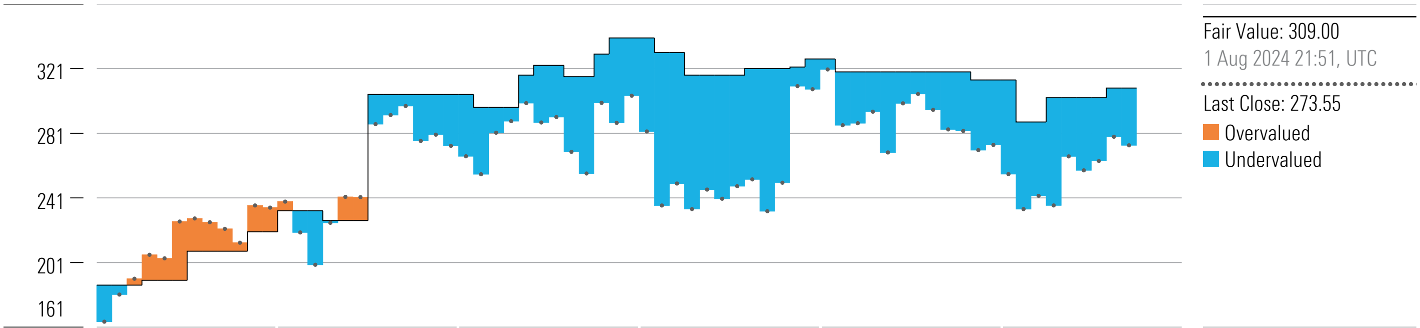
Morningstar Equity Analyst Report | Report as of 6 Sep 2024 23:18, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

Air Products & Chemicals Inc APD ★★★★ 6 Sep 2024 21:28, UTC

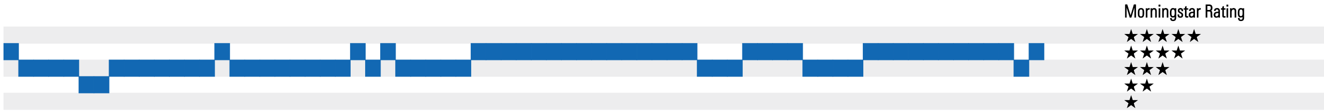
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
273.55 USD 5 Sep 2024	309.00 USD 1 Aug 2024 21:51, UTC	0.89	59.74 USD Bil 6 Sep 2024	Wide	Large Value	Medium	Exemplary	7 Aug 2024 05:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD	
	1.07	0.90	0.89	0.94	0.87	0.89	Price/Fair Value
	49.72	18.55	13.56	3.44	-8.91	1.20	Total Return %

Morningstar Rating



Total Return % as of 05 Sep 2024. Last Close as of 05 Sep 2024. Fair Value as of 1 Aug 2024 21:51, UTC.

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

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

Air Products Earnings: On Track to Reach Full-Year Adjusted EPS Guidance

Analyst Note Krzysztof Smalec, CFA, Equity Analyst, 1 Aug 2024

Wide-moat-rated Air Products' fiscal third-quarter adjusted EPS of $3.20 came in above management's guidance of $3.00 to $3.05, and the industrial gas firm maintained its full-year adjusted EPS guidance range of $12.20 to $12.50. We've raised our fair value estimate to $309 per share from $303, which reflects our slightly more optimistic near-term projections and time value of money.

We think that the positive reaction after the earnings release, as the stock closed up nearly 9%, was a function of low expectations heading into the quarter. We suspect that investors were worried about a potential guidance cut or negative news about the blue and green hydrogen project backlog following the recent management shake-up, so the clean print likely allayed these concerns. Chief Executive Officer Seifi Ghasemi said on the call that the company has started to search for a potential successor to join the company as president and member of the board of directors.

We think the highlight of the quarter was the announcement of a 15-year agreement to supply TotalEnergies 70,000 tons of green hydrogen per year starting in 2030, which would account for over 30% of the expected green hydrogen output from the NEOM project. Management said on the call that the contract announcement has also sparked more interest from other potential customers. Given investors' concerns about the firm's ability to secure offtake agreements for blue and green hydrogen, we consider the TotalEnergies contract announcement an important milestone, as it improves visibility

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Sector	Industry
Basic Materials	Specialty Chemicals

Business Description

Since its founding in 1940, Air Products has become one of the leading industrial gas suppliers globally, with operations in 50 countries and 19,000 employees. The company is the largest supplier of hydrogen and helium in the world. It has a unique portfolio serving customers in a number of industries, including chemicals, energy, healthcare, metals, and electronics. Air Products generated $12.6 billion in revenue in fiscal 2023.

and lowers the risk of the NEOM project. Air Products now seems to be taking a more measured approach and said it will not announce any new blue or green hydrogen megaprojects until it secures customer agreements for most of the output from the Alberta, Louisiana, and NEOM projects, which we see as prudent.

Business Strategy & Outlook Krzysztof Smalec, CFA, Equity Analyst, 3 Apr 2024

Air Products benefits from operating in an industry with a very favorable structure. Despite selling industrial gases, which are essentially commodities, public industrial gas companies have consistently delivered lucrative returns because of their economic moats. Industrial gases typically account for a relatively small fraction of customers' costs but are a vital input to ensure uninterrupted production. As such, customers are often willing to pay a premium and sign long-term contracts to ensure their businesses run smoothly. Long-term contracts and high switching costs contribute to industrial gas producers' moats, helping them generate a predictable cash flow stream and lucrative returns.

Since Seifi Ghasemi was appointed CEO in 2014, new management has launched several initiatives that drastically improved Air Products' profitability, raising EBITDA margins by over 1,000 basis points. This remarkable improvement is largely due to significant cost cuts, divestments of low-margin noncore operations, and an aggressive pursuit of opportunities in emerging markets.

Demand for industrial gases is strongly correlated to industrial production. As such, organic revenue growth will largely depend on global economic conditions. That said, we think Air Products can fuel additional revenue growth through investment in new projects or asset buybacks.

Air Products is poised for rapid growth over the next few years because of its 10-year capital allocation plan. The industrial gas firm aims to deploy over $32 billion during the next decade and has already either spent or committed over $19 billion of that amount. We are bullish on Air Products' long-term prospects and think that the firm's ambitious capital allocation plan will fuel tremendous growth for many years to come, driven by investments in traditional industrial gas projects as well as new opportunities including green hydrogen and carbon capture.

Bulls Say Krzysztof Smalec, CFA, Equity Analyst, 1 Aug 2024

- Air Products is poised for rapid growth due to business opportunities that drive its ambitious $30 billion capital allocation plan.
- Air Products has emerged as a leader in green and blue hydrogen, with several multi-billion-dollar projects currently in development.
- The company's focus on on-site investments will result in a derisked portfolio with more stable cash flows.

Bears Say Krzysztof Smalec, CFA, Equity Analyst, 1 Aug 2024

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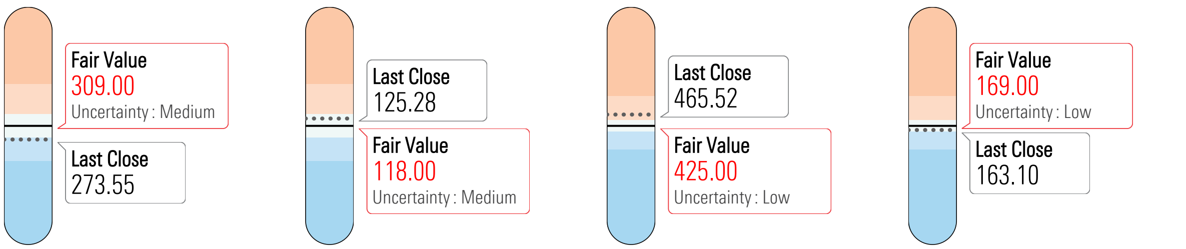
Competitors



	Air Products & Chemicals Inc APD	PPG Industries Inc PPG	Linde PLC LIN	Air Liquide SA AI
Economic Moat	Wide	Narrow	Wide	Wide
Currency	USD	USD	USD	EUR
Fair Value	309.00 1 Aug 2024 21:51, UTC	118.00 19 Apr 2024 18:15, UTC	425.00 2 Aug 2024 19:35, UTC	169.00 26 Jul 2024 18:29, UTC
1-Star Price	216.30	159.30	531.25	211.25
5-Star Price	417.15	82.60	340.00	135.20
Assessment	Undervalued 6 Sep 2024	Fairly Valued 6 Sep 2024	Overvalued 6 Sep 2024	Fairly Valued 6 Sep 2024
Morningstar Rating	★★★★6 Sep 2024 21:28, UTC	★★★6 Sep 2024 21:27, UTC	★★6 Sep 2024 21:27, UTC	★★★6 Sep 2024 01:47, UTC
Analyst	Krzysztof Smalec, Equity Analyst	Spencer Liberman, Equity Analyst	Krzysztof Smalec, Equity Analyst	Krzysztof Smalec, Equity Analyst
Capital Allocation	Exemplary	Standard	Standard	Standard
Price/Fair Value	0.89	1.06	1.07	0.97
Price/Sales	5.03	1.64	6.91	3.48
Price/Book	4.03	3.76	5.82	3.81
Price/Earning	22.76	15.76	31.41	27.87
Dividend Yield	2.57%	2.10%	1.17%	1.78%
Market Cap	59.74 Bil	29.11 Bil	218.15 Bil	93.57 Bil
52-Week Range	212.24—307.71	118.07—151.16	361.02—479.79	137.60—179.47
Investment Style	Large Value	Mid Blend	Large Blend	Large Blend

- After Air Liquide's 2016 acquisition of Airgas and the Praxair-Linde merger in 2018, Air Products is a distant third in terms of market share among industrial gas majors and may struggle to regain share.
- Strong competition for new contracts in emerging countries, especially China and India, could result in depressed returns in those markets.
- Given its large backlog of blue and green hydrogen projects, Air Products faces elevated execution risk, which could include project delays, cost overruns, and returns falling short of expectations.

Economic Moat Krzysztof Smalec, CFA, Equity Analyst, 3 Apr 2024

We assign Air Products a wide moat rating, primarily due to switching costs and secondarily due to intangible assets. Air Products benefits from operating in an industry that is inherently moaty because of high switching costs. Although industrial gases are essentially commodities, they are a crucial input in many industries. Since gas typically represents only a fraction of total costs, customers are often willing to pay a premium and enter into long-term contracts with reputable distributors to ensure uninterrupted supply. As such, public industrial gas companies have historically earned returns in excess of their cost of capital, and we believe these lucrative profits will persist.

Industrial gases are distributed through three supply modes: on-site, merchant, and packaged. Operations are often tightly integrated across all three supply modes: An industrial gas company will build an on-site plant (either adjacent to a customer's facility or connected through pipelines), and sell excess capacity through merchant (tanker trucks) and packaged (cylinders and dewars) supply channels.

Switching costs vary by supply mode. The on-site segment has the highest switching costs, because switching to another supplier might require a substantial cost to convert or purchase new equipment. Large customers often sign 10- to 20-year contracts with take-or-pay clauses and prices indexed to the cost of electricity, and we estimate that customer retention rates exceed 95%. Merchant customers also face switching costs, as they typically enter into three- to seven-year contracts and often rely on industrial gas companies for storage and vaporization. Lastly, we don't see any meaningful switching costs in packaged gases. That said, the three supply modes are often tightly integrated, with the same plant providing industrial gases through all three supply modes.

In addition to switching costs, Air Products also benefits from intangible assets, consisting primarily of customer relationships, patents, and engineering know-how. Industrial gas companies often develop strong relationships with their on-site customers, as they offer a full spectrum of engineering and consulting services. They can create value for their customers through optimization programs aimed at improving throughput rates, enhancing quality, and increasing safety.

We believe that Air Products' wide moat rests on the strength of its on-site and merchant segments, which benefit from long-term contracts and high switching costs. We believe that the company benefits from a resilient business model, as take-or-pay clauses and cost pass-through mechanisms in the on-site contracts allow the firm to withstand macroeconomic headwinds. We expect Air Products' wide moat will help the company continue to deliver attractive returns on invested capital throughout the next two decades.

Fair Value and Profit Drivers Krzysztof Smalec, CFA, Equity Analyst, 1 Aug 2024

We've raised our fair value estimate to $309 per share from $303 following Air Products' fiscal 2024 third-quarter earnings release, driven by our slightly more optimistic near-term projections and time value of money. Management maintained its outlook for full-year 2024 and continues to expect adjusted EPS of $12.20 to $12.50.

We are projecting average core sales growth of roughly 4% per year. Additionally, we assume that investments in large on-site projects will fuel strong growth over the next five years, as we expect management to deploy over $30 billion of capital during the 10-year period from fiscal 2023 to fiscal 2032. We project most of this growth to come from asset buybacks and investments in large on-site projects, with a focus on opportunities in green hydrogen and carbon capture.

Management has already aggressively reduced fixed costs, which led to adjusted operating margins growing from 16% in fiscal 2014 to 21.7% in fiscal 2023, marking a roughly 700-basis-point improvement during Ghasemi's tenure as CEO. We are projecting an additional 280 basis points of operating margin expansion from fiscal 2023 levels to approximately 24.5% by fiscal 2028.

Risk and Uncertainty Krzysztof Smalec, CFA, Equity Analyst, 3 Apr 2024

Air Products has a Medium Morningstar Uncertainty Rating. The industry exhibits a below-average degree of cyclicality. We believe that industrial gas firms have a resilient business model. The on-site business benefits from take-or-pay clauses and cost pass-through mechanisms for electricity and natural gas prices, which give it strong defensive characteristics that enable it to withstand macroeconomic headwinds. That said, we assign Air Products a higher uncertainty rating than its competitors, given execution risk around its project backlog, which could include project delays, cost overruns, and returns falling short of expectations.

We expect limited upside in pricing in the industrial gas sector due to competition for new contracts, especially in emerging markets, and on-site customers' option to choose in-house production. Based on company reports and information published by Gasworld magazine, we estimate that roughly 30% of the global industrial gas market is captive (in-house production). We believe that competition for new contracts and the in-house production alternative will keep a lid on pricing over the long run, but we remain confident that Air Products' wide moat will allow it to keep delivering strong returns throughout the next two decades.

Our rating is not materially affected by environmental, social, and governance risks. We think the largest and potentially most material ESG risks for the company include potential product quality and safety failures and failure to comply with various environmental as well as health and safety laws.

Capital Allocation Krzysztof Smalec, CFA, Equity Analyst, 3 Apr 2024

We assign Air Products an Exemplary Capital Allocation Rating. The rating reflects our overall assessment of the company's balance sheet, management's investment decisions, and shareholder distributions.

Air Products has a sound balance sheet and significant capacity to pursue growth by investing in new projects. We view management's investment history as exemplary, as Air Products has significantly improved its profitability and accelerated growth through its ambitious capital deployment plan in recent years. Lastly, we view the industrial gas firm's shareholder distributions as appropriate. In January 2024, Air Products increased its quarterly dividend by 1%, from $1.75 to $1.77, extending its dividend growth streak to 42 consecutive years.

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Since taking the helm in 2014, CEO Seifi Ghasemi has orchestrated a remarkable turnaround. When he took the reins of the company, Ghasemi unveiled his five-point plan to transform it by focusing on safety, profitability, core business, a clean balance sheet, and at least 10% annual EPS growth. Thus far, management has delivered on all these promises as Air Products has been firing on all cylinders. Over the last few years, the company has improved its employee lost-time injury rate by over 60%, raised EBITDA margins by over 1,000 basis points, divested noncore segments, significantly reduced debt, and delivered average annual EPS growth of roughly 11%.

We believe Ghasemi management has been proactive about pursuing growth opportunities and appropriately managing its portfolio. The company deployed proceeds from divestments of noncore electronic materials and specialty additives divisions (Versum Materials in 2016 and Evonik in 2017) to reduce debt and fund investments in new opportunities, including blue and green hydrogen projects.

Analyst Notes Archive

Air Products Earnings: Full-Year Outlook Maintained After Solid Quarter Krzysztof Smalec, CFA, Equity Analyst, 30 Apr 2024

Wide-moat-rated Air Products posted solid fiscal second-quarter results, as its adjusted EPS of $2.85 came in above management's guidance range of $2.60 to $2.75 thanks to strong results in the Americas and Europe. We've trimmed our fair value estimate to $303 from $307, which reflects our slightly more conservative near-term revenue growth projections, but we continue to see the name as modestly undervalued.

Air Products' fiscal second-quarter underlying sales were down 1% from the prior-year period, as 1% higher pricing was more than offset by a 2% volume decline. Volumes were up 1% in the Americas thanks to strong hydrogen demand. In Asia, volumes were down 1%, as higher on-site volumes were more than offset by lower merchant activity due to continued headwinds in China and in the helium business. Lastly, volumes declined 6% year over year in Europe due to softer merchant demand as well as a planned project maintenance outage. Air Products expanded its fiscal second-quarter adjusted EBITDA margin by 490 basis points year over year, from 36% to 40.9%, thanks to lower energy cost pass-through (which drove roughly half of the improvement) as well as higher pricing and lower costs.

Management maintained its outlook for full-year 2024 and continues to expect adjusted EPS of $12.20 to $12.50. Based on Air Products' first-half results and outlook for the fiscal third quarter, which includes higher expected maintenance costs due to major turnarounds in the United States and Europe, the company will need a strong fiscal fourth quarter to reach the midpoint of the full-year guidance range. On the call, management sounded optimistic that earnings growth will accelerate, as the fiscal fourth quarter is seasonally the strongest and will also benefit from productivity actions, a significant number of smaller new projects coming on-stream, and a ramp-up in the LNG business.

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Upgrading Air Liquide, Air Products, and Linde to Wide Moat Ratings Krzysztof Smalec, CFA, Equity Analyst, 3 Apr 2024

After taking a fresh look at industrial gas firms, we are upgrading our moat ratings for Air Liquide, Air Products, and Linde to wide from narrow, based on switching costs and intangible assets. The moat upgrade boosts our fair value estimates to EUR 185 from EUR 162 for Air Liquide, to $307 from $288 for Air Products, and to $425 from $398 for Linde.

The industry benefits from a resilient business model, particularly in the on-site business, where an industrial gas firm builds plants that are either adjacent to a customer's facility or connected through pipelines. On-site customers typically sign 10- to 20-year contracts with take-or-pay clauses and cost pass-through mechanisms for electricity and natural gas prices. These defensive characteristics enable industrial gas firms to withstand macroeconomic headwinds, including volatility in energy prices and fluctuations in global industrial production. All three industrial gas firms have long records of delivering returns on invested capital in the low to mid-teens. Given the resilience of the on-site business and significant barriers to entry, we expect all three companies to continue outearning their cost of capital over the next two decades.

We have also lowered our Morningstar Uncertainty Ratings for Air Liquide and Linde to Low from Medium to reflect the defensive characteristics of the industrial gas business. While we think that Air Products' core industrial gas business has a similar risk profile to its competitors, we are maintaining our Medium Uncertainty Rating due to execution risk around the company's nearly $20 billion current project backlog, which could include project delays, cost overruns, and returns falling short of expectations.

Air Products Earnings: Full-Year Guidance Cut Due to China Slowdown and Lower Helium Volumes Krzysztof Smalec, CFA, Equity Analyst, 5 Feb 2024

Narrow-moat-rated Air Products' fiscal first-quarter revenue of $2.997 billion and adjusted EPS of $2.82 both fell short of FactSet consensus estimates of $3.195 billion and $3.00. This shortfall was driven by a slowdown in China, lower helium volumes in the electronics end market, higher costs for a sale of equipment project, and the impact of Argentina's currency devaluation. Management expects the softness in Asia and helium to persist in the near term, which led to a full-year adjusted EPS guidance cut from $12.80-$13.10 to $12.20-$12.50. Based on the more muted near-term outlook, we've lowered our fair value estimate to $288 from $314.

Air Products' fiscal first-quarter underlying sales were up 4%, driven by 3% volume growth and 1% higher pricing. Volumes remained flat year over year in Asia, as stronger on-site activity was offset by lower helium demand. In the Americas, volumes grew 3% thanks to strong hydrogen demand. Lastly, Europe posted 9% volume growth driven by stronger on-site activity, including the contribution from a new project in Uzbekistan.

While Air Products did not update its cost forecasts for any of the major projects in its backlog, management said on the earnings call that the sustainable aviation fuel project with World Energy might be delayed by another year to 2027, depending on the timing of necessary permits in California. Although Air Products faces an uncertain macroeconomic environment in the near term, as well as concerns around its project backlog, we think these headwinds are priced in at current levels. The stock plummeted by around 15% following the earnings release and is now trading at a nearly 25% discount to our updated fair value estimate, which we view as an attractive entry point for investors with a long-term horizon.

Media Reports Hint at Final Green Hydrogen Tax Credit Rules Brett Castelli, Equity Analyst, 6 Dec 2023

Media reports have picked up on leaked guidance for the hotly contested U.S. green hydrogen tax credit. While the rules have yet to be finalized, the initial reports point to slightly more restrictive guidance than hoped by many industry participants. Shares of hydrogen-exposed equities underperformed on Dec. 5, with the Global X Hydrogen exchange-traded fund down 2.9% versus the S&P 500 decline of 0.1%.

The Inflation Reduction Act of 2022 included a first-of-its-kind hydrogen tax credit, including $3 per kilogram for green hydrogen projects. This was expected to jump-start the nascent green hydrogen industry, however, industry participants have been eagerly awaiting final guidance regarding requirements for a facility to qualify as "green." The official guidance has been expected to be released before year-end, but recent indications are it could slip into 2024.

The leaked rules have triggered warnings from industry, including from the CEO of the American Clean Power Association stating the rules "will fail to get this new industry off the ground" if finalized as reported. However, we believe this is partially politicking, given the rules are still yet to be finalized. Our initial read of the leaked requirements is that they are only modestly more restrictive than our expectations and should still allow for final investment decisions on initial projects.

Our current favorite stocks within the broader hydrogen ecosystem include Chart Industries and Air Products, with both narrow-moat firms trading in 4-star territory. In contrast, we see a more balanced risk/reward for earlier-stage hydrogen firms, such as no-moat Plug Power, where financing uncertainty leads to a wide range of outcomes.

Air Products Earnings: Solid Results and Outlook Overshadowed by Backlog Uncertainty Krzysztof Smalec, CFA, Equity Analyst, 7 Nov 2023

Narrow-moat-rated Air Products' fiscal fourth-quarter adjusted EPS of $3.15 beat our estimate by $0.04.

For full-year fiscal 2024 management anticipates adjusted EPS of $12.80 to $13.10, which implies a roughly 12.5% year-over-year increase at the midpoint. Despite the earnings beat and a solid outlook for fiscal 2024, the stock plunged by nearly 13%, which we think reflects the market's concerns about the industrial gas firm's project backlog. After rolling our model forward one year, we've reduced our fair value estimate to $314 from $319, as our slightly lower operating margin projections were partially offset by time value of money.

The company provided an update on the Louisiana blue hydrogen project and now expects the total capital required to be around $7 billion, up from the original 2021 estimate of $4.5 billion. Management said on the call that roughly $1 billion of the cost increase is due to inflation, with the remainder attributable to capitalized interest as well as additional investment in the facility (including land, infrastructure, and utilities) to prepare for future expansion. Despite the higher capital cost, management still expects the project to generate a double-digit IRR on the expanded $7 billion investment, which we consider realistic as the original return target did not include benefits from the Inflation Reduction Act.

We remain optimistic about the long-term outlook for Air Products, as we continue to expect the company to capitalize on growing investment in blue and green hydrogen. As the firm's large projects near completion, we think that the market's focus will increasingly turn from new project announcements to execution, and uncertainty around the backlog could weigh on the stock. That said, shares are now trading at a nearly 20% discount to our updated fair value estimate, which we see as an attractive entry point for investors with a long-term horizon.

Air Products Earnings: Price and Volumes Up Across All Regions Krzysztof Smalec, CFA, Equity Analyst, 3 Aug 2023

We are maintaining our $319 fair value estimate for narrow-moat-rated Air Products following the industrial gas firm's fiscal third-quarter earnings release. Management raised the bottom end of its full-year guidance and now anticipates adjusted EPS in the range of $11.40-$11.50 (up from $11.30-$11.50). We've made some puts and takes in our model, but nothing in the earnings release alters our long-term view of the firm.

Air Products' fiscal third-quarter underlying sales increased by 7% from the same period last year, on 3% higher pricing (including 10% higher merchant pricing) and 4% higher volumes. All regions saw positive volume growth: 6% in the Americas, 8% in Asia, and 1% in Europe. The industrial gas firm expanded its fiscal third-quarter adjusted EBITDA margin by 590 basis points year over year, from 33.9% to 39.8%, thanks to a positive price-cost spread and higher equity affiliates' income as well as a roughly 400-basis-point boost from lower energy cost pass-through.

During the quarter, Air Products completed the financial close on the NEOM project and signed an

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agreement to acquire a natural gas-to-syngas processing project in Uzbekistan for $1 billion. The Uzbekistan facility is already built and will start contributing to Air Products' earnings in fiscal 2024. We were pleased to hear that the Jiutai gasification project is now operational and has been completed under budget, despite supply chain disruptions and COVID-19-related lockdowns. Management also said on the earnings call that the Gulf Coast Ammonia project is on pace to start delivering hydrogen in August.

We continue to see a long runway for growth for Air Products. The company aims to deploy over $30 billion of capital over the next decade, with nearly $18 billion of projects already in the backlog. We believe that Air Products is well positioned to capitalize on an acceleration in blue and green hydrogen investment opportunities.

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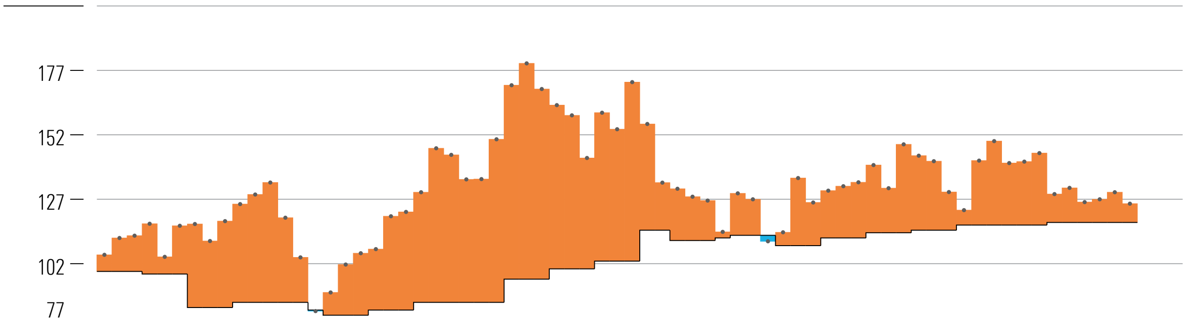
Air Products & Chemicals Inc APD ★★★★ 6 Sep 2024 21:28, UTC

Competitors Price vs. Fair Value

PPG Industries Inc PPG



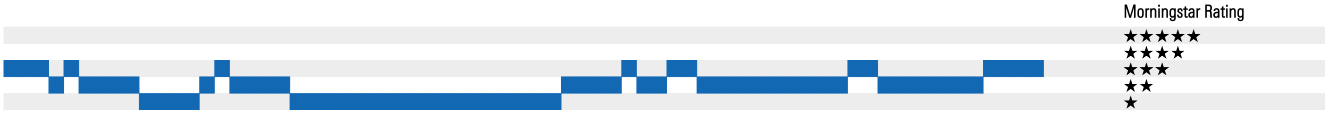
Last Close: 125.28

Fair Value: 118.00
19 Apr 2024 18:15, UTC

Overvalued
Undervalued

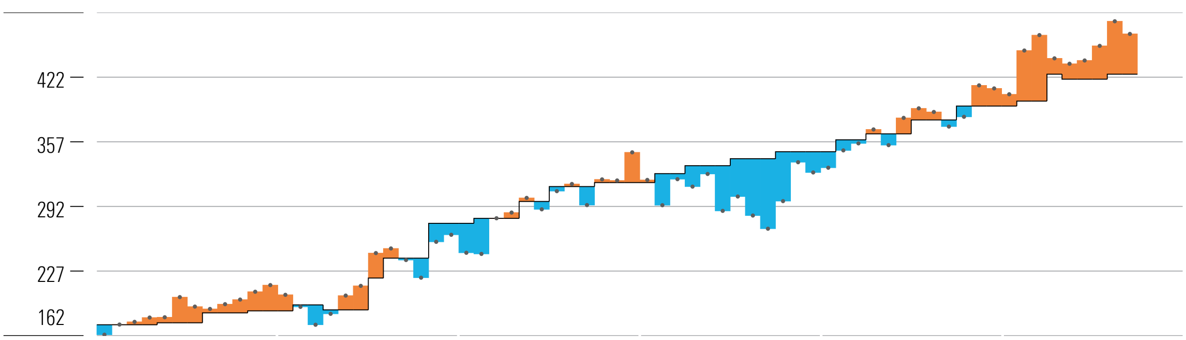
	2019	2020	2021	2022	2023	YTD
Price/Fair Value	1.53	1.66	1.67	1.15	1.28	1.06
Total Return %	32.51	9.61	21.13	-25.68	20.96	-14.90

Morningstar Rating



Total Return % as of 05 Sep 2024. Last Close as of 05 Sep 2024. Fair Value as of 19 Apr 2024 18:15, UTC.

Linde PLC LIN



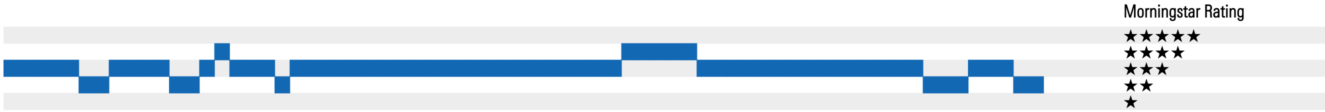
Last Close: 465.52

Fair Value: 425.00
2 Aug 2024 19:35, UTC

Overvalued
Undervalued

	2019	2020	2021	2022	2023	YTD
Price/Fair Value	1.14	0.96	1.10	0.94	1.05	1.07
Total Return %	38.68	25.58	33.08	-4.49	27.48	14.36

Morningstar Rating



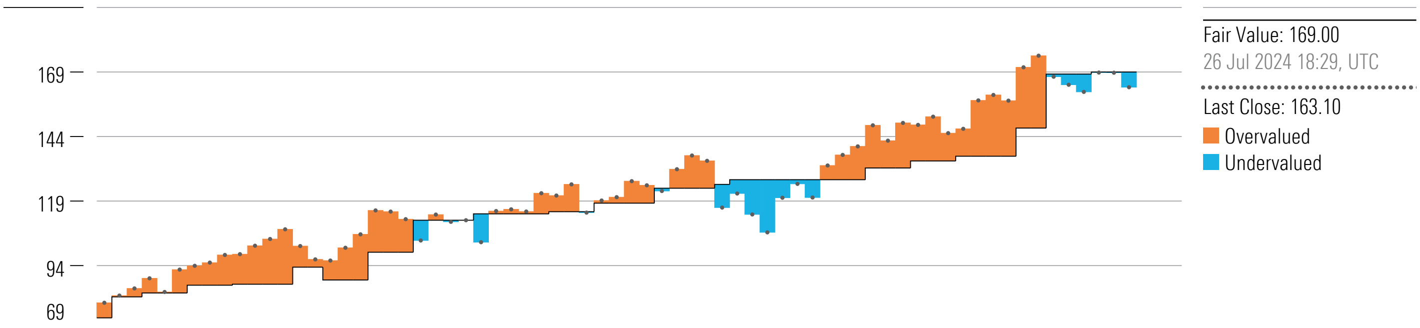
Total Return % as of 05 Sep 2024. Last Close as of 05 Sep 2024. Fair Value as of 2 Aug 2024 19:35, UTC.

Morningstar Equity Analyst Report | Report as of 6 Sep 2024 23:18, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

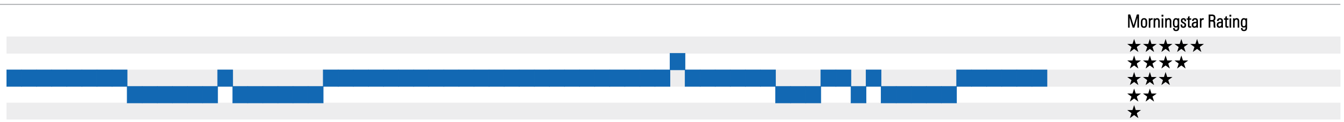
Air Products & Chemicals Inc APD ★★★★ 6 Sep 2024 21:28, UTC

Competitors Price vs. Fair Value

Air Liquide SA AI



	2019	2020	2021	2022	2023	YTD
Price/Fair Value	1.20	0.99	1.07	0.95	1.17	0.97
Total Return %	30.45	8.52	16.25	-3.12	35.25	3.68



Total Return % as of 05 Sep 2024. Last Close as of 05 Sep 2024. Fair Value as of 26 Jul 2024 18:29, UTC.

Morningstar Equity Analyst Report | Report as of 6 Sep 2024 23:18, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 13 of 21

Air Products & Chemicals Inc APD ★★★★ 6 Sep 2024 21:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
273.55 USD 5 Sep 2024	309.00 USD 1 Aug 2024 21:51, UTC	0.89	59.74 USD Bil 6 Sep 2024	Wide	Large Value	Medium	Exemplary	7 Aug 2024 05:00, UTC

Morningstar Historical Summary

Financials as of 30 Jun 2024

Fiscal Year, ends 30 Sep	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (USD Bil)	10.44	7.82	7.50	8.19	8.93	8.92	8.86	10.32	12.70	12.60	8.91	12.10
Revenue Growth %	2.5	-25.1	-4.1	9.1	9.1	-0.1	-0.7	16.6	23.0	-0.8	-5.3	-6.7
EBITDA (USD Mil)	2,447	2,227	2,524	2,403	3,116	3,509	3,718	3,971	4,221	4,418	3,557	4,804
EBITDA Margin %	23.4	28.5	33.6	29.3	34.9	39.4	42.0	38.5	33.2	35.1	39.9	39.7
Operating Income (USD Mil)	1,648	1,385	1,613	1,786	1,966	2,170	2,238	2,268	2,413	2,739	2,099	2,837
Operating Margin %	15.8	17.7	21.5	21.8	22.0	24.3	25.3	22.0	19.0	21.7	23.5	23.4
Net Income (USD Mil)	992	1,278	631	3,000	1,498	1,760	1,887	2,099	2,256	2,300	1,878	2,571
Net Margin %	9.5	16.3	8.4	36.7	16.8	19.7	21.3	20.3	17.8	18.3	21.1	21.2
Diluted Shares Outstanding (Mil)	215	217	218	220	221	222	222	223	223	223	223	223
Diluted Earnings Per Share (USD)	4.61	5.88	2.89	13.65	6.78	7.94	8.49	9.43	10.14	10.33	8.43	11.54
Dividends Per Share (USD)	3.02	3.20	3.39	3.71	4.25	4.58	5.18	5.84	6.36	6.87	5.29	7.04

Valuation as of 30 Aug 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	3.0	2.9	3.3	4.4	4.0	5.8	6.9	6.6	5.4	4.8	4.7	5.1
Price/Earnings	31.4	22.1	20.7	31.8	24.3	29.6	31.9	33.3	30.6	26.6	23.3	24.2
Price/Cash Flow	14.2	11.6	11.9	23.0	13.9	17.5	18.6	20.2	21.2	19.0	17.5	16.8
Dividend Yield %	2.14	2.49	2.39	2.32	2.75	1.97	1.96	1.97	2.1	2.56	2.72	2.52
Price/Book	4.2	3.9	4.4	3.6	3.2	4.7	5.0	5.0	5.2	4.3	3.8	4.1
EV/EBITDA	15.0	15.1	14.3	15.1	11.5	15.0	16.8	17.6	17.4	15.8	0.0	0.0

Operating Performance / Profitability as of 30 Jun 2024

Fiscal Year, ends 30 Sep	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	5.6	7.3	3.6	16.4	8.0	9.2	8.6	8.1	8.4	7.8	—	7.6
ROE %	13.8	17.5	8.8	35.0	14.3	16.1	16.3	16.4	16.9	16.8	—	17.6
ROIC %	8.0	10.2	5.6	23.5	11.1	12.9	11.4	10.5	10.9	10.4	—	10.2
Asset Turnover	0.6	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.4	—	0.4

Financial Leverage

Fiscal Year, ends 30 Sep	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	39.6	35.3	35.6	25.2	23.6	22.6	39.1	36.1	36.9	41.3	47.2	—
Equity/Assets %	41.4	41.8	39.3	54.6	56.6	58.4	48.0	50.4	48.3	44.7	40.8	—
Total Debt/EBITDA	2.5	2.6	2.1	1.6	1.2	0.9	2.2	2.1	2.0	2.5	4.1	—
EBITDA/Interest Expense	19.6	21.7	21.9	19.9	23.9	25.6	34.0	28.0	33.0	24.9	21.0	22.1

Morningstar Analyst Historical/Forecast Summary as of 01 Aug 2024

Financials

			Estimates		
Fiscal Year, ends 30 Sep 2023	2022	2023	2024	2025	2026
Revenue (USD Mil)	12,699	12,600	12,164	12,945	14,104
Revenue Growth %	23.0	-0.8	-3.5	6.4	9.0
EBITDA (USD Mil)	4,247	4,702	4,944	5,532	6,138
EBITDA Margin %	33.4	37.3	40.6	42.7	43.5
Operating Income (USD Mil)	2,413	2,739	2,931	3,314	3,610
Operating Margin %	19.0	21.7	24.1	25.6	25.6
Net Income (USD Mil)	2,316	2,563	2,731	2,900	3,033
Net Margin %	18.2	20.3	22.5	22.4	21.5
Diluted Shares Outstanding (Mil)	223	223	223	223	223
Diluted Earnings Per Share(USD)	10.41	11.51	12.27	13.02	13.62
Dividends Per Share(USD)	6.36	6.87	7.06	7.32	7.68

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	4.1	5.0	4.9	4.6	4.2
Price/Earnings	22.4	24.6	21.9	20.6	19.7
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	2.7	2.4	2.6	2.7	2.9
Price/Book	3.9	4.4	3.9	3.6	3.3
EV/EBITDA	13.2	15.1	14.6	13.0	11.7

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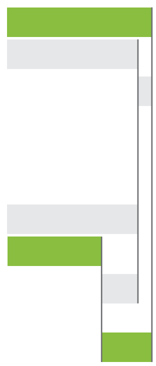
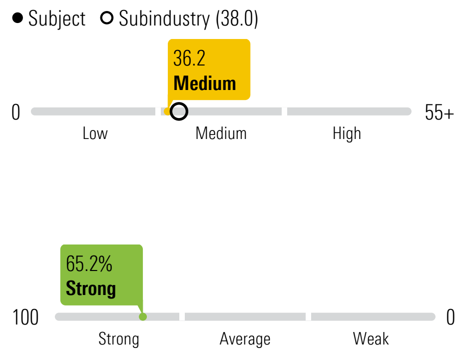
Air Products & Chemicals Inc APD ★★★★ 6 Sep 2024 21:28, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
273.55 USD 5 Sep 2024	309.00 USD 1 Aug 2024 21:51, UTC	0.89	59.74 USD Bil 6 Sep 2024	Wide	Large Value	Medium	Exemplary	7 Aug 2024 05:00, UTC

ESG Risk Rating Breakdown

Exposure		
Company Exposure[1]	36.2	
– Manageable Risk	32.7	
Unmanageable Risk[2]	**3.4**	
Management		
Manageable Risk	32.7	
– Managed Risk[3]	21.3	
Management Gap[4]	**11.4**	
Overall Unmanaged Risk	**14.8**	





- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

- Management measures a company's ability to manage ESG risks through its commitments and actions
- Management assesses a company's efficiency on ESG programs, practices, and policies
- Management score ranges from 0-100% showing how much manageable risk a company is managing

ESG Risk Rating

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

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 65.2% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

ESG Risk Rating Assessment[5]

ESG Risk Rating is of Aug 07, 2024. Highest Controversy Level is as of Aug 08, 2024. Sustainalytics Subindustry: Industrial Gases. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: sustainalytics.com/esg-ratings/.

Peer Analysis 07 Aug 2024

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

Company Name	Exposure	Range	Management	Range	ESG Risk Rating	Range
Air Products & Chemicals Inc	36.2 | Medium	0 – 55+	65.2 | Strong	100 – 0	14.8 | Low	0 – 40+
PPG Industries Inc	51.6 | Medium	0 – 55+	63.1 | Strong	100 – 0	22.3 | Medium	0 – 40+
Linde PLC	37.6 | Medium	0 – 55+	80.0 | Strong	100 – 0	10.3 | Low	0 – 40+
CMS Energy Corp	58.7 | High	0 – 55+	70.1 | Strong	100 – 0	20.3 | Medium	0 – 40+
Air Liquide SA	36.1 | Medium	0 – 55+	69.9 | Strong	100 – 0	13.2 | Low	0 – 40+

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Appendix
Historical Morningstar Rating

Air Products & Chemicals Inc APD 6 Sep 2024 21:28, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	★★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★	★★★★	★★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★	★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★	★★★	★★★	★★★	★★	★★	★★★	★★★	★★★	★★★	★★★★

PPG Industries Inc PPG 6 Sep 2024 21:27, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	★★★	★★★	★★★	★★★	★★	★★	★★	★★	★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★	★★	★★★	★★★	★★	★★	★★	★★	★★	★★	★★	★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★	★★	★★★	★★★	★★	★★	★★★	★★	★★	★★	★★	★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★	★	★	★	★	★	★	★	★	★	★	★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★	★	★	★	★	★★	★★	★★	★★	★★★	★★	★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★	★	★	★★	★★	★★	★★	★★★	★★	★★★	★★★	★★★

Linde PLC LIN 6 Sep 2024 21:27, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	★★	★★	★★★	★★★	★★★	★★	★★	★★	★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★	★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★	★★★	★★★	★★★	★★★	★★	★★★	★★★	★★★	★★★★	★★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★★	★★★	★★★	★★★	★★	★★	★★★	★★★	★★★	★★★	★★★

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Air Liquide SA AI 6 Sep 2024 01:47, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	★★★	★★★	★★★	★★★	★★★	★★★	★★	★★	★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★	★★	★★★	★★	★★★	★★★	★★	★★	★★	★★★	★★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★	★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★	★★★	★★★	★★	★★	★★	★★	★★	★★	★★★	★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★	★★	★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★

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, indepth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm approach.

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

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

1. Economic Moat

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

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

2. Estimated Fair Value

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

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

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

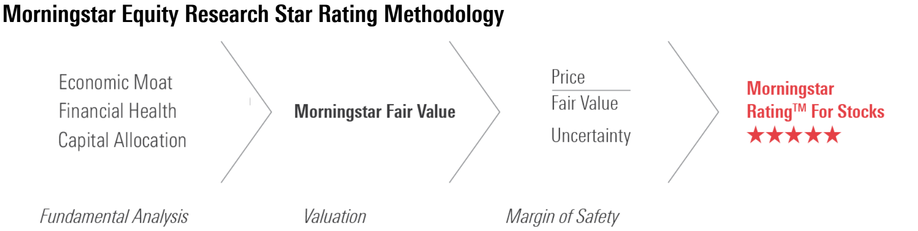
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return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

3. Uncertainty Around That Fair Value Estimate

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

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

Morningstar Equity Research Star Rating Methodology



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Research Methodology for Valuing Companies

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

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

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

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

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

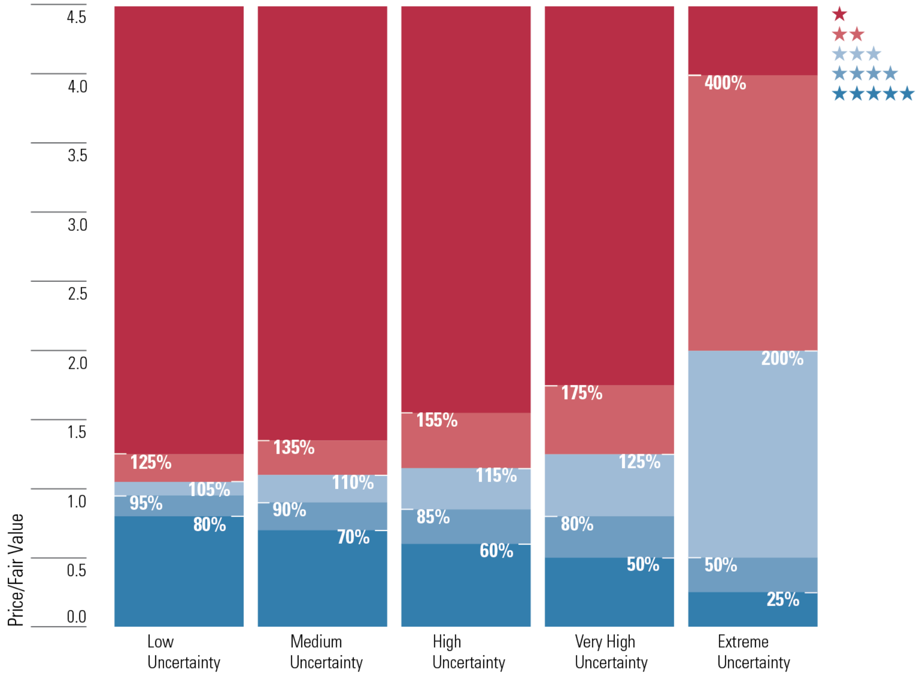
4. Market Price

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

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

Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



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

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

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

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

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk 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.

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

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

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

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

Other Definitions

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

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

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

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

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

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

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

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

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

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

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