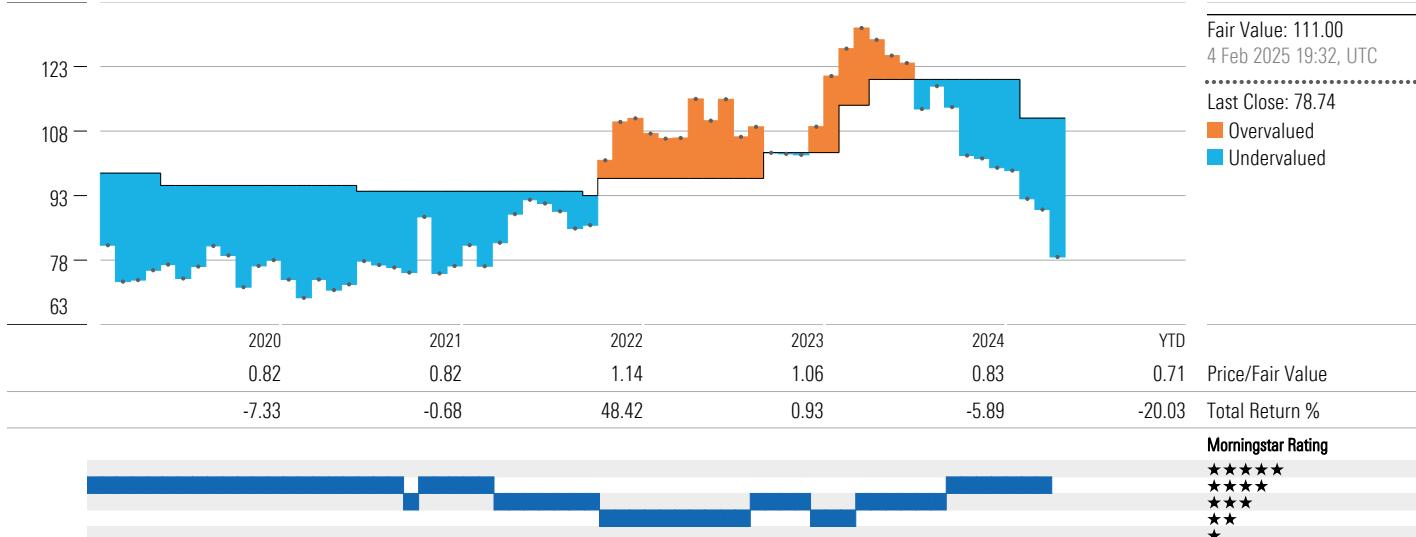


Merck & Co Inc MRK ★★★★ 23 Apr 2025 21:26, UTC

| Last Price | Fair Value Estimate | Price/FVE | Market Cap | Economic Moat™ | Equity Style Box | Uncertainty | Capital Allocation | ESG Risk Rating Assessment ¹ |
|--------------------------|-------------------------------------|-----------|-------------------------------|--|---|-------------|--------------------|--|
| 78.74 USD 23 Apr 2025 | 111.00 USD 4 Feb 2025 19:32, UTC | 0.71 | 198.04 USD Bil 24 Apr 2025 |  Wide |  Large Value | Medium | Standard |  2 Apr 2025 05:00, UTC |

Price vs. Fair Value



Total Return % as of 23 Apr 2025. Last Close as of 23 Apr 2025. Fair Value as of 4 Feb 2025 19:32, UTC.

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The primary analyst covering this company does not own its stock.

The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

Merck Earnings: Gardasil Declines as Expected, and Tariffs Are Having Minimal Impact So Far

Analyst Note Karen Andersen, CFA, Director, 24 Apr 2025

Merck's revenue fell 2% year over year (and grew at 1% in constant currencies) to \$15.5 billion, and management held its guidance for revenue and EPS except for business development charges. An estimated \$200 million tariff headwind for 2025 is being balanced by tailwinds from a weaker US dollar.

Why it matters: Investors have been particularly concerned about demand for HPV vaccine Gardasil in China, with uncertainty around pharmaceutical tariffs also weighing on shares.

- ▶ Gardasil's 41% (\$1.1 billion) decline in the first quarter was in line with our expectations, and we're encouraged by strong demand and pricing for the vaccine in other markets outside of China.
 - ▶ Tariffs announced so far (mostly relating to trade with China) have reduced management's gross margin guidance for the year by 50 basis points, and we think bringing Keytruda inventory to the US will allow Merck to avoid a significant hit from further pharmaceutical tariffs this year

The bottom line: We're maintaining our \$111 fair value estimate for wide-moat Merck following a quarter that held both expected Gardasil declines as well as impressive sales of newer products like vaccine Capvaxine and pulmonary arterial hypertension drug Winrevaril.

- ▶ We expect potential approval of a subcutaneous version of oncology drug Keytruda in September could help protect a portion of sales from Medicare negotiation and patent expirations in 2028.
 - ▶ We're awaiting key data from several pipeline programs that we think look underappreciated by

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| | | |
|---|---|--|
| Sector  Healthcare | Industry Drug Manufacturers - General | investors, including an oral cholesterol-lowering program (2025 data) and several antibody-drug conjugates in oncology (2027). |
|---|---|--|

Business Description

Merck makes pharmaceutical products to treat several conditions in a number of therapeutic areas, including cardiometabolic disease, cancer, and infections. Within cancer, the firm's immuno-oncology platform is growing as a major contributor to overall sales. The company also has a substantial vaccine business, with treatments to prevent pediatric diseases as well as human papillomavirus, or HPV. Additionally, Merck sells animal health-related drugs. From a geographical perspective, just under half of the company's sales are generated in the United States.

Business Strategy & Outlook

Karen Andersen, CFA, Director, 27 Sep 2024

Merck's combination of a wide lineup of high-margin drugs and a pipeline of new drugs should ensure strong returns on invested capital over the long term. Further, following the divestment of the Organon business in June 2021, the remaining portfolio at Merck holds a higher percentage of drugs with strong patent protection. On the pipeline front, after several years of only moderate research and development productivity, Merck's drug development strategy is yielding important new drugs.

Merck's new products have mitigated the generic competition, offsetting the recent major patent losses. In particular, Keytruda for cancer represents a key blockbuster with multi-billion-dollar potential: It holds a first-mover advantage in one of the largest cancer indications of non-small cell lung cancer with excellent clinical data. Also, we expect new cancer drug combinations will further propel Merck's overall drug sales. However, we expect intense competition in the cancer market with several competitive drugs likely to report important clinical data over the next couple years in earlier stage cancer settings. Other headwinds include generic competition, notably to diabetes drug Januvia, but potentially not until 2026 in the US.

After several years of mixed results, Merck's R&D productivity is improving as the company shifts more toward areas of unmet medical need. Owing to side effects or lack of compelling efficacy, Merck experienced major setbacks several years ago with cardiovascular disease drugs anacetrapib, Tredaptive, Rolofylline, and TRA along with telcagepant for migraines. Safety questions ended the development of osteoporosis drug odanacatib. Despite these setbacks, Merck has some solid successes, including a successful launch for its PD-1 drug Keytruda in oncology. Following on this success, Merck is shifting its focus toward areas of unmet medical need in specialty-care areas, and Keytruda is leading this new direction. We expect Keytruda's leadership in non-small cell lung cancer and several other cancers will be a key driver of growth for the firm over the next several years, but the 2028 US patent loss on the drug will create eventual pressure.

Bulls Say

Karen Andersen, CFA, Director, 4 Feb 2025

- Keytruda looks best positioned in the immuno-oncology landscape, buoyed by a first-mover advantage in the important indication of first-line non-small cell lung cancer.
- The growth in Merck's high margin cancer drugs should help expand the company's overall operating margin.
- Merck supports a strong dividend yield that looks secure based on a wide diversified portfolio of drugs.

Bears Say

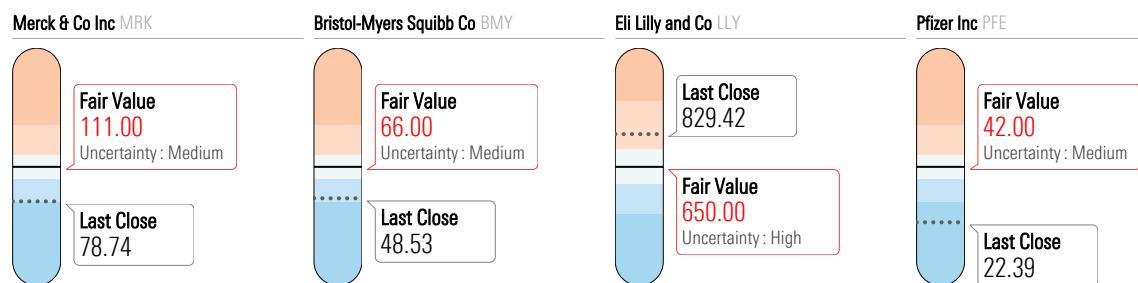
Karen Andersen, CFA, Director, 4 Feb 2025

- Outside of immuno oncology, Merck needs to increase the number of late-stage pipeline drugs.

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Competitors



| | | | |
|--------------------|------------------------------|------------------------------|------------------------------|
| Economic Moat | Wide | Wide | Wide |
| Currency | USD | USD | USD |
| Fair Value | 111.00 4 Feb 2025 19:32, UTC | 66.00 11 Nov 2024 23:29, UTC | 650.00 7 Apr 2025 20:58, UTC |
| 1-Star Price | 149.85 | 89.10 | 1,007.50 |
| 5-Star Price | 77.70 | 46.20 | 390.00 |
| Assessment | Undervalued 23 Apr 2025 | Undervalued 23 Apr 2025 | Overvalued 23 Apr 2025 |
| Morningstar Rating | ★★★★ 23 Apr 2025 21:26, UTC | ★★★★ 23 Apr 2025 21:30, UTC | ★★★★ 23 Apr 2025 21:32, UTC |
| Analyst | Karen Andersen, Director | Karen Andersen, Director | Karen Andersen, Director |
| Capital Allocation | Standard | Exemplary | Exemplary |
| Price/Fair Value | 0.71 | 0.74 | 1.28 |
| Price/Sales | 3.12 | 2.04 | 16.65 |
| Price/Book | 4.30 | 6.03 | 52.45 |
| Price/Earning | 10.29 | 42.20 | 53.23 |
| Dividend Yield | 4.01% | 5.03% | 0.65% |
| Market Cap | 198.14 Bil | 98.75 Bil | 744.81 Bil |
| 52-Week Range | 75.93—134.63 | 39.35—63.33 | 677.09—972.53 |
| Investment Style | Large Value | Large Value | Large Growth |

- The eventual US patent loss on Keytruda in 2028 is concerning given the high sales contribution of the drug.
- Advancements in oncology can happen quickly, which could cause disruption to Merck's leading growth driver, Keytruda.

Economic Moat Karen Andersen, CFA, Director, 6 Sep 2024

Patents, economies of scale, and a powerful intellectual base buoy Merck's business and keep it well shielded from the competition. As the bedrock of Merck's wide moat, patent protection should continue to keep competitors at bay while the company strives to introduce the next generation of drugs. Further, the company's enormous cash flows support a powerful salesforce that not only sells currently marketed drugs, but also serves as a deterrent for developing drug companies seeking to launch competing products. As a result, Merck offers a powerful partnership opportunity for externally developed drugs.

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The cash flows also put the company in the rare position of supporting the approximately \$800 million in R&D needed on average to bring each new drug to the market. While not as powerful as in the 1990s, Merck's research laboratories still hold a vast database of knowledge that should help the company to maintain its leadership positions in drug discovery and development. Also, the company's entrenchment in the emerging immuno-oncology area should strengthen Merck's competitive position with drugs that carry very strong pricing power in areas of unmet medical need. Merck's strong entrenchment in vaccines adds a layer of competitive protection from intellectual property and cost advantages, as the company's large-scale production enables a lower cost base, which can be more important in the vaccine market.

We think the company does face environmental, social, and governance risks, particularly related to potential US drug price-related policy reform (close to half of total sales are generated by prescription drugs sales in the US) to increase access by lowering drug prices. Ongoing product governance issues (including litigation related to side effects and patents) also weigh on the firm. While we have factored these threats into our analysis, we don't see them as a material threat to its moat rating.

Fair Value and Profit Drivers Karen Andersen, CFA, Director, 4 Feb 2025

We are lowering our fair value estimate to \$111 per share from \$120, as we expect sales of Gardasil to decline significantly in 2025 due to reduced sales in China. We see uncertainty surrounding the timing of economic recovery in China as well as US vaccine policy, and we now assume 2030 sales for Gardasil around \$7 billion globally.

Beyond Gardasil, Merck's late-stage pipeline looks increasing well positioned to mitigate the eventual patent loss on Keytruda starting in 2028. Overall, following the divestment of Organon in 2021, we continue to expect steady long-term growth for the entire firm, partly driven by the solid outlook for cancer drug Keytruda. We expect Keytruda to gain the lion's share of the market for late-stage non-small cell lung cancer drugs, as well as a solid position in the adjuvant NSCLC market. Keytruda is key to Merck's valuation and we expect it will be a leader in the immuno-oncology market. We expect the drug to reach peak sales of over \$40 billion largely based on strong efficacy in several cancer types including lung, head and neck, melanoma, and several other cancer indications. In looking at the entire company, we expect that Merck will post close to 7% annual top-line growth between 2025-2028, with new drugs offsetting drugs lost to generic competition. Potential game changers to the growth rate include the company's pipeline immuno-oncology drugs that can move quickly through clinical development. On the headwind side, Merck faces generic competition to Januvia (diabetes) in 2026 in the US. Longer term, the 2028 patent loss on Keytruda will likely weigh on the long-term outlook for the firm. However, we believe pipeline drugs and growth from existing drugs will help mitigate the generic headwinds. Overall, we expect improving margins over the near term as overall sales are represented by more specialty-oriented drugs that carry strong pricing power and need less marketing support.

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Risk and Uncertainty Karen Andersen, CFA, Director, 6 Sep 2024

Merck's near-term risk largely centers on market acceptance of new drugs. Like all pharmaceutical companies, Merck faces regulatory risk from the FDA. Product delays or nonapprovals could hurt the stock. Also, the growing power of managed care and a more price-sensitive US government may reduce Merck's pricing power. Lastly, the growing success of Keytruda has increased the firm's dependence on the drug for growth, which could become problematic if any side effects show up or new therapies emerge quickly in treating cancer. However, overall, we view Merck's Morningstar Uncertainty Rating as Medium, given the wide diversity of largely inelastic drugs in the company's portfolio.

Our Uncertainty Rating for the company is not materially affected by environmental, social, and governance, or ESG, risks, although we see access to basic services (tied to drug pricing) as the biggest ESG risk that the firm needs to manage. Merck generates close to half of total sales from US prescription drug sales (largely in line relative to peers) so additional major pricing reforms could weigh on sales and margins.

Additionally, we assume a more than 50% probability of Merck seeing future costs related to product governance ESG risks (such as off-label marketing or litigation related to side effects), and model base case annual legal costs at 2% of non-GAAP net income (at the midrange relative to peers based on Merck's product portfolio having average exposure to future potential litigation).

Capital Allocation Karen Andersen, CFA, Director, 6 Sep 2024

Overall, we rate Merck's Morningstar Capital Allocation Rating as Standard. The rating reflects our belief that Merck possesses a sound balance sheet, a steady track record of investments, and largely fair shareholder distributions.

We believe Merck holds a sound balance sheet with low levels of risk regarding: 1) the size of the debt carried; 2) the business cyclicalities facing the firm; and 3) the debt maturity outlook. While an argument could be made to increase the leverage of the balance sheet to be more active in investing, we believe the company along with the majority of firms in the large cap biopharma industry should hold ample balance sheet strength to support opportunistic acquisitions as dynamic scientific data emerges that might require relatively investment quick action. Also, a strong balance sheet helps biopharma companies through most product litigation challenges with minimal concern by the market.

Turning to investments, we believe Merck is operating at a reasonable level. The firm tends to spend on R&D at close to the high-teens level as a percentage of sales (in line with the industry average). The firm has shown high productivity with strong execution with the lead drug Keytruda, but less strong developments elsewhere. Nevertheless, the overall sound productivity in creating the next generation of drugs has yielded enough new drugs to help mitigate patent losses. The strong productivity with Keytruda is exceptional and helps offset less R&D gains with the remaining portfolio. We do expect

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more major gains in the early stage pipeline over the next several years.

On the acquisition and partnership side, Merck has executed reasonably well. While Merck hasn't made many major acquisitions over the recent past, the Acceleron deal in 2021 and the partnerships with AstraZeneca (Lynparza) and Eisai (Lenvima) look like good uses of capital. The Lynparza deal in particular looks like a solid move to gain access into the strongly developing PARP class at a good price point. While further back, the acquisition of Schering Plough for \$41 billion seems like a very strong use of capital as the deal brought in an early-stage Keytruda, but management has acknowledged that Keytruda was not the driver of the acquisition.

Regarding distributions, we view Merck's dividends and share repurchases as about right. Merck has generally targeted close to a 50% payout in dividends as a percentage of normalized earnings, which seems about right for a more mature industry. Further, Merck has shown a willingness to buy back shares at generally favorable time periods.

Turning to management specifically, in early 2021, Merck announced the appointment of Rob Davis as CEO, taking over the position from Ken Frazier. With Frazier at retirement age, we view the new leader as a continuation of Merck's past strategy and not a red flag or shift in the leadership approach, as Davis was part of a succession strategy guided by Frazier. Davis brings a strong background to the CEO role as he joined Merck as the CFO in 2014 following several leadership roles at Baxter and Eli Lilly.

Analyst Notes Archive

Biopharma Industry: We Anticipate Tariffs to Bring Short-Term Margin Pressure; No Valuation

Changes Karen Andersen, CFA, Director, 9 Apr 2025

President Trump has announced that "major" pharmaceutical product tariffs are likely to be revealed soon, but at the same time, paused broader tariffs for most trade partners for 90 days to allow time for negotiations. Why it matters: The biopharma industry has largely been exempt from tariffs (except for 20% tariffs on imports to the US from China, implemented in March). The industry continues to brace for a potential pharma-specific announcement, which could have implications for global manufacturing strategies. The rumored 25% tariff could be applied to products manufactured in Europe and imported into the US. While there might be some flexibility to move toward a more domestic manufacturing strategy, avoiding tariffs completely would require new facilities that take several years to build. Both US and Europe-based firms have significant European manufacturing exposure due to tax advantages (US firms), home country manufacturing (Europe firms), and other reasons, including lower production costs and lower exposure to currency fluctuations. The bottom line: We are not changing our biopharma uncertainty ratings or fair value estimates, as we think the direct impact from tariffs on earnings is likely to be limited in scope. Moreover, the indirect impact from a potential recession should also be limited given the noncyclical nature of drug spending. We assume pharmaceutical tariffs are enacted but do

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not last after 2026 due to political pressure from midterm elections. In this scenario, we think biopharma is unlikely to wholesale rethink its manufacturing footprint, apart from incremental US capacity additions. Using a non-GAAP industry average margin analysis of the short-run tariff impact, a 25% tariff would only amount to a 2-percentage-point operating margin headwind in the worst case, or a 6% headwind to operating profits, using an industry average 32% operating profit margin.

Biopharma Industry: Exempt From Global 10% Tariff, but We Still See Margin and Tax Rate Risks

Karen Andersen, CFA, Director, 3 Apr 2025

On April 2, President Donald Trump announced a 10% tariff on imports from all countries, effective on April 5. However, pharmaceuticals appear to be among the exemptions listed in the full executive order, as part of Annex II. Why it matters: The biopharma industry has been sheltered from tariffs for decades, including during the first Trump administration, but investors had been concerned about potential global tariffs, as the industry has significant manufacturing in European countries like Ireland, Germany, and Switzerland. With roughly \$200 billion in pharmaceutical imports in 2024, a 10% tariff could amount to a \$20 billion headwind across the industry, with the biggest firms seeing potential annual tariffs as high as \$1 billion. Previously implemented tariffs on pharmaceutical imports from China (raised from 10% in February to 20% in March) appear manageable for branded biopharma, due to limited manufacturing in China, and pharmaceuticals are generally exempt from Mexico and Canada tariffs (25%, March 2025). The bottom line: We think a future global pharmaceutical tariff is still a risk and could pressure gross margins and increase long-term tax rates. However, we expect firms to be able to adapt their manufacturing, and nearly all large-cap biopharma firms continue to hold wide economic moats. On margins, we could see near-term pressure from tariffs and long-term pressure from additional investment in US manufacturing facilities, which are not likely to receive approval for several years, even assuming US Food and Drug Administration inspections stay on track following staff reductions. With increased US manufacturing, we expect tax rates could begin to rise closer to the current 21% US corporate tax rate, a level we assume will be maintained as Trump aims to extend his tax cuts via the reconciliation process in the Republican-controlled Congress.

Healthcare Policy: RFK Jr. Confirmed to Lead HHS, but Biopharma Uncertainty Captured in Our Ratings

Karen Andersen, CFA, Director, 13 Feb 2025

On Feb. 13, the Senate voted 52-48 to confirm Robert F. Kennedy Jr. as secretary of Health and Human Services. This follows a 14-13 party-line vote on Feb. 4 in the Senate Finance Committee, where Republican Sen. Bill Cassidy cast the deciding yes vote despite concerns about Kennedy's vaccine views. Why it matters: Kennedy injects uncertainty into future healthcare policy as the Trump administration, with the help of Elon Musk's Department of Government Efficiency, is already taking steps that could make the biopharma industry less innovative and efficient. A Feb. 11 reduction-in-force executive order as well as healthcare-specific actions, like a proposed (but currently blocked) Feb. 7

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proposal for National Institutes of Health funding cuts, could slow research and Food and Drug Administration reviews. The bottom line: We're not making any biopharma valuation changes, as we think our uncertainty ratings—which already skew toward high (only global diversified firms Johnson & Johnson and Roche hold low uncertainty ratings)—capture the range of realistic outcomes. We view the most bearish vaccine scenarios as less likely, as Kennedy has support for reducing chronic disease and removing food additives, and aggressive antivaccine steps could mean pressure from Senate Republicans like Cassidy and Thom Tillis. FDA funding is partly driven by fees from the biopharma industry, offering some insulation from dramatic workforce reductions. Long view: We think investors should view the chaotic policy environment in the context of bullish biopharma themes like solid innovation, productivity improvements, new technologies, and ample room for collaborations and acquisitions in a more friendly Federal Trade Commission environment. We see the probability of international price benchmarking—arguably the biggest potential biopharma headwind—as below 10%, as anything beyond the scale of Trump's 2018 proposed Medicare Part B system would likely require congressional approval.

Merck Earnings: Gardasil Weighs on 2025 Growth, but Firm Still Undervalued Karen Andersen, CFA, Director, 4 Feb 2025

Fourth-quarter revenue grew 7% to \$15.6 billion (including Keytruda growth of 21% to \$7.8 billion), in line with overall 7% growth for the year. Shares fell more than 10% as Merck paused Gardasil shipments to China, and 2025 sales guidance of \$64.1 billion-\$65.6 billion implies flat to 2% growth. Why it matters: HPV vaccine Gardasil has been hit by economic weakness in China and the cash-pay nature of Gardasil China sales. This has led management to withdraw guidance for \$11 billion in Gardasil annual global sales by 2030. Gardasil was 13% of Merck's sales in 2024, and roughly half of Gardasil sales tie to China. This increases reliance on Merck's oncology drug Keytruda (46% of sales), which could face biosimilar competition and Medicare negotiation in 2028. The bottom line: We're lowering our fair value estimate for wide-moat Merck to \$111 per share from \$120, after factoring in a steep 34% Gardasil decline in 2025. We now assume Merck will see 1% sales growth in 2025 before returning to mid- to high-single-digit growth in 2026 and 2027. We have lowered our 2030 Gardasil sales forecast from \$10 billion to \$7 billion given limited visibility on a China recovery and continuing uncertainty surrounding US vaccine policy. We expect Keytruda sales to fall from a peak of \$41 billion in 2028 to below \$10 billion annually by 2032, which we think factors in sufficient pressure from patent expiration and competition. Big picture: We continue to see Merck shares as undervalued, with the market's fears about Keytruda's long-term sales trajectory overshadowing potential from newer products and a promising pipeline. We anticipate peak sales for pulmonary hypertension drug Winrevair around \$4 billion, and we're bullish on the mRNA-based Keytruda combination that could launch in melanoma in 2027. Merck still plans to continue bolstering its pipeline with business development, and we think the market would look favorably on deals in cardiovascular disease or oncology.

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More Trump Healthcare Nominations Largely Aligned With Kennedy Karen Andersen, CFA, Director, 2 Dec 2024

Following President-elect Donald Trump's Nov. 14 announcement of the nomination of Robert F. Kennedy Jr. as secretary of the US Department of Health and Human Services, there have been several more nominations for leadership in the 13 HHS divisions, including Dr. Mehmet Oz (Centers for Medicare and Medicaid Services) on Nov. 19, Dr. Marty Makary (US Food and Drug Administration) and Dr. Dave Weldon (Centers for Disease Control and Prevention) on Nov. 22, and Dr. Jay Bhattacharya (National Institutes of Health) on Nov. 26. Overall, we think these selections show a consistent theme of introducing potential disruptive forces to US healthcare, although their lack of experience and the power of career staffers in these agencies could serve to blunt any significant proposed changes. We continue to see obesity drugs and vaccines as areas of potential scrutiny, although without any clarity on proposals, we're not making any changes to our fair value estimates following these announcements. As discussed in our Nov. 18 note, we think biopharma industry tailwinds under the new Trump administration could include repealing the Medicare negotiation provision in the Inflation Reduction Act, less Federal Trade Commission scrutiny of acquisitions, as well as continued lower corporate taxes. However, Kennedy's skepticism of vaccine and obesity drug benefits could erode public trust and we think his team could slow the approval of new drugs and vaccines and de-emphasize CDC vaccine guidelines. Views on obesity drugs will likely be front and center in 2025, given the proposed rule from the Biden administration to expand obesity drug coverage in Medicare and Medicaid and the upcoming announcement of the 2027 list of negotiated drugs (which is likely to include Novo Nordisk's semaglutide). The Trump administration would need to finalize the rule and we expect Kennedy will be conflicted over whether to discourage reliance on weight loss drugs or reduce obesity drug costs significantly.

Trump's Nomination of RFK Jr. to Lead HHS a Potential Industry Headwind Karen Andersen, CFA, Director, 18 Nov 2024

President-elect Donald Trump announced on Nov. 14 that he is nominating Robert F. Kennedy Jr. to be secretary of the Department of Health and Human Services under his new administration in 2025. RFK Jr. has strong views on public health and, if confirmed, could use his position to make changes at several of the 13 HHS divisions. In our Nov. 8 note, we discussed the potential tailwinds of a Trump administration, including possible repeal of the Medicare negotiation provision in the Inflation Reduction Act, less Federal Trade Commission scrutiny of acquisitions, and a likely continuation of lower corporate taxes. However, if RFK's nomination is confirmed, we expect more "wild card" headwinds to the industry will come to fruition. As the HHS covers the US Food and Drug Administration and the Centers for Disease Control and Prevention, an HHS secretary skeptical of vaccine and obesity drug benefits could work to erode public trust, put up roadblocks for approval of new vaccines, and prevent

Merck & Co Inc MRK ★★★★☆ 23 Apr 2025 21:26, UTC

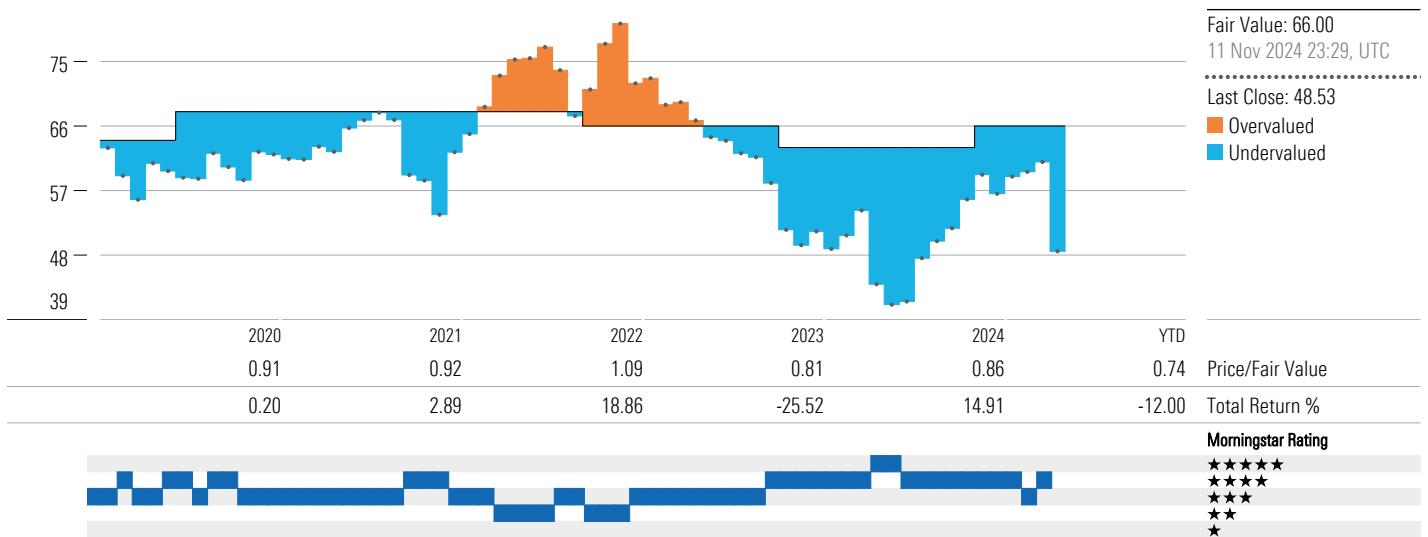
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|--------------------------|-------------------------------------|-----------|-------------------------------|----------------|------------------|-------------|--------------------|--|
| 78.74 USD 23 Apr 2025 | 111.00 USD 4 Feb 2025 19:32, UTC | 0.71 | 198.04 USD Bil 24 Apr 2025 | Wide | Large Value | Medium | Standard |  2 Apr 2025 05:00, UTC |

the CDC from recommending any vaccines that make it through the approval process. With less federal guidance, we think it is possible certain states could waver in support of broad mandates for childhood vaccines. All of these could weigh on sales of vaccines in the US, including covid vaccine makers Moderna and BioNTech and big biopharma vaccine makers like GSK (we model 14% of GSK revenue from US vaccine sales in 2024), Pfizer (12%), Merck (9%), and Sanofi (6%). If RFK Jr. is confirmed, we may lower our US vaccine sales estimates, although we don't think reductions would be long-lasting, and we don't yet see this as a significant hit to our valuations. Broad international price benchmarks could be a bear-case scenario under RFK Jr., which may increase our Morningstar Uncertainty Ratings. That said, any proposal would likely start with a smaller portion of the Medicare market and not extend to private markets, and we would be unlikely to include this in our fair value estimates. 

Merck & Co Inc MRK ★★★★ 23 Apr 2025 21:26, UTC

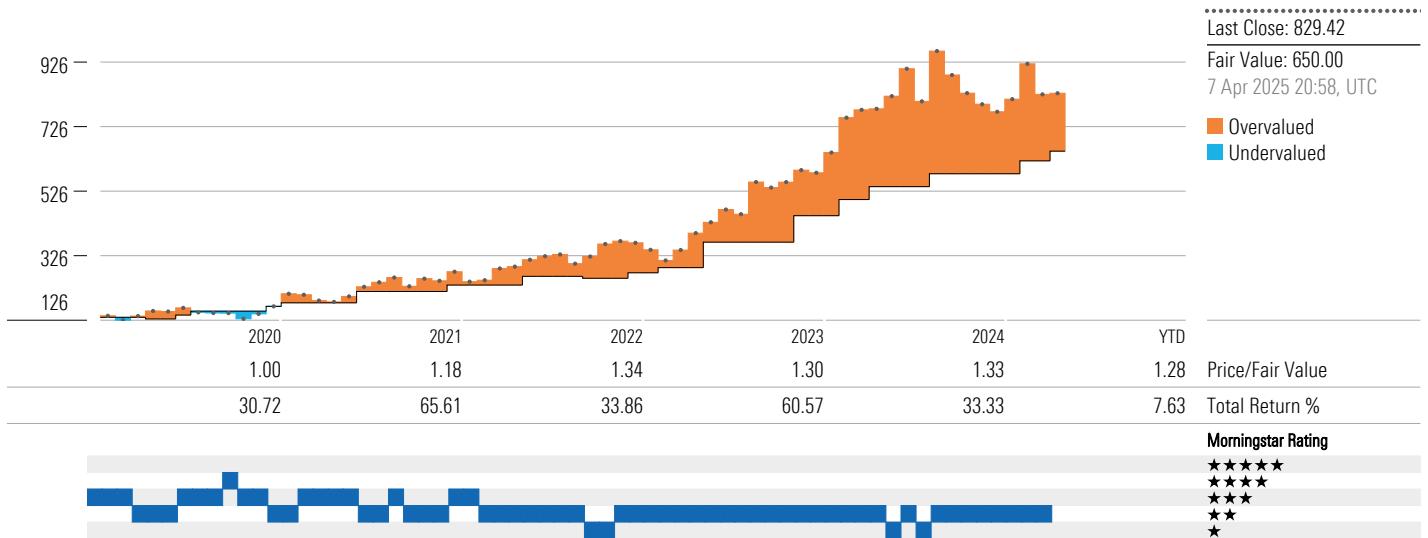
Competitors Price vs. Fair Value

Bristol-Myers Squibb Co BMY



Total Return % as of 23 Apr 2025. Last Close as of 23 Apr 2025. Fair Value as of 11 Nov 2024 23:29, UTC.

Eli Lilly and Co LLY

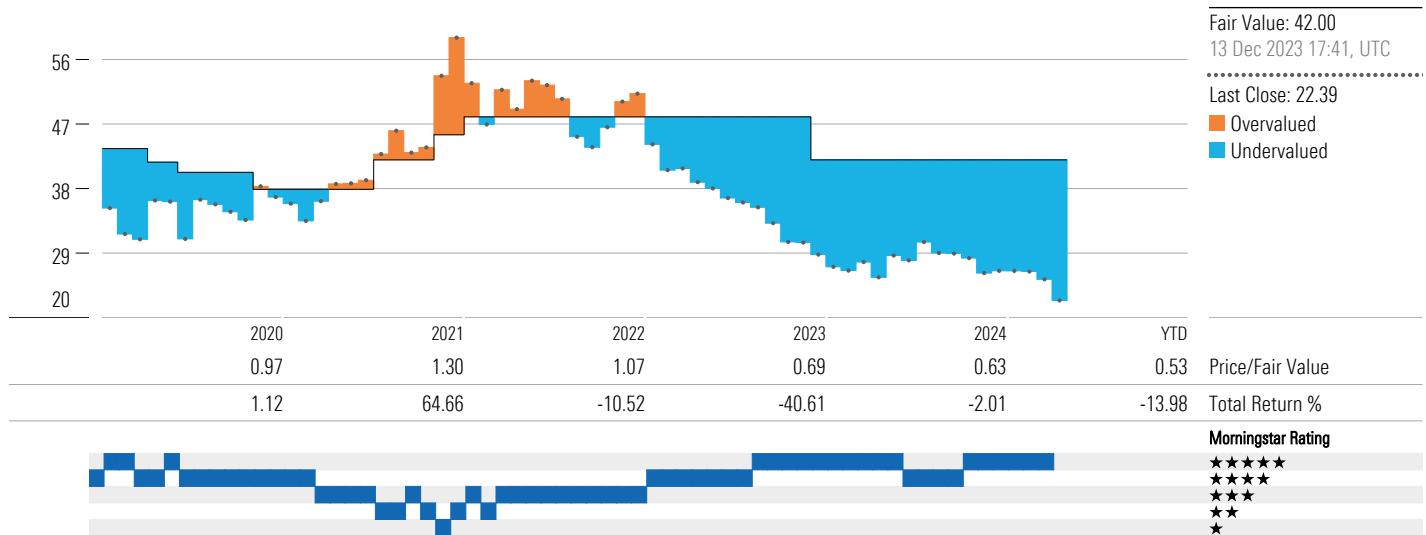


Total Return % as of 23 Apr 2025. Last Close as of 23 Apr 2025. Fair Value as of 7 Apr 2025 20:58, UTC.

Merck & Co Inc MRK ★★★★ 23 Apr 2025 21:26, UTC

Competitors Price vs. Fair Value

Pfizer Inc PFE



Total Return % as of 23 Apr 2025. Last Close as of 23 Apr 2025. Fair Value as of 13 Dec 2023 17:41, UTC.

Merck & Co Inc MRK ★★★★ 23 Apr 2025 21:26, UTC

| Last Price 78.74 USD 23 Apr 2025 | Fair Value Estimate 111.00 USD 4 Feb 2025 19:32, UTC | Price/FVE 0.71 | Market Cap 198.04 USD Bil 24 Apr 2025 | Economic Moat™  Wide | Equity Style Box  Large Value | Uncertainty Medium | Capital Allocation Standard | ESG Risk Rating Assessment¹  2 Apr 2025 05:00, UTC |
|--|--|-------------------|---|--|---|-----------------------|--------------------------------|---|
|--|--|-------------------|---|--|---|-----------------------|--------------------------------|---|

Morningstar Valuation Model Summary

Financials as of 24 Apr 2025

| | Actual | | | Forecast | | | | |
|---|--------|--------|--------|----------|--------|--------|--------|--------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Fiscal Year, ends 31 Dec | | | | | | | | |
| Revenue (USD Mil) | 59,283 | 60,115 | 64,168 | 65,289 | 69,363 | 75,225 | 81,069 | 78,907 |
| Operating Income (USD Mil) | 18,282 | 2,954 | 20,221 | 24,777 | 28,081 | 32,278 | 35,248 | 34,166 |
| EBITDA (USD Mil) | 21,158 | 6,542 | 25,291 | 30,466 | 33,894 | 38,147 | 40,668 | 39,191 |
| Adjusted EBITDA (USD Mil) | 21,158 | 6,542 | 25,291 | 30,466 | 33,894 | 38,147 | 40,668 | 39,191 |
| Net Income (USD Mil) | 14,519 | 365 | 17,117 | 16,898 | 22,702 | 26,115 | 28,555 | 27,706 |
| Adjusted Net Income (USD Mil) | 19,004 | 3,837 | 19,444 | 22,410 | 24,611 | 27,847 | 30,040 | 28,943 |
| Free Cash Flow To The Firm (USD Mil) | 18,183 | 792 | 19,679 | 18,237 | 23,750 | 26,593 | 29,425 | 28,684 |
| Weighted Average Diluted Shares Outstanding (Mil) | 2,542 | 2,547 | 2,541 | 2,510 | 2,460 | 2,411 | 2,362 | 2,315 |
| Earnings Per Share (Diluted) (USD) | 5.71 | 0.14 | 6.74 | 6.73 | 9.23 | 10.83 | 12.09 | 11.97 |
| Adjusted Earnings Per Share (Diluted) (USD) | 7.48 | 1.51 | 7.65 | 8.93 | 10.01 | 11.55 | 12.72 | 12.50 |
| Dividends Per Share (USD) | 2.80 | 2.96 | 3.12 | 3.24 | 3.43 | 3.64 | 3.86 | 4.09 |

Margins & Returns as of 24 Apr 2025

| | Actual | | | Forecast | | | | | |
|-------------------------------------|------------|------|------|----------|------|------|------|------|------|
| | 3 Year Avg | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Operating Margin % | 22.0 | 30.8 | 4.9 | 31.5 | 38.0 | 40.5 | 42.9 | 43.5 | 43.3 |
| EBITDA Margin % | — | 35.7 | 10.9 | 39.4 | 46.7 | 48.9 | 50.7 | 50.2 | 49.7 |
| Adjusted EBITDA Margin % | — | 35.7 | 10.9 | 39.4 | 46.7 | 48.9 | 50.7 | 50.2 | 49.7 |
| Net Margin % | 17.3 | 24.5 | 0.6 | 26.7 | 25.9 | 32.7 | 34.7 | 35.2 | 35.1 |
| Adjusted Net Margin % | 22.9 | 32.1 | 6.4 | 30.3 | 34.3 | 35.5 | 37.0 | 37.1 | 36.7 |
| Free Cash Flow To The Firm Margin % | 20.9 | 30.7 | 1.3 | 30.7 | 27.9 | 34.2 | 35.4 | 36.3 | 36.4 |

Growth & Ratios as of 24 Apr 2025

| | Actual | | | Forecast | | | | | |
|--------------------------------------|-------------|------|-------|----------|------|------|------|------|------------------|
| | 3 Year CAGR | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 5 Year CAGR |
| Revenue Growth % | 9.6 | 21.7 | 1.4 | 6.7 | 1.8 | 6.2 | 8.5 | 7.8 | -2.7 |
| Operating Income Growth % | 15.3 | 38.5 | -83.8 | 584.5 | 22.5 | 13.3 | 14.9 | 9.2 | -3.1 |
| EBITDA Growth % | 78.7 | 18.5 | -69.1 | 286.6 | 20.5 | 11.3 | 12.6 | 6.6 | -3.6 |
| Adjusted EBITDA Growth % | 12.3 | 18.5 | -69.1 | 286.6 | 20.5 | 11.3 | 12.6 | 6.6 | -3.6 |
| Earnings Per Share Growth % | 9.4 | 11.1 | -97.5 | 4600.7 | -0.1 | 37.1 | 17.4 | 11.6 | -1.0 |
| Adjusted Earnings Per Share Growth % | 9.4 | 24.2 | -79.9 | 407.9 | 16.7 | 12.1 | 15.5 | 10.1 | -1.7 |

Valuation as of 24 Apr 2025

| | Actual | | | Forecast | | | | |
|------------------------|--------|-------|------|----------|------|------|------|------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Price/Earning | 14.8 | 72.2 | 13.0 | 8.8 | 7.9 | 6.8 | 6.2 | 6.3 |
| Price/Sales | 4.7 | 4.6 | 3.9 | 3.0 | 2.9 | 2.6 | 2.4 | 2.5 |
| Price/Book | 6.1 | 7.4 | 5.5 | 3.8 | 3.3 | 2.7 | 2.2 | 1.9 |
| Price/Cash Flow | — | — | — | — | — | — | — | — |
| EV/EBITDA | 14.2 | 46.2 | 10.9 | 7.3 | 6.5 | 5.8 | 5.4 | 5.7 |
| EV/EBIT | 16.4 | 102.4 | 13.6 | 8.9 | 7.9 | 6.9 | 6.3 | 6.5 |
| Dividend Yield % | 2.5 | 2.7 | 3.1 | 4.1 | 4.4 | 4.6 | 4.9 | 5.2 |
| Dividend Payout % | 37.5 | 196.5 | 40.8 | 36.3 | 34.3 | 31.5 | 30.3 | 32.7 |
| Free Cash Flow Yield % | — | — | — | — | — | — | — | — |

Operating Performance / Profitability as of 24 Apr 2025

| | Actual | | | Forecast | | | | |
|--------------------------|--------|------|------|----------|------|------|------|------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Fiscal Year, ends 31 Dec | | | | | | | | |
| ROA % | 13.3 | 0.3 | 14.6 | — | 17.7 | 19.0 | 19.1 | 17.5 |
| ROE % | 31.5 | 1.0 | 36.9 | 32.8 | 38.2 | 37.1 | 34.3 | 29.2 |
| ROIC % | 17.5 | 12.9 | 16.3 | 17.2 | 19.0 | 22.0 | 24.1 | 22.8 |

Merck & Co Inc MRK ★★★★☆ 23 Apr 2025 21:26, UTC

| Last Price 78.74 USD 23 Apr 2025 | Fair Value Estimate 111.00 USD 4 Feb 2025 19:32, UTC | Price/FVE 0.71 | Market Cap 198.04 USD Bil 24 Apr 2025 | Economic Moat™  Wide | Equity Style Box  Large Value | Uncertainty Medium | Capital Allocation Standard | ESG Risk Rating Assessment ¹  2 Apr 2025 05:00, UTC |
|--|--|-------------------|---|--|---|-----------------------|--------------------------------|---|
|--|--|-------------------|---|--|---|-----------------------|--------------------------------|---|

| Financial Leverage (Reporting Currency) | Actual | | | Forecast | | | | |
|---|--------|------|------|----------|------|------|-------|-------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Fiscal Year, ends 31 Dec | 9.8 | 11.3 | 12.9 | 10.6 | 9.9 | 9.1 | 8.4 | 7.7 |
| Debt/Capital % | 2.4 | 2.8 | 2.5 | 2.4 | 2.2 | 1.9 | 1.8 | 1.7 |
| Assets/Equity | 0.8 | 4.3 | 0.9 | 0.6 | 0.3 | -0.1 | -0.4 | -0.7 |
| Net Debt/EBITDA | 1.5 | 5.4 | 1.5 | 1.2 | 1.0 | 0.8 | 0.7 | 0.7 |
| Total Debt/EBITDA | 26.3 | 8.4 | 29.5 | 36.7 | 56.7 | 91.2 | 107.4 | 115.5 |
| EBITDA/ Net Interest Expense | | | | | | | | |

| Forecast Revisions as of 24 Apr 2025 | 2025 | | 2026 | | 2027 | |
|---|---------|--------|---------|--------|---------|--------|
| | Current | Prior | Current | Prior | Current | Prior |
| Prior data as of 28 Feb 2025 | 111.00 | 111.89 | — | — | — | — |
| Fair Value Estimate Change (Trading Currency) | | | | | | |
| Revenue (USD Mil) | 65,289 | 65,495 | 69,363 | 69,718 | 75,225 | 75,681 |
| Operating Income (USD Mil) | 24,777 | 25,444 | 28,081 | 28,236 | 32,278 | 32,486 |
| EBITDA (USD Mil) | 30,466 | 31,241 | 33,894 | 34,115 | 38,147 | 38,424 |
| Net Income (USD Mil) | 22,410 | 22,785 | 24,611 | 24,789 | 27,847 | 28,069 |
| Earnings Per Share (Diluted) (USD) | 6.73 | 6.46 | 9.23 | 9.23 | 10.83 | 10.84 |
| Adjusted Earnings Per Share (Diluted) (USD) | 8.93 | 9.01 | 10.01 | 10.00 | 11.55 | 11.55 |
| Dividends Per Share (USD) | 3.24 | 3.24 | 3.43 | 3.43 | 3.64 | 3.64 |

| Key Valuation Drivers as of 24 Apr 2025 | Discounted Cash Flow Valuation as of 24 Apr 2025 | |
|---|--|--|
| | USD Mil | |
| Cost of Equity % | 7.5 | |
| Pre-Tax Cost of Debt % | 5.8 | |
| Weighted Average Cost of Capital % | 7.2 | |
| Long-Run Tax Rate % | 17.0 | |
| Stage II EBI Growth Rate % | 3.5 | |
| Stage II Investment Rate % | 25.0 | |
| Perpetuity Year | 20 | |

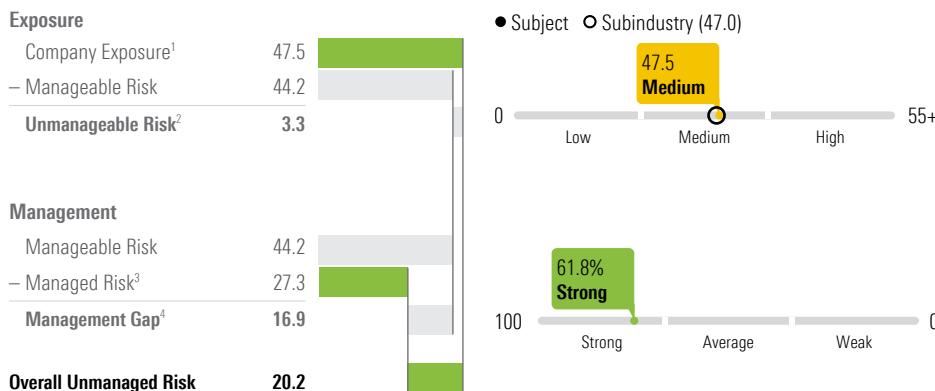
Additional estimates and scenarios available for download at <https://pitchbook.com/>.

| Discounted Cash Flow Valuation as of 24 Apr 2025 | USD Mil | |
|--|----------------------|------|
| | Cash and Equivalents | Debt |
| Present Value Stage I | 154,036 | |
| Present Value Stage II | 58,082 | |
| Present Value Stage III | 94,024 | |
| Total Firm Value | 306,142 | |
| Cash and Equivalents | 13,689 | |
| Debt | 37,111 | |
| Other Adjustments | 1,253 | |
| Equity Value | 282,287 | |
| Projected Diluted Shares | 2,510 | |
| Fair Value per Share (USD) | 111.00 | |

Merck & Co Inc MRK ★★★★ 23 Apr 2025 21:26, UTC

| Last Price | Fair Value Estimate | Price/FVE | Market Cap | Economic Moat™ | Equity Style Box | Uncertainty | Capital Allocation | ESG Risk Rating Assessment¹ |
|--------------------------|-------------------------------------|-----------|-------------------------------|----------------|------------------|-------------|--------------------|---|
| 78.74 USD 23 Apr 2025 | 111.00 USD 4 Feb 2025 19:32, UTC | 0.71 | 198.04 USD Bil 24 Apr 2025 | Wide | Large Value | Medium | Standard |  2 Apr 2025 05:00, UTC |

ESG Risk Rating Breakdown



- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure
- Management measures a company's ability to manage ESG risks through its commitments and actions
- Management assesses a company's efficiency on ESG programs, practices, and policies
- Management score ranges from 0-100% showing how much manageable risk a company is managing

ESG Risk Rating



ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues
2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives
3. Managed Risk = Manageable Risk multiplied by a Management score of 61.8%
4. Management Gap assesses risks that are not managed, but are considered manageable
5. ESG Risk Rating Assessment = Overall Unmanaged Risk + Unmanageable Risk

ESG Risk Rating Assessment²



ESG Risk Rating is of Apr 02, 2025. Highest Controversy Level is as of Apr 08, 2025. Sustainalytics Subindustry: Pharmaceuticals. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: sustainalytics.com/esg-ratings/.

Peer Analysis 02 Apr 2025

| Company Name | Exposure | Management | ESG Risk Rating |
|-------------------------|---------------|----------------|-----------------|
| Merck & Co Inc | 47.5 Medium | 61.8 Strong | 20.2 Medium |
| Bristol-Myers Squibb Co | 39.5 Medium | 48.4 Average | 21.2 Medium |
| Eli Lilly and Co | 45.8 Medium | 51.8 Strong | 23.6 Medium |
| Pfizer Inc | 44.3 Medium | 63.4 Strong | 18.3 Low |
| — | — — | — — | — — |

Appendix

Historical Morningstar Rating

Merck & Co Inc MRK 23 Apr 2025 21:26, UTC

| Dec 2025 | Nov 2025 | Oct 2025 | Sep 2025 | Aug 2025 | Jul 2025 | Jun 2025 | May 2025 | Apr 2025 | Mar 2025 | Feb 2025 | Jan 2025 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| — | — | — | — | — | — | — | — | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Dec 2024 | Nov 2024 | Oct 2024 | Sep 2024 | Aug 2024 | Jul 2024 | Jun 2024 | May 2024 | Apr 2024 | Mar 2024 | Feb 2024 | Jan 2024 |
| ★★★★ | ★★★★ | ★★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★ | ★★ | ★★ |
| Dec 2023 | Nov 2023 | Oct 2023 | Sep 2023 | Aug 2023 | Jul 2023 | Jun 2023 | May 2023 | Apr 2023 | Mar 2023 | Feb 2023 | Jan 2023 |
| ★★★ | ★★★ | ★★★ | ★★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| Dec 2022 | Nov 2022 | Oct 2022 | Sep 2022 | Aug 2022 | Jul 2022 | Jun 2022 | May 2022 | Apr 2022 | Mar 2022 | Feb 2022 | Jan 2022 |
| ★★ | ★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★★ | ★★★★ | ★★★★ |
| Dec 2021 | Nov 2021 | Oct 2021 | Sep 2021 | Aug 2021 | Jul 2021 | Jun 2021 | May 2021 | Apr 2021 | Mar 2021 | Feb 2021 | Jan 2021 |
| ★★★★ | ★★★★ | ★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Dec 2020 | Nov 2020 | Oct 2020 | Sep 2020 | Aug 2020 | Jul 2020 | Jun 2020 | May 2020 | Apr 2020 | Mar 2020 | Feb 2020 | Jan 2020 |
| ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |

Bristol-Myers Squibb Co BMY 23 Apr 2025 21:30, UTC

| Dec 2025 | Nov 2025 | Oct 2025 | Sep 2025 | Aug 2025 | Jul 2025 | Jun 2025 | May 2025 | Apr 2025 | Mar 2025 | Feb 2025 | Jan 2025 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| — | — | — | — | — | — | — | — | ★★★★ | ★★★ | ★★★★ | ★★★★ |
| Dec 2024 | Nov 2024 | Oct 2024 | Sep 2024 | Aug 2024 | Jul 2024 | Jun 2024 | May 2024 | Apr 2024 | Mar 2024 | Feb 2024 | Jan 2024 |
| ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Dec 2023 | Nov 2023 | Oct 2023 | Sep 2023 | Aug 2023 | Jul 2023 | Jun 2023 | May 2023 | Apr 2023 | Mar 2023 | Feb 2023 | Jan 2023 |
| ★★★★ | ★★★★ | ★★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2022 | Nov 2022 | Oct 2022 | Sep 2022 | Aug 2022 | Jul 2022 | Jun 2022 | May 2022 | Apr 2022 | Mar 2022 | Feb 2022 | Jan 2022 |
| ★★ | ★★ | ★★ | ★★★ | ★★★ | ★★ | ★★ | ★★ | ★★ | ★★★ | ★★★ | ★★★ |
| Dec 2021 | Nov 2021 | Oct 2021 | Sep 2021 | Aug 2021 | Jul 2021 | Jun 2021 | May 2021 | Apr 2021 | Mar 2021 | Feb 2021 | Jan 2021 |
| ★★★★ | ★★★★ | ★★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2020 | Nov 2020 | Oct 2020 | Sep 2020 | Aug 2020 | Jul 2020 | Jun 2020 | May 2020 | Apr 2020 | Mar 2020 | Feb 2020 | Jan 2020 |
| ★★★ | ★★★ | ★★★★ | ★★★★ | ★★★ | ★★★★ | ★★★★ | ★★★ | ★★★ | ★★★★ | ★★★ | ★★★ |

Eli Lilly and Co LLY 23 Apr 2025 21:32, UTC

| Dec 2025 | Nov 2025 | Oct 2025 | Sep 2025 | Aug 2025 | Jul 2025 | Jun 2025 | May 2025 | Apr 2025 | Mar 2025 | Feb 2025 | Jan 2025 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| — | — | — | — | — | — | — | — | ★★ | ★★ | ★★ | ★★ |
| Dec 2024 | Nov 2024 | Oct 2024 | Sep 2024 | Aug 2024 | Jul 2024 | Jun 2024 | May 2024 | Apr 2024 | Mar 2024 | Feb 2024 | Jan 2024 |
| ★★ | ★★ | ★★ | ★★ | ★ | ★★ | ★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| Dec 2023 | Nov 2023 | Oct 2023 | Sep 2023 | Aug 2023 | Jul 2023 | Jun 2023 | May 2023 | Apr 2023 | Mar 2023 | Feb 2023 | Jan 2023 |
| ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| Dec 2022 | Nov 2022 | Oct 2022 | Sep 2022 | Aug 2022 | Jul 2022 | Jun 2022 | May 2022 | Apr 2022 | Mar 2022 | Feb 2022 | Jan 2022 |
| ★★ | ★ | ★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| Dec 2021 | Nov 2021 | Oct 2021 | Sep 2021 | Aug 2021 | Jul 2021 | Jun 2021 | May 2021 | Apr 2021 | Mar 2021 | Feb 2021 | Jan 2021 |
| ★★ | ★★ | ★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2020 | Nov 2020 | Oct 2020 | Sep 2020 | Aug 2020 | Jul 2020 | Jun 2020 | May 2020 | Apr 2020 | Mar 2020 | Feb 2020 | Jan 2020 |
| ★★★ | ★★★ | ★★★★ | ★★★★ | ★★★ | ★★★★ | ★★★★ | ★★★ | ★★★ | ★★★★ | ★★★ | ★★★ |

Pfizer Inc PFE 23 Apr 2025 21:26, UTC

| Dec 2025 | Nov 2025 | Oct 2025 | Sep 2025 | Aug 2025 | Jul 2025 | Jun 2025 | May 2025 | Apr 2025 | Mar 2025 | Feb 2025 | Jan 2025 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| — | — | — | — | — | — | — | — | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |
| Dec 2024 | Nov 2024 | Oct 2024 | Sep 2024 | Aug 2024 | Jul 2024 | Jun 2024 | May 2024 | Apr 2024 | Mar 2024 | Feb 2024 | Jan 2024 |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |
| Dec 2023 | Nov 2023 | Oct 2023 | Sep 2023 | Aug 2023 | Jul 2023 | Jun 2023 | May 2023 | Apr 2023 | Mar 2023 | Feb 2023 | Jan 2023 |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |
| Dec 2022 | Nov 2022 | Oct 2022 | Sep 2022 | Aug 2022 | Jul 2022 | Jun 2022 | May 2022 | Apr 2022 | Mar 2022 | Feb 2022 | Jan 2022 |
| ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2021 | Nov 2021 | Oct 2021 | Sep 2021 | Aug 2021 | Jul 2021 | Jun 2021 | May 2021 | Apr 2021 | Mar 2021 | Feb 2021 | Jan 2021 |
| ★ | ★★ | ★★★ | ★★ | ★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ | ★★★ |
| Dec 2020 | Nov 2020 | Oct 2020 | Sep 2020 | Aug 2020 | Jul 2020 | Jun 2020 | May 2020 | Apr 2020 | Mar 2020 | Feb 2020 | Jan 2020 |
| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |

Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our singlepoint star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as re-

turns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence would eliminate a firm's economic profit on a cumulative or midcycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in workingcapital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to de-

rive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating is designed to capture the range of potential outcomes for a company's intrinsic value. This rating is used to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating is aimed at identifying the confidence we should have in assigning a fair value estimate for a given stock.

Our Uncertainty Rating is meant to take into account anything that can increase the potential dispersion of future outcomes for the intrinsic value of a company, and any-

Morningstar Equity Research Star Rating Methodology



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thing that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the Uncertainty Rating provides guidance in portfolio construction based on risk tolerance.

Our Uncertainty Ratings are: Low, Medium, High, Very High, and Extreme.

Margin of Safety

| Qualitative Analysis | Uncertainty Ratings | ★★★★★ Rating | ★ Rating |
|----------------------|---------------------|--------------|----------|
| Low | 20% Discount | 25% Premium | |
| Medium | 30% Discount | 35% Premium | |
| High | 40% Discount | 55% Premium | |
| Very High | 50% Discount | 75% Premium | |
| Extreme | 75% Discount | 300% Premium | |

Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly, when a stock hits 1 star, we expect there is a 75% chance that the intrinsic value of that stock lies below the current market price.

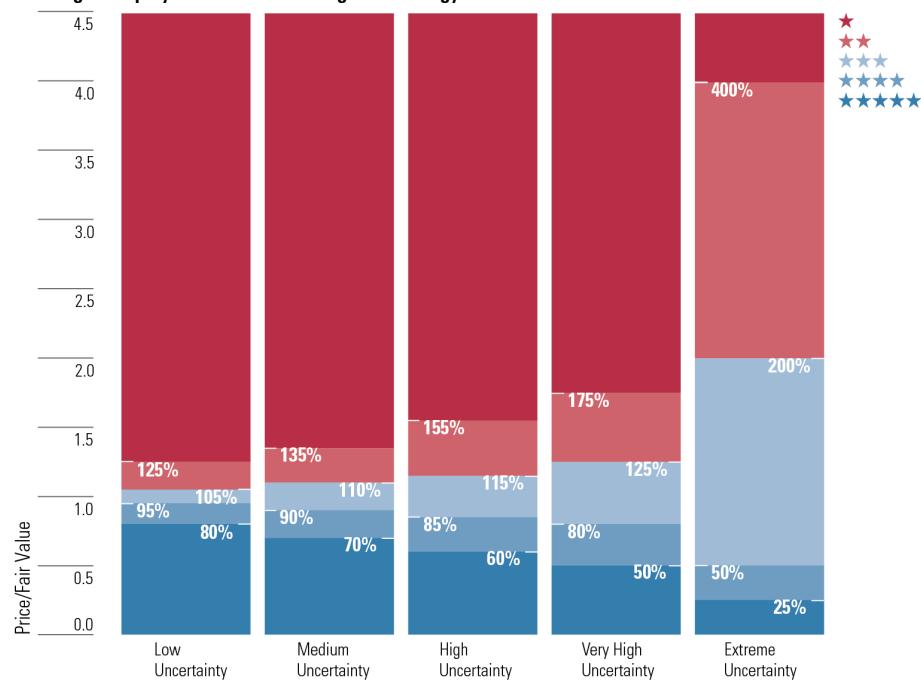
4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

For more details about our methodology, please go to <https://shareholders.morningstar.com>

Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk ad-

justed return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Other Definitions

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider compa-



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ies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider companies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

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Sustainalytics ESG Risk Rating Assessment: The ESG Risk Rating Assessment is provided by Sustainalytics; a Morningstar company.

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors.

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale

starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit sustainalytics.com/esg-ratings/

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

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