Lisbon School of Economics & Management
Universidade de Lisboa

MASTER OF SCIENCE IN
FINANCE

MASTERS FINAL WORK
PROJECT

EQUITY RESEARCH:
JOHNSON & JOHNSON

RAVI MUKESH RAMESCHANDRA

OCTOBER 2021

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RAVI MUKESH RAMESCHANDRA

SUPERVISOR:

TELMO VIEIRA

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Abstract

The present Equity Research report was written in line with the CFA Institute's guidelines and reflects public information available up to October 14th, 2021.

Johnson & Johnson ("J&J") is a major Healthcare player, engaged in the research and development, manufacture, and sale of a range of products in Consumer, Pharmaceutical and Medical Devices segments.

J&J has a BUY recommendation with medium risk, with a 2022YE PT of $206.2/share using the Discounted Cash Flow Method (DCF), which represents an upside potential of 28.1% against the closing price of $160.9/share on October 1st. Other valuation methods such as the Flow to Equity (FTE), Adjusted Present (APV), Dividend Discount Model (DDM) and Relative Valuation were also applied.

Main drivers behind the BUY recommendation are: (1) high levels of R&D investment and positive expectations for growth within the oncology segment, (2) quick recovery in 2021 and 2022 following Covid-19 related lockdowns and (3) positive halo effect derived from the Covid-19 vaccine.

The main risks considered are (1) regulatory/legal risks, (2) R&D risk and (3) pricing pressure.

JEL classification: G10; G17; G30; G32; G34; G35

Keywords: Equity Research; Valuation; Mergers & Acquisitions; Johnson & Johnson; Healthcare; Pharmaceuticals; Mergers & Acquisitions; M&A; Research and Development

Resumo

O presente Equity Research foi escrito de acordo com as diretrizes do CFA Institute e reflete informações públicas disponíveis até 14 de Outubro de 2021.

A Johnson & Johnson (“J&J”) é um importante player da área de saúde, que atua na pesquisa e desenvolvimento, fabricação e venda de uma variedade de produtos nos segmentos de consumo, farmacêutica e dispositivos médicos.

A J&J tem uma recomendação de COMPRA com risco médio, com um 2022YE PT de $ 206,2 / ação usando o Método de Fluxo de Caixa Descontado (DCF), o que representa um potencial de alta de 28,1% contra o preço de fechamento de $ 160,9 / ação em 1º de outubro. Outros métodos de avaliação como o Fluxo para o Patrimônio Líquido (FTE), Presente Ajustado (APV), Modelo de Desconto de Dividendos (DDM) e Avaliação Relativa também foram aplicados.

Os principais motivadores por trás da recomendação de COMPRA são: (1) altos níveis de investimento em P&D e expectativas positivas de crescimento no segmento de oncologia, (2) recuperação rápida em 2021 e 2022 após confinamentos relacionados com o Covid-19 e (3) efeito halo positivo derivado da produção e venda da vacina contra o Covid-19.

Os principais riscos considerados são (1) riscos regulatórios / legais, (2) riscos de P&D e (3) pressão de preços.

Classificação JEL: G10; G17; G30; G32; G34; G35

Palavras-Chave: Equity Research; Avaliação de Empresas; Fusões e Aquisições; Johnson & Johnson; Saúde; Farmaceutica; Fusões e Aquisições; Pesquisa e Desenvolvimento

Acknowledgements

Foremost, I would like to thank my supervisor, professor Telmo Vieira for his invaluable insight into the healthcare industry and continuing help.

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I cannot leave ISEG without mentioning my fellow friends and colleagues, on whom I could always count on for unwavering support.

Lastly, I would like to express my thanks to my family, who always supported me throughout my academic journey and without whom none of this would be possible.

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Johnson & Johnson

Founded in 1886, J&J - Johnson & Johnson is engaged in the research and development, manufacture, and sale of a range of products in the healthcare field. It operates through three segments: Consumer, Pharmaceutical and Medical Devices.

RECOMMENDATION	BUY
Date	07/10/2021
Current Price	160.93
Target Price	206.16
Upside	28.1%
Sector	Healthcare
Ticker	J&J
Stock Exchange	NYSE

INVESTMENT SUMMARY

We issue a **BUY** recommendation with **medium risk** on J&J with a 12-month target price of $206.16, presenting a 28.1% upside potential on the closing price of $160.93 on October 10th. Our valuation is based on a Discounted Cash Flow Valuation and lays on the following key catalysts: (1) J&J's strong position in the Oncology treatment market, (2) the reversion of consumer demand to pre-pandemic levels and (3) its halo effect derived from the Covid-19 vaccine.

J&J'S ONCOLOGY SEGMENT TO KEEP GROWING ABOVE PEERS

From 2010-2019, oncology has seen the largest relative rise in medicine use in developed markets with a 14% CAGR (*IQVIA*) and is forecasted to continue growing at a 5 year 9-12% CAGR to 2025.

This is the main growth driver for J&J, with a very strong position in the market with **DARZALEX** and **IMBRUVICA**. The cancer drugs franchise is one of the fastest-growing pieces of the healthcare giant, growing at a CAGR of 33% 2014-20 and we forecast it will continue to grow at the upper level of 12% CAGR 2020-25F. (Appendix 12)

In 21/06/2021 the FDA also approved the J&J drug **RYBREVANT**, a new treatment for one of the rarest forms of Lung cancer which is the most common cancer type and the leading cause of cancer-related deaths worldwide (*American Cancer Society*). We believe that J&J's continued investment in R&D and its strong position in the industry can create a high long-term upside. (figure 2)

QUICK RECOVERY IN 2021-2022

2020 was marked by a pandemic which switched demand as lockdowns happened throughout the world and people saw their needs change and delays in certain fields of medical care. This meant a 0.6% YOY change in Sales in 2020 with this value being pulled down mostly by a -11.6% YOY change in Medical Devices as procedure volumes drastically decreased derived from a surge in Covid-19 cases and hospitals having to shut down procedures as a result.

However, as **hospitals develop the ability to manage capacity and medical procedures have started to pick up**, we forecast that the recovery will be quick, with a 10% YOY change in 2021 (Q2 2021 is up 7% compared to 2019) and **a CAGR of 4.92% from 2022-26F for the medical devices segment,** in line with the company's forecast in the latest medical devices conference, which may be conservative unless the delta variant causes a significant surge in hospitalizations.

HALO EFFECT DERIVED FROM THE COVID-19 VACCINE

J&J is set to gain from Covid-19 developments in 2 fronts:

1. Increased efficiency in drug development and manufacture

The sale and manufacture of the Covid-19 vaccine required Johnson and Johnson to make substantial changes to the way it approached the research and manufacture of new drugs, based on the scale of production and the short timeframe needed.

This meant a **restructuring of its supply chain** to efficiently get the vaccine to all the patients who needed it around the world and a **substantial shortening of the time from R&D to production**. These changes provide the company a framework in which J&J can build upon in the upcoming years to drive higher growth.

2. Better brand image

Being one of the few companies approved to manufacture a vaccine for Covid-19 gives the company an image of competence and trustworthiness. This is especially important as the company is going through various litigation cases and is set to pay various billions of dollars in lawsuits. A positive view of the company may help offset negative brand image impacts related to its legal issues.

Figure 1. Relative Share Performance
Source: Author Analysis

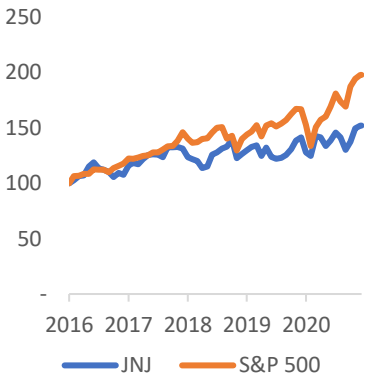


Figure 2. Global Oncology Spending and Growth
Source: EvaluatePharma

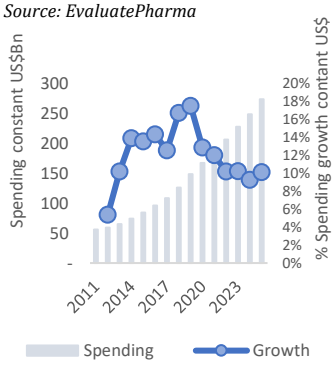
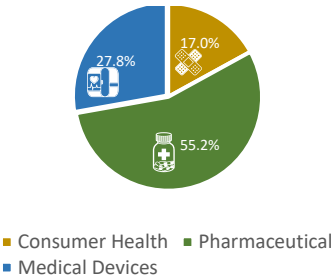


Figure 3. Revenue contribution by segment
Source: Author Analysis



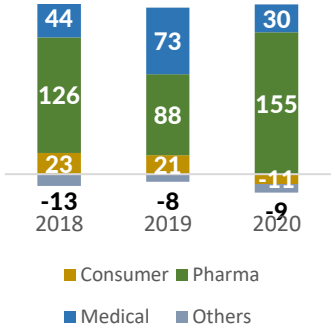
Business Description

Founded in 1886, **J&J - Johnson & Johnson** is engaged in the research and development, manufacture, and sale of a range of products in the healthcare field. The Company has over 134500 employees and 230 operating companies, which conduct business around the world. In 2020 the company reported $82.584bn in total revenue. (figure 3)

BUSINESS SEGMENTS & GEOGRAPHIC REACH

J&J operates in 3 main segments: **Consumer Health, Medical Devices and Pharmaceuticals**. The company is best known for its various numerous household names of medications and first aid supplies such as the Band-Aid brand, Tylenol, Johnson's Baby products, Remicade, Darzalex and Imbruvica. Pharmaceutical sales account for 55.2% of sales while Medical Devices and Consumer Health account for 27.8% and 17.0% of revenues, respectively (Figure 3).

Figure 4. EBT by Segment
Source: Author Analysis

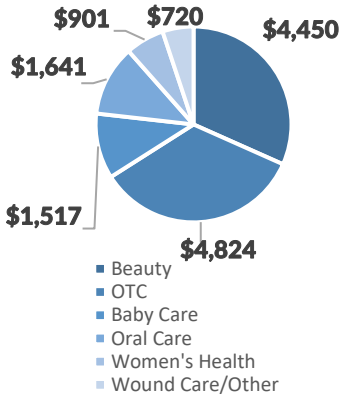


Consumer Health: Its Consumer segment includes a broad range of products focused on **personal healthcare** used in:

- Skin health (31.7%)
- Over the counter (OTC) medicines (34.3%)
- Baby care (10.8%)
- Oral care (11.7%)
- Women's health (6.4%)
- Wound care/Others (5.2%)

These products are marketed to the general public and sold online (eCommerce) and to retail outlets and distributors throughout the world. In 2020, **66% of the sales in this segment came from the Beauty and OTC segments**. (Figure 5)

Figure 5. Consumer Health Revenue by product ($m)

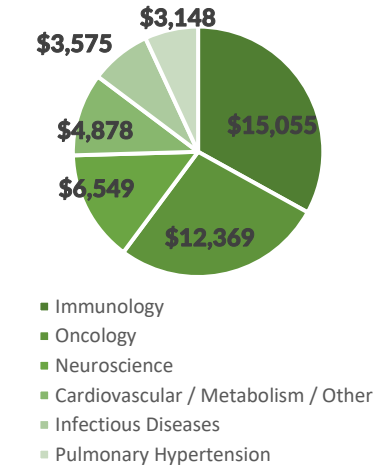


Pharmaceuticals: The Pharmaceutical segment is focused on six therapeutic areas:

- Immunology (33%)
- Oncology (27.1%)
- Neuroscience (14.4%)
- Cardiovascular/Metabolism/Other (10.7%)
- Oncology (7.8%)
- Pulmonary Hypertension (6.9%)

Medicines in this segment are distributed directly to retailers, wholesalers, hospitals, and healthcare professionals for prescription use. In 2020, **60.2% of sales in this segment came from the Immunology and Oncology segments**. (Figure 6)

Figure 6. Pharmaceuticals Revenue. by product ($m)

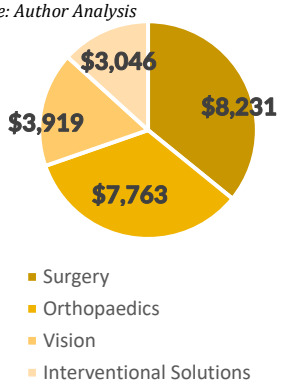


Medical Devices: The Medical Devices segment includes a broad range of products used in:

- Surgery (35.9%)
- Orthopaedics (33.8%)
- Vision (17.1%)
- Interventional Solutions (13.3%)

The products are distributed to wholesalers, hospitals, and retailers, and used predominantly in the professional field by physicians, nurses, hospitals, eye care professionals and clinics. In 2020, 70% of sales in this segment came from the Surgery and Orthopaedics segments. (Figure 7)

Figure 7. Medical Devices Rev. by product ($m)
Source: Author Analysis



Covid-19 Vaccine: J&J is one of the few companies producing a Covid-19 vaccine with FDA approval under emergency use and over 3.66bn doses have been administered globally as of July 21st. The company is set to earn revenues of $2.5bn derived from the vaccine in 2021, with a weight of 2.81% of total revenue (Figure 8). However, unlike its competitors, J&Js has a not-for-profit approach with its vaccine. Under the investor's guidance set by CFO Joseph Wolk in the Q2 2021 Earnings Call, J&J's EPS should not be impacted by Covid-19 vaccine sales. While this may change in the future, with the emergence of new variants and as booster shots may be required, we follow the company's guidance and maintain the assumption that the vaccine will remain as not-for-profit and have no impact on Net Income in 2021-26F due to a lack of further information.

Figure 8. Weight of Covid-19 Vaccine Revenues
Source: Author Analysis

Figure 9.Expected 2021 Covid-19 Vaccine Revs. ($bn)
Source: Author Analysis

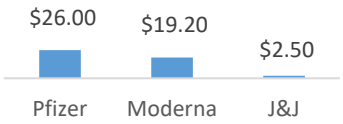
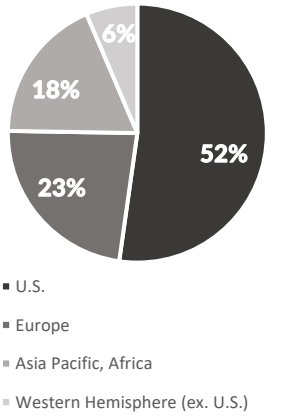


Figure 10. Revenue Contribution by Geography
Source: Author Analysis



Geographic Reach: J&J's customers are spread around the globe, with 52% of revenues coming from the United States, 23% from Europe, 18% from Asia Pacific and Africa and 6% from the Western Hemisphere (ex. US) (Figure 10).

COMPANY STRATEGIES

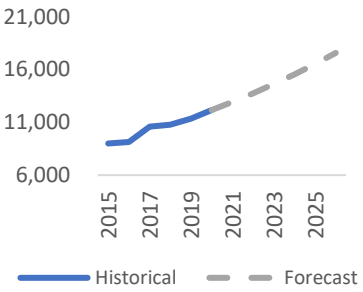
Investing in R&D:

The company's strategy is to maintain its leading position in healthcare. With this goal, comes the objective to invest more in R&D than its peers to stay ahead of competition.

We forecast that R&D spending will increase at a CAGR of 6.2% 2021-26F, following a YOY increase of 7.08% in 2020, when revenues were negatively impacted by lockdowns throughout the world. The main area where we see R&D being directed is Pharmaceuticals, namely Oncology and Immunology as well as Medical Devices. (Figure 11)

J&J's approach to continue innovating and creating new products that fill unmet needs in the market will allow it to outpace the market, through staying a relevant player in the segments that are set to grow the most within the industry. (see Appendix 12/13)

Figure 11. R&D Spending ($m)
Source: Author Analysis

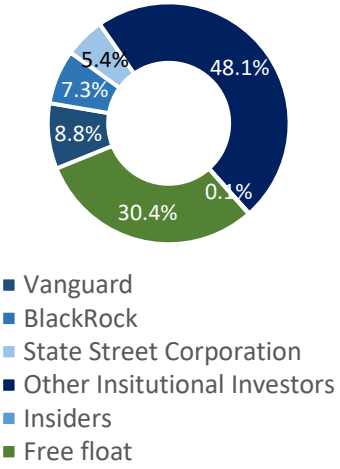


Mergers & Acquisitions:

One of the pillars that allows J&J to be successful is its **agnostic position towards the source of innovation**. The objective is having something that's transformational and being able to get it to patients, not where it originated from.

As a result, **50% of their products come internally and 50% externally**. In 2020, the Company made an all-cash $6.5bn acquisition of Momenta Pharmaceuticals, a company that discovers and develops novel therapies for immune-mediated diseases. Boasting a AAA rating and strong financials, we believe that J&J will be able to **maintain an active position in M&A** and generate long-term value for its investors.

Figure 12. Shareholder's Structure
Source: Yahoo Finance



Diversification of the Supply Chain:

Johnson & Johnson makes an active commitment to the continuous improvement of its supply chain, ensuring that products arrive on time and that the company can respond to rapid surges in product demand.

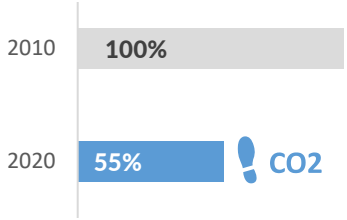
In 2020 the company moved up 5 spots on the annual 2020 Supply Chain Top 25 index (table 1), derived from its ability to put innovation into practice across the company and its efforts to respond to the Covid-19 pandemic. Gartner specifically called out a collaboration with Ethicon and Prisma Health to make and distribute VESper Ventilator Expansion Splitter – going from concept to launch in just 10 days. The

company continues to invest into technology and at many J&J locations, this has allowed manufacturing to continue without interruption, despite being in the middle of a pandemic.

***Table 1**. Gartner Supply Chain Top 25*

Rank	Company	Peer Opinion	Gartner Opinion	Three-Year Weighted ROPA	Inventory Turns	Three-Year Weighted Rev. Growth	ESG Component Score	Composite Score
1	Cisco Systems	470.0	574	3	13	2.9%	10	**6**
2	Colgate-Palmolive	1113.0	532	1	5	1.0%	10	**5**
3	**Johnson & Johnson**	885.0	454	1	3	3.6%	8	**5**

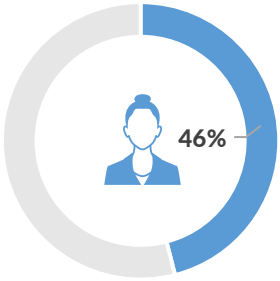
Figure 13. Relative Co2 reductions
Source: Author Analysis



Shareholder Structure

J&J's largest individual shareholder is the Vanguard Group with 8.8% ownership. BlackRock is the second largest shareholder with 7.3%. The third largest with 5.4% is State Street Corporation. In total, 69.51% of Float is held by Institutions. J&J has 2.63bn shares outstanding. These ordinary shares outstanding are traded in the New York Stock Exchange (NYSE). (Figure 12)

Figure 14. Share of management positions held by women
Source: Author Analysis



Environmental, Social and Governance

In 2016 the company set out a five-year plan with 21 Goals on corporate citizenship and sustainability efforts, with an updated "Health for Humanity goals 2025" to be taken on in the next years. Achieving these goals is integral to the company's commitment to create value for all stakeholders.

ENVIRONMENT

J&J appears to be concerned about environmental protection. On the goal of reducing the company's impacts on **climate and water resources**, the company **achieved all 3 targets** set out in 2016, having exceeded 2 of them:

1. **Reduce carbon emissions** by 20% by 2020, which was achieved in 2019 and has been down 45% globally since 2010 (Figure 13);
2. Produce 35% of electricity from renewable resources by 2020, which was exceeded (Figure 15);
3. Conduct a comprehensive **water risk assessment** at 100% of manufacturing/R&D locations and implement resource protection plans at the high-risk sites, which was achieved by the end of 2020.

The company also received EARTHWARDS recognition for sustainable innovation improvements on new and existing products representing 20% of revenues.

Figure 15. Electricity from renewable sources
Source: Author Analysis

SOCIAL

The company actively looks to build a more diverse workforce representative of the communities it serves, with a share of management positions held by women of 46% and set to continue growing in the future. (Figure 14)

Some of the key commitments and goals that show J&J's commitment to social responsibility are $100m committed in the next five years in the U.S. to help eliminate health inequalities for people of colour, achieving 50% of women in management positions by 2025 and engaging two million girls in STEM²D activities by 2025.

It is important to note, however, that in the past years, J&J has been involved in several controversies, including an opioid trial loss, a talc litigation, a DOJ investigation over J&J talc statements and a $8bn Risperdal verdict that was later reduced to $6.8m.

Table 2. ESG Risk Rating
Source: SustainAnalytics

Risk Rating		
JnJ	**29**	Medium
Novartis	17	Low
Roche	21	Medium
Merck	22	Medium
Pfizer	25	Medium
Average	**23**	Medium

GOVERNANCE

Mr. Alex Gorsky was elected J&J's CEO and Chairman of the Board in 2012. He has been with the company since 1988, starting as a sales representative with Janssen Pharmaceutica. He holds an MBA from the Wharton School of the University of Pennsylvania.

On January 3rd 2022, the current CEO Alex Gorsky will serve as Execute Chairman and **transition the role of CEO to Joaquin Duato**, who will also be appointed as a member of the Company's Board of Directors. Mr. Joaquin Duato has been with the company for over 30 years and in his current position, he provides strategic direction for the Pharmaceutical and Consumer Health sectors ($60bn portfolio) and

oversees Supply Chain, Technology and Health & Wellness teams. He holds an MBA from ESADE.

Both **ISS Score Metric** (Table 2) and **ESG Risk Rating** (Table 3), place J&J under its peers. The ISS Quality score of 8, with 1 being the highest out of 10, represents a high for J&J when compared to its direct peers in all metrics except Shareholders rights. The ESG Risk Rating metric, which measures a company's exposure to industry-specific material ESG risks and how well a company is managing those risks, shows that J&J has an ESG Risk Rating of 29, which represents medium risk. Compared to its peers, Johnson & Johnson has the highest ESG Risk Rating out of the group. We believe that this is mostly explained by the company's recent involvements in various lawsuits related to its connection to the opioid crisis and health concerns in some products, such as its talcum powder.

J&J follows the Anglo-Saxon Governance model where directors are elected each year by the shareholders at the Annual Meeting of Shareholders. All directors other than the Chairman/CEO are independent and all committees other than the Finance Committee are comprised solely of independent directors.

Executive Committee: Composed by 11 members (Appendix 12)

Board of Directors: Composed by 14 members (Appendix 13)

The Board of Directors has the following committees:

- **Audit Committee**: Provides oversight of the financial management, independent auditors and financial reporting procedures of the Company.
- **Compensation & Benefits Committee**: Duties and responsibilities relating to the compensation of the Company's directors and executive officers and oversight of the management of various pension, long-term incentive, savings, health, and welfare plans.
- **Nominating & Corporate Governance Committee:** Identify qualified individuals for membership on the Board and recommend nominees for the next annual meeting of shareholders.
- **Regulatory, Compliance & Government Affairs Committee:** Provide oversight to operate within and comply within the specialized regulatory environment the company is in, with respect to healthcare compliance and product quality and safety.
- **Science, Technology & Sustainability Committee**: Assist in the general oversight of significant scientific and technological aspects of the Company's businesses.
- **Finance Committee**: Exercises the authority of the Board during the intervals between meetings.

Table 3. ISS Score Metric
Source: Yahoo Finance

Metric	J&J	Peer Average
Overall Score	**8**	**5**
Audit	10	7
Board	8	6
Shareholders Rights	4	4
Compensation	9	4

Industry overview and competitive positioning

MACRO ANALYSIS

Economic outlook

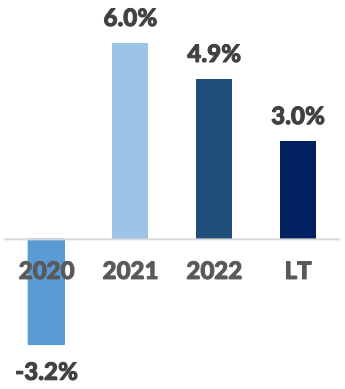
The global economy is currently rebounding from a slowdown in 2020.

The global economy is projected to **grow 6%** in 2021 and **4.9%** in 2022 (Figure 16) as vaccination rates are increasing and countries are reopening. The global recovery can be split into two blocs:

1. Most advanced economies that can look forward to further normalization of activity;
2. Countries that will still face resurgent infections and rising COVID death tolls.

While this recovery is not assured until the pandemic is beaten globally, we remain positive as the WHO, World Bank and WTO set out a goal of vaccinating at least 40% of the population in every country by the end of 2021 and at least 60% by mid-2022, alongside ensuring adequate diagnostics and therapeutics at a price of $50 billion.

Figure 16. World GDP Growth forecasts
Source: IMF

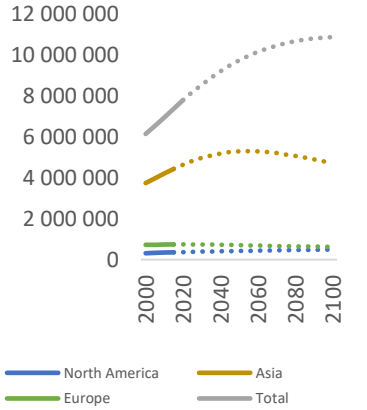


Population Growth

World population has been growing at 1.2% CAGR 2000-20. The United Nations forecasts that this upward trend will continue but slow down, with a forecasted 0.98% CAGR 2020-25F and 0.42% CAGR 2020-2100F and it is expected for population growth rates to continue to decline as we enter what the UN calls the "last phase of the demographic transition", meaning that by the end of the century global population growth will have fallen to 0.1%.

This means a projected 9.7bn people on Earth by 2050, compared to the current 7.67bn, a substantial 24.44% increase (Figure 17).

Figure 17. Population Forecast 2020-2100
Source: OECD



Ageing population

Population ageing is a global phenomenon and virtually every country is experiencing growth in size and proportion of older persons in their population. The increase of worldwide population is linked to the increase of life expectancy, as people get better access to healthcare.

These new pressures bring new opportunities for companies' trough investment in R&D and Technology in search for the creation of new drugs.

A recent analysis on health care expenditure by age shows a large difference between age groups in spending, with per capita health expenditure being 3.32 times higher when compared to the 20-64yr age group and 5.75 times higher when compared to the 0-10yr group for the 8 high income countries analysed. (Figure 19) (Appendix 19)

The focus on elderly care is especially important given that between 2019 and 2050, the proportion of the world's population aged 65 years or above is projected to increase from 9% to 16%, so that one in six people in the world will be aged 65 years or over as forecasted by the United Nations. (Figure 18)

The focus on guaranteeing good quality and innovative healthcare to guarantee the best quality of life for this ever-increasing portion of the population serves as an opportunity for J&J in its Pharmaceutical and Medical Devices segment with the latter being centered around heart diseases and heart issues, where people over the age of 65 are more likely to suffer from hearth issues and need stents or other surgical products. (Figure 19)

Figure 18. Worldwide % of population aged ≥ 65
Source: United Nations

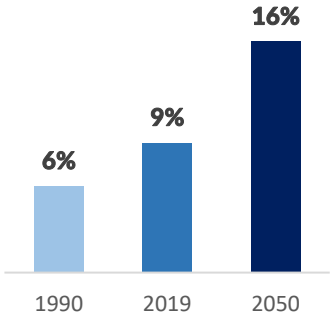
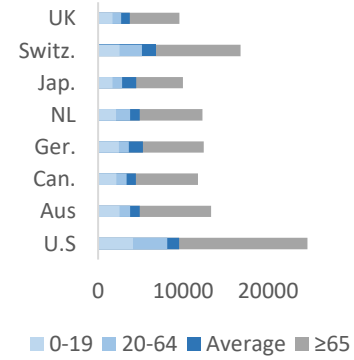


Figure 19. Per capita health expenditure, $
Source: Papanicolas, 2020



DRIVERS OF REVENUES

Data is driving Healthcare

The industry's biggest trend that was accelerated in 2020 is the use of digital technology – telemedicine, wearables devices, other tools – to help make healthcare delivery more efficient and personalized.

Today, approximately 30% of the world's data volume is being generated by the healthcare industry and it's projected that by 2025 the healthcare data CAGR will reach 36%, 9% higher than the global datasphere. The number of digital device interactions/capita/day is **projected to rise to nearly 5000 in 2025** from 1426 in 2020, with much of this increase being healthcare related. (Figures 21 & 22)

It is certain that healthcare technology will be part of the future reality, as consumer wearables increasingly converge with medical technology and are able not only to collect data, but also suggest solutions and provide treatment.

Figure 21. Data CAGR 2018-25
Source: RBC Capital Markets

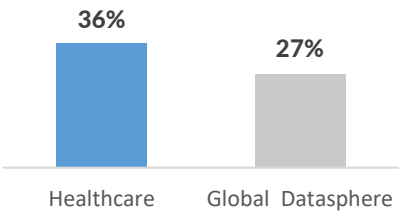


Figure 22. Digital Device Interactions/Capita/Day
Source: RBC Capital Markets

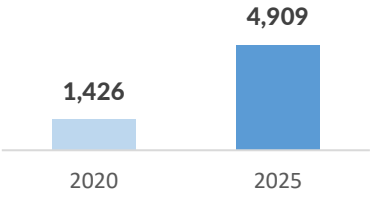
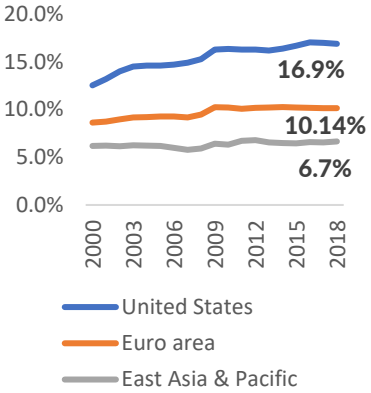


Figure 20. Health Expenditure (% GDP)
Source: World Bank



As healthcare costs reach an unsustainable level and keep taking on a higher percentage of GDP across the globe (Figure 20), one of the major shifts that will shape the new healthcare landscape is the shift from volume to value-based healthcare, as patients stop being passive recipients of services and start driving their own healthcare experience through improved access to information and an increasingly important role in decisions related with their healthcare. (Appendix 13)

Oncology and Immunology driving growth in Biopharma & Medical Devices

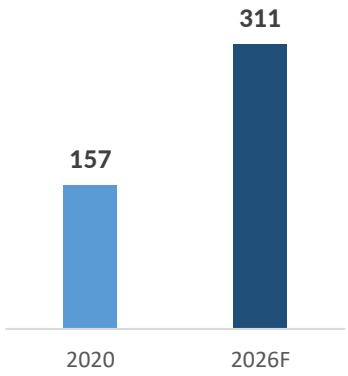
Oncology and Immunology continue to be the main R&D focus area in the biopharma industry and the biggest drivers that support a CAGR of 7.4% 2020-26F for Worldwide Prescription Drug Sales. (Figure 23)

As an estimated 39.5% of all men and women will be diagnosed with cancer at some point of their life[1],- oncology is the area with the largest proportion of clinical development spending, with 37.4% of total pipeline expenditure and 28.7% of total pipeline FDA approvals.

This high investment is set to see high returns, with a forecast of $188.2bn NPV, which represents 34.8% of the US clinical pipeline. It is projected that oncology will make up 21.7% of total pharmaceutical sales in 2026.

Medical devices are also set benefit from this growth, as the segment works very closely with the Biopharma industry in approaching these diseases in Oncology and Immunology.

Figure 23. Global sales from oncology ($bn)
Source: EvaluatePharma



Medical Patents & Legal Framework

Companies in the healthcare industry invest millions every year in order to develop new products and increase the company's bottom line. To protect their inventions, companies use patents which convey the patentee "the right to exclude others from making, using, selling, or offering to sell the matter of the patent" for a finite number of years.

The agencies that govern new pharmaceutical products are different in the United States and Europe. The principal criteria all medicines must have when applying for authorization are **quality, safety, efficacy, and a positive-risk balance**.

United States: The Food and Drug Administration (FDA) is responsible for assuring that new drugs are safe and effective, and the approval process requires compliance with testing programs (clinical trials).

Europe: The European Medicines Agency (EMA) or National authorities are responsible for this process, depending on where the products will be sold (EU territory or nationally).

The principal criteria all medicines must have when applying for authorization are **quality, safety, efficacy and a positive-risk balance.**

Clinical trials are usually divided into 3 main phases:

- **Phase 1:** Small trials, recruiting only a few patients. Trials may be open to people who are already at an advanced stage of the disease and have already tried all other available treatments. These trials are used to find out:
    - How much of the drug is safe to give;

Figure 24. Biopharma M&A activity ($bn)
Source: EvaluatePharma

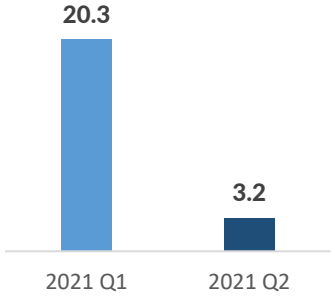
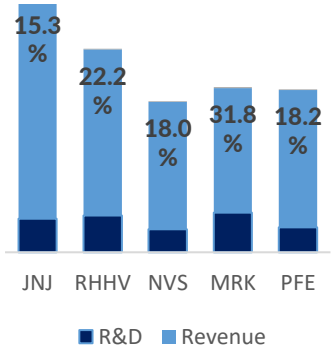


Figure 25. 12 Month Trail R&D/Revenue
Source: Author Analysis



[1] https://www.cancer.gov/about-cancer/understanding/statistics

- What the side effects are;

- **Phase 2:** Tend to use more people than the phase and can last several years. While the emphasis of the Phase 1 is on safety, Phase 2's is on effectiveness (although they continue to study safety). These trials are used to find out:
  - Preliminary data on if the drug works in people who have a certain disease

- **Phase 3:** The number of subjects ranges from several hundred to about 3000. This phase gathers more information on safety and effectiveness, studying different populations and different dosages and using the drug in combination with other drugs.
  - If the FDA agrees that the results of the trial are positive, the drug will be approved

Mergers, Acquisitions and Collaborations

Many companies use the strategy of mergers, acquisitions, or collaborations to improve their position in a given region or market. This is also the case for healthcare companies as they increasingly partner with other stakeholders to form collaborations that **address increasingly complex scientific and technological challenges, create efficiencies in R&D, and accelerate development and delivery of new patient treatments.**[2]

However, while takeover activity has seen a positive trend up to 2020, this pattern has changed since. In the second quarter of 2021, the combined M&A value of $3.2bn is below the first quarter value of $20.3bn but also the first quarters of 2020, when Covid-19 had a negative impact in deal-making. There are a couple of factors at play:

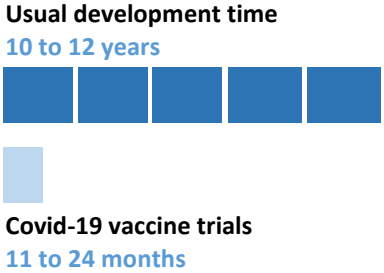
1. The ability of biotech companies to access large amounts of cash from public and private investors, making it easier to resist takeover approaches;
2. Threat of regulatory action on the grounds of antitrust concerns (driven by a desire to reduce companies' pricing power and make drugs more affordable).

Nevertheless, M&A continues to be a strategy largely used by healthcare companies, and we expect it to continue recovering in the forecast period.

Covid-19 Related changes in supply and demand

Covid-19 has accelerated and intensified existing trends in the industry as technology adoption increases exponentially and development cycles and approvals for medicines becomes faster by a factor of 10 in the case of covid-19 related products – see Figure 26. This means a widening of the gap between those at the top and bottom of the power curve of economic profit as companies with resilient business models in a position to benefit from these trends have pulled away.

Figure 26. Covid-19 impact on drug production
Source: London School of Hygiene and Tropical Medicine



The new R&D methodologies applied in the development and manufacture of covid-19 related products may also be applied to other products, quickening the time from discovery to distribution of new drugs and devices.

Companies also have the opportunity to continue investing in an ever-growing larger digital market, whether through being present in the telehealth market or wearables.

DRIVERS OF COSTS

Research and Development

R&D is the industry's main source of growth. The success of companies depends on the discovery and development of new medicines, The average spending in R&D has been over 25% of Revenues in 2018 in 2019, making the industry one of the biggest spenders in R&D. These high costs are related to the - costs of developing new drugs and bringing them to the market, including those incurred in preclinical research phases and in clinical trials: the **expected cost to develop a new drug** has been estimated to range from **$1bn to more than $2bn**[3]. R&D is inherently risky and cancelled/failed products that do not

[2] https://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/how-biopharma-collaborations-are-fueling-biomedical-innovation.html
[3] https://www.cbo.gov/publication/57126

make it to the markets are expected in drug development programs. Some drugs never reach clinical trials, and out of those that do, only about 12% reach the market.

Pricing Pressure and Legislation

Pharmaceutical price controls remain a large focus for regulators and the public as healthcare expenses continue to grow and take on **a larger percentage of GDP** (Figure 20). Risk of pharmaceutical **pricing being limited** and reimbursements cuts may lead to lower profit margins and it's likely that major players will need to shift their strategy to maximize ROI.

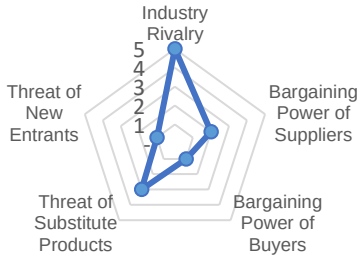
When developing, testing and selling new drugs, companies undergo the risk that these may have unpredicted side effects that negatively affect patients which may lead to the **payment of lawsuit settlements**. As of September 2021, three large drug distributors and Johnson & Johnson pay a $26bn settlement in order to resolve thousands of opioid lawsuits.

COMPETITIVE POSITIONING

The market for healthcare/pharmaceuticals follows closely the structure of an oligopoly. There are few sellers as the barriers to entry/exit are extremely high. Product differentiation can exist derived from R&D and innovation efforts but depending on the segment, products can also be homogeneous with advertising being the main way of nonprice competition.

For the case of companies whose main revenue stream comes from the sale of patented drugs and medicines, pricing power is also considerable. Profit margins are also large in the industry: from 2000 to 2018 large pharmaceutical companies reported annual profit margins of 76.5%, significantly greater than those of S&P 500 companies at 37.4%.[4]

Figure 27. Porter's 5 Forces
Source: Author Analysis



Force	Level
Industry Rivalry	5
Bargaining Power of Suppliers	2
Bargaining Power of Buyers	1
Threat of Substitute Products	3
Threat of New Entrants	1

Industry Rivalry (High)

The pharmaceutical/healthcare industry is very competitive.

- Most of its key players have been in the industry for a long time and actively invest in R&D.
- This constant introduction of new medicines and better medical technologies in the market creates a pressure to continue innovating so as to not fall behind. A recovery in M&A deals will also make the market even more competitive.

Threat of New Entrants (Low)

Threat of newcomers to the industry due to:

- Few established players in the industry that hold a significant market share and do large recurrent investments in R&D, marketing, and distribution in order to maintain it.
- Inherent risk associated with the development of new drugs, as only a portion of them reach the market and entrance into this market is extremely difficult.
- Heavily regulated market, with companies having to go through lengthy bureaucratic processes in order to get approval from regulatory authorities.
- Despite the existence big profit margins in the industry leading to the existence of a steady flow of start-ups, these pose no threat to big pharmaceutical companies, as one of the main strategies for these smaller firms is to be sold to a big pharma firm.

Threat of Substitutes (Low-Medium)

The main substitutes that the industry faces are composed by:

- **Generic medicines** - These are cheaper copies from previously patented/branded goods that are homogeneous to the products sold from the brand names. Consumers tend to prefer them

[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7054843/

due to the lower price but they're not always available due to patent protection. We find that the segment most at risk is the Consumer Health as Pharmaceuticals are protected by patents and Medical Devices have a high investment barrier to entry;

- **Integration of digital alternatives** – Digital devices are set to be part of the healthcare sector as their efficiency and ease of collection data increases. These could substitute some current products as in the new business model health outcomes are enabled by digital health devices in addition to traditional medicine (Appendix 16);
- **R&D and Innovation –** Companies invest millions of dollars every year in order to discover new and more efficient treatments which can spread market share for a given medicine/treatment. However, even medicines belonging to the same therapeutic class may not be substitutable as there are differences in disease characteristics, therapeutic and safety profile, and treatment protocols.

Bargaining Power of Buyers (Low)

Medical patients have a very low power in the pricing of products.

- Pharmaceuticals companies set their prices according to demand-side factors, with the objective of extracting the consumers' maximum willing to pay for a medicine and not based on costs of R&D and production.[5]
- Pharmacies or medical institutions that are large buyers of these medicines can have some bargaining power, however it greatly reduces when the medicine in question is under patent protection or only has one manufacturer. However, governmental pressure has been increasing as ethical concerns arise.

Bargaining Power of Suppliers (Low)

Suppliers have low power.

- The commodity products in the chemical industry used for manufacturing drugs are readily available from various suppliers.
- However, niche circumstances such as the Covid-19 pandemic can have negative impacts in the supply chain and give more power to suppliers as APIs become harder to get

SWOT Analysis

Table 4. SWOT Analysis

Strengths	Weaknesses
•Strong brand presence; •High product diversification; •Covid-19 Vaccine Developments; •Scaled up manufacturing capacity; •Strong R&D department.	•Litigation (e.g. talc powder and opioid crisis) •Overdependence on successful products.
Opportunities	**Threats**
•Expansion through M&A and Collaborations; •Focus on emerging fast-growing markets.	•Exchange Rate Risks; •Pricing pressure; •Patent risk; •Manufacturing operation delays; •Counterfeit products.

Peer Selection

The peer group is comprised of major (bio)pharmaceutical companies. Out of a sample of 12 international companies we pick a group of 6 peers based on their Market cap, Market Cap/R&D and P/E ratio.

[5] https://apps.who.int/iris/bitstream/handle/10665/277190/9789241515115-eng.pdf

- **Roche** – Swiss multinational healthcare company operating worldwide in pharmaceuticals and diagnostics. The company's headquarters are located in Basel, Switzerland.
- **Pfizer** – American multinational pharmaceutical and biotechnology company. Its portfolio includes medicines and vaccines. The company's headquarters are located in New York, U.S.
- **Eli Lily & Co.** – American multinational pharmaceutical company. The company operates through two business segments: 1) Human Pharmaceutical Products and 2) Animal Health Products. The company's headquarters are located in Indianapolis, U.S.
- **Novartis** – Swiss multinational pharmaceutical company. The company operates in: 1) Innovative Medicines (manufacture and sale of patented pharmaceuticals), 2) Sandoz (finished dosage form medicines and APIs). The company's headquarters are located in Basel, Switzerland.
- **Abbvie** - American multinational biopharmaceutical company. AbbVie was separated from Abbott in January 2013 and is now responsible for research-based pharmaceuticals. The company's headquarters are located in Delaware, U.S.
- **Merck & Co. -** American multinational global health care company. The company operates through two segments: 1) Pharmaceutical and 2) Animal Health. The company's headquarters are located in New Jersey, U.S.

We choose not to include Abbot Laboratories despite it having a Market Cap that's higher than our lower-end limit of approximately $200bn as it specializes only on medical products leading to lower R&D requirements making it not comparable with our peer group. (See Market Cap/R&D – figure 28)

Figure 28. Peer Group
Source: Author Analysis

Company	Market Cap ($M)	Market Cap/R&D	P/E	Relevant Peer
Johnson & Johnson	**463,975**	**34.07**	**26.11**	**n/a**
Roche Holding AG	350,125	25.42	21.93	**Yes**
Pfizer Inc.	271,812	26.84	22.06	**Yes**
Eli Lilly & Co.	239,528	32.58	39.46	**Yes**
Novartis AG	228,645	24.67	25.45	**Yes**
Abbott Laboratories	218,163	84.36	34.39	-
AbbVie Inc.	205,841	26.76	31.20	**Yes**
Merck & Co. Inc.	194,207	12.12	31.26	**Yes**
Bristol-Myers Squibb Co.	150,015	6.47	-29.54	-
Amgen Inc.	130,424	22.31	22.70	-
Zoetis Inc.	95,490	197.70	50.02	-
Gilead Sciences Inc.	89,221	14.12	17.28	-
Illumina Inc.	75,891	98.69	98.69	-

Financial Analysis

REVENUE SET TO CONTINUE GROWING

Total revenues are given by the sum between three different business segments:

1. Consumer (17% of sales in 2020YE),
2. Pharmaceutical (55.2% of sales in 2020YE)
3. Medical (27.8% of sales in 2020YE)

We forecast revenues for 2020-25F at a CAGR of 5.51%, up from the historical CAGR of 3.34% 2015-20 (Figure 29). We forecast revenues for each one of the segments based on the pipeline's historical growth and market expectations. (Appendix 12).

We anticipate that **Pharmaceuticals** will be the main revenue driver, growing at 6.8% CAGR 2020-26F and bringing in revenue of $67.5bn driven by a stronger position in Oncology and Immunology.

Medical Devices are set to rebound from a weak result in 2020, driven by a reduction in customer demand due to lockdowns and delays in surgeries. The segment will be able to grow at a 4.92% CAGR 2020-26F based on the J&J's outlook in their latest Medical Devices conference and our market expectations.

Consumer Health serves as a reliable revenue stream for the company and has maintained a stable level of revenues from 2015-20 growing at a CAGR of 0.7% ($13.5bn to $14.05bn). We expect the segment to continue growing at a lower end CAGR of 2% 2020-25F based on long-term GDP growth forecasts for the 35 nation OECD area.

Figure 29. Revenue projections & CAGR
Source: Author Analysis

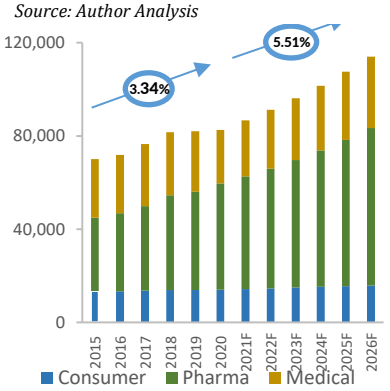
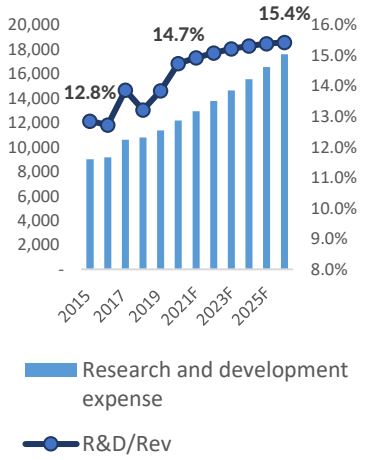


Figure 30. R&D spending in terms of Revenues
Source: Author Analysis



CONSITENT PROFITABILITY

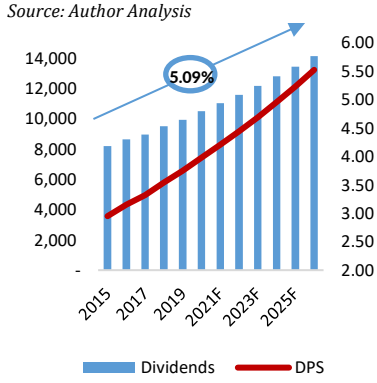
J&J has maintained a robust and consistent **75% Gross Profit Margin** and **20% Net Profit Margin** (excluding 2017, which was affected by a non-recurrent item, between 2015-20. We expect these profitability ratios to remain close to the 5-year historical levels in 2020-2026F at 74.5% for GPM and recovering up to 18.8% in 2026F for NPM from 17.8% in 2020, impacted negatively by Covid-19 expenses.

OPIOID LEGAL ACTION & OTHER CASES

J&J is set to pay a **$5bn settlement**, **which represents 6.1% of 2020 Sales,** related to the U.S. opioid crisis, on a settlement of lawsuits impacting four companies in a $26bn deal. This settlement is likely to represent a large part of settlements between companies in the drug industry and local governments over the addiction and overdose epidemic in the U.S.

This and other cases such as the talc lawsuit associated with J&J's Baby Powder negatively affect the company's bottom-line and brand image as consumers, which may impact financial results as consumer trust may be lost leading to a loss in market share as consumers switch to alternative products from competitors.

Figure 31. Maintaining dividend growth
Source: Author Analysis



LEADING THE INDUSTRY IN R&D

The way to sustain long-term growth in the healthcare industry is through R&D and J&J knows it.

The historical high profitability has allowed J&J to maintain high levels of R&D spending, allowing it to continue to innovate and expand its product line.

We set J&J's R&D spending growing at **6.2% CAGR 2020-25F**, the same as its historical 2015-20 CAGR.

This means that R&D spending in relation to revenues is expected to increase from 14.9% to 15.3% for the company (Figure 30). The R&D funds are expected to be used within all 3 segments, with special emphasis in Oncology and Immunology within the Pharmaceutical Sector and Interventional Solutions for Medical Devices.

MAINTAINING 59 YEARS OF DIVIDEND GROWTH

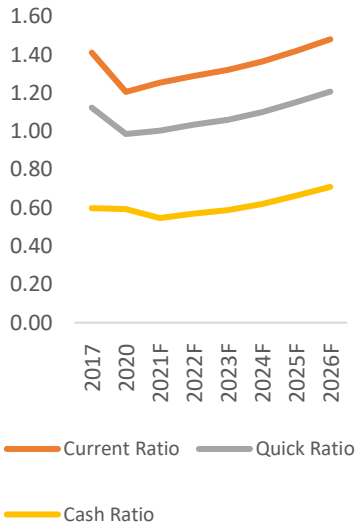
J&J boasts a Aaa rating and strong cash flow generation which are supportive of long-term growth opportunities. The company actively rewards its investors through recurrent share repurchases and increases in dividends paid.

With a **DPS of $4.20** in 2021F, J&J has a **Dividend Yield of 2.42%**. Compared to 10 years Treasury Bond yields at 2.02%, investors can get a higher return by purchasing the Johnson & Johnson stock.

Dividends at set to continue growing a CAGR of 5.09% 2021-25F (Figure 31), based on 59 years of historical dividend growth resulting in a 7% CAGR. The company's strategy has not changed and it continues to plan on increasing dividends and remuneration for shareholders.

Because of its strong balance sheet, the Aaa rating is supported by a debt-to-equity ratio of 55.7%, which means that it is likely that the company will be able to continue supporting its dividend even if its there's a temporary negative impact to the business

Figure 32. Liquidity Ratios
Source: Author analysis



FINANCIAL STRENGTH

J&J is currently under one major lawsuit with a **$5bn settlement**, fuelled by its connection to the opioid epidemic in the US. While no data has been provided regarding the payment schedule, we predict that it will be fully paid during our forecast period 2021F-26F with a linear payment schedule.

Return on Equity

Despite this drawback, we forecast that ROE will still be able to grow from 25.4% in 2019 (pre-pandemic levels) to 27.2% in 2026F due to J&J's strong cash flow generation capability, with an increase in NPM from 16.3% in 2021F to 18.8% in 2026F. (appendix 4)

Debt Ratio

J&J is a mature company and as such has a stable debt structure. As such, we set long- and short-term Debt Ratio to remain stable and in line with historical levels, based on a 1.57 Debt to Operational Income ratio (see Appendix 8) which represents a slight increase in leverage as the company continues investing heavily into R&D to expand its current pipeline and maintain revenue growth.

Profitability

J&J's profitability ratios are set to go back to positive trends on a YOY basis between 2020 and 2026F after a slight decline in GPM, EBITDA margin and EBIT margin in 2020 as the medical devices segment struggled. Proceeding a general recovery and accelerated growth in our forecasted period, liquidity is expected to go back in line to historical rates (see Appendix 4)

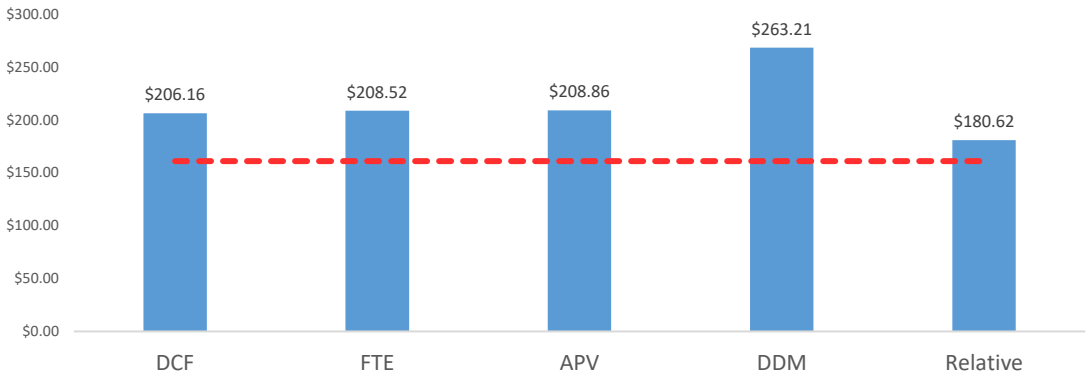
Efficiency

The company continues to invest into supply chain developments, to be able to more efficiently ensure that changes in product demand can be quickly responded to. As such, we forecast that the company will be able to increase its overall efficiency ratios compared to historical levels.

DSO is expected to have a negative trend in 2020-26F, going from 40.09 in 2020 to 2026F and DIO is also set to have a similar trend.

Operating costs to sales are also expected to see a YOY decrease in 2020-26F from 76.1% in 2020 to 74.9% in 2026. (Appendix 4)

Valuation



Source: Analyst Estimates

We issue a **BUY** recommendation for J&J with a 2022YE target price of $206.16, presenting a **28.1% upside potential from the closing price of $160.93 per share of September 5th, 2021**. Our forecast is driven by a DCF analysis, complemented with a Free Cash Flow to Equity (FCFE), Adjusted Present Value (APV), Dividend Discount Model (DDM) and Relative Valuation.

1. Discounted Cash Flow
2. Free Cash Flow to Equity
3. Adjusted Present Value
4. Dividend Discount Model
5. Relative Valuation

Using a DCF valuation model we reach a target price of $206.16 in 2022YE, with an upside potential of 28.1% from the closing price of $160.93 on September 7th, 2021.

DISCOUNTED CASH FLOW

We compute FCFF as: $FCFF = NOPAT + D\&A - CAPEX - \Delta Net\ WC$.

WACC assumptions

We reach a **WACC of 5.36%** for J&J, which we use to discount the FCFF.

Risk-free rate is computed as the 5-Year Average of the 10 Year Treasury Yield (^TNX), at 1.94%. Appendix 24 includes other alternatives such as the spot price, 10-Year average of the ^TNX and Pablo Fernandez' survey. We ultimately decide to use the 5-year average as it is the most liquid amongst the alternatives, providing a more stable value for what the rate should be.

Beta reflects J&J different segments, as we revenue weigh the beta for each one of the industries, arriving at an adjusted beta of 0.92 using a weighted average industry beta by business segment. Alternative methods such as calculating a regression beta and a peer adjusted regression beta were also computed. (Appendix 23)

Market Risk Premium is based on a market survey for the US (Pablo Fernandez), at 5.5%. We also calculate this value by looking at the implied ERP in the S&P 500 by discounting expected dividends and buybacks by the Risk Premium to arrive at the current value of the index. (Appendix 21)

Cost of Debt of 2.6% is based on a coverage ratio analysis – we apply an implied 0.69% spread to the Risk-free rate based on J&J's high interest coverage ratio. Alternatives such as using the interest rate and the industry average cost of debt are also presented. (Appendix 25)

Table 5. Valuation methodologies
Source: Author Analysis

Valuation	2022YE
Discounted Cash Flow	$206.16
Flow to Equity	$208.52
Adjusted Present Value	$208.86
Dividend Discount Model	$263.21
Relative Valuation	$180.62

Figure 33. J&J's WACC
Source: Author Analysis

Enterprise Value	550 615
Net Debt	-16 072
Equity Value	534 542
Shares Outstanding	2 607
Price	$ 206.2

Table 6. DCF Valuation
Source: Author Analysis

DCF Analysis	Rate	Source
Cost of Equity		
Risk Free Rate	1.94%	^TNX 5y average
Beta	0.92	Blume Adjusted Industry Average Beta
Market Risk Premium	5.5%	Market Survey (Fernandez)
Cost of Equity	6.78%	
Cost of Debt	2.5%	Spread + Rf (Damodaran)
Tax Rate	16.5%	J&J Guidelines
WACC	**5.1%**	

Terminal Growth Rate & Terminal value

We set terminal growth rate at 2.52% based on:

1) The weighted average long-term average GDP growth (2.74%);

2) The long-term annual average headline CPI (2.3%).

Our **terminal value** is based on a **Perpetuity Growth model**, with a terminal WACC of 5.1% and a perpetual growth rate (g) of 2.52%. We reach a value of equity of $545,431m with 2.607m shares outstanding.

See Appendix 22 for alternative methods of reaching *g* based on ROE and ROC. These values were not used as the values were too high to be sustainable in the long-term (>2.5%)

Figure 34. APV EV Calculation
Source: Author Analysis

Enterprise Value	551,203
Debt	-6,755
Equity Value	544,449
Shares Outstanding	2,568
Price	$ 208.86

Capex and D&A

We use D&A forecasts provided by the firm in their annual report. Within CAPEX, we assume that 1) additions to PP&E will continue growing at the 4-year historical CAGR of 3.36% and 2) change in Intangible Assets will grow at a historical percentage of the previous year's R&D of 53% plus Amortization expenses. As the companies is set to keep growing in the forecast period, CAPEX is also increasing.

Net Working Capital

Accounts receivable, accounts payable and inventories were set based on historical Account Receivable Days, Account Payable Days, and Inventory Days (Appendix 8). Accounts Payables are linearly adjusted to return to the 5-year historical average by 2025F.

ADJUSTED PRESENT VALUE

We also apply the APV valuation method, where we reach an equity value of $544.449m representing a **target price of $208.9/share**. This method allows us to separate value created by financial manoeuvres, being a more transparent alternative as you all components that drive the value of the analysis are presented.

FCFF were discounted at an APV rate of 5.35%, based on a Cost of Equity of 6.78% and Risk-Free Rate of 1.94%

RELATIVE VALUATION

We include a multiples valuation, given the ease of finding publicly listed healthcare/pharmaceutical companies worldwide with comparable levels of R&D investment and business characteristics. The peer group is based on companies whose main revenue stream comes from patented pharmaceutical products (Figure 28).

We choose 2 EV multiples to derive a target price of $180.6: **1) EV/R&D:** Growth in pharmaceuticals is tied to investments in R&D. We set R&D at a 34.07 EV/R&D ratio, above the peer average of 26.06, as its diversified portfolio allows it to maintain a stable source of revenues with low R&D requirements compared to its peers. 2) **EV/LTM Sales**: We use this multiple instead of an EV/Earnings ratio to focus on operational performance, rather than impacts from capital structures.

Figure 35. Peer Multiples

	EV/R&D	EV/LTM Sales	EV/Earnings
J&J	34.07	5.20	26.11
Peer Average	26.06	5.16	25.45
Peer Median	26.76	4.90	28.84
J&J 2022 Multiple	34.07	5.20	26.11
Implied Price	179.24	182.01	153.88

Sensitivity Analysis

We conduct a sensitivity analysis to flex J&J's key drivers, namely, a) the oncology sector growth, b) operational costs, c) WACC, d) Terminal growth rate and d) Tax rate.

WACC and terminal growth rate impact the company's target valuation, with a negative change of 0.42% in the Terminal Growth Rate and increase of 0.4% in the WACC changing our recommendation from **Buy** to **Hold**. (Figure 37)

Figure 37. Sensitivity Analysis
Source: Author Analysis

WACC \ g	1.9%	2.1%	2.3%	**2.52%**	2.7%	2.9%	3.1%
206							
4.56%	227	245	265	290	319	356	404
4.76%	211	226	243	263	287	317	354
4.96%	197	209	224	241	261	285	315
5.16%	184	195	208	222	239	259	283
5.36%	173	183	194	**206**	221	238	257
5.56%	163	172	181	192	205	219	236
5.76%	154	162	171	180	191	203	218
5.96%	146	153	161	169	179	190	202
6.16%	139	145	152	160	168	178	188

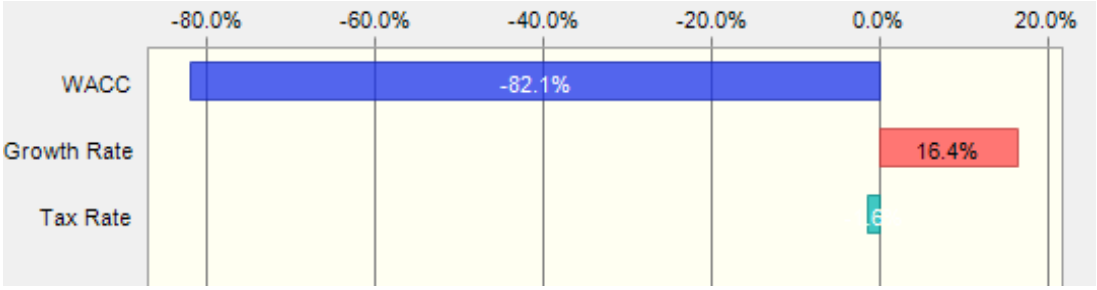
Monte Carlo Simulation

We also conduct a Monte Carlo simulation in addition to the previous analysis, with WACC, Terminal growth rate and tax rate being the main factors tested.

We run 10.000 simulations, adjusted to 9800 observations after removing outliers. Results showed a mean and median price target of $210.92 and $204.47 respectively, in line with our BUY recommendation.

WACC is the main driver of variance in our simulation, followed by the terminal growth rate and tax rate (Figure 38).

Figure 38. Contribution to the variance



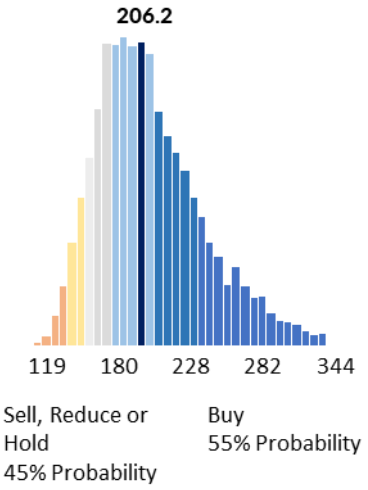
Scenario Analysis

Lastly, we also conduct a scenario analysis for 3 main assumptions based on our base case, a bear case and a bull case scenario (table 6):

1) **Oncology growth rate**: Oncology pharmaceutical sales are the main growth driver for the company, and we assume a base case of 12% growth YOY based on market expectations and historical growth (Appendix 9).

However, R&D risk, competition or other unpredicted causes may lead to a lower growth in this segment which we analyse in our bear case – a decrease in 1% from our base case would lead to a target price of $200.6, a reduction of $5.6. However, this **would not change our buy recommendation**.

Figure 36. Monte Carlo simulation
Source: Author Analysis



Mean	210.92
Median	204.47
Standard Deviation	41.94
Variance	1758.73
Skewness	0.74
Kurtosis	0.29
Minimum	119.04
Maximum	350.38

Given that we adjust down the growth rate from historical levels, growth may be higher than expected, which we analyse within the bull case – an increase in 1% from our base case would lead to a target price of $211.7, an increase of $5.6 from our base case, **maintaining our buy recommendation**.

2) **COGS and SG&A**: Operation manufacturing delays and other macroeconomic factors may impact the company's cost – an increase of 1% in COGS and SG&A would lead to a decrease in our target price of ($9.4) and ($7.3) respectively. We do not expect this scenario to be likely, as COGS & SG&A have maintained a very stable value in percentage of sales in 2015-20, in line with our base case.

The company also has plans to implement actions to improve its global supply chain and expects to record restructuring charges of approximately $1.9bn to $2.3bn - a scenario where COGS and SG&A suffer a reduction derived from this investment are also represented with a decrease of 1.5% and 0.9% in COGS and SG&A respectively, which increase our target price to $221.5 for the change in COGS and $217.8 for the change in SG&A.

Table 7. Scenario Analysis
Source: Author Analysis

Variables	**Bear Case**	**Base Case**	**Bull Case**
Oncology Growth	11%	12.0%	13%
Target price	200.6	206.2	211.7
COGS (%Sales)	26.5%	25.5%	24.0%
Target price	196.7	206.2	221.5
SG&A (%Sales)	28.5%	27.9%	27.0%
Target price	198.8	202.2	217.8

Investment Risks

BUSINESS AND OPERATIONAL RISKS

[B1] Competition from generics / Patent Expiration

The loss of patent protection in a profitable market may lead to an increase in competition and a decline in sales as generics enter the market and fight for market share through price reductions.

- **Mitigant**: J&J can focus on expanding its pipeline by maintaining its high levels of R&D investment that may lead to follow-on innovation and the development of new products.

[B2] Manufacturing operation delays

Pharmaceutical companies rely on the import of APIs as well as finished drug products, mostly from India or China. Macroeconomic factors could lead to delays in the supply chain and drug shortages.

- **Mitigant**: Following the negative impacts derived from COVID-19 lockdowns on the supply chain, J&J has made an active commitment to the continuous improvement of its supply chain, having moved up 5 spots on the annual 2020 Supply Chain Top 25 index in 2020.

[B3] Research and Development Risk

Developing new products and bringing them to the market is a costly, lengthy and uncertain process. There is no guarantee that companies will be able to replace revenue lost to generics/other competition through the research and development of commercially successful products.

- **Impact**: We set J&J's R&D expenditure growing at a 6.2% CAGR 2020-25F, above its peers, to continue sustaining long-term growth.

[B4] Brand Image and Reputation

Brand image and reputation are essential in the healthcare business as customers may be less inclined to purchase a certain good if they perceive it to be unsafe and can't trust the company that produces it.

J&J has been present in various dubious cases of products that caused health complications and had to be recalled or resulted in lawsuits, such as the current talc and opioid lawsuits.

These cases may lead to customers choosing alternative competitors from whom to buy their healthcare products from as a vision of reticence grows towards the company.

- **Mitigant:** J&J is one of the companies producing and distributing a Covid-19 vaccine, however, unlike the other companies, it is doing so at a break-even price, showing its x towards social responsibility in a time of crisis.

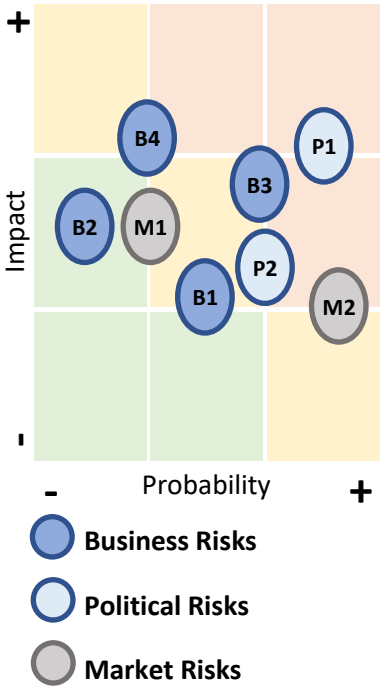
MARKET RISKS

[M1] Macroeconomic

General economic levels greatly influence a company's operations and ability to maintain long-term growth. Although a general rebound is expected as vaccines become widely available, there is still uncertainty related to further Covid-19 mutations that could deviate reality from the forecast.

- **Mitigant:** The company is mature and very diversified, being present in 3 different business segments (Consumer health, pharmaceuticals and medical devices). This enables the company to sustain short-term losses derived from this macroeconomic while still maintaining high levels of investment which support long-term growth.

Figure 39. Risk Matrix
Source: Author Analysis



[M2] Exchange Rates

Being present across the globe with 52% of revenues coming from the United States, 23% from Europe, 18% from Asia Pacific and Africa and 6% from the Western Hemisphere (ex. US), J&J is exposed to fluctuations in currency exchange rates, and the effect on certain assets and liabilities in foreign currency which may significantly increase or decrease reported sales, costs and earnings.

- **Mitigant:** The company hedges its exposure by entering currency swap contracts. A 1% change in the spread between U.S. and foreign interest rates would increase/decrease the unrealized value of the swap contracts by approximately $1,667m (*2020 10k*). At maturity, gains/losses on the swap contract would be offset by gains/losses on the underlying transaction, having no impact on cash flows.

POLITICAL RISKS

[P1] Regulatory and Legal Risk

J&J is liable for any undisclosed or unpredicted side effect that their products may have on their customers. As consumer's health is put on the line, the company must go through an extensive set of trials to guarantee that products are safe to enter the market.

Despite this effort to maintain consumer health safety, sometimes drugs are later found to cause serious side effects that were not originally expected.

There are currently **multiple legal disputes** that will lead to the incurrence of litigation expense and other obligations.

Companies are also obliged to comply with the law of every country in which they operate. The requirements are extensive and complex and the change of new requirements, imposed by a changing government or public expectations regarding the healthcare industry is a risk to the company.

- **Mitigant:** The company allocates appropriate provisions as a precaution for these situations.

[P2] Pricing pressure

As healthcare related costs continue growing and taking on a larger percentage of GDP, pressure to lower prices and make drugs more accessible are quite strong.

These pressures are compounded by the significant controversies and political debate/publicity about drug prices that may be considered excessive.

The emergence of cheaper safe biosimilars - products that are demonstrated to be biosimilar to or interchangeable with an FDA-approved biological product – has also driven down prices as pharmaceutical companies face a new type of competition.

Abbreviations

C

CAGR
: Compounded Annual Growth Rate · v, 1, 3, 6, 7, 12, 13, 15, 18, 29, 30, 31, 32

CAPEX
: Capital expenditure · 15, 25, 42

CEO
: Chief executive officer · 4, 5, 34

D

DOJ
: Department of Justice · 4

DPS
: Dividends per share · 13, 39

E

EPS
: Earnings per share · 3, 25

ERP
: Equity Risk Premium · 14

ESG
: Enviromental, social and governance · v, 4, 5

EV
: Equity value · v, 15, 42, 43

F

FDA
: Food and Drug Administration · 1, 3, 7, 8, 19

G

GDP
: Gross Domestic Product · v, 7, 9, 12, 15, 19, 32, 37, 39, 40

GPM
: Gross profit margin · 12, 13

J

J&J
: Johnson & Johnson · i, ii, v, 1, 2, 3, 4, 5, 6, 12, 13, 14, 15, 16, 18, 19, 24, 29, 32, 37, 38, 39, 40, 41

M

M&A
: Mergers and Acquisitions · i, v, 3, 8, 9, 10

N

NPM
: Net profit Margin · 12, 13, 40

NPV
: Net present value · 7

O

OTC
: Over the counter · 2, 31

P

PP&E
: Property, Plant, and Equipment · 15, 25, 38

Q

Q2
: 2nd Quarter · 1, 3

R

R&D
: Research and Development · i, v, 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 29, 30, 38

ROE
: Return on equity · 13, 15, 25, 39, 40

ROI
: Return on investment · 9, 37

W

WHO
: World Health Organization · 6

Y

YOY
: Year-over-year · 1, 3, 13, 16

Appendices

Appendix 1: Statement of Financial Position ($M)

Balance Sheet

	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Assets												
Current assets												
Cash and cash equivalents	13,732	18,972	17,824	18,107	17,305	13,985	9,138	9,637	10,021	11,216	13,081	15,354
Marketable securities	24,644	22,935	472	1,580	1,982	11,200	12,599	13,998	15,397	16,795	18,194	19,593
Accounts receivable trade	10,734	11,699	13,490	14,098	14,481	13,576	14,537	15,292	16,121	17,028	18,021	19,109
Inventories	8,053	8,144	8,765	8,599	9,020	9,344	9,699	10,203	10,756	11,361	12,024	12,750
Other ST Assets	3,047	3,282	2,537	3,649	2,486	3,132	3,288	3,459	3,646	3,851	4,076	4,322
Total current assets	**60,210**	**65,032**	**43,088**	**46,033**	**45,274**	**51,237**	**49,261**	**52,590**	**55,940**	**60,252**	**65,397**	**71,128**
Property, plant and equipment, net	15,905	15,912	17,005	17,035	17,658	18,766	19,397	20,050	20,724	21,421	22,142	22,886
Intangible assets, net	25,764	26,876	53,228	47,611	47,643	53,402	55,110	57,415	60,143	63,519	67,370	71,726
Goodwill	21,629	22,805	31,906	30,453	33,639	36,393	33,639	33,639	33,639	33,639	33,639	33,639
Deferred tax asset	5,490	6,148	7,105	7,640	7,819	8,534	14,431	15,594	16,720	18,130	19,842	21,397
Other assets	4,413	4,435	4,971	4,182	5,695	6,562	6,889	7,247	7,639	8,069	8,540	9,056
Total assets	**133,411**	**141,208**	**157,303**	**152,954**	**157,728**	**174,894**	**178,727**	**186,535**	**194,805**	**205,029**	**216,929**	**229,831**
Liabilities and Shareholders' Equity												
Current liabilities												
Loans and notes payable	7,004	4,684	3,906	2,796	1,202	2,631	2,536	2,727	2,913	3,145	3,375	3,631
Accounts payable	6,668	6,918	7,310	7,537	8,544	9,505	9,677	9,963	10,275	10,612	10,977	11,369
Accrued liabilities	5,411	5,635	7,304	7,601	9,715	13,968	9,121	9,596	10,115	10,685	11,308	11,991
Accrued taxes on income	750	971	1,854	818	2,266	1,392	2,354	2,544	2,727	2,957	3,237	3,490
Other payables and accruals	7,914	8,079	10,163	12,478	14,237	14,997	15,058	15,280	15,515	15,763	16,021	16,286
Total current liabilities	**27,747**	**26,287**	**30,537**	**31,230**	**35,964**	**42,493**	**38,746**	**40,110**	**41,546**	**43,162**	**44,917**	**46,766**
Long-term debt	12,857	22,442	30,675	27,684	26,494	32,635	28,901	31,082	33,195	35,839	38,459	41,375
Deferred tax liability	2,562	2,910	8,368	7,506	5,958	7,214	12,199	13,182	14,134	15,325	16,773	18,087
Provision for Risks & Charges	8,854	9,615	10,074	9,951	10,663	10,771	9,938	9,104	8,271	7,438	6,604	5,771
Long-term taxes payable	-	-	8,472	8,242	7,444	6,559	11,091	11,985	12,851	13,934	15,250	16,445
Other liabilities	10,241	9,536	9,017	8,589	11,734	11,944	12,539	13,191	13,905	14,687	15,544	16,483
Total liabilities	**62,261**	**70,790**	**97,143**	**93,202**	**98,257**	**111,616**	**113,414**	**118,654**	**123,901**	**130,385**	**137,548**	**144,927**
Shareholders' equity												
Common stock - par value $1.00 per share	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120	3,120
Accumulated other comprehensive income (loss)	- 13,165	- 14,901	- 13,199	- 15,222	- 15,891	- 15,242	- 15,242	- 15,242	- 15,242	- 15,242	- 15,242	- 15,242
Retained earnings	103,879	110,551	101,793	106,216	110,659	113,890	118,136	123,051	128,568	134,957	142,506	151,015
Less: common stock held in treasury, at cost	- 22,684	- 28,352	- 31,554	- 34,362	- 38,417	- 38,490	- 40,701	- 43,049	- 45,542	- 48,190	- 51,003	- 53,990
Total shareholders' equity	**71,150**	**70,418**	**60,160**	**59,752**	**59,471**	**63,278**	**65,313**	**67,880**	**70,904**	**74,644**	**79,381**	**84,904**
Total liabilities and shareholders' equity	**133,411**	**141,208**	**157,303**	**152,954**	**157,728**	**174,894**	**178,727**	**186,535**	**194,805**	**205,029**	**216,929**	**229,831**

Appendix 2: Income Statement ($M)

Income Statement

	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Covid 19 Sales (not for profit)							**2,500**	-	-	-	-	-
Covid 19 Costs							**2,500**	-	-	-	-	-
Total sales (excluding effects from the Covid-19 vaccine sales)	**70,074**	**71,890**	**76,450**	**81,581**	**82,059**	**82,584**	**86,696**	**91,204**	**96,143**	**101,553**	**107,477**	**113,965**
Cost of products sold	17,680	18,035	19,797	20,162	20,547	21,049	21,884	23,022	24,269	25,634	27,130	28,768
Gross Profit	**52,394**	**53,855**	**56,653**	**61,419**	**61,512**	**61,535**	**64,812**	**68,182**	**71,874**	**75,918**	**80,348**	**85,198**
Selling, marketing and administrative expenses	21,079	20,067	21,520	22,540	22,178	22,084	24,208	25,467	26,846	28,357	30,011	31,823
Research and development expense	8,999	9,143	10,594	10,775	11,355	12,159	12,913	13,714	14,565	15,469	16,429	17,448
In-process research and development	224	29	408	1,126	890	181	476	476	476	476	476	476
D&A	3,746	3,754	5,642	6,929	7,009	7,378	7,209	7,009	7,009	6,809	6,810	6,811
Operational Income	**18,346**	**20,862**	**18,489**	**20,049**	**20,080**	**19,733**	**20,005**	**21,515**	**22,977**	**24,807**	**26,621**	**28,639**
Other (income) expense, net	-1,783	210	-42	1,405	2,525	2,899	833	833	833	833	833	833
Restructuring	509	491	309	251	266	247	400	400	400	400	-	-
Interest expense, net:	424	358	549	394	-39	90	498	535	572	617	663	713
Pre-Tax Income	**19,196**	**19,803**	**17,673**	**17,999**	**17,328**	**16,497**	**18,273**	**19,746**	**21,172**	**22,956**	**25,125**	**27,093**
Income Taxes	3,787	3,263	16,373	2,702	2,209	1,783	3,015	3,258	3,493	3,788	4,146	4,470
Net Income	**15,409**	**16,540**	**1,300**	**15,297**	**15,119**	**14,714**	**15,258**	**16,488**	**17,679**	**19,169**	**20,980**	**22,623**

Appendix 3: Cash Flow Statement ($M)

Cash Flow Statement

	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
CASH FLOWS FROM OPERATING ACTIVITIES												
Net Income							**15,258**	**16,488**	**17,679**	**19,169**	**20,980**	**22,623**
Depreciation & Amortization							7,209	7,009	7,009	6,809	6,810	6,811
-Other Non-Cash Items							-156	-171	-187	-205	-225	-246
Changes in Working Capital							**-2,181**	**-207**	**-272**	**-96**	**87**	**-99**
Inventories							-355	-504	-553	-605	-663	-726
Accounts Receivable							-961	-756	-828	-907	-993	-1,088
Accounts Payable							172	287	312	337	364	392
Accrued Expenses and other							-3,823	885	939	1,047	1,161	1,201
Other Current and Non-Current assets							-5,897	-1,163	-1,126	-1,409	-1,713	-1,554
Other Current and Non-Current Liabilities							8,684	1,043	984	1,441	1,931	1,675
NET CASH FLOWS FROM OPERATING ACTIVITIES	**19,569**	**18,767**	**21,056**	**22,201**	**23,416**	**23,536**	**20,131**	**23,118**	**24,228**	**25,676**	**27,652**	**29,089**
CASH FLOWS FROM INVESTING ACTIVITIES												
Additions to PPE							-3,140	-3,161	-3,183	-3,206	-3,230	-3,254
Acquisitions / Purchases of Intangible Assets							-3,654	-6,805	-7,228	-7,676	-8,152	-8,658
Change in Marketable Securities							-1,399	-1,399	-1,399	-1,399	-1,399	-1,399
Others							-327	-358	-392	-430	-471	-516
NET CASH USED BY INVESTING ACTIVITIES	**-7,735**	**-4,761**	**-14,868**	**-3,167**	**-6,194**	**-20,825**	**-8,520**	**-11,724**	**-12,202**	**-12,711**	**-13,251**	**-13,826**
CASH FLOWS FROM FINANCING ACTIVITIES												
Dividends paid							-11,012	-11,573	-12,161	-12,780	-13,430	-14,113
Shares Repurchased							-2,211	-2,348	-2,494	-2,648	-2,813	-2,987
Increase in ST Debt							-95	191	185	232	230	256
Increase in LT Debt							-3,734	2,182	2,113	2,644	2,621	2,916
Others							595	652	714	782	857	938
NET CASH USED BY FINANCING ACTIVITIES	**-11,136**	**-8,551**	**-7,673**	**-18,510**	**-18,015**	**-6,120**	**-16,458**	**-10,896**	**-11,643**	**-11,770**	**-12,535**	**-12,990**
Beginning Cash Balance							13,985	9,138	9,637	10,021	11,216	13,081
Cash Flows							-4,847	499	383	1,195	1,865	2,272
Ending Cash Balance							**9,138**	**9,637**	**10,021**	**11,216**	**13,081**	**15,354**

Appendix 4: Key Financial Ratios

J&J - Key Financials ($m)	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Liquidity Ratios												
Current Ratio	2.17	2.47	1.41	1.47	1.26	1.21	1.21	1.21	1.21	1.22	1.24	1.26
Quick Ratio	1.88	2.16	1.12	1.20	1.01	0.99	0.95	0.95	0.94	0.95	0.97	0.99
Cash Ratio	1.38	1.59	0.60	0.63	0.54	0.59	0.50	0.49	0.47	0.47	0.48	0.49
Efficiency Ratios												
Total Asset Turnover	1.05	0.52	0.51	0.53	0.53	0.50	0.49	0.51	0.52	0.53	0.53	0.54
Receivables Turnover	13.06	6.41	6.07	5.91	5.74	5.89	6.17	6.12	6.12	6.13	6.13	6.14
Collection Period (DSO)	27.96	56.95	60.13	61.72	63.56	62.00	59.18	59.69	59.63	59.57	59.51	59.46
Inventory Turnover	17.40	8.88	9.04	9.40	9.31	8.99	9.06	9.08	9.09	9.09	9.10	9.11
Days in Inventory (DIO)	20.97	41.12	40.36	38.84	39.18	40.58	40.29	40.21	40.17	40.13	40.10	40.06
Payables Turnover	21.02	10.58	10.75	10.99	10.21	9.15	9.00	9.20	9.41	9.63	9.86	10.10
Payables Period (DPO)	17.37	34.49	33.96	33.21	35.76	39.89	40.58	39.68	38.79	37.90	37.02	36.13
Operating Cycle	48.93	98.07	100.50	100.56	102.74	102.58	99.46	99.90	99.80	99.70	99.61	99.52
Cash Cycle	31.56	63.58	66.53	67.35	66.98	62.70	58.89	60.22	61.01	61.80	62.59	63.39
CAPEX/Dep	724.7%	100.3%	141.4%	101.2%	124.8%	144.2%	131.7%	133.1%	134.5%	136.0%	137.5%	139.1%
CAPEX/Sales	26.3%	3.6%	4.9%	3.1%	3.8%	4.4%	3.8%	3.7%	3.5%	3.4%	3.2%	3.1%
PP&E/Sales	22.7%	22.1%	22.2%	20.9%	21.5%	22.7%	22.6%	22.4%	22.1%	21.8%	21.5%	21.1%
Operating Costs/Sales	73.8%	71.0%	75.8%	75.4%	75.5%	76.1%	77.2%	76.7%	76.4%	75.9%	75.6%	75.2%
NWC/Sales	17.3%	18.0%	19.5%	18.6%	18.2%	16.2%	16.8%	17.0%	17.3%	17.5%	17.8%	18.0%
Profitability Ratios												
Gross Profit Margin	74.8%	74.9%	74.1%	75.3%	75.0%	74.5%	74.5%	74.5%	74.5%	74.5%	74.5%	74.5%
EBITDA Margin	33.3%	33.3%	31.2%	31.0%	29.6%	29.0%	28.4%	28.4%	28.4%	28.5%	28.9%	29.0%
EBIT Margin	28.0%	28.0%	23.8%	22.5%	21.1%	20.1%	20.1%	20.7%	21.1%	21.8%	22.6%	23.1%
Net Profit Margin	22.0%	23.0%	1.7%	18.8%	18.4%	17.8%	16.3%	16.8%	17.2%	17.7%	18.4%	18.7%
ROA	11.6%	11.7%	0.8%	10.0%	9.6%	8.4%	8.1%	8.4%	8.8%	9.1%	9.5%	9.8%
ROCE	18.6%	17.5%	14.4%	15.1%	14.2%	12.5%	12.7%	13.3%	13.8%	14.4%	15.0%	15.3%
ROC	18.0%	17.3%	16.1%	17.0%	16.6%	14.1%	15.3%	16.0%	16.6%	17.2%	17.9%	18.3%
ROE	21.7%	23.5%	2.2%	25.6%	25.4%	23.3%	22.1%	23.5%	24.7%	26.1%	27.4%	28.2%
EPS	5.56	6.04	0.48	5.70	5.72	5.52	5.33	5.81	6.29	6.88	7.60	8.26
SG&A/Sales	30.1%	27.9%	28.1%	27.6%	27.0%	26.7%	27.9%	27.9%	27.9%	27.9%	27.9%	27.9%
Solvency Ratios												
Long- and short-term Debt Ratio	14.9%	19.2%	22.0%	19.9%	17.6%	20.2%	17.7%	18.4%	18.9%	19.5%	19.9%	20.3%
Long-term Debt Ratio	9.6%	15.9%	19.5%	18.1%	16.8%	18.7%	16.3%	16.9%	17.4%	17.9%	18.3%	18.7%
Debt to Equity Ratio	27.9%	38.5%	57.5%	51.0%	46.6%	55.7%	48.6%	51.3%	53.4%	55.8%	57.4%	58.7%
Equity Multiplier	1.88	2.01	2.61	2.56	2.65	2.76	2.74	2.79	2.83	2.86	2.88	2.88
Debt to EBITDA	85%	113%	145%	120%	114%	147%	126%	129%	130%	133%	133%	134%
Net Debt to EBITDA	26%	34%	70%	49%	43%	89%	99%	108%	115%	121%	122%	124%
Interest Coverage Ratio	55	67	43	64	-623	266	50	49	48	47	48	47
Equity to Assets	53%	50%	38%	39%	38%	36%	36%	36%	35%	35%	35%	35%

Appendix 5: Common-Size Statement of Financial Position

Balance Sheet

	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Assets												
Current assets												
Cash and cash equivalents	10.3%	13.4%	11.3%	11.8%	11.0%	8.0%	5.1%	5.2%	5.1%	5.5%	6.0%	6.7%
Marketable securities	18.5%	16.2%	0.3%	1.0%	1.3%	6.4%	7.0%	7.5%	7.9%	8.2%	8.4%	8.5%
Accounts receivable trade	8.0%	8.3%	8.6%	9.2%	9.2%	7.8%	8.1%	8.2%	8.3%	8.3%	8.3%	8.3%
Inventories	6.0%	5.8%	5.6%	5.6%	5.7%	5.3%	5.4%	5.5%	5.5%	5.5%	5.5%	5.5%
Other ST Assets	2.3%	2.3%	1.6%	2.4%	1.6%	1.8%	1.8%	1.9%	1.9%	1.9%	1.9%	1.9%
Total current assets	45.1%	46.1%	27.4%	30.1%	28.7%	29.3%	27.6%	28.2%	28.7%	29.4%	30.1%	30.9%
Property, plant and equipment, net	11.9%	11.3%	10.8%	11.1%	11.2%	10.7%	10.9%	10.7%	10.6%	10.4%	10.2%	10.0%
Intangible assets, net	19.3%	19.0%	33.8%	31.1%	30.2%	30.5%	30.8%	30.8%	30.9%	31.0%	31.1%	31.2%
Goodwill	16.2%	16.1%	20.3%	19.9%	21.3%	20.8%	18.8%	18.0%	17.3%	16.4%	15.5%	14.6%
Deferred tax asset	4.1%	4.4%	4.5%	5.0%	5.0%	4.9%	8.1%	8.4%	8.6%	8.8%	9.1%	9.3%
Other assets	3.3%	3.1%	3.2%	2.7%	3.6%	3.8%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%
Total assets	**133,411**	**141,208**	**157,303**	**152,954**	**157,728**	**174,894**	**178,727**	**186,535**	**194,805**	**205,029**	**216,929**	**229,831**
Liabilities and Shareholders' Equity												
Current liabilities												
Loans and notes payable	5.2%	3.3%	2.5%	1.8%	0.8%	1.5%	1.4%	1.5%	1.5%	1.5%	1.6%	1.6%
Accounts payable	5.0%	4.9%	4.6%	4.9%	5.4%	5.4%	5.4%	5.3%	5.3%	5.2%	5.1%	4.9%
Accrued liabilities	4.1%	4.0%	4.6%	5.0%	6.2%	8.0%	5.1%	5.1%	5.2%	5.2%	5.2%	5.2%
Accrued taxes on income	0.6%	0.7%	1.2%	0.5%	1.4%	0.8%	1.3%	1.4%	1.4%	1.4%	1.5%	1.5%
Other payables and accruals	5.9%	5.7%	6.5%	8.2%	9.0%	8.6%	8.4%	8.2%	8.0%	7.7%	7.4%	7.1%
Total current liabilities	20.8%	18.6%	19.4%	20.4%	22.8%	24.3%	21.7%	21.5%	21.3%	21.1%	20.7%	20.3%
Long-term debt	9.6%	15.9%	19.5%	18.1%	16.8%	18.7%	16.2%	16.7%	17.0%	17.5%	17.7%	18.0%
Deferred tax liability	1.9%	2.1%	5.3%	4.9%	3.8%	4.1%	6.8%	7.1%	7.3%	7.5%	7.7%	7.9%
Provision for Risks & Charges	6.6%	6.8%	6.4%	6.5%	6.8%	6.2%	5.6%	4.9%	4.2%	3.6%	3.0%	2.5%
Long-term taxes payable	0.0%	0.0%	5.4%	5.4%	4.7%	3.8%	6.2%	6.4%	6.6%	6.8%	7.0%	7.2%
Other liabilities	7.7%	6.8%	5.7%	5.6%	7.4%	6.8%	7.0%	7.1%	7.1%	7.2%	7.2%	7.2%
Total liabilities	**46.7%**	**50.1%**	**61.8%**	**60.9%**	**62.3%**	**63.8%**	**63.5%**	**63.6%**	**63.6%**	**63.6%**	**63.4%**	**63.1%**
Shareholders' equity												
Common stock - par value $1.00 per share	2.3%	2.2%	2.0%	2.0%	2.0%	1.8%	1.7%	1.7%	1.6%	1.5%	1.4%	1.4%
Accumulated other comprehensive income (loss)	-9.9%	-10.6%	-8.4%	-10.0%	-10.1%	-8.7%	-8.5%	-8.2%	-7.8%	-7.4%	-7.0%	-6.6%
Retained earnings	77.9%	78.3%	64.7%	69.4%	70.2%	65.1%	66.1%	66.0%	66.0%	65.8%	65.7%	65.7%
Less: common stock held in treasury, at cost	-17.0%	-20.1%	-20.1%	-22.5%	-24.4%	-22.0%	-22.8%	-23.1%	-23.4%	-23.5%	-23.5%	-23.5%
Total shareholders' equity	**53.3%**	**49.9%**	**38.2%**	**39.1%**	**37.7%**	**36.2%**	**36.5%**	**36.4%**	**36.4%**	**36.4%**	**36.6%**	**36.9%**
Total liabilities and shareholders' equity	**133,411**	**141,208**	**157,303**	**152,954**	**157,728**	**174,894**	**178,727**	**186,535**	**194,805**	**205,029**	**216,929**	**229,831**

Appendix 6: Common-Size Income Statement

Income Statement

	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Covid-19 Sales (not for profit)							N.A	-	-	-	-	-
Covid-19 Costs							N.A	-	-	-	-	-
Total sales (excluding effects from the Covid-19 vaccine sales)	**70,074**	**71,890**	**76,450**	**81,581**	**82,059**	**82,584**	**86,696**	**91,204**	**96,143**	**101,553**	**107,477**	**113,965**
Cost of products sold	25.2%	25.1%	25.9%	24.7%	25.0%	25.5%	25.2%	25.2%	25.2%	25.2%	25.2%	25.2%
Gross Profit	**74.8%**	**74.9%**	**74.1%**	**75.3%**	**75.0%**	**74.5%**	74.8%	74.8%	74.8%	74.8%	74.8%	74.8%
Selling, marketing and administrative expenses	30.1%	27.9%	28.1%	27.6%	27.0%	26.7%	27.9%	27.9%	27.9%	27.9%	27.9%	27.9%
Research and development expense	12.8%	12.7%	13.9%	13.2%	13.8%	14.7%	14.9%	15.0%	15.1%	15.2%	15.3%	15.3%
In-process research and development	0.3%	0.0%	0.5%	1.4%	1.1%	0.2%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%
D&A	5.3%	5.2%	7.4%	8.5%	8.5%	8.9%	8.3%	7.7%	7.3%	6.7%	6.3%	6.0%
Operational Income	**26.2%**	**29.0%**	**24.2%**	**24.6%**	**24.5%**	**23.9%**	23.1%	23.6%	23.9%	24.4%	24.8%	25.1%
Other (income) expense, net	-2.5%	0.3%	-0.1%	1.7%	3.1%	3.5%	1.0%	0.9%	0.9%	0.8%	0.8%	0.7%
Restructuring	0.7%	0.7%	0.4%	0.3%	0.3%	0.3%	0.5%	0.4%	0.4%	0.4%	0.0%	0.0%
Interest expense, net:	0.6%	0.5%	0.7%	0.5%	0.0%	0.1%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Pre-Tax Income	**27.4%**	**27.5%**	**23.1%**	**22.1%**	**21.1%**	**20.0%**	21.1%	21.7%	22.0%	22.6%	23.4%	23.8%
Income Taxes	5.4%	4.5%	21.4%	3.3%	2.7%	2.2%	3.5%	3.6%	3.6%	3.7%	3.9%	3.9%
Net Income	**22.0%**	**23.0%**	**1.7%**	**18.8%**	**18.4%**	**17.8%**	17.6%	18.1%	18.4%	18.9%	19.5%	19.9%

Appendix 7: Common-Size Cash Flow Statement

Cash Flow Statement

CASH FLOWS FROM OPERATING ACTIVITIES											
Net Income							**17.6%**	**18.1%**	**18.4%**	**18.9%**	**19.5%**	**19.9%**
Depreciation & Amortization							8.3%	7.7%	7.3%	6.7%	6.3%	6.0%
-Other Non-Cash Items							(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)
Changes in Working Capital							**(2.5%)**	**(0.2%)**	**(0.3%)**	**(0.1%)**	**0.1%**	**(0.1%)**
Inventories							(0.4%)	(0.6%)	(0.6%)	(0.6%)	(0.6%)	(0.6%)
Accounts Receivable							(1.1%)	(0.8%)	(0.9%)	(0.9%)	(0.9%)	(1.0%)
Accounts Payable							0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
Accrued Expenses and other							(4.4%)	1.0%	1.0%	1.0%	1.1%	1.1%
Other Current and Non-Current assets							(6.8%)	(1.3%)	(1.2%)	(1.4%)	(1.6%)	(1.4%)
Other Current and Non-Current Liabilities							10.0%	1.1%	1.0%	1.4%	1.8%	1.5%
NET CASH FLOWS FROM OPERATING ACTIVITIES	**27.9%**	**26.1%**	**27.5%**	**27.2%**	**28.5%**	**28.5%**	**23.2%**	**25.3%**	**25.2%**	**25.3%**	**25.7%**	**25.5%**
CASH FLOWS FROM INVESTING ACTIVITIES											
Additions to PPE							(3.6%)	(3.5%)	(3.3%)	(3.2%)	(3.0%)	(2.9%)
Acquisitions / Purchases of Intangible Assets							(4.2%)	(7.5%)	(7.5%)	(7.6%)	(7.6%)	(7.6%)
Change in Marketable Securities							(1.6%)	(1.5%)	(1.5%)	(1.4%)	(1.3%)	(1.2%)
Others							(0.4%)	(0.4%)	(0.4%)	(0.4%)	(0.4%)	(0.5%)
NET CASH USED BY INVESTING ACTIVITIES	**(11.0%)**	**(6.6%)**	**(19.4%)**	**(3.9%)**	**(7.5%)**	**(25.2%)**	(9.8%)	(12.9%)	(12.7%)	(12.5%)	(12.3%)	(12.1%)
CASH FLOWS FROM FINANCING ACTIVITIES											
Dividends paid							(12.7%)	(12.7%)	(12.6%)	(12.6%)	(12.5%)	(12.4%)
Shares Repurchased							(2.5%)	(2.6%)	(2.6%)	(2.6%)	(2.6%)	(2.6%)
Increase in ST Debt							(0.1%)	0.2%	0.2%	0.2%	0.2%	0.2%
Increase in LT Debt							(4.3%)	2.4%	2.2%	2.6%	2.4%	2.6%
Others							0.7%	0.7%	0.7%	0.8%	0.8%	0.8%
NET CASH USED BY FINANCING ACTIVITIES	**(15.9%)**	**(11.9%)**	**(10.0%)**	**(22.7%)**	**(22.0%)**	**(7.4%)**	(19.0%)	(11.9%)	(12.1%)	(11.6%)	(11.7%)	(11.4%)
Beginning Cash Balance							16.1%	10.0%	10.0%	9.9%	10.4%	11.5%
Cash Flows							(5.6%)	0.5%	0.4%	1.2%	1.7%	2.0%
Ending Cash Balance							10.5%	10.6%	10.4%	11.0%	12.2%	13.5%

Appendix 8: Balance Sheet Forecasting Assumptions

Balance Sheet		2021	2022	2023	2024	2025	2026	Assumptions
Current Assets								
Marketable Securities	Nominal, $m	12,599	13,998	15,397	16,795	18,194	19,593	Average of Marketable securities (2015,2016,2020) for 2026F - Values for 2017-19 were not accounted for due to a non-recurring charge related to the US tax law. We forecast a linear increase in marketable securities up to 2026F
Accounts Receivable Days	Nominal	61	61	61	61	61	61	Normalized at the 5y historical average
Inventory Days	Nominal	162	162	162	162	162	162	Normalized at the 5y historical average
Other ST Assets	% Growth	3,288	3,459	3,646	3,851	4,076	4,322	Forecasted to grow at the same rate as Sales
Non-Current Assets								
Property Plant and Equipment	% Growth	3.36%	3.36%	3.36%	3.36%	3.36%	3.36%	Forecasted to grow at the 2015-20 CAGR as the company continues growing
Change in Intangible Assets	Nominal, $m	1,708	2,305	2,728	3,376	3,851	4,356	Based on the relationship between Amortization and R&D in t-1
	% R&D t-1	53%	53%	53%	53%	53%	53%	Average relationship between investment in Intangible Assets and R&D in t-1 (2016,2019,2020); 2017-18 were excluded to remove the effects of a non-recurring charge related to the US tax law
Goodwill	Nominal, $m	33,639	33,639	33,639	33,639	33,639	33,639	Normalized at the 2020 value
Deferred tax asset	Nominal, $m	14,431	15,594	16,720	18,130	19,842	21,397	Forecasted to grow at the same rate as Taxes
Other LT Assets	% Growth	4.98%	5.20%	5.42%	5.63%	5.83%	6.04%	Forecasted to grow at the same rate as Sales
Current Liabilities								
Short Term Debt	% Operational Income	2,536	2,727	2,913	3,145	3,375	3,631	Set as 8.1% of Total Debt based on the historical ratio. Total debt is set based on a Debt/Op. Income ratio of 1.57
Account Payable Days	Nominal	161	158	155	151	148	144	Forecasted to go back to the 5y historical average of 144 by 2026F. We assume a decrease in Payable Days of 3 each year until we reach that goal
Accrued Liabilities	% COGS	42%	42%	42%	42%	42%	42%	Normalized at the 5y historical average
Accrued Taxes on income	% Growth	69%	8%	7%	8%	9%	8%	Forecasted to grow at the same rate as Taxes
Other Payables and accruals	% Cogs	69%	66%	64%	61%	59%	57%	6% increase in 2020 forecasted due to Covid liquidity issues, with a decrease of 1% per following year up to the value observed in 2019
Non-Current Liabilities								
Long Term Debt	% Operational Income	28,901	31,082	33,195	35,839	38,459	41,375	Set as 91.9% of Total Debt based on the historical ratio. Total debt is set based on a Debt/Op. Income ratio of 1.57
Deferred tax liability	% Growth	69%	8%	7%	8%	9%	8%	Forecasted to grow at the same rate as Taxes
Other Liabilities	% Growth	5%	5%	5%	6%	6%	6%	Forecasted to grow at the same rate as sales
Long Term Taxes Payable	% Growth	69%	8%	7%	8%	9%	8%	Forecasted to grow at the same rate as taxes
Provision for risks and charges	Nominal, $m	9937.67	9104.33	8271.00	7437.67	6604.33	5771.00	J&J is set to pay a $5bn opioid settlement. We assume that this payment will be spread evenly throughout the forecast period

Appendix 9: Income Statement Forecasting Assumptions

Income Statement		2021	2022	2023	2024	2025	2026	Assumptions
Total Sales								
Consumer	Growth %	2%	2%	2%	2%	2%	2%	Low growth sector, expected to grow close to inflation
Pharmaceutical	Growth %	6%	6%	7%	7%	7%	7%	Medium-high growth sector, CAGR taken from a comparison between historical CAGR and EvaluatePharma2020 forecasts: Growth derived mainly from Imbruvica, Darzalex, Stelara and Tremfya, based on consensus.
Immunology		8%	8%	8%	8%	8%	8%	6.72% Historical 5y CAGR - Adjusted to 7% based on 9-12% industry 5y CAGR forecast
Infectious Diseases		-7%	-7%	-7%	-7%	-7%	-7%	Forecasted at the historical 5y CAGR
Neuroscience		2%	2%	2%	2%	2%	2%	0.16% Historical 5y CAGR; Adjusted to 2% Based on 3%-6% industry 5y CAGR forecast
Oncology		12%	12%	12%	12%	12%	12%	19.76% Historical 5y CAGR; Adjusted to the upper limit of 12% Based on a 9%-12% industry 5y CAGR forecast
Pulmonary Hypertension		9%	9%	9%	9%	9%	9%	33% Historical 3y CAGR; Adjusted to 9% based on the firm's latest earnings call and it's strong position within the sector. These two products will experience strong uptake, benefiting from physician familiarity, strong positioning in treatment guidelines, and robust efficacy data to support them. Importantly, Johnson & Johnson has generated efficacy data for morbidity/mortality, broadening the evidence base for its products. Although the results of the TRITON trial were largely negative, the triple combination therapy exhibited a numerical reduction in the risk of first disease progression event.
Cardiovascular / Metabolism / Other		-2%	-2%	-2%	-2%	-2%	-2%	-2% Historical 5y CAGR
Medical Devices	Growth %	5%	5%	5%	5%	5%	5%	Low-medium growth sector, CAGR taken from company's forecasts supported by a quick recovery from the negative pandemic impacts
Expenses								
Cost of products sold	% Sales	25.2%	25.2%	25.2%	25.2%	25.2%	25.2%	COGS were computed as a % of Total Sales. From 2021F to 2024F we used the historical average COGS/Sales between 2015-17.
Depreciation and Amortization	Nominal, $m	7209	7009	7009	6809	6810	6811	As mentioned in the 2020 annual report for 2021-25. 2026F assumed to be the same as 2025F
Selling, marketing and administrative expenses	% Sales	27.9%	27.9%	27.9%	27.9%	27.9%	27.9%	Average of SG&A as a % of Total Sales (2015-20)
Research and development	Growth %	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%	Average YoY Change in R&D (2015-20)
In-process research and development	Nominal, $m	476	476	476	476	476	476	Average of In-process R&D (2015-20)
Non-Recurring Items								
Restructuring	Nominal, $m	400	400	400	400	-	-	1.9bn to 2.3bn in the next 4-5 years forecasted in the 2020 annual report - associated with network optimizations, exit costs and accelerated depreciation
Other expense (income), net	Nominal, $m	833	833	833	833	833	833	Changes in "Provision for Risks & Charges" - related with legal costs
Interest Expense								
Interest expense	Nominal, %	1.58%	1.58%	1.58%	1.58%	1.58%	1.58%	Average of Interest Expense (2015-18). 2019 and 2020 values were not accounted for as they're not sustainable in the long term
Tax Rate	Nominal, %	16.5%	16.5%	16.5%	16.5%	16.5%	16.5%	As mentioned during the 2021 Second Quarter conference call

Appendix 10: Cash Flow Statement Forecasting Assumptions

Cash Flow Statement		2021	2022	2023	2024	2025	2026	Assumptions
Operating Activities								
Depreciation	Nominal, $m	2,509	2,509	2,509	2,509	2,509	2,509	2020-2024 provided in the company's annual reports; 2025 & 2026 normalized
Amortization of intangibles	Nominal, $m	4,700	4,500	4,500	4,300	4,301	4,302	2020-2024 provided in the company's annual reports; 2025 & 2026 normalized
Financing Activities								
Shares Outstanding	Nominal, m	2,620	2,607	2,594	2,581	2,568	2,555	Forecasted to grow at -1.16% CAGR (historical 5-year CAGR): The company has been using share repurchases as a distribution strategy for over 10 years
Dividends per share	Nominal	4.2	4.4	4.7	5.0	5.2	5.5	Forecasted to grow at 6.18% CAGR (historical 5-year CAGR)
Repurchase of common stock								
Average value per share repurchased	$ Nominal	168	179	191	204	218	233	Based on a 34.07 Price/Research Ratio

Appendix 11: Sales by segment

Consumer Health Franchise							
(Dollars in Millions)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Beauty	4,106	3,633	3,897	4,200	4,382	4,593	4,450
OTC	3,758	3,895	3,977	4,126	4,334	4,444	4,824
Baby Care	2,239	2,157	2,001	1,916	1,858	1,675	1,517
Oral Care	1,647	1,580	1,568	1,531	1,555	1,528	1,641
Women's Health	1,302	1,200	1,067	1,050	1,049	986	901
Wound Care/Other	1,444	1,042	797	779	675	671	720
Total Sales	**14,496**	**13,507**	**13,307**	**13,602**	**13,853**	**13,897**	**14,053**

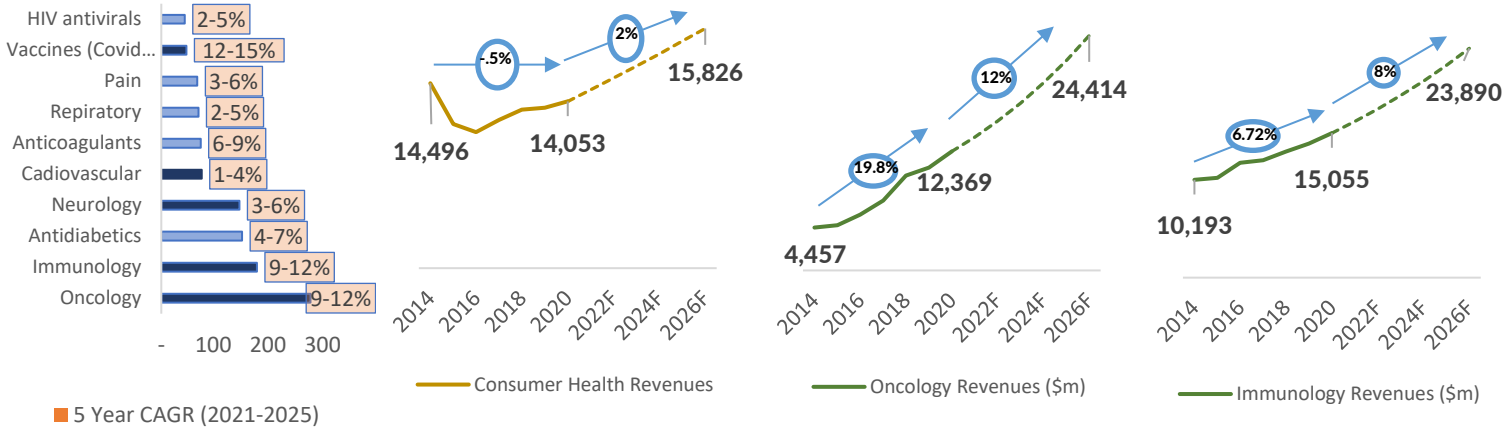
Pharmaceutical Franchise							
(Dollars in Millions)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Immunology	10,193	10,402	11,968	12,244	13,120	13,951	15,055
Oncology	4,457	4,695	5,807	7,258	9,844	10,692	12,369
Neuroscience	6,487	6,259	6,085	5,986	6,077	6,328	6,549
Cardiovascular / Metabolism / Other	5,577	6,418	6,396	6,287	5,816	5,192	4,878
Infectious Diseases	5,599	3,656	3,208	3,154	3,304	3,413	3,575
Pulmonary Hypertension	-	-	-	1,327	2,573	2,623	3,148
Total Pharma Sales	**32,313**	**31,430**	**33,464**	**36,256**	**40,734**	**42,199**	**45,574**

Medical Devices Franchise							
(Dollars in Millions)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Surgery	9,717	9,217	9,296	9,559	9,901	9,501	8,231
Orthopedics	9,675	9,262	9,334	9,258	8,885	8,839	7,763
Vision	2,818	2,608	2,785	4,063	4,553	4,624	3,919
Interventional Solutions	2,208	2,036	1,849	2,096	2,646	2,997	3,046
Diabetes Care	2,142	1,928	1,789	1,615	1,009	-	-
Diagnostics	962	86	66	1	-	-	-
Total Medical Devices Sales	**27,522**	**25,137**	**25,119**	**26,592**	**26,994**	**25,963**	**22,959**

Appendix 12: Key drivers of revenue growth

Products	Segment	Revenues ($m)	2015-20 CAGR*
Stelara	Immunology	$7,707	24%
Tremfya*	Immunology	$1,347	57%
Erleada	Oncology	$760	n/a
Darzalex*	Oncology	$4,190	191%
Imbruvica	Oncology	$4,128	66%

*Products that weren't yet sold in 2015, adjusted CAGR.



Out of J&J's extensive and growing pipeline, we identify 5 key products that are set to drive growth for the company and that sets it apart from its peers:

Immunology

(1) Stelara in ulcerative colitis and Chron's disease, with most growth coming from the latter. Stelara's long-term safety data assures a strong position in the market. Stelara is the highest grossing product in J&J's pipeline with $7.7bn in revenues in 2020 and has grown at a CAGR of 24% 2015-20.

(2) Tremfya in psoriatic arthritis care is a key drug used for the treatment of the disease. Growth can be explained by the drug's strong efficacy and unmet medical need in psoriasis. However, it's important to note that competition is high and Tremfya's biggest competitor, Skyrizi from AbbVie, has had an impact on growth. Tremfya has grown at a CAGR of 57% 2018-20.

Based on forecasts set by EvaluatePharma, with a range of 9-12% CAGR 2021-25 for the immunology market, **we set the overall Immunology pipeline growing at 8%**, adjusted from its CAGR of 6.72% 2014-20.

Oncology

(3) Erleada, a new treatment for prostate cancer will be competing with Pfizer's Xtandi, despite Xtandi already being well-established among doctors and the healthcare paradigm. The sales for 2021 Q1 saw a 44% increase compared to 2020 Q1.

(4) Darzalex is the main growth driver for the oncology segment: the drug is used in late stages of multiple myeloma, a type of bone marrow cancer, and is quickly becoming the standard of care. The product has grown at a CAGR of 191% 2015-20 and positive trials are set to push Darzalex into first-line therapy, driving sales. **(5) Imbruvica** is an oral medication and similarly to Dazalex, has become a standard of care for a form of blood cancer. Growth for Imbruvica comes from it's use in earlier stages of the disease, the prolonged use in patients due to the long duration of therapy and price increases.

The **Oncology segment** has grown at a historical CAGR of 19.8% 2015-20, which we adjust downwards to a **CAGR of 12% 2020-25F** based on market forecasts.

Consumer health

The consumer health business has maintained a stable level of revenue, growing at a CAGR of -0.5% 2014-20 (14.496bn to 14.053bn). This allows the company access to a stable source of income, which it can invest into: (1) the development of new products in the other segments

and (2) sustainability changes. However, other benefits can also be extracted, such as the consumer know-how on how to better communicate with consumers (patients and physicians), namely within the digital content realm, by delivering solutions that have a consumer-friendly and usable interface which is helping create a better digital ecosystem for the company.

We set the **Consumer Health segment growing at a 2% CAGR 2020-25F**, in line with J&J's forecasts and long-term expected GDP growth in the 35 nation OECD area (Appendix 22).

Appendix 13: Pharmaceutical pipeline

CARDIOVASCULAR AND METABOLISM		
Name	**Description**	**Phase**
procidentia	Difficult to treat hypertension	Phase III US Phase III EU
XARELTO (rivaroxaban)	Infrainguinal revascularized	Filed 10/20 US
XARELTO (rivaroxaban)	Pediatric VTE/CHD (Fontan)	Filed 6/21 US
XARELTO (rivaroxaban)	COVID-19 MI (PREVENT-HD)	Phase III US

Immunology		
Name	**Description**	**Phase**
nipocalimab	Warm Autoimmune Hemolytic Anemia	Phase III US Phase III EU
SIMPONI (golimumab)	Pediatric Ulcerative Colitis	Phase III US Phase III EU
STELARA (ustekinumab)	Pediatric Crohn's Disease	Phase III US Phase III EU
STELARA (ustekinumab)	Pediatric Ulcerative Colitis	Phase III US
TREMFYA (guselkumab)	Crohn's Disease	Phase IIB/III US Phase IIB/III EU
TREMFYA (guselkumab)	Pediatric Psoriasis	Phase III US Phase III EU
TREMFYA (guselkumab)	Ulcerative Colitis Monotherapy	Phase IIB/III US Phase IIB/III EU
TREMFYA (guselkumab)	Psoriatic Arthritis Structural Damage	Phase III US

INFECTIOUS DISEASES AND VACCINES		
Name	**Description**	**Phase**
rilematovir	Hematopoietic Stem Cell Transplantation patients infected with Respiratory Syncytial Virus (FREESIA)	Phase II US Phase II EU
VAC31518	Janssen COVID-19 Vaccine	Approved 2/21 EUA Approved 3/21 cMAA
VAC52150	Monovalent Ebola Virus Vaccine 10	Phase III US Approved 7/20 EU
VAC52416	Multivalent ExPEC Vaccine	Phase III US Phase III EU
VAC89220	HIV Px Vaccine	Phase III US Phase III EU

NEUROSCIENCE		
Name	**Description**	**Phase**
INVEGA HAFYERA (PP6M)	Treatment of Schizophrenia	Filed 10/20 US Filed 11/20 EU
PONVORY (ponesimod)	Relapsing forms of Multiple Sclerosis	Approved 3/21 US Approved 5/21 EU
seltorexant	Adjunctive treatment for major depressive disorder with insomnia symptoms	Phase III US Phase III EU

PULMONARY HYPERTENSION		
Name	**Description**	**Phase**
macitentan	Chronic thromboembolic pulmonary hypertension 75mg	Phase III US Phase III EU

macitentan	Pulmonary arterial hypertension 75mg	Phase III US Phase III EU
macitentan w/tadalafil FDC	Pulmonary arterial hypertension	Phase III US Phase III EU
OPSUMIT (macitentan)	Fontan-palliated in adolescent (>12 years old) and adult patients	Phase III US Phase III EU
OPSUMIT (macitentan)	Pediatric pulmonary arterial hypertension	Phase III US Phase III EU
UPTRAVI (selexipag)	Pulmonary arterial hypertension IV	Filed 9/20 US
UPTRAVI (selexipag)	Chronic thromboembolic pulmonary hypertension	Phase III US Phase III EU
UPTRAVI (selexipag)	Pediatric pulmonary arterial hypertension	Phase III US Phase III EU

ONCOLOGY		
Name	**Description**	**Phase**
amivantamab / lazertinib	Non Small Cell Lung Cancer	Phase III US Phase III EU
BALVERSA (erdafitinib)	Urothelial cancer	Approved 4/19 US Phase III EU
BALVERSA (erdafitinib)	Tumor Agnostic	Phase II US Phase II EU
BALVERSA (erdafitinib)	Non muscle invasive bladder cancer	Phase II US Phase II EU
ciltacabtagene autoleucel (BCMA CAR-T)	Relapsed refractory multiple myeloma	Filed 3/21 US Filed 4/21 EU
ciltacabtagene autoleucel (BCMA CAR-T)	Relapsed refractory multiple myeloma w/1-3 PL	Phase III US Phase III EU
DARZALEX (daratumumab)	Relapsed Refractory Multiple Myeloma w/PomDex	Approved 7/21 US Approved 6/21 EU
DARZALEX (daratumumab)	Amyloidosis (ANDROMEDA)	Approved 1/21 US Approved 6/21 EU
DARZALEX (daratumumab)	Smoldering multiple myeloma (SMM3001)	Phase III US Phase III EU
DARZALEX (daratumumab)	Frontline multiple myeloma transplant ineligible in combination w/ bortezomib, lenalidomide and dexamethasone	Phase III US Phase III EU
DARZALEX (daratumumab)	Frontline multiple myeloma transplant eligible in combination w/ bortezomib, lenalidomide and dexamethasone	Phase III US Phase III EU
ERLEADA	Localized prostate cancer	Phase III US Phase III EU
ERLEADA	High risk prostate cancer (PROTEUS)	Phase III US Phase III EU
IMBRUVICA (ibrutinib)	Treatment naïve patients with Mantle Cell Lymphoma in combination with Bendamustine and Rituximab (SHINE)	Phase III US Phase III EU
IMBRUVICA (ibrutinib)	Relapsed/refractory patients with Indolant Non-Hodgkins Lymphoma in combination with Bendamustine and Rituximab or R-CHOP; (SELENE)	Phase III US Phase III EU
IMBRUVICA (ibrutinib)	Frontline Chronic Lymphocytic Leukemia in combination with venetoclax (fixed duration) (GLOW)	Phase III US Phase III EU
IMBRUVICA (ibrutinib)	Relapsed/refractory patients with Mantle Cell Lymphoma in combination with venetoclax (SYMPATICO)	Phase III US Phase III EU
niraparib	L1 Prostate cancer metastatic castration-resistant in combination with abiraterone acetate and Prednisone	Phase III US Phase III EU
niraparib / abiraterone acetate	M1 Metastatic Castration-Sensitive Prostate Cancer in combination with abiraterone acetate and Prednisone	Phase III US Phase III EU
RIS/gemcitabine plus cetrelimab	Muscle non invasive bladder cancer	Phase II US Phase II EU
RIS/gemcitabine plus cetrelimab	Non-muscle invasive bladder cancer	Phase III US Phase III EU
RYBREVANT (amivantamab)	Non Small Cell Lung Cancer	Approved 5/21 US Filed 1/21 US
RYBREVANT (amivantamab)	Frontline Non Small Cell Lung Cancer in combination with chemotherapy 11	Phase III US Phase III EU
talquetamab (GPRC5D/CD3)	Relapsed refractory multiple myeloma	Phase II US Phase II EU
teclistamab (BCMA/CD3)	Relapsed refractory multiple myeloma	Phase II US Phase II EU

Appendix 14: Business and Corporate Structure – Board of Directors

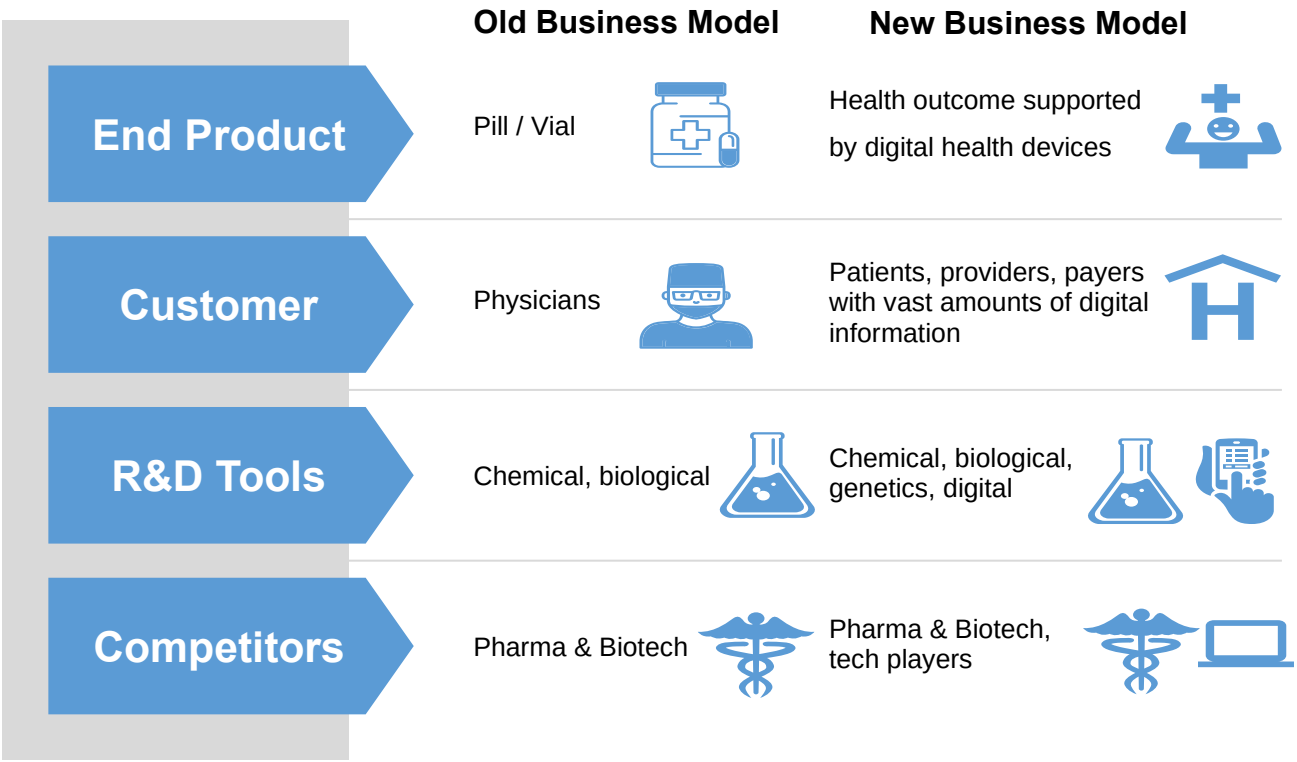
Name	Position	Held since	Current Committees	Other Public Board Services
Alex Gorsky	Chairman & CEO	2012	• Chair, Finance	• International Business Machines Corporation (since 2014)
Hubert Joly	Independent Director	2019	• Member, Nominating & Corporate Governance	• Best Buy Co., Inc. (since 2012) • Ralph Lauren Corporation (since 2009)
Mark Alan Weinberger	Independent Director	2019	• Member, Audit • Member, Regulatory Compliance	• MetLife Inc. (since 2019)
Nadja Y. West	Independent Director	2020	• Member, Science, Technology & Sustainability	• Nucor Corporation (since 2019) • Tenet Healthcare Corporation (since 2019)
Anne M. Mulcahy	Lead Independent Director	2009 (Lead Director since 2012)	• Member, Audit • Member, Finance • Member, Nominating & Corporate Governance	• Graham Holdings Company (since 2008) • LPL Financial Holdings Inc. (since 2013) • Williams-Sonoma, Inc. (since 2018) • Target Corporation (1997-2017)
Ronald A. Williams	Independent Director	2011	• Chair, Compensation & Benefits • Member, Nominating & Corporate Governance	• The Boeing Company (since 2010) • American Express Company (since 2007) • Envision Healthcare Holdings, Inc. (2011-2017)
Charles O. Prince	Independent Director	2006	• Chair, Regulatory Compliance • Member, Nominating & Corporate Governance	• Xerox Corporation (2008-2018)
Ian Edward Lamert Davis	Independent Director	2010	• Member, Audit • Member, Regulatory Compliance	• BP, plc (since 2010) • Rolls-Royce Holdings plc (since 2013)
A. Eugene Washington	Independent Director	2012	• Member, Compensation & Benefits • Member, Science, Technology & Sustainability	-
Mark B. McClellan	Independent Director	2013	• Member, Regulatory Compliance • Member, Science, Technology & Sustainability	• Cigna Corporation (since 2018)
D. Scott Davis	Independent Director	2014	• Chair, Audit • Member, Compensation & Benefits	• Honeywell International, Inc. (since 2005) • United Parcel Service, Inc. (2008-2016) • EndoChoice, Inc. (2014-2016)
Mary C. Beckerle	Independent Director	2015	• Chair, Science, Technology & Sustainability • Member, Regulatory Compliance	• Huntsman Corporation (since 2011)
Jennifer A. Doudna	Independent Director	2016	• Member, Science, Technology & Sustainability	-
Marillyn A. Hewson	Independent Director	2019	• Member, Compensation & Benefits	• Chevron Corporation (since January 2021) • DuPont; DowDuPont Inc. (2007-2019) • Lockheed Martin Corporation (since 2012-2021)

Appendix 15: Business and Corporate Structure – Executive Committee

Name	Position	Held since	Department
Alex Gorsky	Chairman	2012	Board of Directors and Chief Executive Officer
Joaquin Duato	Vice Chairman of the Executive Committee	2018	Vice Chairman of the Executive Committee
Peter Fasolo	Executive Vice President	2016	Chief Human Resources Officer

Ashley McEvoy	Executive Vice President	2018	Chief Human Resources Officer
Thibaut Mongon	Executive Vice President	2019	Worldwide Chairman, Consumer Health
Michael Sneed	Executive Vice President	2018	Global Corporate Affairs & Chief Communication Officer
Paul Stoffels	Vice Chairman of the Executive Committee	2018	Chief Scientific Officer
Jennifer Taubert	Executive Vice President	2018	Worldwide Chairman, Pharmaceuticals
Michael Ullmann	Executive Vice President	2016	General Counsel
Kathy Wengel	Executive Vice President	2018	Chief Global Supply Chain Officer
Joseph J. Wolk	Executive Vice President	2018	Chief Financial Officer

Appendix 16: Change in the Healthcare experience



Appendix 17: Healthcare spending by age groups

We use the conclusions from “Comparison of Health Care Spending by Age in 8 High-Income Countries”. Irene Papanicolas, 2020 to analyse how healthcare spending varies by age groups in developed countries.

The study uses data from the Organisation for Economic Co-operation and Development to examine variations in total current health care spending per capita, by age cohort, for the US and 7 other high-income countries (i.e. Australia, Canada, Germany, Japan, the Netherlands, Switzerland, and the United Kingdom) in 2015.

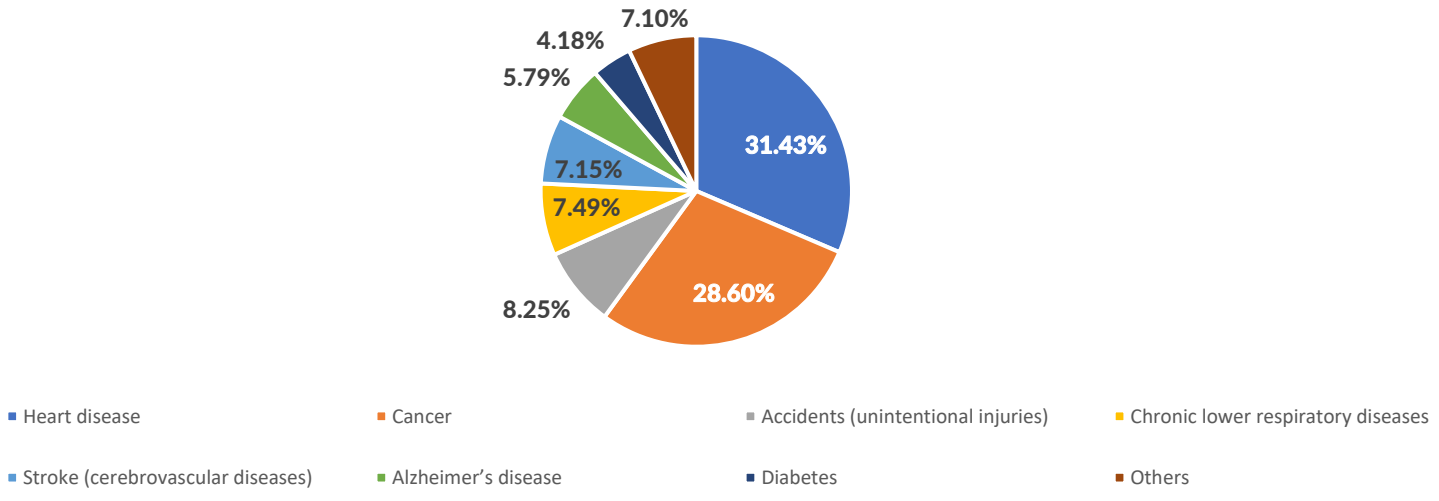
	Per capita health expenditure, USD				Expenditure relative to the mean			
	Age group, y				Age group, y			
Country	**0-19**	**20-64**	**≥65**	**Average**	**0-19**	**20-64**	**≥65**	**All**
U.S	4097	8161	24655	9524	1,7	2,0	1,8	1,7
Aus	2525	3771	13316	4888	1,2	1,0	1,1	1,0
Can.	2147	3366	11773	4457	1,0	0,9	1,0	0,9
Ger.	2448	3630	12442	5277	1,1	1,0	1,0	1,1
NL	2115	3763	12285	4916	1,0	1,0	1,0	1,0
Jap.	1711	2822	9972	4486	0,8	0,8	0,8	0,9
Switz.	2530	5166	16788	6730	1,2	1,4	1,4	1,4
UK	1686	2705	9584	3714	0,8	0,8	0,8	0,8
Average (US included)	2 407	4 173	13 852	5 499	44%	76%	252%	100%
Average (No US)	2 166	3 603	12 309	4 924	44%	73%	250%	100%

On average, we find that people aged above 65 years old spend on average 252% more on healthcare than the mean. This means that this group is the biggest spender by a large margin and this unbalance is only set to continue expanding as population ageing and a growing healthcare related costs in percentage of GDP continues to grow in the foreseeable future.

Appendix 18: Main causes of death in the US

An additional line of analysis that supports our thesis behind the industry’s growth is looking at what the main causes of death are in the US as a proxy to what requires the most investment and is likely to see a higher ROI if an impact can be made on these areas.

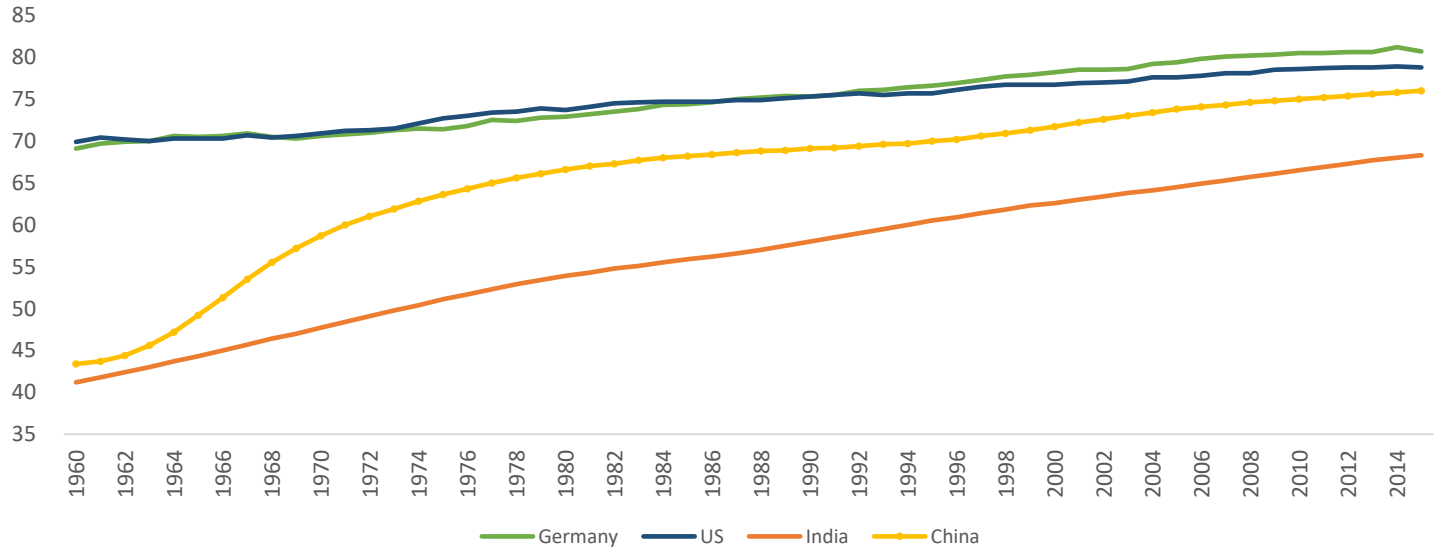
We gather data from the CDC and find that about 60% of deaths in 2019 are due to heart disease and Cancer, in line with the importance we give in our analysis to the continuing growth of the oncology segment.



Appendix 19: Development of the life expectancy at birth (1960-2015)

As quality of life and access to medicines continues to increase throughout the world, derived from a generalized increase in worldwide GDP and purchasing capability together with an expansion from healthcare companies to international markets, so does life expectancy at birth.

Between 1960 and 2015, life expectancy has increased: 12 years in Germany, 9 years in the US, **27 years in India** and **33 years in China**. Together with a continuing growth in worldwide population levels (mostly coming from developing countries), these trends justify our conclusion of large long-term growth potential for the healthcare industry, which J&J can benefit from.



Appendix 20: Capitalizing Research and Development – an alternative

When a company invests into PP&E, it capitalizes the asset and depreciates it over time. However, when a company invests in intangible assets, this investment must be fully expensed.

In some industries, as is the case for the pharmaceutical industry, this can lead to an underestimation of a company's IC and an overestimation of its ROIC.

As such, we present below as estimation of capitalized investment in R&D using an **8-year asset lifetime**.

Note that J&J does not have the information related to its R&D asset lifetime publicly available and as such this assumption is based on an industry average. Because of this we choose not to apply this transformation in our financial model.

Our initial year (1991) is based on the last year we R&D information on, however the company has been operating for longer. Despite this, our forecast for 2026F would not see any significant change as earlier R&D investments would've been fully amortized and have a low impact on more recent years.

Years	R&D Investment	Amortization of R&D	Final R&D
1991	980	-	980
1992	1,127	123	1,985
1993	1,182	248	2,918
1994	1,278	365	3,832
1995	1,634	479	4,987
1996	1,905	623	6,268
1997	2,140	784	7,625
1998	2,336	953	9,008
1999	2,768	1,126	10,650
2000	3,105	1,331	12,424
2001	3,591	1,553	14,462
2002	3,957	1,808	16,611
2003	4,684	2,076	19,219
2004	5,314	2,402	22,130
2005	6,462	2,766	25,826
2006	7,125	3,228	29,723
2007	7,680	3,715	33,687

2008	7,577	4,211	37,053
2009	6,949	4,632	39,371
2010	6,796	4,921	41,245
2011	7,486	5,156	43,576
2012	7,602	5,447	45,731
2013	8,110	5,716	48,124
2014	8,471	6,016	50,580
2015	8,999	6,322	53,256
2016	9,143	6,657	55,742
2017	10,554	6,968	59,329
2018	10,775	7,416	62,687
2019	11,355	7,836	66,207
2020	12,159	8,276	70,090
2021	13,020	8,761	74,348
2022	13,828	9,294	78,883
2023	14,686	9,860	83,708
2024	15,597	10,463	88,841
2025	16,564	11,105	94,300
2026	17,592	11,788	100,104

Appendix 21.1: Estimating Implied Risk Premium

We use the information available ins stock prices to find how risk averse the market is and how much of a risk premium it is demanding. By analysing earnings throughout the forecast period and finding the risk premium at which these must be discounted at to reach the current, we can find the implied risk premium in the market.

The S&P 500 is used as a proxy for the market together with a 1.8% risk-free rate, in line with our valuation assumptions. Earnings growth estimates and expected pay-outs for the forecast period are taken from Thomson Reuters.

We reach an implied risk-premium of 3.03%, based on expected returns of 3.973%. (IRP = ER – Rf)

Historical Market Risk Premium Computation	
Equity Index Used	S&P500
Time Period	5Y
Proxy for Risk-Free Rate	5y ^TNX average
Risk-free Rate (Rf)	1.80%
Expected Growth Rate	1.80%
Expected Returns (ER)	4.973%
Implied Rp (IRP)	3.03%
S&P 500 Index price	$4,391.34

Bottom-up Estimates (Thomson Reuters on 5/28/2021)					
Year	Earnings Growth	Earnings	Expected Payout	Expected Dividends + Buybacks	Present Value
2020		139.7	83%	116	
2021	43.52%	200.5	85%	170	159
2022	10.50%	221.6	87%	192	168
2023	8.17%	239.7	89%	213	174
2024	1.75%	243.9	91%	221	169
2025	1.23%	246.9	92%	228	163
Compounded average	12.06%		Terminal Value	4,648	3,557
				Sum	**4,391.34**

Appendix 21.2: Implied Cost of Equity (DDM)

Another methodology to reach the implied return on equity is through the Dividend Discount Model.

Using the **Gordon growth model** to value equity per share we find that: $Value\ of\ Equity = \frac{Dividends_{t+1}}{Cost\ of\ Equity - Expected\ Growth\ Rate}$. Thus, given the current value of equity, dividends at t+1 and expected growth rate, one can find the implied cost of equity.

Expected growth rate can be calculated based on the company's fundamentals and is given by the following equation:

$$Expected\ Growth\ rate = (1 - Payout\ Ratio) * Return\ on\ Equity$$

At the current date, J&J is priced at $161 which gives us an **implied cost of equity of 10%.**

	2021	2022	2023	2024	2025	2026	Terminal
1 - Dividend Payout Ratio	28%	30%	31%	33%	36%	38%	32%
Net Income	15258	16488	17679	19169	20980	22623	
Dividends	11012	11573	12161	12780	13430	14113	
ROE	23%	24%	25%	26%	26%	27%	25%
Sustainable G	6,5%	7,2%	7,8%	8,6%	9,5%	10,0%	**8,2%**

DPS (2022)	4,44
Current Price	161
DDM Re	10,00%

Appendix 22: Computing the Long-term growth rate

For the terminal value we assume a going concern approach with cash flows growing perpetually at a continuous rate. In order to reach the **Terminal Growth Rate**, we present five different approaches – (1) ROE method, (2) ROC method, (3) Long-term GDP growth, (4) Long-term population growth and (5) Long-Term Annual Average Headline CPI.

Using the ROC and ROE approaches, we arrive at a 3.74% and 5.53% perpetual growth rate, respectively. Although these values are based on fundamental analysis, we believe they're **over-optimistic** given the estimates of 3% long-term average **global GDP growth**.

Therefore, we apply a 50-50 weight split between the weighted average **long-term GDP growth** based on J&J's revenue geographic distribution and Long-Term Annual Average **Headline CPI** arriving at a **2.52% terminal growth** rate that can be sustained in the long term.

We also present long-term population growth forecasts however as we lack the data required to find the correlation between population growth and a perpetual growth rate for J&J, we chose not to apply it.

Calculating Terminal Growth Rate	2021	2022	2023	2024	2025	2026	Terminal
Reinvestment Rate	3.9%	19.5%	20.6%	22.2%	22.6%	23.2%	21.6%
Net Capex	-415	2,958	3,402	4,073	4,572	5,101	
Change in WC	1,144	973	1,069	1,175	1,292	1,421	
1-Debt Ratio	82%	82%	81%	81%	81%	80%	
Net Income	15,258	16,488	17,679	19,169	20,980	22,623	
ROC	16.2%	16.7%	17.0%	17.3%	17.8%	17.9%	17.3%
EBIT (1-t)	15,674	16,935	18,156	19,684	21,533	23,218	
Book Value of Equity	65,313	67,880	70,904	74,644	79,381	84,904	
Book Value of Debt	31,437	33,810	36,108	38,984	41,834	45,006	
ROE	23.4%	24.3%	24.9%	25.7%	26.4%	26.6%	25.6%
NPM	17.6%	18.1%	18.4%	18.9%	19.5%	19.9%	
Asset Turnover	0.49	0.49	0.49	0.50	0.50	0.50	
Financial Leverage	2.74	2.75	2.75	2.75	2.73	2.71	

g(ROC)	0%	**3.74%**	
g(ROE)	0%	**5.53%**	
Weighted Average Long-Term GDP Growth	50%	**2.74%**	
Long-Term Average Global GDP Growth		3.00%	Source: OECD
Long-Term Average GDP Growth in the 35-nation OECD area	75%	2.00%	Source: OECD
Long-Term Average GDP Growth in Emerging Countries	25%	5.00%	Source: OECD
Weighted Average Long-Term Population Growth Forecast (2020-60)	0%	**0.56%**	
US Forecast		0.44%	
Europe Forecast		-0.20%	
Asia Forecast		0.33%	
Africa Forecast		1.95%	Rate assumed for both Africa and Asia (lack of information)
South America		0.40%	
Long-Term Annual Average Headline CPI	50%	**2.30%**	Source: Federal Reserve Bank of Philadelphia
Weighted Average LT Growth Rate	100%	**2.52%**	

Appendix 23: Calculating Beta

We compute 3 different methods to arrive at Beta – (1) Adjusted Beta by industry, (2) Regression Beta, (3) Peer adjusted Beta.

In the first case, we use the betas calculated by Damodaran for each of the industries in which J&J operates, and give each one a weight based on J&J's sales distribution, arriving at an **adjusted beta of 0.88** which we apply in our forecast.

For the regression beta we compute a linear regression to test the correlation between J&J's and the S&P500, arriving at a **beta of 0.73**.

Lastly, we also compute a peer adjusted regression beta, in which we compute the average unlevered beta between our peers, which we use to compute J&J's beta, arriving at a **beta of 0.68**. In this analysis we assume a tax rate of 16%.

Beta	Industry Betas	% of Sales	Adjusted
Pharma	0.91	56%	0.51
Healthcare Products	0.83	17%	0.14
Healthcare Support Services	0.85	28%	0.24
Adjusted Beta			**0.88**
Regression Beta			**0.73**
Peer Adjusted Regression Beta			**0.70**

Peer adjusted beta	Betas (5y Monthly)	D/E Ratio	Unlevered Beta	Beta (Ajusted for Outliers)
Johnson & Johnson	0.71	48.1%	0.50	**0.388**
AbbVie Inc.	0.79	653.6%	0.12	1.79
Eli Lilly & Co.	0.24	257.6%	0.08	0.87
Merck & Co. Inc.	0.42	79.7%	0.25	0.46
Pfizer Inc.	0.67	57.9%	0.45	0.41
Novartis AG	0.52	66.3%	0.33	0.43
Roche Holding AG	0.27	42.9%	0.20	0.38
Average (excluding outliers)	0.56	1.61	**0.28**	**0.68**
Median (excluding outliers)	0.64	0.66	0.25	0.43

Appendix 24: Estimating Risk-Free Rate

J&J's headquarters are in the US, most of its sales come from the North American market most costs/revenues are in US$.

As such, we use a **10-year US treasury bond** to calculate the risk-free rate. While our DCF model assumes a perpetuity, we still choose to use a 10-year bond, as it retains a high trading volume. While the 30-year bond would more correctly represent the timeframe of our analysis, given that the trading volume is vastly lower, we would be incurring the risk of the value not correctly representing current market views.

We analyse 4 alternatives to arrive to the risk-free rate: (1) Spot price, (2) 5-year average, (3) 10-year average of the 10-Years Treasury Yield and (4) the value provided by Fernandez on his latest survey based on what risk-free rate investors use in their financial models in the United States.

We choose to apply the **5-Year Average of 1.94%**, in order to adjust the current rate for the historically low interest rates, which would not be sustainable in the long term.

Risk-Free Rate		
Treasury Yield 10 Years (^TNX)	Spot Price	**1.34%**
Treasury Yield 10 Years (^TNX)	5y Average	**1.94%**
Treasury Yield 10 Years (^TNX)	10y Average	**2.02%**
Market Survey	Fernandez	**1.80%**

Appendix 25: Estimating Cost of Debt

Cost of debt is calculated using 3 different methodologies: (1) Assuming it to be equal to the interest rate, (2) Credit Spread and (3) looking at the industry average.

Given J&J's strong financial position resulting in an **interest coverage ratio of 219** we apply a 0.69% spread (based on Damodaran's forecast for the US market). This results in a **Cost of Debt of 2.6%** which we apply throughout our forecast.

We choose not to assume a direct correlation between the interest rate paid by the company as we find that it is substantially lower than the industry's cost of debt, despite being adjusted upwards in 2020F, which would lead to an overvaluation of the company.

Lastly, we do not use the industry's average cost of debt as Johnson and Johnson is in a unique position, having a diversified portfolio which grants it higher financial stability and, therefore, a lower cost of debt.

Cost of Debt		**Source**
Interest Rate	1.58%	
Credit Spread	2.6%	
Interest Cov. Ratio	219	
Spread	0.69%	Damodaran
Risk Free Rate	1.94%	
Industry Cost of Debt	3%	Damodaran

Appendix 26: DCF Model

Under the DCF model, the value of a firm can be written as the value of its after-tax operating cash flows, discounted by a cost of capital.

Free cash flow to the firm is calculated as: $FCFF = NOPAT + D\&A - CAPEX - \Delta Net\ WC$, which we discount at a WACC of 5.36% and adjust for net debt in order to reach the equity value.

Terminal value assumes that the business will grow in perpetuity at a set long-term growth rate of 2.52%

Calculating FCFF						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
FCFF	14,034	14,715	15,466	16,365	17,392	627,687
NOPAT	17,965	19,186	20,714	22,229	23,914	
D&A	7,009	7,009	6,809	6,810	6,811	
NWC, change	973	1,069	1,175	1,292	1,421	
CAPEX	9,967	10,411	10,882	11,382	11,912	

DCF Model						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
FCFF	14,034	14,715	15,466	16,365	17,392	627,687
WACC	5.36%	5.36%	5.36%	5.36%	5.36%	5.36%
Present Value	14,034	13,966	13,932	13,992	14,113	483,428
FV (2022)	553,465					
Net Debt	-16,072					
EV	537,392					
Price	206.2					

Appendix 27: APV Model

The APV model is more flexible than the DCF model as it **does not require the firm to have a stable debt structure** given that the valuation of the tax shield is done separately.

Under this model, **cash flows are discounted using the Ru**, given by $r_u = \frac{E}{V} * r_e + \frac{D}{V} * r_d$ to arrive at the unlevered value of the firm (VU). The **present value of the Interest tax shield** is then added to VU to arrive at the value of the levered firm.

Ru in the **terminal year** is computed as the **average** of Ru in 2022-26F.

Debt capacity is calculated as a percentage of the present value of FCFF (PVu), based on the **Debt/Equity ratio** in each year.

Using this model, we arrive at a price target of **$208.9/share**.

Calculating APV Discount Rate						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
E	67,880	70,904	74,644	79,381	84,904	
D	33,810	36,108	38,984	41,834	45,006	
V	101,690	107,012	113,628	121,215	129,910	
APV (Int Rate)	5.05%	5.03%	5.00%	4.99%	4.98%	**5.02%**
APV (Credit Spread)	5.40%	5.38%	5.36%	5.35%	5.34%	**5.38%**

APV Model						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
FCFF	14,034	14,715	15,466	16,365	17,392	627,687
Ru	5.40%	5.38%	5.36%	5.35%	5.34%	5.38%
PVu	14,034	13,250	13,224	13,285	13,406	483,033
Vu	550,232					
Debt Capacity	6,755	6,600	6,734	6,938	7,001	252,268
Interest Paid	178	174	177	183	184	6,640
Tax Shield	29	29	29	30	30	1,096
PV Tax Shield	29	26	25	24	23	843
VTaxShield	971					
VL	551,203					
Debt	-6,755					
EV	544,449					
Price	209					

Appendix 28: FTE Model

Under the Flow to Equity model, **FCFE** (Free cash flow to equity) is computed as: $FCFE = NI + D\&A + \Delta NWC + Capex + Net\ borrowing$, which is **discounted at the cost of equity** to reach equity value.

Cost of equity is calculated using the **CAPM Model** and is given by $K_e = R_f + \beta * MRP$.

Terminal value is calculated using the **Gordon Growth Model** (perpetuity growth).

We reach an equity value of 543.56bn, with a price of $208.5/share.

Cost of Equity	
Risk Free Rate	1.94%
Beta	0.88
Beta Adj (Blume)	0.92
MRP	5.50%
Cost of Equity	6.78%

Calculating FCFE						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
FCFE	14,930	15,506	16,797	17,967	19,273	657,447
NI	16,488	17,679	19,169	20,980	22,623	
D&A	7,009	7,009	6,809	6,810	6,811	
NWC, Change	973	1,069	1,175	1,292	1,421	
Capex	9,967	10,411	10,882	11,382	11,912	
Net Borrowing	2,373	2,298	2,876	2,851	3,172	

Flow to Equity Model						
	2022	**2023**	**2024**	**2025**	**2026**	**Terminal**
FCFE (2)	14,929.8	15,505.5	16,796.5	17,966.7	19,272.7	657,447.2
r	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Present Value	14,930	13,598	13,795	13,819	13,882	473,539
EV	**543,562**					
Price	**208.5**					

Appendix 29: DDM Model

Under the **Dividend Discount Model** (DDM), the price of the stock is equal the company's **future dividends** discounted back to their present value at the **cost of equity**.

We assume a dividend growth rate of 5.09% based on historical growth (Figure 31) and a cost of equity of 6.78%.

We reach an equity value of 686.1bn, resulting on a price of **$263.2/share**.

The high dividend growth rate in addition to the consistent levels of share repurchases lead to an overvaluation while using the DDM in comparison with the other methodologies.

DDM	2022	2023	2024	2025	2026	Terminal
Dividend Paid	11,573	12,161	12,780	13,430	14,113	874,759
Present Value	11,573	11,389	11,208	11,030	10,855	630,062
Equity Value	**686,117**					
Price	**263.2**					

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Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%