

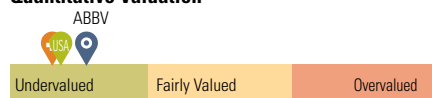
AbbVie Inc ABBV (XNYS)

Morningstar Rating ★★★★ 31 May 2019 22:07, UTC	Last Price 76.71 USD 31 May 2019	Fair Value Estimate 102.00 USD 01 Dec 2018 00:04, UTC	Price/Fair Value 0.75	Trailing Dividend Yield % 5.29 31 May 2019	Forward Dividend Yield % 5.58 31 May 2019	Market Cap (Bil) 113.40 31 May 2019	Industry Drug Manufacturers - Major	Stewardship Standard
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Morningstar Pillars	Analyst	Quantitative
Economic Moat	Narrow	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	0.86	0.97	0.82	0.83
Price/Earnings	21.5	26.8	26.5	20.1
Forward P/E	8.8	—	11.3	13.9
Price/Cash Flow	8.4	16.6	18.4	13.1
Price/Free Cash Flow	8.8	18.3	27.3	19.5
Trailing Dividend Yield%	5.29	3.23	1.50	2.35

Source: Morningstar

Bulls Say

- ▶ AbbVie supports a strong dividend yield, which should act as valuation support, as the cash flows to support the dividend look secure over the next few years.
- ▶ AbbVie's increasing entrenchment in blood cancers should bode well for growth as pricing power remains solid in this therapeutic area of the pharmaceutical market.
- ▶ AbbVie's next generation immunology drugs targeting the IL23 and JAK pathways should help mitigate the competitive threats facing Humira.

Bears Say

- ▶ Several of AbbVie's pipeline drugs in immunology have mechanisms of action similar to drugs already approved, taking away the first mover advantage for AbbVie.
- ▶ The high profit margins on Humira will likely cause an amplified impact on earnings as sales are lost to eventual biosimilar competition.
- ▶ The pricing power of hepatitis C drugs has eroded significantly over the past few years, which may put further pressure on AbbVie next generation hepatitis C platform.

Important Disclosure:

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AbbVie Posts Solid 1Q, With Cancer Drugs and U.S. Humira Sales Offsetting Biosimilar Pressure

Business Strategy and Outlook

Damien Conover, CFA, Sector Director, 27 April 2018

While AbbVie holds a strong portfolio of marketed and pipeline drugs, the increasing competition to the company's key drug Humira should slow the growth for the company. At over 50% of total sales and a higher portion of earnings (due to higher margin revenue), Humira is a key determinant of AbbVie's performance over the next three years.

With approvals in rheumatoid arthritis, psoriasis, and Crohn's disease, Humira should continue to grow in 2018 as these markets as penetration rates are below 25% on average, but longer-term challenges are emerging. Despite a favorable near-term outlook for Humira in 2018, uncertainty around encroaching competition will likely weigh on investor sentiment toward the company. In particular, new JAK inhibitors, IL-17 and IL-23 antibodies represent major drug advancements in rheumatoid arthritis and psoriasis, which will likely lead to some market share losses for Humira. Also, while Humira's biologic composition and longer-lasting patents may deter generic completion following the late-2016 key patent loss in the U.S. and the 2018 patent loss in Europe, we model close to 20% annual revenue declines for Humira by 2021.

Partly offsetting Humira's eventual declines, AbbVie looks well-positioned with the next generation immunology drugs. In particular, pipeline drugs have shown improved efficacy and safety over Humira and other currently leading treatment options.

Beyond immunology, cancer drug Imbruvica is the next-biggest sales contributor. Imbruvica's strong clinical data in several forms of blood cancer should lead to peak sales above \$6 billion. AbbVie's remaining drugs are largely mature with patent expirations long past, but have manufacturing or specific dosing complexities which make generic competition less likely.

Looking forward, AbbVie's pipeline is weighted heavily toward new cancer drugs. In particular, AbbVie's pipeline should lead to an increasingly strong position in blood

cancer. The company should be able to leverage its solid entrenchment with Imbruvica to launch the new drugs.

Analyst Note

Damien Conover, CFA, Sector Director, 25 April 2019

AbbVie reported first-quarter results slightly ahead of our expectations, but we don't expect any significant impact to our fair value estimate based on the minor outperformance, and we continue to view the stock as undervalued. With its increasing focus on the erosion of sales from immunology drug Humira, we believe the investment community is not fully appreciating the company's solid pipeline of next-generation immunology drugs. While we expect the Humira biosimilar pressure to increase internationally and to start in 2023 in the U.S., we believe the company has a strong enough position with several other marketed drugs and new pipeline drugs to support a narrow moat.

In the quarter, total sales were largely flat operationally, with international declines from Humira offset by growth in oncology drugs and U.S. Humira sales, a trend we expect to continue throughout the year. However, as AbbVie laps the heavy international biosimilar Humira competition later in the year, we expect growth will improve in 2020. Also, AbbVie is making solid strides in bringing next-generation immunology drugs to the market that hold superior profiles over Humira. The recent approval of Skyrizi brings a new psoriasis drug to the market with leading efficacy and a slight dosing advantage over Johnson & Johnson's Tremfya, which holds a similar mechanism of action. Also, we expect approval of rheumatoid arthritis drug upadacitinib in the third quarter, and the drug looks well positioned for refractory patients. Beyond the new launches, AbbVie's currently marketed cancer drugs Imbruvica and Venclexta continue to post strong growth, and we expect this to continue as both drugs move into earlier lines of therapy. While AbbVie looks increasingly well positioned for the biosimilar Humira competition in the U.S. expected in 2023, we do expect significant total sales declines in 2023-24 (down 9% and 16%, respectively) before stabilizing in 2025.

Economic Moat

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Close Competitors	Currency (Mil)	Market Cap	TTM Sales	Operating Margin	TTM/PE
Johnson & Johnson JNJ	USD	348,211	81,593	22.99	24.27
Pfizer Inc PFE	USD	230,848	53,859	28.80	21.28
Merck & Co Inc MRK	USD	203,938	43,073	25.98	25.00
Eli Lilly and Co LLY	USD	112,558	24,684	25.45	44.84

Damien Conover, Sector Director, 15 January 2019

We believe AbbVie supports a narrow moat based on patent-protected drugs, intellectual intangibles, and a powerful salesforce. As is the case for most drug firms, the core of AbbVie's moat lies in its portfolio of patent-protected drugs. However, unlike AbbVie's Big Pharma peers, which tend to carry wide moats, one drug (Humira) represents the majority of AbbVie's sales (more than 50%) and profits (greater than 70%). As a result of both emerging branded competition to Humira in the immediate term and a potential generic biosimilar threat in the 2018-20 time frame, we believe excess returns are likely to persist for 10 years, but we cannot be as certain of this for our 20-year outlook, which would be needed for a wide-moat rating. While we do model in Humira sales declines beginning in 2020, the rate of decline will likely be more gradual than a typical small molecule-branded drug facing generic competition, because of the complexities in developing and marketing a biosimilar (generic biologic).

Nevertheless, AbbVie derives enormous cash flows from its current product portfolio to fund ongoing discovery and development of the next generation of drugs. The large cash flows create an economy of scale that enables AbbVie to fund the average \$800 million required for a new drug. While not as strong as other Big Pharma firms, AbbVie's R&D has created a database of intellectual insights that should help increase the odds of successful drug development. Finally, AbbVie's entrenched salesforce in one of the most sought-after therapeutic areas of immunology should help the firm launch its next generation of drugs and make the company a leading candidate for smaller drug firms needing help to develop and commercialize innovative new drugs.

Fair Value & Profit Drivers

Damien Conover, Sector Director, 15 January 2019

Our AbbVie fair value estimate stands at \$102. We model annual Humira declines beginning in 2019 outside the U.S. and in 2023 in the U.S., following key patent settlements. A key valuation driver to offset eventual likely Humira sales declines is the company's next-generation

immunology drugs targeting the IL23 and JAK pathways as these new pathways seem to offer better efficacy and an improved side effect profile over Humira. Further helping offset likely eventual Humira sales erosion, cancer drug Imbruvica holds strong blockbuster potential in leukemia. Also, the company has several other late-stage cancer drugs that should further help mitigate the eventual Humira sales declines. Our \$36 billion 2020 total sales projection is slightly below management's guidance of over \$37 billion. On the bottom line, over the next three years we expect improving margins, largely driven by the higher contribution to total sales by specialty drugs, which carry very high margins. Also, AbbVie's partnership royalties on Humira began to expire in 2017, helping improve gross margins. For the weighted average cost of capital, we use a 7.5% cost of equity and market rates for the cost of debt.

Risk & Uncertainty

Damien Conover, Sector Director, 15 January 2019

Similar to other drug firms, AbbVie faces the risks of new drug failures, reimbursement challenges for new drugs, and drug pricing cuts by large payer groups that are growing increasingly price-sensitive. Further, AbbVie's high concentration of Humira sales makes the company significantly exposed to any new competitive threats to Humira, both from biosimilars and new branded drug competition.

Stewardship

Damien Conover, Sector Director, 15 January 2019

We believe AbbVie's management team has demonstrated Standard stewardship. While the failed acquisition attempt for Shire is concerning, we believe the new abrupt U.S. Treasury laws largely caused the acquisition to collapse, somewhat giving management a pass. Nevertheless, the \$1.6 billion breakup fee related to the failed Shire deal does show that management didn't gauge the political landscape correctly. Further, the \$21 billion Pharmacyclics acquisition appears to be a fair use of capital if Imbruvica can reach our \$6 billion plus peak sales projection.

Turning to management specifically, AbbVie is led by Rick Gonzalez, who joined Abbott in 1977 and held many managerial posts throughout his career at the firm. However, he only recently led the drug group starting in July 2010 after a brief retirement. His relatively short tenure in the key field of drug commercialization and

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development is a concern, but execution has been going well under his leadership. Backing up Gonzalez, CFO Bill Chase has been with Abbott for more than 20 years. Chase's background in licensing and acquisitions is helpful, as AbbVie will need to redeploy the strong cash flows from Humira into acquisitions and partnering to augment the company's developing pipeline. However, Chase's recent announcement to retire in mid-2019 will leave a void that we expect will be replaced by an internal candidate.

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Analyst Notes Archive

AbbVie Posts Steady 4Q and Offers Slightly Disappointing 2019 Outlook, but Shares Look Undervalued

Damien Conover, Sector Director, 25 January 2019

Along with fourth-quarter results that largely met our expectations and slightly underperformed consensus expectations, AbbVie provided 2019 guidance slightly below our projections. We don't expect any meaningful change in our fair value estimate, however. AbbVie's 2019 guidance for oncology drug Venclexta and endometriosis drug Orilissa is slightly behind our projections, but we continue to expect both drugs will develop into major sales contributors with 2022 sales estimates of \$3 billion and \$900 million, respectively. Also, increased generic competition to testosterone therapy AndroGel will weigh on 2019. However, our sales decline of 30% expected for Humira internationally due to biosimilars is in line with management's guidance. Despite these headwinds in 2019, AbbVie is reasonably well positioned with new drugs to mitigate most of the generic pressures affecting Humira over the long term, supporting our narrow moat rating. However, we lack conviction to award a wide moat rating, given the higher level of uncertainty in offsetting generic Humira pressures, as the drug represents close to 60% of total sales.

In the quarter, international Humira sales fell 15% year over year, and we expect this decline to accelerate in 2019 to 30%. We expect Humira to face further price and volume erosion in 2020 of close to 20%. By 2021, we expect biosimilars to launch in the remaining 25% of international countries, which should lead to our projected decline of 30%. We expect the largest generic headwind in 2023, when biosimilars are likely to enter the United States.

AbbVie is launching several new drugs that should help mitigate Humira biosimilar pressures. We expect major blockbuster potential for immunology drugs risankizumab and upadacitinib, both of which should launch in 2019. Further, currently launched hematology drugs Imbruvica and Venclexta should grow significantly based on new indications and excellent efficacy.

AbbVie Posts Solid 1Q, With Cancer Drugs and U.S. Humira Sales Offsetting Biosimilar Pressure

Damien Conover, Sector Director, 25 April 2019

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AbbVie Inc ABBV ★★★★★^Q 01 Jun 2019 02:00 UTC

Last Close
31 May 2019
76.71

Fair Value^Q
01 Jun 2019 02:00 UTC
89.42

Market Cap
31 May 2019
113.4 Bil

Sector
Healthcare

Industry
Drug Manufacturers - Major United States

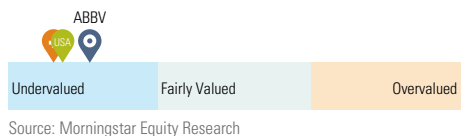
There is no one analyst in which a Quantitative Fair Value Estimate and Quantitative Star Rating are attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative fair value. As an employee of 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

AbbVie is a drug company with a strong exposure to immunology and oncology. The company's top drug, Humira, represents over half of the company's current profits. The company was spun off from Abbott in early 2013.

Quantitative Scores

		Scores		
		All	Rel Sector	Rel Country
Quantitative Moat	Wide	100	100	99
Valuation	Undervalued	48	41	42
Quantitative Uncertainty	High	95	95	93
Financial Health	Strong	93	90	93



Valuation

	Current	5-Yr Avg	Sector Median	Country Median
Price/Quant Fair Value	0.86	0.97	0.82	0.83
Price/Earnings	21.5	26.8	26.5	20.1
Forward P/E	8.8	—	11.3	13.9
Price/Cash Flow	8.4	16.6	18.4	13.1
Price/Free Cash Flow	8.8	18.3	27.3	19.5
Trailing Dividend Yield %	5.29	3.23	1.50	2.35
Price/Book	—	26.9	3.4	2.4
Price/Sales	3.6	4.7	4.2	2.4

Profitability

	Current	5-Yr Avg	Sector Median	Country Median
Return on Equity %	—	—	12.4	12.9
Return on Assets %	8.5	9.1	6.2	5.2
Revenue/Employee (Mil)	1.1	0.9	0.3	0.3

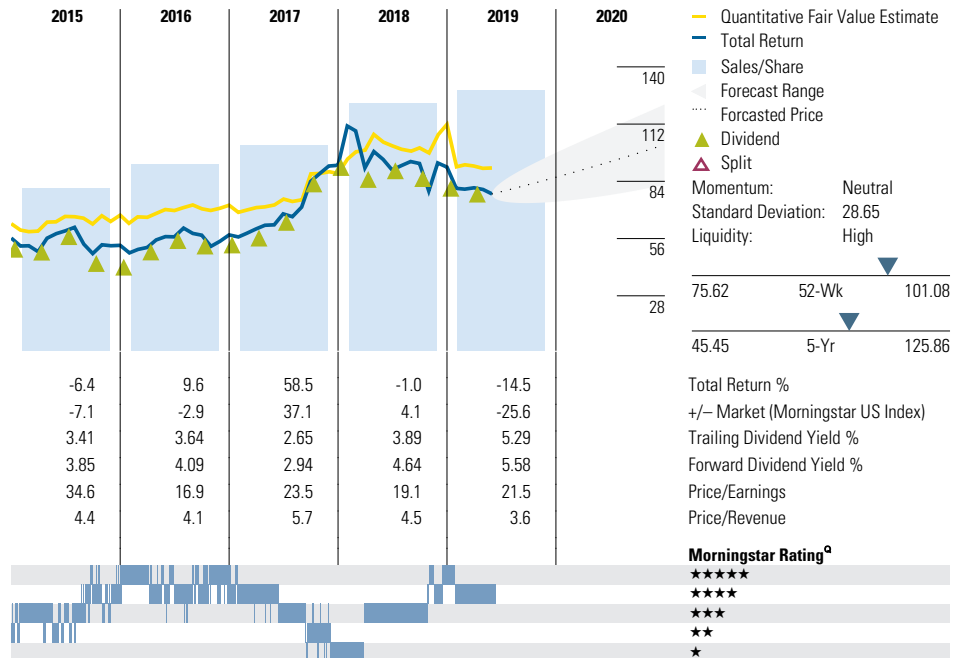
Financial Health

	Current	5-Yr Avg	Sector Median	Country Median
Distance to Default	0.8	0.6	0.6	0.5
Solvency Score	—	—	494.6	552.4
Assets/Equity	-7.0	10.1	1.4	1.7
Long-Term Debt/Equity	-4.1	4.7	0.1	0.4

Growth Per Share

	1-Year	3-Year	5-Year	10-Year
Revenue %	16.1	12.7	11.8	—
Operating Income %	-33.1	-5.4	2.4	—
Earnings %	10.9	5.4	7.4	—
Dividends %	40.2	21.1	17.5	—
Book Value %	—	—	—	—
Stock Total Return %	-18.4	11.0	10.7	—

Price vs. Quantitative Fair Value

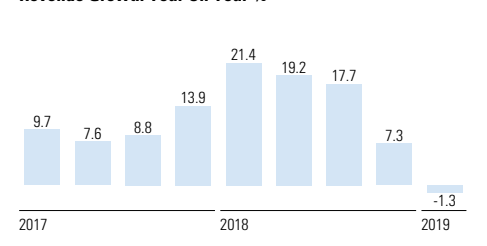


	2014	2015	2016	2017	2018	TTM	Financials (Fiscal Year in Mil)
Revenue	19,960	22,859	25,638	28,216	32,753	32,647	Revenue
% Change	6.2	14.5	12.2	10.1	16.1	-0.3	% Change
Operating Income	3,411	7,537	9,384	9,592	6,383	6,490	Operating Income
% Change	-39.8	121.0	24.5	2.2	-33.5	1.7	% Change
Net Income	1,774	5,144	5,953	5,309	5,687	5,360	Net Income
Operating Cash Flow	3,549	7,535	7,041	9,960	13,427	13,799	Operating Cash Flow
Capital Spending	-612	-532	-479	-529	-638	-626	Capital Spending
Free Cash Flow	2,937	7,003	6,562	9,431	12,789	13,173	Free Cash Flow
% Sales	14.7	30.6	25.6	33.4	39.0	40.3	% Sales
EPS	1.10	3.13	3.63	3.30	3.66	3.57	EPS
% Change	-57.0	184.5	16.0	-9.1	10.9	-2.5	% Change
Free Cash Flow/Share	2.96	2.73	4.25	5.26	7.58	8.68	Free Cash Flow/Share
Dividends/Share	1.66	2.02	2.28	2.56	3.59	3.95	Dividends/Share
Book Value/Share	2.92	3.02	4.06	4.20	-1.98	-5.29	Book Value/Share
Shares Outstanding (Mil)	1,591	1,610	1,593	1,592	1,479	1,478	Shares Outstanding (Mil)
Return on Equity %	56.9	180.9	138.1	108.6	—	—	Profitability
Return on Assets %	6.3	12.8	9.9	7.7	8.7	8.5	Return on Assets %
Net Margin %	8.9	22.5	23.1	18.7	17.3	16.3	Net Margin %
Asset Turnover	0.70	0.57	0.43	0.41	0.50	0.52	Asset Turnover
Financial Leverage	15.8	13.4	14.3	13.9	—	—	Financial Leverage
Gross Margin %	77.8	80.3	77.3	75.1	76.4	77.1	Gross Margin %
Operating Margin %	17.1	33.0	36.6	34.0	19.5	19.9	Operating Margin %
Long-Term Debt	10,565	29,240	36,440	30,953	35,002	—	Long-Term Debt
Total Equity	1,742	3,945	4,636	5,097	-8,446	-7,826	Total Equity
Fixed Asset Turns	8.3	9.1	9.9	10.4	11.5	11.5	Fixed Asset Turns

Quarterly Revenue & EPS

Revenue (Mil)	Mar	Jun	Sep	Dec	Total
2019	7,828.0	—	—	—	—
2018	7,934.0	8,278.0	8,236.0	8,305.0	32,753.0
2017	6,538.0	6,944.0	6,995.0	7,739.0	28,216.0
2016	5,958.0	6,452.0	6,432.0	6,796.0	25,638.0
Earnings Per Share (€)					
2019	1.65	—	—	—	—
2018	1.74	1.26	1.81	-1.23	3.66
2017	1.06	1.19	1.01	0.03	3.30
2016	0.83	0.98	0.97	0.85	3.63

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

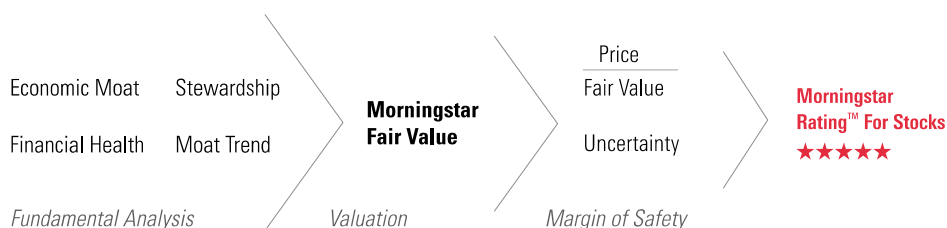
The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling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

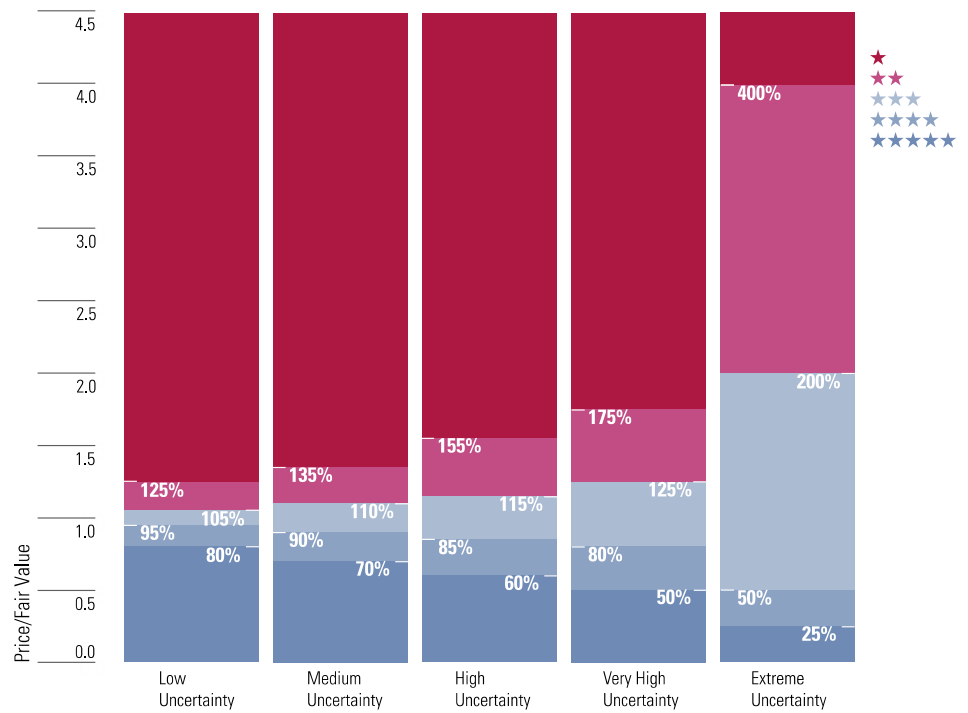
- ▶ Low—margin of safety for 5-star rating is a 20% discount and for 1-star rating is 25% premium.
- ▶ Medium—margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.
- ▶ High—margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.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

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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>.

AbbVie Inc ABBV (XNYS)

Morningstar Rating ★★★★	Last Price 76.71 USD	Fair Value Estimate 102.00 USD	Price/Fair Value 0.75	Trailing Dividend Yield % 5.29	Forward Dividend Yield % 5.58	Market Cap (Bil) 113.40	Industry Drug Manufacturers - Major	Stewardship Standard
31 May 2019 22:07, UTC	31 May 2019	01 Dec 2018 00:04, UTC		31 May 2019	31 May 2019	31 May 2019		

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AbbVie Inc ABBV (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★	76.71 USD	102.00 USD	0.75	5.29	5.58	113.40	Drug Manufacturers - Major	Standard
31 May 2019 22:07, UTC	31 May 2019	01 Dec 2018 00:04, UTC		31 May 2019	31 May 2019	31 May 2019		

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AbbVie Inc ABBV (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★	76.71 USD	102.00 USD	0.75	5.29	5.58	113.40	Drug Manufacturers - Major	Standard
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