

PFIZER AFTER COVID-19:
NEW OPPORTUNITY OR SUBSTANCIAL CONCENTRATION RISK

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Abstract

The Equity Research report intends to introduce investors with key insights regarding the stock performance and intrinsic value of Pfizer. Covid-19 pandemic brought new opportunities, as well as new challenges and risks that need to be analyzed to provide a conclusion on which effect prevails and outweighs the other. The full spectrum, from industry analysis and trends to peer comparison represent a value-added approach to the company's specific data. In the end, the valuation suggests a buy recommendation with Pfizer stock being priced at \$56.08 per share by 31 December 2022, representing a 16% annualized shareholder return, including capital gains and dividend payment.

Keywords: Equity Research; Covid-19; Risk; Pfizer

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This report is part of the ... report (annexed), developed by DAVID ARIAS and TIAGO ROMÃO and should be read as an integral part of it.

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Introduction

The equity research project intends to introduce investors with all the relevant data that is required to properly value the intrinsic value of the company. The joint report will summarize all the assumptions taken into consideration when performing this type of analysis. Pfizer, being a publicly traded company, has many corporate details available to the public, which are considered crucial to build an accurate valuation model. Nonetheless, in order to arrive at a complete report, one should first refer to the macroeconomic situation, as well as the industry-specific trend. Apart from that, the core segments disclosed by the joint report are the past results, performance forecasts, and the valuation itself.

In the report developed by my pair, core importance will be given to the industry trends and how they are expected to influence the Financial Statements' forecasts. Beginning with past performance analysis and going through important regulations and key sources of value, revenues will be forecasted with great detail, as well as the most relevant costs.

In this individual report, the main focus will be the final valuation and respective recommendation. To complement such information, the report will introduce firstly some relevant data on how the economy is currently behaving and how it is expected to evolve. Additionally, one will also refer to the macroeconomic impacts that the Covid-19 pandemic has brought to the world. Not only increased risk is forecasted, but also big opportunities are expected within the pharmaceutical industry. It is only a matter of trying to understand whether or not Pfizer is well positioned to thrive from the new reality, or if risks will outweigh the potential of opportunities.

After an exhaustive research, analysts collected sufficient evidence that the share price of Pfizer is undervalued. The leadership position in Covid vaccines supports the opinion that the opportunity will outperform the risks, creating value for the company. Moreover, when taking into consideration peer performance multiples, it suggests a price per share incredibly higher in every scenario. Investors seem to be disappointed with the first quarter performance, especially regarding Paxlovid revenues, however Pfizer's management remains confident that the forecasted sales will be realized by the end of the year.

Company overview

Pandemic impacts

Pfizer's Nowadays, whenever one performs an equity research or any study involving the valuation of a business, the pandemic topic needs to be carefully addressed. The first assumption to be defined suggests that symptoms and impacts introduced by Covid-19 are expected to last longer than the 2 years already gone since day 1 of the pandemic crisis. Business operations are expected to remain affected and demand is really uncertain due to the changes we have witnessed over the last months. The question that will be addressed throughout the report is if the pharmaceutical industry, and Pfizer in particular, is going to perceive these impacts similarly to the remaining industries/economy.

In line with the previous question, PricewaterhouseCoopers developed a research in the United Kingdom whose conclusions are believed to apply towards other markets, especially well established and developed, as the US market. The stronger conviction from the investigation was that "Though Covid-19 is challenging pharma companies, it's also highlighting ways in which the industry can redefine itself". The pharmaceutical industry, being the major responsible for battling the virus, has legitimate aspirations on seeing this crisis more as an opportunity rather than a threat. Hence, predictions and forecasts need to account for extra caution given the current uncertainty, aggravated by the fact that the company under valuation disclosed, in 2021, a large portion of revenue contingent on Covid products. New outbreaks, new lockdowns, herd immunity...are several scenarios that may or may not happen and which would have divergent consequences in today's status quo.

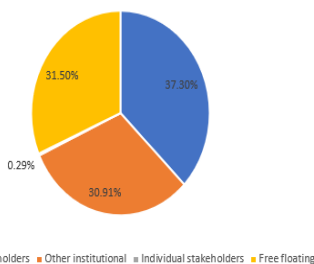
The most straightforward data to look at when analyzing the possible impacts of a pandemic on a company's performance are revenues. There is a clear trend for exponential growth associated with the signature of contracts related to Covid-19 products. Before 2020, Pfizer's revenues were stagnating around \$13 billion per quarter, with a tendency to go down as competitors became fiercest and generics take more and more share of the market.

Pfizer appeared to struggle with finding new sources of revenue until the pandemic taking over the industries and global economy. Still, before witnessing the positive impacts to its revenues, the company disclosed a poor 2020 performance in line with the negative flow of the whole economy. The American pharmaceutical saw demand shrink to historical levels as populations put their health needs aside apart from possible Covid related symptoms. The first quarter

of 2021 flags the change. From Q1 2021, contracts for Pfizer Comirnaty vaccine are realized and Covid-19 related revenues are verified. Pfizer then enters an exponential growth supported on Covid products and medicines, breaking revenue records quarter after quarter. In fact, revenues grew at an average 27% from Q1 to Q3 over the last year. Though in the fourth quarter of 2021 revenues seemed to stabilize, the first quarter of the current year came to show that it is not exactly the case. Pfizer is embracing R&D and technological investments with the aim of broadening its Covid products' portfolio, which ultimately supports the expectation that 2022 will outperform the best annual performance registered (2021). In the end, Pfizer's revenues are projected to surpass the \$100,00 million barrier for 2022, closing the year with around 25% increase on revenues over 2021.

Shareholder structure

Exhibit 1: Shareholder structure composition



Source: Bloomberg

Excluding treasury shares, Pfizer shares accounts to \$5.78bn, and has \$300bn in market cap. Institutional shareholders such as investment funds and mutual funds hold 68.2% of the market's floating stocks and individual stakeholders accounts for 0.29% of stocks hold. In total, 31.5% of total shares are free floating stocks that are traded daily on the stock exchange. The 4 main institutional shareholders account for 21,89% of total shares, which are the Vanguard group (7.84%), SSgA funds Management (5.04%), BlackRock Fund Advisors (4.83%) and Capital Research & Management Co (4.19%). While the mutual funds with the highest stakes are Vanguard Total Stock Market Index (2.86%), Vanguard 500 Index Fund (2.16%) and Washington Mutual Investor Fund (1.12%). In comparison with the main big-pharma competitors, Pfizer has a similar percentage of free-floating shares.

Dividend policy: Pfizer has a fixed dividend policy, with them being paid on a quarterly basis. Overall the dividend payout have been oscillating between 2018 and 2021, reaching the maximum value in 2020 (92.15%) and the minimal in 2021 (39.7%). As a result, there was a huge decline in the dividend yield between both years (from 4.12% to 2.64%), this happened due to the high increase in the net profit between 2020 and 2021 (140%), lead by the increase in revenues. On the other hand, dividends per share have been increasing constantly since 2018, but in 2021 there were only a slight increase, as dividends paid only grew 3.42%. It is predicted that the dividends per share will keep increasing. The dividend yield is now below the average of peers (3.0%)

Board of directors: It is composed by 12 members, out of those the CEO, Dr Albert Bourla. Bourla has now an extensive career at Pfizer, with more than 25 years of serving, "holding several leadership positions". The chairman has been

in the position since 2019 and from then on Pfizer has embraced a vision of science and data driven, investing in technology and R&D to accomplish innovation.

Exhibit 2: Macroeconomic outlook (in billions)

World Macroeconomic Outlook	2018	2019	2020	2021
Inflation rate	3.6%	3.5%	3.2%	4.4%
Real GDP growth	3.5%	2.8%	-4.9%	5.5%
Nominal GDP growth	7.2%	6.4%	-1.86%	10.1%
Unemployment rate	5.4%	5.4%	6.5%	5.7%

Source: IMF, OECD data & Statista

Macroeconomic environment

Over the last two years now, the world has been faced with a pandemic which brought severe consequences at all levels. Not only the United States, Pfizer's base and principal market, suffered big impacts from long lasting lockdowns but those effects were shared worldwide. Governments tried everything they could to protect regional economies, however the virus proved to be stronger, driving production levels down and creating an uncertainty environment, with great focus in financial markets. All these constraints led to considerable fluctuations in world real GDP from 2020 to 2023, the year at which the index is forecasted to start stabilizing around 3%. Observing IMF's data, one clearly identifies the 2020 drop in nominal GDP growth, that together with an average inflation, delivered a negative 4.9% change in real growth. More recently, statistics suggest that 2021 is the first recovery year with 5.5% real GDP growth and the trend is to lower such year change to a stable 3.3% by 2025. Still, with populations feeling wealthier and with the recent Ukraine-Russia conflict, inflation is expected to reach record levels, disabling real GDP to grow at its potential.

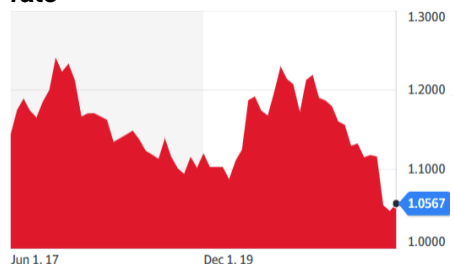
Exhibit 3: Macroeconomic forecast (in billions)

World Macroeconomic Outlook	2022F	2023F	2024F	2025F
Inflation rate	7.1%	3.1%	3.3%	3.2%
Real GDP growth	4.1%	3.6%	3.4%	3.3%
Nominal GDP growth	11.5%	6.8%	6.8%	6.6%
Unemployment rate	5.9%	6.0%	5.9%	5.9%

Source: IMF, OECD data & Statista

Unlike worldwide trend, the pharmaceutical industry was one that did not see its operations threatened by the crisis since it all began with a virus that needed to be addressed. In fact, what we witnessed was the necessity for pharma companies to adapt their businesses towards the pandemic and the demand that it would generate. If we look at populations' statistics, we recognize that the world population is aging, meaning that there is a larger percentage of people above 65 years, when compared to previous years and this trend is not expected to be reversed in the near future. From this data, we can derive that a larger share of people is now arriving at an age which requires an increase in health expenses, enlarging the customer base of pharmaceutical companies. In the end, the core business of pharmaceuticals seemed to be always assured and this pandemic is seen as an opportunity for such companies to innovate through technology and access new revenue stream drivers.

Exhibit 4: EUR/USD exchange rate



Source: Yahoo finance

The world's economy is expected to fully recover to pre-pandemic statistics by 2023-2025, time at which companies that failed to adapt to the new "normal" (new drugs, new treatments, new technology) are likely to see their performance declining below 2019 results.

Exchange rates: Over the last 5 years, May 2022 had the lowest exchange rate of EUR to USD – 1.04. While the highest value was in Jan 2018 – 1.24, it is

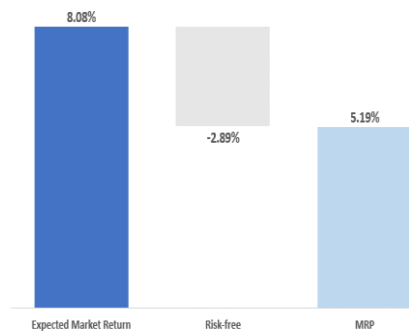
important to take in consideration, exchange fluctuations, as it affects the cost of sellings, which had a negative impact due to currency fluctuations; derivative financial instruments are also affected in its fair value, as they are made to mitigate the impact of currency changes during transactions in U.S dollar with exposures to euro, yen U.K pound, etc. Pfizer has a protection against fluctuations, as a change in maximum of 10% would not have significant effect. However, since the beginning of the year, the dollar got heavily valued, and probably will have a huge impact on Pfizer costs, revenues and fair values.

Valuation

To perform the absolute valuation of Pfizer, the DCF model was the approach used, according to the assumption that the company targets a leverage ratio. Resorting to the overall economy and market statistics, the following inputs were obtained. The daily return on the recent 10-year US Treasury Bonds data was used as the proxy for the risk-free rate, amounting to 2.89%. Additionally, the group found it reasonable to make use of an average annual return of the S&P 500 index (1990-2021) to replicate the market returns, which amounted to 8.08%. The aim was to arrive at an expected rate of return that would reflect a well-diversified portfolio of stocks from several backgrounds. In the end, the obtained Market Risk Premium was 5.19% (Exhibit), a rate that is precisely in line with the average risk premium in the US market within the period 2011-2020¹.

Inputs

Exhibit 5: Market inputs



Source: Bloomberg and own forecasts

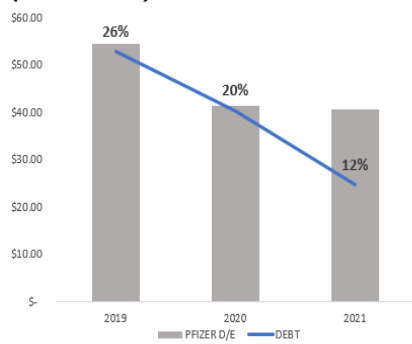
With respect to the capital structure, in the end of 2021 total debt amounted to 8.4 billion, with its balance being the following: 36.2 billion of long-term debt and he remaining 2.2 billion dollars standing for the current portion of total debt short-term). Such debt value represents a clear vision for leverage reduction, hich ultimately allowed Pfizer to see Fitch revising the company’s rating from egative to stable in mid-October². This progress was largely supported not only y the considerable debt reduction, but also by the cash generated through usiness divestitures as Upjohn. Following the previous rationale and knowing that the global economy is recovering, thus presenting less attractive interest rates, it is expected from Pfizer to maintain lower leverage ratios. With the 12% D/E target, Pfizer communicates its relative assurance of the business when compared with the 27% average ratio for US listed pharmaceuticals in 2021³.

¹ Statista

² <https://www.fitchratings.com/research/corporate-finance/fitch-affirms-pfizer-inc-idr-at-a-revises-rating-outlook-to-stable-from-negative-14-10-2021>

³ <https://www.readyratios.com/sec/industry/2834/>

Exhibit 6: Pfizer's leverage ratio (in billions)



Source: Company data

Exhibit 7: Cost of capital inputs

Cost of capital inputs	
MRP	5.19%
Rf	2.89%
Tax rate	21%
Target D/E	0.12
Bu (industry)	0.64
Bu	0.60
Be	0.70
Bd	0.18
Unlevered cost of capital	0.06
Levered cost of capital	0.07
Cost of debt	0.04
WACC	0.06

Source: Own forecasts

Exhibit 8: Terminal value inputs

Steady State Figures	
g	2.20%
WACC	6.13%
Sales growth	1%
ROIC	9%
Inflation rate	2.00%
Real GDP Growth Rate	1.45%
Nominal Long-term Growth Rate of the Economy	3.48%

Source: Own estimations

Pfizer's cost of debt was estimated taking into consideration a corporate bond due the 18th of August 2031 with a 3.81% yield to maturity, a default probability of 0.38% and 0.19% as the loss given default. The expected Rd was then calculated on the basis of Moody's approach⁴ to A2 bonds which resulted on a 3,81% cost of debt. By the CAPM formula, using the rates from above, one achieves a debt beta of 0.18.

The process of unlevering the Beta was performed for Pfizer, as well as its competitors considered throughout the valuation. In an attempt to eliminate any bias while using the last full year capital structure (2021), an average debt-to-equity ratio over the last 4 years was considered the target D/E ratio for the peers. With this, we arrive at an industry proxy for the unlevered beta (β_u) of 0.64, with Pfizer sitting at 0.6. Consequently, we have all the inputs to compute the unlevered cost of capital that amounts to 6.22% for the industry proxy. Once we have our unlevered betas for individual companies and the proxy for the industry, we need to estimate the cost of equity by firstly re-levering the beta, this time only considering Pfizer's capital structure (β_e). With the support of the CAPM formula, we end up with a rate for the levered cost of equity around 6.51%. After computing all the relevant inputs for the WACC and assuming a stable tax rate of 21%, the discount rate of 6.13% is obtained.

Terminal value

By 2029, Pfizer is set to reach the steady state, point at which free cash flows will grow at a constant rate of 2.2% perpetually, positioned above the long-run Fed's inflation target of 2% for the US. Covid revenues will represent a residual share and Sales growth will stabilize around a 1.5% constant rate with the ROIC sitting at 9.1%.

Forecasted Pfizer's ROIC in the steady state is converging towards the company's average ROIC before the substantial drop by the end of 2018 (9%). If we adjust it for the Goodwill, the ROIC will be aligned with the industry average, around 15%. (Alpha spread graph) Even though this is a particularly competitive industry, the company will see its ROIC stabilizing at a higher rate than the WACC, meaning that its strategy will continue to create and deliver value to shareholders. In addition, Pfizer as a large-deal acquirer, is sustaining its

⁴ Moody's, 2006, "Probability of Default Ratings and Loss Given Default Assessments for Non-Financial Speculative-Grade Corporate Obligors in the United States and Canada"

competitive advantage mainly through the ability to perform M&A operations, as it has been doing with Upjohn and Arena more recently.

Pfizer's steady state growth rate slightly above 2% is bounded by the US inflation rate and nominal growth of the economy. To evaluate the economy's long-term nominal growth, historical data was used in a specific time frame that best reflects the future in terms of performance and development (2000-2021). The US real GDP growth averaged 1.5%, which together with an inflation target of 2% delivers around 3.4% for the nominal growth rate.

As of the 31st of December 2022, Pfizer's enterprise value adds up to \$348,422 million, from which \$308,123 million stand for the value of equity after the \$40,298 million of Net Debt (Financial Debt) have been deducted. This translates into a \$54.86 price per share, if keeping the number of shares outstanding as disclosed in the first quarter report of 2022, representing a 9% share premium when compared with the price as of May 12th 2022 (\$50.39).

Sensitivity analysis

In order to have an overview on how the share price would fluctuate with changes in the WACC inputs and/or variations in the long-term growth rate, a sensitivity analysis was run. Regarding WACC, the valuation inputs under assessment and allowed to vary are the cost of equity (Re) and the cost of debt (Rd). Therefore, capital structure and taxation are assumed to remain constant.

The cost of debt (Rd) interval was bounded in accordance with the theoretical definition that states that the range for the cost of debt goes from the risk-free rate (minimum) to the rate equal to the cost of equity (maximum). In this case, the Rd would be comprised within the 2.89% - 6.51% interval. This exercise takes greater importance when assessing the fluctuations of the cost of equity. The reason for that is mainly due to approximations. The levered Beta was built around the average of the company and peers' unlevered Betas, assumed to represent the industry. That is why a 95% confidence interval for the industry unlevered Beta was used (with 95% of confidence the industry Bu would fall between 0.58 and 0.73). Following this rationale, the Re would go from 6.17% to 7.02%. Putting all these inputs together, the WACC would fluctuate between 5.52% and 6.68%. (Exhibit wacc average). After that, the same analysis was performed regarding the terminal growth rate. Considering that Pfizer is a well-established company, operating in a mature pharmaceutical industry, it was assumed that the potential long-term growth would vary between a 1% low rate and a 3.5% nominal GDP growth.

Exhibit 9: WACC analysis

WACC	
Minimum	5.74%
Average	6.20%
Maximum	6.81%

Source: Own estimations

Exhibit 10: Share price analysis

Share Price	
Minimum	\$ 43.78
Average	\$ 55.35
Maximum	\$ 79.50

Source: Own estimations

Share Price	g								
	\$	54.86	1.00%	1.50%	2.00%	2.20%	2.50%	3.00%	3.50%
WACC	5.74%	\$ 50.51	\$ 53.57	\$ 57.46	\$ 59.28	\$ 62.54	\$ 69.47	\$ 79.50	
	6.13%	\$ 47.75	\$ 50.27	\$ 53.41	\$ 54.86	\$ 57.41	\$ 62.69	\$ 69.98	
	6.20%	\$ 47.26	\$ 49.70	\$ 52.72	\$ 54.11	\$ 56.55	\$ 61.58	\$ 68.47	
	6.51%	\$ 45.43	\$ 47.55	\$ 50.14	\$ 51.32	\$ 53.38	\$ 57.54	\$ 63.09	
	6.81%	\$ 43.78	\$ 45.64	\$ 47.89	\$ 48.90	\$ 50.65	\$ 54.14	\$ 58.68	

Ultimately, after the WACC and g input ranges have been set, we can assess the behavior of the company’s share price to changes in both components. Pfizer’s price per share goes from a minimum of \$43.78 (WACC equal to 6.81% and terminal growth rate of 1%) to a maximum of \$79.50, when the WACC is at 5.54% and the terminal growth is 3.5%. On average, Pfizer’s stock is valued at \$55.25 per share, meaning that chances of arriving at a positive share premium are higher than the opposite and this could be seen as slight evidence that Pfizer’s stock is undervalued.

Major investment risk

As a publicly traded company, Pfizer needs to comply with several reporting standards when presenting shareholders with periodic performance reports. One relevant topic that the company is required to disclose are the major risk factors which are seen to be material to Pfizer’s business. Following this rationale, there are 2 risks that were considered to have crucial importance on the company’s performance, thus being the ones scrutinized below.

The first risk stands for the uncertainty around the COVID-19 pandemic, originating a concentration effect that could impact the level of revenue, with greater intensity in the short-term. As of 31st December 2021, 45% of the total company revenue was attributed to Covid-19 related medicines (vaccine and oral antiviral drug). Therefore, the company results rely critically on the evolution of the virus and any shock to it can lead to severe consequences.

The other risk stands for the importance of intellectual property and how protecting it can contribute to the company’s performance. Knowing that under the base case we have assumed the period 2025-2027 as crucial for patent expiration reasons, this risk on property rights will produce bigger impact in the long run. That said, the ability for Pfizer to protect against competitors is key on defining the perpetual growth rate.

On a side note, there are still other risks that may influence the performance, such as supply chain constraints, inflation/prices or legal proceedings. However, the majority of those risks are not company specific in the sense that across de industry and the economy, other companies are facing them too. The difference

is that Pfizer has a long history within pharmaceuticals and thus, it is expected to better cope (relatively) with such shocks. Ultimately, the group classified these risks as immaterial for the purpose of our analysis.

Impact risk analysis

To better understand the impact of the risks above mentioned, a risk analysis was performed. For the concentration risk, the main assumption is that the forecasted share of revenue coming from Comirnaty and Paxlovid for 2022 would be around 55%, and only this portion was free to vary, according to distinctive events. The remaining 45% of total revenues was kept constant. Additionally, the base case terminal growth value was also kept fixed. Only this way, it was possible to assess the consequences of changes in 2022 revenues, stemming exclusively from Comirnaty and Paxlovid forecasts.

Regarding the first risk, two contrasting scenarios were considered: a first one, where COVID-19 products' forecast is given an extra margin over the base case. Under this microscenario, Comirnaty and Paxlovid revenue would increase by 10% and 5%, respectively. Total revenue would increase to \$105,921 million in 2022, with Covid-19 being responsible for 57% of it, raising the share price for \$55.21 (10% share premium). For the second scenario, the joint revenues from Covid products were set to decrease by 30% for the vaccine and 50% for the oral drug. This results in a price per share of \$47.92 (negative premium), point at which Comirnaty and Paxlovid are responsible for around 43% of Pfizer's total revenues. To arrive at a single share value, we need to combine the previous information with probabilities. This way, resorting to Airfinity's scenarios⁵, the high demand would have an adjusted probability of 20%, the base case would verify 50% of the times and the low demand scenario would have a probability of occurrence around 30%. A slight adjustment was made to the probabilities given the analysts' expectations after taking into consideration Q1 results. After applying the probability theory, the share price would still present a 6% positive premium, with a share price of \$53.21. Even in the presence of a negative scenario that is incredibly greater than the positive one, in absolute terms, Pfizer's stock seems to resist on the premium side.

First Risk										
Scenario	Product	Share of Total Revenue	% Realized	Total Revenue 2022	Revenue	New Revenue	Share Price	Impact (%)	Share Premium	
Positive	Comirnaty	34%	110%	\$ 101,231	\$ 37,620	\$ 105,701	\$ 55.21	10%	6%	
	Paxlovid	21%	105%		\$ 22,050					
Base						\$ 54.86	9%			
Negative	Comirnaty	34%	70%	\$ 101,431	\$ 24,080	\$ 80,611	\$ 47.92	-5%		
	Paxlovid	21%	50%		\$ 10,500					

⁵ Airfinity, Covid-19 Vaccine Revenue Forecasts

One additional analysis made under this risk was, to keep all absolute levels of revenue constant and changing only the pace of the fall on demand for Covid-19 products. This time, the same margin was applied, 25% of the current yearly trend. In other words, the positive scenario would delay the fall by 25% and that same fall would be aggravated by 25% under the negative scenario. These two contrasting scenarios would produce a share premium of 31% (positive event) and -5% (negative event).

	Covid Revenue evolution	Share Price	Impact
Positive	-25%	\$ 66.01	31%
Negative	25%	\$ 47.80	-5%

In the end, we concluded from this analysis that the share price is importantly dependent on the revenues for Covid-19 products. However, as the base case predicts this product concentration to become residual by 2030, the share price will always be more sensitive in the occurrence of positive shocks to demand. Putting it differently, one believes there is great upside potential if good news show up, bigger than the low side in demand shrinkages. Though one should not disregard the possibility for a share price decrease in the presence of bad news, the chances that the price keeps stable or goes up is higher. The relatively low downside, compared with the sizeable upside potential communicate investors confidence when considering such risk.

Moving on to the second risk analysed, three different perspectives were studied:

- 1) Pfizer continues its investment on intellectual property and through new and patent extensions, it protects from competitors, namely generics. This would enable the company to reinforce its status by continuously beating the economy and growing at 3,5% perpetually;
- 2) The second perspective illustrates a scenario under which Pfizer would have difficulties in sustaining a competitive advantage due to lack of intellectual property and competition would drive the terminal growth to the expected annual US inflation of 2%;
- 3) Under the last perspective, in an era of constant transformation driven by technology, Pfizer would face countless difficulties to see its intellectual assets protected and competition would recover a considerable share of market. The sources for revenues would stagnate and so would the long-term growth.

All these 3 perspectives reflect possible outcomes arising from the risk over the intellectual property that Pfizer used until the recent years to thrive among several industry players. If the company proves to be able to maintain its investments in technology and R&D, it is relatively straightforward to foresee a bright future, with consistent performances resulting in a share premium of

Exhibit 11: Second risk analysis

Second Risk			
Scenario	Perpetual g	Share Price	Impact
Positive	4%	\$ 69.98	39%
Intermediate	2%	\$ 53.41	6%
Negative	0	\$ 43.93	-13%

Source: Own estimations

around 39%. On the other hand, if the company does not prove to have resources to fortify its existing assets and acquire revolutionary ones, it may end up losing the capacity to compete within the industry. On a more conservative approach, operating profits would grow at 2%, delivering a price per share of \$53.41, delivering a 6% share premium when compared with its actual price. The third perspective, being the most extreme and unrealistic, depicts a scenario of growth stagnation. Under this assumption, the share price would reflect a negative 13% share premium. Again, this event linking to a \$43.93 share price is very unlikely to occur given Pfizer’s historical to sustain competitive advantages creating value to its shareholders.

All in all, even a more conservative approach indicates evidence of a possible (even if small) undervaluation of Pfizer’s stock. Only an extreme conjuncture of factors would explain and communicate a company’s stock price significantly below its current market valuation of \$50.39.

Scenario analysis

In an attempt to simulate potential deviations that may occur from our base case, a scenario analysis was developed considering two possible events, a worst and a best-case scenario. Having in mind that throughout this report the group tried to isolate and better understand the pandemic effects on Pfizer’s performance, this analysis will be made by defining different growth rates to the components here emphasized: revenue excluding covid products, Comirnaty and Paxlovid revenue.

Worst case scenario: On the basis of this scenario is the assumption that the pandemic situation has achieved its peak and the majority of the covid revenue contracts have already been reflected. Therefore, revenue excluding covid would be growing slightly above 0%, the pre-Covid revenue growth (2018-2019). Regarding covid revenues, the vaccine (Comirnaty) would reflect only half of the anticipated revenue for the base case, with the full year number being just above what the company reported for the first quarter of 2022. The antiviral drug (Paxlovid), the one with the highest expected annual growth for 2022 under the base scenario, would fall short and display a level of total revenue around 4 times the disclosed amount for the quarterly figures. This could be the scenario under FDA’s rejection for a broader use of the oral treatment. Additionally, as total covid market volumes are lower, Pfizer would reduce investment, resulting on a lower market share. This translates into a higher and more accelerated contraction of revenue from covid in the short-term.

Exhibit 12: Base scenario output

Base Scenario	
g (Steady State)	2.20%
ROIC	9.1%
Terminal Value	\$ 259,890.56
Value of Equity	\$ 308,123.07
Share Price	\$ 54.86
Share Premium	8.86%

Source: Own estimations

Exhibit 13: Worst scenario output

Worst Scenario	
g (Steady State)	1.00%
ROIC	7.0%
Terminal Value	\$ 153,524
Value of Equity	\$ 199,582
Share Price	\$ 35.53
Share Premium	-29.49%

Source: Own estimations

In the end, under the worst scenario, total revenues would amount to \$46,927 million in 2030. Such represents 10% lower than the base case but would allow Pfizer to move away from revenue concentration sooner. In fact, only 3% of revenues would come from these two Covid medicines by 2030. Considering a terminal growth equal to 1% (mainly due to excluding covid revenue growth), the worst share price for the company's equity would suggest a negative premium around 30%, being it priced at \$35.53 per share.

Best case scenario: Now looking into the best possible scenario, the main assumption is that the pandemic is yet to stabilize in the sense that the virus is expected to remain stronger within the community for a longer period. With this, covid vaccines would remain high for 2022 and the antiviral drug would surpass the base forecast due to the increased activity period of the virus.

Revenues excluding covid medicines would growth at the average of the last three years (2018-2021), which corresponds to around 3%. Comirnaty and Paxlovid 2022 forecasts, according to analysts⁶, under an optimistic scenario would outperform the base case by close to 5% and 19% respectively. In absolute terms, we would be talking about \$36,000 million Covid vaccine revenue and \$25,000 million antiviral drug revenue in 2022. In contrast with the previous case, we would be talking about a larger market for Covid products, justifying substantial investment increase, which would lead to a potential larger share of market. Ultimately, this would enable Pfizer to better resist short-run market shrinkage, slowing down the downward trend intensity.

In the event of the best scenario, total revenues would add up to \$66,600 million by 2030, representing \$14,295 million more (around 27%) than the forecast for the base case. Under this optimistic scheme, Pfizer would not only thrive from revenue concentration, but it would also be capable of diversifying its sources of revenue in the longer-term, with the remaining segments growing at the economy rate. This would translate into a perpetual growth of 3%, close to the rate of nominal GDP growth, delivering a share price of \$90,80, highlighting an 80.19% positive premium.

Exhibit 14: Best scenario output

Best Scenario	
g (Steady State)	3.00%
ROIC	14.4%
Terminal Value	\$ 542,739.34
Value of Equity	\$ 510,002.40
Share Price	\$ 90.80
Share Premium	80.19%

Source: Own estimations

Exhibit 15: Multiples

Name	P/E	EV/EBITDA	EV/Revenue
Johnson&Johnson	21.3 x	15.6 x	4.9 x
AbbVie	16.3 x	16.5 x	5.9 x
Eli Lilly	34.3 x	31.3 x	9.9 x
Pfizer Inc	10.4 x	10.0 x	3.2 x

Source: Bloomberg

Multiple valuation: A relative approach

One last valuation method that will enrich and support our analysis is the multiple valuation, which consists of comparing Pfizer with peers resorting to the companies' multiples. In this case, there were three different ratios through which the valuation was performed: Price-Earnings ratio (P/E), Enterprise Value to EBITDA (EV/EBITDA) and Enterprise Value to Revenue (EV/Revenue).

⁶ Bloomberg Intelligence, Pfizer Research

Beginning with the Price-Earnings ratio, Pfizer displays the lower ratio among competitors with a ratio of 10.4x. Such ratio will consequently put the Pfizer has the one with the lowest stock value with respect to the company’s earnings. If we take a closer look on the quartiles analysis, we see that on average the price per share should be around \$136,62 (around 130% market capitalization premium) if we take into consideration the last full year earnings of \$32,517. In fact, for all quartile, multiples valuation suggest that Pfizer’s share price should be higher according to its earnings thus, there is evidence that the stock is underpriced or the company is underperforming when comparing to peers.

Exhibit 16: P/E multiple analysis

P/E Ratio	Change (%)	Share Price
Maximum	235.07%	\$ 197.86
75th Percentile	171.42%	\$ 160.27
Median	107.76%	\$ 122.68
25th Percentile	83.45%	\$ 108.33
Minimum	59.14%	\$ 93.97
Average	131.37%	\$ 136.62

Source: Bloomberg and own forecasts

If we look at the next multiple, EV/EBITDA, the average indicates a share price of \$138.01, 133% higher than what it is currently priced. Once again, Pfizer presents the lowest ratio among peers with 10x. As one can imagine, these conditions build a scenario where all industry multiples deliver a higher share price when compared to Pfizer’s actual value.

Exhibit 17: EV/EBITDA multiple analysis

EV/EBITDA	Change (%)	Share Price
Maximum	260.04%	\$ 212.60
75th Percentile	172.05%	\$ 160.65
Median	84.07%	\$ 108.69
25th Percentile	78.83%	\$ 105.60
Minimum	73.60%	\$ 102.51
Average	133.72%	\$ 138.01

Source: Bloomberg and own forecasts

At last, we have the revenue ratio, EV/Revenue, which is now at 3.2x for Pfizer, being the smallest within the industry representants. On average, the share should be priced at \$115.87, with a market cap change of 96%. For all scenarios, this multiple would produce a share price highly above the actual value.

Exhibit 18: EV/Revenue multiple analysis

EV/Revenue	Change (%)	Share Price
Maximum	190.66%	\$ 171.64
75th Percentile	129.81%	\$ 135.70
Median	68.95%	\$ 99.77
25th Percentile	53.55%	\$ 90.67
Minimum	38.14%	\$ 81.57
Average	96.22%	\$ 115.87

Source: Bloomberg and own forecasts

In sum, multiples valuation is not recognized as being reliable on assessing whether stocks are under or overvalued due to its simplicity. This relative approach focuses on specific time frames and incorporates company specific information (as risk) that should not be affecting the basis for valuing other industry peers. However, for this specific case, it is believed that the relative approach supports one argument: undervaluation. Pfizer has the lowest 3 ratios across competitors and even in the event of using 2021 figures, the analysis will always propose a higher share price than the actual price. For 2022, the scenario takes an even clearer perspective that the company’s stock might be undervalued, with multiples displaying huge share premiums for the performance forecasted.

Final Recommendation

At first sight, the pharmaceutical industry, being a very large and highly requested mature market, seems to present companies with great value adding opportunities. Moreover, taking into consideration Pfizer’s operational growth mainly due to Covid-19 and 2022 record revenue forecasts, one could be tempted to infer that we would, for sure, be under a scenario of stock price skyrocketing. Eventually, it will come down to how Pfizer will use excess cash generated over

the last fiscal year. Nonetheless, some prudence is required due to the forecast's great dependence on global events, such as the evolution of the pandemic.

Firstly, in the beginning of May, Pfizer made publicly available the first quarter corporate results, which brought some disappointing news. Although Comirnaty revenue remained high as expected, the same did not apply to Paxlovid pill, that is still deeply dependent on FDA's approval. The drug's forecasts fell short considerably and investors reacted immediately under the increased uncertainty around the highest expected grow product. Additionally, operating revenue growth excluding Covid products came short to just 2%⁷. (QUARTER REPORT). Besides revenues, investors are extremely sensitive to the period post 2025 due to various patent expirations. Keys sources for competitive advantages are not secure after that thus, investors are aware that waiting for additional information on new or renewed patents might be crucial to properly value Pfizer.

To finalize, nowadays we are witnessing an event that will certainly produce effects all over the world, with greater incidence in the production industries, but it is still too early to derive numbers from it. The Ukraine-Russia conflict will be placing huge constraints to companies' supply chains. Increase in input costs and supply disruptions provide substance to the opinion that greater uncertainty will be faced. However, as mentioned by the CEO, "Pfizer is very independent in terms of supplying our ingredients from those parts of the world"⁸, which could reduce volatility and present an opportunity for the company to consolidate a leadership position within the pharmaceutical industry.

Recommendation linked to numbers

Throughout the report, several topics were addressed so that one could understand and rely, with substantial confidence, on the data that would serve as input for the valuation. The DCF method was then chosen as the appropriate method to analyse and work the data with the final aim of arriving at an accurate corporate valuation. According to the Discounted Cash Flow approach driven by the analysts, as of the 31st December 2022, Pfizer's share is expected to be publicly traded at \$54.86. As the target date is only 7 months away from the date of this valuation, an annualization of shareholder return needs to be performed so that one can come up with a recommendation based on numbers. This translates into an annualized shareholder return around 16%, including a \$0.40 expected dividend within the \$4,47 capital gain, which supports the final recommendation to buy. Further investigation was conducted with a risk analysis and a multiples

⁷ Pfizer First Quarter 2022 Results

⁸ CBS news, <https://www.cbsnews.com/news/russia-ukraine-pfizer-investment-albert-bourla/>

approach supporting the evidence that Pfizer's stock could be undervalued, not fully reflecting the intrinsic value.

Appendix

Appendix 1: Reformulated Balance sheet

Reformulated Balance Sheet (USD (\$) in Millions)	2018A	2019A	2020A	2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Core Business													
Operating Cash	\$86.50	\$98.10	\$93.02	\$162.76	\$2,024.63	\$1,573.16	\$1,262.62	\$1,250.07	\$1,145.06	\$1,066.98	\$1,021.18	\$1,020.23	\$1,046.08
Inventories	\$7,508.00	\$7,068.00	\$6,021.00	\$3,058.00	\$10,186.43	\$6,962.37	\$5,607.07	\$5,143.95	\$4,711.94	\$4,076.51	\$3,610.79	\$3,321.10	\$3,305.26
Trade accounts receivable	\$9,026.00	\$6,772.00	\$7,913.00	\$11,479.00	\$14,285.28	\$11,150.14	\$9,621.04	\$8,826.38	\$8,084.94	\$7,533.60	\$7,210.26	\$7,274.60	\$7,386.03
Trade accounts payable	\$4,674.00	\$3,887.00	\$4,281.00	\$5,678.00	\$6,228.11	\$4,287.02	\$3,452.50	\$3,167.34	\$2,901.28	\$2,510.32	\$2,217.77	\$2,051.10	\$2,058.18
= NWC	\$11,675.50	\$10,771.10	\$12,494.02	\$16,585.76	\$20,207.23	\$15,404.67	\$13,138.22	\$12,053.06	\$11,040.57	\$10,167.16	\$9,615.46	\$9,584.90	\$9,702.18
Identifiable intangible assets	\$35,211.00	\$33,936.00	\$28,336.00	\$25,146.00	\$27,742.25	\$28,517.16	\$28,496.78	\$28,406.47	\$28,400.28	\$28,429.92	\$28,521.88	\$28,616.71	\$28,748.92
Property, plant and equipment	\$13,385.00	\$12,968.00	\$13,745.00	\$14,681.00	\$14,444.53	\$14,837.85	\$15,353.57	\$15,661.12	\$15,860.47	\$16,225.11	\$16,576.61	\$16,895.63	\$17,215.14
Other Assets and Liabilities	-\$11,631.00	-\$10,306.00	-\$11,819.00	-\$26,582.00	-\$25,238.97	-\$23,799.93	-\$23,063.37	-\$22,820.50	-\$23,015.20	-\$23,304.83	-\$23,421.82	-\$23,286.39	-\$23,142.55
Current tax assets	\$3,374.00	\$2,736.00	\$3,284.00	\$4,286.00	\$5,312.63	\$4,143.78	\$3,575.52	\$3,280.19	\$3,004.65	\$2,799.75	\$2,679.59	\$2,703.50	\$2,744.91
Other current assets	\$2,461.00	\$2,357.00	\$3,479.00	\$3,820.00	\$4,787.21	\$3,703.56	\$3,201.70	\$2,937.26	\$2,690.52	\$2,507.04	\$2,389.44	\$2,420.85	\$2,457.93
Other noncurrent assets	\$2,799.00	\$4,189.00	\$4,879.00	\$7,679.00	\$7,538.35	\$5,879.82	\$5,073.48	\$4,654.43	\$4,263.44	\$3,972.70	\$3,802.20	\$3,836.13	\$3,894.89
Income taxes payable	\$1,285.00	\$800.00	\$1,049.00	\$1,266.00	\$1,576.60	\$1,223.73	\$1,061.09	\$973.45	\$891.67	\$830.87	\$795.21	\$802.30	\$814.59
Accrued compensation and related items	\$2,397.00	\$2,390.00	\$3,049.00	\$3,320.00	\$4,149.48	\$2,236.54	\$2,782.69	\$2,582.03	\$2,348.81	\$2,186.77	\$2,092.92	\$2,115.59	\$2,143.94
Other current liabilities	\$10,763.00	\$9,334.00	\$11,561.00	\$24,839.00	\$24,310.08	\$20,257.82	\$18,250.29	\$17,346.90	\$16,925.32	\$16,756.69	\$16,604.92	\$16,522.57	\$16,471.74
Deferred revenues	\$0.00	\$0.00	\$1,113.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00	\$3,067.00
Other noncurrent liabilities	\$5,850.00	\$6,894.00	\$5,689.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00	\$9,743.00
= Operating Invested Capital	\$48,640.50	\$47,369.10	\$42,746.02	\$30,830.76	\$37,155.20	\$35,059.75	\$33,931.20	\$33,300.15	\$32,286.13	\$31,527.36	\$31,292.13	\$31,810.84	\$32,527.70
Non-Core Business													
Short-term investments	\$17,694.00	\$8,525.00	\$10,437.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00	\$29,125.00
Current assets of discontinued operations and other assets held for sale	\$5,725.00	\$4,224.00	\$167.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Equity method investments	\$80.00	\$17,133.00	\$16,856.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00	\$16,472.00
Long-term investments	\$2,896.00	\$3,094.00	\$3,406.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00	\$5,054.00
Goodwill	\$53,411.00	\$49,202.00	\$49,556.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00	\$49,200.00
Noncurrent deferred tax assets and other noncurrent tax assets	\$1,924.00	\$1,510.00	\$2,303.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00	\$3,341.00
Noncurrent assets of discontinued operations	\$0.00	\$3,427.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Current liabilities of discontinued operations	\$1,890.00	\$2,410.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Pension benefit obligations	\$5,272.00	\$5,291.00	\$4,769.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00	\$3,489.00
Postretirement benefit obligations	\$1,138.00	\$136.00	\$145.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00	\$235.00
Noncurrent deferred tax liabilities	\$3,700.00	\$5,652.00	\$4,863.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00	\$3,490.00
Other taxes payable	\$14,737.00	\$12,126.00	\$11,560.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00	\$11,331.00
= Non-Operating Invested Capital	\$58,584.00	\$70,028.00	\$61,771.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00	\$87,796.00
= Total Invested Capital	\$107,224.50	\$117,397.10	\$104,517.02	\$117,826.76	\$124,951.20	\$122,859.75	\$121,727.20	\$121,096.15	\$120,082.13	\$119,323.36	\$119,088.13	\$119,606.84	\$120,323.70
Financial													
Excess Cash	\$322.50	\$302.90	\$562.98	\$318.24	\$648.54	\$505.85	\$436.48	\$400.43	\$368.79	\$341.78	\$327.11	\$330.03	\$336.08
<i>% of Revenues</i>	0.01	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Short-term borrowings	\$8,831.00	\$16,195.00	\$2,703.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00	\$2,241.00
Dividends payable	\$2,047.00	\$2,104.00	\$2,162.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00	\$2,249.00
Long-term debt	\$3,909.00	\$3,955.00	\$7,133.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00	\$8,195.00
Total Debt	\$41,740.00	\$52,150.00	\$39,836.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00	\$38,436.00
Non-Controlling Interests	\$261.00	\$303.00	\$235.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00	\$262.00
= Net Financial Debt	-\$43,815.50	-\$54,254.10	-\$41,280.02	-\$40,628.76	-\$40,298.46	-\$40,441.15	-\$40,510.52	-\$40,546.57	-\$40,580.21	-\$40,605.22	-\$40,619.89	-\$40,616.97	-\$40,611.92
= Equity	\$63,409.00	\$63,143.00	\$63,237.00	\$77,198.00	\$84,652.74	\$82,418.60	\$81,216.68	\$80,549.58	\$79,501.92	\$78,718.13	\$78,468.24	\$78,989.87	\$79,717.78

