

Automotive Industry

Weekly automotive pit stop

Industry Overview

Recent US industry reports and data points – Pages 2-8

- [Year Ahead 2024: Five Auto themes & top stock picks as volatility remains](#)
- [Total recall 3Q:23 – Good results, but the electric slide & UAW/labor costs rise](#)
- [Top 5 Themes for 2023: Back to School report card](#)
- [December 2023 US auto sales run hard through the tape – SAAR of 15.8mm](#)

Core Autos primers (see links):

- [Car Wars 2024-2027: Rise of powertrain conundrum & return of market share shifts](#)
- [Who Makes the Car of the Future – 2023](#)
- [The Auto Dealer Dilemma – will the good times keep rolling?](#)

Valuation update – Pages 9-13

We believe that the accompanying valuation framework is one of the most important fundamental factors that should be considered when making investment decisions on the stocks in our coverage universe. However, given the extreme volatility in certain links of the automotive value chain, investors should be cognizant that the stocks are sensitive to headlines and swings in expectations, especially in the short term.

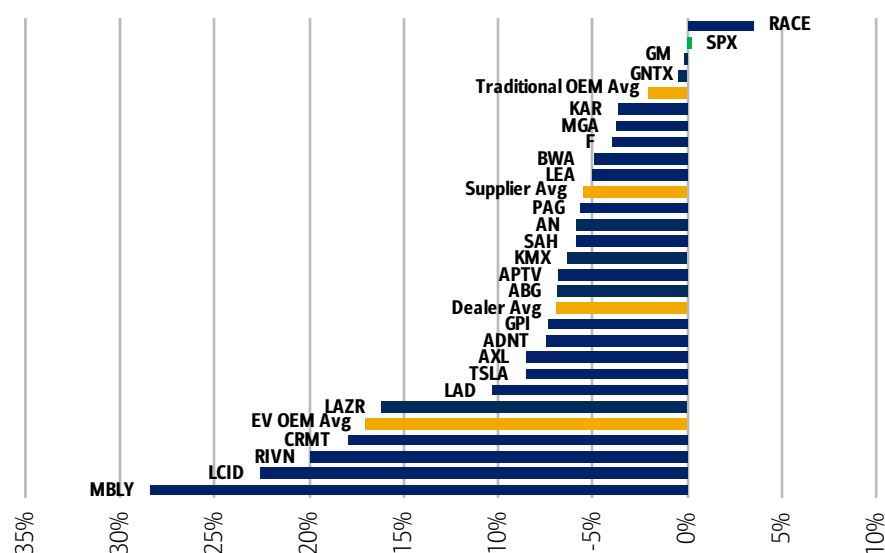
Buy: ABG, ADNT, AN, APTV, BWA, F, GM, GPI, LAD, LEA, MGA, PAG, RACE, RIVN, VC

Neutral: GNTX, LAZR, LCID, TSLA

Underperform: AXL, CRMT, KAR, KMX, MBLY, SAH

Exhibit 1: 2024 YTD stock performance

YTD stock performance of automotive coverage vs. supplier, dealer & OEM averages as well as S&P Index



Source: Bloomberg as of 1/11/24

BofA GLOBAL RESEARCH

12 January 2024

Equity
United States
Autos/Car Manufacturers

John Murphy, CFA
Research Analyst
BofAS
+1 646 855 2025
johnj.murphy@bofa.com

John P. Babcock
Research Analyst
BofAS
+1 646 743 0046
john.p.babcock@bofa.com

Federico Merendi
Research Analyst
BofAS
+1 646 556 2798
federico.merendi@bofa.com

William Healey
Research Analyst
BofAS
+1 646 855 5747
william.healey2@bofa.com

Stock symbol key:

Adient Plc	ADNT
American Axle	AXL
America's Car-Mart	CRMT
Aptiv PLC	APTV
Asbury Auto	ABG
AutoNation, Inc.	AN
BorgWarner	BWA
CarMax	KMX
Ferrari	RACE
Ford Motor	F
General Motors	GM
Gentex	GNTX
Group 1 Auto	GPI
OPENLANE	KAR
Luminar Technologies Inc	LAZR
Lucid Group	LCID
Lear Corp.	LEA
Lithia Motors A	LAD
Mobileye	MBLY
Magna Intl	MGA
Penske Auto Group	PAG
Rivian Automotive	RIVN
Sonic Automotive	SAH
Tesla	TSLA
Visteon Corp	VC

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Refer to important disclosures on page 24 to 27. Analyst Certification on page 23. Price Objective Basis/Risk on page 15.

12645048

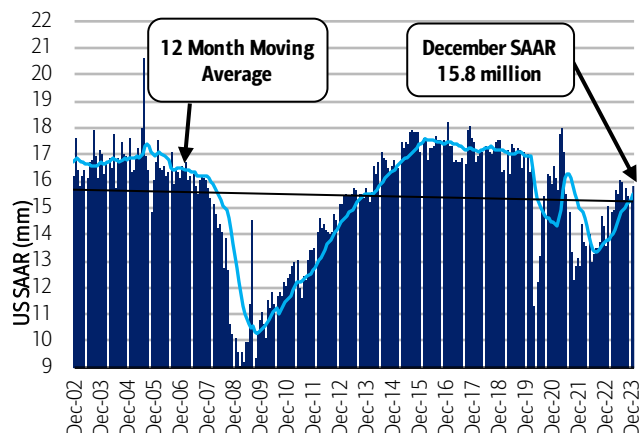
Timestamp: 12 January 2024 05:00AM EST

December 2023 auto sales run hard through the tape

December SAAR of 15.8mm up 17.3% YoY

Exhibit 2: U.S. seasonally adjusted annual rate (SAAR)

December SAAR of 15.8mm was above the 12-month moving average



Source: WardsAuto InfoBank

BofA GLOBAL RESEARCH

December US light vehicle sales increased 17.3% YoY for a seasonally adjusted annualized rate (SAAR) of 15.8mm, an increase from the 15.3mm SAAR in November. This was above both our estimate of 15.4mm and consensus of 15.5mm. December performance brings 2023 full-year sales to 15.5mm units, up 12.7% YoY. The increase was driven mainly by improving inventory levels and a robust recovery in fleet sales.

Looking forward to 2024, although some risks persist, which include macro uncertainty, inflation, higher rates, weak consumer confidence, and a potential US recession, our forecast for 2024 is more constructive. After a SAAR of 13.8mm in 2022 and 15.5mm in 2023, we project auto sales will increase to 16.1mm in 2024 and build towards the next peak in the US auto cycle in 2028 (17-18mm range).

Exhibit 3: US vehicle sales and market share – current month and 2023YTD

US December unit sales increased 17.3% YoY on a SD-adjusted basis, with car sales up 8.7% YoY and light truck sales up 19.3% YoY

		Cars			Light Trucks			Total Vehicles		
		2023	2022	%Δ*	2023	2022	%Δ*	2023	2022	%Δ*
December	December UNITS:									
	Detroit Three	27,667	31,268	-8.1%	526,331	488,128	12.0%	553,998	519,396	10.8%
	Europeans	34,194	31,242	13.7%	100,208	86,501	20.3%	134,402	117,743	18.5%
	Japanese	138,360	122,141	17.6%	389,064	307,880	31.2%	527,424	430,021	27.4%
	Koreans	34,417	38,692	-7.6%	107,825	99,960	12.0%	142,242	138,652	6.5%
	Others	19,734	19,570	4.7%	55,466	43,515	32.4%	75,200	63,085	23.8%
	Total	254,372	242,913	8.7%	1,178,894	1,025,984	19.3%	1,433,266	1,268,897	17.3%
	ANNUAL RATE (Mils.)	3.1	2.8	8.2%	12.8	10.7	19.0%	15.8	13.6	16.7%
	CAR/TRUCK MIX (%):	17.7%	19.1%	(1.4)	82.3%	80.9%	1.4	100.0%	100.0%	
	MARKET SHARE:									
	Detroit Three	10.9%	12.9%	(2.0)	44.6%	47.6%	(2.9)	38.7%	40.9%	(2.3)
	Europeans	13.4%	12.9%	0.6	8.5%	8.4%	0.1	9.4%	9.3%	0.1
	Japanese	54.4%	50.3%	4.1	33.0%	30.0%	3.0	36.8%	33.9%	2.9
	Koreans	13.5%	15.9%	(2.4)	9.1%	9.7%	(0.6)	9.9%	10.9%	(1.0)
	Others	7.8%	8.1%	(0.3)	4.7%	4.2%	0.5	5.2%	5.0%	0.3
YTD 2023	YTD 2023 UNITS:									
	Detroit Three	411,253	418,327	-1.4%	5,605,371	5,168,302	8.8%	6,016,624	5,586,629	8.0%
	Europeans	391,988	354,016	11.1%	971,494	916,834	6.3%	1,363,482	1,270,850	7.6%
	Japanese	1,540,979	1,365,047	13.3%	3,998,387	3,394,472	18.2%	5,539,366	4,759,519	16.8%
	Koreans	494,863	481,229	3.2%	1,157,958	992,995	17.0%	1,652,821	1,474,224	12.5%
	Others	253,416	239,956	6.0%	622,464	423,161	47.6%	875,880	663,117	32.5%
	Total	3,092,499	2,858,575	8.5%	12,355,674	10,895,764	13.8%	15,448,173	13,754,339	12.7%
	ANNUAL RATE (Mils.)	3.1	2.9	8.3%	12.4	10.9	13.5%	15.5	13.8	12.4%
	CAR/TRUCK MIX (%):	20.0%	20.8%	(0.8)	80.0%	79.2%	0.8	100.0%	100.0%	
	MARKET SHARE:									
	Detroit Three	13.3%	14.6%	(1.3)	45.4%	47.4%	(2.1)	38.9%	40.6%	(1.7)
	Europeans	12.7%	12.4%	0.3	7.9%	8.4%	(0.6)	8.8%	9.2%	(0.4)
	Japanese	49.8%	47.8%	2.1	32.4%	31.2%	1.2	35.9%	34.6%	1.3
	Koreans	16.0%	16.8%	(0.8)	9.4%	9.1%	0.3	10.7%	10.7%	(0.0)
	Others	8.2%	8.4%	(0.2)	5.0%	3.9%	1.2	5.7%	4.8%	0.8

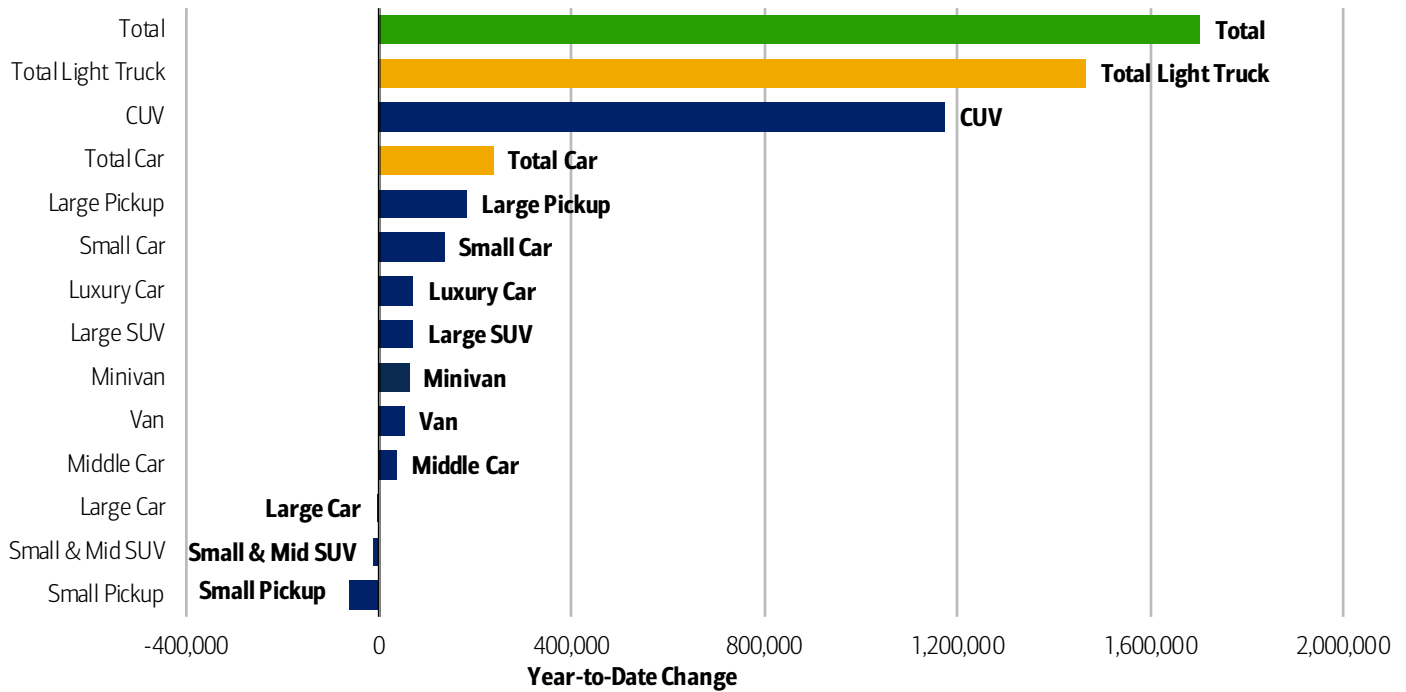
Source: WardsAuto InfoBank; * Note: Selling day adjusted

BofA GLOBAL RESEARCH

US sales mix

Exhibit 4: US sales by segment – 2023 unit change

Total light vehicle sales are up YTD, with increases in both Light Truck (especially CUV) and Car sales

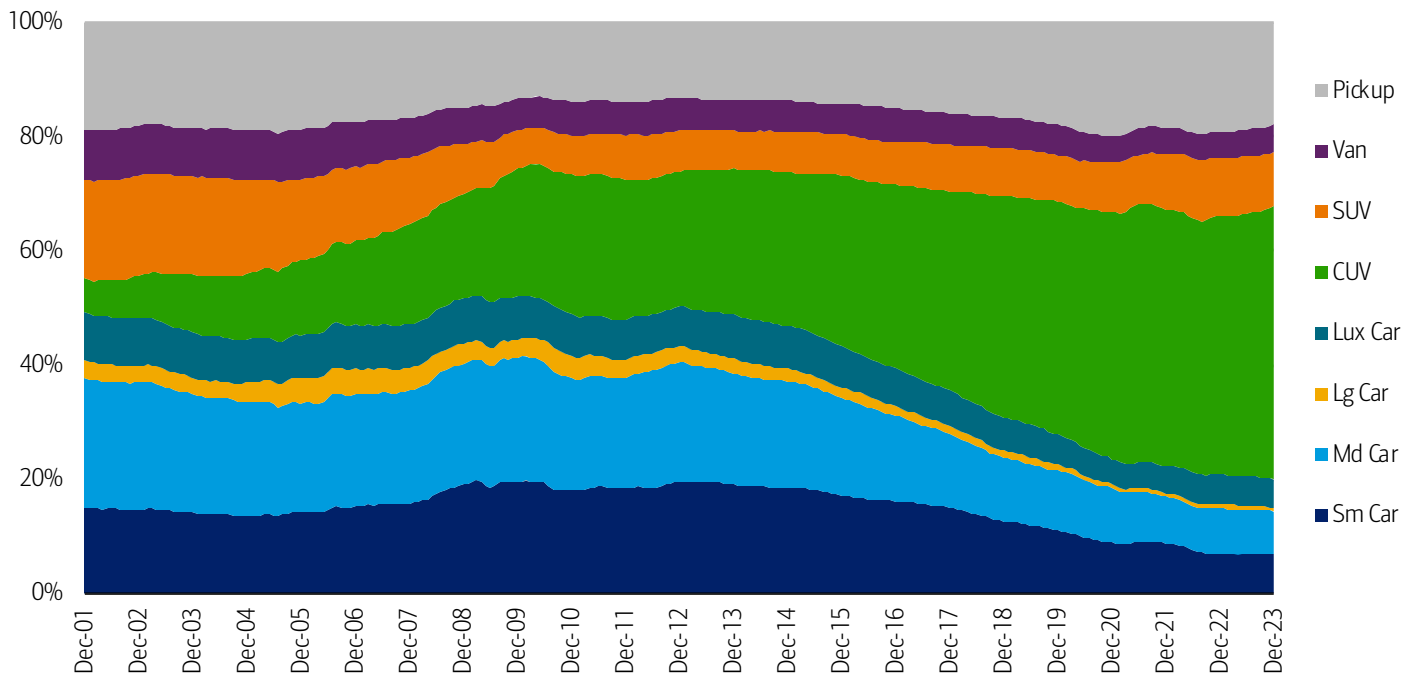


Source: WardsAuto InfoBank

BofA GLOBAL RESEARCH

Exhibit 5: US sales by segment – Last Twelve Months (LTM) mix trend

Over the past decade, Crossover Utility Vehicles (CUVs) have increasingly gained market share from Small, Mid-sized and Large Cars



Source: WardsAuto InfoBank

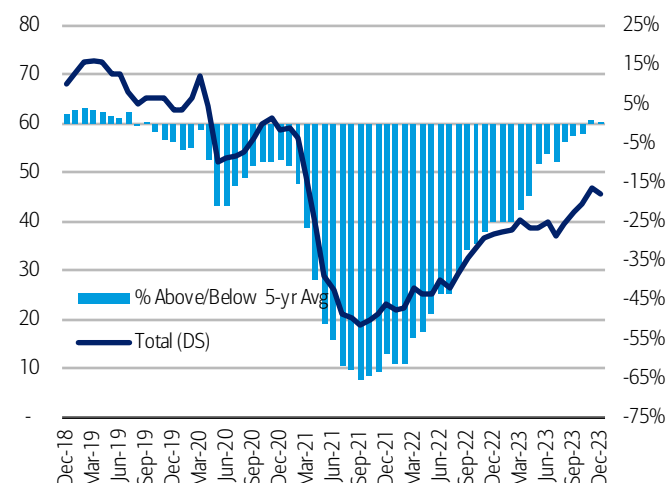
BofA GLOBAL RESEARCH

Inventory shrinks following strong sales

December inventory decreases 31k units MoM

Exhibit 6: US inventory – total (DS)

December days' supply of 46DS came in above the 5-year average of 45DS



Source: WardsAuto InfoBank

BofA GLOBAL RESEARCH

December 2024 auto inventory was down 31k units from November 2023 to ~2.3mm. Although the rise in inventories paused in December, recall that inventories climbed the last two years and are now up 140% off the September 2021 trough. Almost all of the MoM decline in absolute inventory was driven by the Japanese (-42k) and Korean OEMs (-9k), while the D3 posted higher inventory (+14k), likely due to some restocking of models affected by the UAW strike in late 2023. Inventory for European OEMs grew (+6k). On a days' supply (DS) basis, inventory stood at 46DS, which is a bit above the five-year average of 45DS, but down one day MoM.

December inventory decline came in light of robust December sales, which were up MoM on a SAAR basis to 15.8mm

Inventory remains somewhat lower than “normal” levels of 2.5mm-3.0mm+ units, but is gradually approaching this range. As production constraints faded in 2023, both sales and inventory started to recover after years in which low inventory impaired sales. We believe there is still substantial unfulfilled demand following the last few years of shortages. Affordability could represent an obstacle for stronger demand to materialize.

Exhibit 7: December 2023 inventory summary

December inventory was ~2.30mm units, with days' supply of 46 above the 5-year avg. of 45

	Inventory	Days	5-yr	% Above	
	Units	Supply	Avg DS	/Below	Note
Detroit 3 -- Cars	105,918	79	53	49%	Detroit 3 OEM's total inventory was up 14k MoM and increased 225k units YoY. Aggregate supply remains less constrained than the industry average, across both cars and light trucks.
Detroit 3 -- Lt Trucks	1,177,308	64	59	8%	
Detroit 3 -- Total	1,283,226	65	59	12%	
Japanese -- Cars	168,964	34	38	-11%	Supply at Japanese OEMs was down 43k MoM but increased 276k units YoY. Aggregate supply is more constrained than the industry average across both cars and light trucks.
Japanese -- Lt Trucks	455,554	35	36	-2%	
Japanese -- Total	624,518	35	36	-5%	
European -- Cars	58,663	45	46	-2%	European OEM's inventory was up 6k units MoM and increased 68k units YoY. Aggregate supply is less constrained than the industry average across both cars and light trucks.
European -- Lt Trucks	166,701	52	47	11%	
European -- Total	225,364	50	47	6%	
Korean -- Cars	32,604	20	31	-36%	Inventory at Korean OEMs declined 9k units MoM but increased 56k units YoY. Both car and truck inventories remain well below the industry average.
Korean -- Lt Trucks	98,044	26	36	-27%	
Korean -- Total	130,648	24	34	-28%	
Industry -- Cars	370,289	37	38	-4%	Total inventory was down 31k units MoM, but up 631k units YoY. Car supply tighter than light truck, as OEMs continue to prioritize production and inventory build of high ASP/margin vehicles.
Industry -- Lt Trucks	1,931,067	48	48	0%	
Industry -- Total	2,301,356	46	45	0%	

Source: WardsAuto InfoBank, BofA Global Research

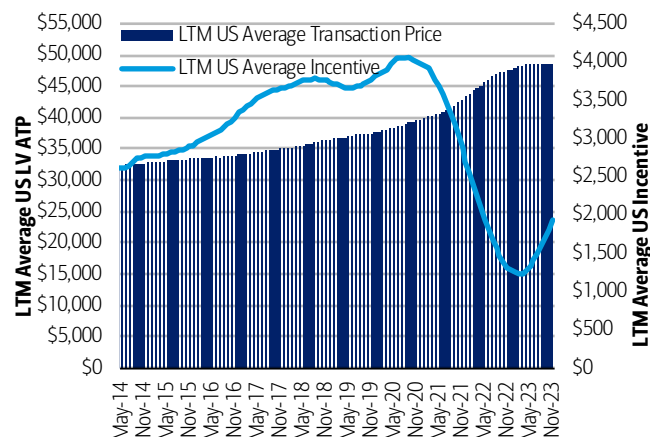
BofA GLOBAL RESEARCH

Incentives & pricing

Mix holds near record levels, ATPs fall in November

Exhibit 8: Industry average transaction price & average incentive

US average ATPs fall from record highs in November, Incentives dimb



Source: Kelley Blue Book (ATPs do not include applied incentives), AutoData

BofA GLOBAL RESEARCH

Two data points that speak to the strength of underlying demand are mix and price, which remain near record levels. Light trucks (pickups, Sports Utility Vehicles (SUVs), Crossover Utility Vehicles (CUVs)) gained +190bps of market share relative to passenger cars in November on a YoY basis, while alternative powertrain vehicles gained +570bps from ICE vehicles YoY.

Average transaction prices (ATPs) fell in November, down 1.5% YoY to \$48,247 (-\$722/unit YoY), but were ~flat MoM according to Kelley Blue Book. Incentives were up 134% YoY and up 10% MoM in November but are still well below 2019 levels (5.3% of ATP vs. ~10% in 2019). We are closely monitoring the strength of demand in light of broader macro risks.

On that note, we expect the recently strong pricing trends (more transitory) and favorable mix shift that has occurred in the last 10 years (more structural) could begin to flatten out or fade as volumes begin to recover in the mid-2020s.

Exhibit 9: Most recent month US incentive and ATP trends – major automakers

Industry average incentive was up 134.4% YoY in November, while the average transaction price was down 1.5% YoY

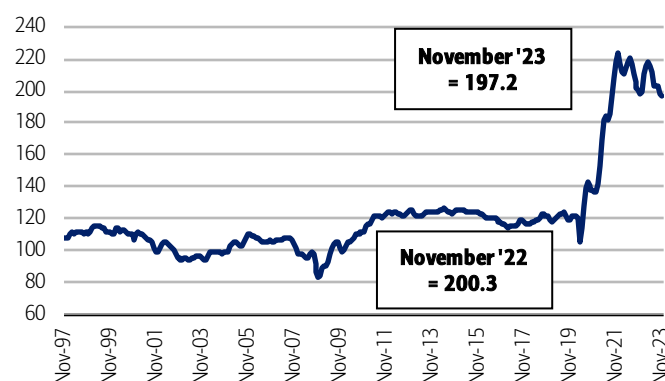
AutoData/KBB	Average Incentive					Average Transaction Price				
	Nov-23	Oct-23	MoM % Chg	Nov-22	YoY % Chg	Nov-23	Oct-23	MoM % Chg	Nov-22	YoY % Chg
GM	\$2,441	\$2,244	8.8%	\$1,381	76.8%	\$52,671	\$53,776	-2.1%	\$52,278	0.8%
Ford	\$1,956	\$1,960	-0.2%	\$1,599	22.3%	\$55,058	\$55,514	-0.8%	\$55,923	-1.5%
Stellantis	\$4,402	\$4,532	-2.9%	\$1,631	169.9%	\$60,085	\$58,373	2.9%	\$55,738	7.8%
Toyota	\$1,235	\$1,094	12.9%	\$611	102.1%	\$41,013	\$40,716	0.7%	\$40,935	0.2%
Honda	\$1,608	\$1,672	-3.8%	\$983	63.6%	\$38,337	\$38,160	0.5%	\$37,796	1.4%
Nissan	\$2,762	\$2,695	2.5%	\$1,500	84.1%	\$35,916	\$36,201	-0.8%	\$37,496	-4.2%
Hyundai	\$2,649	\$2,273	16.5%	\$980	170.3%	\$37,444	\$37,124	0.9%	\$35,960	4.1%
BMW	\$4,327	\$3,716	16.4%	\$1,335	224.1%	\$69,140	\$69,488	-0.5%	\$69,098	0.1%
Volkswagen	\$3,863	\$3,247	19.0%	\$1,531	152.3%	\$58,665	\$55,298	6.1%	\$58,599	0.1%
Tesla	\$3,663	\$1,191	207.6%	\$567	546.0%	\$53,756	\$53,606	0.3%	\$67,639	-20.5%
Industry	\$2,546	\$2,322	9.6%	\$1,086	134.4%	\$48,247	\$47,944	0.6%	\$48,969	-1.5%

Source: Kelley Blue Book (ATPs do not include applied incentives), AutoData

BofA GLOBAL RESEARCH

Exhibit 10: NADA Used Vehicle Price Index

NADA Used Vehicle Price Index was down 1.6% YoY in November 2023 and decreased 0.5% on a MoM basis

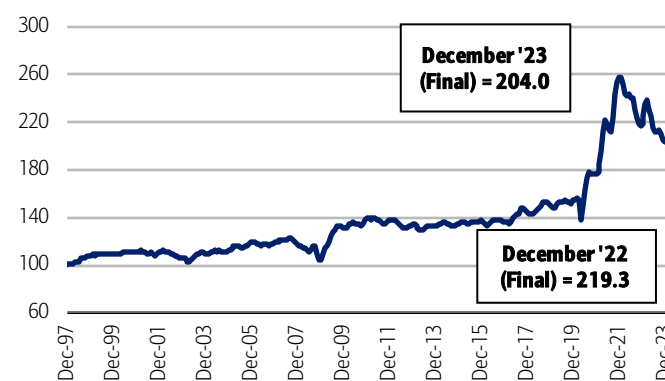


Source: NADA

BofA GLOBAL RESEARCH

Exhibit 11: Manheim Used Vehicle Value Index

Manheim Used Vehicle Value Index was down 7.0% YoY in December 2023 (Final) and decreased 0.5% on a MoM basis



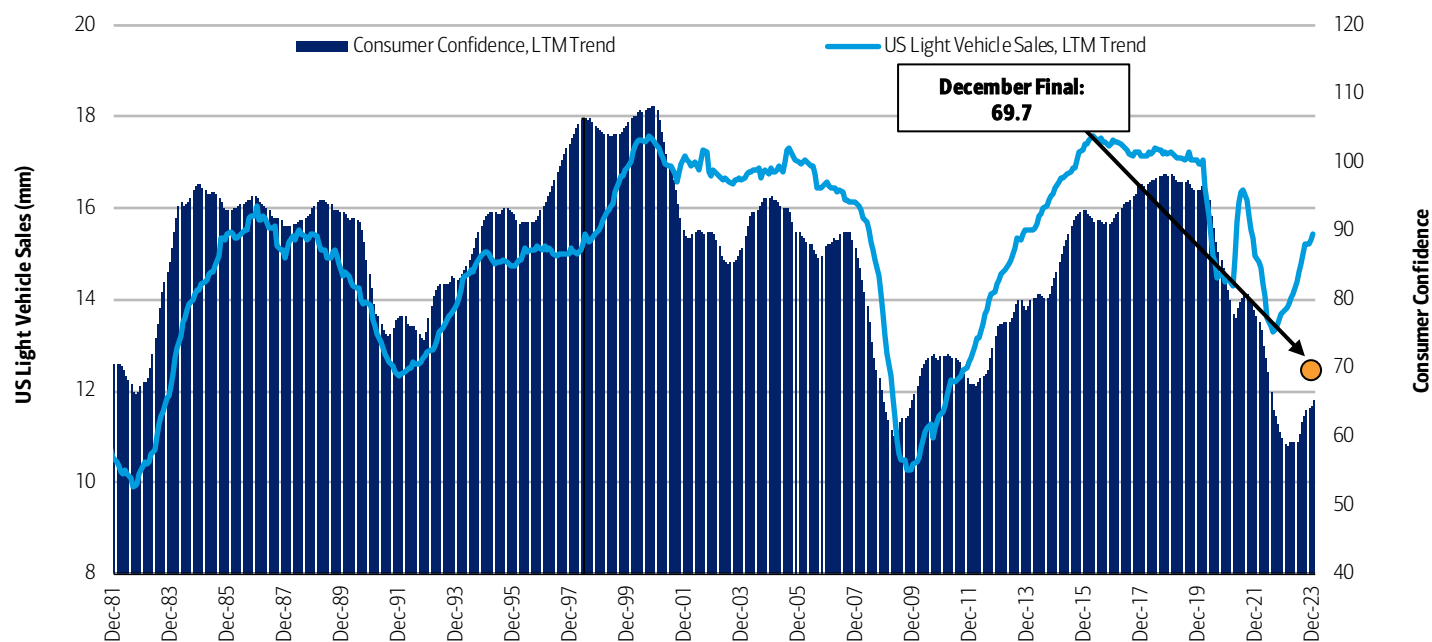
Source: Manheim

BofA GLOBAL RESEARCH

Other monthly data

Exhibit 12: Consumer confidence versus US auto sales

On an LTM basis, consumer confidence and US automotive sales seem to be past their trough; December (Final) consumer confidence was up 16.8% YoY

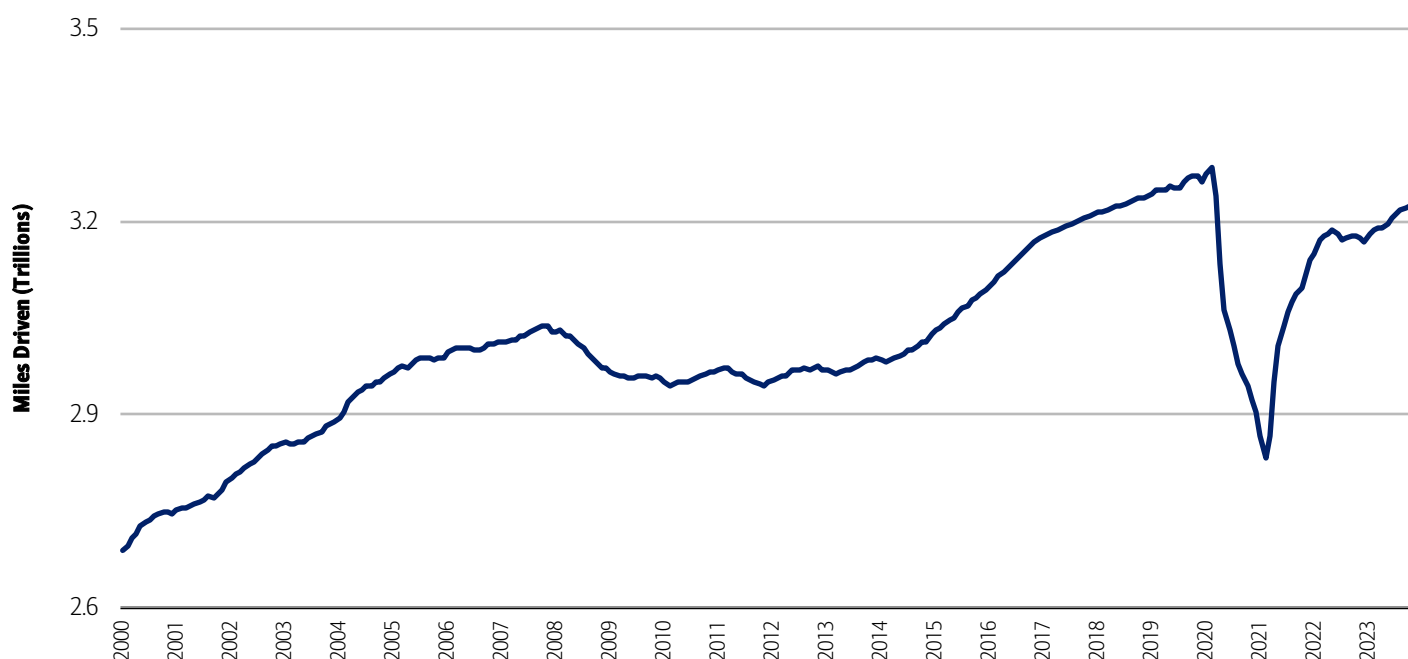


Source: University of Michigan, Wards AutoInfoBank

BofA GLOBAL RESEARCH

Exhibit 13: LTM US miles driven

On a LTM basis, US miles driven fell significantly in 2020 due to COVID-19 but have largely recovered. After declining in 2H22, miles driven increased in 2023YTD.



Source: Federal Highway Administration

BofA GLOBAL RESEARCH

Exhibit 14: US average retail gasoline price

US average retail gasoline prices rose steadily from 2020-2022. Gas prices retreated throughout 2H22 and increased through 2023 but have declined since October.



Source: US Energy Information Administration

BofA GLOBAL RESEARCH

Exhibit 15: BofA Global Research estimated total raw material \$ cost per average vehicle

We estimate that the total raw material \$ cost per average vehicle has decreased in recent months, although it has been volatile over time



Source: BofA Global Research estimates

BofA GLOBAL RESEARCH



Upcoming event calendar

Exhibit 16: Calendar of upcoming automotive industry events

Below we outline the release dates for monthly industry and economic data used in our analyses

January	January 19, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of January
February	February 1, 2024	Industry Data Release	January 2024 US auto sales
	February 2, 2024	Economic Data Release	Final Consumer Confidence survey for month of January
	February 2, 2024	Economic Data Release	US unemployment rate / US employees change in nonfarm payrolls
	Week of February 5, 2024	Industry Data Release	January 2024 US auto inventories
	February 16, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of February
March	March 1, 2024	Industry Data Release	February 2024 US auto sales
	March 1, 2024	Economic Data Release	Final Consumer Confidence survey for month of February
	Week of March 4, 2024	Industry Data Release	February 2024 US auto inventories
	March 8, 2024	Economic Data Release	US unemployment rate / US employees change in nonfarm payrolls
	March 15, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of March
	March 26-27, 2024	BofA Conference	Bank of America 2024 Global Automotive Summit (New York)
	March 28, 2024	Economic Data Release	Final Consumer Confidence survey for month of March
April	April 2, 2024	Industry Data Release	March 2024 US auto sales
	Week of April 1, 2024	Industry Data Release	March 2024 US auto inventories
	April 5, 2024	Economic Data Release	US unemployment rate / US employees change in nonfarm payrolls
	April 12, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of April
	April 26, 2024	Economic Data Release	Final Consumer Confidence survey for month of April
May	May 1, 2024	Industry Data Release	April 2024 US auto sales
	Week of May 1, 2024	Industry Data Release	April 2024 US auto inventories
	May 3, 2024	Economic Data Release	US unemployment rate / US employees change in nonfarm payrolls
	May 10, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of May
	May 24, 2024	Economic Data Release	Final Consumer Confidence survey for month of May
June	June 3, 2024	Industry Data Release	May 2024 US auto sales
	Week of June 3, 2024	Industry Data Release	May 2024 US auto inventories
	June 7, 2024	Economic Data Release	US unemployment rate / US employees change in nonfarm payrolls
	June 14, 2024	Economic Data Release	Preliminary Consumer Confidence survey for month of June
	June 28, 2024	Economic Data Release	Final Consumer Confidence survey for month of June

Source: AutoNews, Bloomberg, Company filings, BofA Global Research

BofA GLOBAL RESEARCH



Valuation update

Exhibit 17: Automotive coverage universe valuation summary

Using valuation multiples based on 2024e (and sometimes 2025e), we have published ratings on a collection of OEM, supplier, and dealer company names

Ticker	Company Name	QRQ	Rating	Price Objective	Pot' Upside/Downside	Basis
F	Ford Motor Co	B-1-7	Buy	\$19.00	62.3%	~4x 2024e EV/EBITDAP, implying 11x P/E; within the historical trading range given increased credibility and improving execution
GM	General Motors	B-1-7	Buy	\$75.00	109.1%	~4x 2024e EV/EBITDAP, implying 9x P/E; within the historical trading range given ongoing execution and the Core to Future transition
RACE	Ferrari	B-1-7	Buy	\$456.00	30.1%	~31x 2024e EV/EBITDA, 12x EV/Sales; a slight premium to current trading level, reflecting ongoing volume, revenue, and earnings growth
LCID	Lucid Motors	C-2-9	Neutral	\$7.00	114.7%	~6x EV/Sales on 2025e, implies roughly 0.5x EV/Sales and 3x EV/EBITDA on pro-forma capital-induced 2030 estimates
RIVN	Rivian Automotive	C-1-9	Buy	\$40.00	112.9%	~3x EV/Sales on 2025e, implying 0.5x EV/Sales and 3x EV/EBITDA on pro-forma capital-induced 2030 estimates
TSLA	Tesla Motors	C-2-9	Neutral	\$290.00	27.6%	~8.5x EV/Sales and 48x EV/EBITDA on 2024e, implying 3.0x EV/Sales and 22x EV/EBITDA on pro-forma capital-induced 2025 estimates
ADNT	Adient PLC	C-1-9	Buy	\$50.00	48.6%	~6x FY2024e EV/EBITDA, above the historical average, reflecting forthcoming US/NA and Global production volume recovery and turnaround efforts
APTIV	Aptiv	C-1-9	Buy	\$125.00	49.5%	~12x 2024e EV/EBITDA; well above supplier average and above multi-industrial average given unique leverage to industry mega-trends
AXL	American Axle	C-3-9	Underperform	\$8.00	-0.7%	~4x 2024e EV/EBITDA; below historical average but in-line recent trading ranges, reflecting forthcoming US/NA and Global production recovery
BWA	BorgWarner	B-1-7	Buy	\$52.00	52.6%	~7x 2024e EV/EBITDA; reflecting BWA's positioning towards a higher growth trajectory after the spin-off of the Fuel Systems and Aftermarket segments
GNTX	Gentex Corp	B-2-7	Neutral	\$34.00	4.6%	~10x 2024e EV/EBITDA; well above supplier average, but slightly below historical average, reflecting potential long-term headwinds for core products
LAZR	Luminar Technologies	C-2-9	Neutral	\$4.00	41.6%	~5.5x EV/Sales on 2025e, a slight premium to avg EV/Sales multiples in Auto/Tech universe we include in LAZR's peer group
LEA	Lear Corp	B-1-7	Buy	\$220.00	64.0%	~7x 2024e EV/EBITDA; above the average, reflecting how vertical integration will bolster already strong cash flow and shareholder returns
MGA	Magna International	B-1-7	Buy	\$77.00	35.4%	~6x 2024e EV/EBITDA; above the historical average given solid long term positioning in industry evolution
MBLY	Mobileye	C-3-9	Underperform	\$22.00	-29.1%	~5.5x 2025e EV/Sales; below the average of its four closest peers reflecting our slower growth outlook following the company's initial guidance for 2024
VC	Visteon Corp	C-1-9	Buy	\$180.00	54.7%	~10x EV/EBITDA on 2024e, consistent with a P/E of ~20x. Slightly above mid-point of where the stock has traded since 2016 (6x-12x)
ABG	Asbury Automotive Group	B-1-9	Buy	\$350.00	67.1%	~11x 2024e P/E; roughly in line with average dealer through-cycle multiple, reflecting forthcoming US/NA cycle recovery through mid-2020s
AN	AutoNation	B-1-9	Buy	\$255.00	80.4%	~11x 2024e P/E; roughly in line with average dealer through-cycle multiple, reflecting forthcoming US/NA cycle recovery through mid-2020s
GPI	Group 1 Automotive	C-1-7	Buy	\$455.00	61.1%	~11x 2024e P/E; about in line with average dealer through-cycle multiple, reflecting forthcoming US/NA cycle recovery through mid-2020s
LAD	Lithia Motors	C-1-7	Buy	\$440.00	49.0%	~11x 2024e P/E; roughly in line with average dealer through-cycle multiple, reflecting forthcoming US/NA cycle recovery through mid-2020s
PAG	Penske Automotive Group	B-1-7	Buy	\$200.00	32.0%	~12x 2024e P/E; roughly in line with average dealer through-cycle multiple, reflecting forthcoming US/NA cycle recovery through mid-2020s
SAH	Sonic Automotive	C-3-7	Underperform	\$60.00	13.5%	~9x 2024e P/E; a bit below the average dealer through-cycle multiple, reflecting potential challenges given the supply of used vehicles
CRMT	America's Car-Mart	C-3-9	Underperform	\$55.00	-11.5%	~15x FY2025e (CY2024) P/E; line with an average through-cycle multiple, reflecting less favorable macro dynamics for low income consumer
KMX	CarMax	C-3-9	Underperform	\$44.00	-38.8%	~12x FY2025e (CY2024) P/E; below historical trading range reflecting potential challenges given the supply of used vehicles
KAR	KAR Auction Services	C-3-9	Underperform	\$16.00	12.1%	~8x 2024e EV/EBITDA; about in line with historical trading range, reflecting potential challenges given the supply of wholesale vehicles

Source: Company filings, Bloomberg, BofA Global Research estimates Up/Downside=potential

Notes: Upside/downside = potential from current stock prices, Adjusted EV/Sales and EV/EBITDA multiples are adjusted for pension & OPEB, 2023-2025e are based off of actual prices as of 1/11/2024, CRMT & KMX calendar years equate to 1-year forward fiscal years (CY2024 = FY2025)

BofA GLOBAL RESEARCH

Exhibit 18: Automotive coverage universe P/E multiples

Below we compare P/E multiples for the companies in our coverage universe, as well as forecast P/E multiples out through 2025E

		P/E											
Ticker	Company Name	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E
F	Ford Motor Co	11.6x	7.3x	6.9x	6.6x	5.9x	7.8x	24.4x	13.1x	6.2x	6.6x	6.0x	5.2x
GM	General Motors	11.5x	6.8x	5.7x	6.2x	5.1x	6.8x	8.5x	8.3x	4.4x	5.0x	4.6x	4.1x
RACE	Ferrari	nm	27.9x	24.6x	30.9x	25.8x	39.9x	57.5x	54.4x	39.5x	46.4x	43.8x	39.2x
	Traditional OEM Average ex. RACE	11.5x	7.0x	6.3x	6.4x	5.5x	7.3x	16.5x	10.7x	5.3x	5.8x	5.3x	4.6x
LCID	Lucid Motors	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
RIVN	Rivian Automotive	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
TSLA	Tesla Motors	nm	nm	nm	nm	nm	2,788.9x	309.5x	155.9x	30.3x	79.6x	55.4x	46.4x
	EV OEM Average	nm	nm	nm	nm	nm	2,788.9x	309.5x	155.9x	30.3x	79.6x	55.4x	46.4x
ADNT	Adient PLC	nm	nm	6.9x	8.4x	2.7x	11.8x	nm	23.0x	nm	16.9x	11.7x	6.9x
APTIV	Aptiv	nm	nm	nm	18.3x	11.7x	17.6x	67.2x	53.9x	27.3x	18.9x	12.9x	10.5x
AXL	American Axle	9.8x	6.6x	5.9x	4.5x	3.4x	6.0x	64.2x	10.0x	12.6x	nm	11.5x	8.1x
BWA	BorgWarner	16.9x	14.2x	12.1x	13.1x	7.8x	9.4x	14.0x	11.4x	8.8x	9.5x	8.1x	7.0x
GNTX	Gentex Corp	19.0x	15.0x	16.5x	16.4x	12.5x	15.5x	23.4x	23.4x	20.1x	18.5x	15.1x	12.7x
LAZR	Luminar Technologies	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
LEA	Lear Corp	12.0x	11.3x	9.4x	10.4x	6.7x	8.7x	29.8x	23.0x	14.2x	11.9x	7.5x	6.2x
MGA	Magna International	12.0x	9.0x	8.3x	9.6x	6.8x	8.1x	19.7x	15.8x	13.7x	10.8x	7.9x	6.2x
MBLY	Mobileye	nm	nm	nm	nm	nm	nm	nm	nm	43.8x	53.5x	86.2x	36.5x
VC	Visteon Corp	187.5x	40.7x	15.1x	20.3x	9.8x	31.3x	129.4x	52.7x	24.5x	18.9x	13.1x	10.2x
	Supplier Average	42.9x	16.1x	10.6x	12.6x	7.7x	13.5x	49.7x	26.7x	17.3x	15.1x	11.0x	8.5x
ABG	Asbury Automotive Group	17.4x	12.1x	10.1x	10.0x	7.9x	10.5x	11.3x	6.3x	4.8x	6.8x	6.5x	6.4x
AN	AutoNation	17.3x	15.0x	11.5x	12.8x	8.1x	9.1x	9.8x	6.4x	4.4x	6.6x	6.1x	6.0x
GPI	Group 1 Automotive	15.3x	11.0x	10.5x	9.2x	5.9x	8.1x	7.3x	5.7x	3.9x	6.6x	6.8x	6.7x
LAD	Lithia Motors	17.0x	15.2x	13.1x	13.5x	7.6x	11.1x	16.1x	7.4x	4.6x	8.9x	7.4x	6.8x
PAG	Penske Automotive Group	15.5x	11.5x	13.0x	11.1x	7.6x	8.5x	8.9x	7.0x	6.2x	9.8x	9.3x	8.7x
SAH	Sonic Automotive	14.2x	11.6x	11.4x	10.0x	7.7x	10.4x	10.0x	5.8x	5.1x	8.1x	8.0x	8.3x
CRMT	America's Car-Mart	19.3x	8.2x	32.9x	17.5x	20.1x	14.5x	14.9x	6.8x	5.2x	24.4x	19.3x	16.6x
KMX	CarMax	30.8x	20.3x	21.0x	19.7x	17.0x	16.3x	17.7x	28.8x	8.7x	25.3x	25.0x	19.4x
KAR	KAR Auction Services	nm	nm	nm	nm	nm	18.7x	36.5x	50.4x	30.3x	21.8x	17.8x	13.6x
	Dealer Average	16.1x	12.7x	11.6x	11.1x	7.5x	9.6x	10.6x	6.5x	4.8x	7.8x	7.3x	7.1x

Source: Company filings, Bloomberg, BofA Global Research estimates

Notes: Upside/downside = potential from current stock prices, 2023-2025e are based off of actual prices as of 1/11/2024, CRMT & KMX calendar years equate to 1-year forward fiscal years (CY2024 = FY2025)

BofA GLOBAL RESEARCH



Exhibit 19: Automotive coverage universe adjusted EV/EBITDA estimates

Below we compare Adjusted EV/EBITDA multiples for the companies in our coverage universe, as well as forecast these multiples through 2025E

Ticker	Company Name	Adjusted EV / EBITDA											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E
F	Ford Motor Co	4.8x	3.1x	5.0x	3.3x	1.9x	2.5x	3.9x	5.0x	2.0x	5.7x	4.1x	3.5x
GM	General Motors	3.8x	3.6x	3.1x	3.5x	2.8x	3.8x	4.2x	4.3x	2.1x	5.0x	4.1x	3.6x
RACE	Ferrari	nm	12.7x	12.6x	16.4x	15.0x	22.0x	31.0x	29.6x	20.9x	24.9x	23.8x	21.3x
	Traditional OEM Average ex. RACE	4.3x	3.4x	4.1x	3.4x	2.3x	3.1x	4.1x	4.6x	2.0x	5.4x	4.1x	3.5x
LCID	Lucid Motors	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
RIVN	Rivian Automotive	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
TSLA	Tesla Motors	nm	nm	53.7x	147.5x	29.3x	27.5x	125.6x	101.1x	21.9x	56.9x	38.0x	31.9x
	EV OEM Average	nm	nm	53.7x	147.5x	29.3x	27.5x	125.6x	101.1x	21.9x	56.9x	38.0x	31.9x
ADNT	Adient PLC	nm	nm	6.5x	6.9x	2.8x	4.1x	7.8x	10.8x	5.8x	7.8x	5.4x	3.9x
APTV	Aptiv	nm	nm	nm	12.4x	8.5x	11.5x	22.8x	22.5x	14.5x	10.7x	8.3x	7.3x
AXL	American Axle	6.0x	5.0x	4.4x	5.2x	4.2x	4.6x	5.9x	4.4x	5.0x	4.7x	3.7x	3.1x
BWA	BorgWarner	9.2x	8.6x	6.7x	7.7x	5.0x	5.5x	12.4x	9.8x	14.0x	10.8x	10.8x	9.4x
GNTX	Gentex Corp	10.6x	8.1x	8.6x	8.5x	8.3x	10.3x	15.3x	16.0x	13.0x	12.2x	9.5x	8.0x
LAZR	Luminar Technologies	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
LEA	Lear Corp	6.7x	6.4x	5.3x	5.9x	4.0x	4.8x	9.6x	9.1x	6.5x	6.3x	4.6x	3.8x
MGA	Magna International	6.7x	5.0x	5.0x	5.7x	4.5x	4.5x	7.3x	7.2x	6.1x	6.1x	4.7x	3.8x
MBLY	Mobileye	nm	nm	nm	nm	nm	nm	nm	nm	36.2x	51.3x	26.9x	16.3x
VC	Visteon Corp	38.1x	9.8x	7.6x	10.9x	6.1x	11.5x	19.6x	15.2x	11.0x	8.8x	6.1x	4.8x
	Supplier Average	12.9x	7.2x	6.3x	7.9x	5.4x	7.1x	12.6x	11.9x	9.5x	8.4x	6.6x	5.5x
ABG	Asbury Automotive Group	10.7x	8.8x	7.7x	7.3x	7.1x	8.6x	9.4x	7.8x	5.3x	6.6x	6.5x	6.2x
AN	AutoNation	10.6x	9.5x	8.7x	9.3x	7.1x	6.8x	6.8x	5.6x	4.4x	5.8x	5.5x	5.2x
GPI	Group 1 Automotive	10.0x	8.3x	8.0x	7.5x	6.4x	7.6x	6.6x	5.9x	4.4x	5.9x	5.9x	5.6x
LAD	Lithia Motors	11.1x	9.3x	8.4x	8.7x	6.9x	8.3x	11.5x	6.4x	6.0x	9.9x	8.8x	8.6x
PAG	Penske Automotive Group	11.1x	8.4x	10.3x	9.7x	8.2x	8.9x	8.3x	6.8x	6.4x	8.6x	8.3x	8.2x
SAH	Sonic Automotive	8.0x	6.9x	6.9x	6.7x	6.0x	6.2x	6.3x	5.4x	4.8x	6.5x	6.4x	6.2x
CRMT	America's Car-Mart	20.1x	33.0x	17.5x	14.4x	14.9x	16.8x	16.0x	16.6x	18.5x	19.9x	35.7x	31.6x
KMX	CarMax	16.0x	11.4x	12.0x	11.1x	9.9x	11.2x	12.0x	17.6x	7.1x	13.7x	12.8x	11.1x
KAR	KAR Auction Services	nm	nm	nm	nm	nm	7.8x	10.3x	9.5x	9.7x	9.2x	7.5x	5.8x
	Dealer Average	10.3x	8.5x	8.3x	8.2x	7.0x	7.7x	8.1x	6.3x	5.2x	7.2x	6.9x	6.7x

Source: Company filings, Bloomberg, BofA Global Research estimates

Notes Adjusted EV/EBITDA multiples are adjusted for pension & OPEB; 2023-2025e are based off of actual prices as of 1/11/2024, CRMT & KMX calendar years equate to 1-year forward fiscal years (CY2024 = FY2025)

BofA GLOBAL RESEARCH

Exhibit 20: Automotive coverage universe EPS

Below we compare EPS for the companies in our coverage universe, as well as forecasted EPS estimates out through 2025E

Ticker	Company Name	EPS											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E
F	Ford Motor Co	\$1.34	\$1.93	\$1.76	\$1.88	\$1.30	\$1.19	\$0.36	\$1.59	\$1.88	\$1.85	\$1.95	\$2.25
GM	General Motors	\$3.03	\$5.02	\$6.12	\$6.62	\$6.54	\$4.82	\$4.90	\$7.07	\$7.59	\$7.16	\$7.80	\$8.85
RACE	Ferrari	€ 1.38	€ 1.63	€ 2.25	€ 2.83	€ 3.37	€ 3.71	€ 3.28	€ 4.50	€ 5.13	€ 6.65	€ 7.30	€ 8.15
LCID	Lucid Motors	nm	nm	nm	nm	nm	(\$35.61)	(\$28.42)	(\$2.00)	(\$0.77)	(\$1.43)	(\$1.15)	(\$0.80)
RIVN	Rivian Automotive	nm	nm	nm	nm	nm	nm	nm	(\$14.78)	(\$6.34)	(\$4.88)	(\$2.25)	(\$0.30)
TSLA	Tesla Motors	(\$0.07)	(\$0.36)	(\$0.19)	(\$0.58)	(\$0.09)	\$0.01	\$0.76	\$2.26	\$4.07	\$3.12	\$4.10	\$4.90
ADNT	Adient PLC	nm	\$5.33	\$8.52	\$9.35	\$5.65	\$1.61	(\$0.04)	\$2.08	\$0.11	\$2.15	\$2.88	\$4.85
APTIV	Aptiv	\$3.77	\$3.51	\$4.47	\$4.64	\$5.26	\$4.80	\$1.94	\$3.06	\$3.41	\$4.75	\$6.50	\$8.00
AXL	American Axle	\$2.31	\$2.88	\$3.27	\$3.81	\$3.30	\$1.61	\$0.13	\$0.93	\$0.62	(\$0.16)	\$0.70	\$1.00
BWA	BorgWarner	\$3.25	\$3.04	\$3.26	\$3.89	\$4.48	\$4.13	\$2.76	\$3.96	\$4.60	\$3.76	\$4.20	\$4.85
GNTX	Gentex Corp	\$0.95	\$1.07	\$1.19	\$1.28	\$1.62	\$1.67	\$1.45	\$1.49	\$1.36	\$1.77	\$2.15	\$2.55
LAZR	Luminar Technologies	nm	nm	nm	nm	(\$12.00)	(\$0.84)	(\$2.54)	(\$0.38)	(\$0.78)	(\$0.84)	(\$0.65)	(\$0.50)
LEA	Lear Corp	\$8.15	\$10.85	\$14.03	\$17.00	\$18.21	\$13.99	\$5.33	\$7.94	\$8.72	\$11.84	\$18.00	\$21.80
MGA	Magna International	\$4.54	\$4.49	\$5.23	\$5.93	\$6.70	\$6.05	\$3.60	\$5.13	\$4.10	\$5.45	\$7.20	\$9.20
MBLY	Mobileye	\$0.21	\$0.47	\$0.73	nm	nm	nm	nm	nm	\$0.80	\$0.81	\$0.36	\$0.85
VC	Visteon Corp	\$0.57	\$2.81	\$5.31	\$6.15	\$6.13	\$2.77	\$0.97	\$2.11	\$5.33	\$6.60	\$8.90	\$11.40
ABG	Asbury Automotive Group	\$4.37	\$5.57	\$6.08	\$6.43	\$8.41	\$9.46	\$12.90	\$27.29	\$37.66	\$33.00	\$32.00	\$32.80
AN	AutoNation	\$3.49	\$3.98	\$4.22	\$4.01	\$4.41	\$4.77	\$7.12	\$18.14	\$24.57	\$22.80	\$23.25	\$23.50
GPI	Group 1 Automotive	\$5.87	\$6.87	\$7.42	\$7.73	\$8.91	\$10.93	\$18.03	\$34.55	\$45.71	\$46.05	\$41.40	\$42.05
LAD	Lithia Motors	\$5.11	\$7.02	\$7.42	\$8.39	\$9.98	\$11.76	\$18.19	\$40.03	\$44.42	\$36.85	\$40.00	\$43.65
PAG	Penske Automotive Group	\$3.17	\$3.67	\$4.00	\$4.31	\$5.34	\$5.28	\$6.64	\$15.28	\$18.55	\$16.35	\$16.35	\$17.35
SAH	Sonic Automotive	\$1.90	\$1.97	\$2.01	\$1.85	\$1.79	\$2.65	\$3.85	\$8.46	\$9.61	\$6.95	\$6.65	\$6.40
CRMT	America's Car-Mart	\$2.77	\$3.25	\$1.33	\$2.55	\$3.60	\$6.73	\$7.39	\$14.95	\$13.92	\$3.11	\$3.22	\$3.75
KMX	CarMax	\$2.16	\$2.66	\$3.06	\$3.26	\$3.69	\$4.79	\$5.33	\$4.52	\$6.97	\$3.03	\$2.87	\$3.70
KAR	KAR Auction Services	nm	nm	nm	\$1.30	\$1.26	\$1.04	\$0.51	\$0.31	\$0.43	\$0.68	\$0.80	\$1.05

Source: Company filings, Bloomberg, BofA Global Research estimates

Notes: CRMT & KMX calendar years equate to 1-year forward fiscal years (CY2024 = FY2025)

BofA GLOBAL RESEARCH



**Exhibit 21: Automotive coverage universe closing prices**

Below we compare annual closing prices for the companies in our coverage universe

Ticker	Company Name	Closing Price											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E
F	Ford Motor Co	\$15.50	\$14.09	\$12.13	\$12.49	\$7.65	\$9.30	\$8.79	\$20.77	\$11.63	\$12.19	\$11.71	\$11.71
GM	General Motors	\$34.91	\$34.01	\$34.84	\$40.99	\$33.45	\$32.59	\$41.64	\$58.63	\$33.64	\$35.92	\$35.86	\$35.86
RACE	Ferrari	nm	\$48.00	\$58.14	\$104.84	\$99.44	\$147.42	\$229.52	\$258.82	\$214.22	\$338.43	\$350.53	\$350.53
LCID	Lucid Motors	nm	nm	nm	nm	nm	nm	\$10.01	\$38.05	\$6.83	\$4.21	\$3.26	\$3.26
RIVN	Rivian Automotive	nm	nm	nm	nm	nm	nm	nm	\$103.69	\$18.43	\$23.46	\$18.79	\$18.79
TSLA	Tesla Motors	\$14.83	\$16.00	\$14.25	\$20.76	\$22.19	\$27.89	\$235.22	\$352.26	\$123.18	\$248.48	\$227.22	\$227.22
ADNT	Adient PLC	nm	nm	\$58.60	\$78.70	\$15.06	\$18.92	\$34.77	\$47.88	\$34.69	\$36.36	\$33.64	\$33.64
APTV	Aptiv	nm	nm	nm	\$84.83	\$61.57	\$84.58	\$130.29	\$164.95	\$93.13	\$89.72	\$83.60	\$83.60
AXL	American Axle	\$22.59	\$18.94	\$19.30	\$17.03	\$11.10	\$9.58	\$8.34	\$9.33	\$7.82	\$8.81	\$8.06	\$8.06
BWA	BorgWarner	\$54.95	\$43.23	\$39.44	\$51.09	\$34.74	\$38.63	\$38.64	\$45.07	\$40.25	\$35.85	\$34.07	\$34.07
GNTX	Gentex Corp	\$18.07	\$16.01	\$19.69	\$20.95	\$20.21	\$25.81	\$33.93	\$34.85	\$27.27	\$32.66	\$32.51	\$32.51
LAZR	Luminar Technologies	nm	nm	nm	nm	nm	\$10.20	\$34.00	\$16.91	\$4.95	\$3.37	\$2.83	\$2.83
LEA	Lear Corp	\$98.08	\$122.83	\$132.37	\$176.66	\$122.86	\$122.18	\$159.03	\$182.95	\$124.02	\$141.21	\$134.18	\$134.18
MGA	Magna International	\$54.35	\$40.56	\$43.40	\$56.67	\$45.45	\$48.84	\$70.80	\$80.94	\$56.18	\$59.08	\$56.87	\$56.87
MBLY	Mobileye	nm	nm	nm	nm	nm	nm	nm	nm	\$35.06	\$43.32	\$31.03	\$31.03
VC	Visteon Corp	\$106.86	\$114.50	\$80.34	\$125.14	\$60.28	\$86.59	\$125.52	\$111.14	\$130.83	\$124.90	\$116.38	\$116.38
ABG	Asbury Automotive Group	\$75.92	\$67.44	\$61.70	\$64.00	\$66.66	\$99.55	\$145.74	\$172.73	\$179.25	\$224.97	\$209.50	\$209.50
AN	AutoNation	\$60.41	\$59.66	\$48.65	\$51.33	\$35.70	\$43.31	\$69.79	\$116.85	\$107.30	\$150.18	\$141.35	\$141.35
GPI	Group 1 Automotive	\$89.62	\$75.70	\$77.94	\$70.97	\$52.72	\$89.06	\$131.14	\$195.22	\$180.37	\$304.74	\$282.38	\$282.38
LAD	Lithia Motors	\$86.69	\$106.67	\$96.86	\$113.59	\$76.33	\$130.91	\$292.67	\$296.95	\$204.74	\$329.28	\$295.40	\$295.40
PAG	Penske Automotive Group	\$49.07	\$42.34	\$51.84	\$47.85	\$40.32	\$44.72	\$59.39	\$107.22	\$114.93	\$160.51	\$151.50	\$151.50
SAH	Sonic Automotive	\$27.04	\$22.76	\$22.90	\$18.45	\$13.76	\$27.61	\$38.57	\$49.45	\$49.27	\$56.21	\$52.88	\$52.88
CRMT	America's Car-Mart	\$53.38	\$26.69	\$43.75	\$44.65	\$72.45	\$97.66	\$109.84	\$102.40	\$72.26	\$75.77	\$62.16	\$62.16
KMX	CarMax	\$66.58	\$53.97	\$64.39	\$64.13	\$62.73	\$78.07	\$94.46	\$130.23	\$60.89	\$76.74	\$71.88	\$71.88
KAR	KAR Auction Services	nm	nm	nm	nm	nm	\$19.41	\$18.61	\$15.62	\$13.05	\$14.81	\$14.27	\$14.27

Source: Company filings, Bloomberg, BofA Global Research estimates

Notes: 2023-2025e are based off of actual prices as of 1/11/2024. CRMT & KMX calendar years equated to 1-forecast fiscal years (CY2024 = FY2025)

BofA GLOBAL RESEARCH

Stock performance

Exhibit 22: Stock performance

On average within our stock coverage, traditional original equipment manufacturers (OEMs) are down 2%, electric vehicle (EV) OEMs are down 17%, suppliers are down 6%, and dealers are down 7% YTD

		Absolute Perf.			Relative to Sector			Relative to Market			52 Week		%	%	Year-to-Date		
1/4/2024	Price	-1M	-3M	-12M	-1M	-3M	-12M	-1M	-3M	-12M	High	Low	vs. High	vs. Low	Absolute	Rel./Sec	Rel./Mkt.
Suppliers																	
Adient	\$33.64	0.9%	-9.0%	-18.5%	-2.4%	7.5%	-5.5%	-2.5%	-16.7%	-32.3%	\$47.50	\$30.11	-29.2%	11.7%	-7.5%	-1.2%	-7.7%
American Axle	\$8.06	4.8%	12.9%	-6.7%	1.4%	33.3%	8.1%	1.4%	3.4%	-22.5%	\$10.12	\$6.29	-20.4%	28.1%	-8.5%	-2.3%	-8.7%
Aptiv	\$83.60	3.7%	-15.5%	-15.8%	0.3%	-0.2%	-2.4%	0.3%	-22.6%	-30.1%	\$124.88	\$71.01	-33.1%	17.7%	-6.8%	-0.5%	-7.0%
BorgWarner	\$34.07	2.4%	-14.8%	-11.1%	-0.9%	0.6%	3.1%	-1.0%	-22.0%	-26.2%	\$47.05	\$31.63	-27.6%	7.7%	-5.0%	1.5%	-5.2%
Gentex	\$32.51	4.1%	2.0%	15.0%	0.7%	20.4%	33.3%	0.7%	-6.6%	-4.5%	\$34.33	\$25.77	-5.3%	26.2%	-0.5%	6.3%	-0.7%
Luminar	\$2.83	14.4%	-33.4%	-45.5%	10.6%	-21.3%	-36.8%	10.6%	-39.0%	-54.7%	\$10.55	\$2.30	-73.2%	22.8%	-16.2%	-10.5%	-16.4%
Lear	\$134.18	0.1%	-3.6%	-1.3%	-3.2%	13.8%	14.4%	-3.2%	-11.8%	-18.1%	\$157.91	\$117.79	-15.0%	13.9%	-5.0%	1.5%	-5.2%
Magna	\$56.87	3.4%	4.2%	-8.7%	0.0%	23.0%	5.8%	0.0%	-4.6%	-24.2%	\$68.92	\$46.71	-17.5%	21.8%	-3.7%	2.8%	-4.0%
Mobileye	\$31.03	-24.4%	-16.1%	-6.4%	-26.9%	-0.9%	8.5%	-26.9%	-23.2%	-22.3%	\$48.11	\$28.19	-35.5%	10.1%	-28.4%	-23.5%	-28.5%
Visteon Corp	\$116.38	-6.0%	-13.7%	-17.6%	-9.0%	1.9%	-4.4%	-9.1%	-20.9%	-31.5%	\$171.66	\$108.66	-32.2%	7.1%	-6.8%	-0.5%	-7.0%
BoFA Supplier Universe Average	nm	1.7%	-4.7%	-8.1%	-1.6%	12.5%	6.5%	-1.7%	-12.7%	-23.7%	nm	nm	-22.5%	16.8%	-5.5%	0.9%	-5.7%
Traditional OEMs																	
Ford	\$11.71	5.8%	-4.4%	-6.9%	10.0%	8.1%	-42.5%	2.3%	-12.5%	-22.7%	\$15.42	\$9.63	-24.1%	21.6%	-3.9%	4.1%	-4.1%
GM	\$35.86	6.8%	15.8%	-5.2%	11.1%	30.8%	-41.4%	3.3%	6.0%	-21.3%	\$43.63	\$26.30	-17.8%	36.3%	-0.2%	8.2%	-0.4%
Ferrari	\$350.53	-5.8%	13.1%	50.0%	-2.0%	27.9%	-7.3%	-8.9%	3.6%	24.6%	\$372.42	\$232.44	-5.9%	50.8%	3.6%	12.3%	3.3%
BoFA Traditional OEM Universe Average	nm	6.3%	5.7%	-6.0%	10.5%	19.4%	-42.0%	2.8%	-3.2%	-22.0%	nm	nm	-20.9%	29.0%	-2.1%	6.2%	-2.3%
EV OEMs																	
Lucid Motor	\$3.26	-29.3%	-39.0%	-58.9%	-26.4%	-31.0%	-74.6%	-31.6%	-44.1%	-65.9%	\$17.81	\$3.15	-81.7%	3.5%	-22.6%	-16.1%	-22.7%
Rivian Automotive	\$18.79	-0.8%	-3.0%	10.0%	3.1%	9.6%	-32.0%	-4.1%	-11.2%	-8.6%	\$28.06	\$11.68	-33.0%	60.9%	-19.9%	-13.2%	-20.1%
Tesla	\$227.22	-5.2%	-13.6%	84.4%	-1.4%	-2.3%	13.9%	-8.4%	-20.9%	53.1%	\$299.29	\$115.60	-24.1%	96.6%	-8.6%	-0.9%	-8.8%
BoFA EV OEM Universe Average	nm	-11.8%	-18.5%	11.8%	-8.2%	-7.9%	-30.9%	-14.7%	-25.4%	-7.1%	nm	nm	-46.3%	53.6%	-17.0%	-10.0%	-17.2%
Auto Dealers																	
Asbury Automotive	\$209.50	-3.2%	-3.9%	9.1%	0.6%	8.6%	-32.6%	-6.4%	-12.0%	-9.4%	\$256.39	\$178.40	-18.3%	17.4%	-6.9%	0.9%	-7.1%
AutoNation	\$141.35	3.7%	1.2%	22.4%	7.9%	14.4%	-24.4%	0.3%	-7.4%	1.7%	\$182.08	\$104.31	-22.4%	35.5%	-5.9%	2.0%	-6.1%
Group 1	\$282.38	-0.3%	8.2%	48.0%	3.7%	22.2%	-8.6%	-3.6%	-1.0%	22.9%	\$310.08	\$183.94	-8.9%	53.5%	-7.3%	0.4%	-7.5%
Lithia Motors	\$295.40	10.5%	7.1%	26.1%	15.0%	21.1%	-22.1%	6.9%	-1.9%	4.7%	\$331.96	\$203.65	-11.0%	45.1%	-10.3%	-2.8%	-10.5%
Sonic Automotive	\$52.88	4.9%	21.7%	5.3%	9.1%	37.6%	-35.0%	1.5%	11.5%	-12.6%	\$62.26	\$39.02	-15.1%	35.5%	-5.9%	2.0%	-6.1%
Penske Auto Group	\$151.50	0.1%	-3.1%	25.6%	4.1%	9.6%	-22.4%	-3.2%	-11.2%	4.3%	\$180.84	\$112.31	-16.2%	34.9%	-5.6%	2.3%	-5.8%
America's Car-Mart	\$62.16	1.3%	-27.8%	-18.3%	5.4%	-18.3%	-49.5%	-2.0%	-33.8%	-32.2%	\$127.96	\$58.12	-51.4%	7.0%	-18.0%	-11.1%	-18.1%
CarMax	\$71.88	7.3%	4.0%	6.6%	11.6%	17.6%	-34.1%	3.7%	-4.8%	-11.5%	\$87.50	\$55.77	-17.9%	28.9%	-6.3%	1.5%	-6.5%
KAR Auction Services	\$14.27	-3.3%	-5.4%	7.2%	0.6%	6.9%	-33.8%	-6.5%	-13.4%	-11.0%	\$16.49	\$12.19	-13.5%	17.1%	-3.6%	4.5%	-3.9%
BoFA Dealer Universe Average	nm	3.3%	5.0%	20.4%	7.4%	18.7%	-25.6%	-0.1%	-3.8%	0.0%	nm	nm	-15.7%	35.8%	-6.9%	0.9%	-7.1%
BoFA Auto Universe Average	nm	-1.4%	-7.7%	0.1%	-0.2%	6.1%	-19.8%	-4.6%	-15.5%	-16.9%	\$117.76	\$69.84	-28.4%	27.6%	-9.6%	-2.6%	-9.8%
S&P 500 Auto Components Index	\$181.24	3.4%	-15.3%	-13.7%	nm	nm	nm	0.0%	-22.4%	-28.4%	\$257.49	\$158.95	-29.6%	14.0%	-6.4%	nm	-6.6%
S&P 500 Automobiles Index	\$93.53	-3.9%	-11.5%	61.9%	nm	nm	nm	-7.0%	-19.0%	34.4%	\$121.08	\$54.39	-22.8%	72.0%	-7.8%	nm	-8.0%
S&P 500	\$4,780.24	3.4%	9.2%	20.4%	nm	nm	nm	nm	nm	nm	\$4,798.50	\$3,808.86	-0.4%	25.5%	0.2%	nm	nm

Source: Bloomberg as of 1/11/2024

Notes: Supplier sector relatives are calculated using the S&P 500 Auto Components Index, OEM sector relatives and auto renters are calculated using the S&P 500 Automobiles Index, Market relatives are calculated using the S&P 500 Index.

Past performance should not and cannot be viewed as an indicator of future performance. The BofA performance data in this exhibit relates to BofA covered companies that have been aggregated into a BofA sector by us for purposes of this report. This performance data is not intended to be

representative of the larger market sectors or sub-sectors, which may include the companies not covered by BofA Global Research. The performance data for sector presented does not represent and is not intended to represent the performance of any BofA analyst's ratings over the relevant periods

BofA GLOBAL RESEARCH



Price objective basis & risk

Adient Plc (ADNT)

Our price objective of \$50 for ADNT is based on an EV/EBITDA multiple of roughly 6.0x on our FY2024 estimates, slightly above the historical average of roughly 5.5x as the company successfully completed debt refinancing and secured its capital structure, and continues to improve in performance with its turnaround efforts.

Downside risks: 1) inability to win sufficient and profitable new business, expand the backlog, and reaccelerate top line growth, 2) inability to complete restructuring programs or cost rationalization initiatives, 3) decline in new vehicle production, 4) inability to consistently execute financially, 5) raw material cost inflation, 6) inability to handle OEM price downs, 7) failure to maintain a lean cost structure, 8) new program/platform launch risk.

Upside risks: 1) ADNT successfully wins back business, expands its backlog and reaccelerates its top line growth, 2) better than expected operating leverage from continued growth in global auto production, 3) significant progress made on restructuring programs and cost rationalization actions, 4) material market share gains in China market, 5) wind-down of non-recurring items boosts ongoing cash flow power.

American Axle (AXL)

Our price objective of \$8 is based on an EV/EBITDA multiple of roughly 4x on our 2024 estimates, which is somewhat lower than the historical average of roughly 4.5x, but in range of recent trading ranges and reflective of the forthcoming US/NA and Global production volume recovery.

Upside risks: 1) Continued strength in large truck volume growth, 2) resolution of plant issues, 3) labor cost inflation doesn't materialize

Downside risks: 1) a slowdown in large truck volume growth, particularly at key customers, 2) failure to diversify its customer base, geographic, and product exposure, 3) expansion into new segments could significantly reduce operating margins, 4) continued sharp rise in raw material and labor costs, 5) loss of business at key customers, and 6) disruption at AXL's suppliers.

America's Car-Mart, Inc. (CRMT)

Our price objective of \$55 is based on a P/E multiple of approximately 15x on our FY2025 (CY2024) EPS estimates, which is about in line with an average through-cycle multiple. We believe this is appropriate given emerging macroeconomic headwinds to CRMT's business including tight inventory in the used vehicle market and weakening of lower-income consumers.

Upside risks: 1) economic conditions improve and income disparity narrows, providing an outsized benefit to CRMT's lower-income bracket consumers, 2) interest rates remain high, used vehicle prices decline and CRMT resumes its role as a lender of last resort as competitive pressures abate, 3) used vehicle supply improves, 4) greater cost containment and operating leverage than forecast, 5) credit metrics improve (collections, defaults, loss rate, etc.)

Downside risks: 1) stalled economic improvement, particularly in rural markets where CRMT is overexposed, 2) interest rates decline quickly and used vehicle values rise, keeping competitive pressure from dealers and lenders high, 3) Inflation remains elevated, 4) used vehicle supply remains restricted, 5) inability to cover fixed costs and achieve operating leverage, 6) deterioration of credit metrics (collections, defaults, loss rate, etc.) and 7) increasing scrutiny by state legislators and/or the CFPB.



Aptiv PLC (APTV)

Our PO of \$125 for APTV is based on an EV/EBITDA multiple of roughly 12x on our 2024 estimates. Our assumed valuation metrics are in line with the average historical trading multiple, but well above the traditional automotive suppliers, which trade in ranges of 3x to 6x. We believe a valuation premium to the group is warranted, as APTV is more of a pure-play electrification / autonomy / connectivity / mobility-centric company, unencumbered by factor risks from other non-future tech businesses/products. However, we see the stock trading in line with its historical average given the hurdles on the semiconductor supply front, which are not completely resolved yet.

Downside risks: 1) sustained volatility in international markets, 2) a longer than expected decline or flatline in US/global automotive volumes, 3) a continued rise in raw material costs and semiconductors disruptions, 4) loss of key customers or suppliers, 5) inability to win new business, 6) competitive pricing pressure.

Upside risks: 1) strength in global auto production volumes, particularly in North America, 2) increased business wins as a result of Safe, Green, Connected portfolio that continue to support growth above market, 3) shareholder-friendly actions, including accretive M&A and share repurchases, support earnings and the stock.

Asbury Auto (ABG)

Our price objective of \$350 is based on a P/E multiple of roughly 11x on our 2024 estimates, which is about in line with an average dealer through-cycle multiple. We believe this is appropriate in light of the ongoing recovery in the US/NA automotive cycle following the COVID-induced trough in 2020, which should translate into revenue and earnings growth across the dealer vertical over our forecast period.

Downside risks: 1) a swift and/or material downturn in US sales, 2) market share losses by the brands to which ABG is overexposed, 3) higher interest rate environment causes material demand deterioration and/or repossessions, 4) consumer dissatisfaction with auto retailing, and 5) the potential for franchise law and/or consumer finance law changes.

Upside risks: 1) US/North America cycle recovers and plateaus at a high level of sales, continues growing, or even declines less than expected, 2) ABG is able to gain back and/or maintain some gross profit per unit in its new and used vehicles businesses, 3) used vehicle focus dries demand, top line and earnings growth beyond the peak in new vehicle sales, and 4) interest rates decline quicker than expected, stimulating demand in 2H23.

AutoNation, Inc. (AN)

Our price objective of \$255 is based on a P/E multiple of roughly 11x on our 2024 estimates, which is about in-line with an average dealer through-cycle multiple. We believe this is appropriate in light of the ongoing recovery in the US/NA automotive cycle following the COVID-induced trough in 2020, which should translate into revenue and earnings growth across the dealer vertical over our forecast period.

Downside risks: 1) a swift and/or material downturn in US sales, 2) poorer-than-expected cost performance and margin compression, 3) a stoppage in share repurchase activity or material sell-off by key shareholders, 4) higher interest rate environment causes material demand deterioration and/or repossessions 5) consumer dissatisfaction with auto retailing, and 6) the potential for franchise law and/or consumer finance law changes.

Upside risks: 1) US/NA cycle recovers and plateaus at a high level of sales, continues growing, or even declines less than expected, 2) AN is able to gain or even just maintain gross profit per unit in its new and used vehicles businesses, 3) standalone used vehicle stores capture some demand and drives top line and earnings growth beyond the peak in

new vehicle sales, and 4) interest rates decline quicker than expected, stimulating demand in 2H23.

BorgWarner (BWA)

Our price objective of \$52 is based on an EV/EBITDA multiple of roughly 7.0x on our 2024 estimates, which we believe reflects the higher growth trajectory on which the company positioned itself after the spin-off of the Fuel Systems and Aftermarket segments in July 2023.

Downside risks: 1) relaxed fuel-efficiency regulations, 2) increased competition in the turbocharger industry, 3) a longer than expected decline or flatline in US/global automotive volumes, 4) a continued rise in raw material costs, 5) slower electric vehicle adoption.

Upside risks: 1) strength in global auto production volumes, particularly in North America, 2) faster adoption of electric and hybrid vehicles, 3) BWA regains lost investor confidence through continued execution and performance.

CarMax, Inc. (KMX)

Our price objective of \$44 is based on a P/E multiple of roughly 12x on our FY2025 (CY2024) estimates, which is the lower end of the average P/E multiple historical range, which we view as appropriate as it reflects challenges presented by the short supply of used vehicles.

Upside risks: 1) used vehicle pricing remains range bound as supply increases and KMX effectively manages its inventory to drive total profits, 2) reversal in the trend of consumers opting for new vehicles rather than late-model used, 3) greater than anticipated store growth, 4) increase in customer interaction/footprint through online presence.

Downside risks: 1) extreme fluctuations in used vehicle pricing, which would have a big impact on sentiment towards the stock, 2) an extensive trend of customers opting for new vehicles rather than late-model used, 3) deterioration in credit availability and decline in the ABS market, 4) disruption from newer tech-oriented entrants, 5) potential demand destruction stemming from macro pressures.

Ferrari (RACE / XJHKF)

Our \$456 PO for RACE US (EUR416 for RACE IM) is based on an adj. EV/EBITDA multiple of roughly 31x on our 2024 estimates, which is a slight premium to RACE's current trading level due to ongoing volume, sales, and earnings growth. This valuation is also supported by a DCF analysis. The multiples used for our valuation framework are a premium to the current trading range of a number of luxury companies we classify as RACE's peer group, but warranted, in our view, given RACE's outsized growth opportunity and stability.

Downside risks: 1) devaluation of the brand due to overproduction or licensing expansion, 2) a decline in the wealth/size of the HNWI community, 3) degradation in perceived vehicle quality or performance, 4) impairment of its Formula 1 reputation or perceived racing pedigree, 5) F-1 losses persist or accelerate, 6) deterioration in adjacent businesses, 7) intensifying competition in the luxury vehicle market, 8) dependence on certain large volume suppliers, 9) significant rise in raw material costs, 10) significant voting power and control attributable to Piero Ferrari & Exor S.p.A.

Upside risks: 1) modest volume expansion, 2) an upward bias on pricing, 3) growth in adjacent businesses, 4) gradual brand and licensing extension, 5) moderation or rationalization of F-1 losses, 6) execution & cost efficiency realization, and 7) management commitment to preserving the exclusive luxury culture.



Ford Motor (F)

Our price objective of \$19 is based on an EV/EBITDAP multiple (EV/EBITDA adjusted for pension) of roughly 4x on our 2024 estimates. This valuation methodology reflects a multiple within Ford's historical range (3-6x). We believe a multiple at this level is warranted considering the timing of the cycle and as the company is on the verge of executing something analogous to our Core to Future transition framework, by which it will strengthen its core business pillars to fund its future business.

Downside risks: 1) a more swift and/or material downturn in US auto sales, 2) a sharp and sustained rise in input costs, 3) disruption in the supply base, 4) significant increase in gas prices, 5) new vehicle pricing deteriorates, 6) market share losses pressure results, 7) unwillingness of dealers to shoulder inventory risk, 8) suppliers gain significant pricing power, 9) stress in capital markets makes borrowing more expensive, 10) Incremental execution risk as management ramps up.

Upside risks: 1) continued strength in US auto cycle, 2) growth in China remains robust, which Ford is able to leverage with product launches, 3) mix and pricing remain favorable, 4) capital allocation is directed towards shareholder returns (special dividend, etc.).

General Motors Company (GM)

Our price objective of \$75 is based on an EV/EBITDAP multiple (EV/EBITDA adjusted for pension) of roughly 4x on our 2024 estimates. This valuation methodology reflects a multiple within GM's historical range (3-6x). We believe a multiple at this level is warranted considering the timing of the cycle and as GM's Core business is being well managed even amidst a choppy macro, while the accelerating focus on Future-proofing the business with the development of the necessary components of the future of mobility services, including an autonomous electric vehicle fleet (Cruise Anywhere) and connectivity (OnStar), may provide upside.

Downside risks: 1) a more swift and/or material downturn in US auto sales, 2) a sharp and sustained rise in input costs, 3) disruption in the supply base, 4) significant increase in gas prices, 5) new vehicle pricing deteriorates, 6) market share losses pressure results, 7) unwillingness of dealers to shoulder inventory risk, 8) suppliers gain significant pricing power, 9) stress in capital markets makes borrowing more expensive, 10) key members of management leave.

Upside risks: 1) continued strength in US auto cycle, 2) growth in China remains robust, which benefits GM through its established market position, 3) mix and pricing remain favorable, 4) capital allocation is directed towards shareholder returns (share repurchases, etc.).

Gentex (GNTX)

Our \$34 price objective on GNTX shares is based on an EV/EBITDA multiple of roughly 10x on our 2024 estimates, which reflects a well above average supplier multiple, and in line with the company's historical trading range. However, we believe a lower multiple could be applied given longer-term structural headwinds for its core products unless new product lines are added to the portfolio.

Upside risks: 1) new program wins that drive higher-than-expected shipment growth, 2) a successful launch of new technology that allows the company to avoid losing market share and re-accelerate growth, 3) stronger-than-expected positive operating leverage, and 4) any regaining of pricing power with the automakers.

Downside risks: 1) a further slowdown in global auto shipments, 2) softer-than-expected operating leverage, 3) a continued rise in raw materials costs, and 4) increased

competition from other suppliers 5) risk of management pursuing large and potentially dilutive M&A.

Group 1 Auto (GPI)

Our price objective of \$455 is based on a P/E multiple of roughly 11x on our 2024 estimates, which is about in-line with an average dealer through-cycle multiple. We believe this is appropriate in light of the ongoing recovery in the US/NA automotive cycle following the COVID-induced trough in 2020, which should translate into revenue and earnings growth across the dealer vertical over our forecast period.

Downside risks: 1) weaker demand than expected in the US, and/or UK, 2) the loss of key management, 3) the possibility that GPI is unable to achieve the operating leverage we forecast, 4) higher interest rate environment causes material demand deterioration and/or repossessions, 5) consumer dissatisfaction with auto retailing, and 6) the potential for franchise law and/or consumer finance law changes.

Upside risks: 1) US/NA cycle recovers and plateaus at a high level of sales, continues growing, or even declines less than expected, 2) GPI is able to gain back some gross profit per unit in its new and used vehicles businesses, 3) growth in international markets helps to offset weakness in the US market, and 4) interest rates decline quicker than expected, stimulating demand in 2H23.

Lear Corp. (LEA)

Our \$220 price objective on LEA shares is based on an EV/EBITDA multiple of roughly 7.0x on our 2024 estimates. This multiple is a slight premium to the company's historical average since we believe adjustment to a lower volume environment and the company's vertical integration will bolster already strong cash flow that is being returned to shareholders through dividends and growing share buybacks.

Downside risks: 1) a slower or further decline in US/global automotive volume growth, 2) disruption from the re-emergence in the Seating market of LEA's largest competitor (ADNT), 3) increased pricing pressure from OEM customers, 4) loss of business at key customers, 5) fierce competition in the automotive supply base, 6) a new rise in raw material costs, 7) execution risk of restructuring, operations, and acquisitions.

Upside risks: 1) faster recovery than expected in global auto production volumes, 2) continued execution and progress on margin expansion, 3) shareholder-friendly actions including accretive M&A and share repurchases support earnings and the stock.

Lithia Motors A (LAD)

Our price objective of \$440 is based on a P/E multiple of roughly 11x on our 2024 estimates, which is a slight premium to an average dealer through-cycle multiple. We believe this is appropriate in light of the company's track record of strong earnings and recent strong execution of M&A growth actions.

Downside risks: 1) a swift and/or material downturn in US sales, 2) slower improvement in operating leverage than forecast, 3) substantial market share loss by domestic brands, to which LAD is exposed, 4) higher interest rate environment causes material demand deterioration and/or repossessions, 5) consumer dissatisfaction with auto retailing, and 6) the potential for franchise law and/or consumer finance law changes.

Upside risks: 1) acquisition activity above current forecasts, 2) continued recovery in US auto sales beyond current estimates, 2) LAD is able to gain back/maintain some gross profit per unit in its new and used vehicles businesses, and 3) interest rates decline quicker than expected, stimulating demand in 2H23.

Lucid Group (LCID)



Our price objective of \$7 is based on 6x EV/Sales on our 2025 estimates, which implies roughly 0.5x EV/Sales and 3x EV/EBITDA on pro-forma capital-induced 2030 estimates. Our valuation framework for LCID is relatively consistent with TSLA and includes the following steps: 1) What the current stock price affords to LCID in incremental plants/units. 2) What the incremental units translates into in incremental revenue/profits. 3) What the incremental revenue/profits translates into in terms of multiples on theoretical pro-forma 2030 metrics.

Downside risks: 1) inability to continue to raise low cost capital to fund business ventures, 2) inability to convert refundable reservations into contracted orders, unit sales, and revenue, 3) greenfield/clean-sheet approach to EV manufacturing introduces risk of successful execution, 4) direct-to-consumer sales and service model may create challenges for business to scale, 5) inability to reach sustainable positive EBITDA/FCF.

Upside risks: 1) significant and better than expected customer traction for introduced/unveiled products, 2) successful execution of go-to-market strategy via direct-to-consumer sales and service model, 3) better than expected progress on start and ramp of production with clean-sheet manufacturing approach, 4) breakthrough in advanced battery technology to drive ICE/EV parity, 5) incremental government/regulatory support/stimulus for EV market.

Luminar Technologies (LAZR)

Our PO of \$4 is based on an EV/Sales multiple of 5.5x on our 2025 estimates. This is above the average EV/Sales multiple of 4.0x for the Auto/Tech companies we include in LAZR's peer group. We believe the premium to peers is warranted given LAZR significantly stronger growth profile. Recall, LAZR is at a more nascent stage than the peer group.

Upside risks: 1) Continued strong execution on securing series production contracts, 2) Progress on Level 2+ autonomous driving and market penetration may be faster than projected, 3) Technological breakthrough on Level 4+ autonomous capabilities and systems, 4) Market consolidation eases competitive pressures and leaves more room expansion, 5) Better than expected cost reduction and quicker scaling of operation, 5) Prices hold up better-than expected.

Downside risks: 1) Slower pace of securing series production contracts, 2) Progress on Level 2+ autonomous driving and market penetration may be slower than projected, 3) Pushout of Level 4+ autonomous capabilities and systems, 4) Necessity for LIDAR at varying levels of autonomy could change as new technology is developed, and preferences may shift to alternative sensors, 5) Inability to establish or maintain technological leadership over competition, 6) Inability to drive down cost effectively to preserve margins as ASPs decline with volume, 7) Macro/market volatility could impact customer demand and launch schedules, 8) LAZR may need to raise additional capital.

Magna Intl (MGA / YMG)

Our \$77 price objective on MGA US (CAD105.49 for MG CN) is based on an EV/EBITDA multiple of roughly 6x on our 2024 estimates, above the historical average of roughly 5.0x, which we believe reflects MGA's superior long-term positioning, and expertise of the complete vehicle/components that provides the company with a competitive advantage amid the ongoing industry evolution and technological advancement (Big Bang).

Downside risks: 1) a flatline or decline in the US SAAR and NA production volumes for longer than expected, 2) inability to deliver on projected growth targets in emerging markets, 3) stress at key customers, most notably the Detroit Three.

Upside risks: 1) strength in global auto production volumes, particularly in North

America, 2) expansion into China market, 3) continued execution and progress on restructuring programs and margin expansion, 4) shareholder-friendly actions including accretive M&A and share repurchases support earnings and the stock.

Mobileye (MBLY)

Our PO of \$22 is based on 5.5x EV/Sales on 2025E, which is below the average of its four closest peers (NVDA, QCOM, LAZR, AMBA) and lower than the range of the two Tier 2+ ADAS/AV hardware companies in the comp set. This reflects our slower growth outlook, specifically following the company's initial guidance for 2024.

Downside risks: 1) Market penetration of Level 2+ ADAS may take longer than expected and pathway/timing of Level 4+ autonomous vehicle (AV) capabilities is unclear, 2) inability to maintain technological leadership over competition, 3) standardization of ADAS/AV technology could make it challenging to maintain gross and operating margins, 4) macro/market volatility could impact demand and product launches, 5) export control limitations of key semiconductor technology and restriction of US citizens/greencard holders from working in certain Chinese entities, 6) lack of liquidity in the stock and/or future stock sales.

Upside risks: 1) Mega-trend towards ADAS & autonomy, 2) timing and go-to-market strategy of MBL's Level 4+ offerings could exceed expectations, 3) MBL may be more successful in winning new customers/contracts, 4) barriers to entry could prove more formidable, 5) industry consolidation in ADAS/AV, 6) better operating performance and/or changes to strategy.

OPENLANE (KAR)

Our price objective of \$16 is based on an adjusted EV/EBITDA multiple of roughly 8x on our 2024 estimates. Although KAR's longer-term historical average EV/EBITDA multiple range is somewhat illustrative, it is not directly applicable because of significant changes in the company since it was last public. We believe recent management changeover will catalyze a broader turnaround effort and result in more sustainable improved operating performance. However, the lack of wholesale vehicle supply in the short term may usurp management's best efforts.

Upside risks: 1) supply of wholesale vehicles bounces back faster than currently expected, 2) execution of a large, transformational acquisition, 3) development of relationships with new suppliers and customers.

Downside risks: 1) supply of new vehicles does not recover or further declines 2) failure to maintain relationships with key customers, 3) failure to maintain key managers.

Penske Auto Group (PAG)

Our price objective of \$200 is based on a P/E multiple of roughly 12x on our 2024 estimates, which is about in line with an average dealer through-cycle multiple. We believe this is appropriate in light of the ongoing recovery in the US/NA automotive cycle following the COVID-induced trough in 2020, which should translate into revenue and earnings growth across the dealer vertical over our forecast period.

Downside risks: 1) the loss of Roger Penske's leadership, 2) a swift and/or material downturn in US sales, 3) slower recovery in Europe sales, 4) higher interest rate environment causes material demand deterioration and/or repossessions 5) unfavorable foreign exchange rates, 6) consumer dissatisfaction with auto retailing, and 7) the potential for franchise law and/or consumer finance law changes.

Upside risks: 1) acquisition activity above current forecasts, 2) continued recovery in US auto sales beyond current estimates, 3) significant improvement in cost leverage beyond

our estimates. 4) interest rates decline quicker than expected, stimulating demand in 2H23.

Rivian Automotive (RIVN)

Our price objective of \$40, based on 3x EV/Sales on our 2025 estimates, implying 0.5x EV/Sales and 3x EV/EBITDA on pro-forma capital-induced 2030 estimates. Our valuation framework for RIVN is relatively consistent with its peer and includes the following steps: 1) What the current stock price affords to RIVN in incremental plants/units. 2) What the incremental units translates into in incremental revenue/profits. 3) What the incremental revenue/profits translates into in terms of multiples on theoretical pro-forma 2030 metrics.

Downside risks: 1) inability to continue to raise low cost capital to fund business ventures, 2) inability to convert pre-orders and orders into unit sales, revenue, and eventually earnings, 3) termination of or amendment to sales and service agreement with anchor customer, 4) direct-to-consumer sales and service model may create challenges for business to scale, 5) inability to reach sustainable positive EBITDA/FCF with investment across numerous business areas.

Upside risks: 1) significant and better than expected customer traction for introduced/unveiled products, 2) successful execution of go-to-market strategy via direct-to-consumer sales and service model, 3) better than expected progress ramp of production and successful build-out of incremental capacity, 4) breakthrough in advanced battery technology to drive ICE/EV parity, 5) incremental government/regulatory support/stimulus for EV market.

Sonic Automotive (SAH)

Our price objective of \$60 is based on a P/E multiple of roughly 9x on our 2024 estimates, which is just below an average dealer through-cycle multiple. We believe this is appropriate in light of the somewhat stalled recovery in the US/NA automotive cycle following the COVID-induced trough in 2020, as well as SAH's over exposure to the Used market via its standalone EchoPark stores.

Upside risks are 1) prolonged upside in the US cycle beyond our forecasts, 2) material accretive M&A activity, 3) market share gains as a result of successful initiatives. 4) interest rates decline quicker than expected, stimulating demand in 2H23.

Downside risks are 1) a swift and/or material downturn in US sales, 2) higher interest rate environment causes material demand deterioration and/or repossessions, 3) consumer dissatisfaction with auto retailing, and 4) the potential for franchise law and/or consumer finance law changes.

Tesla Motors (TSLA)

Our price objective of \$290 is based on 8.5x EV/Sales and 48x EV/EBITDA on our 2024 estimates, which implies roughly 3x EV/Sales and 22x EV/EBITDA on pro-forma capital-induced 2025 estimates. Our valuation framework for TSLA includes the following steps: 1) What the current stock price affords to TSLA in incremental plants/units. 2) What the incremental units translates into in incremental revenue/profits. 3) What the incremental revenue/profits translates into in terms of multiples on theoretical pro-forma 2025 metrics.

Downside risks: 1) inability to continue raising low-cost capital to fund business ventures, 2) inability to generate positive earnings/FCF, 3) slower ramp in electric vehicle demand, 4) setbacks or lack of advancements in battery technology, 5) fierce competition from incumbent OEMs, 6) inability to execute efficiently with higher volume, 7) low gasoline prices, and 8) loss of management.

Upside risks: 1) better execution and cost containment, 2) a sharp/sustained rise in gasoline prices, 3) a breakthrough in advanced battery technology, 4) increase in federal or state incentives, 5) short covering.

Visteon (VC)

Our PO of \$180 is based on an EV/EBITDA multiple of 10x on our 2024 estimates, which is consistent with a P/E multiple of roughly 20x. This is slightly above the mid-point of where the stock has traded (6-12x) since 2016, excluding the Covid-19 period. Our assumed multiple is a premium to the current trading multiple of 7x for the suppliers in our coverage and our average assumed multiple of 8x underlying our POs, given VC's growth-over-market is above most suppliers and in consideration of its exposure to key mega-trends.

Downside risks: 1) Competition is intense and likely to heat up further as suppliers aggressively position their product portfolio to benefit from high growth markets, 2) Inability to maintain a technological edge amidst the rapidly evolving auto sector, 3) Inability to win new business across its product lines, or gain higher content per vehicle on new business wins, 4) Inability to drive growth-over-market and margin expansion as expected, 5) UAW strike poses a near-term risk to volumes and earnings.

Upside risks: 1) Stronger than expected recovery in automotive sales/production, 2) Higher-than-expected content per vehicle across newer product areas, 3) Market share gains with new product launches, 4) Successfully achieve 2026 growth and margin targets, 5) Shareholder-friendly actions like M&A and share repurchases.

Analyst Certification

We, John Murphy, CFA and John P. Babcock, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Securities is currently acting as financial advisor to Intel Corp in connection with its sale of a minority stake in IMS Nanofabrication GmbH to Taiwan Semiconductor Manufacturing Co Ltd, which was announced on September 12, 2023.

US - Automotives Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Adient Plc	ADNT	ADNT US	John Murphy, CFA
	Aptiv PLC	APTV	APTV US	John Murphy, CFA
	Asbury Auto	ABG	ABG US	John Murphy, CFA
	AutoNation, Inc.	AN	AN US	John Murphy, CFA
	BorgWarner	BWA	BWA US	John Murphy, CFA
	Ferrari	RACE	RACE US	John Murphy, CFA
	Ferrari NV	XJHKF	RACE IM	John Murphy, CFA
	Ford Motor	F	F US	John Murphy, CFA
	General Motors Company	GM	GM US	John Murphy, CFA
	Group 1 Auto	GPI	GPI US	John Murphy, CFA
	Lear Corp.	LEA	LEA US	John Murphy, CFA
	Lithia Motors A	LAD	LAD US	John Murphy, CFA
	Magna Intl	MGA	MGA US	John Murphy, CFA
	Magna Intl	YMG	MG CN	John Murphy, CFA
	Penske Auto Group	PAG	PAG US	John Murphy, CFA
	Rivian Automotive	RIVN	RIVN US	John Murphy, CFA



US - Automotives Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Visteon	VC	VC US	John P. Babcock
NEUTRAL				
	Gentex	GNTX	GNTX US	John Murphy, CFA
	Lucid Group	LCID	LCID US	John Murphy, CFA
	Luminar Technologies	LAZR	LAZR US	John P. Babcock
	Tesla Motors	TSLA	TSLA US	John Murphy, CFA
UNDERPERFORM				
	American Axle	AXL	AXL US	John Murphy, CFA
	America's Car-Mart, Inc.	CRMT	CRMT US	John Murphy, CFA
	CarMax, Inc.	KMX	KMX US	John Murphy, CFA
	Mobileye	MBLY	MBLY US	John Murphy, CFA
	OPENLANE	KAR	KAR US	John Murphy, CFA
	Sonic Automotive	SAH	SAH US	John Murphy, CFA
RVW				
	Fisker	FSR	FSR US	John P. Babcock

Disclosures

Important Disclosures

Equity Investment Rating Distribution: Autos Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	67	55.83%	Buy	39	58.21%
Hold	30	25.00%	Hold	15	50.00%
Sell	23	19.17%	Sell	12	52.17%

Equity Investment Rating Distribution: Distributors Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	5	71.43%	Buy	2	40.00%
Hold	0	0.00%	Hold	0	0.00%
Sell	2	28.57%	Sell	1	50.00%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the [Price Charts website](#), or call 1-800-MERRILL to have them mailed.

BofA or one of its affiliates acts as a market maker for the equity securities recommended in the report: Adient Plc, American Axle, America's Car-Mart, Aptiv PLC, Asbury Auto, AutoNation, Inc., BorgWarner, CarMax, Ferrari, Ford Motor, General Motors, Gentex, Group 1 Auto, Lear Corp., Lithia Motors A, Lucid Group, Luminar, Magna Intl, Mobileye, OPENLANE, Penske Auto Group, Rivian

Automotive, Sonic Automotive, Tesla, Visteon Corp.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Lucid Group, Magna Intl, Mobileye, Rivian Automotive.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Adient Plc, American Axle, Aptiv PLC, Asbury Auto Grp, AutoNation Inc, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Lear Corp., Lucid Group, Magna Intl, Mobileye, OPENLANE, Rivian Automotive, Sonic Automotive, Tesla Motors, Visteon.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Adient Plc, American Axle, America's Car-Mart, Aptiv PLC, Asbury Auto Grp, AutoNation Inc, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Group 1 Automoti, Lear Corp., Lithia Motors A, Lucid Group, Magna Intl, Mobileye, OPENLANE, Penske Auto Group, Rivian Automotive, Sonic Automotive, Tesla Motors, Visteon.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: Adient Plc, American Axle, America's Car-Mart, Aptiv PLC, Asbury Auto Grp, AutoNation Inc, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Group 1 Automoti, Lear Corp., Lithia Motors A, Lucid Group, Magna Intl, Mobileye, OPENLANE, Penske Auto Group, Rivian Automotive, Sonic Automotive, Tesla Motors, Visteon.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Adient Plc, Asbury Auto Grp, AutoNation Inc, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Lucid Group, Magna Intl, Mobileye, OPENLANE, Rivian Automotive, Sonic Automotive, Visteon.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Adient Plc, American Axle, Aptiv PLC, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Lear Corp., Lucid Group, Magna Intl, Mobileye, Rivian Automotive, Sonic Automotive, Tesla Motors, Visteon.

BofAS together with its affiliates beneficially owns one percent or more of the common stock of this issuer. If this report was issued on or after the 9th day of the month, it reflects the ownership position on the last day of the previous month. Reports issued before the 9th day of a month reflect the ownership position at the end of the second month preceding the date of the report: Aptiv PLC, BorgWarner, Ferrari, General Motors Co, Group 1 Automoti, Lear Corp., Magna Intl.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Adient Plc, American Axle, America's Car-Mart, Aptiv PLC, Asbury Auto, AutoNation, Inc., BorgWarner, CarMax, Ferrari, Ford Motor, General Motors, Gentex, Group 1 Auto, Lear Corp., Lithia Motors A, Lucid Group, Luminar, Magna Intl, Mobileye, OPENLANE, Penske Auto Group, Rivian Automotive, Sonic Automotive, Tesla, Visteon Corp.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: Adient Plc, American Axle, Aptiv PLC, Asbury Auto Grp, AutoNation Inc, BorgWarner, CarMax, Ferrari, Ford Motor, General Motors Co, Group 1 Automoti, Lear Corp., Lithia Motors A, Lucid Group, Magna Intl, Mobileye, OPENLANE, Penske Auto Group, Rivian Automotive, Sonic Automotive, Tesla Motors, Visteon.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

BofAS together with its affiliates beneficially owns a net short position of 0.5% or more of the total issued share capital of this issuer. Ownership positions speak as of a date no more than three trading days prior to the date of this report: General Motors Co.

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to "Wholesale" clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is

authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

BofA ESGMeter Methodology:

ESGMeter is a proprietary metric based on quantitative analysis and fundamental analyst inputs that reflects our assessment of a company's Environmental, Social and Governance-related attributes. The ESGMeter is intended to indicate a company's likelihood of experiencing stronger financial stability (higher return on equity and lower earnings and price volatility) over the next three years relative to peer group. There are three ESGMeter levels - Low, Medium, and High - which indicate whether a company has attributes most likely to translate into superior financial stability (in the case of a High level) or weaker financial stability (in the case of a Low level) over the next three years relative to its peer group. A Medium level suggests that a company exhibits ESG characteristics that are likely associated with financial stability results in line with its peer group over the next three years. Full details of our methodology, financial stability definition and disclaimers are available at [BofA ESGMeter methodology](#). ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of the BofA Global Research fundamental equity analyst's investment rating, volatility risk rating, income rating or price objective for that company.

Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. iQDatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to

seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.