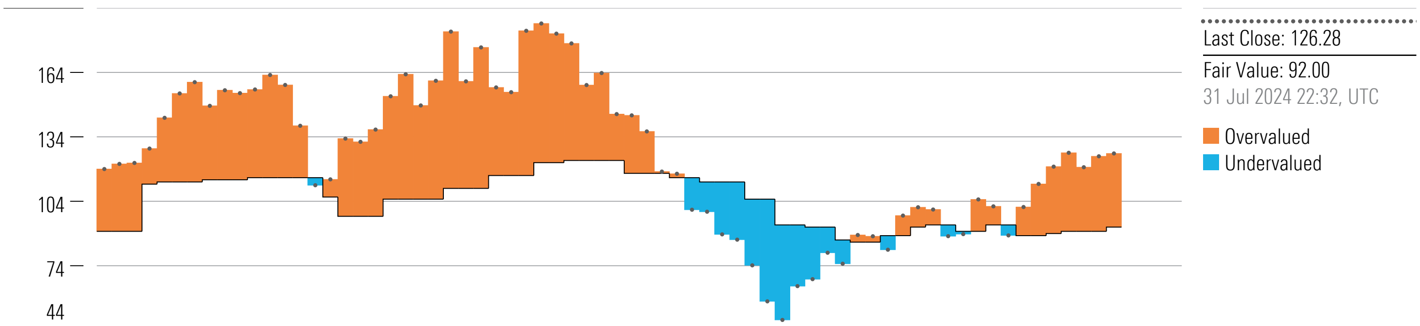
Morningstar Equity Analyst Report | Report as of 29 Aug 2024 22:15, UTC | Reporting Currency: EUR | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

adidas AG ADR ADDYY ★ 29 Aug 2024 21:30, UTC

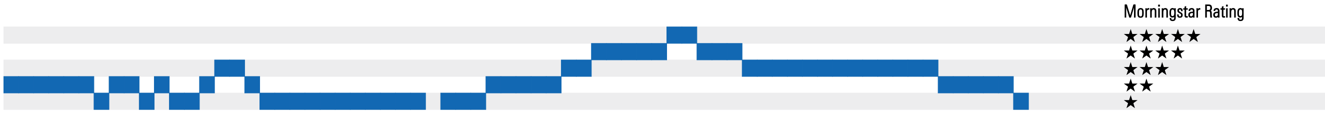
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
126.28 USD 28 Aug 2024	92.00 USD 31 Jul 2024 22:32, UTC	1.38	45.49 USD Bil 29 Aug 2024	Narrow	Large Growth	Medium	Standard	7 Aug 2024 05:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD
Price/Fair Value	1.42	1.66	1.23	0.74	1.09	1.38
Total Return %	57.83	12.40	-20.31	-51.75	50.62	24.60

Morningstar Rating



Total Return % as of 28 Aug 2024. Last Close as of 28 Aug 2024. Fair Value as of 31 Jul 2024 22:32, 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.

Adidas Earnings: Share Prices Already Reflect Brighter Outlook

Analyst Note David Swartz, Senior Equity Analyst, 31 Jul 2024

There were few surprises in narrow-moat Adidas' second-quarter report as it had revealed its sales growth (9%), gross margin (50.8%), and operating margin (5.9%) results in its July 16 preannouncement. It also held to its outlook for full-year high-single-digit percentage sales growth and EUR 1 billion in operating profit. However, we think its guidance is too low given the momentum in its business, including strong jersey sales throughout the recent international football competitions, the high popularity of its "terrace-style" shoes, an expected boost from the Paris Olympics, and another EUR 150 million in anticipated Yeezy sales. Indeed, Adidas' outlook seemingly suggests that its second-half sales growth will be lower than in the first half and that the upcoming Yeezy offering generates no profit. The firm has consistently outperformed its own outlook over the past few quarters due, in part, to overly cautious guidance related to Yeezy. Thus, we are revising our 2024 estimates to levels above company guidance. Specifically, we are lifting our forecast for sales growth and operating profit to 10% from 7% and to $1.14 billion (4.9% margin) from $994 million (4.3% margin), respectively.

Our fair value estimates rise to EUR 172/$92 from EUR 168/$90 on the increase in our 2024 estimates. Even so, we view Adidas' shares, up about 25% since the beginning of the year, as expensive. While the firm's results have improved more quickly than we had anticipated, challenges remain, including the end of Yeezy and uncertain economic conditions in North America and China. Moreover, Adidas is also struggling to meet demand for some of its popular footwear styles, while competitors are increasing

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Sector	Industry
Consumer Cyclical	Footwear & Accessories

Business Description

Adidas designs, develops, produces, and markets athletic and leisure apparel, footwear, accessories, and sports equipment. Under its eponymous brand, it produces apparel for competitive athletics, casual activewear, and casual fashion. Adidas sells its products in more than 160 countries through nearly 1,900 owned retail stores, 15,000 mono-branded franchise stores, 150,000 wholesale doors, and owned e-commerce that is available in 67 countries. The company was founded in 1949 in Germany.

production of similar products.

In conjunction with the earnings release, we are revising our Morningstar Uncertainty Rating on Adidas to Medium from High based on our quantitative model and clear signs of improving stability and financial health after a very tumultuous period.

Business Strategy & Outlook David Swartz, Senior Equity Analyst, 31 Jul 2024

We think Adidas is a leader in athletic and athleisure apparel with a narrow moat based on an intangible brand asset. While it has been beset with problems over the past few years, we think it can still make progress under its Own the Game plan for 2021-25. For example, Adidas' e-commerce, now available in about 67 countries, generated about EUR 4 billion in sales in 2023 (roughly 19% of its total sales), and we project this will exceed EUR 9 billion and 30% of its yearly sales by the end of this decade. Further, we think the firm's new sportswear offerings and plans to improve its position in key categories like running and outdoor will be successful. However, because of heavy competition, the termination of the Yeezy partnership, and its slow recovery in China, our estimates are below the low end of Own the Game targets of compound average sales growth of 8%-10%, average net income growth of 16%-18%, and 2025 gross and operating margins of 53%-55% and 12%-14%, respectively.

Adidas has struggled with the end of the Yeezy product line and inventory management issues in North America but appears to be having some success with new products in basketball and with its "terrace-style" shoes. After a 19% sales decline in 2023, we believe the firm will return to sales growth in the region in 2024's second half.

Although it has had difficulties there of late, we believe Adidas has a strong opportunity in China, now the second-largest athletic apparel market in the world after the United States. It is an increasingly competitive market; it is also growing rapidly as the Chinese government continues to invest heavily in athletics. We forecast the firm's sales in Greater China will exceed EUR 5.1 billion in 2027, up from EUR 3.2 billion in 2023.

Bulls Say David Swartz, Senior Equity Analyst, 31 Jul 2024

- Adidas' e-commerce gives the company greater control over its brand and pricing. The firm has increased its digital capabilities and cut wholesale accounts. Its e-commerce sales were about EUR 4 billion in 2023, or 19% of total sales.
- Adidas' sponsorships of leading teams and players in international football make it one of the most visible brands in the world.
- Adidas has just over 10% share in China, the fastest-growing athletic apparel and footwear market, and will benefit from the growth of athletics in the country.

Bears Say David Swartz, Senior Equity Analyst, 31 Jul 2024

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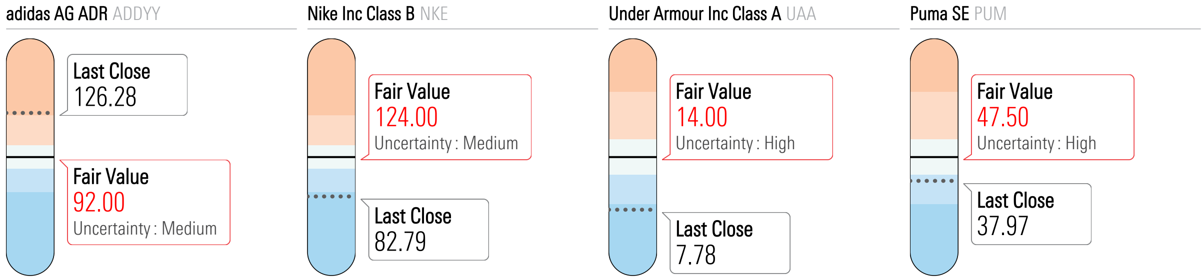
Competitors



	adidas AG ADR ADDYY	Nike Inc Class B NKE	Under Armour Inc Class A UAA	Puma SE PUM
Economic Moat	Narrow	Wide	None	None
Currency	USD	USD	USD	EUR
Fair Value	92.00 31 Jul 2024 22:32, UTC	124.00 2 Jul 2024 02:21, UTC	14.00 21 May 2024 20:06, UTC	47.50 8 May 2024 19:26, UTC
1-Star Price	124.20	167.40	21.70	73.63
5-Star Price	64.40	86.80	8.40	28.50
Assessment	Significantly Overvalued 29 Aug 2024	Significantly Undervalued 29 Aug 2024	Significantly Undervalued 29 Aug 2024	Undervalued 29 Aug 2024
Morningstar Rating	★29 Aug 2024 21:30, UTC	★★★★★29 Aug 2024 21:26, UTC	★★★★★29 Aug 2024 21:27, UTC	★★★★29 Aug 2024 00:21, UTC
Analyst	David Swartz, Senior Equity Analyst	David Swartz, Senior Equity Analyst	David Swartz, Senior Equity Analyst	David Swartz, Senior Equity Analyst
Capital Allocation	Standard	Exemplary	Standard	Standard
Price/Fair Value	1.38	0.67	0.55	0.80
Price/Sales	1.89	2.47	0.62	0.67
Price/Book	8.43	8.62	1.85	2.16
Price/Earning	197.21	22.20	—	20.42
Dividend Yield	0.30%	1.75%	0.00%	2.16%
Market Cap	—	124.84 Bil	3.34 Bil	5.74 Bil
52-Week Range	—	70.75—123.39	7.68—9.50	34.21—63.20
Investment Style	Large Growth	Large Blend	Small Blend	Mid Blend

- Adidas was affected by China's restrictions in 2022, and the recovery has been slow. Other external threats include the war in Ukraine and inflation's impact on consumer demand.
- Adidas' innovation has trailed some others in a sportswear market that has become increasingly competitive.
- Adidas had to terminate its Yeezy partnership in late 2022. Thus far, it has been unable to replace the lost Yeezy sales and income with any other product line.

Economic Moat David Swartz, Senior Equity Analyst, 31 Jul 2024

We assign a narrow moat rating to Adidas based on a brand intangible asset. Adidas produces athletic apparel and footwear for professional and amateur athletes, sports equipment, and sports-inspired fashion for both athletes and nonathletes alike in more than 160 countries. The firm generated EUR 21.4 billion in sales in 2023 and was the second-largest sportswear company in the world behind only wide-moat Nike in terms of both sales and market share. In 2023, Adidas had 11% share of the $165 billion (retail) sports footwear market and 6.2% share of the $231 billion (retail) sports apparel market (Euromonitor).

As evidence of its competitive edge, Adidas' adjusted returns on invested capital, including goodwill, have averaged 13% over the past 10 years. We acknowledge that average annual adjusted ROICs were quite low in 2022 (5%) and 2023 (2%) because of several issues: one-time restructuring costs, the end of the Yeezy product line (which we estimate represented a high-single-digit percentage of sales at its peak), a CEO change, and other challenges. However, we forecast average annual adjusted ROICs, including goodwill, will exceed the company's weighted average cost of capital over the next 10 years, supporting our moat rating. Specifically, we estimate Adidas' weighted average cost of capital at 9% and expect its adjusted ROICs, including goodwill, to average 22%.

In addition to quantitative factors, we evaluate activewear producers like Adidas using five criteria: geographic reach; pricing; sponsorships/visibility; product quality/performance; and control over distribution. We rate Adidas as high in geographic reach, sponsorships/visibility, pricing, and product quality/performance, and moderate in control over distribution.

Adidas achieves high pricing on many products, supporting our view of its brand power. While Adidas sells products at many price points, its leading items are generally priced higher than those of most. For example, nearly all the soccer cleats that retail for more than $180 per pair at Dick's Sporting Goods in the US are produced by either Adidas or Nike. It's a similar story in other performance footwear, where Nike and Adidas tend to achieve the highest prices. Aside from its performance apparel, Adidas receives premium pricing for some of its specialized fashion gear.

Premium pricing allows Adidas to post high gross margins. Its 10-year historical average gross margin of 50% was above those of many competitors, including Nike and Puma. We forecast Adidas' gross margins will stabilize around 53% by 2027 after some weak years due to its struggles in China, currency effects, and the termination of the Yeezy deal. We think Adidas is one of the few companies able to achieve premium prices and margins in the competitive athletic apparel market, supporting our narrow-moat view.

Further, we believe only Nike and Adidas have the financial resources and worldwide appeal to sign sponsorships with leading athletes, teams, and leagues in Europe, the US, and elsewhere. While other companies, including no-moat peers Under Armour and Puma, sponsor some high-profile athletes and teams, they lack the star power or depth of Adidas and Nike. Adidas' sponsorships accounted for about 50% of its roughly EUR 2.5 billion in total marketing expenditures in 2023. Adidas' high-profile partnerships include the FIFA World Cup (which it has sponsored since 1970), the Olympics, the UEFA European Championship, Manchester United, Arsenal, and Real Madrid. Adidas also sponsors numerous amateur and club teams, including AAU basketball and college teams in the US. Athletes

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sponsored by Adidas include Lionel Messi (soccer), Patrick Mahomes (football), James Harden (basketball), Damian Lillard (basketball), Noah Lyles (track), Anthony Edwards (basketball), Caroline Wozniacki (tennis), and Mikaela Shiffrin (skiing).

We view Adidas as a successful casual fashion brand as well as an athletic brand. Although its relationships in the sports world are important, most purchasers of sportswear products are not professionals or even dedicated athletes. Adidas has survived through many fashion cycles, some favorable to the firm and others less so. Through these ups and downs, its large catalog of products has given it an edge over smaller and newer firms. In 2023, for example, the firm was reeling from the end of its Yeezy deal when a shoe style known as “terrace” (low rise, rubber soles) unexpectedly came back into fashion in Western Europe and, later, North America. This trend benefited Adidas, which has been the primary maker of shoes of this type for decades.

Adding to its popularity, Adidas has a few dozen sponsorships and partnerships with celebrities and artists, including long-standing ones with singer Pharrell Williams and fashion designer Jerry Lorenzo's high-end streetwear brand Fear of God. These collaborations provide exposure for the brand and help it launch new products at premium prices. We believe its many partnerships in the sports and entertainment worlds provide a competitive edge and support its narrow moat based on its intangible brand asset.

While style and partnerships are important, innovation allows Adidas to achieve premium prices and supports its brand among both professional and amateur athletes. For example, its Boost footwear incorporates a thermoplastic polyurethane material that was developed by chemical company BASF. Adidas claims Boost shoes have excellent running properties as the midsole springs back into its original shape after impact, thereby reducing energy usage. The veracity of this claim is hotly debated by runners. Whether marketing hype or not, most of Adidas' high-priced shoes incorporate the Boost technology. The firm was a tiny player in running shoes in the US before the introduction of Boost. Although Puma and other competitors have since released running shoes with similar features, Adidas gained an advantage by being first to market. Innovations such as these keep Adidas' brands fresh and allow it to maintain premium pricing.

Our high rating for Adidas' geographic reach is reflected in its share numbers in key territories. In its home region of Western Europe in 2023, it had second-best shares of 17.3% and 9% in sports footwear and apparel, respectively, and similar shares in Eastern Europe. Meanwhile, Adidas' share of the North America sportswear market has averaged 6% over the past five years, second to Nike's 17%. Boosted by fashion trends and investments, Adidas' North America segment accounted for 24% of its sales in 2023, up from 15% of its total in 2014. We forecast the company's sales in Europe and North America sales will grow at about 4% annual rates over the next 10 years, roughly in line with expected growth of the

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sportswear markets in these regions, as we do not expect any significant change in the company's shares in these markets.

We also believe Adidas has significant opportunity for growth in Asia, especially China. According to Euromonitor, the Chinese sportswear market, already the second largest in the world after the US, will grow to roughly $79 billion from $54 billion between 2023 and 2028, a compound average annual rate of 8%. Adidas has approximately 7,000 stores (mostly franchised) in China. Over the next decade, we forecast a compound average annual growth rate of 12% for the company in Greater China, as we think it is poised to take further share in the region.

Adidas has many distribution points for its products, supporting its brand intangible asset. Worldwide, it owns nearly 1,900 stores, franchises another 15,000 stores, and sells products in about 150,000 wholesale locations. Although Adidas has replaced some full-price stores with outlets, its store base has become more productive. Even with disruptions due to the pandemic, we estimate that its sales from branded stores increased to EUR 4.6 billion in 2023 from EUR 3.4 billion in 2014. As Adidas has closed stores, it has also enhanced its digital business. The company, which now sells products through digital channels in 67 countries, lifted its e-commerce sales to about EUR 4 billion in 2023 from just EUR 200 million in 2012. We view the online trend as favorable, as Adidas sells much of its products through digital channels at full price and likely achieves a better margin by shifting some sales from wholesale channels. Further, the company operates an online loyalty program, which it uses to highlight new and limited-edition merchandise. Even so, the firm's high exposure to third-party distribution has hurt its inventory control and pricing at times. For this reason, we rate its control over distribution as moderate.

We do not think a wide moat rating is appropriate for Adidas. Although it is one of the leaders in a large global market, its results have been very inconsistent in recent years, and its former CEO was effectively forced out. Such inconsistency suggests that it may be aggressive to assume that its brand-based edge could last for more than 20 years (as required for a wide moat).

We do not believe Adidas has a moat based on any other factors besides its brand intangible asset. As Adidas outsources most of its manufacturing to 357 factories in 40 countries (as of 2023), we do not think it has any cost advantage over competitors, which source from similar supply chains. Moreover, we do not believe Adidas can sign sponsorship deals at below-market prices because it must compete with Nike and others to sign the top athletes and teams. Further, we do not think Adidas has a moat based on efficient scale, as its distribution system is like that of competitors. There is no network effect in the athletic apparel business and no switching costs. While Adidas produces some exclusive performance and fashion apparel, consumers have many alternatives to its products.

Fair Value and Profit Drivers David Swartz, Senior Equity Analyst, 31 Jul 2024

We are lifting our fair value estimate for Adidas' ADRs (equivalent to 0.5 shares) to $92 from $90 after the firm announced second-quarter results above our original expectations. Our fair value estimate is based on an exchange rate of EUR 0.93/$1, the spot rate on July 31. Adidas achieved 9% sales growth, a 50.8% gross margin, and a 5.9% operating margin in the second quarter. Our respective estimates were 4%, 50.5%, and 3.4%.

Adidas guided to high-single-digit currency-neutral sales growth and EUR 1 billion in operating profit for the full year. We think this outlook is likely too low given the momentum in its business, including strong jersey sales throughout the recent international football competitions, the high popularity of its terrace-style shoes, an expected boost from the Paris Olympics, and an additional EUR 150 million in expected Yeezy sales. Indeed, Adidas assumes no profit contribution from Yeezy in the second half and its guidance inexplicably suggests that its overall sales growth will slow. The firm has consistently outperformed its own outlook over the past few quarters due, in part, to overly conservative guidance on Yeezy sales and profits. Thus, we are revising our 2024 estimates to levels above company guidance. Specifically, we are lifting our forecast for sales growth and operating profit to 10% from 7% and to $1.14 billion (4.9% margin) from $994 million (4.3% margin), respectively.

In the long term, we forecast the growth of Adidas' direct-to-consumer business will boost its margins. E-commerce accounted for approximately 19% of Adidas' 2023 sales, and we estimate it will rise to 41% of sales in 2033. Its total owned retail (both branded stores and e-commerce) increased to about EUR 8.7 billion in 2023 from EUR 3.8 billion in 2014 despite the closure of hundreds of stores. We also believe improved efficiency in Adidas' supply chain will boost margins. Among other efforts, the firm invests in automation in its manufacturers' factories to reduce costs and increase production rates.

We anticipate Adidas' growth will slow in North America, where its sales increased by more than EUR 4 billion between 2014 and 2022 but then fell 19% in 2023 due in part to the end of the Yeezy contract. We do not think past double-digit sales growth rates are achievable in the long term as fashion trends change, the Yeezy contract has ended, and Adidas' sales base has grown much larger. We forecast compound average annual sales growth in North America at 4% over the next decade. In Europe, we also forecast 4% compound average annual sales growth. While Europe is Adidas' largest market by sales, it is also saturated and lacks strong growth opportunities.

We forecast higher sales growth rates in Greater China and emerging markets as these regions have substantial growth prospects as more people move into the middle class. We forecast 10-year compound average sales growth rates of about 12% and 5% in Greater China and the emerging-markets segments, respectively.

Risk and Uncertainty David Swartz, Senior Equity Analyst, 31 Jul 2024

We are revising our Morningstar Uncertainty Rating on Adidas to Medium from High based on our quantitative model and clear signs of improving stability and financial health after a very tumultuous period. The company has faced a string of challenges over the past few years, including lost market share in China, unfavorable currency movement, and the end of the Yeezy partnership, but its results have been improving.

Adidas' recent results in North America have been disappointing. The end of the Yeezy partnership contributed to a decline in sales in the region in 2023 and future growth is in doubt due to increasing competition and turmoil in the wholesale channel.

Adidas had to terminate operations in Russia due to the invasion of Ukraine. While this move necessitated a roughly EUR 200 million write-down in 2022, the longer-term impact should be limited.

Adidas is exposed to weakness in physical retail in the US and other markets. Many retailers that carry its gear are suffering from declining customer traffic and closing stores as e-commerce and discount stores take share. Liquidations from bankruptcies have hurt pricing across the industry. We think Adidas must increase its direct-to-consumer business to overcome weakness at physical retail.

Tariffs could have a negative effect on Adidas. To mitigate the risk of tariffs on goods imported from China, it has moved most of its production for the US market to other countries in Asia.

Although it has faced its share of scandals, we do not think Adidas faces any environmental, social, or governance risks that will have a material effect on our valuation of the company. However, like many international apparel manufacturers, it has faced controversies related to the treatment of workers in its supply chain and the large amounts of resources used in clothing production. Moreover, Adidas has been entangled in the forced-labor controversy in China.

Capital Allocation David Swartz, Senior Equity Analyst, 31 Jul 2024

We assign a Capital Allocation Rating of Standard to Adidas. The company, in accordance with German law, is overseen by an executive board and supervisory board. The executive board consists of the five top executives of the company and reports to the supervisory board. The supervisory board consists of 16 members, evenly split between members elected by shareholders and members elected by employees.

Bjørn Gulden became Adidas' CEO at the beginning of 2023. He had been the CEO at Puma, Adidas' longtime rival. There have not been any significant changes in Adidas' capital allocation policies under his leadership.

Adidas generally operates with a very conservative balance sheet. In the years before the pandemic, the firm often operated in a net cash position. However, after issuing debt during the pandemic, it now has more debt than cash. We believe it will return to a net cash position within the next two years due to debt reduction and positive free cash flow. Including 2024, we forecast it will generate an annual

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average of EUR 2.1 billion in free cash flow to the firm over the next 10 years.

Adidas' capital needs are limited, as its capital expenditures averaged just 2.6% of revenue over the past decade. We forecast capital expenditures as a percentage of sales at 3% in the long term as it invests in its supply chain, e-commerce, and company-owned stores. We have a favorable view of these investments.

In a deal that proved to be a poor use of capital, Adidas acquired Reebok in 2005 for $3.8 billion. Once a legitimate rival in the US, Reebok fell far behind Nike and other major athletic brands under Adidas' management. Thus, we have a favorable view of the 2022 sale of the brand to Authentic Brands Group even though the price (EUR 2.1 billion) was below the purchase price.

Adidas has not made any acquisitions in nearly a decade. Its most recent deal was to buy Austria-based fitness app Runtastic for $240 million in 2015. We think Adidas overpaid, as 50.1% of it had been sold two years earlier at an enterprise value of just $25 million. As Under Armour was making acquisitions in the fitness app space at around the same time, we think Adidas may have felt pressure to follow suit. We do not expect the firm to pursue large acquisitions and expect it will use much of its free cash flow for stock buybacks and dividends in the future.

Adidas was a consistent repurchaser of its own shares before 2023 but has put buybacks on hold while it works on improving its results and balance sheet. In past years, the firm has repurchased shares at prices above our fair value estimate, which we believe has reduced shareholder value. We forecast buybacks will resume in a meaningful way in 2026.

Adidas issues one dividend per year based on the prior year's earnings. In anticipation of better results, the company chose to issue a dividend of EUR 0.70 per share in 2024 despite reporting a net loss in 2023. Generally, the firm intends to issue 30%-50% of its prior year's earnings to shareholders as dividends.

Analyst Notes Archive

Adidas: Preannouncement Highlights Comeback, but Already Reflected in Shares David Swartz, Senior Equity Analyst, 16 Jul 2024

Narrow-moat Adidas released preliminary second-quarter results that exceeded our estimates. The company also announced an increase in its 2024 operating profit guidance to EUR 1 billion from EUR 700 million previously. However, we rate Adidas' shares as overvalued and are not revising our fair value estimates of EUR 168/$90 currently as our forecast for EUR 994 million in 2024 operating profit is very close to the updated guidance. Our estimate was substantially above the earlier outlook due, in part, to our expectation of a profit contribution from sales of the remaining Yeezy merchandise this year. Over the past few quarters, Adidas has consistently issued guidance that included zero profit from the discontinued brand even though significant profit was ultimately realized. Thus, we have set our expectations accordingly.

In the quarter, Adidas recorded 9% revenue growth, well above our 4% forecast. For the year, the firm guided to high-single-digit currency-neutral sales growth, a slight revision from its previous outlook for mid- to high-single-digit growth. Our revenue forecast aligns with the revised guidance. Further, Adidas' quarterly gross 50.8% gross margin beat our estimate by 30 basis points, and it realized EUR 50 million in operating profit related to Yeezy. In the medium term, we think the company can build to 53% gross margins and operating margins of about 11%-12%.

Adidas attributed the second-quarter outperformance to strong sell-through, limited discounting, lower costs, and a favorable product mix. Although no details were provided, we believe that the company continues to benefit from the popularity of its "terrace"-style footwear in Western Europe and North America. Adidas likely also got a boost from the UEFA European Championship, which began in mid-June. We expect to receive more information about the quarter and update our estimates when full results are announced on July 31.

Adidas Earnings: 2024 Guidance Looks Low Given Renewed Momentum; Shares Expensive David Swartz, Senior Equity Analyst, 30 Apr 2024

Narrow-moat Adidas' final first-quarter 3.5% sales growth, 51.2% gross margin, and 6.2% operating margin matched the preliminary results that were released on April 16. The firm also held to the full-year guidance that it issued on that date of mid- to high-single-digit currency-neutral sales growth and EUR 700 million in operating profit. While the sales outlook appears reasonable, the profit guidance is very low as it implies an operating margin in the low single digits for the rest of the year. It is true that economic conditions are not ideal, but we think that Adidas is being overly conservative on the near-term outlook considering the popularity of its Terrace styles like Samba and Gazelle and with major sporting events (like the Summer Olympics) and product launches on the horizon. Also, the firm's guidance assumes that the remaining EUR 200 million in Yeezy inventory is sold at cost even after EUR 150 million in first-quarter sales of the discontinued line yielded EUR 50 million in profit. Thus, we forecast Adidas' 2024 operating profit at well above company guidance at close to $1 billion (4.3% margin).

Adidas' EUR 0.96 in first-quarter EPS on continuing operations fell short of our EUR 1.23 forecast due to a higher tax rate and interest cost, but the effect on our valuation is immaterial. We are marginally raising our fair value estimates to EUR 168/$90 from EUR 166/$89. Even so, we rate Adidas' shares, up more than 40% over the past year, as overvalued. Alongside its quarterly results, Adidas outlined a path to improved medium-term results, including a 10% operating margin in 2026. However, as the firm continues to face challenges, especially in greater China, where it has lost share, and in the depressed North America wholesale market, we think the turnaround will take a bit longer and model a 9% 2026 margin. In the long run, we think the firm can build to 11.5% operating margins on cost leverage and higher merchandise margin.

Adidas: Small Fair Value Estimate Increase After Preliminary Results, but Shares Overvalued David Swartz, Senior Equity Analyst, 16 Apr 2024

Overcoming uneven demand for sportswear in major markets, narrow-moat Adidas released preliminary first-quarter results that exceeded our expectations. The firm achieved 4% sales growth, a 51.2% gross margin, and EUR 336 million in operating profit in the period, above our respective estimates of 2%, 46%, and EUR 110 million. After revising our model to incorporate these results, our first-quarter earnings per share estimate increases to EUR 1.23 from EUR 0.27 and our fair value estimate rises to EUR 166/$89 from EUR 163/$88. We expect to revisit our forecast for the year after the full quarterly results are reported, expected at the end of April. Adidas did caution that it still expects a significant negative impact from currency movement in 2024.

Adidas sold about EUR 150 million in Yeezy merchandise, which generated EUR 50 million in operating profit in the first quarter. As this result was little different than we had assumed, the firm’s outperformance was attributable to its core business. Adidas plans to sell its remaining EUR 200 million in Yeezy shoes at cost throughout 2024. Thus far, the firm has not developed any product line to replace Yeezy, but its legacy Samba shoes have come back in style over the past year. Adidas should also benefit from the upcoming Summer Olympics and the UEFA European Championship, which will be held in its native Germany.

Adidas Earnings: Results and 2024 Outlook Match Preliminary Results; Shares Expensive David Swartz, Senior Equity Analyst, 13 Mar 2024

Narrow-moat Adidas’ 2023 fourth-quarter results and initial 2024 outlook were mostly unchanged from its preliminary results of Feb. 1 (see our note). The firm expects a challenging 2024 due to a suboptimal economy, unfavorable currency movement, and soft demand for sportswear, especially in North America. As we lowered our forecast after the announcement, we do not expect to make any material changes to our EUR 163/$88 per share fair value estimates; we think shares are overvalued. We think CEO Bjorn Gulden is making progress on product innovation, marketing, and other key initiatives, but we also think that financial performance is unlikely to improve materially until 2025.

Adidas reported the 8% sales decline and negative 8% operating margin it had announced. There were no Yeezy sales in the fourth quarter, and there was about EUR 100 million negative impact on operating income from the devaluation of the Argentine peso. One bright spot was that currency-neutral sales in Greater China (14% of total) increased 37%. While sales in the region remain depressed as compared with historical levels, the performance does give us some confidence that lost market share can be regained. Conversely, North America currency-neutral sales (24% of total) plummeted 21% with no

Yeezy sales and low sell-in due to excess inventory at wholesale. While inventory in this channel remains a problem, Adidas has made progress in reducing its total inventory (down 24% year over year) and limiting discounting.

Adidas reiterated its 2024 guidance for currency-neutral mid-single-digit revenue growth and EUR 500 million in operating profit. Reported sales growth is likely to be minimal. Adidas' outlook anticipates the sale of the remaining EUR 250 million in Yeezy shoes, down from about EUR 750 million in 2023. The firm's guidance assumes no profit from Yeezy sales, but we believe there is adequate demand for full-price sell-through despite some indications of waning interest in the product.

Adidas: Disappointing Guidance Demonstrates Depth of Problems; Shares Fully Valued David Swartz, Senior Equity Analyst, 1 Feb 2024

Ahead of its full report on March 13, narrow-moat Adidas revealed preliminary 2023 results and initial 2024 guidance below our estimates. While disappointing, the outlook was not surprising given similarly dim reports from peers wide-moat Nike and no-moat Puma. Adidas, like others in its industry, is struggling with excess inventory amid slowing demand for activewear in North America, as well as very unfavorable currency movements. Given that its turnaround continues to be a work in progress, we are lowering our fair value estimates to EUR 163/$88 from EUR 172/$93, leaving shares fully valued.

Adidas expects to report a sales decline of 5% and an operating margin of about 1.3% in 2023, slightly short of our prior estimates of negative 4% and 1.4%, respectively. Consequently, we have lowered our 2023 adjusted EPS forecast to EUR 0.06 from EUR 0.18. Like Puma, Adidas was stung by the devaluation of the Argentine peso in the fourth quarter, which lowered its operating income by about EUR 100 million. The firm would have apparently beat our fourth-quarter forecast excluding this event but would have reported a sales decline and sizable loss regardless given it had no Yeezy sales in the quarter and order rates in the U.S. were low.

More importantly, Adidas' outlook for 2024 suggests sales growth of just 1% and an operating margin of about 2.3%, far shy of our estimates of 10% and 4.7%, respectively. Sales growth on a currency-neutral basis is expected to be healthier (up a mid-single-digit percentage). Even so, Adidas, like Nike, anticipates slow demand for activewear in the U.S. in the first half of the year. As for Yeezy, Adidas will sell its remaining inventory (valued at about EUR 250 million) at cost. On the expense side, Adidas is facing higher shipping expenses due to the attacks on commercial shipping in the Red Sea and plans to boost its marketing expense to support sales in a tough market. Overall, we have cut our 2024 EPS forecast to EUR 1.42 from EUR 4.05.

Adidas Earnings: Profitability Improvement Affirmed; Shares Fairly Valued David Swartz, Senior Equity Analyst, 9 Nov 2023

Adidas' third-quarter results and outlook matched its announcement on Oct. 17 (see our note). As expected, the firm benefited from the sale of about EUR 350 million of its discontinued Yeezy shoes in the quarter, as well as some improvement in its underlying business trends, including 10% currency-neutral growth in owned retail. We do not expect to make any material revisions to our EUR 172/$90 fair value estimates, leaving shares fully valued. Although it has had some issues, including the Yeezy controversy, difficulty recovering from the pandemic in China, and a CEO change, we believe Adidas' narrow moat rating based on a brand intangible asset is intact and expect the firm to benefit from the global growth of activewear.

Adidas' sales declines in Europe, the Middle East, and Africa (40% of the total) and greater China (15% of total) of 3% and 7%, respectively, matched our estimates. Sales growth in both regions would have been positive excluding the negative impact of Yeezy and currency movement. However, Adidas still has work to do to regain its lost share to native rivals in China. Meanwhile, North America sales (25% of total) fell 15%, marginally below our negative 14% estimate, due to the impact of Yeezy, excess inventory at retail, and weak wholesale demand. Fortunately, Adidas appears to be making progress on reversing its inventory woes as quarter-end inventory was down 23% from last year.

Third-quarter gross and operating margins of 49.3% and 6.8%, respectively, matched the preliminary numbers and our forecast. Its gross margin would have been about 48% without the (high margin) Yeezy sales. Within about five years, we think the firm can lift its yearly gross margins to 53% and its operating margins to 12% through its product innovation and cost efforts, as well as by increasing sales in China and other higher-margin regions. Adidas' EPS of EUR 1.45 in the quarter was slightly above our EUR 1.43 estimate due to small differences in taxes and other items.

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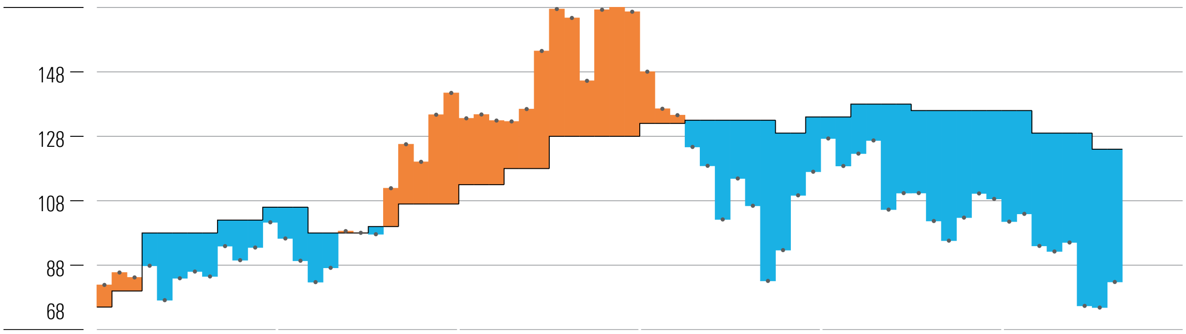
adidas AG ADR ADDYY ★ 29 Aug 2024 21:30, UTC

Competitors Price vs. Fair Value

Nike Inc Class B NKE

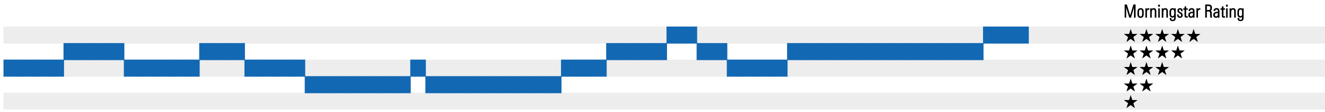


Fair Value: 124.00
2 Jul 2024 02:21, UTC

Last Close: 82.79
Overvalued
Undervalued

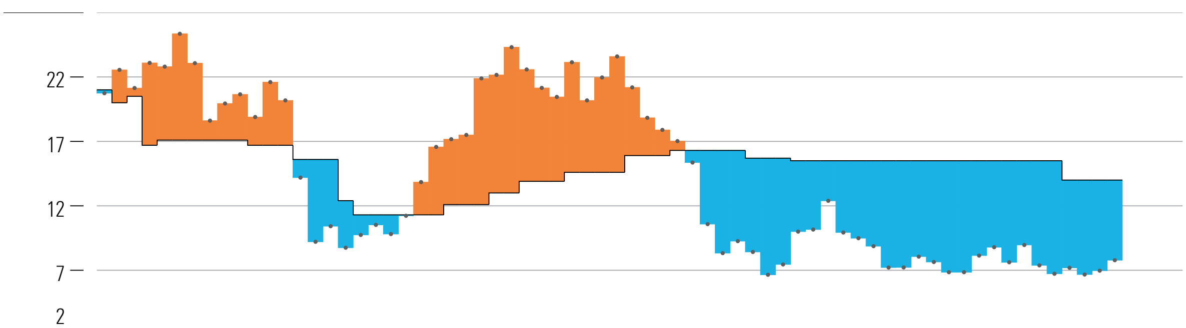
2019	2020	2021	2022	2023	YTD	
0.96	1.32	1.30	0.87	0.80	0.67	Price/Fair Value
37.87	40.64	18.61	-29.04	-6.03	-23.06	Total Return %

Morningstar Rating



Total Return % as of 28 Aug 2024. Last Close as of 28 Aug 2024. Fair Value as of 2 Jul 2024 02:21, UTC.

Under Armour Inc Class A UAA

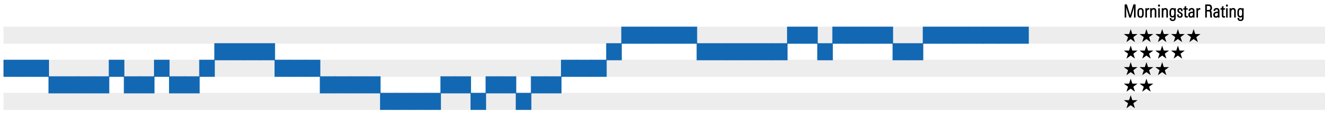


Fair Value: 14.00
21 May 2024 20:06, UTC

Last Close: 7.78
Overvalued
Undervalued

2019	2020	2021	2022	2023	YTD	
1.29	1.42	1.33	0.66	0.57	0.55	Price/Fair Value
22.24	-20.51	23.41	-52.05	-13.48	-11.49	Total Return %

Morningstar Rating



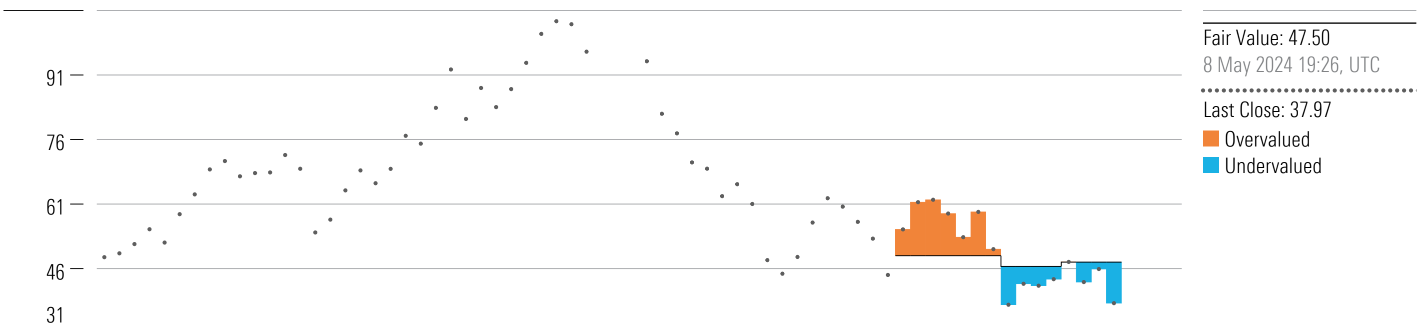
Total Return % as of 28 Aug 2024. Last Close as of 28 Aug 2024. Fair Value as of 21 May 2024 20:06, UTC.

Morningstar Equity Analyst Report | Report as of 29 Aug 2024 22:15, UTC | Reporting Currency: EUR | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

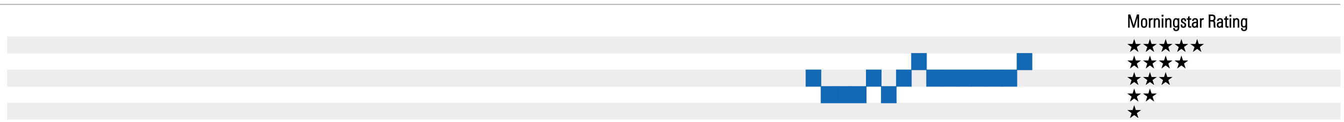
adidas AG ADR ADDYY ★ 29 Aug 2024 21:30, UTC

Competitors Price vs. Fair Value

Puma SE PUM



	2019	2020	2021	2022	2023	YTD
Price/Fair Value	—	—	—	—	1.03	0.80
Total Return %	60.89	35.01	16.67	-46.59	-9.45	-23.22



Total Return % as of 28 Aug 2024. Last Close as of 28 Aug 2024. Fair Value as of 8 May 2024 19:26, UTC.

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adidas AG ADR ADDYY ★ 29 Aug 2024 21:30, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
126.28 USD 28 Aug 2024	92.00 USD 31 Jul 2024 22:32, UTC	1.38	45.49 USD Bil 29 Aug 2024	Narrow	Large Growth	Medium	Standard	7 Aug 2024 05:00, UTC

Morningstar Historical Summary

Financials as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (EUR Bil)	15	17	18	21	22	24	18	21	23	21	11	22
Revenue Growth %	2.3	16.4	9.3	14.8	3.3	7.9	-22.0	15.2	6.0	-4.8	6.2	-0.6
EBITDA (EUR Mil)	1,302	1,497	1,982	2,569	2,910	3,932	2,077	3,112	1,900	1,437	1,286	1,878
EBITDA Margin %	9.0	8.9	10.7	12.1	13.3	16.6	11.3	14.7	8.4	6.7	11.4	8.5
Operating Income (EUR Mil)	955	1,088	1,536	2,104	2,398	2,673	853	1,989	729	279	683	726
Operating Margin %	6.6	6.4	8.3	9.9	10.9	11.3	4.6	9.4	3.2	1.3	6.1	3.3
Net Income (EUR Mil)	490	634	1,017	1,097	1,702	1,976	432	2,116	612	-75	360	240
Net Margin %	3.4	3.8	5.5	5.2	7.8	8.4	2.3	10.0	2.7	-0.4	3.2	1.1
Diluted Shares Outstanding (Mil)	418	403	412	408	404	395	390	388	367	357	357	357
Diluted Earnings Per Share (EUR)	1.34	1.58	2.50	2.69	4.21	5.00	1.11	5.45	1.67	-0.21	1.01	0.68
Dividends Per Share (EUR)	0.75	0.76	0.81	0.97	1.33	1.69	0.00	1.50	1.61	0.36	0.35	0.35

Valuation as of 31 Jul 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	0.8	1.1	1.6	1.6	1.7	2.5	2.9	2.2	1.1	1.5	1.9	1.9
Price/Earnings	19.2	27.6	30.7	26.2	23.0	31.4	123.5	34.4	28.7	-208.3	476.2	212.8
Price/Cash Flow	22.2	15.6	26.4	20.0	13.9	23.2	181.8	11.4	57.1	18.3	13.1	14.1
Dividend Yield %	3.0	1.74	1.16	1.08	1.49	1.16	—	1.27	2.57	0.38	0.32	0.3
Price/Book	1.9	3.1	4.9	5.3	5.6	8.0	8.9	6.3	3.7	6.3	8.2	8.3
EV/EBITDA	11.2	13.5	16.2	15.7	13.9	15.9	36.3	18.0	15.1	28.4	0.0	0.0

Operating Performance / Profitability as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	4.1	4.9	7.1	7.5	11.5	10.9	2.1	9.8	2.9	-0.4	1.9	1.2
ROE %	8.8	11.2	16.8	17.5	27.4	30.0	6.5	30.3	9.8	-1.6	7.5	4.9
ROIC %	7.3	8.9	13.5	14.7	22.4	20.9	5.0	17.4	5.7	0.3	4.3	3.5
Asset Turnover	1.2	1.3	1.3	1.5	1.5	1.3	0.9	1.0	1.1	1.1	0.6	1.1

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	22.1	20.6	13.2	14.1	21.0	37.0	41.8	38.6	51.4	49.4	49.6	—
Equity/Assets %	45.3	42.5	42.6	43.0	40.8	32.9	30.7	34.0	24.6	25.4	25.4	—
Total Debt/EBITDA	1.4	1.2	0.8	0.4	0.6	1.2	2.8	1.7	3.4	3.9	4.7	—
EBITDA/Interest Expense	21.0	23.0	28.3	41.4	69.3	24.6	8.7	28.1	13.9	9.0	7.3	8.3

Morningstar Analyst Historical/Forecast Summary as of 31 Jul 2024

Financials

			Estimates		
Fiscal Year, ends 31 Dec 2023	2022	2023	2024	2025	2026
Revenue (EUR Mil)	22,511	21,427	23,512	25,511	26,538
Revenue Growth %	6.0	-4.8	9.7	8.5	4.0
EBITDA (EUR Mil)	1,874	1,358	2,387	3,236	3,915
EBITDA Margin %	8.3	6.3	10.2	12.7	14.8
Operating Income (EUR Mil)	669	268	1,142	1,837	2,388
Operating Margin %	3.0	1.3	4.9	7.2	9.0
Net Income (EUR Mil)	229	-120	603	1,377	1,807
Net Margin %	1.0	-0.6	2.6	5.4	6.8
Diluted Shares Outstanding (Mil)	183	179	179	179	175
Diluted Earnings Per Share(EUR)	1.25	-0.67	3.38	7.71	10.33
Dividends Per Share(EUR)	3.30	0.70	0.70	1.69	3.86

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	1.0	1.5	1.7	1.6	1.5
Price/Earnings	101.6	-274.7	67.7	29.7	22.2
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	2.6	0.4	0.3	0.7	1.7
Price/Book	4.7	7.2	8.1	6.7	6.1
EV/EBITDA	14.4	27.2	18.5	13.7	11.3

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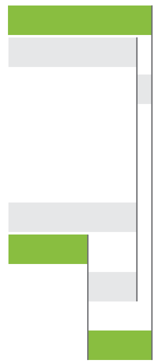
adidas AG ADR ADDYY ★ 29 Aug 2024 21:30, UTC

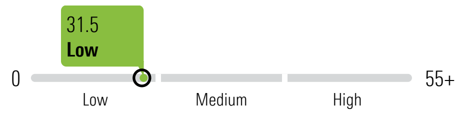
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
126.28 USD 28 Aug 2024	92.00 USD 31 Jul 2024 22:32, UTC	1.38	45.49 USD Bil 29 Aug 2024	Narrow	Large Growth	Medium	Standard	7 Aug 2024 05:00, UTC

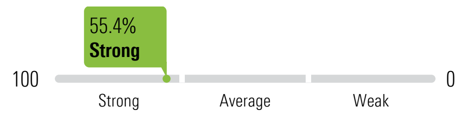
ESG Risk Rating Breakdown

Exposure	
Company Exposure[1]	31.5
– Manageable Risk	28.2
Unmanageable Risk[2]	**3.3**
Management	
Manageable Risk	28.2
– Managed Risk[3]	15.6
Management Gap[4]	**12.6**
Overall Unmanaged Risk	**15.9**



● Subject ○ Subindustry (31.0)





- 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 55.4% 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: Footwear. 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	Management	ESG Risk Rating
adidas AG	31.5 | Low (0–55+)	55.4 | Strong (100–0)	15.9 | Low (0–40+)
Nike Inc	30.8 | Low (0–55+)	43.6 | Average (100–0)	18.7 | Low (0–40+)
Under Armour Inc	29.9 | Low (0–55+)	50.1 | Strong (100–0)	16.3 | Low (0–40+)
Puma SE	32.7 | Low (0–55+)	51.0 | Strong (100–0)	17.7 | Low (0–40+)
ANTA Sports Products Ltd	27.5 | Low (0–55+)	46.5 | Average (100–0)	15.9 | Low (0–40+)

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Appendix
Historical Morningstar Rating

adidas AG ADR ADDYY 29 Aug 2024 21:30, 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
★	★★	★	★★	★★	★	★★	★★	★★	★★	★★	★★

Nike Inc Class B NKE 29 Aug 2024 21:26, 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
★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★	★★★	★★★

Under Armour Inc Class A UAA 29 Aug 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
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★★★★	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★	★★★	★★★	★★★	★★
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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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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.

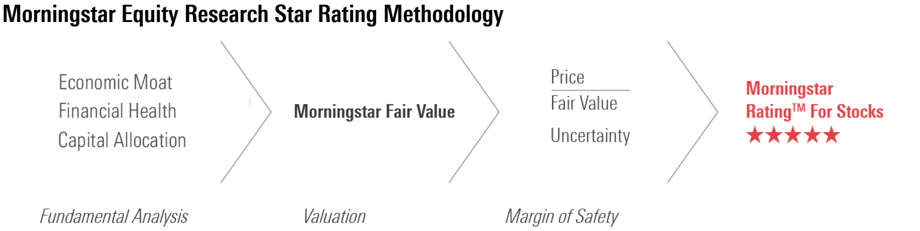
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return 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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thing that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

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

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

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

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

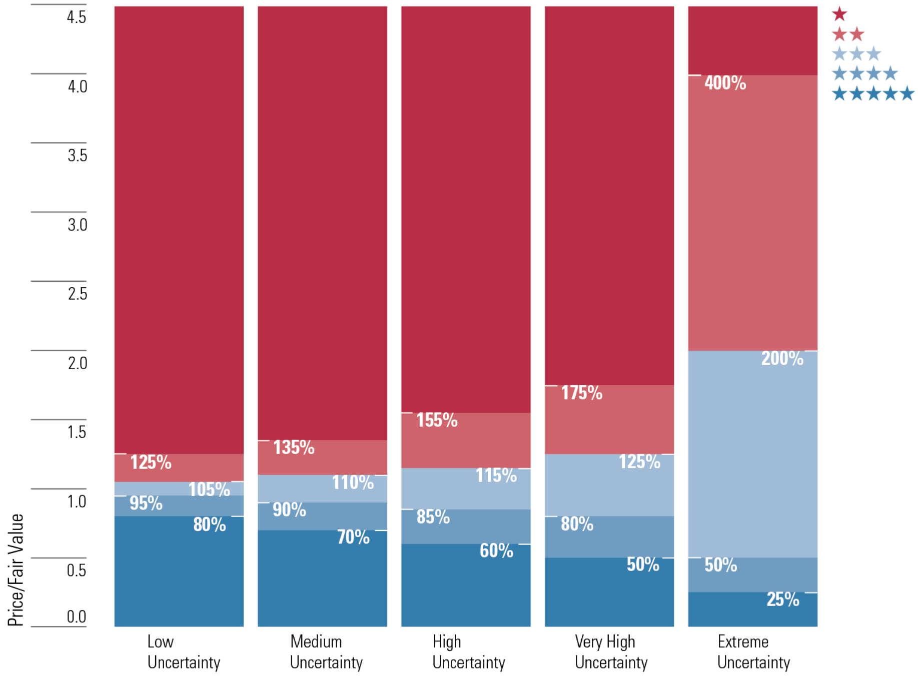
4. Market Price

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

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

Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



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

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

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

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

The Morningstar Star Ratings for stocks are defined below:

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

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

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