**Merck & Co., Inc. (MRK)**

Logo, company name

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**Recommendation: Buy**

**GICS Sector:** Health Care

**Industry:** Pharmaceuticals

**Date:** January 7th, 2023

**Stock Exchange:** NYSE - Nasdaq

*Figure 1: Valuation Summary*

|  |  |
| --- | --- |
| Closing Price | 110.18396 |
| Target Price | 259.47 |
| Upside (potential) | 135.49% |
| Shares outstanding (million) | 2540 |
| Market Capitalization  (million) | $ 279,867 |
| Beta | 0.40 |
| PE Ratio | 19.28 |

Merck & Co., also known as MSD outside of the United States and Canada, is a multinational pharmaceutical company based in New Jersey, USA.

**Investment Summary**

Based on our analysis, we recommend a BUY rating for Merck. Our target price for the stock over the next years is $259 per share, which represents a potential upside of almost 136% from its current price of $110 (as of December 31, 2022).

*Figure 2: Share Price daily evolution 2022*

*Source: Personal Consensus.*

One of the strengths of Merck is its diverse portfolio of products, which includes many successful drugs and vaccines. The company has several key products that generate significant revenue, such as Keytruda, Gardasil, and Januvia. Keytruda, in particular, has been a major driver of growth for Merck, with sales expected to reach almost $27 billion by 2025.

Merck also invests heavily in research and development, which helps ensure a steady stream of new products and potential revenue growth. The company has a robust pipeline of drugs and vaccines in development, including several promising cancer therapies.

*Source: Personal Consensus.*

In addition, Merck has a strong balance sheet and generates substantial free cash flow, which allows the company to invest in research and development and return capital to shareholders through dividends and share repurchases.

*Figure 3: Monthly Stock Price evolution*

Merck is a strong company with a diverse portfolio of products and a promising pipeline of drugs and vaccines in development. The company's strong financial position and commitment to research and development make it an attractive investment opportunity.

*Source: Personal Consensus.*

**Business Overview**

*Figure 4: Main Products 2022*

The company’s business is primarily focused on researching, developing, manufacturing, and marketing a wide range of prescription drugs, vaccines, biologic therapies, and animal health products. Their product portfolio includes treatments for a variety of diseases such as cancer, diabetes, HIV/AIDS, cardiovascular disease, and more. In terms of revenue, Merck & Co is one of the largest pharmaceutical companies in the world. In 2022, the company reported net sales of $59.3 billion. Merck & Co has a strong research and development pipeline with a focus on oncology, vaccines, and hospital acute care. They have numerous partnerships and collaborations, including academic institutions, other pharmaceutical companies, and biotechnology firms to advance its research and development efforts.

*Figure 5: Main Numbers of the Company*

*Source: Personal Consensus.*

Company name

Description automatically generated with medium confidenceIn addition to its pharmaceutical business, Merck & Co also has a significant animal health division, which produces vaccines and pharmaceutical products for livestock and pets.

**History and Management Team**

Merck & Co was founded in 1891 in the United States, with an early focus on manufacturing therapeutic agents, including the first vaccines for diphtheria and tetanus. Over time, the company expanded its operations to include research, development, and marketing of a wide range of pharmaceutical products. Today, Merck & Co is a global leader in the pharmaceutical industry, with operations in over 140 countries.

The current Chairman of the Board and CEO of Merck & Co is Robert M. Davis, who became president in April 2021, CEO and a member of the board of directors on July 1, 2021, and chairman of the board on December 1, 2022.

*Source: Personal Consensus, Merck & Co.*

*Figure 6: R&D Forecast 2026 (millions)*

**Business segments**

Pharmaceutical segment: focused on researching, developing, manufacturing, and marketing prescription drugs for a wide range of therapeutic areas such as oncology, diabetes, cardiovascular disease, infectious diseases, and more.

Animal Health segment: produces vaccines and pharmaceutical products for livestock and pets. The segment is focused on providing innovative solutions to improve the health and well-being of animals.

Healthcare Services segment: range of services to support the delivery of healthcare, including patient support services, clinical research services, and health information technology solutions.

*Source: Personal Consensus.*

Chart, histogram

Description automatically generated**Key Strategies**

*Figure 7: ESG Pharmaceutical Industry*

**Research and development:** The company prioritizes research and development efforts to create innovative pharmaceutical products and vaccines, particularly in the fields of oncology, vaccines, and hospital acute care.

Graphical user interface, application

Description automatically generated**Strategic partnerships:** Merck & Co values strategic partnerships with academic institutions, other pharmaceutical companies, and biotechnology firms to foster collaboration, access new technologies and expertise, and diversify its product portfolio.

*Source: Pitchbook.*

**Geographic expansion:** Merck & Co has a strong global presence and is committed to expanding its global presence, particularly in emerging markets, to improve access to healthcare and broaden its reach worldwide.

*Figure 8: ESG Rating History*

*Source: Personal Consensus.*

**Digital transformation:** The company has also invested in digital health technologies, recognizing their potential to enhance patient outcomes and support healthcare providers. Through the utilization of data and technology, Merck & Co aims to better comprehend diseases, develop novel treatments, and deliver care more efficiently.

**Ethics Sustainability & Responsibility (ESR)**

*Figure 9: ESG Rating Trend*

While Merck has made significant progress towards their ESR goals in areas such as environmental sustainability and access to health, it is important to note that the company has a history of unethical behavior and legal issues, such as the Vioxx scandal. While they have taken steps to improve their public image, it is important to consider whether their pursuit of ethics is a genuine shift in the company's values or simply a public relations strategy. It is also important to note that despite that progress, there is still room for improvement. For example, while they have made progress towards reducing greenhouse gas emissions, they have not yet achieved their goal of carbon neutrality. Additionally, while they have made progress towards improving access to health for low-income individuals, they have not yet achieved their goal of reaching 30 million people by 2025.

*Source: Personal Consensus.*

**Diversity, Equity, Inclusion & Belonging**

*Figure 10: ESG Management Structure*

|  |  |
| --- | --- |
| **Responsible Party** | **Oversight for ESG topics** |
| Board | Provides oversight with respect to the Company’s ESG matters and strategy related thereto. |
| Governance Committee | Monitors and assists the Board in its oversight of our ESG matters, including ensuring that applicable ESG matters are subject to review by Board committees with relevant areas of competency, by monitoring and evaluating programs and activities, reviewing strategy regarding political engagement, and reviewing environmental sustainability practices. |
| Compensation & Management Development Committee | Assists the Board with its oversight of human capital management, including our policies and practices related to talent management, culture, diversity, equity and inclusion. This includes maintaining fair hiring and promotion practices and a commitment to sustain pay equity for employees of all genders, races, and ethnicities. |
| Audit Committee | Monitors compliance with the Company’s policies on ethical business practices. |
| Research Committee | Monitors compliance with the highest standards of scientific integrity in the conduct of our research and development. |
| Management | Management is responsible for reviewing, refining and implementing long-term ESG strategy, including through its Public Policy & Responsibility Council comprising diverse cross-functional members, and for updating the Board and its committees, as applicable, on ESG matters. |

Merck is a highly diverse company with a focus on diversity, equity, inclusion, and belonging (DEIB). They have a high percentage of women and non-white employees, and they are working towards achieving gender parity and greater racial diversity in leadership positions. Merck also places emphasis on LGBTQI+ inclusion and the inclusion of people with disabilities. They have programs in place to promote an inclusive culture and environment, such as intercultural training and digital tools for communication. Merck uses AI technology to analyze and improve their hiring practices and offer mentoring and talent programs for target groups. They also prioritize creating a workplace free of discrimination, intolerance, and harassment. Merck's commitment to DEIB is evident in their policies and programs, which have been in place for over a decade and continue to improve every year.

**Corporate Governance**

Merck & Co has a well-established governance structure to oversee ESG matters and sustainability topics, which begins with the Board, responsible for representing and protecting shareholders' interests. The Board has established four committees, composed solely of independent directors, to oversee ESG matters: Audit, Compensation & Management Development, Governance, and Research. The Board's Governance Committee ensures that ESG matters are subject to review by Board committees with relevant areas of competency and monitors compliance with the Company's policies on ethical business practices. The Compensation & Management Development Committee assists the Board with its oversight of human capital management, including talent management, culture, diversity, equity, and inclusion. The Audit Committee monitors compliance with the highest standards of scientific integrity in the conduct of research and development. Merck & Co has a Public Policy and Responsibility Council, which is a high-level forum for strategic input and guidance on social business investments, ESG approach, and public policy issues and positions. The PPRC enables policy and ESG issue identification and debate, makes recommendations to the CEO's Executive Team, informs policy and ESG strategy, and reviews performance and reporting against defined drive long-term ESG strategy. Merck & Co regularly reports on its progress on ESG matters and sustainability topics.

*Source: Personal Consensus, Merck & Co.*

**Competitive advantage**

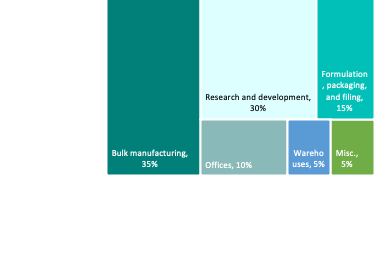
*Figure 11: Company Areas portfolio*

*with revenue*

**R&D:** substantial investment in research and development. In 2020, the company invested over $12 billion in R&D, making it one of the top R&D spenders in the pharmaceutical industry. This investment has allowed Merck to develop a wide range of innovative products, including blockbuster drugs such as Keytruda, which generated over $14 billion in sales in 2020. Merck's R&D efforts have also led to breakthroughs in areas such as cancer treatment, HIV/AIDS therapy, and vaccines.

**Diversified Portfolio:** the company's portfolio includes products for the treatment of cardiovascular disease, diabetes, infectious diseases, oncology, and more. This diversification not only helps to mitigate risks associated with individual products but also allows Merck to capture a broader market share and better serve the needs of patients and healthcare providers worldwide.

*Source: Personal Consensus.*

**Global Reach:** the company operates in more than 140 countries and has a strong presence in both developed and emerging markets. In 2020, over half of Merck's revenue came from outside the United States, reflecting the company's ability to successfully navigate and compete in diverse global markets. Merck's global footprint also allows the company to leverage economies of scale and take advantage of local talent and resources.

*Figure 12: Energy use Pharmaceutical Industry*

*Source: Personal Consensus.*

**Industry Overview**

The pharmaceutical industry, in which Merck and Co operates, is a highly regulated and competitive industry focused on researching, developing, and marketing drugs to prevent, diagnose, and treat diseases. It plays a critical role in advancing public health by providing effective and safe medications to patients worldwide.

*Figure 13: Industry Forecast (billions)*

The industry is characterized by high levels of research and development (R&D) expenditures, long development timelines, and a high rate of drug candidate failures. The success of pharmaceutical companies depends on their ability to develop innovative products that meet unmet medical needs and to navigate the regulatory landscape to bring these products to market.

In recent years, the industry has faced increasing pressure from governments, insurers, and patients to provide affordable medicines, which has led to pricing pressure and consolidation within the industry. Additionally, the emergence of biologics and biosimilars has created new challenges and opportunities for pharmaceutical companies.

*Source: Personal Consensus.*

Chart, bar chart

Description automatically generatedDespite these challenges, the industry remains a vital contributor to global health, with a strong track record of innovation and life-saving treatments. With an aging population and increasing healthcare needs worldwide, the demand for new and innovative medicines is expected to continue to grow, providing opportunities for companies like Merck and Co to make a significant impact on patient health.

*Figure 14: Age distribution Population (US)*

**Demand Drivers**

Aging population: As the global population ages, there is a higher incidence of chronic diseases such as diabetes, heart disease, and cancer. This has led to an increased demand for drugs to manage and treat these conditions.

*Source: U.S. Census Bureau*

Lifestyle changes: Changes in lifestyle, such as unhealthy diets and sedentary behavior, have contributed to an increase in obesity and related health issues. This has created a growing market for drugs to treat obesity and related conditions.

*Figure 15: Change annual drug spending (customers)*

Innovation: Advances in technology and research have led to the development of new drugs and treatments for a wide range of conditions. As consumers become more aware of these new treatments, demand for them increases.

Emerging markets: Developing countries with growing populations and economies are experiencing an increase in demand for healthcare services and products, including pharmaceuticals.

A map of the world

Description automatically generated with medium confidenceGovernment policies: Government policies and regulations can also have a significant impact on demand for pharmaceuticals. For example, the Affordable Care Act in the United States has increased access to healthcare and created a larger market for pharmaceutical companies.

*Source: Personal Consensus.*

*Figure 16: % population vaccinated.*

**COVID-19 Effects**

Chart

Description automatically generated with medium confidenceThe pandemic has led to increased demand for drugs and vaccines that can treat or prevent COVID-19. Pharmaceutical companies have had boost production of these drugs to meet the demand. On the other hand, people deferred non-essential medical treatments, leading to lower demand for other types of medicines which also had an effect on the revenue of Merck & Co. Furthermore, the pandemic has caused delays in the development of drugs for other diseases. Clinical trials have been disrupted, and researchers have had to shift their focus to COVID-19. There also was a disruption of the supply chain, leading to a shortage of raw materials and ingredients required to produce medicines and vaccines. This resulted in production delays and supply.

*Source: Personal Consensus.*

Finally, COVID-19 has led to changes in regulatory requirements for drugs and medical devices. Some countries have expedited the approval process for COVID-19 treatments and vaccines, while others have tightened their regulatory requirements. Although we’ve already seen the heavy impacts of the pandemic, and we’re moving past it, we are still to see what the long-term repercussions will be on the company.

*Figure 17: Covid-19 deaths as a % of all-cause deaths*

**Headwinds and Tailwinds**

*Source: Personal Consensus, OECD.*

Some headwinds in the pharmaceutical industry include regulatory hurdles, patent expirations, pricing pressure, and increasing competition. For example, before a new drug can be sold, it has to be tested extensively, which can take a long time and cost a lot of money. Also, when a drug's patent expires, other companies can start making cheaper versions, which can hurt the original company's sales.

*Figure 18: Average Time new drug*

On the other hand, there are also tailwinds that can help pharmaceutical companies. These include things like new scientific discoveries, growing demand for certain drugs, and favorable regulatory policies. For example, if a company creates a new drug that can treat a disease that no one else can treat, that can be a huge boost for them. Additionally, if more people need drugs to treat a certain illness, that can be good for the companies that make those drugs. Finally, if the government makes it easier or faster for companies to get their drugs approved, that can also be a tailwind for them.

*Source: Personal Consensus.*

*Source: Personal Consensus.*

*Figure 19: Average Cost new drug*

**INVESTMENT RISKS**

Chart, bar chart

Description automatically generated**Market Risks**

*Figure 20: Patent Fillings per year*

*Source: PitchBook*

MR1: Patent Expirations. Merck & Co faces significant patent expirations in the coming years, including key drugs like Keytruda and Januvia. This could lead to increased competition from generic drug makers and significant revenue loss. Valuation Impact (hypothetical): A 10% decrease in revenue due to patent expirations results in a 15% downside to our target price. Mitigation: Merck & Co has a robust pipeline of new drugs and is actively investing in research and development to bring new products to market.

Graphical user interface, text, application

Description automatically generatedMR2: Competitive Pressure. Merck & Co faces significant competition from other pharmaceutical companies, particularly in key therapeutic areas like oncology and diabetes. Valuation Impact (hypothetical): A 10% decrease in revenue due to increased competition results in a 5% downside to our target price. Mitigation: Merck & Co is actively Logo, company name

Description automatically generatedinvesting in research and development to bring new products to market and has a strong portfolio of existing products.

*Figure 21: Litigation Figures for Merck drugs*

Timeline

Description automatically generated with medium confidenceMR3: Litigation Risk. As a large pharmaceutical company, Merck & Co faces significant litigation risk, including product liability lawsuits and intellectual property disputes. Valuation Impact (hypothetical): A 10% increase in legal costs results in a 5% downside to our target price. Mitigation: Merck & Co has a strong legal team and is actively managing its litigation risk through careful risk management and compliance measures.

*Source: Personal Consensus.*

*Source: Personal Consensus.*

*Figure 22: Risk Likelihoods*

MR4: Foreign Exchange Risk. As a global company, Merck & Co is exposed to foreign exchange risk, particularly in emerging markets. Valuation Impact (hypothetical): A 10% decrease in revenue due to unfavorable foreign exchange rates results in a 2% downside to our target price. Mitigation: Merck & Co actively manages its foreign exchange risk through hedging and other risk management strategies.

**Political Risks**

PR1: Drug Pricing Policies. Government regulations on drug prices, particularly in the US, could impact Merck's revenue and profitability. Valuation Impact (hypothetical): A 10% decrease in US pharmaceutical sales revenue lowers our target price by 2.95%. Mitigation: Merck can focus on expanding its presence in other countries with more favorable pricing policies and continue to develop innovative therapies that provide significant patient benefits.

*Figure 23: Risk Impact*

Chart

Description automatically generatedPR2: Regulatory Approval. Regulatory approvals are essential for Merck to bring new products to market and maintain its existing product portfolio. Any delay or failure to obtain regulatory approval could lead to significant revenue losses. Valuation Impact (hypothetical): A delay in the approval of a significant product lowers our target price by 5.11%. Mitigation: Merck can diversify its product portfolio, pursue partnerships, and engage in ongoing dialogue with regulators to improve the approval process.

PR3: Political Instability. Merck operates in countries with varying degrees of political stability, and any instability or political unrest could impact the company's operations and revenue. Valuation Impact (hypothetical): A 10% decrease in revenue from a particular country lowers our target price by 0.63%. Mitigation: Merck can diversify its operations across multiple countries, maintain strong relationships with local stakeholders, and continuously monitor political situations to respond quickly to any instability.

*Source: Personal Consensus.*

|  |  |  |
| --- | --- | --- |
| MR1: Patent Expirations | B1: R&D Risk | M4: Foreign exchange Risk |
| PR2: Regulatory Approval | PR1: Drug Pricing Policies |  |
| MR2: Competitive Pressure |  | PR3: Political Instability |
| B2: Supply Chain Risk | MR3: Litigation Risk | PR4: Trade Policies |

PR4: Trade Policies. Changes in trade policies, particularly in countries where Merck has significant operations or exports, could impact the company's revenue and profitability. Valuation Impact (hypothetical): A 10% decrease in revenue from a particular country due to trade policy changes lowers our target price by 0.51%. Mitigation: Merck can diversify its operations and supply chain across multiple countries and engage in ongoing dialogue with policymakers to promote trade policies that benefit the company.

*Figure 24: Risk Matrix*

**Operational Risks**

Chart, bar chart

Description automatically generatedB1. Research and Development Risk: Merck's future growth and profitability depend heavily on its ability to develop and commercialize new products. However, drug development is a complex and uncertain process, with high failure rates, regulatory risks, and long development timelines. Valuation impact: A significant delay or failure in the development of a major pipeline product could result in a downward revision of earnings estimates and a decrease in the company's stock price. Mitigation: Merck has a diverse pipeline of drug candidates, including collaborations and licensing agreements, and a strong track record of successful drug development. The company also invests heavily in R&D, with over $13 billion spent on R&D in 2020, to maintain its competitive edge.

*Figure 25: Shortage reports for innovative products in the US*

*Source: Ernst & Young.*

*Source: Personal Consensus.*

Chart, bubble chart

Description automatically generatedB2. Supply Chain Risk: Merck's manufacturing operations are complex, with many suppliers and vendors involved in the process. Any disruptions or delays in the supply chain, including shortages of raw materials or active pharmaceutical ingredients, could result in production delays and affect Merck's ability to meet demand. Valuation impact: A supply chain disruption could lead to reduced revenue and earnings, lower margins, and reputational damage. Mitigation: Merck has implemented a risk management program to identify and mitigate supply chain risks, including a robust supplier qualification process and contingency plans to address potential disruptions. The company also maintains safety stock of critical raw materials and actively monitors its suppliers' financial stability and compliance with regulations.

*Figure 26: Merck Revenue and Operating Profit vs main competitors.*

**Financial Analysis**

**Revenue and Profitability**

Merck & Co reported total revenue of $47.6 billion for the fiscal year 2020. This represents a decrease of 1.3% compared to the previous year's revenue of $48.9 billion. The decline in revenue is primarily attributed to the impact of the COVID-19 pandemic on the healthcare industry, as well as patent expirations of some of Merck's key products.

*Source: Personal Consensus.*

*Figure 27: Revenue and Net income evolution and forecast*

Despite the decline in revenue, they were able to maintain a strong level of profitability. The company reported a gross profit margin of 74.6%, which is a slight increase from the previous year's margin of 73.9%. This indicates that Merck was able to effectively manage its costs and maintain a high level of efficiency in its operations.

In terms of net income, Merck & Co reported $9.9 billion for the fiscal year 2020, which represents an increase of 12.8% compared to the previous year's net income of $8.8 billion. This increase in net income is largely attributed to the company's ability to reduce its operating expenses and increase its research and development investments.

Chart, waterfall chart

Description automatically generatedOverall, Merck & Co has been able to maintain a strong level of profitability despite the challenges posed by the COVID-19 pandemic and patent expirations. The company's ability to effectively manage its costs and increase its research and development investments bodes well for its future growth and success in the pharmaceutical industry.

*Source: Personal Consensus.*

*Figure 28: Capital Structure*

The predicted data for the years 2023-2027 suggests that the company’s revenue is expected to continue growing steadily, with an average annual growth rate of around 4.5%. This trend is in line with their historical revenue growth, indicating a consistent performance.

Furthermore, the predicted net income also displays a similar trend, with an average annual growth rate of around 7.3%. This indicates that the company is expected to maintain its profitability and generate higher earnings in the coming years.

**Capital Investments**

Chart, waterfall chart

Description automatically generatedIn the recent years, Merck & Co.'s capital investments increased steadily from $2.90 billion to $3.57 billion, representing a compound annual growth rate (CAGR) of 5.3%. The company allocated the majority of its capital investments to property, plant, and equipment (PP&E), which accounted for 82.5% of the total capital investments in 2022.

Looking ahead, the company predicts that capital investments will continue to increase over the next five years, reaching a projected $4.41 billion by 2027. This represents a CAGR of 4.4% from 2022 to 2027. As with the historical data, the majority of capital investments are expected to be allocated to PP&E, accounting for approximately 84.6% of the projected capital investments in 2027.

Chart, waterfall chart

Description automatically generatedBased on my analysis, it is likely for the company to continue to invest in their long-term growth through capital expenditures in PP&E.

*Source: PitchBook*

*Figure 29: Market Capitalization comparison with competitors*

Chart, pie chart

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**Shareholder’s Equity**

The shareholder's equity for Merck & Co has seen a steady increase over the years 2018-2022, growing from $23.9 billion in 2018 to $32.2 billion in 2022. This increase can be attributed to the company's consistent profitability and effective management of assets.

Graphical user interface, text, application

Description automatically generatedFrom my analysis we can see that the shareholder's equity is expected to continue its upward trend, with an estimated value of $42.6 billion in 2027. This is a positive indication that the company's is well-positioned to maintain its financial health and stability, as it demonstrates a strong foundation and ability to generate value for its shareholders.

*Source: Personal Consensus.*

**Ratios**

**Performance**

*Figure 30: Merck’s Financial information*

|  |  |
| --- | --- |
| **Financial Information** |  |
| Price per share | 110.18 |
| Shares outstanding (millions) | 2540 |
| Interest Expense on the I/S | 962 |
| Weighted Average Cost of Capital (%) | 4.42% |
| Cost of Equity (%) | 4.68% |
| Tax Rate (%) | 14.10% |

|  |  |
| --- | --- |
| **Value Measurement** | |
| Market Capitalization | 279867 |
| Market Value Added (MVA) | 233876 |
| Market to Book ratio | 6.09 |
| Price to Earnings | 19.27 |

Based on my analysis, we can conclude that Merck has demonstrated strong profitability and financial performance in recent years and is expected to continue to do so in the future. Despite some variability in certain metrics, such as operating profit margin and return on assets, Merck's performance has generally been strong and consistent. Their consistently high return on sales and net profit margin indicates that they are generating a significant profit from their sales revenue, while their consistently high return on equity suggests that they are effectively using their equity to generate profits. Both Residual Income (RI) and Economic Value Added (EVA) have consistently increased over the years, indicating that Merck is creating more value over and above their required rate of return. The data suggests that Merck is a financially healthy company with a sound business model and effective management and is expected to continue to perform well in the future.

*Figure 31: Merck’s Value measurement*

*Source: Personal Consensus.*

**Liquidity**

The calculations show that Merck has maintained a relatively strong level of liquidity over the years. The current ratio has generally been above 1, indicating that they have sufficient current assets to cover their current liabilities. The quick ratio has also been relatively stable and generally above 0.7, indicating that they have sufficient quick assets to cover their current liabilities. While there has been some variability in the accounts receivable turnover and days in receivable metrics, they have generally been at reasonable levels. The accounts receivable turnover indicates how quickly a company collects its outstanding receivables, while the days in receivable metric measures the average number of days it takes to collect receivables.

*Source: Personal Consensus.*

*Figure 32: Main performance ratios*

*Source: Personal Consensus.*

*Figure 33: Liquidity and Efficiency ratios*

In general, a higher accounts receivable turnover and a lower days in receivable metric are seen as positive indicators of a company's liquidity.

**Efficiency**

While the company has had some ups and downs in its productivity and efficiency metrics, it is generally performing well in this area. The relatively stable inventory turnover and the generally positive trend in total asset turnover suggest that the company is effectively utilizing its resources to generate revenue. However, the variability in days in inventory and the decline in some turnover metrics suggest that there may be room for improvement in certain areas of the company's operations.

*Source: Personal Consensus.*

*Source: Personal Consensus.*

*Figure 34: Debt Ratio Evolution*

**Leverage**

Based on my analysis, we can see that the company has been reducing its debt ratio and asset-to-equity ratio over the past years, which suggests a decreasing level of leverage. Additionally, the current liabilities to total debt ratio has remained relatively stable, indicating that the company has a good balance between short-term liabilities and long-term debt.

*Figure 35: DuPont breakdown*

**Dupont**

DuPont Analysis shows that the gradually increased on the return on equity (ROE) can be attributed to a steady increase in return on sales, as well as an increase in asset turnover. Additionally, the asset to equity ratio has decreased over the years, indicating that the company is relying less on debt financing.

**Valuation**

*Source: Personal Consensus.*

**WACC**

*Figure 36: Merck & Co Cost of equity and debt*

Diagram

Description automatically generatedMerck's WACC is 4.42%. This means that for each dollar the company invests in a project, it must generate a return of at least 4.42% to create value for its shareholders. The WACC is calculated using the cost of debt and the cost of equity, weighted by the proportion of debt and equity in the company's capital structure.

In Merck's case, the cost of debt is 3.02% and the cost of equity is 4.68%. These figures are based on the company's capital structure, which includes both debt and equity. The WACC calculation reflects the blended cost of all of the company's capital resources, weighted by their proportion in the company's capital structure.

*Source: Personal Consensus.*

*Figure 37: WACC Comparison with competitors*

The 4.42% WACC suggests that the company is able to generate value for its shareholders with a relatively low level of risk.

**DCF**

The DCF analysis projects the free cash flows of the firm for the next 5 years, and then calculates the present value of those cash flows, as well as the terminal value beyond year 5. The present value of the cash flows is then added to the present value of the firm's terminal value to obtain the intrinsic value of the firm. The intrinsic value is then divided by the number of shares outstanding to obtain the intrinsic value per share.

Chart

Description automatically generatedIn my analysis, we see that the projected free cash flows of the firm are increasing steadily over the next five years, from $10.6 million in 2022 to $18.2 million in 2024, before dropping slightly to $17.5 million in 2025, and then jumping significantly to $1.07 billion in 2026 due to the inclusion of the terminal value. The terminal value is calculated using a perpetuity growth rate of 2.5% and a discount rate of 4.46%, resulting in a terminal value of $1.05 billion.

*Figure 38: Target Prices on Relative Methods*

*Source: Personal Consensus.*

*Figure 39: Current Price vs Target Price*

*Source: Personal Consensus.*

Using a discount rate of 4.42%, which is based on the firm's weighted average cost of capital (WACC), the present value of the projected free cash flows and terminal value is calculated to be $917.4 million, which indicate a steady growth in operating cash flows with an average annual growth rate of 11.5%. Subtracting the market value of the firm's debt and preferred stock of $38.9 million results in an intrinsic value of common stock of $878.6 million. Dividing this value by the number of shares outstanding of 2.54 billion results in an intrinsic value per share of $345.89.

*Source: Personal Consensus.*

Based on my DCF valuation, the intrinsic value of the company's common stock is calculated to be $345.89 per share. This represents a significant premium to the current market price of $110.18 per share as of today, hence, the stock appears undervalued and may be a good investment opportunity, so I would give a recommendation to buy this stock.

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1. Income Statement
2. Balance Sheet
3. Cash Flow
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5. Free Cash Flow
6. Valuation
7. Multiples
8. Financial Analysis (Ratios)
9. Corporate Governance
10. Supply Chain

Appendix 1: Income Statement

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Appendix 2: Balance Sheet

Table

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Appendix 3: Cash Flow

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Appendix 4: Cost of Capital

Appendix 5: Free Cash Flow

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Appendix 6: Valuation

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Appendix 7: Relative Multiples

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Appendix 8: Financial Analysis (Ratios)

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Appendix 9: Corporate Governance

Appendix 10: Supply Chain

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