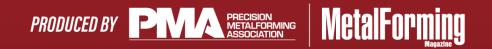
AUTOMOTIVE PARTS SUPPLIERS CONFERENCE

SEPTEMBER 11-12, 2024 PONTIAC, MI





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Global Automotive Outlook:

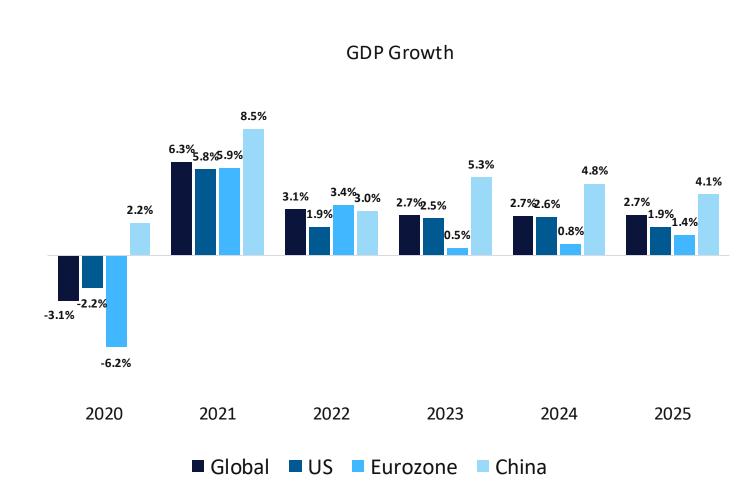
Growth at a Crossroad (Again)

Jeff Schuster, Vice President, Automotive Research September 11, 2024

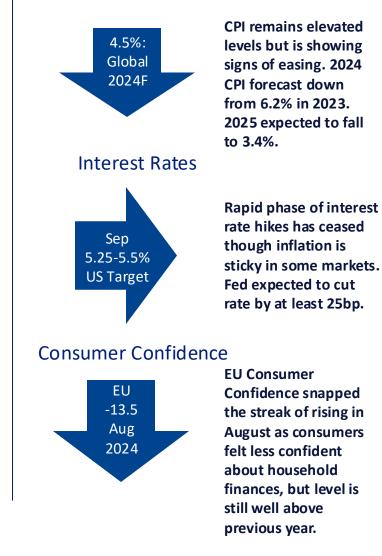


- Current Environment Global Auto Metrics
- Longer-term Outlook and Electrification Path

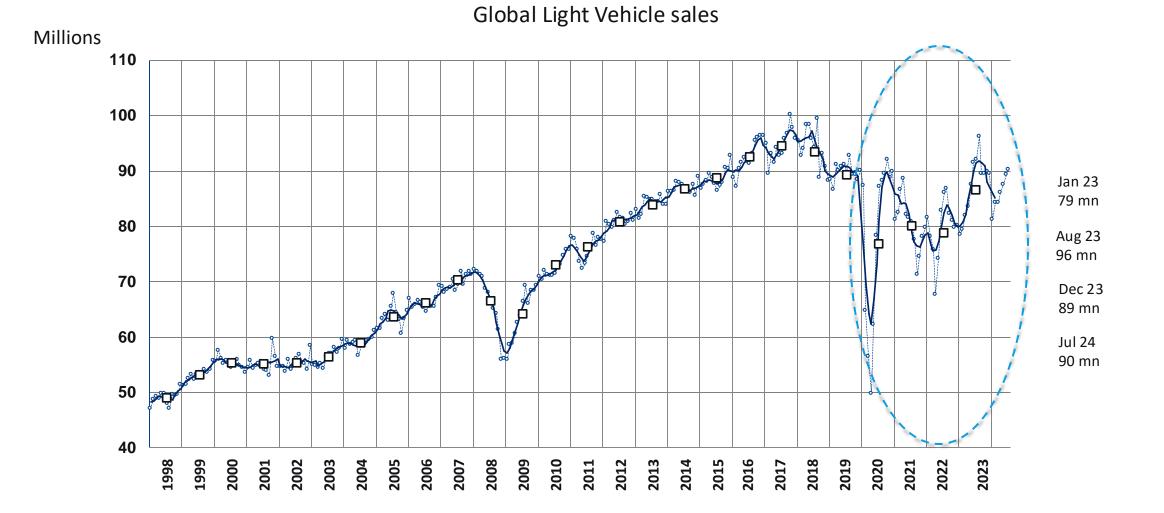
GDP Growth – outlook improved since January, but risks remain



Inflation



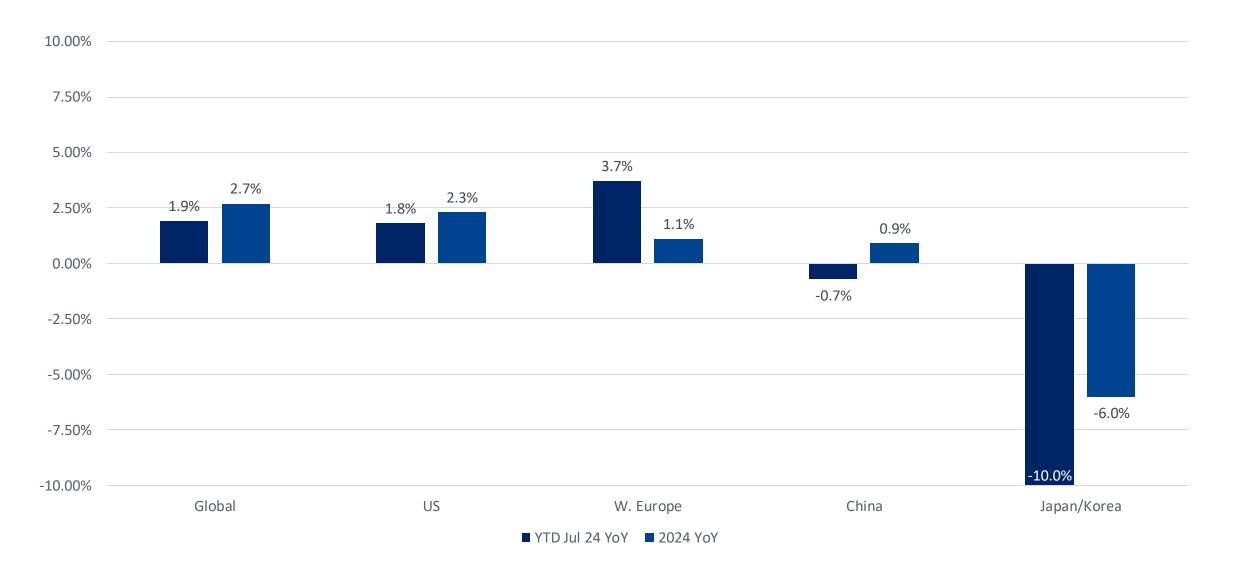
Global Light Vehicle market recovery remains robust



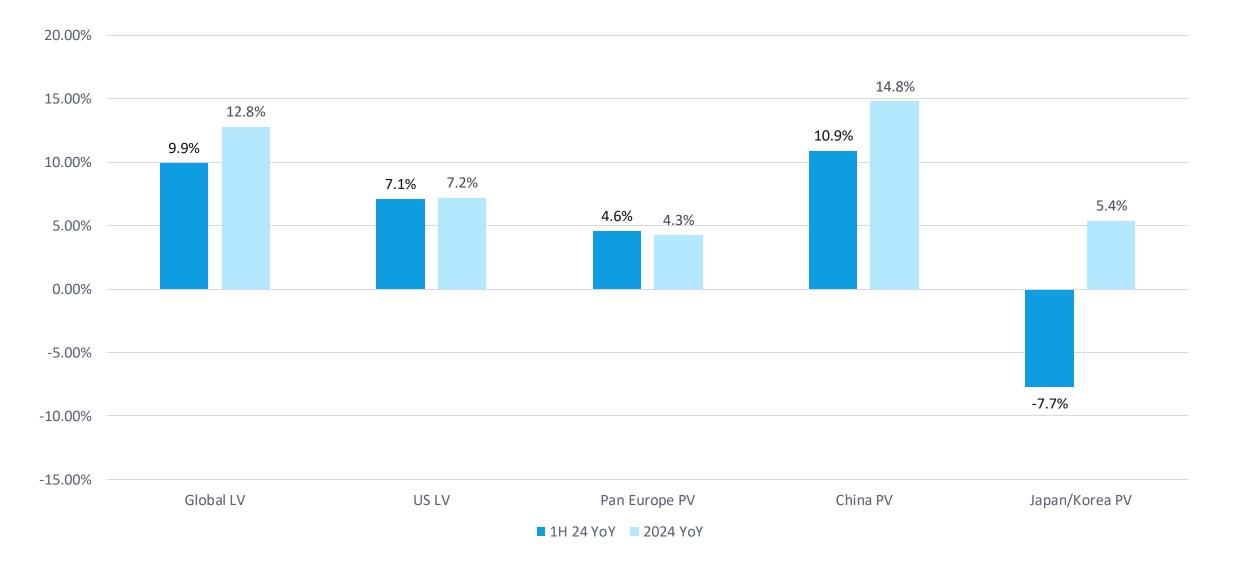
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Near-term market demand is mixed

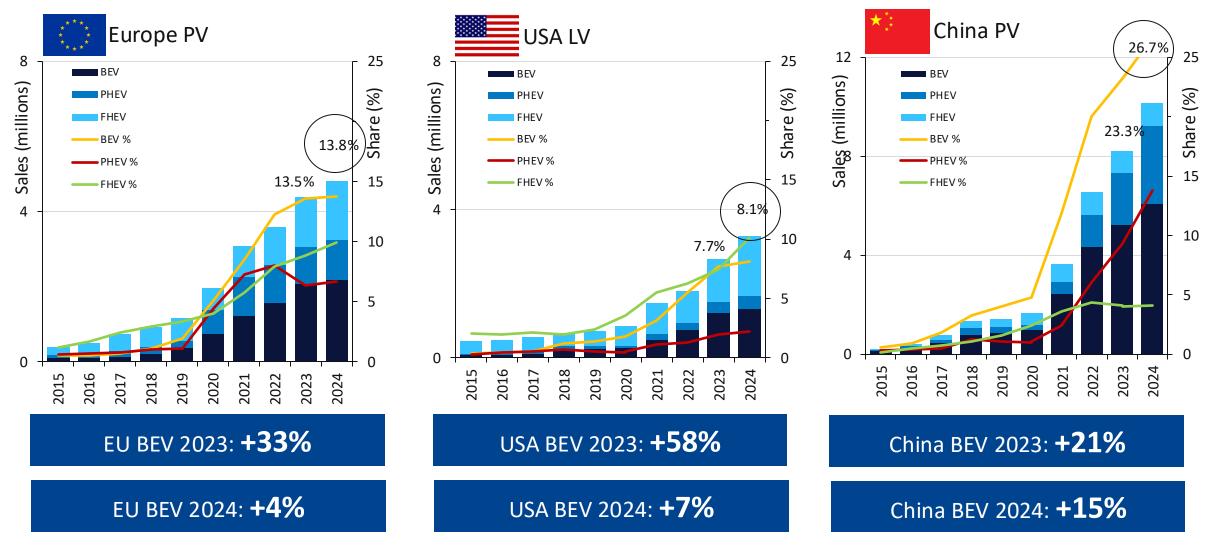


Near-term BEV expected to improve through H2

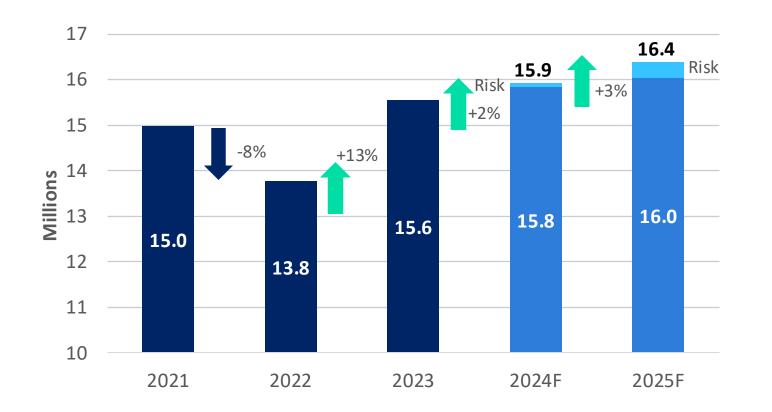


Near-term regional xEV picture

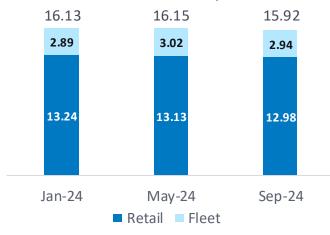
BEV, PHEV & FHEV markets (same scale for each market)



US Light Vehicle sales outlook



2024 revision pattern

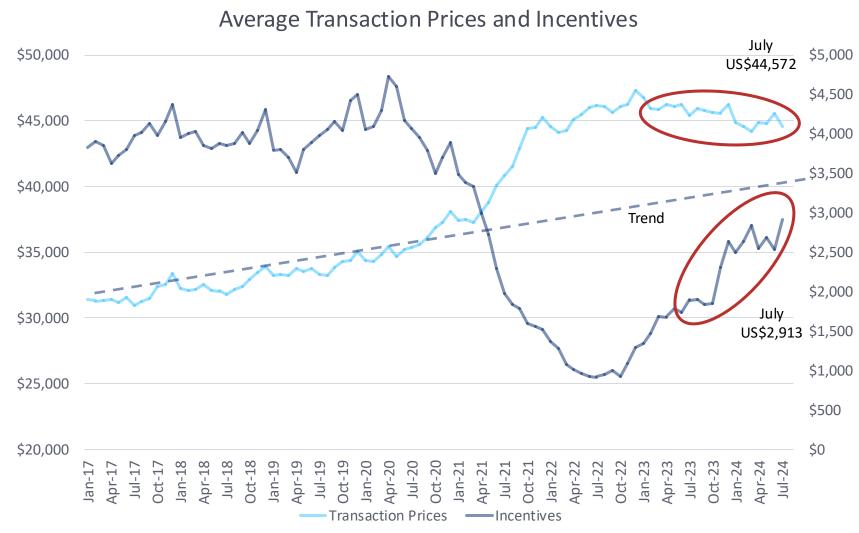


Drivers to US sales forecast

- Spring outperformed expectations despite inflation pressure.
- Inventory recovered, CDK cyber attack, Fed signaling cut
- Jun-Aug underperformed expectations
- Consumers remain displaced demand normalized given current pricing/incentives
- Fed cuts coming and Inventory plentiful.

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Transaction prices plateau, and incentives recover



- Average industry-wide transaction prices are up by 30% over pre-pandemic levels. This is likely keeping some buyers out of the new car market.
- Trend growth would suggest that the average would be around US\$40,000 by now had the pandemic/chip shortage not happened.
 - Incentives bottomed out at US\$922 in July 2022 and have since nearly tripled.
- However, incentives are still around 30% below pre-pandemic levels

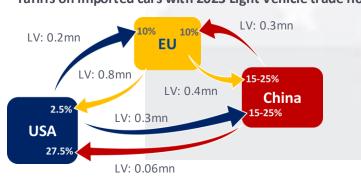
US election impact

Overview

- US Election has historically not had material near-term market impacts
- Areas of focus: Trade, EVs, Regulations

Trade:

- Over ½ vehicle sales are domestically build with ¼ from USMCA region
- Both candidates likely increase protectionism with heighten tariff risk under Trump – Biden tariffs on China Evs, batteries and semiconductors like to remain
- Trump open to Chinese plants in US
- Tariffs like trigger retaliations



Tariffs on imported cars with 2023 Light Vehicle trade flow volumes

EVs:

- EV growth has slowed as consumers struggles with pricing and infrastructure.
- Trump may end EV credit and likely support ICEs in mid-term
- Harris likely to further Biden push and add more toward infrastructure, specifically charging network.
- Both to push for domestic manufacturing of Evs and components



US base powertrain type forecast

Regulations:

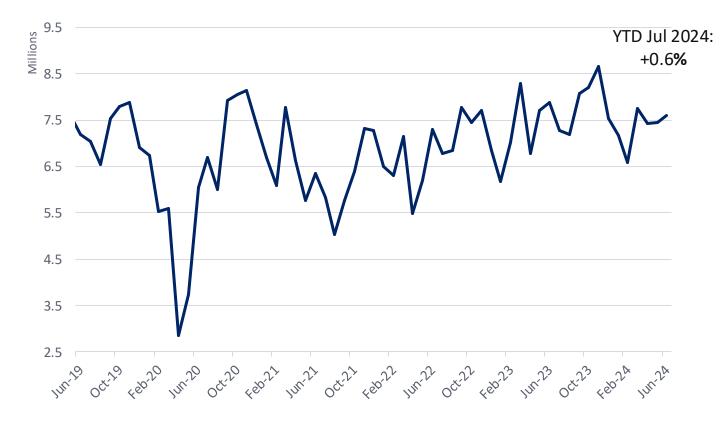
- Current EPA, NHTSA and IRA requirements would be under great pressure with a Trump
- Trump may task Musk with eliminating government waste, which likely would further trim regulations impacting Auto.
- Harris likely to keep and expand regulatory environment in Auto, but no indication yet if policy would increase regulatory pressure beyond current Biden stance.

Trump Administration EPA/CAFE Reduction Scenario: Share of US market by EV Type in 2030

Electrification Type	Base Case US Market Share		% Change Versus Base Forecast
BEV+FCEV	36%	29%	-24%
PHEV	5%	4%	-26%
FHEV	14%	12%	-17%

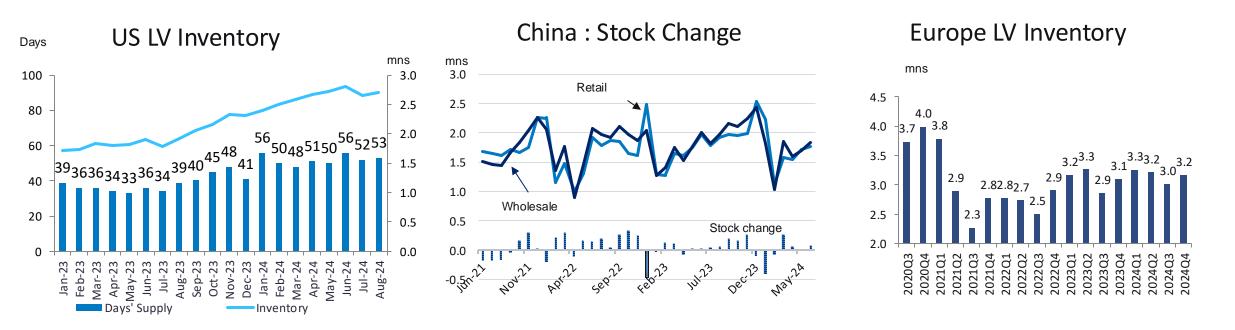
Global LV monthly production trend

Monthly LV production with trend



- Global LV production volumes have firmed since H2 2022.
- 2023 LV output grew by 10% YoY and YTD 2024 through June is up just 0.2%
- Base-effects flatter the pace of growth, but the volume is stable.
- Supply-side disruptions are not fully resolved but no longer material.
- Some Risk remains in H2 as inventory and demand is balanced.

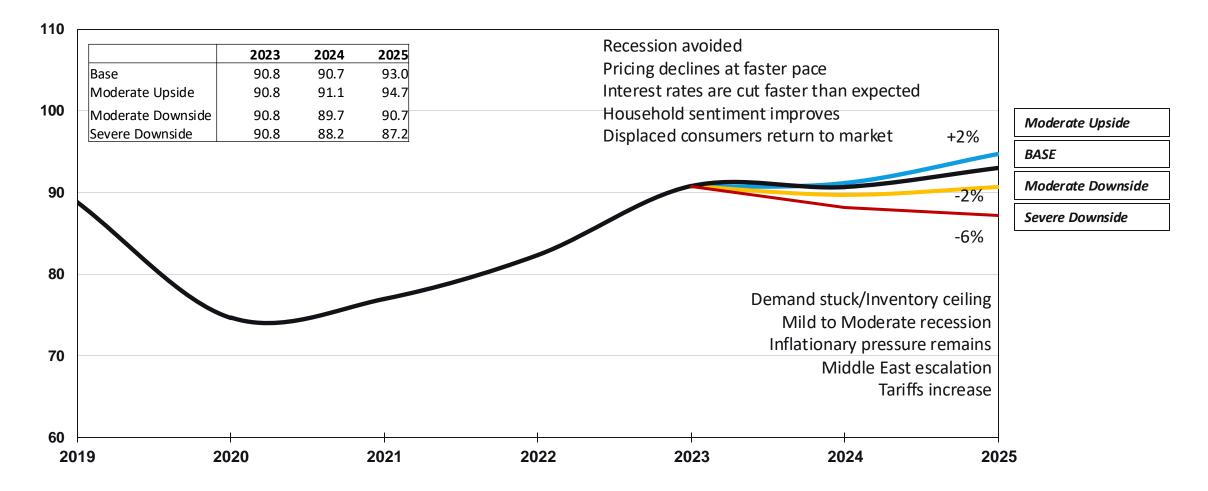
Inventory metrics



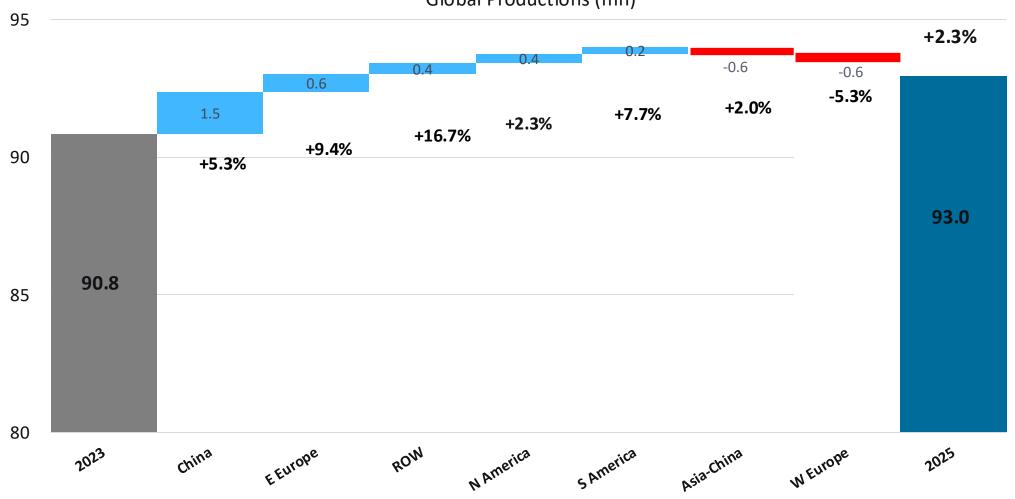
- US Light Vehicle inventory grew slightly in August and is up a 40% from a year ago. Inventory is being managed thus far –
 "Normal" days' supply of 60-65 days' supply are unlikely to return at industry level. Volume still remains nearly 30% below
 2019.
- China had less disruption impact on inventory than other markets. Broadly, 2023 has been more managed but stock grew by ~750k in 2023. YTD 2024 is down 100K, but volume has trended upward in last 4 months.
- Europe's inventory ended 2023 up 190k in Q4, as disruption has eased. Levels in 2024 are expected to moderate as the year progresses and inventory to stabilize. Inventory expected to be 28% lower than 2019 levels.

Global LV production short-term range

Risk concentrated with demand levelling off and inventory building



Global production recovery slows



Global Productions (mn)

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Production by Top OEM groups

	1H24 %	2H24 %	2024 %	2025 %
OEM Group	Change	Change	Change	Change
Toyota	-9.0%	-7.1%	-8.0%	1.7%
VW Group	-3.8%	-1.5%	-2.6%	-0.3%
Hyundai/Kia	-1.0%	-1.1%	-1.1%	-0.5%
Stellantis	-12.8%	-10.4%	-11.7%	9.8%
Ren-Niss-Mits	-4.7%	-2.1%	-3.4%	7.1%
GM	-9.5%	-11.2%	-10.3%	0.1%
Ford	-0.1%	-1.0%	-0.5%	2.1%
Honda	-2.9%	-6.3%	-4.7%	-1.4%
Suzuki Group	5.2%	0.4%	2.8%	-7.2%
BYD	27.8%	37.6%	33.5%	4.4%
SAIC	-6.5%	-16.9%	-12.6%	5.6%
Geely Group	31.9%	14.6%	21.9%	5.8%
BMW Group	0.9%	5.8%	3.3%	-7.1%
Mercedes-Benz	-9.6%	8.0%	-1.4%	-0.5%
Tesla	-9.3%	12.1%	1.5%	2.6%
Total Market	-0.1%	-0.3%	-0.2%	2.5%

Underperforming Market



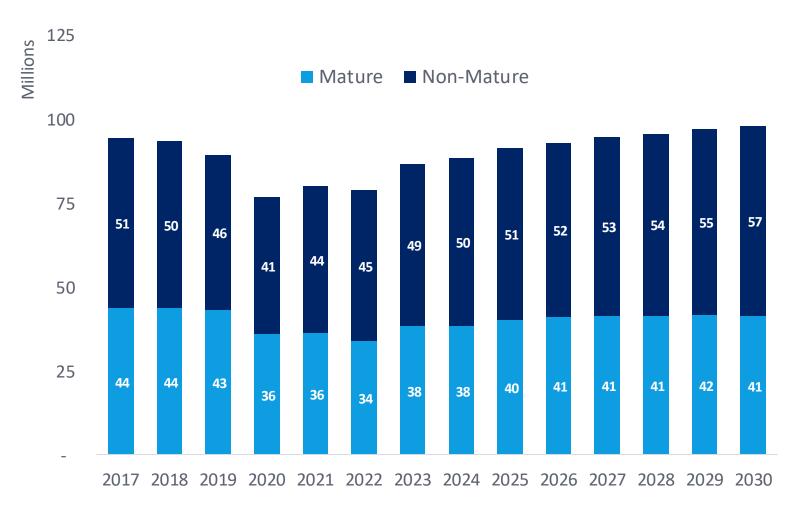
Outperforming Market

- China EV leaders continue to shine while • mainstream global brands lose ground in 2024.
- 2H was previously expected to boost • 2024 but now lagging 1H, with 750-1250K at risk.
- SAIC (Mainly GM's JV Chinese brands down most in 2024. Stellantis, GM and Toyota round out top decliners.
- BYD growth slows by 2025, but position • remain very strong and is double the industry.
- Stellantis volume back to 2023 levels • some on stronger NA and EU volume (EE up 36%) in 2025.

- Current Environment Global Auto Metrics
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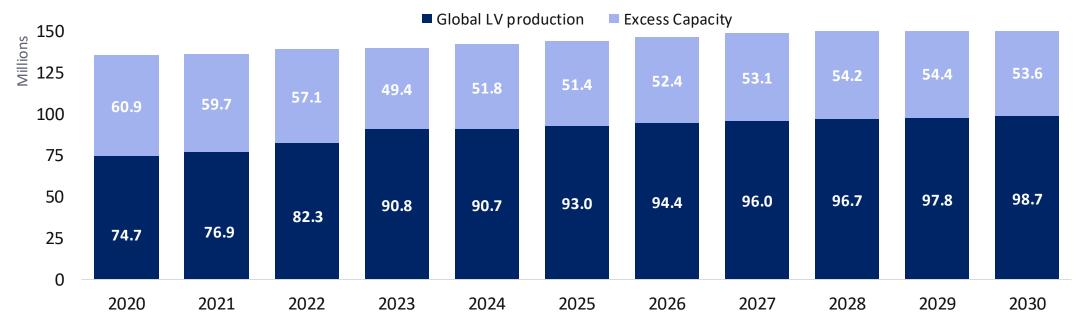
Medium-Term Sales Outlook

Breakdown of sales forecast by mature and non-mature markets



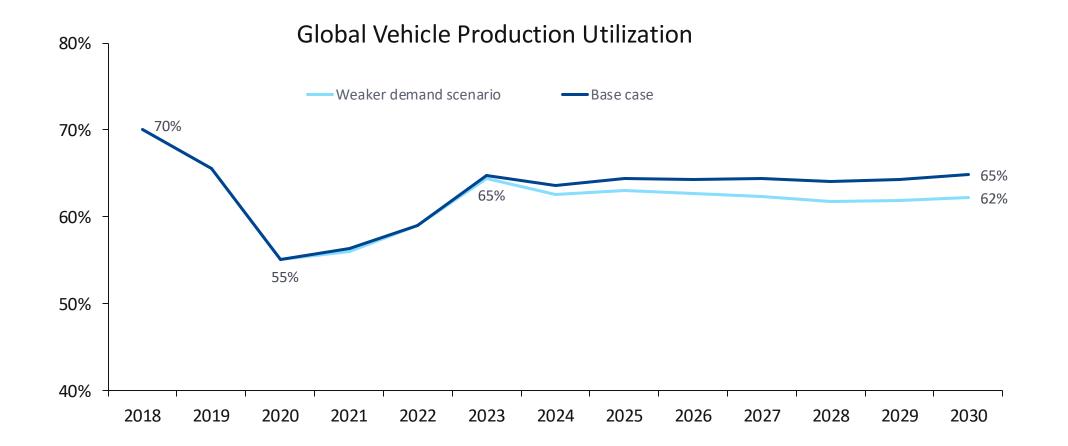
- Ongoing recovery in supply supports both mature and non-mature markets through 2026.
- Long-term CAGR is just 2% for Global LV volume from 2023 as mature markets level off
- Mature markets not expected to reach 44 mn units/year level of pre-pandemic due to elevated pricing and ongoing downside risks, despite parc and populations continuing to grow.
- Non-mature markets seeing strong growth over decade to eclipse previous highs. China continues to dominate picture though key growth from India, and eventual improvements in other larger non-mature markets.

Global LV Output – Longer Term Development

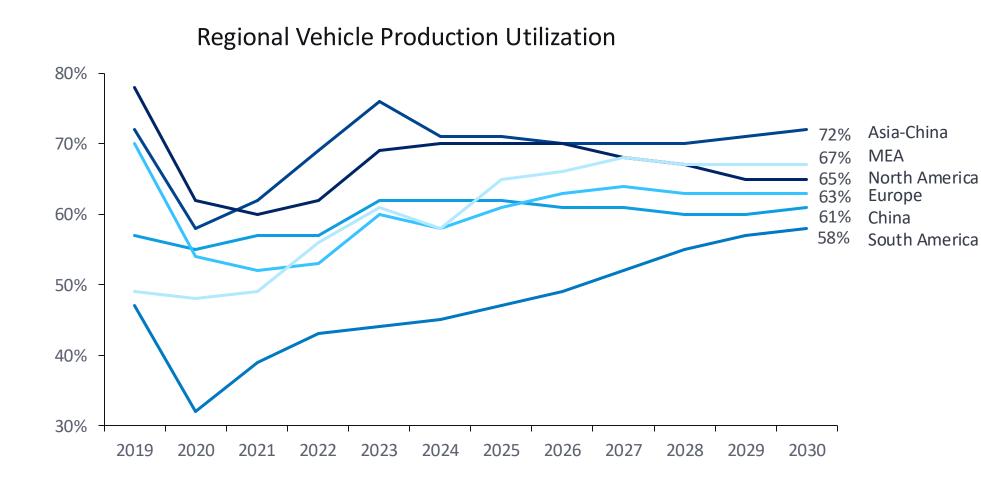


- Forecast uncertainty remains elevated. Risks include, demand growth slowing, geo-political conflict, logistic issues, labor shortages and inflation.
- Mid-term forecast gets support from BEV conversion as inventory spreads across a larger number of vehicles, but efficiency suffers as excess capacity grows with BEVs.
- Vehicle sharing could be long-term volume risk but only if significant roadblocks solved.
- Longer-term baseline forecast downgraded by an annual average of over 8mn units since 2022 because of: macro risk skewed to the downside, longer-run risk of material shortages returning, elevated vehicle pricing, consumer need/behavioral change
- CAGR '23-'30 of 1.5% on par with demand so previously expected longer term growth in inventory has evaporated.

Global production efficiency not expect to return to previous levels



Production efficiency improvement varies by market



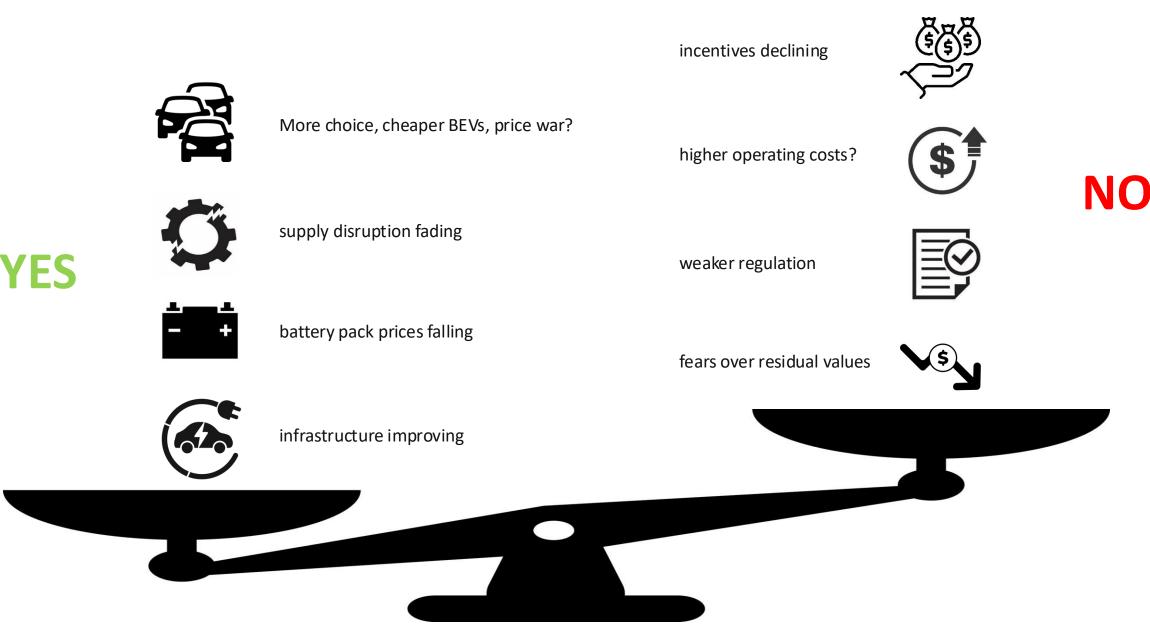
- Mixed results across regions with some markets improving on 2019 levels by 2030.
- NA sees more near-term improvement but falters at end of horizon.
- EU improves to mid-60s but should be at 80% for efficiency.
- SA remains the lagging region - improvement to just 58%.
- EV transition playing significant role in pulling down efficiency in most markets.

Global focus on carbon emissions reduction



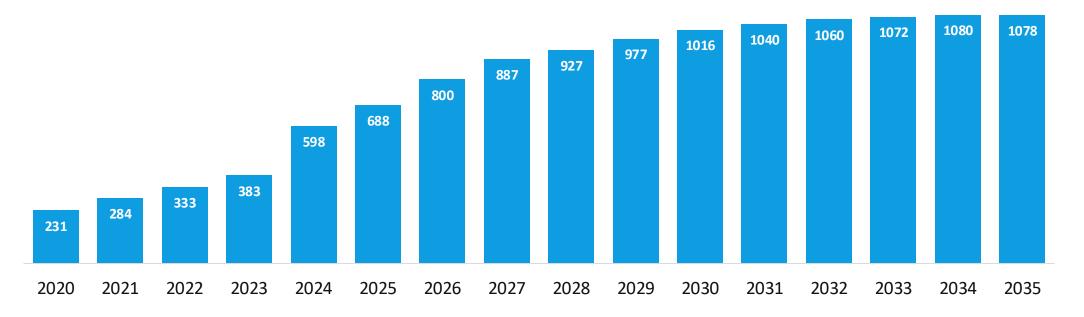
- Widespread governmental new vehicle emission and fuel economy targets.
 - EU: 0 g/km CO₂ output in 2035
 - China: 40% sales are new energy vehicle in 2030
 - US: EPA ruling relaxes path through $2030 c5g/mile CO_2$ in 2032
 - California (and some CARB states): 100% zero emission in 2035
 - Smaller regional bans
- Brands planning zero-emission-vehicle only sales globally:
 - 2025: Jaguar
 - 2030: Mercedes, Volvo, Bentley, Rolls-Royce, Cadillac, Buick, Genesis, Maserati...
 - Early 2030's: Audi, MINI
 - 2035: GM, Subaru, Lexus
 - 2040: Honda, Hyundai/Kia, VW
- What about the consumer?

Will BEVs get more appealing for consumers?



Global BEV model count grows exponentially

BEV Models

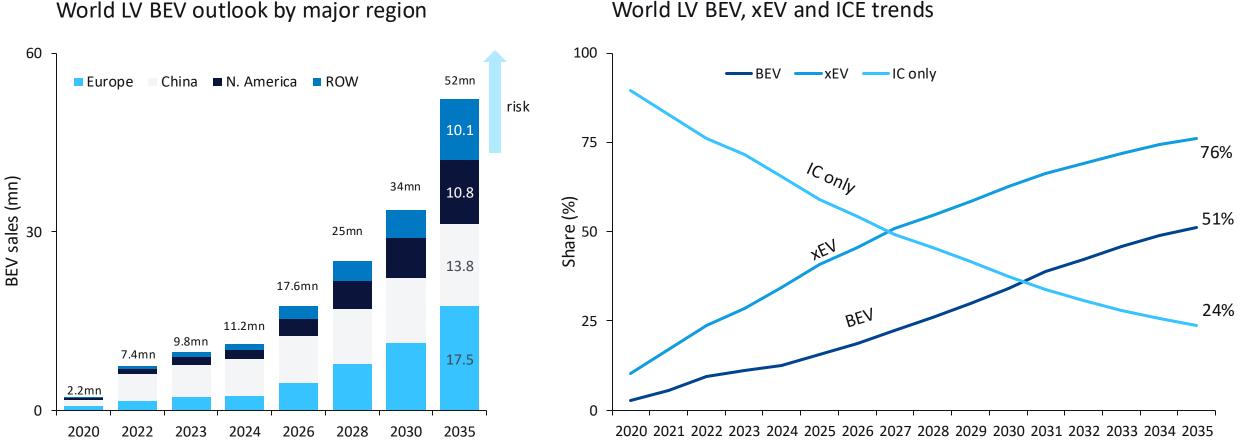


- Global BEV count grows by 56% in 2024 to nearly 600 available models, driving by China and expanding share in Europe. New US EPA ruling will slow some launches but not likely to have impact globally.
- BEVs increases significantly over long-term horizon, nearly doubling from 2024-2035, as choice supports volume growth into mainstream markets and consumers. However, the BEV market will continue to behave like a premium market until the need for lower cost models is met.

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Base case BEV and xEV forecast by major market



World LV BEV outlook by major region

- Europe BEV volumes catch up with China, driven by policy, but China plug-in sales stay well ahead of Europe through the forecast.
- NA grows from a low base and stays behind China and Europe through forecast. New US policy expected to slow transition but not end result.

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For any queries regarding my presentation, please contact me at:

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