

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

Johnson & Johnson Position in the
Pharmaceutical Industry Competitive
Landscape

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Abstract

This work project “Johnson & Johnson Place in the Pharmaceutical Industry Competitive Landscape” analyses Johnson & Johnson business within the pharmaceutical industry. Given the demand for JNJ products and the growth in revenues brought with COVID-19 due to the Janssen vaccine sales, we estimate a sales growth of 11.4% compared to last year. We will analyze the COVID-19 pandemic current and possible future implications for the industry and the company and compare it with other pharmaceutical companies which are COVID-19 vaccine producers. We will also investigate JNJ most relevant mergers and acquisitions as well as to examine the pharmaceutical industry and the current and future evolution of microeconomic indicators both in the US and the rest of the world. Our valuation of Johnson & Johnson yields a price target of 197.57\$ which results in a return of 16.03% and therefore a *BUY* recommendation

Keywords

Equity Research, JNJ, Pharmaceutical Industry, Valuation

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

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Company Overview

Johnson & Johnson (JNJ) is an US based holding company and one of the most known companies around the world. Its subsidiaries mainly focus on products related to human health and well-being. J&J has operating companies in virtually all countries of the world and since 1887 has been incorporated in New Jersey.

The company operates in three different business segments: Consumer Health, Pharmaceutical and Medical Devices.

Pharmaceutical segment is focused on six therapeutic areas: immunology, infectious diseases, neuroscience, pulmonary hypertension, oncology and cardiovascular and metabolism. Products in this segment are directly distributed to retailers, wholesalers, hospitals, and health care professionals for prescription use. Pharmaceutical accounted for \$45.6B in sales in 2020, being by far the biggest contributor for Total Revenues, representing **55% of total revenues**.

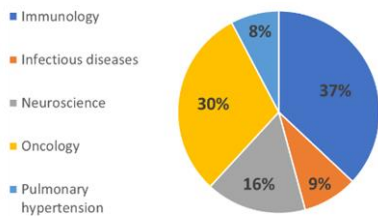
Medical Devices segment focuses on products used in interventional solutions, orthopaedics, surgery, and vision fields. In 2018 the company discontinued its operation of Diabetes Care, focusing now only of the four segments aforementioned. Medical devices accounted for \$23B in sales in 2020, representing **28% of total revenues**.

Consumer Health segment includes products that focus on personal healthcare, beauty and skin care products, and also medicines related to baby care, women's health, and wound care markets. It represented **17% of total revenues** with a total \$14.1B.

In terms of Sales in 2020 were 82.584B USD representing an increase of 0.641% when compared to 2019 and a total market share of 6.36% of the pharmaceutical industry. When breaking down by geography US is leader with 52,2%, followed by the European market, with 23%. The next market englobes Asia-Pacific and Africa with 18,3% and lastly the western Hemisphere with 6,5%.

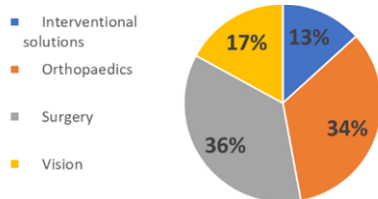
JNJ, as mentioned above, **operates in virtually all countries** of the world engaging in research, development, manufacture, and sale of a broad range of products in the healthcare field. Although the products made and sold internationally fall under the three segments mentioned above, the principal markets products and methods of distribution in international business vary from country to country depending on the culture of the area. J&J employees 136 400

Exhibit 1: Pharmaceutical Revenue Segmentation



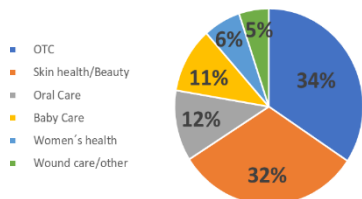
Source: Company data

Exhibit 2: Medical Devices Revenue Segmentation



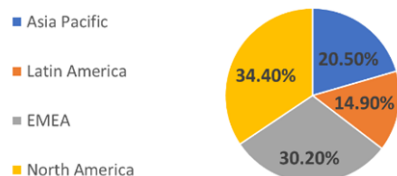
Source: Company data

Exhibit 3: Consumer Healthcare Revenue Segmentation



Source: Company data

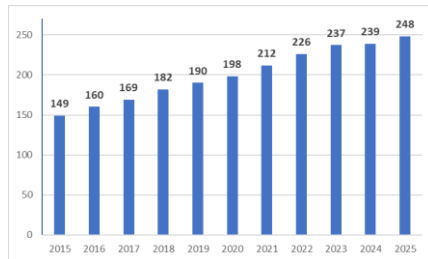
Exhibit 4: Employees' Distribution



Source: Company data

people worldwide, 34.4% of those in North America, 30.2% in Europe, 14.9% in Latin America and 20.5% in Asia.

Exhibit 5: R&D spending (2015-2025)



Source: Statista

Another aspect that is very characteristic of this specific industry is the need to “protect” the products. Given that it is a research-intensive industry, it is crucial to be patent protected, or else the investment made in R&D is useless, given that other companies could immediately copy and imitate the product. Thus, as Scherer¹ emphasizes in his publication “Handbook on Health Economics” in 2001, and Mohan² supports, patents are believed to be of great material importance to the company in the operation of its business. The industry is highly dependent on patents and faces patents and other intellectual property challenges from third parties. J&J owns or is licensed under a great number of patents in the US and Internationally related to their products, product uses, formulations and manufacturing processes.

COVID-19 pandemic impact

When analysing a company nowadays, one must also consider the impacts of COVID-19. Firstly, it is expected that the pandemic continues to impact the companies’ performance. It is expectable that COVID has a negative impact on operations and financial position because of demand shrinkage, which in turn may affect the company turnover. Moreover, demand changes are not the only changes that are believed to affect the short run of the industry.

According to Ayati et al³ (2021) the most prominent effects of the pandemic are the industry slowdown growth and the approval delays, given that non-vaccines products are being relegated to second plan in terms of approvals. Also, Ayati emphasizes that companies, especially the ones inserted in this specific industry, can move towards self-sufficiency in pharma-production supply chain.

In addition, one must be careful when making predictions under the circumstances that we live in. The possibility of a new pandemic outbreak, the possibility of an exponentially increase of COVID-19 cases, the possibility of a new potential lockdown in several of the most developed countries in the world, among many other questions and doubts that everyone have regarding the future of the world affected by a health crisis. Although, it is also crucial to mention, that some players had a huge positive effect in their performance resulting from the vaccine production. For example, booster shots have helped the vaccine demand staying

¹ Handbook on Health Economics

² <https://www.rroij.com/open-access/patents--an-important-tool-for-pharmaceutical-industry-.php?aid=34351>

³ Ayalti et al 2020 “Short and long term Impacts of Covid-19 on the pharmaceutical sector”

Exhibit 6: Net Income Comparison

	Net Income 2020	Net Income 2021
JNJ	\$12.98 B	\$16.14 B
Pfizer	\$8.31 B	\$18.59 B
Astrazeneca	\$2.14 B	\$0.46 B
Moderna	\$-0.5 B	\$7.13 B
BioNTech	\$-0.4 B	\$8.16 B

Source: Companies' data

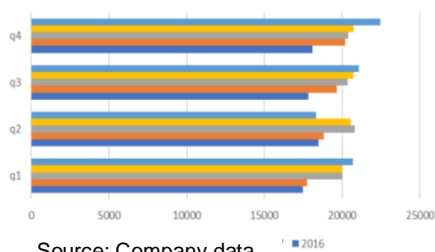
high and vaccine makers and developers have had their profits increase in 2021, greatly driven by the “simple” aspect that were the main producers of the vaccine.

When comparing the Net Income of those companies, one can see that all of them, excepting Astrazeneca, increased their Net Income from one year to another in Q1 through Q3. The decrease of Astrazeneca is explained by the fact that the company invested a lot in R&D⁴, diminishing their profits, because under “normal investment in R&D” the company would also have experienced growth in their Net Income.

How did the pandemic affect the revenues?

When evaluating the performance of the company, in revenues terms, one can see by the graph below, that when breaking down the revenues by quarter, in 2020, the company outperformed the previous year in all quarters, except for Q2, where covid-19 had more incidence. In that quarter the main responsible for this decreasing compared to the homologous period of the transact year was the decrease in the Medical Devices segment, that suffered a 34% negative change.

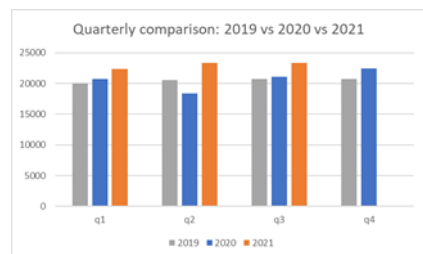
Exhibit 7: Quarterly Revenues of JNJ (2016-2020), in \$B



Source: Company data

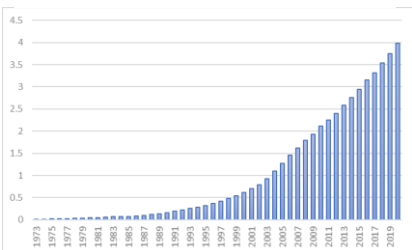
When trying to understand if the pandemic would have long-lasting effects in terms of revenues, or if it will jeopardize greatly the level of revenues for the upcoming years, one can evaluate the quarterly results of 2021 already disclosed by the company and compare them to them to the values of 2020 (and 2019, specially to know how the 2nd quarter performed). When looking to the graph, it is clear that until now, the 3 registered quarters of the current year, outperformed the 2019 and 2020 values, which not only is a sign that the post-pandemic scenario seems very favourable but also indicates that if the last quarter goes as expected by the JNJ, the **company will close the year with around 92 billion in revenues**, which represents an increment of 11.4% when compared to last year. Such significative increase is not surprising when looking at the quarterly reports presented by the company and understanding that in the 9 months already reported the pharma segment and the Medical Devices grew by 13.5% and 23.4%, respectively, while the Consumer Health increased 5%.

Exhibit 8: Quarterly Revenues of JNJ (2019-2021), in \$B



Source: Company data

Exhibit 9: Market Capitalization of JNJ (00's \$B)



Source: Bloomberg

Ownership Structure and Dividend Policy

JNJ started being traded in 1944 in the New York Stock Exchange (NYSE). Currently the company has a market capitalization of \$ 419 billion and with 2670 million of shares. Out of those shares, 69.3% are held by institutional investors, while the remaining portion is owned by the general public⁵. Given that the

⁴ Statista

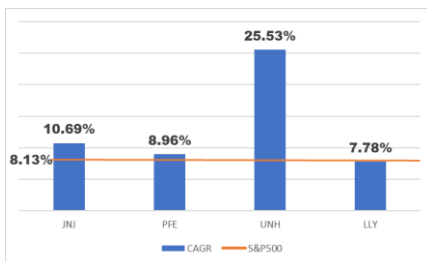
⁵ Yahoo Finance

Exhibit 10: Consecutive years raising dividends

JNJ	59 years
Abbott Labs	49 years
UnitedHealth	12 years
Pfizer	11 years
Eli Lilly	7 years

Source: Dividend.com

Exhibit 11: Stock Performance 1990-2020, vs S&P 500



Source: Yahoo Finance and Own calculations

Exhibit 12: Info Sharpe, 1990- 2020

S&P500	0.44
JNJ	0.46
PFE	0.33
UNH	0.6
LLY	0.31

Source: Own calculations

Opportunity to buy? Or reason for concern?

institution investors possess most of the number of shares, they can influence the decisions of the company.

On another note, JNJ has been raising its dividends for the last 59 years, outperforming the whole industry⁶. For example, Pfizer and UnitedHealth have only been increasing their dividends in the last 11 and 12 years, respectively. Thus, it is a very attractive stock for the so called “dividend investors”.

Board of Directors

The BoD is composed by the CEO, Alex Gorsky, and other 13 members. Gorsky has been linked to the company since 1988, where he first started as Sales Representative, and in 2012 became the leader of the company. However, it was announced on August 19th of 2021, that the current CEO will serve as CEO until the 3rd of January of 2022⁷, when the current Vice Chairman of the Company’s Executive Committee, Joaquin Duato, will then assume the role.

Stock Performance

To evaluate how is the stock performing within the industry and *versus* the S&P500 index, one can see by the exhibit 45, that the CAGR of JNJ between 1990 and 2020 is above the S&P500 and also above Pfizer and Eli Lilly. Regarding, the Info Sharpe, a rule of thumb is that the greater the ratio, the more attractive is the stock, and if one follows that logic, one can again see that over the course of the period 1990-2020, JNJ is more attractive than the index considered.

Is the recent performance a cause of concern?

Exhibit 13 & 14: Historical JNJ & Last 10 years stock performance



Source: Yahoo Finance and Own Calculations

By the graph on the left one can see that the stock price has been trending very strongly throughout the last 10 years, as we can see by the graph above. However, since mid-August to the beginning of December, the share price dropped, approximately, \$25. From that point onwards the stock has been “slightly” recovering. The share price on the 10th of December was of \$ 165.49, representing

⁶ <https://www.dividend.com/health-care-sector-dividend-stocks-etfs-and-funds/>

⁷ <https://www.mddionline.com/business/jjs-alex-gorsky-step-down-ceo>

a pullback of 7,8% when compared to the all-time high, \$179.47, reached in August 17. This is a significant decreasing for such a safe stock as JNJ that present a Beta of 0,7. In comparison the S&P500 is trading below all-time high in about 4%.

The main reason for such dip in a short period of time is the Medicare Program announcement in the US, supported by the House of Democrats. After the election of Joe Biden, on the 3rd of November of 2020, the US pharmaceutical scenario changed a little bit. The bill inducted by the democrats, allow now Medicare to negotiate the lower drug prices with pharmaceutical companies. The estimated savings, with this plan in place, are of 500 billion throughout the next 10 years. Just for a little bit of context last year the pharma business generated a grand total of 539 billion dollars⁸. So, of course that the business suffers a blow with the Medicare reformulation. Even though this reformulation “only” affect pharma business, given that the its the main generator of revenues of JNJ it’s a scenario that could highly affect.

Industry Overview

Exhibit 15: Pharmaceutical Segments CAGRs (2021-2028)

Oncology	6,83%
Immunology	8,10%
Neuroscience	3,5%
Infectious Diseases	4,6%
Hypertension	4,9%
Cardiovascular	10,09%
Metabolism	13,13%

Source: Fortune Business Insights

The **pharmaceutical manufacturing** market size amounted to \$1299 B in 2020, and it is project to experience a CAGR of 2.91% from 2021 to 2031⁹. In terms of revenues JNJ outperformed Pfizer, to be market leader (\$56.1B vs \$51.75B). The largest pharmaceutical market is the USA, followed by Europe. More than stating that the pharma sector will experience a CAGR of 2.91%, it is of paramount importance to also evaluate the CAGR of the sub-segments that compose JNJ, with them being Immunology, Neuroscience, Infectious diseases, Hypertension, Cardiovascular diseases, and metabolism. All the different segments that make up the pharma business segment present positive signs of revenue growth.¹⁰

All business segments of JNJ present positive signs of growth with **medical devices** having a CAGR of 5.20% from 2021 to 2028 and expected to present a market size of \$448B in 2020. **Consumer health products** has a CAGR of 8.56% from 2021 to 2028 and a market size of \$332B in 2020.

Exhibit 16: Comparison with Peers

	Mkt Cap	Revenues
JNJ	\$435.7B	\$82.5B
PFE	\$296.2B	\$41.9B
LLY	\$233.5B	\$24.5B
UNH	\$450.2B	\$257.1B

Source: Companiesmarketcap.com

Competitors:

The pharmaceutical Industry is one of the most competitive Industries in the world, with a large number of competitors both large and small, most of them well recognized and with a long history in the market. Furthermore, the pharmaceutical industry is subject to countless regulations that increase competition by imposing

⁸ NY Times, 2021: “Health Care Renovation”

⁹ Fortune Business Insights

¹⁰ Fortune Business Insights & Statista

strict laws in technology advancement and generics that companies are obliged to obey¹¹.

In very broad terms, one can say that given that the industry is very mature, and the majority of big players are well established, there is an intense competition within the industry, with the threat of new entrants being medium/low, mostly due to the high investment needed, the manufacturing, R&D costs, especially when considering that the established players have already developed economies of scale, hampering the entrance of new companies in the business.

Relative Competitive Position:

1) Cash Conversion Cycle

It is crucially important to analyse how much time each company takes to convert its investment in cash. The less days it takes the better for the company. In that line of thought JNJ has been improving, since from 2016 to 2020 it reduced its CCC by 30 days, sitting now at 85 days (specially driven by the increase in Average Payable Period in 23 days). When comparing directly with Pfizer and Eli Lilly, both present higher CCC, above 200 days, while UnitedHealth's CCC is negative, outperforming all the ones mentioned above, which means that given their truly high Average Payable Period (around 400 days) the company takes less time to sell its inventories and receive the cash than time to pay to its suppliers. All in all, the CCC of JNJ is healthy when comparing to its peers.

Exhibit 17: Cash Conversion Cycle (days) – Comparison with Peers (2020)

Cash Conversion Cycle	JNJ	PFE	UNH	LLY
Avg. Collection Period	88	69	36	103
Avg. Holding Period	144	338	48	265
Avg. Payable Period	146	181	527	107
CCC	85	226	-442	261

Source: Company Data

2) Liquidity Ratios

By the analysis of the table below, one can see that only UnitedHealth (UNH) has current liabilities exceeding the amount of its current assets, with the other companies showing ability to meet its short-term obligations with its current assets. Regarding the cash ratio, the higher the Cash Ratio the more stable the company is in terms of liquidity and financial health, and by comparing JNJ with its competitors only UNH falls behind, with the others being very similar. Lastly, the Cash Ratio all the companies present values that are fair greatly less than 1.

Exhibit 18: Liquidity Ratios – Comparison with Peers (2020)

¹¹ Cooper, P & Lopez I, 2021, "Drugmakers undercut rivals with new patent tactic as law shifts"

Liquidity Ratios	JNJ	PFE	UNH	LLY
Current Ratio	1.21	1.35	0.74	1.40
Quick Ratio	0.99	1.04	0.69	1.08
Cash Ratio	0.09	0.12	0.21	0.11

Source: Company Data

3) Accounting Ratios

When thoroughly analysing the gross margins of each one of the four companies, there is a main conclusion that must be drawn is that JNJ greatly fall behind its peers regarding the Gross Margin. This shows that JNJ has a lot to improve in term of cost structure, as COGS are taking up a huge part of revenues, when compared to the other companies studied. In terms of debt, JNJ is more attractive for investors, given the lower D/E ratio when compared to Pfizer and UnitedHealth. The industry average over the last 5 years, for US companies, has been 30%, which implies that JNJ the one that sits closer to that value.

ROE takes up a higher importance in the pharma industry given the fact that, by being a capital-intensive industry it shows investors how efficiently the company is using its capital to generate profit, and in this case, Eli Lilly outstandingly outperforms the other companies. The industry average (adjusted to R&D) is approximately 12%¹², which makes JNJ being way higher than the average. This is an indicator that the company allocates its capital profitably, resembling the fact that it is a LT winner.

Regarding Core ROIC, as one would see further up, that the WACC is lower than the ROIC, we can affirm that the company is creating value, meaning that the invested capital is being used effectively.

Exhibit 19: Accounting Ratios – Comparison with Peers (2020)

Accounting Ratios	JNJ	PFE	UNH	LLY
Gross Margin	66%	79%	88%	78%
Debt-to-Equity	0.37	0.64	0.79	-3.37
Financial Autonomy	36%	41%	35%	12%
ROE	23%	15%	23%	110%
CORE ROIC	18%	9%	25%	18%

Source: Company Data

Mergers and acquisitions:

“The industry exhibits a pattern of firms merging and larger firms buying smaller firms that have promising research or new drugs”. (Whiteside, 2021)¹³. JNJ follows the same strategy to increase innovation and prune in terms of business portfolio by acquiring smaller companies that will help to “redefine” and grow the business. When the company lacks innovation in some sector, it may make up for it by

¹² https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/roe.html

¹³ Whiteside, E, 2021, Investopedia, “The Industry Handbook: Pharma Industry”

acquiring companies with high level of R&D in such fields. Such example was the acquisition of Pfizer's consumer healthcare unit in 2006 that instantly made J&J a certified consumer health products titan.

Johnson and Johnson have made 42 acquisitions and 17 investments spending a combined \$86.47B for these acquisitions. Its key acquisitions were Actelion in January 2017 for \$30B, DePuy Synthes in June 2012 for \$19.70B and Momenta in August 2020 for \$6.50B. Its latest acquisitions were Momenta (Aug 2020), Verb Surgical (Dec 2019) and Taris Biomedical (Dec 2019). These historical of acquisition clearly show that even an enormous company as JNJ is incapable of developing everything in-house and must have partners to help them. The most relevant acquisition, in terms of amount, the Actelion one, a swiss pharma company that is focused on R&D and treatment of rare diseases, shows the company's intention to intensify and strengthen its position in the pharmaceutical segment, pressuring its competitors.

To conclude, not only M&A activity is fundamental in terms of strategy implementation to deal with a competitive industry, but also to streamline operations in terms of manufacturing process (Bieri, 2018)¹⁴.

Science and Technology:

Disruptive technologies such as AI, robotics, 3D printing and precision medicine, among many others will impact the manufacturing and distribution of pharmaceuticals. The pharma industry must prepare itself to embrace new technologies and put a greater focus on prevention and digital health.

The emerging pharmaceutical technologies can aid in a much faster drug and vaccine development if companies make use and prioritize digitalization initiatives. Five years ago, the technology necessary for the creation of MRA covid 19 vaccines did not exist. This illustrates the exponential advance in the development of technological advance in the industry. High-performance computing and advanced genetic sequencing are technologies valuable for the creation of vaccines and pharmaceutical products but other technologies such as the power of near-instantaneous communication are to be explored by companies in the industry to help in the needs of pharmaceutical supply chains, logistics, funding as well as coordinate R&D activities.

In 2020 a Global Data survey found that 30% of companies in the healthcare industry have digital strategies, noting a 4% rise comparing to 2019.¹⁵

Exhibit 20: Remarkable M&A's of JNJ

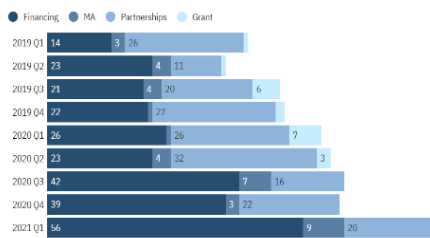
Acquisitions	Year	Amount
Actelion	2017	\$ 30 B
DePuy	2012	\$ 19.70 B
Momenta	2020	\$ 6.5 B
Auris Health	2019	\$ 5.8 B
Centocor	1999	\$ 4.9 B
Vogue International	2016	\$ 3.3 B
Scios	2003	\$ 2.4 B

Source: Contract Pharma

Exhibit 21: Number of AI deals in the Pharma sector

¹⁴ Bieri, C, 2018, ContractPharma, "What Drives M&A in the Pharma Industry"

¹⁵ <https://www.pharmaceutical-technology.com/features/pharma-ai-investment>



Source: GlobalData

When analysing J&J technology investments one can see the how they are vital for the growth of the company: they paired up with Merck and Sanofi in order to manufacture vaccines in a global scale, concluded a partnership with Prisma health in a partnership with Prisma Health for the manufacturing and distribution of a ventilator expansion device and collaborated with Koa Health to research the use of digital cognitive behavioural therapy, investment in direct-to-consumer telehealth company Thirty Madison.

To illustrate the growing investment made in this matter, let's take as a closer look to Artificial Intelligence. GlobalData conducted a study that shows that in a short span of two years (from 2019 Q1 to 2021 Q1)¹⁶, the number of AI deals announced by the pharmaceutical companies amounted to 44, while in the same quarter of the current year, the number of deals announced was of 85. Moreover, the same study shows that since 2014 to 2021, the number of granted AI patents increased from 20 to 75, which illustrates the growing investment made in AI. This is an industry trend, and by the looks of it, the companies that better leverage their position and investments in disruptive technology will gain a competitive advantage and, most probably, dominate the sector.

In addition, GlobalData developed a metric system where classifies the companies according to their AI investments and future projections. The only two companies considered as "Dominant Players" were Novartis and GlakoSmithKline, and other 19 were considered as "Leaders" that can then elevate their position to be dominant players. JNJ is one of those companies, alongside, Pfizer, for example.

Growth Strategy

In sum, for the companies within the industry to grow, they should focus on the technologies for data collection about the patients, and also data analysis and interpretation. The industry is more and more technological driven, and the companies that best address this and best adapt to the "new world of technology" that is conquering the industry, are the ones that will have more success.

Research and Development

In 2020, research and development spending in the pharmaceutical industry totalled nearly 200 billion U.S. dollars globally. For comparison, R&D expenditures totalled 137 billion dollars in 2012, which represents a CAGR of 4,84%.

R&D is the pharmaceutical industry's lifeblood. The success of major drug companies almost wholly depends upon the discovery and development of new medicines, and their allocation of capital expenditures (capex) reflects this fact. A

¹⁶ <https://www.pharmaceutical-technology.com/features/pharma-ai-investment>

study conducted Mehmet Ugur et al¹⁷, concluded that there is nearly a linear correlation between the R&D investment and R&D output, and also, that there are economies of scale on pharmaceutical R&D.

Pharmaceutical companies spent, on average, over 25% of revenues on R&D in 2018 and 2019, making it one of the biggest spenders in this area. Outside of the semiconductor industry, no other industry spends more on R&D. In fact, of the 20 largest R&D spending industries in the world, the pharmaceutical industry makes up nearly half the list.

When comparing with other main investors, one can note on the left the R&D investments and the % of revenues. JNJ even though one the biggest spenders in amount terms, in terms of %, it lagged behind other companies (Exhibit 22). For example, while JNJ spent 14.8% of its revenues, Pfizer spent more than 22%.

R&D Efficiency:

More than the amount invested, it is crucial to understand if the investments are efficient. For that purpose, it is relevant to study on a considered span of time (last 5 years) how many drugs were approved and their contribution in terms of value for the company. Over the last 5 years, in JNJ case, only 5 drugs were approved, with an overall value contribution of roughly \$24 billion. For example, when comparing with Pfizer, JNJ had less drugs approved but the value generated by those drugs has higher, so more than the number of drugs approved in the last 5 years it is important to study how the value of the drugs approved recently is in relation to the total value of marketed drugs.

In exhibit 24, on the left, one can see all the 8 companies that over the last 5 years, have value of drugs approved above \$17 B. Out of those 8 companies, the value of the recently approved drugs as % of the total value of marketed drugs, JNJ is the one that presents the lowest %, with 10.2%. On one hand, this number shows the low dependency of JNJ on newly approved drugs, which makes the business less risky, but is also a little bit concerning, as the R&D investments may be not as efficient as other companies.

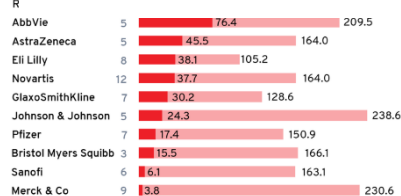
For example, if we directly compare AbbVie with JNJ, and the R&D spent over the last years, JNJ (blue line) spent considerably more than AbbVie (red line), and had the same number of drugs approved, but while JNJ approved drugs value barely surpassed \$24 B, while AbbVie value of approved drugs was, approximately, \$ 76B. Of course, that, drugs take a lot of time to be approved, and the last 10 years of R&D are not perfect illustrative of the whole picture but give a notion that JNJ must improve its R&D efficiency.

Exhibit 22: R&D analysis

	R&D spent	% of Revenues
JNJ	\$ 12.2 B	14,8%
Roche	\$ 6.5 B	24,1
Novartis	\$ 9 B	18,5
Merck	\$ 13.6 B	28,3
Pfizer	\$ 9.4 B	22,4

Source: Companies' Financial Statements

Exhibit 23: Measurement of R&D efficiency



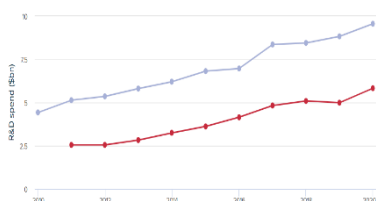
Source: Fierce Pharma

Exhibit 24: Last 5 years Drugs approves as % of Total Marketed Drugs Value

Company	% of Marketed Drugs Value
Roche	45.9%
AbbVie	36.5%
AstraZeneca	27.7%
Eli Lilly	36.2%
Novartis	23.0%
GSK	23.5%
JNJ	10.2%
Pfizer	11.5%

Source: Fierce Pharma

Exhibit 25: R&D comparison JNJ (blue) vs AbbVie (red)



Source: Evaluate.com – Data Insights

¹⁷ Ugur, M & Trushin, E & Solomon, E, 2016, “Inverted-U relationship between R&D intensity and survival”

Pricing:

Another hot topic of the industry has been the need for affordable and equitable pricing. To illustrate how prices have been increasing, from January of 2019 to January of 2020, 48% of branded drugs saw its price increasing, while from January 2020 to January 2021 the registered % was of 60.6%. Specifically, to this industry, there are several factors that influence the price setting: the uniqueness of the drug, the expiration date of the patent and also the regulation imposed in the country of production and distribution¹⁸. Due to this pricing pressure several regulations and pricing control mechanisms were imposed.

Sustainability:

The importance of ESG criteria is an increasingly apparent trend in the world of finance and is having a growing impact on it. In 2020, almost 60% of investors declared their intention to have positive impacts through their investments. The number of investors focused on environmental, social and governance factors has therefore increased, alongside realizations that ESG focused companies outperform other companies. With the pharma businesses being under pressure to comply with certain environmental obligations, this will be an increasing trend across industries¹⁹. JNJ is currently ranked 11th on the MSCI ESG rating. Recent scandals may drive down the ranking and deter future investors (active stewardship vs negative screening).

Exhibit 26: ESG criteria comparison (2020)

ESG Criteria	JNJ	Pfizer	Eli Lilly	UnitedHealth
Total ESG Risk Score	29 (55th Percentile)	25 (39th Percentile)	29 (57th Percentile)	20 (24th percentile)
Environment Risk		0.7	1.8	1.7
Social Risk Score		20	13.1	17.2
Governance Risk		8	9.6	10.5
Controversy level(average industry 1.9)		4	3	2

Source: ESG global Rankings

Macroeconomic Situation

First and foremost, it is inevitable to talk about the pandemic, and how that only not only affect the US, where the company is established and it most rely on, but the whole world. By that reason, the macroeconomic projections next presented are for the whole economy. Because of the pandemic the overall macroeconomic situation suffered significant variations that are expected to have its repercussions. However, the somewhat, possible, long-lasting effects of Covid-19, it is believed that the situation will be reversed and the upcoming years, a trend to reverse those effects and reach the “normality”. The last year was without a doubt an horrific year that also affected hugely the economy. After consulting the IMF and OECD

Exhibit 27: Macroeconomic Indicators (World: 2016 – 2020)

Years	2016	2017	2018	2019	2020
Inflation Rate	2.7%	3.2%	3.6%	3.5%	3.2%
Real GDP growth	3.30%	3.80%	3.50%	2.80%	-4.40%
Nominal GDP growth	6.09%	7.12%	7.23%	6.40%	-1.34%
Unemployment Rate	5.70%	5.60%	5.40%	5.40%	6.50%

Source: IMF & OECD

¹⁸ https://www.lungcancereurope.eu/2020/08/02/health-technology-assessment-hta-and-drug-pricing/#Overview_of_drug_pricing

¹⁹ <https://www.pharmaceutical-technology.com/news/environmental-sustainability-in-the-pharmaceutical-industry-needs-to-be-addressed-the-most-poll/>

statistics one can note that over the last years the Nominal GDP growth was stable around 6 and 7%, and last year it registered a negative value of 1.34%. If one considers the Inflation effects (stable at the 3% threshold), the Real GDP growth shows the same trend, steady values around 3% and then a huge drop to -4.4%. After analysing these statistics, the first conclusion that one must draw is the fact that the consumer wealth decreased, which, makes the average consumer to decrease consumption, including health related consumption. So, only consider this factor, one may expect consumption in healthcare to drop. Nonetheless, there are other factors to have into consideration that led to the conclusion that the healthcare/pharmaceutical industry will not experience this consumption drop. Firstly, according to Statista, the population is aging, as shown by the increase of the % of people over 65 years, and the decrease of people with 15 or less. This is positive for the pharmaceutical sector, as the people that need pharmaceutical products the most, elderly, is increasing. Moreover, given the technology driven world we live in, allied with pharmaceutical innovations, treatments and many other, this is contributing for the increase of the life expectancy, sustaining the large customer base. Moreover, and having in mind that the origin of this situation is a health-related crisis, supports the idea that healthcare and pharma companies will play a crucial role to “get out” of this situation by providing medicines, drugs, vaccines and many other products. The economic forecast indicate that the economy will in the next few years recover from these fluctuations and stagnate around pre-pandemic values around 2024 or 2025.

Exhibit 28: Macroeconomic Indicators Projections (World: 2011 – 2025)

Years	2021F	2022F	2023F	2024F	2025F
Inflation Rate	3,4%	3,2%	3,1%	3,1%	3,2%
Real GDP growth	5,20%	4,20%	3,80%	3,60%	3,50%
Nominal GDP growth	8,78%	7,53%	7,02%	6,81%	6,81%
Unemployment Rate	5,70%	5,90%	6,00%	5,90%	5,90%

Past Analysis

Revenues

Exhibit 29: Revenue per segment (2016-2020) \$Million

	2016	2017	2018	2019	2020
Consumer Health BU	\$ 13,307	\$ 13,602	\$ 13,853	\$ 13,897	\$ 14,053
US Sales	\$ 5,420	\$ 5,565	\$ 5,761	\$ 5,839	\$ 6,362
Rest of the world	\$ 7,887	\$ 8,037	\$ 8,092	\$ 8,059	\$ 7,691
Pharmaceutical BU	\$ 33,464	\$ 36,256	\$ 40,734	\$ 42,198	\$ 45,572
US Sales	\$ 20,125	\$ 21,474	\$ 23,286	\$ 23,874	\$ 25,735
Rest of the world	\$ 13,339	\$ 14,782	\$ 17,448	\$ 18,324	\$ 19,837
Medical Devices BU	\$ 25,119	\$ 26,592	\$ 26,994	\$ 25,963	\$ 22,959
US Sales	\$ 12,266	\$ 12,824	\$ 12,837	\$ 12,384	\$ 11,036
Rest of the world	\$ 12,853	\$ 13,768	\$ 14,157	\$ 13,579	\$ 11,923
Total Revenues	\$ 71,890	\$ 76,450	\$ 81,581	\$ 82,058	\$ 82,584
US Sales	\$ 37,811	\$ 39,863	\$ 41,884	\$ 42,097	\$ 43,133
Rest of the world	\$ 34,079	\$ 36,587	\$ 39,697	\$ 39,962	\$ 39,451

Source: Company Data

Source: Company Annual Report

Over the last 5 years we can see that the revenues have been increasing, registering in 2016 a value of 71890 and last year of 82584. This translates into a growth of 14,88%. Of course, that during pandemic times, it was hard, but still, from 2019 to 2020, an increment of 0,6% was noted. It is mainly due to the huge diversification of the portfolio that JNJ can show growth in their stream of Total Revenues across the years. If JNJ was overly dependent of one single, or even a few, drugs, it would not be possible to keep these growth rates. The huge diversification of products/drugs makes possible to face lawsuits and adverse situations, like the pandemic and keep Total Revenues increasing.

When going into further examination, one can note that the Pharmaceutical segmental has been strengthening its position as the one that generates more revenues throughout the last 5 years, with approximately 56% of sales coming from within the US territory, in the last year. Regarding the remaining segments, the Consumer Healthcare is the most stable segment of the company. From 2016 to 2020 the revenues from this sector only have been very constant, going from

Exhibit 30: Revenue per segment, % (2016-2020) \$Million

	2016	2017	2018	2019	2020
Consumer Health BU	19%	18%	17%	17%	17%
US Sales	8%	7%	7%	7%	8%
Rest of the world	11%	11%	10%	10%	9%
Pharmaceutical BU	47%	47%	50%	51%	55%
US Sales	28%	28%	29%	29%	31%
Rest of the world	19%	19%	21%	22%	24%
Medical Devices BU	35%	35%	33%	32%	28%
US Sales	17%	17%	16%	15%	13%
Rest of the world	18%	18%	17%	17%	14%
Total Revenues	100%	100%	100%	100%	100%
US Sales	53%	52%	51%	51%	52%
Rest of the world	47%	48%	49%	49%	48%

\$13.3B to \$14.053B, registering a positive variation of 5%, in a 5-year span, with the majority of sales of sales coming from the Rest of the World. Curious, that last year, highly affected by the pandemic situation, the sales from the Rest of the World decreased 4,5%, while the sales from the US increased almost 9%. Concerning medical devices, the pandemic situation affected a lot the demand for the Medical Devices segment, as a lot of surgical procedures had to be delayed and/or cancelled due to the restrictions. This is reflected by the decrease from \$25.663B to \$22.959B, in just one year. The most important aspect is to understand if that shrink of demand was only caused due to covid or not. We have strong beliefs that the revenues dip that occurred last years were due to the pandemic, as in the last years the values for that segment have been very constant.

Is JNJ highly dependent on a single drug?

We can see that the past 3 years, these 3 specific drugs have gained relevance in terms of % of total revenues, given that the last year, these 3 drugs represented almost 1/5 of the total sales of the company. These products are not like band-aids, where the company can easily build brand recognition as their competitive advantage. In the case of pharmaceutical the greatest competitive advantage are the patents. It is also of crucial importance to mention that the “bestselling” product, Stelara, its patent expires in 2023 in the United States (2024 in the Rest of the World), while for Darzalex and Imbruvica, the patents are far from expiration. This is a thing to have in mind, but not a cause for extreme concern, as in the meanwhile other new drugs will be approved. The patent expiration dates are crucial to predict the sales forecast for the drugs, as we will see in the Revenue Forecast section.

Exhibit 31: Main drugs as % of Total Revenues

	2018	2019	2020
Stelara	6.32%	7.75%	9.33%
Darzalex	2.48%	3.65%	5.07%
Imbruvica	3.21%	4.16%	5.00%
	12.01%	15.56%	19.40%

Source: Company Annual Report

Exhibit 32: Main pharma drugs patents expiration dates

	US	Rest of the World
Stelara	2023	2024
Darzalex	2029	2031
Imbruvica	2036	2036

Source: Company Annual Report

New Drugs

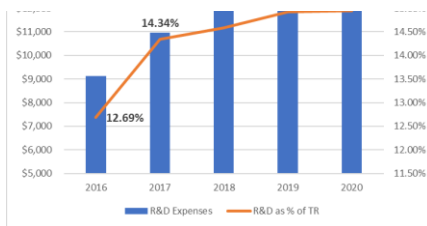
A crucial factor for companies that operate in this specific industry is the development of new medicines. Developing new drugs is extremely costly, and more than that its bears uncertainty with it, as many “potential drugs/products” are not accepted and do not reach the market. In terms of %, for a better perception, only 12% of the drugs that enter clinical trials are approved by the FDA. The low % is a consequence of the meticulous process to a drug to be accepted, as it must pass 2 different phase of test plus clinical trials, before receiving FDA approval to be inserted in the market. So, all in all, the process takes a lot of time (the estimation is that a drug that is starting to be develop now it will take 8 to 10 years before receiving approval, if approved...), and is also very costly.

Is investment in R&D closely related to the stream of revenues that the company experience? Of course, that the more revenues the company has the more invest in R&D is expected. However, one also must be careful that too much investment

in R&D will reach a point of diminishing return, and so, to beat the competition it's important to have a proper investment in R&D. The R&D investments is not just only to invent and develop new drugs, it is also for incremental innovation, product differentiation and monitoring the risks of products.

It is also important to remark that, according to a study conducted by EvaluatePharma, it is expected that by 2024 JNJ will surpass Roche as the biggest spender on pharmaceutical R&D. Also, between 2020 to 2024 the expected CAGR is of 3,0%, substantially lower than the 4,2% registered between 2010 to 2020²⁰.

Exhibit 33: R&D expenses and R&D as % of Total Revenues (JNJ – 2016-2020)



Source: Company Annual Report and Own calculations

When we look more closely to the R&D over the last 5 years, we see a clear trend that the R&D has been increasing constantly and rapidly. Regarding the products in pipeline in the 3 first years of our study (2016, 2017 and 2018) JNJ had 11 products under development, dropping to 9 in 2019, and reaching a maximum of 14 in the following year. Another covid-19 implication is the fact that is delaying approval and trials of non-vaccines products, which affects the R&D efficiency in the short and medium run.

Costs:

In the past 5 years, the three main categories of cost incurred are: Cost of sales, SG&A and R&D costs. The overall costs have been increasing in the time span, from \$50.754B to \$62.851B, an increment of 23% just in 5 years. Throughout these 5 years, the % of the three main categories of costs in relation to the total of costs have been constant, with COGS always being around 35%, SG&A near 33% and R&D representing 1/5 of the Total Costs incurred.

As one can see, most R&D costs are directed to the pharmaceutical business, almost 80% in the last year, which is anything but surprising. Cost of developing a new drug, drug trials.

Exhibit 34: JNJ R&D expenses allocation per segment 2016-2020 (\$M)

	2016	2017	2018	2019	2020
R&D expenses by sector					
Consumer Health	\$ 580	\$ 584	\$ 565	\$ 493	\$ 422
Pharmaceutical	\$ 6 967	\$ 8 360	\$ 8 446	\$ 8 834	\$ 9 563
Medical Devices	\$ 1 548	\$ 1 610	\$ 1 764	\$ 2 028	\$ 2 174
Total	\$ 9 095	\$ 10 554	\$ 10 775	\$ 11 355	\$ 12 159
Consumer Health	6,4%	5,5%	5,2%	4,3%	3,5%
Pharmaceutical	76,6%	79,2%	78,4%	77,8%	78,6%
Medical Devices	17,0%	15,3%	16,4%	17,9%	17,9%
Total	100%	100%	100%	100%	100%

Source: Company Annual Report and Own calculations

When we are analyzing such a big company, it is even more to understand their growth strategy for the foreseeable future. Investing in innovation. Of course, this is mainly done through R&D but also through the acquisition of smaller companies

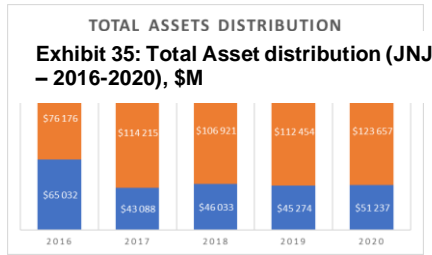
²⁰ Mckinsey, 2021, "Covid-19 implication for life sciences R&D recovery and the next normal"

that can boost the business. Acquisitions are key and a win/win for both companies. While the acquired company is provided scale and distribution by JNJ, allowing them to get the product to the market much easier.

Balance Sheet

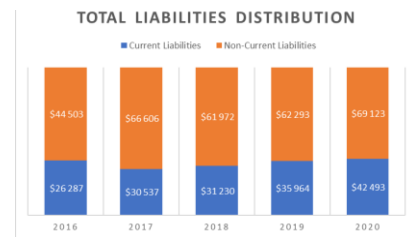
In term of Assets, in the last 5 years, the total Assets increased from 141 208 million of dollars to 174 894 million of dollars, representing a growth of approximately 24% over the course of the last 5 years. The drop of the current assets was driven by the decrease of marketable securities in about \$14 B. On the same line of thought, the non-current assets increased almost 62%, which is incredibly meaningful. During that time, the captions responsible by such increment were: intangible assets that doubled their value from 2016 to 2020, reaching a value of 53 402 million dollars in 2020 and Goodwill that grew from almost 23 billion to 36.3 billion of dollars. Within Intangible assets, trademarks (with definite or indefinite lives) grew from less than 16 billion to more than 41 billion of dollars, being the responsible for such an increase in the rubric of Intangible assets.

In term of Liabilities, in the last 5 years, the total liabilities increased from almost \$71B to more than \$111B, with both the current and non-current liabilities showing growths of more than 50%.



Source: Company Annual Report

Exhibit 36: Total Liabilities distribution (JNJ – 2016-2020), \$M



Source: Company Annual Report