Automotive Industry

Auto earnings midgame update – Strong execution, outlooks too conservative

Price Objective Change

06 February 2024

Equity
Global
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

Good finish to 2023; expect more to come in 2024

As we enter the third week of earnings, we are updating estimates for the companies that have reported so far in 4Q:23. Although the sample size is still small, the first batch of reporters has largely delivered encouraging news for the Auto industry: OEMs and Dealers have confidence that demand will continue to be healthy while suppliers are on their way to recover margins. In general, we believe the macro backdrop included in outlooks, especially volume assumptions, has been way too conservative and would expect upside through the course of 2024.

Dealers: environment remains strong, but UK volatility

Only GPI has reported results among dealers, which makes it early to get a good read on the industry. GPI indicated that demand for new vehicles is solid, but the used vehicle business may face some volatility due to softening price (this is more extreme in the UK). After a long run of outperformance, P&S cooled slightly with SSS +4.9%, but is likely to continue to grow for many years ahead. The bottom line is that management is still confident in the business environment. As North America operations continue to deliver solid results, international markets (the U.K.) showed some cracks. In our coverage, in addition to GPI, only PAG and LAD are exposed to markets overseas (UK).

Suppliers: margins ramp, weaker EV risk to LT targets

Traditional suppliers, APTV and GNTX, reported a solid quarter and showed that margin recovery is underway. Expectations for 2024 call for further margin expansion largely driven by productivity gains and stabilized volumes. Global production volume in focus markets is conservatively expected to decline slightly YoY, which may provide upside through the year. Commentary from APTV regarding weaker high voltage going forward suggests that concerns of potential softer EV demand is real. In addition, management indicated that their internal projection of EV representing 30% of the market by 2030 should perhaps be revised lower. This may portend a lighter guide from BWA next week and a potential downward revision of MGA 2025-2027 targets.

OEM: solid demand but weaker EV weigh on sentiment

GM delivered another strong quarter despite UAW strike headwinds, supported by still favorable industry-wide pricing, solid demand, and execution. That said, we believe some mix deterioration is on the horizon. We'd highlight that GM is guiding for a 2%-2.5% pricing headwind in 2024. Separately, GM's plans to resurrect PHEV technology in North America is another sign of the slowdown of US EV demand. TSLA commentary was consistent with this trend, with guidance for sales growth to be meaningfully weaker in 2024. As for Ferrari, the company reported solid 4Q results and a 2024 outlook that was stronger than most had forecast. We continue to be impressed by management's execution and ongoing product cadence. Ferrari remains one of our top picks in 2024 with a lengthy backlog that extends through 2025, as well as stable and strong earnings.

Update POs for 4Q:23 reporting to-date

We are updating POs with APTV now at $115 (was $125), GNTX at $35 (was $34), GPI at $425 (was $455), and RACE at $458 (was $456), reflecting our latest estimates and as we now value APTV at 11x EV/EBITDA (from 12x) on 2024E given weak commentary on electrification.

Exhibit 1: Ratings and Old/New POs
PO changes for stocks in auto coverage that have reported 4Q:23 earnings

	Rating	Old PO	New PO
OEMs			
GM	B-1-7	$75	$75
RACE	B-1-7	$456	$458
TSLA	C-2-9	$280	$280
Suppliers			
APTV	C-1-9	$125	$115
GNTX	B-2-7	$34	$35
MBLY	C-3-9	$22	$22
Dealers			
GPI	C-1-7	$455	$425

Source: BofA Global Research estimates
BofA GLOBAL RESEARCH

Acronyms:
EV: Electric vehicle
OEM: Original equipment manufacturers
P&S: Parts & service
PHEV: Plug-in Hybrid
UAW: United Auto Workers
GPU: Gross profit per unit
Tickers: OEMs: APTV (Aptiv), GM (General Motors), TSLA (Tesla), GNTX (Gentex), MBLY (Mobileye), GPI (Group1), RACE (Ferrari), MGA (Magna), PAG (Penske), LAD (Lithia), LAD (Lithia Motor), BWA (BorgWarner)

Quick take on 4Q:23 results to-date

As we enter the third week of earnings, we are updating estimates for the companies that have reported so far in 4Q:23. Although the sample size is still small, the first batch of reporters has largely delivered encouraging news for the Auto industry: OEMs and Dealers have confidence that demand will continue to be healthy while suppliers are on their way to recover margins. In general, we believe the macro backdrop included in outlooks, especially volume assumptions, has been way too conservative and would expect upside through the course of 2024.

Exhibit 2: 4Q:23 earnings results summary
In the table below, we show company results for 4Q:23 vs. our estimates and consensus

Ticker	Earnings Date	Actual 4Q23	BofAe 4Q23	Consensus 4Q23	% Beat (Miss) vs Consensus	Actual 4Q22	YoY % Δ
APTV	1/31/2024	1.40	1.35	1.33	5.4%	1.27	10.4%
GM	1/30/2024	1.24	1.05	1.16	7.2%	2.12	-41.5%
GNTX	1/26/2024	0.50	0.44	0.44	13.5%	0.37	35.0%
GPI	1/31/2024	9.50	10.41	10.46	-9.2%	10.86	-12.6%
MBLY	1/24/2024	0.28	0.27	0.27	3.6%	0.27	3.3%
RACE	2/1/2024	1.62	1.38	1.49	9.1%	1.21	34.6%
TSLA	1/25/2024	0.71	0.73	0.73	-2.8%	1.19	-40.3%

Source: Company filings, Bloomberg, BofA Global Research estimates

BofA GLOBAL RESEARCH

Quick comments on results

Below we outline the key message of 4Q24 earnings for the companies that have already reported results and released 2024 outlook.

Aptiv: Aptiv reported a solid 4Q24 characterized by a meaningful margin recovery despite UAW strike headwinds in the quarter. The outlook, however, was disappointing as the company pushed previously disclosed profitability target to 2026 from prior 2025 due to slower growth of High Voltage products.

Ferrari: RACE delivered another solid quarter with 4Q:23 results above our forecast driven by higher revenues on favorable mix, which also supported a stronger gross margin. The company continues to manage a very strong order book that extends through 2025. Meanwhile, its 2024 outlook was above our prior forecast and RACE is on-track to exceed the previously provided 2026 guidance. Interestingly, RACE noted that it will work tirelessly to improve its Formula 1 performance, and the day after it reported earnings the company announced that Lewis Hamilton plans to join Scuderia Ferrari in 2025 on a multi-year contract.

General Motors: GM reported a strong quarter driven by continued strength of trucks in North America, which it is expected to remain strong in 2024 given the outlook. However, the company did not give details on the long-term outlook as details will be revealed at their investor day (previously scheduled for March 2024 but now TBD). Interestingly, the company is planning to bring PHEV in the North American market as demand for BEV is weaker than expected. On Cruise, management intention is to rebuild public trust and "re-launch" later in 2024.

Gentex: GNTX closed FY23 with very positive results that speak to its product roll out and initiatives to recover its pre-Covid margin profile. FY24 outlook indicates further progress on the margin recovery primarily driven by productivity. Note that the company will host an Investor Day on March 19 in New York.

Group 1: Group1 delivered an uncharacteristic miss in the quarter. Results were generally solid across the board but were dragged down by operational issues in the UK business as a result of poor new & used margins and rising costs. There was also a larger than expected normalization in Parts & Service growth. Management took corrective action by reducing UK headcount by 10%, but expects there to be UK-related headwinds through 1Q24. Management's outlook on new vehicle demand in the US remains positive.

MBLY: MBLY's 4Q:23 results were in range of the preliminary results it provided in early January, and the company also left its 2024 guidance unchanged. The company's announced design win with a large Western OEM is a positive sign as it helps double the number of vehicles in its pipeline and could spur other key OEMs to use MBLY. That said, considering company commentary and our recent discussions at the 2024 Consumer Electronics Show in Las Vegas, we tempered our growth forecasts for MBLY's ADAS and SuperVision products in 2025 and 2026. We'd note that the Street estimates have also come down since earnings reporting, but further adjustments may be needed.

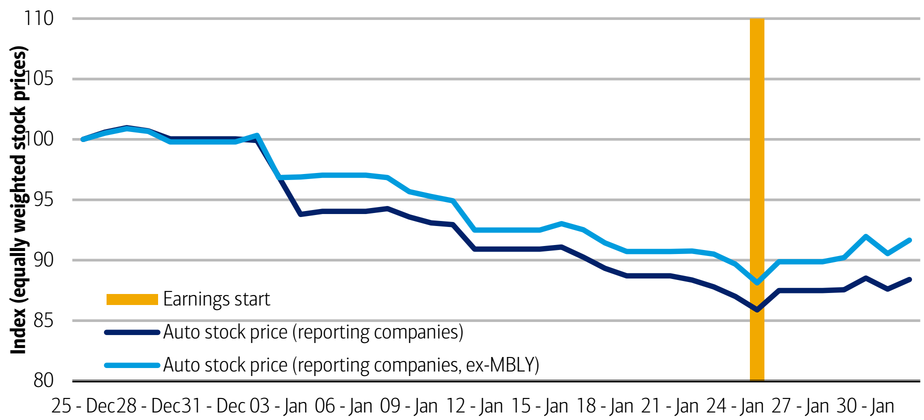
Tesla: Tesla results for 4Q23 came in largely as expected. Margins continue to feel pressure from price cutting initiatives, although at a lower rate in 4Q. TSLA does not release a formal guidance, but commentary suggested that FY24 growth will be below long-term company projections and Energy will outpace Automotive growth. This was largely expected as well given that the product portfolio is aging and the addition of a mass market model is not expected until late 2025/early 2026 (commentary suggested start-of-production mid-2025).

Stock Performance

In the 30 days leading 4Q23 earnings season, Auto stocks underperformed the S&P 500 index. On earnings days, there have been meaningful underperformance and outperformance. RACE, GM, and GNTX strongly outperformed the index on strong outlooks while stocks exposed to electrification and autonomous driving (TSLA, APTV, MBLY) suffered meaningful declines given less positive perspective on secular trends.

Exhibit 3: Reporting companies stock performance relative to S&P 500

Below we show the equally weighted stock performance of 4Q23 reporters relative to the S&P 500

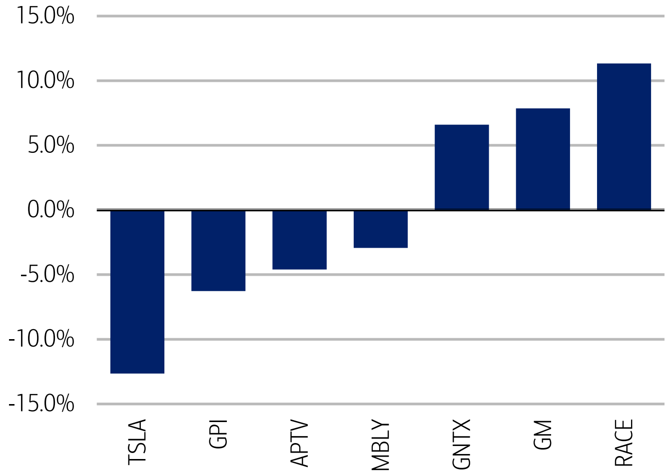


Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 4: Stock performance on the earnings day

Stocks performance on the earnings day registered large swings in both directions, ex-MBLY whose stock was already pricing in a disappoint outlook

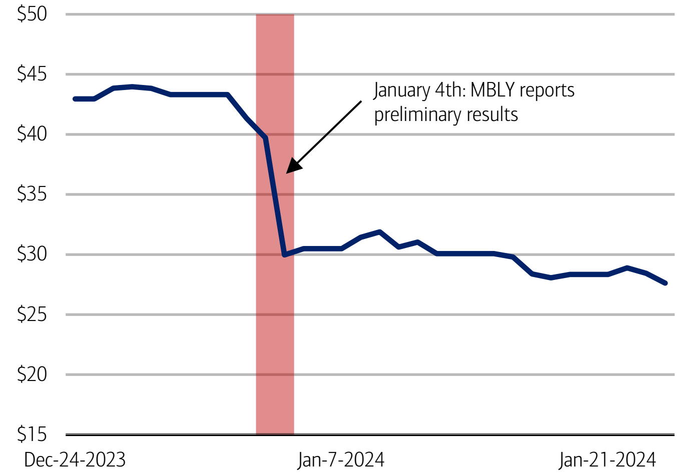


Source: Bloomberg

BofA GLOBAL RESEARCH

Exhibit 5: MBLY stock performance

MBLY reported disappointed preliminary results in early January, which triggered a steep stock price decline (-25% on the day of the announcement)



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Adjusting estimates and POs

We are making estimate and price objective (PO) revisions for the companies in our coverage universe that have reported earnings (some of which we updated directly after companies reported, namely the OEMs). A summary of the changes is included in Exhibit 6 and Exhibit 7 below.

Exhibit 6: BofA new estimates for 2024, 2025, 2026

In the table below, we show our updated estimates for the companies in our coverage that have reported 4Q:23 earnings so far

EPS	2024			2025			2026		
Ticker	Old	New	Change	Old	New	Change	Old	New	Change
APTV	6.00	5.80	-3.3%	7.50	6.85	-8.7%	9.15	8.90	-2.7%
GM	9.35	9.35	0.0%	10.85	10.85	0.0%	12.30	12.30	0.0%
GNTX	2.15	2.18	1.4%	2.52	2.55	1.2%	2.97	3.00	1.0%
GPI	41.40	38.50	-7.0%	42.05	37.25	-11.4%	42.75	37.75	-11.7%
MBLY	0.36	0.40	11.1%	0.85	0.65	-23.5%	na	1.00	na
RACE	7.00	7.60	8.6%	7.95	8.25	3.8%	9.10	9.20	1.1%
TSLA	3.30	3.30	0.0%	4.10	4.10	0.0%	4.70	4.70	0.0%

Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 7: Price Objective changes

In the table below, we show how our price objectives are changing post-reporting

Ticker	Rating		Updated PO	Prior PO	% Change	Valuation Metric*
OEMs						
APTV	C-1-9	Buy	$115	$125	-8.0%	11x EV/EBITDAP on 2024 (prior 12x)
GNTX	B-2-7	Neutral	$35	$34	2.9%	10x EV/EBITDA on 2024
GPI	C-1-7	Buy	$425	$455	-6.6%	11x P/E on 2024
RACE	B-1-7	Buy	$458	$456	0.4%	31x EV/EBITDA on 2024

Source: Bloomberg, BofA Global Research estimates

BofA GLOBAL RESEARCH

2024 Outlooks good, but conservative

Taking a broader view that includes companies outside our coverage, we note that auto companies expect their topline to grow at 7-10% average (ex-MBLY). From our back of the envelop calculations, the auto industry expects operating margin expansion in the 60-130bps range (ex-MBLY). Below are the basics from companies that have reported to date.

Exhibit 8: 2024 outlook reported over 4Q23 reporting season

Below we outline the outlook companies have so far reported

Outlook	APTV	GNTX	MBLY	RACE	GM
Revenue FY24	$21.3bn-$21.9bn	$2.44bn-$2.55bn	$1.83bn-$1.96bn	>$6.4bn	na
Revenue FY23	$20.1bn	$2.3bn	$2.08bn	$5.97bn	na
Implied growth	*6-9%*	*6-11%*	*(12)-(6)%*	*7%+*	*na*
Operating Income '24	$2,475m-$2,625m	$538m-$587m	$270m-360m	>$1,770m	$12.0bn-$14.0bn
Operating Income '23	$2,127m	$495m	$693m	$1,620m	$12.36bn
Implied growth	*16-23%*	*9-19%*	*(61)-(48)%*	*~9%+*	*(3)-13%*
Operating margin '24	11.6%-12.0%	22-23%*	14.8-18.4%*	>=27%	8-10%**
Operating margin '23	10.60%	21.60%	33.30%	27.1%	8.7%**
Implied expansion	*100-140bps*	*40-140bps*	*(1,850)-(1,500)bps*	*~flat-up*	(70)-130bps**
EPS '24	$5.55-$6.05	$1.98-$2.11*	na	$7.50+*	$7.20-$7.70
EPS '23	$4.86	$1.86	$0.28	$6.90	$7.68
Implied growth	*14-24%*	*6-13%*	na	9%+	(6)-0%

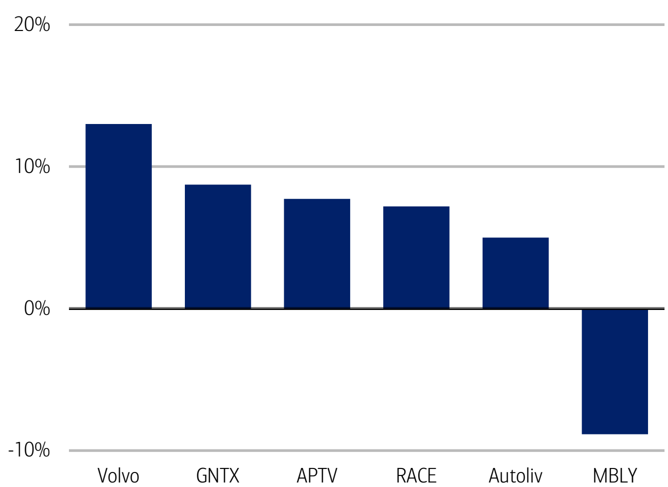
Source: Company filings, BofA Global Research

Note: *Implied from company guidance items, **North America margin

BofA GLOBAL RESEARCH

Exhibit 9: FY24e revenue growth (m/p) for selected companies

Ex-MBLY, the industry expects moderate revenue growth for FY24 (~+8%)

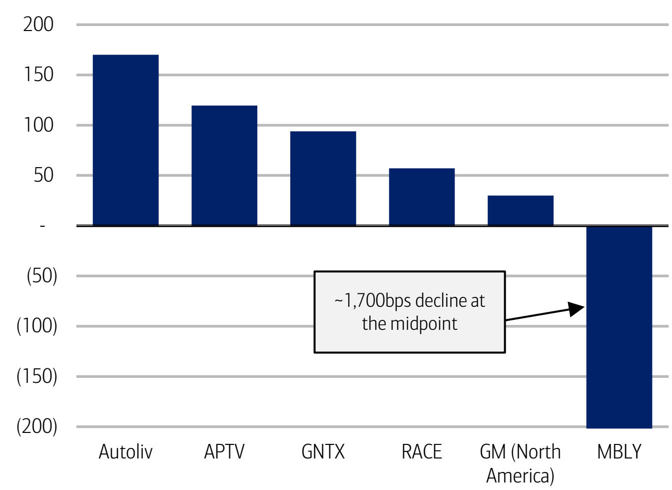


Source: Company filings, BofA Research

BofA GLOBAL RESEARCH

Exhibit 10: FY24e op. margin change (m/p) for selected companies

Ex-MBLY, companies expect margins expansion, with suppliers leading



Source: Company filings, BofA Research

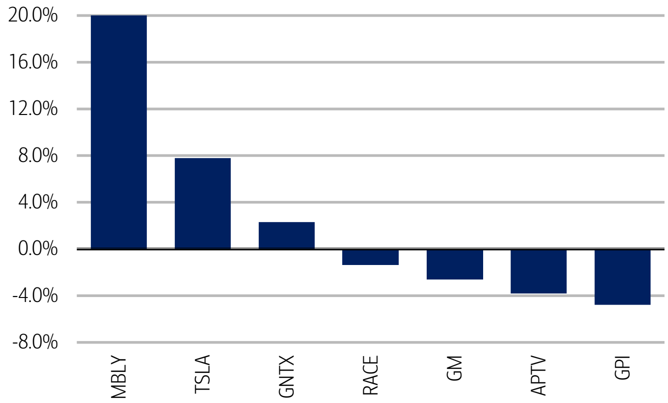
Note: MBLY operating margin in FY24 is expected to contract ~1,700bps at the midpoint

BofA GLOBAL RESEARCH

4Q23 earnings key metrics

Exhibit 11: 4Q23 Revenue: Quarter over Quarter change

On a QoQ basis, MBLY had the largest revenue growth across the reporters driven. TSLA benefitted from volume growth.

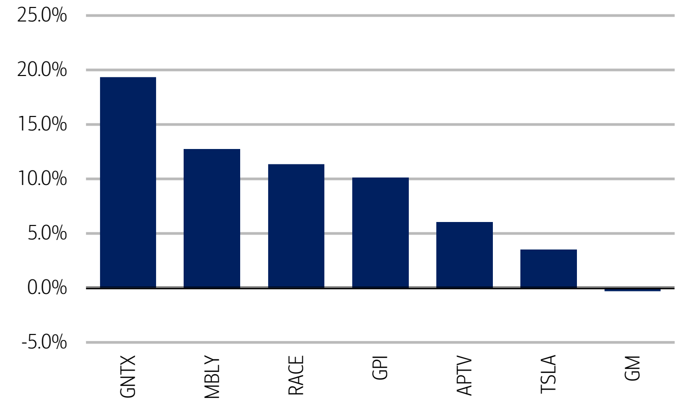


Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 12: 4Q23 Revenue: Year over Year change

On a YoY basis, GNTX had the strongest revenue growth, followed by MBLY and RACE. GM was flat partially due to the effect of the UAW strike.

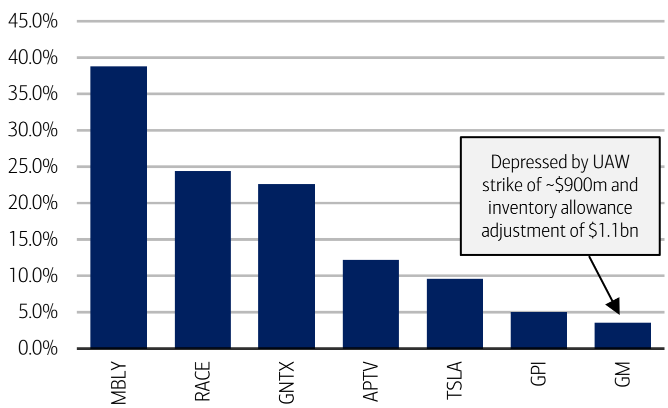


Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 13: 4Q23 Adjusted operating margin

MBLY remains the company with the highest margin in our coverage. However, given company outlook margins will resemble traditional suppliers'.

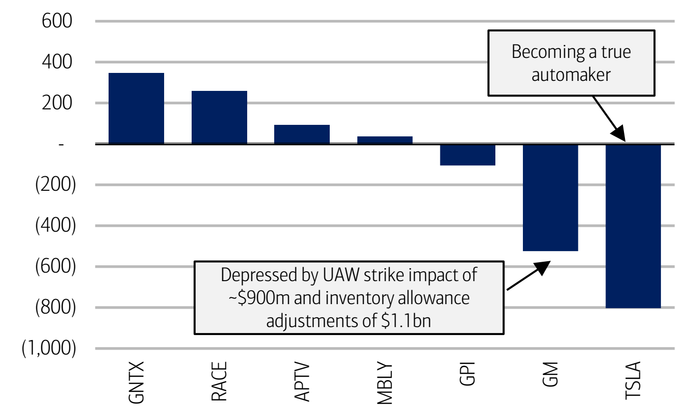


Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 14: Adjusted operating income margin change YoY

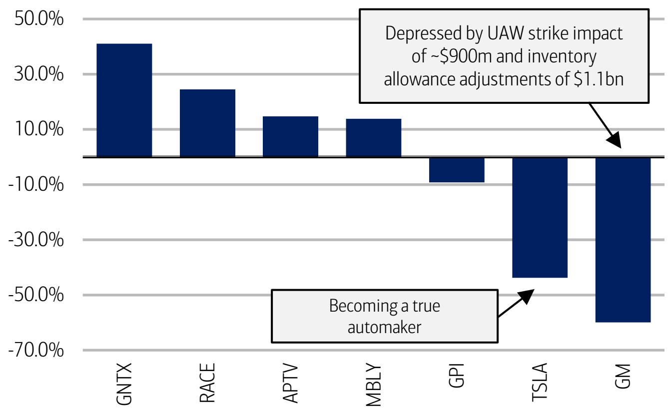
On a YoY basis, GNTX register the largest improvement of margins followed by RACE. TSLA suffered from price cuts and GM was affected by the strike.



Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

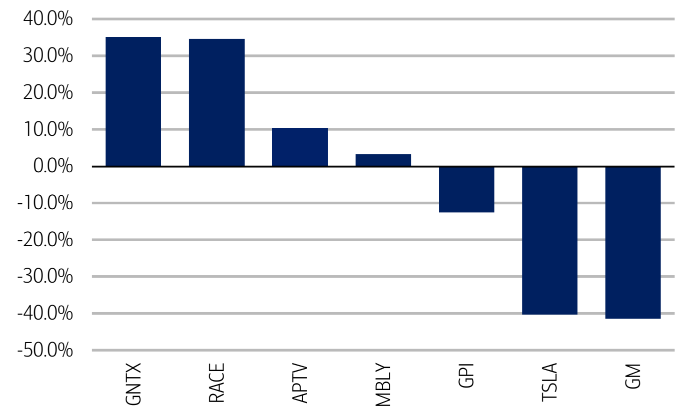
Exhibit 15: Adjusted operating income YoY change
On a YoY basis, GNTX register the largest growth of adjusted operating income driven by solid topline growth and operational improvements. TSLA decline reflected the effect of price cuts while GM suffered from the strike.



Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

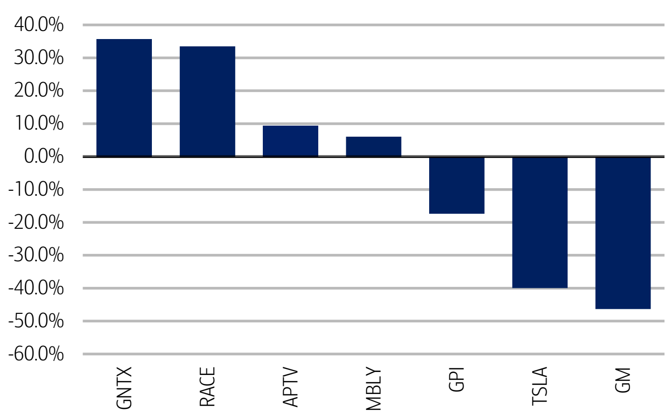
Exhibit 16: Adjusted EPS YoY change
Adjusted EPS YoY change largely reflected the operating results during the quarter. We note that GPI and GM's EPS growth benefitted from aggressive share buybacks while TSLA's was negatively affected by share compensation.



Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

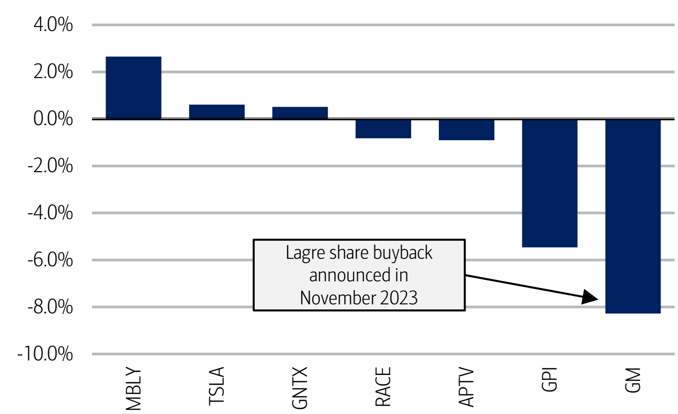
Exhibit 17: YoY Adjusted Net Income change
On a YoY basis, GNTX and RACE saw the strongest net income growth.



Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 18: YoY change in Diluted Shares Outstanding
Strong FCF generation allowed GM and GPI to continue to buy back shares.



Source: Company filings, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 19: Stocks mentioned
Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
APTV	APTV US	Aptiv PLC	US$ 82.23	C-1-9
RACE	RACE US	Ferrari	US$ 371.66	B-1-7
XJHKF	RACE IM	Ferrari	EUR 346.2	B-1-7
GM	GM US	General Motors	US$ 37.79	B-1-7
GNTX	GNTX US	Gentex	US$ 33.9	B-2-7
GPI	GPI US	Group 1 Auto	US$ 268.16	C-1-7
MBLY	MBLY US	Mobileye	US$ 26.95	C-3-9
TSLA	TSLA US	Tesla	US$ 181.06	C-2-9
K	K US	Kellanova	US$ 54.12	A-2-7

Source: BofA Global Research

BofA GLOBAL RESEARCH

Price objective basis & risk

Aptiv PLC (APTV)
Our PO of $115 for APTV is based on an EV/EBITDA multiple of roughly 11x 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.

Ferrari (RACE / XJHKF)
Our $458 PO for RACE US (EUR426 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.

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 $35 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 $425 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.

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 MBLY's Level 4+ offerings could exceed expectations, 3) MBLY 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.

Tesla Motors (TSLA)

Our price objective of $280 is based on 8.5x EV/Sales and 50x 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.

Analyst Certification

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

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
	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.
BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: Aptiv PLC, Ferrari, General Motors, Gentex, Group 1 Auto, Mobileye, Tesla.
BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Mobileye.
The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Aptiv PLC, Ferrari, General Motors Co, Mobileye, Tesla Motors.
BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Aptiv PLC, Ferrari, General Motors Co, Group 1 Automoti, Mobileye, Tesla Motors.
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: Aptiv PLC, Ferrari, General Motors Co, Group 1 Automoti, Mobileye, Tesla Motors.
BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Ferrari, General Motors Co, Mobileye.
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: Aptiv PLC, Ferrari, General Motors Co, Mobileye, Tesla Motors.
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, Ferrari, General Motors Co, Group 1 Automoti.
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: Aptiv PLC, Ferrari, General Motors, Gentex, Group 1 Auto, Mobileye, Tesla.
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: Aptiv PLC, Ferrari, General Motors Co, Group 1 Automoti, Mobileye, Tesla Motors.
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.bofaml.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 (HKSFC); 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 HKSFC; 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.