A Work Project, presented as part of the requirements for the Award of a Master Degree in Economics / Finance / Management from the NOVA – School of Business and Economics.

Pfizer Equity Report

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A Project carried out on the Master in Finance Program, under the supervision of:

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Abstract

This report is an Equity Research done as part of a final year project for the MSc in Finance of Nova School of Business and Economics. The goal of the paper is to conduct a thorough analysis of Pfizer's business model and to evaluate the value drivers and trends of the Pharmaceutical Industry. Financials of main big players were compared to assess the position of our target. We arrived at a valuation of 69.28$ using the DCF method, which is an increase of 26% in the stock price one year from today.

Keywords (up to four)

Pfizer; Valuation; Key Drivers; COVID-19

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This report is part of the company report Pfizer (annexed) and should be read has an integral part of it.

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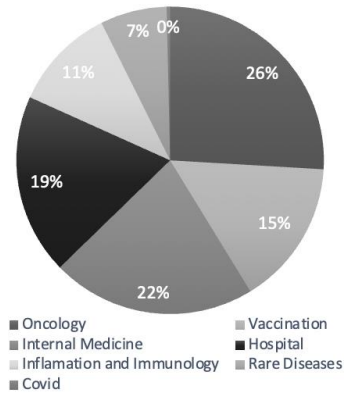
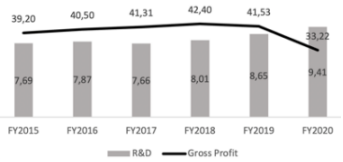


Source: Pfizer Financials | Own Computations

Exhibit 2. R&D and Gross Profit (bn$)



Source: Pfizer Financials | Own Computations

Pfizer was established in 1849 in New York, where it was the first to start the production of antibiotics. It is an American multinational pharmaceutical and biotechnology company corporation. More than 150 years later, Pfizer is the biggest player in the pharmaceutical industry, with a leading market share throughout the years. It engages in the development, manufacture, marketing, sales, and distribution of its products.

Pfizer's pharmaceutical business units are divided into seven different segments: Oncology, Inflammation and Immunology, Hospital, Vaccine, Internal Medicine, Rare Diseases, and Covid. The latter segment has appeared recently in the activities of the company after the pandemic outbreak that the world has seen in 2019. Not all pharmaceutical companies are engaged in developing the Covid vaccine, which gives Pfizer a competitive edge for the coming years and boosted company's revenue.

In 2020 the company reported revenues of 41.91bn$, with 52% of this value coming from the US alone, an increase of approximately 2% in revenues from last year. Outside the US the two largest national markets for Pfizer are China and Japan, which contributed 6% and 5% respectively of Pfizer's revenues. Oncology, Internal Medicine, and Hospital are the main segments contributing to Pfizer's revenue in 2020 with a revenue share of 26%, 21% and 19% respectively. The company's net income is increasing throughout the years. It increased by 5.88% from 2019 to 2020. As such, we expect Pfizer's net income to be 24.8bn$ in 2021.

Operational Business

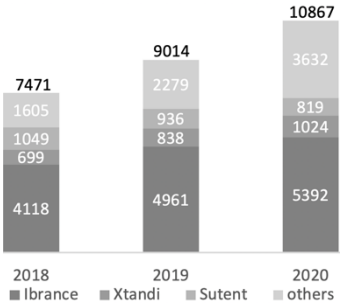
Business Units

Oncology

Cancer is one of the most complicated diseases known to mankind, with more than 100 types and a constantly changing biology. It is the number one cause leading to deaths worldwide. Pfizer's goal is to bring innovative treatment by highly investing in a robust pipeline of products. With 31 products being developed and 9 products attaining the final clinical trial, oncology's pipeline constitutes the largest portfolio of the company.

On the operational level, the segment reported a total revenue of 10.87bn$ and 9.01bn$ for the years of 2020 and 2019 respectively. The revenue for this sector in 2020 and 2019 represents 25.9% and 21.9% of Pfizer's total revenue, which makes it a main contributor sector of the total sales for the company. Pfizer's oncology sector revenue is generated from more than 13 components mainly led by 5 of them. Namely, Ibrance, Xtandi, Sutent, Inlyta, and Xalorki representing 80% of the revenue for this sector in 2020. The sector's revenue increased by 45% from 7,47bn$ in 2018 to 10,87bn$ in 2020 for a CAGR of approximately 18%. Pfizer's market share for this industry represented a value of 6.7% in 2020.

Exhibit 3. Oncology Revenue breakdown by Product (mn$)



Source: Pfizer Financials | Own Computations

The main driver for Pfizer's oncology revenue is Ibrance, which is used for the treatment of breast cancer, that accumulates a revenue of 5.4bn$ in 2020, accounting for 50% of this segment's revenue for the last three years with its patent expiring in March 2027. Even though the drug sales have been increasing and the patent isn't expiring soon, Ibrance is expected to grow at a slower rate since researchers have proved that the drug could not lengthen the time patients could live without invasive disease returning[1]. Morover, certain studies indicate that Ibrance is an inferior drug to Eli Lilly's rival CDK inhibitor Verzenio, which had sales of 912mn$ and 579.7mn$ in 2020 and 2019 respectively, an increase of 57%. However, Ibrance still represents a strong market share of 80% for the CDK (cyclin dependent kinases) market. But we expect this number to significantly decrease after patent expiry in 2027 to attain a value of 40% for the CDK market. Celegne's drug Revlimid presents the highest market share for oncology products with a market share of 8% but is expected to lose ground in 2024 due to the drug losing exclusivity reducing its market share to 5%. Ibrance is in the 4th position in regards of drugs market share, and increased sales by 9%, outside the U.S., in the third quarter of 2021.

Exhibit 4. Oncology Drugs Patent Expiry Year

Drug	U.S.	Europe	Japan
Ibrance	2027	2028	2028
Xtandi	2027	Royalties	Royalties
Sutent	2021	2022	2024
Inlyta	2025	2025	2025
Xalorki	2029	2027	2028

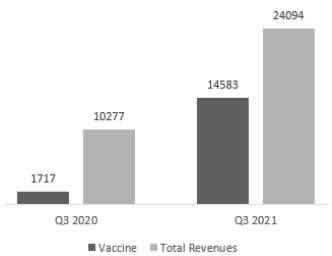
Source: Pfizer Annual Report

Growth was also driven by Xtandi gaining market share and increasing 22% in sales compared with 2019. Sales also increased by 18.6% in the first nine months of 2021 compared to 2020. This increase can be explained by the FDA approval of Xtandi in non metastatic and metastatic prostate cancer[2] as well as due to an increase in prostate cancer patients worldwide, which led to 1bn$ sales in 2020. The drug's patent expires in 2027, thus, we expect an increase in sales of around 10% per year. Another factor contributing to the growth of the segment is Inlyta's sales that grew 65% from 2019 to 2020 as a consequence of the improvement in the treatment of metastatic renal cell carcinoma by introduction of immune checkpoint inhibitors (ICI). Inlyta's sales increased by 33% from 2020 (until Q3) to 2021 (until Q3). Patents on this drug will not expire until 2030, so high revenue growth is still expected for this product during our forecasting period. Due to extensive drugs' portfolio of Pfizer's oncology and patents on the main drugs of this sector, we expect a growth of 0.3% until 2027, and a moderate decrease afterwards.

Covid

Cominarty is an mRNA-based coronavirus vaccine that gives immunity against COVID-19 and is being jointly developed and commercialized with BioNTech, an agreement that took place on April 2020. Pfizer and BioNTech share the costs of development for the vaccine, as well as the profits. The vaccine has been approved in more than 50 countries in 2020 and it is subject for approval or market authorization from market to market.

Exhibit 5. Vaccine - Total Revenue (mn$)



Source: Pfizer Financials | Own Computations

The Covid-19 Vaccine has participated in revenues of 24.3bn$ in the first nine months of 2021. Total sales increased by 91%, or 27bn$ in absolute terms that can be mostly attributed to the sales of Covid-19 vaccine, from the same period last year. The Vaccine was responsible for more than 54% of the company's sales in the third quarter of 2021. Vaccine's revenues rose to 14.6bn$ from 1.7bn$ last year in the third quarter alone, and Covid vaccine accounted for 13bn$ of this revenue. Pfizer expects revenues of 36bn$ in 2021 for the Covid-19 vaccine based on contracts the company signed under agreement in February 2021 and do not include all the

[1] Angus Liu (2021). 13. Ibrance. Fierce Pharma
[2] Fraiser Kansteiner (2021). 18. Xtandi. Fierce Pharma

potential doses that Pfizer could sell in the future.

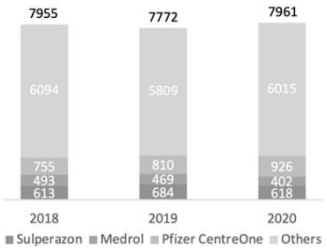
Covid has caused a decline in the spending in general and selling administrative expenses. However, the research and development department saw an increase in expenses of 1bn$ due to the development of Covid 19 vaccine in collaboration with BioNTech and other investments toward new capabilities and driving automation.

In addition, Pfizer's weekly market share of COVID-19 vaccines administered continues to increase. In the U.S., the 4-week average market share increased from about 56% in April to 74% as of October 31. In the EU, it went from 70% to 80% during the same time period. These market share increases are a consequence of the vaccine being the first to receive emergency use authorization and the 2-dose series being preferred by many countries around the world for use in certain younger populations.

Hospital

Pfizer's Hospital Business Unit includes a global portfolio of sterile injectable and anti-infective medicines combatting infections. With a great commitment to R&D, Pfizer presents one of the most diversified portfolios of anti-infectives worldwide with more than 80 medicines available. And it has 6 more drugs in its pipeline that are being developed. Four of the drugs are in phase 3 and the rest in phase 1. On the operational level this segment has seen a YOY growth of 3% in total revenues, the increase in demand resulted from certain sterile injectable products used in the intubation and ongoing treatment of mechanically ventilated Covid-19 patients.

Exhibit 7. Hospital Revenue Breakdown Hospital Revenue Breakdown (mn$)



Source: Pfizer Financials | Own Computations

The sector presented revenues of 7.78bn$ and 7.96bn$ for years 2019 and 2020, which represented 18.9% and 19.0% of Pfizer's total revenue respectively. This sector is the third most important in terms of sales for Pfizer's operations. The key product contributing to the sales from this sector is Sulperazon with sales of 684m$ and 618m$ for 2019 and 2020 respectively, presenting a share of 9% for Hospital's revenue in 2019 and 8% in 2020. This was mainly driven by the continued growth of anti-infective products in China. Growth was also driven by the increase in demand for Panzyga, which saw an increase of 47% in YOY sales from 2019 to 2020. The main reason for this increase is that Panzynga is the only intravenous immunoglobulin with two FDA-approved[3] for the treatment of chronic inflammatory demyelinating polyneuropathy. Zavicefta was another player in the growth in sales for this sector with a YOY sales increase of 96%, mainly because of the launch of this product in international and emerging markets.

Roche

Roche holding, or legally Hoffman-La Roche, is a Swiss health-care company founded in 1896, and one of the world's leading companies in the sector. Since 2004, the company has had two parallel sections, the pharmaceutical sector and the diagnostic sector. The company is commercially present in 150 countries and has approximately 101000 employees to date. The company has an average of 3.5% (2016-2020) market share from the whole pharmaceutical industry. Roche has always been a leader when it comes to the Oncology sector, the most significant sector for Pfizer's business units, with a market share of 24% in 2018. However,

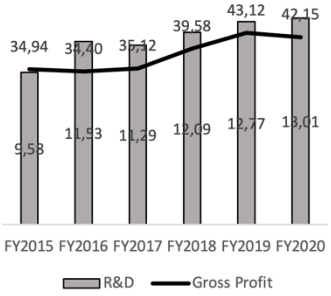
[3] Eammon Nolan (2021). U.S. FDA approves PANZYGA for the treatment of adults with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP). businesswire

Exhibit 19. Roche – Financial Information (mn$)

	2019	2020
Sales	65 845	68 525
EBITDA	24 641	26 973
EBITDA Margin	37,4%	39,4%
Net Income	13 940	16 233
Net Income Margin	21,2%	23,7%
Current Ratio	1,3	1,3
RORC	3,6x	3,3x
ROE	37,6%	35,9%
ROA	16,2%	16,6%

Source: Bloomberg | Own Computations

Exhibit 20. Roche's R&D and Gross Profit (bn$)



Roche's market share is expected to decrease in this segment because Herceptin and Avastin, which accounted for almost one third of the company's revenues, lost their market exclusivity in 2019 which resulted in a decrease of 5.4bn$ in revenues for 2020.

Roche recorded revenues of 62.97bn$ in 2020 a decrease of about 5.10% from 2019, which presented revenues of 66.36bn$. This could be mainly due to the competition of biosimilars and patent expiration. Although sales have decreased compared to last year, the company still presented better net income with a value of 16.27bn$ in 2020 a YOY increase of 6.83% from 15.23bn$ in 2019. The pharmaceutical division, which is the only front where they compete with Pfizer, accounted for 76% of Roche's total revenue with sales of 48.03bn$, 20% more than Pfizer. The diagnostic sector presented revenues of 14.89bn$, accounting for 24% of Roche's Revenues. The company saw an increase of 14% of its sales in the US while its market decreased by 7% in the EU. Research and development spending reached 13.01bn$ in 2020 and its R&D spending has been increasing with a CAGR of 5.08% since 2011, which shows that the company is aiming in developing new products. Roche is one of the leaders in terms of R&D, which can give it a competitive advantage by increasing its product pipeline and to effectively integrate new technologies for drug discovery.

In March 2020, Roche's diagnostic division took an important step with the occurrence of the diagnostic test of the SARS- Cov-2, capable of analyzing between 1400 to 8800 samples in a day. In August 2020, Roche announced they were developing and manufacturing antibodies to fight the covid-19 epidemic in the form of an oral pill.

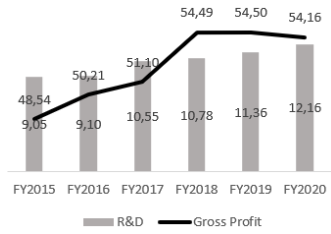
Johnson and Johnson

Exhibit 21. Johnson & Johnson – Financial Information (mn$)

	2019	2020
Sales	82 059	82 584
EBITDA	24 720	28 634
EBITDA Margin	30,1%	34,7%
Net Income	15 119	14 714
Net Income Margin	18,4%	17,8%
Current Ratio	1,26	1,21
RORC	5,1x	4,8x
ROE	25,4%	23,5%
ROA	9,6%	8,4%

Source: Bloomberg | Own Computations

Exhibit 22. J&J's R&D and Gross Profit (bn$)



Founded in 1886 in New Jersey, started its activity being the first company to produce cotton white, sterile and absorbents for surgery purposes. Now J&J is one of the biggest companies in the healthcare industry engaged in research and development and manufacture of products. It employs more than 130 000 employees worldwide. The company's activities are divided into three main segments: medical devices, pharmaceuticals, and consumer goods. The company is ranked as number 5 in terms of market share for the pharma industry with a share of 4.27%.

Revenues for Johnson and Johnson increased from 82.06bn$ in 2019 to 82.58bn$ in 2020, presenting an increase of 0.6%. However, net earnings decreased by 2.67% from 15.12bn$ in 2019 to 14.71bn$ in 2020. The pharmaceutical sector for the company accounted for the biggest share of the revenues in 2020 of 55.18% (45.57bn$). Medical devices represented 27.8% of revenues in 2020 and consumer healthcare accounted for the remaining 17% of revenues for the same fiscal year.

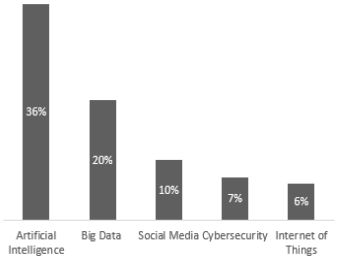
J&J is dealing with copycat versions of prostate cancer after the patent loss for its blockbuster drug Remicade, the drug saw a decrease of 14.4% in sales from 2019 to 2020, attaining 3.74bn$ in sales. Zytiga also faced a similar problem because of patent expiry and sales decreased by 45.7% in 2020. However, these losses were compensated by the increase in sales of the company's biggest drugs, Stelara, which patent will expire in 2023, accounted for 9.3% of J&J total sales with an increase of 21.1% from 2019 to 2020 in sales. The second largest drug Darzalex that accounted for 5% of total sales have a patent that will expire only in 2029 and increased its sales by 39.8% in 2020 for a value of 4.19bn$. The drug is promising for J&J

because it is already competing in second line and alter uses in multiple myeloma and can be used in frontline use as well.

J&J performed better than Pfizer in the oncology sector, which corresponds to the best performing sector for Pfizer. However, because of J&J's cancer drugs losing exclusivity, sales from this sector are expected to decrease in the coming years. In 2020, Oncology drug sales accounted for 12.37bn$ for J&J compared to 10.87bn$ for Pfizer. J&J also outperformed Pfizer in the sales of Immunology with a value of 15.01bn$ compared to 4.6bn$ for Pfizer. However, Pfizer was better in generating revenues from its hospital sector with a revenue of 7.96bn$ compared to J&J's 3.57bn$.

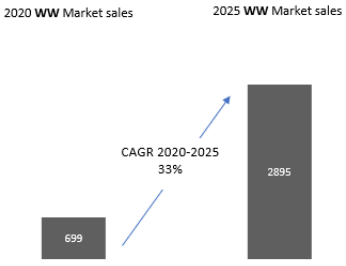
Trends

Exhibit 23. Top 5 trends affecting the pharma industry (2021)



With the huge advancement in technological discoveries, the pharma industry should adapt its activities accordingly. The drug discovery process is a long and complex problem. There are preclinical trials which the drug pass through, where the targeted disease and molecules to attack it are studied. Clinical trials are divided into three phases. Phase 1 examines the drug safety. Phase 2 tests the drug's efficacy on people that have been targeted by the disease. Phase 3 studies the efficacy with a larger amount of people. The average cost for a traditional drug pipeline is 2.6bn$, and a complete traditional pipeline can take up to 12 years[4]. The cost has been greatly increasing since 2001, there is a decrease in the rate of new drugs getting approval with additional billions spent. The rate to get drugs tested on human is barely 12%, and only 10% of molecules entering the trials gain approval, which is a loss for the industry.

Exhibit 24. AI in Pharma sector market until 2025 (mn$)

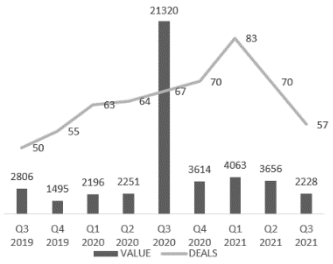


Source: GlobalData | Own Computations

The amount of data increased from 4.4 zettabytes, where 1 zettabyte =10^12 GB, to 44 zettabytes from 2013 to 2020 and is not appearing to diminish. Because of the capabilities of Artificial Intelligence to recognize patterns and analyze complex algorithms, it could be employed to gain crucial medical information. AI can help in drug discovery by facilitating drug design, chemical synthesis, drug repurposing, and drug screening. AI can assist in predicting 3D structure of targeted protein and predict drug-protein interactions. Evotec has announced a collaboration with Exscientia to develop a new anticancer molecule. Traditionally, it would take between 4-5 years to come up with the drug candidate, however it was found in 8 months using Exscientia's AI design platform. But the time and costs savings from AI are yet still not very known because no drugs have been fully developed using this technology. The global AI in pharma reached a value of 699.3mn$ in 2020, having increased at a CAGR of 31.8% since 2015. The market is expected to grow to 2895mn$ in 2025 at a rate of 32.9%, which is then expected to reach a value of 9143mn$ in 2030. The top opportunities in the AI pharma sector will arise in drug discovery segment, which accounted for 80% of the total in 2020. It is going to be the fastest growing segment in AI pharma at a CAGR of 37.8% during 2020-2025. A global data study showed that AI and big data are the 2 biggest areas that influenced the pharma industry in 2021.

[4] Sulivan (2019). A Tough Road: Cost To Develop One New Drug is $2.6 Billion, Approval Rate For Drugs Entering Clinical Trial is Less than 12%. Policy&Medicine

Exhibit 25. Number of deals and values (mn$) 2019-2021



Source: Pharmaceutical Technology | Own Computations

Exhibit 26. AION Collaboration

This year pharma incumbents have participated in 9 healthcare AI deals; these pharma deals represent a funding of 800mn$ for AI healthcare startups. And funding for companies working with AI for drug discovery has reached a value of 13.5bn$ between March 2020 and 2021. Many big pharma and technological companies are collaborating with AI startups to accelerate the process. Merck, Pfizer, Astrazaneca, and Teva are collaborating with amazon to fund the Israeli biotech fund that will launch a new incubator for startups drawing the line between artificial intelligence and drug development. The company won a 10mn$ funding by the government to get started. GSK has opened its own research center for AI in London valued at 10mn£. GSK believes that AI could increase the success rate for drug development to 20%, which can save billions of dollars for the industry. Amgen has invested 6mn$ round of funding in GNS healthcare. PathAI has also received investment from Bristol-Myers Squibb to complete a 75mn$ series B funding. BMS leads the pharmaceutical sectors in AI deals with 7 deals from January 2020 to June 2021. Bayer AG and Pfizer followed BMS with 6 and 5 deals respectively. AZN and J&J are the ones recruiting the most for AI jobs, with 676 and 616 monthly new jobs posted. Roche was the most innovative in this area with 17 new patents filed. In a two-year period, pharma sector saw 217 venture financing with a value of 7.5bn$. almost 200 new partnerships arose with a value of 7.5bn$. 28 acquisitions happened with a value of 28bn$ and 73 equity offerings for a value of 8bn$.

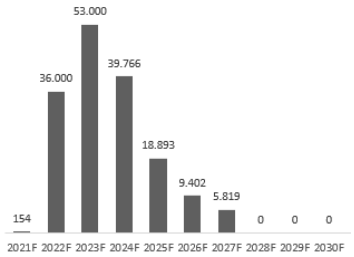
Moreover, Pfizer is collaborating with amazon web services (AWS) to create new cloud-based solution that can improve the process of the development, manufacturing, and distribution of medicine in clinical trials. The Pfizer Amazon Collaboration Team (PACT) is trying to exploit AWS capabilities in analytics, machine learning, storage, and cloud data warehousing to Pfizer laboratory and clinical manufacturing. By incorporating predictive maintenance capabilities built by AWS machine learning services, Pfizer can maximize uptime for equipment. The VP of pharmaceuticals Sciences at Pfizer mentioned that Pfizer's goal to collaborate with AWS to expedite the process of drug discovery and development. Moreover, 10 big pharma competitors came together in July 2020 to form a nonprofit Accumulus synergy, that aims to build a data sharing platform that supports real time exchange of information with regulators. Experts from Janssen and Pfizer believe that this method would accelerate drug development by reducing lag time between regulators and pharma companies, as well as among pharma companies themselves. Because traditionally it takes weeks for regulators to answer pharma companies and vice versa. With this method answers and data can be shared on the platform. Novartis and J&J are the two biggest pharma companies committed to artificial intelligence investments. Novartis is collaborating with Microsoft to improve and accelerate drug discovery and development. And J&J also has its Jlabs, which is a startup incubator to collaborate with young companies that work in drug discovery using AI.

SWOT Analysis

Pfizer had 10bn$ in sales during the third quarter of 2020, this value has increased to 24.1bn$ for the same period of 2021 representing an increase of approximately 134% in just one year. Moreover, the company is expecting an additional 12bn$ in revenue for the final quarter from Covid vaccine alone. Pfizer also announced that it is capable to produce 4 billion doses of the vaccine in 2022, which was based on contracts signed with other countries, as such contracts are estimated

to bring sales of 29bn$ in 2022. Given that the vaccine needs a booster shot after a certain amount of time in order to protect against different variants of the disease, demand for Pfizer's Covid-19 vaccine is expected to increase for the upcoming years.

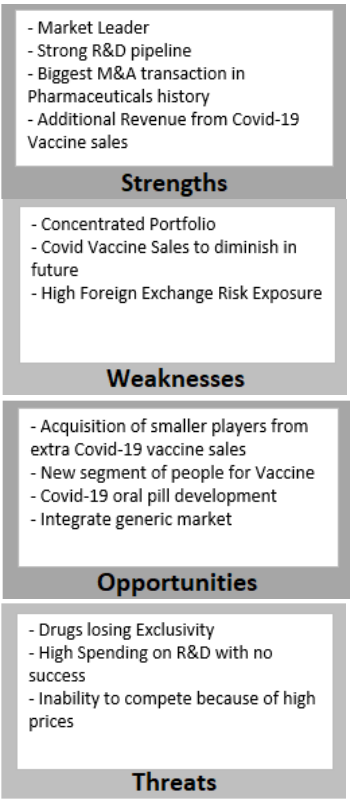
Exhibit 29. Revenues from Covid in the forecasted period (mn$)



Source: Reuters | Own Computations

Pfizer will continue to invest up to 1bn$ with the goal of facilitating access for its Covid-19 oral antiviral treatment to the maximum amount of people in the world. Pfizer will be able to supply its pill for 53% of the world's population, including low- and middle-income population. It will also change its pricing accordingly to make it affordable for every country. Analysis has showed that the pill could reduce hospitalization risk by 89% compared to placebo in patients. These results were proven to be more promising than Merck's Covid-19 oral antiviral treatment pill that showed only 50% effectiveness. Roche's pill failed to meet its primary endpoint in a phase 2 trial. These outcomes give a competitive edge for Pfizer's pill, which is expected to bring revenues of 24bn$ and 33bn$ in 2022 and 2023 respectively[5].

Exhibit 30. SWOT Analysis



Pfizer and BioNTech announced that the FDA approved their vaccine as the first one to be used for children for ages between 5 and <12. The vaccine presents an efficacy of 90.7% for this target group. Moreover, the U.S. has purchased 50 million doses of the company's Covid-19 doses for children aged under 5 years of age. The world population for the segment of 0-14 years constitute 25% of the population. And because Pfizer is the first company to get approval for vaccinating this trench of ages, and 57% of the population is vaccinated and Pfizer's vaccine constitutes one third quarter of doses administered. We expect that Pfizer will administer doses for 15% (6% higher than calculations for the reasons mentioned) of this population or 1 billion people. And because Pfizer's vaccine costs 19.5$ per dose. It would bring additional 19.5bn$ for Pfizer.

Due to of the extra revenue generated by sales of vaccines in 2021 and revenues coming from the oral pill in the future, Pfizer is expected to increase its M&A activities. Pfizer is expecting to have revenues of 80bn$ in 2021, an increase of 100% from last year. In November 2021, Pfizer acquired Trillium for a purchase price of 2.22bn$. Trillium's two lead molecules, TTI-621 and TTI-622 enhance patient's immune system ability to detect and destroy cancer cells. It is a milestone for Pfizer since Trillium's molecules could complement Pfizer's portfolio in innovating more in the oncology sector. The autoimmune cancer is expected to reach a market of 150bn$ in 2026 with a CAGR of 9.6% from 2020. Pfizer also acquired Amplyx Pharmaceuticals in April 2021 that would help Pfizer increase its portfolio of inflammation and immunology. Amplyx's lead compound is a new asset under development for the treatment of invasive fungal infections.

Pfizer has a strong history in M&A transactions, it uses these transactions in order to diversify its portfolio and strengthen its position in every segment. In 2019 Pfizer acquired Array Biopharma for 10.6bn$ to boost its oncology pipeline. Moreover, Pfizer acquired cancer drug-maker Medivation for 14bn$ and Anacor pharmaceuticals for 5.2bn$, expanding its portfolio in inflammation and immunology, which is one of their business units that need most improvement. Pfizer also has the biggest pharmaceutical acquisition transaction in history with a value of

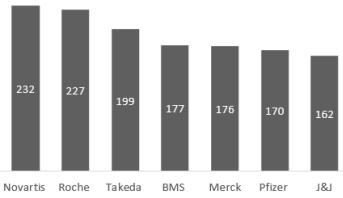
[5] Michael Erman and Deena Beasley (2021). Pfizer says COVID-19 pill near 90% protective against hospitalization, death. https://www.reuters.com/business/healthcare-pharmaceuticals/pfizer-says-covid-19-pill-near-90-effective-final-analysis-2021-12-14/

87.3bn$, acquiring Warner-Lambert. The 6th and 7th biggest pharmaceutical transactions in history were also made by Pfizer.

Pfizer is one of the leaders in its industry in research and development and this is shown by the size of the research and development pipeline. Pfizer had 170 new pipeline products in the market during 2021, making it the 6th Pharma company worldwide in developing new drugs. Novartis and Roche are the leaders in terms of new drugs developed, developing 232 and 227 drugs respectively in 2021. Moreover, Pfizer is in 6th position compared to its peers when it comes to spending on R&D and has spent 18% of its revenues on that area. Pfizer is predicted to be the 4th highest spender in terms of R&D in 2026, with a value of 10.6bn$, outspent by Roche, J&J, and Merck. R&D Productivity has driven incredible improvements in clinical success rates. For example, Pfizer's success rate in Phase 2 on a five-year rolling average more than tripled from 15% five years ago to 52% at the end of 2020, which is less than the double the 2019 industry benchmark of 29%.

Pfizer is also one of the biggest players in its industry with a market cap value in 2021 of 263bn$, ranking 3rd after J&J and Roche that have market caps of 454bn$ and 349bn$ respectively. In 2020, Pfizer's Eliquis had sales of 9.2bn$, making it the 4th highest selling drug worldwide.

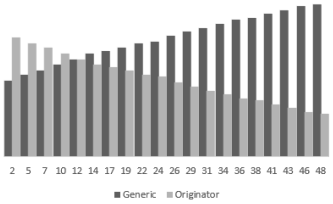
Exhibit 31. Number of Drugs developed by company in 2021



Source: Statista | Own Computations

Revenue losses caused by products losing exclusivity need to be offset by the discovery and development of new products. To be successful, investments in research and development and collaborations need to address unmet medical needs for investments to pay off. The costs of product development are very high and there is no guarantee for the desired outcome, a product development can fail at any clinical trial stage and losses would not be compensated. Although products can succeed to pass clinical trials it faces competition from other products. Pfizer halted phase 3 clinical trials of torcetrapib after spending almost 1bn$ for the development of the drug. Because the independent data safety monitoring board found more deaths and cardiovascular problems in people taking the drug. Pfizer was not able to complete the drug development afterwards due to the incident and lost all of the money invested to develop the drug.

Exhibit 32. Generic – Originator Uptake after months of Generic Entry (%)



Generic medication presents a great threat for the business of the original medicines. This kind of medications have very low expenditure on R&D because they copy the molecule version of the originator, so the cost to develop them is much lower. So, companies producing generic medications can afford to price lower its products for the same effects. One study shows that generic uptake increased from 39% of DDD (Defined Daily Dose) to 73% to the prescribed amount of DDD in the first 48 months after initial generic entry[6].

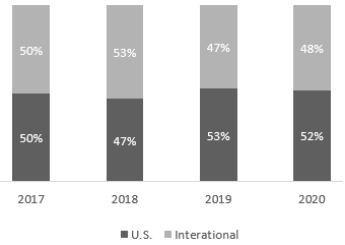
Pfizer's product portfolio is very concentrated, which means that only seven of the products among all the products that Pfizer sell account for more than half of the total revenues. Having said that, if it is proved that any product has side effects or any safety concerns, regulators could ban the product and remove it from the market. Furthermore, in the pharma sector product losing exclusivity is a big concern for companies. More specifically, if one of the seven products in Pfizer's portfolio loses patent, it could result in deterioration of the revenues for the overall company.

[6] Van Der Schans et al. (2020). The impact of Patent Expiry on Drug Prices: insights from the Dutch market. National Center of Biotechnology Information

For instance, when Lyrica's patent expired in 2019, 6 months after it was expected to, the sales for the drug saw a decrease of approximately 35% in the market share of similar kind of drugs. 16 companies have profited from the news and entered the market to take shares from Pfizer.

Moreover, 48% of Pfizer's revenues in 2020 were derived from international operations, including 23% from Europe and 17% in China, Japan and other Asian countries. Having said that, any currency fluctuation in these countries could lead a disruption in international operations, which can incur losses for Pfizer. For instance, in the last 6 months, the Euro depreciated more than 6% when compared with the dollar. So, sales made by Pfizer in Europe would lead to a smaller amount in USD, which can lead to lower cash conversion to Pfizer's operations. Especially if costs were incurred in Euro before the depreciation. It is a double loss, because sales would lead to less profits and costs could be higher if paid beforehand. More specifically, Pfizer has almost all of its labs and research centers in the U.S. except 1 located in the United Kingdom. This means most of the costs incurred for researching new molecules will be in USD, so a EUR depreciation will lead Pfizer to have more sales to get the same amount in USD in order to invest the money afterwards in researching and developing new drugs.

Exhibit 33. Historical Revenue Breakdown by Geography

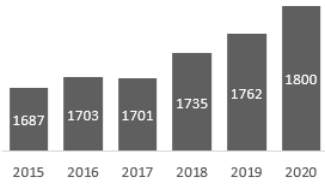


Valuation

Revenue Decomposition

Oncology

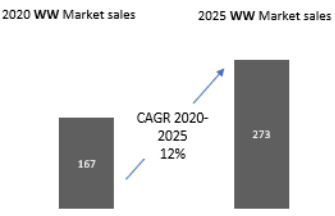
Exhibit 39. Historical New Cancer Cases in the U.S. (Thousands)



Source: Statista | Own Computations

The oncology market has been increasing throughout the years. The number of Americans living with cancer has increased from 10.8 million individuals in 2004 to 16.9 million in 2019, which represent a CAGR of 3.03%. The number of new cases is increasing as well, however the number of deaths from cancer in the U.S. is seeing a decrease in recent years (number of deaths was 181 per 100 000 people in 2004 and 149 per 100 000 people in 2018). This means that advancements in cancer treatment are becoming more effective. Specifically, number of cancer drugs development in the U.S. has increased from 399 in 2005 to 1120 in 2018.

Exhibit 40. Worldwide Oncology drugs market revenue (2020-2025) bn$



Source: Statista | Own Computations

The global oncology spending has increased from 56bn$ in 2011 to 167bn$ in 2020, representing a CAGR of 12.91%. The global spending (Consumer Spending) for the oncology sector is expected to reach 273bn$ in 2025 representing a CAGR of 12%. We expect Pfizer's CAGR to be slightly higher in the same period due to Xtandi's use for metastatic prostate cancer treatment and IBRANCE's market presence. For that reason, we expect a CAGR of 13% for Pfizer's oncology sector. Furthermore, Cancer diagnostic market size is expected to more than double from 2015 to 2023 with a CAGR of 11.5%, which means more people will be diagnosed with cancer who will need medications in the future. The two main products of Pfizer's oncology sector are Ibrance and Xtandi, for the treatment of breast and prostate cancer respectively. These two cancers accounts for the 5th and 7th position in terms of deaths in the U.S. implying that the demand for these drugs has potential.

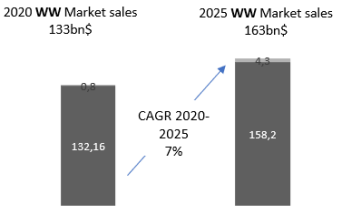
Pfizer had revenues of 5.87bn$ in 2017 in the oncology sector, representing a market share of 5.6%. Revenues are expected to grow to 14bn$ in 2024, representing a market share of 6% which implies a CAGR of 12.9% and is in line with our expectations. Pfizer's Ibrance is ranked number 5 in terms of revenue and market share among the top oncology products and is expected to

keep this position in the future. Revenues from Ibrance are expected to reach 8.28bn$ in 2024. This indicates that this sector will still be promising for Pfizer's future revenues. The leader in this sector is Roche with a market share of 26.3% in 2017 but is expected to lose market shares in the future because of some of its products losing exclusivity, which will make revenues more evenly divided among other players. And Merck's Keytruda is expected to be the leader drug in the sector with sales expected to reach 12.89bn$ in 2024 due to drug approvals and many different uses in combination with other drugs as well.

Hospital

Hospital sector is mainly composed of two main portfolios: the sterile injectable market and the anti-infective drug market.

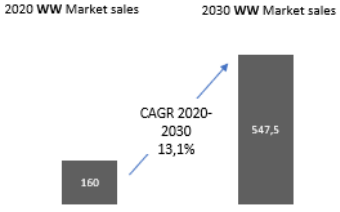
Exhibit 43. Worldwide Hospital drugs market revenue (2020-2025) bn$



The global anti-infective drug market decreased from 132.16bn$ in 2020 to 116.4bn$ in 2021. The decrease is mainly caused by Covid which disrupted the demand and production activities of the companies. the market is expected to reach 158.20bn$ in 2025 at a CAGR of 8%. The global share market for the injectable market is expected to grow at CAGR of 5% until 2025 to have a value of 4.3bn$ in 2025. Taking into consideration the two main segments of this market we can say that the segment will grow at a CAGR of 7% until 2025 and remain that way until the end of the forecasting period. The global anti-bacterial market is expected to have a value of 44bn$ in 2027 with β-lactam dominating the sector with a share of 59% in 2019. The general pipeline of antibiotic drugs has been decreasing with time until 2020, Pfizer had 6 new products in its pipeline for the hospital sector, from which one drug uses β-lactam for its treatment. Pipeline analysis of antibiotics showed that 41 new antibiotics are being developed. About 60% of drugs in phase 3 will be approved, and 25% of drugs under development represent a novel drug or mechanism of action. Pfizer's aztreonam-avibactam is a new molecular entity being developed that uses β-lactam for treatment of infections caused by Gram-negative. Since it is a new molecule, it has potential to grant Pfizer a patent in the future, which can boost the sector's revenue in the future. Pfizer will have a slightly higher growth, growing at a rate of 9% in this sector since competitors trying to develop new products are relatively smaller companies than Pfizer. So, Pfizer can take advantage of its expertise in the area of drug development.

Rare Diseases

Exhibit 46. Worldwide Rare diseases revenue (2020-30) bn$



Source: Statista | Own Computation

The number of people that are facing problems with rare diseases attained a value of 350 million in 2016. As the world population has increased by 7% from 2016 to 2020, we expect that the number of patients treated by rare diseases also increased by 7%, to have a value of 374.5 million in 2020. The global orphan drug sales attained 160bn$ in 2020 from a value of 66bn$ in 2012, representing a CAGR of 9.66%. the market share of rare diseases is expected to increase when compared to other global cell and gene therapy, accounting to 35% in 2025 after being 30% in 2019. Furthermore, global rare disease market is expected to increase as well, from 160bn$ in 2020 to 547.5bn$ in 2030 representing a CAGR of 13.1%.

Pfizer had revenues from orphan drugs of 4.5bn$ in 2018 and is expected to have revenues of 9bn$for the same sector in 2024, representing a CAGR of 14%. Pfizer's market share for this sector is 5.1% in 2020 and is expected to grow in the coming years. The increase will be mainly driven by the new product pipeline that Pfizer is developing in this sector. Pfizer has one drug

that is being registered and six other drugs in phase 3.

The development and discovery of Somatrogon, responsible for the treatment of growth deficiency, gives a lot of positive potential for Pfizer. Firstly, Somatrogon has proven to be more effective and has less treatment burden than Genotropin, Pfizer's old drug in treatment of GHD, which saw a decline in sales in recent years. Secondly, it is not until recently that the FDA approved the use of a one per week dose for the treatment of GHD. Pfizer would be the second company after Ascendis Pharma given permission to do that. This presents positive news for Pfizer, so we expect an increase in market share to attain a value of 6.3%. Pfizer's Vyndaqel is expected to have revenues of 3.6bn$ in 2024, ranking in number 8 among the top 10 rare disease drugs worldwide. Vyndaqel sales growth alongside development of other rare disease drugs are expected to increase Pfizer's revenue in this sector.

Margins and costs

The pharmaceutical sector presents a very high gross margin with an average of 83.02% calculated among the 11 biggest players in the industry. Pfizer's gross margin is just below the average considering its competitors with a gross margin of 82.74% and an operating margin of 23.93% coming shorter than the average of the sector, which was calculated by taking out outliers. However, Pfizer was successful in keeping its gross margin constantly high in the last several years. Pfizer was also successful to increase its operating margin compared to the last two years. This is a positive sign for the company because last two years presented a lot of uncertainty and disruption in activities caused by the pandemic outbreak for all businesses. Although Pfizer was investing a lot in research and development to produce the covid-19 vaccine, it was successful to keep the margins high. This will help Pfizer to pay its debt obligation and to retain or invest some of this capital.

Exhibit 47. ROA and ROE peer analysis 2020

Companies	ROA	ROE
Pfizer	**6%**	**15%**
Astrazeneca	5%	20%
GSK	9%	10%
Merck	8%	28%
Roche	17%	36%
Johnson and Johnson	8%	23%
Novartis	6%	14%
Eli Lilly	13%	110%
Abbvie	3%	35%
Moderna	-10%	-29%
Amgen	12%	77%

Source: Orbis | Own Computation

Return on Equity and Asset show how efficiently the company is using its resources in generating profits. We can clearly see that Pfizer does not have any advantage on its comparable regarding the return on equity. Looking at Pfizer's equity return for the last several years, we see that the latter was alternating from one year to another for the last 4 fiscal years. This could mean either the company is investing in profitable projects or that the company is over leveraged, which is not the case for Pfizer. Since ROE was alternating it shows that Pfizer was investing some of its equities that are turning into profits.

Exhibit 48. Gross and Operating peer margins 2020

Companies	Gross Margin	Operating Margin
Pfizer	**83%**	**24%**
Astrazeneca	92%	15%
GSK	n/a	23%
Merck	79%	18%
Roche	82%	31%
Johnson and Johnson	75%	26%
Novartis	83%	20%
Eli Lilly	83%	25%
Abbvie	81%	26%
Moderna	n/a	-95%
Amgen	90%	36%

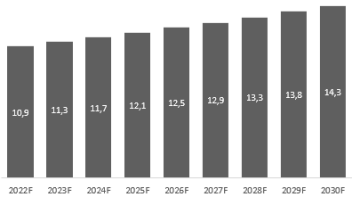
Source: Orbis | Own Computation

Pfizer cost structure is divided into several components. Cost of goods sold, research and development expenses, other operating items, and SG&A that are usual operating costs. The first three costs mentioned are directly related with the products that Pfizer sell. The cost of goods sold which include the direct cost of producing the goods such as the materials and labor used to produce the product. Other operating costs can include outsourcing costs, cost of raw materials and supplies, maintenance, and repair work, etc. Research and development, which is crucial for the pharmaceutical industry, are the costs associated with developing new molecules or enhancing already existing drugs in the portfolio of the company

SG&A account for expenses not directly attributed to Pfizer sales, it includes expenses such as salaries and employee benefits, advertising costs, sale commissions, regulatory fees, and customer support. Since it is not possible to breakdown SG&A, the expenses were forecasted

using the number of employees, which was derived by total revenue. The result suggested that SG&A will grow an average of 2% per year, which leads to an operating margin 24%.

Exhibit 49. R&D Forecasted Period (bn$)



Research and Development expenses for Pfizer have been almost constant from 2015 to 2019. The biggest increase during these years was from 2015 to 2016, with a small increase of 2.37%. However, the story for R&D has changed for Pfizer from 2019 to 2020, which saw an increase of 14.86%. in the third quarter of 2021, R&D expenses had a value of 7920mn$ compared to the 6050mn$ it had in the same period of 2020, an increase of 31%. The increase can be mainly contributed to the pandemic outbreak and the initiative that Pfizer took for developing the vaccine and pills against Covid-19.

Because Pfizer is facing many patents expiration in the coming decade and with the increase in the competition for winning the technological pharma race, we believe that the research and development costs for Pfizer will highly increase. But the increase will be offset by lower spending due to the finalization of the covid-19 vaccine and pill. So, we expect that growth in the R&D will significantly increase in the forecasted period. This increase is expected to lead in lower profit margins not only for the company but for the sector too.

Since Pfizer isn't expecting any significant investment in Capital Expenditure in the near future, our forecast suggests that the Capex is expected to increase at a slow rate until 2023 where the capital expenditure is predicted to be 3.2bn$ (from 2.3bn$ in 2020). When forecasting the PPE and Intangibles we assumed it would grow in correlation with revenues.

Pfizer owns and leases spaces around the world for its various sectors, and believes that its properties are well maintained, suitable for Pfizer's current necessities and foreseeable future. In 2020, the company had 363 properties leased and owned, a total of 43M square feet which was a reduction from 2019 when Pfizer had 453 properties and 47M square feet. This was caused mainly due to the spin-off Upjohn Business combination with Mylan for the creation of Viatris.

Annex: Group Report

NOVA SCHOOL OF BUSINESS & ECONOMICS

MASTER IN FINANCE

Pfizer Inc.

PHARMACEUTICAL

Student: Pedro Corrêa de Sampaio & Joseph Khazzaka

Company Report

17/12/2021

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Pfizer makes the best of a bad situation

How Pfizer capitalized on the COVID-19 pandemic

Our analysis points to a BUY recommendation. We value Pfizer at $69.28, translating in a 25% increase from its current price. We expect Pfizer to show strong results in the pharmaceutical industry.

Covid-19 being Pfizer's main growth driver

Covid-19 related products (Vaccine and pills) are expected to be the main drivers of Pfizer's growth, with sales of 36bn$ in 2021 and 53bn$ in the following year, representing 52% of total sales by 2022. With the pill expecting to offset any losses coming from the reduction in covid-19 vaccine demand.

Current pipeline to offset expected losses due to patent expiration

Our forecast leads to the conclusion that Pfizer's current pipeline would offset losses starting in 2026 due to patent expiration. However, it is expected that Pfizer will increase it M&A activity and collaborations with other Pharma companies due to the inflow of cash coming from Covid-19 sales.

Valuation

We used a DCF model (WACC of 6.13% and growth of 2.5%) in order to achieve our target price of $69.28, with expected return of 25%.

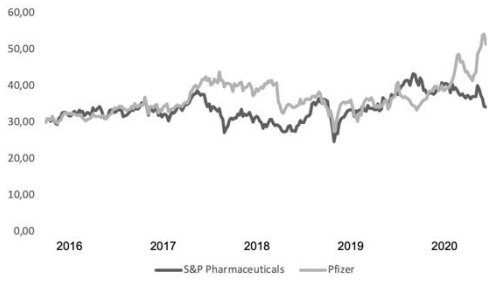
Company description

Pfizer is a U.S. based pharmaceutical company which research, develops and sells pharmaceutical products. In 2020 revenues accounted for 41.9bn$. its main business units are Oncology, Internal Medicine, Hospital, Vaccination (without Covid-19), Inflammation & Immunology and Rare Diseases by order of total revenue market share.

Recommendation:	**BUY**
Price Target FY21:	**$ 69.28**
Price (as of 15-Dec-21):	**$ 55.54**

Yahoo Finance: PFE

52 week range ($)	33.36 – 55.54
Market Cap (bn$)	330.04
Outstanding Shares (B)	5.61



(bn$ except EPS)	2020	2021E	2022F
Revenues	41,9	82,1	102,0
EBITDA	13,5	31,1	41,7
EBITDA Margin	32,3%	37,8%	40,9%
EBIT	8,8	29,4	40,0
Net Profit	9,6	22,3	31,4
EPS	1,7	4,0	5,6

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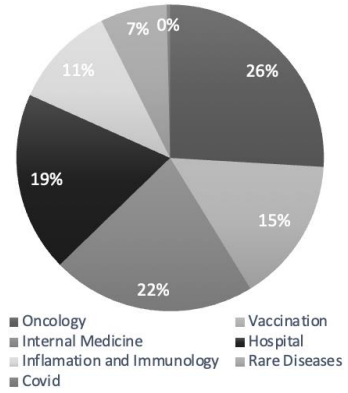
Company Overview

Exhibit 1. Revenue breakdown by segment (2020)



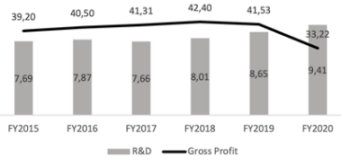
Source: Pfizer Financials | Own Computations

Pfizer was established in 1849 in New York, where it was the first to start the production of antibiotics. It is an American multinational pharmaceutical and biotechnology company corporation. More than 150 years later, Pfizer is the biggest player in the pharmaceutical industry, with a leading market share throughout the years. It engages in the development, manufacture, marketing, sales, and distribution of its products.

Pfizer's pharmaceutical business units are divided into seven different segments: Oncology, Inflammation and Immunology, Hospital, Vaccine, Internal Medicine, Rare Diseases, and Covid. The latter segment has appeared recently in the activities of the company after the pandemic outbreak that the world has seen in 2019. Not all pharmaceutical companies are engaged in developing the Covid vaccine, which gives Pfizer a competitive edge for the coming years and boosted company's revenue.

In 2020 the company reported revenues of 41.91bn$, with 52% of this value coming from the US alone, an increase of approximately 2% in revenues from last year. Outside the US the two largest national markets for Pfizer are China and Japan, which contributed 6% and 5% respectively of Pfizer's revenues. Oncology, Internal Medicine, and Hospital are the main segments contributing to Pfizer's revenue in 2020 with a revenue share of 26%, 21% and 19% respectively. The company's net income is increasing throughout the years. It increased by 5.88% from 2019 to 2020. As such, we expect Pfizer's net income to be 24.8bn$ in 2021.

Exhibit 2. R&D and Gross Profit (bn$)



Source: Pfizer Financials | Own Computations

Operational Business

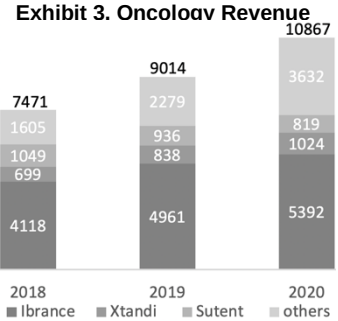
Business Units

Oncology

Cancer is one of the most complicated diseases known to mankind, with more than 100 types and a constantly changing biology. It is the number one cause leading to deaths worldwide. Pfizer's goal is to bring innovative treatment by highly investing in a robust pipeline of products. With 31 products being developed and 9 products attaining the final clinical trial, oncology's pipeline constitutes the largest portfolio of the company.

On the operational level, the segment reported a total revenue of 10.87bn$ and 9.01bn$ for the years of 2020 and 2019 respectively. The revenue for this sector in 2020 and 2019 represents 25.9% and 21.9% of Pfizer's total revenue, which makes it a main contributor sector of the total sales for the company. Pfizer's oncology sector revenue is generated from more than 13 components mainly led by 5 of them. Namely, Ibrance, Xtandi, Sutent, Inlyta, and Xalorki representing 80% of the revenue for this sector in 2020. The sector's revenue increased by 45% from 7,47bn$ in 2018 to 10,87bn$ in 2020 for a CAGR of approximately 18%. Pfizer's market share for this industry represented a value of 6.7% in 2020.

Exhibit 3. Oncology Revenue



Source: Pfizer Financials | Own Computations

The main driver for Pfizer's oncology revenue is Ibrance, which is used for the treatment of breast cancer, that accumulates a revenue of 5.4bn$ in 2020, accounting for 50% of this segment's revenue for the last three years with its patent expiring in March 2027. Even though the drug sales have been increasing and the patent isn't expiring soon, Ibrance is expected to grow at a slower rate since researchers have proved that the drug could not lengthen the time patients could live without invasive disease returning[7]. Morover, certain studies indicate that Ibrance is an inferior drug to Eli Lilly's rival CDK inhibitor Verzenio, which had sales of 912mn$ and 579.7mn$ in 2020 and 2019 respectively, an increase of 57%. However, Ibrance still represents a strong market share of 80% for the CDK (cyclin dependent kinases) market. But we expect this number to significantly decrease after patent expiry in 2027 to attain a value of 40% for the CDK market. Celegne's drug Revlimid presents the highest market share for oncology products with a market share of 8% but is expected to lose ground in 2024 due to the drug losing exclusivity reducing its market share to 5%. Ibrance is in the 4th position in regards of drugs market share, and increased sales by 9%, outside the U.S., in the third quarter of 2021.

Growth was also driven by Xtandi gaining market share and increasing 22% in sales compared with 2019. Sales also increased by 18.6% in the first nine months of 2021 compared to 2020. This increase can be explained by the FDA approval of Xtandi in non metastatic and metastatic prostate cancer[8] as well as due to an increase in prostate cancer patients worldwide, which led to 1bn$ sales in 2020. The drug's patent expires in 2027, thus, we expect an increase in sales of around 10% per year. Another factor contributing to the growth of the segment is Inlyta's sales that grew 65% from 2019 to 2020 as a consequence of the improvement in the treatment of metastatic renal cell carcinoma by introduction of immune checkpoint inhibitors (ICI). Inlyta's sales increased by 33% from 2020 (until Q3) to 2021 (until Q3). Patents on this drug will not expire until 2030, so high revenue growth is still expected for this product during our forecasting period. Due to extensive drugs' portfolio of Pfizer's oncology and patents on the main drugs of this sector, we expect a growth of 0.3% until 2027, and a moderate decrease afterwards.

Exhibit 4. Oncology Drugs Patent Expiry Year

Drug	U.S.	Europe	Japan
Ibrance	2027	2028	2028
Xtandi	2027	Royalties	Royalties
Sutent	2021	2022	2024
Inlyta	2025	2025	2025
Xalorki	2029	2027	2028

Source: Pfizer Annual Report

Covid

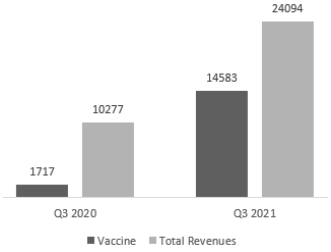
Cominarty is an mRNA-based coronavirus vaccine that gives immunity against COVID-19 and is being jointly developed and commercialized with BioNTech, an agreement that took place on April 2020. Pfizer and BioNTech share the costs of development for the vaccine, as well as the profits. The vaccine has been approved in more than 50 countries in 2020 and it is subject for approval or market authorization from market to market.

The Covid-19 Vaccine has participated in revenues of 24.3bn$ in the first nine months of 2021. Total sales increased by 91%, or 27bn$ in absolute terms that can be mostly attributed to the sales of Covid-19 vaccine, from the same period last year. The Vaccine was responsible for

[7] Angus Liu (2021). 13. Ibrance. Fierce Pharma
[8] Fraiser Kansteiner (2021). 18. Xtandi. Fierce Pharma

Source: Pfizer Financials | Own Computations

Exhibit 5. Vaccine - Total Revenue (mn$)



more than 54% of the company's sales in the third quarter of 2021. Vaccine's revenues rose to 14.6bn$ from 1.7bn$ last year in the third quarter alone, and Covid vaccine accounted for 13bn$ of this revenue. Pfizer expects revenues of 36bn$ in 2021 for the Covid-19 vaccine based on contracts the company signed under agreement in February 2021 and do not include all the potential doses that Pfizer could sell in the future.

Covid has caused a decline in the spending in general and selling administrative expenses. However, the research and development department saw an increase in expenses of 1bn$ due to the development of Covid 19 vaccine in collaboration with BioNTech and other investments toward new capabilities and driving automation.

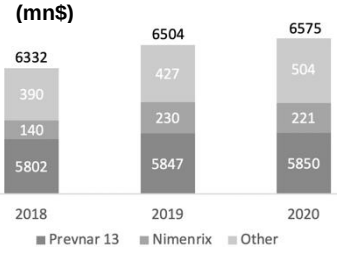
In addition, Pfizer's weekly market share of COVID-19 vaccines administered continues to increase. In the U.S., the 4-week average market share increased from about 56% in April to 74% as of October 31. In the EU, it went from 70% to 80% during the same time period. These market share increases are a consequence of the vaccine being the first to receive emergency use authorization and the 2-dose series being preferred by many countries around the world for use in certain younger populations.

Vaccination (Without Covid-19)

Pfizer has a long history in the vaccine industry. They have irradicated various diseases that at some points were considered to be fatal, such as smallpox and polio, more recently Pfizer has invested a lot in R&D and have developed novel vaccines with new delivery systems and technology that created the ability to prevent several bacterial infections. In 2020 around 86M people were immunized by Pfizer's vaccines.

Most recently they have created a vaccine which immunizes people from Covid-19 and had a huge impact in the recovery from this pandemic. These vaccines were distributed worldwide which resulted in huge revenues for the company. However, in this segment we focus on vaccination without Covid-19 as the pandemic is expected to end in a near future and Covid vaccination will decrease substantially in the upcoming years.

Exhibit 6. Vaccination (non-Covid-19) Revenue Breakdown (mn$)



Source: Pfizer Financials | Own Computations

In the last 4 years, excluding Covid, Pfizer's vaccination revenue has been steadily increasing. In 2017 Pfizer's market share in the vaccine industry was 21.7%, this value has decreased in 2020 to 18.5% (Pfizer's vaccination revenue / Sector's Revenue).

Pfizer's main vaccines are pneumococcal vaccine Prevnar/Prevenar 13 & 20, which were their highest selling products in 2020 with 5.85bn$ in sales, Prevnar 20 is currently the only vaccine that the FDA has approved[9] not only for invasive pneumococcal disease but also for pneumonia. A 2% decline in U.S. revenue can be explained by a 36% decline in Prevnar 13 adult indication.

The pandemic has also affected the business of Pfizer since there were less people willing to relocate and leave their homes, which highly affected the medical visits. Furthermore, some

[9] Brandon May (2021). FDA approves 20-Valent Pneumococcal Vaccine (Prevnar). Medscape

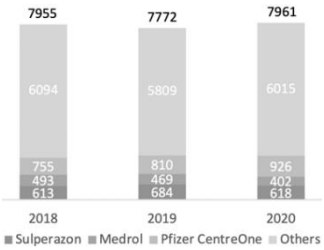
vaccines like the Prevnar 13 were not advised to be taken at the same time with Covid 19 vaccine, which caused a decrease in the use of the Prevnar 13 vaccine

Pfizer has started Phase 3 of the clinical trial in adults for its investigational vaccine against Respiratory Syncytial Virus (RSV), given that there is no vaccine currently available to treat this respiratory illness if Pfizer is able to approve this vaccine it will further increase their market share in this sector and boost their vaccination revenues in the upcoming years

Hospital

Pfizer's Hospital Business Unit includes a global portfolio of sterile injectable and anti-infective medicines combatting infections. With a great commitment to R&D, Pfizer presents one of the most diversified portfolios of anti-infectives worldwide with more than 80 medicines available. And it has 6 more drugs in its pipeline that are being developed. Four of the drugs are in phase 3 and the rest in phase 1. On the operational level this segment has seen a YOY growth of 3% in total revenues, the increase in demand resulted from certain sterile injectable products used in the intubation and ongoing treatment of mechanically ventilated Covid-19 patients.

Exhibit 7. Hospital Revenue Breakdown Hospital Revenue Breakdown (mn$)



Source: Pfizer Financials | Own Computations

The sector presented revenues of 7.78bn$ and 7.96bn$ for years 2019 and 2020, which represented 18.9% and 19.0% of Pfizer's total revenue respectively. This sector is the third most important in terms of sales for Pfizer's operations. The key product contributing to the sales from this sector is Sulperazon with sales of 684m$ and 618m$ for 2019 and 2020 respectively, presenting a share of 9% for Hospital's revenue in 2019 and 8% in 2020. This was mainly driven by the continued growth of anti-infective products in China. Growth was also driven by the increase in demand for Panzyga, which saw an increase of 47% in YOY sales from 2019 to 2020. The main reason for this increase is that Panzynga is the only intravenous immunoglobulin with two FDA-approved[10] for the treatment of chronic inflammatory demyelinating polyneuropathy. Zavicefta was another player in the growth in sales for this sector with a YOY sales increase of 96%, mainly because of the launch of this product in international and emerging markets.

Internal Medicine

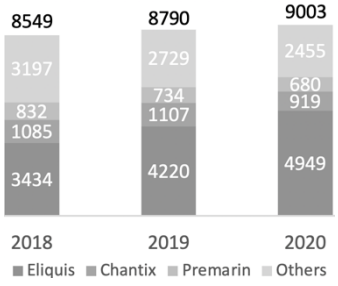
Cardiovascular diseases (CVD) are the leading cause of mortality around the world, it accounts for one in every two adult deaths. There are more cases of CVD every year, including heart-failure, peripheral arterial disease and nephropathy given that as more patients are able to survive hearts attacks. The population ages and as is known the older population are more susceptible to cardiovascular diseases. Additionally, Metabolic Diseases, as Type 2 diabetes (T2D) and obesity, are also major health problems that have reached massive proportions around the world.

[10] Eammon Nolan (2021). U.S. FDA approves PANZYGA for the treatment of adults with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP). businesswire

In the last two decades, obesity and T2D incidents have more than doubled.

Pfizer aims at developing novel and innovative medicines in order to improve the lives of patients suffering from CVD. Pfizer's expected highest selling medicine (excluding Covid vaccine) in 2021 is Eliquis that has already made more revenue for Pfizer in the first 3Q of 2021 than in FY 2020. This is an anticoagulant medication which is used to both treat and prevent blood clots and to prevent strokes in people with nonvalvular atrial fibrillation. This medicine accounts for more than 50% of the Pfizer's revenue in the Internal Medicine business unit and its patent has been extended from February 2023 to November 2026. This medicine is considered to be one of the biggest selling medicines in the world. According to Evaluate Pharma's 2020 Preview report published in December, Eliquis ranks as the No.4 biggest new sales generator, with a projected sales increase of 1.08bn$ in 2020[11]. Its expansion in the emerging markets has been one of the reasons for its recent increase from 2020 to 2021 (until Q3) where revenues increased already over 50%, Eliquis has continued to deliver strong performance with global revenues up 19% to 1.3bn$ in the third quarter. In the U.S., sales growth for Eliquis was driven mainly by a 16% growth in prescription volume.

Exhibit 8. Internal Medicine Revenue Breakdown (mn$)

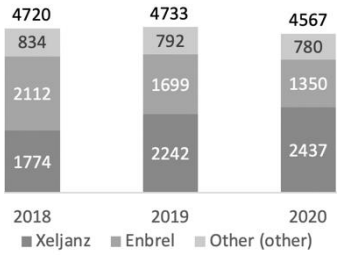


Source: Pfizer Financials | Own Computations

Inflammation & Immunology (I&I)

In the Inflammation & Immunology department, Pfizer focusses in R&D in order to find the next generation of therapies for immune- mediated diseases. One of the ways of achieving that is by forming strategic partnerships with remarkable collaborators. Pfizer's bestselling medicines in this business units are Xeljanz, Enbrel and Inflectra/Remsima which accounted for 97% of Pfizer's revenue in this sector in 2021 (until Q3).

Exhibit 9. Inflammation & Immunology Revenue Breakdown (mn$)



Source: Pfizer Financials | Own Computations

The monoclonal antibody held a global immunology market share of approximately 65% in 2020 and expected to dominate in the coming years due to the approvals by governmental bodies. Regionally, North America accounts for 47bn$ in sales in 2020 and is likely to dominate this market for the coming years. In Europe the market is expected to grow due to the increase of prevalence of chronic diseases.

Xeljanz is a JAK inhibitor drug which is Pfizer's 4th highest selling drug in 2021 (Until Q3), the current leader in sales in this sub-market with revenues of 2.4bn$ and with its patent expiring in 2025. Its main competitors in this sub-market are Jakafi (Incyte Corporation and Novartis joint venture) having 1.9bn$ in revenue with their patent expiring in 2028 and Olumiant (Eli Lilly and Incyte Corporation joint venture) having 639mn$ in revenue with their patent expiring in 2030.

Enbrel is an extremally successful drug in this sector with its patent expiring in 2028/29, created from a collaboration between Pfizer and Amgen[12] (Pfizer has the rights to sell in Europe), in 2020

[11] Evaluate Pharma. (2020). Eliquis patent win adds a few billion to Bristol and Pfizer. https://www.evaluate.com/vantage/articles/news/snippets/eliquis-patent-win-adds-few-billion-bristol-and-pfizer

[12] PharmaShots. (2021). Top 20 Immunology Segment Revenue. https://pharmashots.com/63340/top-20-immunology-companies-based-on-2020-immunology-segment-revenue

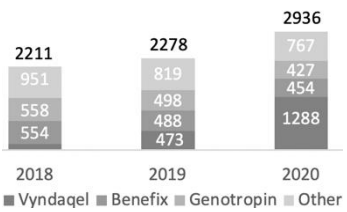
its sales surpassed the 5bn$ mark (Pfizer netting 1.4bn$ in sales). However, Enbrel faces extremely tough competition from AbbVie's Humira with revenues close to 20bn$ in the last two years and with its patent expiring in 2034 it looks like Humira will dominate this sub-market for the foreseeable future.

Immunology is Pfizer's second to last business unit in terms of revenue, representing about 10% of Pfizer's revenue in 2020. Consequently, Pfizer isn't considered one of the leading pharma companies in this sector with only 4.57bn$ in revenue in 2020 compared with the top 3 leaders Roche, Johnson & Johnson and Abbvie with sales of 9.3bn$, 15bn$ and 22.2bn$ respectively. As of 2020, Pfizer holds a 5.33% market share whereas the top 3 companies account for over 50% of this segment's market share.

Rare Diseases

Rare Disease is the area that includes dealing with rare cardiologic diseases, inborn errors of metabolism, rare neurologic, and gene therapy. It includes innovative brands for a number of therapeutic areas with rare diseases, including amyloidosis, hemophilia and endocrine diseases. In 2020, this segment represented 7.0% of Pfizer's total revenue.

Exhibit 10. Rare Disease Revenue Breakdown (mn$)



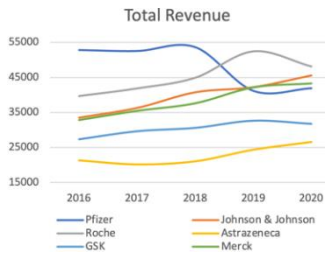
Source: Pfizer Financials | Own Computations

The increase in revenues from rare disease is mainly due to the launch of Vyndaqel and Vyndamax in 2019 for the treatment of ATTR-CM in the United States. The product has seen an increase of approximately 900% in sales for a 2-year period, increasing from 148mn$ to 1.29bn$ in 2020 for a CAGR of approximately 200%. The sales increase of Vyndaqel and Vyndamax is mostly explained by their entrance in the U.S. market due to its FDA approval in 2019, although it was already approved in Europe since 2011. After the FDA approval, the sales of the drug increased significantly and is expected to have sales of 3.5 bn$ in 2025. One of the leading drugs in this sector is AbbVie's Imbruvica, which had revenues of 4.3bn$ in 2020 and 3.83bn$ in 2019, a 12.27% growth YOY sales. Even though Vyndaqel represented a higher growth, Imbruvica has strong revenues and is expected to stay the leader in this sector with its revenues forecasted to achieve 10bn$ in 2024. The strong presence of this drug is mainly due to the green light given by the FDA in 2018 showing that the drug could reduce the risk of death by 77%, sales grew 29% from 2018 to 2019.

Moreover, the continued uptake for the transthyretin amyloid polyneuropathy primarily in developed Europe also has driven growth in the rare disease segment. This sector saw a YOY sales growth of 29%. However, other products in the sector have seen a declining market share primarily due to competitive pressure and unfavorable channel mix in the United States. Refacto AF, for instance has seen a decrease in sales from 426mn$ in 2019 to 370mn$ in 2020 representing a decrease of 13.15% in YOY sales. The decrease was mainly driven by increased competition, which resulted in the decline in the price of the drug. The price of the drug has

decreased by approximately the same amount of the YOY sales. So, the decrease in revenues of the product is mainly driven by the decrease in prices.

Exhibit 11. Global Pharmaceutical – Revenue (mn$)



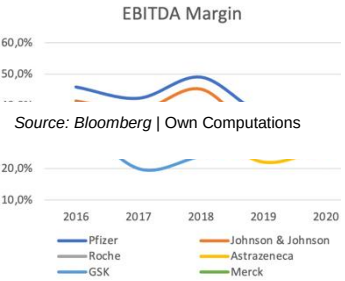
Source: Bloomberg | Own Computations

Pharmaceutical Overview

The Pharma industry takes into account the development, production and marketing of medications as a whole. Between 2015 and 2020, the revenue of the worldwide pharmaceutical market recorded a CAGR of 2.8%, with all annual revenues above the 1tn$. In 2021, worldwide sales are expected to increase to around 1.3tn$, with the United States representing around 48% of these sales. In 2020, the total nominal spending on medicines in the U.S. was 539bn$, which increased from 380bn$ in 2014.

The national pharmaceutical markets that have grown the most in the last 4 years were the Brazilian and German markets which grew 12.1% and 6.7% respectively in 2020.

Exhibit 12. Global Pharmaceutical – EBITDA Margin



Source: Bloomberg | Own Computations

AstraZeneca

AstraZeneca is a British-Swedish pharmaceutical and biotech company based in England with its headquarters in Cambridge. The company was founded in 1999 through the merger of the Swedish Astra AB and the British Zeneca Group.

It has a vast portfolio of products for diseases in areas such as cardiovascular, oncology, neuroscience, infection, gastrointestinal, inflammation and respiratory. Its latest achievement was the development of the Oxford-AstraZeneca COVID-19 vaccine.

AstraZeneca achieved its highest level of revenue in 2011 (33.59bn$) and steadily started to decrease until 2017, however they began to slowly increase since then, in 2020 they achieved a total revenue of 26.6bn$ and they are expected to become the leading pharma company in sales increase in 2021. Their expenditure in R&D in the last 5 years barely changed with an average spending of 5.94bn$ (2015-2020) which is significantly lower than Pfizer's R&D expense in the same period (8.21bn$) which can be explained by a higher number of drugs being developed in Pfizer's pipeline. Its main source of revenue is the Oncology Department, which accounted for 10.85bn$ in revenue (40.8% of their total revenue). The regions where they had most success in 2020 are the United States (8.6bn$ in sales) and Emerging Markets (8.7bn$ in sales) whereas Pfizer had a similar return on sales in the Emerging Markets (8.4bn$ in sales) but a much higher revenue in the United States (21.7bn$) which represents around 50% of their revenue worldwide.

Just like Pfizer, AstraZeneca also developed a Covid-19 vaccine with 2021 sales forecast of 33.5bn$ which is similar to the expected Pfizer's revenue from the Covid-19 vaccine for 2021

Exhibit 13. AstraZeneca – Financial Information (mn$)

	2019	2020
Sales	24 384	26 617
EBITDA	6 689	8 311
EBITDA Margin	27,4%	31,2%
Net Income	1 335	3 196
Net Income Margin	5,5%	12,0%
Current Ratio	0,86	0,96
RORC	3,3x	3,5x
ROE	9,2%	20,4%
ROA	2,2%	4,8%

Source: Bloomberg | Own Computations

Exhibit 14. AstraZeneca's R&D and Gross Profit (bn$)

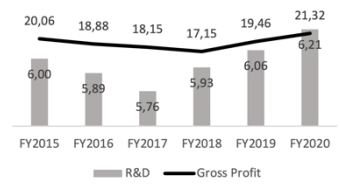


Exhibit 15. GlaxoSmithKline – Financial Information (mn$)

	2019	2020
Sales	8 820	9 567
EBITDA	4 024	3 966
EBITDA Margin	45,6%	41,5%
Net Income	2 237	2 183
Net Income Margin	25,4%	22,8%
Current Ratio	8,87	8,01
RORC	5,6x	4,9x
ROE	10,0%	11,3%
ROA	10,1%	8,7%

Source: Bloomberg | Own Computations

Exhibit 16. GlaxoSmithKline's R&D and Gross Profit (bn$)

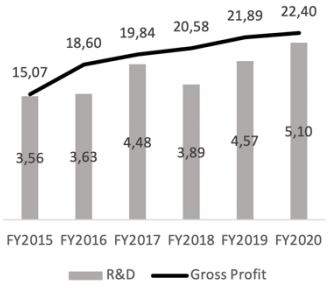
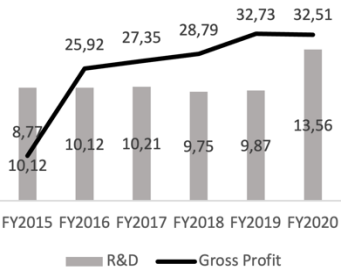


Exhibit 17. Merck – Financial Information (mn$)

	2019	2020
Sales	46 840	47 994
EBITDA	16 887	14 013
EBITDA Margin	36,1%	29,2%
Net Income	9 843	7 067
Net Income Margin	21,0%	14,7%
Current Ratio	1,24	1,02
RORC	3,4x	3,3x
ROE	38,0%	27,9%
ROA	11,7%	7,7%

Source: Bloomberg | Own Computations

Exhibit 18. Merck's R&D and Gross Profit (bn$)



GSK

GSK is a British pharmaceutical company based in London, England. The company was founded in 2000 with the merger of two large pharmaceutical groups, Glaxo Wellcome and SmithKline Beecham. According to Forbes, in 2019, GSK was considered the 6th largest pharmaceutical company in the world with Pfizer, Novartis, Roche, Sanofi, and Merck & Co. completing the top five.

2019 joint venture with Pfizer brought together two complementary brand portfolios, making GSK number one globally, in terms of market share, in over-the-counter (OTC) medicines, therapeutic oral health, and vitamins, minerals and supplements.

GSK had a total turnover of 34bn£ in 2020 including customer healthcare. As for prescription sales they had a total revenue of 30.59bn$ and 5.91bn$ in R&D expenditure which is lower than the R&D spending of Pfizer (8.88bn$).

Their revenue by region is 42.7% United States, 2.9% United Kingdom and 54.4% Rest of World.

Merck

Merck & Co. is an American pharmaceutical company based in New Jersey. Its name was originated from the Merck family which created the Merck Group in 1669 in Germany. In 1891, Merck & Co. was established as an American affiliate. Merck's main business segments are the development and production of medicines, vaccination, biologic therapy and animal health products.

As of 2019 Merck was the 4th pharma company with highest revenue worldwide (46.84bn$) and was the 2nd leading pharmaceutical company by global vaccine revenue. They have a total of 74000 employees and its capital expenditure has been rapidly increasing since 2015 (1.28bn$) until 2020 (4.68bn$). Their main business unit in terms of revenue share is the Oncology sector which accounts for 33% of their total revenue for 2020 (total revenue- 48bn$; oncology- 15.8bn$), the 2nd biggest business unit is vaccines with revenue of 7.87bn$. Most of Merck's revenue comes from the United States- 44% and EMEA- 28%, which are the same regions Pfizer gains more revenue from (US- 50%)

It has multiple blockbuster drugs or products each with 2020 revenues including cancer immunotherapy, anti-diabetic medication and vaccines against HPV and chickenpox.

Roche

Roche holding, or legally Hoffman-La Roche, is a Swiss health-care company founded in 1896, and one of the world's leading companies in the sector. Since 2004, the company has had two parallel sections, the pharmaceutical sector and the diagnostic sector. The company is commercially present in 150 countries and has approximately 101000 employees to date. The company has an average of 3.5% (2016-2020) market share from the whole pharmaceutical industry. Roche has always been a leader when it comes to the Oncology sector, the most significant sector for Pfizer's business units, with a market share of 24% in 2018. However, Roche's market share is expected to decrease in this segment because Herceptin and Avastin, which accounted for almost one third of the company's revenues, lost their market exclusivity in 2019 which resulted in a decrease of 5.4bn$ in revenues for 2020.

Roche recorded revenues of 62.97bn$ in 2020 a decrease of about 5.10% from 2019, which presented revenues of 66.36bn$. This could be mainly due to the competition of biosimilars and patent expiration. Although sales have decreased compared to last year, the company still presented better net income with a value of 16.27bn$ in 2020 a YOY increase of 6.83% from 15.23bn$ in 2019. The pharmaceutical division, which is the only front where they compete with Pfizer, accounted for 76% of Roche's total revenue with sales of 48.03bn$, 20% more than Pfizer. The diagnostic sector presented revenues of 14.89bn$, accounting for 24% of Roche's Revenues. The company saw an increase of 14% of its sales in the US while its market decreased by 7% in the EU. Research and development spending reached 13.01bn$ in 2020 and its R&D spending has been increasing with a CAGR of 5.08% since 2011, which shows that the company is aiming in developing new products. Roche is one of the leaders in terms of R&D, which can give it a competitive advantage by increasing its product pipeline and to effectively integrate new technologies for drug discovery.

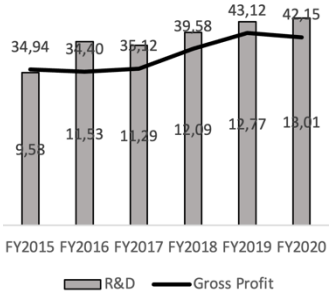
In March 2020, Roche's diagnostic division took an important step with the occurrence of the diagnostic test of the SARS- Cov-2, capable of analyzing between 1400 to 8800 samples in a day. In August 2020, Roche announced they were developing and manufacturing antibodies to fight the covid-19 epidemic in the form of an oral pill.

Source: Bloomberg | Own Computations

Exhibit 19. Roche – Financial Information (mn$)

	2019	2020
Sales	65 845	68 525
EBITDA	24 641	26 973
EBITDA Margin	37,4%	39,4%
Net Income	13 940	16 233
Net Income Margin	21,2%	23,7%
Current Ratio	1,3	1,3
RORC	3,6x	3,3x
ROE	37,6%	35,9%
ROA	16,2%	16,6%

Exhibit 20. Roche's R&D and Gross Profit (bn$)



Johnson and Johnson

Founded in 1886 in New Jersey, started its activity being the first company to produce cotton white, sterile and absorbents for surgery purposes. Now J&J is one of the biggest companies in the healthcare industry engaged in research and development and manufacture of products. It employs more than 130 000 employees worldwide. The company's activities are divided into three main segments: medical devices, pharmaceuticals, and consumer goods. The company is ranked as number 5 in terms of market share for the pharma industry with a share of 4.27%.

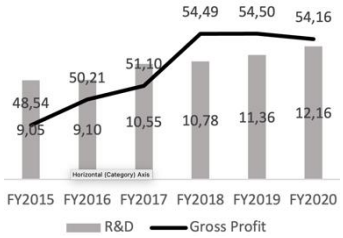
Exhibit 21. Johnson & Johnson – Financial Information (mn$)

	2019	2020
Sales	82 059	82 584
EBITDA	24 720	28 634
EBITDA Margin	30,1%	34,7%
Net Income	15 119	14 714
Net Income Margin	18,4%	17,8%
Current Ratio	1,26	1,21
RORC	5,1x	4,8x
ROE	25,4%	23,5%
ROA	9,6%	8,4%

Source: Bloomberg | Own Computations

Revenues for Johnson and Johnson increased from 82.06bn$ in 2019 to 82.58bn$ in 2020, presenting an increase of 0.6%. However, net earnings decreased by 2.67% from 15.12bn$ in 2019 to 14.71bn$ in 2020. The pharmaceutical sector for the company accounted for the biggest share of the revenues in 2020 of 55.18% (45.57bn$). Medical devices represented 27.8% of revenues in 2020 and consumer healthcare accounted for the remaining 17% of revenues for the same fiscal year.

Exhibit 22. J&J's R&D and Gross Profit (bn$)



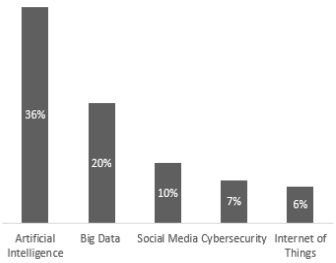
J&J is dealing with copycat versions of prostate cancer after the patent loss for its blockbuster drug Remicade, the drug saw a decrease of 14.4% in sales from 2019 to 2020, attaining 3.74bn$ in sales. Zytiga also faced a similar problem because of patent expiry and sales decreased by 45.7% in 2020. However, these losses were compensated by the increase in sales of the company's biggest drugs, Stelara, which patent will expire in 2023, accounted for 9.3% of J&J total sales with an increase of 21.1% from 2019 to 2020 in sales. The second largest drug Darzalex that accounted for 5% of total sales have a patent that will expire only in 2029 and increased its sales by 39.8% in 2020 for a value of 4.19bn$. The drug is promising for J&J because it is already competing in second line and alter uses in multiple myeloma and can be used in frontline use as well.

J&J performed better than Pfizer in the oncology sector, which corresponds to the best performing sector for Pfizer. However, because of J&J's cancer drugs losing exclusivity, sales from this sector are expected to decrease in the coming years. In 2020, Oncology drug sales accounted for 12.37bn$ for J&J compared to 10.87bn$ for Pfizer. J&J also outperformed Pfizer in the sales of Immunology with a value of 15.01bn$ compared to 4.6bn$ for Pfizer. However, Pfizer was better in generating revenues from its hospital sector with a revenue of 7.96bn$ compared to J&J's 3.57bn$.

Trends

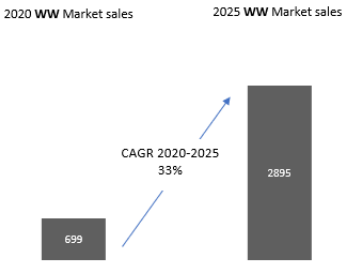
With the huge advancement in technological discoveries, the pharma industry should adapt its activities accordingly. The drug discovery process is a long and complex problem. There are preclinical trials which the drug pass through, where the targeted disease and molecules to attack it are studied. Clinical trials are divided into three phases. Phase 1 examines the drug safety. Phase 2 tests the drug's efficacy on people that have been targeted by the disease. Phase 3 studies the efficacy with a larger amount of people. The average cost for a traditional drug pipeline is 2.6bn$, and a complete traditional pipeline can take up to 12 years[13]. The cost has been greatly increasing since 2001, there is a decrease in the rate of new drugs getting approval with additional billions spent. The rate to get drugs tested on human is barely 12%, and only 10% of molecules entering the trials gain approval, which is a loss for the industry.

Exhibit 23. Top 5 trends affecting the pharma industry (2021)



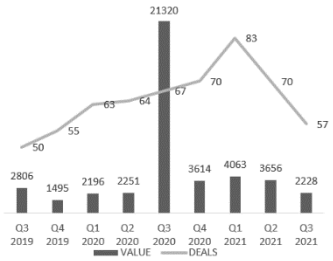
[13] Sulivan (2019). A Tough Road: Cost To Develop One New Drug is $2.6 Billion, Approval Rate For Drugs Entering Clinical Trial is Less than 12%. Policy&Medicine

Exhibit 24. AI in Pharma sector market until 2025 (mn$)



Source: GlobalData | Own Computations

Exhibit 25. Number of deals and values (mn$) 2019-2021



Source: Pharmaceutical Technology | Own Computations

Exhibit 26. AION Collaboration

The amount of data increased from 4.4 zettabytes, where 1 zettabyte =10^12 GB, to 44 zettabytes from 2013 to 2020 and is not appearing to diminish. Because of the capabilities of Artificial Intelligence to recognize patterns and analyze complex algorithms, it could be employed to gain crucial medical information. AI can help in drug discovery by facilitating drug design, chemical synthesis, drug repurposing, and drug screening. AI can assist in predicting 3D structure of targeted protein and predict drug-protein interactions. Evotec has announced a collaboration with Exscientia to develop a new anticancer molecule. Traditionally, it would take between 4-5 years to come up with the drug candidate, however it was found in 8 months using Exscientia's AI design platform. But the time and costs savings from AI are yet still not very known because no drugs have been fully developed using this technology. The global AI in pharma reached a value of 699.3mn$ in 2020, having increased at a CAGR of 31.8% since 2015. The market is expected to grow to 2895mn$ in 2025 at a rate of 32.9%, which is then expected to reach a value of 9143mn$ in 2030. The top opportunities in the AI pharma sector will arise in drug discovery segment, which accounted for 80% of the total in 2020. It is going to be the fastest growing segment in AI pharma at a CAGR of 37.8% during 2020-2025. A global data study showed that AI and big data are the 2 biggest areas that influenced the pharma industry in 2021.

This year pharma incumbents have participated in 9 healthcare AI deals; these pharma deals represent a funding of 800mn$ for AI healthcare startups. And funding for companies working with AI for drug discovery has reached a value of 13.5bn$ between March 2020 and 2021. Many big pharma and technological companies are collaborating with AI startups to accelerate the process. Merck, Pfizer, Astrazaneca, and Teva are collaborating with amazon to fund the Israeli biotech fund that will launch a new incubator for startups drawing the line between artificial intelligence and drug development. The company won a 10mn$ funding by the government to get started. GSK has opened its own research center for AI in London valued at 10mn£. GSK believes that AI could increase the success rate for drug development to 20%, which can save billions of dollars for the industry. Amgen has invested 6mn$ round of funding in GNS healthcare. PathAI has also received investment from Bristol-Myers Squibb to complete a 75mn$ series B funding. BMS leads the pharmaceutical sectors in AI deals with 7 deals from January 2020 to June 2021. Bayer AG and Pfizer followed BMS with 6 and 5 deals respectively. AZN and J&J are the ones recruiting the most for AI jobs, with 676 and 616 monthly new jobs posted. Roche was the most innovative in this area with 17 new patents filed. In a two-year period, pharma sector saw 217 venture financing with a value of 7.5bn$. almost 200 new partnerships arose with a value of 7.5bn$. 28 acquisitions happened with a value of 28bn$ and 73 equity offerings for a value of 8bn$.

Moreover, Pfizer is collaborating with amazon web services (AWS) to create new cloud-based solution that can improve the process of the development, manufacturing, and distribution of medicine in clinical trials. The Pfizer Amazon Collaboration Team (PACT) is trying to exploit AWS capabilities in analytics, machine learning, storage, and cloud data warehousing to Pfizer laboratory and clinical manufacturing. By incorporating predictive maintenance capabilities built

by AWS machine learning services, Pfizer can maximize uptime for equipment. The VP of pharmaceuticals Sciences at Pfizer mentioned that Pfizer's goal to collaborate with AWS to expedite the process of drug discovery and development. Moreover, 10 big pharma competitors came together in July 2020 to form a nonprofit Accumulus synergy, that aims to build a data sharing platform that supports real time exchange of information with regulators. Experts from Janssen and Pfizer believe that this method would accelerate drug development by reducing lag time between regulators and pharma companies, as well as among pharma companies themselves. Because traditionally it takes weeks for regulators to answer pharma companies and vice versa. With this method answers and data can be shared on the platform. Novartis and J&J are the two biggest pharma companies committed to artificial intelligence investments. Novartis is collaborating with Microsoft to improve and accelerate drug discovery and development. And J&J also has its Jlabs, which is a startup incubator to collaborate with young companies that work in drug discovery using AI.

Pfizer Strategic Position

One of the most important aspects of the Pharma industry is the ability generate patents for vaccines and medicines before the inevitable appearance of generic products from other competitors that offer better price ranges. Pfizer has 189 approved drugs and 713 patent family members in 66 countries and 208 supplementary protection certificates in 19 countries and of the 713 patents, 31 are in the U.S.

In 2020 Lyrica's patent ended, however from 2021 to 2026, Pfizer's portfolio is relatively "free" from loss of exclusivity with patents. This 5-year period allows Pfizer to get some pipeline prospects into the market and increase their sales as a way to offset the expect losses when certain patents begin to expire in 2026.

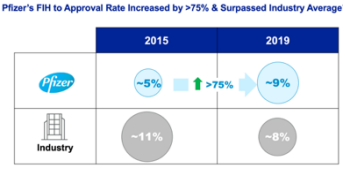
As seen in the picture below, Pfizer has currently 94 different projects in different stages of development

Pfizer Pipeline Snapshot as of November 2, 2021

Pfizer predicts that JAK1 inhibitor abrocitinib (registration phase), antisense therapy vupanorsen (Phase 2) and a 20-valent pneumococcal conjugate vaccine (Recently approved) will be able to generate more than 3bn$ each by 2025. Moreover, Pfizer expects its Duchenne muscular dystrophy gene therapy (Phase 3) to achieve a turnover of around 2bn$ and has identified other products which can generate a lot of revenue in the future.

All these pipeline prospects presented above of still unapproved experimental products are expected to reach around 15bn$ in revenue by 2025. This timing is ideal as internal forecasts

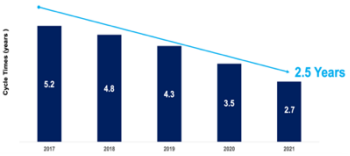
Exhibit 27. Approval Rate % (2015-19)



Source: Investor's Presentation

estimate a loss of revenue, beginning in 2026, due to patent expirations of around 18bn$. Management expects that the current pipeline prospects will at minimum offset the loss in revenue from patents expiration.

Exhibit 28. FHI to Approval Clinical Operational Cycle Times (2017-21)



Source: Investor's Presentation

This prediction of expected revenue gain relays in Pfizer's ability to get these prospect products to market. In 2015, only 5% of Pfizer's drugs which went into the clinic were able to get approval to become marketable, this percentage was well below industry average of 11%. However, by 2019 this figure changed to 9% which is above the industry average of 8%. This increase in approval rate together with the FHI to Approval Clinical Operational Cycle Times expecting to decrease by 2.5 years in 2021 allows Pfizer to be confident that their new pipeline will be successful.

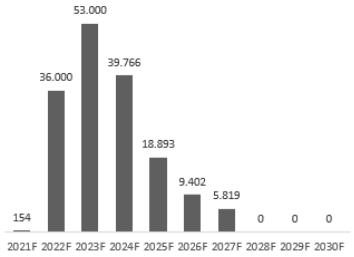
Pfizer will also look to create value in the upcoming years by forming partnerships with other pharma companies as they are going to have a lot of cash available to invest (due to Covid-19 vaccine sales), expected to have around 78bn$ gross cash by mid-2022, which will boost the company's M&A firepower (175bn$ available) and ability to form strategic joint ventures as they did with BMS for the development of the very successful ELIQUIS.

Potential Pipeline				
Name	Phase	Revenue Potential	Prob. Of Approval	Segment
Abrocitinib	Registration	> 3bn$	91%	Inflamation & Immunology
Vupanorsen	Phase 2	> 3bn$	12%	Internal Medicine
Prevnar 20	Approved	> 3bn$	100%	Vaccine
DMD	Phase 3	> 2bn$	52%	Rare Diseases
RSV	Phase 3	> 1bn$	62%	Vaccine
Talzenna	Phase 3	> 1bn$	44%	Oncology
Clostridioides	Phase 3	> 1bn$	60%	Vaccine
Ritlecitinib	Phase 3	> 1bn$	52%	Inflamation & Immunology
Hemophilia Gene Therapy	Phase 3	> 1bn$	72%	Rare Diseases
Somatrogon	Registration	> 500m$	91%	Rare Diseases
Marstacimab	Phase 3	> 500m$	72%	Rare Diseases
LMNA - related DCM	Phase 3	> 500m$	52%	Rare Diseases

SWOT Analysis

Pfizer had 10bn$ in sales during the third quarter of 2020, this value has increased to 24.1bn$ for the same period of 2021 representing an increase of approximately 134% in just one year. Moreover, the company is expecting an additional 12bn$ in revenue for the final quarter from Covid vaccine alone. Pfizer also announced that it is capable to produce 4 billion doses of the vaccine in 2022, which was based on contracts signed with other countries, as such contracts are estimated to bring sales of 29bn$ in 2022. Given that the vaccine needs a booster shot after a certain amount of time in order to protect against different variants of the disease, demand for Pfizer's Covid-19 vaccine is expected to increase for the upcoming years.

Exhibit 29. Revenues from Covid in the forecasted period (mn$)



Source: Reuters | Own Computations

Pfizer will continue to invest up to 1bn$ with the goal of facilitating access for its Covid-19 oral antiviral treatment to the maximum amount of people in the world. Pfizer will be able to supply its pill for 53% of the world's population, including low- and middle-income population. It will also change its pricing accordingly to make it affordable for every country. Analysis has showed that the pill could reduce hospitalization risk by 89% compared to placebo in patients. These results were proven to be more promising than Merck's Covid-19 oral antiviral treatment pill that showed only 50% effectiveness. Roche's pill failed to meet its primary endpoint in a phase 2 trial. These outcomes give a competitive edge for Pfizer's pill, which is expected to bring revenues of 24bn$ and 33bn$ in 2022 and 2023 respectively[14].

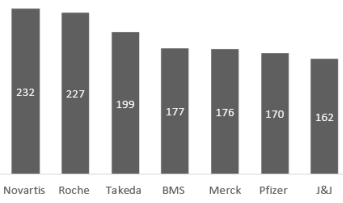
Exhibit 30. SWOT Analysis

- Market Leader - Strong R&D pipeline - Biggest M&A transaction in Pharmaceuticals history - Additional Revenue from Covid-19 Vaccine sales
Strengths
- Concentrated Portfolio - Covid Vaccine Sales to diminish in future - High Foreign Exchange Risk Exposure
Weaknesses
- Acquisition of smaller players from extra Covid-19 vaccine sales - New segment of people for Vaccine - Covid-19 oral pill development - Integrate generic market
Opportunities
- Drugs losing Exclusivity - High Spending on R&D with no success - Inability to compete because of high prices
Threats

Pfizer and BioNTech announced that the FDA approved their vaccine as the first one to be used for children for ages between 5 and <12. The vaccine presents an efficacy of 90.7% for this target group. Moreover, the U.S. has purchased 50 million doses of the company's Covid-19 doses for children aged under 5 years of age. The world population for the segment of 0-14 years constitute 25% of the population. And because Pfizer is the first company to get approval for vaccinating this trench of ages, and 57% of the population is vaccinated and Pfizer's vaccine constitutes one third quarter of doses administered. We expect that Pfizer will administer doses for 15% (6% higher than calculations for the reasons mentioned) of this population or 1 billion people. And because Pfizer's vaccine costs 19.5$ per dose. It would bring additional 19.5bn$ for Pfizer.

Due to of the extra revenue generated by sales of vaccines in 2021 and revenues coming from the oral pill in the future, Pfizer is expected to increase its M&A activities. Pfizer is expecting to have revenues of 80bn$ in 2021, an increase of 100% from last year. In November 2021, Pfizer acquired Trillium for a purchase price of 2.22bn$. Trillium's two lead molecules, TTI-621 and TTI-622 enhance patient's immune system ability to detect and destroy cancer cells. It is a milestone for Pfizer since Trillium's molecules could complement Pfizer's portfolio in innovating more in the oncology sector. The autoimmune cancer is expected to reach a market of 150bn$ in 2026 with a CAGR of 9.6% from 2020. Pfizer also acquired Amplyx Pharmaceuticals in April 2021 that would help Pfizer increase its portfolio of inflammation and immunology. Amplyx's lead compound is a new asset under development for the treatment of invasive fungal infections.

Exhibit 31. Number of Drugs developed by company in 2021



Source: Statista | Own Computations

Pfizer has a strong history in M&A transactions, it uses these transactions in order to diversify its portfolio and strengthen its position in every segment. In 2019 Pfizer acquired Array Biopharma for 10.6bn$ to boost its oncology pipeline. Moreover, Pfizer acquired cancer drug-maker Medivation for 14bn$ and Anacor pharmaceuticals for 5.2bn$, expanding its portfolio in inflammation and immunology, which is one of their business units that need most improvement. Pfizer also has the biggest pharmaceutical acquisition transaction in history with a value of

[14] Michael Erman and Deena Beasley (2021). Pfizer says COVID-19 pill near 90% protective against hospitalization, death. https://www.reuters.com/business/healthcare-pharmaceuticals/pfizer-says-covid-19-pill-near-90-effective-final-analysis-2021-12-14/

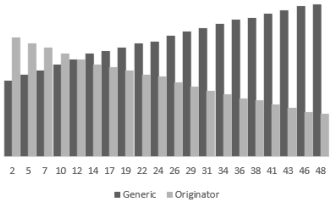
87.3bn$, acquiring Warner-Lambert. The 6th and 7th biggest pharmaceutical transactions in history were also made by Pfizer.

Pfizer is one of the leaders in its industry in research and development and this is shown by the size of the research and development pipeline. Pfizer had 170 new pipeline products in the market during 2021, making it the 6th Pharma company worldwide in developing new drugs. Novartis and Roche are the leaders in terms of new drugs developed, developing 232 and 227 drugs respectively in 2021. Moreover, Pfizer is in 6th position compared to its peers when it comes to spending on R&D and has spent 18% of its revenues on that area. Pfizer is predicted to be the 4th highest spender in terms of R&D in 2026, with a value of 10.6bn$, outspent by Roche, J&J, and Merck. R&D Productivity has driven incredible improvements in clinical success rates. For example, Pfizer's success rate in Phase 2 on a five-year rolling average more than tripled from 15% five years ago to 52% at the end of 2020, which is less than the double the 2019 industry benchmark of 29%.

Pfizer is also one of the biggest players in its industry with a market cap value in 2021 of 263bn$, ranking 3rd after J&J and Roche that have market caps of 454bn$ and 349bn$ respectively. In 2020, Pfizer's Eliquis had sales of 9.2bn$, making it the 4th highest selling drug worldwide.

Revenue losses caused by products losing exclusivity need to be offset by the discovery and development of new products. To be successful, investments in research and development and collaborations need to address unmet medical needs for investments to pay off. The costs of product development are very high and there is no guarantee for the desired outcome, a product development can fail at any clinical trial stage and losses would not be compensated. Although products can succeed to pass clinical trials it faces competition from other products. Pfizer halted phase 3 clinical trials of torcetrapib after spending almost 1bn$ for the development of the drug. Because the independent data safety monitoring board found more deaths and cardiovascular problems in people taking the drug. Pfizer was not able to complete the drug development afterwards due to the incident and lost all of the money invested to develop the drug.

Exhibit 32. Generic – Originator Uptake after months of Generic Entry (%)



Generic medication presents a great threat for the business of the original medicines. This kind of medications have very low expenditure on R&D because they copy the molecule version of the originator, so the cost to develop them is much lower. So, companies producing generic medications can afford to price lower its products for the same effects. One study shows that generic uptake increased from 39% of DDD (Defined Daily Dose) to 73% to the prescribed amount of DDD in the first 48 months after initial generic entry[15].

Pfizer's product portfolio is very concentrated, which means that only seven of the products among all the products that Pfizer sell account for more than half of the total revenues. Having said that, if it is proved that any product has side effects or any safety concerns, regulators could

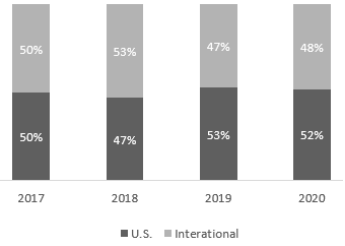
[15] Van Der Schans et al. (2020). The impact of Patent Expiry on Drug Prices: insights from the Dutch market. National Center of Biotechnology Information

ban the product and remove it from the market. Furthermore, in the pharma sector product losing exclusivity is a big concern for companies. More specifically, if one of the seven products in Pfizer's portfolio loses patent, it could result in deterioration of the revenues for the overall company.

For instance, when lyrica's patent expired in 2019, 6 months after it was expected to, the sales for the drug saw a decrease of approximately 35% in the market share of similar kind of drugs. 16 companies have profited from the news and entered the market to take shares from Pfizer.

Moreover, 48% of Pfizer's revenues in 2020 were derived from international operations, including 23% from Europe and 17% in China, Japan and other Asian countries. Having said that, any currency fluctuation in these countries could lead a disruption in international operations, which can incur losses for Pfizer. For instance, in the last 6 months, the Euro depreciated more than 6% when compared with the dollar. So, sales made by Pfizer in Europe would lead to a smaller amount in USD, which can lead to lower cash conversion to Pfizer's operations. Especially if costs were incurred in Euro before the depreciation. It is a double loss, because sales would lead to less profits and costs could be higher if paid beforehand. More specifically, Pfizer has almost all of its labs and research centers in the U.S. except 1 located in the United Kingdom. This means most of the costs incurred for researching new molecules will be in USD, so a EUR depreciation will lead Pfizer to have more sales to get the same amount in USD in order to invest the money afterwards in researching and developing new drugs.

Exhibit 33. Historical Revenue Breakdown by Geography



Shareholder's Structure

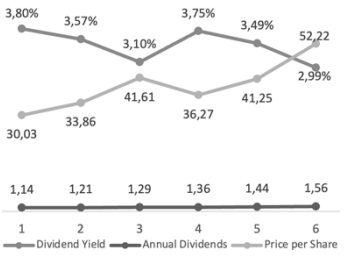
Exhibit 34. Shareholder Structure

Investor Name	Holding %
Vanguard Group, Inc. (The)	8,19%
Blackrock Inc.	7,32%
State Street Corporation	4,99%
Capital World Investors	4,30%
Wellington Management Group, LLP	3,94%

Source: Yahoo Finance

Pfizer is a publicly traded company, listed in the NYSE since 1972. Pfizer's outstanding shares amount to 5.6bn with 67.4% of the shares being held by institutional investors such as The Vanguard Group, Inc. (8.19%), SSgA Funds Management, Inc. (4.99%) and BlackRock Fund Advisors (7.32%) The insiders hold 0.04% of total shares outstanding. As Exhibit 34 shows, the stock does not register dominant positionings. The distribution of shares of the five largest institutional holders also reflects the significant dissemination of Pfizer, since they only control 28.74% of the company. The remaining 32.6% are free floating stocks, which are traded on the stock exchange with an average volume traded in the last 3 months of 34.5m.

Exhibit 35. Pfizer historical dividend yield (2016-2021)



Source: Orbis | Own Computations

In terms of shareholder return, Pfizer has been increasing its dividends over time (On average, dividends have increased 6.5% a year). From 2016 to 2021 the dividend yields slowly decreased from 3.8% to 2.99%, averaging 3.45%. Pfizer announced in 2019 its plan to spin off the Upjohn unit and merge it with Mylan. This transaction formed Viatris, in which Pfizer holds 57% and Mylan the remaining 43%. Since then, Pfizer claimed it would reduce its dividend payout after the divestiture of Upjohn due to the unit's contribution of nearly 20% of the company's total revenue in 2019. Pfizer intended to reduce its dividend payout as soon as Viatris initiated its dividend program which happened in May of this year. Given that Viatris declared a cash dividend of 0.11$ per share (amounting to 0.44$ annual rate) and that for every 100 Pfizer shares, Pfizer shareholders are intitled to 12 Viatris shares. Assuming Pfizer aims to keep the combined dividend of both companies the same as Pfizer's 2020 dividend, Pfizer is expected to reduce its annual dividend to $1.51 per share.

Stock Performance

Exhibit 36. 5-year stock annualized return rate

Companies / Indexes	Annualized Returns
S&P 500	15,92%
Roche	11,09%
Pfizer	10,68%
Johnson & Johnson	8,17%
Dow Jones Pharma Index	6,14%
Merck	4,02%

(From 08/12/2016 to 08/12/2021)

Source: Yahoo Finance | Own Computations

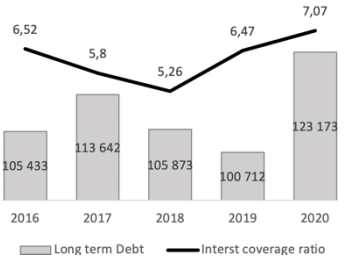
Over the last 5 years Pfizer outperformed the Dow Jones Pharmaceuticals index by approximately 5.54 p.p., Dow Jones Pharma had an annualized return of approximately 6,14% while Pfizer had a return of approximately 10,68%. The S&P 500 outperformed Pfizer by approximately 5.24 p.p. with the former having annualized returns of 15.92%.

Pharmaceutical industry returns indicate that in general pharmaceutical companies performed worse than the market for the last 5 years. However, when comparing Pfizer's share annualized returns with its main competitors and the industry as a whole, Pfizer's shares have one of the highest returns in this 5-year period, this success can partially be attributed to its covid vaccine (stock price almost doubled since March 2020).

Pfizer's unlevered beta had a value of 0.68, which means that the systematic risk of Pfizer was lower than that of the pharmaceutical market (0.8 unlevered beta) because this value indicates that the stock is less volatile than the market.

Capital Structure

Exhibit 37. Historical interest coverage ratio and LT Debt (mn$)



When comparing the debt ratio of comparable companies with that of Pfizer's, the company has one of the lowest D/E ratios with a value approximately equal to 1.44. the industry presents an average of 2.20. Only Novartis and Roche present D/E ratios that are lower than Pfizer with values of 1.33 and 1.17 respectively.

Exhibit 38. Pharma Companies D/E Ratio

Companies	D/E
Pfizer	1,44
Roche	1,17
J&J	1,76
Novartis	1,33
Eli Lilly	7,27
ASZN	3,27
Merck	2,62
Abbvie	10,51
Amgen	5,69
Moderna	1,86

Source: Orbis | Own Computations

Other pharmaceutical companies have on average higher debt obligation when compared to their market capitalization. That relation brings the discussion on interest coverage ratio, which are on average lower than that of Pfizer since other companies have more debt in their accounts. Interest coverage ratio = EBIT/Interest expense, and the bigger the value of this ratio the better off is the company. As we can see from the graph Pfizer's interest coverage ratio decreased in 2018, although its long-term debt also decreased, this was mainly caused by lower EBIT that the company experienced during this period due to its discontinuation of its Upjohn business. However, in 2020 with greater long-term debt Pfizer could still be able to increase its interest cover ratio because of a higher EBIT that increased by 19% from 2019 to 2020.

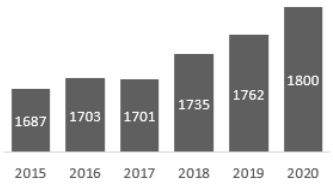
Since the company presents a strong financial position and is expected to have more revenues because of Covid-19 vaccine and pill, it would be eligible to finance its operations with more debt and lenders would be ensured to be paid back. By using the extra revenue and additional debt the company might borrow, it would be able to invest more in different drugs pipeline as well as in new technologies to automate its operations in drug discovery and hospitalization.

Valuation

Revenue Decomposition

Oncology

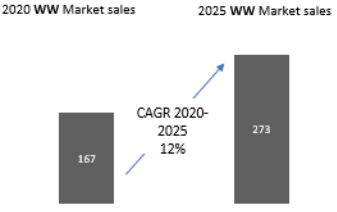
Exhibit 39. Historical New Cancer Cases in the U.S. (Thousands)



Source: Statista | Own Computations

The oncology market has been increasing throughout the years. The number of Americans living with cancer has increased from 10.8 million individuals in 2004 to 16.9 million in 2019, which represent a CAGR of 3.03%. The number of new cases is increasing as well, however the number of deaths from cancer in the U.S. is seeing a decrease in recent years (number of deaths was 181 per 100 000 people in 2004 and 149 per 100 000 people in 2018). This means that advancements in cancer treatment are becoming more effective. Specifically, number of cancer drugs development in the U.S. has increased from 399 in 2005 to 1120 in 2018.

Exhibit 40. Worldwide Oncology drugs market revenue (2020-2025) bn$



Source: Statista | Own Computations

The global oncology spending has increased from 56bn$ in 2011 to 167bn$ in 2020, representing a CAGR of 12.91%. The global spending (Consumer Spending) for the oncology sector is expected to reach 273bn$ in 2025 representing a CAGR of 12%. We expect Pfizer's CAGR to be slightly higher in the same period due to Xtandi's use for metastatic prostate cancer treatment and IBRANCE's market presence. For that reason, we expect a CAGR of 13% for Pfizer's oncology sector. Furthermore, Cancer diagnostic market size is expected to more than double from 2015 to 2023 with a CAGR of 11.5%, which means more people will be diagnosed with cancer who will need medications in the future. The two main products of Pfizer's oncology sector are Ibrance and Xtandi, for the treatment of breast and prostate cancer respectively. These two cancers accounts for the 5th and 7th position in terms of deaths in the U.S. implying that the demand for these drugs has potential.

Pfizer had revenues of 5.87bn$ in 2017 in the oncology sector, representing a market share of

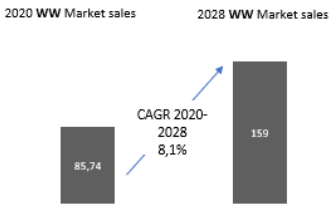
5.6%. Revenues are expected to grow to 14bn$ in 2024, representing a market share of 6% which implies a CAGR of 12.9% and is in line with our expectations. Pfizer's Ibrance is ranked number 5 in terms of revenue and market share among the top oncology products and is expected to keep this position in the future. Revenues from Ibrance are expected to reach 8.28bn$ in 2024. This indicates that this sector will still be promising for Pfizer's future revenues. The leader in this sector is Roche with a market share of 26.3% in 2017 but is expected to lose market shares in the future because of some of its products losing exclusivity, which will make revenues more evenly divided among other players. And Merck's Keytruda is expected to be the leader drug in the sector with sales expected to reach 12.89bn$ in 2024 due to drug approvals and many different uses in combination with other drugs as well.

Immunology

The global immunology market size was 85.74bn$ in 2020. The market is projected to grow from 92bn$ in 2021 to approximately 159bn$ in 2028 with a CAGR of 8.1%, which is explained by the sudden rise in demand for this sector.

Greater awareness of immunological diseases in both developing and developed countries has caused this surge in the demand for immunological medicines to suppress the diseases. Furthermore, big institution in this market try to innovate in this sector to meet consumer's demand in a more efficient way and achieve better results in patients' treatments.

Exhibit 41. Worldwide Immunology drugs market revenue (2020-2028) bn$

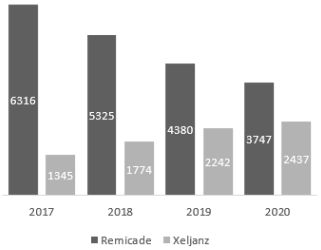


Source: Fortune Business Insights | Own Computations

According to a research by the national stem cell foundation, nearly 4% of the world's population is affected by at least one of 80 different immune system. However, the sector faces high costs and adverse effects associated with these drugs mainly due to the large investment in research and development and the costly manufacturing.

The market is expected to see a decline in sales going forward because of the entrance of biosimilars in the market. J&J's Remicade lost 1,6bn$ in sales due to the patent loss in 2016, which will likely lose another 2.6bn$ in 2021. But as mentioned before Pfizer's Xeljanz is protected by a patent and saw an increase in market share from 1% to 4% and is expected to grow further to attain 6%. As previously mentioned, Abbvie's Humira, which patent expires in 2034, is a clear winner in this sector with sales amounting to approximately 20bn$ in 2020.

Exhibit 42. Historical revenue – Xeljanz & Remicade (2017-20) mn$



Source: Financial Reports | Own Computations

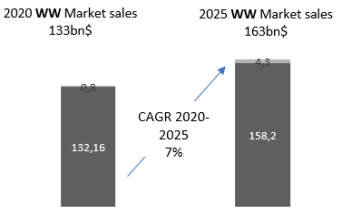
Even though Pfizer's future in this segment doesn't seem bright due to intensive competition and lack of projects being developed in this sector (currently 16), there are currently two projects which if approved will increase Pfizer's revenue in this segment, abrocitinib which is in the Registration phase of development meaning it is close to being approved in the U.S (already approved in Great Britain and Japan) is already considered to have better performance than Sanofi's Dupixent, which has been in the market since 2017 and generate more than 8bn$ in 2020. Thus, if approved, this drug is expected to achieve around 3bn$ in revenue by 2025, which would leave the company afloat in terms of market share for the upcoming years. The second drug in development is Ritlecitinib which is in Phase 3 of development. Even though there is still

a long way to go for its potential FDA approval, if approved, Pfizer has a chance to enter this emerging alopecia drug market which is expected to grow from 7.6bn$ in revenue in 2020 to 14.2bn$ by 2028 and experts believe this drug could attain 15% market share by 2028 resulting in 750m$ annual revenue.

Hospital

Hospital sector is mainly composed of two main portfolios: the sterile injectable market and the anti-infective drug market.

Exhibit 43. Worldwide Hospital drugs market revenue (2020-2025) bn$

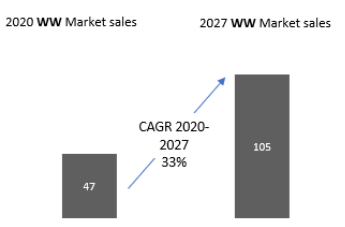


The global anti-infective drug market decreased from 132.16bn$ in 2020 to 116.4bn$ in 2021. The decrease is mainly caused by Covid which disrupted the demand and production activities of the companies. the market is expected to reach 158.20bn$ in 2025 at a CAGR of 8%. The global share market for the injectable market is expected to grow at CAGR of 5% until 2025 to have a value of 4.3bn$ in 2025. Taking into consideration the two main segments of this market we can say that the segment will grow at a CAGR of 7% until 2025 and remain that way until the end of the forecasting period. The global anti-bacterial market is expected to have a value of 44bn$ in 2027 with β-lactam dominating the sector with a share of 59% in 2019. The general pipeline of antibiotic drugs has been decreasing with time until 2020, Pfizer had 6 new products in its pipeline for the hospital sector, from which one drug uses β-lactam for its treatment. Pipeline analysis of antibiotics showed that 41 new antibiotics are being developed. About 60% of drugs in phase 3 will be approved, and 25% of drugs under development represent a novel drug or mechanism of action. Pfizer's aztreonam-avibactam is a new molecular entity being developed that uses β-lactam for treatment of infections caused by Gram-negative. Since it is a new molecule, it has potential to grant Pfizer a patent in the future, which can boost the sector's revenue in the future. Pfizer will have a slightly higher growth, growing at a rate of 9% in this sector since competitors trying to develop new products are relatively smaller companies than Pfizer. So, Pfizer can take advantage of its expertise in the area of drug development.

Vaccination (Without Covid-19)

Pfizer's market share in the vaccination market in 2020, was 18.5%, expected to decrease in 2021. This is due to the Prevnar family vaccines, which represent 89.6% of Pfizer's revenue in the non-Covid vaccination market, having a 2% decline in Prevnar 20 revenue despite currently being the only FDA approved vaccine for both invasive pneumococcal disease and pneumonia, and having a 36% decline in Prevnar 13. The reason for this decline can be attributed to Covid-19 as less people went to the hospital for non-covid related matters. However, the vaccine family is expected to regain market share in the upcoming years as the pandemic slows down with projected 2026 sales of 7.08bn$. Thus, we expect Pfizer's market share to decrease in 2021 but to slightly increase in 2023, when Prevnar 20 is expected to be approved for children's application

Exhibit 44. Worldwide Vaccination market revenue (2020-2027) bn$



Source: Fortune Business Insights | Own Computations

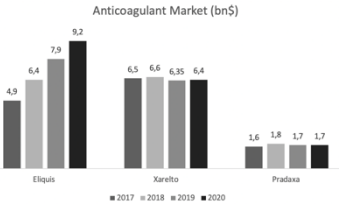
which represent around 80% of the market for pneumococcal vaccination. In terms of competition in the pneumococcal vaccination market, Prevnar's main competitor is GSK's Synflorix which had 531m$ in sales in 2020, 14% decrease from 2019 which is significantly lower than Pfizer's Prevnar 13, Merck has entered this market this year with Vaxneuvance, which is considered to be similar in performance to Prevnar 13 but still underperforming Prevnar 20. Thus, in the long run Pfizer's market share will decrease as there is no expectation for new approvals in this division.

As for Pfizer's Covid vaccines, administered a value of more than 420 million doses of the 560 million total doses administered in Europe. It had also approximately 250 million doses administered in the US with Moderna coming in second with 145 million doses. Pfizer is expecting to have sales of 36bn$ this year and 29bn$ in 2022 from the vaccine alone. Analysts say that Pfizer are dominating the vaccine rate. Another interesting aspect for Pfizer is the development of the oral pill that could replace the vaccine in protecting people against the virus

Internal Medicine

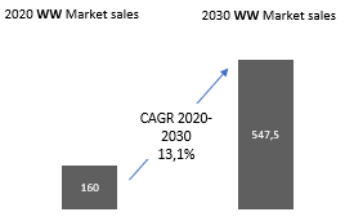
As previously mentioned, Pfizer's best-selling product in the internal medicine unit, Eliquis represents more than 50% of Pfizer's revenue in this sector. Averaging a 20% growth in sales per year, this medicine is expected to remain dominant in this market for the next 5 years, when the patent expires, and generic products enter the market. Eliquis main competition is Xarelto which was developed by a joint venture between Bayer and J&J which generated sales of 6.9bn$ in 2020 which was relatively lower than Pfizer and BMS's joint venture Eliquis which had 9.2bn$ in sales and Pradaxa which average 1.7bn$ in sales for the last 4 years. With Eliquis being considered the more effective drug in the Anticoagulant market it is safe to assume this gap between the competitors will continue to increase. With the remaining medicines in this sector such as Chantix/Champix and the Premarin family and others declining in sales in 2021, Chantix had a 45% decrease in sales (until Q3) which can be attributed to the patent expiring in 2020 and Premarin family a 11% decrease in sales (until Q3), this trend is expected to continue in the upcoming years, as there are no new medicines being developed in the near future and there currently only 12 projects being developed in this area (Phase 1→ 5; Phase 2 → 5; Phase 3→ 1; Registration→ 1). Vupanorsen is the only drug that is currently being developed in this business unit which, if approved, will have a great impact on this sector's revenue in the upcoming years. Thus, we expect that internal medicine's market sector to slowly increase until 2026 when generic products enter the market.

Exhibit 45. Historical revenue (bn$) - Eliquis, Xarelto, Pradaxa (2017-20)



Rare Diseases

Exhibit 46. Worldwide Rare diseases revenue (2020-30) bn$



Source: Statista | Own Computation

The number of people that are facing problems with rare diseases attained a value of 350 million in 2016. As the world population has increased by 7% from 2016 to 2020, we expect that the number of patients treated by rare diseases also increased by 7%, to have a value of 374.5 million in 2020. The global orphan drug sales attained 160bn$ in 2020 from a value of 66bn$ in 2012, representing a CAGR of 9.66%. the market share of rare diseases is expected to increase when compared to other global cell and gene therapy, accounting to 35% in 2025 after being 30% in 2019. Furthermore, global rare disease market is expected to increase as well, from 160bn$ in 2020 to 547.5bn$ in 2030 representing a CAGR of 13.1%.

Pfizer had revenues from orphan drugs of 4.5bn$ in 2018 and is expected to have revenues of 9bn$for the same sector in 2024, representing a CAGR of 14%. Pfizer's market share for this sector is 5.1% in 2020 and is expected to grow in the coming years. The increase will be mainly driven by the new product pipeline that Pfizer is developing in this sector. Pfizer has one drug that is being registered and six other drugs in phase 3.

The development and discovery of Somatrogon, responsible for the treatment of growth deficiency, gives a lot of positive potential for Pfizer. Firstly, Somatrogon has proven to be more effective and has less treatment burden than Genotropin, Pfizer's old drug in treatment of GHD, which saw a decline in sales in recent years. Secondly, it is not until recently that the FDA approved the use of a one per week dose for the treatment of GHD. Pfizer would be the second company after Ascendis Pharma given permission to do that. This presents positive news for Pfizer, so we expect an increase in market share to attain a value of 6.3%. Pfizer's Vyndaqel is expected to have revenues of 3.6bn$ in 2024, ranking in number 8 among the top 10 rare disease drugs worldwide. Vyndaqel sales growth alongside development of other rare disease drugs are expected to increase Pfizer's revenue in this sector.

Margins and costs

Exhibit 47. ROA and ROE peer analysis 2020

Companies	ROA	ROE
Pfizer	**6%**	**15%**
Astrazeneca	5%	20%
GSK	9%	10%
Merck	8%	28%
Roche	17%	36%
Johnson and Johnson	8%	23%
Novartis	6%	14%
Eli Lilly	13%	110%
Abbvie	3%	35%
Moderna	-10%	-29%
Amgen	12%	77%

Source: Orbis | Own Computation

The pharmaceutical sector presents a very high gross margin with an average of 83.02% calculated among the 11 biggest players in the industry. Pfizer's gross margin is just below the average considering its competitors with a gross margin of 82.74% and an operating margin of 23.93% coming shorter than the average of the sector, which was calculated by taking out outliers. However, Pfizer was successful in keeping its gross margin constantly high in the last several years. Pfizer was also successful to increase its operating margin compared to the last two years. This is a positive sign for the company because last two years presented a lot of uncertainty and disruption in activities caused by the pandemic outbreak for all businesses. Although Pfizer was investing a lot in research and development to produce the covid-19 vaccine, it was successful to keep the margins high. This will help Pfizer to pay its debt obligation and to retain or invest some of this capital.

Return on Equity and Asset show how efficiently the company is using its resources in generating profits. We can clearly see that Pfizer does not have any advantage on its comparable regarding the return on equity. Looking at Pfizer's equity return for the last several years, we see that the latter was alternating from one year to another for the last 4 fiscal years. This could mean either the company is investing in profitable projects or that the company is over leveraged, which is not the case for Pfizer. Since ROE was alternating it shows that Pfizer was investing some of its equities that are turning into profits.

Exhibit 48. Gross and Operating peer margins 2020

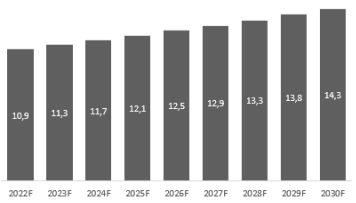
Companies	Gross Margin	Operating Margin
Pfizer	**83%**	**24%**
Astrazeneca	92%	15%
GSK	n/a	23%
Merck	79%	18%
Roche	82%	31%
Johnson and Johnson	75%	26%
Novartis	83%	20%
Eli Lilly	83%	25%
Abbvie	81%	26%
Moderna	n/a	-95%
Amgen	90%	36%

Source: Orbis | Own Computation

Pfizer cost structure is divided into several components. Cost of goods sold, research and development expenses, other operating items, and SG&A that are usual operating costs. The first three costs mentioned are directly related with the products that Pfizer sell. The cost of goods sold which include the direct cost of producing the goods such as the materials and labor used to produce the product. Other operating costs can include outsourcing costs, cost of raw materials and supplies, maintenance, and repair work, etc. Research and development, which is crucial for the pharmaceutical industry, are the costs associated with developing new molecules or enhancing already existing drugs in the portfolio of the company

SG&A account for expenses not directly attributed to Pfizer sales, it includes expenses such as salaries and employee benefits, advertising costs, sale commissions, regulatory fees, and customer support. Since it is not possible to breakdown SG&A, the expenses were forecasted using the number of employees, which was derived by total revenue. The result suggested that SG&A will grow an average of 2% per year, which leads to an operating margin 24%.

Exhibit 49. R&D Forecasted Period (bn$)



Research and Development expenses for Pfizer have been almost constant from 2015 to 2019. The biggest increase during these years was from 2015 to 2016, with a small increase of 2.37%. However, the story for R&D has changed for Pfizer from 2019 to 2020, which saw an increase of 14.86%. in the third quarter of 2021, R&D expenses had a value of 7920mn$ compared to the 6050mn$ it had in the same period of 2020, an increase of 31%. The increase can be mainly contributed to the pandemic outbreak and the initiative that Pfizer took for developing the vaccine and pills against Covid-19.

Because Pfizer is facing many patents expiration in the coming decade and with the increase in the competition for winning the technological pharma race, we believe that the research and development costs for Pfizer will highly increase. But the increase will be offset by lower spending due to the finalization of the covid-19 vaccine and pill. So, we expect that growth in the R&D will significantly increase in the forecasted period. This increase is expected to lead in lower profit margins not only for the company but for the sector too.

Since Pfizer isn't expecting any significant investment in Capital Expenditure in the near future, our forecast suggests that the Capex is expected to increase at a slow rate until 2023 where the capital expenditure is predicted to be 3.2bn$ (from 2.3bn$ in 2020). When forecasting the PPE and Intangibles we assumed it would grow in correlation with revenues.

Pfizer owns and leases spaces around the world for its various sectors, and believes that its properties are well maintained, suitable for Pfizer's current necessities and foreseeable future. In 2020, the company had 363 properties leased and owned, a total of 43M square feet which was a reduction from 2019 when Pfizer had 453 properties and 47M square feet. This was caused mainly due to the spin-off Upjohn Business combination with Mylan for the creation of Viatris.

Weighted Average Cost of Capital

CAPM estimations were based on the risk-free which was derived using the value of 10-year US Treasury Bond in 2020. The choice was made to minimize the errors. The market risk premium was calculated using the average from the market risk premium for the past 60 years. The average of the market risk premium for the past 60 years was 5.23%. we thought that the longer the period is the better it explains the market risk premium for our computations.

Exhibit 50. Cost of Debt

YTM – 1st approach	
Weighted-average YTM	2,62%
LGD	53,9%
Default Probability	0,00%
Cost of Debt	**2,62%**
YTM – 2nd approach	
U.S. 10 Year-Treasury yield	1,63%
A2 Credit Rating	1,20%
Cost of Debt	**2,83%**
Average Cost of Debt	**2,73%**

Cost of Debt

In order to estimate the cost of debt we used the combination of two different approaches, the first one was done by calculating the YTM from Pfizer's outstanding debt and remove its probability of default * LGD. The probability of default was assumed to be 0.001%. As for the Loss Given Default, we assumed a standardized value of 53.90% used for large cap firms. This resulted in a cost of debt of 2.62%. The second approach was based on the credit spread that should be applied to Pfizer's debt, given its A2 rating: 1.2%. Then we applied the spread to the risk-free rate (1.63%) and attained a cost of debt of 2.83%. The average of these two approaches resulted in a 2,73% cost of debt for Pfizer.

Exhibit 51. Unlevered β

Pfizer's peer group unlevered β	
GlaxoSmithKline	0,38
Johnson & Johnson	0,68
AstraZeneca	0,70
Merck	0,63
Roche	0,85
Bristol Myers Squibb	0,84
Pfizer	0,52
Median Unlevered β	0,68

Cost of equity and WACC

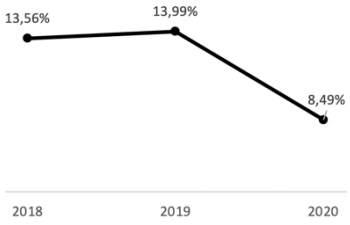
In order to estimate Pfizer's costs of equity, unlevered (rU) and levered (rE), levered equity β from Pfizer and its peers was extracted from Bloomberg. Peers were chosen by closeness in operations and relatively close market size (same peers were then used in the Comparable Valuation) all betas were relatively close in value: min: 0,4; max: 0,87; mean: 0,68. We unlevered the βs, in order to analyze only the operational risk. The companies included in the peer group were GSK; Roche; Merck & Co.; BMS; J&J and AstraZeneca. We reached a median unlevered β of 0.68 and, therefore, we calculate Pfizer's rU = 6,24%. Afterwards, with Pfizer's D/E ratio of 20.8% and βD = 0.19, we were able to attain Pfizer's βE of 0.79 and rE of 6.99% which ultimately gave us a WACC of 6.16%.

Exhibit 52. Cost of Equity & WACC

Risk-Free Rate	1,63%
Market Risk Premium	6,75%
Unlevered β	0,68
Levered β	0,70
rU	**6,24%**
rE	**6,99%**
Cost of Debt	2,73%
WACC	6,16%

Intrinsic Valuation

Exhibit 53. Pfizer's historical ROIC



Source: Orbis | Own Computation

The DCF method of valuation was chosen and the WACC was used to discount the cash flows. We used this method, since we didn't expect any relevant changes in the capital structure during our forecast years. When calculating the terminal growth, we assumed the average from 2023 to 2030 growth rate with growth = ROIC * Reinvestment rate, given that RONIC is considered to be unstable throughout the years as it is dependent on patent changes. In the last 4 years of our forecasting period (2027-2030), growth ranges were very stabilized with values between 2.74% and 3.54%. Thus, Pfizer's terminal value was computed with growth = 2.5%. Deriving from RR = 21.01% and ROIC = 16.56%. The weighted average inflation rate that is expected for Pfizer in 2030 is 2.65%, relatively higher than our terminal rate but smaller when we take into account only the last two years forecasted (3.49%). Having a terminal ROIC significantly higher than the WACC is reasonable, as Pfizer is a mature company with a stable ROIC. Pfizer is capable of developing innovative solutions, due to its significant resources and R&D investment increasing in the future.

We arrived at an Enterprise Value of 427.5.1bn$ and a share price value of 69.28$. Given that the share price today is 55.2$, it is safe to assume that the stock price is extremely undervalued and as such we recommend to BUY.

Comparable Valuation

Exhibit 54. Peers' trading multiples

Peers' Trading multiples

Pharmaceutical	EV/EBITDA
Johnson & Johnson	**14,8x**
GlaxoSmithKline	**10,9x**
Roche	**9,3x**
AstraZeneca	**19,5x**
Bristol-Myers Squibb	**11,0x**
Merck & Co. Inc.	**16,5x**

Source: Orbis | Own Computation

As an additional approach to determine Pfizer's share price, a comparable valuation was used. The criteria used to assess which comparable companies made sense to use in this particular model were similar economic performance and worldwide geographic activity. Similarity of risk was also considered as known in financial theory; reward is dependent on risk. In order to match all these criteria, a mixture of traditional and alternative approach described by Kulali et. al.93 was used to narrow down the optimal comparable companies which as mentioned before were used to calculate the betas.

The share price implied by the EV/EBITDA ratios ranges between 75 and 83, with a median of 76 using 2021 ratio, and ranging between 60 and 89 with a 71 median with 6-year averages. Due to the subjectivity of the method, it is important to look at these values with restrain. In the Pharma industry, the EV/EBITDA is considered to be the better ratio as opposed to Revenue or Net Income.

Exhibit 55. Peers' RORC (5 years)

	RORC
Johnson & Johnson	5,0x
Pfizer	4,9x
GlaxoSmithKline	4,7x
Roche	3,3x
AstraZeneca	3,2x
Bristol Myers Squibb	2,6x
Merck	2,5x

In addition, an analysis was made of the industry-specific metric Return on Research Capital (RORC) to assess Pfizer's performance against its competitors regarding one of the main key drivers in the Pharma industry, Research & Development. RORC is the amount of profit earned for each dollar the company spends on R&D within a certain period. Since pharmaceutical projects take years to become profitable, a 5-year average was used in all calculations. Out of the 7 companies used in this model, there was a cleat gap between the top 3 and the others with Johnson & Johnson and Pfizer being a close 1st and 2nd.

Sensitivity Analysis

The sensitivity analysis performed estimates the sensibility of the price target regarding to our terminal growth and how a different WACC would also affect the target price.

The worst-case scenario we assumed for the growth rate was a -0.2% decrease in growth with terminal growth being 2.30%. For the best-case scenario, we assume the growth rate +0,2%, our target price would range from $66.69 to $72.17.

For the WACC we used the same percentual change (0.2%) to attain our worst and best case scenario. The upper value led to a WACC of 6.33%, while for the lower value the WACC was 5.93%. Our DCF target price would be $65.70 in the worst case scenario and $73.27 in the best case scenario.

Combining both assumptions to change along the mentioned ranges, our price would range from $63.41 (WACC at its highest and terminal growth at its lowest) to $76.58 (WACC at its lowest and terminal growth at its highest).

DCF	Terminal Growth					
WACC	**69,28**	2,30%	2,40%	2,50%	2,60%	2,70%
	5,93%	70,33	71,76	73,27	74,87	76,58
	6,03%	68,46	69,80	71,22	72,72	74,31
	6,13%	66,69	67,95	69,28	70,68	72,17
	6,23%	65,01	66,19	67,44	68,76	70,15
	6,33%	63,41	64,52	65,70	66,94	68,24

	2.018	2.019	2.020	2021F	2022F	2023F	2024F	2025F
Total Revenues	**40.824**	**41.173**	**41.909**	**82.120**	**101.388**	**92.356**	**76.639**	**71.231**
growth rate		*0,9%*	*1,8%*	*95,9%*	*23,5%*	*-8,9%*	*-17,0%*	*-7,1%*
Cost of Sales	-8.987	-8.251	-8.692	-26.689	-35.097	-29.835	-21.218	-17.674
Cost of Sales (% of revenues)	*22,0%*	*20,0%*	*20,7%*	*32,5%*	*34,6%*	*32,3%*	*27,7%*	*24,8%*
Cost of Sales Remaining operations	-8.987	-8.251	-8.620	-9.916	-10.404	-11.307	-12.415	-13.293
Cost of Sales (% of revenues)	*22,0%*	*20,0%*	*20,6%*	*21,5%*	*21,5%*	*21,5%*	*21,5%*	*21,5%*
Cost of Sales Covid 19	0	0	-72	-16.773	-24.694	-18.528	-8.803	-4.381
Cost of Sales (% of revenues)			*46,6%*	*46,6%*	*46,6%*	*46,6%*	*46,6%*	
Gross Profit	31.837	32.922	33.217	55.431	66.291	62.521	55.421	53.557
Gross Margin (%)	*78,0%*	*80,0%*	*79,3%*	*67,5%*	*65,4%*	*67,7%*	*72,3%*	*75,2%*
Selling, informational and administrative expenses	-12.612	-12.750	-11.615	-11.489	-11.719	-11.954	-12.193	-12.436
SG&A (% of revenues)	*30,9%*	*31,0%*	*27,7%*	*14,0%*	*11,6%*	*12,9%*	*15,9%*	*17,5%*
Research and development expenses	-7.760	-8.394	-9.405	-10.560	-10.919	-11.290	-11.674	-12.071
R&D (% of revenues)	*19,0%*	*20,4%*	*22,4%*	*12,9%*	*10,8%*	*12,2%*	*15,2%*	*16,9%*
Amortization of intangible assets	-4.736	-4.462	-3.436	-3.897	-4.138	-4.394	-4.666	-4.955
% of intangible assets	*13,5%*	*13,1%*	*12,1%*	*12,9%*	*12,9%*	*12,9%*	*12,9%*	*12,9%*
EBIT	6.729	7.316	8.761	29.485	39.515	34.883	26.888	24.094
Statutory Operating Taxes	-1.413	-1.536	-1.840	-6.192	-11.064	-9.767	-7.529	-6.746
Statutory Tax Rate	*21,0%*	*21,0%*	*21,0%*	*21,0%*	*28,0%*	*28,0%*	*28,0%*	*28,0%*
Adjustments	1.021	1.794	1.097	1.769	5.137	4.535	3.495	3.132
Effective Tax Rate	*-7,4%*	*5,4%*	*6,4%*	*15,0%*	*15,0%*	*15,0%*	*15,0%*	*15,0%*
Net Operating Income	6.336	7.574	8.019	25.062	33.587	29.651	22.854	20.480
Non-Operating								
Restructuring charges and certain acquisition-related	-1.058	-601	-600	-753	-753	-753	-753	-753
Gain on completion of Consumer Healthcare JV transa	0	8.086	6	0	0	0	0	0
Non Operating other income/(deductions)	-761	-1.741	780	-574	-574	-574	-574	-574
Non Operating Income Before Taxes	-1.819	5.744	186	-1.327	-1.327	-1.327	-1.327	-1.327
Statutory Non-operating Taxes	382	-1.206	-39	279	372	372	372	372
Statutory Tax Rate	*21,0%*	*21,0%*	*21,0%*	*21,0%*	*28,0%*	*28,0%*	*28,0%*	*28,0%*
Discontinued operations - net of tax	7.328	5.435	2.631	0	0	0	0	0
Other Comprehensive Income net	-1.975	-376	14	-779	-779	-779	-779	-779
Net Non-operating Income	3.916	9.597	2.792	-1.827	-1.734	-1.734	-1.734	-1.734
Financial								
Interest Expense	-1.316	-1.573	-1.449	-1.086	-1.086	-1.086	-1.086	-1.086
Interest Expense as a % of Debt				*2,7%*	*2,7%*	*2,7%*	*2,7%*	*2,7%*
Tax Shield	276	330	304	228	304	304	304	304
Statutory Tax Rates	*21,0%*	*21,0%*	*21,0%*	*21,0%*	*28,0%*	*28,0%*	*28,0%*	*28,0%*
Minority Interests	-16	-18	-27	-20	-20	-20	-20	-20
Financial Result	-1.056	-1.261	-1.172	-878	-802	-802	-802	-802

Reformulated Balance Sheet

	2018	2019	2020	2021F	2022F	2023F	2024F	2025F
Operating								
Operational Cash (2%)	1.073	1.035	838	1.642	2.028	1.847	1.533	1.425
% of revenues	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%	2,00%
Trade accounts receivable	8.025	6.772	7.930	12.991	16.040	14.611	12.124	11.269
Collection period	55	48	69	58	58	58	58	58
Inventories	7.508	7.068	8.046	19.073	25.082	21.321	15.163	12.631
Holding period	244	252	338	261	261	261	261	261
Trade accounts payable	-4.674	-3.887	-4.309	-10.894	-14.326	-12.178	-8.661	-7.214
Payable Period	152	139	181	149	149	149	149	149
NWC	11.932	10.988	12.505	22.814	28.824	25.602	20.160	18.110
Current tax assets	3.374	2.736	3.264	4.979	6.147	5.599	4.646	4.318
% of revenues	6,3%	5,3%	7,8%	6,1%	6,1%	6,1%	6,1%	6,1%
Income taxes payable	-1.265	-980	-1.049	-1.279	-1.579	-1.439	-1.194	-1.109
% of revenues	2,4%	1,9%	2,5%	1,6%	1,6%	1,6%	1,6%	1,6%
Accrued compensation and related items	-2.397	-2.390	-3.058	-4.120	-5.086	-4.633	-3.845	-3.573
% of revenues	4,5%	4,6%	7,3%	5,0%	5,0%	5,0%	5,0%	5,0%
Noncurrent deferred tax assets and other noncurrer	1.924	1.911	2.383	3.230	3.988	3.632	3.014	2.802
% of revenues	3,6%	3,7%	5,7%	3,9%	3,9%	3,9%	3,9%	3,9%
Other taxes payable	-14.737	-12.126	-11.560	-17.767	-21.936	-19.982	-16.581	-15.411
% of revenues	27,5%	23,4%	27,6%	21,6%	21,6%	21,6%	21,6%	21,6%
Other assets and liabilities	-13.101	-10.849	-10.020	-14.957	-18.467	-16.822	-13.959	-12.974
Identifiable intangible assets	35.211	33.936	28.471	30.234	32.106	34.093	36.204	38.446
CAGR of revenues (2020-2028)				6,2%	6,2%	6,2%	6,2%	6,2%
Property, plant and equipment	13.385	12.969	13.900	14.761	15.675	16.645	17.676	18.770
CAGR of revenues (2020-2028)				6,2%	6,2%	6,2%	6,2%	6,2%
Goodwill	53.411	48.202	49.577	51.639	51.639	51.639	51.639	51.639
CAGR of revenues (2020-2028)				6,2%	6,2%	6,2%	6,2%	6,2%
Core Business Invested Capital	100.838	95.246	94.433	104.489	109.776	111.157	111.720	113.991

Non-Operating								
Current assets of discontinued operations, other as	9.725	4.224	167	0	0	0	0	0
Other current assets	2.461	2.357	3.438	2.491	2.491	2.491	2.491	2.491
Other noncurrent assets	2.799	4.199	4.569	3.590	3.590	3.590	3.590	3.590
Noncurrent assets of discontinued operations	0	13.427	0	0	0	0	0	0
Total Other Current and Non-current Assets	14.985	24.207	8.174	6.081	6.081	6.081	6.081	6.081
Current liabilities of discontinued operations	-1.890	-2.413	0	0	0	0	0	0
Other current liabilities	-10.753	-9.334	-12.640	-10.976	-10.976	-10.976	-10.976	-10.976
Pension benefit obligations	-5.272	-5.291	-4.766	-4.766	-4.766	-4.766	-4.766	-4.766
# number of employees	*92.400*	*88.300*	*78.500*	*78.500*	*78.500*	*78.500*	*78.500*	*78.500*
Pension benefit obligations per employee (in M $)	0,0571	0,0599	0,0607	0,0624	0,0624	0,0624	0,0624	0,0624
Postretirement benefit obligations	-1.338	-926	-645	1.133	1.133	1.133	1.133	1.133
# number of employees	*92.400*	*88.300*	*78.500*	*78.500*	*78.500*	*78.500*	*78.500*	*78.500*
Postretirement benefit obligations per employee (in M $)	*0,014*	*0,010*	*0,008*	*0,014*	*0,014*	*0,014*	*0,014*	*0,014*
Other noncurrent liabilities	-5.850	-6.894	-6.669	-6.193	-6.193	-6.193	-6.193	-6.193
Noncurrent deferred tax liabilities	-3.700	-5.652	-4.063	-4.329	-4.329	-4.329	-4.329	-4.329
Total Other Current and Non-current Liabilities	-28.803	-30.510	-28.783	-25.130	-25.130	-25.130	-25.130	-25.130
Short-term investments	17.694	8.525	10.437	10.437	10.437	10.437	10.437	10.437
gorowth rate	-5,13%	-51,82%	22,43%	15%	15%	-6,93%	-6,93%	-6,93%
Long-term investments	2.767	3.014	3.406	3.406	3.406	3.406	3.406	3.406
gorowth rate	-60,6%	8,9%	13,0%	80,0%	50%	18%	-19%	-19%
Equity-method investments	0	17.133	16.856	16.856	16.856	16.856	16.856	16.856
Non Core Invested Capital Result	6.643	22.369	10.090	11.650	11.650	11.650	11.650	11.650
Total Invested Capital	107.481	117.615	104.523	116.139	121.426	122.807	123.370	125.641
Financial								
Excess Cash	66	86	946	0	0	0	0	0
as % of Revenues	0,12%	0,17%	2,26%	1,91%	1,91%	1,91%	1,91%	1,91%
Short-term borrowings, including current portion of	-8.831	-16.195	-2.703	-2.703	-2.703	-2.703	-2.703	-2.703
Long-term debt	-32.909	-35.955	-37.133	-37.133	-37.133	-37.133	-37.133	-37.133
Preferred stock, no par value, at stated value; 27 sha	-19	-17	0					
Debt	-41.759	-52.167	-39.836	-39.836	-39.836	-39.836	-39.836	-39.836
Net Financial Assets	-41.693	-52.081	-38.890	-39.668	-40.461	-41.271	-42.096	-42.938
Equity								
noncontrolling interests	351	303	235					
Dividends payable	2.047	2.104	2.162					
Total Pfizer Inc. shareholders' equity	63.388	63.127	63.238					
Total Equity	65.786	65.534	65.635	76.471	80.965	81.537	81.274	82.703

	Forecasted Free Cash Flow Map							
(USD Millions)	**2018**	**2019**	**2020**	**2021F**	**2022F**	**2023F**	**2024F**	**2025F**
EBIT	15.045	13.921	8.760	29.485	39.515	34.883	26.888	24.094
Statutory Operating Taxes	-3.159	-2.923	-1.840	-6.192	-11.064	-9.767	-7.529	-6.746
Adjustments	1.790	2.329	1.097	1.769	5.137	4.535	3.495	3.132
NOPLAT	**13.675**	**13.327**	**8.018**	**25.062**	**33.587**	**29.651**	**22.854**	**20.480**
Depreciation & amortization	6.384	6.010	4.777	5511	5853	6215	6600	7009
Operating Gross Free Cash Flow	**20.059**	**19.337**	**12.795**	**30.574**	**39.440**	**35.866**	**29.454**	**27.489**
Chnage in Working Cash	22	-38	-197	804	385	-181	-314	-108
Change in Inventories	-70	-440	978	11.027	6.009	-3.761	-6.158	-2.533
Change in Trade Receivables	-196	-1.253	1.158	5.061	3.048	-1.429	-2.486	-856
Change in Trade Payables	-18	787	-422	-6.585	-3.432	2.148	3.517	1.447
-Change in NWC	262	944	-1.517	-10.308	-6.011	3.222	5.442	2.050
-Changes in Other Assets and Liabilities	-3.364	-2.252	-829	4.937	3.510	-1.645	-2.863	-985
-CAPEX	-1.011	-984	-2.272	-2.475	-2.628	-2.791	-2.964	-3.148
-Change in Goodwill	2.541	5.209	-1.375	-2.062	0	0	0	0
-Change in Identifiable Intangible Assets	8.637	-3.335	2.029	-5.660	-6.010	-6.382	-6.777	-7.197
Operating Free Cash Flow	**27.124**	**18.919**	**8.831**	**15.006**	**28.301**	**28.270**	**22.292**	**18.209**
Non Operating Items								
Non-Core Result	-3.422	3.843	2.792	-1.827	-1.734	-1.734	-1.734	-1.734
Change in Total Other Current and Non-current Assets	9.457	9.222	-16.033	-2.093	0	0	0	0
Change in Total Other Current and Non-current Liabilities	-209	-1.707	1.727	3653	0	0	0	0
Change in Short-term Investments	-956	-9.169	1.912	0	0	0	0	0
Change in Long-term Investments	-4.248	247	392	0	0	0	0	0
Change in Equity-method investments	0	17.133	-277	0	0	0	0	0
-Total Change in Non-Core Assets	-4044	-15726	12279	-1560	0	0	0	0
Non-Operating Free Cash Flow	**-7.466**	**-11.883**	**15.071**	**-3.387**	**-1.734**	**-1.734**	**-1.734**	**-1.734**
Total Cash Flow Available to Investors	**19.659**	**7.035**	**23.902**	**11.619**	**26.566**	**26.535**	**20.558**	**16.475**
Financing Items								
Interest Expenses	-1316	-1574	-1449	-1086	-1086	-1086	-1086	-1086
Minority Interests	-16	-18	-27	-20	-20	-20	-20	-20
Tax Shield	276	331	304	228	304	304	304	304
Change in Financial Debt	-1525	10340	-13259	778	793	809	825	842
Cashflow to Equityholders	-17079	-16112	-9469	-11520	-26557	-26542	-20581	-16514
Total Cash Flows From Investors	**-19.660**	**-7.033**	**-23.900**	**-11.621**	**-26.566**	**-26.535**	**-20.558**	**-16.475**

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Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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