

Date

Recommendation: BUY, Shares, ValueIntrinsic Value: Blank

Analyst: Morkos Ghattas, Ishbah Hilal, Kayla Chen, Brian Gao

Company Name(Ticker): Merck & Co (MRK)

Current Price: 109.81

Recommendation: Buy

Upside (#Shares): 13.09%(6 shares)

Executive Summary

Merck & Co. is a leading global pharmaceutical company that specializes in the research, development, manufacturing, and distribution of innovative prescription medicines, vaccines, biologics, and animal health products. With a history dating back to 1891, the company has become one of the largest pharmaceutical companies in the world, with a diverse product portfolio that includes some of the most well-known drugs and vaccines in the industry. Merck & Co.'s commitment to innovation and research has earned it a strong reputation in the healthcare industry, with numerous awards and accolades recognizing its contributions to medical science. Today, the company continues to invest heavily in research and development, with a focus on discovering new treatments and therapies for a wide range of medical conditions.

Company Overview

Merck & Co. is a global pharmaceutical company that specializes in the research, development, manufacturing, and distribution of innovative prescription medicines, vaccines, biologics, and animal health products. The company has a strong presence in the healthcare industry and is committed to improving the lives of patients around the world.

Brief History:

Merck & Co. was founded in 1891 and is headquartered in Kenilworth, New Jersey. The company's founders were George Merck, who immigrated to the United States from Germany in the mid-19th century, and Theodore Weicker, a chemist who worked at a pharmaceutical company in New York City. Over the years, Merck & Co. has become one of the largest pharmaceutical companies in the world, with a diverse portfolio of products and a strong commitment to innovation and research.

Types of Products:

Merck & Co.'s product portfolio includes prescription drugs, vaccines, biologics, animal health products, and consumer health products. Some of the company's most well-known products include:

1. Prescription drugs:
 - Keytruda (pembrolizumab): a cancer immunotherapy drug used to treat various types of cancer, including melanoma, non-small cell lung cancer, and head and neck squamous cell carcinoma.
 - Januvia (sitagliptin): a drug used to treat type 2 diabetes by regulating blood sugar levels.
 - Propecia (finasteride): a drug used to treat male pattern baldness.
 - Zetia (ezetimibe): a cholesterol-lowering drug used to reduce the risk of cardiovascular disease.
 - Remicade (infliximab): a biologic drug used to treat autoimmune diseases such as rheumatoid arthritis and Crohn's disease.
2. Vaccines:

- Gardasil (human papillomavirus (HPV) vaccine): a vaccine used to prevent HPV infections and associated cancers.
- Rotateq (rotavirus vaccine): a vaccine used to protect against rotavirus, a leading cause of severe diarrhea in infants and young children.
- 3. Biologics:
 - Keytruda (pembrolizumab): a cancer immunotherapy drug used to treat various types of cancer, including melanoma, non-small cell lung cancer, and head and neck squamous cell carcinoma.
 - Remicade (infliximab): a biologic drug used to treat autoimmune diseases such as rheumatoid arthritis and Crohn's disease.
- 4. Animal health products:
 - Bravecto (fluralaner): a flea and tick treatment for dogs and cats.
 - Nobivac (vaccine line): a range of vaccines for dogs, cats, and livestock.
- 5. Consumer health products:
 - Coppertone (suncare line): a range of sunscreen products for adults and children.
 - Dr. Scholl's (footcare line): a range of footcare products, including insoles and orthotics.
 - Femstat (women's health line): a range of products for vaginal health.

Prominence in the Drug Manufacturing Space:

Merck & Co. is one of the largest and most respected pharmaceutical companies in the world, with a strong reputation for innovation and research. The company has a long history of developing groundbreaking drugs, including the first statin drug to be approved by the FDA, and has been recognized for its contributions to the healthcare industry with numerous awards and accolades. Today, Merck & Co. continues to invest heavily in research and development, with a focus on discovering new treatments and therapies for a wide range of medical conditions.

Investment Thesis

Diverse Portfolio

Merck & Co. is a pharmaceutical company with a diverse product portfolio, which includes drugs in the fields of oncology, cardiovascular, infectious diseases, and vaccines. The company has shown strong growth in recent years, with several key drugs performing exceptionally well, including Keytruda, Lynparza, and Lenvima.

Keytruda, a cancer immunotherapy drug, had an impressive 27% year-over-year growth, driven by its expanding indications and high efficacy rates in various types of cancer. Lynparza, a drug used to treat certain types of ovarian and breast cancers, grew 18% year-over-year, driven by increasing adoption rates and expanded indications. Lenvima, a drug used to treat several types of cancer, including thyroid cancer, renal cell carcinoma, and liver cancer, grew 28% year-over-year, driven by strong performance in Japan and increasing adoption rates in the United States.

The company's diverse product portfolio provides a cushion against market volatility, and the growing demand for oncology and cardiovascular drugs is expected to continue. Additionally, Merck & Co.'s focus on research and development, combined with its strong financial position, bodes well for future growth and development of innovative products.

Overall, Merck & Co. is an attractive investment opportunity, with a diverse portfolio of products and a track record of strong growth. With the company's focus on research and development and the growing demand for oncology and cardiovascular drugs, there is significant potential for long-term growth and value creation for investors.

Collabritions (Acquisitions)

Merck & Co.'s partnerships and collaborations with other companies have been a key driver of its success, with notable examples including Keytruda, which was developed in collaboration with Moderna. These collaborations allow the company to leverage the strengths and expertise of other companies, accelerating the development of new drugs and bringing them to market faster. In addition, these partnerships also reduce the risk and cost of research and development, making it a more attractive investment opportunity.

Merck & Co.'s recent acquisition of Acceleron Pharma and Imago Biosciences further demonstrates the company's commitment to expanding its portfolio and diversifying its offerings. The acquisition of Acceleron Pharma provides Merck & Co. with exposure to the cardiovascular industry, with Acceleron's lead drug sotatercept showing promising results in treating various cardiovascular conditions. Similarly, the acquisition of Imago Biosciences provides Merck & Co. with access to innovative therapies for treating various diseases, including cancer and fibrosis.

Overall, Merck & Co.'s collaborations and acquisitions present an attractive investment opportunity, as they allow the company to expand its portfolio, diversify its offerings, and bring innovative drugs to market faster and more efficiently. With the company's strong financial position and focus on research and development, there is significant potential for long-term growth and value creation for investors.

Valuation, Recommendation, & Risks

Using conservative growth for Merck, the team conducted a DCF and found that Intrinsic value came out to be \$124.2. Revenues growth is estimated to decrease in 2023 due to the recessionary enviornment and the higher interest rate.(Figure 3)

Regulatory Risks

There are several regulatory risks facing Merck & Co., one of which is the CREATES Act, which was passed in December 2019. The CREATES Act is aimed at increasing competition for generic drugs, which could impact Merck & Co.'s revenue streams. The act allows generic drug manufacturers to sue brand-name companies like Merck & Co. for not providing enough samples of their drugs, which can be used to develop generic versions. This could increase competition for Merck & Co.'s drugs and potentially lower prices, reducing the company's revenue and profitability.

Another regulatory risk is the Prescription Drug User Fee Act (PDUFA), which was recently reauthorized in September 2022. The PDUFA allows the FDA to collect fees from pharmaceutical companies like Merck & Co. in order to approve and test drugs. While this fee collection is necessary for the FDA to perform its duties, it can also increase costs for companies like Merck & Co. who must pay these fees to bring new drugs to market. These increased costs could impact the company's financial performance and profitability.

Investors should closely monitor the impact of these regulatory risks on Merck & Co.'s operations and financial performance, as they could have a significant impact on the company's revenue streams and profitability. The company's ability to adapt to changes in the regulatory environment and develop new drugs and therapies to replace older products will be critical to its long-term success.

Company: Blank (Ticker)

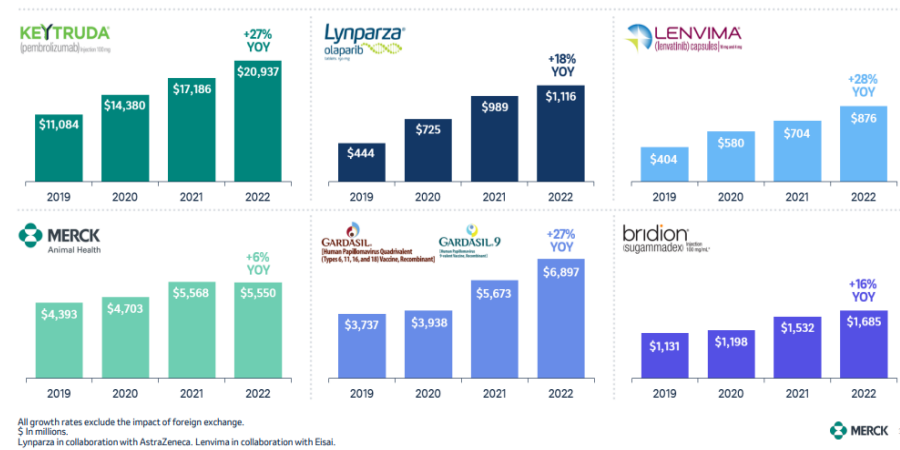
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Expiration of Patents

One of the key risks for Merck & Co. is the expiration of its patents. Patents provide a temporary monopoly on a particular drug or product, allowing companies like Merck & Co. to generate significant revenue from their products. However, patents only last for a limited time, typically around 20 years, after which other companies can produce and sell generic versions of the drug. This can result in a significant decline in revenue for the company, as we have already seen with the upcoming expiration of patents for drugs like Januvia and Janumet, which generated \$1.1 billion globally in the third quarter of 2022. In addition, the expiration of patents for other key drugs like Keytruda, Gardasil, and Lenvima in the coming years presents a significant risk to the company's revenue streams. As a result, investors should closely monitor the expiration of Merck & Co.'s patents and the company's efforts to develop new drugs and therapies to replace these products in its portfolio.

Appendix



(Figure 1) Yoy growth of product line.

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Merck & Co

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Hylander Student Investment Fund DCF Template

Winter 2023

Assumptions	2019A	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Revenue Growth	-8%	6%	17%	22%	10.0%	14.0%	16.0%	14.0%	12.0%
EBIT Margin	27.2%	27.1%	32.6%	38.5%	31%	31%	31%	31%	31%
Interest Rate	2.5%	2.8%	2.3%	3.0%	5%	4.8%	4.5%	4%	4%
Tax Rate	16%	13%	10%	9%	12%	12%	12%	12%	12%
Operating Forecast	2019A	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Revenue	39,121	41,518	48,704	59,283	65,211	74,341	86,235	98,308	110,105
Growth	-8%	6%	17%	22%	10.0%	14.0%	16%	14%	12%
Operating Expenses	28,483	30,276	32,847	36,482	44,996	51,295	59,502	67,833	75,973
EBIT	10,638	11,242	15,857	22,801	20,216	23,046	26,733	30,476	34,133
Margin	27%	27%	33%	38%	31%	31%	31%	31%	31%
D&A	4,520	3,077	3,218	3,123	3,772	5,340	5,230	6,820	6,676
EBITDA	15,158	14,319	19,075	25,924	23,988	28,386	31,963	37,296	40,809
Interest Expense	619	772	770	1,100	2,000	1,900	1,800	1,700	1,520
Tax	1,565	1,340	1,521	1,918	2,186	2,537	2,992	3,453	3,914
Operating Cash Flows	13,593	12,979	17,554	24,006	21,802	25,849	28,971	33,843	36,895
Capex	8,447	5,544	14,227	(1,764)	11,861	24,879	3,858	26,632	4,882
Change in NWC		(4,827)	5,944	4,868	(10,877)	52	68	69	67
Unlevered FCF	5,146	12,262	(2,617)	20,302	20,818	917	25,046	7,143	31,946
Fully Diluted Shares	2,530	2,541	2,538	2,542	2,542	2,542	2,542	2,542	2,542
ST Debt + ST Operating Leases	1,901	2,300	2,300	5,000	5,000	5,000	5,000	5,000	5,000
LT Debt + LT Operating Leases	22,736	25,360	30,630	35,000	35,000	35,000	35,000	35,000	35,000
Discount Period					1	2	3	4	5
Discount Factor					94.47%	89.24%	84.31%	79.65%	75.24%
PV of FCF					19,666	819	21,116	5,689	24,036
Sensitivity									

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WACC Build-Up	
Cost of Debt	3.0%
Tax Rate	8.7%
Tax-Shielded Cost of Debt	2.7%
Risk Free Rate (10 yr T-Bond)	4.1%
Market Return (Historical 10+ years)	10.0%
Market Risk Premium	5.9%
Beta (3 year Monthly vs R3000)	0.37
Cost of Equity	6.3%
Total Debt	\$40,000.0
Market Cap (Millions)	\$278,615.0
Debt / Total Value	12.6%
Equity / Total Value	87.4%
WACC	5.9%

Valuation	
WACC	5.9%
Choose CGM or Exit Multiple in TV?	Exit Multiple
Exit Multiple (Peer Median EV/EBITDA)	9.00x
Perpetual Growth Rate (CGM)	2.0%
Terminal Year Unlevered FCF	\$31,946.1
Terminal Value	\$367,280.6
Discount Factor	75.24%
PV of Terminal Value	*****
Total Enterprise Value	\$347,670.5
Less: Debt	40,000
Plus: Cash & Cash Equivalents	\$8,000
Implied Equity Value	\$315,670
Shares Outstanding (millions)	2,542.0
Implied Share Price	\$124.2

(Figure 2)