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Auto Parts Retail & Autos and Shared Mobility

The Tesla Effect: EV Risk to DIY Auto Retail Looks Priced In

In collaboration with our Autos colleagues and industry experts, we frame four scenarios for the DIY Auto industry, flexing the size of the car parc and EV penetration. We see the most risk from shared mobility/automation, though that will take time to play out. Reiterate OW on AZO, ORLY, and AAP.

WHAT'S	
CHANGED?	

AutoZone Inc. (AZO.N)	From:	To:
Price Target	\$1,505.00	\$1,640.00
O'Reilly Automotive Inc (ORLY.O)		
Price Target	\$510.00	\$560.00
Advance Auto Parts Inc (AAP.N)		
Price Target	\$190.00	\$195.00

Concerns about disruption from electric vehicles (EVs) and shared mobility have pressured DIY Auto stocks. EVs, which cost ~25% less to maintain than ICE vehicles, are a visible threat today and were partially responsible for the group's underperformance in 2020 (up ~1% vs. the S&P 500 up ~30%). Shared mobility poses an underappreciated risk – near term from rideshare apps like Uber and Lyft (covered by Brian Nowak), and longer term from fully automated (L5) shared mobility, which could shrink the car parc significantly.

Working with the Morgan Stanley Autos team and industry expert Schwartz Advisors, we framed 4 EV scenarios looking out ~30 years. They reflect a range of outcomes for the size of the car parc and EV penetration. The car parc stands at ~280 million vehicles today with ~0.5% EV penetration. In our Running on Empty bear case, the car parc shrinks by ~40% to 167 million vehicles in 2050 with 60% EV penetration. The Full Tank bull case builds in modest car parc growth until the 2040s with 305 million vehicles in 2050 (up ~9% from today) and 37% EV penetration.

We then modeled the size/growth of the Automotive Aftermarket industry out to 2050 based on these scenarios. In the bear case, industry revenue peaks at \$157 billion in 2023 (vs. ~\$140 billion today) before declining ~2.5%/year through 2050. In the bull case, revenue grows steadily at ~2%/year until peaking in 2045 at \$240 billion and then declining with the car parc. The Half Empty and Half Full cases envision peak revenues of \$205b/\$225b in 2035/2040. We built DCFs to assess the current industry value under each scenario. Our key findings:

1. Valuations for the leading Auto Parts retailers already embed these threats, in our view. Three of the four scenarios produce higher DCFbacked values than the current industry value of \$208 billion (~40% higher on average). Risk reward skews favorably, with ~12% downside in the most bearish case vs. ~50% upside in the most bullish case.

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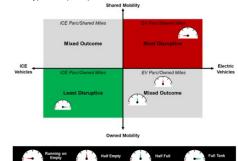
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Hardline/Broadline/Food Retail

North America

IndustryView In-Line

Exhibit 1: Key variables for the DIY Auto TAM: 1) the size of the car parc (which is impacted by shared mobility) and 2) EV penetration



Source: Morgan Stanley Research

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- 2. Shared mobility is a critical risk factor to monitor. In two of the three non-bear cases (Half Empty and Half Full), we model EV penetration in line with the bear case (60%+ by 2050). This suggests that the industry is undervalued even assuming high EV penetration. A shrinking car parc, which largely depends on shared mobility, is the stronger driver of lower valuation.
- 3. L5 automation is a key variable in later years. Automation could expand shared mobility significantly by 1) removing labor/driver constraints and 2) improving utilization. Higher utilization could dramatically reduce the car parc, likely via centralized fleets as well as lowering the number of cars per household. While cost and regulatory hurdles mean L5 automation won't be widely available for decades, it drives the car parc decline after 2045 in all 4 scenarios.
- 4. Solving for the current industry value via a reverse DCF suggests DIY

 Auto stocks are discounting a bearish outcome. The industry value of

 \$208 billion today implies a car parc between Running on Empty and Half
 Empty (the 2 gloomiest scenarios) and EV penetration in line with the bear

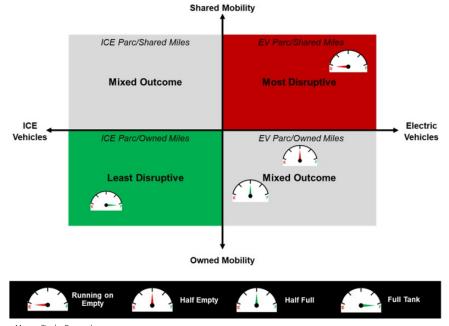
This work makes us more positive on DIY Auto retailers. Comparing the 50% upside to the industry value implied by the bull case with the 12% downside to the bear case value implies a ~4:1 bull/bear skew. We also think the DIY Auto retailers have time to adapt their business models before L5 automated shared mobility puts real pressure on the car parc. In order of preference, we reiterate our OWs on AZO, ORLY, and AAP with ~15%/~10%/~5% upside to our PTs of \$1,640/\$560/\$195.

Executive Summary

Electric vehicles (EVs) and shared mobility are two powerful sources of disruption in

DIY Auto Retail. Higher EV penetration and increases in shared miles are being driven by the inexorable forces of climate change and digitization. EVs represent just 0.5% of the US vehicle fleet today, but we expect this to rise substantially over time, driven by economics, business models, and environmental policies. EVs have 1/100th or 1/1,000 the moving parts of an ICE-powered car, and data suggests required maintenance costs are materially lower, which could reduce industry revenues as EV penetration increases. Further, in the long run as L5 (fully autonomous) vehicles become a reality, they will likely replace non-autonomous vehicles at a rate above 1:1, driving down the number of vehicles in operation (VIO). Combined, a shrinking car parc (or modestly growing in the bull case) and increasing EV penetration could put significant pressure on the DIY Auto TAM over time.

Exhibit 2: Key variables for the DIY Auto TAM: 1) the size of the car parc (which is impacted by shared mobility); and 2) EV penetration



Source: Morgan Stanley Research

While that threat seems distant, we think EV risk is one reason the DIY Auto stocks (AAP, AZO, ORLY) gained just ~1% in 2020 vs. the S&P 500's ~30% rise. Bears argue the industry faces structural/terminal challenges from EVs, while bulls believe the risk is overblown and DIY Auto retailers can still grow over the long term and/or adapt to the changing environment.

To better understand the risks and opportunities, we quantify a range of scenarios for the sector. We illustratively value the entire DIY Auto Retail industry on an intrinsic basis, with help from 1) Adam Jonas, Morgan Stanley's Auto & Shared Mobility analyst (an EV bull/ICE bear), and 2) Schwartz Advisors, an Automotive Aftermarket strategic

consulting firm (EV "realists"). Adam Jonas's model — the Running on Empty "bear" case — shows VIO shrinking at a linear rate starting in 2020. In contrast, the Schwartz base case — which we call Full Tank or the most bullish scenario we examine — shows a larger 2050 car parc than today's. Both models also vary substantially in their EV penetration over time. The more variations of EVs in the market at multiple price points, the faster EV penetration should accelerate. New entrants (it's no real secret Apple, for example, is in the process of developing an EV) are a key variable too.

Exhibit 3: The \$128b gap between the total industry values implied by the "Running on Empty" and "Full Tank" scenarios underscores the wide range of possible outcomes

	Running on Empty (MS Autos)	Half Empty (MS Retail)	Half Full (Schwartz 2X)	Full Tank (Schwartz Base)
2020				
Car Parc (m) EV %	273 0.4%	280 0.5%	280 0.5%	280 0.5%
Industry Revenue (\$b)	152	166	166	166
2030				
Car Parc (m) EV %	234 8.2%	309 8.1%	309 8.1%	309 5.0%
Industry Revenue (\$b)	143	202	203	204
2040				
Car Parc (m) EV %	198 33.3%	282 24.4%	325 30.1%	327 17.9%
Industry Revenue (\$b)	108	197	226	238
2050				
Car Parc (m) EV %	167 64.3%	243 61.4%	257 60.0%	305 37.0%
Industry Revenue (\$b)	73	161	175	232
Valuation				
Industry Valuation (\$b)	184	270	286	312
		\$128b D	ifference	

Source: Morgan Stanley Research, Schwartz Advisors

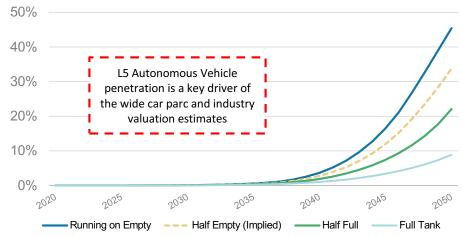
Shared mobility: an underappreciated risk? Investors mostly focus on the EV vs. ICE debate and rarely (if ever) mention the potential effects of shared vs. owned mobility trends. Yet the biggest driver of the valuation gap between the industry bull and bear cases is the number of cars on the road over time – not the mix of ICE vehicles vs. EVs. Importantly, the two more bullish Schwartz cases (the Full Tank and Half Full cases) explicitly consider the impact of rising L5 automation-enabled shared mobility penetration, which materially reduces the VIO over time and thus challenges the industry TAM. To illustrate: three of the four scenarios suggest EV penetration will reach \sim 60% by 2050, but the industry valuations in these scenarios vary by \sim \$100b. The reason is the size of the car parc: \sim 257m vehicles requiring maintenance/repair in the Half Full case (the second-most bullish case) by 2050 vs. 167m in the Running on Empty case (the most bearish case). This divergence is largely driven by differences in L5 autonomous vehicle penetration.

Autonomous vehicles could significantly shrink the car parc. Shared mobility is the most compelling use case for fully automated vehicles, likely in the form of a large centralized fleet. The significantly better utilization of autonomous vehicles means many fewer cars are needed to travel the same number of miles. This is true of shared mobility more generally, but autonomous vehicles remove the labor/driver constraint. Even owned autonomous cars could shrink the car parc with better utilization. A suburban family may have one autonomous car for their household instead of 2 non-autonomous vehicles because the driverless rides mean one car is enough to do a morning commute and drop children off at school where two cars and two drivers were

needed before. However, it is important to note that automation doesn't drive noticeable shrinkage in the car parc in any of the scenarios we studied until at least 2040. Significant regulatory and consumer confidence barriers need to be crossed before a centralized automated fleet of shared mobility vehicles can realistically operate.

Exhibit 4: L5 autonomous vehicles likely replace non-autonomous vehicles at a >1:1 rate, which could shrink the car parc



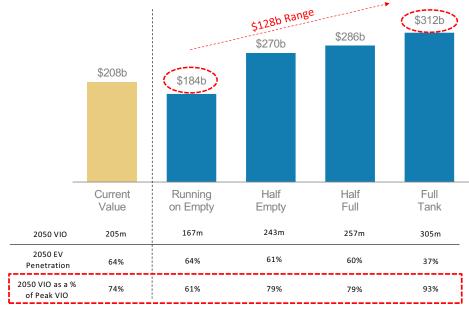


Source: Morgan Stanley Research

Our conclusion: DIY Auto stocks are discounting a relatively bearish outcome, and thus there could be upside. The bull case valuation for the DIY Auto Retail industry is ~\$312b (the Full Tank scenario, reflecting the Schwartz Advisors car parc model). The bear case value is ~\$184b (the Running on Empty scenario, reflecting Adam Jonas's car parc model). We estimate the public markets are valuing the sector at roughly ~\$208b today (based on the methodology outlined in Current Industry Valuation Implied by DIY Auto Stocks). We can also derive the market's implied valuation with the same car parc, EV penetration, and DCF assumptions as the Running on Empty bear case using the general methodology instead of the specialized total industry revenue estimates embedded in the bear case's \$184b valuation, suggesting a bearish outcome is priced in. Put together, at the DIY Auto Retail industry's current valuation, there is ~50% upside to the bull case vs. around 12% downside to the bear case over time. In other words, a longer-term investment in the DIY Auto Retail industry offers a favorable ~4:1 positive risk/reward skew, in our view.

Exhibit 5: 3 of the 4 scenarios we studied produce industry valuations above what is currently implied by the DIY Auto *stocks*

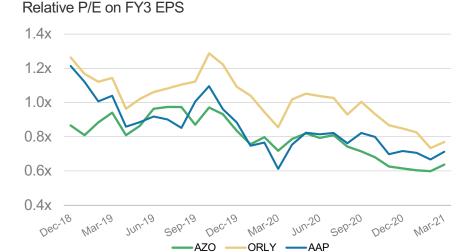
DCF-Based Total Industry Value



aq~zSource: ,Morgan Stanley Research, Schwartz Advisors

Reiterate OW on AZO, ORLY, and AAP. DIY Auto stocks' relative multiples (vs. the S&P 500) have contracted ~30% on average since the beginning of 2019. While the sharp decline in early 2020 can be attributed in part to concerns around miles driven – a key industry spend driver – amidst the COVID-19 pandemic, EV concerns have existed (and steadily grown) since before the pandemic began. Based on our analysis, at least part of the de-rating is due to an overly bearish view of the industry's viability long term.

Exhibit 6: AAP, ORLY, and AZO's relative multiples have contracted $\sim 30\%$ on average since the beginning of 2019



Source: Morgan Stanley Research. Note: relative multiples are compared to the S&P 500

We raise our AZO/ORLY/AAP PTs to \$1,640/\$560/\$195 from \$1,505/\$510/\$190. On AZO, we are raising our '21/'22 EPS estimates to \$75/\$86 (from \$72/\$81) on stronger comps than we previously modeled. Given stimulus and strong first half performance,

we believe AZO is on track for a +6% comp vs. the -2% we previously modelled. Our \$1,640 PT is based on ~19x (unchanged) '22 EPS of \$86.30. On ORLY, we are modestly raising our '22 EPS estimate to \$27 from \$26.80 assuming 10 bps more EBIT margin expansion in '22 than previously modeled and gross margin in line with 2018. We also raise our target multiple to ~20.5x, the current market multiple, which is a discount compared to ORLY's historical 1.1x relative multiple and a premium to its current 0.8x relative multiple. On AAP, we raise our '21/'22 EPS estimates to \$10.05/\$11.40 from \$9.75/\$11.05, building in the high end of AAP's '21 EBIT margin guide (8.9%) vs. the low end previously (8.7%). We continue to model 30 bps of EBIT margin expansion in '22 as expect margin initiatives to yield incremental efficiencies. Our ~17x target multiple is unchanged.

Our methodology: We took a top down approach to (illustratively) value the DIY Auto Retail sector on an intrinsic basis. Our steps are described below and our detailed model is available upon request.

- We modeled the composition of the car parc through 2050, with a focus on 1) the EV/ICE split and 2) the total number of cars on the road (governed by shared vs. owned mobility trends);
- We derived the cost difference between annual maintenance for an ICE vehicle vs. an EV (and what portion of the spend is captured by DIY Auto retailers). In general EVs cost 20-25% less to maintain/repair;
- We multiplied the number of ICEs/EVs on the road by the cost to maintain ICEs/EVs, in order to derive total industry revenue (in each year);¹
- We applied a FCF margin to total industry revenue to calculate total industry FCF (assumed margin based on the long-term average generated by AAP, AZO, and ORLY); and,
- We discounted FCF back to present value, calculated the industry's terminal value (using -2%/-0.5%/0%/+1% terminal growth assumptions in the *Running on Empty/Half Empty/Half Full/Full Tank* cases), and summed the present value of FCF and terminal value to derive total industry value.
- We then compared the total industry values derived from the 4 scenarios to our estimate of the current industry value to assess the risk/reward presented by DIY Auto at the stocks' current valuations.

Among other factors to consider, Apple (covered by Katy Huberty) is said to be developing an EV, which could significantly increase EV penetration and Apple's share of the market over time. Whether today's DIY players stand to benefit or lose depends on their ability to fundamentally adapt their business strategies. For example, DIY players could preserve their TAM if they can service Apple's EV fleet in the future. Admittedly, the outcomes are very wide and may take many years to play out.

Where we could be wrong: 1) Our long-run forecasts to 2050 are by nature unknown, and there could be significant deviation on EV penetration and the size of the car parc. 2) EV penetration will largely depend on affordability and government mandates/emissions regulations, which can be unpredictable. 3) The car parc could be

significantly impacted by shared mobility, and there is limited visibility into the speed of automation and associated legal/regulatory processes. 4) To calculate industry revenues, we assume the average annual maintenance cost for an EV is 25% below an ICE vehicle; absolute and relative maintenance costs may change over time. 5) The bull/bear skew depends on our current industry value, which entails some subjectivity as we extrapolate the current enterprise values of the 3 DIY Auto retailers in our coverage (AAP, AZO, ORLY) to the broader space.

Comparing the Cases and Key Drivers

We examined and established DCF-backed total industry values for 4 cases, named Running on Empty, Half Empty, Half Full, and Full Tank. Below we highlight some key considerations & assumptions that underlie the two main drivers of total industry value: vehicles in operation (VIO) and the EV/hybrid/ICE mix.

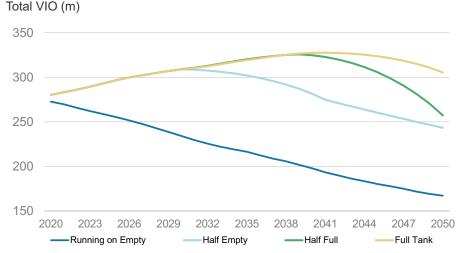
Total Vehicles in Operation (VIO)

The first consideration in evaluating the future of the DIY Auto Industry is establishing the size of the TAM going forward. For DIY Auto, the TAM is (for now) essentially synonymous with the number of ICE vehicles on the road. Thus forecasting whether VIO should grow or shrink over time is a critical debate. The case for a shrinking VIO largely revolves around two related factors: automation and shared mobility. Essentially, shared mobility improves vehicle efficiency and utilization and leaves streets less congested. Further, shared mobility reduces the need for individual ownership of cars which could consolidate the same amount of miles driven into fewer vehicles with higher utilization rates. Secondarily, automation - and specifically L5 fully autonomous vehicles - can supplement and accelerate the trend toward shared mobility, even further reducing the number of cars on the road. Bulls argue that even with automationenabled shared mobility, consumers will continue owning and purchasing vehicles for the agency it provides them. All four models assume VIO peaks before 2050, but the range in total VIO at that time varies by over 120m across the cases. For the Half Empty case, peak VIO occurs at the midpoint of the Running on Empty case's 2020 and Half Full and Full Tank cases ~2040.

Exhibit 7: In the "Running on Empty" case, VIO has already peaked

	Running on Empty	Half Empty	Half Full	Full Tank
Peak VIO Year	2020	2030	2039	2041
Peak VIO (m)	273	309	326	328
2050 VIO (m)	167	243	257	305

Exhibit 8: The models we examine encompass a wide range of VIO outcomes by 2050



Source: Morgan Stanley Research

Aside from shared mobility, other trends to watch include suburbanization vs urbanization and public transit availability. Unsurprisingly, Uber and Lyft adoption has been stronger in urban areas where there is more driver availability. While we expect shared mobility adoption to steadily increase in suburban areas, the labor/driver constraints in those markets alongside lower population density makes owning a car more advantageous. Hence if suburbanization trends continue post-COVID, widespread shared mobility adoption may take longer to play out. Automation largely eliminates the driver shortage problem, but true L5 autonomous vehicles are many years out (perhaps decades). Improved public transit offerings, especially in suburban areas, also have the potential to reduce long term vehicle ownership, but this is currently largely dependent on local policy and funding. Further, large urban areas with the most extensive public transit offerings also have the highest rates of Uber and Lyft adoption, so the dynamics between public transit and owned shared mobility aren't yet clear.

EV/Hybrid/ICE Mix

Taking the VIO as given, the mix of vehicle types is a key variable in assessing the DIY Auto industry TAM. For example, even if VIO triples by 2050, DIY Auto retailers would still face an existential threat if 99% of the VIO by that point has transitioned to EVs. Between the four models we examined, there are essentially two EV/Hybrid/ICE distributions to examine (Running on Empty, Half Empty, and Half Full have similar ending distributions, though on a different VIO base). In every scenario except the Full Tank bull case - in which 2050 EV penetration reaches 37% by 2050 - EV penetration reaches 60% by 2050. For context, the Running on Empty scenario has EV penetration exceeding 37% in 2042.

Exhibit 9: In three of the four cases, EV penetration reaches 60% by 2050

	Running on Empty	Half Empty	Half Full	Full Tank
2030 EV Penetration	8%	8%	8%	5%
2040 EV Penetration	33%	24%	30%	18%
2050 EV Penetration	64%	61%	60%	37%

Most agree that there will be fewer ICE vehicles in operation in 2050 than today; the consensus for hybrids, which are ICE vehicles for maintenance purposes, is less clear.

The timing and degree of hybrid adoption largely depends on innovation in EVs that can make them faster, easier, and cheaper to produce. For context, the current cost of a Tesla exceeds the average annual family income in the US. Until BEVs can be made available at comparable price points as ICE vehicles and/or the market for used EVs expands, hybrids represent a relatively eco-friendly option at a more accessible price point - but one that is less bearish for the DIY Auto space.

Exhibit 10: Even the Full Tank case, which builds in a larger car parc in 2050 than in 2020, assumes the number of ICE and Hybrid vehicles declines over time.

ICE and Hybrid Vehicles in Operation

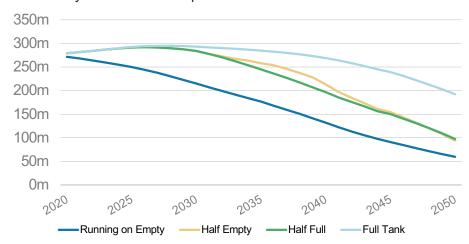


Exhibit 11: EV penetration should grow substantially over time

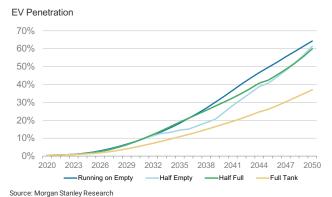


Exhibit 13: As EV and hybrid vehicles account for a larger share of new car sales, ICE penetration should decline

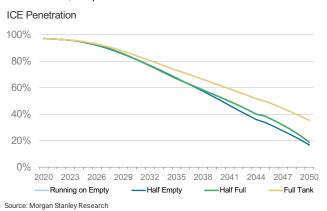
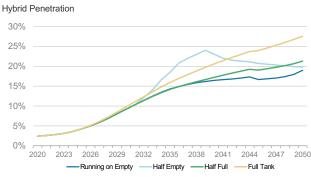


Exhibit 12: The level and timing of hybrid penetration has a material impact on industry revenues



Source: Morgan Stanley Research

DIY Auto Retail investor sentiment has rarely been this cautious. We think a key reason has been the flurry of new "milestones" from regulators/governments and auto manufacturers. While our scenarios push us away from the *Running on Empty* case, we acknowledge this mandate risk is real, though it seems more intense in Europe than in the US (France, Norway, and the UK have already set dates for ICE bans). The most notable case of a US mandate at the moment is in California, which is moving to 100% EV sales of new cars by 2035, with Washington and Hawaii considering similar mandates.

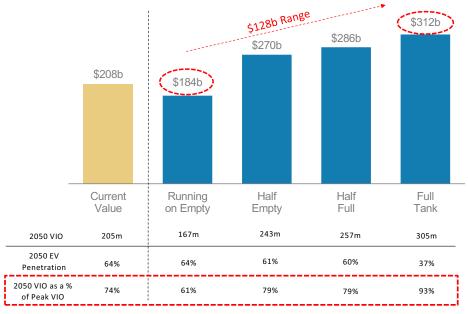
Exhibit 14: Auto manufacturers are setting their own targets for EV production/mix

United States	Targets
Ford	1m BEVs by 2025 across NA and China
General Motors	All BEV in passenger cars in Europe by 2026
Japan	Targets
Toyota	1m annual sales or more BEV/*FCV and 4.5m annual sales or more for HEV/PHEV by 2025+
Nissan	1m annual sales or more of electrified cars including BEV and HEV by 2024
Honda	15% BEV/FCV annual sales penetration and 50% for HEV/PHEV by 2030
EU OEM	Targets
BMW	25%/33%/50% new vehicle sales penetration by 2021/2025/2030
Daimler	2%/9%/15%/50%+ new vehicle sales penetration by 2019/2020/2021/2030
Volkswagen	4%/20% new vehicle sales penetration 2020/2025
PSA	Entire range electrified for LCVs and PCs by 2021
Renault	30%/35% BEV/Hybrid new vehicle sales penetration by 2025
Source: Morgan Stanley Researc	h

A Deep Dive into the Cases

Exhibit 15: 3 of the 4 scenarios we studied produce industry valuations above what is currently implied by the DIY Auto *stocks*

DCF-Based Total Industry Value

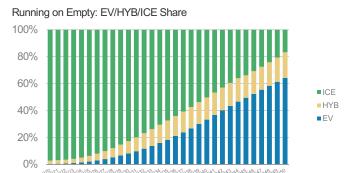


Source: Morgan Stanley Research

Running on Empty

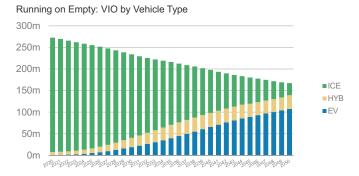
With 167m VIO in 2050, 40% below the current VIO, this "bear" case implies a total industry value of ~\$184b. This case, which is based on the Morgan Stanley Auto team's forecasts, is by far the most bearish outcome for DIY Auto names. The most significant driver of the low total industry value is a bearish VIO forecast, which in this scenario has already peaked. The model suggests a largely linear decline in VIO from now until 2050. This alone significantly reduces the total industry value. On top of that, this case builds in some of the more aggressive assumptions we have seen for EV penetration, with EVs representing a third of the car parc by 2040 and nearly 65% by 2050.

Exhibit 16: In the "Running on Empty" case, EV penetration exceeds 60% by 2050



Source: Morgan Stanley Research. Note: The MS Autos team does not break out hybrid penetration in their model. We used the Schwartz 2X case as a guide to break out hybrids from EVs for illustrative purposes. This does not affect total industry value.

Exhibit 17: The MS Autos team models a largely linear decline in the car parc from 2020-2050

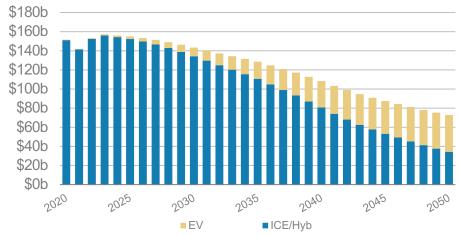


Source: Morgan Stanley Research. NOTE: The MS Autos team does not break out hybrid penetration in their model. We used the Schwartz 2X case as a guide to break out hybrids from EVs for illustrative purposes. This does not affect total industry value.

Notably, the Running on Empty case implies L5 penetration begins to ramp in 2030, reaching 95% of sales by 2050. Though not a direct driver of the model, growth in automation and shared mobility are key qualitative factors which influence the MS Autos team's bearish view of VIO. We calculated the total industry value of ~\$184b implied by the EV mix and VIO forecasts with a DCF analysis with 2050 as the terminal year. This embeds ~\$73b of industry revenue in 2050 (or a ~2.5% CAGR decline from 2020-2050), a 10% FCF margin, 7% discount rate, and -2% terminal growth rate.

Exhibit 18: In this case, industry revenues decline beginning in 2023. By 2050, 53% of industry revenues are from EVs.





Source: Morgan Stanley Research

Half Empty

We considered the wide range of outcomes between the Running on Empty and Full Tank cases and built a case of our own reflecting what we believe to be the most likely progression. It is the second most bearish case of the 4 we examined. Running on Empty has VIO peaking in 2030, while the more bullish Full Tank and Half Full cases result in peak VIO around 2040. In Half Empty, we model a peak in 2030 at 309m vehicles, with 243m vehicles in 2050 (~25m below Half Full but well above Running on Empty's 167m).

Our 2050 EV/Hybrid/ICE distribution resembles both the *Running on Empty* and *Half Full* ending distributions, but between 2030 and 2040 we model a higher share of hybrids vs. BEVs. The timing of hybrid adoption vs. EV adoption is a key debate (discussed below). We believe until EVs are widely available on demand at more accessible price points, hybrids are likely to be purchased at an increased rate as consumers become more eco- (and tax benefit) conscious without breaking the bank. This positively impacts total DIY Auto industry revenues in those years as hybrid maintenance costs are in-line with ICE vehicles.

Exhibit 19: "Half Empty" case includes stronger hybrid adoption in the 2030s

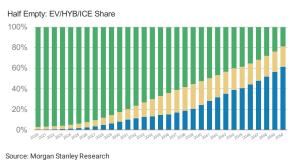
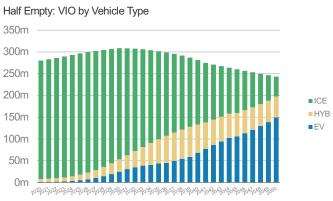


Exhibit 20: We build in a decline in VIO starting in 2030



Source: Morgan Stanley Research

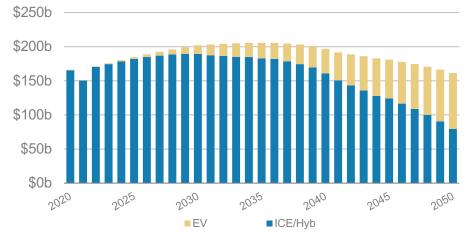
■HYB

■ EV

Our model produces a total industry value of ~\$270b. This is based on a DCF embedding ~\$161b of industry revenue in 2050 (or a slight CAGR decline from 2020-2050), a 10% FCF margin, 7% discount rate, and -0.5% terminal growth rate. While not a direct driver in the model, we do believe that automation is likely to put pressure on the size of the car parc by the 2040s, and un-automated shared mobility could reduce car purchases as soon as 2030, hence the 2030 VIO peak. We are also sympathetic to the argument that consumers will not necessarily give up the agency afforded to them by owning their own vehicle, fully automated or not, so we set up our 2050 VIO above Running on Empty.

Exhibit 21: In this case, industry revenues peak in 2035. By 2050, 51% of industry revenues are from EVs.

Half Empty: Industry Revenue by Car Type

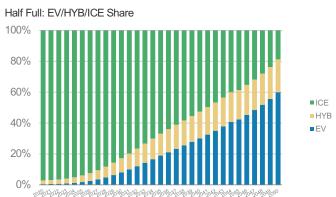


Source: Morgan Stanley Research

Half Full

The Half Full case (Schwartz's 2X case) was built to reflect the possible outcome if regulators introduce mandates to accelerate EV adoption. In contrast with the Full Tank "bull case" scenario, the Half Full case includes a 2050 VIO of 257m, modestly below the current VIO, and the EV/Hybrid/ICE mix resembles the Running on Empty bear case model. VIO peaks in 2039 in Half Full and while EVs grow at a similar average rate in both Schwartz models (~17% in the base case vs. ~18% in the 2X case), ICE vehicles are scrapped faster allowing EVs to take significantly more share. Automation is the primary driver of the accelerated scrap rate of ICE vehicles in this model. In 2050 L5 AVs reduce VIO by 85m compared to 40m in the Full Tank (Schwartz's Base case) model. The pre-AV impacted VIO in this model is only 3m vehicles below the pre-AV impacted VIO in the Full Tank model. Our DCF produces a ~\$286b industry value and incorporates \$175b in industry revenue in 2050 (a slightly positive CAGR from 2020-2050), 10% FCF margin, 7% discount rate, and 0% terminal growth.

Exhibit 22: EV penetration in this model resembles the Running on Empty case



Source: Morgan Stanley Research

Exhibit 23: This case builds in a steeper decline post 2040 and smaller 2050 car parc due primarily to L5 AVs

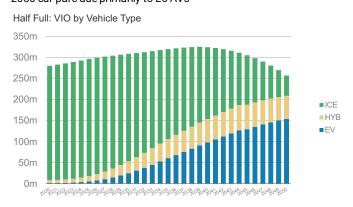
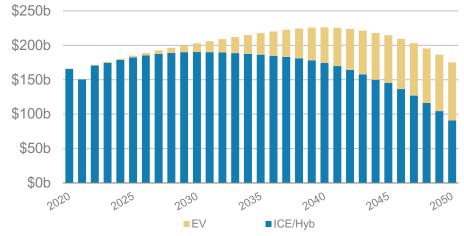


Exhibit 24: In this case, industry revenues peak in 2040. By 2050, 48% of industry revenues are from EVs.

Half Full: Industry Revenue by Car Type



Source: Morgan Stanley Research

■ICE ■HYB

■EV

Full Tank

The most bullish of the cases we examined, the *Full Tank* case (Schwartz Advisors base case) includes 305m VIO in 2050 and EV penetration of 37% (compared to 33% by 2030 in *Running on Empty*). 305m VIO would actually represent a ~9% increase from today's ~280m car parc. Interestingly, Schwartz Advisors expects the share of EVs and Hybrids in 2050 (37% and 28% respectively) to be roughly the same as the share of just EVs in the Morgan Stanley Autos model. Recall Hybrid maintenance costs resemble those of an ICE vehicle, not an EV, so the mix in this model is a significant driver of the bullish total industry value of ~\$312b, as well as the overall increase in VIO. The DCF for this case incorporates industry revenue of ~\$232b in 2050 (or a +1% revenue CAGR from 2020-2050), a 10% FCF margin, 7% discount rate, and 1% terminal growth rate.

Exhibit 25: 2050 EV penetration lands at 37% in the "Full Tank" model, which is the most bullish case

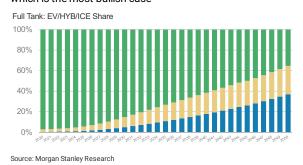
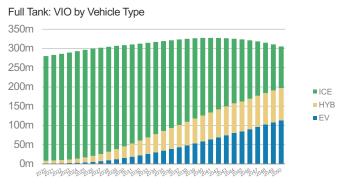


Exhibit 26: While this scenario builds in a decline in VIO post 2040, the 2050 car parc is larger than today's



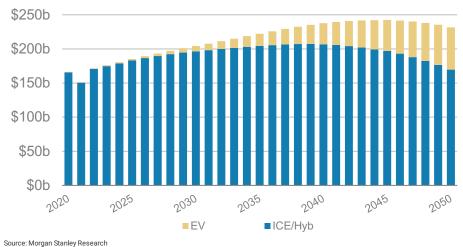
Source: Morgan Stanley Research

L5 automation is a direct driver of the *Full Tank* VIO forecast, and in 2050 this reduces VIO by ~40m vehicles, most of which are ICE vehicles. This model builds in a 1.5x replacement rate to account for increased shared mobility. The logic behind the assumption is that for every new fully autonomous vehicle on the road, improved efficiency takes 1.5 cars off the road. It's possible this replacement rate is conservative

and autonomous cars could drive sharper reductions in VIO. Until the mid-2040s, all of the cars replaced are ICE vehicles, which are older on average and already being phased out, but by 2045, autonomous vehicles begin to replace some older models of BEVs and hybrids as well. This math implies that in the absence of L5 automation, total VIO could be 345m in 2050.

Exhibit 27: In this case, industry revenues peak in 2046. By 2050, just 26% of industry revenues are from EVs.





Current Industry Valuation Implied by DIY Auto Stocks

We estimate the industry is currently being valued at ~\$208b. For this analysis, we use calendar 2019 data from the DIY Auto retailers (AAP, AZO, ORLY) and our industry revenue model as a baseline. We don't use 2020 data because it's not a representative snapshot of the industry revenue and profit mix by company. From the revenue breakdown in Exhibit 28, we isolate the revenue/EBITDA contributions of the big three public DIY Auto retailers and then estimate how much EBITDA the rest of the industry generates. This assumes an 11% EBITDA margin for other participants (per industry experts and channel checks), which is below the ~18% aggregate EBITDA margin of AAP/AZO/ORLY.

Exhibit 28: Industry revenue breakdown

2019 Industry Revenue (\$b)	
ORLY Revenue	\$10
AAP Revenue	\$10
AZO Revenue	\$12
Implied Rest of Industry Revenue	\$110
= Industry Revenue	\$142

Source: Company data, Morgan Stanley Research, Auto Care Factbook. Note; AZO revenue is calendarized.

Exhibit 29: Industry EBITDA breakdown

2019 Industry EBITDA (\$b)	
ORLY EBITDA	\$2
AAP EBITDA	\$1
AZO EBITDA	\$3
Rest of Industry EBITDA	\$12
Rest of Industry EBITDA Margin	11%
= Industry EBITDA	\$18

Source: Company data, Morgan Stanley Research

We derive the current ~\$208b industry valuation through a two-pronged methodology.

There are two pieces to our methodology. First, we start with the current enterprise

values of AAP, AZO, and ORLY per public data and updated market capitalizations. Second, we estimate what the rest of the industry would be valued at in the public markets, which is the most subjective piece of our analysis. We do this applying a 10x EV/EBITDA multiple on the ~\$12b of estimated 2019 EBITDA that the rest of the industry generated. This compares to a ~14.5x multiple on the 2019 EBITDA that AAP/AZO/ORLY generated (based on current EVs). We apply a lower multiple to respect the reality that EBITDA dollars generated by the rest of the industry (consisting of smaller, largely private players with lower margins) would be valued at a lower multiple than the Big 3 publics. We choose 10x because it is a healthy discount to the ~14.5x multiple of the public companies, and is also in-line with typical trailing acquisition multiples in the industry, per conversations with industry experts and our channel checks.

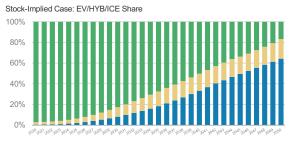
Exhibit 30: Our industry valuation methodology points to a ~\$208b current industry value

	AAP/AZO/ORLY		Rest of Industry		Total Industry
2019 EBITDA	\$6 billion	+	\$12 billion	=	\$18 billion
Multiple	14.5x (implied)		10x		11.5x
Current Value	\$87 billion	+	\$121 billion	=	\$208 billion

Source: Company data, Morgan Stanley Research. Note: current value defined as enterprise value.

The current industry value is discounting a car parc between the Half Empty and Running on Empty cases and EV penetration in line with Running on Empty. We built up a car parc and EV/hybrid/ICE split to reach the ~\$208b stock-implied industry value. There are multiple ways to arrive at this valuation (a larger car parc and higher EV penetration, a smaller car parc and higher EV penetration, etc) so the below case should be viewed as just one scenario. Interestingly, calculating total industry revenue for the Running on Empty case using the same methodology as the other three cases (in our valuation it is calculated differently using owned vs shared miles as well as EV/ICE split) produces the current stock-implied value, suggesting a bearish outcome is priced in.

Exhibit 31: Using the same methodology as the other 4 cases, the "Running on Empty" EV/hybrid/ICE split yields the \sim \$208b stockimplied industry value



Source: Morgan Stanley Research

Exhibit 32: The stocks are pricing in a car parc at the midpoint of the Running on Empty and Half Empty cases

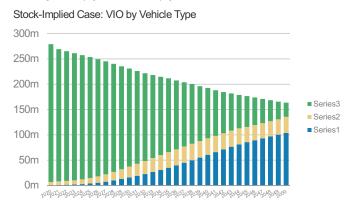
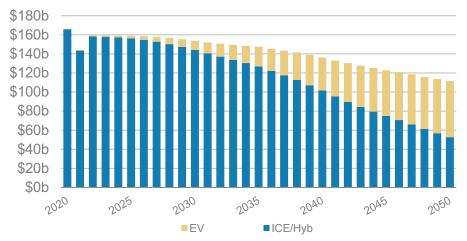


Exhibit 33: In this case, industry revenues peak in 2020. By 2050, 53% of industry revenues are from EVs.

Stock-Implied: Industry Revenue by Car Type



Source: Morgan Stanley Research

Below, we summarize the DCF assumptions embedded in the 4 models. These

assumptions are detailed in each of the case descriptions above and summarized in the below exhibit for comparative purposes. As can be seen below, the two key flex points are the 2050 industry revenue forecasts (which is based on the detailed industry models) and (to a lesser extent) the terminal growth rate. We leave the free cash flow margin at 10% and discount of 7% unchanged across our scenarios to more directly isolate the impact of various top line industry outcomes. It is possible and perhaps likely the 10% free cash flow margin would differ throughout the scenarios, though the manner and magnitude are uncertain. It is also not a certainty that a more bearish top line industry outcome would necessarily drive a lower margin; for example if this caused more widespread industry consolidation, margins could remain steady despite a declining revenue base.

Exhibit 34: DCF assumptions across the 4 scenarios; industry revenue and terminal growth rate are the two key flexes

	Running on Empty	Half Empty	Half Full	Full Tank
2050 Industry Revenue (\$b)	73	161	175	232
2020-2050 Revenue CAGR	-2.4%	-0.1%	0.2%	1.1%
Free Cash Flow Margin	10%	10%	10%	10%
Discount Rate	7%	7%	7%	7%
Terminal Growth Rate	-2%	-1%	0%	1%
Total Industry Value (\$b)	184	270	286	312
% Upside / Downside vs. Current Value	-12%	29%	37%	50%
Source: Company data, Morgan Stanley Research				

In 3 of the 4 scenarios, the industry appears undervalued. In other words, in all scenarios but the *Running on Empty* "extreme" bear case, the industry's intrinsic valuation is above what is implied by the DIY Auto stocks. These three scenarios present upside of roughly 30-50%, while the *Running on Empty* case suggests there is ~12% downside. The bull to bear skew thus skews positive by a ~4:1 ratio. Perhaps more importantly, to believe the industry is overvalued one must subscribe to what we view as a fairly draconian long-term outlook on EV penetration and shared mobility. This may turn out

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to be the reality, but in other scenarios - which still imply an industry under structural threat - we think the stocks are discounting too bearish an industry outcome.

Key Debates

The Role of Hybrids

Hybrid vehicles include electric components as well as an ICE, but the annual maintenance cost resembles traditional ICE vehicles. Using a DCF methodology means the mix of electric/hybrid/ICE vehicles in the progression to 2050 can materially impact the total industry value. Hybrids are currently more widely available than BEVs at a more affordable price point. It is generally accepted that over time ICE vehicles will lose share of total VIO over time, but if they cede this share to hybrids as well as BEVs over the long term, it's good news for DIY Auto Parts retailers. Said another way, the more hybrids take share from ICE vehicles relative to BEVs, the larger the DIY Autos TAM is and the longer it can stick around. As BEVs become more accessible at lower price points, the value proposition of Hybrids is diminished, but the timeline for such developments is unclear. Monitoring Hybrid penetration relative to BEVs, in the context of total VIO shrink (or growth), will be key in forecasting long term industry revenues.

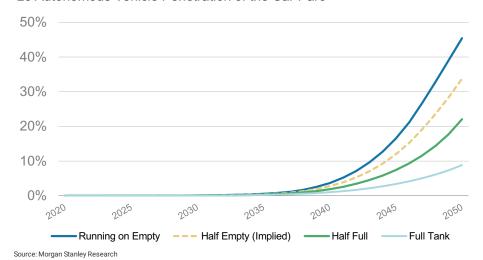
Autonomous Vehicles and Shared Mobility

The role of automation in expanding shared mobility is a core component of long-term

VIO forecasts. Currently, the average car may spend only 10% of the day in use, and the other 90% parked. Shared mobility promises vastly increased efficiency by dramatically increasing the miles/day of a single vehicle, therefore reducing the number of vehicles on the road. At a high level, the logic is that availability of shared mobility options will lead households to own fewer vehicles (why buy a car and have to deal with upkeep and parking when you could just take Ubers). L5 automation (full automation with no driver intervention or steering wheel) could drive cost and efficiency optimization, opening the possibility for better traffic coordination, safety, and all without the cost of a driver. In many ways, growth in shared mobility is tied to improvements in automation. L5 automation-enabled shared mobility is still a long way off (it will take millions of miles of test driving to achieve L5-automation that will be accepted by consumers and regulators), but the possibility represents the most existential threat to the size of the car parc in the long term.

Exhibit 35: Shared mobility enabed by L5 AVs is a significant driver of variation between car parc forecasts in our model





There are some partial offsets to the threat posed by automation and shared mobility to long term total VIO. The first is tied to demand timing. While it is certainly inefficient to some extent that vehicles are only used 10% of the day, it isn't realistic to bring utilization to 100% because many consumers need to use their vehicles at the same time. A shared mobility vehicle may hit 100% utilization, but there still need to be as many cars as morning commuters, barring any major shifts in public transit usage. Therefore, VIO utilization will always be sub-100%. Second, the cultural attachment to personally owned cars will not disappear over night. It is possible that even with fully automated shared mobility options available, consumers will still want to own and drive their own cars.

The Miles Driven Argument

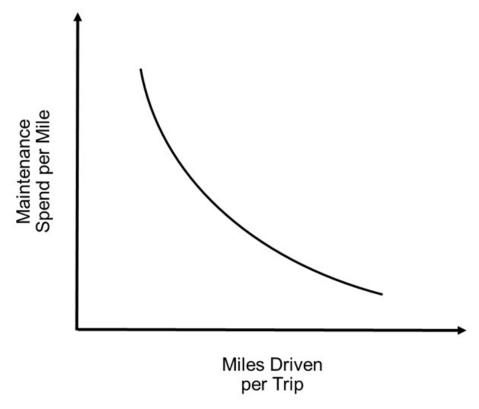
In some ways, miles driven trends could be considered an offset to a shrinking car parc.

The mechanism by which shared mobility drives shrinkage in the car parc is by improving utilization, or needing fewer vehicles to travel the same number of miles. In our analysis, we calculate total industry value based on the maintenance cost per vehicle and the number of vehicles in the car parc. An alternative methodology could estimate the maintenance cost per mile travelled and forecast miles driven and assume that as long as miles driven are flat, the size of the DIY Auto industry shouldn't necessarily shrink, even with fewer vehicles. In other words, if maintenance costs per mile and total miles travelled are consistent, whether those miles are travelled by a fleet of 100m vehicles or 200m vehicles should be immaterial to the size of the industry.

Even if miles driven remain the same as the car parc shrinks, DIY Auto Retailers could still see a headwind. Most powertrain wear occurs in the first few miles of travel as cold engine, transmission and driveline components are lubricated and come up to speed and temperature. Once at a steady state speed, the wear rate declines. Therefore, two vehicles travelling 500 miles sustain more wear than a single vehicle travelling 1,000 miles. Even if miles driven are flat over time, fewer vehicles on the road still means less maintenance spend. Also, intuitively we would expect miles driven to decline as shared mobility becomes more prominent. Uber Pool is a current example; If two commuters

Uber Pool instead of driving individually, the miles driven for that trip is effectively halved.

Exhibit 36: Flat miles driven can't fully offset a decline in the car parc because maintenance spend per mile declines as utilization increases



Source: Morgan Stanley Research

Do the DIY Auto Retailers Have Time to Adapt?

There are bulls who acknowledge the threat posed by EVs to the DIY Auto TAM, but feel confident the tail is long enough that the businesses have time to adapt. Part of this assumption depends on 1) how fast you think EV penetration grows and 2) when you think VIO peaks. If EV penetration grows quickly within a shrinking car parc, DIY Auto businesses may be dead in the water. However, if the VIO continues to grow as EV penetration rises, the DIY Auto TAM may remain intact for some time, allowing businesses like ORLY, AZO, and AAP to adjust their models. As a result, the EV/DIY Auto Debate isn't just about the mix and number of cars on the road, it's about the timing of any shifts or declines and the flexibility of the businesses.

DIY Autos retailers have several options when it comes to transforming their businesses to meet the demands of a changed environment. The most obvious is expanding into additional product categories. The first step is likely forging relationships with EV manufacturers today and sowing the seeds early to ensure access to relevant products like electric batteries later. Also, tires are a significant part of the Auto Parts TAM that we typically ignore because AZO, ORLY, and AAP don't carry them, but they could represent a substantial opportunity as heavier EVs actually tend to wear down tires faster than ICE vehicles. If fleets become more centralized with shared mobility, the

distributor role becomes more pressured as large fleet operators can source directly from manufacturers, but it's an option worth considering. DIY Auto retailers can also lead the transition toward EVs by helping mechanics to strategically plan and prepare their businesses and offering tech and EV training. In the meantime, the changing dynamics will favor scale players, and DIY Auto retailers should be aggressively moving to consolidate market share.

Risk Reward - AutoZone Inc. (AZO.N)

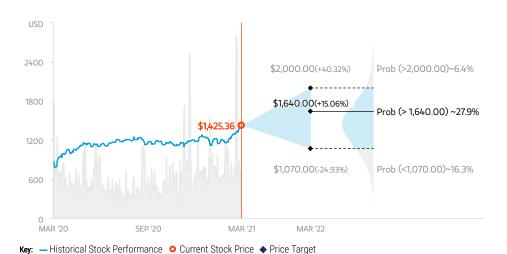
Top Pick in DIY Auto; High Quality Compounder Gaining Share

PRICE TARGET \$1,640.00

Our \$1,640 price target is based on ~19x our F'22e EPS of ~\$86. In F'21 we forecast 6% comps and ~100 bps EBIT margin contraction (with ~45 bps/~55 bps gross margin contraction/SG&A deleverage). This results in EBIT growth of 1% in F'21 (0% EPS growth). In F'22 we forecast 2.5% comps and 80 bps EBIT margin expansion (~55 bps gross margin expansion and 25 bps SG&A leverage). This yields 9%/15% EBIT/EPS growth in F'22.



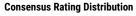
RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)

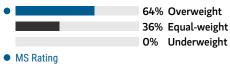


Source: Thomson Reuters, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 30 Mar, 2021. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology <a href="https://example.com/here-neutral-

OVERWEIGHT THESIS

■ AZO is our top pick in DIY Auto. We see it as a high quality retailer with the ability to compound earnings/FCF growth over time. While not immune to a tougher macro backdrop (fewer miles driven), we believe AZO is best positioned through any recession given its leading exposure to the more defensive DIY segment (~80% of sales). In addition its DIFM growth was accelerating pre-COVID and we think it can gain more share in that segment going forward. In our view, ongoing share gains coupled with solid expense management should allow AZO to overcome headwinds from less driving in the near- to mediumterm





Source: Thomson Reuters, Morgan Stanley Research

Risk Reward Themes

Earnings Quality: Positive
Macroeconomics: Positive
Self-help: Positive

View descriptions of Risk Rewards Themes here

BULL CASE

\$2,000.00

BASE CASE

\$1,640.00

BEAR CASE

\$1,070.00

~22.5x 2022 EPS of ~\$89, or ~17x EV/EBITDA

Our \$2,000 price target is based on ~22.5x our F'22 EPS of ~\$89. In F'21 we forecast +8.5% comps and ~75 bps EBIT margin contraction (with ~35 bps/~40 bps gross margin contraction/SG&A deleverage). This results in EBIT growing by 5% in F'21 (+4.5% EPS growth buoyed by share repurchases). In F'22 we forecast ~3.5% comps and ~40 bps EBIT margin expansion (~10 bps gross margin expansion combined with SG&A leverage). This yields 8%/14% EBIT/EPS growth in 2022. We model EPS of ~\$78/~\$89 in F'21/F'22.

~19x F'22 EPS of ~\$86, or ~15x EV/EBITDA

Our \$1,640 price target is based on ~19x our F'22e EPS of ~\$86. In F'21 we forecast 6% comps and ~100 bps EBIT margin contraction (with ~45 bps/~55 bps gross margin contraction/SG&A deleverage). This results in EBIT growth of 1% in F'21 (0% EPS growth). In F'22 we forecast 2.5% comps and 80 bps EBIT margin expansion (~55 bps gross margin expansion and 25 bps SG&A leverage). This yields 9%/15% EBIT/EPS growth in F'22.

~16x 2022 EPS of ~\$67, or ~12.5x EV/EBITDA

Our \$1,070 price target is based on ~16x our F'22 EPS of ~\$67. In F'21 we forecast +5% comps and ~120 bps EBIT margin contraction (with ~55 bps/~65 bps gross margin contraction/SG&A deleverage). This results in EBIT declining by 2% in F'21. In F'22 we forecast +1.5% comps and ~250 bps of EBIT margin erosion, 30 bps higher gross margins, and ~280 bps SG&A deleverage. This yields -11%/-7% EBIT/EPS growth in F'22. We model EPS of ~\$73/~\$67 in F'21/F'22...

Risk Reward - AutoZone Inc. (AZO.N)

KEY EARNINGS INPUTS

Drivers	2020	2021e	2022e	2023e
Comps (%)	8.6	6.2	2.5	2.5
Gross Margin (%)	53.6	53.2	53.7	53.7
EBIT Margin (%)	19.1	18.1	18.9	19.0
Total sq footage growth (%)	2.3	2.9	3.0	1.8
SGA per sqft growth (%)	2.0	5.5	1.0	1.6

CATALYST CALENDAR

Date	Event	Source: Thomson Reuters, Morgan Stanley
24 May 2021 - 28 May 2021	Q3 2021 Autozone Inc	c Earnings Release

INVESTMENT DRIVERS

- Sales growth (comps and store expansion)
- Expenses/margins
- Consistent free cash flow generation and shareholder return via buybacks

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate View explanation of regional hierarchies <u>here</u>

MS ALPHA MODELS

5/5 24 Month Horizon	5/5 most	3 Month Horizon
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Source: Thomson Reuters, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Longer than expected industry shift towards DIY; share gains in both DIY and DIFM segments
- Shift to DIY insulates gross margin headwinds
 The state of th
- Tapering of investments/higher expense growth

RISKS TO DOWNSIDE

- Less than expected share gain amid recession
- Greater than expected margin pressure due to rising expenses and ongoing investments
- Increasing e-commerce penetration in the DIY market

OWNERSHIP POSITIONING

Inst. Owners, % Active	65.4%		
HF Sector Long/Short Ratio	2.5x		
HF Sector Net Exposure	15.7%		

Thomson Reuters; MSPB Content. Includes certain hedge fund exposures held with MSPB. Information may be inconsistent with or may not reflect broader market trends. Long/Short Ratio = Long Exposure / Short exposure. Sector % of Total Net Exposure = (For a particular sector: Long Exposure - Short Exposure) / (Across all sectors: Long Exposure - Short Exposure).

MS ESTIMATES VS. CONSENSUS



Source: Thomson Reuters, Morgan Stanley Research

Risk Reward - O'Reilly Automotive Inc (ORLY.O)

Best-In-Class Model Keeps Us Overweight

PRICE TARGET \$560.00

Our \$560 price target is based on ~20.5x our 2022 EPS of \$27. In 2021 we forecast -1% comps and 160 bps EBIT margin contraction (10 bps gross margin expansion offset by SG&A deleverage). This results in EBIT declining by ~6% in 2021. In 2022 we forecast 4% comps and ~40 bps EBIT margin expansion (~25 bps gross margin gain helped by 15 bps SG&A leverage). This yields ~10%/17% EBIT/EPS growth in '22 (with EPS growth buoyed by share repurchases).

Consensus Price Target Distribution

\$460.00

MS PT

Source: Thomson Reuters, Morgan Stanley Research

Morgan Stanley Estimates

OVERWEIGHT THESIS

■ We view ORLY as a best-in-class operator in the defensive DIY Auto space, which typically outperforms during recessions. Although the sector faces headwinds from a tougher macro backdrop (fewer miles driven), ORLY has the best track record of share gains among its peers. We expect it to gain enough share to partly offset sales/earnings pressure from less driving in the medium-term. A positive risk/reward skew keeps us Overweight.

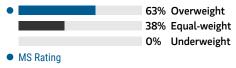
RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)



Key: — Historical Stock Performance ○ Current Stock Price ◆ Price Target

Source: Thomson Reuters, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 30 Mar, 2021. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology here

Consensus Rating Distribution



Source: Thomson Reuters, Morgan Stanley Research

Risk Reward Themes

Earnings Quality: Positive
Macroeconomics: Positive
Share Gain: Positive

View descriptions of Risk Rewards Themes here

BULL CASE \$675.00 BASE CASE ~23x 2022e EPS of ~\$29.40, or ~16.5x ~20.5x 2022e EPS of ~\$2

~20.5x 2022e EPS of ~\$27, or ~15.5x EV/EBITDA

\$560.00

Our \$675 bull case is based on ~23x our 2022 EPS of \$29.40. In 2021 we forecast 1% comps and ~100 bps EBIT margin contraction (with ~40 bps gross margin expansion offset by SG&A deleverage). This results in -0.5% EBIT decline in 2021 (4.5% EPS growth helped by share repurchases). In 2022 we forecast 5% comps and 70 bps EBIT margin expansion (50 bps higher gross margin aided by 20 bps SG&A leverage). This yields ~12%/20% EBIT/EPS growth in 2022. We model EPS of \$24.60/\$29.40 in 2021/2022.

EV/EBITDA

Our \$560 price target is based on ~20.5x our 2022 EPS of \$27. In 2021 we forecast -1% comps and 160 bps EBIT margin contraction (10 bps gross margin expansion offset by SG&A deleverage). This results in EBIT declining by ~6% in 2021. In 2022 we forecast 4% comps and ~40 bps EBIT margin expansion (~25 bps gross margin gain helped by 15 bps SG&A leverage). This yields ~10%/17% EBIT/EPS growth in '22 (with EPS growth buoyed by share repurchases).

BEAR CASE \$400.00

~16x 2022e EPS of ~\$24.90, or ~12.5x EV/EBITDA

Our \$400 bear case is based on 16x our 2022 EPS of \$24.90. In 2021 we forecast -4% comps and ~200 bps EBIT margin contraction (15 bps lower gross margin compounded by SG&A deleverage). This results in EBIT declining by 10% in 2020 (-6% EPS decline). In 2022 we forecast ~2% comps and 20 bps of EBIT margin expansion (flat gross margin and ~20 bps SG&A leverage). This yields 6%/13% EBIT/EPS growth in 2022. We model EPS of \$22.05/\$24.90 in 2021/2022.

Risk Reward - O'Reilly Automotive Inc (ORLY.O)

KEY EARNINGS INPUTS

Drivers	2020	2021e	2022e	2023e
Comps (%)	10.9	(1.7)	4.0	2.5
Total sq footage growth (%)	3.6	15.8	11.3	6.5
Gross Margin (%)	52.4	52.6	52.8	52.9
SG&A Per Avg Sqft Growth (%)	1.4	(2.0)	(6.0)	(4.1)
EBIT Margin (%)	20.8	19.2	19.7	19.7

CATALYST CALENDAR

Date	Event	Source: Thomson Reuters, Morgan Stanley
20 Apr 2021 - 26 Apr 2021	Q1 2021 O'Reilly Autor	notive Inc Earnings Release

INVESTMENT DRIVERS

- Continued comp gains in both DIY and DIFM
- Steady gross margins via increasing scale and lowering inventory costs
- · Solid free cash flow

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate View explanation of regional hierarchies <u>here</u>

MS ALPHA MODELS

5/5 24 Month Horizon	5/5 most	3 Month Horizon
----------------------	-------------	--------------------

Source: Thomson Reuters, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Comps stay in the MSD+ due to share gains amid weaker backdrop
- Gross margin stability despite International headwinds
- Solid expense management and moderating capex

RISKS TO DOWNSIDE

- Share gains unable to offset miles driven headwinds
- Lower new store productivity
- Issues with early International expansion (sales or costs)
- Gross margin downside or greater than anticipated expense headwinds/investments

OWNERSHIP POSITIONING



Thomson Reuters; MSPB Content. Includes certain hedge fund exposures held with MSPB. Information may be inconsistent with or may not reflect broader market trends. Long/Short Ratio = Long Exposure / Short exposure. Sector % of Total Net Exposure = (For a particular sector: Long Exposure - Short Exposure) / (Across all sectors: Long Exposure - Short Exposure).

MS ESTIMATES VS. CONSENSUS



Source: Thomson Reuters, Morgan Stanley Research

Risk Reward – Advance Auto Parts Inc (AAP.N)

2:1 Positive Risk/Reward Skew Keeps Us Overweight

PRICE TARGET \$195.00

Our \$195 PT is based on \sim 17x our 2022 EPS of \$11.15. In 2021 we forecast 1% comps and \sim 70 bps EBIT margin expansion (with \sim 5 bps gross margin contraction offset by SG&A leverage). This results in 9% EBIT growth (18% EPS growth due to share repurchases). In 2022 we forecast 2.5% comps and \sim 30 bps EBIT margin expansion (40 bps gross margin gain and 10 bps SG&A deleverage). This yields 6%/14% EBIT/EPS growth in 2022.

RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)

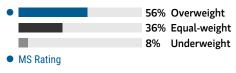


Source: Thomson Reuters, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 30 Mar, 2021. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology here

OVERWEIGHT THESIS

- AAP operates in a defensive (recession-resistant) category and has one of the largest long-term EBIT margin expansion opportunities in our coverage (we estimate 300-400 bps over time).
- COVID-19 slowed parts of AAP's transformation but gross and EBIT margin upside from internal initiatives is still expected beginning in 2021.
- Significant and improving FCF generation plus share repurchases likely to enhance EPS growth.
- We think the combination of a defensive category, AAP's progress generating stable top-line growth, and significant margin upside all make for a positive risk/reward skew.

Consensus Rating Distribution



Source: Thomson Reuters, Morgan Stanley Research

Risk Reward Themes

Earnings Quality: Positive
Macroeconomics: Positive
Self-help: Positive

View descriptions of Risk Rewards Themes here

BULL CASE

\$230.00

BASE CASE

\$195.00

BEAR CASE

\$130.00

~18.5x 2022 EPS of ~\$12.55, or ~11x EV/EBITDA

Our \$230 PT is based on ~18.5x our 2022 EPS of ~\$12.55. In 2021 we forecast 4% comps and ~115 bps EBIT margin expansion (with ~15 bps gross margin expansion compounded by SG&A leverage). This results in 18% EBIT growth (27% EPS growth due to share repurchases). In 2022 we forecast 3.5% comps and ~40 bps EBIT margin expansion (~40 bps gross margin gain plus flat SG&A). This yields 8%/16% EBIT/EPS growth in 2022.

~17x 2022 EPS of ~\$11.40 or ~10.5x EV/EBITDA

Our \$195 PT is based on ~17x our 2022 EPS of \$11.15. In 2021 we forecast 1% comps and ~70 bps EBIT margin expansion (with ~5 bps gross margin contraction offset by SG&A leverage). This results in 9% EBIT growth (18% EPS growth due to share repurchases). In 2022 we forecast 2.5% comps and ~30 bps EBIT margin expansion (40 bps gross margin gain and 10 bps SG&A deleverage). This yields 6%/14% EBIT/EPS growth in 2022.

~13x 2022 EPS of ~\$10.05, or ~8x EV/EBITDA

Our \$130 PT is based on ~12x our 2022 EPS of ~\$10.05. In 2021 we forecast -2% comps and 20 bps EBIT margin expansion (with 35 bps gross margin contraction offset by some SG&A leverage). This results in EBIT declining by 1% (7% EPS growth buoyed by share repurchases). In 2022 we forecast -0.5% comps and ~30 bps EBIT margin expansion (~40 bps gross margin gain offset by SG&A deleverage). This yields 3.5% EBIT growth/11% EPS growth in 2022.

Risk Reward – Advance Auto Parts Inc (AAP.N)

KEY EARNINGS INPUTS

Drivers	2020	2021e	2022e	2023e
Comps (%)	3.0	1.0	2.5	2.5
Gross Margin (%)	44.4	44.3	44.7	44.8
SGA per sqft growth (%)	8.2	8.9	9.2	9.4
EBIT Margin (%)	0.9	9.2	6.3	5.4
EBIT Growth (%)	6.6	(1.9)	2.6	2.0

CATALYST CALENDAR

Date	Event	Source: Thomson Reuters, Morgan Stanley
20 Apr 2021	Advance Auto Parts I and Strategy Update	nc Publication of Investor Presentation (Virtual)
17 May 2021 - 21 May 2021	Q1 2021 Advance Au	to Parts Inc Earnings Release

INVESTMENT DRIVERS

- Comps (return to sustainable growth)
- 300-400 bps of EBIT margin expansion potential from opportunity to close the ~1,000 bps gross margin gap vs. peers

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate View explanation of regional hierarchies <u>here</u>

MS ALPHA MODELS

Source: Thomson Reuters, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- AAP gains market share during recession, reversing trend of share losses and supporting higher than expected comp growth
- Gross margin tailwinds (product mix, lapping 1x items, supply chain improvement) and incremental cost saving initiatives

RISKS TO DOWNSIDE

- Comps miss expectations due to tougher macro backdrop (fewer miles driven) or ongoing share losses
- Supply chain transformation stalls; margin upside unrealized

OWNERSHIP POSITIONING

Inst. Owners, % Active	67.5%		
HF Sector Long/Short Ratio	2.5x		
HF Sector Net Exposure	15.7%		

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MS ESTIMATES VS. CONSENSUS



Source: Thomson Reuters, Morgan Stanley Research

Endnotes

^{1.} Total industry value is calculated differently for the Running on Empty case and is based on owned vs shared miles driven and the EV/ICE split within the car parc.

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(as of February 28, 2021)

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	COVERAGE UN	NIVERSE	INVESTMEN	IT BANKING CLIE	ENTS (IBC)	OTHER MAI INVESTMENT S CLIENTS (SERVICES
STOCK RATING	COUNT	% OF	COUNT	% OF	% OF	COUNT	% OF
CATEGORY		TOTAL		TOTAL IBC	RATING		TOTAL
				(CATEGORY		OTHER
							MISC
Overweight/Buy	1493	43%	400	47%	27%	664	43%
Equal-weight/Hold	1439	42%	359	42%	25%	651	42%
Not-Rated/Hold	6	0%	1	0%	17%	5	0%
Underweight/Sell	518	15%	87	10%	17%	214	14%
TOTAL	3,456		847			1534	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

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Stock Price, Price Target and Rating History (See Rating Definitions)

Advance Auto Parts Inc (AAP.N) - As of 3/29/21 in USD Industry : Hardline/Broadline/Food Retail



Stock Rating History: 3/1/16 : 0/I

Price Target History: 1/19/16 : 195; 5/20/16 : 180; 1/17/17 : 200; 5/1/17 : 185; 5/25/17 : 160; 7/6/17 : 125; 8/16/17 : 100; 11/8/17 : 92; 11/14/17 : 96; 12/12/17 : 120; 1/17/18 : 130; 8/8/18 : 140; 8/14/18 : 170; 10/10/18 : 195; 11/5/18 : 205; 8/13/19 : 185; 2/12/20 : 180; 3/16/20 : 175; 4/1/20 : 135; 5/20/20 : 148; 11/10/20 : 190

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Stock Price (Not Covered by Current Analyst) -- Stock Price (Covered by Current Analyst) -Stock and Industry Ratings (abbreviations below) appear as + Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)

Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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AutoZone Inc. (AZO.N) - As of 3/29/21 in USD Industry: Hardline/Broadline/Food Retail



Stock Rating History: 3/1/16 : E/I; 9/27/16 : 0/I; 7/6/17 : E/I; 3/16/20 : 0/I

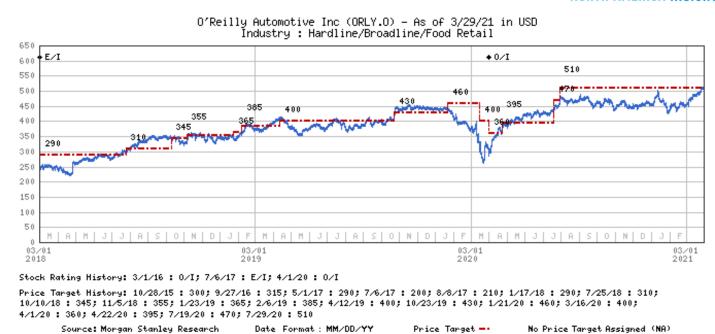
Price Target History: 1/27/16 : 820; 9/27/16 : 840; 1/17/17 : 900; 5/1/17 : 825; 5/23/17 : 680; 7/6/17 : 540; 9/19/17 : 585; 12/5/17 : 700; 1/17/18 : 800; 2/28/18 : 750; 5/23/18 : 700; 9/18/18 : 760; 11/5/18 : 800; 12/4/18 : 870; 1/23/19 : 900; 2/26/19 : 980; 3/28/19 : 1050; 9/24/19 : 1100; 12/10/19 : 1200; 12/13/19 : 1300; 4/1/20 : 1140; 9/16/20 : 1505

Source: Morgan Stanley Research Date Format: MM/DD/YY Price Target •• No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) •• Stock Price (Covered by Current Analyst) ••
Stock and Industry Ratings (abbreviations below) appear as • Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)

Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.



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Stock and Industry Ratings (abbreviations below) appear as + Stock Rating/Industry View

In-line (I) Cautious (C)

Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)

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Stock Price (Covered by Current Analyst) ==

No Rating (NR)

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Industry View: Attractive (A)

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INDUSTRY COVERAGE: Hardline/Broadline/Food Retail

COMPANY (TICKER)	RATING (AS OF)	PRICE* (03/30/2021)
Simeon Gutman, CFA		
Advance Auto Parts Inc (AAP.N)	O (06/23/2014)	\$186.07
Albertsons Companies, Inc (ACI.N)	U (01/20/2021)	\$19.75
At Home Group Inc (HOME.N)	E (06/10/2019)	\$27.28
AutoZone Inc. (AZO.N)	O (03/16/2020)	\$1,425.36
Bed Bath & Beyond Inc. (BBBY.O)	E (10/28/2020)	\$29.52
Best Buy Co Inc (BBY.N)	E (01/19/2016)	\$115.72
BJ'S Wholesale Club (BJ.N)	E (07/23/2018)	\$44.88
Costco Wholesale Corp (COST.O)	O (03/16/2020)	\$349.75
Dick's Sporting Goods (DKS.N)	O (08/26/2020)	\$77.49
Dollar General Corporation (DG.N)	O (02/16/2016)	\$201.75
Dollar Tree Inc (DLTR.O)	E (02/16/2016)	\$116.23
Driven Brands Holdings Inc (DRVN.O)	E (02/09/2021)	\$25.52
Five Below Inc (FIVE.O)	O (06/30/2019)	\$190.50
Floor & Decor Holdings Inc (FND.N)	E (11/12/2018)	\$95.94
Grocery Outlet Holding Corp (GO.O)	E (07/15/2019)	\$37.19
Home Depot Inc (HD.N)	O (02/23/2017)	\$304.82
Kroger Co. (KR.N)	U (01/20/2021)	\$38.08
Leslie's, Inc. (LESL.O)	E (11/23/2020)	\$23.58
Lowe's Companies Inc (LOW.N)	O (01/21/2015)	\$190.02
Lumber Liquidators Holdings Inc (LL.N)	U (01/21/2020)	\$25.33
National Vision Holdings Inc. (EYE.O)	O (11/20/2017)	\$45.14
O'Reilly Automotive Inc (ORLY.O)	O (04/01/2020)	\$509.13
Ollie's Bargain Outlet Holdings Inc (OLLI.O)	U (01/20/2021)	\$88.03
Party City Holdco Inc (PRTY.N)	E (01/19/2016)	\$5.73
Sally Beauty Holdings Inc (SBH.N)	E (01/20/2021)	\$20.38
Target Corp (TGT.N)	E (05/20/2019)	\$199.65
Tractor Supply Co (TSCO.O)	E (07/24/2020)	\$177.05
Ulta Beauty Inc (ULTAO)	E (08/29/2019)	\$308.00
Valvoline Inc. (VW.N)	E (10/18/2016)	\$26.39
Walmart Inc (WMT.N)	O (01/23/2019)	\$135.74
Wayfair Inc (W.N)	E (02/25/2021)	\$317.02
Williams-Sonoma Inc (WSMN)	E (01/20/2021)	\$184.00

Stock Ratings are subject to change. Please see latest research for each company.

^{*} Historical prices are not split adjusted.

INDUSTRY COVERAGE: Autos & Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (03/30/2021)
Adam Jonas, CFA		
Adient PLC (ADNT.N)	U (03/17/2021)	\$44.05
American Axle & Manufacturing Holdings Inc (AXL.N)	U (03/24/2021)	\$9.68
Aptiv Plc (APTV.N)	O (03/30/2020)	\$137.29
Asbury Automotive Group Inc (ABG.N)	O (12/07/2020)	\$201.07
AutoNation Inc. (AN.N)	U (07/10/2018)	\$94.81
BorgWarner Inc. (BWAN)	U (11/09/2020)	\$46.53
Carmax Inc (KMXN)	O (07/10/2018)	\$135.83
Carvana Co (CVNAN)	O (02/26/2021)	\$254.50
Ferrari NV (RACE.N)	O (05/09/2019)	\$208.77
Fisker Inc (FSR.N)	O (02/11/2021)	\$16.72
Ford Motor Company (F.N)	U (01/29/2021)	\$12.46
Garrett Motion Inc (GTXMQ.PK)	++	\$5.19
General Motors Company (GMN)	O (04/09/2018)	\$58.51
Group 1 Automotive, Inc (GPI.N)	O (05/06/2019)	\$158.34
Lear Corporation (LEAN)	O (11/09/2020)	\$177.65
Lithia Motors Inc. (LAD.N)	U (02/09/2021)	\$399.71
Lordstown Motors (RIDE.O)	U (02/11/2021)	\$11.58
Magna International Inc. (MGAN)	U (11/09/2020)	\$88.75
Penske Automotive Group, Inc (PAG.N)	O (07/10/2018)	\$82.08
Quantumscape Corp (QS.N)	O (02/11/2021)	\$44.07
Romeo Power, Inc. (RMO.N)	U (02/11/2021)	\$10.37
Sonic Automotive Inc (SAH.N)	E (11/14/2019)	\$50.66
Tenneco Inc. (TEN.N)	U (03/30/2020)	\$10.81
Tesla Inc (TSLAO)	O (11/18/2020)	\$635.62
Visteon Corporation (VC.O)	U (03/22/2018)	\$120.99
Billy Kovanis		
	E (03/15/2021)	\$75.00
Avis Budget Group Inc (CAR.O) Harley-Davidson Inc (HOG.N)	E (03/13/2021) E (02/02/2021)	\$75.00 \$37.53
Polaris Inc. (PII.N)	O (01/19/2021)	\$37.53 \$135.55
Foldits IIIC. (FII.IV)	0 (0 1/ 19/2021)	φ133.33
Victoria A Greer		
Goodyear Tire & Rubber Company (GT.O)	O (02/10/2021)	\$17.60

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