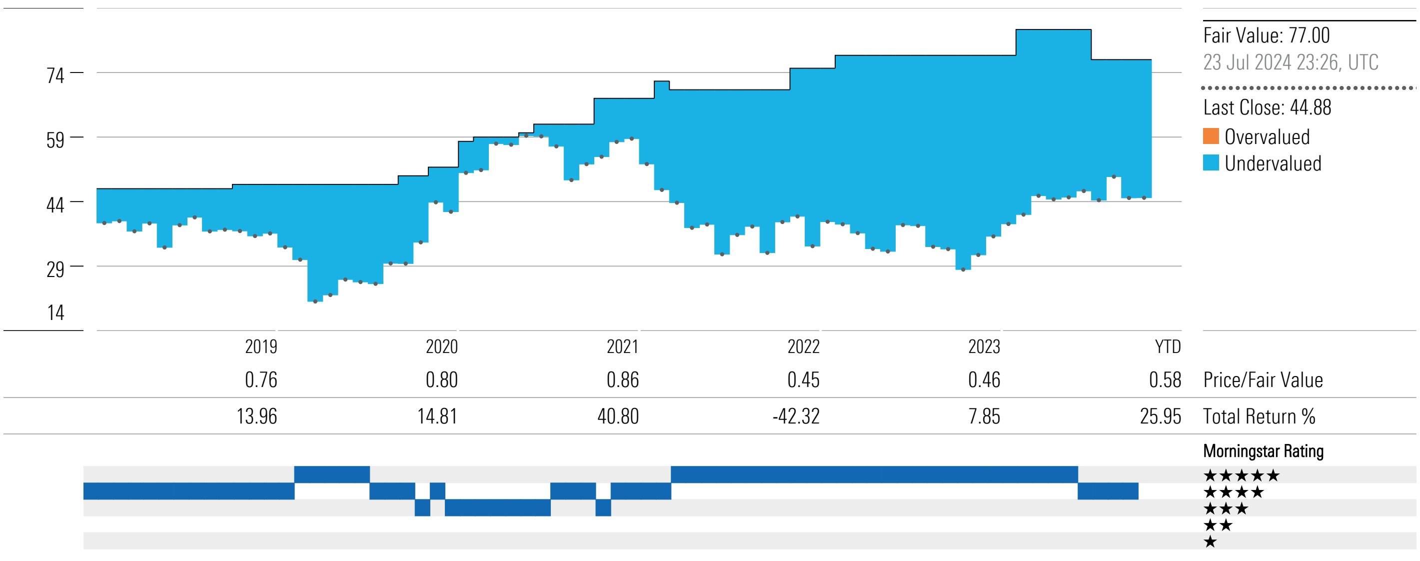
Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 1 of 22

General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
44.88 USD 1 Oct 2024	77.00 USD 23 Jul 2024 23:26, UTC	0.58	50.44 USD Bil 1 Oct 2024	None	Mid Value	High	Standard	4 Sep 2024 05:00, UTC

Price vs. Fair Value



Total Return % as of 01 Oct 2024. Last Close as of 01 Oct 2024. Fair Value as of 23 Jul 2024 23:26, 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.

GM: US Sales Show Good Retail Channel Growth Despite No Excessive Discounting

Analyst Note David Whiston, CFA, CPA, CFE, Strategist, 2 Oct 2024

Most automakers reported September US auto sales on Oct. 1. Wards Intelligence put volumes down 12.8% year over year, but there were three fewer selling days in September 2024 versus September 2023 (Labor Day 2024 weekend volume included in August sales). Adjusting for fewer selling days, volume fell 1.4%. The seasonally adjusted annualized selling rate of 15.77 million improved from September 2023's 15.69 million. Inventories likely remain below three million units, and the recent interest-rate cut should nudge some buyers to visit showrooms in the fourth quarter, though we think the industry would benefit from further rate reductions. We still expect 2024 light-vehicle sales in the high 15 million range.

GM's third-quarter US sales fell by 2.2%, but we calculate 0.4% growth, adjusting for two fewer selling days in this year's quarter. Longtime market concerns about falling prices have yet to hurt GM as its incentives as a percentage of average transaction price at 4.5% are 240 basis points lower than the industry average. GM also said 18 of its nameplates have higher ATPs than their segment average, enabling ATPs of 112% above the industry average for the quarter through Sept. 22. GM's electric vehicle growth (32,095 total EV units sold or 4.9% of total volume) continues due to models like the Cadillac Lyriq, Chevrolet Equinox, Blazer, Silverado, and just-launched GMC Sierra. GM's EV sales rose 60%, and by 46% from the second quarter. The Escalade Iq and Cadillac Optiq crossover launch in the fourth quarter to continue the EV expansion and refreshed combustion full-size SUVs also launching

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Sector	Industry
Consumer Cyclical	Auto Manufacturers

Business Description

General Motors Co. emerged from the bankruptcy of General Motors Corp. (old GM) in July 2009. GM has eight brands and operates under four segments: GM North America, GM International, Cruise, and GM Financial. The United States now has four brands instead of eight under old GM. The company regained its us market share leader crown in 2022, after losing it to Toyota due to the chip shortage in 2021. 2023's share was 16.5%. GM's Cruise autonomous vehicle arm has previously done driverless geofenced AV robotaxi services in San Francisco and other cities but stopped in late 2023 after an accident. It restarted service in 2024 but not in California. GM owns over 80% of Cruise. GM Financial became the company's captive finance arm in October 2010 via the purchase of AmeriCredit.

mean good potential for the fourth quarter. Cadillac had its best third quarter since 2016, Chevrolet's retail channel deliveries have risen for nine straight quarters, Buick grew for the seventh straight quarter, and GMC had its best third quarter since 2005. Excluding medium-duty pickups, truck deliveries rose 1.7% year over year, led by the GMC Sierra light-duty up 17.6%.

Business Strategy & Outlook David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

We see General Motors with a competitive lineup in all segments it competes in, combined with a reduced cost base ($2 billion more in cuts across 2023-24), finally enabling it to have the scale to match its size. We think GM's earnings potential is excellent because the company has a healthy North American unit and a nearly mature finance arm with GM Financial. Moving hourly workers' retiree healthcare to a separate fund and closing plants drastically lowered GM North America's breakeven point to US industry sales of about 10 million-11 million vehicles, assuming 18%-19% share. We expect more scale to come from GM moving its production onto vehicle sets over the next few years and a joint venture making EV batteries for even more flexibility and scale.

GM makes products that consumers are willing to pay more for than in the past. It no longer has to overproduce trying to cover high labor costs and then dump cars into rental fleets (which hurts residual values). GM now operates in a demand-pull model where it can produce only to meet demand and is structured to do no worse than break even at the bottom of an economic cycle when plants can be open. The result is higher profits than under old GM despite lower US share. It now seeks roughly $300 billion in total revenue by 2030 with about $80 billion from many new high-margin businesses such as insurance, subscriptions, and selling data, while targeting 2030 total company adjusted EBIT margin of 12%-14%, up from 7.2% in 2023.

We think actions such as buying Cruise, along with GM’s connectivity and data-gathering via OnStar, position GM well for this new era. After Cruise completes a safety review, we expect it to resume offering autonomous ride-hailing, but we think the $50 billion revenue target in 2030 is off the table. GM is investing over $35 billion in battery electric and autonomous vehicles for 2020-25 and is launching 30 BEVs through 2025 with two thirds of them available in North America. In early 2021 announced the ambition to only sell zero-emission vehicles globally by 2035.

Bulls Say David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

- GMNA's breakeven point of about 10 million-11 million units is drastically lower than it was under old GM.
- Management is not afraid to buy back large amounts of stock.
- GM can charge thousands of dollars more per vehicle in light-truck segments. Higher prices with fewer incentive dollars allow GM to get more margin per vehicle, which helps mitigate a severe decline in light-vehicle sales and falling market share.

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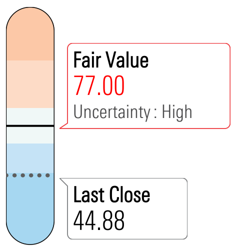
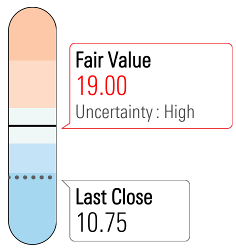
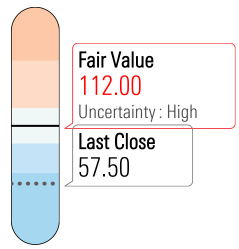
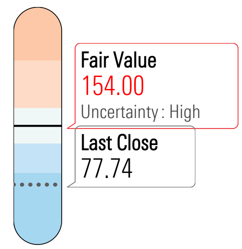
Competitors

	General Motors Co GM	Ford Motor Co F	Mercedes-Benz Group AG MBG	Bayerische Motoren Werke AG BMW









	General Motors Co GM	Ford Motor Co F	Mercedes-Benz Group AG MBG	Bayerische Motoren Werke AG BMW
Economic Moat	None	None	Narrow	Narrow
Currency	USD	USD	EUR	EUR
Fair Value	77.00 23 Jul 2024 23:26, UTC	19.00 30 Nov 2023 22:43, UTC	112.00 20 Sep 2024 10:51, UTC	154.00 11 Sep 2024 13:17, UTC
1-Star Price	46.20	29.45	173.60	238.70
5-Star Price	119.35	11.40	67.20	92.40
Assessment	Undervalued 1 Oct 2024	Significantly Undervalued 1 Oct 2024	Significantly Undervalued 1 Oct 2024	Significantly Undervalued 1 Oct 2024
Morningstar Rating	★★★★ 1 Oct 2024 21:44, UTC	★★★★★ 1 Oct 2024 21:31, UTC	★★★★★ 2 Oct 2024 00:09, UTC	★★★★★ 2 Oct 2024 00:09, UTC
Analyst	David Whiston, Strategist	David Whiston, Strategist	Rella Suskin, Equity Analyst	Rella Suskin, Equity Analyst
Capital Allocation	Standard	Standard	Standard	Standard
Price/Fair Value	0.58	0.57	0.51	0.50
Price/Sales	0.31	0.24	0.40	0.29
Price/Book	0.72	0.99	0.68	0.55
Price/Earning	4.86	6.55	4.66	4.31
Dividend Yield	1.00%	5.58%	9.22%	7.72%
Market Cap	50.44 Bil	42.73 Bil	61.52 Bil	49.65 Bil
52-Week Range	26.30—50.50	9.49—14.85	54.05—77.45	68.58—115.35
Investment Style	Mid Value	Mid Value	Large Value	Large Value

Bears Say David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

- GM may have to see a US recession to prove it can do much better than old GM before the market will award the stock a higher P/E multiple. The recession came in 2020, and may again in 2025, but the P/E multiple well after the downturn is uncertain.
- Auto stocks often sell off severely because of macroeconomic concerns, even if the bottom-up story looks attractive.
- The US auto market is becoming more crowded each year. Hyundai-Kia, Tesla, and other firms such as new entrants from China and EV startups may take more share over time from existing players such as GM.

Economic Moat David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

GM does not have an economic moat, and we do not expect that to change. Vehicle manufacturing is a very capital-intensive business, but barriers to entry are not as high as in the past. The industry is already full of strong competition, so it is nearly impossible for one firm to gain a durable advantage. Automakers from China and India may soon enter developed markets such as the US, and South Korea's Hyundai and Kia have become formidable competitors. Plus many battery electric startups are emerging in addition to Tesla, such as Lucid, Rivian, Fisker, and formidable Chinese EV makers. Furthermore, the auto industry is so cyclical that in bad times even the best automakers cannot avoid large declines in return on invested capital and profit. Cost-cutting helps ease the pain, but it does not restore all lost profit in bad times.

Fair Value and Profit Drivers David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

After second-quarter results showed continued weakness in China, we are lowering our fair value estimate to $77 per share from $84. The change is mostly from lowering our total equity method income over 2024-28 by nearly $3.4 billion. Management in April said China's first-quarter equity income loss of $106 million would turn to a profit for the second quarter, but significant competition from foreign and Chinese automakers led to negative $104 million of second-quarter China equity income. We expect a full-year loss for China and until GM shows its restructuring efforts in China overcoming competitive pressure and industry overcapacity, we are now modeling negative equity income for each year of 2024-28 for cumulative total equity method losses of $1.76 billion.

At GM's November 2022 EV investor day, it increased its 2025 total company revenue target including GM Financial of about $195 billion given in October 2021 to over $225 billion. This increase is from expected 2025 EV revenue of over $50 billion, up from $30 billion announced in October 2021. We model about $163 billion of 2025 revenue excluding GM Financial as EV demand has slowed since November 2022. Offsetting some of this revenue growth was that GM raised its annual capital expenditure spending for 2023-2025 to $11 billion to $12 billion from $9 billion to $11 billion targeted a couple years ago, though July 2024 capital spending guidance is $10 billion to $11 billion. Rising interest rates have helped GM's global pension underfunding improve at year-end 2023 to $5.5 billion from $12.4 billion in 2020.

We will continue to review our midcycle margin assumption as the company progresses through its transformative strategy announced in October 2021 and confirmed in November 2022 of targeting total company (which means including GM Financial) 12%-14% EBIT margin by 2030 and revenue of $275 billion-$315 billion. We think it's possible that these targets could be lowered at the company's Oct. 8 investor day and that may mean a fair value estimate reduction. New asset-light businesses centered on data analytics and subscriptions for performance upgrades and autonomous features such as Super Cruise or Ultra Cruise should enable margin expansion over time. Our weighted average cost of capital is about 10%. Our estimate for GM's midcycle automotive adjusted EBIT margin including equity income (mostly Chinese joint ventures) and Cruise is around 4.8%, 30 basis points lower than our prior model, to

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reflect a midcycle margin encompassing the wide range of possible margins for both good times and bad times. We had in the past modeled this metric around 6% but we are trying to make our assumptions more conservative in light of slowing EV demand and the uncertainty around the cadence of Cruise's growth after resuming operations.

Our compound annual non-GM Financial revenue growth rate is about 5.5%. We model 100 basis points of declining North American market share from 2020 levels through 2028 (but expansion from chip-shortage-depressed 2021 levels) because of continued strong competitive threats. We model the critical midcycle automotive operating margin, excluding equity income but including Cruise, in the last year of our explicit forecast period at about 5%. GM's transformation plan announced in late 2018 and its 2021 announced pivot into selling data analytics and connected services should yield billions in new free cash flow if successful. Capital expenditure is modeled at about 6% of non-financial-services revenue on average. We model $22.5 billion across 2024-25, then $12 billion in 2026, and $10 billion for each of 2027 and 2028. We model the Cruise AV business to have about $700 million of revenue for 2024-28, down from $3.2 billion, which makes up about $1 of our fair value estimate.

GM began re-establishing its captive finance arm with the creation of GM Financial in October 2010 via the acquisition of AmeriCredit. We add GM Financial to the valuation at its year-end 2023 book value of $15.5 billion. Our diluted share count is 1.047 billion to reflect continued share repurchases in 2024 for the ASR and GM's normal repurchase program. Management said in July to expect further buybacks due to the stock being undervalued.

Risk and Uncertainty David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

GM's global pension was underfunded by about $5.5 billion as of Dec. 31, 2023, and the projected benefit obligation will go up if interest rates decline. Management does not expect to be forced to make any major contributions to the US qualified plan for five years, but that assertion is only an estimate, and GM did make a $2 billion discretionary contribution in early 2016 via a bond offering. 2024 international plan contributions will be as much as $700 million. US gas prices going well over $5 a gallon is also a risk due to GM's reliance on light trucks, as is the threat of more tariffs and the ever-looming threat of mass recalls, recessions, and inflation. More vehicles made on the same platform means a recall can affect millions more vehicles than in the past.

The auto industry faces disruption from ride-hailing, car-sharing, and autonomous vehicles, or AVs, but we do not think private vehicle ownership will cease. GM is well positioned to compete in these new spaces via its own AV work with Cruise and OnStar. New entrants in the electric pickup space such as Tesla and Rivian are a risk to GM's biggest profit source, but it's too early to say these startups will take meaningful share in the pickup segment. GM launched the GMC Hummer BEV pickup in December 2021, a BEV Silverado launched in 2023, and BEV Sierra comes out in 2024.

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A key environmental, social, and governance risk we see is increasing regulatory scrutiny of combustion vehicles, but we are not worried as electric vehicles such as the GMC Hummer, over $35 billion of EV/AV spending across 2020-25, and a 2021 announcement of a goal to only sell zero-emission vehicles globally by 2035 show GM is serious about switching away from combustion engines. Union negotiations in spring 2028 may mean a very long strike at that time plus the resumption of pensions and retiree healthcare to all US hourly workers. GM operates in a cyclical industry, so the stock can fall hard in a downturn.

Capital Allocation David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

We give GM a Standard rating under our capital allocation methodology. The company’s balance sheet is in good shape, with June 30 automotive liquidity excluding Cruise at $35.8 billion, including $22.3 billion of cash and debt securities. At the end of 2023, the auto business excluding Cruise was in a net cash position of $3.4 billion and auto debt maturing across 2024-26 totals about $3.2 billion with $2.6 billion of that amount due in 2025. We calculate the global pension obligation of $57.6 billion was 90.4% funded at the end of 2023 and management does not expect any major mandatory contributions. Plans are closed to new hires but the UAW wants to reopen the US pension plan to all its GM members as part of the 2028 negotiation. Given GM has plenty of credit line availability and was able to issue bonds during the pandemic, we are not worried about its balance sheet health should macroeconomic conditions worsen. GM North America’s breakeven point is when US industry annualized sales are 10 million-11 million units, which we think is not likely to ever happen again following 2009’s 10.4 million, which was absurdly low in historical per capita terms.

GM's capital allocation history has greatly improved since it first went public, thanks to buybacks when the stock is undervalued and a clearly articulated capital allocation plan as of March 2015. We expect good economic profit during some years of our five-year explicit forecast period and like that a three-year average return on invested capital of 20% is a key part of management's compensation package. We like that GM now is willing to exit businesses where it does not think it can be profitable long-term. Examples include exiting Russia, Australia, India, Indonesia, and Thailand, and most notably selling Opel/Vauxhall in August 2017 to exit Europe. More action came in November 2018 with the bold announcement in GMNA to stop production at various car model plants, such as the Impala and Cruze, that have fallen out of favor as consumers move to light trucks. Old GM would never have done this. The 2018 move saved GM $4.5 billion in net costs by the end of 2020 and a new $2 billion fixed cost reduction program is in effect for 2023-24 that reduced North American salaried headcount, engineering, and marketing costs.

We want to see a combination of voluntary pension funding and common stock repurchases when the shares trade far below our fair value estimate. The buyback plans are an excellent move for shareholders, in our opinion, and we feel can be executed without sacrificing reinvesting in the business. GM had not meaningfully repurchased shares since $4.5 billion spent in 2017, but that changed in late 2022 with $2.5 billion of repurchases following an increase that August in the authorization to $5 billion. That program is complete and GM announced a $6 billion authorization in June 2024. On Nov. 29, 2023 GM announced a $10 billion accelerated repurchase program (a contractual obligation where GM gives four banks all $10 billion upfront to repurchase GM stock over time) with $6.8 billion immediately repurchased on Dec. 1, 2023 at $31.63 per share and the remaining $3.2 billion to be bought back by fourth quarter 2024. We like management aggressively buying back about 25% of its share count due to the stock, in our view, being very undervalued in late 2023.

We interpret management not raising the dividend in the years before the pandemic to mean that the dividend was what management thinks can be maintained throughout an economic cycle, but a complete shutdown of plants due to covid-19 proved too much, and the dividend was suspended in April 2020. GM resumed the dividend in August 2022 by announcing a quarterly payout of $0.09 per share and increased it to $0.12 at the start of 2024. We expect dividend increases over time while also repurchasing shares. GM targets automotive cash of $18 billion to $20 billion.

We see GM able to return cash to shareholders while also investing correctly for the future in battery electric vehicles and autonomous vehicles via the Cruise business. GM made a bold proclamation in early 2021 by saying globally it aspires to only sell zero-emission vehicles by 2035. The company is well on its way to making this transition with vehicles such as the Cruise Origin autonomous BEV, GMC Hummer truck and SUV, Chevrolet Bolt EUV, Cadillac Lyriq, the Equinox and Blazer crossovers, and BEV full-size pickups. In June 2021, GM announced it's increasing spending on BEVs and AVs for 2020-25 by 30% to $35 billion. This money will fund 30 BEVs by mid-decade, with two thirds of them available in North America, and 40% of US offerings will be BEV by 2025. We also like that GM is branding its battery technology, called Ultium, which offers up to 450 miles of range, and selling its expertise in BEVs and hydrogen to firms such as Honda and Navistar.

Analyst Notes Archive

GM Earnings: China Problems Worsening While EV Volumes Rise and Combustion Business Strong

David Whiston, CFA, CPA, CFE, Strategist, 23 Jul 2024

GM reported good second-quarter results with adjusted diluted earnings per share of $3.06, up 60.2% year over year, beating the LSEG consensus of $2.75. The company raised 2024 adjusted EBIT and adjusted EPS guidance (the latter's midpoint is now $10.00 instead of $9.50). However, the stock fell 6.4% on July 23, which we attribute to worsening China results and the higher EPS guidance mostly from adding back more special items than in previous guidance. We also calculate that adjusted EPS would have been about $2.53, excluding share repurchases.

We are lowering our fair value estimate to $77 from $84 primarily from lowering our total equity method income over 2024-28 by nearly $3.4 billion. Management in April said China's first-quarter equity income loss of $106 million would turn into a profit for the second quarter. Still, significant competition from foreign and Chinese automakers led to negative $104 million in second-quarter China equity income. We expect a full-year loss for China, and until GM shows its restructuring efforts in China overcoming competitive pressure and industry overcapacity, we are now modeling negative equity income for each year of 2024-28 for a cumulative total of $1.76 billion.

GM's internal combustion business continues to post robust results, and total company adjusted EBIT margin increased by 210 basis points to 9.3%. In contrast, adjusted automotive free cash flow fell 4.5% to $5.3 billion on higher capital spending and fewer add backs in this year's quarter for special items. Adjusted EBIT of $4.4 billion increased by 37.2% on $800 million volume tailwinds plus $300 million in pricing contribution and $1.3 billion in cost reductions. Mix was a $500 million headwind on higher GM North America electric vehicle volume. Total GMNA wholesales rose 8.4% on good demand for new crossovers like the Traverse, and first half GM's full-size US pickup truck sales increased about 5%, gaining 350 basis points of share.

GM: Second-Quarter US Sales Are the Company's Best Since 2020 David Whiston, CFA, CPA, CFE, Strategist, 3 Jul 2024

Most automakers reported US auto sales on July 2. Wards Intelligence put June sales at 1.32 million, down 3.4% year over year. The seasonally adjusted annualized selling rate was 15.29 million versus 16.06 million last June. The ransomware attack on leading dealer management software vendor CDK affected sales starting June 19 and Wards estimates a 50,000 unit hit to June sales and a 0.6 million SAAR impact. CDK said on July 2 that substantially all of its over 15,000 dealer customers are back on the system, so we think the industry can make up lost June volume during the third quarter. Dealers will still need to spend considerable time manually entering all the transactions incurred since June 19 into their DMS. Vehicle inventories of about 2.7 million are at levels last seen in early 2021 just before the chip shortage began, and demand is there, especially for foreign automakers like Toyota. We think 2024 US light-vehicle sales will be about 15.8 million-16 million, a 2.9% increase from 2023.

GM's second-quarter sales rose 0.6% and fell 0.4% in the first half. GM's July 2 release said first-half retail volume is up 5%. We don't mind less volume when it's less fleet volume, plus its full-size pickups are having their best year since 2007, up 5% so far. For the quarter, we calculate GM's total pickup volume rose 11.1%, with full-size up 7.1% and midsize up 43.7%. GM's total US second-quarter sales of 696,086 were its best total deliveries since the fourth quarter of 2020. The firm cited J.D. Power PIN data that its second-quarter incentives as a percent of average transaction price were only 4% and have been 100 basis points lower than the industry for five straight quarters. This data point, lower rental fleet sales, Cadillac having its best second-quarter retail sales in nine years, Buick its best quarter in four years, and GMC its best second quarter since 2005, gives optimism for healthy EBIT contribution from pricing in second-quarter earnings on July 23.

US Tariffs on Chinese EVs Do Not Change Our View of US EV Adoption Seth Goldstein, CFA, Strategist, 14 May 2024

The US on May 13, 2024, announced a series of new tariffs on Chinese imports. These include a 100% tariff on electric vehicles and a 25% tariff on lithium-ion batteries and battery parts. There was also a 25% tariff on critical minerals, which include graphite, permanent magnets, and cobalt.

The tariffs will likely limit imports of EVs, batteries, and battery materials into the US. However, the announcement does not change our view on US EV adoption. We still expect the US will see 40% EV adoption by 2030. The tariffs follow the 2022 Inflation Reduction Act, which created federal subsidies for EVs of up to $7,500, on the condition that their batteries and critical minerals in these batteries were made either in the US or a free-trade partner. Given that EV adoption in the US is still in the early-market phase, where a subsidy is a large sales driver, we think the lack of being able to offer a subsidy already incentivized automakers to pursue a supply chain that avoids importing from China.

In the interim, we think the tariffs on EV imports will likely keep many lower-cost Chinese EVs out of the US. Currently, we view the lack of EV options in the affordable-vehicle segments as holding back US EV adoption. For US automakers that are developing affordable EVs, such as Tesla, GM, and Ford, this creates an opportunity to capture US consumer demand in this segment.

We were surprised lithium was not included on the list, as China controls the majority of lithium refining capacity globally. However, very little of that lithium is exported to the US, as China instead exports lithium-ion batteries to America. Regardless, the major US-listed lithium producers under our coverage have global operations that either refine lithium in the US and China or sell to both countries, which already limits the impact of a potential lithium import tariff. We see no changes to our outlook for higher lithium prices in the second half of 2024.

GM Earnings: Strong Start to 2024 Is Good Sign for Rest of the Year David Whiston, CFA, CPA, CFE, Strategist, 23 Apr 2024

GM started 2024 with good first-quarter results and raised 2024 EPS and adjusted EBIT guidance, giving us no reason to change our $84 fair value estimate. Adjusted diluted EPS of $2.62 rose 18.6% year over year (9.8% excluding buybacks) and beat the LSEG consensus of $2.15. EPS is now guided at $9.00-$10.00, up from $8.50-$9.50, as good demand expectations; cost cutting efforts; and the fact pricing didn't fall as much as planned in the quarter led to a $500 million increase on both ends of adjusted EBIT guidance to $12.5 billion-$14.5 billion. We've never believed falling prices from chip-shortage-induced high levels would mean poor 2024 results because we expected benefits from higher US volumes as the industry heals from the chip shortage. Total adjusted EBIT rose by 1.8% year over year as a $200 million pricing headwind and a $500 million mix headwind on fewer trucks and more electric vehicles was offset by a $700 million volume tailwind. GM North America's $900 million volume benefit offset $200 million in lower GM International volume. GM's ongoing $2 billion cost reduction plan for 2024 contributed $200 million and helped offset higher labor costs in the new United Auto Workers union contract.

Despite modest EBIT growth, GM's adjusted automotive free cash flow of $1.1 billion was a first-quarter record thanks to fewer working capital outflows. GM ended the quarter with $33.3 billion of automotive liquidity, including $13.5 billion in cash and bonds. Share repurchases beyond the accelerated share repurchase continued at $280 million and $800 million of authorization outside the ASR remains.

GM North America's EBIT rose 7.4% to $3.8 billion, with margin a healthy 10.6% (down 30 basis points) but GMI lost $10 million and GM China had negative equity income of $106 million. Both China and South America saw intentionally lower production to avoid excessive discounting to clear inventory, but China should be profitable in the second quarter.

GM: US Sales Show Good Consumer Demand at the Expense of Fleet Sales David Whiston, CFA, CPA, CFE, Strategist, 3 Apr 2024

Higher inventories and more discounting continue to bring consumers back to showrooms this year, with March US light-vehicle sales up by 4.6% year over year. Wards put the seasonally adjusted annualized selling rate at 15.49 million, up from 14.93 million in March 2023. The chip shortage is mainly behind the industry, so inventories are at their highest levels since early 2021, which, in turn, is bringing incentives off ultralow levels as a percentage of the average transaction price. Per Cox Automotive, incentives have recently trended at nearly 6% of ATP, about double the rate in early 2023 but still far below prepandemic levels in the low teens. We expect continued inventory growth and higher incentives, which, combined with a possible interest rate cut or cuts this year, may fuel higher demand.

GM reported first-quarter sales on April 2 that fell 1.5% year over year, and we calculate a 4% decline adjusting for two extra selling days versus the prior year’s quarter. The volume appears to be held back by lower fleet sales, which is not necessarily a bad thing. GM said its retail sales were up 6%, which is the highest for a first quarter since 2021. All four of GM’s brands posted retail channel growth, with Buick’s retail deliveries up 10%, Cadillac up 9%, Chevrolet up 6%, and GMC up 3%. The Cadillac Lyriq EV crossover made up 17% of Cadillac’s volume and half of its buyers are new to GM. Buick had its best total volume in three years thanks to the new Envista crossover, with almost 70% of its buyers new to the brand and the Encore GX crossover up 8.8%. Mix and pricing did well for both Buick and GMC with 25% of Buick buyers taking the high-end Avenir trim and GMC customers paid the highest-ever first-quarter ATPs for the brand with 30% Denali trim penetration. We calculate total GM pickup truck growth of 3.9% mainly on an 11.4% increase in heavy duty models which saw their overall mix of GM’s truck volume (excluding medium duty) rise 260 basis points to 32.8%.

Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 11 of 22

General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
44.88 USD 1 Oct 2024	77.00 USD 23 Jul 2024 23:26, UTC	0.58	50.44 USD Bil 1 Oct 2024	None	Mid Value	High	Standard	4 Sep 2024 05:00, UTC

GM Earnings: Good 2024 Guidance Boosts Stock by Nearly 10% in Jan. 30 Trading David Whiston, CFA, CPA, CFE, Strategist, 30 Jan 2024

GM finished 2023 with a good fourth quarter—hindered by nearly $1 billion in UAW strike costs—and introduced 2024 guidance that suggests a good year ahead. We are not changing our fair value estimate but will reassess all modeling inputs while rolling our model for the 10-K. Fourth-quarter adjusted diluted EPS of $1.24 fell 41.5% year over year but beat the $1.16 Refinitiv consensus. Adjusted EBIT of $1.8 billion fell by 53.8%, and EBIT margin declined by 470 basis points to 4.1%. Adjusted auto free cash flow of $1.3 billion fell by 70% but still left GM with automotive cash and securities of $19.8 billion.

We think the market was primarily concerned with GM's 2024 outlook going into the Jan. 30 earnings release, so adjusted diluted EPS guidance of between $8.50-$9.50 was good news relative to the $7.87 consensus and our projection of $8.39. Total company adjusted EBIT guidance of $12 billion to $14 billion suggests some upside potential from 2023's $12.4 billion (down 14.6% from 2022), with profit cadence likely to follow GM's typical seasonal pattern of strongest results in the second and third quarters. Adjusted automotive free cash flow is guided down from 2023's $11.7 billion, to $8 billion to $10 billion, on possibly higher capital expenditure and working capital.

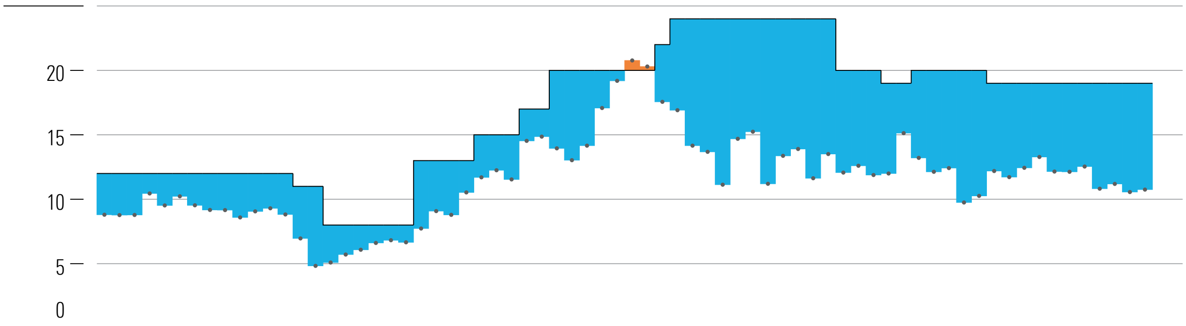
Guidance assumes an average share count of just below 1.15 billion shares and U.S. industry sales of about 16 million, including heavy trucks, which is reasonable. It also assumes a pricing decline of 2%-2.5%, which we think is reasonable but could prove too conservative if pricing does not decline as fast as planned, which occurred in 2023. Mix is also a headwind due to more crossover volume (versus trucks and SUVs) and electric vehicle sales growth as battery production on existing models like the Cadillac Lyriq improves this year. New EVs this year include the Escalade IQ SUV, Equinox crossover, and Sierra and Silverado RST pickups. China will struggle this year and have a first-quarter loss.

Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 12 of 22

General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

Competitors Price vs. Fair Value

Ford Motor Co F



Fair Value: 19.00
30 Nov 2023 22:43, UTC

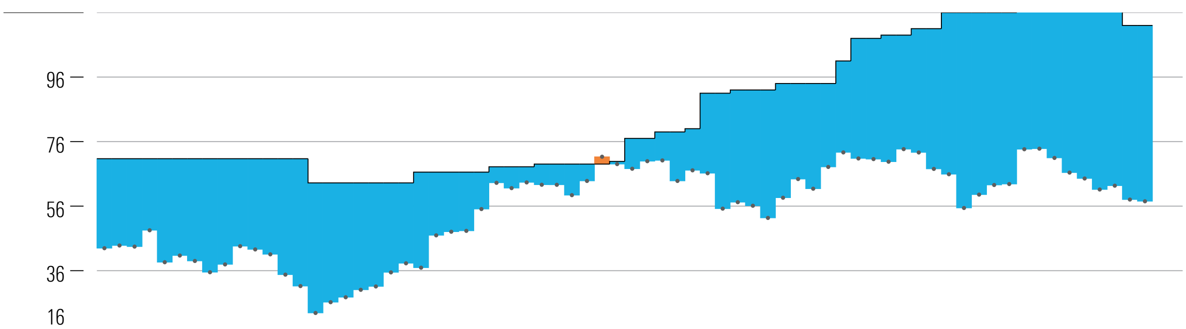
Last Close: 10.75
Overvalued
Undervalued

	2019	2020	2021	2022	2023	YTD
Price/Fair Value	0.78	0.68	1.04	0.48	0.64	0.57
Total Return %	29.41	-3.87	137.43	-41.60	15.56	-6.64

Morningstar Rating
★★★★★
★★★★
★★★
★★
★

Total Return % as of 01 Oct 2024. Last Close as of 01 Oct 2024. Fair Value as of 30 Nov 2023 22:43, UTC.

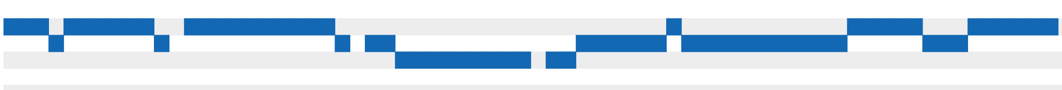
Mercedes-Benz Group AG MBG



Fair Value: 112.00
20 Sep 2024 10:51, UTC

Last Close: 57.50
Overvalued
Undervalued

	2019	2020	2021	2022	2023	YTD
Price/Fair Value	0.58	0.72	0.88	0.65	0.54	0.51
Total Return %	14.62	18.88	39.94	-1.76	10.34	0.40



Morningstar Rating
★★★★★
★★★★
★★★
★★
★

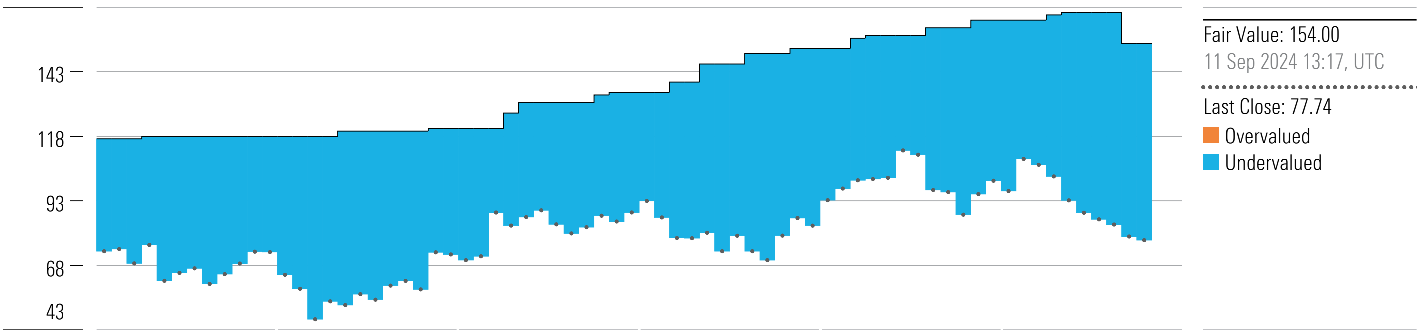
Total Return % as of 01 Oct 2024. Last Close as of 01 Oct 2024. Fair Value as of 20 Sep 2024 10:51, UTC.

Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 13 of 22

General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

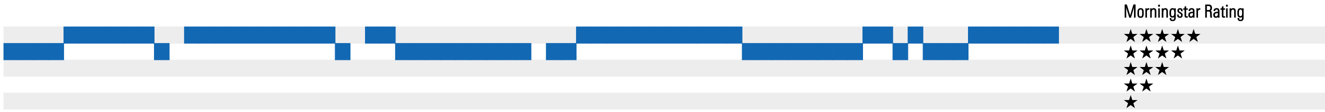
Competitors Price vs. Fair Value

Bayerische Motoren Werke AG BMW



	2019	2020	2021	2022	2023	YTD	
	0.62	0.60	0.66	0.55	0.62	0.50	Price/Fair Value
	8.40	2.17	25.14	0.78	31.06	-16.91	Total Return %

Morningstar Rating



Total Return % as of 01 Oct 2024. Last Close as of 01 Oct 2024. Fair Value as of 11 Sep 2024 13:17, UTC.

Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 14 of 22

General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
44.88 USD 1 Oct 2024	77.00 USD 23 Jul 2024 23:26, UTC	0.58	50.44 USD Bil 1 Oct 2024	None	Mid Value	High	Standard	4 Sep 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 (USD Bil)	156	136	149	146	147	137	122	127	157	172	91	178
Revenue Growth %	0.3	-13.0	9.9	-2.4	1.0	-6.7	-10.8	3.7	23.4	9.6	7.4	4.9
EBITDA (USD Bil)	12	16	22	25	23	22	22	26	24	23	14	25
EBITDA Margin %	7.6	12.0	15.0	17.0	15.6	16.3	18.0	20.3	15.2	13.5	15.5	14.2
Operating Income (USD Bil)	1.65	5.54	8.69	8.66	4.45	5.48	6.63	9.32	10.31	9.30	7.61	11.54
Operating Margin %	1.1	4.1	5.8	5.9	3.0	4.0	5.4	7.3	6.6	5.4	8.4	6.5
Net Income (USD Bil)	3.95	9.69	9.43	-3.86	8.01	6.73	6.43	10.02	9.93	10.13	5.91	11.08
Net Margin %	1.8	7.1	6.3	-2.7	5.4	4.8	5.1	7.8	5.7	5.8	6.5	6.2
Diluted Shares Outstanding (Mil)	1,687	1,640	1,570	1,492	1,431	1,439	1,442	1,468	1,454	1,369	1,155	1,249
Diluted Earnings Per Share (USD)	1.65	5.91	6.00	-2.65	5.53	4.57	4.33	6.70	6.13	7.32	5.10	8.90
Dividends Per Share (USD)	1.20	1.38	1.52	1.52	1.52	1.52	0.38	0.00	0.18	0.36	0.24	0.42

Valuation as of 30 Sep 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	0.4	0.4	0.3	0.4	0.3	0.4	0.5	0.7	0.3	0.3	0.3	0.3
Price/Earnings	22.5	12.5	4.0	8.7	35.6	6.0	18.7	7.8	5.7	5.0	5.0	5.0
Price/Cash Flow	5.9	4.5	3.7	4.3	3.0	3.0	4.5	5.7	2.9	2.2	2.9	2.9
Dividend Yield %	3.44	4.06	4.36	3.71	4.54	4.15	1.83	—	0.54	1.0	1.0	1.0
Price/Book	1.4	1.5	1.2	1.4	1.2	1.2	1.3	1.6	0.7	0.6	0.7	0.7
EV/EBITDA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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 %	1.6	5.2	4.5	-1.8	3.6	2.9	2.7	4.1	3.5	3.7	2.1	3.9
ROE %	7.5	25.7	22.5	-9.8	21.4	16.3	14.4	18.8	14.0	15.2	8.9	15.7
ROIC %	3.8	10.3	8.8	-3.0	6.0	4.8	4.6	6.4	5.3	5.3	3.1	5.8
Asset Turnover	0.9	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.6	0.6	0.3	0.6

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	47.2	52.2	53.9	65.8	65.3	61.6	62.2	56.2	53.1	56.6	56.3	—
Equity/Assets %	20.0	20.5	19.8	16.5	17.1	18.3	19.1	24.4	25.7	23.5	24.3	—
Total Debt/EBITDA	3.9	3.9	3.4	3.8	4.6	4.7	5.0	4.3	4.8	5.3	9.0	—
EBITDA/Interest Expense	29.5	38.5	39.8	43.0	34.9	28.6	20.0	27.1	24.2	25.5	33.1	28.8

Morningstar Analyst Historical/Forecast Summary as of 23 Jul 2024

Financials

			Estimates		
Fiscal Year, ends 31 Dec 2023	2022	2023	2024	2025	2026
Revenue (USD Mil)	143,970	157,658	164,837	162,735	199,409
Revenue Growth %	26.8	9.5	4.6	-1.3	22.5
EBITDA (USD Mil)	15,823	15,396	19,140	17,303	16,237
EBITDA Margin %	11.0	9.8	11.6	10.6	8.1
Operating Income (USD Mil)	9,434	8,452	11,227	10,631	8,061
Operating Margin %	6.6	5.4	6.8	6.5	4.0
Net Income (USD Mil)	11,034	10,511	10,576	9,647	7,616
Net Margin %	7.7	6.7	6.4	5.9	3.8
Diluted Shares Outstanding (Mil)	1,454	1,369	1,047	1,007	989
Diluted Earnings Per Share(USD)	7.59	7.68	10.10	9.58	7.70
Dividends Per Share(USD)	0.18	0.36	0.48	0.62	0.94

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	0.3	0.3	0.3	0.3	0.3
Price/Earnings	4.4	4.7	4.4	4.7	5.8
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	0.5	1.0	1.1	1.4	2.1
Price/Book	0.9	1.0	0.9	0.8	0.7
EV/EBITDA	8.2	8.7	7.6	8.4	9.0

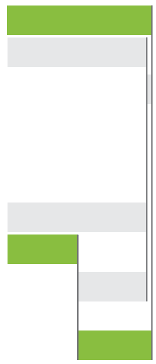
Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 15 of 22

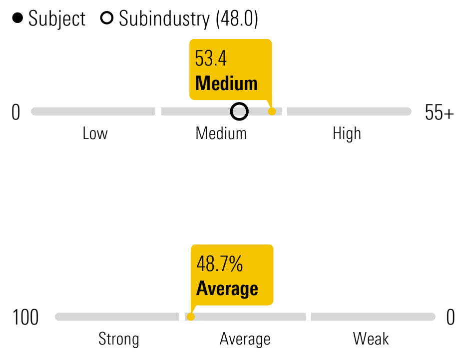
General Motors Co GM ★★★★ 1 Oct 2024 21:44, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
44.88 USD 1 Oct 2024	77.00 USD 23 Jul 2024 23:26, UTC	0.58	50.44 USD Bil 1 Oct 2024	None	Mid Value	High	Standard	4 Sep 2024 05:00, UTC

ESG Risk Rating Breakdown

Exposure		
Company Exposure[1]	53.4	
– Manageable Risk	51.5	
Unmanageable Risk[2]	**1.9**	
Management		
Manageable Risk	51.5	
– Managed Risk[3]	25.1	
Management Gap[4]	**26.4**	
Overall Unmanaged Risk	**28.3**	

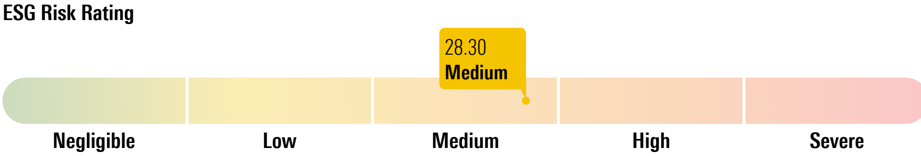




- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

- 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 48.7% 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 Sep 04, 2024. Highest Controversy Level is as of Sep 08, 2024. 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 04 Sep 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		
General Motors Co	53.4 | Medium	0	55+	48.7 | Average	100	0	28.3 | Medium	0	40+
Ford Motor Co	50.6 | Medium	0	55+	57.7 | Strong	100	0	22.5 | Medium	0	40+
Mercedes-Benz Group AG	48.1 | Medium	0	55+	67.1 | Strong	100	0	17.0 | Low	0	40+
Honda Motor Co Ltd	51.4 | Medium	0	55+	48.3 | Average	100	0	27.4 | Medium	0	40+
Bayerische Motoren Werke AG	46.9 | Medium	0	55+	53.2 | Strong	100	0	22.9 | Medium	0	40+

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Appendix
Historical Morningstar Rating

General Motors Co GM 1 Oct 2024 21:44, 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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★

Ford Motor Co F 1 Oct 2024 21:31, 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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★

Mercedes-Benz Group AG MBG 2 Oct 2024 00:09, 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
—	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★	★★★★★	★★★★★	★★★★★

Morningstar Equity Analyst Report | Report as of 2 Oct 2024 02:57, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 17 of 22

Bayerische Motoren Werke AG BMW 2 Oct 2024 00:09, 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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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.

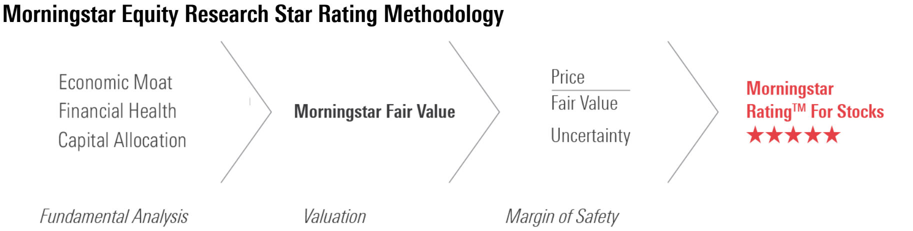
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return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

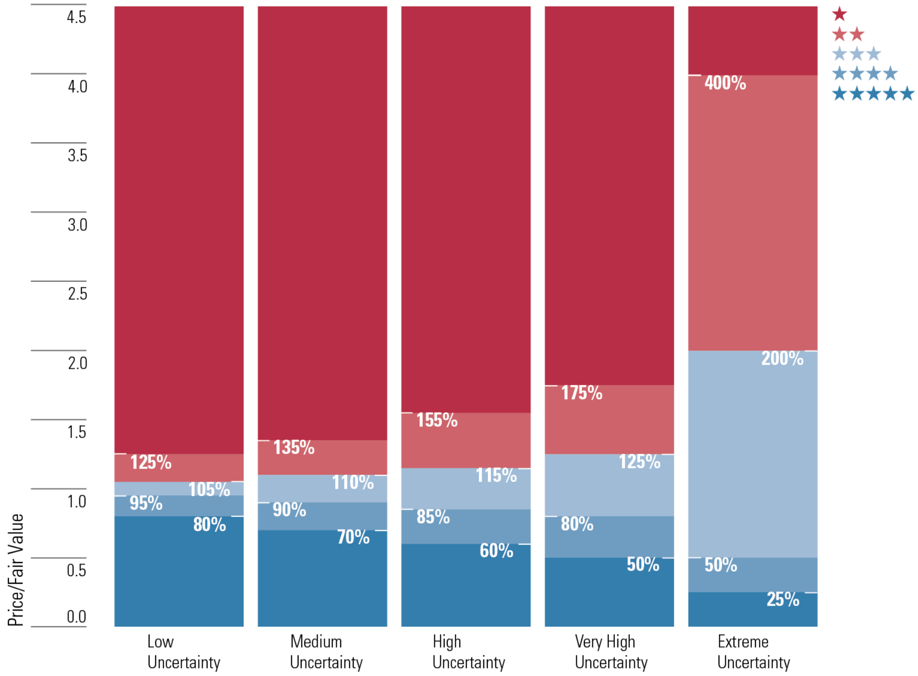
4. Market Price

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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