

US Autos & Industrial Tech

5 key topics for 4Q23 earnings

We believe that five key topics investors will be focused on during 4Q23 earnings season are:

1) EV market challenges, including the degree to which EV growth is decelerating, how price cuts will impact consumer demand and OEM earnings, and what shifting OEM EV ramp plans mean for suppliers (for example, with Ford's reduction to F-150 Lighting production, and GM temporarily pausing Blazer EV production).

We believe that Tesla's recent price cuts of about 2-6% for several models in China (after slightly raising prices on select models in China in 4Q) and 4-9% for Model Y in Germany and France imply downside risk to our current Tesla estimates.

We also believe that investors will look for clarity on EV growth rates and where OEM EV ramp plans settle out before multiples of the more EV-exposed auto suppliers can re-expand.

2) AI development, and the impact of AI on software & services (including the extent that more advanced AI training technology can help to accelerate ADAS/AV development) and the business opportunity for auto OEMs in software & services. Tesla has pointed out that putting more vehicles on the road by lowering prices creates a larger installed base to monetize with software and services, and the timeframe/outlook for its most recent FSD software (V12) as well as its Optimus robot will likely be topics on its 4Q earnings call.

We also believe AI investments in the datacenter will be a tailwind for VRT and to a lesser extent APH, TEL, and FLEX.

3) Tier 1 assumptions on end market growth, especially with auto production having recovered to historically normal levels of about 90 mn in 2023, and how OEM exposure will impact supplier growth (e.g. some OEMs, such as BYD and Tesla, are growing faster than the auto market overall). While we believe that auto industry production can grow modestly in 2024, we appreciate that tier 1s often initially give full year guidance using somewhat conservative assumptions on end market growth. We show how customer weighted production growth looks for each of our tier 1 suppliers in this note.

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4) Supply chain dynamics and inventory levels, including when inventory reductions in the industrial/distribution markets will end, opportunities for better FCF on improved working capital, and the degree of read across to other suppliers from Mobileye's weaker 2024 guidance (due primarily to inventory reductions at auto tier 1s). While we recognize the added risk for other companies in the auto supply chain post the weaker Mobileye outlook, we'd note that lead times for electronics components like connectors did not stretch nearly as much as semis, which we view as a mitigating factor.

5) Margins and cost reduction opportunities, including whether auto OEMs and suppliers can offset higher labor costs. While we believe GM's cost reduction efforts can offset higher yoy labor costs (and we model 2024 EBIT above FactSet consensus for GM), we believe investors will look to see if Ford announces incremental cost actions to mitigate rising labor costs (our Ford 2024 EBIT estimate is in-line with FactSet consensus).

Separately, we adjust our estimates and price target for FLEX to incorporate the completion of the Nextracker spin, and lower price targets for several of the early stage EV/lidar exposed companies (FSR, RIVN, CHPT, LAZR, INVZ) to better reflect market multiples and challenges stemming from an EV market with slower growth and more aggressive pricing.

Stock Trading Recap

Since the start of 2024, the stocks in our coverage are down 6% at the median vs. the S&P 500 up 2%. Established companies in our coverage are down 5% while early-stage companies are down 22% at the median.

We believe the underperformance has been driven by issues including slowing EV volume growth, and concerns about inventory reductions (including Mobileye's below-consensus 2024 guidance).

Exhibit 1: Stock performance of covered companies since 3Q23 EPS reports and YTD

	Stock Performance			
	Since 3Q23 reports		2024 YTD	
	Absolute	Relative to S&P 500	Absolute	Relative to S&P 500
Auto OEMs				
GM	23.4%	8.8%	-1.9%	-3.9%
F	0.2%	-17.4%	-6.7%	-8.7%
TSLA	-13.8%	-26.6%	-15.8%	-17.8%
RIVN	-7.9%	-19.0%	-31.6%	-33.6%
FSR	-78.3%	-88.6%	-49.1%	-51.0%
Tier 1 Suppliers				
BWA	3.7%	-9.0%	-6.7%	-8.7%
LEA	-1.9%	-19.5%	-7.3%	-9.3%
GNTX	14.3%	-3.8%	-1.5%	-3.5%
MGA	4.7%	-6.9%	-5.2%	-7.2%
APTV	5.8%	-6.9%	-9.0%	-11.0%
VC	-7.1%	-24.6%	-4.8%	-6.8%
Electronic Components				
APH	22.9%	6.8%	-1.2%	-3.2%
* TEL	9.6%	-5.2%	-4.2%	-6.2%
ST	10.8%	-5.2%	-6.0%	-7.9%
BDC	18.7%	6.0%	-3.7%	-5.6%
Lidar & Autonomy				
AUR	87.3%	72.5%	-22.4%	-24.4%
LAZR	-27.4%	-38.4%	-20.8%	-22.8%
INVZ	4.3%	-6.6%	-24.1%	-26.1%
MBLY	-21.9%	-39.5%	-34.4%	-36.4%
EMS				
* FLEX	-0.5%	-16.7%	-24.1%	-26.1%
* JBL	-9.7%	-12.8%	-3.3%	-5.3%
Test & Measurement				
* KEYS	14.9%	7.9%	-2.5%	-4.5%
Power & Thermal Management				
VRT	43.5%	27.4%	11.7%	9.8%
Voice Technology				
* CRNC	22.0%	15.1%	5.1%	3.1%
Charging Infrastructure				
* CHPT	5.4%	-1.6%	-7.7%	-9.7%
Warehouse Automation				
* SYM	21.7%	14.8%	-11.9%	-13.9%
EV Battery				
QS	25.3%	9.1%	1.2%	-0.8%

*Since companies most recent FY quarterly reports

Source: FactSet

CY24/25 EPS estimates (per FactSet) for established companies in our coverage have been revised down by 2%/4% at the median since one day before the companies reported 3Q23 results.

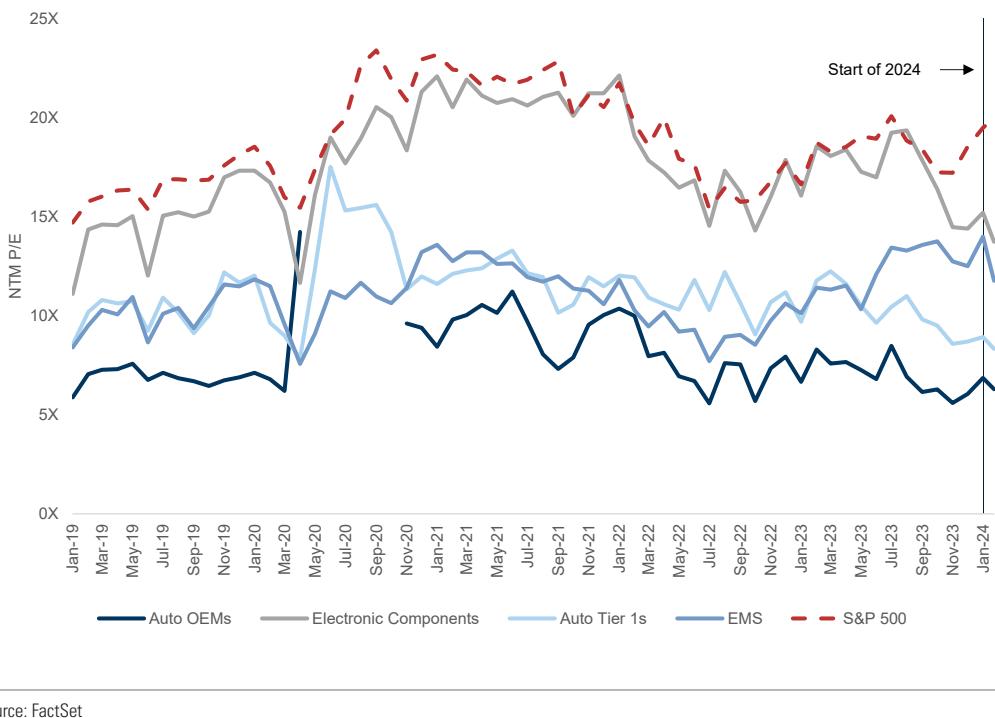
Exhibit 2: 2023/24/25 consensus EPS estimate revisions since one day before and seven days after the 3Q23 report and YTD

	Change in consensus EPS estimates							
	2023			2024			2025	
	Since T-1 3Q23 reports	Intraquarter (EPS +7 days)	2024 YTD	Since T-1 3Q23 reports	Since (EPS +7 days)	2024 YTD	Since T-1 3Q23 reports	Since (EPS +7 days)
Auto OEMs								
GM	0.8%	0.7%	0.7%	14.4%	17.0%	1.3%	17.4%	18.8%
F	-8.4%	-2.1%	-0.1%	3.5%	5.0%	2.0%	-9.0%	-2.6%
TSLA	-6.7%	-1.9%	-0.2%	-18.7%	-7.7%	-4.0%	-14.8%	-9.0%
RIVN	--	--	--	--	--	--	--	--
FSR	--	--	--	--	--	--	-81.5%	-81.4%
Tier 1 Suppliers								
BWA	--	--	--	--	--	--	--	--
LEA	3.1%	0.6%	-0.2%	-2.4%	-3.0%	-2.1%	-4.8%	-3.5%
GNTX	0.5%	0.2%	0.2%	-1.9%	-1.0%	-0.2%	-0.6%	-0.6%
MGA	4.4%	1.1%	0.4%	2.1%	-0.3%	-0.3%	-0.5%	-1.7%
APTV	1.0%	1.0%	0.6%	-5.3%	-2.0%	-0.9%	-6.4%	-2.0%
VC	3.3%	2.3%	0.4%	-4.9%	-3.1%	-2.3%	-4.2%	-4.1%
Electronic Components								
APH	1.2%	0.1%	0.1%	1.3%	0.8%	0.1%	1.5%	2.2%
* TEL	0.0%	-0.2%	-0.1%	-2.1%	-0.8%	-0.3%	-3.1%	-1.8%
ST	-2.1%	0.0%	0.2%	-4.6%	-1.3%	-0.6%	-6.9%	-4.5%
BDC	-6.8%	0.0%	0.0%	-18.0%	-0.7%	-0.7%	-7.9%	-1.0%
Lidar & Autonomy								
AUR	--	--	--	--	--	--	--	--
LAZR	--	--	--	--	--	--	--	--
INVZ	--	--	--	--	--	--	--	--
MBLY	12.7%	4.8%	3.8%	-49.9%	-48.8%	-47.8%	-26.9%	-24.6%
EMS								
* FLEX	3.5%	0.1%	0.1%	10.0%	2.5%	2.5%	23.8%	4.7%
* JBL	-0.4%	-0.4%	-0.2%	-0.5%	-0.8%	-0.5%	0.5%	0.3%
Test & Measurement								
* KEYS	0.1%	-0.2%	0.0%	-7.4%	-1.0%	0.2%	-8.9%	-0.8%
Power & Thermal Management								
VRT	8.6%	1.9%	0.2%	14.5%	4.1%	0.6%	20.5%	11.8%
Voice Technology								
* CRNC	-2.5%	0.0%	0.0%	-13.5%	-0.1%	-0.1%	-49.9%	-0.2%
Charging Infrastructure								
* CHPT	--	--	--	--	--	--	--	--
Warehouse Automation								
* SYM	--	-6.6%	-5.4%	7.7%	-0.5%	0.0%	-11.6%	-0.1%
EV Battery								
QS	--	--	--	--	--	--	--	--
<i>*Since companies most recent FY quarterly reports</i>								

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Source: FactSet

Since the start of 2024, the median NTM P/E multiple across our coverage has compressed, with EMS and electronic components companies seeing the most multiple compression.

Exhibit 3: NTM median P/E by subsector since 2019


Source: FactSet

Tesla - Key topics for 4Q report

We believe that key focal points for investors when Tesla reports 4Q results (scheduled for 1/24 after the market close) will include: 1) the company's 2024 outlook for vehicle deliveries; 2) where automotive non-GAAP gross margins will bottom (given Tesla's price cuts but also falling costs for some materials such as batteries, as detailed by Nikhil Bhandari [in a report from 1/18](#)); and 3) products enabled by AI such as FSD and Optimus.

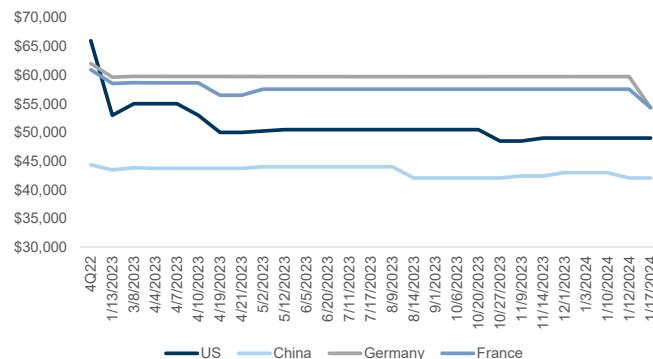
While we expect relatively in-line 4Q23 earnings (we assume non-GAAP EPS of \$0.73), we see downside risk to 2024 consensus estimates due to lower volumes (we model 2.125 mn vs. Visible Alpha Consensus Data at a little under 2.2 mn) and lower prices. With Tesla's recent price cuts, we believe there is downside risk to our current \$3.75 estimate for 2024 non-GAAP earnings.

Recall, Tesla reported solid 4Q23 deliveries and production on 1/2 of ~485k and ~495k respectively. Model 3/Y deliveries in the quarter were about 462k (up 10% qoq and up 19% yoy), and other model deliveries (e.g. S/X/Cybertruck) were about 23k (up 44% qoq and up 34% yoy). We believe sales in China were especially strong in 4Q23 based on CPCA data.

However, after raising prices marginally in 4Q in China (~1% on Model Y Standard and Long Range and Model 3 Standard, and ~4% on Model Y Performance), on 1/12/24 Tesla cut prices in China by between 2%-6% on Model Y Standard and Long Range variants and both Model 3 variants (leaving Model Y Performance and S/X pricing unchanged).

This suggests to us that demand may have slowed in China. Additionally, on 1/17, Tesla cut prices in France and Germany for the Model Y between 4%-9% (with the smallest cut on the Model Y Standard Range in Germany and largest on the Model Y Long Range in Germany).

Exhibit 4: Tesla Pricing on Model Y Long Range from 4Q22-1/17/2023



Source: Company data, Goldman Sachs Global Investment Research

Tesla has cut prices on the Model Y Long Range by ~25% in the US, ~5% in China, and ~10% in France and Germany between 1/1/2023 and 1/17/2024. The steepest cuts, in Germany and France, came on the Model Y Performance trim, with roughly 10-15% reductions respectively over the past year.

Additionally, on 1/11 Tesla suspended the majority of car production from its Germany factory between January 29th and February 11th due to a lack of components as a result of shipping delays related to the Red Sea conflict. We estimate that losing 4-5K of production per week for a few weeks could be a 10-50 bp automotive gross margin headwind in 1Q.

As a result of these recent price cuts and the temporary suspension of production in Germany, we see some downside risk to our current estimates for Tesla.

We believe some investors are debating the extent that Tesla can improve volumes and margins from 4Q23 annualized levels. For example, annualizing 4Q23 deliveries and adding in Cybertruck would imply deliveries approaching ~2.0 mn in 2024. We believe 2024 volume growth will be below Tesla's historical 50% target (we assume 17.5% yoy growth to 2.125 mn (albeit below Visible Alpha consensus)) and expect lower prices to be a lever to support volume growth. We believe growth could re-accelerate when Tesla begins shipping vehicles using its low-cost third generation platform (e.g. a vehicle priced in the \$25-30K range), and believe that Tesla is targeting for this to occur in the mid 2025 timeframe based on commentary from Tesla at its 2023 investor day (although we note a volume ramp may not occur until 2026, especially as Tesla has been late with some of its product timeline targets historically).

We also believe investors will look to assess where automotive non-GAAP gross margins will bottom, and to what extent margins will expand or contract from the high teens level that automotive non-GAAP gross margins were tracking to for 2023 (we model ~17% for 4Q23).

We are Neutral rated on Tesla shares. We believe pricing and market headwinds will limit Tesla's earnings growth in 2024, and we view valuation as full, but we believe the company is well-positioned for long-term growth given its strong capabilities and cost structure for the broader clean mobility space, including with software and services.

Our 12-month price target of \$255 is based on 50X applied to Q5-Q8 estimated EPS including SBC. Key downside risks to our view relate to potentially larger vehicle price reductions than we expect, increased competition in EVs, delays to products/capabilities such as FSD/the third generation platform/4680, key person risk, the internal control environment, margins, and operational risks associated with Tesla's high degree of vertical integration. Upside risks include faster EV adoption and/or share gains, a stronger macroeconomic environment for new vehicle sales more generally, earlier new product launches than we expect (e.g. a vehicle using the third generation platform), and an earlier/larger impact from AI-enabled products (e.g. FSD and Optimus) than we currently anticipate.

Automotive production and OEM considerations for tier 1s

We believe most tier 1s will report strong 4Q23 results, with industry production tracking higher than most assumed in 2023 guidance ([Exhibit 5](#))

Exhibit 5: Select auto suppliers' LVP updated outlooks vs. IHS December update

Company	Auto suppliers light vehicle production outlook vs. IHS		
	CY23 LVP most recent outlooks (YoY)	IHS forecast (YoY; as of December '23)	Δ
Aptiv			
** Global	>6%	+9%	-3 pp
BorgWarner			
** North America	+6%	+9%	-3 pp
** Europe	+8.75%	+12%	-3.25 pp
** China	+5.75%	+8%	-2.25 pp
** Global	+6.75%	+9%	-2.25 pp
Lear			
^ North America	+5%	+9%	-4 pp
^ Europe and Africa	+12%	+12%	flat
^ China	+5%	+8%	-3 pp
^ Global	+7%	+9%	-2 pp
Magna			
North America	+6%	+9%	-3 pp
Europe	+11%	+12%	-1 pp
China	+3%	+8%	-5 pp
Visteon			
* Global	low single-digit growth	+9%	

*Adjusted for market exposure

^Midpoint of outlook

Source: Company data, Goldman Sachs Global Investment Research, IHS

We believe there will be more focus from investors on 2024 guidance, with global auto industry production having recovered to historically normal levels of about 90 mn in 2023: 1) how OEM exposure will impact supplier growth (e.g. some OEMs, such as BYD and Tesla, are growing faster than the auto market overall) and 2) what content growth will be for suppliers, especially given the recent volatility in OEM EV ramp plans.

While we believe that auto industry production can grow modestly in 2024, we

appreciate that tier 1s often initially give full year guidance using somewhat conservative assumptions on end market growth. We show key OEM exposure for each supplier in [Exhibit 6](#) and what 2024 growth would be for each of our suppliers when weighted for key OEM exposure based on IHS production data in [Exhibit 7](#).

Exhibit 6: Customer exposure for select suppliers in our coverage

	% of Revenues by OEM										
	Stellantis	VW	GM	Ford	Geely	SAIC GM	Mercedes	Tesla	Toyota	BMW	Tata Motors
Aptiv	9%	8%	9%	8%	5%	3%	4%	5%	2%	2%	2%
* BorgWarner		8%		13%							
Gentex	13%		10%						16%		
Lear	10%	11%	20%	14%			11%				
Magna	13%	10%	16%	13%			13%			14%	
Visteon	6%	9%	9%	22%	4%		9%			9%	

As of FY2022

*No other single customer accounted for more than 10% of the Company's consolidated net sales. Sales to the Company's top ten customers represented 62% of sales for the year ended December 31, 2022, per BWA's 10-K

Source: Company data, Goldman Sachs Global Investment Research

Exhibit 7: Customer-weighted growth for select suppliers in our coverage

	Customer weighted growth	
	2024E	2025E
Aptiv	0%	3%
BorgWarner	-3%	0%
Gentex	-2%	-2%
Lear	-2%	-1%
Visteon	-2%	0%
Magna	-2%	0%
Total	0%	2%

Source: Company data, Goldman Sachs Global Investment Research, IHS

Note that, with changes published by our colleague George Galliers on [1/16/24](#), our assumptions for global auto production in 2024/25 are now 90.1 mn/92.0 mn and for sales are now 89.1 mn/93.4 mn. For EV mix, we assume global BEV penetration will reach 13%/16% in 2024/2025. Longer-term, we expect global BEV penetration of 34%/50%/62% in 2030/2035/2040.

Margins and offsets to higher labor costs a likely focus, especially for auto OEMs

We believe the ability of companies, especially auto OEMs, to offset higher labor costs will be a key focus this earnings season.

On the UAW and labor costs, GM believes that the UAW and Unifor contracts will add an incremental \$1.5 bn of cost in 2024 and \$9.3 bn over the life of the contracts. The company highlighted that it believes it could offset the full \$1.5 bn of incremental cost in 2024 through fully realizing its previous cost down efforts (reducing marketing spend by \$800 mn and implementing the voluntary separation program, which could save the company ~\$1 bn annually) and reducing complexity. GM has also commented that it will substantially reduce its spending at Cruise in 2024.

Ford commented that the cost effect of the new contract is anticipated to be about

\$900 per vehicle by 2028 absent any offsets, and that it would look to offset this through higher productivity and lower expenses. We believe the ability of Ford to identify and execute on additional cost measures will be a focal point this quarter.

At Ford's capital markets day in 2023, the company highlighted that it had a ~\$7 bn cost disadvantage compared to its competitors. The company commented that a key focus for 2024 is closing this gap through improving its supply chain (and not single sourcing key components and commodities), vehicle design, and manufacturing. Ford also believes that, by improving on those three factors (purpose built vehicle design, manufacturing, and supply chain), it has an opportunity to reduce its warranty cost (which was a ~\$1.2 bn yoy adjusted EBIT headwind in 3Q23). Separately, management has commented that it expects pricing for Blue could come down ~\$1,800 (with ~\$800 coming from dealer and the remaining \$1K to come from higher incentives) to bring vehicle pricing relative to monthly disposable income back in line with historical levels.

Adjusting FLEX estimates for Nextracker spin

On 1/2/24, Flex announced that it had completed the spin off of its remaining shares in Nextracker (covered by Brian Lee). With Nextracker no longer being consolidated into Flex's financials, we update our EPS estimates (inc. SBC) for FY24/25/26 to \$2.05/\$2.12/\$2.30 from \$2.23/\$2.55/\$2.65. Excluding SBC, we model \$2.38/\$2.40/\$2.60. There is no material change to our FLEX estimates other than accounting for the Nextracker spin.

We adjust our 12-month price target to \$27 from \$34, now based on 12X Q5-Q8 EPS (from 13X prior) to better align the multiple with the growth and margin profile of the remaining business (as Nextracker had higher margins and growth).

We maintain our Buy rating on Flex shares, as we view Flex as well-positioned to expand earnings and FCF given its rising exposure to markets that offer strong long-term growth potential (e.g. datacenter, next-gen mobility, renewables), improving cycle to cycle margins, and an ability to benefit from customers looking for regional and resilient supply chains.

Key risks to our view relate to macroeconomic demand, supply/demand dynamics, Flex's ability to expand margins, geopolitical uncertainty, and FCF.

Ratings summary and price targets

We update price targets and/or estimates for several early stage companies in our coverage to better reflect 1) recent EV and lidar market trends and 2) more difficult business conditions for the broader auto industry. We believe lidar fundamentals have the potential to be impacted by slower OEM EV ramp plans and/or OEMs looking to mitigate more difficult pricing for vehicles.

For **Rivian**, we adjust our price target to better reflect lower market multiples for

EV-exposed early stage companies. We also believe, on its 4Q23 earnings call, that investors will look to better understand demand/bookings trends as well as manufacturing ramp progress, given that some new orders for R1S vehicles can now be delivered in as little as 1-2 weeks (while wait times until recently had been several months). We lower our 12-month price target to \$17 from \$20, now based on 1.25X (from 1.5X prior) Q5-Q8 revenue, and remain Neutral-rated. Key upside/downside risks to our view relate to EV adoption, volumes, the production ramp, the competitive landscape, Rivian's high degree of vertical integration, cash burn, and the supply chain.

For **Fisker**, we lower our revenue estimates for 2024 (-4%) and 2025 (-8%). The company's shifting distribution strategy (as announced on 1/4/23) as well as the pricing reductions from Tesla (including in the crossover segment where Fisker's Ocean directly competes with Model Y) suggest to us that its revenue ramp could be more limited than we previously expected. We also update multiples to reflect the market multiples for EV-exposed early stage companies. We adjust our EPS estimates (inc. SBC) for 2023/24/25 to -\$1.33/-\$1.10/-\$0.85 from -\$1.32/-\$1.70/-\$1.30 on lower revenue and also a higher share count post the debt conversion on 1/19/24. Our 12-month price target moves to \$0.75 from \$1, as detailed in Exhibit 8, and we remain Sell-rated. Key upside risks to our view include higher sales volumes than we anticipate (either from changes in Fisker's market share and/or the overall market size), margin upside (depending on the mix of base/premium Fisker products, the sale of EV tax credits, or volume leverage), faster than expected production/delivery ramp and speed to market for its models.

For **Innoviz**, we lower our estimates and 12-month price target to reflect the end of a customer autonomous shuttle program, and to better account for the risk of potentially slower OEM sales volumes using its lidar (as OEMs are dealing with pricing pressure and slower sales for EVs). We adjust our EPS estimate (inc. SBC) for 2025 to -\$0.65 from -\$0.55 on lower revenue and maintain our 2023/24 estimates of -\$0.82/-\$0.85. Our 12-month price target moves to \$2.50 from \$3, as detailed in Exhibit 8. Key downside risks to our Buy thesis relate to: lidar adoption and ASPs; margins; market share; M&A; and balance sheet.

For **Luminar**, we lower our 12-month price target to better reflect lower market multiples and what we believe is an added degree of competition (e.g. Aeva's progress at Daimler Trucks). While we still use a slightly higher base case target multiple for Luminar than for Innoviz, which we believe is reasonable in light of Luminar being standard on what we think will be a volume product launch in 2024 (the EX90), we also believe OEM awards on ADAS platforms and lidar vendors in 2024, as well as lidar company ramps to support series production programs, will be important to monitor to better understand which lidar suppliers are having the most traction in the market (and the most longer-term earnings power). We lower our 12-month price target to \$2 from \$3, as detailed in Exhibit 8 and maintain our Sell rating. Key upside risks to our thesis relate to 1) revenue growth (dependent on lidar adoption in key verticals, Luminar's ability to convert partnerships into commercial wins, the regulatory environment, and competition/ASP), 2) margins (there could be upside to our expectations based on software mix, competition, and the company's ability to bring down its bill of materials), 3) market share (Luminar is among leaders in the industry based on its design wins, but

if it took meaningful incremental share then there could be upside to our view); 4) the regulatory landscape, especially if lidar becomes mandatory in some regions.

For **ChargePoint**, we lower our 12-month price target to better reflect lower market multiples for EV-exposed early stage companies and reduced momentum on a slower than previously expected EV ramp. We lower multiples for our bear, base, and bull case, as detailed in [Exhibit 8](#), which lowers our 12-month price target to \$2 from \$2.50 prior. Key upside/downside risks to our Neutral view include: 1) ChargePoint's ability to grow port shipments, which could be negatively impacted by competitive dynamics or accelerated by higher than anticipated EV adoption and/or additional regulatory support; 2) evolving charging habits among drivers — higher reliance on public L2 infrastructure could drive demand for ChargePoint's more profitable products, whereas a preference for DC or at-home charging could have an adverse impact (ChargePoint has products to serve these markets, but DC/residential is generally lower margin); 3) competitive landscape — we believe the industry could become increasingly competitive over time and could potentially impact demand for ChargePoint's commercial/workplace products among site hosts and/or create pricing pressure; 4) ASPs — higher or lower pricing than we expect could lead to different revenue, EBITDA and FCF than our expectation; 5) European expansion — if ChargePoint can execute on its strategy to further expand its footprint in Europe (and potentially other geographies over time) through organic or inorganic measures, this could drive upside to our model; and 6) higher public plug/EV coverage — if EV drivers demand more public charging options than we anticipate, this could also drive upside.

Exhibit 8: Updated price targets and multiples for early stage companies with EV exposure in our coverage

	New				Discounted Period	Old				
	Price Target	Target Multiples				Blended	Target Multiples			
		Bear	Base	Bull			Bear	Base	Bull	
Luminar	\$2.00	2X	2.5X	4X	2025	\$3.00	2X	3X	5X	
Innoviz	\$2.50	1X	2X	4X	2025	\$3.00	1X	2X	4X	
ChargePoint	\$2.00	0.5X	0.75X	1X	2026	\$2.50	0.75X	1X	1.25X	
Fisker	\$0.75	0.5X	0.5X	1X	2025	\$1.00	0.75X	0.75X	1X	

*All companies use Revenue estimates

Bear/Base/Bull weighted 5%/90%/5% respectively

Source: Goldman Sachs Global Investment Research

In [Exhibit 9](#), we detail upside/downside scenarios for our coverage group with trough and upside multiples based on historical trading ranges.

Exhibit 9: Upside/downside scenarios for select companies in our coverage

	Upside/Downside Scenario								
	Current Price (1/23/2024)	Trough Multiple (NTM P/E)	NTM EPS (GSe)	Downside Valuation (Trough Multiple on NTM EPS)	Downside %	Upside Multiple (NTM P/E)	FY2025 EPS (GSe)	Upside Valuation (Trailing Typical Median Multiple on FY25 EPS)	Upside %
Tier-1 Suppliers									
BWA	\$33	7X	\$3.90	\$27	(18%)	12X	\$4.65	\$56	67%
GNTX	\$32	12X	\$1.90	\$23	(29%)	17X	\$2.40	\$40	23%
LEA	\$131	7X	\$14.25	\$100	(24%)	12X	\$20.00	\$230	76%
MGA	\$56	7X	\$6.00	\$42	(25%)	11X	\$8.00	\$84	50%
VC	\$119	11X	\$9.10	\$100	(16%)	20X	\$12.50	\$250	110%
APTV	\$82	12X	\$5.75	\$69	(15%)	20X	\$8.00	\$160	96%
Component Suppliers									
APH	\$98	19X	\$3.10	\$59	(40%)	35X	\$3.35	\$117	20%
BDC	\$74	7X	\$5.20	\$36	(51%)	15X	\$7.50	\$113	51%
ST	\$35	8X	\$3.70	\$30	(16%)	12X	\$4.40	\$53	49%
TEL	\$135	14X	\$7.50	\$105	(22%)	23X	\$8.75	\$201	50%
EMS									
* FLEX	\$23	6X	\$2.25	\$14	(42%)	13X	\$2.40	\$31	35%
Test & Measurement									
* KEYS	\$155	15X	\$6.80	\$102	(34%)	22X	\$8.45	\$186	20%
Power & Thermal Management									
VRT	\$54	7X	\$2.05	\$14	(73%)	25X	\$2.75	\$69	28%

* EPS estimates exclude SBC

	Upside/Downside Scenario								
	Current Price (1/23/2024)	Downside Multiple	NTM GSe	Downside Valuation	Downside %	Upside Multiple	2025 GSe	Upside Valuation	Upside %
Auto OEMs									
F	\$11	4X	\$1.35	\$5	(53%)	8X	\$2.00	\$15	33%
GM	\$35	4X	\$7.20	\$29	(18%)	8X	\$9.50	\$76	116%
TSLA	\$209	30X	~\$2.75-\$3.30	~\$80-\$100	~(60%)-(50%)	55X	~\$5.10-\$5.65	~\$280-\$315	~30%-50%

TSLA shows range for EPS including and excluding SBC

Source: FactSet, Goldman Sachs Global Investment Research

Price targets and key risks

In [Exhibit 10](#) we present our price targets and key risks.

Exhibit 10: Price targets and key risks

Company	Ticker	GS Rating	Current Price	Price Target	PT Methodology	Key upside/downside risks
Auto OEMs						
Tesla	TSLA	Neutral	\$209.14	\$255	Q5-Q8 EPS	EV adoption, margins, market share, the auto cycle, operational execution, key person risk
General Motors	GM	Buy	\$36.23	\$45	Norm. EPS	The auto cycle, market share, margins, FCF, and the ability to pivot to growth areas such as EVs and AVs
Ford	F	Neutral	\$11.37	\$11	Norm. EPS	The auto cycle, market share, margins, and the ability to pivot to growth areas such as EVs and AVs
Rivian	RIVN	Neutral	\$16.04	\$17	Q5-Q8 Sales	Pre-orders/sales volumes, production ramp, market share, margins, software/services mix, the auto cycle, and EV adoption
Fisker	FSR	Sell	\$0.89	\$0.75	2025 Sales (Discounted)	Pre-orders/sales volumes, time to market, market share, margins, the auto cycle, and EV adoption
Tier 1 Suppliers						
BorgWarner	BWA	Neutral	\$33.45	\$38	Norm. EPS	Revenue growth including ability to outgrow market due to EV portfolio, diesel exposure, the auto cycle, margins, and market share
Gentex	GNTX	Neutral	\$32.16	\$31	Norm. EPS	Revenue growth, margins, and multiple expansion
Lear	LEA	Buy	\$130.91	\$162	Norm. EPS	The auto cycle, ability to benefit from increasing EV industry mix, margins, market share
Magna	MGA	Neutral	\$56.01	\$58	Norm. EPS	The auto cycle, market share, ability to outgrow production and capitalize on secular growth themes, capital allocation, and FCF
Visteon	VC	Buy	\$118.94	\$176	Norm. EPS	Ability to capitalize on EVs and AVs, margins, revenue, market share, general macroeconomic risk, multiple expansion/contraction
Aptiv	APTV	Buy	\$31.64	\$14	Norm. EPS	Ability to grow CPV, the auto cycle, market share, margins, debt
Electronic Components						
Amphenol	APH	Buy	\$97.84	\$107	Norm. EPS	Sales trends, margins, capital allocation
** Te Connectivity	TEI	Buy	\$134.65	\$175	Norm. EPS	Revenue growth and end-to-end margin, and M&A
Belden	BDC	Buy	\$74.43	\$61	Norm. EPS	Industrial/macroeconomic trends, margins, leverage, and M&A
Sensata	ST	Buy	\$35.33	\$48	Norm. EPS	Auto production, margins, leverage, tax rate, FX, and ability to increase CPV in EVs and hybrids
Lidar and Autonomy						
Aurora	AUR	Sell	\$3.39	\$2.00	2027 Sales (Discounted)	Time to market, industry pricing per mile, ability to expand geographic reach
Innoviz	INVZ	Buy	\$1.92	\$2.50	2025 Sales (Discounted)	Lidar adoption and ASPs, margins, market share, M&A, balance sheet
Luminar	LAZR	Sell	\$2.67	\$2.00	2025 Sales (Discounted)	Lidar adoption and ASPs, margins, market share, M&A, balance sheet
Mobileye	MBLY	Buy	\$28.43	\$40	Q5-Q8 EBITDA	ADAS/AU adoption, competition, geopolitics, market share, supply constraints and supplier/partner readiness
EMS						
Flex	FLEX	Buy	\$23.11	\$27	Q5-Q8 EPS	Tariff and geopolitical uncertainty, global macroeconomic demand, and margin and cash flow trends
Test and Measurement						
Keysight	KEYS	Buy	\$155.04	\$175	Norm. EPS	Revenue growth (especially in 5G), margins, M&A, and the impact the US/China trade relations on fundamentals
Power and Thermal Management						
Vertiv	VRT	Buy	\$53.67	\$56	Q5-Q8 EBITDA	Revenue growth, margins, leverage
Voice Technology						
Cerence	CRNC	Neutral	\$20.66	\$19	Q5-Q8 Sales	Industry and macro environment, competition, margins, natural ASP degradation, mature contract with Toyota
EV Battery						
QuantumScape	QS	Sell	\$7.03	\$4.50	2028 Sales (Discounted)	Ability to hit its targeted battery specs and ramp production, technological breakthroughs in today's lithium-ion batteries
Charging Infrastructure						
ChargePoint	CHPT	Neutral	\$2.16	\$2.00	2026 Sales (Discounted)	EV adoption/driver charging habits, margins, market share, European expansion, ASPs
Warehouse Automation						
Symbotic	SYM	Neutral	\$45.24	\$51	FY2026 EBITDA (Discounted)	Customer concentration, industry competition, warehouse automation investment trends, revenue growth

*Our 12-month PT for MG.TO listed in Canada is 77 CAD

**TEL is on the GS Americas Conviction List

12-month price target

Source: Goldman Sachs Global Investment Research

GSe vs. the Street (FactSet)

In [Exhibit 11](#), we show our coverage estimates versus the Street (FactSet).

Exhibit 11: GSe vs. The Street (FactSet)

Ticker	4QCY23E			1QCY24E			CY24E			CY25E			
	YoY Revenues	EPS		YoY Revenues	EPS		Revenue	EPS		Revenue	EPS		
	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
Auto OEMs													
F	(8%) (2%)	\$0.11	\$0.12	(8%)	5%	6%	\$0.37	\$0.45	(18%)	\$179,019	\$179,101	(0%)	
GM	(12%) (10%)	\$0.97	\$1.15	(16%)	9%	0%	\$2.02	\$2.01	0%	\$175,975	\$169,644	4%	
TSLA	6% 5%	\$0.73	\$0.73	0%	10%	14%	\$0.70	\$0.75	(7%)	\$115,017	\$116,582	(1%)	
RIVN	101% 91%	(\$1.33)	(\$1.34)	--	99%	132%	(\$0.84)	(\$1.08)	--	\$6,135	\$6,061	1%	
FSR	--	(\$0.39)	(\$0.23)	--	--	--	(\$2.27)	(\$3.24)	--	\$1,123	\$1,052	(40%)	
Average	(4%) (2%)	--	--	(8%)	8%	7%	--	--	(8%)	1%	2%	8%	
Tier 1 Suppliers													
BWA	\$0.55	\$0.54	0%	\$0.55	\$0.54	0%	\$0.55	\$0.54	0%	\$18,343	\$18,266	6%	
DRIVX	14% 13%	\$0.42	\$0.44	(5%)	6%	10%	\$0.45	\$0.50	(10%)	\$2,615	\$2,501	1%	
LEA	4% 6%	\$3.01	\$3.10	(3%)	0%	3%	\$3.04	\$3.41	(11%)	\$24,629	\$24,451	1%	
MGA	7% 9%	\$1.50	\$1.46	3%	3%	5%	\$1.29	\$1.53	(16%)	\$45,093	\$45,254	(0%)	
VC	(3%) (1%)	\$1.97	\$2.08	(5%)	10%	5%	\$1.95	\$1.82	7%	\$4,408	\$4,295	3%	
APTV	7% 9%	\$1.34	\$1.33	1%	8%	7%	\$1.21	\$1.20	1%	\$22,088	\$21,697	2%	
Average	6% 7%	--	--	(2%)	5%	6%	--	--	(6%)	1%	3%	2%	
Ticker													
Components & Systems													
APH	(2%) (1%)	\$0.77	\$0.77	0%	(2%)	(3%)	\$0.72	\$0.72	0%	\$12,998	\$13,205	(2%)	
BDC	(17%) (17%)	\$1.15	\$1.13	0%	(2%)	(1%)	\$0.93	\$0.93	0%	\$2,314	\$2,307	0%	
ST	(24%) (24%)	\$0.46	\$0.46	(1%)	4%	9%	\$0.43	\$0.43	0%	\$4,447	\$4,447	0%	
TEL	(4%) (4%)	\$1.70	\$1.71	(1%)	3%	3%	\$1.77	\$1.78	(1%)	\$16,698	\$16,606	1%	
Average	(6%) (6%)	--	--	(0%)	1%	0%	--	--	(3%)	(0%)	(0%)	(1%)	
Lidar and Autonomy													
AJR	(\$0.14) (\$0.13)	--	--	--	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff
LAZR	59% 61%	(\$0.19)	(\$0.19)	--	11%	11%	(\$0.18)	(\$0.18)	--	\$190	\$177	7%	
INVZ	187% 232%	(\$0.14)	(\$0.18)	--	(60%)	(11%)	(\$0.16)	(\$0.19)	--	\$35	\$76	(54%)	
MBLY	20% 20%	\$0.30	\$0.27	11%	(63%)	(58%)	(\$0.05)	(\$0.04)	--	\$1,909	\$2,012	(5%)	
Test & Measurement													
KEYS	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
Power & Thermal Management													
VRT	8% 8%	\$0.54	\$0.53	2%	(17%)	(14%)	\$0.33	\$0.37	(11%)	\$7,511	\$7,524	(0%)	
Voice Technology													
CRNC	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
EV Battery													
QS	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
Charging													
CHPT	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
Warehouse Automation													
SYM	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	GS Street	GS Street	% Diff	
Average	(6%) (6%)	\$0.04	\$0.02	--	17%	9%	\$0.05	\$0.04	25%	\$1,951	\$1,956	(0%)	
										\$0.24	\$0.32	(25%)	
										\$2,766	\$2,846	(3%)	
										\$0.41	\$0.68	(40%)	

* Estimates adjusted to exclude stock based compensation to compare to the Street (TSLA, RIVN, FSR, KEYS, CRNC, LAZR, INVZ, MBLY, CHPT).

Source: Goldman Sachs Global Investment Research, FactSet

Disclosure Appendix

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We, Mark Delaney, CFA, Will Bryant, Morgan Leung and Aman Gupta, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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