



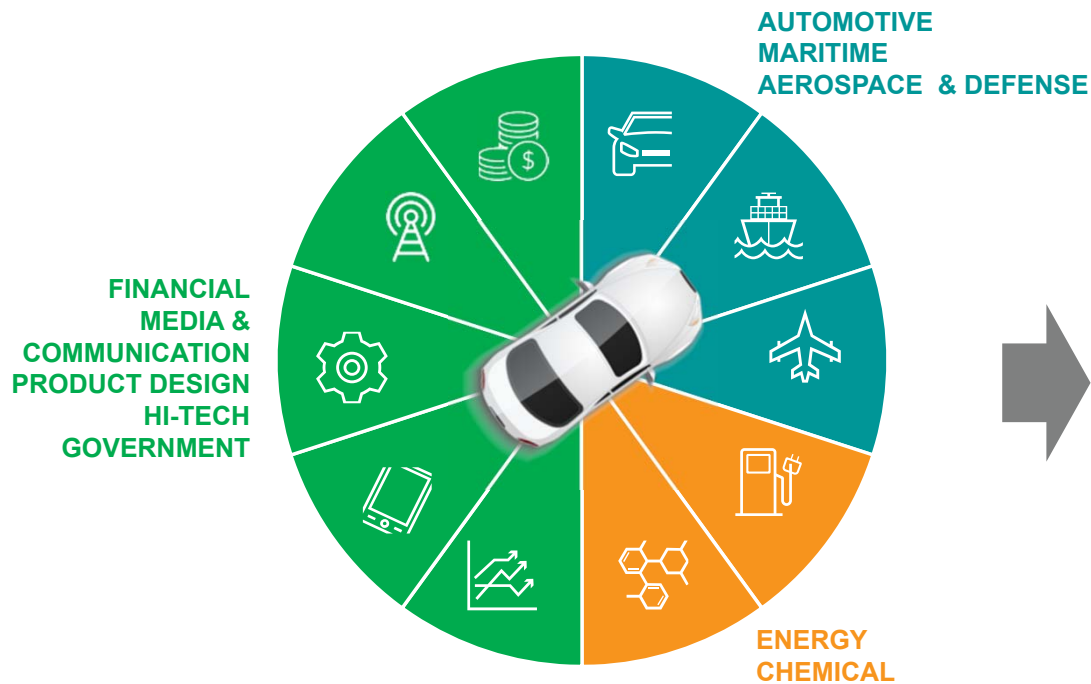
IHS Markit®

Global Vehicle Trade Flows

Headwinds and Secular Shifts Abound

WEDNESDAY, 24 APRIL 2019 | FVL NORTH AMERICA | HUNTINGTON BEACH, CA

An Integrated Partner Focused on Major Decision Dynamics



AUTOMOTIVE

The automotive sector is one of the biggest and most competitive markets in the world and relies on in-depth analysis for its daily operations.

Our extensive global team of automotive analysts located in 15 key markets supplies the depth of information and level of comprehension needed for a competitive edge.

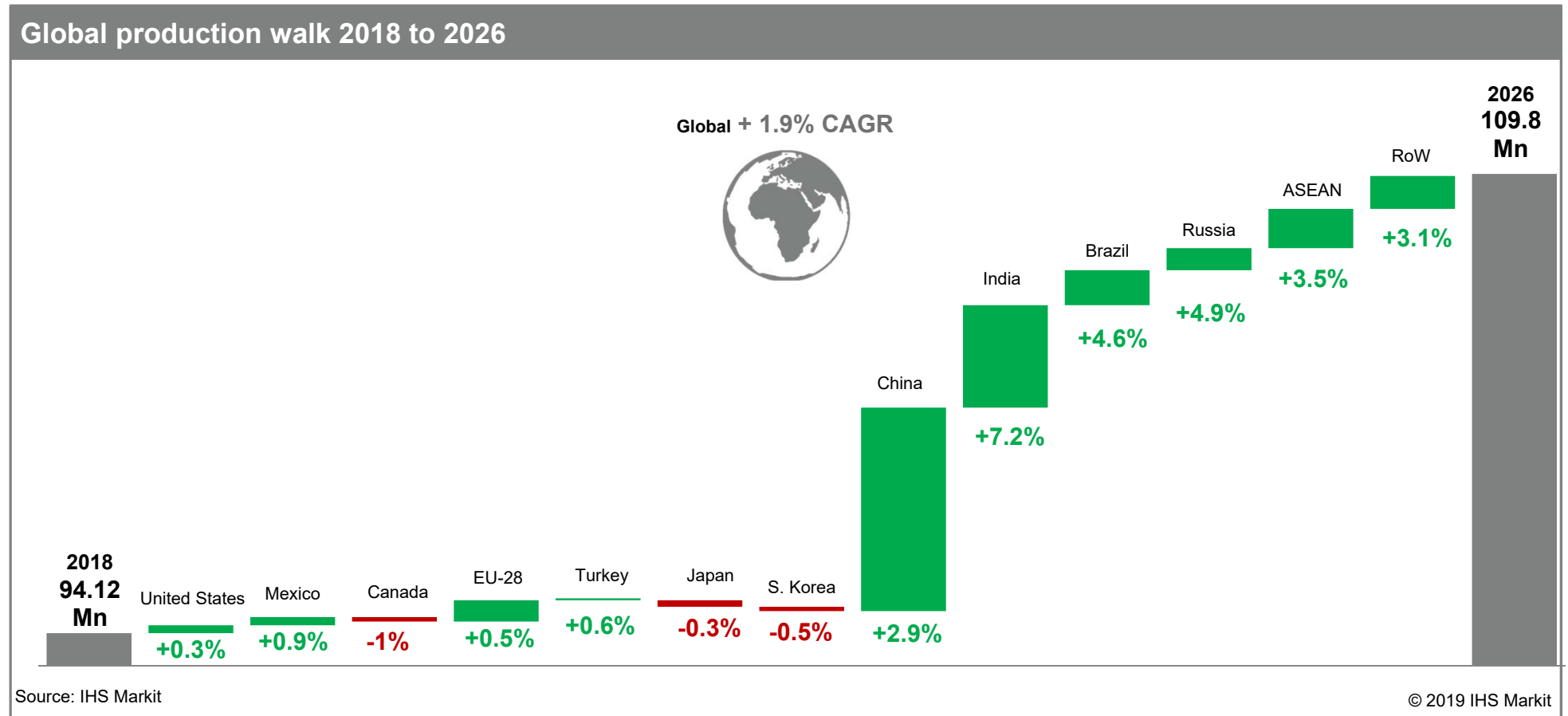
IHS Markit automotive solutions span the entire value chain, from product inception to sales, marketing and the aftermarket.

We scale our insights to address virtually any domain or enterprise, improving the speed, accuracy and impact of business strategy and tactics.

Agenda

- **Global Market Dynamics**
- Key Secular Shifts
- Trade Route Analysis
- Summary

Global pace slows but direction remains upward



Trade Disruptions / Progress

• 232 Steel/Aluminum Tariffs

- Steel and aluminum prices have risen due to higher import costs and real inflation by domestic producers (driven by capacity restrictions).
- House and Senate Republicans want these eliminated before USMCA is passed. Democrats are not as united. Quotas are possible.

• 232 Auto Parts and Light Vehicle Tariffs

- Recent side agreements note the willingness to negotiate post USMCA (60 day 'cooling off') delay with Mexico and Canada.
- Parts/vehicle tariffs could range from 15-25% depending upon sub-system and country source – Implementation may wait until Summer 2019. Using 232 as leverage to agree to larger trade structures.

• Section 301 - China Tariffs

- Tranche 1: \$34B - China molds are impacted by a 25% tariff which started in July 2018.
- Tranche 2: \$16B – Additive to the earlier tranche (25%). Started in late August 2018.
- Tranche 3: \$200B – 10% tariff captures the balance of auto parts – Held at this level given negotiation progress.

Possible
resolution
by end of
April

• USMCA

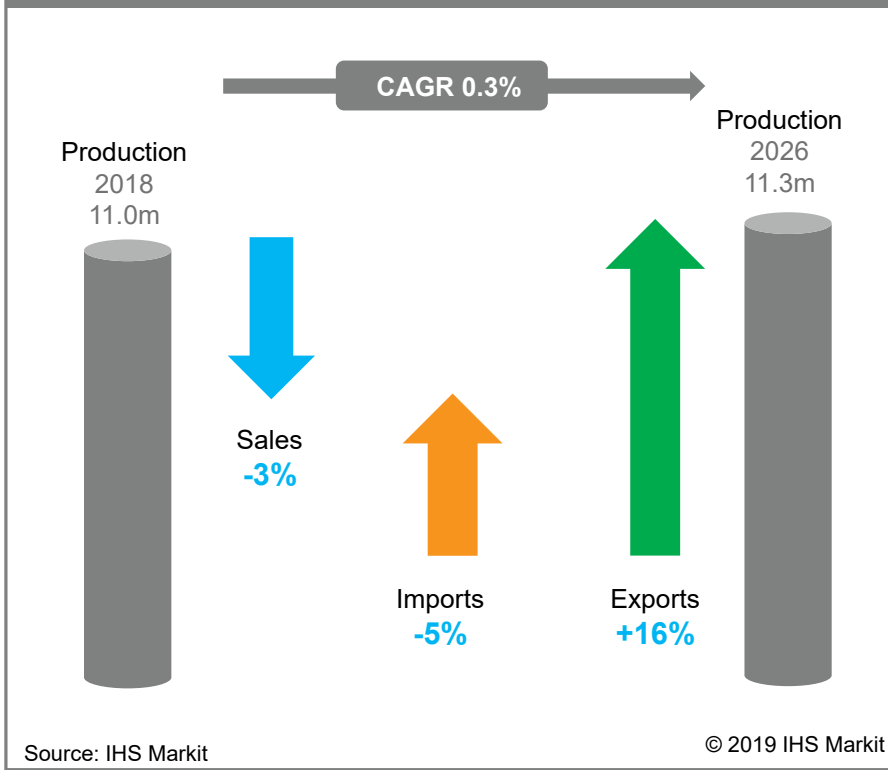
- Shifts in RVA, Add Labor Value Add, Add Steel/Aluminum Thresholds, Add Hard Quotas through side letters, Add Sunset clause.
- Labor Value Add Calculation is still being worked out
- Ratification by all parties entails a number of moving parts – Mexican Labor Reforms, 232 Steel/Aluminum elimination

• US Southern Border

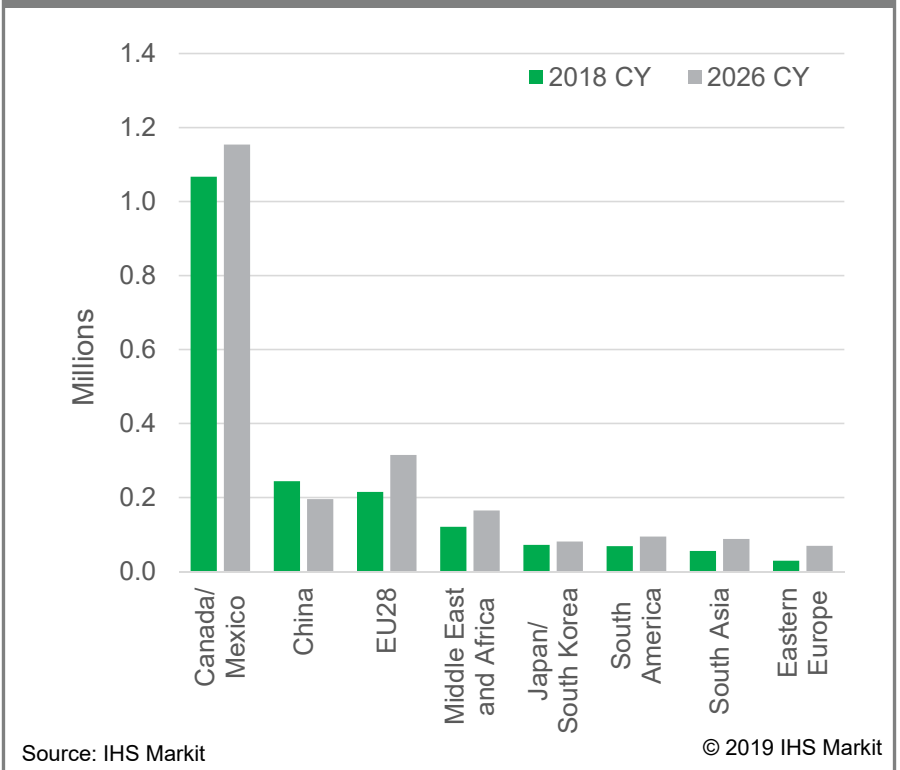
- A possible US southern border closure is frontloading some deliveries and could cause significant disruptions to US/Canada production.

Trade policy casts a long shadow

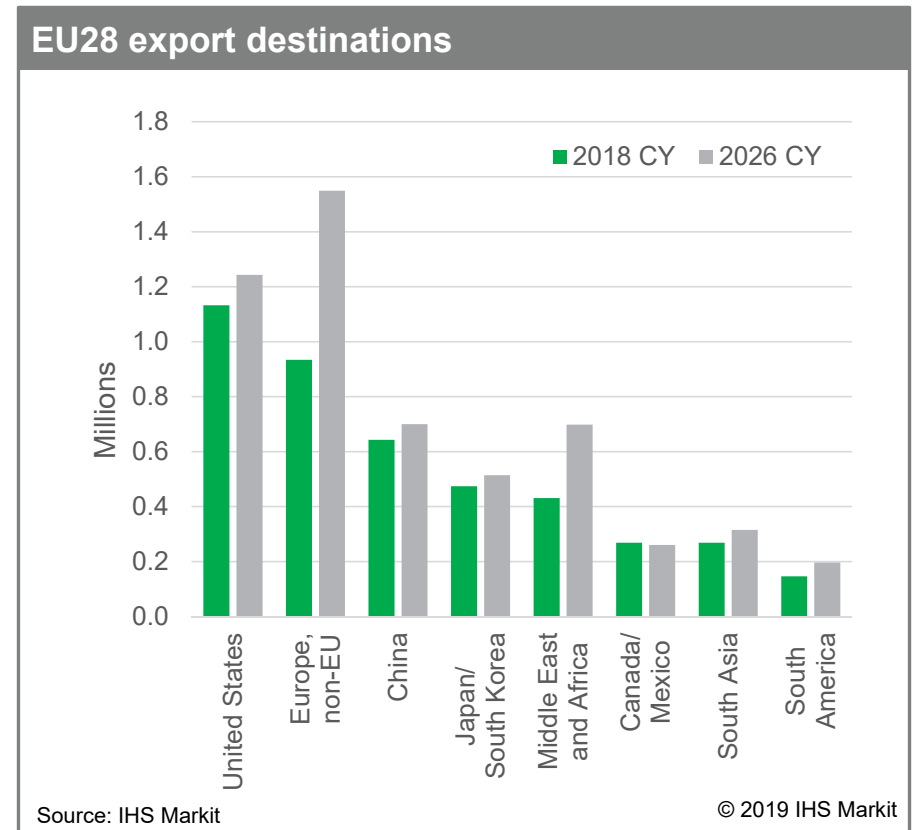
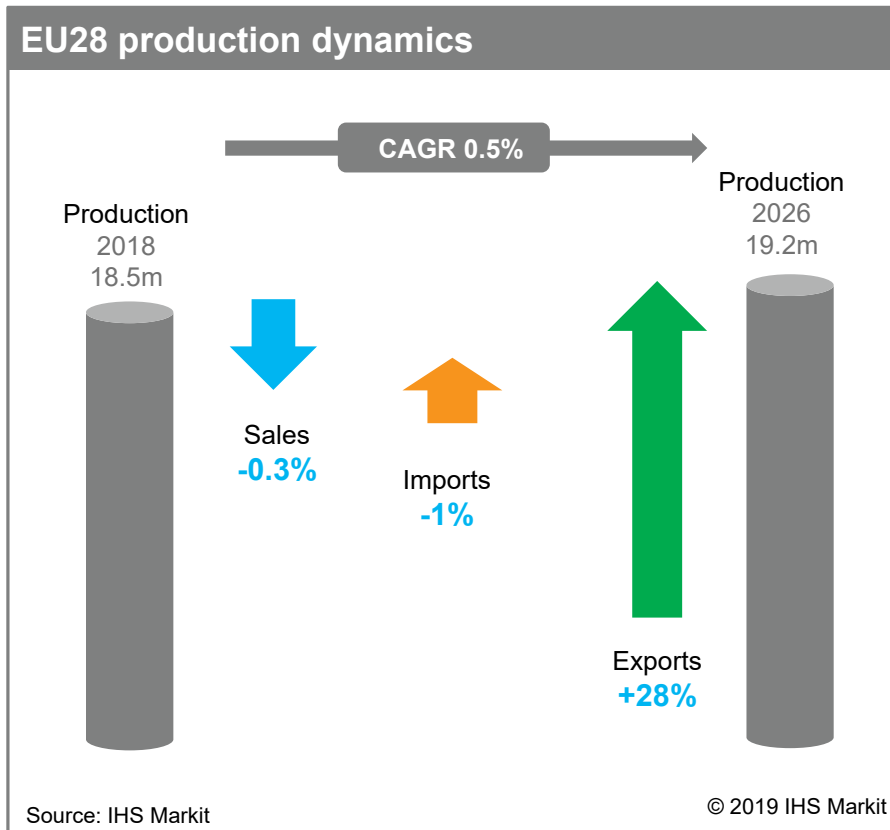
United States production dynamics



United States export destinations

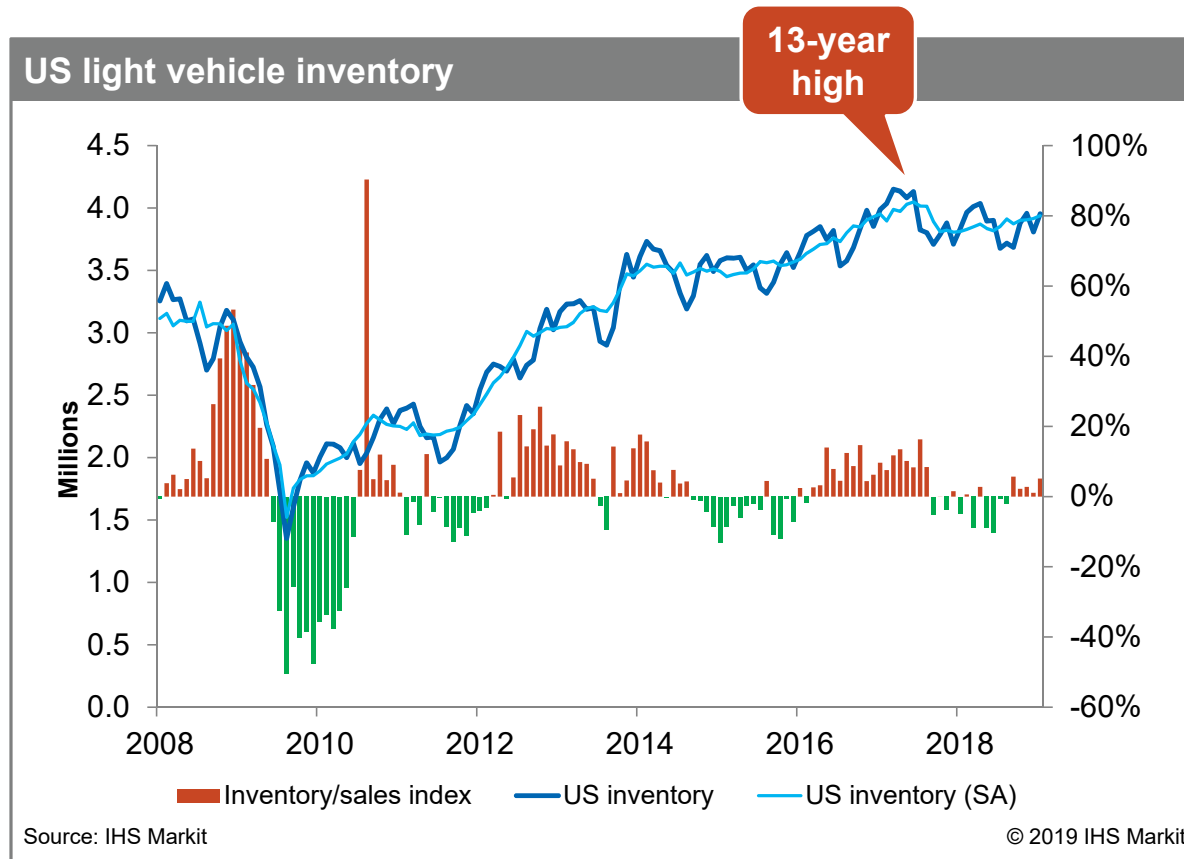


EU28 producers gain volume in the region but US is crucial to export profile



US light vehicle sales

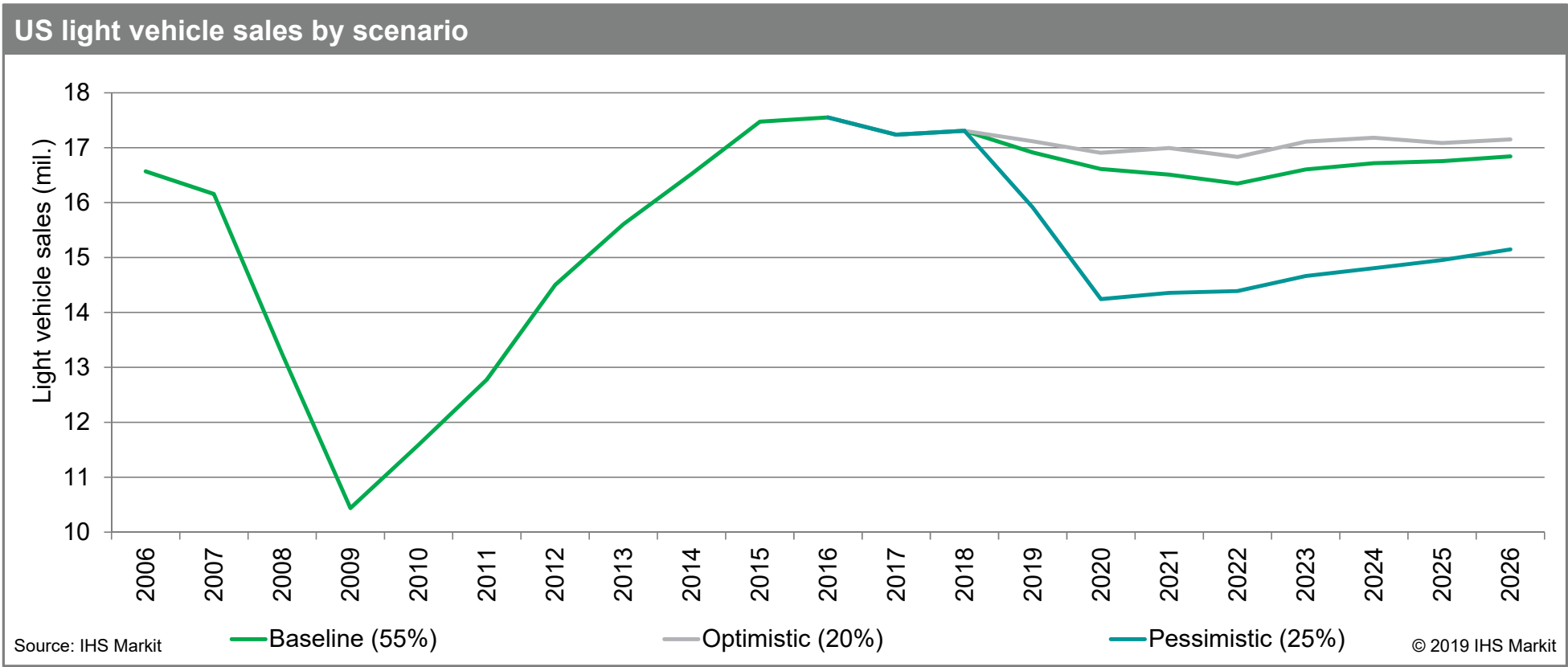
Inventory correction in progress



Inventory issues

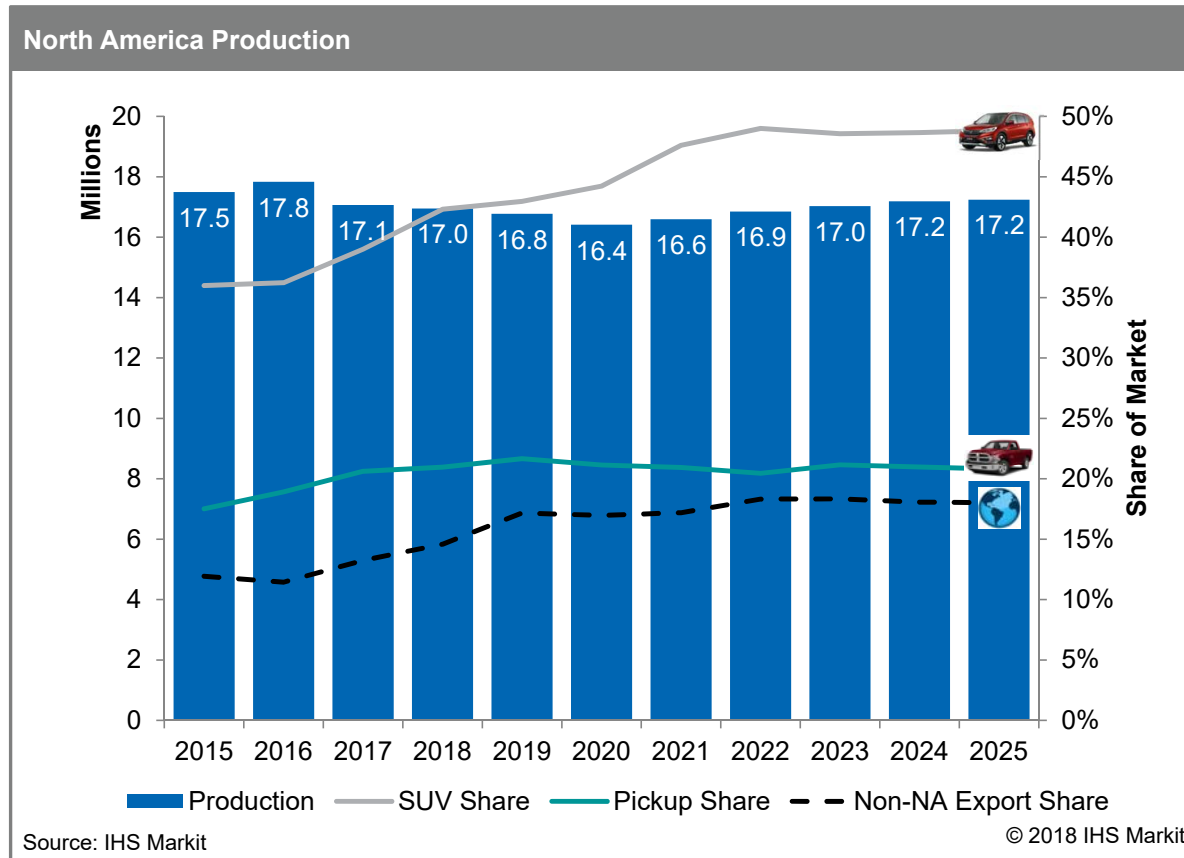
- 2018 inventory correction year
- Inventory off from 13-year high; 4.2M units in 2017
- Mix issues between cars and trucks
- Sudden draw down after natural disasters in 4Q 2017
- Inventory adjustments improving
 - Jan. 2019 = 3.95M units
 - Up 145,000 units from Dec. 2018
 - Up 3.2% or 121,000 units from Jan. 2017
- 250,000 to 400,000 units of excess inventory
- Continued pullback on car production
- Minimal under supply of vehicles

Prolonged trade disputes to have severe consequences on US sales



North American Production Outlook

Declines Ahead Before Growth Returns



Next Decade Growth Focused on New Market Players

- OEMs find balance amid rising costs and increased competition
 - Incentives
 - Fleet
 - Inventory
 - Portfolio consolidation
- Growth due to localization and portfolio expansion
 - Up to 1.1 mil units of total by 2021
 - Exports support production growth
- S/CUVs approach 50% by early next decade.

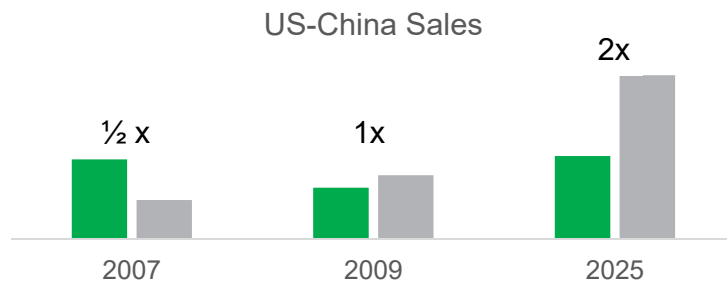
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China now has technology influence – not just global-leading output

Growing Influence of China Beyond Volume, Technology w/Scale

Sales market will grow ½ x to 2x the US in 18 yrs

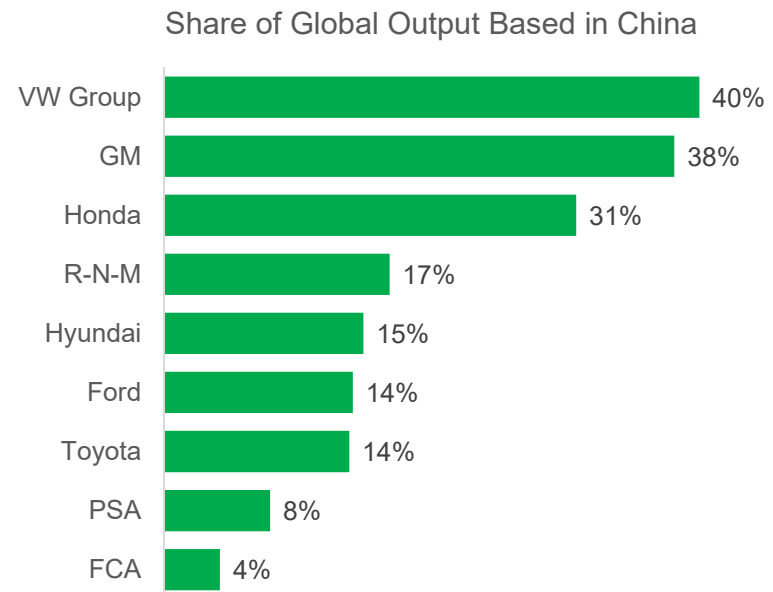


China is no longer a production outpost

Share of Western OEM production from a global platform



Dependency on China volume also dictates global propulsion and platform strategies



Secular Forces – Significantly Impacting the Vehicle/Supplier Ecosystem

Conventional

Some conventional platforms can implement batteries, but cannot change the overall architecture to form a battery driven vehicle assembly.



Multi-Energy

Initially designed to support both BEV and conventional

While BEV platforms will demand greater attention (technology), multi-energy efforts will hub the highest volume opportunities over the next 15 years



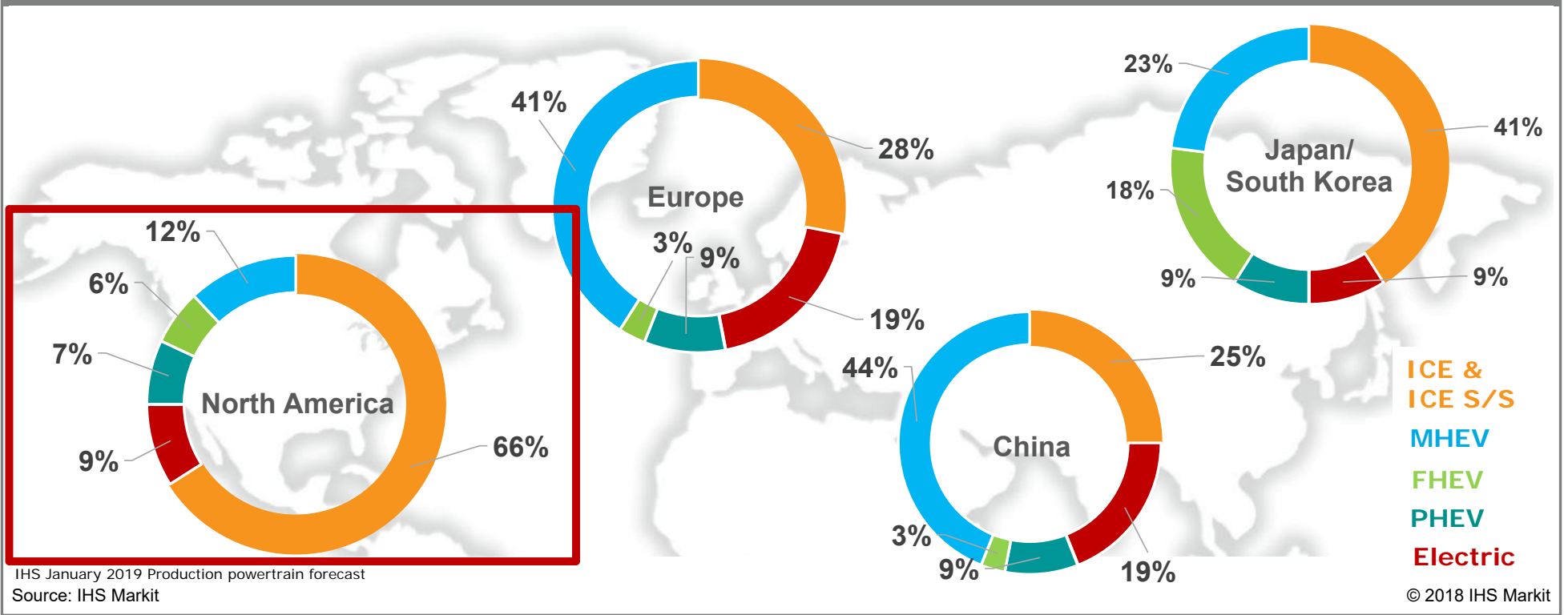
Battery Electric

Platform is designed only for pure BEV applications. Skateboard style architecture allows for more battery capacity and more interior space with the same vehicle size.



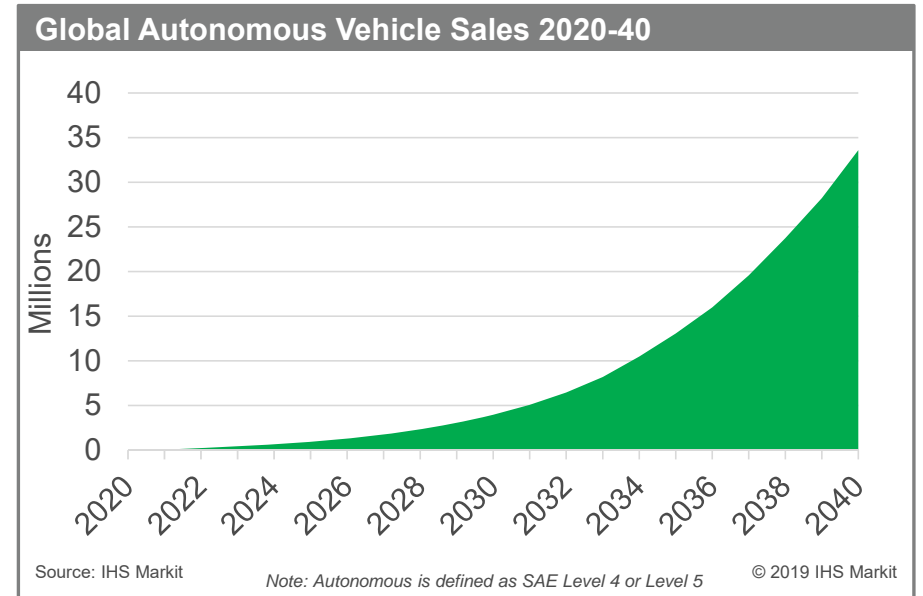
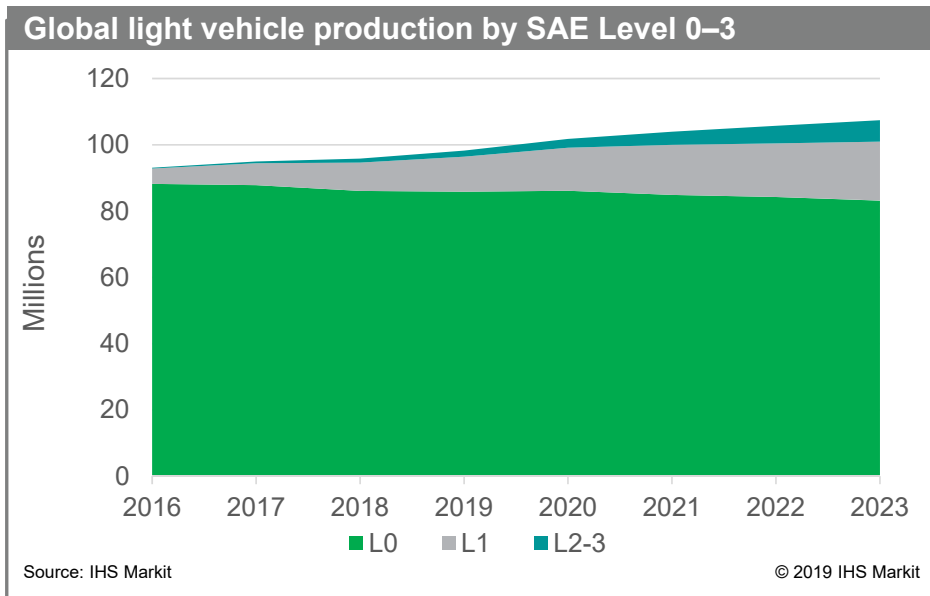
Global propulsion design islands

2030 Snapshot, and one region is truly alone



Autonomous Vehicle Growth Steadily Increases

Cautious Early Introductions Expand Through Shared Mobility Fleets



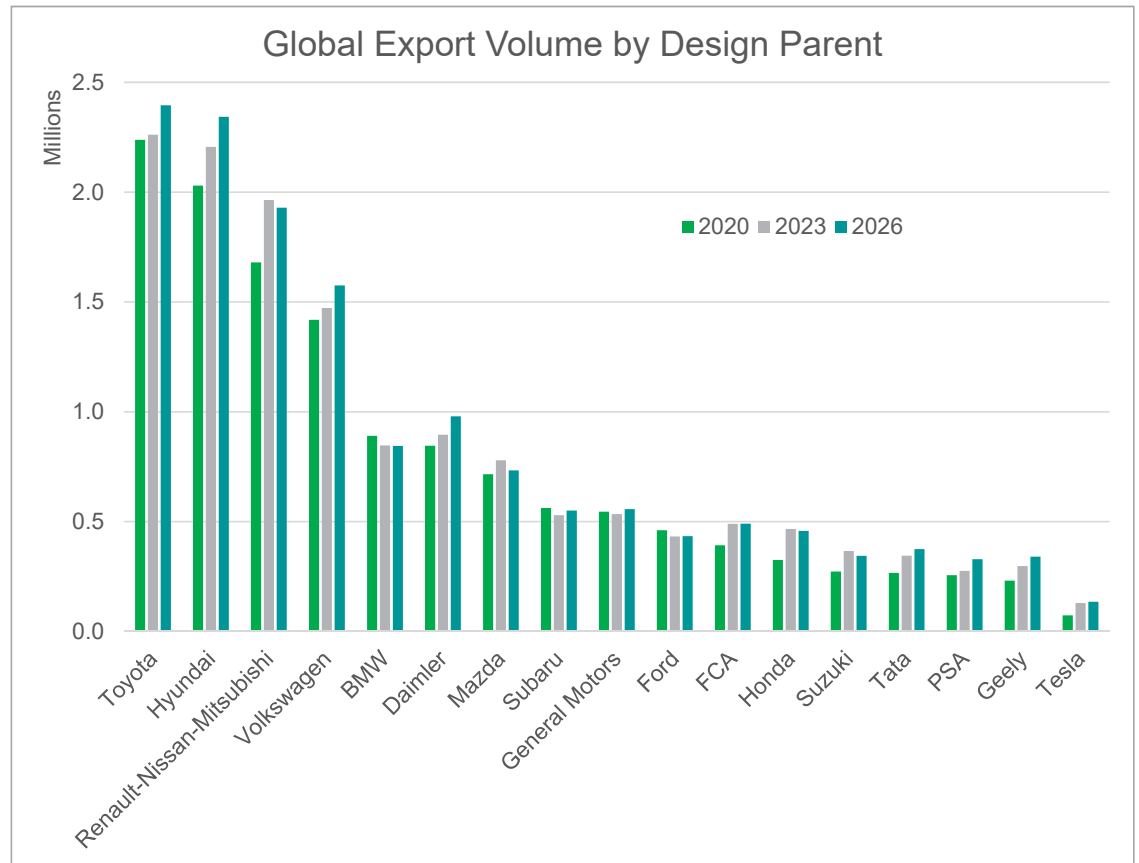
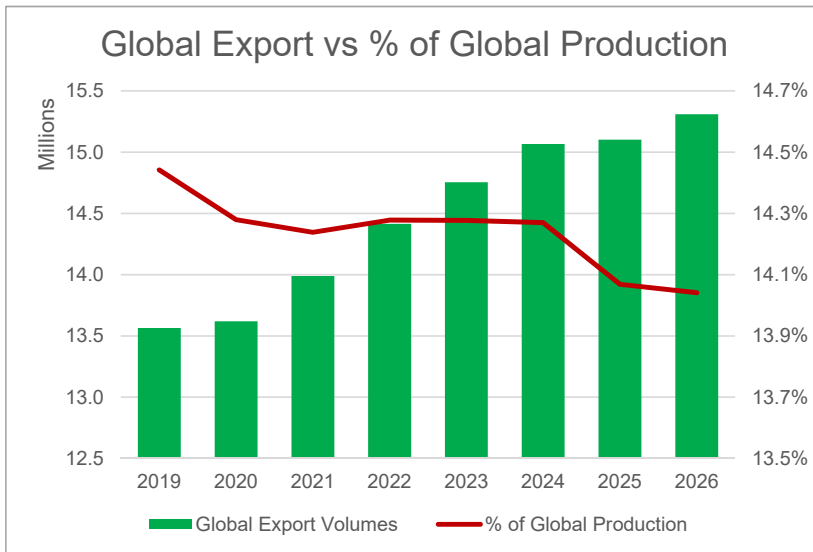
- Majority of new vehicle sales remain relatively “low tech” on the SAE scale
 - L0: AEB, lane departure warning, blind spot information
 - L1: Adaptive cruise control, automatic parking
 - L2-3: Autopilot, traffic jam and highway cruise
- L2-3 automated driving capability driven by EU and NA

- First production-line L4 autonomous vehicles in 2019, all deployed in mobility fleets
- Mobility services drive early volumes into fleets in China and the United States
- Ownership remains strong in Europe and the United States

Agenda

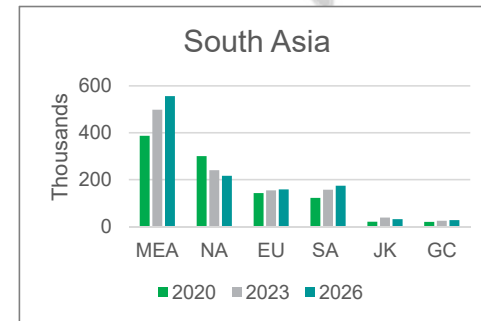
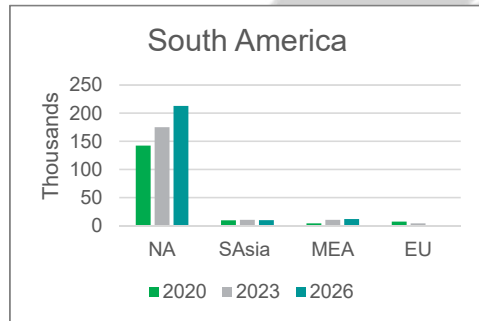
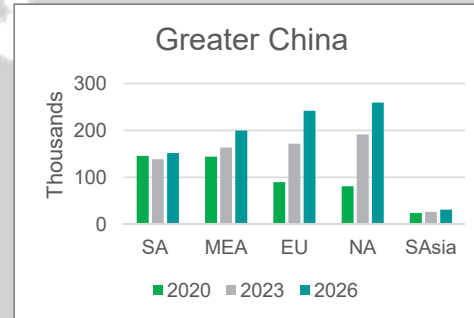
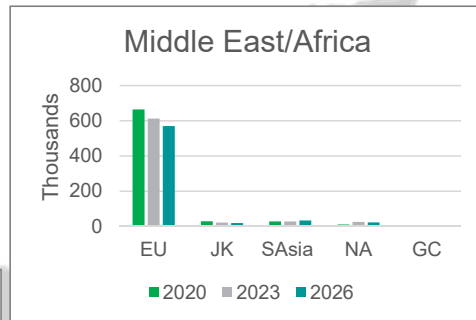
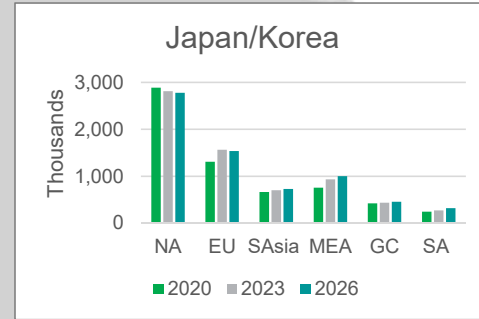
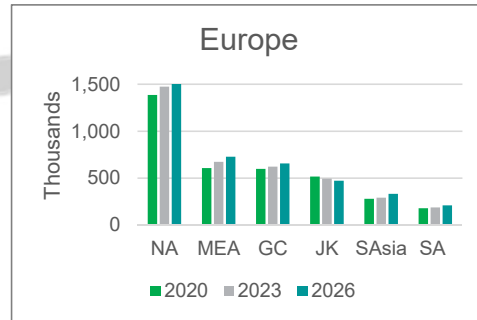
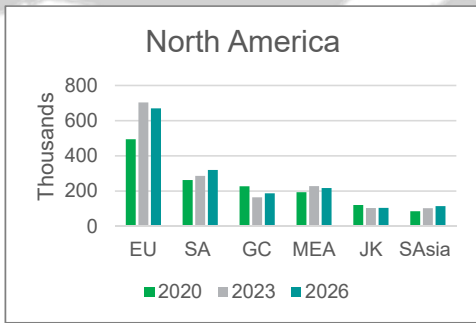
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Global Export Volume Moderates



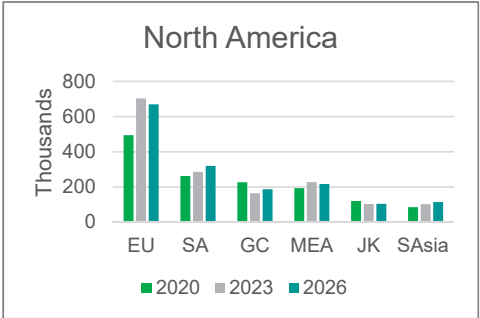
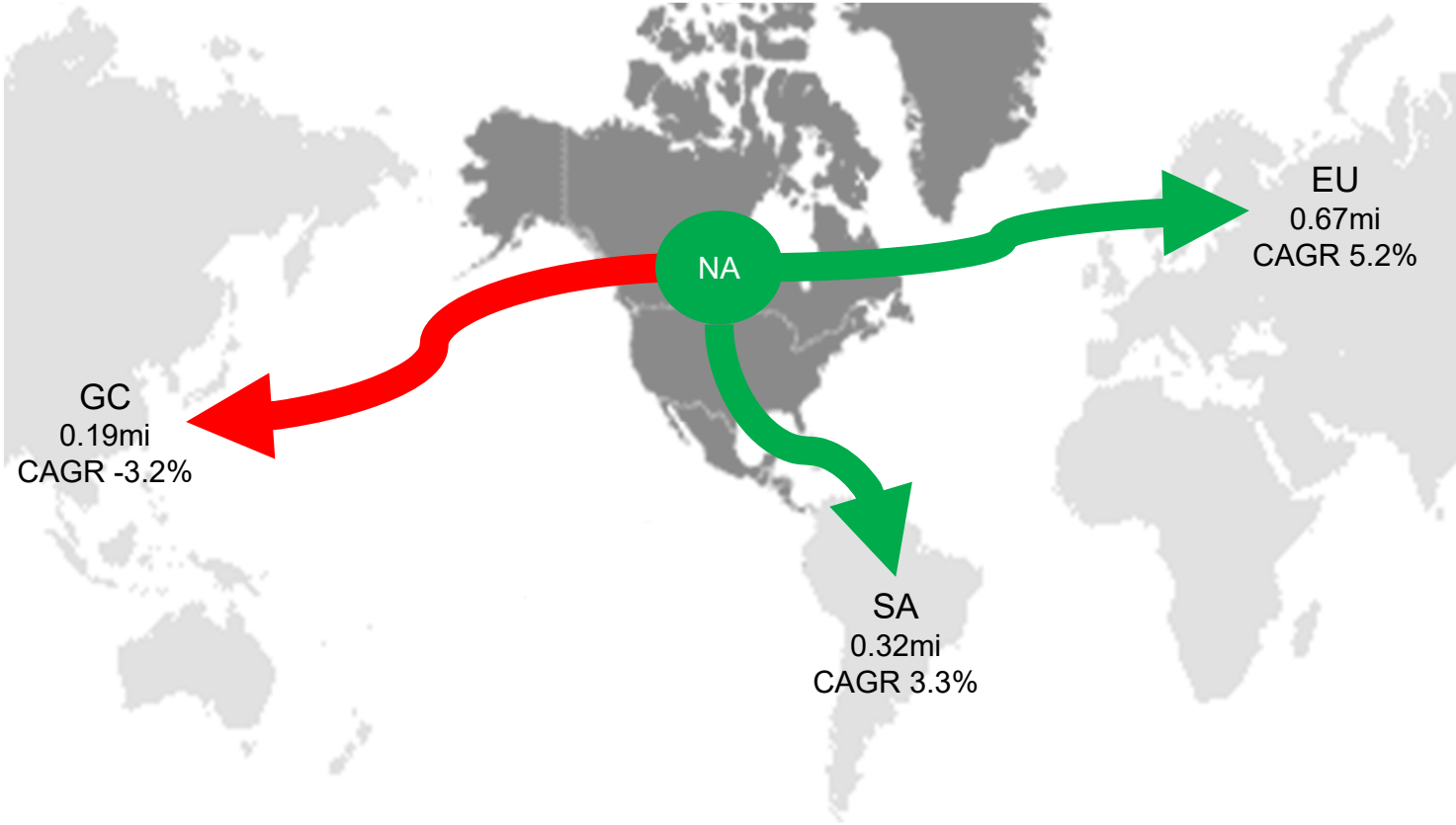
- Growth trade routes emerge:**
- NA to EU
 - NA to SA
 - GC to MEA
 - NA to GC

Global Export Flows



Global Flow			
	2020	2023	2026
Export Volume	13.6M	14.7M	15.3M

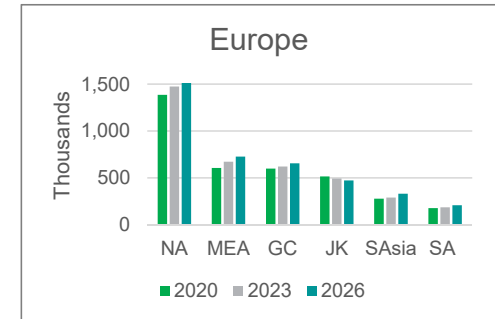
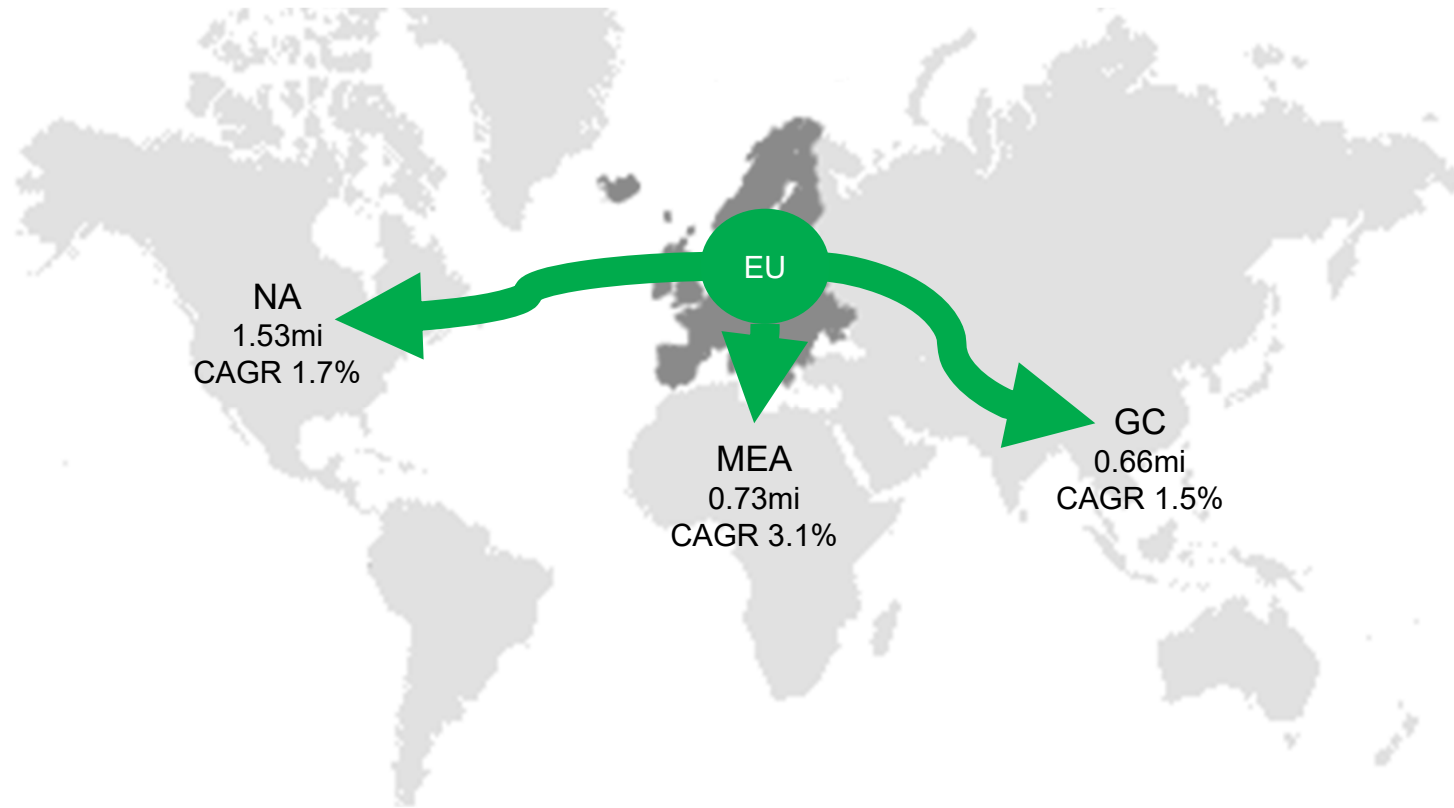
North America Export Flow



North America			
	2020	2023	2026
EU	495	704	670
SA	263	286	320
GC	227	165	187
MEA	193	228	217
JK	120	103	105
SAsia	85	103	114

*Volumes in Thousand units

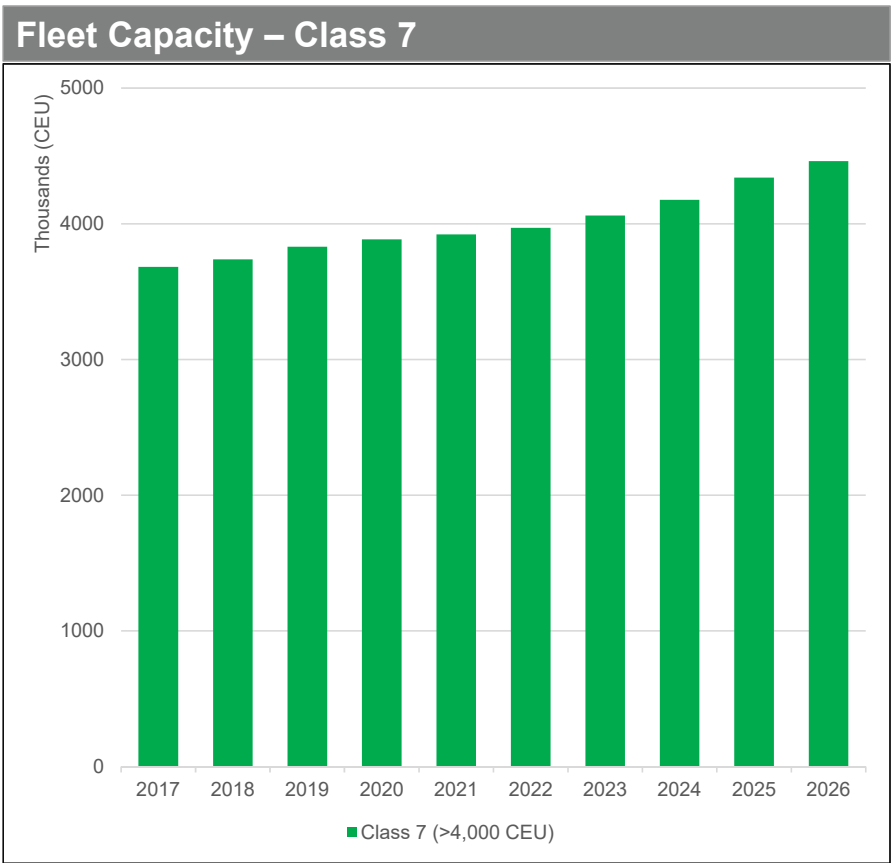
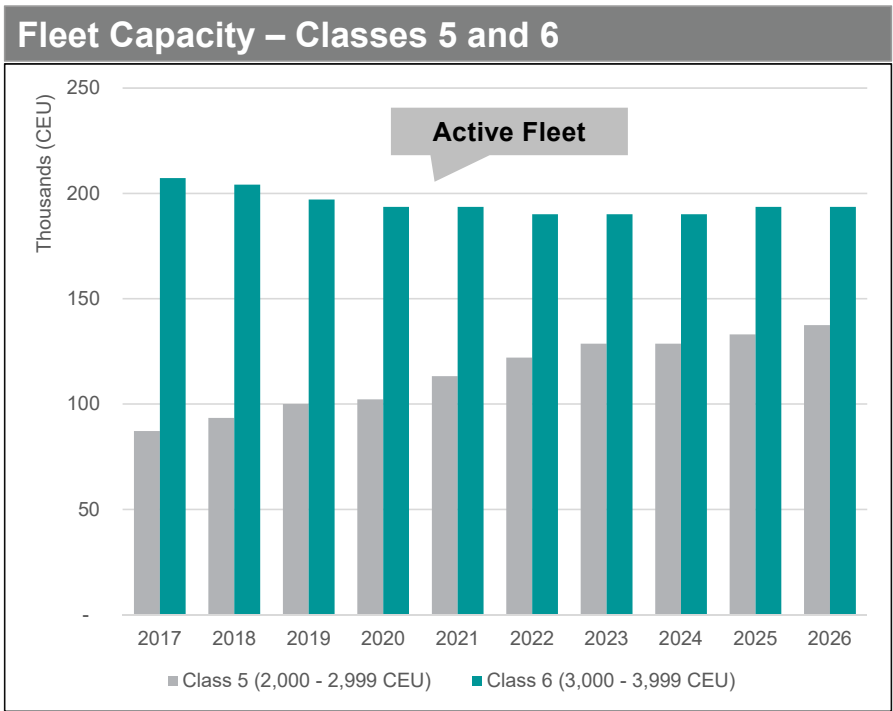
Europe Export Flow



Europe			
	2020	2023	2026
NA	1,386	1,476	1,533
MEA	607	673	728
GC	599	622	656
JK	516	494	473
SAsia	280	290	332
SA	179	187	210

*Volumes in Thousand units

Vehicle Carrier Fleet Capacity Forecast – Growing at the Edges



Vehicle Carriers categorized according to CEU Capacity

- Class 5 – 2,000 to 2,999 CEU
- Class 6 – 3,000 to 3,999 CEU
- Class 7 – 4,000 CEU +

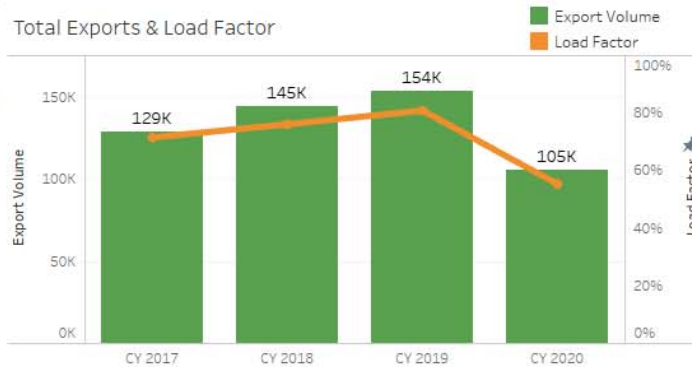
Source: IHS Markit Maritime

Key Route – Tableau-based Analysis by Route, Carrier or OEM

Route Overview



Total Exports & Load Factor

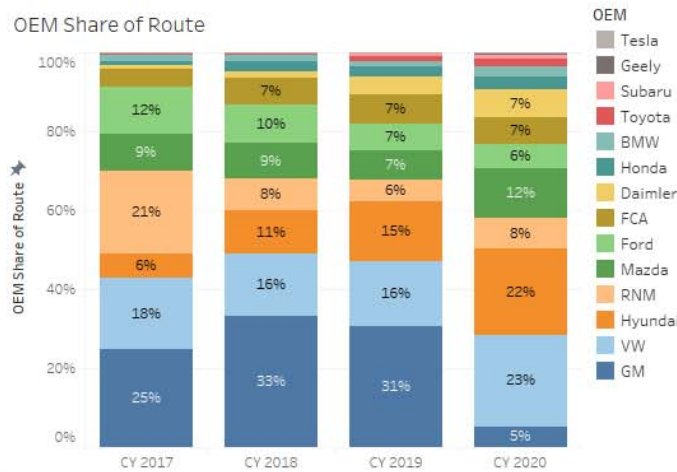


Export Volumes by Country/Adj. CEU Capacity & Load Factor

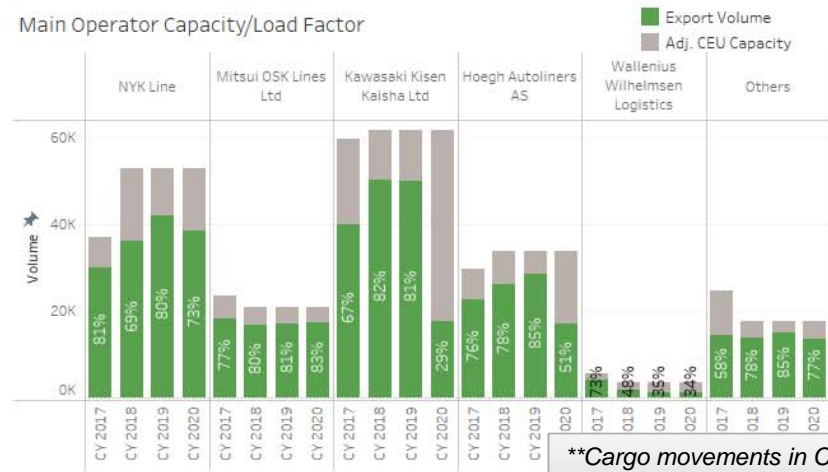
VP: Country	🇺🇸	CY 2017	CY 2018	CY 2019	CY 2020
Mexico		113K	127K	133K	83K
United States		15K	17K	19K	20K
Canada		1K	1K	3K	3K
Grand Total		129K	145K	154K	105K
Adj. CEU Capacity		180K	190K	190K	190K
Load Factor		72%	76%	81%	55%



OEM Share of Route



Main Operator Capacity/Load Factor



****Cargo movements in Central America not considered**

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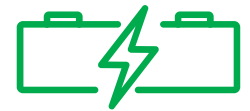
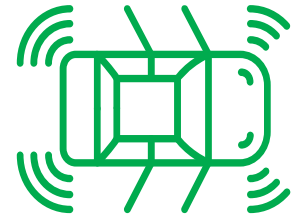
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Summary

Strong Industry Volume Masks Critical Secular Changes

- Plateauing Markets Increase Risk
 - Portfolio consolidation, ongoing trade tensions, moderating market fundamentals & strengthening competition.
 - Focus on efficiency, differentiation, speed, diversification, cost containment and flexibility.
 - New trade routes emerge
- Long-term Considerations
 - Journey through ACES from conventional platforms to BEV architectures opens new opportunities, alliances and profit pools – Global export dynamics are impacted.
 - Vehicle shipping industry will need to be more flexible to schedules, volumes, vehicle dynamics & trade routes



Thank You

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