

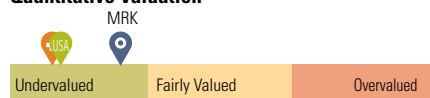
Merck & Co Inc MRK (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★	80.45 USD	100.00 USD	0.80	3.03	3.23	203.54	Drug Manufacturers - General	Standard
20 Nov 2020 22:17, UTC	20 Nov 2020	14 May 2020 14:12, UTC		20 Nov 2020	20 Nov 2020	20 Nov 2020		

Morningstar Pillars	Analyst	Quantitative
Economic Moat	Wide	Wide
Valuation	★★★★	Undervalued
Uncertainty	Medium	High
Financial Health	—	Strong

Source: Morningstar Equity Research

Quantitative Valuation



	Current	5-Yr Avg	Sector	Country
Price/Quant Fair Value	0.90	0.97	0.82	0.83
Price/Earnings	17.8	41.8	26.5	20.1
Forward P/E	12.4	—	11.3	13.9
Price/Cash Flow	18.5	19.5	18.4	13.1
Price/Free Cash Flow	30.4	25.7	27.3	19.5
Trailing Dividend Yield%	3.03	3.00	1.50	2.35

Source: Morningstar

Bulls Say

- ▶ 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

- ▶ Outside of immuno oncology, Merck needs to increase the number of late-stage pipeline drugs.
- ▶ While the majority of the patent losses are behind the company, the firm does face generic competition on Januvia, potentially as early as 2022.
- ▶ Advancements in oncology can happen quickly, which could cause disruption to Merck's leading growth driver, Keytruda.

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Implementation of Trump's Recent Efforts to Affect Drug Pricing Seems Unlikely

Business Strategy and Outlook

Damien Conover, CFA, Sector Director, 15 October 2020

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, Merck is through the worst of its patent cliff, which should remove the heightened generic competition the company has experienced over the past years. And 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. 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 between 2020 and 2021 in earlier stage cancer settings. Other headwinds include generic competition, notably to diabetes drug Januvia, likely to start as early as 2022.

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 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 will be a key driver of growth for the company over the next several years.

Analyst Note

Damien Conover, CFA, Sector Director, 23 November 2020

President Donald Trump issued several orders on Nov. 20 designed to lower U.S. drug prices, but we don't expect implementation of the orders due to legal challenges, lack of support from the U.S. Congress and the new Biden administration, and unclear financial impacts. As a result, we don't expect any major impact on the U.S. pricing power of drugs, a core pillar of the moats and valuations in the drug industry.

One of the White House directives focused on pricing 50 of the largest Medicare B drugs (hospital-administered drugs) at the lowest levels paid by developed countries. While this would significantly affect U.S. prices, as we estimate drug pricing in the United States is close to double prices in developed markets, we expect valid industry legal challenges to stop this order. The order doesn't appear to have followed the normal legal process and instead was rushed out for Trump to enact the policy before leaving office. Additionally, we believe the rule is difficult to implement without legislative support from Congress. Further, we don't expect the Biden administration to focus initially on U.S. drug pricing, especially in the form of these recent proposals that lack full legal and congressional support.

A second White House directive targeted the elimination of pricing rebates in the U.S. drug system, an entrenched system that is very complex to undo through presidential order, especially without a clear analysis of financial implications. While we expect the drug industry to support the removal of rebates as drug firms only receive payments excluding rebates, we expect the payer groups will oppose the rule, given the importance of rebates in payer strategies. With a high degree of uncertainty regarding the impact on the federal budget, we expect the payer groups will be successful in stopping this effort to repeal drug price rebating.

Economic Moat

Damien Conover, Sector Director, 15 October 2020

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,

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Close Competitors	Currency (Mil)	Market Cap	TTM Sales	Operating Margin	TTM/PE
Pfizer Inc PFE	USD	203,993	48,649	26.59	23.70
Eli Lilly and Co LLY	USD	139,173	23,214	26.16	23.87

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. 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. Lastly, 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.

Fair Value & Profit Drivers

Damien Conover, Sector Director, 15 October 2020

We are maintaining our fair value estimate of \$100. Merck looks well positioned with immuno-oncology drug Keytruda and cancer drug Lynparza as well as HPV vaccine Gardasil. We expect Keytruda to gain the lion's share of the late stage non-small cell lung cancer (NSCLC) market as well as close to 40% of the adjuvant NSCLC market. We continue to expect steady long-term growth for the entire firm, partly driven by the solid outlook for cancer drug Keytruda and to a lesser extent the strong outlook for HPV vaccine Gardasil (largely in international markets). 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 \$25 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, over the next five years, we expect that Merck will post 5% annual

top-line growth 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. Merck still faces generic competition to older drugs Remicade (immunology), Zetia (cardiovascular), and Vytorin (cardiovascular), but the heaviest near-term patent loss is likely in 2022 when generics are likely to launch against diabetes drug Januvia. However, we believe pipeline drugs and growth from existing drugs will offset 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.

Risk & Uncertainty

Damien Conover, Sector Director, 15 October 2020

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 U.S. government may reduce Merck's pricing power. Additionally, Merck faces some remaining legal risk with Vioxx. While the majority of plaintiffs participated in the \$5 billion settlement, a few holdouts could ring up major additional settlements. Also, litigation risk remains from patients who took one-time blockbuster Fosamax for osteoporosis as the medicine has been linked to infrequent but serious side effects. 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 uncertainty as medium, given the wide diversity of largely inelastic drugs in the firm's portfolio.

Stewardship

Damien Conover, Sector Director, 15 October 2020

Ken Frazier took over as CEO from Dick Clark at the beginning of 2011 and was appointed chairman of the board in late 2011. With Clark nearing retirement age, we viewed the new leader as a continuation of Merck's past strategy and not a red flag or shift in the leadership approach, as Frazier was part of a succession strategy guided by Clark. Frazier's almost two decades of experience at Merck across most major divisions should position him well to lead the company. He also deserves much of the credit for the successful handling of the Vioxx

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litigation, as he held Merck's general counsel position during the majority of the litigation.

We rate the company's stewardship as standard, as Merck has shown reasonable use of capital with the last major acquisition (the purchase of Schering-Plough at a fair price), which brought in several important pipeline products (including Keytruda) and allowed for cost-cutting opportunities. On the other hand, the \$8 billion acquisition of Cubist seems like a stretch to make the valuation work, especially after the announcement of the sooner-than-expected patent loss on key drug Cubicin. Merck's heavy funding of R&D over the past decade has produced mixed results, with several important new drugs but also many failures. However, the company shifted its R&D focus toward areas of specialty care (away from primary care), which should continue to support improved productivity, and the success of Keytruda is an example of this new focus.

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Analyst Notes Archive

New Data From ASCO Supports Strong Outlook for Immuno-Oncology Drugs

Damien Conover, Sector Director, 02 June 2020

We attended the American Society of Clinical Oncology virtual annual meeting, where new immuno-oncology data in non-small-cell lung, small-cell lung, bladder, liver, and triple-negative breast cancer showed continued support for our above-consensus expectations. Importantly, we are seeing efficacy differences between the leading immuno-oncology drugs by cancer indication, which is likely to enable stronger pricing power. We believe the more unique the drugs are in response rates across cancer types, the less ability payers have to negotiate prices. The strong pricing power in areas of unmet medical needs like oncology should reinforce the wide moats for leading companies Bristol-Myers Squibb, Merck, Roche, and AstraZeneca. We expect the PD-1/PDL1 immuno-oncology drugs to collectively generate \$54 billion by 2024, ahead of consensus expectations of \$44 billion. Within this group, we view Merck and Roche as the most undervalued. Additionally, based on the overall strength of the data, we increased our fair values for Bristol (up to \$68 largely based on strong non-small cell lung cancer data for Opdivo and Yervoy), AstraZeneca (up to \$55 largely due to solid small cell lung cancer data for Imfinzi) and Roche (up to \$54/CHF 417 due to strong combination data with tiragolumab in lung cancer and Tecentriq's approval in liver cancer).

Annual Pipeline Review of Leading Big Pharma and Biotech Supports Moats

Damien Conover, Sector Director, 10 July 2020

Most Big Pharma and Big Biotech stocks in our coverage support wide economic moats as a result of their ability to generate new drugs to replace mature ones losing patent protection. Innovation is the central building block for the strong economic moats in the drug and biotechnology industry, supporting drug pricing power and launch trajectories. However, following patent expirations, drug sales fall significantly, making the continuous cycle of new drugs essential to the moats in the industry. In looking at the leading large-cap U.S. and European drug and biotech industries, we expect steady innovation to drive 5% annual sales growth over the next five years, similar to consensus expectations. Overlaying our growth analysis with valuation, we see underappreciated areas:

Roche's Tecentriq in several cancer niches; Bristol-Myers Squibb's steady position in immuno-oncology and massive pipeline and cash flow support from Celgene; Merck's oncology portfolio and vaccine and animal health cash flows; and Pfizer's new immunology drugs and strong vaccine positioning.

Trump's Executive Orders on Drug Prices Have Limited Impact on Our Industry FVEs and Moat Ratings

Damien Conover, Sector Director, 27 July 2020

President Donald Trump's executive orders targeting drug prices create modest pricing headwinds and slightly higher uncertainty for drug firms. However, we don't expect these actions to significantly affect our fair value estimates or moat ratings due to limited details, challenging implementation, and only minor impacts.

Trump's executive orders, signed July 24, targeted three areas with varying degrees of impact; a fourth order is pending. First, the order allowing the importation of drugs from Canada would significantly reduce U.S. drug prices (which are close to double international prices), but safely implementing this is challenging, given the different labels across countries, and drug firms are likely to limit Canada sales. Importation of drugs has been passed by Congress twice, only to fail in implementation largely due to safety concerns. Second, the order to eliminate rebates within the supply chain without increasing premiums seems difficult to implement, as those rebates are typically used to reduce overall premiums, and it is unclear what eliminating rebates would do to net drug prices in this complex system. Third, passing insulin and epinephrine discounts currently benefiting certain health centers to patients would likely reduce patients' out-of-pocket payments, but this isolated change would not likely affect drug firms significantly.

Trump also targeted the potential to use international benchmark pricing for certain drugs administered in the hospital setting under Medicare Part B, but this order has not yet been released, as he is open to discussion with drug firms until at least Aug. 24 to find alternative ways to lower drug prices. While details of this strategy are less clear, we estimate a 10% reduction to Part B drug prices would hit industry earnings by close to 1%, and higher for firms like Amgen and Regeneron. Implementing this looks challenging as well, partly due to complexities and ambiguities around international pricing.

Merck & Co Inc MRK (XNYS)

Morningstar Rating

★★★★

20 Nov 2020

22:17, UTC

Last Price

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Fair Value Estimate

100.00 USD

14 May 2020

14:12, UTC

Price/Fair Value

0.80

Trailing Dividend Yield %

3.03

20 Nov 2020

Forward Dividend Yield %

3.23

20 Nov 2020

Market Cap (Bil)

203.54

20 Nov 2020

Industry
Drug Manufacturers
- General
Stewardship

Standard

Narrow-Moat Seattle Genetics Scores Oncology Deals With Merck; Raising FVE to \$138

Anna Baran, Eq. Analyst, 14 September 2020

We are planning to raise our fair value estimate for narrow-moat Seattle Genetics to \$138 following the announcement of agreements for two of its oncology programs with wide-moat Merck. The favorable economics of the agreements, which include \$725 million in upfront payments and a \$1 billion equity investment, drive our fair value estimate increase for Seattle. We're maintaining our \$100 per share fair value for Merck. In total, Seattle is eligible to receive over \$4 billion in payments and milestones, demonstrating the strength of the company's drug research and development platform in antibody-drug conjugates.

With this agreement, Seattle secures an important global partner to expand the reach of its medicines, in addition to a substantial cash inflow to help fund ongoing research efforts. With several ongoing late-stage trials, we expect Seattle to keep posting net losses until reaching profitability in 2024. We expect Seattle's product sales and partnerships to sufficiently fund drug development without needing to raise cash via new equity or debt. Additionally, we expect Seattle to stop depending on commercialization partnerships over time and maintain global rights to its products.

Seattle and Merck have agreed to jointly develop and commercialize ladiratuzumab vedotin for triple-negative breast cancer and other solid tumors, sharing development costs and profits equally. We think the phase-2 asset could see an approval in third-line TNBC next year, with potential for label expansion. The collaboration with Merck makes sense given the treatment potential of LV in combination with Merck's Keytruda.

Separately, Merck will have rights to commercialize Tukysa for HER2-positive breast cancer outside the U.S., Canada, and Europe, with Seattle receiving tiered royalties. Merck will also contribute \$85 million to Tukysa development costs, as the companies have plans to test the tyrosine kinase inhibitor in other cancers, including colorectal and gastric.

President Trump's Updated Healthcare Policy Targets Drug Costs, but Implementation Looks

Tough

Damien Conover, Sector Director, 25 September 2020

President Donald Trump updated the administration's healthcare policy to include new drug benefit cards for seniors and executive orders supporting insurance protection for pre-existing conditions and increased clarity around medical billing. We don't expect any major changes to our fair value estimates or moat ratings based on the announcements, but the updates slightly increase uncertainty within the drug industry. The updates add to executive orders issued over the past two months, including international drug importation, Medicare drug price setting based on international prices, elimination of drug rebates in the supply channel, and the minor expansion of 340b drug discounts (targeting low-income patients) for certain drugs (see July 27 note for more details).

We largely view the updated announcements as political and see significant challenges with the implementation of the initiatives, especially without Congressional approval. The cost for the new drug benefit cards would surpass \$5 billion, and the funding source is less clear but could come from savings generated by other initiatives. International reference pricing for Medicare would generate savings and likely be the largest headwind for the drug group. We estimate that industry sales would fall by over 20% if international drug reference pricing were used by Medicare and followed by private insurance. However, this seems highly unlikely due to the likely need for Congressional approval and the complexities and ambiguities around international pricing. The administration may lean on the demonstration policies within the Affordable Care Act to push forward the healthcare policies, but the initiatives seem to go beyond the scope intended in the ACA. Trump is also still hoping to repeal the ACA, putting the strategy into question longer term. We expect several delays to the administration's healthcare plans that will likely mean minimal healthcare policy changes until after the presidential election.

Merck Posts Strong Third Quarter, Lifted by Continued Robust Keytruda Sales and Lower Spending

Damien Conover, Sector Director, 27 October 2020

Merck reported third-quarter results that were ahead of both our and S&P CapIQ consensus expectations, partly driven by lower marketing and administrative costs as the pandemic limited spending. However, we don't expect any

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major changes to our fair value estimate based on the minor outperformance. We continue to view Merck as undervalued, with the market not fully appreciating the firm's strong immuno-oncology platform, especially in early-stage cancers, where we expect clinical data will likely support increased Keytruda use over the next several years. The strong outlook in immuno-oncology combined with continued pipeline development across several therapeutic areas further supports our wide moat rating.

In the quarter, total sales increased operationally 2% year over year, driven by growth from the firm's top drug Keytruda, up 21%, representing almost 30% of total sales. We expect continued growth from Keytruda with significant growth opportunities internationally, where the drug launched later relative to the U.S., and in earlier adjuvant lines of therapy (lung cancer in particular, with pivotal data likely in 2021). Offsetting the strong Keytruda sales, the firm's vaccines sales were largely flat, with COVID-19 headwinds hurting wellness visits and related sales from human papillomavirus vaccine Gardasil, but we expect long-term demand for the vaccine will return based on excellent efficacy.

On the pipeline front, Merck continues to make measured strides. The firm continues to post strong data for a new pneumococcal vaccine, but a competing and stronger vaccine from Pfizer will likely limit Merck's vaccine potential. Also, Merck continues to make progress in developing COVID-19 vaccines, but slower than competitors. The firm's two vaccines (V591 and V590) still need data from phase 1 studies before moving into phase 3. However, the COVID-19 antiviral molnupiravir has already moved into a phase 2/phase 3 studies based on favorable early-stage data.

While Still Uncertain, U.S. Elections Seem to Ease Concerns on Major Drug Pricing Policy Changes

Damien Conover, Sector Director, 06 November 2020

Although the outcome of the U.S. elections is still uncertain, we expect the likely politically divided Congress with either presidential candidate to pursue modest drug policy reforms that will not materially affect our valuations or moat ratings in the biopharma industry. We continue to view the biopharma group as undervalued and expect strong fundamentals combined with an easing of concerns around major U.S. drug policies to drive stock prices higher.

Over the next two years, we expect moderate policy changes to U.S. drug prices. We view changes to the out-of-pocket payments for patients in the catastrophic phase within Medicare Part D as the most likely potential change. With the current system requiring seniors to pay close to 5% of costs of very expensive drugs, patients can be on the hook for over \$5,000 per year. With bipartisan support for addressing these costs, we expect policies to change the cost structure, with the drug companies picking up some of these expenses at a relatively low hit to overall profits. Additionally, in the event of the Affordable Care Act being struck down by the Supreme Court, we would expect the divided government to be unlikely to offer a comprehensive alternative, but we wouldn't expect a major drag on biopharma earnings as the ACA didn't drive gains for the branded drug group.

Importantly, we believe the more significant U.S. drug pricing policies look unlikely to surface. We believe the probability of international reference pricing (pricing U.S. drugs at a similar rate to other developed markets) looks lower following an election that is likely to keep Congress divided. Also, we don't view Medicare drug negotiation as likely, given the politically split Congress. Overall, we expect U.S. drug pricing to remain fairly similar to the current structure, which should bode well for the biopharma industry as the group has seen pressure over concerns about potential major U.S. drug policy changes.

Implementation of Trump's Recent Efforts to Affect Drug Pricing Seems Unlikely

Damien Conover, Sector Director, 23 November 2020

President Donald Trump issued several orders on Nov. 20 designed to lower U.S. drug prices, but we don't expect implementation of the orders due to legal challenges, lack of support from the U.S. Congress and the new Biden administration, and unclear financial impacts. As a result, we don't expect any major impact on the U.S. pricing power of drugs, a core pillar of the moats and valuations in the drug industry.

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Merck & Co Inc MRK ★★★^Q 23 Nov 2020 02:00 UTC

Last Close

20 Nov 2020

80.45

Fair Value^Q

23 Nov 2020 02:00 UTC

89.00

Market Cap

20 Nov 2020

203.5 Bil

Sector

Healthcare

Industry

Drug Manufacturers - General

Country of Domicile

USA United States

There is no one analyst in which a Quantitative Fair Value Estimate and Quantitative Star Rating are attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative fair value. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities. For information regarding Conflicts of Interests, visit <http://global.morningstar.com/equitydisclosures>

Company Profile

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 hepatitis B and pediatric diseases as well as HPV and shingles. Additionally, Merck sells animal health-related drugs. From a geographical perspective, close to 40% of the

Quantitative Scores

		Scores		
		All	Rel Sector	Rel Country
Quantitative Moat	Wide	100	100	100
Valuation	Undervalued	39	29	38
Quantitative Uncertainty	High	94	96	91
Financial Health	Strong	93	80	93



Source: Morningstar Equity Research

Valuation

	Current	5-Yr Avg	Sector Median	Country Median
Price/Quant Fair Value	0.90	0.97	0.82	0.83
Price/Earnings	17.8	41.8	26.5	20.1
Forward P/E	12.4	—	11.3	13.9
Price/Cash Flow	18.5	19.5	18.4	13.1
Price/Free Cash Flow	30.4	25.7	27.3	19.5
Trailing Dividend Yield %	3.03	3.00	1.50	2.35
Price/Book	7.0	4.8	3.4	2.4
Price/Sales	4.3	4.3	4.2	2.4

Profitability

	Current	5-Yr Avg	Sector Median	Country Median
Return on Equity %	41.1	16.6	12.4	12.9
Return on Assets %	13.3	6.0	6.2	5.2
Revenue/Employee (K)	666.9	604.1	309.2	325.9

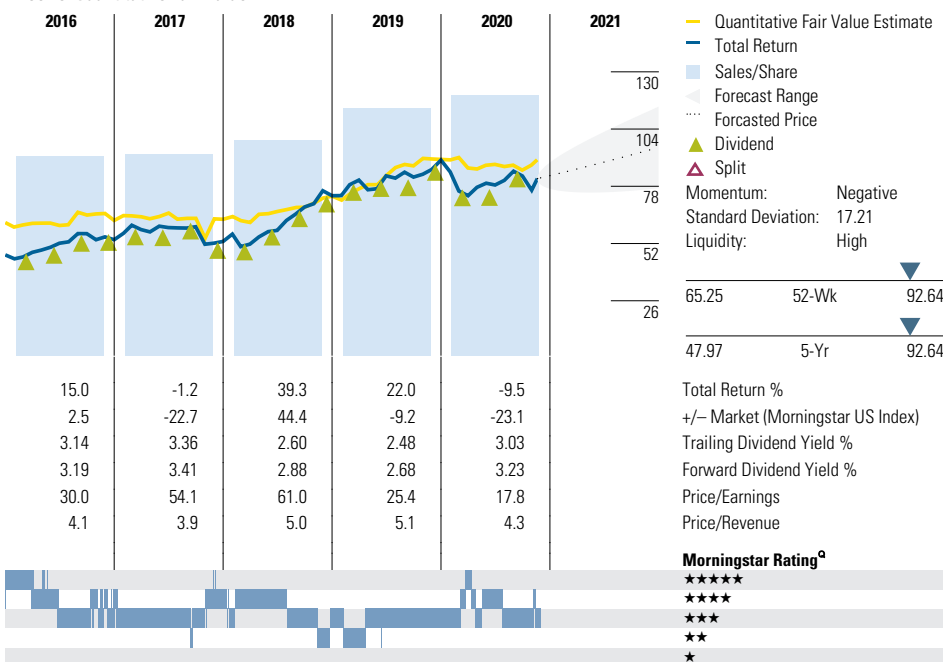
Financial Health

	Current	5-Yr Avg	Sector Median	Country Median
Distance to Default	0.7	0.7	0.6	0.5
Solvency Score	333.3	—	494.6	552.4
Assets/Equity	3.3	2.7	1.4	1.7
Long-Term Debt/Equity	0.9	0.7	0.1	0.4

Growth Per Share

	1-Year	3-Year	5-Year	10-Year
Revenue %	10.8	5.6	2.1	5.5
Operating Income %	37.1	30.6	12.9	11.8
Earnings %	64.2	39.3	-1.3	-3.9
Dividends %	13.6	6.9	5.0	4.1
Book Value %	-0.9	-11.2	-9.9	-6.0
Stock Total Return %	-2.8	17.2	10.9	10.9

Price vs. Quantitative Fair Value

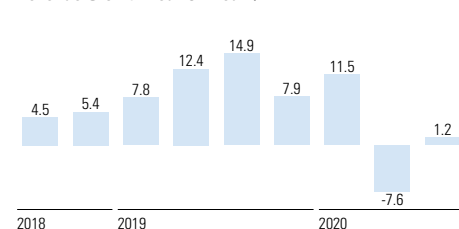


	2015	2016	2017	2018	2019	TTM	Financials (Fiscal Year in Mil)
Revenue	39,498	39,807	40,122	42,294	46,840	47,347	Revenue
% Change	-6.5	0.8	0.8	5.4	10.7	1.1	% Change
Operating Income	7,547	6,030	7,309	8,931	12,241	13,185	Operating Income
% Change	12.9	-20.1	21.2	22.2	37.1	7.7	% Change
Net Income	4,442	3,920	2,394	6,220	9,843	11,517	Net Income
Operating Cash Flow	12,421	10,376	6,447	10,922	13,440	11,041	Operating Cash Flow
Capital Spending	-1,283	-1,614	-1,888	-2,615	-3,473	-4,307	Capital Spending
Free Cash Flow	11,138	8,762	4,559	8,307	9,967	6,734	Free Cash Flow
% Sales	28.2	22.0	11.4	19.6	21.3	14.2	% Sales
EPS	1.56	1.41	0.87	2.32	3.81	4.53	EPS
% Change	-61.7	-9.6	-38.3	166.7	64.2	18.9	% Change
Free Cash Flow/Share	1.65	3.33	1.57	3.31	3.45	3.67	Free Cash Flow/Share
Dividends/Share	1.81	1.85	1.89	1.99	2.26	2.44	Dividends/Share
Book Value/Share	16.39	15.91	14.18	12.51	10.57	10.93	Book Value/Share
Shares Outstanding (Mil)	2,781	2,749	2,697	2,593	2,539	2,530	Shares Outstanding (Mil)
Profitability	9.5	9.3	6.4	20.4	37.4	41.1	Profitability
Return on Equity %	4.4	4.0	2.6	7.3	11.8	13.3	Return on Equity %
Return on Assets %	11.3	9.9	6.0	14.7	21.0	24.3	Return on Assets %
Net Margin %	0.39	0.40	0.44	0.50	0.56	0.55	Net Margin %
Asset Turnover	2.3	2.4	2.6	3.1	3.3	3.1	Asset Turnover
Financial Leverage	62.2	65.1	68.2	68.1	69.9	71.2	Financial Leverage
Gross Margin %	19.1	15.2	18.2	21.1	26.1	27.9	Gross Margin %
Operating Margin %	23,929	24,274	21,353	19,806	22,736	26,321	Operating Margin %
Long-Term Debt	44,676	40,088	34,336	26,701	25,907	29,186	Long-Term Debt
Total Equity	3.1	3.2	3.3	3.3	3.3	3.0	Total Equity
Fixed Asset Turns							Fixed Asset Turns

Quarterly Revenue & EPS

	Mar	Jun	Sep	Dec	Total
Revenue (Mil)					
2020	12,057.0	10,872.0	12,551.0	—	—
2019	10,816.0	11,760.0	12,397.0	11,868.0	46,840.0
2018	10,037.0	10,465.0	10,794.0	10,998.0	42,294.0
2017	9,434.0	9,930.0	10,325.0	10,433.0	40,122.0
Earnings Per Share (I)					
2020	1.26	1.18	1.16	—	—
2019	1.12	1.03	0.74	0.92	3.81
2018	0.27	0.63	0.73	0.69	2.32
2017	0.56	0.71	-0.02	-0.32	0.87

Revenue Growth Year On Year %



Research Methodology for Valuing Companies

Qualitative Equity Research 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. We believe this bottom-up, long-term, fundamentally based approach allows our analysts to focus on long-term business drivers, which have the greatest valuation impact, rather than short-term market noise.

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 an uncertainty-adjusted 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 single-point 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 excess economic profits as returns 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.

To assess the direction of the underlying competitive advantages, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

All the moat and moat trend ratings undergo periodic review and any changes must be approved by the Morningstar Economic Moat Committee, comprised of senior members of Morningstar's equity research department.

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 working-capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes, or EBI, and the net new investment, or NNI, to derive our annual free cash flow forecast.

Stage II: Fade

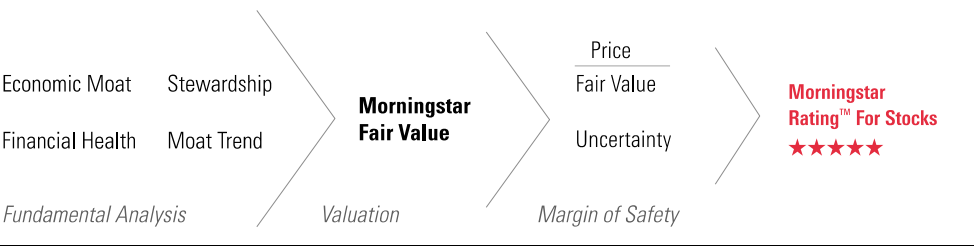
The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling 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, or RONIC, and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until the perpetuity stage is reached. 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.

Morningstar Research Methodology for Valuing Companies



Research Methodology for Valuing Companies

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating represents the analysts' ability to bound the estimated value of the shares in a company around the fair value estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, and other company-specific factors.

Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate.

Our recommended margin of safety widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, 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 for our qualitative analysis are low, medium, high, very high, and extreme.

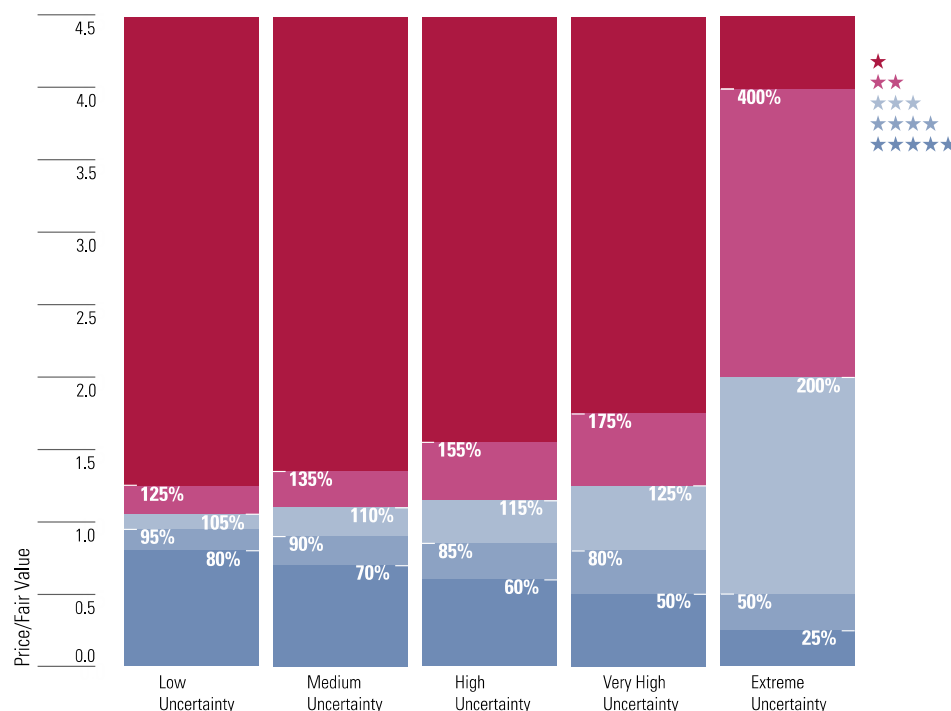
- ▶ Low—margin of safety for 5-star rating is a 20% discount and for 1-star rating is 25% premium.
- ▶ Medium—margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.
- ▶ High—margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.
- ▶ Very High—margin of safety for 5-star rating is a 50% discount and for 1-star rating is 75% premium.
- ▶ Extreme—margin of safety for 5-star rating is a 75% discount and for 1-star rating is 300% premium.

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 Equity Research Star Rating Methodology



Morningstar Star Rating for Stocks

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.

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-adjusted return is highly likely over a multiyear time frame. 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. The market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Research Methodology for Valuing Companies

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.

Stewardship Rating: Represents our assessment of management's stewardship of shareholder capital, with particular emphasis on capital allocation decisions. Analysts consider companies' investment strategy and valuation, financial leverage, dividend and share buyback policies, execution, compensation, related party transactions, and accounting practices. Corporate governance practices are only considered if they've had a demonstrated impact on shareholder value. Analysts assign one of three ratings: "Exemplary," "Standard," and "Poor." Analysts judge stewardship from an equity holder's perspective. Ratings are determined on an absolute basis. Most companies will receive a Standard rating, and this is the default rating in the absence of evidence that managers have made exceptionally strong or poor capital allocation decisions.

Quantitative Valuation: Using the below terms, intended to denote the relationship between the security's Last Price and Morningstar's quantitative fair value estimate for that security.

- Undervalued: Last Price is below Morningstar's quantitative fair value estimate.
- Fairly Valued: Last Price is in line with Morningstar's quantitative fair value estimate.
- Overvalued: Last Price is above Morningstar's quantitative fair value estimate.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

Quantitative Equity Reports Overview

The quantitative report on equities consists of data, statistics and quantitative equity ratings on equity securities. Morningstar, Inc.'s quantitative equity ratings are forward looking and are generated by a statistical model that is based on Morningstar Inc.'s analyst-driven equity ratings and quantitative statistics. Given the nature of the

quantitative report and the quantitative ratings, there is no one analyst in which a given report is attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities.

Quantitative Equity Ratings

Morningstar's quantitative equity ratings consist of:

- (i) Quantitative Fair Value Estimate
 - (ii) Quantitative Star Rating
 - (iii) Quantitative Uncertainty
 - (iv) Quantitative Economic Moat
 - (v) Quantitative Financial Health
- (collectively the "Quantitative Ratings").

The Quantitative Ratings are calculated daily and derived from the analyst-driven ratings of a company's peers as determined by statistical algorithms. Morningstar, Inc. ("Morningstar," "we," "our") calculates Quantitative Ratings for companies whether it already provides analyst ratings and qualitative coverage. In some cases, the Quantitative Ratings may differ from the analyst ratings because a company's analyst-driven ratings can significantly differ from other companies in its peer group.

Quantitative Fair Value Estimate: Intended to represent Morningstar's estimate of the per share dollar amount that a company's equity is worth today. Morningstar calculates the quantitative fair value estimate using a statistical model derived from the fair value estimate Morningstar's equity analysts assign to companies. Please go to <https://shareholders.morningstar.com> for information about fair value estimates Morningstar's equity analysts assign to companies.

Quantitative Economic Moat: Intended to describe the strength of a firm's competitive position. It is calculated using an algorithm designed to predict the Economic Moat rating a Morningstar analyst would assign to the stock. The rating is expressed as Narrow, Wide, or None.

- Narrow: assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 70% but less than 99%.
- Wide: assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 99%.
- None: assigned when the probability of an analyst receiving a "Wide Moat" rating by an analyst is less than 70%.

Quantitative Star Rating: Intended to be the summary rating based on the combination of our Quantitative Fair

Value Estimate, current market price, and the Quantitative Uncertainty Rating. The rating is expressed as 1-Star, 2-Star, 3-Star, 4-Star, and 5-Star.

★: the stock is overvalued with a reasonable margin of safety.

Log (Quant FVE/Price) < -1 * Quantitative Uncertainty

★★: the stock is somewhat overvalued.

Log (Quant FVE/Price) between (-1 * Quantitative Uncertainty, -0.5 * Quantitative Uncertainty)

★★★: the stock is approximately fairly valued.

Log (Quant FVE/Price) between (-0.5 * Quantitative Uncertainty, 0.5 * Quantitative Uncertainty)

★★★★: the stock is somewhat undervalued.

Log (Quant FVE/Price) between (0.5 * Quantitative Uncertainty, 1 * Quantitative Uncertainty)

★★★★★: the stock is undervalued with a reasonable margin of safety. Log (Quant FVE/Price) > 1 * Quantitative Uncertainty

Quantitative Uncertainty: Intended to represent Morningstar's level of uncertainty about the accuracy of the quantitative fair value estimate. Generally, the lower the quantitative Uncertainty, the narrower the potential range of outcomes for that particular company. The rating is expressed as Low, Medium, High, Very High, and Extreme.

- Low: the interquartile range for possible fair values is less than 10%.
- Medium: the interquartile range for possible fair values is less than 15% but greater than 10%.
- High: the interquartile range for possible fair values is less than 35% but greater than 15%.
- Very High: the interquartile range for possible fair values is less than 80% but greater than 35%.
- Extreme: the interquartile range for possible fair values is greater than 80%.

Quantitative Financial Health: Intended to reflect the probability that a firm will face financial distress in the near future. The calculation uses a predictive model designed to anticipate when a company may default on its financial obligations. The rating is expressed as Weak, Moderate, and Strong.

- Weak: assigned when Quantitative Financial Health < 0.2
- Moderate: assigned when Quantitative Financial Health is between 0.2 and 0.7
- Strong: assigned when Quantitative Financial Health > 0.7

Research Methodology for Valuing Companies

Other Definitions

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

Quantitative Valuation: Using the below terms, intended to denote the relationship between the security's Last Price and Morningstar's quantitative fair value estimate for that security.

- Undervalued: Last Price is below Morningstar's quantitative fair value estimate.
- Fairly Valued: Last Price is in line with Morningstar's quantitative fair value estimate.
- Overvalued: Last Price is above Morningstar's quantitative fair value estimate.

This Report has not been made available to the issuer of the security prior to publication.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report.

The quantitative equity ratings are not statements of fact. Morningstar does not guarantee the completeness or accuracy of the assumptions or models used in determining the quantitative equity ratings. In addition, there is the risk that the price target will not be met due to such things as unforeseen changes in demand for the company's products, changes in management, technology, economic development, interest rate development, operating and/or material costs, competitive pressure, supervisory law, exchange rate, and tax rate. For investments in foreign markets there are further risks, generally based on exchange rate changes or changes in political and social conditions.

A change in the fundamental factors underlying the quantitative equity ratings can mean that the valuation is subsequently no longer accurate.

For more information about Morningstar's quantitative methodology, please visit <http://global.morningstar.com/equitydisclosures>.

Merck & Co Inc MRK (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★★	80.45 USD	100.00 USD	0.80	3.03	3.23	203.54	Drug Manufacturers - General	Standard
20 Nov 2020 22:17, UTC	20 Nov 2020	14 May 2020 14:12, UTC		20 Nov 2020	20 Nov 2020	20 Nov 2020		

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The Equity Research Group believes its analysts make a reasonable effort to carefully research information contained in the analysis. The information on which the analysis is based has been obtained from sources believed to be reliable such as, for example, the company's financial statements filed with a regulator, company website, Bloomberg and any other the relevant press sources. Only the information obtained from such sources is made available to the issuer who is the subject of the analysis, which is necessary to properly reconcile with the facts. Should this sharing of information result in considerable changes, a statement of that fact will be noted within the report. While the Equity Research Group has obtained data, statistics and information from sources it believes to be reliable, neither the Equity Research Group nor Morningstar, Inc. performs an audit or seeks independent verification of any of the data, statistics, and information it receives.

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Merck & Co Inc MRK (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★ 20 Nov 2020 22:17, UTC	80.45 USD 20 Nov 2020	100.00 USD 14 May 2020 14:12, UTC	0.80	3.03 20 Nov 2020	3.23 20 Nov 2020	203.54 20 Nov 2020	Drug Manufacturers - General	Standard

investment decision and when deemed necessary, to seek the advice of a legal, tax, and/or accounting professional.

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- No interests are held by the analyst with respect to the security subject of this investment research report. – Morningstar, Inc. may hold a long position in the security subject of this investment research report that exceeds 0.5% of the total issued share capital of the security. To determine if such is the case, please click <http://msi.morningstar.com> and <http://mdi.morningstar.com>.
- Analysts' compensation is derived from Morningstar, Inc.'s overall earnings and consists of salary, bonus and in some cases restricted stock.

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- Neither Morningstar, Inc. or the Equity Research Group is a market maker or a liquidity provider of the security noted within this report.

- Neither Morningstar, Inc. or the Equity Research Group has been a lead manager or co-lead manager over the previous 12-months of any publicly disclosed offer of financial instruments of the issuer.

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Merck & Co Inc MRK (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★	80.45 USD	100.00 USD	0.80	3.03	3.23	203.54	Drug Manufacturers - General	Standard
20 Nov 2020 22:17, UTC	20 Nov 2020	14 May 2020 14:12, UTC		20 Nov 2020	20 Nov 2020	20 Nov 2020		

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