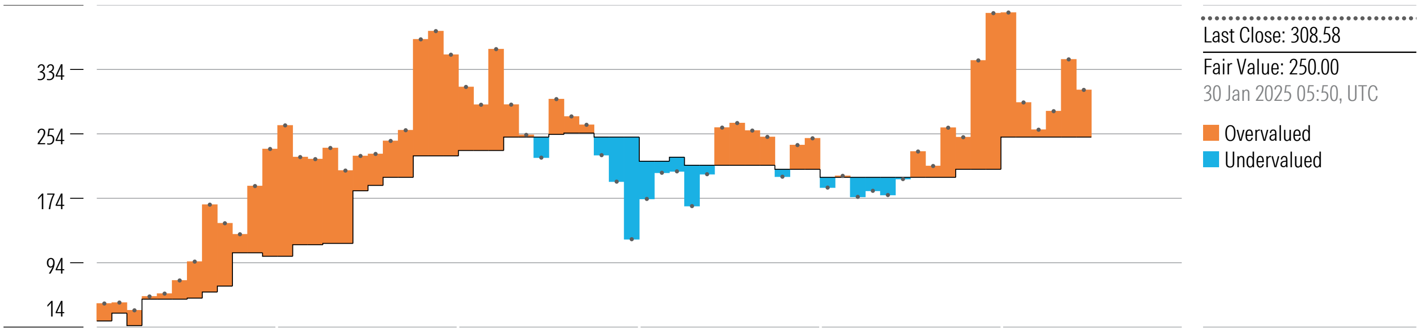
Morningstar Equity Analyst Report | Report as of 10 Jun 2025 22:42, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

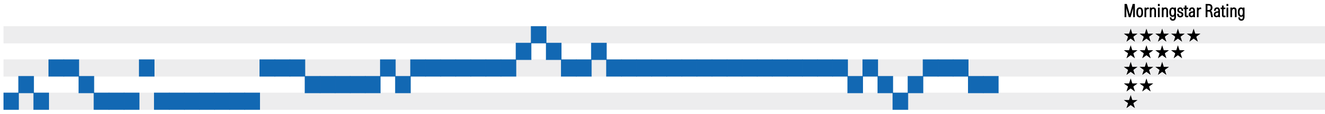
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
308.58 USD 9 Jun 2025	250.00 USD 30 Jan 2025 05:50, UTC	1.23	1.05 USD Tril 10 Jun 2025	Narrow	Large Growth	Very High	Exemplary	7 May 2025 05:00, UTC

Price vs. Fair Value



	2020	2021	2022	2023	2024	YTD	
	2.31	1.55	0.49	1.18	1.92	1.23	Price/Fair Value
	743.44	49.76	-65.03	101.72	62.52	-23.59	Total Return %

Morningstar Rating



Total Return % as of 09 Jun 2025. Last Close as of 09 Jun 2025. Fair Value as of 30 Jan 2025 05:50, UTC.

Contents

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

Tesla: Shares Rise as CEO Elon Musk's Feud With US President Donald Trump Cools

Analyst Note Seth Goldstein, CFA, Strategist, 6 Jun 2025

Elon Musk and Donald Trump's public feud on June 5 appeared to cool off on June 6 with a potential meeting between Musk and Trump aides and Musk saying he would not decommission a spacecraft used for US astronaut space travel. Tesla shares were up 5% at the time of writing.

Why it matters: If the feud intensified, Tesla risked facing company-specific repercussions. These could include creating autonomous vehicle regulations unfavorable to Tesla, such as requiring a lidar system or excluding Tesla both from the ability to sell emissions credits and import Chinese rare-earth metals.

- We view these retaliatory actions as unlikely. In our view, of all Musk's companies, SpaceX is the most at risk for a negative impact from the Musk-Trump feud through the potential cancellation of government contracts.

The bottom line: For now, we maintain our $250 fair value estimate for narrow-moat Tesla. Even if Musk and Trump return to a cordial relationship, we think Trump will continue to push to end the EV tax credit in 2025, seven years early, in the US spending bill. This would likely weigh on EV sales in 2026.

- At current prices, we view Tesla as slightly overvalued, with the stock trading around 20% above our fair value estimate but in 3-star territory. We recommend investors wait for the stock to offer a margin of safety before considering an entry point into shares.

Big picture: The Musk-Trump relationship will likely increase Tesla's stock price volatility. However, we

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Sector	Industry
Consumer Cyclical	Auto Manufacturers

Business Description

Tesla is a vertically integrated battery electric vehicle automaker and developer of autonomous driving software. The company has multiple vehicles in its fleet, which include luxury and midsize sedans, crossover SUVs, a light truck, and a semi truck. Tesla also plans to begin selling more affordable vehicles, a sports car, and offer a robotaxi service. Global deliveries in 2024 were a little below 1.8 million vehicles. The company sells batteries for stationary storage for residential and commercial properties including utilities and solar panels and solar roofs for energy generation. Tesla also owns a fast-charging network.

don't view the relationship as having a large impact on Tesla's business. We see the upcoming robotaxi testing, set to start next week, as a stronger catalyst that will affect Tesla's business and stock price.

- We also point to the launch of the more affordable vehicle as a key event in 2025. We think the more affordable vehicle will come with a similar price point as best-selling midsize CUVs, such as the Honda CR-V or Toyota Rav4. This should drive deliveries growth as production ramps.

Business Strategy & Outlook Seth Goldstein, CFA, Strategist, 23 Apr 2025

Tesla is one of the largest battery electric vehicle automakers in the world. In less than a decade, the firm went from a startup to a globally recognized luxury automaker with its Model S and Model X vehicles. Tesla competes in the entry-level luxury car and midsize crossover sport utility vehicle markets with its Model 3 and Model Y vehicles. It also sells a light truck—the Cybertruck—and a semi truck. It plans to launch an affordable SUV, luxury sports car, and robotaxi in the future.

Tesla aims to retain its market leader status as EVs grow from a niche market to reaching mass consumer adoption. We forecast EVs will reach one in three autos sold globally by 2030. To meet growing demand, Tesla opened two new factories in 2022, increasing its production capacity. Tesla also invests around 4% of its sales in research and development, focusing on improving its market-leading technology and reducing manufacturing costs. For EVs to see mass adoption, long-range EVs need to reach cost parity with internal combustion engines across all vehicle categories. To reduce costs, Tesla focuses on automation and efficiency in its manufacturing process, such as reducing the total number of parts that need to be assembled in a vehicle. The company also designs some of its own batteries. Tesla's goal is to reduce costs by more than 50% over time.

EVs also need readily available fast-chargers throughout a region to see mass-market adoption. Tesla continues to expand its supercharging network, which consists of fast chargers built along highways and in cities throughout the US, EU, and China.

Tesla is attempting to take a larger share of its customers' auto-related spending, which includes selling autonomous driving software, insurance, and charging. The company also aims to launch a robotaxi service using its autonomous driving software. We expect autonomous vehicles, including Tesla's robotaxi service, to make up 50% of ride-hailing rides in the US and Canada by 2030 as robotaxis are cheaper than human drivers.

It also sells solar panels and batteries to consumers and utilities. As the battery-based energy storage market expands, Tesla is well positioned to grow accordingly.

Bulls Say Seth Goldstein, CFA, Strategist, 23 Apr 2025

- Tesla has the potential to disrupt the automotive and power generation industries with its technology for EVs, AVs, batteries, and solar generation systems.

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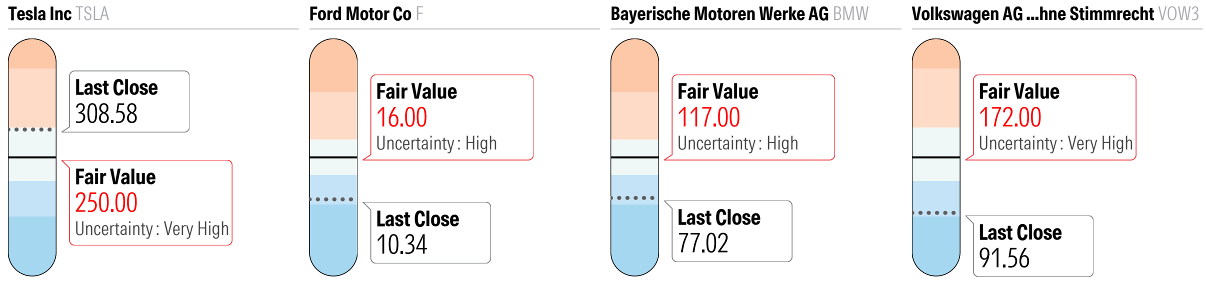
Competitors



	Tesla Inc TSLA	Ford Motor Co F	Bayerische Motoren Werke AG BMW	Volkswagen AG ...hne Stimmrecht VOW3
Economic Moat	Narrow	None	None	None
Currency	USD	USD	EUR	EUR
Fair Value	250.00 30 Jan 2025 05:50, UTC	16.00 11 Feb 2025 00:56, UTC	117.00 26 Nov 2024 19:25, UTC	172.00 24 Apr 2025 13:40, UTC
1-Star Price	437.50	24.80	181.35	301.00
5-Star Price	125.00	9.60	70.20	86.00
Assessment	Overvalued 10 Jun 2025	Undervalued 10 Jun 2025	Undervalued 10 Jun 2025	Undervalued 10 Jun 2025
Morningstar Rating	★★10 Jun 2025 21:50, UTC	★★★★10 Jun 2025 21:33, UTC	★★★★10 Jun 2025 00:23, UTC	★★★★10 Jun 2025 00:40, UTC
Analyst	Seth Goldstein, Strategist	David Whiston, Strategist	Rella Suskin, Equity Analyst	Rella Suskin, Equity Analyst
Capital Allocation	Exemplary	Standard	Standard	Poor
Price/Fair Value	1.23	0.66	0.66	0.53
Price/Sales	10.81	0.23	0.31	0.14
Price/Book	12.73	0.91	0.51	0.27
Price/Earning	160.06	6.94	6.79	3.68
Dividend Yield	0.00%	7.31%	5.61%	6.94%
Market Cap	1,050.32 Bil	42.15 Bil	48.44 Bil	46.43 Bil
52-Week Range	167.41—488.54	8.44—14.85	62.96—92.38	78.86—114.20
Investment Style	Large Growth	Mid Value	Large Value	Large Value

- Tesla will see higher profit margins as it reduces unit production costs over the next several years.
- Tesla's full self-driving software should generate growing profits in the coming years as the technology continues to improve, leading to a robotaxi service, increased adoption by Tesla drivers, and licensing from other auto manufacturers.

Bears Say Seth Goldstein, CFA, Strategist, 23 Apr 2025

- Traditional automakers and new entrants are investing heavily in EV development, which will result in Tesla seeing a deceleration in sales growth and being forced to cut prices due to increased competition, eroding profit margins.
- Tesla's large investment into autonomous driving software will be value destructive as the robotaxi product will face delays and competition from Waymo, who already offers a robotaxi service.
- Tesla CEO Elon Musk's political activities will turn consumers away from buying a Tesla in key markets including the US and Europe, leading to lower sales and profits.

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Economic Moat Seth Goldstein, CFA, Strategist, 23 Apr 2025

We award Tesla a narrow moat rating. Tesla's moat stems from two of our five moat sources: intangible assets and cost advantage. The company's strong brand cachet as a luxury automaker commands premium pricing, while its EV manufacturing expertise allows the company to make its vehicles cheaper than its competitors.

Intangible Assets

Tesla's brand cachet is not likely to be impaired anytime soon as other automakers move into the battery electric vehicle space because we expect the company to keep innovating to stay ahead of startup and established competitors. The Model S Plaid, the most upgraded version of Tesla's luxury sedan, offers 390 miles of range, at the high end for electric vehicles. It does 0-60 mph in under 2 seconds and has 1,020 horsepower, putting the Model S Plaid in a rare class of performance among all autos, regardless of powertrain. By focusing on the luxury auto market first, Tesla was able to create tremendous media publicity for the company that reaches beyond its customers. This generated strong consumer demand for its subsequent vehicles at lower price points, such as the Model 3 and Model Y. As other new vehicles are launched, such as the affordable SUV, we expect the company's strong brand will continue to generate consumer demand.

Tesla has a more high-tech vehicle with the ability to do drivetrain updates and other updates via Wi-Fi or a cellular connection, and customers do not have to visit a store for many service needs. Tesla will instead pick up the vehicle from home and often return it the same day, while providing a fully loaded loaner for no charge, or visit the customer's home or work and service the car there. This experience is much easier than many other automakers' service, which helps Tesla's brand equity. Further, this has been accomplished with little to no spending on advertising, which is rare for a consumer brand. This strong brand equity has carried over to Tesla's energy generation and storage business, where the company can charge a premium for its fully integrated solar panel, inverter, and home battery storage systems sold to consumers.

Tesla's proprietary technology contributes to its intangible asset-driven competitive advantage. This form of intangible assets applies to EVs due to their innovative, highly engineered nature and because patents for EV technologies hold somewhat less value due to the ability of competitors to create alternatively designed, but ultimately similar, products. Since launching the Model S in 2012, Tesla has been the industry leader in electric vehicles, producing the best EVs on the market. The company invests nearly 6% of sales in R&D to maintain its best-in-class range, which is well ahead of the competition on a miles per kilowatt-hour basis and continues to improve other vehicle specs such as power. Tesla is also investing heavily in its proprietary autonomous vehicle technology and building one of the world's largest supercomputers to train self-driving artificial intelligence. With R&D spending in line with its peers, we think Tesla will be able to maintain its proprietary technological advantage.

Tesla will face increasing competition in the coming years. Automakers plan to electrify their fleets by adding EV versions of existing vehicles and creating new platforms. However, we see EVs becoming a greater proportion of auto sales, growing to 30% by 2030 from 3% in 2020, which will expand the market as EVs rapidly take share from internal combustion engine vehicles. As new models are introduced, Tesla's technological advantage and the strength of its brand will remain intact, which will allow the company to continue to charge a premium price for its EVs.

Cost Advantage

We think Tesla benefits from a cost advantage in electric vehicles production thanks to its manufacturing scale. Tesla's total vehicle volume has grown from just over 100,000 in 2017 to nearly 1.8 million deliveries in 2024. During the same period, the company's average cost of goods sold per vehicle has fallen over 55%, from $84,000 to just over $35,000. While some of this is due to manufacturing a greater proportion of midsize cars and SUVs versus luxury autos, the majority of the COGS decline has come from the company's focus on reducing manufacturing costs due to scale. Legacy automakers are gradually transitioning to BEV production from internal combustion engines, but we expect they will be saddled with legacy ICE costs for a long time. Even as legacy automakers begin to produce more EVs, we expect Tesla will continue to have lower costs as it has outlined a plan to further reduce unit production costs over the next several years with a new manufacturing process. With Tesla's cost per vehicle set to fall, legacy automakers may take years to catch up to Tesla, if ever, as they won't want to build many new factories from scratch like Tesla is doing.

We think Tesla's combination of intangible assets and cost advantage will persist in the future and allow the firm to generate excess returns on capital. We see the potential for Tesla to outearn its cost of capital over at least the next 20 years, which is the measurement we use for a wide moat rating. However, the second 10-year period carries significant uncertainty for both Tesla and the broader automotive industry, given the rapid advancement of autonomous vehicle technologies that could transform how consumers use vehicles. As such, we view a narrow moat rating, which assumes a 10-year excess return duration, as more appropriate.

Fair Value and Profit Drivers Seth Goldstein, CFA, Strategist, 23 Apr 2025

Our Tesla fair value estimate is $250. We use a weighted average cost of capital of just under 9%. Our equity valuation adds back nonrecourse and nondilutive convertible debt.

In 2025, we forecast deliveries will slightly fall versus the 1.79 million deliveries in 2024. We expect first half deliveries will be affected by the new Model Y not being solid in all markets, especially in the beginning of the year. However, we forecast a better second half of the year as the affordable vehicle is launched by midyear. As the company is ramping up production of the new vehicles, we expect automotive gross margins excluding credits will remain in the mid-teens, below management's long-term goal of 20%.

Longer term, we assume Tesla delivers 4.3 million vehicles per year in 2030. Our forecast is well below management's aspirational goal of selling 20 million vehicles by the end of this decade. However, it is a more than double the 1.8 million vehicles delivered in 2024.

Our forecast assumes Tesla slightly lower Model 3 and Model Y deliveries and ramps up volume of the Cybertruck to around 50,000 deliveries per year, far below management's goal of 250,000. We forecast Tesla will launch its affordable SUV priced in the mid-$30,000 range with some deliveries coming in 2025 and a ramp-up in 2026 at a pace similar to the Model 3 ramp-up in 2018, the first full year the vehicle was sold. We think deliveries of the affordable SUV will exceed those of the Model Y and Model 3, as the lower price point of this vehicle should attract a larger consumer base.

We think Tesla will be successful in continuing to reduce its manufacturing costs on a per vehicle basis. We forecast segment gross margin will recover to the low 20s by the end of the decade, above the 19% generated in 2023 but below the 29% achieved in 2022.

We assume revenue growth and margin expansion from autonomous software sold on a subscription basis. We also assume the successful growth of the insurance business and increased profits from the charging business result in long-term profit growth and margin expansion in the services and other segment.

In energy generation and storage, we assume the business averages annual revenue growth at roughly a 30% range during our 10-year forecast, primarily driven by accelerating demand for energy storage systems. While we forecast ESS prices to decline, the fall will largely be driven by cheaper battery costs, which should not affect profitability. As volume grows, unit costs should fall. Combined with recurring revenue from long-term power purchase agreements and AI trading software, we expect the business will turn profitable and generate gross margins in line with peers such as Enphase and SolarEdge.

We assume overhead expenses continue to decline as a percentage of sales as the company benefits from operating leverage as deliveries grow. As a result, we forecast companywide operating margin will return to the midteens by the end of the decade, in line with the 17% achieved in 2022 and well above the 9% in 2023.

To fund this growth, we assume Tesla will have around $115 billion in capital expenditures over the next decade.

Our base case also adds the present value of Tesla's robotaxi business, Dojo's AI training services, and the Optimus humanoid robot sales. We expect robotaxis will enter the ride-hailing market by 2028 and rollout on a city-by-city basis, similar to how Waymo, Uber, and Lyft increased their service locations. Tesla will take an asset-light approach, selling vehicles and then running the software. Our robotaxi valuation account for around $65 per share, or a little more than 20%, of our Tesla valuation. Our FSD software subscription valuation accounts for $25 per share, or around 10% of our fair value estimate. Optimus and Dojo combine for roughly $25 per share, an additional 10% of our fair value estimate.

Given the wide range of outcomes, we also model upside and downside scenarios.

Our upside scenario fair value estimate is $600. In this scenario, we assume Tesla delivers a little over 5 million vehicles per year by 2030 and the company benefits from cost reductions in excess of our base-case forecast. We also value robotaxi at around $175 per share, Optimus and Dojo at a combined $185 per share, and FSD software subscriptions at around $55 per share.

Our downside scenario fair value estimate is $100 per share. In a downside scenario, we assume Tesla delivers less than 3.5 million vehicles in 2030. We also assume cost reductions do not materialize as planned and Tesla is forced to cut prices amid increasing competition. This keeps gross margin in the high teens, in line with the 19% generated in 2023. We also assume no economic benefit from autonomous driving software and sees slower growth in the insurance business. We assign no value to the company's ancillary businesses including robotaxis, Dojo's AI training services, and humanoid robots.

Risk and Uncertainty Seth Goldstein, CFA, Strategist, 23 Apr 2025

We assign Tesla a Very High Morningstar Uncertainty Rating as we see a wide range of potential outcomes for the company.

The automotive market is highly cyclical and subject to sharp demand declines based on economic conditions. As an EV market leader, Tesla is subject to growing competition from traditional automakers and new entrants. As new lower-priced EVs enter the market, Tesla may be forced to continue to cut prices, reducing the firm's industry-leading profits. With more EV choices, consumers may view Tesla less favorably. The company is also investing heavily in R&D to develop autonomous driving software, robotaxis, and humanoid robots with no guarantee these investments will bear fruit. As of the last SEC filing, Tesla's CEO owns roughly 12% of the company's stock and uses it as collateral for personal loans, which raises the risk of a large sale to repay debt.

Tesla also faces political risk related to the political activities of CEO Elon Musk. Musk serves as an advisor to US President Donald Trump and campaigned for the far-right Alternative for Germany party. These activities risk turning away some consumers from buying a Tesla.

Tesla faces ESG risks. As an automaker, Tesla is subject to potential product defects that could result in recalls, including its autonomous driving software. We see a moderate impact should this occur. Another risk involves employee retention. If Tesla is unable to retain key employees, such as CEO Elon Musk, its image as an innovative company could decline. We see a low probability but moderate materiality.

Additional ESG risks include potential patent litigation as the company relies on new technology to improve its EVs and energy storage systems. We see a low probability but moderate materiality should this occur. Tesla may also face regulatory issues in some US states due to laws that require automakers and dealers to be separate. We see a moderate probability but low materiality.

Capital Allocation Seth Goldstein, CFA, Strategist, 11 Mar 2025

We award Tesla an Exemplary Capital Allocation Rating based on our framework that assesses its balance sheet, investment decisions, and shareholder distributions.

We rate the balance sheet as sound. Tesla's revenue is subject to high cyclicality, and the majority of the company's debt and financial lease obligations are due within the next three years. However, with a healthy balance sheet and cash far exceeding total debt, Tesla should be able to easily meet its financial obligations.

We view management's investments as exceptional. Tesla's aspiration is to increase its EV volume from a little under 1.8 million vehicles in 2024 to 20 million by 2030. To do so, the company built new factories around the world, including in China, the EU, and US. Given strong consumer demand, we think the capacity expansion plans make sense. We are also in favor of the company's focus on reducing its manufacturing costs on a per unit basis while investing to maintain its technological advantage. To reduce costs, Tesla makes its own batteries, with plans to increase its own battery cell production from an annual capacity of 100 gigawatt-hours in 2022 to 3 terawatt-hours by 2030. The battery will also be incorporated into the structural design of the EV. Tesla's battery improvements aim to reduce cost on a per kWh basis, increase range, and reduce investment on a per GWh basis.

We are in favor of the focus on reducing costs, as this should enable Tesla to keep its cost advantage intact as large legacy automakers electrify further this decade. Reduced manufacturing costs should enable Tesla to increase profit margins for its existing vehicles and produce an affordable sedan and SUV in the future at a profitable level. We also think management is smart to look at adding ancillary revenue streams such as autonomous driving software, which can be a product differentiator if Tesla is successful, as well as selling insurance. We are in favor of the move to open Tesla's charging network to non-Tesla vehicles as it can drive additional revenue and profits from charging stations by increasing the capacity utilization of each station.

We see shareholder distributions as appropriate. Tesla does not pay a dividend and to date has not repurchased shares. Instead, it has used the capital markets to issue stock, most recently at value-accretive levels. Given that Tesla is investing heavily in expanding its vehicle and battery production capacity, we think the best use of capital is internal reinvestment to fund organic growth rather than shareholder distribution. However, with solid free cash flow generation and little debt, management said it may consider share repurchases in the future. Tesla is currently preparing to begin selling an affordable vehicle and building the required plants to ramp up production. Once this is complete and the initial factories are ramped up, we think share repurchases, at least to offset dilution from stock-based compensation, would make sense with excess cash flow.

Elon Musk has been Tesla's CEO since 2008. Before co-founding Tesla, he co-founded and sold the internet payment system PayPal. Musk also co-founded SpaceX, Neuralink, and The Boring Co. Further, Musk purchased Twitter, now called X, in late 2022 and was CEO until mid-2023. For Tesla, Musk's compensation comes entirely from stock awards. Under the plan created in 2018, Musk earned 304 million stock option awards (split-adjusted, at a price of $23.34 per share) in 12 tranches based on meeting revenue, EBITDA, and market capitalization targets, which was completed by the end of 2022. This compensation package was voided by a Delaware judge following a shareholder lawsuit, though Tesla may appeal the ruling. For future compensation awards, while we understand the revenue and EBITDA targets for a growing company, we would prefer a return on invested capital metric be added.

Analyst Notes Archive

Tesla: Shares Sink as CEO Elon Musk Feuds With US President Donald Trump Seth Goldstein, CFA,Strategist,5 Jun 2025

Tesla CEO Elon Musk and US President Donald Trump publicly feuded with each other, issuing statements on their respective social media platforms. Musk is not in favor of the US budget that Trump hopes to pass. Tesla shares were down over 14% on the day, June 5. Why it matters: The US spending bill includes the expiration of the $7,500 electric vehicle subsidy at the end of 2025, seven years before it is set to expire. All Tesla vehicles sold in the US currently qualify for the subsidy, so Tesla could face lower sales volumes from the subsidy expiration raising prices to consumers. President Trump also threatened to cancel all of Musk's government contracts and subsidies. This would likely affect Musk's SpaceX more than Tesla. However, if Trump were to retaliate against Musk, Tesla might be excluded from the ability to sell emissions credits. The bottom line: For now, we maintain our $250 fair value estimate for narrow-moat Tesla. Before June 5's selloff, Tesla was overvalued in 2-star territory. At current prices, we view Tesla as fairly valued, with the stock trading less than 15% above our fair value estimate and in 3-star territory. If the early EV subsidy expiration is enacted into law, it would likely weigh on Tesla's deliveries in 2026. We expect this would affect all EV producers through lower sales volumes, similar to the declines after the removal of EV subsidies in other markets. Longer term, we do not view subsidies as a growth driver of EVs. Once long-range EVs reach cost parity with internal combustion engines and there is adequate fast charging built along highways and throughout cities, consumer demand, not subsidies, will drive EV adoption. Big picture: The subsidy expiration could

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weigh on Tesla's deliveries in 2026. However, over the long term, we think Tesla's autonomous driving software could prove to be a differentiator that could lead consumers to choose a Tesla.

Tesla: Robotaxi Testing Launch Date Set for June 12 Seth Goldstein, CFA,Strategist,29 May 2025

Bloomberg reported Tesla plans to launch the testing of its robotaxi service in Austin, Texas, on June 12. The report said Tesla already conducted its first driverless test on public roads in Austin with an engineer in the passenger seat. Tesla shares were up 2% in afterhours trading. Why it matters: Tesla's robotaxi moving from product concept to testing is a key step toward the launch of a robotaxi service. Management said it was targeting the month of June for the testing launch. We interpret the set date as a sign that management is confident the software is ready for testing. The report said Tesla plans to test 10 robotaxis. Based on our estimate for robotaxis making 15 rides per day, this could allow Tesla to run at least 4,500 tests per month, if not more. This should allow Tesla to more quickly identify and fix any issues with the robotaxi service versus a smaller fleet. The bottom line: We maintain our $250 fair value estimate for narrow-moat Tesla. While we assume Tesla's robotaxi service begins testing in June, we forecast the multicity robotaxi service launch will not occur until 2028, as we do not think the software is ready for widespread adoption. At current prices, we view Tesla shares as overvalued with the stock trading at roughly 45% above our fair value estimate and in 2-star territory. We see a lot of optimism priced into the stock that implicitly assumes Tesla's robotaxi launches next year, in line with management's timeline. Long view: In the coming years, we forecast Tesla will successfully roll out its robotaxi service and enter new cities. We see Tesla and Alphabet's Waymo gaining market share in the ride-hailing market as they will be able to offer cheaper rides versus traditional ride-hailing services.

Tesla: Sales Decline in All Three Key Markets in April Seth Goldstein, CFA,Strategist,27 May 2025

The European Automobile Manufacturers' Association reported Tesla's sales were down nearly 50% in April in the European Union, United Kingdom, and European Free Trade Association countries combined. Tesla shares were up 3% on broader market optimism following a US tariff delay on EU imports. Why it matters: In April, Tesla's sales declined in its three key markets of the US, China, and Europe. This follows a 13% year-over-year deliveries decline in the first quarter. The fall in April sales confirms our view that Tesla will likely see deliveries decline in the second quarter. Lower deliveries reduce Tesla's total addressable market for its ancillary products and services, which include autonomous driving subscription software, charging, and insurance in a select number of US states. The bottom line: For now, we maintain our $250 fair value estimate for narrow-moat Tesla. While we expect second-quarter deliveries will decline, a double-digit drop would put our full-year forecast for Tesla, to see only a low-single-digit decline, at risk. At current prices, we view Tesla shares as overvalued, with the stock trading around 40% above our fair value estimate and in 2-star territory. In our view, the current share price reflects a lot of optimism surrounding the company's ability to launch its robotaxi product. Coming up: Tesla plans to begin testing its robotaxi service in Austin, Texas, next month. Management aims to launch the service to customers next year. However, we think the service will likely be delayed until 2028, as we do not think the software will be ready by management's timeline.

Tesla: Board of Directors Reportedly Exploring New Pay Package for CEO Elon Musk Seth Goldstein, CFA,Strategist,14 May 2025

The Financial Times reported Tesla's board of directors formed a special committee to explore CEO Elon Musk's pay. Tesla shares were up 2% at the time of writing on the news. Why it matters: Musk has said he would consider leaving Tesla if he does not have a larger ownership stake. Additionally, Musk's 2018 pay package was struck down by a Delaware judge. Tesla appealed the decision to the Delaware Supreme Court, but the outcome is uncertain. The committee will review a new pay package that includes how to compensate Musk should the Delaware Supreme Court fail to reinstate his 2018 pay package. Musk's feeling that his compensation is adequate makes it less likely he chooses to leave Tesla over at least the next several years. The bottom line: We maintain our $250 fair value estimate for narrow-moat Tesla. At current prices, we view Tesla shares as overvalued, with the stock trading more than 30% above our fair value estimate and in 2-star territory. Our base case for Tesla is that Musk will remain in the CEO role for the foreseeable future while Tesla aims to transition the company from primarily an automaker to focusing more on autonomous driving software, robotaxis, and humanoid robots. The key-person risk in Tesla's stock is reflected in the most recent share price increase and the stock decline in early May following a report that Tesla's board was considering replacing Musk. We think any news that would lead to Musk either staying longer or leaving earlier will make shares more volatile.Coming up: Tesla plans to begin testing its robotaxi service in its headquarters city of Austin, Texas, in June. We do not think Tesla's autonomous vehicle software will be ready to operate a robotaxi service by management's timeline of 2026, but we think it will be ready by 2028.

Tesla: Shares Surge on US-China Tariff Pause Seth Goldstein, CFA,Strategist,12 May 2025

The US and China agreed to temporary tariff cuts over the next 90 days while they negotiate a larger trade deal. The US will cut tariffs on Chinese imports to 30% from 145%, while China will cut tariffs on US imports to 10% from 125%. Tesla shares were up 8% in May 12 premarket trading.Why it matters: Tariffs can cause inflation and result in consumers purchasing fewer items. In autos, Tesla's primary business, this includes the risk that consumers will delay or forgo a purchase or trade down to a less expensive vehicle. Lower auto sales will reduce Tesla's total addressable market for its other products and services, which include autonomous driving software subscriptions, insurance in select US states, and charging.The bottom line: We maintain our $250 fair value estimate for narrow-moat Tesla. At current prices, we view Tesla shares as overvalued, trading nearly 30% above our fair value estimate. If the reduced tariff rates remain in place, Tesla should benefit from lower tariff-related inflation. However, we continue to forecast lower deliveries in 2025. We think the current model lineup is close to

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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
308.58 USD 9 Jun 2025	250.00 USD 30 Jan 2025 05:50, UTC	1.23	1.05 USD Tril 10 Jun 2025	Narrow	Large Growth	Very High	Exemplary	7 May 2025 05:00, UTC

market saturation. Tesla plans to begin production on a more affordable vehicle later this year, but we do not expect significant delivery volume until 2026. We think this new vehicle will ultimately generate the majority of Tesla deliveries.Coming up: Tesla plans to begin testing its robotaxi service in its headquarters city of Austin, Texas, in June. We do not think Tesla's autonomous vehicle software will be ready to operate a robotaxi service by management's timeline of 2026 but think it will be ready by 2028. The market may be pricing in a short ramp-up from robotaxi testing to product launch and assuming that Tesla meets management's timeline. Accordingly, any delays in the actual timeline could weigh on the shares.

Tesla: Board Search for Successor to CEO Elon Musk Highlights Key-Person Risk Seth Goldstein, CFA,Strategist,1 May 2025

The Wall Street Journal reported that Tesla's board began to search for a successor to current CEO Elon Musk around one month ago. The board also told Musk that he needed to spend more time on Tesla. Why it matters: Since President Donald Trump was elected, Musk had been spending time in an advisory role to Trump. This created the risk that Musk's time as an advisor would distract him from his leadership role at Tesla, potentially causing Tesla to see slower progress on its goals. Musk's political actions could also turn some consumers away from buying a Tesla, which would weigh on the company's financial results. The bottom line: We maintain our $250 fair value estimate for narrow-moat Tesla. We think Musk is likely to remain CEO for as long as he wants to run the company. Musk's message of spending more time at Tesla during its recent earnings call should satisfy the board's demand. Musk potentially leaving Tesla highlights the company's key-person risk. If Musk were to be replaced, we would expect the stock would see a significant decline following the news. At current prices, we view Tesla's stock as fairly valued, with the stock trading slightly above our fair value estimate but in 3-star territory. We recommend investors wait for the stock to offer a margin of safety before considering an entry point. Big picture: In our view, many Tesla shareholders are in the stock because of Musk's visionary leadership. Along with this, Musk has held additional prominent leadership positions in other companies for years. This includes him taking a leadership role at X (formerly Twitter) when he first acquired the company. In our view, Musk's advisory role to President Trump was a similar side venture to his initial role at X after the acquisition closed. We maintain our Exemplary Capital Allocation Rating. We don't see strong evidence that Tesla's results suffered due to Musk's other ventures.

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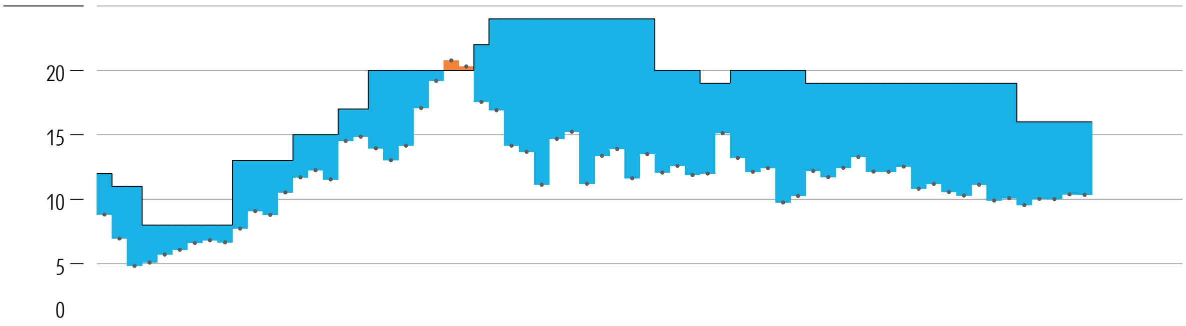
Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

Competitors Price vs. Fair Value

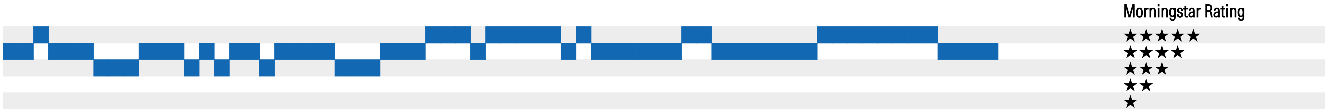
Ford Motor Co F



Fair Value: 16.00
11 Feb 2025 00:56, UTC

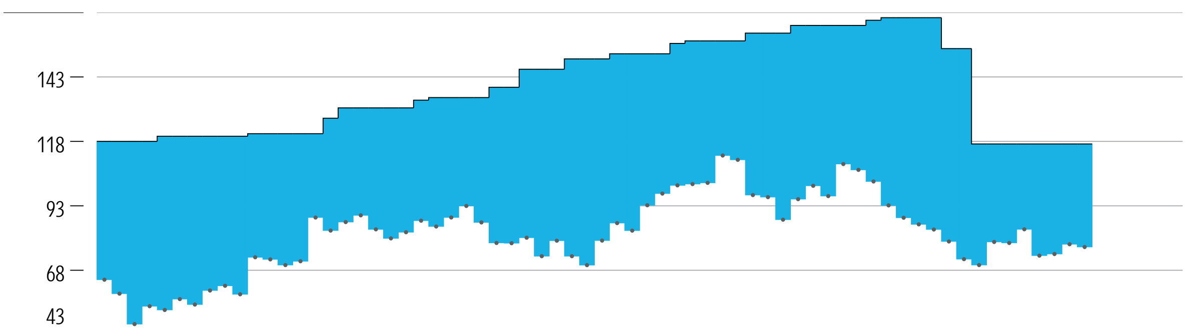
Last Close: 10.34
Overvalued
Undervalued

	2020	2021	2022	2023	2024	YTD	
	0.68	1.04	0.48	0.64	0.52	0.66	Price/Fair Value
	-3.87	137.43	-41.60	15.56	-12.39	8.99	Total Return %



Total Return % as of 09 Jun 2025. Last Close as of 09 Jun 2025. Fair Value as of 11 Feb 2025 00:56, UTC.

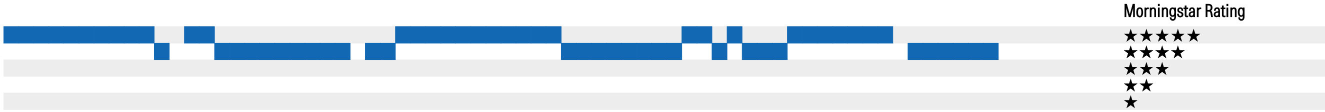
Bayerische Motoren Werke AG BMW



Fair Value: 117.00
26 Nov 2024 19:25, UTC

Last Close: 77.02
Overvalued
Undervalued

	2020	2021	2022	2023	2024	YTD	
	0.60	0.66	0.55	0.62	0.68	0.66	Price/Fair Value
	2.17	25.14	0.78	31.06	-15.68	2.96	Total Return %



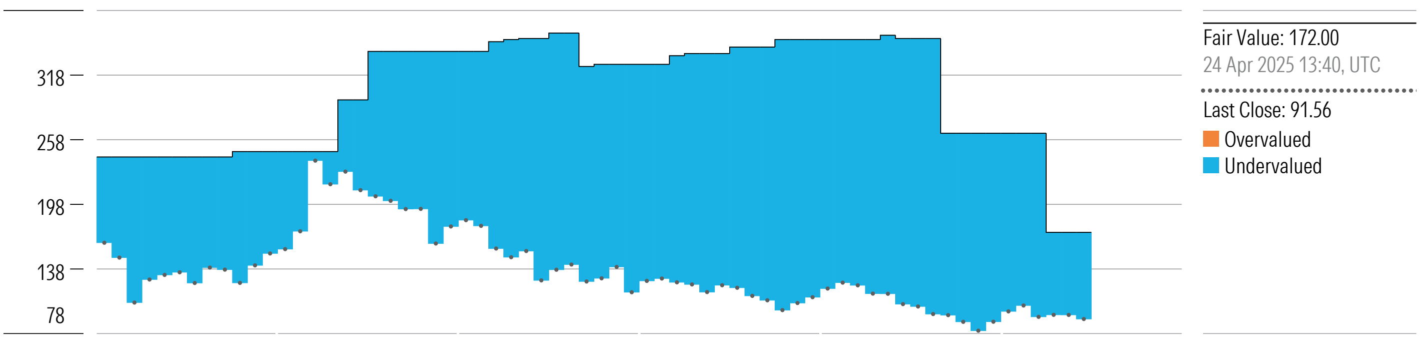
Total Return % as of 09 Jun 2025. Last Close as of 09 Jun 2025. Fair Value as of 26 Nov 2024 19:25, UTC.

Morningstar Equity Analyst Report | Report as of 10 Jun 2025 22:42, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

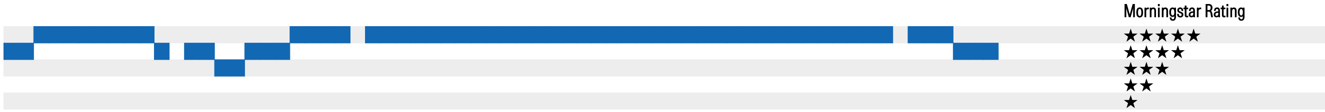
Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

Competitors Price vs. Fair Value

Volkswagen AG Vorz-Inhaber-Akt ohne Stimmrecht VOW3



	2020	2021	2022	2023	2024	YTD
Price/Fair Value	0.62	0.52	0.35	0.32	0.34	0.53
Total Return %	-10.76	19.63	-19.41	3.56	-12.25	9.97



Total Return % as of 09 Jun 2025. Last Close as of 09 Jun 2025. Fair Value as of 24 Apr 2025 13:40, UTC.

Morningstar Equity Analyst Report | Report as of 10 Jun 2025 22:42, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
308.58 USD 9 Jun 2025	250.00 USD 30 Jan 2025 05:50, UTC	1.23	1.05 USD Tril 10 Jun 2025	Narrow	Large Growth	Very High	Exemplary	7 May 2025 05:00, UTC

Morningstar Valuation Model Summary

Financials as of 22 Apr 2025	Actual			Forecast				
Fiscal Year, ends 31 Dec	2022	2023	2024	2025	2026	2027	2028	2029
Revenue (USD Mil)	53,823	96,773	97,690	99,836	108,171	127,782	150,842	185,787
Operating Income (USD Mil)	6,496	8,891	7,760	4,132	6,114	10,319	16,280	25,251
EBITDA (USD Mil)	9,569	13,730	7,771	9,074	11,472	16,656	23,768	34,486
Adjusted EBITDA (USD Mil)	11,065	16,633	16,645	12,273	14,603	19,669	26,785	37,415
Net Income (USD Mil)	5,524	14,999	7,091	4,267	5,866	9,232	13,982	20,871
Adjusted Net Income (USD Mil)	7,111	10,889	8,458	5,764	7,218	10,382	15,000	21,614
Free Cash Flow To The Firm (USD Mil)	6,414	4,589	-9,087	4,597	2,859	4,697	10,422	20,102
Weighted Average Diluted Shares Outstanding (Mil)	3,386	3,485	3,525	3,525	3,525	3,525	3,525	3,525
Earnings Per Share (Diluted) (USD)	1.63	4.30	2.01	1.21	1.66	2.62	3.97	5.92
Adjusted Earnings Per Share (Diluted) (USD)	2.10	3.12	2.40	1.64	2.05	2.95	4.26	6.13
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Margins & Returns as of 22 Apr 2025		Actual			Forecast					
	3 Year Avg	2022	2023	2024	2025	2026	2027	2028	2029	5 Year Avg
Operating Margin %	9.9	12.1	9.2	7.9	4.1	5.7	8.1	10.8	13.6	8.4
EBITDA Margin %	—	17.8	14.2	8.0	9.1	10.6	13.0	15.8	18.6	—
Adjusted EBITDA Margin %	—	20.6	17.2	17.0	12.3	13.5	15.4	17.8	20.1	15.8
Net Margin %	11.0	10.3	15.5	7.3	4.3	5.4	7.2	9.3	11.2	7.5
Adjusted Net Margin %	11.0	13.2	11.3	8.7	5.8	6.7	8.1	9.9	11.6	8.4
Free Cash Flow To The Firm Margin %	2.5	11.9	4.7	-9.3	4.6	2.6	3.7	6.9	10.8	5.7

Growth & Ratios as of 22 Apr 2025		Actual			Forecast					
	3 Year CAGR	2022	2023	2024	2025	2026	2027	2028	2029	5 Year CAGR
Revenue Growth %	45.8	70.7	79.8	1.0	2.2	8.4	18.1	18.1	23.2	13.7
Operating Income Growth %	57.3	225.8	36.9	-12.7	-46.8	48.0	68.8	57.8	55.1	26.6
EBITDA Growth %	42.8	128.2	43.5	-43.4	16.8	26.4	45.2	42.7	45.1	35.2
Adjusted EBITDA Growth %	39.0	78.4	50.3	0.1	-26.3	19.0	34.7	36.2	39.7	17.6
Earnings Per Share Growth %	108.5	635.2	163.8	-53.3	-39.8	37.5	57.4	51.4	49.3	24.1
Adjusted Earnings Per Share Growth %	108.5	138.9	48.8	-23.2	-31.9	25.2	43.8	44.5	44.1	24.1

Valuation as of 22 Apr 2025	Actual			Forecast				
	2022	2023	2024	2025	2026	2027	2028	2029
Price/Earning	58.7	79.6	168.3	198.8	159.1	110.5	76.5	53.2
Price/Sales	7.2	8.2	13.3	10.5	9.7	8.2	7.0	5.7
Price/Book	13.8	13.8	19.5	14.9	13.8	12.5	10.8	9.0
Price/Cash Flow	—	—	—	—	—	—	—	—
EV/EBITDA	33.8	46.4	76.8	83.6	70.3	52.2	38.3	27.4
EV/EBIT	57.5	86.8	164.7	248.4	167.9	99.5	63.1	40.6
Dividend Yield %	—	—	—	—	—	—	—	—
Dividend Payout %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Free Cash Flow Yield %	—	—	—	—	—	—	—	—

Operating Performance / Profitability as of 22 Apr 2025	Actual			Forecast				
Fiscal Year, ends 31 Dec	2022	2023	2024	2025	2026	2027	2028	2029
ROA %	8.9	14.1	5.5	3.3	4.1	5.9	7.7	9.3
ROE %	17.5	23.6	9.6	5.5	7.0	9.9	13.0	16.3
ROIC %	22.2	22.3	14.9	2.9	5.0	9.1	14.6	23.0

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Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
308.58 USD 9 Jun 2025	250.00 USD 30 Jan 2025 05:50, UTC	1.23	1.05 USD Tril 10 Jun 2025	Narrow	Large Growth	Very High	Exemplary	7 May 2025 05:00, UTC

Financial Leverage (Reporting Currency)	Actual			Forecast				
Fiscal Year, ends 31 Dec	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Debt/Capital %	1.5	1.2	1.0	0.9	1.0	0.9	1.3	2.2
Assets/Equity	2.0	1.7	1.8	1.7	1.7	1.7	1.7	1.8
Net Debt/EBITDA	-1.7	-1.4	-3.0	-2.8	-2.5	-2.1	-1.9	-2.0
Total Debt/EBITDA	0.5	0.6	0.8	0.7	0.7	0.5	0.6	0.8
EBITDA/ Net Interest Expense	35.1	-18.3	-13.7	-10.6	-12.8	-17.7	-26.7	-73.1

Forecast Revisions as of 22 Apr 2025	2025		2026		2027	
Prior data as of 11 Mar 2025	**Current**	**Prior**	**Current**	**Prior**	**Current**	**Prior**
Fair Value Estimate Change (Trading Currency)	250.00	249.53	—	—	—	—
Revenue (USD Mil)	99,836	102,496	108,171	113,500	127,782	135,941
Operating Income (USD Mil)	4,132	9,222	6,114	11,905	10,319	16,595
EBITDA (USD Mil)	12,273	17,621	14,603	20,822	19,669	26,523
Net Income (USD Mil)	5,764	9,954	7,218	12,046	10,382	15,650
Earnings Per Share (Diluted) (USD)	1.21	2.39	1.66	3.01	2.62	4.09
Adjusted Earnings Per Share (Diluted) (USD)	1.64	2.82	2.05	3.42	2.95	4.44
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00

Key Valuation Drivers as of 22 Apr 2025	
Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.8
Weighted Average Cost of Capital %	8.8
Long-Run Tax Rate %	23.0
Stage II EBI Growth Rate %	9.0
Stage II Investment Rate %	15.0
Perpetuity Year	15

Additional estimates and scenarios available for download at https://pitchbook.com/.

Discounted Cash Flow Valuation as of 22 Apr 2025	**USD Mil**
Present Value Stage I	134,543
Present Value Stage II	93,610
Present Value Stage III	274,791
Total Firm Value	**502,945**
Cash and Equivalents	36,563
Debt	8,213
Other Adjustments	327,601
Equity Value	**858,895**
Projected Diluted Shares	3,525
Fair Value per Share (USD)	**250.00**

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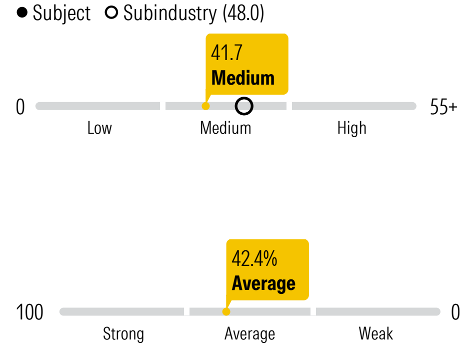
Tesla Inc TSLA ★★ 10 Jun 2025 21:50, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
308.58 USD 9 Jun 2025	250.00 USD 30 Jan 2025 05:50, UTC	1.23	1.05 USD Tril 10 Jun 2025	Narrow	Large Growth	Very High	Exemplary	7 May 2025 05:00, UTC

ESG Risk Rating Breakdown

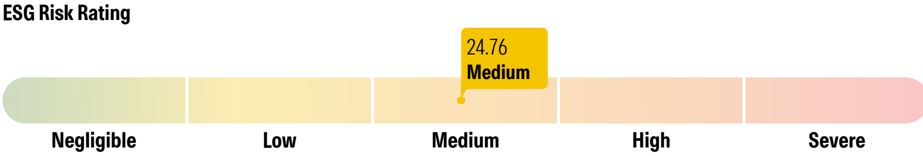
Exposure	
Company Exposure[1]	41.7
– Manageable Risk	39.8
Unmanageable Risk[2]	**1.8**
Management	
Manageable Risk	39.8
– Managed Risk[3]	16.9
Management Gap[4]	**22.9**
Overall Unmanaged Risk	**24.8**



- 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 42.4% 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 May 07, 2025. Highest Controversy Level is as of Jun 08, 2025. Sustainalytics Subindustry: Automobiles. 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 May 2025

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	
Tesla Inc	41.7 | Medium	0 – 55+	42.4 | Average	100 – 0	24.8 | Medium	0 – 40+
Ford Motor Co	55.2 | High	0 – 55+	52.5 | Strong	100 – 0	27.6 | Medium	0 – 40+
Volkswagen AG	53.9 | Medium	0 – 55+	51.5 | Strong	100 – 0	27.5 | Medium	0 – 40+
Bayerische Motoren Werke AG	47.1 | Medium	0 – 55+	52.1 | Strong	100 – 0	23.8 | Medium	0 – 40+
General Motors Co	53.3 | Medium	0 – 55+	50.0 | Average	100 – 0	27.6 | Medium	0 – 40+

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Appendix
Historical Morningstar Rating

Tesla Inc TSLA 10 Jun 2025 21:50, UTC

Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
—	—	—	—	—	—	★★	★★	★★★	★★★	★★★	★★
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
★	★	★★★	★	★	★	★★	★★★	★★★	★	★★	★

Ford Motor Co F 10 Jun 2025 21:33, UTC

Dec 2025	Nov 2025	Oct 2025	Sep 2025	Aug 2025	Jul 2025	Jun 2025	May 2025	Apr 2025	Mar 2025	Feb 2025	Jan 2025
—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★★★
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
★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★	★★★★	★★★
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Morningstar Equity Analyst Report | Report as of 10 Jun 2025 22:42, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NASDAQ - ALL MARKETS

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Dec 2025 —	Nov 2025 —	Oct 2025 —	Sep 2025 —	Aug 2025 —	Jul 2025 —	Jun 2025 ★★★★	May 2025 ★★★★	Apr 2025 ★★★★	Mar 2025 ★★★★★	Feb 2025 ★★★★★	Jan 2025 ★★★★★
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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.

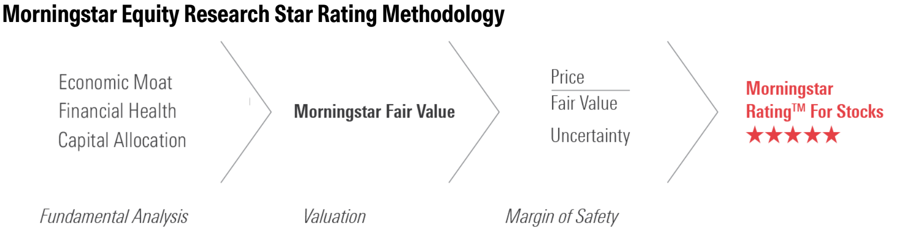
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return 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

Morningstar Equity Research Star Rating Methodology



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outcomes for the intrinsic value of a company, and anything 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

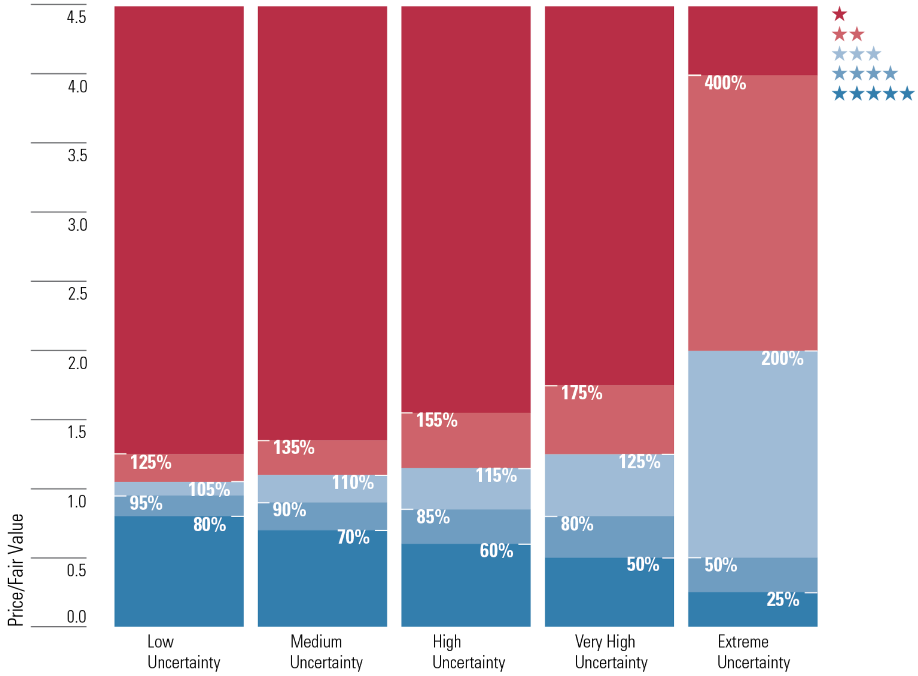
Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly,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



Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. 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,

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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.

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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