

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers

## House GOP Takes First Step to Fulfill Promise on ACA

See Page 2 for the full Analyst Note from 04 May 2017

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

Research as of 04 May 2017  
Estimates as of 26 Apr 2017  
Pricing data through 18 May 2017  
Rating updated as of 18 May 2017

Currency amounts expressed with "\$" are in U.S. dollars (USD) unless otherwise denoted.

### Contents

Investment Thesis	
Morningstar Analysis	
Analyst Note	2
Valuation, Growth and Profitability	2
Scenario Analysis	2
Economic Moat	3
Moat Trend	3
Bulls Say/Bears Say	5
Financial Health	6
Enterprise Risk	6
Management & Ownership	7
Analyst Note Archive	8
Additional Information	-
Morningstar Analyst Forecasts	10
Comparable Company Analysis	14
Methodology for Valuing Companies	16

### Investment Thesis 12 Dec 2016

With strong positions in multiple key health-care businesses, Novartis is well-positioned for steady long-term growth. Strong intellectual property supporting multibillion-dollar products, combined with an abundance of late-pipeline products, creates a wide economic moat. While the recent patent loss on Diovan and the 2016 patent loss on Gleevec will weigh on growth, the company's strong strategic position should lead to solid long-term growth.

Novartis derives its strength from a diversified operating platform that includes branded pharmaceuticals, generics, eye-care products, and consumer products. Although the majority of its competitors focus solely on the high-margin branded pharmaceutical segment, Novartis runs several complementary operations that reduce overall volatility and create cross-segment synergies. For example, not only does its generic business, Sandoz, serve to grab a portion of the billions of dollars in competitive branded products losing patent protection during the next 10 years, but it also extends the life cycle of in-house products as patents expire. Further, the acquisition of Alcon in 2011 greatly boosts Novartis' consumer and drug segments with additional sales from the fast-growing eye-care business.

The pharmaceutical segment is poised for long-term growth driven by new pipeline products and existing drugs. Novartis differentiates itself because of its sheer number of blockbusters, including Gilenya for multiple sclerosis, and Afinitor and Tasigna for cancer. Also, the company has generated a strong late-stage pipeline with recent launches of heart failure drug Entresto and immunology drug Cosentyx. Despite the recent patent losses on Diovan and Gleevec, the combination of a strong pipeline of new products and a diverse, well-positioned operating platform should translate into steady growth over the long term.

### Vital Statistics

Market Cap (USD Mil)	189,980
52-Week High (USD)	83.58
52-Week Low (USD)	66.93
52-Week Total Return %	9.3
YTD Total Return %	13.7
Last Fiscal Year End	31 Dec 2016
5-Yr Forward Revenue CAGR %	1.8
5-Yr Forward EPS CAGR %	4.1
Price/Fair Value	0.92

### Valuation Summary and Forecasts

	Fiscal Year:	2015	2016	2017(E)	2018(E)
Price/Earnings		17.4	15.5	17.6	16.7
EV/EBITDA		19.3	16.4	14.1	13.5
EV/EBIT		22.6	19.3	19.7	18.4
Free Cash Flow Yield %		4.6	5.6	6.6	5.9
Dividend Yield %		3.2	3.7	3.4	3.6

### Financial Summary and Forecasts (USD Mil)

	Fiscal Year:	2015	2016	2017(E)	2018(E)
Revenue		50,387	49,436	48,381	49,666
Revenue YoY %		-15.0	-1.9	-2.1	2.7
EBIT		9,243	8,971	10,794	11,593
EBIT YoY %		-27.0	-2.9	20.3	7.4
Net Income, Adjusted		12,041	11,314	10,818	11,384
Net Income YoY %		-5.6	-6.0	-4.4	5.2
Diluted EPS		4.94	4.71	4.54	4.80
Diluted EPS YoY %		-4.4	-4.6	-3.8	5.8
Free Cash Flow		13,482	9,241	13,311	11,901
Free Cash Flow YoY %		2.7	-31.5	44.0	-10.6

Historical/forecast data sources are Morningstar Estimates and may reflect adjustments.

### Profile

Novartis develops and manufactures health-care products in four main operating segments: branded drugs, generic pharmaceuticals, eye care products, and consumer products. The company sells its products globally with the U.S. representing close to a third of total sales.

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## Morningstar Analysis

### House GOP Takes First Step to Fulfill Promise on ACA

04 May 2017

The third time's the charm as the House of Representatives voted 217 to 213 to pass the revised American Health Care Act. While this provides the House GOP with a way to make good on its long-standing promise to repeal and replace the Affordable Care Act, the altered bill is unlikely to go very far in the Senate for several reasons. First, most of the revisions pushed the legislation rightward in order to gain the agreement of conservatives in the Freedom Caucus. Considering Republicans in the more moderate Senate had already expressed reservations about the original AHCA before the addition of measures that would allow states to obtain waivers exempting them from meeting consumer protections in the ACA, including the essential benefits covering prescription drugs and mental health benefits as well as affordable coverage for those with pre-existing conditions, we think Senate reception of this revised bill will be even more lukewarm.

Second, the Congressional Budget Office is still working on scoring this revised AHCA and may release its projections as early as next week. If the CBO's estimates match up with, or are worse, than its scoring of the original AHCA--suggesting 24 million Americans would become uninsured by 2026 and that premiums for older Americans would rise significantly--senators may become even more wary of supporting this legislation. It is likely that in the Senate's hands, the most extreme elements of the AHCA will be neutered. Additionally, it is not clear how some of the changes to consumer protections will qualify for the Senate's budget reconciliation process, which would allow for a simple majority vote but only on measures that are directly linked to taxation, spending, or the deficit.

For more detail on how well ideas in the AHCA have worked in the past, please see "GOP's Efforts to Dismantle the ACA Remain a Moving Target: Achieving Republican consensus on a replacement could be complicated." To review the

impact of potential legislation on the different healthcare industries, please see "GOP Healthcare Plans Don't Change Our Valuations or Moats Much: Undervalued drug industry looks like it's in the best position."

### Valuation, Growth and Profitability 12 Dec 2016

We are slightly reducing our fair value estimate to \$87 from \$89 largely based on the phase 3 failure of Fovista (pegpleranib). We had expected the drug to reach over \$1 billion in peak sales, but after the unsuccessful study, we expect Novartis to end development of the drug. Looking at the entire company, Novartis gained margin improvement following the corporate reshuffling with Glaxo and Eli Lilly. A key factor in the margin improvement is the divestiture of both the animal health (to Eli Lilly) and vaccine unit (to Glaxo) that were carrying very low margins and not driving much of the cash flow for the company. Following the restructuring, we project an average 2% annual sales growth rate during the next decade as new product launches unfold. Additionally, several late-stage drugs targeting rare diseases could provide possible upside to our projections as these drugs tend to carry considerable pricing power. Following the completed restructuring in 2015, we expect slight margin expansion as the company gains leverage from its generic and eye-care businesses. Additionally, the multiple operating segments should provide more stable and consistent growth versus a branded-only pharmaceutical company such as AstraZeneca.

### Scenario Analysis

Largely based on the low volatility of cash flows from a diverse and inelastic product portfolio, we rate Novartis' uncertainty as low. Our scenario analysis assumes a base-case fair value estimate of \$87 and a bull case of \$98 (25% probability), while our bear case (25% probability) projects a \$75 fair value estimate. Relative to our base case, the scenario analysis shows minor variances, hence our low uncertainty rating.

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The key factors affecting the scenario analysis include the degree of success of the generic and branded drug pipelines along with the magnitude of market pressures for currently marketed drugs. Within the pipeline, a couple top drivers of valuation are Cosentyx for psoriasis, Entresto for heart failure, and LEE011 for cancer. In addition, the unknown impact that biosimilars will have on the branded market weighs on our certainty.

### Economic Moat

Patents, economies of scale, and a powerful distribution network support Novartis' wide moat. Novartis' patent-protected drugs carry strong pricing power, which enables the firm to generate returns on invested capital in excess of its cost of capital. Further, the patents give the company time to develop the next generation of drugs before generic competition arises. Additionally, while Novartis holds a diversified product portfolio there is some product concentration with the company's largest drug Gleevec representing close to 9% of total sales, but we expect new products will mitigate the eventual generic competition. Also, Novartis' operating structure allows for cost cutting following patent losses to reduce the margin pressure from

lost high-margin drug sales. Overall, Novartis' established product line creates the enormous cash flows needed to fund the average \$800 million in development costs per new drug. In addition, the company's powerful distribution network sets up the company as a strong partner for smaller drug companies that lack Novartis' resources. Also, Novartis' entrenched ophthalmology and generic drug franchises creates added layers of competitive advantage, stemming from brand power and cost advantages in eye care products and some cost advantage in the generics business.

### Moat Trend

We believe Novartis faces a stable moat trend. Over the next three years, the company's major patent losses primary include cancer drug Gleevec and cardiovascular drug Diovan. While patent losses over the next three years will impact more than 10% of total sales, the company's strong pipeline combined with stable currently marketed drugs should lead to flat total growth over the same time period. On the pipeline side, we expect well over \$1 billion dollars in peak annual sales from the new cardiovascular drug Entresto and new psoriasis drug Cosentyx. The strong offsets to patent losses should enable the firm to continue to invest in research and development setting up a stable lineup of next generation drugs.

Turning to the macro environment, several headwinds face Novartis, but the company is making solid strategic moves to address the challenges. On the negative side, the risk-sensitive U.S. Food and Drug Administration is generally only approving very safe drugs, or drugs in high-need areas such as cancer. Also, managed care and pharmacy benefit managers have consolidated over the past decade and are now using their growing size to demand lower drug prices and reduced coverage for less innovative drugs, forcing drug firms to push for true innovation, and reducing the power of Novartis' distribution networks. Further, the U.S. government is evaluating comparative

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effectiveness programs and more aggressive price negotiations, raising the bar for future innovation. While Novartis faces several headwinds, the company's pipeline is focused on more innovative treatments in areas of unmet medical areas such as cancer where payer coverage and pricing power remain strong. Outside the pipeline, the company's strong entrenchment in eye care and generic drugs gives the firm some relief from the pressures in the drug business.

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### Bulls Say/Bears Say

#### Bulls Say

- ▶ Novartis' solid late-stage pipeline should propel long-term growth. The company should launch several new drugs during the next several years in critical therapeutic areas such as heart failure and oncology.
- ▶ Novartis operates across multiple segments, which provides greater stability in earnings compared with firms that are focused on the branded drug business.
- ▶ With a leading number of pipeline drugs designated as breakthrough therapies, Novartis' research and development in unmet medical needs should yield several new drugs with strong pricing power.

#### Bears Say

- ▶ The recent patent losses on cardiovascular drug Diovan and cancer drug Gleevec are creating a massive drag on sales.
- ▶ The Alcon challenges in marketing and innovation could take several years to correct.
- ▶ Novartis is falling behind in a core focus of cancer treatment as the firm is far behind competition in immuno-oncology.

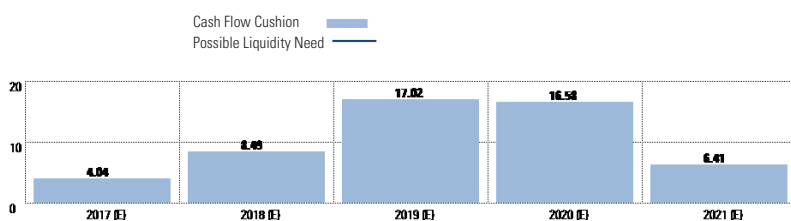
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## Five Year Adjusted Cash Flow Forecast (USD Mil)

	2017(E)	2018(E)	2019(E)	2020(E)	2021(E)
Cash and Equivalents (beginning of period)	7,777	14,601	15,916	17,941	20,115
Adjusted Available Cash Flow	8,771	10,532	5,764	6,165	6,404
Total Cash Available before Debt Service	16,548	25,133	21,679	24,106	26,520
Principal Payments	-2,989	-1,838	-175	-342	-3,068
Interest Payments	-720	-724	-695	-687	-638
Other Cash Obligations and Commitments	-386	-398	-404	-425	-433
Total Cash Obligations and Commitments	-4,095	-2,960	-1,274	-1,454	-4,139

## Cumulative Annual Cash Flow Cushion



## Adjusted Cash Flow Summary

	USD Millions	% of Commitments
Beginning Cash Balance	7,777	55.9
Sum of 5-Year Adjusted Free Cash Flow	37,637	270.3
Sum of Cash and 5-Year Cash Generation	45,414	326.2
Revolver Availability	—	—
Asset Adjusted Borrowings (Repayment)	—	—
Sum of Cash, 5-Year Cash Generation, Revolver and Adjustments	45,414	326.2
Sum of 5-Year Cash Commitments	-13,922	—

## Financial Health

Novartis carries a solid financial position with debt to 2016 projected EBITDA of 1.6 times and free cash flow after capital expenditures to debt of 0.5. Further, Novartis' diverse platform of products should translate into steady cash flows to easily service debt requirements. Novartis primarily uses its cash to fund its dividend, which represents close to 60% of the company's normalized earnings. We expect continued dividend increases, but a slow rate over the next few years. Additionally, we expect the company will continue to pursue acquisitions, which will be likely funded by cash from operations and occasionally increased debt.

## Enterprise Risk

Novartis, like all branded pharmaceutical companies, faces a number of considerable threats, including drug trial failures, extended new drug approval times, pricing pressure from the managed-care industry, and political pressure to rein in drug costs. Also, increasingly aggressive generic drug companies are attacking patents on branded drugs several years before key expiration dates. Further, following several acquisitions and divestitures, the company faces integration risk in bringing together all of the business lines while staying focused on key strategies.

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## Management & Ownership

### Management Activity

Name	Position	Shares Held	Report Date*	InsiderActivity
NA	NA	NA	NA	NA

\*Represents the date on which the owner's name, position, and common shares held were reported by the holder or issuer.

### Fund Ownership

Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
Dodge & Cox Stock Fund	1.00	2.70	3,281	31 Mar 2017
Dodge & Cox International Stock Fund	0.56	1.68	—	31 Mar 2017
Vanguard PrimeCap Fund	0.53	1.79	—	31 Mar 2017
Franklin Mutual Global Discovery Fund	0.27	2.10	316	31 Mar 2017
Parnassus Core Equity Fund	0.22	2.56	—	30 Apr 2017

#### Concentrated Holders

BLDRS Europe Select ADR Fund	—	6.38	—	18 May 2017
Market Vectors® Pharmaceutical ETF	0.01	6.21	—	18 May 2017
BBVA Europa	—	6.15	—	30 Apr 2017
Thrivent Partner Healthcare	0.01	5.51	127	28 Feb 2017
Hanwha Global Healthcare Master Equity	0.01	5.45	174	28 Feb 2017

### Institutional Transactions

Top 5 Buyers	% of Shares Held	% of Fund Assets	Shares Bought/Sold (k)	Portfolio Date
Parnassus Investments	0.34	2.77	3,859	31 Mar 2017
1832 Asset Management L.P	0.14	0.38	2,946	31 Dec 2016
Dodge & Cox	1.93	2.96	2,137	31 Dec 2016
Franklin Mutual Advisers, LLC	0.62	2.98	2,072	31 Dec 2016
Federated Investment Management Company	0.08	0.65	1,851	31 Dec 2016

#### Top 5 Sellers

Mawer Investment Management Ltd	0.13	2.26	-820	31 Dec 2016
Capital World Investors	0.06	0.03	-500	31 Dec 2016
Delaware Management Business Trust	0.04	0.15	-470	31 Dec 2016
Legg Mason Partners Fund Advisor, LLC	0.01	0.80	-403	31 Mar 2017
Aperio Group, LLC	0.03	0.35	-387	31 Dec 2016

### Management

12 Dec 2016

We give Novartis stewardship a Standard rating, as the company has made several strong strategic acquisitions over the recent past, but most of the purchase prices bordered on the high end of the valuation range. The acquisition of dermatology firm Fougera for \$1.5 billion exemplifies Novartis' aggressive bids for strong strategic assets. Further, the much larger acquisition of Alcon in the rapidly growing eye-care market for just over \$50 billion shows that the company will aggressively reinvest capital into solid strategic paths. While the targets make strategic sense, the prices paid tend to transfer most of the strategic gains to the targets due to the high takeover prices. Additionally, the 2014 decisions to sell the animal health and vaccine business appear to be sound strategic moves as the company lacked the needed scale in these areas. Also, the sale prices appear favorable. However, in tandem with these sales, the company also paid \$16 billion (10 times sales) for Glaxo's oncology business, which seems to have overvalued the cancer assets.

Joe Jimenez took over as CEO in February 2010, replacing 16-year veteran Daniel Vasella. Jimenez brings a strong background that fits well with Novartis' operations. Early in his career, he held senior leadership positions at ConAgra and H.J. Heinz, which could prove useful to Novartis' consumer group. More important, Jimenez's experience as the recent head of Novartis' most important division, pharmaceuticals, should help him effectively lead the company. In 2013, Harry Kirsch took over as CFO, replacing industry veteran Jon Symonds. A key focus for Kirsch is improving the operating margin.

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### Analyst Notes

#### **Novartis Posts Steady 1Q as New Products Help Offset Generic Pressure to Gleevec** 25 Apr 2017

Novartis reported first-quarter results largely in line with both our and consensus expectations and we don't expect significant changes to our \$87 fair value estimate. We continue to view the stock as undervalued and despite the near-term generic pressure to oncology drug Gleevec, we expect the company to return to growth in 2018. Additionally, even with the generic competition impacting this leading drug (7% of total sales), the firm posted 2% operational sales growth in the quarter, showing the strength of the company's diverse portfolio and reinforcing our wide-moat rating.

New product growth is helping the firm offset generic pressures with Cosentyx leading the charge. We expect Cosentyx will hit peak sales of \$5 billion based on leading efficacy and a clean side effect profile. Further, Cosentyx's line extensions should give the drug the most indications in the IL-17 class, including ankylosing spondylitis, axial spondyloarthritis, psoriatic arthritis, and psoriasis. Beyond Cosentyx, cardiovascular drug Entresto is showing improving signs of growth. As reimbursement and an expanded salesforce takes hold, we expect the drug will eventually reach peak sales of close to \$5 billion. The success of these drugs is increasingly important given the recent Phase III drug failures of cardiovascular drug RLX030 and ophthalmology drug Fovista.

Outside the drug group, Alcon showed some signs for stability, posting 1% operational growth, and we expect flat growth for the division in 2017. Also, we believe it is increasingly likely this group will be divested in 2018 due to the lack of synergies with the overall firm.

While we believe U.S. tax reform is more likely than not to occur during the Trump administration, we don't expect a major impact on Novartis' tax rate as the company already

enjoys a very low tax rate of close to 15% likely due to strategic geographic placement of intellectual property and geographic earnings stripping to reduce the company's tax rate.

For more insights on the pricing dynamics, especially for Novartis' cancer drugs and new immunology drug Cosentyx, please see our recent Healthcare Observer titled "Despite PBM Scrutiny, Differentiated Drugs Provide Undervalued Stocks with Underappreciated U.S. Pricing Power." Further, for an overview on immunology and Cosentyx, please see our Healthcare Observer titled "Immunology 2020: Moats Still Matter--Changing of the Guard as TNFs Fall and Biologic/Orals Rise."

#### **Novartis Posts In-Line 4Q While Signaling Potential Divestiture of Alcon; Shares Look Undervalued** 25 Jan 2017

Novartis reported fourth-quarter results that were largely in line with our and consensus expectations, and we don't expect any major changes to our \$87 fair value estimate. We continue to view the stock as undervalued despite the flat sales growth in the quarter and the flat 2017 sales guidance, as the company's pipeline looks strong enough to drive mid-single-digit sales growth starting in 2018, with faster bottom-line growth as efficiency gains improve margins. The strong pipeline also reinforces our wide moat rating. The decision to evaluate the potential divestiture of Alcon doesn't affect our outlook for the company's moat, as the majority of Novartis' competitive strength lies with the drug group (80% of core operating income). We believe a spin-off of the unit is likely, given the lack of operational synergies between drugs and ophthalmology devices.

In the quarter, generic pressures on key drugs and continued Alcon softness led to flat quarterly sales growth, which should continue through 2017. Generic Gleevec caused close to a 6% drag on overall sales, but we expect this headwind to largely annualize by 2018. Gleevec's successor



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### Analyst Notes

drug Tasigna showed close to a 10% gain in the quarter, partly alleviating concerns that generic Gleevec will bring down the whole class, but a Tasigna deceleration is still likely.

By 2018, the company should be in a better position based on new pipeline drug launches and increased traction with recently launched drugs. We expect sales of cardiovascular drug Entresto to accelerate based on increased insurance coverage with low copays and an expansion in Novartis' salesforce for the drug. Also, Cosentyx is well positioned in immunology to reach over \$3 billion in sales by 2020. We expect significant sales by 2020 from pipeline drugs RLX030 (heart failure), OMB157 (multiple sclerosis), AMG334 (migraine), and RTH258 (ophthalmology).

For a more complete review of the outlook for Cosentyx, please see our Healthcare Observer "Immunology 2020: Moats Still Matter--Changing of the Guard as TNFs Fall and Biologic/Orals Rise." For a deeper dive into Novartis' pipeline prospects, please see our Healthcare Observer "Strong Pipelines Support Big Biotech and Big Pharma Moats and Attractive Valuations."

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## Morningstar Analyst Forecasts

### Financial Summary and Forecasts

Fiscal Year Ends in December

	3-Year Hist. CAGR	Forecast					5-Year Proj. CAGR
		2014	2015	2016	2017	2018	
Growth (% YoY)							
Revenue	-5.6	0.8	-15.0	-1.9	-2.1	2.7	1.8
EBIT	-8.0	10.0	-27.0	-2.9	20.3	7.4	9.5
EBITDA	-7.5	7.1	-24.5	-2.1	42.7	4.7	11.3
Net Income	-3.4	1.8	-5.6	-6.0	-4.4	5.2	3.2
Diluted EPS	-2.3	2.1	-4.4	-4.6	-3.8	5.8	4.1
Earnings Before Interest, after Tax	-4.8	2.7	68.8	-50.3	5.6	6.2	5.5
Free Cash Flow	-4.4	24.1	2.7	-31.5	44.0	-10.6	8.5

	3-Year Hist. Avg	Forecast					5-Year Proj. Avg
		2014	2015	2016	2017	2018	
Profitability							
Operating Margin %	19.3	21.4	18.3	18.2	22.3	23.3	24.3
EBITDA Margin %	22.3	24.1	21.4	21.4	31.1	31.8	32.3
Net Margin %	22.8	21.5	23.9	22.9	22.4	22.9	23.5
Free Cash Flow Margin %	22.5	22.1	26.8	18.7	27.5	24.0	25.4
ROIC %	12.7	17.1	10.8	10.4	16.1	18.3	20.5
Adjusted ROIC %	8.9	11.8	7.5	7.2	11.0	12.4	13.8
Return on Assets %	9.0	8.1	13.8	5.1	6.1	6.7	7.4
Return on Equity %	15.7	14.1	24.1	8.8	10.6	11.7	12.7

	3-Year Hist. Avg	Forecast					5-Year Proj. Avg
		2014	2015	2016	2017	2018	
Leverage							
Debt/Capital	0.23	0.22	0.22	0.24	0.26	0.24	0.24
Total Debt/EBITDA	1.90	1.43	2.03	2.25	1.72	1.53	1.44
EBITDA/Interest Expense	17.24	20.29	16.48	14.94	20.93	21.79	23.97

### Valuation Summary and Forecasts

	2015	2016	2017(E)	2018(E)
Price/Fair Value	0.86	0.84	—	—
Price/Earnings	17.4	15.5	17.6	16.7
EV/EBITDA	19.3	16.4	14.1	13.5
EV/EBIT	22.6	19.3	19.7	18.4
Free Cash Flow Yield %	4.6	5.6	6.6	5.9
Dividend Yield %	3.2	3.7	3.4	3.6

### Key Valuation Drivers

Cost of Equity %	7.5
Pre-Tax Cost of Debt %	5.5
Weighted Average Cost of Capital %	7.2
Long-Run Tax Rate %	15.0
Stage II EBI Growth Rate %	4.0
Stage II Investment Rate %	13.3
Perpetuity Year	20

Additional estimates and scenarios available for download at <http://select.morningstar.com>.

### Discounted Cash Flow Valuation

	USD Mil	Firm Value (%)	Per Share Value
Present Value Stage I	94,352	41.6	39.64
Present Value Stage II	54,116	23.9	22.73
Present Value Stage III	78,159	34.5	32.83
<b>Total Firm Value</b>	<b>226,627</b>	<b>100.0</b>	<b>95.20</b>
Cash and Equivalents	7,777	—	3.27
Debt	-23,802	—	-10.00
Preferred Stock	—	—	—
Other Adjustments	-5,893	—	-2.48
<b>Equity Value</b>	<b>204,710</b>	<b>—</b>	<b>86.00</b>
Projected Diluted Shares	2,380		
<b>Fair Value per Share (USD)</b>	<b>87.00</b>		

The data in the table above represent base-case forecasts in the company's reporting currency as of the beginning of the current year. Our fair value estimate may differ from the equity value per share shown above due to our time value of money adjustment and in cases where probability-weighted scenario analysis is performed.

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## Morningstar Analyst Forecasts

### Income Statement (USD Mil)

Fiscal Year Ends in December

	Forecast				
	2014	2015	2016	2017	2018
<b>Revenue</b>	<b>59,276</b>	<b>50,387</b>	<b>49,436</b>	<b>48,381</b>	<b>49,666</b>
Cost of Goods Sold	20,101	17,404	17,520	13,543	13,784
<b>Gross Profit</b>	<b>39,175</b>	<b>32,983</b>	<b>31,916</b>	<b>34,838</b>	<b>35,882</b>
Selling, General & Administrative Expenses	17,236	11,772	11,998	14,218	14,502
Research & Development	9,943	8,935	9,039	8,315	8,543
Other Operating Expense (Income)	-660	3,033	1,908	-1,190	-1,321
Depreciation & Amortization (if reported separately)	—	—	—	2,700	2,565
<b>Operating Income (ex charges)</b>	<b>12,656</b>	<b>9,243</b>	<b>8,971</b>	<b>10,794</b>	<b>11,593</b>
Restructuring & Other Cash Charges	—	—	—	500	300
Impairment Charges (if reported separately)	—	—	—	200	180
Other Non-Cash (Income)/Charges	—	—	—	40	41
<b>Operating Income (incl charges)</b>	<b>12,656</b>	<b>9,243</b>	<b>8,971</b>	<b>10,054</b>	<b>11,072</b>
Interest Expense	704	655	707	720	724
Interest Income	-31	-454	-447	—	—
<b>Pre-Tax Income</b>	<b>11,921</b>	<b>8,134</b>	<b>7,817</b>	<b>9,334</b>	<b>10,348</b>
Income Tax Expense	1,641	1,106	1,119	1,405	1,552
Other After-Tax Cash Gains (Losses)	—	10,766	—	—	—
Other After-Tax Non-Cash Gains (Losses)	—	—	—	—	—
(Minority Interest)	-70	-11	14	—	—
(Preferred Dividends)	—	—	—	—	—
<b>Net Income</b>	<b>10,210</b>	<b>17,783</b>	<b>6,712</b>	<b>7,930</b>	<b>8,796</b>
Weighted Average Diluted Shares Outstanding	2,470	2,438	2,400	2,385	2,373
<b>Diluted Earnings Per Share</b>	<b>4.13</b>	<b>7.29</b>	<b>2.80</b>	<b>3.32</b>	<b>3.71</b>
Adjusted Net Income	12,755	12,041	11,314	10,818	11,384
<b>Diluted Earnings Per Share (Adjusted)</b>	<b>5.16</b>	<b>4.94</b>	<b>4.71</b>	<b>4.54</b>	<b>4.80</b>
Dividends Per Common Share	2.76	2.72	2.70	2.72	2.88
<b>EBITDA</b>	<b>14,286</b>	<b>10,793</b>	<b>10,562</b>	<b>14,327</b>	<b>15,251</b>
<b>Adjusted EBITDA</b>	<b>14,286</b>	<b>10,793</b>	<b>10,562</b>	<b>15,067</b>	<b>15,772</b>

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers

## Morningstar Analyst Forecasts

### Balance Sheet (USD Mil)

Fiscal Year Ends in December

	2014	2015	2016	Forecast	
				2017	2018
Cash and Equivalents	13,862	5,447	7,777	14,601	15,916
Investments	—	—	—	—	—
Accounts Receivable	8,275	8,180	8,202	7,290	7,484
Inventory	6,093	6,226	6,255	4,638	4,720
Deferred Tax Assets (Current)	—	—	—	—	—
Other Short Term Assets	9,331	2,992	2,697	2,697	2,697
<b>Current Assets</b>	<b>37,561</b>	<b>22,845</b>	<b>24,931</b>	<b>29,226</b>	<b>30,817</b>
Net Property Plant, and Equipment	15,983	15,982	15,641	15,907	16,180
Goodwill	29,311	31,174	30,980	30,780	30,600
Other Intangibles	23,832	34,217	31,340	28,640	26,075
Deferred Tax Assets (Long-Term)	7,994	8,957	10,034	10,034	10,034
Other Long-Term Operating Assets	554	601	698	698	698
Long-Term Non-Operating Assets	10,152	17,780	16,500	16,500	16,500
<b>Total Assets</b>	<b>125,387</b>	<b>131,556</b>	<b>130,124</b>	<b>131,785</b>	<b>130,904</b>
Accounts Payable	5,419	5,668	4,873	4,267	4,343
Short-Term Debt	6,612	5,604	5,905	7,000	7,000
Deferred Tax Liabilities (Current)	—	—	—	—	—
Other Short-Term Liabilities	14,942	12,436	11,431	11,431	11,431
<b>Current Liabilities</b>	<b>26,973</b>	<b>23,708</b>	<b>22,209</b>	<b>22,698</b>	<b>22,774</b>
Long-Term Debt	13,799	16,327	17,897	18,908	17,070
Deferred Tax Liabilities (Long-Term)	6,099	7,399	6,657	6,657	6,657
Other Long-Term Operating Liabilities	7,672	7,000	8,470	8,470	8,470
Long-Term Non-Operating Liabilities	—	—	—	40	81
<b>Total Liabilities</b>	<b>54,543</b>	<b>54,434</b>	<b>55,233</b>	<b>56,773</b>	<b>55,052</b>
Preferred Stock	—	—	—	—	—
Common Stock	—	—	—	—	—
Additional Paid-in Capital	1,001	991	972	972	972
Retained Earnings (Deficit)	69,868	76,156	73,936	75,366	77,321
(Treasury Stock)	-103	-101	-76	-1,384	-2,500
Other Equity	—	—	—	—	—
<b>Shareholder's Equity</b>	<b>70,766</b>	<b>77,046</b>	<b>74,832</b>	<b>74,953</b>	<b>75,793</b>
Minority Interest	78	76	59	59	59
<b>Total Equity</b>	<b>70,844</b>	<b>77,122</b>	<b>74,891</b>	<b>75,012</b>	<b>75,852</b>

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers

## Morningstar Analyst Forecasts

### Cash Flow (USD Mil)

Fiscal Year Ends in December

	2014	2015	2016	Forecast	
				2017	2018
Net Income	10,727	7,028	6,698	7,930	8,796
Depreciation	1,630	1,550	1,591	1,572	1,614
Amortization	—	—	—	2,700	2,565
Stock-Based Compensation	—	—	—	—	—
Impairment of Goodwill	3,052	3,921	4,452	200	180
Impairment of Other Intangibles	—	—	—	—	—
Deferred Taxes	—	—	—	—	—
Other Non-Cash Adjustments	-887	-602	-1,266	40	41
(Increase) Decrease in Accounts Receivable	-367	—	—	912	-194
(Increase) Decrease in Inventory	-506	—	—	1,617	-82
Change in Other Short-Term Assets	—	—	—	—	—
Increase (Decrease) in Accounts Payable	142	—	—	-606	76
Change in Other Short-Term Liabilities	106	—	—	—	—
<b>Cash From Operations</b>	<b>13,897</b>	<b>11,897</b>	<b>11,475</b>	<b>14,365</b>	<b>12,996</b>
(Capital Expenditures)	-2,624	-2,367	-1,862	-1,838	-1,887
Net (Acquisitions), Asset Sales, and Disposals	-331	-16,787	-774	—	—
Net Sales (Purchases) of Investments	1,917	-512	-57	—	—
Other Investing Cash Flows	1,919	8,882	-748	—	—
<b>Cash From Investing</b>	<b>881</b>	<b>-10,784</b>	<b>-3,441</b>	<b>-1,838</b>	<b>-1,887</b>
Common Stock Issuance (or Repurchase)	-4,515	-4,490	-895	-1,308	-1,116
Common Stock (Dividends)	-6,810	-6,643	-6,475	-6,500	-6,840
Short-Term Debt Issuance (or Retirement)	-107	451	1,816	1,095	—
Long-Term Debt Issuance (or Retirement)	3,425	1,510	239	1,011	-1,838
Other Financing Cash Flows	-140	-4	1	—	—
<b>Cash From Financing</b>	<b>-8,147</b>	<b>-9,176</b>	<b>-5,314</b>	<b>-5,702</b>	<b>-9,794</b>
Exchange Rates, Discontinued Ops, etc. (net)	-295	-286	-387	—	—
<b>Net Change in Cash</b>	<b>6,336</b>	<b>-8,349</b>	<b>2,333</b>	<b>6,824</b>	<b>1,315</b>

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers

## Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

### Valuation Analysis

Company/Ticker	Price/Fair Value	Price/Earnings			EV/EBITDA			Price/Free Cash Flow			Price/Book			Price/Sales		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	1.18	17.1	17.8	17.0	12.8	12.1	11.8	20.2	20.4	18.1	4.5	4.6	4.5	4.4	4.5	4.4
GlaxoSmithKline PLC GSK GBR	0.84	NM	NM	NM	20.7	9.6	9.3	15.4	36.5	17.0	67.7	NM	933.1	2.7	2.6	2.5
Average		17.1	17.8	17.0	16.8	10.9	10.6	17.8	28.5	17.6	36.1	4.6	468.8	3.6	3.6	3.5
<b>Novartis AG NVS US</b>	<b>0.92</b>	<b>15.5</b>	<b>17.6</b>	<b>16.7</b>	<b>16.4</b>	<b>14.1</b>	<b>13.5</b>	<b>18.0</b>	<b>15.2</b>	<b>17.1</b>	<b>2.3</b>	<b>2.5</b>	<b>2.5</b>	<b>3.5</b>	<b>3.9</b>	<b>3.8</b>

### Returns Analysis

Company/Ticker	Last Historical Year Total Assets (Mil)	ROIC %			Adjusted ROIC %			Return on Equity %			Return on Assets %			Dividend Yield %		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	141,208 USD	21.4	23.8	22.5	17.0	17.1	15.0	23.4	23.6	23.9	12.1	11.7	12.1	2.8	2.7	2.8
GlaxoSmithKline PLC GSK GBR	59,081 GBP	6.6	16.7	16.6	7.7	19.6	19.4	29.2	783.6	NM	1.6	5.3	7.5	6.4	4.8	4.8
Average		14.0	20.3	19.6	12.4	18.4	17.2	26.3	403.6	23.9	6.9	8.5	9.8	4.6	3.8	3.8
<b>Novartis AG NVS US</b>	<b>130,124 USD</b>	<b>10.4</b>	<b>16.1</b>	<b>18.3</b>	<b>7.2</b>	<b>11.0</b>	<b>12.4</b>	<b>8.8</b>	<b>10.6</b>	<b>11.7</b>	<b>5.1</b>	<b>6.1</b>	<b>6.7</b>	<b>3.7</b>	<b>3.4</b>	<b>3.6</b>

### Growth Analysis

Company/Ticker	Last Historical Year Revenue (Mil)	Revenue Growth %			EBIT Growth %			EPS Growth %			Free Cash Flow Growth %			Dividend/Share Growth %		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	71,890 USD	2.6	4.9	2.6	2.6	11.8	3.4	8.5	6.2	4.7	-36.5	-254.7	-207.6	6.8	6.2	4.7
GlaxoSmithKline PLC GSK GBR	27,889 GBP	16.6	9.3	3.8	-74.8	208.8	3.2	35.5	11.7	-1.0	-37.2	-52.7	81.1	24.7	-19.0	—
Average		9.6	7.1	3.2	-36.1	110.3	3.3	22.0	9.0	1.9	-36.9	-153.7	-63.3	15.8	-6.4	4.7
<b>Novartis AG NVS US</b>	<b>49,436 USD</b>	<b>-1.9</b>	<b>-2.1</b>	<b>2.7</b>	<b>-2.9</b>	<b>20.3</b>	<b>7.4</b>	<b>-4.6</b>	<b>-3.8</b>	<b>5.8</b>	<b>-31.5</b>	<b>44.0</b>	<b>-10.6</b>	<b>-1.0</b>	<b>1.0</b>	<b>5.8</b>

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers

## Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

### Profitability Analysis

Company/Ticker	Last Historical Year Net Income (Mil)	Gross Margin %			EBITDA Margin %			Operating Margin %			Net Margin %			Free Cash Flow Margin %		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	18,764 USD	69.8	72.2	71.9	34.1	36.7	36.8	28.7	30.6	30.9	26.1	26.1	26.1	21.6	22.3	24.4
GlaxoSmithKline PLC GSK GBR	4,978 GBP	66.7	70.3	69.6	15.7	32.4	31.9	9.3	26.4	26.2	17.9	18.1	17.3	17.8	7.2	15.0
Average		68.3	71.3	70.8	24.9	34.6	34.4	19.0	28.5	28.6	22.0	22.1	21.7	19.7	14.8	19.7
<b>Novartis AG NVS US</b>	<b>11,314 USD</b>	<b>64.6</b>	<b>72.0</b>	<b>72.3</b>	<b>21.4</b>	<b>31.1</b>	<b>31.8</b>	<b>18.2</b>	<b>22.3</b>	<b>23.3</b>	<b>22.9</b>	<b>22.4</b>	<b>22.9</b>	<b>19.5</b>	<b>25.9</b>	<b>22.4</b>

### Leverage Analysis

Company/Ticker	Last Historical Year Total Debt (Mil)	Debt/Equity %			Debt/Total Cap %			EBITDA/Interest Exp.			Total Debt/EBITDA			Assets/Equity		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	27,126 USD	38.5	44.0	39.5	27.8	30.5	28.3	33.7	29.0	28.4	1.1	1.2	1.1	2.0	2.0	2.0
GlaxoSmithKline PLC GSK GBR	18,790 GBP	1,671.7	-5,501.9	21,616.0	94.4	101.9	99.5	5.9	13.5	12.0	4.3	1.9	1.8	52.6	NM	NM
Average		855.1	-2,729.0	10,827.8	61.1	66.2	63.9	19.8	21.3	20.2	2.7	1.6	1.5	27.3	2.0	2.0
<b>Novartis AG NVS US</b>	<b>23,802 USD</b>	<b>31.8</b>	<b>34.6</b>	<b>31.8</b>	<b>24.1</b>	<b>25.7</b>	<b>24.1</b>	<b>14.9</b>	<b>20.9</b>	<b>21.8</b>	<b>2.3</b>	<b>1.7</b>	<b>1.5</b>	<b>1.7</b>	<b>1.8</b>	<b>1.7</b>

### Liquidity Analysis

Company/Ticker	Market Cap (Mil)	Cash per Share			Current Ratio			Quick Ratio			Cash/Short-Term Debt			Payout Ratio %		
		2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)	2016	2017(E)	2018(E)
Johnson & Johnson JNJ USA	342,036 USD	15.03	5.56	5.54	2.47	1.54	1.53	2.16	1.23	1.21	8.95	3.06	2.98	53.1	54.1	52.6
GlaxoSmithKline PLC GSK GBR	80,557 GBP	1.02	0.51	0.51	0.88	0.81	0.84	0.61	0.54	0.55	1.21	0.62	0.62	425.6	126.9	90.2
Average		8.03	3.04	3.03	1.68	1.18	1.19	1.39	0.89	0.88	5.08	1.84	1.80	239.4	90.5	71.4
<b>Novartis AG NVS US</b>	<b>189,980 USD</b>	<b>3.24</b>	<b>6.12</b>	<b>6.71</b>	<b>1.12</b>	<b>1.29</b>	<b>1.35</b>	<b>0.84</b>	<b>1.08</b>	<b>1.15</b>	<b>1.32</b>	<b>2.09</b>	<b>2.27</b>	<b>96.5</b>	<b>82.0</b>	<b>77.8</b>

# Research Methodology for Valuing Companies

## Overview

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

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

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate

and (4) the current market price. This process ultimately culminates in our 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 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 sustainability of excess profits, 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.

## 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 (EBI) and the net new investment (NNI) to derive our annual free cash flow forecast.

### Stage II: Fade

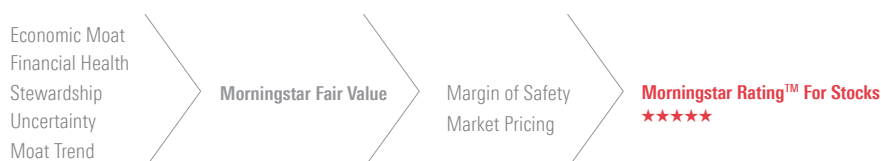
The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling 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 (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

### Stage III: Perpetuity

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

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total pres-

## Morningstar Research Methodology for Valuing Companies





# Research Methodology for Valuing Companies

ent value of expected future cash flows. Because we are modeling free cash flow to the firm — representing cash available to provide a return to all capital providers — we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

### 3. Uncertainty around that fair value estimate

Morningstar’s Uncertainty Rating 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:** Stock’s uncertainty exceeds the parameters we have set for assigning the appropriate margin of safety.

### 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 detail information about our methodology, please go to <http://global.morningstar.com/equitydisclosures>

#### 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. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market’s valuation. When there are many 5-star stocks, the stock market as

a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

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

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

The Morningstar Star Ratings for stocks are defined below:

#### Five Stars ★★★★★

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

#### Four Stars ★★★★

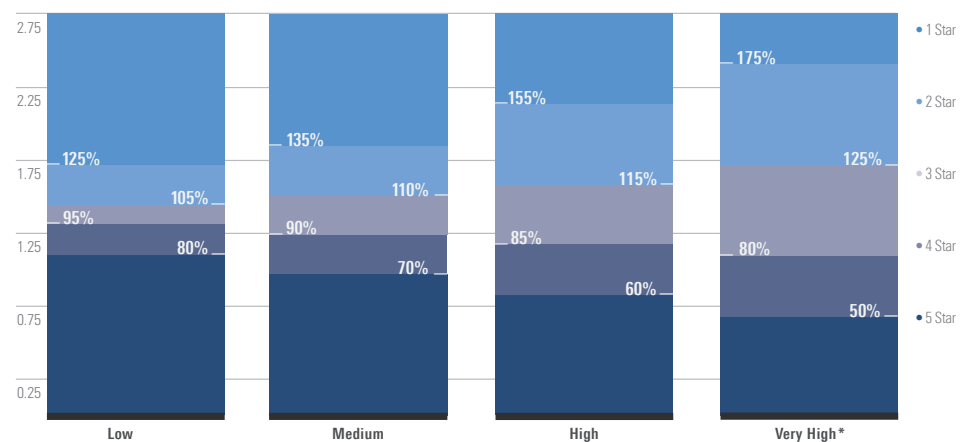
We believe appreciation beyond a fair risk-adjusted return is likely.

#### Three Stars ★★★

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

## Morningstar Research Methodology for Valuing Companies

Price/Fair Value



\* Occasionally a stock’s uncertainty will be too high for us to estimate, in which case we label it Extreme.

# Research Methodology for Valuing Companies

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## Two Stars ★★

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

## One Star ★

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

Other Definitions:

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

**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.

# Novartis AG NVS (NYSE) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Stewardship	Industry Group
80.08 USD	87.00 USD	Low	Wide	Stable	Standard	Drug Manufacturers



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