The Forces Reshaping the Auto Industry

A U.S. New Light Vehicle Industry Overview

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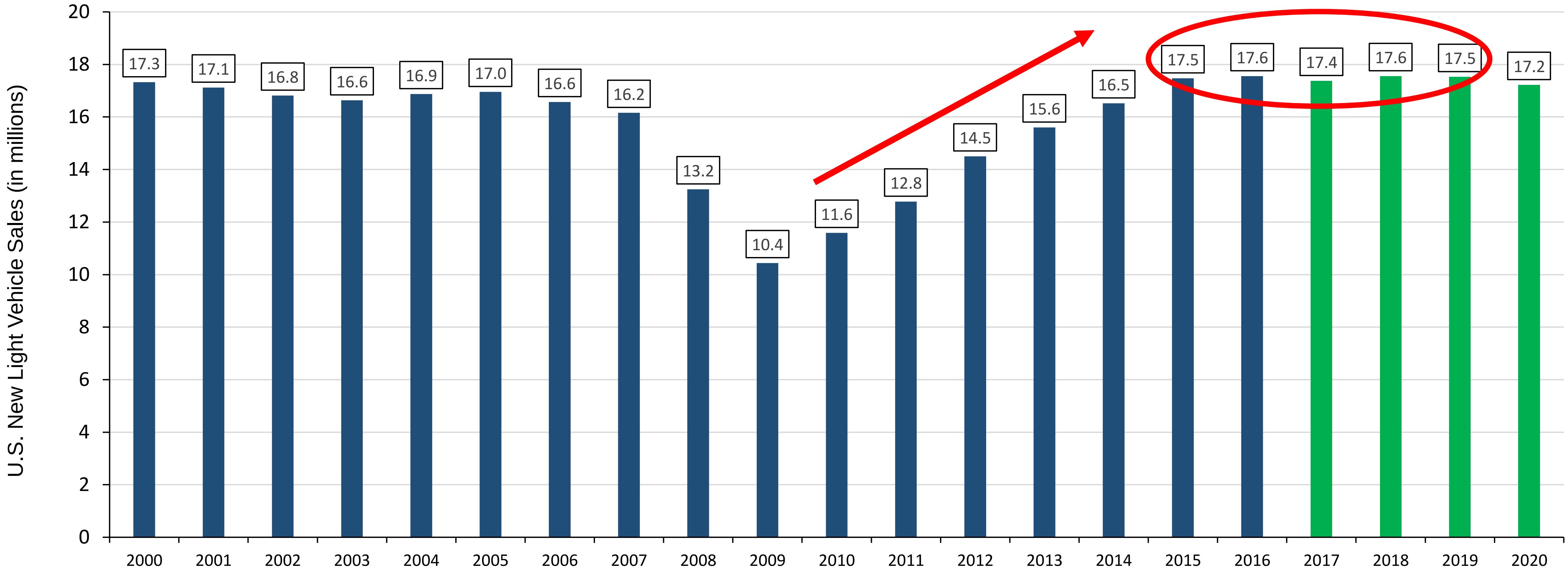
Agenda

- Plateauing
- SUV/CUV
- Parity
- ICE
- Production
- A.C.E.S.
- Summary

“Plateauing”

U.S. New Light Vehicle Sales (in millions)

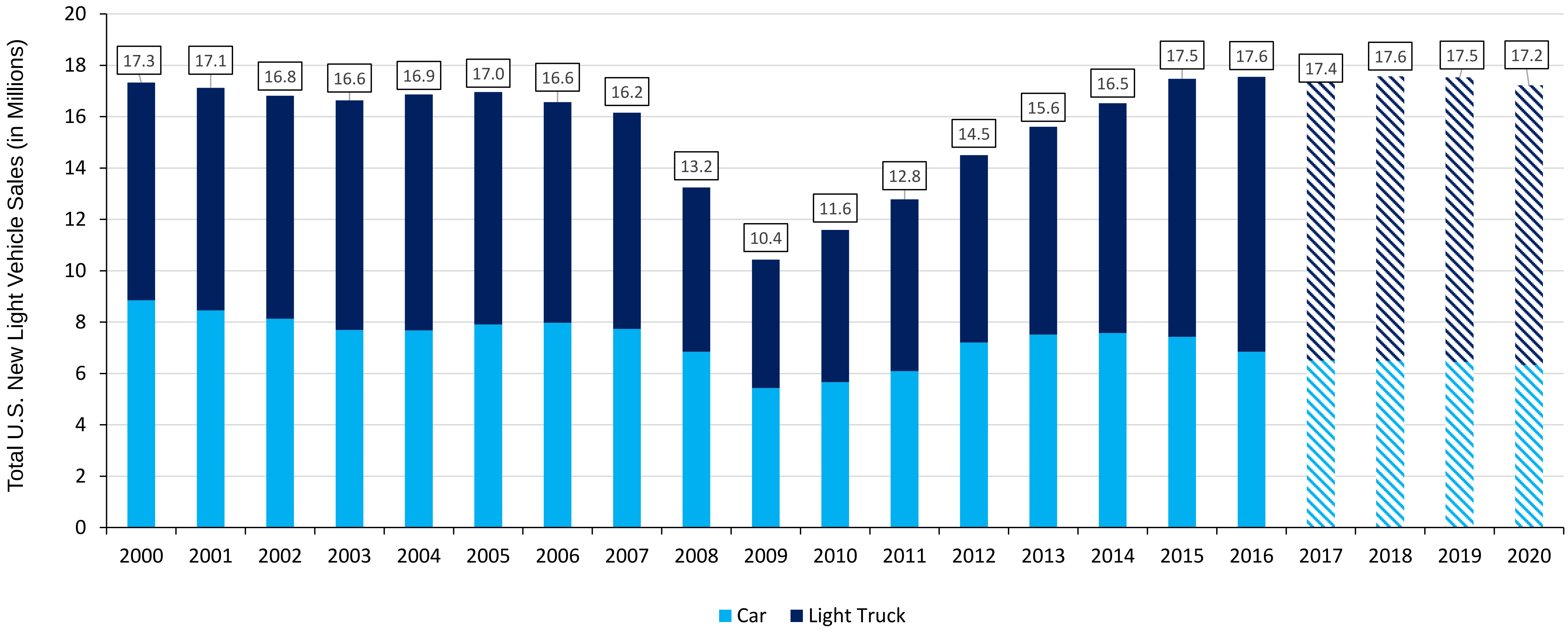


➢ U.S. new light vehicles sales are forecast to remain in the 17.4 – 17.6 million range from 2017 through 2019.

Ramifications of Plateauing

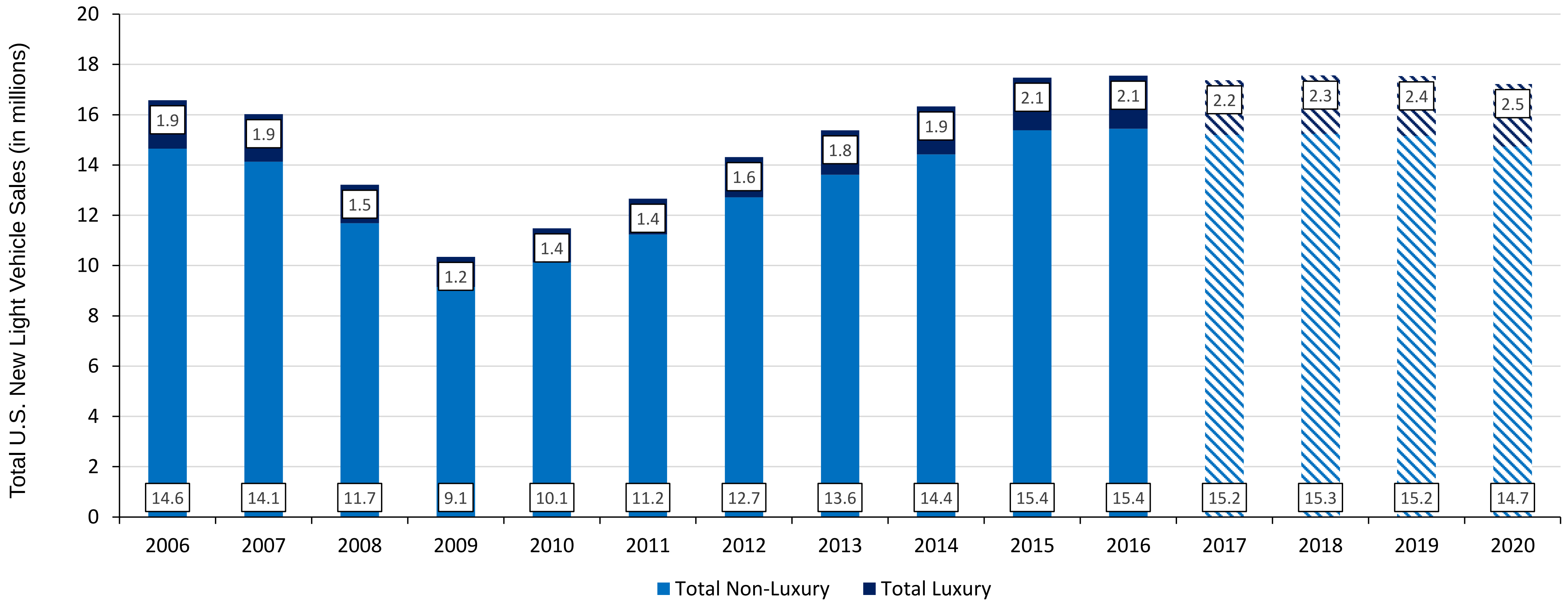
- Greater emphasis on conquesting
- Higher incentive spend
- Higher fleet mix
- Greater pressure on sales and F&I managers

Car/Light Truck Split by Year



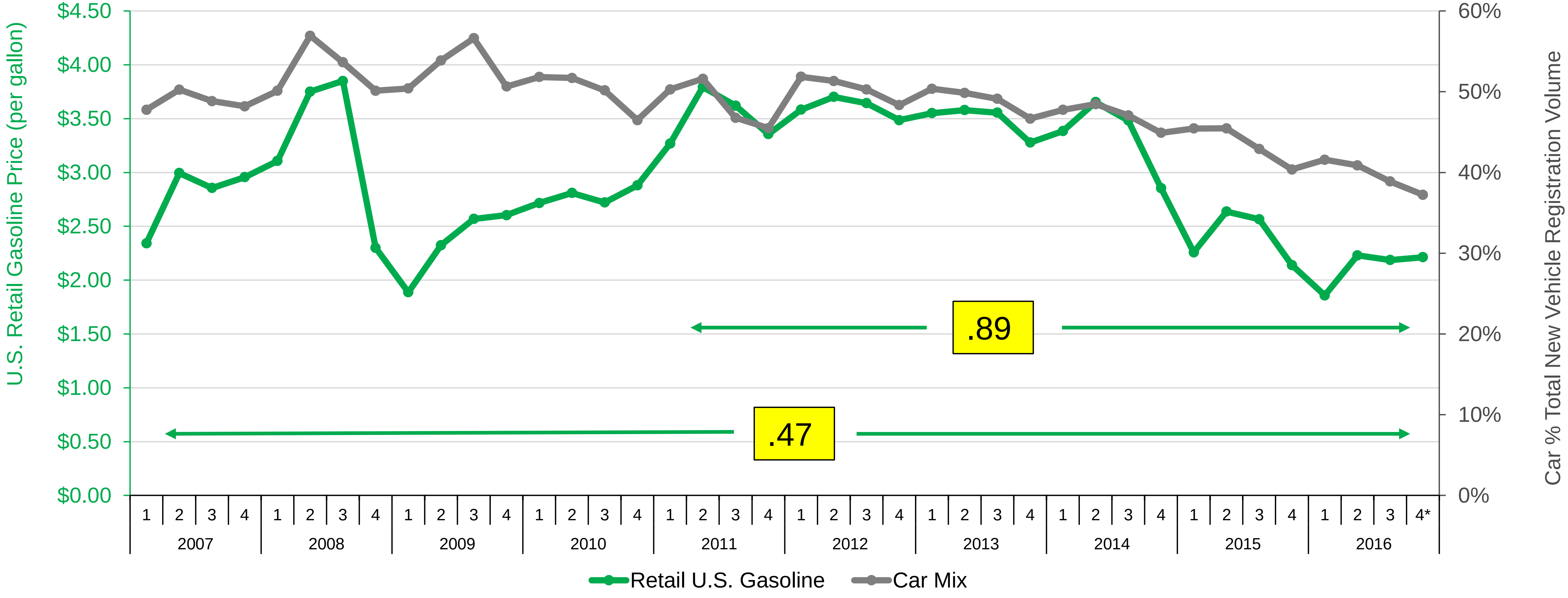
- Light trucks will account for 63% of all new vehicle deliveries by 2020

Luxury/Non-Luxury Split by Year



- Luxury deliveries will rise to 2.5 million by the end of the decade, driven by new entrants, greater supply (creating downward pressure on prices), and a higher mix of high-end buyers

Retail U.S. Gasoline Price (per gallon) vs. Car Mix

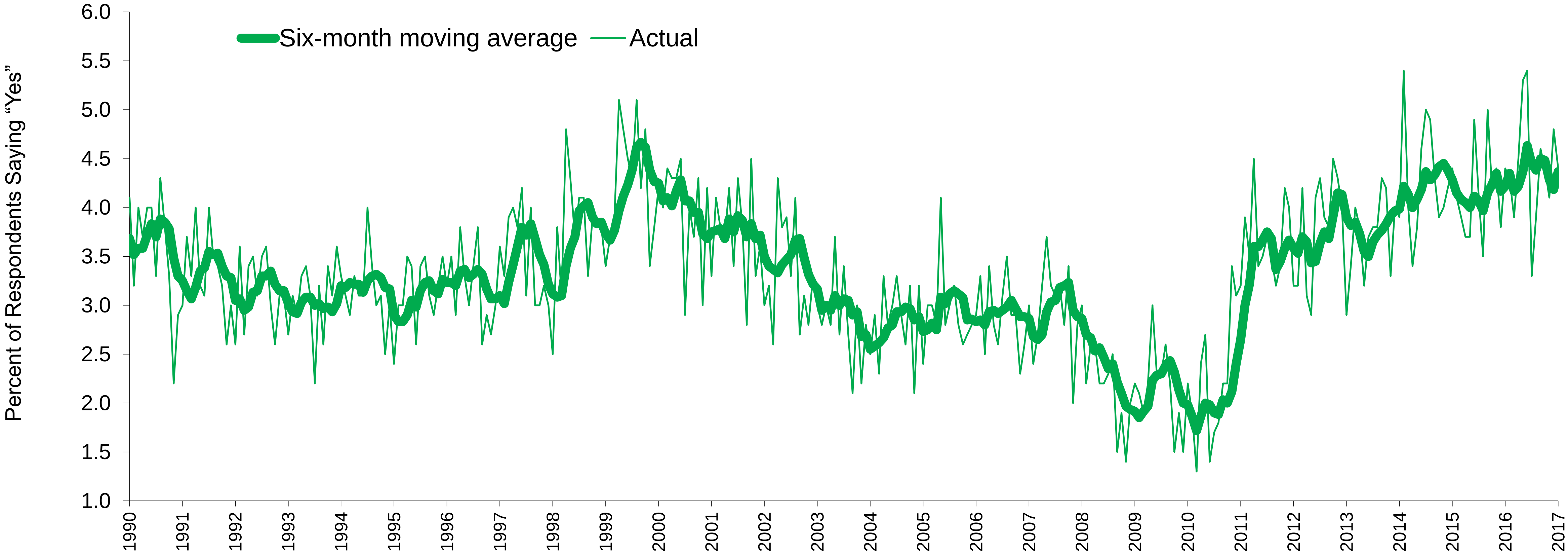


Registration Type: Total

**Q4 2016 includes October and November only*

Gasoline price source: AAA of Michigan

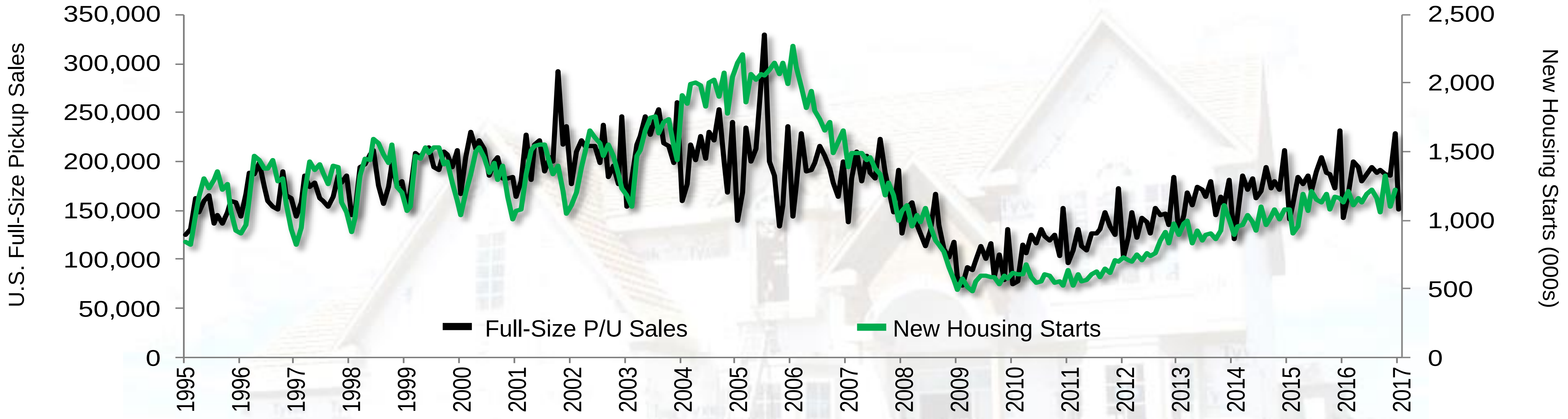
U.S. Consumer Behavior – Intention to Buy a New Vehicle



- Intention to buy a new vehicle remains high; stronger wages will improve ability

Source: Conference Board survey of intention to buy within 6 months

New Housing Starts and Full-Size Pickup Sales



- Strong correlation between housing starts and full-size pickup sales
- Housing starts are recovering (slow but steady) – not expected to reach previous peak
- Full-size pickup sales recovering with improved commercial fleet sales and redesigned vehicle offerings, further bolstered by low gas prices

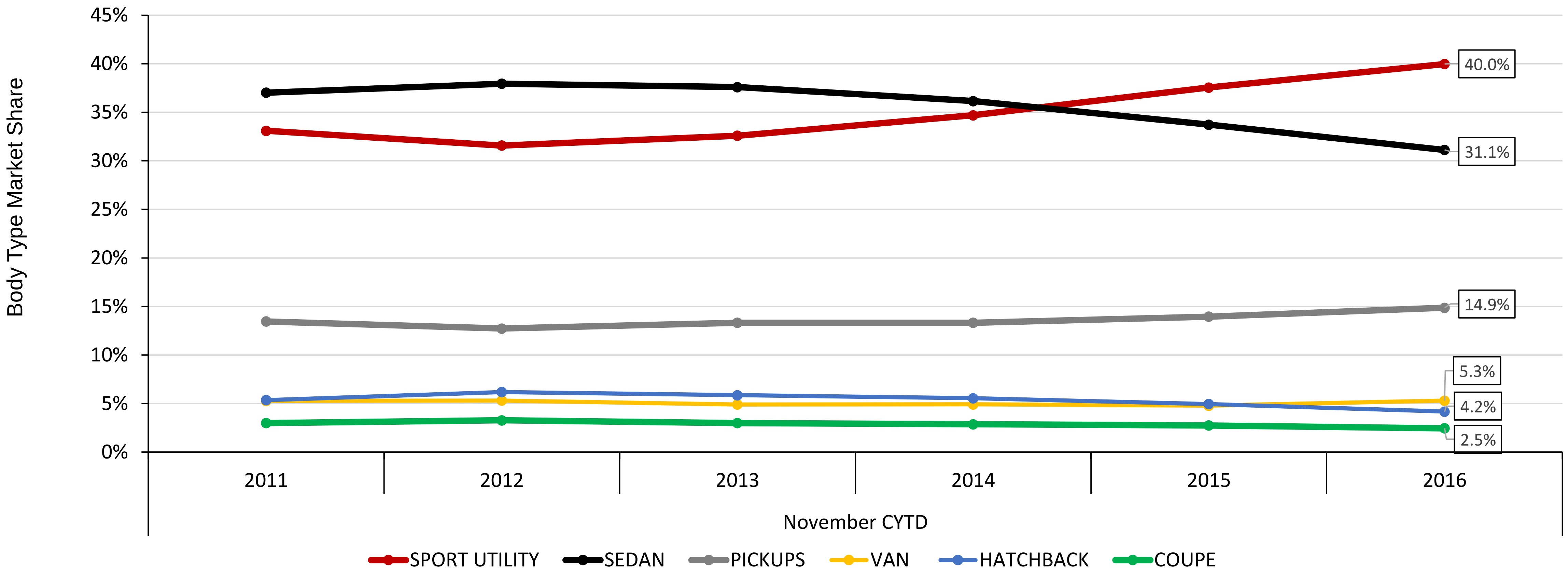
Direction of New Federal Administration

?

- NAFTA
- Border tariffs
- Localized production
- CAFE
- Taxation

SUVS/CUVS – HOW HIGH?

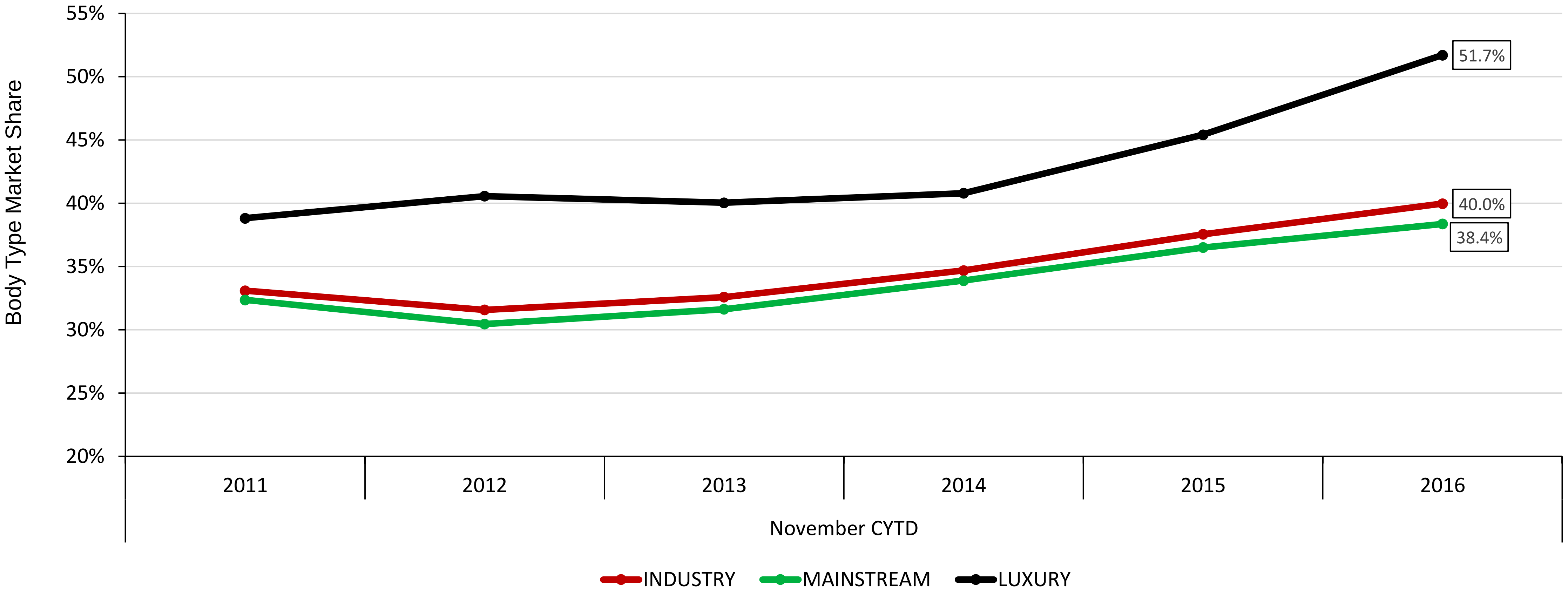
U.S. New Vehicle Registrations by Body Style



➢ Four of every ten new vehicle registrations are now SUVs or CUVs, almost a third higher than sedans

Registration Type: Total

Trended SUV/CUV Share – Luxury and Mainstream

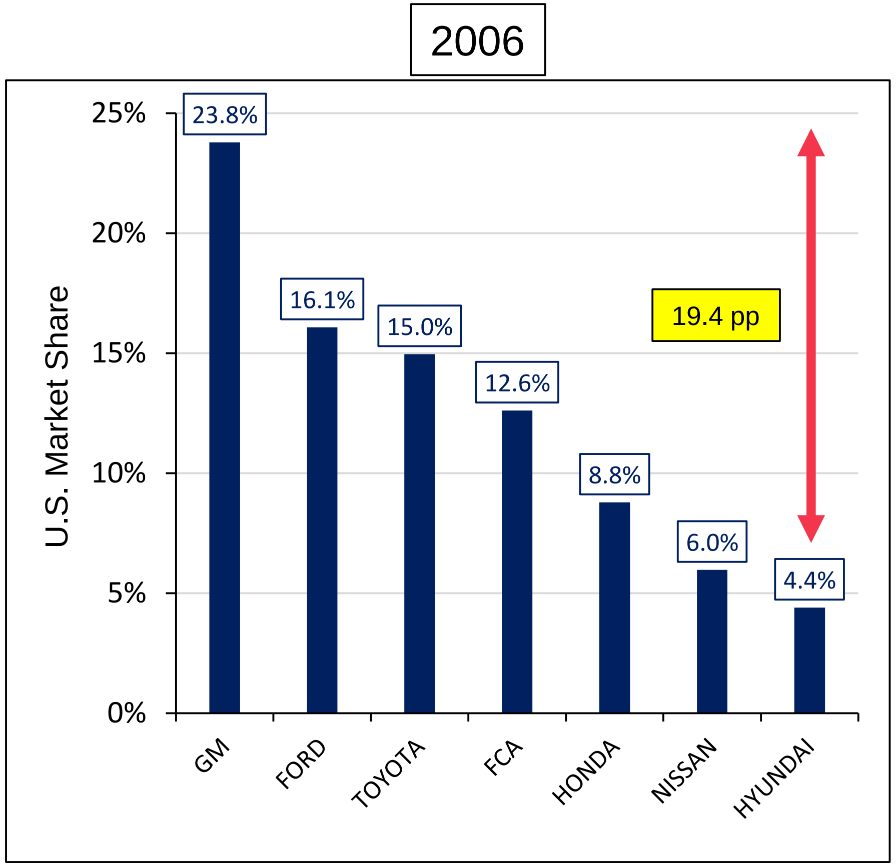


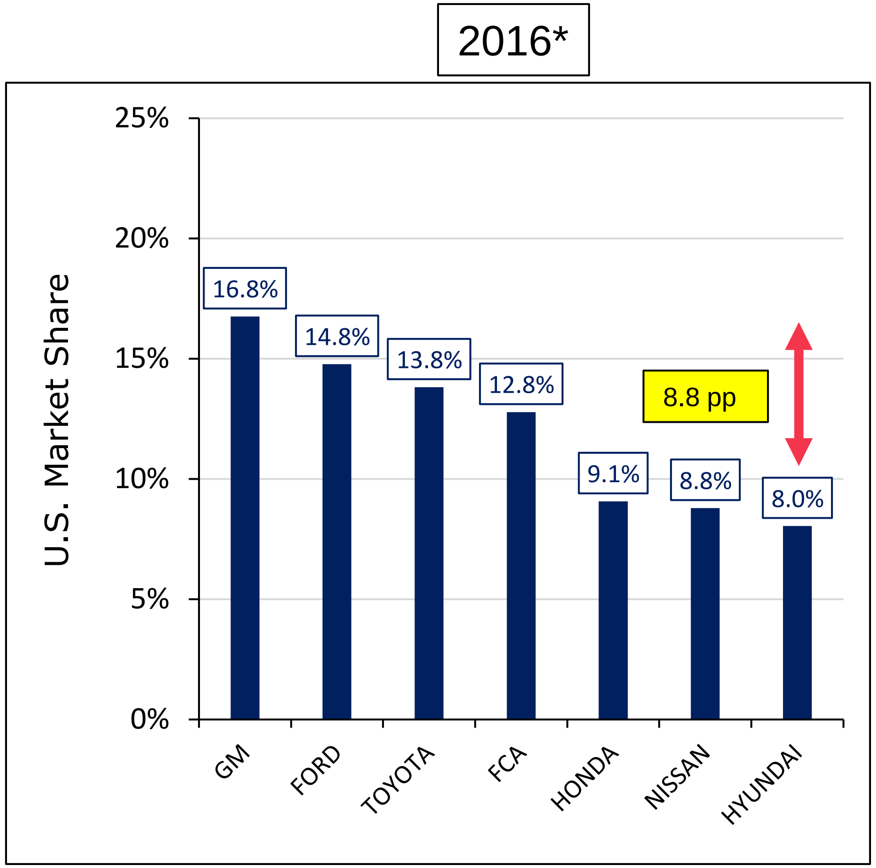
➢ More than half of all luxury deliveries in the first eleven months of 2016 were SUVs or CUVs

Registration Type: Total

PARITY

Corporate Market Share - 2006 vs. 2016

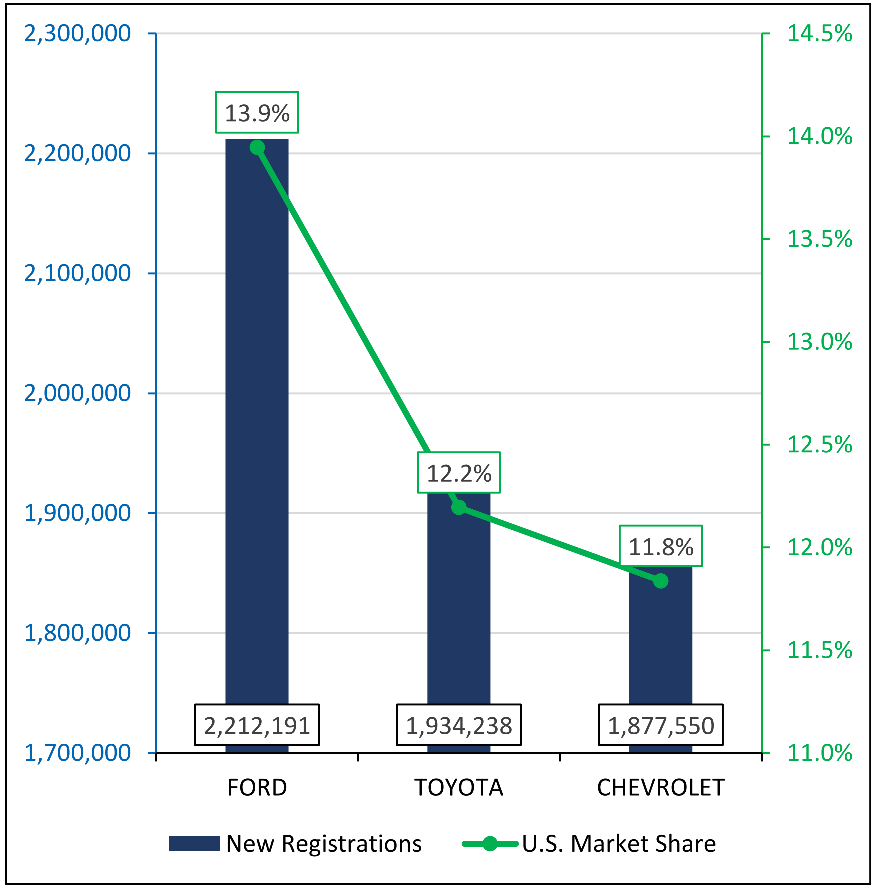


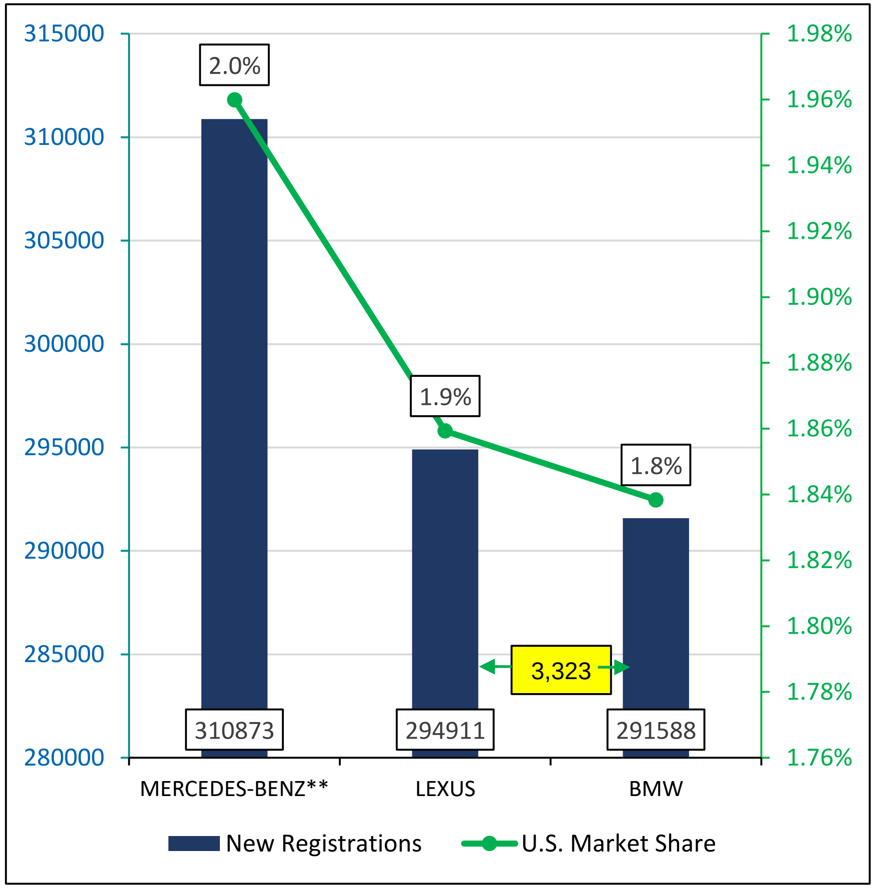


- U.S. market share range from best to worst among the seven largest OEMs has declined from almost 20 points ten years ago to less than nine points now
- Also, the range from best to worst among Honda, Nissan and Hyundai (corporations) has declined from 4.4 pp ten years ago to 1.1 pp now

*November CYTD

Mainstream and Luxury Brand Leaders – 2016*



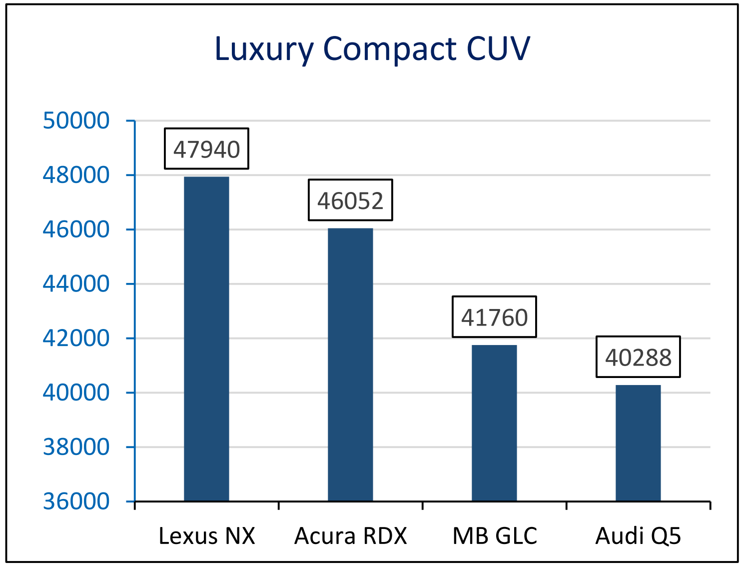


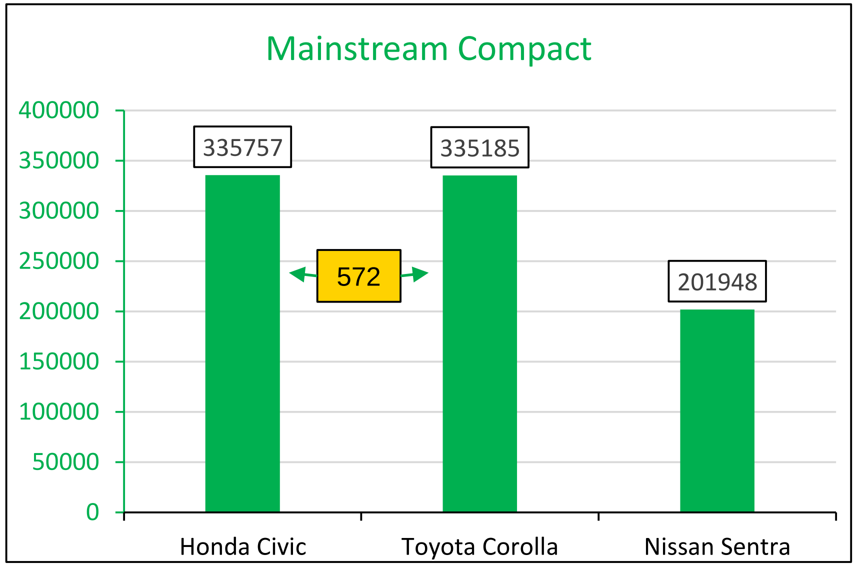
- Mainstream leaders are within almost two percentage points of one another, while the premium leaders are within .2 points

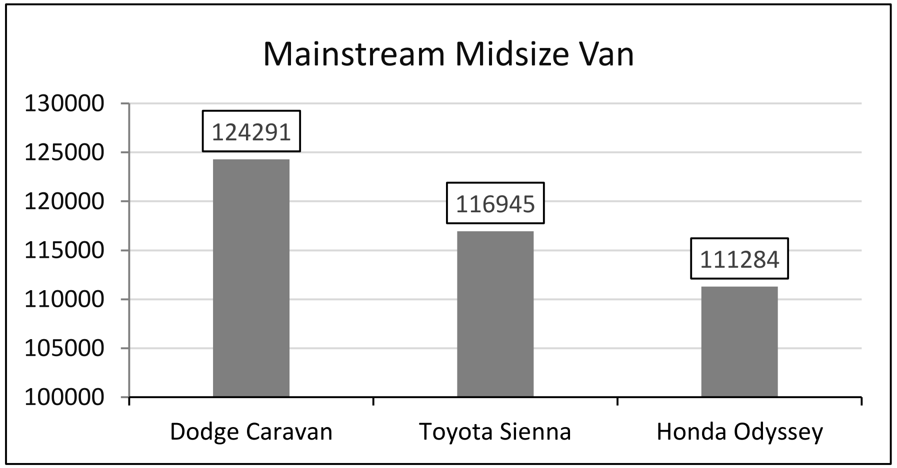
*November CYTD

**Excludes Sprinter

Parity at the Model Level – November 2016 CYTD







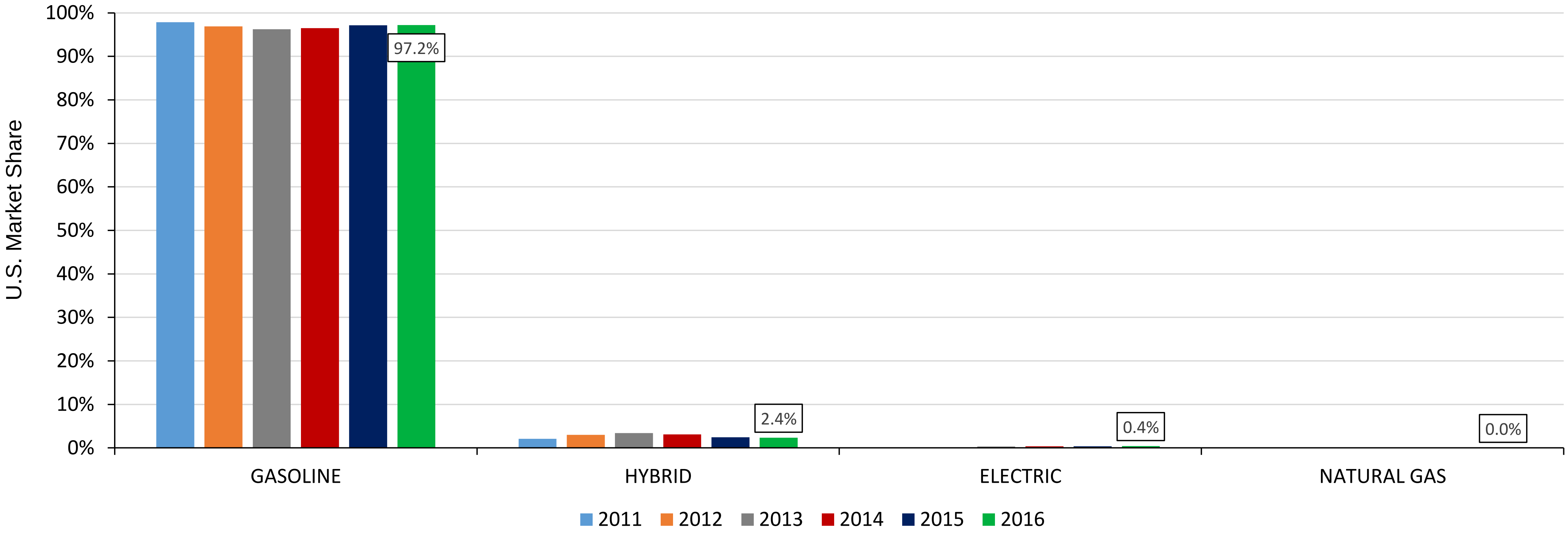
Note: All data are based on total new registrations November 2016 CYTD

Implications of Parity

- Heavier targeted incentives
- Pressure to increase availability/inventories
- Higher fleet mix?
- Impact on residuals?
- Pressure to reduce product life cycles/increase cadence

I.C.E. Forever?

Trended Fuel Type Mix (All Data are November CYTD)

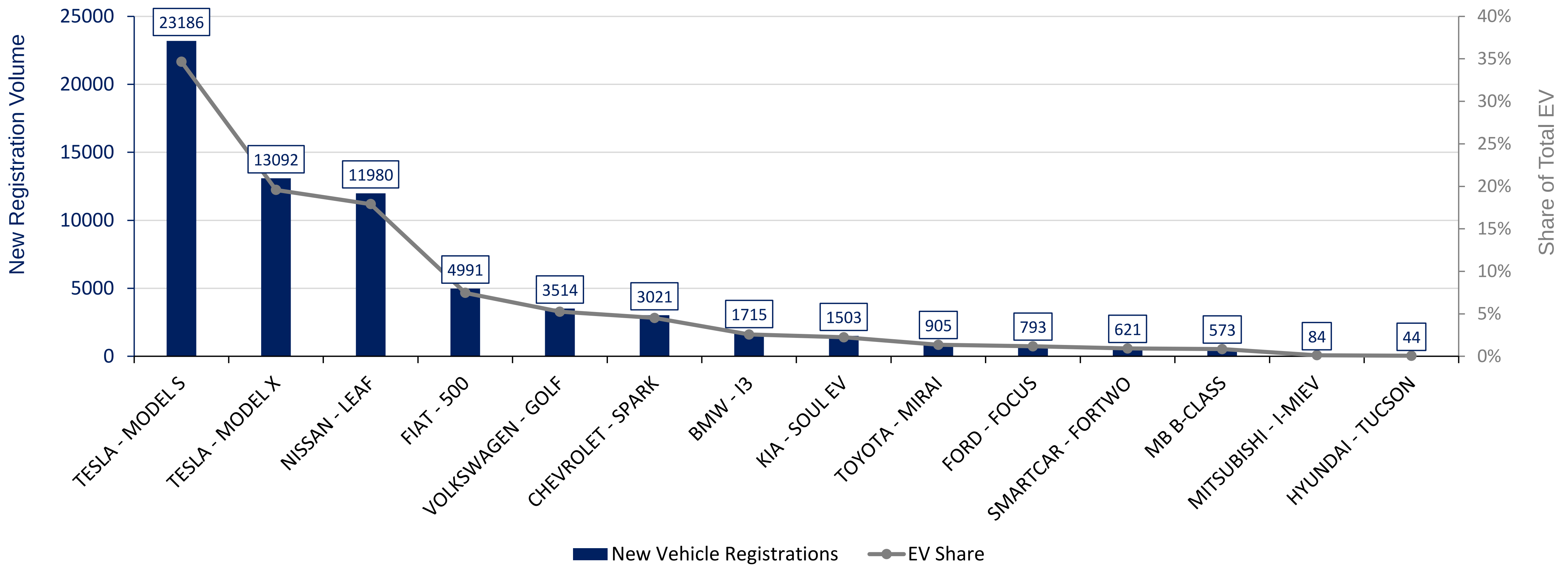


- ➢ Gasoline vehicles continue to dominate U.S. new vehicle registrations, accounting for more than 95% of all registrations for six consecutive years

Note: All data are November CYTD

Note: Diesel are included in gasoline

EV Volumes and Market Share – November 2016 CYTD

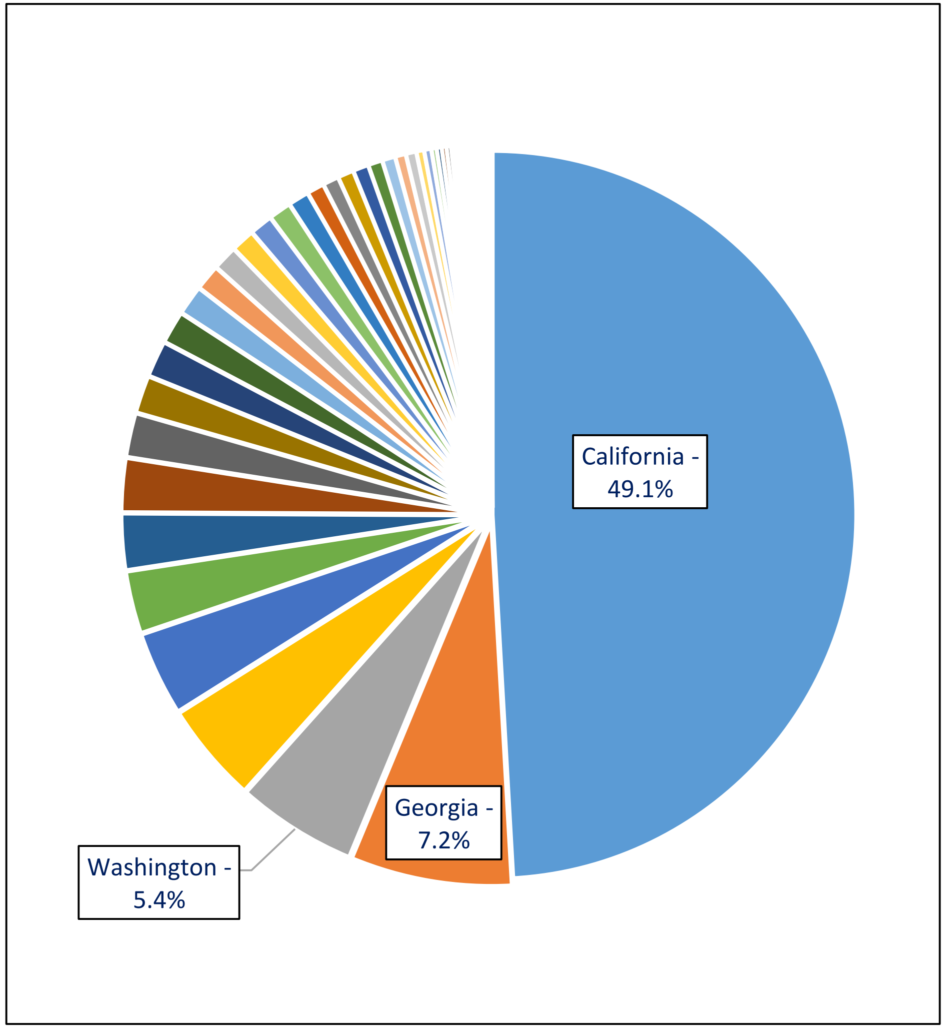


➢ The two Teslas and Nissan Leaf together account for almost three of every four electric vehicles registered November 2016 CYTD

Note: IHS Markit classifies Electric Vehicles as those powered solely by electricity, with no extended range gasoline support system

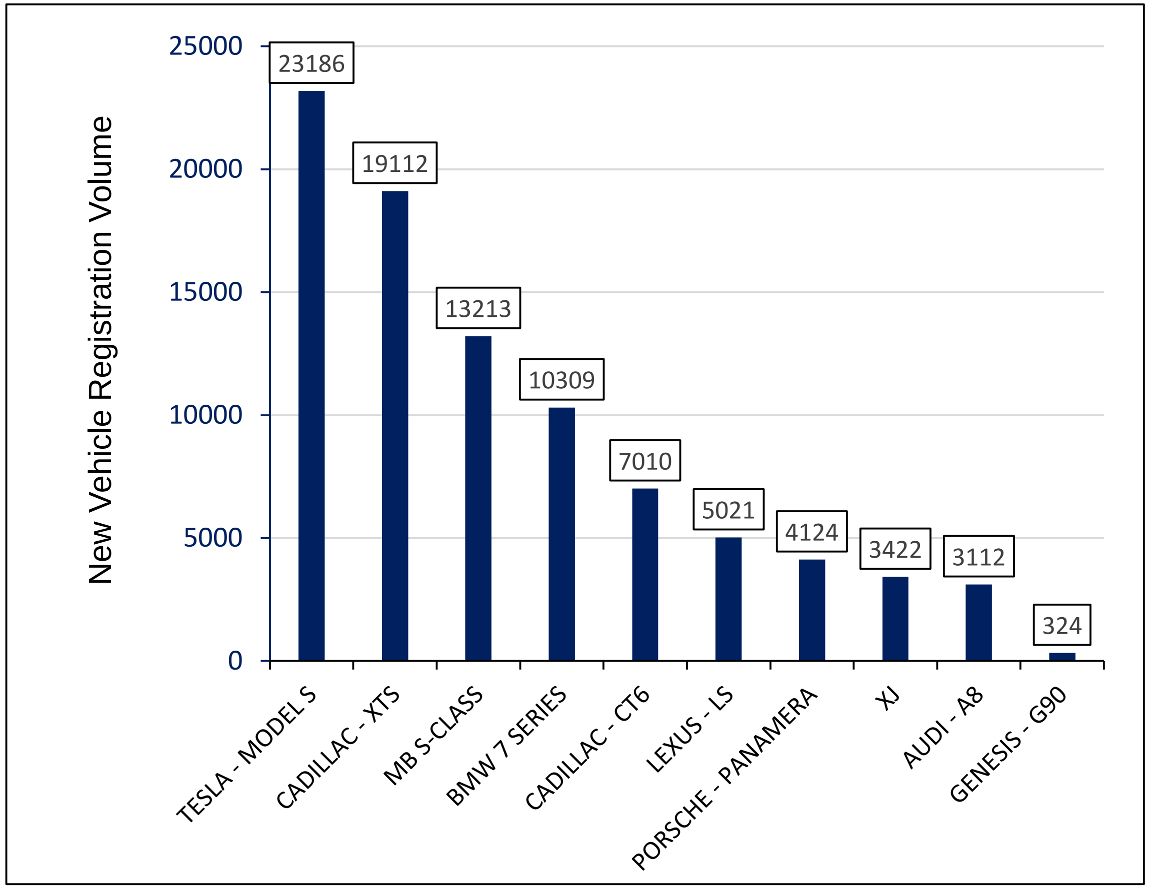
EV Vehicles in Operation (VIO) by State

- Half of all EVs registered in the U.S. are in California
- Thirty-three states together account for just 9% of all EVs on U.S. highways



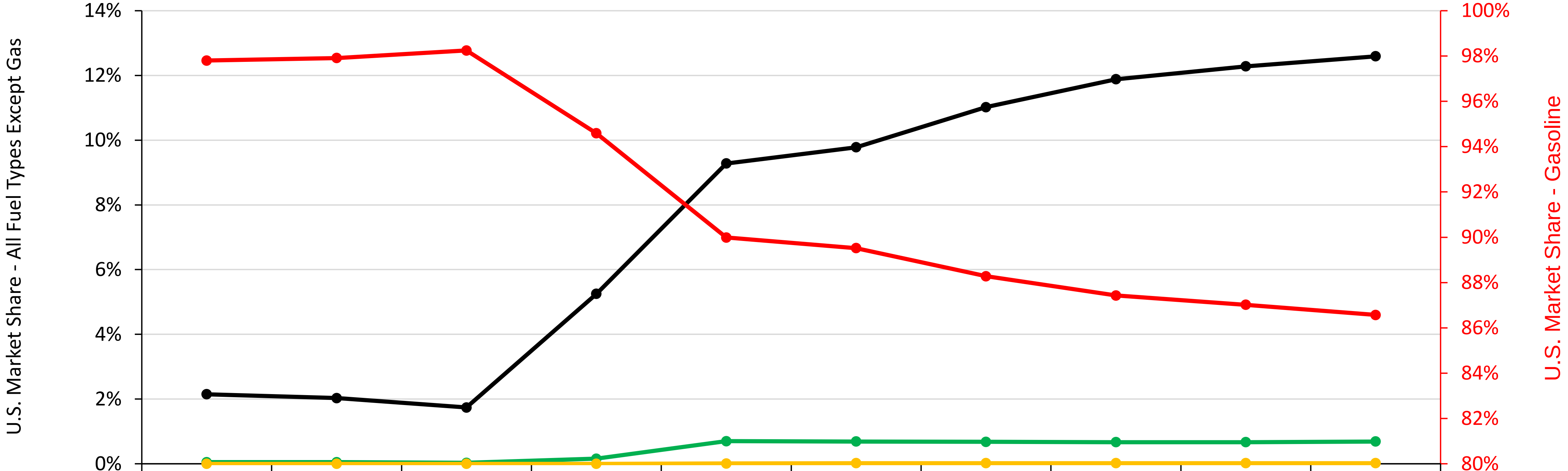
Note: Data are as of October 2016

New Registrations for Full Size Luxury Sedans – November 2016 CYTD



- Tesla Model S is number one by a wide margin
- Model S almost out-sells S-Class and 7 Series combined

IHS Markit Fuel Type Mix Forecast



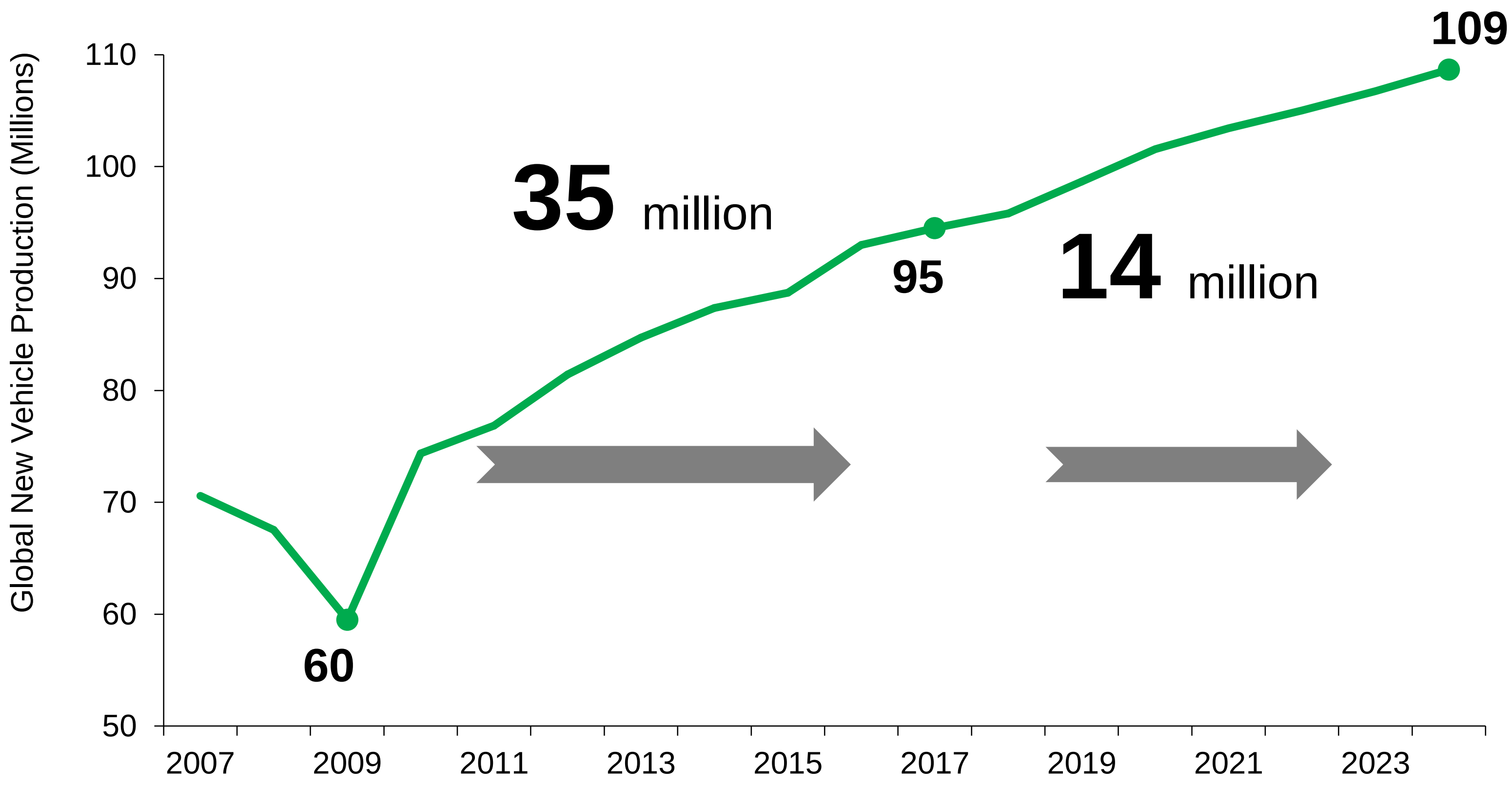
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Hybrid	2.15%	2.03%	1.74%	5.25%	9.28%	9.78%	11.02%	11.88%	12.28%	12.59%
Electric	0.05%	0.05%	0.03%	0.16%	0.70%	0.69%	0.68%	0.67%	0.67%	0.69%
Fuel Cell	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%
Gasoline	97.80%	97.91%	98.24%	94.59%	89.99%	89.52%	88.28%	87.43%	87.02%	86.57%

Chevrolet Bolt: Game Changer?

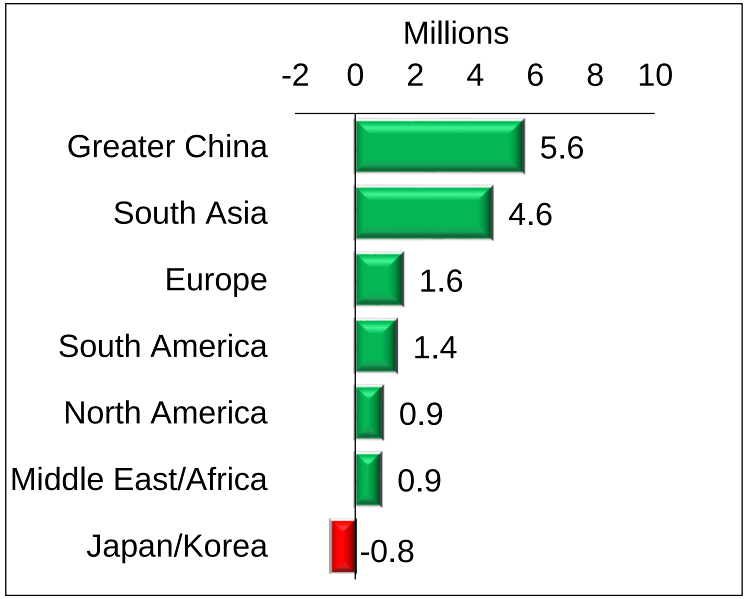
- Estimated range: 238 miles
- 200 hp and 266 lb-ft torque
- Price: $37,500 (approximately $30,000 after Federal tax credits)
- Two hour charging time for 50 miles of travel when using 240 volt outlet
- Includes standard Chevrolet suite of options: OnStar, Wi-Fi, color touchscreen, rear camera mirror, surround vision

Production Shifts

Global Production Growth



Change from 2017 to 2023



➢ Transition from mature to emerging markets intensifies

North America Light Vehicle Production

2017 vs. 2016

OEM	2017F (000s)	2016 (000s)	% Δ	Δ Units (000s)
GM	3,508	3,646	-3.8%	-138
Ford	2,976	3,068	-3.0%	-92
Fiat/Chrysler	2,194	2,516	-12.8%	-322
Detroit 3	**8,678**	**9,230**	**-6.0%**	**-552**
Toyota	2,039	2,090	-2.4%	-51
Honda	1,936	1,962	-1.3%	-26
Ren/Nissan	1,784	1,856	-3.9%	-72
Hyundai	973	859	13.3%	114
Asian 4	**6,732**	**6,767**	**-0.5%**	**-35**
VW	789	518	52.3%	271
BMW	363	411	-11.7%	-48
Daimler	330	355	-7.0%	-25
German 3	**1,482**	**1,284**	**15.4%**	**198**
Others	685	568	20.6%	117
Total	**17,577**	**17,849**	**-1.5%**	**-272**



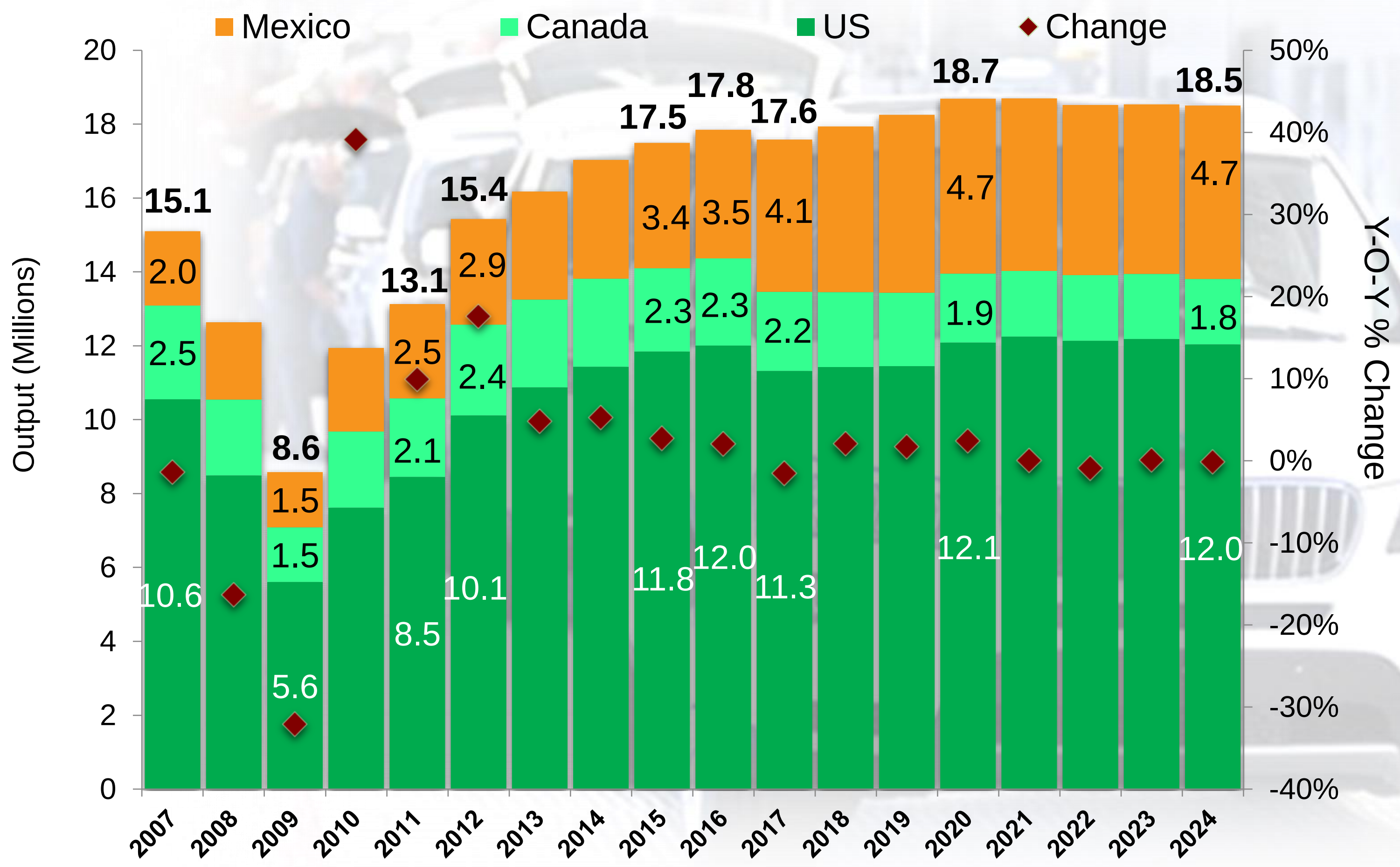


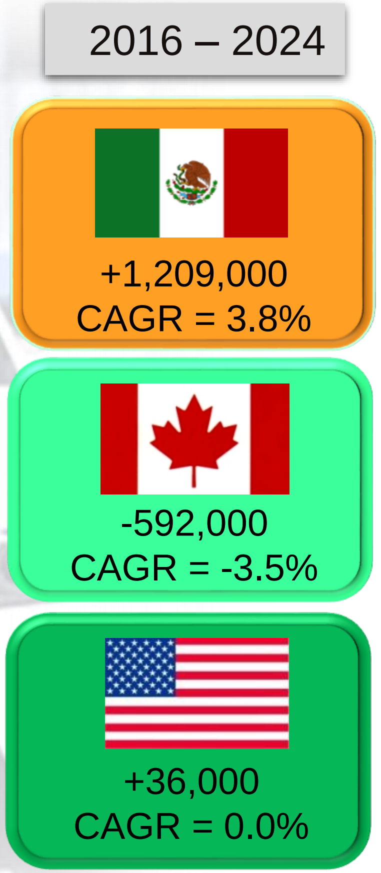
- Production takes a step back as demand plateaus
- GM – CUV launches reign (Equinox, Enclave, Traverse, Terrain, etc.)
- Ford – Expedition/Navigator
- Chrysler – Jeep in focus (Compass, Wrangler, etc.)
- Key new domestic launches include Honda Accord; Toyota Camry; Hyundai Accent/Kia Rio; Infiniti QX50; BMW X3; Tesla Model 3
- VW CUVs finally arrive: Atlas & Tiguan

Source: IHS Markit Light Vehicle Production Forecast

Production Outlook

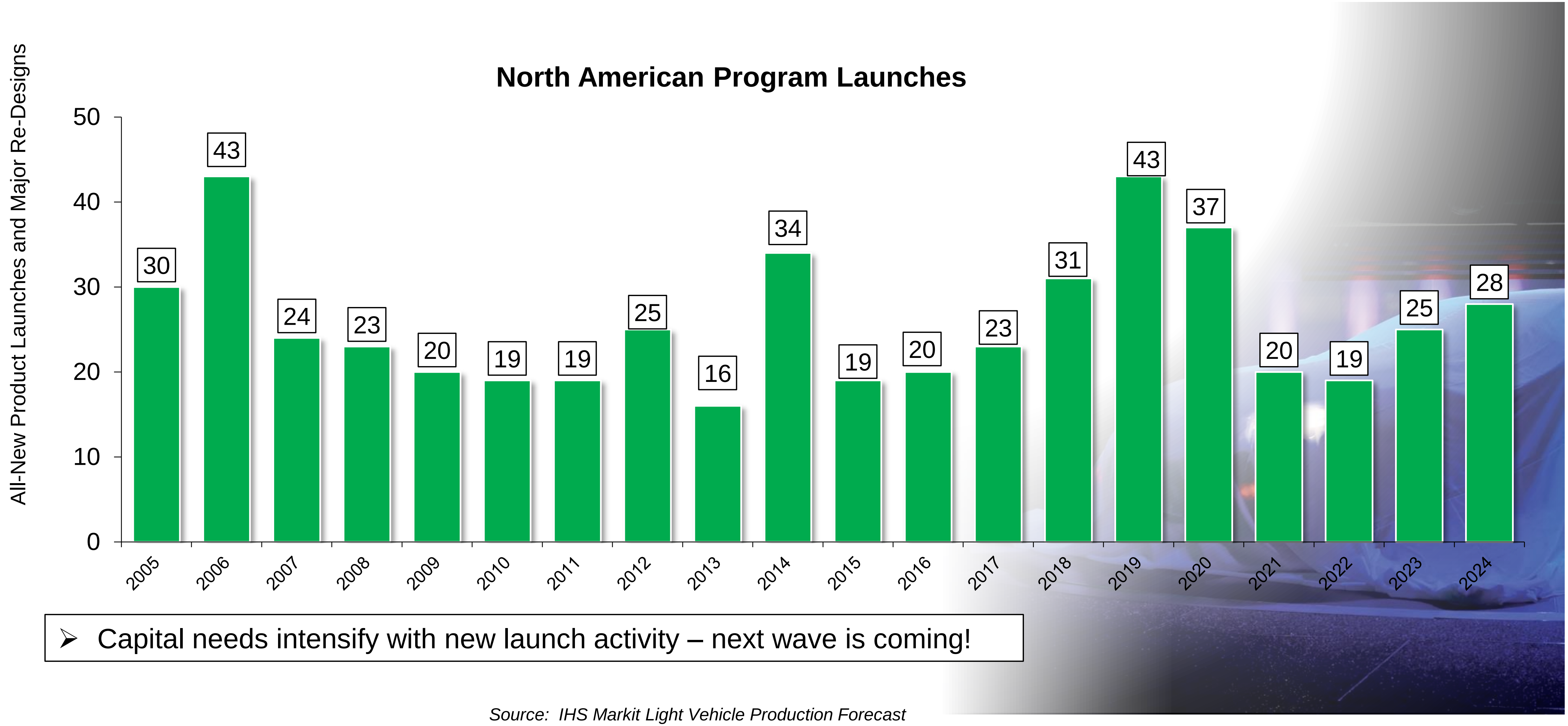
North American Light Vehicle Production by Country





Source: IHS Markit Light Vehicle Production Forecast

Supplier Dynamics

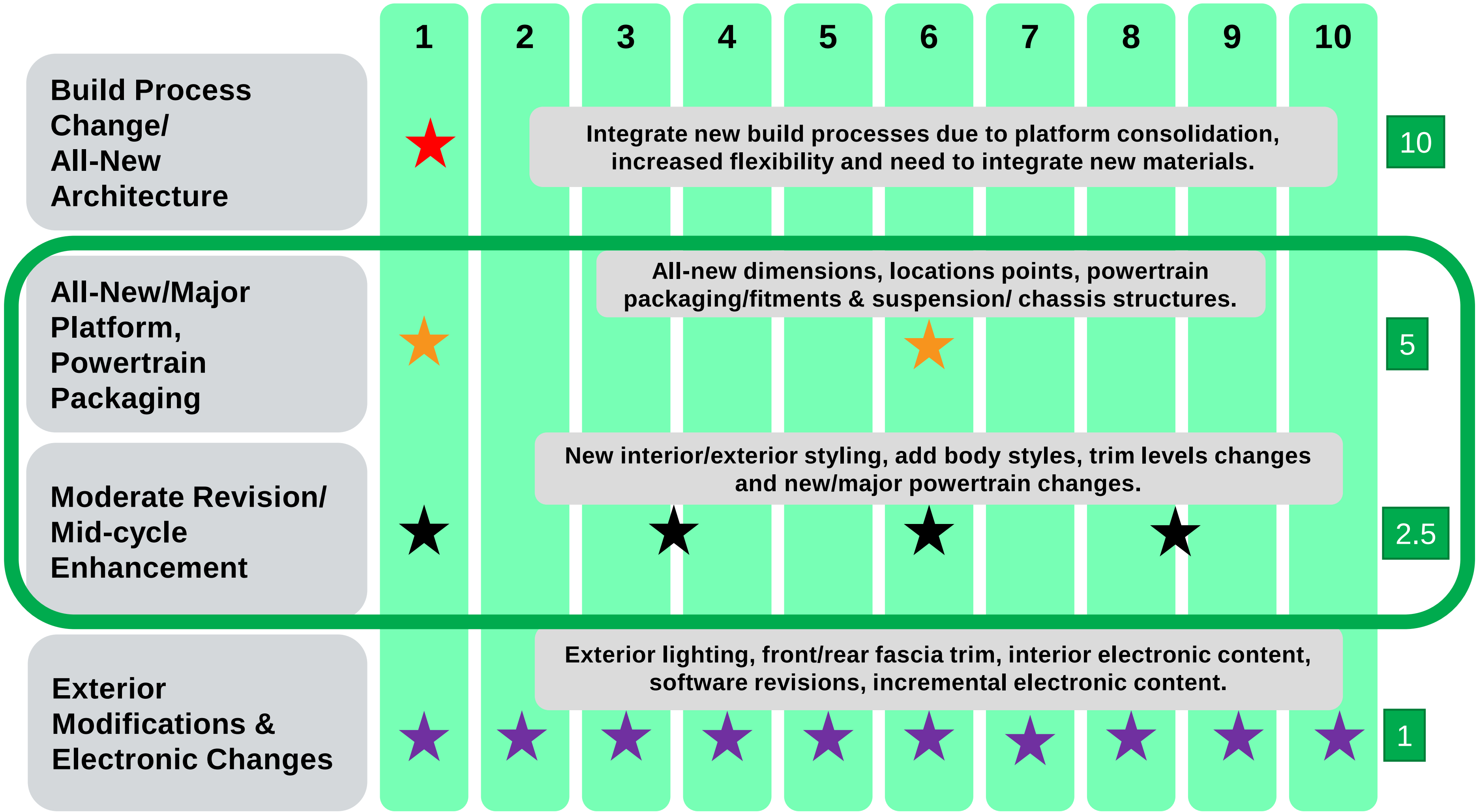


➢ Capital needs intensify with new launch activity – next wave is coming!

Source: IHS Markit Light Vehicle Production Forecast

The New Cadence 10 – 5 – 2.5 – 1

Increased Speed & Intensity Impacts Launch Requirements

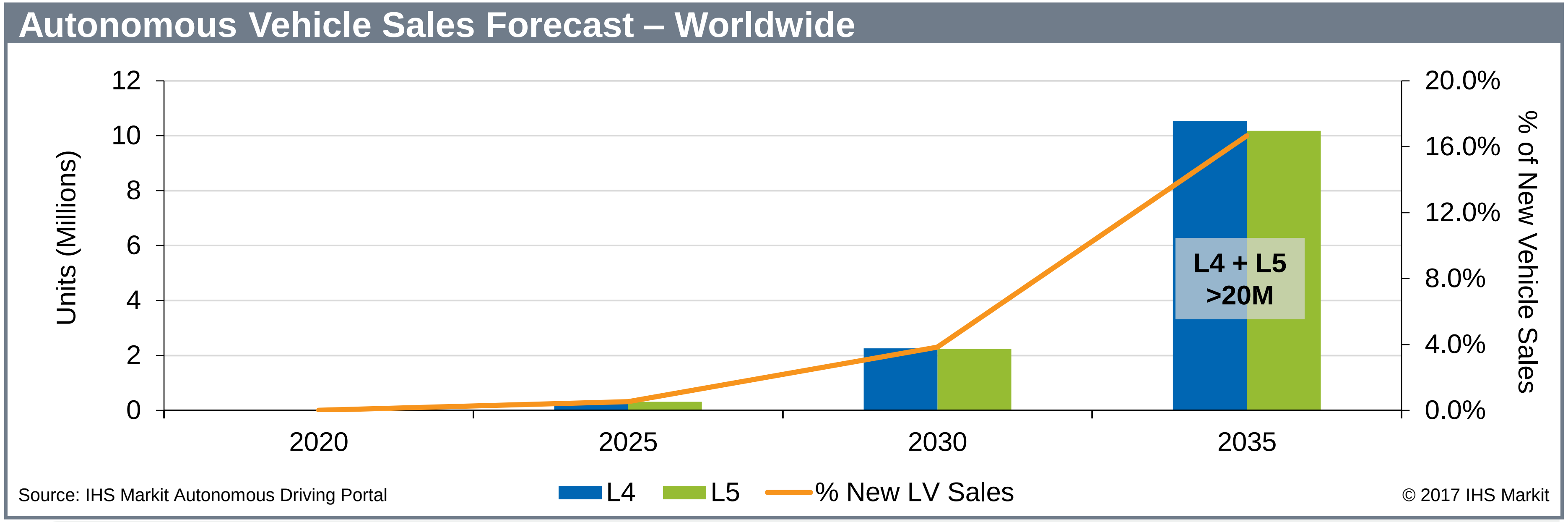


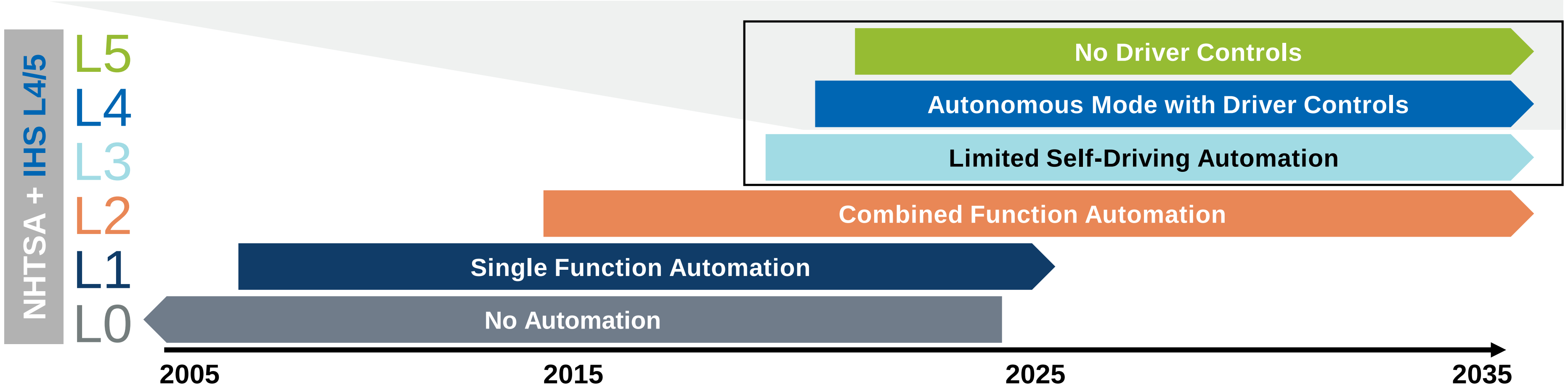
A.C.E.S.

- Autonomy
- Connectivity
- Electrification
- Sharing

Automated Driving EVOLUTION

Autonomous Driving: When, Not If – But a Longer Term Proposition

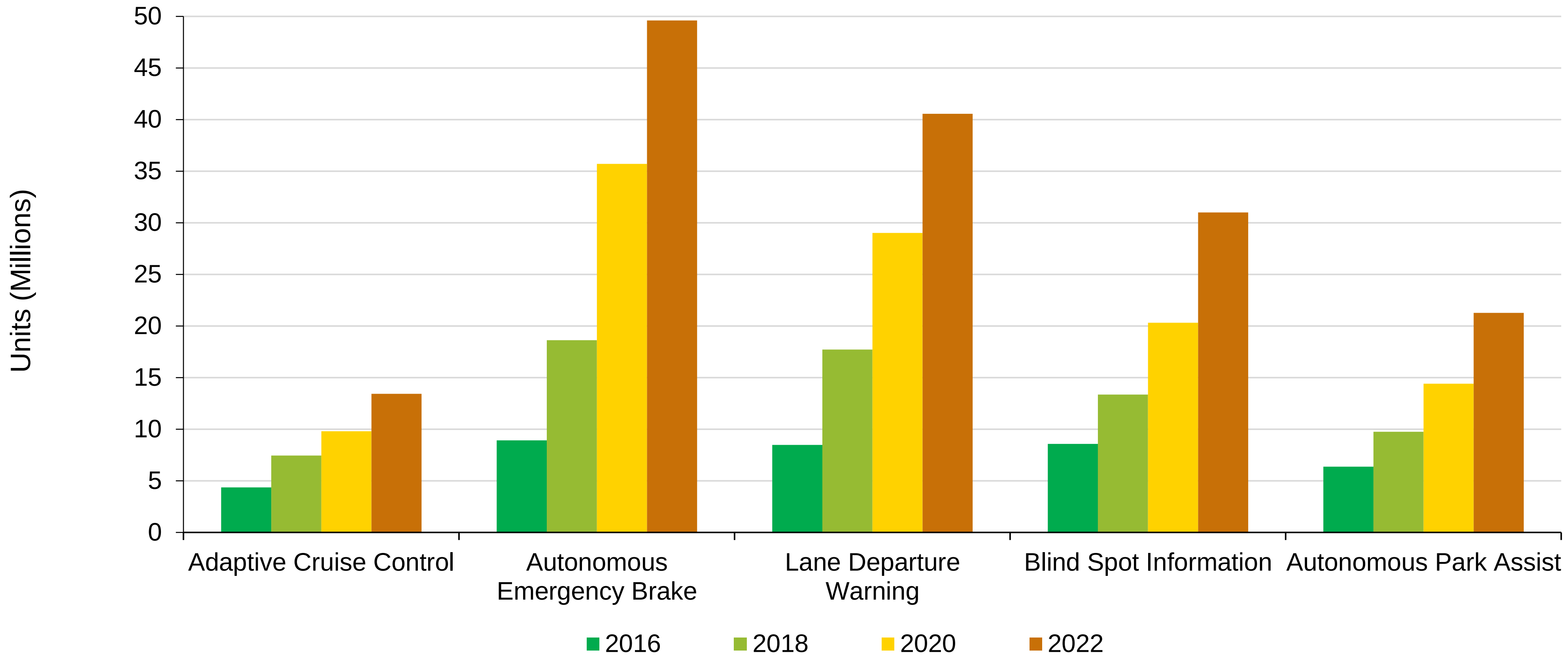




Autonomous Vehicle Outlook

Building Blocks of Autonomy Offer Compelling Near-Term Growth Prospects

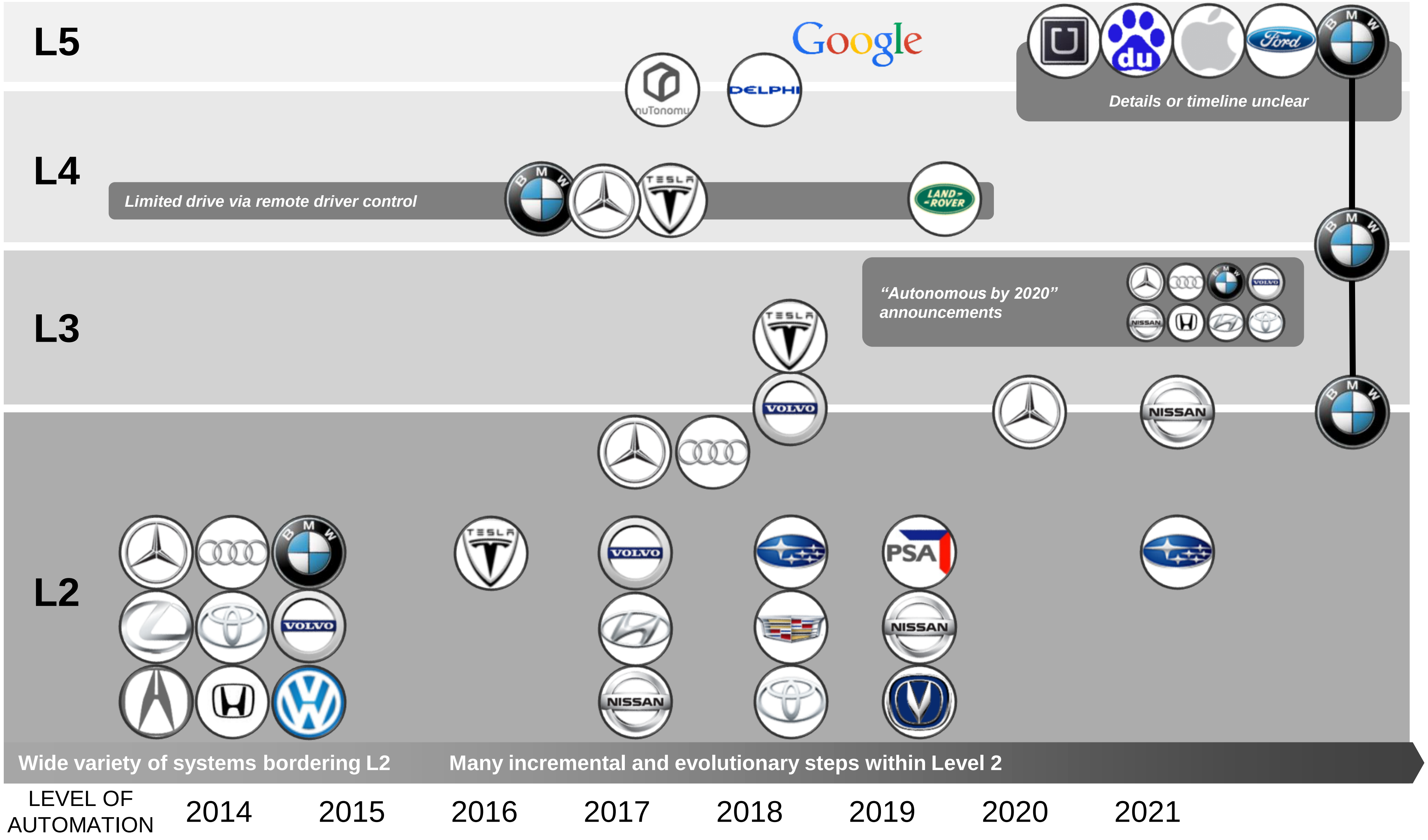
ADAS Applications Leading to Autonomy – Worldwide Production Units



A Sample of Autonomous Vehicle Initiatives

- GM will soon start testing autonomous Chevrolet Bolts in metro Detroit
- Ford has committed to building a commercially marketable autonomous vehicle with no steering wheel or pedals by 2021
- FCA and Waymo together have engineered and assembled 100 Chrysler Pacificas that will be tested as autonomous vehicles
- Delphi will soon start testing autonomous Audi A8s in Singapore
- Uber is currently testing autonomous Ford Fusions and Volvo XC90s in Pittsburgh

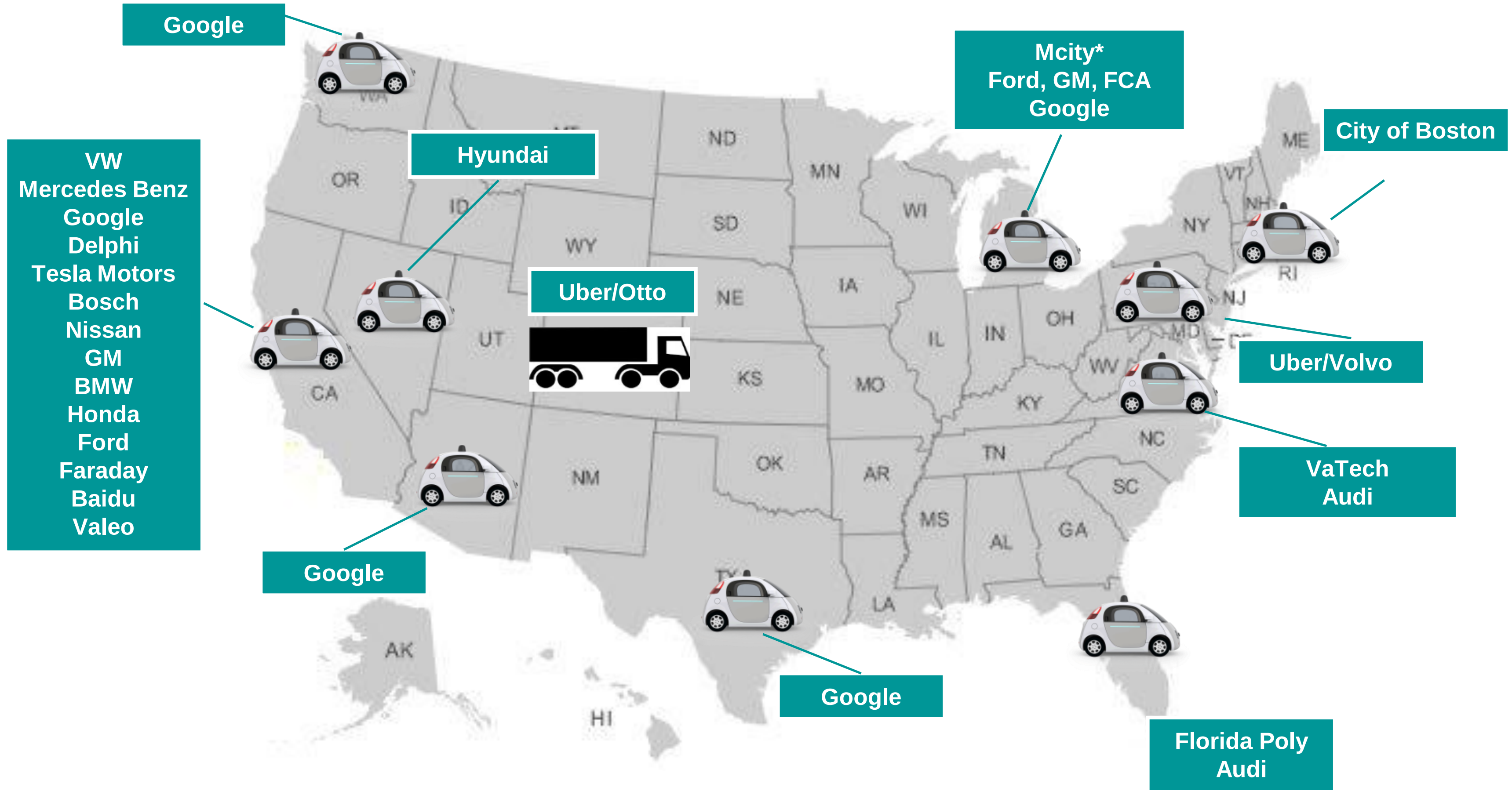
Current State of the Art and Announced Plans



IHS Level 4: Fully autonomous **with** driver controls

IHS Level 5: Fully autonomous **without** driver controls

Cities are Lining up for Autonomous Vehicle Testing



**Mcity is a testing site of autonomous vehicles*
Note: This list represents the major announcements

Summary

1. Unprecedented Three Years in a Row at 17+ Million - Will Continue
2. Plataeauing and Parity will Increase Emphasis on Conquesting
3. SUV/CUVs Will Maintain Strong Share, at Expense of Sedans
4. I.C.E. Will Dominate in Near Term
5. ACES Coming, but Not Tomorrow

Thank You!

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