



# **MASTER OF SCIENCE IN FINANCE**

## **MASTERS FINAL WORK PROJECT**

**EQUITY RESEARCH:  
GLAXOSMITHKLINE PLC.**

**SOFIA TEIXEIRA DIAS MOREIRA MORAS**

**OCTOBER 2021**



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**SUPERVISOR:  
TELMO FRANCISCO SALVADOR VIEIRA**

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# Abstract

This project is an Equity Research that follows the guidelines and regulations of ISEG Master Final Project as well as the format recommended by CFA Institute (Pinto, Henry, Robison, and Stowe, 2010).

This Equity Research is a detailed valuation of GSK plc., including specific information and analysis about the company. Selecting this company and studying the pharmaceutical industry comes from the actual situation that we are living with the COVID-19 pandemic. Furthermore, understanding the influence and the impact of the pharmaceutical industry nowadays and in the future, through a deep study it seems a challenge to me.

The price target for GSK plc. was computed using different methods, Discounted Cash Flow (DCF) approach (using the Free Cash Flow to the Firm), the Flow to Equity Method, the Adjusted Present Value, the Dividend Discount Model and Relative Valuation. The two principal methods used (WACC method and Relative Valuation), complement the analysis and robustness of the results reached.

The final price target obtained for 2022 YE is £ 21,18/share, which represents an upside potential of 17,51% regarding the price in the January 2021 of £ 18,02/share. The final recommendation is to Buy, taking into consideration the level of risk of GSK to be medium.

JEL Classification: F01, G10, G17, G30, G32, G34, G35, I10, J10, J11, K41, L65

Keywords: Equity Research, Valuation, Risks

# Resumo

Este projeto é um Relatório de Avaliação que segue as orientações e regras para um Trabalho Final do Programa de Mestrado do ISEG bem como o formato recomendado do CFA Institute (Pinto, Henry, Robinson, and Stowe, 2010).

Este Relatório de Avaliação é uma avaliação detalhada da GSK plc., incluindo informação específica e análises sobre a empresa. Selecionar esta empresa e estudar a indústria farmacêutica provém da situação atual que se vive com a pandemia COVID-19. Além disso, perceber a influência e o impacto da indústria farmacêutica na atualidade e no futuro através do estudo profundo pareceu-me desafiante.

O preço alvo para a GSK foi calculado utilizando vários métodos, o método *Discounted Cash Flow* (utilizando *Free Cash Flow to the Firm*), *Flow to Equity Method*, *Adjusted Present Value*, *Dividend Discount Model* e *Relative Valuation*. Os dois métodos principais usados (*WACC method* e *Relative Valuation*), complementam a análise e a robustez dos resultados obtidos.

O preço alvo obtido para final do ano de 2022 é £21,18/ação, o que representa um potencial de valorização de 17,51% tendo em conta o preço em janeiro de 2021 de £ 18,02/ação. A recomendação final é de Compra, tendo em consideração o risco da GSK ser médio.

Classificação JEL: F01, G10, G17, G30, G32, G34, G35, I10, J10, J11, K41, L65

Palavras-chave: Relatório de avaliação, Avaliação, Riscos

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# Glossary

## A

API – Active Pharmaceutical Ingredient

## C

CAGR – Compound Annual Growth Rate

CBO – Congressional Budget Office

## D

DCF – Discounted Cash Flow

## E

EMA – European Medicines Agency

ERP – Equity Risk Premium

EU – Euro Area

## F

FCFE – Free Cash Flow to Equity

FCFF – Free Cash Flow to the Firm

FDA – Food and Drug Administration

FED – Federal Reserve Board

## G

g – Perpetual Growth Rate

GDP – Gross Domestic Product

GSK – GlaxoSmithKline plc.

## J

J&J – Johnson&Johnson

## P

PCE inflation – Personal Consumption Expenditures Price Index

p.p – percentage points

PV – Present Value

## Q

Q2 – Second quarter

QE – Quantitative Easing

## R

R&D – Research and Development

## T

TV – Terminal Value

## U

USA – United States of America

## W

WACC – Weighted Average Cost of Capital



## 1. Research Snapshot

The final recommendation for GSK plc. is **BUY**, reaching a **price target of £21,18** which represents an **upside potential of 17,51%**. (Figure 1 & Table 1)

In order to get this price target, different valuation's methods were used, although the principal ones are **Discount Cash Flow** valuation and **Relative Valuation**. In the second method used, the price target is £21,50 with an upside potential of 19,32% which indicates the same recommendation, **BUY**. (Figure 1 & Table 2).

Considering the risks that will be revealed further on as well as the risks that the company faces daily and the new reality that is facing nowadays with the COVID-19 pandemic, the final risk assessment is **Medium Risk for GSK**. (Table 2)

The **main segment is pharmaceutical** and is the one that provides more turnover, representing around 46% of the company sales. The EBIT is forecasted to grow in the following years, at a rate around 5% a year. (Table 3)

**GSK plc.** is a major global healthcare group which is engaged in the creation and discovery, development, manufacture and marketing of pharmaceutical products, vaccines, and consumer healthcare products.

Regarding all analysis it is expected that **GSK plc. continues to grow**, special due to the transaction with Pfizer to combine both consumer healthcare businesses into a **world-leading Joint Venture**. Furthermore, the possibility of separation into two new companies will increase the strength in the market in Biopharma and Consumer Healthcare segments, and also provides a significant opportunity to create value for shareholders. Thus, it is probable that **GSK plc. remains one of the largest pharmaceutical companies in the market**.

Table 3 - GSK Financials – Main results  
Source: SM Analysis

	2020	2021E	2022F	2023F	2024F	2025F	2026F
<b>Revenues</b>	34 099	33 821	35 438	37 141	38 937	40 830	42 827
<b>COGS</b>	(11 704)	(11 580)	(12 134)	(12 717)	(13 332)	(13 980)	(14 664)
<b>Operating Expenses</b>	1 624	(411)	(430)	(451)	(473)	(496)	(520)
<b>EBIT</b>	7 783	6 323	6 625	6 943	7 279	7 633	8 006

Figure 1 - Valuation Summary  
Source: SM Analysis

	
Price target: <b>£21,18</b>	
Close price: £18,02	
Upside potential:  17,51%	
Annualized return:  12,86%	
Risk: <b>Medium</b>	
Recommendation: <b>BUY</b>	

Type of valuation	Price target	Upside Potential	Final recommendation
<b>DCF Method</b>	£21,18	17,51%	<b>BUY</b>
<b>Relative Valuation</b>	£21,50	19,32%	<b>BUY</b>

Table 1 - Market Profile  
Source: SM Analysis

<b>Closed price</b>	£18,02
<b>Ticker</b>	GSK: LN
<b>Sector</b>	Healthcare
<b>Sub-industry</b>	Biotech & Pharma

Table 2 - Recommendation system  
Source: Resources of EQR course

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%

## 2. Business description

**GlaxoSmithKline plc. (GSK)** is a global healthcare company, starting in 1715 and founded as GSK known as today with the merger of SmithKline Beecham and GlaxoWellcome in 2000. The main purpose of the company is to help people to have a longer life with better quality, diminishing the pain of some diseases. The **geographies that GSKs operate are US (43%), Europe (24%) and international (33%)**. The firm employs over **94.000 people across 96 markets** and over **12.000 workers are in the R&D department**.

GSK has three main business areas: **pharmaceutical, vaccines and consumer healthcare**. The **pharmaceutical business** generated sales around £17 billion in 2020 and developed medicines in respiratory, HIV, 10 immune-inflammation, and oncology areas. Regarding the **vaccines segment**, GSK is the largest vaccines company by revenue, generating sales around £7 billion in 2020. The portfolio has more than 20 vaccines combating several diseases like pneumococcal disease, meningitis, hepatitis, rotavirus, whooping cough, and influenza. Concerning **consumer healthcare**, GSK is a world leading company especially due to the completed transaction in 2019 with Pfizer, combining healthcare segments of both companies, working as a joint venture. This segment generated around £10 billion in 2020, creating advanced consumer healthcare products for oral health, pain relief, cold, flu and allergy, digestive health and vitamins, minerals, and supplements.

The growing path of the company is consistent, representing **£34 billion of turnover in FY20**. Although, compared with previous year, the **pharmaceutical segment** decreased 2,84%, nevertheless the respiratory medicines sales were up around 22%. The **vaccines' segments** also registered a decline of -2,45%, due to COVID-19 pandemic that causes a divestment on Hepatitis vaccines. In contrast, consumer healthcare increased significantly (11,54%) due to the inclusion of the Pfizer portfolio. **GSK is one of the companies with more expenditure in R&D** (£5,1bn FY20, representing 15% of the turnover) which means 40 new medicines and 17 new vaccines in development in FY20.

The **GSK's ROE was in 2020, 0,31** and the media through the years is around 0,58. The ROIC was 0,12 FY20 which is close to the normal values, 0,11. The debt ratio is decreasing through the years, reaching the lowest value in 2020 with 0,74, due to an increase in total assets as well as a decrease in total liabilities.

### Key drivers of profitability (revenues and costs)

The **GSK faces a few challenges and new opportunities** to grow. Nowadays, the **population is getting older very fast, the chronic diseases are increasing** and these two tendencies drives the healthcare sector, in particularly pharmaceutical companies. Besides that, the company's commitment to **ESG is crucial** and a long-term driver of revenues for the company and shareholders. Although, there are challenges that need to be faced, like the high competition of the sector, there are also high barriers regarding the high level of regulation. Other relevant factors to mention are the **patents expiration** and the **high costs related to R&D**. These are some risks

and uncertainties that GSK has every day, even though the company is proactive, constantly working to mitigate those risks and prevent from them in order to not affect the financial condition or the performance or do not affect the ability to achieve their goals. There are committees to address these issues, the **Audit & Risk Committee** that constantly evolve the **Corporate Responsibility Committee and the Science Committee**. GSK every year produce a report about all possible risks detected and a strategy is design to assure that the company is always prepared.

### Company Strategy

**GSK has 3 main priorities, Innovation, Performance and Trust.** These three core aspects should be aligned with the culture and values of the company, bringing distinguished, high-quality, and needed healthcare products to the larger number of people as possible, preventing and treating diseases using their knowledge. This knowledge is also shared through partnerships around the world to improve the existing data. The company also believes in investing enough in R&D to continue discovering new medicines and improving the existing ones. As well, the investment in the business and human resources every time is crucial, and nowadays more than ever, be transparent, trustable and at the same time respect the ESG across the business.

For the future, the company is prepared to expand, separating the business into two new companies: an innovative biopharma company, focused on medicines and vaccines associated with the immune system, the use of human genetics and new technologies, with huge investment in R&D. The second company will be focused on consumer healthcare and innovation based on science and consumer perceptions. To mitigate the risk of failure, in the fourth quarter in 2019 the company created the Future Ready Office (FRO) with the purpose of monitoring all the progress and the risks that could appear during the process.

### Research and development

**Investment in R&D is a major priority in this company.** According to the *EvaluatePharma* report, GSK is among the **top 10** of the companies with higher spends in R&D as well as the higher projections to increase those values until 2026. (Table 4)

The therapy areas are **oncology, HIV and infection diseases, immune-inflammation, respiratory, other pharmaceuticals** and vaccines and the approach for R&D is to combine science, technology, and the culture of the firm. Developing new drugs is very risky, only around 12% become a medicine sell in the market. The best way for GSK is to focus on the immune system and use human genetics to prove that this methodology is the most successful. Along with new developments, GSK uses a wide range of advanced technology to improve the results and go further in investigation adopting artificial intelligence and machine learning. Once more, align this strategy according to the culture and the values of the company.

In 2020, there were nine important approvals for medicines in respiratory, oncology, HIV, and 11 immune inflammation. Furthermore, there were more than 20 assets in the ending stages of development.

Table 4 - Pharmaceutical R&D Spend (2019-2026)

Source: EvaluatePharma Report

Company	Pharma R&D (\$bn)		CAGR
	2019	2026	
Roche	10.3	12.9	+3.3%
Merck&Co	8.7	11.0	+3.3%
Johnson&Johnson	8.8	10.7	+2.8%
Novartis	8.4	9.7	+2.1%
pfizer	8.0	9.7	+2.7%
Bristol-Myers Squibb	5.9	9.4	+6.9%
<b>GlaxoSmithKline</b>	<b>5.5</b>	<b>7.6</b>	<b>+4.6%</b>
AstraZeneca	5.3	7.5	+5.1%
AbbVie	5.0	7.3	+5.6%
Eli Lilly	5.6	7.0	+3.3%
Total Top 10	71.6	92.8	+3.8%
Other	114.6	139.7	+2.9%
Total Top 10	186.1	232.5	+3.2%

### Capital allocation

GSK pretends to reinforce its position in the market to increase the cash's resources. The main strategy is to complement the actual offer, **investing in R&D pipeline, improving vaccine supply capacity, and developing new products**. Focusing on this strategy, this investment will have a positive impact on dividends and the target is to increase **1.25x to 1.5x** in the future. The company will also pursue with **M&A activity** to get more returns and continue the business development.

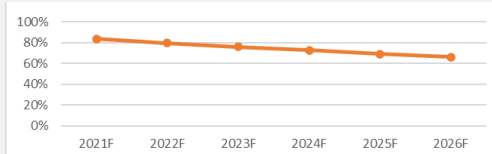
### Dividend Policy

GSK recognizes the importance of the dividends to shareholders and is essential to continue to distribute regularly. The company distributes dividends quarterly and since 2016 the Board maintains the level of **80p per share**, independently of the external environment. Possibly in the future the company recognizes an increase in the dividends, but for now is still constant. The average **payout ratio** is around **74%** registering the highest value in 2017 with 174% and the lowest value in 2020 with 59%. (Graph 1 and Appendix 8)

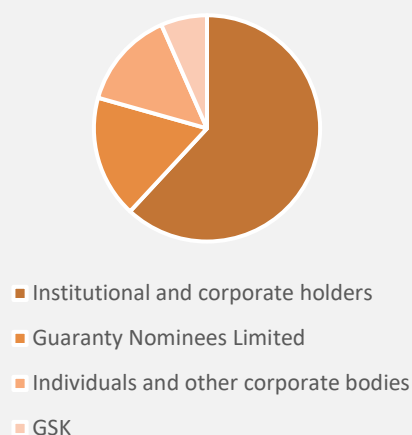
### Shareholder's structure

According to the data at 31/12/2020, GSK had a total of **5,385,189,617 shares outstanding**. Focusing on shareholders structure, the majority correspond to institutional and corporate holders with **61,90%** (3,333,752,207 shares outstanding), then with **17,47%** which correspond to 940,673,288 shares outstanding from Guaranty Nominees Limited; **14,03%** (755,558,172 shares outstanding) held by Individuals and other corporate bodies. The remaining **6,60%** (355,205,950 shares outstanding) were held as treasury shares by **GSK**. The Guaranty Nominees Limited is the name registered by the companies of American Depository Receipt (ADR) program, which is managed by the Depositary, the J.P. Morgan Chase Bank, N.A. (Graph 2)

Graph 1 - Dividend Payout Ratio  
Source: SM Analysis



Graph 2 - Shareholder's structure  
Source: F-20 Report



## 3. Management & Environment, Social and Corporate Governance

The company is dedicated to accomplish the highest standards of corporate governance and this effort that will bring value to shareholders and stakeholders. There is a General Meeting every year where the Board invites all shareholders. In this meeting, the CEO presents the performance of the group and the future strategy, it is also an opportunity for questions to the Board about the group. **The corporate governance framework is one board and six committees.**

### The Board

The **Board composition is 25% executive, 75% non-executive**. Regarding the diversity, **58% are male** workers and **42% female** workers. Focusing on ethnicity, 92% are white, the other 8% are black, Asian and others minority ethnic. Concerning international experience, the percentages are global with 92%, US 100%, Europe 92%. Some of the responsibilities regarding the Innovation, Performance and Trust the Board had enabled to the Committees to every meeting can be focused directly on those issues. The **chairman is Jonathan Symonds and the CEO is Emma Walmsley**. There is always an

Figure 2 - The Company's Structure  
Source: Annual Report 2020



independent and arduous challenge supervised by **the Senior Independent Director, Vindi Banga**. (Figure 2 & Graph 3,4 and 5)

### Science Committee

This committee helps to support the Board in all issues **related to scientific perspective**, guide and educate, helping in future transactions and serve as scientific technical assurance. It also strengthens all the scientific assumptions which drive the R&D strategy. This committee is led by **Dr. Jesse Goodman**.

### Corporate Responsibility Committee

This committee, led by **Lynn Elsenhans**, is charged by **all issues linked to ESG**. It's crucial the role of CRC, align the strategy of the company with E (Environment) and S (Sustainable) aspects of ESG. The main goals are to increase the level of ambition on environmental sustainability to achieve a zero impact on the environment and a positive impact on nature by 2030. **Related to Governance**, this committee is working hard on inclusion and diversity in the workforce.

### Transformation & Separation Committee

This is the most recent committee created, May 2020, and the main function is to **advise and assist the Board** with matters associated with the separation of the company. To guarantee that the separation is done properly, transforming into two independent businesses, with a competitive structure of costs, to be efficient and suited the purpose. The committee with this responsibility allows the Board to focus on actual businesses of Biopharma and Consumer Healthcare until the separation is complete. The responsible is **Jonathan Symonds**.

### Nomination & Corporate Governance Committee

The responsibility of this committee is to understand and correct any gap of skills, find the right persons to replace the long-serving directors of Audit & Risk and Corporate Responsibility Committee and also identify the third Scientific & Medical Expert (SME) to reinforce the Science Committee and improve the scientific expertise on the Board. The main responsible for this committee is **Jonathan Symonds**.

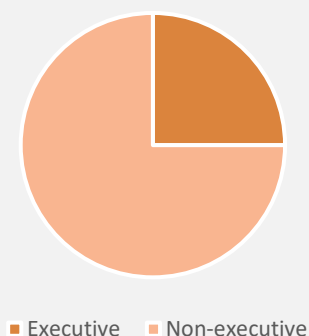
### Audit & Risk Committee

This committee is represented by **Judy Lewent**. The first main role is the internal control over financial reporting besides that, the reinforcement of information technology processes in the company. The financial reporting and control are specially addressed to an internal audit team (A&A, Audit and Assurance) and an external audit team. Another concern is the risk management, internal controls and risks that company face. **The GSK has a well-established and mature risk management and a rigorous internal control framework**.

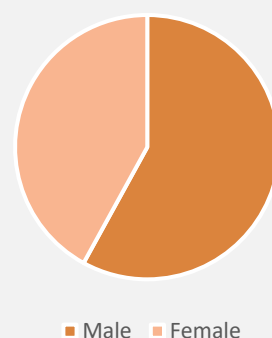
### Remuneration Committee

This committee prepares a remuneration's report every year that is discussed and subject to advisory vote in the Annual General Meeting. The main responsibilities are the implementation of the remuneration policy to reward management's performance. The responsible for this committee is **Urs Rohner**.

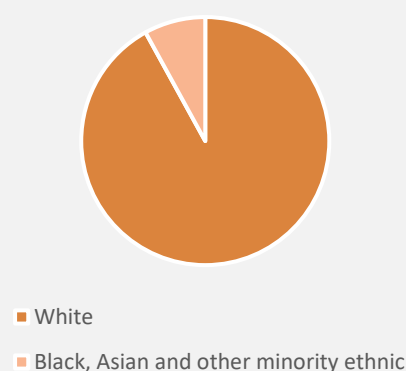
Graph 3 - The Board  
Source: Annual Report 2020



Graph 4 - The Diversity  
Source: Annual Report 2020



Graph 5 - The Ethnicity  
Source: Annual Report 2020





## ESG responsibility

Nowadays, the ESG is a metric used for many companies and has one of the major roles in the development and growth of a firm. **The E, Environmental** criteria consider how a company performs respecting the nature and ecosystem. The **social criteria** assess how it manages relationships with employees, suppliers, customers, and the communities where it operates. **Governance** deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights. Currently, the industry as well as GSK, has a commitment with the future and sustainability of the planet and this metric will help to understand how committed the company is to achieve that goal.

Furthermore, GSK is a signatory to the UN Global Compact (UNGC), which is the world's largest corporate sustainability initiative. This initiative is for companies to align their future strategies and daily operations with universal principles on human rights, labor, environment, and anti-corruption, in order to take actions thinking about the well-being of society.

Regarding the ratings and looking closely at ESG Score in Bloomberg that includes evaluations from most important rating providers, including **MSCI, Sustainalytics, ISS and RobecoSAM**, the total is **63.93 in a total of 100**. The best rank is Governance (90.55) while the Social component has room for improvement (44.11). (Table 5)

Additionally, GSK is **in first place at Access to Medicine Index** and the company is dedicated to maintaining this place. Another great achievement is the second place in the pharmaceutical industry for *Dow Jones Sustainability Index*. These two accomplishments are due to the importance that the company transmits to these issues. To keep the good work in this field, GSK set two new aspiring goals, a net zero impact on carbon and a net positive impact on nature by 2030.

## 4. Industry Overview

### Outlook of Pharmaceutical Industry

The pharmaceutical industry belongs to the healthcare sector that consists in different subcategories: **development, production, and marketing of drugs**. The main aim of this industry is to provide medicines that avoid infections, increase health, and treat diseases around the world. The prescription drug sales are forecasted to grow, according to the *EvaluatePharma* report, to just over \$1tr in 2026. Moreover, with the **advances in R&D and technology**, the pharmaceutical industry is starting a new era in medicines development. According to *EvaluatePharma* report. "*Industry R&D spend is forecast to grow at a CAGR of 4.2% between 2020-202.*", which means that is possible to reach \$254bn. (Graph 6)

It is expected that prescription drug sales will reach almost **\$1.4trn by 2026**. Even though the COVID-19, "*the industry demand for innovative and effective therapies continues to drive long-term growth.*"

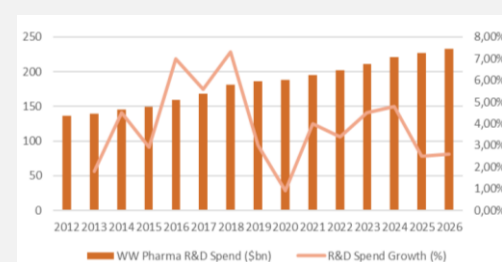
### Industry Trends

It is relevant to emphasize that the main changes in this sector are due to the constant evolution in this area. The growing and constant use of new **technologies, the digital disruption, the artificial intelligence, and the big data analytics** are factors that nowadays are relevant to develop new products

Table 5 - ESG Score  
Source: Bloomberg

ESG Disclosure	63.93
E	57.02
S	44.11
G	90.55

Graph 6 - R&D Spend 2012-2026  
Source: *EvaluatePharma* Report



and transform medicine as we know it. More often called **Digital health**, the use of remote clinical trials, changes our perspective for the future regarding drugs and medicine in general.

This brings also another change in this industry, **patient empowerment**, and the knowledge that the customer has about the science, the new areas of treatment, and pharmaceutical companies must be aware of that to bring to the market the best and ultimate medicines.

Furthermore, the growing power of **bionics and nanotechnologies** and the increased influence and capacity of biotech companies in the market as well as the new business models are made part of this new reality. To reinforce this idea, the **Nasdaq Biotech Index**, at the beginning of 2021, reached the highest growth rate ever, **30%**.

Additionally, the **transparent consumer markets**. This type of industry is scrutinized by governments, agencies, clients, and others and with more transparent methods, the market will have more confidence in the medicines and drugs that are available.

## Key Drivers of Revenues and Costs

### Drivers of Revenues

The key drivers of the industry are changing overall in this industry. Furthermore, there are global trends that are opportunities and challenges. The demographic change is increasing the demand for medicines and therapeutics. The global population is **estimated to grow to 8.5 billion** by 2030. Associated health problems are increasingly linked with the **aging population**, that is projected to double between 2019 and 2050. (Graph 7) Along with aging population, **chronic diseases are also increasing**. (Graph 8) These considerations will contribute to rising demand for healthcare, especially for vaccines and specialty medicines.

These pressures will bring new opportunities for some companies and the **investment in R&D and in technology will increase** the production of new drugs, leading to creation of new patents. Thus, a huge possibility to raise the profits exponentially appears. The COVID-19 is a proof that how pioneering technology is accelerating and allowing innovation for all industry.

Another point to highlight is the **rise of M&A activity**. According to *PwC analysis in Global M&A Industry Trends in Health Industries*, there are a few aspects to consider, the continued pressure on drug prices and supply chains will lead to consolidation in generics and production of APIs (particularly in India and Asia-Pacific region). Moreover, given the prolonged of the pandemic crisis, companies related to medical devices, vaccines, therapies, and diagnostics associated with pandemic response probably will continue to have attractive value creation and possibly become targets for acquisitions. In other points of view, a variety of therapeutic areas that are not related to the COVID-19 pandemic are suffering a decrease in demand.

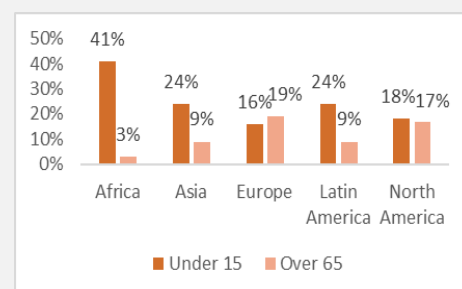
### Drivers of Costs

Despite all this, healthcare is an **extremely regulated industry**, reflecting public expectations that products fulfil rigorous levels of quality, safety, and efficacy.

The **expenditures in R&D due to the chance of failure**, could be considered a sunk cost and lead to higher costs. Moreover, the patent expiration is a risk, and a major driver of costs, given the possibility of generics appearing in the market with lower prices.

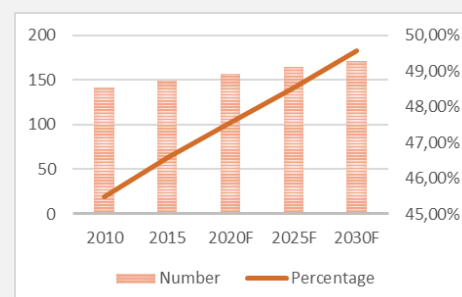
Graph 7 - World Population by age and by region 2020

Source: Statista



Graph 8 - Number of people with Chronic diseases (millions)

Source: Statista and American Hospital Association



Additionally, the **long development of new medicines** can result in delays in study initiation, leading to increasing costs. On the other hand, these studies are necessary to ensure a competitive drug classification and to boost the probability of getting a good quality medicine.

Likewise, it is extremely relevant to do the right **promotion and marketing** campaigns to convince the doctors, the population, the hospitals, among others, to buy their products instead of generics or others from the competition, so the costs with **Advertising and Selling, General and Administrative expenses** are very high in this industry.

## Macroeconomic Influence of the Industry including Supply and Demand Analysis

### Economic global outlook

According to the International Monetary Fund, the global economy is climbing out from the depths to which it had plummeted during the Great Lockdown in April in 2020. In January 2020, the global economy was forecast to grow by 3.3% but then the **COVID-19 hugely affected the economy** and now the worldwide economy is facing a deep recession.

As stated in *World Economic Outlook*, the COVID-19 pandemic has had a more **negative impact** on activity in the first half of 2020 than anticipated. In January 2021, the updated provisions are that the **global growth is projected to be 5.5% for 2021 and 4.2% in 2022**. The forecast is adjusted up due to expectations of a vaccine-powered growth of activity later in the year and additional policy support in a few large economies.

According to the United Nations, the aggregate OECD **unemployment rate** stood at **5.2%** in February 2020, as several OECD member states entered 2020 with historically low unemployment rates, but by **April it had increased to 8.5%**, its highest value in a decade. In April 2021, the aggregate unemployment rate was 6.6% which means 1.3p.p above the pre-pandemic rate registered in February 2020. This value was the first monthly increase since the peak in April 2020. In specific, for the euro area the rate stated around 8% a marginal decline comparing with previous month (March, 8.1%) although **still 0.7p.p above the pre-pandemic level**.

### Europe Economic Outlook

Europe Economy suffered huge shifts due to this new pandemic, and the second quarter of 2020 was probably the harshest quarter in the last years for all countries. According to Eurostat data, in the second quarter of 2020 **GDP decreased 11.8% in Europe and 11.4% in the EU** when compared with the first quarter of the same year. When compared with the same quarter of 2019, the numbers are even more outrageous, with a decrease of 14.70% in Europe and 13.90% in the EU. In 2021, the Europe economy is forecast to **grow by 4.2% in 2021 and around 4.4% in 2022**, stronger than previously expected.

The **unemployment rate is 8%** as previously mentioned, and the inflation is expected to be slightly higher in 2021, in euro area is projected to **increase from 0.3% in 2020 to 1.4% in 2021 and around 1.3% in 2022**. These numbers can be explained by the lockdowns that occurred in Europe, which shutdown all economies in this quarter. The UK has even more dramatic numbers right now due to the Brexit costs.



## USA Economic Outlook

The USA GDP due to the pandemic also suffered a huge impact, according to CBO, “Growth declined by 5.0% in the first quarter, signaling the onset of the 2020 recession. In Q2, the full effect of the recession commenced, and the economy contracted 31.4%. The economy won’t return to its pre-pandemic level until 2022”.

**The real GDP growth is estimated to be 3.7% in 2021. The unemployment, like was expected, increased, 7.6% in 2020 and 5.3% in 2021.**

According to the FED, the target for inflation is 2.0% in 2023. In 2021 is forecast to be 3% and 2,1% in 2022. To reach this rate as a benchmark, the FED funds rate (interest rate) is between 0.0% and 0.25%, so 2021 is predicted to be 0,1% and the same value for 2022. Is relevant to emphasize that FED also keeps in mind that long-term rates should be low, so it’s restarting the QE program.

## The impact of COVID-19

According to *McKinsey & Company*, this new crisis is accelerating some trends in the healthcare industry, such as Globalization, China influence, innovation, and digitalization.

The industry includes pharmaceutical companies that follow those trends, and that have been increasingly investing in **R&D** and **M&A** activities for the last decade.

With COVID-19 companies are facing a temporary stagnation in R&D returns, but it is estimated to increase later on. Attempts and effort from these companies to be more sustainable are also being suspended for a while due to the global supply and demand needs globally. After 2020, the companies are trying to be back with the same goals and **resources to be more sustainable** like was planned before the pandemic.

The heavy reliance on China and India for raw materials, intermediates, and APIs is of significant concern as COVID-19 puts **pressure on the supply chains**.

While the risk for pharmaceutical companies making branded products is lower, given that they have several months of safety stock in APIs, some changes should be taken into deliberation such as assessing existing relationships with suppliers, establishing inventory adjustments, and looking for opportunities to vary the supply in the event of business interruption.

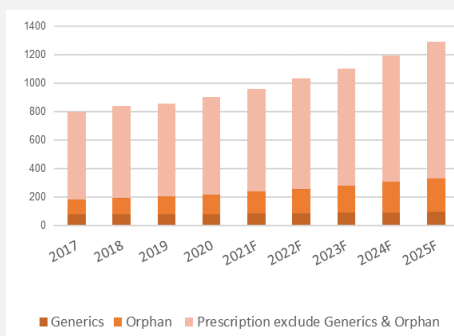
Furthermore, another aspect relevant to mention is that the way **digital interaction is growing**, which also signifies a challenge in this industry, as companies will need to review the way they deal with some products in their portfolio.

To sum up, people are now more skeptical towards hospital visits, but they are willing to take actions to prevent their health, which can be a chance for companies to invest in apps and other platforms to **interact digitally with patients**.

## Demand and Supply

The demand for medicines can be measured by its prescription, in Graph 9, it is possible to identify the growth trend from 2017 to 2020 and the forecast **growth rate 6.05% CAGR from 2021 to 2025**. This upward trend of medicines’ consumption depends on some economic and demographic trends, including, the increase of chronic diseases because of the **ageing population** plus a sedentariness lifestyle, **greater governments expenditures on health**

Graph 9 - Worldwide Total Prescription Drug Sales  
Source: EvaluatePharma



especially during the COVID-19 pandemics, and a higher demand for new and more effective treatments.

As seen before the world population is growing at a huge rhythm, the prognoses point to the **global population reaching 8.5 billion in 2030**. The idea that European and North American populations are getting older means that there will be an increase in demand for medicines in these regions in forthcoming years. It is also possible to see that emerging markets in regions like Asia, Africa and Latin America make companies shift towards those markets since it is expected to have a higher rate of sales growth (Graph 10). Between 2010 to 2015, the revenues in China grew at **22.4% CAGR** and it is expected a forecast growth rate of 8% CAGR for the next five years. For the rest of emerging markets its expected that in 2025 the revenues will achieve double of the revenues registered in 2015.

One more key driver of demand is the **number of people that suffer from chronic diseases**, the projections for the percentage of the American population that could be suffering from at least one chronic disease, and in 2030 we can have almost half (49.57%) of the American population suffering from at least one chronic disease.

Besides all the drivers mentioned previously, **government expenditures** on healthcare showed a growth trend in the past and it is expected that trend to continue in future especially because of the COVID-19 pandemic. Latest studies point to an increase of upon 50% for next year in health expenditures for some countries, this factor will contribute to a higher demand for pharmaceutical products in the future.

The **supply for medicines is influenced by exchange rates**, since it directly changes the companies' profitability, costs, and revenues, and therefore companies' financial statements. Since the volatility of these rates can be hard to predict and given the exposure exchange fluctuations, companies can mitigate this risk by hedging.

Moreover, the expiration of the patents, as companies **lose their exclusivity rights** for some treatments, the supply of generics increases which leads to price competition, that adversely affects companies' revenues. It is possible to evaluate the sales at risk due patent expiration, and between 2020 and 2025 it is expected that on average **3.2%** of the market is at risk. (Graph 11)

## PESTLE Analysis

World is constantly changing and external factors tend to have a long-term impact, which requires more time and research from companies. Table 6 specifies these factors.

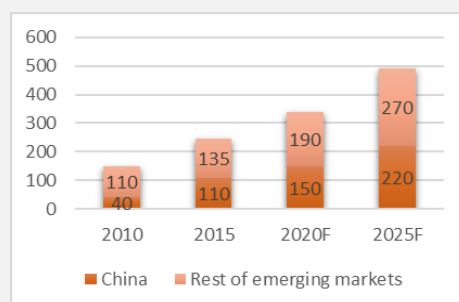
Table 6 - PESTLE Analysis

Source: Group project – EQR Course and SM Analysis

Political	Economic	Social
<ul style="list-style-type: none"> <li>› Political changes, focus and pressure on health industry</li> <li>› Price regulation</li> </ul>	<ul style="list-style-type: none"> <li>› Worldwide crisis</li> <li>› Changes in GDP, unemployment rate and tax environment</li> <li>› Growth in investment in healthcare per capita</li> <li>› Reduction in consumer income</li> <li>› Price pressure</li> </ul>	<ul style="list-style-type: none"> <li>› More social awareness and interest among consumers</li> <li>› Growth in ageing population and in population on general</li> <li>› Culture changes</li> <li>› Increasing in obesity population</li> </ul>
Technological	Legal	Environmental
<ul style="list-style-type: none"> <li>› More technological advancements and innovation will affect the services provisions, customized treatments and the marketing of products</li> <li>› New digital opportunities (social media)</li> <li>› Innovation in biotech</li> <li>› Machine learning evolution</li> </ul>	<ul style="list-style-type: none"> <li>› High regulatory and legislative restrictions</li> <li>› Changes in advertising laws</li> </ul>	<ul style="list-style-type: none"> <li>› More conscientiously worldwide to environmental issues, like pollution and waste</li> </ul>

Graph 10 - Pharma Emerging Markets (\$ billions)

Source: Mckinsey & Company



Graph 11 - Worldwide sales at Risk from Patent Expiration

Source: EvaluatePharma Report



### Legal framework of the industry

Patents are the most important asset in pharmaceutical industry, as they provide to each company exclusivity on their products. The expiration of them can create very damaging effects on a company, as **generic pharmaceutical** manufacturer can produce and sell identical products for a lower price.

The process of launching and maintaining of a medicine in the market, as it is shown in Figure 3, is regulated **differently in the U.S. and Europe**.

In the U.S., it is strictly centralized and made by the **FDA**, who has the crucial role to give the marketing authorization for the medicines.

In Europe, the process can be made by **EMA** or by National authorities, depending on the territory that they will be sold, EU territory or nationally.

The primary criteria that all medicines must have when applying to marketing authorization are **quality, safety, efficacy, and a positive-risk balance**.

### Structure of debt and sources of financing

The financial strategy of GSK is to have a **right mix of debt and equity** and the Group purpose is to continue to pursue this balance. The GSK remains to manage its financial policies with a credit ranking for short-term, of **A-1 and P-1** for S&P and Moody's respectively. For the long-term, the rating is **A of S&P and A2 of Moody's**, which means that the outlook for S&P and Moody's is **stable**.

Regarding the analysis of liquidity, the GSK's strategy is to diversify the sources of liquidity to use a range of facilities and to preserve the wide access to financial markets. The company, to **short-term finance** has access to \$10 billion US Commercial paper and £5 billion of euro commercial paper programme. £ 1,9 billion of medium-term committed facilities, £ 2,5 billion of 364 day committed facilities and the use of cash and cash equivalents and liquid investments. (Table 7, 8 and Appendix 5,6)

### Peer Group

The Pharmaceutical Industry is competitive and there are lots of difficult diseases to deal with. Pharmaceutical companies are constantly seeking for the best treatment and medicine, it's vital to know which players are in the market. Table 9 shows the major competitors by market share, total revenues, and market capitalization. To get this group, the first step was to search for pharmaceutical companies with **headquarters in the United States or Europe** and collect the data from their **revenues to make a comparison**. After this primary selection, with a group of 12 companies, it is possible to identify seven with similar revenues.

Secondly, split the chosen group by headquarters and to have a more equal analysis, choose three companies from each headquarter with the most similar revenues. See table below with that information (Table 9).

Being the peer group defined, it is possible to confirm that all the companies chosen had the same main activity, that is production and sale of pharmaceutical medicines. See also Appendix 12.

Figure 3 - Launching and maintenance process of medicines in the market  
Source: Group Project – EQR Course



Table 7 - Credit Ranking  
Source: Company's website

	S&P	Moody's
Short-term rating	A-1	P-1
Long-term rating	A	A2
Outlook	Stable	Stable

Table 8 - Medium/ Long-term Liquidity  
Source: Company's website

Programme	Limit	Rating (S&P/Moody's)
US Commercial Paper	\$10 billion	A-1 / P-1
Euro Commercial Paper	£5 billion	A-1 / P-1
Euro Medium Term Note Programme	£20 billion	A / A2
US Shelf	Unlimited	A / A2

Table 9 - Peer Group  
Source: Thomson Reuters Database

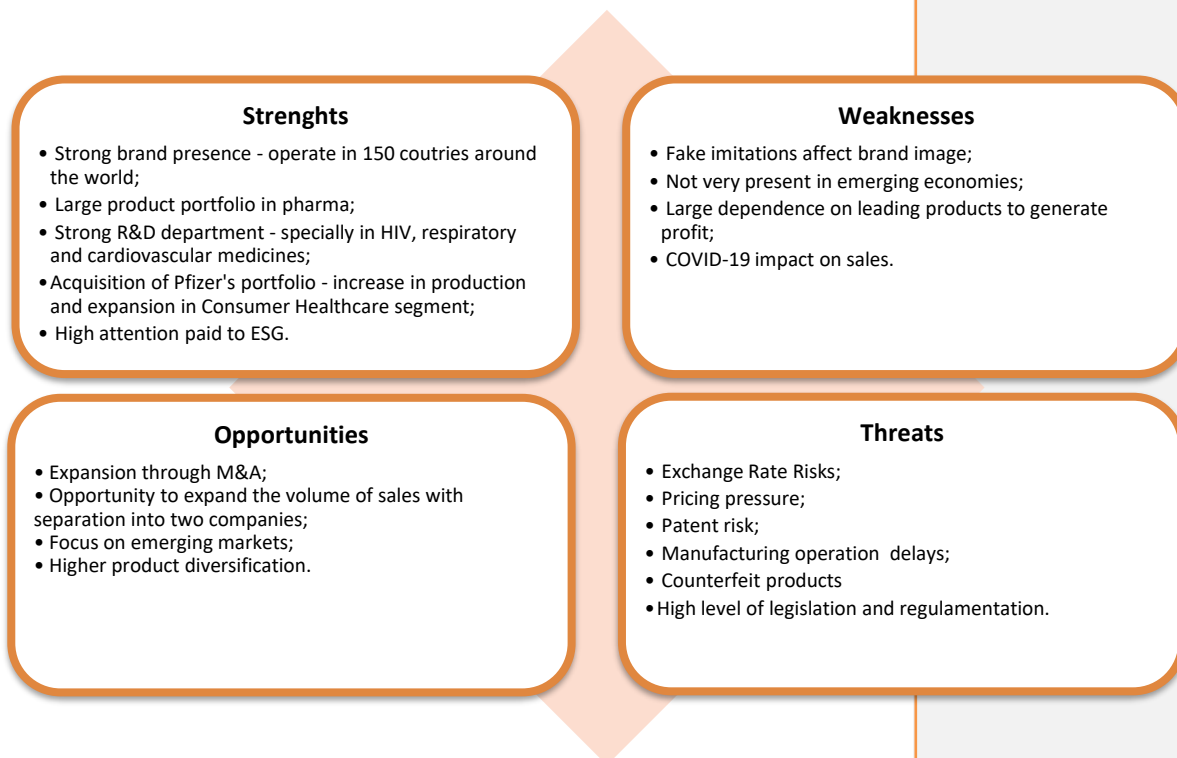
Ticker	Company name	Market Cap (\$M)	Revenues (\$M)	Share (%)	Country
JNJ	Johnson & Johnson	389 921,20	82 059,00	26%	USA
PFE	Pfizer Inc.	210 833,60	51 750,00	16%	USA
NVS	Novartis	194 774,50	48 624,00	15%	Switzerland
MRK	Merck & Co.	201 909,30	46 840,00	15%	USA
GSK	GlaxoSmithKline plc	88 350,00	43 957,00	14%	United Kingdom
BAYN	Bayer AG	44 022,42	43 545,00	14%	Germany

### Comparative Analysis

The peer group chosen exemplifies part of the Health and Healthcare Industry leaders, which have been focusing on similar areas. Each area is approached in a different way from each company; however, every approach seems to be aligned with this idea of innovation and sustainability. Innovation has certainly been an even more critical topic nowadays due to this new pandemic of COVID-19, which demands a transformation in the companies' business models.

### SWOT Analysis

Figure 4 - SWOT Analysis  
Source: SM Analysis



To understand deeply the position of the GSK, internally and externally, the SWOT analysis is the right approach. A few aspects referenced are similar in other companies that belong to the same peer group, others are very specific to GSK. It is relevant to highlight the **expansion of the company**, that in the future there will be two new companies, the opportunities can increase exponentially. The **concern with ESG** aspect into the business model of the company is also pertinent to mention. On the other hand, the **negative impact of the COVID-19** on sales is a weakness present nowadays. (Figure 4)

## Porter's 5 forces

### Threat of New Entrants: LOW

The threat of new entrants is low for pharmaceutical industry, due to the fact of the **high government regulations** and laws to enter (EMA and FDA). The expenditures with establishing a manufacturing firm are high and the investment in R&D of new drugs are also high. **Establishing product** diversity, leading to **client engagement** is also complex and the existing companies developed economies of scale, leading to increased profits, which is challenging to accomplish for new companies. As a final point, most drugs have **patents**, so a new firm must start from zero to produce a new medicine.

### Bargaining power of Buyers: MEDIUM

The bargaining power of buyers is medium in Europe and USA. Patents of new medicines last **20 years** in both, **allowing the producer to set the price**. When the time ends, generic production begins and prices become more competitive, so customers have a higher number of possibilities, and the switching costs are low.

Alternatively, a **higher client's base pressures** pharmaceuticals to keep prices quite low. However, hospitals, health care **insurance companies and governments** have significant bargaining power because they can choose to not subsidize certain medicines. Furthermore, the patients have the "commitment" to follow the medical prescriptions, having in this way **less bargaining power**.

### Bargaining Power of Suppliers: LOW

The bargaining power of suppliers is low because sales are concentrated on the larger companies and there are several providers. Companies **have higher switching costs** when investing in new medicines (**high investment in R&D**) and the raw materials used in the drug production are available in large quantities.

Conversely, when researchers discover new products, the company of which they belong have a vast bargaining power, due to the fact new patents are created.

### Threat of Substitute Products: MEDIUM to HIGH

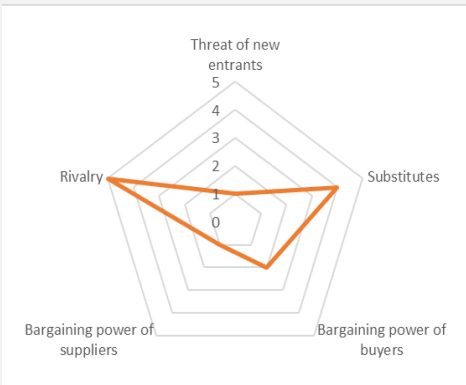
The threat of substitute products can be medium or high because if the drug is still in its patent period, there is no substitute product. However, when this time ends, its generic production begins, and a high number of substitutes are produced and the **demand for low-cost drugs increases**.

On the other hand, unconventional medicines, and promotion of a **healthy lifestyle can be other options for medicines**.

### Industry Rivalry: HIGH

The pharmaceutical industry is quite competitive because most of its players have **good brand recognition**. The **profit margins are high**, there are a lot of firms, and the government laws make this market highly competitive. The investment in R&D has been increasing, and so companies are becoming more competitive, because there exist a constant pressure to innovate. Also, a vast number of **M&A** for the development of new drugs and chemicals have been appearing. (Graph 12)

Graph 12 - Porter's 5 forces  
Source: Group project – EQR Course and SM Analysis



Legend	
Low	1
Low to medium	2
Medium	3
Medium to High	4
High	5



## 5. Investment Summary

Using the **Discounted Cash Flow method (DCF)** through the calculations and formulas used, explained in the next chapter, the price is **£21,18** representing an upside potential of 17,51%. The risk assessment indicates medium risk, thus the final recommendation according to the matrix in Table 2 is **BUY** (Figure 5). The **relative valuation** also leads to the same recommendation (with a target price equal to **£21,50** and an upside potential of **19,32%**). (Figure 6)

### Investments Risks

GSK faces some risks that were previously mentioned like **patent expiration and medicines legislation**, as well as specific risks like the complexity associated with Brexit, the uncertainty of the future of the worldwide economy due to impact on states and on household income provoked by **COVID-19 Pandemic**. Besides all efforts of the company, these risks can't be controlled by GSK's management.

Moreover, GSK is one of **10 Top companies with higher expenditure in R&D (\$4,6bn or £3,39bn until 2026)**. If this investment led to a success, it is profitable, otherwise it could be considered sunk costs (damaging for GSK). This high investment in R&D also brings another risk associated: **product liability litigation**. GSK faces a significant number of legal and other disputes including notification of **possible claims** (net amount around £363 million). Furthermore, GSK is investing on the production of the adjuvant vaccine for COVID-19 (partnership with Sanofi). Some agreements, for instance, with the European Union and UK, already exist but the success of this vaccine is uncertain. Additionally, other pharmaceuticals launch first to market their vaccines, reducing the possibilities of buyers for GSK and Sanofi. Beyond these factors mentioned, **GSK that operates in 150 countries**, is exposed to the **foreign exchange rates**. The company hedges this particular risk mainly with foreign exchange forward contracts and swaps.

## 6. Valuation

Regarding the different methods for valuation, to evaluate GSK the three **DCF** models were used, the **Equity approach** (Equity method) and the **Entity Approach** (WACC method, the most traditional approach commonly used in investments appraisal and the APV method). The DCF approach which is computed using FCFF for WACC and APV method, relative to the Equity method is necessary to use the FCFE.

Furthermore, the **relative valuation** (Market Multiples approach) was used to complement the analysis. This method compares the GSK with identical companies, so a Peer Group was selected, for which price information is available.

The **Dividend Discount Model** was also computed to bring a new perspective of the valuation, that the intrinsic value will be the same as the sum of all future dividend payments when discounted to the present value.

### DCF Assumptions

To evaluate GSK, the period considered was from 31 December 2017 until 31 December 2026 and then the terminal value.

Figure 5 - DCF Valuation  
Source: SM Analysis

Equity Value	106 685
Net debt	24 404
Shares outstanding	5 038
Price at end 2020	£18,02
Price target	£21,18
Upside potential	17,51%

Figure 6 - Relative Valuation  
Source: SM Analysis

Equity Value	103 534
Net debt	24 404
Shares outstanding	5 038
Price at end 2020	£18,02
Price target	£21,50
Upside potential	19,32%

Regarding the DCF method, two steps are necessary for the calculation of WACC method, the computation of **FCFF and WACC**. The FCFF is based on the following formula (1), which represents the cash flow available to the company's suppliers of capital after all operating expenses, including taxes have been paid and necessary investments in working capital and fixed capital have been made.

$$(1) FCFF = NOPAT + Depreciation - \Delta WCR - CapEx$$

In the first place it is relevant to clarify some assumptions to use in the calculation to reach the price target for GSK.

### The Turnover's forecast

The forecast of the turnover was made by the business segment. The segments in the company are three, **pharmaceuticals, vaccines, and consumer healthcare**. The segment with the highest value of turnover is pharmaceuticals. The turnover for GSK in 2021 was predicted according to similar assumptions of 2020 due to the impact of COVID-19, it is predictable that going back to the normal values after the pandemic, the company still working on it, and the following years could change significantly. It is also pertinent to emphasize that the trend for the Consumer Healthcare segment was different, this segment increased the sales, especially due to the acquisition of the Portfolio of Pfizer. The following years forecasted go along with the values predicted in the *Evaluate Pharma World Preview and Deloitte's Report about Global Health Care Sector Outlook*.

The **Pharmaceutical segment** grows at 3% in 2021, similar growth of GSK in 2020, explained by the impact of reduction of established pharmaceuticals, and for remaining years 3,9% (similar to predictions of the market according *Evaluate Pharma's report*) which means a **CAGR of 3,2% (21E-26F)** reaching £20 032 million in 2026F.

The **Vaccines segment grows at 2%** similar to 2020, and then will increase at 8,1% following the predicted market trend. This represents that the **CAGR for 2021E to 2026F is equal to 6,7%**.

The **Consumer Healthcare segment** grows at the same rate for all the period 4% as well as 2020 GSK's growth and according to the conservative predicted growth of the market based on studies that were previously mentioned, which means a **CAGR of 3,3%** for 2021E-2026F.

Considering these data, the total turnover increased at a **CAGR around 4%** for the same period. (Graph 13 and Appendix 1, 2 and 9)

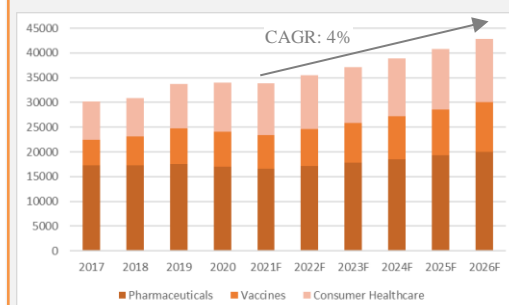
### The Cost of Goods Sold 's forecast

The Cost of Goods Sold follow a **percentage of turnover, around 34%**. The percentage was obtained based on the average of the historical years. According to the historical years and the prospects the percentage will be similar for the rest of the years. This metric represents the direct costs of producing the goods sold by GSK. This amount consists of the cost of the materials and labor directly used. (Appendix 10)

### The PP&E and Intangible Assets

The **Property, plant and equipment (PP&E)**, the long-assets and tangible assets that GSK cannot easily convert into cash. The main categories of PP&E

Graph 13 - Turnover by business segment  
Source: SM Analysis



are freehold buildings, leasehold land, and buildings (with approximate **20 to 50 years of expected useful lives**), plant and machinery (with a useful life around 10 to 20 years) and equipment and vehicles (with the lowest useful life, around 3 to 10 years). The projections for PP&E are based on the average of the turnover between 2017-2020 which is equal to **1,56%**. The same rational and percentage of growth was adopted to intangible assets that comprises, for instance, licenses, patents, trademarks, brand names between others. The CAGR registered for both rubrics is equal to **1,30%** in the forecasted period (2021E-2026F). (Graph 14 and Appendix 10)

### The R&D and SG&A's forecast

The **R&D expenses** linked to the development of new medicines and any intellectual property created in the process, was computed based on a percentage of the turnover, in **GSK's case 14%**. Both rubrics are directly linked and follow the same tendency in most of the situations. The **SG&A expenses** correspond to all other costs not directly related with making the medicine, for instance include the costs of marketing or shipping the product. According to the historical years the percentage in relation to turnover was practically the same and the average was applied to the future years, **around 33%**. (Appendix 10)

### The Depreciation and Amortization

**Depreciation and amortization** follow the same rationale. Both were computed according to the historical average of a percentage of revenues. This means, **3,4% and 3,2% respectively**. This methodology was used due to the flat values that the historical years present.

The R&D, SG&A and the D&A represent the major components of the operating expenses of a company. The SG&A is the component with higher weight (56%) and the second the R&D (25%), that is possible to observe in Graph 15. (Appendix 10)

### The Working Capital Requirements

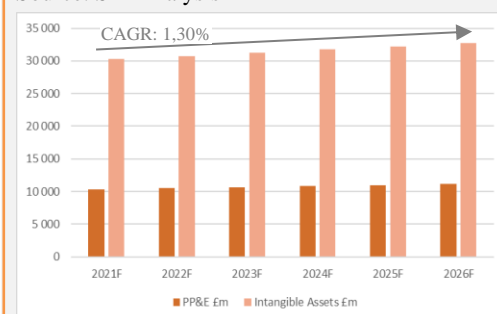
Regarding the changes in **Working Capital Requirements**, is the amount of working capital required by operation, which means the operating assets minus operating liabilities. In Appendix 7, it is possible to observe in more detail the calculations and the formula considered in **(2)**.

$$(2) \text{ WCR} = \text{Inventories} + \text{Accounts Receivable} + \text{Tax Receivable} - \text{Accounts Payables} - \text{Deferred tax liabilities} - \text{Tax Payables}$$

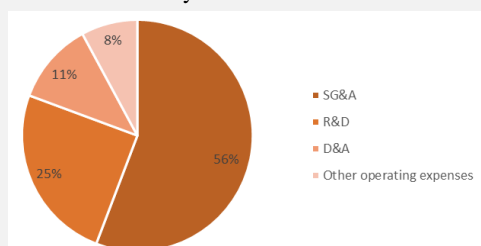
### The CapEX forecast

Relate to **CapEX**, a relevant variable to take into consideration in the calculations for FCFF. CapEX symbolizes funds used by GSK to acquire, improve, and preserve physical assets such as property, plants, buildings, technology, or equipment. GSK reinforced the idea in this annual report that the objective is to maintain the levels of CapEx relatively constant throughout the next few years. The historical years also follow a constant movement, so the growth rate was computed with a value around 3% and was also applied in this context to assure that the tendency verified keep going for the forecasted years. The CapEX grows at a **CAGR of 2,39%** in the forecasted period. (Graph 16)

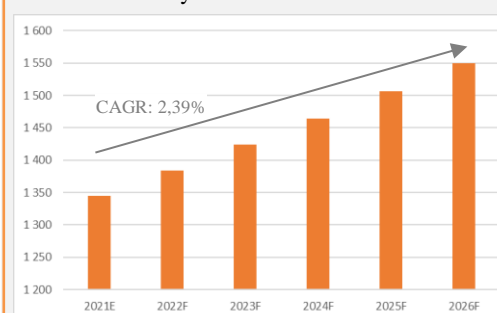
Graph 14 - PP&E and IA  
Source: SM Analysis



Graph 15 - Operating Expenses  
Source: SM Analysis



Graph 16 - CapEx  
Source: SM Analysis





Considering the data and assumptions it is possible to forecast the FCFF according to the formula previously mentioned as well as the final values in the Table 10.

Table 10 - FCFF Forecast  
Source: SM Analysis and Bloomberg

	2021E	2022F	2023F	2024F	2025F	2026F
<b>Operating Profit</b>	6 323	6 625	6 943	7 279	7 633	8 006
<b>Income Taxes on Operating Profit</b>	828	868	910	954	1 000	1 049
<b>NOPAT (Net Operating Profit After Taxes)</b>	5 494	5 757	6 034	6 325	6 633	6 957
<b>Depreciation</b>	2 867	2 973	3 085	3 202	3 326	3 457
<b>- Increase in WCR</b>	599	411	433	457	482	508
<b>- CAPEX</b>	1 345	1 384	1 424	1 465	1 507	1 550
<b>Free Cash Flow to the Firm</b>	<b>6 418</b>	<b>6 935</b>	<b>7 261</b>	<b>7 606</b>	<b>7 971</b>	<b>8 356</b>

The WACC, provides the cost of capital of all equity and debt instruments proportionately weighted and follows the subsequent formulas. ((3), (4) and (5)).

$$(3) \text{ WACC} = Ke \times \left[ \frac{E}{E+D} \right] + Kd \times \left[ \frac{D}{E+D} \right] \times (1 - t)$$

$$(4) Ke = Rf + \beta \times ERP$$

$$(5) \beta l = \beta u \times \left( 1 + \left( \frac{D}{E} \right) \times (1 - t) \right)$$

To compute the **WACC** it is necessary to calculate the levered beta, using the **unlevered beta from Bloomberg's database**. The formula used is from Modigliani-Miller that was considered the most appropriate from the GSK structure. (Figure 7)

This data specially the unlevered beta was used also to compute the cost of equity (4). The **Equity Risk Premium (9,996%)** used was also from Bloomberg's database as well as the **risk-free rate** with a value of **0,74%**. The formula used is based on CAPM's assumptions. The tax rate is the same through the years forecasted and is equal to **13,10%**.

According, *Damodaran (2016)* the cost of capital has an important role in valuation, considering the discount rate to discount back the cash flows to the firm to arrive at value of today. This means that is relevant to take into consideration several aspects like the type of the company and the market that the company operate. Thus, in pharmaceutical companies like GSK is relevant that the cost of capital should reflect the risk of the investment and not the risk of the entity taking the investment. For instance, the EMEA or FDA approval for a new drug, it could be a possibility considering an increase in cost of capital, although the author defends that is not necessary increase the discount rate to incorporate this risk due to is a regular risk, an operational risk for companies in this type of market. This analysis was taken into consideration through the computation of WACC and the valuation process.

Figure 7 - DCF Assumptions  
Source: SM Analysis and Bloomberg

Cost of Equity	12, 51%
Cost of debt (after tax)	4,13%
Weight of Equity	57%
Weight of Debt	43%
Corporate tax rate	13,10%
Risk free-rate	0,74%
Beta levered	1,18
Equity Risk Premium	9,996%
WACC	8,40%

Concerning the terminal value, the formula (6) considered the last FCFF calculated, a Perpetual Growth Rate ( $g^*$ ) (7) which was calculated according to the Fisher Formula and the WACC previously computed.

$$(6) TV = \frac{FCFF \times (1+g)}{WACC-g}$$

$$(7) g^* = [(1+r) \times (1+g)] - 1$$

The terminal value was computed according to the formula above, considering the FCFF of the last year forecasted growing with a **growth rate equal to 2,64%**. The Growth rate was reached using the Fisher formula that was designed by Irving Fisher, using the inflation rate and the GDP growth as assumptions. (Table 11 and Figure 8)

Table 11 -  $g^*$  calculations – Fisher Formula  
Source: SM Analysis

Regions	Revenues	% Revenues by region	Inflation Rate	Result
US	14 556	42,69%	1,23%	0,53%
Europe	8 164	23,94%	0,68%	0,16%
International	11 379	33,37%	0,75%	0,25%
Total	34 099	100,00%		0,94%

Regions	Revenues	% Revenues by region	GDP Growth	Result
US	14 556	42,69%	1,61%	0,69%
Europe	8 164	23,94%	1,30%	0,31%
International	11 379	33,37%	2,07%	0,69%
Total	34 099	100,00%		1,69%

Fisher Formula	2,64%
----------------	-------

The final step, the sum of the present value of FCFF and present value of terminal value to reach Intrinsic Enterprise Value. To get the Equity Value is necessary to add Cash and Cash Equivalents and subtract the debt. The Debt (long and short-term debt) minus the Cash and Cash Equivalents is the **Net debt, for GSK is £ 20 858M**.

To complete the analysis, the **normalized terminal value** was reached using a linear trend according to the Least Square Method. This method permits some adjustments to some variables to become more stable and smoother through the years. According to that, the Working Capital Requirements is more stable, and the business cycle effect has less impact on calculations. The price target using this method is **£21,18, indicating an upside potential of 17,51%**. (Figure 9)

### Market Multiples Valuation

Like was said previously, this analysis was complemented with the Market Multiples approach in order to understand other points of analysis and compare with the other valuations obtained. There are several multiples that can be used, although the ones presented are **Enterprise Value to EBIT, Enterprise Value to Sales, Price-to-Book Value (P/B) and Price-to-Sales (P/Sales)**.

Having in mind all the data available the multiple EV/EBIT, P/B and P/Sales seems the most reliable, with a price target equal to **£21,50** representing an **upside potential of 19,32%**. According to the recommendation system, with

Figure 8 - TV not normalized  
Source: SM Analysis

Terminal Value	149 017
Present Value of Terminal Value	99 565
$g^*$	2,64%

Figure 9 - TV normalized  
Source: SM Analysis

Terminal Value	132 575
Present Value of Terminal Value	97 580
$g^*$	2,64%

medium risk that GSK is classified, the final recommendation still **BUY**. So, both analyses indicate the same, that GSK is currently undervalued

### Multiples Assumptions

First of all, the peer group must be chosen. The concern was to choose companies from the sales type of industry as well as companies that operate in similar markets. A **group of 5 companies** was the selection made according to the criteria: **geographical areas companies with similar revenues**. (Appendix 12)

Then, the data from those companies was collected to proceed to the relative valuation and reach a final price for GSK according to the data from its peers. (Appendix 11)

First, to compute the multiples previously mention the following formulas were used (8), (9), (10) and (11):

$$(8) \frac{EV}{EBIT} = \frac{Enterprise\ Value}{EBIT} \quad (9) \frac{EV}{Sale} = \frac{Enterprise\ Value}{Sales}$$

$$(10) \frac{P}{B} = \frac{Market\ Price\ per\ Share}{BookmValue\ per\ Share} \quad (11) \frac{P}{S} = \frac{Price}{Revenues/Share}$$

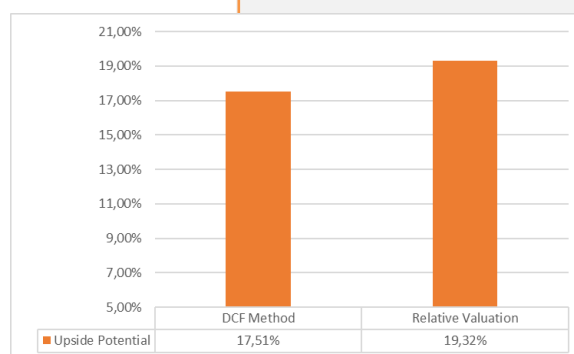
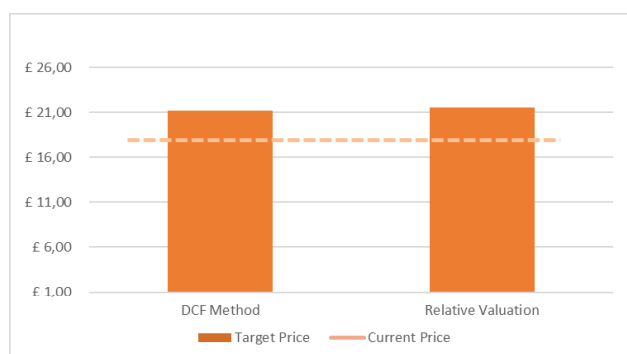
Using the most significant multiples, and taking out some outliers identified, see Appendix 11, the final price target reached **was £21,50 with an upside potential of 19,3%**. (Table 12)

Table 12 - Relative Valuation – results  
Source: SM Analysis

Summary		
	Eq. Value per share	Equity Value
<b>EV/EBIT</b>	£ 21,10	106 281
<b>P/B</b>	£ 17,14	80 657
<b>P/Sales</b>	£ 26,27	123 663
<b>Average</b>	£ <b>21,50</b>	<b>103 534</b>
<b>Upside potential</b>	<b>19,3%</b>	

Summing up, in the Graph 17, the analysis indicates that **Relative Valuation** supports the final conclusion of **DCF Valuation**.

Graph 17 - Price target and Upside Potential  
Source: SM Analysis



In total, five methods were calculated: APV method, WACC method, Equity Method, Relative Valuation and DDM Method. In Appendix 11: Valuation, is possible to compare all methods and regard the calculations in more detail.

## 7. Financial Analysis

To complement the analysis of GSK and understand the performance that is expected for the next few years as well as some assumptions, some analysis and ratios will be detailed and explained.

### Liquidity Analysis

Starting the analysis with the **liquidity**, the values for **Current Ratio** are less than one with a range **between 0,77x and 0,82x for 21E-26F**, which indicates that the cash generation is not sufficient to cover all short-term liabilities. Other ratios of liquidity like **Cash Ratio or Quick Ratio** indicate the same conclusion. Despite that, the tendency is to increase which means an improvement at this level. (Graph 18)

### Profitability Analysis

Is possible to verify that in 2021 the net income suffers a decrease, due to impact of the COVID-19 that is explained in the assumptions (see Appendix 3, 4 and 11), although for the rest of the remaining years the net income continues to grow slowly. The **EBITDA and EBIT** follow the same behavior as is expected. These results are justified due to the assumption indicated for the turnover of GSK. (Graph 19)

Even with this pandemic that affects the pharmaceutical industry in different ways depending on the position of the company facing this challenge, GSK will recover from the impact suffered in 2020 in pharmaceuticals and vaccines segments (although some of the decrease in turnover was slightly compensated by the increase in consumer healthcare segment).

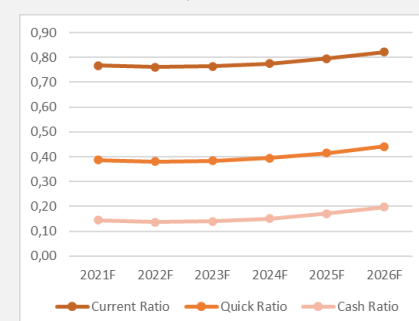
Focusing on **EBITDA margin** for the forecasted years the values will be around **19% and 27% similar to the historical values**. The EBIT margin will have a flatter behavior and will be around 19% close to the historical average of GSK. (Graph 19)

Considering the analysis of **ROA**, the historical years registered a slight increase like the forecasted years registered. The average in 2021 and 2027 period is close to **7%**. The **ROE**, in a broad overview, is decreasing slowly, the same tendency is verified in the forecasted years. The main reason is the slow increase of the net income compared with the equity. The average of the ROE from 2021 to 2027 is approximately **24%**. Although, regarding the scenario of the pharmaceutical industry, this value is above the average when compared with major competitors. (Graph 20)

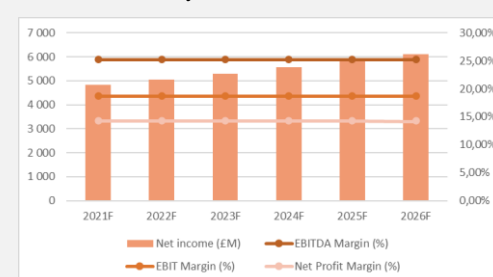
### Solvency Analysis

Regarding the solvency's capacity of the company, the long-term debt ratio is decreasing during the forecast period from **114% to 85%** reflecting the explicit effort in historical years of decreasing weight of the debt. Furthermore, the equity ratio is increasing throughout the years from **26% to 29%**, which means that investment weight by GSK owners has been increasing, a tendency registered since 2017. (Graph 21)

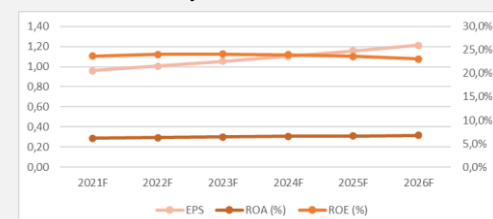
Graph 18 - Analysis of liquidity  
Source: SM Analysis



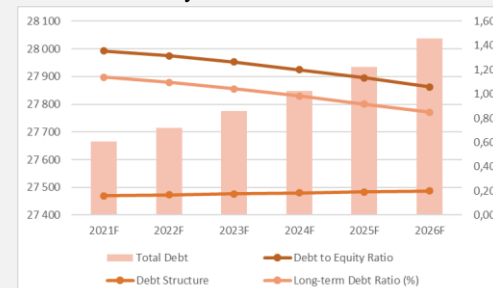
Graph 19 - Analysis of profitability  
Source: SM Analysis



Graph 20 - Analysis of profitability – main ratios  
Source: SM Analysis



Graph 21 - Analysis of solvency  
Source: SM Analysis



## Operational Efficiency Analysis

Concerning the operational efficiency, analyzing two important ratios **the Total Assets Turnover and the Fixed Assets Turnover**. It is possible to verify in the Graph 22 that the first ratio mentioned is expected to increase in a range **between 0,43x and 0,47x** in the forecasted period. The same tendency of growth is verified in the second ratio cited, with a range **between 0,66x and 0,76x in 21E-26F**. This means that GSK is improving its efficiency using better assets to generate revenues.

## 8. Investment Risks

Like all companies, GSK faces risks, some are external and other internal although it is necessary to be aware of all of them prepare the **best strategy to minimize the impact of those risks**. (Figure 10)

### - External Risks

### Economic and Legal Risks

#### 1. Legislation (E1)

Companies are **obligated to comply with the law of all countries** in which they operate. Such requirements are extensive and complex, with the change of new requirements to be imposed as a result of changing government and public expectations regarding the healthcare industry. Furthermore, the final decision of **FDA or EMA** is crucial and can significantly affect the commercial availability in the markets and future revenues of companies, including GSK.

#### 2. Exchange rates (E2)

Changes in **exchange rates** can result in significant increases or decreases in reported sales, costs, and earnings, and in the reported value of assets, liabilities, and cash flows. GSK operates worldwide (**150 countries**) so is constantly **exposed to this risk**.

#### 3. Manufacturing operations delays (E3)

Macroeconomic factors could lead to **delay in the manufacturing operation process**. (e.g. COVID-19 resulted in a reduction in the supply of medicine from China). Other macroeconomics factors could affect the company, the global economic conditions, the **future crisis** that is coming and eventually affecting the global financial markets, and the access of ways to obtain financing.

#### 4. Pandemics (E4)

The most recent risk that the company faces even though the impact is crucial and relevant to consider. The **pressure to find a vaccine or a medicine** to treat COVID-19, is huge, and the **pressure on price as well**. The environment that pharmaceuticals companies deal with is uncertain, so the projects and future revenues are more difficult to predict. Also, with the pandemic, the downward price pressure in major markets continues for products related to it. Moreover, even if the company is not directly related with COVID-19 products, the recipes of other products will decline. The concentration of resources in other products is not the same right now.

Graph 22 - Analysis of Operational Efficiency  
Source: SM Analysis

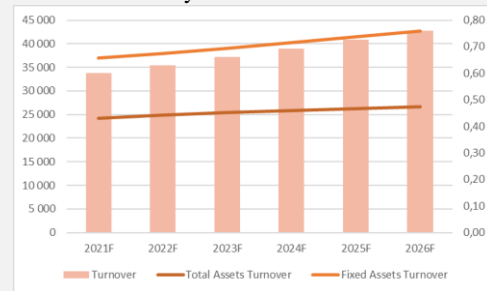
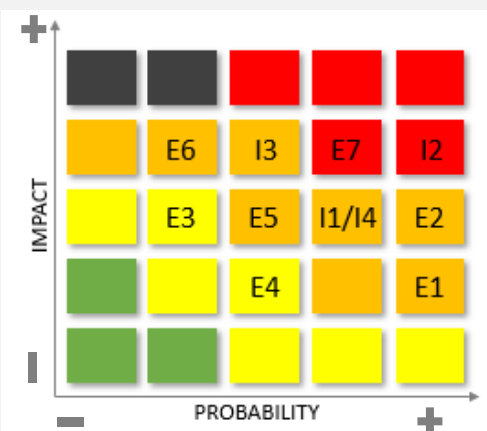


Figure 10 - Risk Matrix  
Source: Group Project – EQR Course and SM Analysis



## Market Risks

### 1. Complex manufacture of products (E5)

Nowadays, **the dependency on sophisticated software and computing infrastructure is higher** in order to achieve the goals of the company. This incorporation of more technologies in the process of the production of medicines introduces new threats and risks, like cyber-attacks that may lead to a disruption of operations.

### 2. Counterfeit Products (E6)

The **presence of falsified medicines is growing**. Falsified medicines pose patient safety risks that can be very harmful or life-threatening. Reports of adverse events affect patient confidence in the original medicine and healthcare in general.

### 3. Competition from generics (E7)

Furthermore, the **presence of competition from generics** is also increasing due to the **end of patents**, GSK already registered the competition from generics before the end of the patent (e.g. *Avamys/Veramyst* for rhinitis).

## - Internal Risks

## Operational Risks

### 1. Pricing pressure (I1)

**Pricing pressures are particularly strong given the increasing demand** for healthcare resulting from the aging of the global population and associated increases in noncommunicable diseases, and the resulting impact on healthcare budgets. These pressures are further compounded by significant **controversies and intense political debate and publicity about prices for pharmaceuticals** that some consider excessive, including government regulatory efforts, funding restrictions, legislative proposals, policy interpretations, investigations, and legal proceedings regarding pharmaceutical pricing practices.

### 2. Patent Expiration Risk (I2)

If a medicine **loses patent protection, this could have a huge impact on sales**, especially in products with high weight on portfolio. It is a significant challenge for all pharmaceutical companies, the particular case of GSK's there are mentioned, in the annual report, 13 products which the patent expired in the US and/or EU. Besides that, there are other products that the company uses. Moreover, if the company succeeds in **obtaining patents**, third parties or government authorities may challenge or seek to invalidate or circumvent its patents and patent application.

### 3. R&D Risk (I3)

Developing new healthcare products and bringing them to market is a **costly, lengthy, and uncertain process**. There can be no guarantee that the research and development activities will produce commercially successful new products that will enable companies to replace revenue and income lost to generic and other competition and grow their business. GSK is constantly investing in R&D to bring new medicines to the market and this situation is cyclical, there is a

period to invest and a period to receive the profit from the investment, although, once again, **is not guarantee that the new developments are going to be a success.**

#### 4. Litigation Risks (14)

Developing new products and launching to the market could result in facing **legal actions**. This event is more susceptible to the large companies given the large potential reward for claimants. It is an event that occurs with frequency and is predictable especially in the pharmaceutical industry. GSK faces a considerable number of **product liability litigation** (GSK net amount of possible claims is estimated around **£363 million**) and the impact can be significant for the future sales of those medicines affecting the GSK's image in the market.

#### The sensitivity analysis

Besides the analysis done, it is relevant to understand the impact of changes in determinant variables on price target. The **sensitivity analysis** will permit clearly understanding those modifications.

First, the impact on the **DCF method**, starting with changing only one variable. The variables are **WACC, Growth Rate, Beta and Equity Risk Premium**.

It is possible to understand in table 13, the variation on the price target when the **WACC variable changes**. It is evident that beyond the WACC being an important variable it is very sensitive, due to very distinguished recommendations from **STRONG BUY to REDUCE**.

Table 13 - Sensitivity Analysis: DCF Method - WACC  
Source: SM Analysis

WACC				
7,60%	8,00%	8,40%	8,80%	9,20%
£ 24,94	£ 22,91	<b>£ 21,18</b>	£ 19,66	£ 18,34
<b>38,40%</b>	<b>27,14%</b>	<b>17,51%</b>	9,10%	<b>1,78%</b>

Looking close to sensitivity in changes in the **growth rate** the behavior of the price target is very similar, very different recommendations. A decrease in growth rate led to a decrease in price target and in an opposite way an increase in the price target. The range in the upside potential is higher than 50 p.p. from **-3,16%** (REDUCE recommendation) to **49,89%** (STRONG BUY recommendation). (Table 14)

Table 14 - Sensitivity Analysis: DCF Method – Growth Rate  
Source: SM Analysis

Growth Rate				
1,36%	2,00%	2,64%	3,28%	3,92%
£ 17,45	£ 19,12	<b>£ 21,18</b>	£ 23,72	£ 27,01
<b>-3,16%</b>	6,10%	<b>17,51%</b>	<b>31,63%</b>	<b>49,89%</b>

Regarding the **Equity Risk Premium**, when this variable decreases the price target suffers an increase, when following the opposite effect the price target decreases. The spectrum of recommendations goes to **STRONG BUY** to



**HOLD**, showing the significant impact on calculations, however lower when comparing with WACC and Growth Rate. (Table 15)

Table 15 - Sensitivity Analysis: DCF Method – Equity Risk Premium  
Source: SM Analysis

Equity Risk Premium				
9,20%	9,60%	10,00%	10,40%	10,80%
£ 23,55	£ 22,30	<b>£ 21,18</b>	£ 20,13	£ 19,19
30,69%	23,75%	17,51%	11,71%	6,49%

As regards **beta variable**, the range of recommendation is similar to Equity Risk Premium, **STRONG BUY to HOLD**. The highest upside potential is 28,14% with a beta equal to 1,10 and the lowest is 7,77% with a beta equal to 1.26. (Table 16)

Table 16 - Sensitivity Analysis: DCF Method – Beta  
Source: SM Analysis

Beta				
1,10	1,14	1,18	1,22	1,26
£ 23,09	£ 22,06	<b>£ 21,18</b>	£ 20,23	£ 19,42
28,14%	22,42%	17,51%	12,26%	7,77%

In a broad perspective, the growth rate and WACC are the most sensitive variables and the ones that the impact on price target is most meaningful. Due to this conclusion, an important and relevant analysis is the impact with the variation of these two variables at same time. (Table 17 and Table 18)

For the GSK valuation, the base case is around **2,64% for the growth rate and 8,40% for the WACC**. This analysis is more detailed than the previously in order to get a more complete overview.

Is possible to verify that when both variables increase the price target decrease, in the opposite view, when both decrease the price target increase.

The highest value achieved occurs when the growth rate increases and WACC decreases with a price target equal to **£ 24,77**, as is expected regarding the rationale from the prior analysis. The lowest, following the same rationale happens when the growth rate decreases and the WACC rate increases, reaching **£ 18,42**.

Table 17 - Sensitivity Analysis: DCF Method - Equity Value  
Source: SM Analysis

DCF Method		Growth Rate								
Equity Value	106 685	2,24%	2,34%	2,44%	2,54%	2,64%	2,74%	2,84%	2,94%	3,04%
WACC	8,00%	108 029	109 868	111 772	113 746	115 862	117 920	120 128	122 423	124 811
	8,10%	105 901	107 672	109 506	111 405	113 440	115 417	117 537	119 740	122 029
	8,20%	103 843	105 550	107 316	109 145	111 103	113 004	115 041	117 156	119 353
	8,30%	101 851	103 498	105 200	106 962	108 847	110 676	112 635	114 667	116 776
	<b>8,40%</b>	99 938	101 527	103 170	104 869	<b>106 685</b>	108 446	110 332	112 286	114 314
	8,50%	98 054	99 588	101 173	102 811	104 561	106 257	108 072	109 952	111 901
	8,60%	96 242	97 724	99 255	100 835	102 524	104 159	105 907	107 717	109 592
	8,70%	94 486	95 918	97 397	98 923	100 552	102 129	103 814	105 558	107 363
	8,80%	92 781	94 166	95 595	97 070	98 643	100 165	101 790	103 471	105 211



Table 18 - Sensitivity Analysis: DCF Method - Price target  
Source: SM Analysis

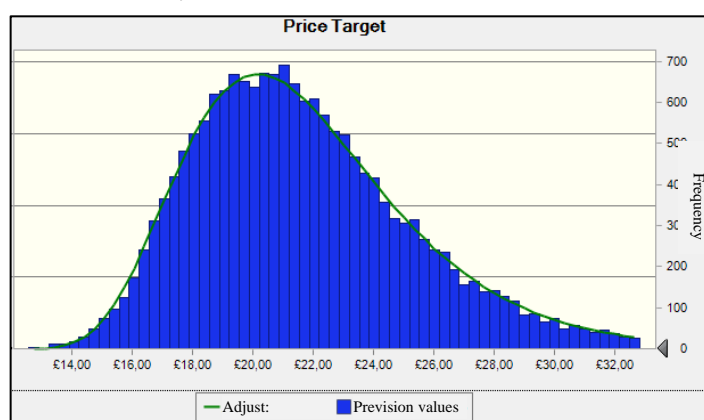
DCF Method		Growth Rate								
Price target	£ 21,18	2,24%	2,34%	2,44%	2,54%	2,64%	2,74%	2,84%	2,94%	3,04%
WACC	8,00%	£ 21,44	£ 21,81	£ 22,19	£ 22,58	£ 23,00	£ 23,41	£ 23,84	£ 24,30	£ 24,77
	8,10%	£ 21,02	£ 21,37	£ 21,74	£ 22,11	£ 22,52	£ 22,91	£ 23,33	£ 23,77	£ 24,22
	8,20%	£ 20,61	£ 20,95	£ 21,30	£ 21,66	£ 22,05	£ 22,43	£ 22,83	£ 23,25	£ 23,69
	8,30%	£ 20,22	£ 20,54	£ 20,88	£ 21,23	£ 21,61	£ 21,97	£ 22,36	£ 22,76	£ 23,18
	8,40%	£ 19,84	£ 20,15	£ 20,48	£ 20,82	£ 21,18	£ 21,53	£ 21,90	£ 22,29	£ 22,69
	8,50%	£ 19,46	£ 19,77	£ 20,08	£ 20,41	£ 20,75	£ 21,09	£ 21,45	£ 21,82	£ 22,21
	8,60%	£ 19,10	£ 19,40	£ 19,70	£ 20,01	£ 20,35	£ 20,67	£ 21,02	£ 21,38	£ 21,75
	8,70%	£ 18,75	£ 19,04	£ 19,33	£ 19,64	£ 19,96	£ 20,27	£ 20,61	£ 20,95	£ 21,31
	8,80%	£ 18,42	£ 18,69	£ 18,97	£ 19,27	£ 19,58	£ 19,88	£ 20,20	£ 20,54	£ 20,88

## Monte Carlo Simulation

To complement the analysis, the **Monte Carlo Simulation** was made regarding the simultaneous change in four variables, the WACC rate, the Growth rate, the Tax rate and the Gross Profit Margin.

According to the result obtained with 17 462 simulations, the average for the price target is around **£21,78**, with an upside potential equal to **20,9%**, which indicates a **BUY** recommendation. The probability that supports this recommendation is around **66% of certainty**. (Graph 23)

Graph 23 – Monte Carlo Simulation  
Source: SM Analysis



Monte Carlo Simulation	
# observations	17 462
Mean	£21,78
Median	£21,21
Standard Desviation	£3,89
10th Percentile	£17,38
90th Percentile	£26,91
Upside Potential	20,9%

## Scenario Analysis

To go further on the analysis, the **Scenario Analysis** is also relevant in order to understand which is the final recommendation based on three different scenarios: the Base Case, the scenario according to my valuation, an optimistic scenario and a pessimistic scenario. These scenarios according to the variation of the **long-term sustainable growth rate ( $g^*$ )**.

The **Base Scenario**, with a growth rate equal to 2,64%, the price target reached is equal to £21,18/share, with an upside potential equal to 17,51%.

For the **Optimistic Scenario**, is considered a growth rate equal to 3,5%, with a price target equal to £24,75/share, an upside potential equal to 37,36% indicating a **STRONG BUY** recommendation.

In contrast, a **Pessimistic Scenario** of 1% for the growth rate, reached a downside potential of -7,70%, with a final price target equal to £16,63/share, indicative of a **SELL** recommendation.

Table 19 – Scenario Analysis  
Source: SM Analysis

Scenario	Price Target	Upside/Downside Potential	Recommendation
Optimistic	£24,75	37,36%	STRONG BUY
Base Case	£21,18	17,51%	BUY
Pessimistic	£16,63	(7,70%)	SELL

# Appendices

## Appendix 1: Statement of Financial Position

£ million	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
<b>Non-current assets</b>										
Property, plant and equipment	10 860	11 058	10 348	10 176	10 335	10 497	10 661	10 827	10 996	11 168
Goodwill	5 734	5 789	10 562	10 597	10 902	11 216	11 539	11 871	12 212	12 564
Other intangible assets	17 562	17 202	30 955	29 824	30 290	30 764	31 244	31 733	32 229	32 732
Other investments	918	1 322	1 837	3 060	3 060	3 060	3 060	3 060	3 060	3 060
Deferred tax assets	3 796	3 887	4 096	4 287	4 219	4 420	4 633	4 857	5 093	5 342
Derivative financial instruments	8	69	103	5	46	46	46	46	46	46
Other non-current assets	1 596	1 812	2 300	2 235	2 235	2 235	2 235	2 235	2 235	2 235
<b>Total non-current assets</b>	<b>40 474</b>	<b>41 139</b>	<b>60 201</b>	<b>60 184</b>	<b>61 087</b>	<b>62 237</b>	<b>63 418</b>	<b>64 629</b>	<b>65 872</b>	<b>67 148</b>
<b>Current assets</b>										
Inventories	5 557	5 476	5 947	5 996	6 038	6 327	6 631	6 951	7 289	7 646
Current tax recoverable	258	229	262	671	367	385	403	423	443	465
Trade Receivables	4671	5165	5 490	5 552	5 477	5 739	6 015	6 306	6 612	6 936
Derivative financial instruments	68	188	421	152	214	224	235	246	258	271
Liquid investments	78	84	79	78	78	78	78	78	78	78
Cash and cash equivalents	3 833	3 874	4 707	6 292	3 262	3 255	3 473	3 931	4 644	5 630
Assets held for sale	113	653	873	106	456	478	501	525	550	577
Other receivables	1329	1258	1712	1 400	1 458	1 519	1 583	1 649	1 718	1 789
<b>Total current assets</b>	<b>15 907</b>	<b>16 927</b>	<b>19 491</b>	<b>20 247</b>	<b>17 351</b>	<b>18 004</b>	<b>18 918</b>	<b>20 108</b>	<b>21 593</b>	<b>23 391</b>
<b>Total assets</b>	<b>56 381</b>	<b>58 066</b>	<b>79 692</b>	<b>80 431</b>	<b>78 438</b>	<b>80 242</b>	<b>82 336</b>	<b>84 737</b>	<b>87 465</b>	<b>90 539</b>
<b>Current liabilities</b>										
Short-term borrowings	2825	5793	6918	3725	4406	4616	4838	5072	5319	5579
Trade Payables	3528	3645	4144	4 357	4107	4303	4510	4728	4958	5201
Others Payables	17442	10392	10795	11 483	11203	11739	12303	12898	13525	14186
Derivative financial instruments	74	127	188	221	153	153	153	153	153	153
Current tax payable	995	965	629	545	836	876	918	963	1009	1059
Provisions and contingent consideration liabilities	1705	1569	1376	1817	1888	1962	2039	2119	2203	2289
<b>Total current liabilities</b>	<b>26 569</b>	<b>22 491</b>	<b>24 050</b>	<b>22 148</b>	<b>22 593</b>	<b>23 649</b>	<b>24 761</b>	<b>25 933</b>	<b>27 166</b>	<b>28 466</b>
<b>Non-current liabilities</b>										
Long-term borrowings	14 264	20 271	23 590	23 425	23 261	23 098	22 937	22 776	22 617	22 459
Corporation tax payable	411	272	189	176	176	176	176	176	176	176
Deferred tax liabilities	1 396	1 156	3 810	3600	2555	2677	2806	2942	3085	3236
Pensions and other post-employment benefits	3 539	3 125	3 457	3650	3650	3650	3650	3650	3650	3650
Derivative financial instruments	0	1	1	10	3	3	3	3	3	3
Provisions and other non-current liabilities	6713	7078	6238	6614	6605	6596	6587	6579	6570	6561
<b>Total non-current liabilities</b>	<b>26 323</b>	<b>31 903</b>	<b>37 285</b>	<b>37 475</b>	<b>36 250</b>	<b>36 201</b>	<b>36 159</b>	<b>36 126</b>	<b>36 101</b>	<b>36 084</b>
<b>Total liabilities</b>	<b>52 892</b>	<b>54 394</b>	<b>61 335</b>	<b>59 623</b>	<b>58 019</b>	<b>59 169</b>	<b>60 342</b>	<b>61 545</b>	<b>62 783</b>	<b>64 065</b>
<b>Equity</b>										
Share capital	1 343	1 345	1 346	1 346	1 346	1 346	1 346	1 346	1 346	1 346
Share premium account	3 019	3 091	3 174	3 281	3 281	3 281	3 281	3 281	3 281	3 281
Retained earnings	(6 477)	(2 716)	4 530	6 755	7 558	8 591	9 865	11 394	13 192	15 273
Other reserves	2 047	2 061	2 355	3 205	2 417	2 417	2 417	2 417	2 417	2 417
<b>Shareholders' equity</b>	<b>(68)</b>	<b>3 781</b>	<b>11 405</b>	<b>14 587</b>	<b>14 602</b>	<b>15 635</b>	<b>16 909</b>	<b>18 438</b>	<b>20 236</b>	<b>22 317</b>
Non-controlling interests	3 557	(109)	6 952	6 221	5 817	5 439	5 085	4 755	4 445	4 157
<b>Total equity</b>	<b>3 489</b>	<b>3 672</b>	<b>18 357</b>	<b>20 808</b>	<b>20 419</b>	<b>21 073</b>	<b>21 994</b>	<b>23 193</b>	<b>24 681</b>	<b>26 474</b>
<b>Total Liabilities+Equity</b>	<b>56 381</b>	<b>58 066</b>	<b>79 692</b>	<b>80 431</b>	<b>78 438</b>	<b>80 242</b>	<b>82 336</b>	<b>84 737</b>	<b>87 465</b>	<b>90 539</b>

## Appendix 2: Common-size Statement of Financial Position

% percentage	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
<b>Non-current assets</b>										
Property, plant and equipment, Net	19,3%	19,0%	13,0%	12,7%	13,2%	13,1%	12,9%	12,8%	12,6%	12,3%
Goodwill	10,2%	10,0%	13,3%	13,2%	13,9%	14,0%	14,0%	14,0%	14,0%	13,9%
Other intangible assets	31,1%	29,6%	38,8%	37,1%	38,6%	38,3%	37,9%	37,4%	36,8%	36,2%
Other investments	1,6%	2,3%	2,3%	3,8%	3,9%	3,8%	3,7%	3,6%	3,5%	3,4%
Deferred tax assets	6,7%	6,7%	5,1%	5,3%	5,4%	5,5%	5,6%	5,7%	5,8%	5,9%
Derivative financial instruments	0,0%	0,1%	0,1%	0,0%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%
Other non-current assets	2,8%	3,1%	2,9%	2,8%	2,8%	2,8%	2,7%	2,6%	2,6%	2,5%
<b>Total non-current assets</b>	<b>71,8%</b>	<b>70,8%</b>	<b>75,5%</b>	<b>74,8%</b>	<b>77,9%</b>	<b>77,6%</b>	<b>77,0%</b>	<b>76,3%</b>	<b>75,3%</b>	<b>74,2%</b>
<b>Current assets</b>										
Inventories	9,9%	9,4%	7,5%	7,5%	7,7%	7,9%	8,1%	8,2%	8,3%	8,4%
Current tax recoverable	0,5%	0,4%	0,3%	0,8%	0,5%	0,5%	0,5%	0,5%	0,5%	0,5%
Accounts Receivables	8,3%	8,9%	6,9%	6,9%	7,0%	7,2%	7,3%	7,4%	7,6%	7,7%
Derivative financial instruments	0,1%	0,3%	0,5%	0,2%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%
Liquid investments	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%
Cash and cash equivalents	6,8%	6,7%	5,9%	7,8%	4,2%	4,1%	4,2%	4,6%	5,3%	6,2%
Assets held for sale	0,2%	1,1%	1,1%	0,1%	0,6%	0,6%	0,6%	0,6%	0,6%	0,6%
Other current assets	2,4%	2,2%	2,1%	1,7%	1,9%	1,9%	1,9%	1,9%	2,0%	2,0%
<b>Total current assets</b>	<b>28,2%</b>	<b>29,2%</b>	<b>24,5%</b>	<b>25,2%</b>	<b>22,1%</b>	<b>22,4%</b>	<b>23,0%</b>	<b>23,7%</b>	<b>24,7%</b>	<b>25,8%</b>
<b>Total assets</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>
<b>Current liabilities</b>										
Short-term borrowings	5,0%	10,0%	8,7%	4,6%	5,6%	5,8%	5,9%	6,0%	6,1%	6,2%
Accounts Payables	6,3%	6,3%	5,2%	5,4%	5,2%	5,4%	5,5%	5,6%	5,7%	5,7%
Other Payables	30,9%	17,9%	13,5%	14,3%	14,3%	14,6%	14,9%	15,2%	15,5%	15,7%
Derivative financial instruments	0,1%	0,2%	0,2%	0,3%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
Current tax payable	1,8%	1,7%	0,8%	0,7%	1,1%	1,1%	1,1%	1,1%	1,2%	1,2%
Provisions and other current liabilities	3,0%	2,7%	1,7%	2,3%	2,4%	2,4%	2,5%	2,5%	2,5%	2,5%
<b>Total current liabilities</b>	<b>47,1%</b>	<b>38,7%</b>	<b>30,2%</b>	<b>27,5%</b>	<b>28,8%</b>	<b>29,5%</b>	<b>30,1%</b>	<b>30,6%</b>	<b>31,1%</b>	<b>31,4%</b>
<b>Non-current liabilities</b>										
Long-term borrowings	25,3%	34,9%	29,6%	29,1%	29,7%	28,8%	27,9%	26,9%	25,9%	24,8%
Corporation tax payable	0,7%	0,5%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
Deferred tax liabilities	2,5%	2,0%	4,8%	4,5%	3,3%	3,3%	3,4%	3,5%	3,5%	3,6%
Pensions and other post-employment benefits	6,3%	5,4%	4,3%	4,5%	4,7%	4,5%	4,4%	4,3%	4,2%	4,0%
Derivative financial instruments	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Provisions and other non-current liabilities	11,9%	12,2%	7,8%	8,2%	8,4%	8,2%	8,0%	7,8%	7,5%	7,2%
<b>Total non-current liabilities</b>	<b>46,7%</b>	<b>54,9%</b>	<b>46,8%</b>	<b>46,6%</b>	<b>46,2%</b>	<b>45,1%</b>	<b>43,9%</b>	<b>42,6%</b>	<b>41,3%</b>	<b>39,9%</b>
<b>Total liabilities</b>	<b>93,8%</b>	<b>93,7%</b>	<b>77,0%</b>	<b>74,1%</b>	<b>74,0%</b>	<b>73,7%</b>	<b>73,3%</b>	<b>72,6%</b>	<b>71,8%</b>	<b>70,8%</b>
<b>Equity</b>										
Share capital	2,4%	2,3%	1,7%	1,7%	1,7%	1,7%	1,6%	1,6%	1,5%	1,5%
Share premium account	5,4%	5,3%	4,0%	4,1%	4,2%	4,1%	4,0%	3,9%	3,8%	3,6%
Retained earnings	-11,5%	-4,7%	5,7%	8,4%	9,6%	10,7%	12,0%	13,4%	15,1%	16,9%
Other reserves	3,6%	3,5%	3,0%	4,0%	3,1%	3,0%	2,9%	2,9%	2,8%	2,7%
<b>Shareholders' equity</b>	<b>-0,1%</b>	<b>6,5%</b>	<b>14,3%</b>	<b>18,1%</b>	<b>18,6%</b>	<b>19,5%</b>	<b>20,5%</b>	<b>21,8%</b>	<b>23,1%</b>	<b>24,6%</b>
Non-controlling interests	6,3%	-0,2%	8,7%	7,7%	7,4%	6,8%	6,2%	5,6%	5,1%	4,6%
<b>Total equity</b>	<b>6,2%</b>	<b>6,3%</b>	<b>23,0%</b>	<b>25,9%</b>	<b>26,0%</b>	<b>26,3%</b>	<b>26,7%</b>	<b>27,4%</b>	<b>28,2%</b>	<b>29,2%</b>
<b>Total Liabilities+Equity</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>

## Appendix 3: Income Statement

£ million	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Turnover	30 186	30 821	33 754	34 099	33 821	35 438	37 141	38 937	40 830	42 827
Cost of sales	(10 342)	(10 241)	(11 863)	(11 704)	(11 580)	(12 134)	(12 717)	(13 332)	(13 980)	(14 664)
<b>Gross profit</b>	<b>19 844</b>	<b>20 580</b>	<b>21 891</b>	<b>22 395</b>	<b>22 241</b>	<b>23 304</b>	<b>24 424</b>	<b>25 605</b>	<b>26 850</b>	<b>28 164</b>
Selling, general and administration	(9 672)	(9 915)	(11 402)	(11 456)	(11 126)	(11 658)	(12 218)	(12 809)	(13 432)	(14 089)
Research and development	(4 476)	(3 893)	(4 568)	(5 098)	(4 730)	(4 956)	(5 194)	(5 446)	(5 710)	(5 990)
Royalty income	356	299	351	318	349	365	383	401	421	441
Other operating income/(expense)	(1 965)	(1 588)	689	1 624	(411)	(430)	(451)	(473)	(496)	(520)
<b>Operating profit (EBIT)</b>	<b>4 087</b>	<b>5 483</b>	<b>6 961</b>	<b>7 783</b>	<b>6 323</b>	<b>6 625</b>	<b>6 943</b>	<b>7 279</b>	<b>7 633</b>	<b>8 006</b>
Finance income	65	81	98	44	76	80	83	87	92	96
Finance expense	(734)	(798)	(912)	(892)	(874)	(916)	(960)	(1006)	(1055)	(1107)
Profit on disposal of interest in associates	94	3	0	0	0	0	0	0	0	0
Share of after tax profits of associates and JV	13	31	74	33	38	38	38	38	38	38
Financial Result	(562)	(683)	(740)	(815)	(761)	(799)	(839)	(881)	(926)	(973)
<b>Profit before taxation (EBT)</b>	<b>3 525</b>	<b>4 800</b>	<b>6 221</b>	<b>6 968</b>	<b>5 562</b>	<b>5 826</b>	<b>6 104</b>	<b>6 398</b>	<b>6 707</b>	<b>7 033</b>
Taxation	(1 356)	(754)	(953)	(580)	(729)	(763)	(800)	(838)	(879)	(921)
<b>Profit after taxation for the year (net income)</b>	<b>2 169</b>	<b>4 046</b>	<b>5 268</b>	<b>6 388</b>	<b>4 833</b>	<b>5 063</b>	<b>5 305</b>	<b>5 560</b>	<b>5 828</b>	<b>6 112</b>
Profit attributable to non-controlling interests	637	423	623	639	639	639	639	639	639	639
Profit attributable to shareholders	1532	3623	4645	5749	4194	4424	4666	4921	5189	5473

## Appendix 4: Common-size Income Statement

% percentage	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Turnover	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Cost of sales	34,3%	33,2%	35,1%	34,3%	34,2%	34,2%	34,2%	34,2%	34,2%	34,2%
<b>Gross profit</b>	<b>65,7%</b>	<b>66,8%</b>	<b>64,9%</b>	<b>65,7%</b>	<b>65,8%</b>	<b>65,8%</b>	<b>65,8%</b>	<b>65,8%</b>	<b>65,8%</b>	<b>65,8%</b>
Selling, general and administration	32,0%	32,2%	33,8%	33,6%	32,9%	32,9%	32,9%	32,9%	32,9%	32,9%
Research and development	14,8%	12,6%	13,5%	15,0%	14,0%	14,0%	14,0%	14,0%	14,0%	14,0%
Royalty income	1,2%	1,0%	1,0%	0,9%	1,0%	1,0%	1,0%	1,0%	1,0%	1,0%
Other operating income/(expense)	-6,5%	-5,2%	2,0%	4,8%	-1,2%	-1,2%	-1,2%	-1,2%	-1,2%	-1,2%
<b>Operating profit (EBIT)</b>										
Finance income	0,2%	0,3%	0,3%	0,1%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
Finance expense	-2,4%	-2,6%	-2,7%	-2,6%	-2,6%	-2,6%	-2,6%	-2,6%	-2,6%	-2,6%
Profit on disposal of interest in associates	0,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Share of after tax profits of associates and JV	0,0%	0,1%	0,2%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%	0,1%
Financial Result	-1,9%	-2,2%	-2,2%	-2,4%	-2,2%	-2,3%	-2,3%	-2,3%	-2,3%	-2,3%
<b>Profit before taxation (EBT)</b>	<b>11,7%</b>	<b>15,6%</b>	<b>18,4%</b>	<b>20,4%</b>	<b>16,4%</b>	<b>16,4%</b>	<b>16,4%</b>	<b>16,4%</b>	<b>16,4%</b>	<b>16,4%</b>
Taxation	-4,5%	-2,4%	-2,8%	-1,7%	-2,2%	-2,2%	-2,2%	-2,2%	-2,2%	-2,2%
<b>Profit after taxation for the year (net income)</b>	<b>7,2%</b>	<b>13,1%</b>	<b>15,6%</b>	<b>18,7%</b>	<b>14,3%</b>	<b>14,3%</b>	<b>14,3%</b>	<b>14,3%</b>	<b>14,3%</b>	<b>14,3%</b>
Profit attributable to non-controlling interests	2,1%	1,4%	1,8%	1,9%	1,9%	1,8%	1,7%	1,6%	1,6%	1,5%
Profit attributable to shareholders	5,1%	11,8%	13,8%	16,9%	12,4%	12,5%	12,6%	12,6%	12,7%	12,8%

## Appendix 5: Cash Flow Statement

£ million	2021F	2022F	2023F	2024F	2025F	2026F
<b>Cash flow from operating activities</b>						
Profit after taxation for the year	4 833	5 063	5 305	5 560	5 828	6 112
<b>Adjustments reconciling profit after tax to operating cash flows</b>	<b>3 773</b>	<b>5 794</b>	<b>6 049</b>	<b>6 317</b>	<b>6 601</b>	<b>6 901</b>
Tax on profits	729	763	800	838	879	921
Finance expense net of finance income	798	836	877	919	964	1 011
Depreciation	1 148	1 203	1 261	1 321	1 386	1 454
Amortization of intangible assets	1 067	1 118	1 172	1 229	1 288	1 352
Impairment and assets written off	652	652	652	652	652	652
Depreciations, Amortizations and Impairments	2 867	2 973	3 085	3 202	3 326	3 457
Decrease/Increase in inventories	42	289	304	321	338	357
Increase/decrease in trade receivables	(75)	262	276	291	307	323
Increase/decrease in trade payables	(250)	196	207	218	230	243
(Increase)/Decrease in other receivables	(58)	(61)	(63)	(66)	(69)	(72)
Increase/Decrease in other payables	(280)	536	564	595	627	662
Other adjustments	-	-	-	-	-	-
Cash generated from operations	8 606	10 857	11 353	11 877	12 430	13 013
Taxation paid	(836)	(876)	(918)	(963)	(1 009)	(1 059)
<b>Net cash inflow from operating activities</b>	<b>7 770</b>	<b>9 981</b>	<b>10 435</b>	<b>10 914</b>	<b>11 420</b>	<b>11 954</b>
<b>Cash flow from investing activities</b>						
Purchase of property, plant and equipment	(1 345)	(1 384)	(1 424)	(1 465)	(1 507)	(1 550)
Proceeds from sales of property, plant and equipment	-	-	-	-	-	-
Purchase of intangibles assets	(1 013)	(1 042)	(1 072)	(1 103)	(1 135)	(1 167)
Proceeds from sales of intangible assets	-	-	-	-	-	-
Purchase of equity investments	-	-	-	-	-	-
Proceeds from sales of equity investments	-	-	-	-	-	-
Contingent consideration paid	-	-	-	-	-	-
Purchase of businesses, net of cash acquired	-	-	-	-	-	-
Disposal of businesses	-	-	-	-	-	-
Investments in associates and joint ventures	-	-	-	-	-	-
Proceeds from disposal of interests in associates	-	-	-	-	-	-
(Increase)/decrease in liquid investments	-	-	-	-	-	-
Interest received	-	-	-	-	-	-
Dividends from associates, joint ventures and equity investments	-	-	-	-	-	-
<b>Net cash inflow/(outflow) from investing activities</b>	<b>(2 358)</b>	<b>(2 426)</b>	<b>(2 496)</b>	<b>(2 568)</b>	<b>(2 641)</b>	<b>(2 717)</b>
<b>Cash flow from financing activities</b>						
Issue of share capital	-	-	-	-	-	-
Purchase of non-controlling interests	-	-	-	-	-	-
Increase/Decreases in long-term loans	(3154)	(3305)	(3464)	(3632)	(3808)	(3994)
Repayment of short-term Notes	-	-	-	-	-	-
(Repayment of)/increase in other short term loans	-	-	-	-	-	-
Repayment of lease liabilities	(227)	(227)	(227)	(227)	(227)	(227)
Interest paid	-	-	-	-	-	-
Dividends paid to shareholders	(4030)	(4030)	(4030)	(4030)	(4030)	(4030)
Distributions to non-controlling interests	-	-	-	-	-	-
Contributions from non-controlling interests	-	-	-	-	-	-
Other financing cash flows	-	-	-	-	-	-
<b>Net cash outflow from financing activities</b>	<b>(7412)</b>	<b>(7563)</b>	<b>(7721)</b>	<b>(7889)</b>	<b>(8065)</b>	<b>(8252)</b>
Cash and bank overdrafts at beginning of year	5 262	3 262	3 255	3 473	3 931	4 644
Exchange adjustments	-	-	-	-	-	-
Increase in cash and bank overdrafts	(2000)	(7)	218	458	713	985
<b>Cash and bank overdrafts at end year</b>	<b>3 262</b>	<b>3 255</b>	<b>3 473</b>	<b>3 931</b>	<b>4 644</b>	<b>5 630</b>

## Appendix 6: Common-size Cash Flow Statement

% of operating activities	2021F	2022F	2023F	2024F	2025F	2026F
<b>Cash flow from operating activities</b>						
Profit after taxation for the year	62,2%	50,7%	50,8%	50,9%	51,0%	51,1%
<b>Adjustments reconciling profit after tax to operating cash flows</b>	<b>48,6%</b>	<b>58,1%</b>	<b>58,0%</b>	<b>57,9%</b>	<b>57,8%</b>	<b>57,7%</b>
Tax on profits	9,4%	7,6%	7,7%	7,7%	7,7%	7,7%
Finance expense net of finance income	10,3%	8,4%	8,4%	8,4%	8,4%	8,5%
Depreciations, Amortizations and Impairments	36,9%	29,8%	29,6%	29,3%	29,1%	28,9%
Decrease/Increase in inventories	0,5%	2,9%	2,9%	2,9%	3,0%	3,0%
Increase/decrease in trade receivables	-1,0%	2,6%	2,6%	2,7%	2,7%	2,7%
Increase/decrease in trade payables	-3,2%	2,0%	2,0%	2,0%	2,0%	2,0%
(Increase)/Decrease in other receivables	-0,8%	-0,6%	-0,6%	-0,6%	-0,6%	-0,6%
Increase/Decrease in other payables	-3,6%	5,4%	5,4%	5,4%	5,5%	5,5%
Other adjustments	-	-	-	-	-	-
Cash generated from operations	110,8%	108,8%	108,8%	108,8%	108,8%	108,9%
Taxation paid	-10,8%	-8,8%	-8,8%	-8,8%	-8,8%	-8,9%
<b>Net cash inflow from operating activities</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>
<b>Cash flow from investing activities</b>						
Purchase of property, plant and equipment	-17%	-13,9%	-13,6%	-13,4%	-13,2%	-13,0%
Proceeds from sales of property, plant and equipment	-	-	-	-	-	-
Purchase of intangibles assets	-13,0%	-10,4%	-10,3%	-10,1%	-9,9%	-9,8%
Proceeds from sales of intangible assets	-	-	-	-	-	-
Purchase of equity investments	-	-	-	-	-	-
Proceeds from sales of equity investments	-	-	-	-	-	-
Contingent consideration paid	-	-	-	-	-	-
Purchase of businesses, net of cash acquired	-	-	-	-	-	-
Disposal of businesses	-	-	-	-	-	-
Investments in associates and joint ventures	-	-	-	-	-	-
Proceeds from disposal of interests in associates	-	-	-	-	-	-
(Increase)/decrease in liquid investments	-	-	-	-	-	-
Interest received	-	-	-	-	-	-
Dividends from associates, joint ventures and equity investments	-	-	-	-	-	-
<b>Net cash inflow/(outflow) from investing activities</b>	<b>-30,3%</b>	<b>-24,3%</b>	<b>-23,9%</b>	<b>-23,5%</b>	<b>-23,1%</b>	<b>-22,7%</b>
<b>Cash flow from financing activities</b>						
Issue of share capital	-	-	-	-	-	-
Purchase of non-controlling interests	-	-	-	-	-	-
Increase/Decreases in long-term loans	-40,6%	-33,1%	-33,2%	-33,3%	-33,3%	-33,4%
Repayment of short-term Notes	-	-	-	-	-	-
(Repayment of)/increase in other short term loans	-	-	-	-	-	-
Repayment of lease liabilities	-2,9%	-2,3%	-2,2%	-2,1%	-2,0%	-1,9%
Interest paid	-	-	-	-	-	-
Dividends paid to shareholders	-51,9%	-40,4%	-38,6%	-36,9%	-35,3%	-33,7%
Distributions to non-controlling interests	-	-	-	-	-	-
Contributions from non-controlling interests	-	-	-	-	-	-
Other financing cash flows	-	-	-	-	-	-
<b>Net cash outflow from financing activities</b>	<b>-95,4%</b>	<b>-75,8%</b>	<b>-74,0%</b>	<b>-72,3%</b>	<b>-70,6%</b>	<b>-69,0%</b>
	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Cash and bank overdrafts at beginning of year	67,7%	32,7%	31,2%	31,8%	34,4%	38,9%
Exchange adjustments	-	-	-	-	-	-
Increase in cash and bank overdrafts	-25,7%	-0,1%	2,1%	4,2%	6,2%	8,2%
<b>Cash and bank overdrafts at end year</b>	<b>42,0%</b>	<b>32,6%</b>	<b>33,3%</b>	<b>36,0%</b>	<b>40,7%</b>	<b>47,1%</b>

## Appendix 7: Managerial Balance Sheet

£ million	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
Property, plant and equipment, Net	10 860	11 058	10 348	10 176	10 335	10 497	10 661	10 827	10 996	11 168
Intangible Assets & Goodwill	23 296	22 991	41 517	40 421	41 192	41 979	42 783	43 603	44 441	45 296
<b>Fixed Assets</b>	<b>34 156</b>	<b>34 049</b>	<b>51 865</b>	<b>50 597</b>	<b>51 527</b>	<b>52 476</b>	<b>53 444</b>	<b>54 431</b>	<b>55 437</b>	<b>56 465</b>
Inventories	5 557	5 476	5 947	5 996	6 038	6 327	6 631	6 951	7 289	7 646
Accounts Receivables	4 671	5 165	5 490	5 552	5 477	5 739	6 015	6 306	6 612	6 936
Tax Receivables	4 054	4 116	4 358	4 958	4 586	4 805	5 036	5 279	5 536	5 807
Accounts Payables	3528	3645	4144	4357	4107	4303	4510	4728	4958	5201
Deferred tax liabilities	1 396	1 156	3 810	3 600	2 555	2 677	2 806	2 942	3 085	3 236
Tax Payables	1 406	1 237	818	721	1 012	1 052	1 094	1 139	1 185	1 235
<b>Working Capital Requirements (WCR)</b>	<b>7 952</b>	<b>8 719</b>	<b>7 023</b>	<b>7 828</b>	<b>8 427</b>	<b>8 838</b>	<b>9 271</b>	<b>9 728</b>	<b>10 209</b>	<b>10 717</b>
Cash & Cash Equivalents	3 833	3 874	4 707	6 292	3 262	3 255	3 473	3 931	4 644	5 630
<b>Cash &amp; Cash Equivalents</b>	<b>3 833</b>	<b>3 874</b>	<b>4 707</b>	<b>6 292</b>	<b>3 262</b>	<b>3 255</b>	<b>3 473</b>	<b>3 931</b>	<b>4 644</b>	<b>5 630</b>
<b>INVESTED CAPITAL</b>	<b>45 941</b>	<b>46 642</b>	<b>63 595</b>	<b>64 717</b>	<b>63 216</b>	<b>64 569</b>	<b>66 188</b>	<b>68 090</b>	<b>70 291</b>	<b>72 812</b>
Total Equity	3 489	3 672	18 357	20 808	20 419	21 073	21 994	23 193	24 681	26 474
Other Assets	4 110	5 386	7 325	7 036	7 547	7 640	7 737	7 839	7 945	8 056
Other Liabilities	29 473	22 292	22 055	23 795	22 678	23 421	24 156	24 887	25 619	26 356
<b>Adjusted Equity</b>	<b>28 852</b>	<b>20 578</b>	<b>33 087</b>	<b>37 567</b>	<b>35 549</b>	<b>36 854</b>	<b>38 413</b>	<b>40 241</b>	<b>42 356</b>	<b>44 774</b>
<b>Long term Debt</b>	<b>14 264</b>	<b>20 271</b>	<b>23 590</b>	<b>23 425</b>	<b>23 261</b>	<b>23 098</b>	<b>22 937</b>	<b>22 776</b>	<b>22 617</b>	<b>22 459</b>
<b>Short Term Debt</b>	<b>2 825</b>	<b>5 793</b>	<b>6 918</b>	<b>3 725</b>	<b>4 406</b>	<b>4 616</b>	<b>4 838</b>	<b>5 072</b>	<b>5 319</b>	<b>5 579</b>
<b>Total Debt</b>	<b>17 089</b>	<b>26 064</b>	<b>30 508</b>	<b>27 150</b>	<b>27 667</b>	<b>27 715</b>	<b>27 775</b>	<b>27 848</b>	<b>27 936</b>	<b>28 038</b>
<b>CAPITAL EMPLOYED</b>	<b>45 941</b>	<b>46 642</b>	<b>63 595</b>	<b>64 717</b>	<b>63 216</b>	<b>64 569</b>	<b>66 188</b>	<b>68 090</b>	<b>70 291</b>	<b>72 812</b>



## Appendix 8: Key Financial Ratios

Liquidity Ratios	2021F	2022F	2023F	2024F	2025F	2026F
Current Ratio	0,77	0,76	0,76	0,78	0,79	0,82
Quick Ratio	0,39	0,38	0,38	0,39	0,41	0,44
Cash Ratio	0,14	0,14	0,14	0,15	0,17	0,20

Profitability Ratios	2021F	2022F	2023F	2024F	2025F	2026F
EBITDA Margin (%)	25,24%	25,24%	25,24%	25,24%	25,24%	25,24%
EBIT Margin (%)	18,69%	18,69%	18,69%	18,69%	18,69%	18,69%
Net income (£M)	4 833	5 063	5 305	5 560	5 828	6 112
Net Profit Margin (%)	14,29%	14,29%	14,28%	14,28%	14,27%	14,27%

Profitability Ratios	2021F	2022F	2023F	2024F	2025F	2026F
ROA (%)	6,2%	6,3%	6,4%	6,6%	6,7%	6,8%
ROE (%)	23,7%	24,0%	24,1%	24,0%	23,6%	23,1%
EPS	0,96	1,00	1,05	1,10	1,16	1,21
SG&A/Turnover (%)	33%	33%	33%	33%	33%	33%
R&D/Turnover (%)	14%	14%	14%	14%	14%	14%
Capex/Turnover (%)	3,98%	3,90%	3,83%	3,76%	3,69%	3,62%

Solvency Ratios	2021F	2022F	2023F	2024F	2025F	2026F
Debt to Equity Ratio	1,35	1,32	1,26	1,20	1,13	1,06
Debt Structure	0,16	0,17	0,17	0,18	0,19	0,20
Long-term Debt Ratio (%)	114%	110%	104%	98%	92%	85%
Total Debt	27 667	27 715	27 775	27 848	27 936	28 038

Operational Efficiency	2021F	2022F	2023F	2024F	2025F	2026F
Total Assets Turnover	0,43	0,44	0,45	0,46	0,47	0,47
Fixed Assets Turnover	0,66	0,68	0,69	0,72	0,74	0,76

Dividend Payout Ratio	2021F	2022F	2023F	2024F	2025F	2026F
	83%	80%	76%	72%	69%	66%

## Appendix 9: Forecasting Assumptions – Revenues

	Unit	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
<b>Turnover by business segment</b>											
Pharmaceuticals	£m	17 276	17 269	17 554	17 056	16 544	17 190	17 860	18 556	19 280	20 032
Vaccines	£m	5 160	5 894	7 157	6 982	6 842	7 397	7 996	8 643	9 343	10 100
Consumer Healthcare	£m	7 750	7 658	8 995	10 033	10 434	10 852	11 286	11 737	12 207	12 695
Group Turnover	£m	30 186	30 821	33 706	34 071	33 821	35 438	37 141	38 937	40 830	42 827
Corporate and other allocated turnover	£m	-	-	48	28	-	-	-	-	-	-
Total	£m	30 186	30 821	33 754	34 099	33 821	35 438	37 141	38 937	40 830	42 827

	Unit	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F	2026F
<b>Turnover by business segment</b>											
Pharmaceuticals	% Turnover	57,23%	56,03%	52,01%	50,02%	48,92%	48,51%	48,09%	47,66%	47,22%	46,77%
Vaccines	% Turnover	17,09%	19,12%	21,20%	20,48%	20,23%	20,87%	21,53%	22,20%	22,88%	23,58%
Consumer Healthcare	% Turnover	25,67%	24,85%	26,65%	29,42%	30,85%	30,62%	30,39%	30,14%	29,90%	29,64%
Group Turnover	% Turnover	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

Business segment	Assumption
Pharmaceuticals	Pharmaceuticals turnover will decline in 2021, around 3%, due to the reduction of established pharmaceuticals (negative impact of covid-19), then a recovery of a forecast turnover of 3,9% according the expectations of the market
Vaccines	Vaccines turnover will decline in 2021, around 2% similar to 2020, due to impact of COVID-19. Then, the forecast is to grow at 8,10% according the expectations of the market
Consumer Healthcare	Consumer Healthcare turnover will grow at 4% due to the expectations of the market as well as the growing concern of GSK to expand this segment.

## Appendix 10: Forecasting Assumptions - Statement of Financial Position

	Unit	2021E	2022F	2023F	2024F	2025F	2026F	Assumption
Cost of Goods Sold	% Turnover	-34%	-34%	-34%	-34%	-34%	-34%	Historical average
Research and Development Expenses	% Turnover	-14%	-14%	-14%	-14%	-14%	-14%	Historical average
Selling, General and Administrative Expenses	% Turnover	-33%	-33%	-33%	-33%	-33%	-33%	Historical average
Royalty income	% Turnover	1,0%	1,0%	1,0%	1,0%	1,0%	1,0%	Historical average
Other operating income/(expense)	% Turnover	-1,2%	-1,2%	-1,2%	-1,2%	-1,2%	-1,2%	Historical average
Finance income	% Turnover	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	Historical average
Finance expense	% Turnover	-2,6%	-2,6%	-2,6%	-2,6%	-2,6%	-2,6%	Historical average
Profit on disposal of interest in associates	£m	0,0	0,0	0,0	0,0	0,0	0,0	Constant, equal to 2020 and 2019
Share of after tax profits of associates and JV	£m	38	38	38	38	38	38	Historical average
Taxation	%	13,1%	13,1%	13,1%	13,1%	13,1%	13,1%	Historical average
<b>PP&amp;E</b>								
Depreciations PP&E	£m	1 148	1 203	1 261	1 321	1 386	1 454	Formula used: (Depreciation PP&E/Turnover)*Turnover
Depreciations PP&E	% Turnover	3,4%	3,4%	3,4%	3,4%	3,4%	3,4%	Historical average
CAPEX	£m	1 345	1 384	1 424	1 465	1 507	1 550	Growth with rate g*
PP&E	£m	10 335	10 497	10 661	10 827	10 996	11 168	Average of growth of turnover the historical years
<b>Intangible Assets</b>								
Amortization on Intangible Assets	£m	1 067	1 118	1 172	1 229	1 288	1 352	Formula used: (Amortization on IA/Turnover)*Turnover
Amortization on Intangible Assets	% Turnover	3,2%	3,2%	3,2%	3,2%	3,2%	3,2%	Historical average
Purchase of Intangible Assets	£m	1 013	1 042	1 072	1 103	1 135	1 167	Growth with rate g*
Intangible Assets	£m	30 290	30 764	31 244	31 733	32 229	32 732	Average of growth of turnover the historical years (2019 is an outlier)
Goodwill	£m	10 902	11 216	11 539	11 871	12 212	12 564	Growth with rate g*
Deferred tax assets	£m	4 219	4 420	4 633	4 857	5 093	5 342	% of turnover (the percentage applied is the average of historical years)
Derivative financial instruments	£m	46	46	46	46	46	46	Historical average
<b>Operational Cycle Ratio</b>								
Trade receivable days	days	59	59	59	59	59	59	Formula used: (Accounts receivable/Turnover)*365
Trade payable days	days	(129)	(129)	(129)	(129)	(129)	(129)	Formula used: (Accounts Payable/Cost of Goods Sold)*365
Inventory days	days	(190)	(190)	(190)	(190)	(190)	(190)	Formula used: (Inventory*365)/Cost of Goods Sold
Inventory	£m	6 038	6 327	6 631	6 951	7 289	7 646	Formula used: (Average of Inventory days/365)*Cost of Goods Sold
Current tax recoverable	£m	367	385	403	423	443	465	% of turnover (the percentage applied is the average of historical years)
Trade Receivable	£m	5 477	5 739	6 015	6 306	6 612	6 936	Formula used: (Turnover*(Accouts receivable days/365))
Derivative financial instruments	£m	214	224	235	246	258	271	% of turnover (the percentage applied is the average of historical years)
Assets held for sale	£m	456	478	501	525	550	577	% of turnover (the percentage applied is the average of historical years)
Other receivables	£m	1 458	1 519	1 583	1 649	1 718	1 789	Average of growth (historical years)
Short-term borrowings	£m	4 406	4 616	4 838	5 072	5 319	5 579	% of turnover (the percentage applied is the average of historical years)
Trade Payables	£m	4 107	4 303	4 510	4 728	4 958	5 201	Formula used: (Cost of sales*(Accouts payables days/365))
Others Payables	£m	11 203	11 739	12 303	12 898	13 525	14 186	% of turnover (the percentage applied is the average of historical years)
Derivative financial instruments	£m	153	153	153	153	153	153	Historical average
Current tax payable	£m	836	876	918	963	1 009	1 059	% of turnover (the percentage applied is the average of historical years)
Provisions and contingent consideration liabilities	£m	1 888	1 962	2 039	2 119	2 203	2 289	Growth rate of historical years
Long-term borrowings	£m	23 261	23 098	22 937	22 776	22 617	22 459	Growth rate based on last 2 years
Deferred tax liabilities	£m	2 555	2 677	2 806	2 942	3 085	3 236	% of turnover (the percentage applied is the average of historical years)
Derivative financial instruments	£m	3	3	3	3	3	3	Historical average
Provisions and other non-current liabilities	£m	6605	6596	6587	6579	6570	6561	Growth rate of historical years
Increase/Decreases in long-term loans	£m	(3154)	(3305)	(3464)	(3632)	(3808)	(3994)	Based on average of percentage of revenues of historical years
<b>Retained earnings</b>								
Retained Earnings n-1	£m	6 755	7 558	8 591	9 865	11 394	13 192	Equal to previous year
Dividend Payment	£m	4 030	4 030	4 030	4 030	4 030	4 030	Formula used: Dividend Payment = Shares outstanding*Dividend per share
Shares Outstanding	#	5 038	5 038	5 038	5 038	5 038	5 038	Equal to 2020
Dividend per share	£/#	0,80	0,80	0,80	0,80	0,80	0,80	Equal to historical period
Net Income	£m	4 833	5 063	5 305	5 560	5 828	6 112	Formula used: Net income= EBT+ Taxation
Retained Earnings n	£m	7 558	8 591	9 865	11 394	13 192	15 273	Formula used: Retained Earnings n-1 - Dividend Payment + Net income
Other reserves	£m	2 417	2 417	2 417	2 417	2 417	2 417	Historical average
Non- controlling interests	£m	5 817	5 439	5 085	4 755	4 445	4 157	Decreasing growth rate according the tendency of the historical years

## Appendix 11: Valuation

### DCF Model

Calculation of WACC	2020	2021F	2022F	2023F	2024F	2025F	2026F	Formulas
Cost of Equity	12,506%	12,506%	12,506%	12,506%	12,506%	12,506%	12,506%	$K_e = R_f + \beta * ERP$ $WACC = (E/(E+D)) * R_e + (D/(E+D)) * R_d$ $EBIT * (1-t) / \text{Total Assets}$ $ROE = ROA + D/E [ROA - r_d (1-t)]$ $B_l = B_u * (1 + (D/E) * (1-t))$
Cost of debt	4,130%	4,130%	4,130%	4,130%	4,130%	4,130%	4,130%	
Cost of debt (after tax)	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	
E/(E+D)	58,0%	56,8%	57,5%	58,4%	59,4%	60,5%	61,7%	
D/(E+D)	42,0%	43,2%	42,5%	41,6%	40,6%	39,5%	38,3%	
Corporate tax rate	13,10%	13,10%	13,10%	13,10%	13,10%	13,10%	13,10%	
Equity+Debt	64 717	64 040	65 250	66 767	68 603	70 775	73 297	
Risk free-rate	0,74%	0,74%	0,74%	0,74%	0,74%	0,74%	0,74%	
Unlevered Beta	0,72	0,72	0,72	0,72	0,72	0,72	0,72	
Beta	1,18	1,18	1,18	1,18	1,18	1,18	1,18	
Equity Risk Premium	9,996%	9,996%	9,996%	9,996%	9,996%	9,996%	9,996%	
<b>WACC</b>	8,518%	8,399%	8,468%	8,551%	8,647%	8,754%	8,870%	

DCF Method	Unit £m	2021F	2022F	2023F	2024F	2025F	2026F
Operating Profit		6 323	6 625	6 943	7 279	7 633	8 006
Income Taxes on Operating Profit		828	868	910	954	1 000	1 049
NOPAT (Net Operating Profit After Taxes)		5 494	5 757	6 034	6 325	6 633	6 957
Depreciation&Amortization		2 867	2 973	3 085	3 202	3 326	3 457
- Increase in WCR		599	411	433	457	482	508
- CAPEX		1 345	1 384	1 424	1 465	1 507	1 550
<b>Free Cash Flow to the Firm</b>		<b>6 418</b>	<b>6 935</b>	<b>7 261</b>	<b>7 606</b>	<b>7 971</b>	<b>8 356</b>

	2021F	2022F	2023F	2024F	2025F	2026F	FCFF TV
<b>FCFF</b>	6 418	6 935	7 261	7 606	7 971	8 356	
<b>Normalized</b>	7 416	7 420	7 423	7 427	7 431	7 434	7 438

DCF Method	DCF Method using Normalized TV
Terminal Value	149 017
PV of Explicit Period of Business Cash Flow	33 509
PV of Terminal Value	97 580
<b>Intrinsic Enterprise Value</b>	<b>133 074</b>
+ Cash	3 262
- Debt	27 667
<b>Equity Value</b>	<b>108 669</b>
<b>Equity Value per share</b>	<b>£ 21,57</b>

<b>Upside Potencial</b>	<b>19,70%</b>	<b>17,51%</b>
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## Equity Method

Equity Method	Unit £m	2021F	2022F	2023F	2024F	2025F	2026F
Free Cash Flow to the Firm (FCFF)		6 418	6 935	7 261	7 606	7 971	8 356
Changes in Debt		517	48	60	73	87	102
Interest Expense* (1-t)		760	796	834	875	917	962
Free Cash Flow to the Equity		6 175	6 187	6 488	6 805	7 141	7 496

Equity Method	
Terminal Value	121 197
PV of Explicit Period of Business Cash Flow	29 822
PV of Terminal Value	78 798
<b>Equity Value</b>	<b>108 620</b>
<b>Equity Value per share</b>	<b>£ 21,56</b>

Upside Potencial 19,65%

## DDM Method

DDM Method	Unit £m	2021F	2022F	2023F	2024F	2025F	2026F
Shares outstanding		5 038	5 038	5 038	5 038	5 038	5 038
Dividends		4 030	4 030	4 030	4 030	4 030	4 030
EPS		0,96	1,00	1,05	1,10	1,16	1,21
DVS		0,80	0,80	0,80	0,80	0,80	0,80
PV DPS		0,80	0,80	0,80	0,80	0,80	0,80
Payout Ratio		0,83	0,80	0,76	0,72	0,69	0,66

DDM Method	
DPS 2026	0,80
H (6 Y)	3
Long growth rate	2,64%
Short growth rate	3,93%
TV	16,0
PV DPS	4,8
PV TV	17,4
<b>Equity Value per share</b>	<b>£ 22,24</b>

Upside Potential 23,44%

## Relative Valuation

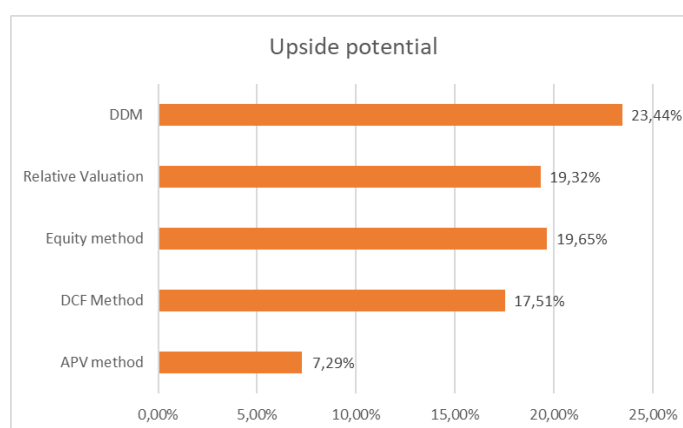
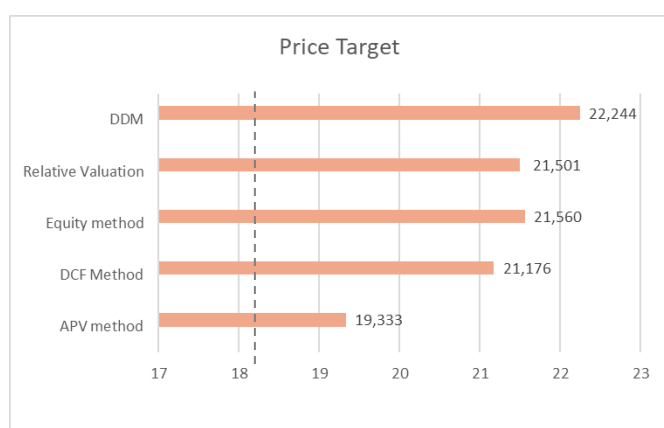
Market Data of Comparable Companies					
Competitors	Share price	Shares outstanding	Equity Market Value	Net Debt	EV
Johnson & Johnson (JNJ)	£ 122,04	2 671	325 969	13 953	339 922
Pfizer (PFE)	£ 29,29	5 598	163 965	44 691	208 657
Novartis (NVS)	£ 66,73	2 257	150 610	17 773	168 382
Merck (MRK)	£ 56,64	2 565	145 282	7 810	153 092
Bayer (BAYN)	£ 43,43	2 428	105 448	24 597	130 045

Accounting data of GSK									
	Sales			EBITDA			EBIT		
	N-1	N	N+1	N-1	N	N+1	N-1	N	N+1
	2019	2020	2021	2019	2020	2021	2019	2020	2021
<b>GSK</b>	<b>33 754,00</b>	<b>34 099,00</b>	<b>33 821,00</b>	<b>21 891,00</b>	<b>22 395,00</b>	<b>22 240,92</b>	<b>6 961,00</b>	<b>7 783,00</b>	<b>6 322,55</b>
Estimated EV of GSK based on:									
Johnson & Johnson (JNJ)	191 374,74	188 347,55	181 996,80	420 820,60	433 011,04	432 530,86	195 192,22	226 067,13	190 231,51
Pfizer (PFE)	231 492,23	278 884,56	329 868,57	399 909,98	450 418,53	492 477,51	223 640,72	259 055,35	218 024,03
Novartis (NVS)	156 896,91	158 442,11	157 092,42	295 006,59	284 323,05	266 016,51	153 195,07	187 522,11	166 774,75
Merck (MRK)	148 308,37	141 066,02	131 736,94	365 444,02	367 593,47	358 947,44	152 557,59	151 154,93	108 813,04
Bayer (BAYN)	123 712,88	117 855,17	110 232,78	321 866,74	295 931,55	264 132,95	(67 473,99)	(78 419,59)	(66 219,04)

Net debt		
Debt of GSK	27 667	27 667
Cash	3 262	3 262
Net Debt	24 404	24 404

Summary		
	Eq. Value per share	Equity Value
<b>EV/EBIT</b>	£ 21,10	106 281
<b>P/B</b>	£ 17,14	80 657
<b>P/Sales</b>	£ 26,27	123 663
<b>Average</b>	£ 21,50	103 534
<b>Upside potential</b>	19,32%	

## Summary – All methods of valuation



To reach the price target for GSK, five methods were used. The highest price obtained was completed with DDM Method (using the H-Model) with £ 22,24 and an upside potential of 23,44% which means a BUY recommendation. The lowest price target was calculated according the APV Method, resulting in a HOLD recommendation with a price of £19,33 and an upside potential equal to 7,29%.

The Flow-to-Equity Method, the price target reached was very close to Relative Valuation and DCF Method, £21,56 (19,65% of upside potential), leading also to a BUY recommendation.

## Appendix 12: Peer Group

Company Name	Revenues	Headquarters
Novo Nordisk (NVO)	122 021,00	EU
Johnson & Johnson (JNJ)	82 059,00	U.S.
Roche (RHHBY)	61 466,00	EU
Pfizer (PFE)	51 750,00	U.S.
Novartis (NVS)	48 624,00	EU
Merck (MRK)	46 840,00	U.S.
GlaxoSmithKline (GSK)	43 957,00	EU
Bayer (BAYN)	43 545,00	EU
Sanofi (SNY)	37 631,00	EU
AbbVie (ABBV)	33 266,00	U.S.
Bristol-Meyers Squibb (BMY)	26 145,00	U.S.
AstraZeneca (AZN)	24 384,00	EU
Amgen (AMGN)	23 362,00	U.S.
Gilead (GILD)	22 249,00	U.S.

Company Name	Revenues	Headquarters
Johnson & Johnson (JNJ)	82 059,00	U.S.
Roche (RHHBY)	61 466,00	EU
Pfizer (PFE)	51 750,00	U.S.
Novartis (NVS)	48 624,00	EU
Merck (MRK)	46 840,00	U.S.
GlaxoSmithKline (GSK)	43 957,00	EU
Bayer (BAYN)	43 545,00	EU

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### Recommendation System

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