Research Center, Bank of America Research*

That shift is mainly caused by the increase in life expectancy. In fact, it increased from 29 years in 1770 to 73 years in 2019 (Figure 3) and it is expected that for every 5 years life expectancy increases by 1 year, achieving 77 years in 2050 (United Nations, 2019). That increase was one of the biggest achievements of humanity and was only possible due to breakthroughs in healthcare, modern medicine, and improvements in lifestyle.

*Figure 3: Life Expectancy (in years) vs Mortality Rates*




*Source: World Bank, Bank of America Research*

#### 3.3.2.1 Biopharmaceutical Impact and Opportunities

The biopharmaceutical sector has played a key role in advancing global health to make it what it is today. Public health investments accounted for 44% of the increase in life expectancy, while biopharmaceutical innovation contributed 35% to this increase (Buxbaum et al., 2020). This remarkable achievement was possible through consistent investments in research and development, leading to the discovery of cures for once-incurable diseases and the prevention of the spread of dangerous viruses through the development of vaccines.

Despite life expectancy increasing, it does not mean that the number of diseases has decreased. With a growing elderly population, there is a higher likelihood of individuals developing multiple long-term illnesses, leading to increased healthcare expenditures. According to (Edward Jones, 2022) the expenditure in the health of those patients is 8 times higher than a healthy adult. Moreover, the lifetime in which people are ill is increasing as well, where a child born in 2020 is expected to spend 12% of their lifetime being sick.

As aging is an inevitable process, it is crucial to shift the perspective from viewing it as a liability to recognizing it as an asset. Therefore, rather than increasing life expectancy, the key challenge for the industry is to increase the number of healthy years. Big biopharmaceuticals are in the best position to bring innovative solutions to this new necessity with innovations in genomics, big data, and artificial intelligence. Living healthily beyond 100 years could become increasingly common, allowing individuals to remain able to work for longer. This could alleviate government budgetary pressures associated with pensions and give people more time to enjoy their lives. Future discoveries such as rejuvenation biotech could even result in the disrupt of death bringing the unimaginable possibility of immortality to the table.

#### *3.3.2.2 Inequality across the World*

While life expectancy has had a global rise, there are still big differences between emerging and developed nations. While a person in Japan can expect to live more than 80 years, in most sub-Saharan countries it is not expected to live more than 60 years due to different accesses to healthcare. These differences were highlighted during the Covid-19 period, where some got quick access to vaccinations while others did not have access at all.

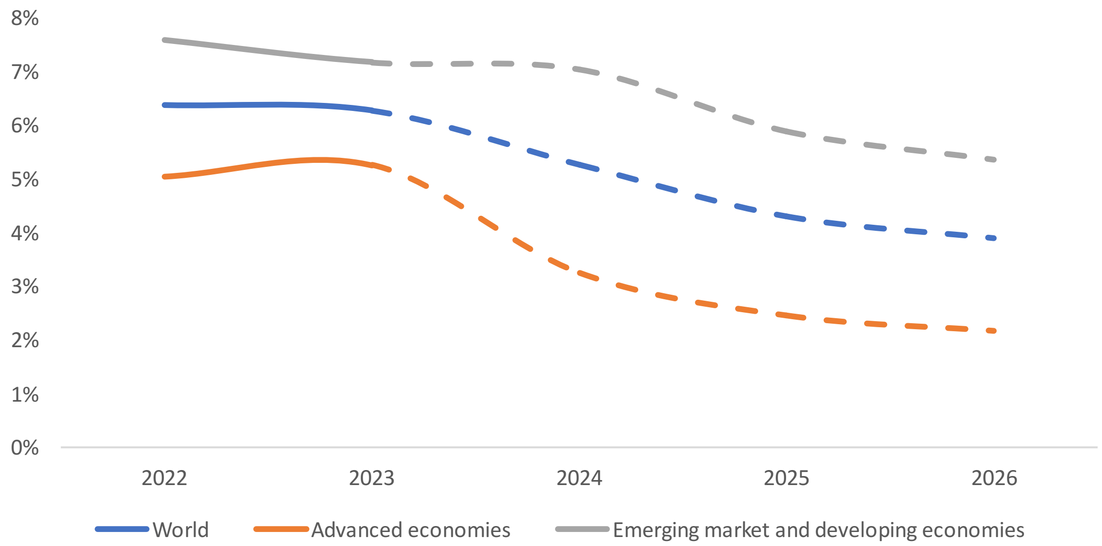
Biopharmaceuticals hold both potential and accountability in emerging nations. By partnering alliances with local governments and NGOs, these companies can guarantee both availability and affordability of crucial medicines and vaccines. Such partnerships can also facilitate the establishment of local manufacturing units, leading to job creation and skill development in these regions. As these countries progress and their GDP grows, increased investments in healthcare can further benefit the biopharmaceutical sector.

## 3.4 Inflation Rates

*"Americans are getting stronger. Twenty years ago, it took two people to carry ten dollars' worth of groceries. Today, a five-year-old can do it" – Henny Youngman*

Inflation refers to a continual and gradual increase in prices (Rezapour, A., 2021). Nowadays, inflation is one of the biggest problems that every country is facing ( XXX), reaching the highest value since 1983. The main causes of inflation were monetary ease, where more money was printed to face the increase of government spending, especially in the healthcare systems that were needed due to Covid-19. Those spendings were even bigger due to the global shortages of medical products accompanied by the global spread of the disease, joined by high prices (Miller, F. A., 2020).

*Figure 4: Global Inflation Evolution*




*Source: International Monetary Fund, 2023*

Those with a fixed dollar income will suffer when the cost-of-living advances (Graham, B., 1973). Since pensioners are key consumers for the pharmaceutical industry this can have a negative effect on this industry. Moreover, even if one of the controversial empirical findings in Finance is the negative relationship between stock returns and inflation (Choundhry, T., 2001), it is possible to claim there is a negative relationship between real stock return and high inflation (Lintner, 1995). This relationship can be caused by the fact that the normal reaction to high inflation is to increase the interest rates (Bank of England, 2022) while higher interest rate will increase the discount rate and lower valuations.

## 3.5 Porter Five Forces

### 3.5.1 Buyer Power

The largest buyers in the global market are the national health services of each country. Since they have significant financial power and buy enormous amounts of medications, they have a considerable influence over contract negotiations, granting them **strong** buyer power.

### 3.5.2 Supplier Power

The industry mostly depends on the R&D division's ability to discover new and potent medications. This positions universities and labs, the starting points of pharmaceutical innovation, as important providers of human resources and expertise for the sector (Nedelcheva, Y. et al., 2021).

Regarding raw materials, participants seek to buy from a variety of sources, limiting their reliance on a single seller since they usually show low levels of differentiation between them, reducing supplier power. Overall supplier power can be defined as **moderate**.

### 3.5.3 Threat of New Entrants

The pharmaceutical industry operates under strict regulations, given its profound implications for public health. Additionally, the sector demands substantial up-front investment in research and development what is a huge barrier to new companies. Consequently, these factors create high barriers to market entry, which leads to a **weak** threat of new entrants.

### 3.5.4 Degree of Rivalry

The industry is dominated by a small number of large and well-established companies, and then there are also smaller companies specialized in a small number of products. Being those companies' large multinational operating almost everywhere over the world, the intensity of rivalry is **strong**.

### 3.5.5 Threat of Substitutes

For this industry, the key question is whether products are competitors or substitutes. A product is considered as a substitute when it achieves a similar effect through a different technology from the original pharmaceutical product (Nedelcheva, Y. et al., 2021). Generics are a good example of that, since, while they mirror the therapeutic effects of branded drugs, their commercialization processes differ. Given their cost-effectiveness and the ease with which patients can transition to them, the presence of generics introduces a pronounced threat of substitution in the industry. Thus, the threat of substitutes is **high**.

# 4 Company Overview

Pfizer Inc. is a research-based, global biopharmaceutical company. It applies science and global resources to bring therapies to people that extend and significantly improve their lives through the discovery, development, manufacture, marketing, sale, and distribution of biopharmaceutical products worldwide.

Pfizer works across the world challenging the most feared diseases nowadays, having a successfully developed a Covid-19 vaccine (Comirnaty) in 2021 and an oral therapeutic also for Covid-19 (Paxlovid).

The company Ebitda breakdown in 2022 in segments (Table 1) is as follows: Primary Care (includes Comirnaty and Paxlovid) accounts for 74%, Specialty Care 14%, and Oncology 12%.

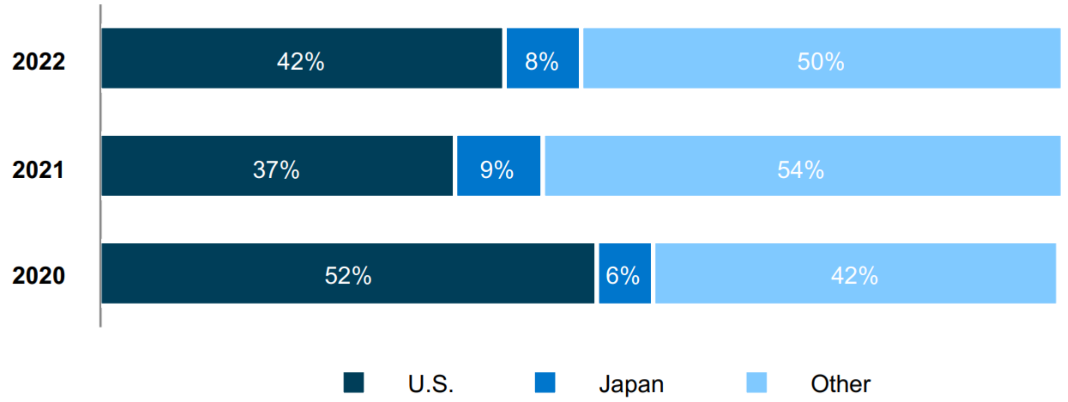
*Table 1: Pfizer Key Products Split by Segments*

| Customer Groups | Description | Key Products |
|---|---|---|
| Primary Care | Includes:<br>• Former Internal Medicine product portfolio (innovative brands in cardiovascular metabolic, migraine and women's health, as well as regional brands)<br>• Former Vaccines product portfolio (innovative vaccines across all ages with a pipeline focus on infectious diseases with significant unmet medical need)<br>• Products for COVID-19 prevention and treatment, and potential future mRNA and antiviral products | • Eliquis, Nurtec ODT/Vydura and the Premarin family<br>• The Prevnar family, Nimenrix, FSME/ IMMUN-TicoVac and Trumenba<br>• Comirnaty<br>• Paxlovid |
| Specialty Care | Includes:<br>• Former Inflammation & Immunology product portfolio (innovative brands and biosimilars for chronic immune and inflammatory diseases)<br>• Former Rare Disease product portfolio (innovative brands for a number of therapeutic areas with rare diseases, including amyloidosis, hemophilia, endocrine diseases and sickle cell disease)<br>• Former Hospital portfolio (global portfolio of sterile injectable and anti infective medicines, excluding Paxlovid) | • Xeljanz, Enbrel (outside the U.S. and Canada), Inflectra, Eucrisa/Staquis and Cibinqo<br>• The Vyndaqel family, Oxbryta, BeneFIX and Genotropin<br>• Sulperazon, Medrol, Zavicefta, Zithromax, Vfend and Panzyga |
| Oncology | Includes innovative oncology brands of biologics, small molecules, immunotherapies and biosimilars across a wide range of cancers. | Ibrance, Xtandi, Inlyta, Retacrit, Lorbrena and Braftovi |

*Source: Pfizer Annual Report 2022*

Pfizer sells products in over 125 countries and although U.S is still the main source of revenues in 2022 (42%), followed by Japan revenues (8%), it became more diversified in past years, as the number of countries where revenues exceeded $500 million increased from 8 in 2020 to 24 in to 2022 with the increase primarily driven by Covid-19 vaccine (Figure 5).

*Figure 5: Revenues by country as % of Total Revenues*




*Source: Pfizer Annual Report 2022*

## 4.1 SWOT Analysis

**Strengths and Opportunities:**

- **Covid-19 products market-share and reputation**: Pfizer has outpaced its peers in the race to combat Covid-19, securing a remarkable 61% market share for the vaccine globally. That achievement brought strong cash flows for the company and increased their reputation as a trustworthy company.
- **Strong R&D and M&A possibilities**: Covid-19 provided an unexpected rise in cash flow for Pfizer that puts the company in an advantageous position to invest more in R&D and M&A to face other diseases.
- **Ageing population**: As the global demographic shifts towards an older population, Pfizer's expertise in addressing the healthcare needs of this age group stands as an important strength.
- **Leveraging Big Data and AI**: Big data and AI can take a key role in the future of biopharmaceuticals, allowing treatments that are suited to specific needs ensuring improved efficacy and fewer side effects.

**Threats and Weaknesses:**

- **Lawsuits:** The number of lawsuits filed against Pfizer has increased substantially in the previous years. This was due to the increase of legal battles over patent rights and given the rapid development vaccine, there might be legal challenges or disputes related to its distribution, side effects, or efficacy.
- **Covid-19 revenues overdependence**: Given the impact of both Comirnaty and Paxlovid on Pfizer revenues, Pfizer is overexposed to Covid-19 development.
- **Generic drug companies:** Governments are putting pressure on doctors to prescribe cheaper generic drugs as demand for pharmaceuticals rises. The rush of generics into the market may have an impact on the company's income.
- **Potential R&D Failures**: While Pfizer is in a good position to reinforce their R&D investments, failed clinical trials or unsuccessful drug developments can lead to significant financial losses for Pfizer.

## 4.2 Covid-19

When on 11 January 2020 China reported the first victim of coronavirus, no one expected that 3 months later, on 11 March 2020, the World Health Organization was officially declaring the Covid-19 disease as a pandemic.

At those times, when everything was blurry and scary for everyone, governments and society started relying on scientists more than ever and applied all their hopes to pharmaceuticals.

After reaching 1 million deaths caused by Covid-19 and several lockdowns that affected the world economy as it had never been seen, on 9 November 2020 results from phase III trials proved that Pfizer and BioNTech's mRNA vaccine was more than 90% effective in preventing symptomatic Covid-19.

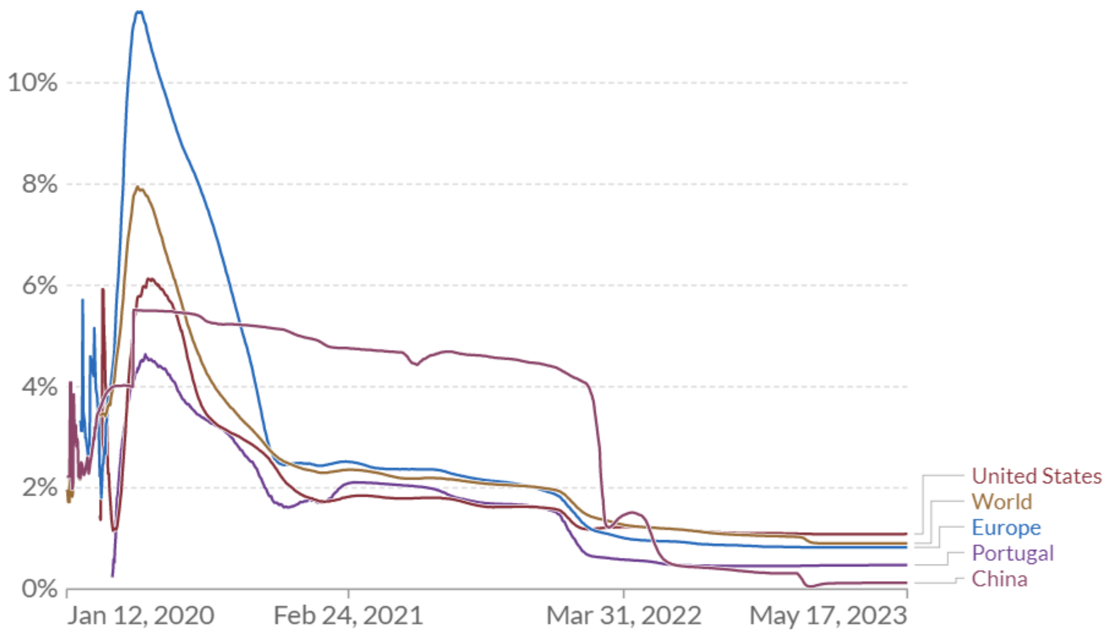
That news of Pfizer and BioNTech's Covid-19 vaccine gave the world a sense of light at the end of a tunnel. Nevertheless, many people were asking if "Pfizer did true a miracle with the vaccine for Covid-19" (J. A. Patel et al., 2020) due to the uncertainty with long-term side effects, with "fears that the vaccine is being granted expedited approval and that this would compromise quality and safety standards" that could affect the confidence on those vaccines. Thus, the results were crucial to have a mass vaccination. Nowadays, H. Branswell (2020) can categorically answer that question by saying that "you are a beneficiary of a miracle. That miracle is the development, testing, manufacturing, and global distribution of Covid vaccines".

Pfizer together with biotech manufactured up to four billion doses in total by the end of 2022, complying with multiple agreements with developed and emerging countries. Moreover, Pfizer also developed a novel oral Covid-19 treatment used against mild Covid-19 infections.

With the WHO declaring the end of Covid-19 as a global health emergency (World Health Organization, 2023) with a case fatality rate stable and comparable with the regular flu (Figure 6), the pandemic is out from the daily news headlines and starts to be forgotten.

However, new variations are continually appearing, and in vivo investigations indicate the possibility for immune evasion and increased transmissibility of new mutations with the most recent VOC XBB.1.5, which has nearly totally replaced the former dominant VOC BQ.1.1 ( (European Centre for Disease Prevention and Control, 2023).

*Figure 6: Covid-19 Fatality Rate Evolution*




*Source: Our World In Data*

Uncertainties inherent to R&D, new variants that could affect the effectiveness of the treatments, long-term unexpected effects, the risk of relationship with BioNTech and the end of Covid-19 as a disease are risks that still may affect the company in the future.

# 5 Pfizer Valuation

## 5.1 Historical Analysis

This chapter pretends to understand Pfizer´s historical positions and compare them with peers to get a more detailed perspective of the industry trends.

Covid-19 was a game changer for Pfizer, and it is possible to observe that there are two completely contrasting times for the company. One before the Covid-19 impact on revenues until late 2020, and a post-Covid-19 that started in late 2020 but is more significant in 2021 onwards.

Total revenues had inconsistent growth over the years before Covid-19, with a decrease of -4% and -8% in 2019 and 2020 respectively (Table 2). However, the sales of the new products helped the revenues to increase 71% in 2021 and 23% in 2022, reaching all-time highs. The production of the new products, together with high inflation and difficulties in the supply chain made the cost of sales increase 209% in 2021 and 11% in 2022 affecting Pfizer's gross margin which decreased from 79% in 2020 to 62% in 2021 (Table 2: Pfizer Growth Analysis). Furthermore, Covid-19 obligated Pfizer to invest more in R&D, increasing those costs from 2020 onwards. The net income followed the revenues trend, decreasing in 2019 and 2020, 7% and 8% respectively but increasing exponentially in 2021.

*Table 2: Pfizer Growth Analysis*

| Growth Analysis | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Total revenues | 2% | -4% | -8% | 71% | 23% |
| Cost of sales | 3% | -10% | -1% | 209% | 11% |
| SG&A | -2% | -1% | -14% | 1% | 8% |
| R&D | 4% | 0% | 13% | 16% | 8% |
| Operating income | 3% | -3% | -16% | 68% | 47% |
| Income before provision for taxes | 6% | -7% | -10% | 67% | 45% |
| Net income | 12% | -7% | -8% | 63% | 50% |

*Source: Bloomberg*

The Covid-19 pandemic impact was also noticeable on Pfizer's financial ratios. In 2021, the company experienced a significant decrease in both Net Debt/Ebitda and Net Debt/Equity due to a high increase in Ebitda and cash from the sales of Covid-19 products. Pfizer is now in a solid financial position to be able to take risks in R&D or in

M&A, giving a competitive advantage against its peers, and the success of its capital allocation will be key to the future of the company.

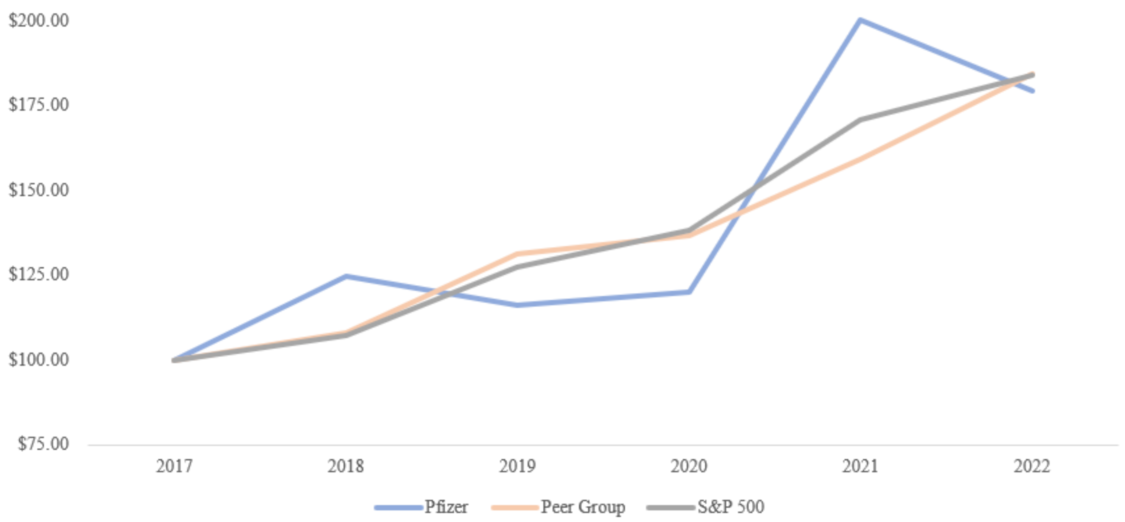
*Table 3: Pfizer Key Ratios and Margins Analysis*

| Key Ratios and Margins | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Net debt/Ebitda | 105% | 133% | 176% | 30% | 36% |
| Net debt/Equity | 36% | 67% | 44% | 10% | 7% |
| Return on Equity | 21% | 51% | 34% | 28% | 36% |
| Gross margin | 79% | 81% | 79% | 62% | 66% |
| Cost of sales | 21% | 19% | 21% | 38% | 34% |
| SG&A (% of revenues) | 27% | 27% | 25% | 15% | 13% |
| R&D (% Revenues) | 15% | 15% | 19% | 13% | 11% |
| Operating margin | 38% | 38% | 35% | 34% | 41% |
| Net margin | 33% | 32% | 32% | 31% | 38% |

*Source: Bloomberg*

As demonstrated by Figure 7, Pfizer share price outperformed both the market and peer group from 2017 to 2018. However, from then until 2020, it lagged in both. After 2020, Pfizer had an important recovery that can be explained by the success of the Covid-19 vaccine.

*Figure 7: Pfizer Share Price Comparison with peer group and S&P 500 between 2017 and 2022*




*Source: Bloomberg*

## 5.2 Pfizer´s Forecast

This chapter aims to provide detailed information regarding the forecast of Pfizer´s financial statements including all the assumptions that were considered to achieve the results of the DCF models.

### 5.2.1 Income Statement

Firstly, all the items in the income statement will be forecasted. All the details can be observed in Appendix 1.

The revenues forecast was divided into segments since all segments have different future perspectives. Furthermore, different approaches were used to forecast legacy products and Comirnaty and Paxlovid, since these became the key drivers of revenues and have a bigger potential impact in the future of the company.

#### *5.2.1.1 Comirnaty: Covid-19 Vaccine*

Covid-19 had a substantial impact on Pfizer´s financials that was mostly reflected on the Comirnaty revenues, where in the first year of sales it represented 45% of the revenues of the company by itself, being on the top 10 selling products worldwide in the past years (Evaluate Pharma, 2022).

*Table 4: Vaccine Forecast Model*

| Vaccine Forecast | | | | |
|---|---|---|---|---|
| **Vaccine Forecast ($m)** | **2023** | **2024** | **2025** | **2026** |
| Population | 8 000 | 8 071 | 8 143 | 8 214 |
| Population growth per year | 71 | 71 | 71 | 71 |
| United States (% of world population) | 4,21% | 4,18% | 4,14% | 4,10% |
| United States (% booster vaccination) | 24% | 24% | 24% | 24% |
| United States # vaccine sales | 81 | 81 | 81 | 81 |
| United States vaccine price | 110 | 110 | 110 | 110 |
| **United States revenue** | **8 897** | **8 904** | **8 902** | **8 900** |
| Europe (% of world population) | 9,31% | 9,23% | 9,15% | 9,07% |
| Europe (% booster vaccination) | 24% | 24% | 24% | 24% |
| Europe # vaccine sales | 180 | 179 | 177 | 176 |
| Europe vaccine price | 50,0 | 50,0 | 50,0 | 50,0 |
| **Europe revenue** | **9 020** | **8 940** | **8 862** | **8 785** |
| Africa Population | 1 441 | 1 475 | 1 509 | 1 543 |
| Africa (% World Population) | 18,01% | 18,27% | 18,53% | 18,78% |
| Africa (% booster vaccination) | 6% | 6% | 6% | 6% |
| Africa # vaccine sales | 87 | 88 | 90 | 91 |
| Africa vaccine price | 19,5 | 19,5 | 19,5 | 19,5 |
| **Africa revenue** | **1 701** | **1 725** | **1 765** | **1 805** |
| Asia % Population | 58,70% | 58,25% | 57,78% | 57,31% |
| Asia (% booster vaccination) | 38% | 38% | 38% | 38% |
| Asia # vaccine sales | 1 793 | 1 780 | 1 765 | 1 751 |
| Asia vaccine price | 19,5 | 19,5 | 19,5 | 19,5 |
| **Asia revenue** | **34 969** | **34 704** | **34 422** | **34 144** |
| South America % Population | 8,34% | 8,39% | 8,44% | 8,42% |
| South America (% booster vaccination) | 54% | 54% | 54% | 54% |
| South America # vaccine sales | 363 | 366 | 368 | 367 |
| South America vaccine price | 19,5 | 19,5 | 19,5 | 19,5 |
| **South America revenue** | **7 086** | **7 129** | **7 171** | **7 160** |
| Pfizer Market Share | 63,00% | 63,00% | 63,00% | 63,00% |
| Pfizer Vaccines Sales | 1 578 | 1 571 | 1 563 | 1 553 |
| Pfizer/BioNtech % Revenues | 50% | 50% | 50% | 50% |
| **Total revenues** | **19 427** | **19 342** | **19 253** | **19 150** |

*Source: Own Analysis, United Nations, Our World In Data, Reuters, Healthcare Dive*

According to the United Nations (2022), the world's population is expected to experience a steady growth, increasing by 71 million annually, reaching 8,214 billion by 2026, driven by emerging countries, where it is expected to represent 83.57% of the population. This consistent population growth underscores the sustained demand for vaccines.

However, access to these vaccines and the infrastructure needed to keep and administer them securely is frequently determined by an individual's Zip Code. South America is at the vanguard, with around 54% of its people having gotten all necessary booster doses. In stark contrast, Africa falls behind, with only 6% of population having access to these boosters (Our World In Data, 2023). Epidemiologists attribute South America's accelerated vaccination drive to several factors, “but the most important, they say, has been decades of successful inoculation campaigns that have created the infrastructure needed to deliver jabs en masse, while instilling trust among the population” (Reuters, 2021).

The assumptions regarding the forecast were based on current trends and expert opinions. Given that the numbers for booster doses appear to remain consistent, I believe that individuals who have received all recommended boosters to date, will continue to do so. This is underpinned by the likelihood of annual booster requirements, as new variants emerge, as suggested by (Weintraub, 2022). Therefore, my projections are 6% for Africa, 38% for Asia, and 58% for South America. However, Pfizer projects 24% of the American population will receive booster dose and I will assume that Europe will also witness a similar booster vaccination rate.

Pfizer's pricing strategy for Comirnaty differs by region. The company has segmented its pricing based on the economic profiles of countries: the United States, Europe, and Emerging countries. Pfizer is expected to price the vaccine at $110 per dose in the US and at $50 in Europe (Reuters, 2022) while for low-and middle-income countries, a special rate of $19.50 has been set, as reported by (Doherty, 2022).

Pfizer's strength in the vaccine market for Covid-19 is evident, leveraging its first-mover advantage and the capability to scale up manufacturing. Moreover, competitors lacked reliability on the most recent variants or were never able to commercialize their vaccines, as for example, Novavax that according to (Evaluate Pharma, 2021), was working on a vaccine with “low manufacturing cost, convenient refrigerator storage, strong efficacy and expected low cost” and it was one of the biggest threats for Pfizer, failed to make the cut commercially (Evaluate Pharma, 2022). Therefore, I will consider that Pfizer will be able to keep the market share of 63% (Pfizer, 2022). Pfizer and BioNTech have an agreement to split the Comirnaty revenues evenly.

With those inputs it was possible to forecast Comirnaty sales until 2026 (Table 4) with the following formula:

*Equation 13*

$$
\begin{aligned}
&Comirnaty\ Sales \\
&\qquad = \left[\left(\sum\left(World\ Population * \%\ Population\ Geograpical\ Segment\right.\right.\right. \\
&\qquad \left.\left.\left. * \%\ Vaccinated\ in\ Geographical\ Segment\right)\right)\right] \\
&\qquad * Pfizer\ market\ share * 50\%
\end{aligned}
$$

#### 5.2.1.2 Paxlovid

Following the success of Comirnaty, Pfizer introduced Paxlovid, an oral antiviral pill. This pill is effective in treating patients with severe symptoms of Covid-19. This innovation also had a significant impact on Pfizer's revenue stream.

*Table 5: Paxlovid Forecast Model*

| id Forecast | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|
| **US** | | | | |
| Sales (# Million) | 4,3 | 4,1 | 3,9 | 3,5 |
| Price ($) | 520 | 520 | 520 | 520 |
| **US Revenues** | **2 236** | **2 132** | **2 028** | **1 820** |
| **Other High Income** | | | | |
| Sales (# Million) | 6,7 | 5,7 | 5,4 | 3,5 |
| Price ($) | 520 | 520 | 520 | 520 |
| **Other High Income Revenues** | **3 484** | **2 964** | **2 808** | **1 820** |
| **Low and Middle Income** | | | | |
| Sales (# Million) | 6,0 | 5,2 | 4,2 | 3,0 |
| Price ($) | 25 | 25 | 25 | 520 |
| **Low and Middle Income Revenues** | **150** | **130** | **105** | **1 560** |
| Pfizer Market Share | 90% | 90% | 90% | 90% |
| **Paxlovid Total Revenues** | **5 870** | **3 614** | **3 433** | **3 900** |

*Source: Financial Times, Reuters, Pfizer Annual Report, Own Analysis*

For forecast purposes, sales were divided into three regions: U.S., Other High Income (OHI) and Low- and Middle-Income Countries (LMIC) (Table 5). Historically, Pfizer adopted a tiered pricing strategy for Paxlovid. The pill was priced at $520 per unit in high-income countries (D. Beasley, 2022), while a significantly reduced price of $25 was set for LMICs (M. Erman, 2022). However, I project that, in the long run, the preferential pricing for LMICs will be phased out, and Paxlovid will be sold at a standard price of $520 across all markets.

To estimate the potential demand for Paxlovid, I have used the flu anti-viral as a proxy (Table 6), given the similarities in the case fatality rate between the flu and Covid-19.

Using the Visible Alpha consensus for TRx anti-viral for flu as a benchmark, I project a corresponding demand for Paxlovid. This approach allows us to provide a more robust forecast.

*Table 6: Flu Anti-viral Forecast Model*

| tiviral volumes in millions | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|
| Flu Anti Viral U.S | 4,3 | 4,1 | 3,9 | 3,5 |
| Flu Anti Viral Europe | 5,5 | 4,4 | 4,2 | 2,8 |
| Flu Anti Viral Japan | 1,2 | 1,3 | 1,2 | 0,7 |
| Flu Anti Viral Vaccine rest of the world | 6,0 | 5,2 | 4,2 | 3,0 |
| **Total** | **17,0** | **15,0** | **13,5** | **10,0** |

*Source: Visible Alpha*

However, it is crucial to note that Paxlovid's revenues are expected to decline over time. This is primarily because, as Pfizer highlighted in 2022, the sales of Paxlovid are intrinsically linked to the number of active Covid-19 cases. As global vaccination is intensified and the number of cases potentially decreases, the demand for treatments like Paxlovid may diminish.

#### *5.2.1.3 Oncology*

According to Evaluate Pharma (2022), the oncology segment is expected to have one of the most significant growths. This projection is supported by the global impact of cancer. The World Health Organization reported that cancer was responsible for nearly 10 million deaths in 2020, accounting for approximately one in every six deaths. Furthermore, the American Cancer Society's data reveals that the U.S. alone diagnosed approximately 1.9 million new cancer cases in 2021. Oncology drugs account for 20% of global pharmaceutical sales, according to the pharmaceutical industry.

Pfizer has been at the forefront of the oncology revolution, with its oncology products, Ibrance, a treatment for metastatic breast cancer, and Xalkori, used to treat lung cancer, accounting for 42% and 10% of Pfizer Oncology revenues in 2022, respectively. According to Pfizer's financials, its oncology segment grew at CAGR of 21% from 2014 to 2021. By 2020, oncology would account for 26% of Pfizer's total revenue. Then, this forecast assumes an annual growth rate aligned with market growth outline in (Bfortune, 2022) of 12% for Pfizer's oncology segment (Table 7).

*Table 7: Oncology Segment Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Oncology | 7 202 | 9 014 | 10 867 | 12 333 | 12 132 | 13 588 | 15 218 | 17 045 | 19 090 | 12,00% |

*Source: Own Analysis*

#### 5.2.1.4 Internal Medicine

This segment is composed of innovative brands in cardiovascular metabolic, migraine and women's health. According to IQVIA Institute (2023), forecasts detailed in Appendix 2, the cardiovascular segment is anticipated to experience growth ranging from 1% to 4% until 2027. Historically, Pfizer´s internal medicine has seen a decline in revenues by 2.30% in the past five years. However, regarding the good reputation that Pfizer acquired and the perspectives of the market, further on in this dissertation it will be considered that Pfizer will be able to follow the more conservative growth rate of the market of 1% (Table 8).

*Table 8: Internal Medicine Segment Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Internal Medicine | 9 996 | 8 790 | 9 003 | 9 329 | 8 896 | 8 985 | 9 075 | 9 166 | 9 257 | 1,00% |

*Source: Own Analysis*

#### 5.2.1.5 Vaccines without Covid-19

Before Covid-19, Pfizer already had a portfolio of innovative vaccines with a pipeline focus on infectious diseases with significant unmet medical need. This segment has seen a decrease of 1% in the past 5 years, which follows the forecast of IQVIA. Then, it was considered that it will continue to decrease 1% until 2026 (Table 9).

*Table 9: Vaccines without Comirnaty Segment Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Vaccines without Comirnaty | 6 332 | 6 504 | 6 421 | 5 844 | 6 136 | 6 097 | 6 059 | 6 021 | 5 983 | -1,00% |

*Source: Own Analysis*

#### 5.2.1.6 Hospital without Paxlovid

The Pfizer hospital segment corresponds to a portfolio of sterile injectable and anti-infective medicines. For the forecast an -0.93% CAGR until 2026 was forecasted, based on the historical decrease of the past 5 years (Table 10).

*Table 10: Hospital without Comirnaty Segment Forecast.*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Hospital without Paxlovid | 8 158 | 6 695 | 6 777 | 7 225 | 7 787 | 7 715 | 7 643 | 7 573 | 7 502 | -0,93% |

*Source: Own Analysis*

#### 5.2.1.7 Inflammation & Immunology

This segment focuses on products for chronic immune and inflammatory diseases. Despite the expected 3% to 6% CAGR (Appendix 2) growth in immunology therapy from 2021-2027, Pfizer's segment has seen a 5.2% CAGR decline in the past 5 years. The decrease is primarily due to global prescription volume drops of Xeljanz, a drug for rheumatoid arthritis, accounting for almost 50% of segment revenues. Since this decrease was due to ongoing shifts in prescribing patterns related to label changes it seems unlikely for Pfizer to recapture Xeljanz's value, the segment is forecasted to continue declining at 5.2% (Table 11).

*Table 11: Inflammation & Immunology Segment Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Inflammation & Immunology | 4 080 | 4 733 | 4 567 | 4 431 | 3 284 | 3 113 | 2 951 | 2 798 | 2 652 | -5,20% |

*Source: Own Analysis*

#### 5.2.1.8 Rare disease

Pfizer rare disease segment includes drugs for amyloidosis, hemophilia, endocrine diseases, and sickle cell disease. It was forecasted as the last 5 years CAGR as 7% (Table 12), mainly driven by Vyndaqel, that grew up 29% from 2022 to 2023 and is expected grow by CAGR of 15.8% until 2032 (Custom Market Insights, 2023).

*Table 12: Rare Disease Segment Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Growth Rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Rare Disease | 2 211 | 2 278 | 2 936 | 3 538 | 3 852 | 3 314 | 3 546 | 3 793 | 4 058 | 6,98% |

*Source: Own Analysis*

#### 5.2.1.9 Cost of Sales

To forecast the cost of sales for Pfizer, I used a direct proportionality based on historical data and the relationship between cost of sales and revenues. To do so, I multiplied the average percentage of cost of sales over the past five years and multiplied it by the forecasted revenue (Table 13).

*Table 13: Cost of Sales Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Assumption |
|---|---|---|---|---|---|---|---|---|---|---|
| Cost of sales | 8 872 | 8 043 | 8 423 | 30 713 | 34 097 | 17 056 | 17 210 | 17 475 | 17 569 | Historical weight over last 5 years revenues |

*Source: Own Analysis*

#### 5.2.1.10 Selling, General & Administrative (SG&A)

"Among other things, [Pfizer's SG&A] expenses include the internal and external costs of marketing, advertising, shipping and handling, IT and legal defense" (Pfizer, 2022). To forecast those expenses, they were divided into 40% fixed and 60% variable expenses according to the historical weight disclosed in Pfizer's annual reports. For the fixed portion, it was assumed it to be half of the 2022 cost of sales expenses. This amount remains consistent over the forecasted years regardless of the level of sales or operations. The variable component is obtained by multiplying the average ratio of SG&A expenses to revenues over the past five years to the revenues of each forecasted year. Then the total expense for each year is the sum of the fixed amount and the variable expenses derived from that year's revenues (Table 14).

*Table 14: SG&A Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Assumption |
|---|---|---|---|---|---|---|---|---|---|---|
| Selling, General & Administrative | 8 872 | 8 043 | 8 423 | 30 713 | 34 097 | 17 056 | 17 210 | 17 475 | 17 569 | 40% fixed costs + 60% variable as historical weight over last 5 years revenues |

*Source: Own Analysis*

#### 5.2.1.11 Research and Development

In the biopharmaceutical realm, R&D is not just an expenditure. It is a strategic investment that promotes innovation and allows future growth. However, accurately forecasting R&D and its effect on profits in this sector remains a difficult challenge.

The industry is witnessing a transformative shift towards the digitalization of clinical trial operations. Pfizer, with its robust balance sheet, is better positioned than many of its competitors to handle these industry shifts. The company's commitment to R&D was clear in its past investments, especially during Covid-19. Given Pfizer's historical performance and the industry trend, I project a 5.2% yearly growth rate for Pfizer's R&D expenses through 2026 (Table 15). This rate follows the historical growth rate between 2018 and 2020, assuming a back to the mean, since the following years had a big increase in R&D due to Covid-19. This estimate is slightly more bullish than the industry consensus (Appendix 3), reflecting Pfizer's strong financial position and Pfizer´s strategy.

*Table 15: R&D Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Assumption |
|---|---|---|---|---|---|---|---|---|---|---|
| Research & Development | 7 962 | 8 385 | 8 877 | 10 523 | 11 428 | 12 180 | 12 981 | 13 834 | 14 744 | Historical 2018-2020 average |

*Source: Own Analysis*

#### *5.2.1.12 Taxes*

To forecast taxes, it was assumed that the tax environment remains relatively stable (Table 16). Then, the average tax rate over the past five years was calculated and then this fixed rate was applied to the EBT for each year.

*Table 16: Tax Forecast*

| ($ Millions) | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026F | Assumption |
|---|---|---|---|---|---|---|---|---|---|---|
| Tax Expense | 1 813 | 1 927 | 1 607 | 2 655 | 4 612 | 2 532 | 2 526 | 2 543 | 2 481 | Average tax rate of the past 5 years |
| Tax Rate | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | |

*Source: Own Analysis*

### 5.2.2 Balance Sheet

The Covid-19 pandemic had an important impact on Pfizer´s financial position. The successful launch of Comirnaty and Paxlovid increased the company's assets and liquidity while allowing them to reduce their debt and strengthen their position. All the details can be observed in Appendix 4.

#### *5.2.2.1 Net Operating Working Capital*

Working capital is defined by the difference between current assets and liabilities and is used as a measure of a firm's liquidity and short-term financial health (J. Fernando, 2022).

To forecast the current assets that Pfizer tracks for its working capital, inventories were forecasted as the average ratio of inventories to cost of sales from the past 2 years since prior to Covid-19 the cost structure was different, while accounts receivable and prepaid expenses were determined based on their respective proportions to revenues over the past 5 years. For other current liabilities, that are announced by Pfizer to represent mainly the 50% due to BioNTech regarding Covid-19 vaccines partnership. For this forecast they were determined based on their respective proportions to revenues over the past 5 years, since they already had a significant amount in the previous years.

Then, the change in working capital was calculated by the year fluctuation of the account. Table 17 displays the previously mentioned accounts and their projections.

*Table 17: Net Working Capital Forecast*

| ($ m)<br>**Current Assets** | 2018P | 2019P | 2020P | 2021P | 2022P | 2023E | 2024E | 2025E | 2026E |
|---|---|---|---|---|---|---|---|---|---|
| Accounts receivable | 8 025 | 8 724 | 7 930 | 11 479 | 10 952 | 10 009 | 9 864 | 9 589 | 8 951 |
| Inventories | 7 508 | 8 283 | 8 046 | 9 059 | 8 981 | 6 841 | 6 403 | 6 745 | 6 891 |
| Prepaid Expenses & Taxes | 5 835 | 5 944 | 6 869 | 8 086 | 8 594 | 7 530 | 7 478 | 7 603 | 7 391 |
| Total Current Assets | 21 368 | 22 951 | 22 845 | 28 624 | 28 527 | 24 379 | 23 746 | 23 937 | 23 233 |
| | | | | | | | | | |
| **Current Liabilities** | | | | | | | | | |
| Accounts payable and liabilities | 4 674 | 4 220 | 4 309 | 5 578 | 6 809 | 5 387 | 5 225 | 5 294 | 5 289 |
| Income taxes payable | 1 265 | 980 | 1 049 | 1 266 | 1 587 | 1 229 | 1 222 | 1 271 | 1 315 |
| Accrued Compensation | 2 397 | 2 720 | 3 057 | 3 332 | 3 407 | 3 407 | 3 407 | 3 407 | 3 407 |
| Other Current Liabilities | 12 643 | 11 083 | 12 640 | 28 006 | 25 087 | 17 835 | 18 010 | 19 172 | 20 043 |
| Total Current Liabilities | 20 979 | 19 003 | 21 055 | 38 182 | 36 890 | 27 858 | 27 864 | 29 144 | 30 054 |
| | | | | | | | | | |
| **Net Working Capital** | 389 | 3 948 | 1 790 | -9 558 | -8 363 | -3 479 | -4 118 | -5 207 | -6 821 |
| **Changes in NWC** | | 3 559 | -2 158 | -11 348 | 1 195 | 4 884 | -639 | -1 089 | -1 614 |

*Source: Own Analysis*

### 5.2.2.2 PP&E, Intangible Assets, Depreciation & Amortization and Capex

In forecasting Pfizer's future needs for PP&E, the average PP&E turnover ratio over the past five years was examined and assumed as Pfizer goal for the next years. This ratio measures how efficiently Pfizer uses its fixed assets to generate sales. Then, it was possible to estimate how much PP&E is needed to obtain that efficiency. Finally, by applying a consistent 10% depreciation rate, derived from the average rate observed in the previous five years, it was possible to calculate the capex required regarding PP&E for each year.

For a biopharmaceutical like Pfizer, tangible assets such as PP&E are just one part of the story. Intangible assets, which include accounts such as patents, licenses, and proprietary technology, are critical. They allow Pfizer to produce and market-specific drugs. Because these rights are time-limited, with patents expiring, there is an inherent requirement for ongoing investment in R&D and the acquisition of new patents to ensure a consistent revenue stream.

To project the future requirements of these intangible assets, the same method used for PP&E was used. However, for the amortization forecast it was assumed Pfizer's provided value on its annual report.

Finally, Table 18 demonstrates all the accounts mentioned, and the necessary net capex that is obtained by the sum of necessary capex for PP&E and for intangible assets. As it is possible to observe, a major expansion was required in 2021, due to the introduction of the Covid-19 line. However, it is expected for capital expenditures to be roughly equal to depreciation and amortization expenses after 2025, since Covid-19 represented an outlier event for Pfizer.

*Table 18: Capex Forecast*

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| Revenues | 53 647 | 51 750 | 47 642 | 81 288 | 100 330 | 68 087 | 67 403 | 69 013 | 71 503 |
| PP&E Turnover Ratio | 4 | 4 | 3 | 5 | 6 | 5 | 5 | 5 | 5 |
| PP&E (t-1) | 13 385 | 13 967 | 13 900 | 14 882 | 16 274 | 14 952 | 14 802 | 15 156 | 15 703 |
| Depreciation | 1 491 | 1 145 | 1 429 | 1 491 | 1 455 | 1 453 | 1 438 | 1 472 | 1 526 |
| PP&E (t) | 11 894 | 12 822 | 12 471 | 13 391 | 14 819 | 13 500 | 13 364 | 13 683 | 14 177 |
| Intangible Assets (t-1) | 35 211 | 35 371 | 28 472 | 25 146 | 43 370 | 40 051 | 39 649 | 40 596 | 42 061 |
| Intangible Assets Turnover Ratio | 2 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 2 |
| Amortization | 4 893 | 4 610 | 3 348 | 3 700 | 3 609 | 4 223 | 3 981 | 3 780 | 3 714 |
| Intangible Assets (t) | 30 318 | 30 761 | 25 124 | 21 446 | 39 761 | 35 828 | 35 668 | 36 816 | 38 347 |
| **Necessary Net Capex** | **7 126** | **-1 211** | **2 433** | **24 807** | **423** | **5 123** | **6 720** | **7 264** | **5 987** |

*Source: Own Analysis*

#### *5.2.2.3 Minority Interest*

The forecast for minority interest is based on a percentage of the net income. As shown in Table 19, nearly 1% of the net income is attributable to minorities, which replicates the value from 2022.

*Table 19: Minorities Forecast*

| ($ Millions) | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| Net Income | 12,843 | 13,648 | 11,383 | 18,806 | 30,833 | 18,826 | 19,028 | 19,418 | 19,272 |
| Minority Interest | 351 | 303 | 235 | 262 | 256 | 156 | 158 | 161 | 160 |
| Minority Interest % Net Income | 3% | 2% | 2% | 1% | 1% | 1% | 1% | 1% | 1% |

*Source: Own Analysis*

#### 5.2.2.4 Total Debt & Distributions

Pfizer's total debt is the sum of its short-term and long-term debt. Given the company's robust financial health from its Covid-19 product sales, it was projected that Pfizer will use its cashflow from operations (Table 18) to repay their debt without the need to issue more. Moving forward, I forecast that 13% of the cash flow from operations will be dedicated to long-term debt repayments (Table 20), value that corresponds to the average percentage that Pfizer has allocated from its cash flow from operations to long-term debt repayments since the start of Covid-19 until 2022. Additionally, following the same rationale, I expect Pfizer to clear its short-term debt by the end of 2023, with no plans for further short-term borrowings, capitalizing on its substantial cash reserves.

*Table 20: LT Debt Repayments Forecast*

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| Repayments LT Debt | -3,566 | -6,806 | -4,003 | -2,004 | -3,298 | -4,166 | -3,154 | -3,063 | -2,996 |
| CFO | 16,096 | 17,460 | 16,256 | 31,248 | 37,385 | 31,357 | 23,742 | 23,050 | 22,545 |
| AS % of CFO | 22% | 39% | 25% | 6% | 9% | 13% | 13% | 13% | 13% |

*Source: Own Analysis*

Regarding distributions given the ongoing uncertainties related to Covid-19, on the forecast it was assumed Pfizer will not commit to additional distributions for shareholders in the upcoming years, remaining with 2022 dividend expenses for the following years and not issuing more buybacks.

Table 21 illustrates the cash flow from financing activities for the period and discloses all the movements regarding debt and financing activities that will affect the balance sheet.

*Table 21: Cash Flow from Financing Forecast*

| Financing Activities | 2018P | 2019P | 2020P | 2021P | 2022P | 2023F | 2024F | 2025F | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| Repayments of LT debt | -3 566 | -6 806 | -4 003 | -2 004 | -3 298 | -4 051 | -3 000 | -2 874 | -2 770 |
| Increase in ST borrowings | 3 711 | 16 455 | 12 352 | 0 | 3 891 | 0 | 0 | 0 | 0 |
| Decrease in ST borrowings | -6 054 | -8 378 | -26 326 | -96 | -4 109 | -2 945 | 0 | 0 | 0 |
| Issuances of common stock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchases of common stock | -12 198 | -8 865 | 0 | 0 | -2 000 | 0 | 0 | 0 | 0 |
| Cash dividends paid | -7 978 | -8 043 | -8 440 | -8 729 | -8 983 | -8 780 | -8 780 | -8 780 | -8 780 |
| Stock option transactions and other | 671 | 2 209 | -444 | 16 | -335 | -335 | -335 | -335 | -335 |
| **Cash from financing activities** | **-20 440** | **-8 486** | **-21 639** | **-9 816** | **-14 834** | **-15 776** | **-11 780** | **-11 654** | **-11 550** |

*Source: Own Analysis*

### 5.2.3 Cash & Equivalents

On this dissertation, cash & equivalents will be used as a plug variable for the balance sheet and obtained from the cash flow statement (Table 22), using the indirect method. The variation in cash and equivalents is obtained by the sum of the cash flows from operating, investing, and financing activities, and added to the cash and equivalents from the previous period to obtain the final cash and equivalents value for the year.

The cashflow from operating activities is determined by adding back the non-cash expenses to the net income. For the investing activities, the primary outflow is capex (Table 18).

*Table 22: Cash Flow Statement Forecast*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Operating Activities** | | | | | | | | | |
| **Net Income** | **12 604** | **13 395** | **11 171** | **18 456** | **30 255** | **16 109** | **15 324** | **15 702** | **16 393** |
| Deferred taxes | -2 205 | 1 878 | -1 515 | -3 714 | 674 | 1 920 | -151 | -557 | -366 |
| Depreciation and amortization | 6 384 | 5 755 | 4 777 | 5 191 | 5 064 | 5 676 | 5 419 | 5 252 | 5 240 |
| Variation Working Capital | -926 | -3 821 | 1 611 | 10 965 | 814 | 4 884 | -639 | -1 089 | -1 614 |
| Accounts receivable | -644 | -699 | 794 | -3 549 | 527 | 943 | 144 | 276 | 638 |
| Inventories | -717 | -775 | 237 | -1 013 | 78 | 2 140 | 438 | -342 | -145 |
| Prepaid Expenses | -16 | -109 | -925 | -1 217 | -508 | 1 064 | 51 | -125 | 212 |
| Accounts payable and liabilities | 431 | -454 | 89 | 1 269 | 1 231 | -1 422 | -162 | 69 | -5 |
| Income taxes payable | -78 | -285 | 69 | 217 | 321 | -358 | -7 | 48 | 44 |
| Other deferred items | 98 | -1 499 | 1 347 | 15 258 | -835 | 0 | 0 | 0 | 0 |
| **Cash from operations** | **15 857** | **17 207** | **16 044** | **30 898** | **36 807** | **28 588** | **19 952** | **19 308** | **19 653** |
| | | | | | | | | | |
| **Investing Activities** | | | | | | | | | |
| Purchases of PP&E and Intangible Assets | -2 042 | -2 176 | -2 252 | -2 711 | -3 236 | -5 123 | -6 720 | -7 264 | -5 987 |
| **Cash from investing activities** | **4 526** | **-3 946** | **-4 271** | **-22 533** | **-15 783** | **-5 123** | **-6 720** | **-7 264** | **-5 987** |
| | | | | | | | | | |
| **Financing Activities** | | | | | | | | | |
| Repayments of LT debt | -3 566 | -6 806 | -4 003 | -2 004 | -3 298 | -3 849 | -2 687 | -2 600 | -2 646 |
| Increase in ST borrowings | 3 711 | 16 455 | 12 352 | 0 | 3 891 | 0 | 0 | 0 | 0 |
| Decrease in ST borrowings | -6 054 | -8 378 | -26 326 | -96 | -4 109 | -2 945 | 0 | 0 | 0 |
| Issuances of common stock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchases of common stock | -12 198 | -8 865 | 0 | 0 | -2 000 | 0 | 0 | 0 | 0 |
| Cash dividends paid | -7 978 | -8 043 | -8 440 | -8 729 | -8 983 | -8 780 | -8 780 | -8 780 | -8 780 |
| **Cash from financing activities** | **-20 440** | **-8 486** | **-21 639** | **-9 816** | **-14 834** | **-15 574** | **-11 466** | **-11 380** | **-11 426** |
| | | | | | | | | | |
| Variation in cash & equivalents | 418 | 166 | 479 | 160 | -1 528 | 7 891 | 1 765 | 664 | 2 239 |
| Cash & equivalents at beginning of period | 721 | 1 139 | 1 305 | 1 784 | 1 944 | 416 | 8 307 | 10 072 | 10 736 |
| **Cash & equivalents at end of period** | **1 139** | **1 305** | **1 784** | **1 944** | **416** | **8 307** | **10 072** | **10 736** | **12 976** |

*Source: Own Analysis*

### 5.2.4 Weighted Average Cost of Capital

To be able to calculate the DCF model, it is required to have a discount factor, that is the cost of capital (Table 23)

*Table 23: WACC Forecast*

| | Regression Approach |
|---|---|
| Beta | 0,71 |
| Risk-free rate | 4,04% |
| Risk Premium | 8,92% |
| **Cost of Equity** | **10,37%** |
| Weight of Bonds | 44,32% |
| Bonds YTM | 4,16% |
| Weight of Debt | 55,68% |
| Risk-free Rate | 4,04% |
| A+ spread | 1,25% |
| Country default spread | 0,00% |
| Cost of remaining debt | 5,29% |
| **Cost of Debt** | **4,79%** |
| Market value of Debt | $73 266 |
| Market Value of Equity | $167 363 |
| Weight of Debt | 30,45% |
| Weight of Equity | 69,55% |
| Cost of Equity | 10,37% |
| Cost of Debt | 4,79% |
| Tax Rate | 14,00% |
| ESG | 0,20% |
| **WACC** | **8,67%** |

*Source: Own Analysis*

#### *5.2.4.1 Market Value of Debt*

As stated in the literature review, calculating the market value of debt seems challenging since companies usually don´t have all their debt in the form of bonds. That is what happens when looking for Pfizer debt structure.

In fact, part of Pfizer's debt is provided by bank loans (all details in Appendix 5). To be able to calculate the market value of those, firstly there were calculated the total amount of debt loans, the number of years left to be paid for each one and each one's weight (Table 24).

Then knowing the total book value of loans, the interest expenses paid in 2022, the weighted average maturity of debt, and the cost of debt, it was possible to apply the Equation 6 disclosed at the literature review.

*Table 24: Market Value of Loans*

| Debt Due in: | Number of years | Amount due | Weight |
|---|---|---|---|
| 2023 | 1 | 0 | 0,00% |
| 2024 | 2 | 750 | 2,51% |
| 2025 | 3 | 3000 | 10,06% |
| 2026 | 4 | 1000 | 3,35% |
| 2027 | 5 | 1660 | 5,56% |
| 2030 | 8 | 5000 | 16,76% |
| 2034 | 12 | 5517 | 18,49% |
| 2040 | 18 | 7153 | 23,98% |
| 2045 | 23 | 3250 | 10,90% |
| 2049 | 28 | 2500 | 8,38% |
| **Total** | **13,49** | **29830** | **100,00%** |

.*Source: Pfizer Report, Own Analysis*

While capital leases are already treated as debt on the balance sheet, operating leases are not, so they need to be incorporated in the calculations. The value of leases corresponds to the present value of all of the remaining operating lease liabilities (Table 25) provided by Pfizer, (2022) (Appendix 6)

*Table 25: Operating lease liabilities*

| Lease commitment year | Number of years | Amount due | Present Value |
|---|---|---|---|
| 2023 | 0 | 662 | 662 |
| 2024 | 1 | 489 | 467 |
| 2025 | 2 | 356 | 324 |
| 2026 | 3 | 300 | 261 |
| 2027 | 4 | 246 | 204 |
| 2028 | 5 | 217 | 172 |
| Thereafter | 6 | 1791 | 5881 |
| **Pre-tax Cost of Debt** | | | **4,79%** |
| | | | |
| **Debt value of leases** | | | **7970** |

*Source: Pfizer annual report, own analysis*

Finally, I added the market value of Pfizer´s 40 bonds issued, 36 in USD, 3 in GDP and 1 in Euro, retrieved on Refinitiv Eikon (Appendix 7), where all the bonds were already converted in US dollars, achieving a final market value of debt of $73 266 (Table 26).

*Table 26: Market Value of Debt*

| | |
|---|---|
| **Market Value of Bonds** | **$36 828** |
| | |
| **Market value of Loans** | |
| Book value of Debt | $29 830 |
| Interest expenses 2022 | $1 247 |
| Weighted average maturity of debt | $13 |
| Cost of debt | 4,79% |
| **Estimated market value of interest bearing debt** | **$28 065** |
| **Lease commitments as debt** | **$7 308** |
| **Market value of all debt** | **$72 201** |

*Source: Reuters, Pfizer Report, Own Analysis*

### 5.2.4.2 Market Value of Equity

The market value of equity was obtained by multiplying Pfizer share price on November 30th of 2023 by the number of shares outstanding (Table 27).

*Table 27: Market Value of Equity*

| | |
|---|---|
| Pfizer Share price | 30,50 |
| Shares outstanding | 5487 |
| **Equity market Value** | **$167 363** |

*Source: Bloomberg*

### 5.2.4.3 Cost of Debt

The cost of debt was calculated as the weighted cost of bonds and other debt. The weight of bonds in Pfizer´s debt represent 44,39%, while the remaining debt represents 55,61%.

The cost of bonds was calculated by the weighted average of each bond YTM, concluding with a value of 4.16%.

In other hand, the cost of the remaining debt was calculated as the risk-free rate plus the credit spread. Standard & Poors (S&P) attributes a ranking of A+ to Pfizer's long-term debt (Appendix 8) that leads to a credit spread of 1,25% (Appendix 9) that was added to the 10 years US government bond of 4,04% concluding with a cost of remaining debt of 5.29%. Since Pfizer is an international company with a diversified portfolio, was assumed that no country risk premium should be considered.

Finally, multiplying each weight of bonds and other debt by their cost, was achieved the final cost of debt of 4,79%. (Table 28)

*Table 28: Pfizer Cost of Debt*

| | |
|---|---|
| Weight of Bonds | 44,39% |
| Bonds YTM | 4,16% |
| Weight of Debt | 55,61% |
| Risk-free Rate | 4,04% |
| A+ spread | 1,25% |
| Country default spread | 0,00% |
| Cost of remaining debt | 5,29% |
| **Cost of Debt** | **4,79%** |

*Source: Own Analysis*

#### *5.2.4.4 Cost of Equity*

The cost of equity is another input required to compute the WACC, and as explained in the literature review it will be calculated using the CAPM.

For the risk-free rate, the US Government Bond of 10 years of 4.04% was used, since Pfizer is a company based in the US and all calculations were based in US dollars.

To obtain the market risk premium I used the same reasoning. Since Pfizer is a company present in the S&P 500 index, I used this index excess return of 8,92% as market risk premium.

For Beta calculation, a regression approach was used, where Beta corresponds to the slope of the best-fitting line in the plot of the security's excess returns versus the market excess return. Using this method, it was possible to obtain a beta of 0,71 (Appendix 10).

#### *5.2.4.5 ESG*

As ESG ratings have an important impact on companies' risk and consequently on their cost of capital, it is crucial to understand how Pfizer is evaluated regarding ESG standards and how it is perceived in comparison with other players in the industry. Table 29 shows the Reuters Refinitiv Eikon ranking for the pharmaceuticals industry. Pfizer has an overall ESG score of 80.67, being in 17$^{th}$ place in the ranking. Even though Pfizer performs well in the social pillar mainly driven by high employee satisfaction (Appendix 11), it reveals a score below average on the Environmental and Governance pillars.

The ESG controversies score seeks to identify possible losses resulting from poor press releases and scandals published in the media, which can harm the reputation and future business opportunities. From a scoring standpoint, controversies can have a major negative influence on a company's overall grade. This score is particularly dangerous for Pfizer nowadays because the company itself alerts for the possibility of “more widespread use of the vaccine or Paxlovid will lead to new information about efficacy, safety or other developments, including the risk of additional adverse reactions, some of which may be serious” (Pfizer, 2022).

Then I will adjust the WACC for the ESG score adding 0.2% to the final WACC, which comes from 0.1% per each 10 points below the maximum score (100).

*Table 29: ESG Score Comparisons*

| Rank | Company Name | ESG Score | Environmental Pillar Score | Social Pillar Score | Governance Pillar Score | ESG Controversies Score |
|---|---|---|---|---|---|---|
| 1 | AstraZeneca PLC | 95.24 | 92 | 97 | 95 | 53 |
| 2 | Roche Holding AG | 94.97 | 94 | 97 | 92 | 62 |
| 3 | GSK plc | 93.58 | 84 | 96 | 96 | 33 |
| 4 | Bayer AG | 90.49 | 83 | 97 | 87 | 1 |
| 5 | Sanofi SA | 88.60 | 85 | 92 | 87 | 26 |
| 6 | Teva Pharmaceutical Industries Ltd | 87.31 | 64 | 94 | 95 | 3 |
| 7 | Merck KGaA | 87.27 | 91 | 96 | 71 | 100 |
| 8 | Dr Reddy's Laboratories Ltd | 86.98 | 84 | 86 | 91 | 33 |
| 9 | Novartis AG | 86.13 | 82 | 93 | 80 | 9 |
| 10 | Astellas Pharma Inc | 86.12 | 81 | 88 | 87 | 83 |
| 10 | Johnson & Johnson | 86.12 | 92 | 97 | 65 | 5 |
| 12 | Ucb SA | 85.74 | 79 | 92 | 82 | 100 |
| 13 | Merck & Co Inc | 82.05 | 87 | 93 | 62 | 83 |
| 14 | Takeda Pharmaceutical Co Ltd | 81.84 | 83 | 79 | 85 | 33 |
| 15 | Abbvie Inc | 81.44 | 74 | 95 | 67 | 3 |
| 16 | Bristol-Myers Squibb Co | 81.21 | 81 | 83 | 79 | 21 |
| 17 | Pfizer Inc | 80.67 | 76 | 90 | 71 | 10 |
| 18 | Novo Nordisk A/S | 80.30 | 86 | 90 | 61 | 83 |
| 19 | CSL Ltd | 78.73 | 38 | 93 | 87 | 100 |
| 20 | Shionogi & Co Ltd | 78.30 | 87 | 83 | 66 | 100 |

*Source: Reuters Refinitiv Eikon Ranking*

### 5.2.5 Perpetual Growth Rate

After computing the WACC, the final input missing to allow the DCF model calculation is the perpetual growth rate. Since Pfizer is a large and stable firm, a stable growth model will be used.

For this dissertation I will consider the terminal growth rate as the expected growth rate for the industry (Table 30) using the forecast for worldwide drug sales disclosed by (Evaluate Pharma, 2022) and detailed in Appendix 3.

*Table 30: Perpetual Growth Rate Forecast*

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worlwide Drug Sales | 758 | 785 | 795 | 844 | 878 | 901 | 941 | 1009 | 1040 | 1005 | 1009 | 1070 |
| % Growth | -1,17% | 3,56% | 1,27% | 6,16% | 4,03% | 2,62% | 4,44% | 7,23% | 3,07% | -3,37% | 0,40% | 6,05% |
| Average Growth | | | | | | 2,29% | | | | | | |

*Source: Own Analysis, Evaluate Pharma (2022)*

## 5.3 Discounted Cash Flow Model Results

All the inputs to calculate the FCF were obtained, however, it is needed to differentiate the taxes expenses and the taxes that were actually paid in the period, where that was calculated by deducting the deferred taxes on the period to the total tax expenses, adding it to the next period to be paid, since Pfizer (2022) highlights on their annual report that "we believe that our deferred tax assets are not recoverable based on an assessment of estimated future taxable income".

Finally, all the inputs needed to compute the enterprise value of the firm, obtaining \$274,742 million. This value represents the value of all assets of the company except cash. However, to value a company that is levered it is needed to have the equity value, this is, the value that remains for the shareholders after any debts have been paid off.

To do so it is needed to subtract the value of net debt equivalent to the market value of debt, and to add all the cash & equivalents that were forecasted in Table 22. Pfizer´s reports on their annual report that "cash equivalents include items almost as liquid as cash, such as certificates of deposit and time deposits with maturity periods of three months or less when purchased. If items meeting this definition are part of a larger investment pool, we classify them as short-term investments". Therefore, since short-term investments have less than 3 months of maturity, they should be treated as cash and be added to the enterprise value as well.

Pfizer faces thousands of lawsuits every year, which often take an extended period before they are settled, and these values are not provisioned for. Thus, I deemed that an adjustment was necessary. This adjustment was made based on the litigation costs that the company has incurred in 2022. Also, M&A impacts the equity value, but since acquisitions are core to Pfizer's strategy the values regarding M&A synergies and goodwill are accounted for in its reports, no adjustment is necessary.

To obtain the estimated share price I will divide the equity value obtained, \$188 313 million, by the number of shares outstanding, 5,526 million.

*Table 31: FCFF Valuation Model*

| Discounting Years | 0,25 | 1,25 | 2,25 | 3,25 |
|---|---|---|---|---|
| **FCFF Model** | **2023E** | **2024E** | **2025E** | **2026E** |
| Revenues | 68 087 | 67 403 | 69 013 | 71 503 |
| EBITDA | 25 462 | 24 186 | 24 358 | 25 048 |
| (-) Taxes Paid | 703 | 4 566 | 2 962 | 2 477 |
| NOPAT | 24 759 | 17 016 | 16 140 | 16 431 |
| (-) NCAPEX | 5 123 | 6 720 | 7 264 | 5 987 |
| (-) Changes in OWC | 4 884 | -639 | -1 089 | -1 614 |
| **=FCFF** | **14 752** | 13 540 | 15 221 | 18 197 |
| Discount Factor | 0,98 | 0,90 | 0,83 | 0,77 |
| **PV(FCFF)** | **14 469** | 12 203 | 12 624 | 13 888 |
| PV(Terminal Value) | 193 304 | | | |
| Enterprise Value | 246 488 | | | |
| (+) Other Non-current Assets | 19 858 | | | |
| (-)Other Non-current Liabilities | 22 993 | | | |
| (-) Debt | 73 266 | | | |
| (+) Cash & Equivalents | 8 307 | | | |
| (+)Short term Investments | 17 626 | | | |
| (-) Contingent Liabilities | 5 200 | | | |
| (-) Pension and postretirement benefit obligations | 2 250 | | | |
| (-) Minority Interests | 256 | | | |
| M&A Synergies | 0 | | | |
| **Equity Value** | **188 313** | | | |
| # of Shares | 5 526 | | | |
| WACC | 8,67% | | | |
| Perpetuity Growth | 2,29% | | | |
| **Price estimated** | **34,08** | | | |
| Pfizer share price (30/11/2023) | 30,50 | | | |
| **Upside/Downside** | **11,72%** | | | |
| **Reccomendation** | **Buy** | | | |

*Source: Own Analysis*

For the assumed current period as the end of the 3rd quarter of 2023, the final share price value obtained using the FCFF method was $34,08 per share, 11,72% above the real share price of $30,50 on 30 November 2023 (Table 31). According to the methodology disclosed in Table 32, the FCFF concludes with a **Buy** recommendation.

*Table 32: Recommendation Methodology*

| Reccomendation | % Variation |
|---|---|
| Strong Buy | >30% |
| Buy | >10% & <30% |
| Hold | >-10% & <10% |
| Sell | <-10% & >-30% |
| Strong Sell | >-10% |

*Source: Own Analysis*

## 5.4 APV

The second enterprise approach used to estimate Pfizer's PT was the APV methodology, in which we discounted the FCFF using the unlevered cost of capital adding the value of the tax shield and deducting the expected bankruptcy costs.

As described in the literature review the first step to calculate the APV is to get the Unlevered Beta of the firm by the equation described in that chapter, achieving the unlevered beta of 0,52 (Table 33). Then assuming the market risk premium constant and using the forecast for the risk-free rate consensus published by EconForecasting (Appendix 12), it was possible to get the unlevered cost of equity.

*Table 33: Unlevered Beta Forecast*

| | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|
| Risk Free Rate | 4,04% | 4,33% | 3,63% | 3,59% |
| Market Risk Premium | 8,92% | 8,92% | 8,92% | 8,92% |
| Unlevered Beta | 0,47 | 0,47 | 0,47 | 0,47 |
| Levered Beta | 0,65 | 0,65 | 0,65 | 0,65 |
| **Cost of Equity** | **8,25%** | **8,54%** | **7,84%** | **7,79%** |

*Source: Own Analysis*

The ITS was calculated by multiplying the average outstanding debt by the cost of debt and the effective tax rate. The PV of the TV was calculated as 26% of the average growth perpetuity of 2.6%. This percentage was chosen to align with the company's debt weight, and given the company's robust balance sheet, it is anticipated that there won't be an increase in its debt/equity ratio.

The cost of bankruptcy is the product of the respective unlevered value of the company in this year, the PD, and the default cost. The bankruptcy cost was set at 20% of each of the years as revealed in the literature review and the probability of default was set as 1.25% according to its A+ S&P rating.

*Table 34: APV Valuation Forecast*

| Discounting Years | 0,25 | 1,25 | 2,25 | 3,25 | |
|---|---|---|---|---|---|
| **APV** | **4Q2023** | **2024** | **2025** | **2026** | **Terminal Value** |
| Ebitda | 25 462 | 24 186 | 24 358 | 25 048 | |
| Taxes | -2 622 | -2 495 | -2 556 | -2 669 | |
| Capex | -5 123 | -6 720 | -7 264 | -5 987 | |
| Change NWC | 4 884 | -639 | -1 089 | -1 614 | |
| Unlevered FCF | 14 752 | 13 540 | 15 221 | 18 197 | |
| RE(U) | 8,64% | 8,93% | 8,23% | 8,19% | |
| Discount Factor | 0,98 | 0,90 | 0,84 | 0,77 | |
| **PV FCF** | **14 449** | **12 167** | **12 740** | **14 091** | **274 264** |
| PV Terminal Value | 185 002 | | | | |
| **Equity Value** | **238 448** | | | | |
| Risk Free | 4,04% | 4,33% | 3,63% | 3,59% | |
| Spread to Risk Free | 1,25% | 1,25% | 1,25% | 1,25% | |
| Costs of Debt | 4,79% | 5,58% | 4,88% | 4,84% | |
| Tax Rate | 14,00% | 14,00% | 14,00% | 14,00% | |
| **Tax Shield** | **492** | **573** | **500** | **496** | |
| R(d) | 4,79% | 5,58% | 4,88% | 4,84% | |
| Discount Factor | 0,99 | 0,93 | 0,90 | 0,86 | |
| PV Tax shield | 486 | 535 | 450 | 425 | **8 944** |
| PV Terminal Value Tax Shield | 7 161 | | | | |
| **Tax Shield Value** | **9 057** | | | | |
| Probability of Default | 1,25% | 1,25% | 1,25% | 1,25% | |
| % of Equity Value as bankrupcy costs | 20% | 20% | 20% | 20% | |
| Bankrupcy costs | 523,01 | 523,01 | 523,01 | 523,01 | |
| **Bankruptcy Costs** | **2 092** | | | | |
| (-) Net Debt | 73 266 | | | | |
| (+) Other Non-current Assets | 19 858 | | | | |
| (-) Non-current Liabilities | 22 993 | | | | |
| (+) Cash & Equivalents | 8 307 | | | | |
| (+) Short-term Investments | 17 626 | | | | |
| (-) Pension and postretirement benefit obligations | 2 250 | | | | |
| (-) Contingent Liabilities | 5 200 | | | | |
| (-) Minority Interests | 256 | | | | |
| Entreprise value | 187 494 | | | | |
| # Shares | 5 526 | | | | |
| **Target Price** | **33,93** | | | | |
| Pfizer share price (30/11/2023) | 30,50 | | | | |
| **Upside/Downside** | **11,24%** | | | | |
| **Recommendation** | **Buy** | | | | |

*Source: Own Analysis*

Finally, for the assumed current period as the end of the 3rd quarter of 2023, it was possible to observe a price target of $33,93 from the APV analysis (Table 34).

### 5.4.1 Sensitivity Analysis

Even though every effort is taken to ensure its accuracy, assumptions are required to be able to compute the DCF model, since it aims to forecast events that will happen in the future and are unpredictable. Then, the sensitivity analysis seeks to determine how changes to DCF's main inputs will affect the price of Pfizer's stock.

Two of the key main inputs are the WACC and the perpetuity growth rate. Those inputs affect the terminal value of the company, which as stated in the literature review, is responsible for a relevant part of the model.

Table 35 shows how the share price would differ along increases and decreases of 0,5% on the WACC and on the growth rate.

*Table 35: Sensitivity analysis*

| | | WACC | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 34,08 | 7,19% | 7,69% | 8,19% | 8,69% | 9,19% | 9,69% | 10,19% |
| Perpetuity Growth Rate | 1,69% | 42,49 | 37,92 | 34,06 | 30,74 | 27,91 | 25,43 | 23,25 |
| | 1,89% | 44,21 | 39,33 | 35,24 | 31,73 | 28,76 | 26,16 | 23,88 |
| | 2,09% | 46,06 | 40,84 | 36,49 | 32,78 | 29,66 | 26,93 | 24,55 |
| | 2,29% | 48,07 | 42,47 | 37,83 | 33,90 | 30,61 | 27,74 | 25,25 |
| | 2,49% | 50,24 | 44,22 | 39,27 | 35,10 | 31,62 | 28,60 | 25,99 |
| | 2,69% | 52,61 | 46,11 | 40,81 | 36,37 | 32,68 | 29,51 | 26,77 |
| | 2,89% | 55,19 | 48,16 | 42,46 | 37,73 | 33,82 | 30,47 | 27,59 |

*Source: Own Analysis*

For these changes, it is possible to obtain a share price between \$23,25 and \$55,19. In green, there are represented the combinations of WACC and growth rate that following my methodology would lead to a Buy recommendation. In grey, it is represented in which conditions it would recommend a Sell, and finally, in white the conditions to recommend a Hold. This analysis reinforces the Buy recommendation.

### 5.4.2 Scenario Analysis

Covid-19 was a game changer for Pfizer and the DCF model is strongly impacted by assumptions related to the evolution of the disease in the next years. Scenarios were created to evaluate how the share price would change in different environments considering the biggest upside and downside risk that Pfizer faces, which is the future of Covid-19.

To do so, variations in the percentage of population vaccinated and Pfizer market share that might affect Comirnaty and Paxlovid volumes sold were analyzed. All the scenarios are described in Table 36.

The first scenario analyzed was if Covid-19 would not slowdown and would come back to 2021 levels until 2026. In this scenario, Pfizer would once more lead vaccination and the sales of the hospital pill and Pfizer's share target-price according to this dissertation would be $54,52 due to higher sales than in the base scenario of those product reflect and the recommendation would be a Strong Buy with an upside of 78,93%.

The second scenario considers that Covid-19 would completely disappear from our lives after 2026, with 0 cases in the entire world. In this case, there would not exist anymore demand for products related to the disease and consequently no revenues coming from it. Following these conditions, the estimated target price would be $20,45, and the recommendation would change to Sell with a downside of -32,90%.

The last scenario considered was if Pfizer would partially lose their market share to new competitors, that might develop cheaper drugs or more efficient drugs for the diseased, continuing to assume that Covid-19 would be at the levels that were assumed during the dissertation. In this scenario, Pfizer would see their volumes sold reduced and this dissertation gives a Pfizer target-price of $28,28 and a Hold recommendation.

*Table 36: Scenario Analysis*

| Scenario Summary | | | | |
|---|---|---|---|---|
| | **Current Values:** | **Covid comes back to 2021 leves** | **Covid disapears** | **Market Share decrease** |
| **Changing Cells:** | | | | |
| United States (% booster vaccination) | 24,00% | 50,00% | 0,00% | 24,00% |
| Europe (% booster vaccination) | 24,00% | 50,00% | 0,00% | 24,00% |
| Africa (% booster vaccination) | 6,00% | 15,00% | 0,00% | 6,00% |
| Asia (% booster vaccination) | 37,85% | 37,85% | 0,00% | 37,85% |
| South America (% booster vaccination) | 54,00% | 54,00% | 0,00% | 54,00% |
| Paxlovid Sales US ($ m) | 4 | 4 | 0 | 4 |
| Paxlovid Sales Other High Income ($ m) | 4 | 7 | 0 | 4 |
| Paxlovid Sales low and middle Income ($ m) | 3 | 6 | 0 | 3 |
| Vaccine Market Share | 50,00% | 50,00% | 50,00% | 30,00% |
| Paxlovid Market Share | 90,00% | 90,00% | 90,00% | 70,00% |
| **Target Price** | **$34,08** | **$54,52** | **$20,45** | **$28,28** |
| Pfizer share price (30/11/2023) | 30,47 | 30,47 | 30,47 | 30,47 |
| **Upside/Downside** | **11,83%** | **78,93%** | **-32,90%** | **-7,18%** |
| **Recommendation** | **Buy** | **Strong Buy** | **Sell** | **Hold** |

*Source: Own Analysis*

## 5.5 Relative Valuation

As indicated in the literature review, multiples valuation is a commonly used tool used in many investment banking reports nowadays. It offers an alternative approach to the main method for valuing a firm, the Discounted Cash Flow method, and will be used to enhance and validate the primary model.

### 5.5.1 Peers Selection

The first step in proceeding with a relative valuation is to decide which companies are comparable to Pfizer. Following the literature review, the "industry membership" reveals to be a robust first filter, then only companies within the industry will be considered.

Then, a SARD approach was used to identify the most similar companies within the industry. This approach was applied looking for market capitalization as a size measure, earnings per share, return of equity and operating margin to compare profitability, Debt to equity and net debt to Ebitda to measure capital structure, and the last 5-year Ebitda growth to compare the growth rate of the companies.

Firstly, to apply the SARD approach, all the data for all the industry peers was extracted on Bloomberg (Table 37)

*Table 37: Pharmaceutical industry companies' analysis*

| | Market Capitalization ( $m ) | EPS | Debt/Equity | Net Debt/EBITDA | Return on Equity | Operating Margin | Ebitda 5y CAGR Growth |
|---|---|---|---|---|---|---|---|
| Pfizer | 160,415 | 1.07 | 40.71 | 1.26 | 11.06 | 41.64 | 21.85 |
| Johnson & Johnson | 375,872 | 1.92 | 41.33 | 0.73 | 27.82 | 32.60 | 2.42 |
| Abbvie Inc | 272,987 | 2.92 | 371.33 | 1.99 | 46.07 | 51.99 | 19.28 |
| Astrazeneca | 161,750 | 1.55 | 78.88 | 1.73 | 16.30 | 30.10 | 6.22 |
| Roche | 199,376 | 8.71 | 82.91 | 0.92 | 42.66 | 35.04 | 2.39 |
| GSK PLC | 59,652 | 0.29 | 207.87 | 1.46 | 54.50 | 27.80 | 6.66 |
| Bayer | 32,130 | 1.33 | 106.51 | 5.69 | -9.82 | 18.24 | 9.56 |
| Sanofi | 112,996 | 1.71 | 28.23 | 0.82 | 6.00 | 28.73 | 8.38 |
| Merck & Co Inc | 61,434 | 1.94 | 44.76 | 1.52 | 10.25 | 26.45 | 8.78 |
| Novartis AG | 193,221 | 1.57 | 42.30 | 0.68 | 15.83 | 32.15 | 3.44 |
| Bristol-Myers Squibb Co | 104,688 | 1.77 | 130.85 | 1.79 | 26.87 | 42.12 | 34.18 |

*Source: Bloomberg*

Then, to be possible to rank for each characteristic, all the companies in order of similarity to Pfizer, were calculated the absolute values obtained by the subtraction of each company value for each characteristic by Pfizer values. (Table 38)

*Table 38: Pharmaceutical industry companies' standardization*

| | Market Capitalization ( $m ) | EPS | Debt/Equity | Net Debt/EBITDA | Return on Equity | Operating Margin | Ebitda 5y CAGR Growth |
|---|---|---|---|---|---|---|---|
| Johnson & Johnson | 215,458 | 0.85 | 0.62 | 0.53 | 16.76 | 9.04 | 19.43 |
| Abbvie Inc | 112,573 | 1.85 | 330.62 | 0.73 | 35.01 | 10.35 | 2.57 |
| Astrazeneca | 1,336 | 0.48 | 38.17 | 0.46 | 5.24 | 11.54 | 15.63 |
| Roche | 38,961 | 7.64 | 42.20 | 0.34 | 31.60 | 6.60 | 19.46 |
| GSK PLC | 100,763 | 0.77 | 167.17 | 0.19 | 43.44 | 13.84 | 15.19 |
| Bayer | 128,284 | 0.26 | 65.81 | 4.42 | 20.88 | 23.39 | 12.29 |
| Sanofi | 47,418 | 0.64 | 12.48 | 0.44 | 5.06 | 12.91 | 13.47 |
| Merck & Co Inc | 98,980 | 0.87 | 4.05 | 0.25 | 0.81 | 15.19 | 13.07 |
| Novartis AG | 32,807 | 0.50 | 1.59 | 0.59 | 4.77 | 9.48 | 18.41 |
| Bristol-Myers Squibb Co | 55,726 | 0.70 | 90.14 | 0.53 | 15.81 | 0.48 | 12.33 |

*Source: Bloomberg, Own Analysis*

Finally, an equal weighted average of the rank obtained by each company for each characteristic was applied. (Table 39)

*Table 39: Pharmaceutical industry SARD*

| | Market Capitalization | EPS | Debt/Equity | Net Debt/EBITDA | Return on Equity | Operating Margin | Ebitda 5y CAGR Growth | Sard |
|---|---|---|---|---|---|---|---|---|
| Novartis AG | 2.00 | 3.00 | 2.00 | 8.00 | 2.00 | 4.00 | 8.00 | 4.14 |
| Astrazeneca | 1.00 | 2.00 | 5.00 | 5.00 | 4.00 | 6.00 | 7.00 | 4.29 |
| Sanofi | 4.00 | 4.00 | 4.00 | 4.00 | 3.00 | 7.00 | 5.00 | 4.43 |
| Merck & Co Inc | 6.00 | 8.00 | 3.00 | 2.00 | 1.00 | 9.00 | 4.00 | 4.71 |
| Bristol-Myers Squibb Co | 5.00 | 5.00 | 8.00 | 6.00 | 5.00 | 1.00 | 3.00 | 4.71 |
| Roche | 3.00 | 10.00 | 6.00 | 3.00 | 8.00 | 2.00 | 10.00 | 6.00 |
| Johnson & Johnson | 10.00 | 7.00 | 1.00 | 7.00 | 6.00 | 3.00 | 9.00 | 6.14 |
| Bayer | 9.00 | 1.00 | 7.00 | 10.00 | 7.00 | 10.00 | 2.00 | 6.57 |
| GSK PLC | 7.00 | 6.00 | 9.00 | 1.00 | 10.00 | 8.00 | 6.00 | 6.71 |
| Abbvie Inc | 8.00 | 9.00 | 10.00 | 9.00 | 9.00 | 5.00 | 1.00 | 7.29 |

*Source: Bloomberg, Own Analysis*

It is evident that none of the companies is equal to Pfizer in any of the previously described criteria. However, it is possible to see that Novartis, Astrazeneca, Sanofi, Merck & Co and Bristol Myers Squibb, are the most similar with an average ranking for each characteristic below 5 and are going to be considered on the multiples analysis.

## 5.5.2 Multiples Valuation

After finding the comparable assets, it is necessary to standardize their market values to make them comparable, and that was done using multiples valuation.

First, it is crucial to choose between current and forward multiples. Current pricing multiples, in this case, would reflect the 2023 level of profitability which can still be considered as an outlier, since it is still impacted by the past unexpected effects of Covid-Then to have a more comparable multiple, on this analysis it was decided to use 2-year-forward-multiples.

Since one of the criteria of peers' selection was by filtering by industry, EV/Ebitda is one of the ideal multiples to be used, as recommended by Maverick (2022). This multiple measures a firm's size to its earnings without reflecting depreciation costs and has the advantage of being passive to changes in the capital structure. The second multiple chosen was the commonly used P/E ratio which provides insight into how much an investor pays for each dollar of earnings.

Table 40 shows the valuation conducted, with the 2 Year Forward multiples obtained from Bloomberg. A simple average of the peers' multiples was conducted to create a single multiple to be utilized in the computations.

*Table 40: Relative Valuation*

| Company | P/E 2YF | EV/EBITDA 2YF |
|---|---|---|
| Pfizer | 10,68 | 8,83 |
| Astrazeneca | 12,54 | 10,65 |
| Sanofi | 14,27 | 10,63 |
| Merck & Co | 15,57 | 9,60 |
| Bristol-Myers Squibb Co | 12,08 | 8,19 |
| Novartis | 12,44 | 10,65 |
| **Peers market -weighted** | 13,38 | 9,94 |
| | | |
| | **EPS** | **Ebitda per share** |
| Pfizer | 2,67 | 3,63 |
| | | |
| **Estimated price** | **€ 35,72** | **€ 36,10** |
| Pfizer share price (30/11/2023) | 30,50 | 30,50 |
| **Upside/downside** | **17,12%** | **18,35%** |
| **Recommendation** | **Buy** | **Buy** |

*Source: Bloomberg*

As it is possible to observe, Pfizer multiples are below the market average. While Covid-19 vaccines increased the market's confidence across this industry, reflected in the price of all companies, Pfizer was able to absorb most of the earnings coming from Covid-19. In fact, Pfizer shows a 63,00% market share on Covid-19 sales and 90% on pills for severe cases. Due to that, all denominators of Pfizer multiples considered (Earnings and Ebitda) saw a significant increase while the other companies did not follow, which is still reflected in forward forecasts.

Finally, based on the multiples' valuation presented in this dissertation, a target price of € 35,72 was estimated for Pfizer shares using the P/E ratio, and a target price of € 36,10 was estimated using EV/Ebitda both confirming the Buy recommendation suggested by the DCF models.

# 6 Price-target and Recommendation

The final price target and recommendation were achieved using a weighted average of the estimated price targets achieved on FCFF, APV, and relative valuation methods.

As stated in the literature review the discounted cash flow methods were shown to work well to evaluate biotech's, therefore they were considered to have the biggest weight on the calculation of the price target. Within the DCF models, the APV seems to achieve more accurate results when changes in the capital structure are expected and therefore will have the biggest impact on the final target price weighting for 50% where the most widely used method in valuation, the FCFF was weighted at 30%.

Nevertheless, as stated by Kaplan et al. (1995), can be a useful complement to the DCF models, since it allows to incorporate information regarding comparable assets price, therefore each multiple used (P/E and EV/Ebitda) will weigh 10% on the final price target (Table 41).

*Table 41: Target Price and Recommendation*

| Valuation Method | Estimated Price Target | Weight |
|---|---|---|
| Ajusted Present Value | $33,93 | 50,00% |
| Free Cash Flow To The Firm | $34,08 | 30,00% |
| Price/Earnings multiple | $35,72 | 10,00% |
| Enterprise value/Ebitda multiple | $36,10 | 10,00% |
| **Dissertation Price Target** | **$34,37** | |
| Pfizer Share Price (30/12/2023) | $30,50 | |
| **Upside/Downside** | **12,68%** | |
| **Disssertation Recommendation** | **Buy** | |

*Source: Own analysis*

This dissertation concludes with a final target price of $34,37 which represents an upside of 12,68% comparing to Pfizer's share price on 30th November 2023 leading to a BUY recommendation.

# 7 Comparison with Goldman Sachs

This chapter aims to compare this dissertation's estimations, assumptions, and price-target to Goldman Sachs (Table 42). All the details are disclosed on Appendix 13

*Table 42: Price Target from Goldman Sachs*

| Institution | Analyst | Reccomendation (Dec, 2022) | Price Target (12 Dec, 2023) | Upside |
|---|---|---|---|---|
| Goldman Sachs | Chris Shibutani | Buy | $37,00 | 29,50% |

*Source: Goldman Sachs research*

Goldman Sachs coverage of Pfizer was reinitiated in 17th December of 2021, with Chris Shibutani, M.D as their analyst. This comparison will take into account the most recent model made available by the analyst at 12th December 2023, where the analyst reduced its Price Target from $48 on the previous report to $37,00, maintaining its Buy recommendation.

*Table 43: Income Statement Comparison*

| | 2023E Thesis | *2023E Goldman Sachs* | % | 2024E Thesis | *2024E Goldman Sachs* | % | 2025E Thesis | *2025E Goldman Sachs* | % |
|---|---|---|---|---|---|---|---|---|---|
| **Income statement** | | | | | | | | | |
| Total revenue | 70 173 | 58 889 | **19%** | 70 809 | 62 084 | **14%** | 71 898 | 64 780 | **11%** |
| Cost of goods sold | 17 056 | 24 734 | **-31%** | 17 210 | 17 383 | **-1%** | 17 475 | 17 815 | **-2%** |
| SG&A | 13 696 | 13 780 | **-1%** | 13 761 | 12 293 | **12%** | 13 873 | 12 632 | **10%** |
| R&D | 12 180 | 12 426 | **-2%** | 12 981 | 11 237 | **16%** | 13 834 | 11 660 | **19%** |
| **Ebitda** | 27 241 | 13 949 | **95%** | 26 857 | 27 071 | **-1%** | 26 716 | 28 673 | **-7%** |
| Depreciation & amortization | 5 720 | 6 120 | **-7%** | 5 492 | 6 000 | **-8%** | 5 314 | 6 000 | **-11%** |
| **Ebit** | 21 521 | 7 829 | **175%** | 21 365 | 21 071 | **1%** | 21 402 | 22 673 | **-6%** |
| Interest Expense | 1 055 | 700 | **51%** | 949 | 752 | **26%** | 848 | 752 | **13%** |
| Tax | 2 532 | 1 167 | **117%** | 2 526 | 3 401 | **-26%** | 2 543 | 3 641 | **-30%** |
| **Net income** | 17 934 | 8 562 | **109%** | 17 890 | 19 270 | **-7%** | 18 011 | 20 632 | **-13%** |

*Source: Own analysis, Goldman Sachs Research*

While comparing the main estimates between this dissertation and Goldman Sachs analyst´s (Table 43), is possible to observe that regarding total revenues, this dissertation shows a more optimistic view, which might be a consequence of the different method of estimates the key drivers for those revenues, which are Covid-19 products. For Comirnaty, the analyst applies a 2x multiple on 2024E sales, which is half of the 4x multiple that he ascribes to the vaccine, based on the 50/50 split with BioNTech, and for Paxlovid, the analyst uses a multiple of 5x of his 2024 sales estimates (Chris Shibutani, 2023). This difference is higher for 2023 where this dissertation delivers a forecast 19% more optimistic but gets lower across the years.

The same pattern can be observed for Ebitda, where for 2023 this dissertation's Ebitda forecast is 83% above Goldman Sachs following a significantly lower estimated Cost of goods sold (-33%). However, for 2024 and 2025 Ebitda forecast on this dissertation is -11% and -15% respectively lower than GS estimates, driven by higher estimated R&D costs in this dissertation, based on the belief that the company will take advantage of its strong balance sheet to increase those costs, while costs of goods sold are in line with GS for those years.

The net income follows the Ebitda trend, with the 2023 thesis forecast 88% above GS while being below -20% and -24% for 2024 and 2025 respectively.

*Table 44: DFC Assumptions Comparison*

| | Thesis | Goldman Sachs |
|---|---|---|
| **Assumptions** | | |
| WACC | 8,67% | 8,00% |
| Perpetual growth rate | 2,29% | 0,00% |
| Number of shares outstanding | 5 526 | 5 646 |
| Tax rate | 14,00% | 12,00% |
| **Valuation** | | |
| Present value of cash flows | 53 184 | 71 026 |
| Present value of terminal value | 193 304 | 144 655 |
| Enterprise value | 246 488 | 215 681 |
| Equity value | 188 313 | 206 549 |
| Equity value per share | 34,08 | 36,58 |
| Current share price | 30,50 | 30,50 |
| Upside/(downside) potential | 11,72% | 28,18% |

*Source: Own analysis, Goldman Sachs Research*

Finally, the FCFF is compared to Goldman Sachs (Table 44) where we can observe that the price obtained on this dissertation is in line with Goldman Sachs. Even though different assumptions were taken into account between this forecast and GS, since its report was the most recent one available, all the new information regarding market conditions were taken into account in both forecasts, which might help to achieve closer prices.

However, different discount factors and perpetual growth rates were considered. Goldman Sachs considered a WACC of 8,00% and a perpetual growth rate of 0,00% while this dissertation assumed a WACC of 8,67% and a perpetual growth rate in line with the industry of 2,29%. Then the present value of cashflows of GS was discounted by a lower WACC leading to a higher value than this dissertation, at the same time that a significantly lower growth rate led to a significantly lower terminal value than this dissertation and a lower enterprise value. However, equity values were in line due to different amounts of net debt considered.

# 8 Conclusion

This dissertation purpose was to achieve a fair target price for Pfizer to provide a final recommendation. Several steps, that went from interpreting past literature, to understanding the environment where the company operates and its history, were considered to achieve all the forecasts required to provide a final recommendation obtained by the discounted cash flow method and the relative valuation method.

The DCF approach relied on justified assumptions to estimate all the financial statements of the company. Few companies suffered such an impact as Pfizer due to the Covid-19 pandemic since the company was able to take the opportunity to become a key player where the market needed. Thus, due to the big impact on the revenues provided by those products, one of the key challenges of this method was to be able to predict Covid-19 evolution as well as Comirnaty and Paxlovid demand. Following this dissertation's assumptions, a decrease in demand for those products in the following years will impact Pfizer's revenues when compared to 2022.

Two different approaches of DCF were used: the widely used FCFF and the APV, which according to the literature review is shown to be a more accurate approach for the valuation of a company that is expected to change its capital structure. Those approaches provided a slightly different fair target price since they differ in the way of discounting cash flows, however, both led to the same Buy recommendation.

The relative valuation was calculated using two different multiples, the EV/Ebitda and Price/Earnings multiples, where the same recommendation of Buy as both DCF methods was obtained.

Ultimately, this dissertation concluded with a Buy recommendation and a target share price of $34,37 obtained by weighing the adjusted present value method, the Free Cash Flow to the Firm method, the Price/Earnings multiple, and the EV/Ebitda multiple, share prices, by 50%, 30%, 10% and 10% respectively.

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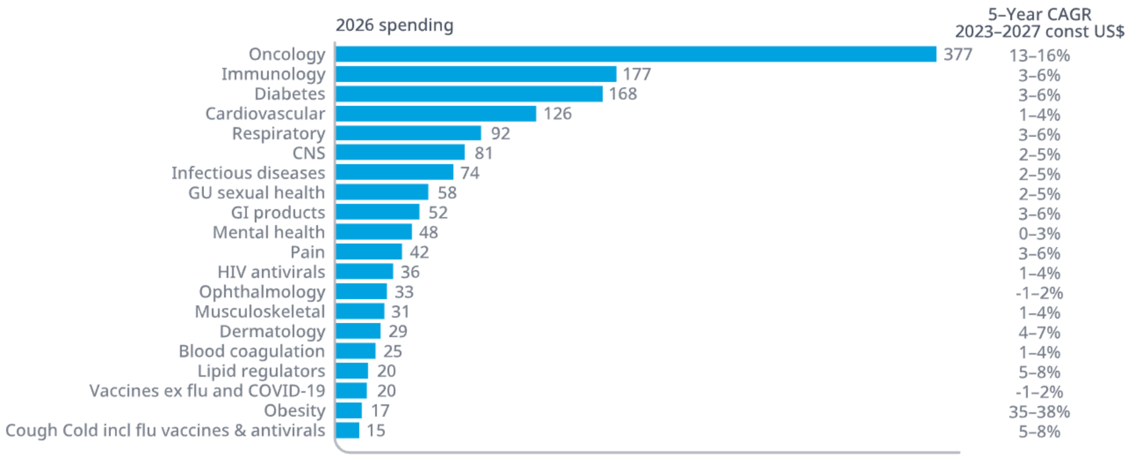
# 10 Appendix

*Appendix 1: Pfizer Income statement*

| ($ Millions) | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| Comirnaty | - | - | 154 | 36,781 | 37,806 | 19,427 | 19,342 | 19,253 | 19,150 |
| Paxlovid | - | - | - | 76 | 18,933 | 7,956 | 7,020 | 6,318 | 4,680 |
| Oncology | 7,202 | 9,014 | 10,867 | 12,333 | 12,132 | 13,588 | 15,218 | 17,045 | 19,090 |
| Internal Medicine | 9,996 | 8,790 | 9,003 | 9,329 | 8,896 | 9,177 | 9,466 | 9,765 | 10,073 |
| Vaccines without Cominarty | 6,332 | 6,504 | 6,421 | 5,844 | 6,136 | 6,354 | 6,580 | 6,814 | 7,056 |
| Hospital without Paxlovid | 8,158 | 6,695 | 6,777 | 7,225 | 9,030 | 7,889 | 7,557 | 7,238 | 6,934 |
| Inflammation & Immunology | 4,080 | 4,733 | 4,567 | 4,431 | 3,284 | 3,192 | 3,103 | 3,016 | 2,931 |
| Rare Disease | 2,211 | 2,278 | 2,936 | 3,538 | 3,852 | 3,977 | 4,105 | 4,238 | 4,375 |
| **Revenues** | **53,647** | **51,750** | **47,642** | **81,288** | **100,330** | **71,559** | **72,391** | **73,686** | **74,288** |
| Cost of sales | 8,872 | 8,043 | 8,423 | 30,713 | 34,097 | 17,393 | 17,595 | 17,910 | 18,056 |
| **Gross Profit** | 44,775 | 43,707 | 39,219 | 50,575 | 66,233 | 54,166 | 54,796 | 55,776 | 56,232 |
| Selling, General, & Administrative | 14,457 | 12,419 | 11,126 | 12,109 | 13,049 | 13,838 | 13,923 | 14,055 | 14,117 |
| Research and Development | 7,962 | 8,385 | 8,877 | 10,523 | 11,428 | 12,039 | 12,683 | 13,362 | 14,076 |
| **Total Operating Expenses** | 22,419 | 20,804 | 20,003 | 22,632 | 24,477 | 25,877 | 26,606 | 27,417 | 28,193 |
| **Ebitda** | **22,356** | **22,903** | **19,216** | **27,943** | **41,756** | **28,289** | **28,190** | **28,359** | **28,039** |
| Depreciation & Amortization | 6,384 | 5,755 | 4,777 | 5,191 | 5,064 | 5,750 | 5,526 | 5,352 | 5,299 |
| **Ebit** | **15,972** | **17,148** | **14,439** | **22,752** | **36,692** | **22,539** | **22,664** | **23,007** | **22,740** |
| Interest expense | 1,316 | 1,573 | 1,449 | 1,291 | 1,247 | 1,055 | 949 | 848 | 747 |
| **Earnings Before Taxes** | **14,656** | **15,575** | **12,990** | **21,461** | **35,445** | **21,484** | **21,715** | **22,159** | **21,993** |
| Tax Expense | 1,813 | 1,927 | 1,607 | 2,655 | 4,612 | 2,658 | 2,687 | 2,742 | 2,721 |
| **Operating Net Income** | **12,843** | **13,648** | **11,383** | **18,806** | **30,833** | **18,826** | **19,028** | **19,418** | **19,272** |

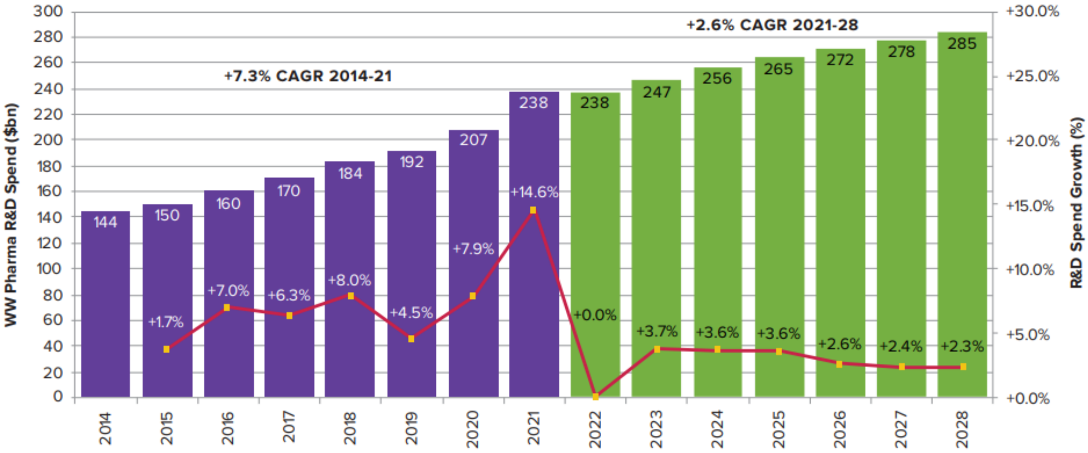
*Source: Bloomberg, Own analysis*

*Appendix 2: IQVIA 5-Year CAGR Spending Forecast*




*Source: IQVIA Institute (Nov,2022)*

*Appendix 3: Evaluate Pharma Worldwide total pharmaceutical R&D spend in 2014 - 2028*




*Source: Evaluate Pharma (August 2022)*

*Appendix 4: Pfizer´s Balance sheet forecast*

| (US$ millions, except per share data) | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|
| ***Assets*** | | | | | | | | | |
| Cash & Equivalents | 1 139 | 1 305 | 1 784 | 1 944 | 416 | 8 307 | 10 072 | 10 736 | 12 976 |
| Short-Term Investments | 17 694 | 8 525 | 10 437 | 29 125 | 22 316 | 17 626 | 15 800 | 17 143 | 17 991 |
| Accounts Receivable | 8 025 | 8 724 | 7 930 | 11 479 | 10 952 | 10 009 | 9 864 | 9 589 | 8 951 |
| Inventories | 7 508 | 8 283 | 8 046 | 9 059 | 8 981 | 6 841 | 6 403 | 6 745 | 6 891 |
| Prepaid Expenses & Taxes | 5 835 | 5 944 | 6 869 | 8 086 | 8 594 | 7 530 | 7 478 | 7 603 | 7 391 |
| Discontinued assets/held for sale | 9 725 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Current Assets** | **49 926** | **32 802** | **35 066** | **59 693** | **51 259** | **50 312** | **49 618** | **51 816** | **54 200** |
| Long-term Loans/Investments | 2 767 | 20 147 | 20 262 | 21 526 | 15 069 | 15 069 | 15 069 | 15 069 | 15 069 |
| Property, Plant & Equipment | 13 385 | 13 967 | 13 900 | 14 882 | 16 274 | 14 952 | 14 802 | 15 156 | 15 703 |
| Intangibles Asets | 35 211 | 35 371 | 28 472 | 25 146 | 43 370 | 40 051 | 39 649 | 40 596 | 42 061 |
| Goodwill (not amortizable) | 53 411 | 58 653 | 49 577 | 49 208 | 51 375 | 51 375 | 51 375 | 51 375 | 51 375 |
| Other Assets | 4 723 | 6 549 | 6 952 | 11 021 | 19 858 | 19 858 | 19 858 | 19 858 | 19 858 |
| **Total Non-Current Assets** | 109 497 | 134 687 | 119 163 | 121 783 | 145 946 | 141 305 | 140 753 | 142 054 | 144 066 |
| **Total Assets** | **159 423** | **167 489** | **154 229** | **181 476** | **197 205** | **191 617** | **190 371** | **193 870** | **198 266** |
| | | | | | | | | | |
| ***Liabilities*** | | | | | | | | | |
| Short-Term Debt | 8 831 | 16 195 | 2 703 | 2 241 | 2 945 | 2 945 | 0 | 0 | 0 |
| Accounts Payable | 4 674 | 4 220 | 4 309 | 5 578 | 6 809 | 5 387 | 5 225 | 5 294 | 5 289 |
| Dividends Payable | 2 047 | 2 104 | 2 162 | 2 249 | 2 303 | 2 385 | 2 385 | 2 385 | 2 385 |
| Income Taxable Payable | 1 265 | 980 | 1 049 | 1 266 | 1 587 | 1 229 | 1 222 | 1 271 | 1 315 |
| Accrued Compensation | 2 397 | 2 720 | 3 057 | 3 332 | 3 407 | 3 407 | 3 407 | 3 407 | 3 407 |
| Other Current Liabilities | 12 643 | 11 083 | 12 640 | 28 006 | 25 087 | 17 835 | 18 010 | 19 172 | 20 043 |
| **Total Current Liabilities** | **31 857** | **37 302** | **25 920** | **42 672** | **42 138** | **33 188** | **30 249** | **31 529** | **32 438** |
| Long-term Debt | 32 909 | 35 955 | 37 133 | 36 195 | 32 884 | 29 035 | 26 348 | 23 748 | 21 102 |
| Pension and postretirement benefit obligations | 1 338 | 1 124 | 645 | 235 | 2 250 | 2 250 | 2 250 | 2 250 | 2 250 |
| Deferred Taxes | 3 700 | 5 578 | 4 063 | 349 | 1 023 | 2 943 | 2 791 | 2 234 | 1 868 |
| Other Noncurrent Liabilities | 25 859 | 24 085 | 22 995 | 24 563 | 22 993 | 22 993 | 22 993 | 22 993 | 22 993 |
| Minority Interest | 351 | 303 | 235 | 262 | 256 | 256 | 256 | 256 | 256 |
| **Total Non-Current Liabilities** | **64 157** | **67 045** | **65 071** | **61 604** | **59 406** | **57 476** | **54 638** | **51 481** | **48 469** |
| **Total Liabilities** | **95 664** | **104 044** | **90 756** | **104 014** | **101 288** | **90 664** | **84 887** | **83 010** | **80 907** |
| | | | | | | | | | |
| ***Shareholders' Equity*** | | | | | | | | | |
| Preferred Stock | 19 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Stock, at par | 467 | 468 | 470 | 473 | 476 | 476 | 476 | 476 | 476 |
| Additional Paid-in Capital | 86 253 | 87 428 | 88 674 | 90 591 | 91 802 | 91 802 | 91 802 | 91 802 | 91 802 |
| Retained Earnings | 89 554 | 97 670 | 96 770 | 103 394 | 125 656 | 130 948 | 135 479 | 140 855 | 147 353 |
| Accum. other comp. income/ (Expense) | -11 275 | -11 640 | -11 688 | -5 897 | -8 304 | -8 304 | -8 304 | -8 304 | -8 304 |
| Treasury Stock, at cost | -101 610 | -110 801 | -110 988 | -111 361 | -113 969 | -113 969 | -113 969 | -113 969 | -113 969 |
| **Total Shareholders' Equity** | **63 759** | **63 445** | **63 473** | **77 462** | **95 917** | **100 953** | **105 484** | **110 860** | **117 358** |
| **Total Liab & Shareholders' Equity** | **159 423** | **167 489** | **154 229** | **181 476** | **197 205** | **191 617** | **190 371** | **193 870** | **198 266** |

*Source: Bloomberg, Pfizer Annual Report 2022, Own Analysis*

*Appendix 5: Pfizer Short-term Borrowings and Long-Term Debt*

## Notes to Consolidated Financial Statements

Pfizer Inc. and Subsidiary Companies

C. Short-Term Borrowings

Short-term borrowings include:

| (MILLIONS) | As of December 31, 2022 | 2021 |
|---|---|---|
| Current portion of long-term debt, principal amount | **$ 2,550** | $ 1,636 |
| Other short-term borrowings, principal amount[(a)] | **385** | 605 |
| Total short-term borrowings, principal amount | **2,935** | 2,241 |
| Net fair value adjustments | **10** | — |
| Total *Short-term borrowings, including current portion of long-term debt*, carried at historical proceeds, as adjusted | **$ 2,945** | $ 2,241 |

(a) Primarily includes cash collateral. See *Note 7F*.

As of December 31, 2022, we had access to a $7 billion committed U.S. revolving credit facility, which may be used for general corporate purposes including to support our commercial paper borrowings. Lenders under this facility have approximately $700 million of commitments maturing in November 2026 and $6.3 billion of commitments maturing in November 2027. In addition to the U.S. revolving credit facility, our lenders have provided us an additional $321 million in lines of credit, of which $292 million expire within one year. Essentially all lines of credit were unused as of December 31, 2022.

D. Long-Term Debt

The following outlines our senior unsecured long-term debt* and the weighted-average stated interest rate by maturity:

| (MILLIONS) | As of December 31, 2022 | 2021 |
|---|---|---|
| Notes due 2023 (3.2% for 2021)[(a)] | **$ —** | $ 2,550 |
| Notes due 2024 (3.9% for 2022 and 2021) | **2,250** | 2,250 |
| Notes due 2025 (0.8% for 2022 and 2021) | **750** | 750 |
| Notes due 2026 (2.9% for 2022 and 2021) | **3,000** | 3,000 |
| Notes due 2027 (2.1% for 2022 and 2021) | **1,000** | 1,051 |
| Notes due 2028 (4.8% for 2022 and 2021) | **1,660** | 1,660 |
| Notes due 2029-2033 (2.6% for 2022 and 2021) | **5,000** | 5,000 |
| Notes due 2034-2038 (5.5% for 2022 and 2021) | **5,517** | 5,585 |
| Notes due 2039-2043 (4.8% for 2022 and 4.7% for 2021) | **7,153** | 7,352 |
| Notes due 2044-2048 (4.2% for 2022 and 2021) | **3,250** | 3,250 |
| Notes due 2049-2053 (3.4% for 2022 and 2021) | **2,500** | 2,500 |
| Total long-term debt, principal amount | **32,080** | 34,948 |
| Net fair value adjustments related to hedging and purchase accounting | **959** | 1,438 |
| Net unamortized discounts, premiums and debt issuance costs | **(175)** | (195) |
| Other long-term debt | **20** | 4 |
| Total long-term debt, carried at historical proceeds, as adjusted | **$ 32,884** | $ 36,195 |
| Current portion of long-term debt, carried at historical proceeds, as adjusted (not included above (3.7% for 2022 and 1.0% for 2021)) | **$ 2,560** | $ 1,636 |

* Our long-term debt is generally redeemable by us at any time at varying redemption prices plus accrued and unpaid interest.

(a) Reclassified to the current portion of long-term debt.

*Source: Pfizer Annual Report 2022*

*Appendix 6: Pfizer Operating lease liabilities*

The following reconciles the undiscounted cash flows for the first five years and total of the remaining years to the operating lease liabilities recorded in the consolidated balance sheet as of December 31, 2022:

| (MILLIONS) Period | Operating Lease Liabilities |
|---|---|
| Next one year[(a)] | **$ 662** |
| 1-2 years | **489** |
| 2-3 years | **356** |
| 3-4 years | **300** |
| 4-5 years | **246** |
| Thereafter | **1,791** |

*Source: Pfizer Annual Report 2022*

*Appendix 7: Pfizer bonds structure*

| Bonds | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Maturity** | **Outstanding (USD)** | **Issued (USD)** | | | | | | |
| **2023** | **2 550 000 000** | **2 550 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFEWY / PFE 7.250 01-Mar-2023 | 01-mar-2023 | 250 000 000 | 250 000 000 | 7,25 | U.S. Dollar | 3,666 | 01-mar-2023 | 101,701 |
| PFE 3.000 15-Jun-2023 | 15-jun-2023 | 1 000 000 000 | 1 000 000 000 | 3,0 | U.S. Dollar | 3,611 | 15-jun-2023 | 99,536 |
| PFE 3.200 15-Sep-2023 '23 | 15-set-2023 | 1 000 000 000 | 1 000 000 000 | 3,2 | U.S. Dollar | 3,502 | 15-set-2023 | 99,699 |
| PFE 2.159 15-Sep-2023 FRN | 15-set-2023 | 300 000 000 | 300 000 000 | 2,159 | U.S. Dollar | 3,738 | 15-set-2023 | 99,767 |
| **2024** | **2 252 600 000** | **2 376 060 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFEWY / PFE 6.450 01-Feb-2024 | 01-fev-2024 | 500 000 000 | 500 000 000 | 6,45 | U.S. Dollar | 3,767 | 01-fev-2024 | 103,621 |
| PFE 2.950 15-Mar-2024 '24 | 15-mar-2024 | 750 000 000 | 750 000 000 | 2,95 | U.S. Dollar | 3,645 | 15-mar-2024 | 98,98 |
| PFE 3.400 15-May-2024 | 15-mai-2024 | 1 000 000 000 | 1 000 000 000 | 3,4 | U.S. Dollar | 3,518 | 15-mai-2024 | 99,805 |
| PFEAR / PFE 2.625 01-Dec-2024 C | 01-dez-2024 | 2 600 000 | 126 060 000 | 2,625 | U.S. Dollar | -43,435 | 02-dez-2024 | 310,55 |
| **2025** | **750 000 000** | **750 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 0.800 28-May-2025 '25 | 28-mai-2025 | 750 000 000 | 750 000 000 | 0,8 | U.S. Dollar | 3,623 | 28-mai-2025 | 92,737 |
| **2026** | **3 000 000 000** | **3 000 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 2.750 03-Jun-2026 | 03-jun-2026 | 1 250 000 000 | 1 250 000 000 | 2,75 | U.S. Dollar | 3,615 | 03-jun-2026 | 96,999 |
| PFE 3.000 15-Dec-2026 | 15-dez-2026 | 1 750 000 000 | 1 750 000 000 | 3,0 | U.S. Dollar | 3,657 | 15-dez-2026 | 97,42 |
| **2027** | **946 325 000** | **946 325 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 1.000 06-Mar-2027 '26 | 06-mar-2027 | 746 325 000 | 746 325 000 | 1,0 | Euro | 2,209 | 08-mar-2027 | 94,875 |
| PFEPH / PFE 6.750 15-Dec-2027 | 15-dez-2027 | 200 000 000 | 200 000 000 | 6,75 | U.S. Dollar | 4,187 | 15-dez-2027 | 112,003 |
| **2028** | **1 659 985 000** | **2 399 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 3.600 15-Sep-2028 '28 | 15-set-2028 | 1 000 000 000 | 1 000 000 000 | 3,6 | U.S. Dollar | 3,767 | 15-set-2028 | 99,106 |
| PFEPH / PFE 6.600 01-Dec-2028 | 01-dez-2028 | 1 000 000 | 700 000 000 | 6,6 | U.S. Dollar | 4,507 | 01-dez-2028 | 111,253 |
| PFEPH / PFE 6.600 01-Dec-2028 | 01-dez-2028 | 658 985 000 | 699 000 000 | 6,6 | U.S. Dollar | 4,407 | 01-dez-2028 | 111,829 |
| PFEPH / PFE 6.600 01-Dec-2028 | 01-dez-2028 | 1 000 000 | 700 000 000 | 6,6 | U.S. Dollar | 4,577 | 01-dez-2028 | 110,855 |
| **2029** | **1 750 000 000** | **1 750 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 3.450 15-Mar-2029 '28 | 15-mar-2029 | 1 750 000 000 | 1 750 000 000 | 3,45 | U.S. Dollar | 4,113 | 15-mar-2029 | 96,24 |
| **2030** | **2 250 000 000** | **2 250 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 2.625 01-Apr-2030 '30 | 01-abr-2030 | 1 250 000 000 | 1 250 000 000 | 2,625 | U.S. Dollar | 4,145 | 01-abr-2030 | 90,209 |
| PFE 1.700 28-May-2030 '30 | 28-mai-2030 | 1 000 000 000 | 1 000 000 000 | 1,7 | U.S. Dollar | 4,014 | 28-mai-2030 | 84,759 |
| **2031** | **1 000 000 000** | **1 000 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 1.750 18-Aug-2031 '31 | 18-ago-2031 | 1 000 000 000 | 1 000 000 000 | 1,75 | U.S. Dollar | 3,99 | 18-ago-2031 | 83,284 |
| **2034** | **750 000 000** | **750 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFEWY / PFE 6.500 01-Feb-2034 | 01-fev-2034 | 750 000 000 | 750 000 000 | 6,5 | U.S. Dollar | 4,573 | 01-fev-2034 | 116,968 |
| **2036** | **1 500 000 000** | **1 500 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFEWY / PFE 6.000 15-Feb-2036 | 15-fev-2036 | 500 000 000 | 500 000 000 | 6,0 | U.S. Dollar | 4,752 | 15-fev-2036 | 112,287 |
| PFE 4.000 15-Dec-2036 | 15-dez-2036 | 1 000 000 000 | 1 000 000 000 | 4,0 | U.S. Dollar | 4,501 | 15-dez-2036 | 94,758 |
| **2037** | **2 000 000 000** | **2 000 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFEWY / PFE 5.950 01-Apr-2037 | 01-abr-2037 | 2 000 000 000 | 2 000 000 000 | 5,95 | U.S. Dollar | 4,689 | 01-abr-2037 | 113,202 |
| **2038** | **1 240 829 000** | **2 426 050 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 6.500 03-Jun-2038 | 03-jun-2038 | 540 829 000 | 1 726 050 000 | 6,5 | Great Britai | 4,392 | 03-jun-2038 | 122,944 |
| PFE 4.100 15-Sep-2038 '38 | 15-set-2038 | 700 000 000 | 700 000 000 | 4,1 | U.S. Dollar | 4,468 | 15-set-2038 | 95,818 |
| **2039** | **3 250 000 000** | **3 250 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 7.200 15-Mar-2039 | 15-mar-2039 | 2 500 000 000 | 2 500 000 000 | 7,2 | U.S. Dollar | 4,783 | 15-mar-2039 | 127,384 |
| PFE 3.900 15-Mar-2039 '38 | 15-mar-2039 | 750 000 000 | 750 000 000 | 3,9 | U.S. Dollar | 4,543 | 15-mar-2039 | 92,579 |
| **2040** | **1 494 769 000** | **1 494 769 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 2.550 28-May-2040 '39 | 28-mai-2040 | 1 000 000 000 | 1 000 000 000 | 2,55 | U.S. Dollar | 4,512 | 29-mai-2040 | 76,227 |
| PFE 5.600 15-Sep-2040 | 15-set-2040 | 494 769 000 | 494 769 000 | 5,6 | U.S. Dollar | 4,785 | 17-set-2040 | 109,767 |
| **2043** | **2 333 227 417** | **2 333 227 417** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 2.735 15-Jun-2043 | 15-jun-2043 | 1 583 227 417 | 1 583 227 417 | 2,735 | Great Britai | 4,371 | 15-jun-2043 | 77,408 |
| PFE 2.735 15-Jun-2043 | 15-jun-2043 | 1 583 227 417 | 1 583 227 417 | 2,735 | Great Britai | 4,371 | 15-jun-2043 | 77,407 |
| PFE 4.300 15-Jun-2043 | 15-jun-2043 | 750 000 000 | 750 000 000 | 4,3 | U.S. Dollar | 4,668 | 15-jun-2043 | 95,128 |
| **2044** | **1 000 000 000** | **1 000 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 4.400 15-May-2044 | 15-mai-2044 | 1 000 000 000 | 1 000 000 000 | 4,4 | U.S. Dollar | 4,653 | 16-mai-2044 | 96,566 |
| **2046** | **1 250 000 000** | **1 250 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 4.125 15-Dec-2046 | 15-dez-2046 | 1 250 000 000 | 1 250 000 000 | 4,125 | U.S. Dollar | 4,647 | 17-dez-2046 | 92,445 |
| **2048** | **1 000 000 000** | **1 000 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 4.200 15-Sep-2048 '48 | 15-set-2048 | 1 000 000 000 | 1 000 000 000 | 4,2 | U.S. Dollar | 4,501 | 15-set-2048 | 95,412 |
| **2049** | **1 250 000 000** | **1 250 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 4.000 15-Mar-2049 '48 | 15-mar-2049 | 1 250 000 000 | 1 250 000 000 | 4,0 | U.S. Dollar | 4,471 | 15-mar-2049 | 92,732 |
| **2050** | **1 250 000 000** | **1 250 000 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 2.700 28-May-2050 '49 | 28-mai-2050 | 1 250 000 000 | 1 250 000 000 | 2,7 | U.S. Dollar | 4,319 | 31-mai-2050 | 73,976 |
| **Perp** | **278 835 700** | **302 250 000** | | | | | | |
| **Description** | **Maturity Date** | **Amount Outstanding** | **Issued Amount** | **Coupon** | **Currency** | **Yield** | **Yield Date** | **Last Price** |
| PFE 6.250 Perp '22 CVT | Perpetual | 278 835 700 | 302 250 000 | 6,25 | U.S. Dollar | -- | -- | -- |
| **Total** | **34 756 571 117** | **36 827 681 417** | | | | **4,165** | | |

*Source: Pfizer Annual Report 2022*

*Appendix 8: Pfizer credit rating*

*Credit Ratings*

The cost and availability of financing are influenced by credit ratings, and increases or decreases in our credit rating could have a beneficial or adverse effect on financing. Our long-term debt is rated high-quality by both S&P and Moody's. In November 2020, upon the completion of the Upjohn separation, both Moody's and S&P lowered our long-term debt rating one notch to 'A2' and 'A+', respectively, and our short-term rating remained unchanged. S&P continues to rate our long-term debt rating outlook as Stable since November 2020, while Moody's recently upgraded our long-term debt rating outlook to Positive in December 2021.

The current ratings assigned to our commercial paper and senior unsecured long-term debt:

| NAME OF RATING AGENCY | Pfizer Short-Term Rating | Pfizer Long-Term Rating | Outlook/Watch |
|---|---|---|---|
| Moody's | P-1 | A2 | Positive |
| S&P | A-1+ | A+ | Stable |

A security rating is not a recommendation to buy, sell or hold securities and the rating is subject to revision or withdrawal at any time by the rating organization. Each rating should be evaluated independently of any other rating.

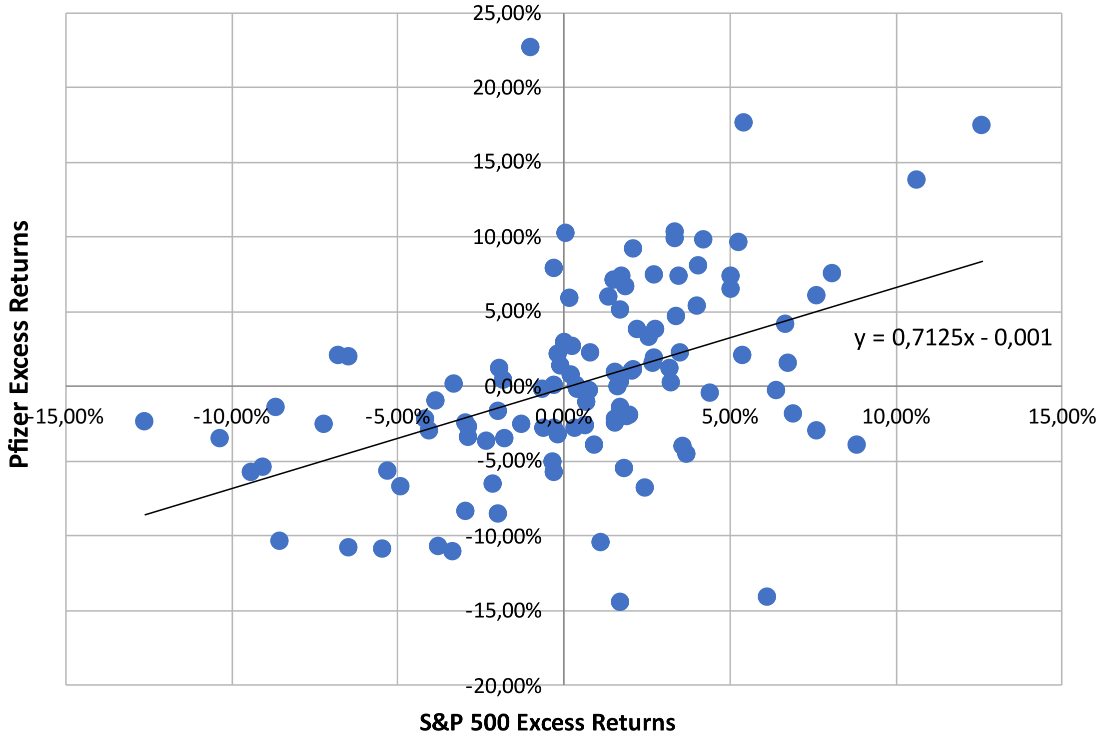
*Source: Pfizer annual report 2022*

*Appendix 9: S&P Rating to Spread Conversion*

| For developed market firms with market cap > $5 billion | | | |
|---|---|---|---|
| *If interest coverage ratio is* | | | |
| > | ≤ to | Rating is | Spread is |
| -100000 | 0.199999 | D2/D | 19.38% |
| 0.2 | 0.649999 | C2/C | 14.54% |
| 0.65 | 0.799999 | Ca2/CC | 11.08% |
| 0.8 | 1.249999 | Caa/CCC | 9.00% |
| 1.25 | 1.499999 | B3/B- | 6.60% |
| 1.5 | 1.749999 | B2/B | 5.40% |
| 1.75 | 1.999999 | B1/B+ | 4.50% |
| 2 | 2.2499999 | Ba2/BB | 3.60% |
| 2.25 | 2.49999 | Ba1/BB+ | 3.00% |
| 2.5 | 2.999999 | Baa2/BBB | 2.00% |
| 3 | 4.249999 | A3/A- | 1.56% |
| 4.25 | 5.499999 | A2/A | 1.38% |
| 5.5 | 6.499999 | A1/A+ | 1.25% |
| 6.5 | 8.499999 | Aa2/AA | 1.00% |
| 8.50 | 100000 | Aaa/AAA | 0.75% |

*Source: Curricular Unit Firm Valuation of Master in Finance (2021) (original source unknown)*

*Appendix 10: Regressions Beta calculation*



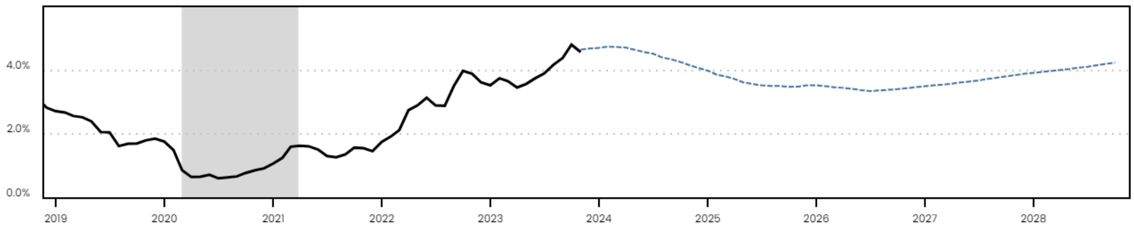

*Source: Bloomberg, Own Analysis*

*Appendix 11: Pfizer ESG score*

| | | | Metric Score | | | Metric Value | | |
|---|---|---|---|---|---|---|---|---|
| **Pillar** | **Category** | **Metric Name** | **FY2020** | **FY2019** | **YoY Change** | **FY2020** | **FY2019** | **YoY Change** |
| Env. | Resource Use | Targets Water Efficiency | 0.00 | 93.90 | (93.90) | FALSE | TRUE | negative_Yes |
| Env. | Resource Use | Renewable Energy Use Ratio | 20.73 | 33.75 | (13.02) | 2.84% | 4.10% | (1.26%) |
| Env. | Emissions | Waste Recycled To Total Waste | 23.13 | 35.83 | (12.70) | 38.67% | 40.73% | (2.06%) |
| Social | Workforce | Employee Satisfaction | 92.86 | -- | 92.86 | 91.00% | -- | 91.00% |
| Social | Workforce | Turnover of Employees | 67.24 | -- | 67.24 | 9.20% | -- | 9.20% |
| Social | Workforce | Women Employees | 46.69 | -- | 46.69 | 47.30% | -- | 47.30% |
| Social | Workforce | Women Managers | 90.82 | -- | 90.82 | 50.70% | -- | 50.70% |
| Social | Workforce | HRC Corporate Equality Index | 54.76 | 63.64 | (8.88) | 100.00 | 100.00 | 0.00 |
| Gov. | Management | Board Size More Ten Less Eight | 42.99 | 21.14 | 21.85 | 1 | 2 | (1) |
| Gov. | Management | Board Gender Diversity, Percent | 88.70 | 42.20 | 46.50 | 36.36% | 16.67% | 19.70% |
| Gov. | Management | Board Specific Skills, Percent | 31.69 | 71.14 | (39.45) | 46.15% | 66.67% | (20.51%) |
| Gov. | Management | Non-Executive Board Members | 99.70 | 51.42 | 48.28 | 100.00% | 83.33% | 16.67% |
| Gov. | Management | Independent Board Members | 99.68 | 54.95 | 44.73 | 100.00% | 83.33% | 16.67% |
| Gov. | Management | CEO Chairman Duality | 74.46 | 0.00 | 74.46 | FALSE | TRUE | negative_Yes |
| Gov. | Management | Highest Remuneration Package | 16.89 | 6.33 | 10.56 | $11,376,100 | $17,928,963 | ($6,552,863) |
| Gov. | CSR Strategy | CSR Sustainability External Audit | 95.75 | -- | 95.75 | TRUE | -- | Yes |

*Source: Refinitiv Eikon*

*Appendix 12: EconForecasting Forwards 10 years US-Bonds Forecast*




*Source: EconForecasting*

*Appendix 13: Goldman Sachs Estimates*

**Buy** **Pfizer Inc.** (PFE)

Chris Shibutani, M.D.
chris.shibutani@gs.com
+1 617 204-2437
Boston

Price: $28.64
12m Price Target: $37.00
Upside: 29.2%
*Price as of Dec 11, 2023*

| Ratios & Valuations | 12/22 | 12/23E | 12/24E | 12/25E |
|---|---|---|---|---|
| P/E (X) | 7.6 | 19.1 | 8.4 | 7.8 |
| EV/EBITDA (X) | 6.3 | 13.2 | 6.3 | 5.5 |
| EV/sales (X) | 2.9 | 3.1 | 2.8 | 2.4 |
| FCF yield (%) | 9.3 | (0.2) | 14.2 | 14.2 |
| EV/DACF (X) | 8.5 | 12.4 | 6.6 | 5.8 |
| CROCI (%) | 19.2 | 7.5 | 12.7 | 13.1 |
| ROE (%) | 43.6 | 9.1 | 19.6 | 19.0 |
| Net debt/EBITDA (X) | 0.3 | 1.6 | 0.3 | (0.1) |
| Net debt/equity (%) | 13.7 | 24.3 | 8.9 | (3.7) |
| Interest cover (X) | 32.9 | 3.6 | 7.8 | 8.4 |
| Inventory days | 96.6 | 141.6 | 214.3 | 209.1 |
| Receivable days | 40.8 | 69.1 | 69.6 | 69.5 |
| Days payable outstanding | 66.3 | 89.6 | 112.1 | 109.4 |

| Growth & Margins (%) | 12/22 | 12/23E | 12/24E | 12/25E |
|---|---|---|---|---|
| Total revenue growth | 23.4 | (41.3) | 5.4 | 4.3 |
| EBITDA growth | 37.0 | (69.7) | 94.1 | 5.9 |
| EPS growth | 49.6 | (77.2) | 128.0 | 7.1 |
| DPS growth | 2.6 | 2.5 | 2.5 | 2.5 |
| Gross margin | 66.0 | 58.0 | 72.0 | 72.5 |
| EBIT margin | 40.9 | 13.3 | 33.9 | 35.0 |

| Income Statement ($ mn) | 12/22 | 12/23E | 12/24E | 12/25E |
|---|---|---|---|---|
| Total revenue | 100,330.0 | 58,889.5 | 62,083.9 | 64,780.4 |
| Cost of goods sold | (34,096.0) | (24,733.6) | (17,383.5) | (17,814.6) |
| SG&A | (13,049.0) | (13,780.1) | (12,292.6) | (12,632.2) |
| R&D | (11,409.0) | (12,425.7) | (11,237.2) | (11,660.5) |
| Other operating inc./(exp.) | (765.0) | (121.0) | (100.0) | -- |
| **EBITDA** | **46,075.0** | **13,949.1** | **27,070.6** | **28,673.2** |
| Depreciation & amortization | (5,064.0) | (6,120.0) | (6,000.0) | (6,000.0) |
| **EBIT** | **41,011.0** | **7,829.1** | **21,070.6** | **22,673.2** |
| Net interest inc./(exp.) | (995.4) | (700.0) | (752.0) | (752.0) |
| Income/(loss) from associates | -- | -- | -- | -- |
| **Pre-tax profit** | **42,965.0** | **9,729.1** | **22,670.6** | **24,273.2** |
| Provision for taxes | (5,226.0) | (1,167.5) | (3,400.6) | (3,641.0) |
| Minority interest | (35.0) | 0.0 | 0.0 | 0.0 |
| Preferred dividends | -- | -- | -- | -- |
| **Net inc. (pre-exceptionals)** | **37,704.0** | **8,561.6** | **19,270.0** | **20,632.2** |
| **Net inc. (post-exceptionals)** | **34,534.0** | **5,385.7** | **16,202.4** | **17,564.5** |
| **EPS (basic, pre-except) ($)** | **6.72** | **1.52** | **3.41** | **3.65** |
| **EPS (diluted, pre-except) ($)** | **6.58** | **1.50** | **3.41** | **3.65** |
| **EPS (ex-ESO exp., dil.) ($)** | **6.58** | **1.50** | **3.41** | **3.65** |
| DPS ($) | 1.60 | 1.64 | 1.68 | 1.72 |
| Div. payout ratio (%) | 23.8 | 107.9 | 49.3 | 47.2 |
| Wtd avg shares out. (basic) (mn) | 5,608.0 | 5,631.2 | 5,646.4 | 5,646.4 |
| Wtd avg shares out. (diluted) (mn) | 5,732.8 | 5,720.0 | 5,646.0 | 5,646.0 |

| Balance Sheet ($ mn) | 12/22 | 12/23E | 12/24E | 12/25E |
|---|---|---|---|---|
| Cash & cash equivalents | 22,732.0 | 40,971.1 | 54,464.6 | 67,767.8 |
| Accounts receivable | 10,952.0 | 11,336.0 | 12,336.0 | 12,336.0 |
| Inventory | 8,981.0 | 10,204.0 | 10,204.0 | 10,204.0 |
| Other current assets | 8,594.0 | 8,541.0 | 8,541.0 | 8,541.0 |
| **Total current assets** | **51,259.0** | **71,052.1** | **85,545.6** | **98,848.8** |
| Net PP&E | 16,274.0 | 17,162.0 | 14,762.0 | 12,362.0 |
| Net intangibles | 94,745.0 | 91,750.5 | 91,750.5 | 91,750.5 |
| Total investments | 15,069.0 | 14,239.0 | 14,239.0 | 14,239.0 |
| Other long-term assets | 19,858.0 | 17,157.5 | 17,157.5 | 17,157.5 |
| **Total assets** | **197,205.0** | **211,361.1** | **223,454.6** | **234,357.8** |
| Accounts payable | 6,809.0 | 5,338.0 | 5,338.0 | 5,338.0 |
| Short-term debt | 2,945.0 | 2,548.0 | 2,548.0 | 2,548.0 |
| Current lease liabilities | -- | -- | -- | -- |
| Other current liabilities | 32,384.0 | 23,250.0 | 25,565.0 | 25,565.0 |
| **Total current liabilities** | **42,138.0** | **31,136.0** | **33,451.0** | **33,451.0** |
| Long-term debt | 32,884.0 | 61,048.0 | 61,048.0 | 61,048.0 |
| Non-current lease liabilities | -- | -- | -- | -- |
| Other long-term liabilities | 26,522.0 | 25,903.0 | 25,903.0 | 25,903.0 |
| **Total long-term liabilities** | **59,406.0** | **86,951.0** | **86,951.0** | **86,951.0** |
| **Total liabilities** | **101,544.0** | **118,087.0** | **120,402.0** | **120,402.0** |
| Preferred shares | -- | -- | -- | -- |
| **Total common equity** | **95,661.0** | **93,274.1** | **103,052.6** | **113,955.8** |
| Minority interest | -- | -- | -- | -- |
| **Total liabilities & equity** | **197,205.0** | **211,361.1** | **223,454.6** | **234,357.8** |
| BVPS ($) | 17.03 | 16.52 | 18.25 | 20.18 |

| Cash Flow ($ mn) | 12/22 | 12/23E | 12/24E | 12/25E |
|---|---|---|---|---|
| Net income | 37,704.0 | 8,561.6 | 19,270.0 | 20,632.2 |
| D&A add-back | 5,064.0 | 6,120.0 | 6,000.0 | 6,000.0 |
| Minority interest add-back | (13.0) | (31.5) | -- | -- |
| Net (inc)/dec working capital | (4,456.0) | (10,872.0) | 1,315.0 | -- |
| Others | (9,210.0) | (484.0) | 0.0 | -- |
| **Cash flow from operations** | **29,089.0** | **3,294.1** | **26,585.0** | **26,632.2** |
| Capital expenditures | (3,236.0) | (3,663.0) | (3,600.0) | (3,600.0) |
| Acquisitions | (22,997.0) | (25.0) | -- | -- |
| Divestitures | -- | -- | -- | -- |
| Others | 3,641.0 | 323.5 | -- | -- |
| **Cash flow from investing** | **(22,592.0)** | **(3,364.5)** | **(3,600.0)** | **(3,600.0)** |
| Dividends paid | (8,983.0) | (9,246.5) | (9,491.6) | (9,728.9) |
| Share issuance/(repurchase) | (2,000.0) | -- | -- | -- |
| Inc/(dec) in debt | (3,516.0) | 28,169.0 | -- | -- |
| Others | (335.0) | (613.0) | -- | -- |
| **Cash flow from financing** | **(14,834.0)** | **18,309.6** | **(9,491.6)** | **(9,728.9)** |
| **Total cash flow** | **(8,337.0)** | **18,239.1** | **13,493.4** | **13,303.3** |
| Free cash flow | 25,853.0 | (368.9) | 22,985.0 | 23,032.2 |
| Free cash flow per share (basic) ($) | 4.61 | (0.07) | 4.07 | 4.08 |

*Source: Goldman Sachs (2023)*