



Planning Through Peaks and Valleys

**Federal Reserve Bank of Chicago-Detroit
Automotive Symposium**

Detroit, Michigan
June 1, 2018

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Championing the business interests of the automotive OE supplier community:

Founded in 1998, the Original Equipment Suppliers Association (OESA), serves as the voice of the automotive supplier and a valuable resource for member organizations. Throughout the supply chain and on legislative and regulatory issues, **OESA represents the collective voice of suppliers.**

Exclusively for automotive suppliers:

Supplier membership is exclusive to original equipment automotive suppliers that directly provide components, tools, materials and services to the OE light vehicle industry.

Strength in numbers:

Membership is comprised of approximately 375 Tier 1,2, and 3 automotive suppliers with North American OE sales that range from \$10 million to \$5+ billion. Affiliate members support the supplier community with thought leadership, industry analysis and other key information.

Led By supplier industry executives:

OESA's interests are guided by a board of directors consisting of CEOs from member companies of all sizes.

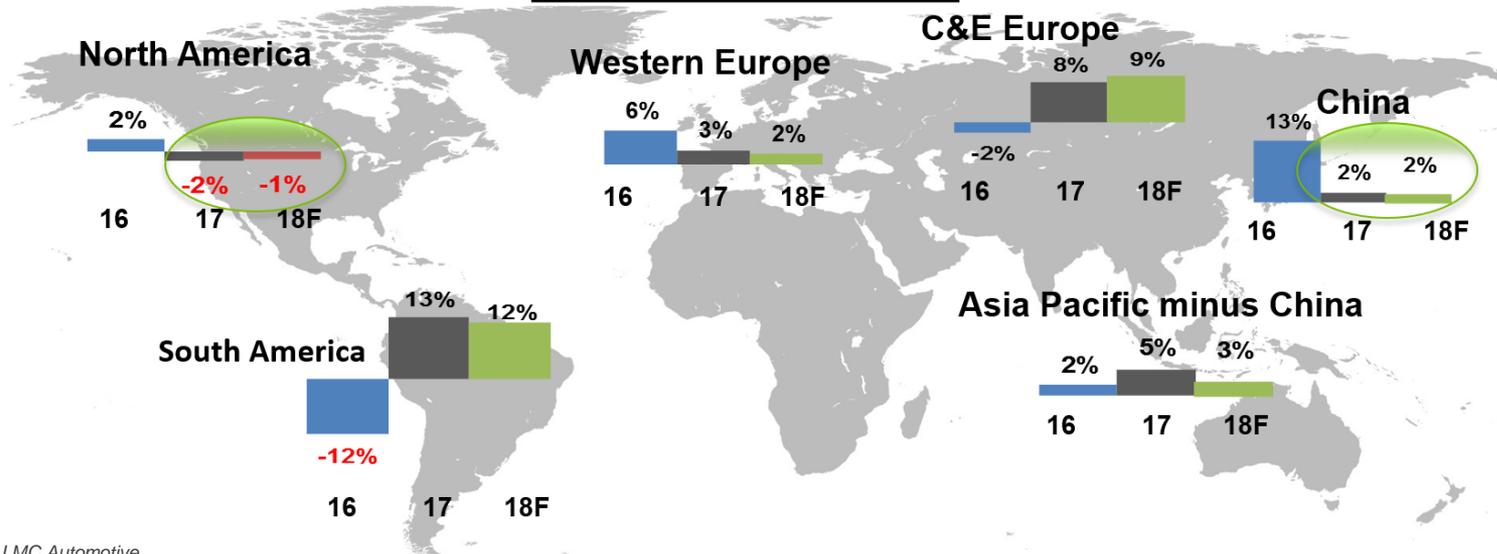
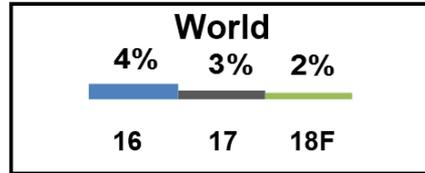
Staff that works for members:

Members enjoy direct access to a staff of dedicated association employees in Detroit and Washington, D.C.

Global Vehicle Sales

Outlook By Region (2016-2018)

- World 2018 forecast: 97.6 mn, up 2.2 mn units from 2017. More of the same?

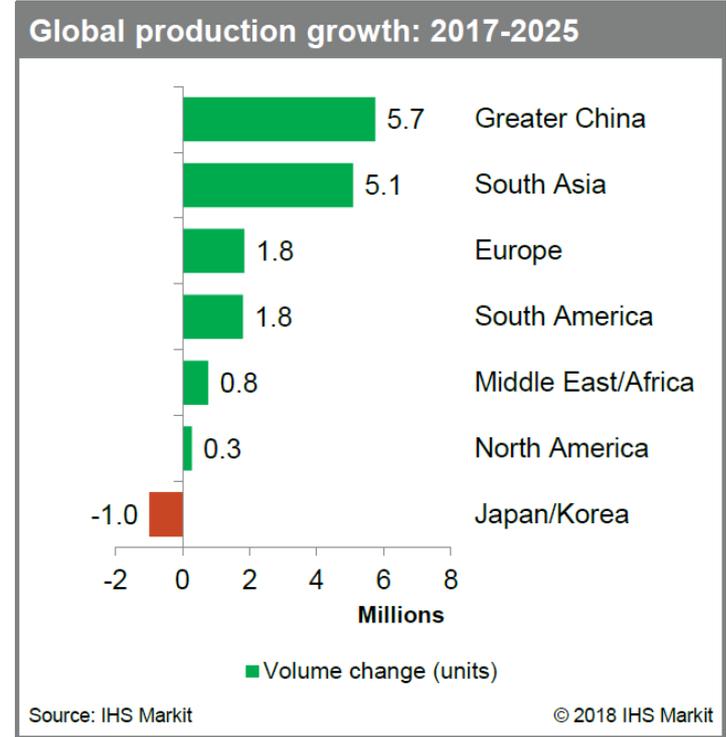
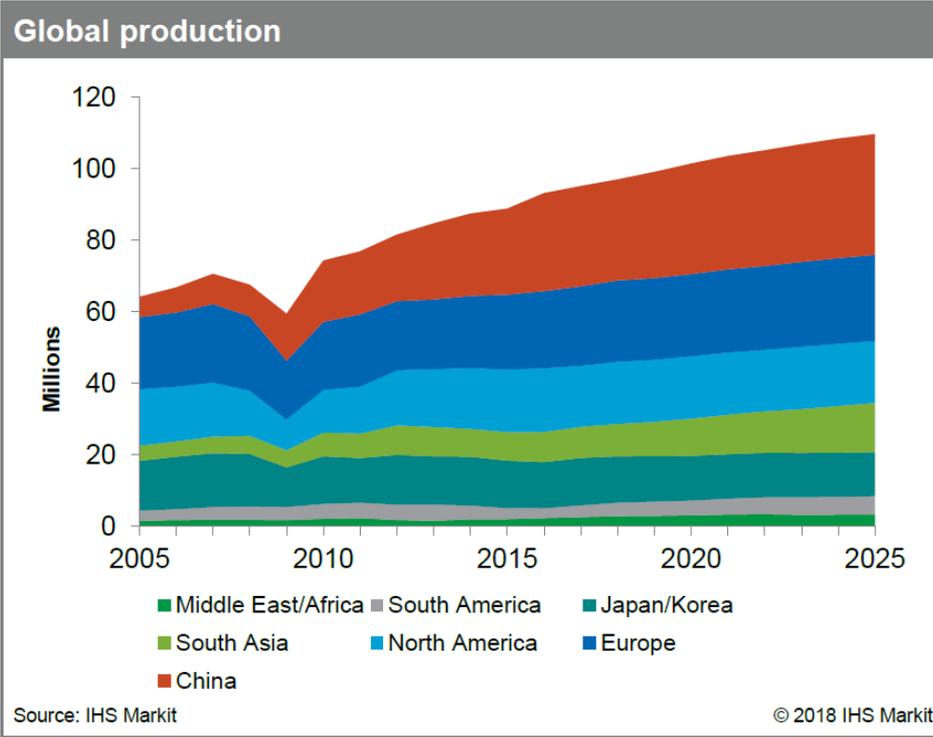


Source: LMC Automotive



Global Vehicle Production

Output By Region (2018-2025)



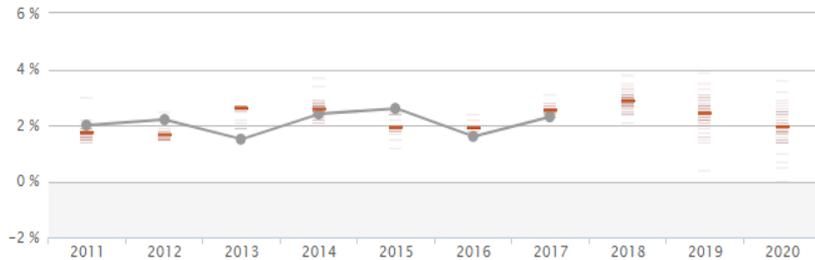
US: Economic Outlook

- Strong fundamentals remain with low unemployment, firm and steady job creation, strong consumer spending and low interest rates

- Job growth has continued, lifting participation rates yet an even tighter outlook is expected by late 2018 / mid 2019

GDP (annual)

Actual
 Estimates
 10 yr.
5 yr.

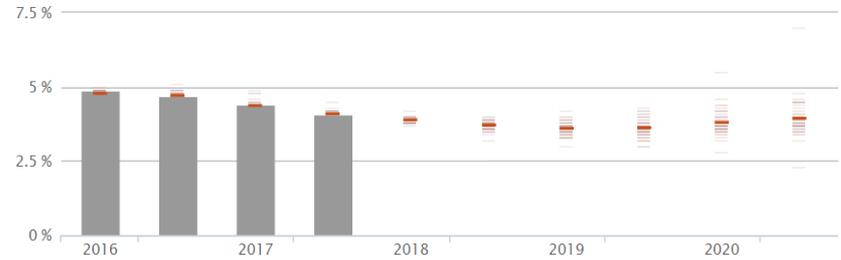


GDP (annual)



Unemployment

Actual
 Estimates
 10 yr.
5 yr.



Unemployment



Source: wsj.com – May 2018 monthly economist survey



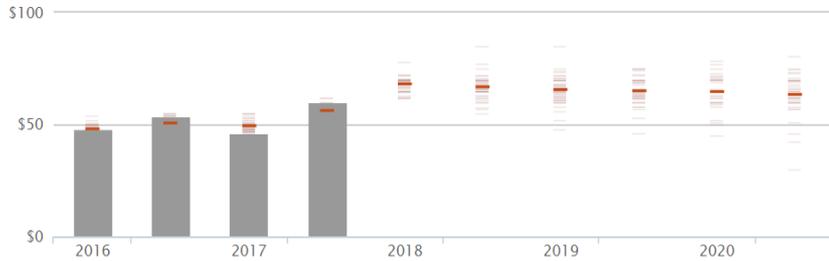
US: Economic Outlook

- Despite higher price volatility, fracking has altered the global energy landscape, holding a constrained pricing outlook

- Greater pricing power has fueled activity for smaller, more affordable homes, pushing builds toward a 1.5M/year pace. Tights supplies & stock market gains have lifted home values

Oil Prices

Actual
 Estimates
 10 yr.
 5 yr.
 3 yr.



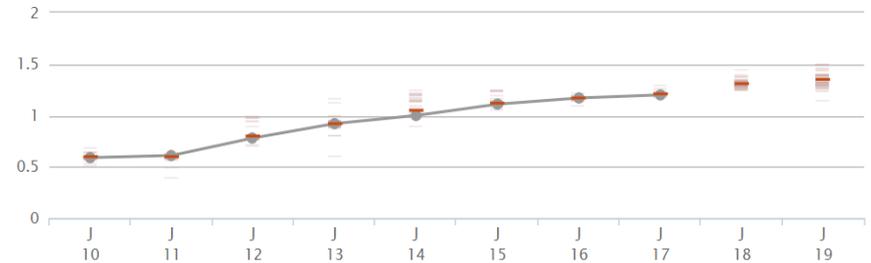
Oil Prices



Source: wsj.com – May 2018 monthly economist survey

Housing Starts

Actual
 Estimates
 10 yr.
 5 yr.

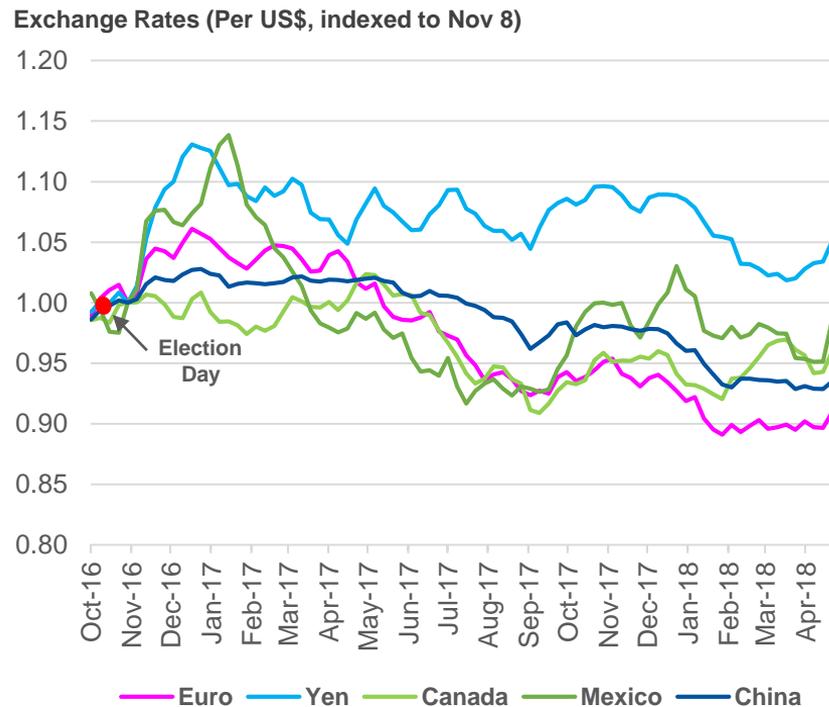
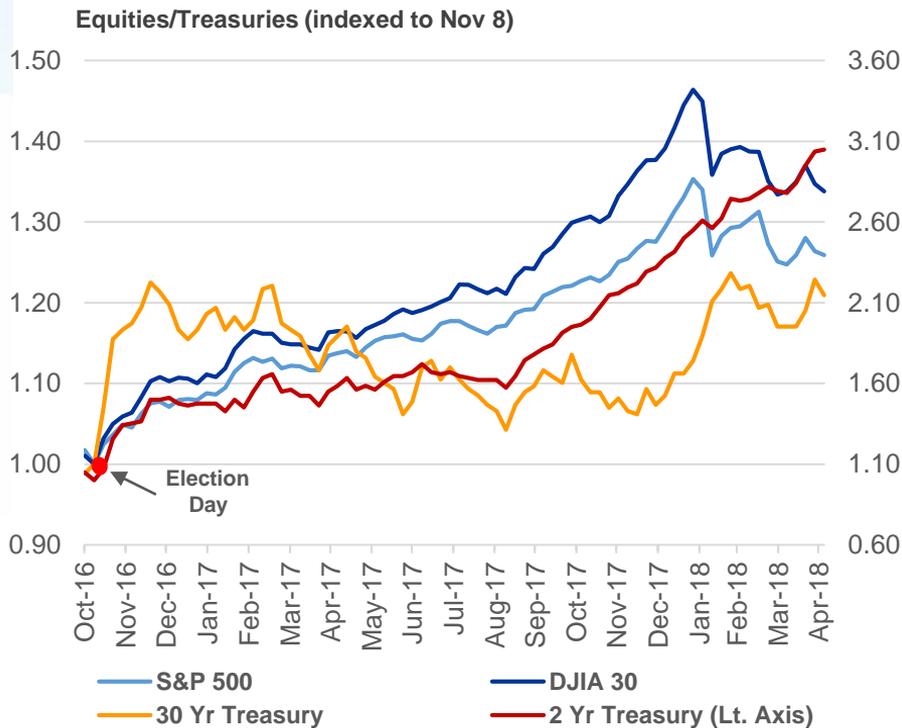


Housing Starts (Millions)



Trump Policy Implications: Market Reaction

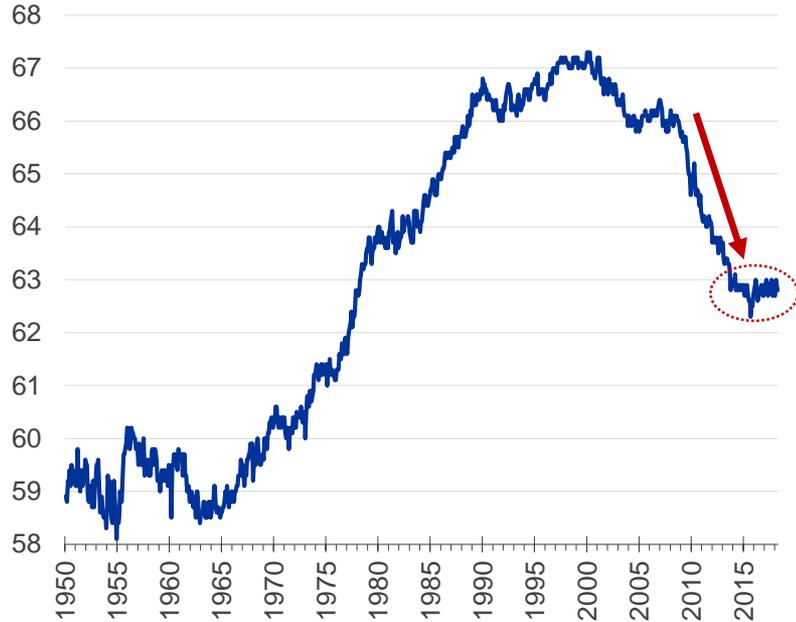
Stocks and treasuries have soared, dollar lower – higher growth, higher inflation, higher interest rates



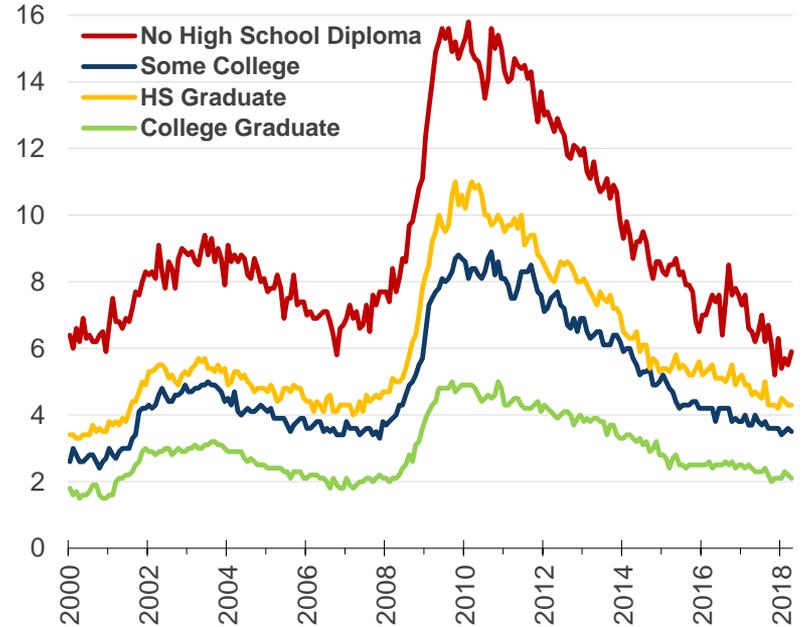
US: Wage Growth Obstacles

Participation remains low since Great Recession even as unemployment rates reach pre-recession lows

Labor Force Participation Rate %



Unemployment Rate % by Education Level

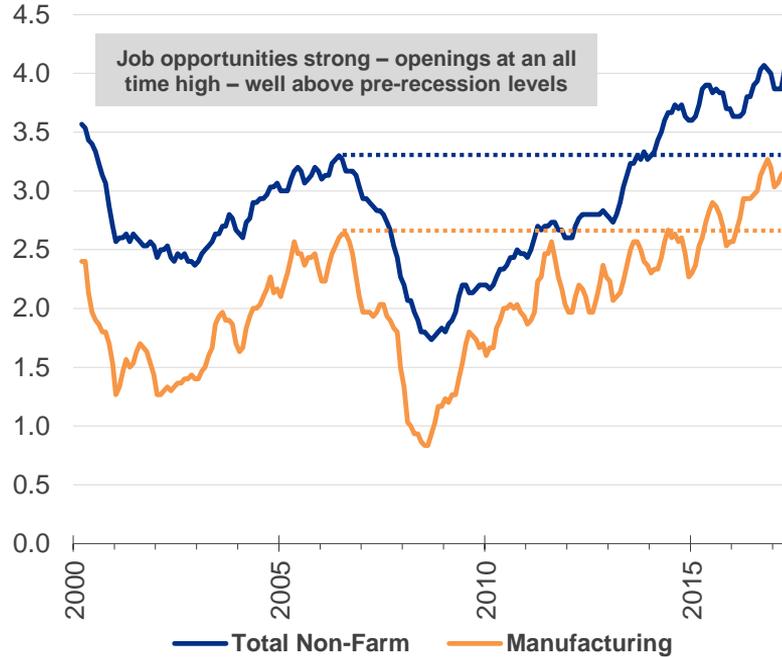


Source: Department of Labor, Bureau of Labor Statistics

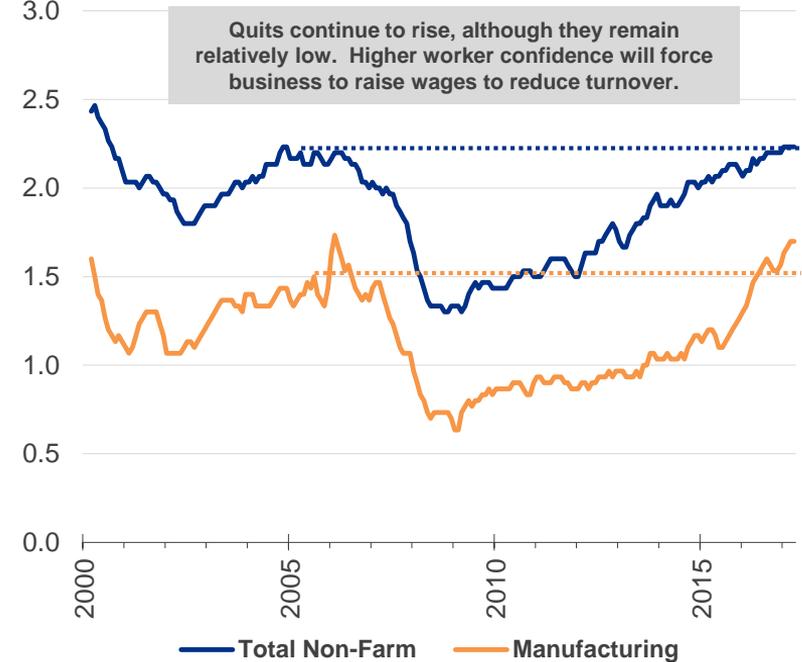
US: Job Market

6.6 million openings; Quits rising too – workers gaining confidence

Openings: Jobs Open Per 100 Employed (3m average)



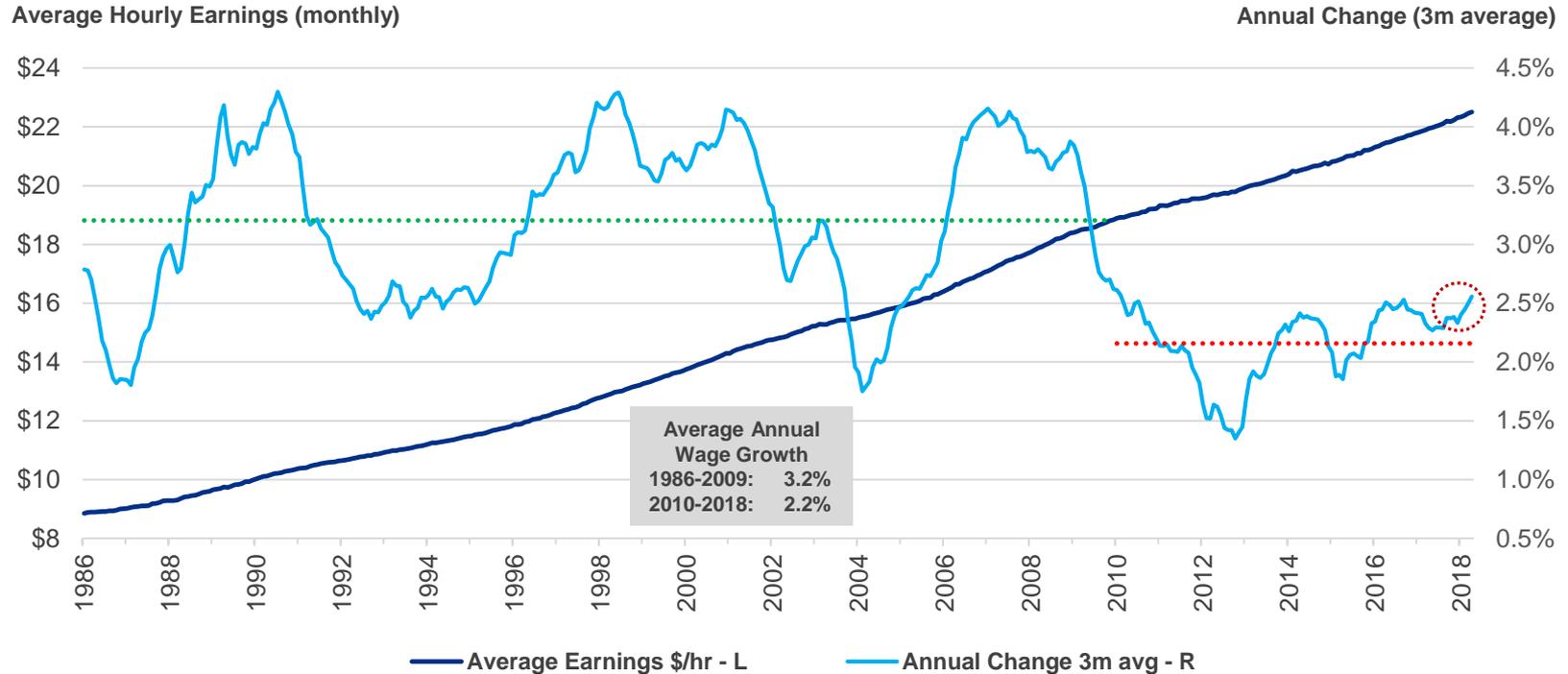
Quits: Jobs Quit Per 100 Employed (3m average)



Source: Department of Labor, Bureau of Labor Statistics

US: Labor Market Wages

Wage growth weak since recession; FED watching closely as a potential inflation “spark”

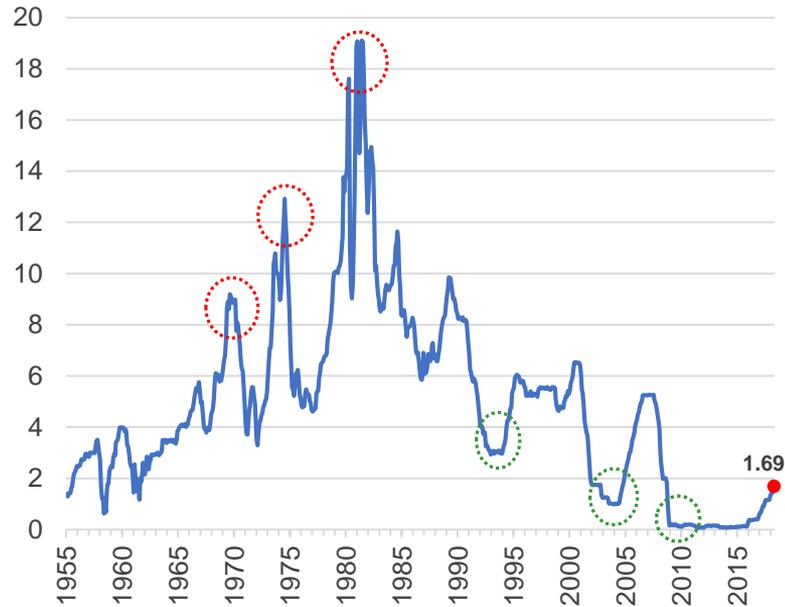


Source: Department of Labor, Bureau of Labor Statistics, Production Non-supervisory

US: Interest Rates

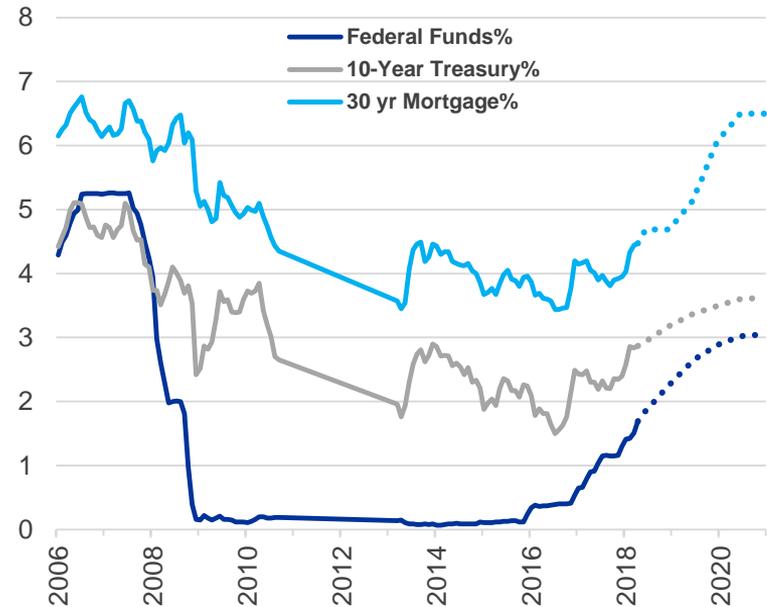
More aggressive tightening likely; FED walking a tightrope to avoid recession

Effective Federal Funds Rate (% , overnight)



Source: Federal Reserve Bank

Key Interest Rate Forecasts (%)



Source: Federal Reserve, WSJ, Mortgage Bankers' Association



US Light Vehicle Sales By Segment – 2017

Divergent Trajectory Remains

	Dec 2017	% Chg from Dec '16	YTD 2017	% Chg from YTD 2016
Cars	518,325	-17.0	6,332,925	-10.9
Midsize	225,471	-20.8	2,792,346	-13.1
Small	201,094	-15.8	2,615,386	-9.6
Luxury	91,742	-8.8	924,500	-7.3
Large	18	-85.5	693	-32.1
Light-duty trucks	1,084,804	1.7	10,897,511	4.3
Pickup	285,404	5.8	2,822,839	4.8
Cross-over	537,711	2.4	5,351,370	8.1
Minivan	37,918	-8.9	484,608	-12.4
Small Van	8,644	-0.5	81,950	-9.3
Large Van	32,594	-17.6	365,263	-2.0
Midsize SUV	94,584	3.2	957,964	-0.8
Large SUV	40,989	0.2	339,425	-0.3
Small SUV	19,538	-7.5	252,102	3.4
Luxury SUV	27,422	-2.1	241,990	2.7
Total SUV/Cross-over	720,244	1.9	7,142,851	6.0
Total SUV	182,533	0.5	1,791,481	0.3
Total Cross-over	537,711	2.4	5,351,370	8.1



Source: www.motorintelligence.com



17.23M

-1.8%

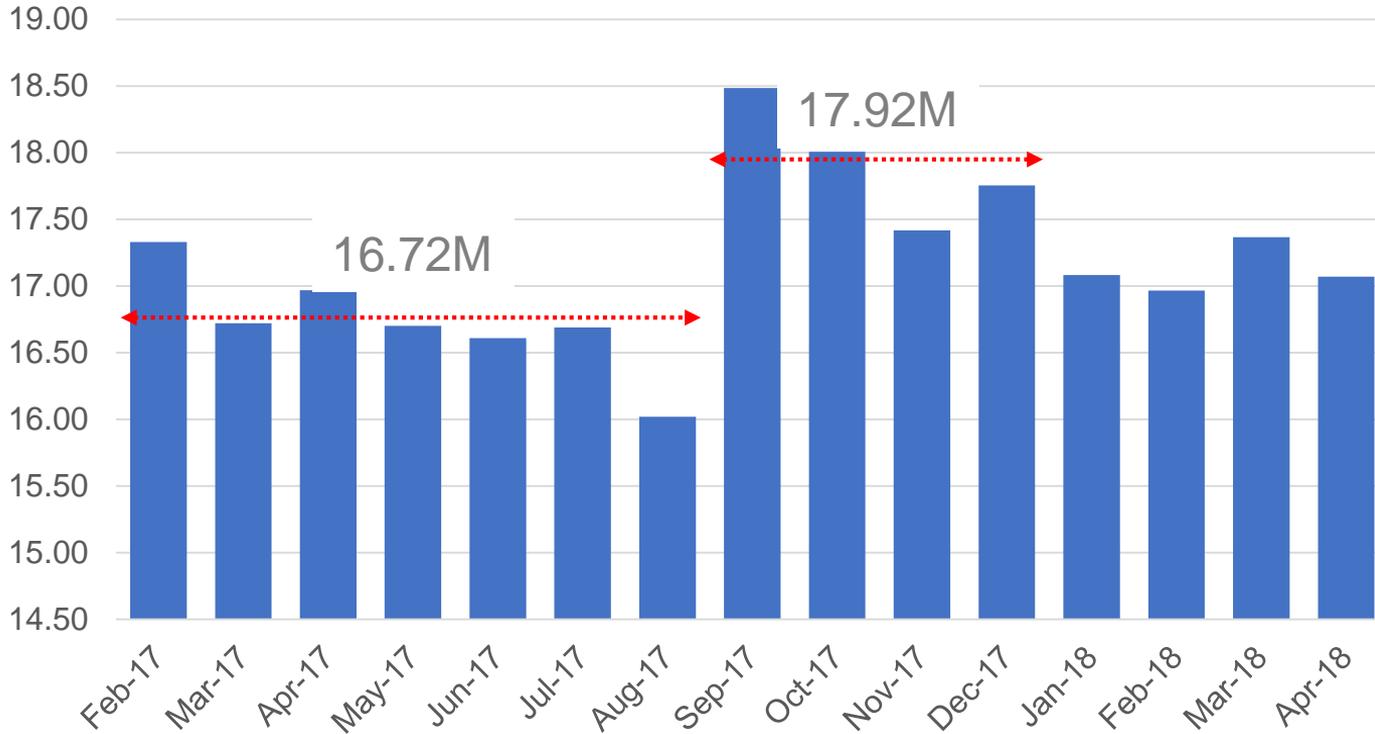


Planning Through Peaks and Valleys

US Light Vehicle Sales (SAAR)

Year end 2017 Boost – Not repeatable

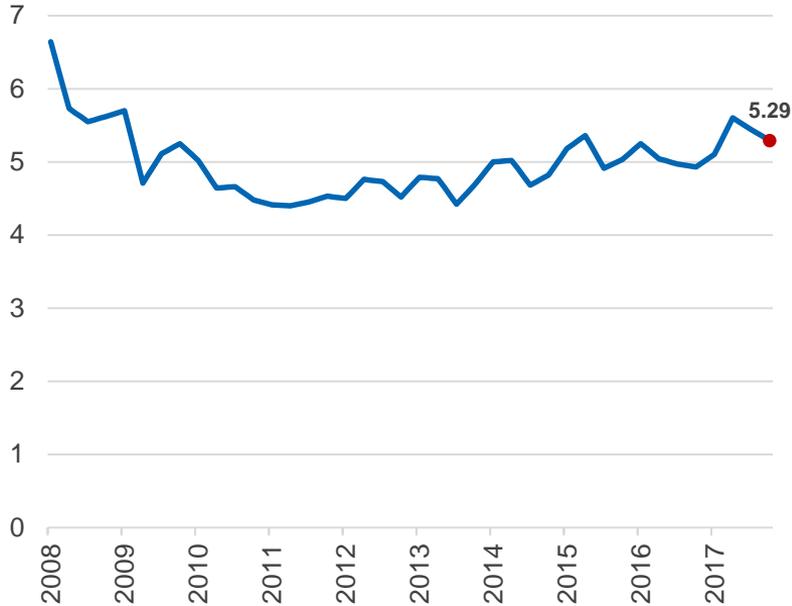
U.S. Light Vehicle Sales (SAAR, Mils.)



US: New Vehicle Financing

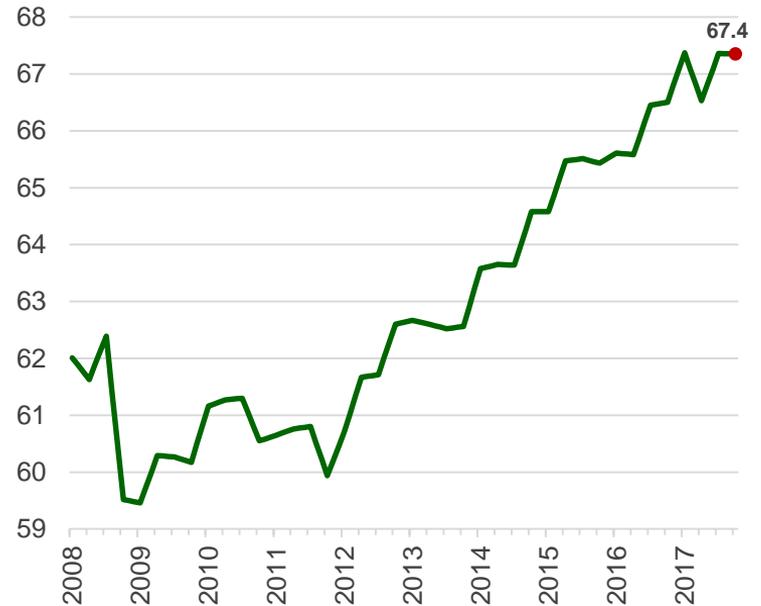
Extended terms keeping monthly payments low, despite record financing amounts and rising interest rates

Interest Rate on New Car Loan (percent)



Source: Federal Reserve Bank, Weighted Average Finance Rate at Finance Companies

US Average Loan Length (months)

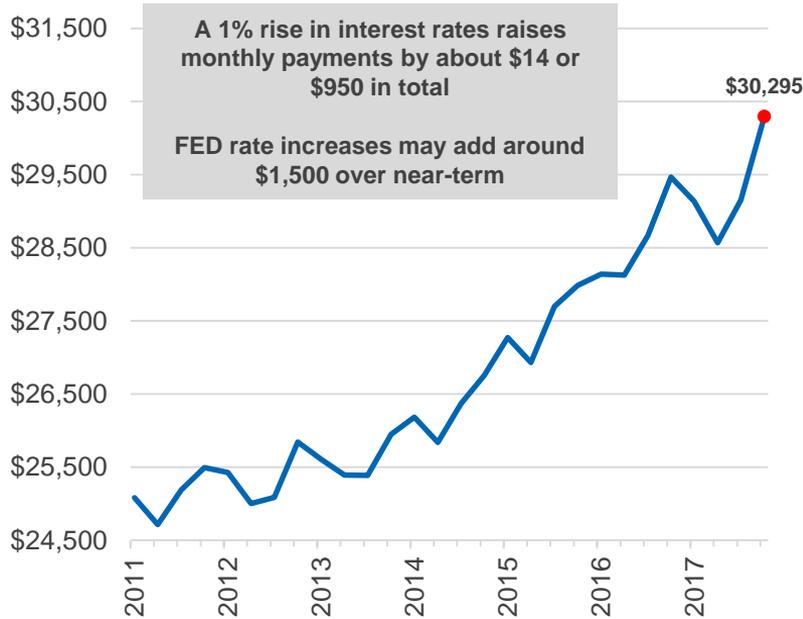


Source: Federal Reserve Bank, New Car Loans at Finance Companies

US: New Vehicle Financing

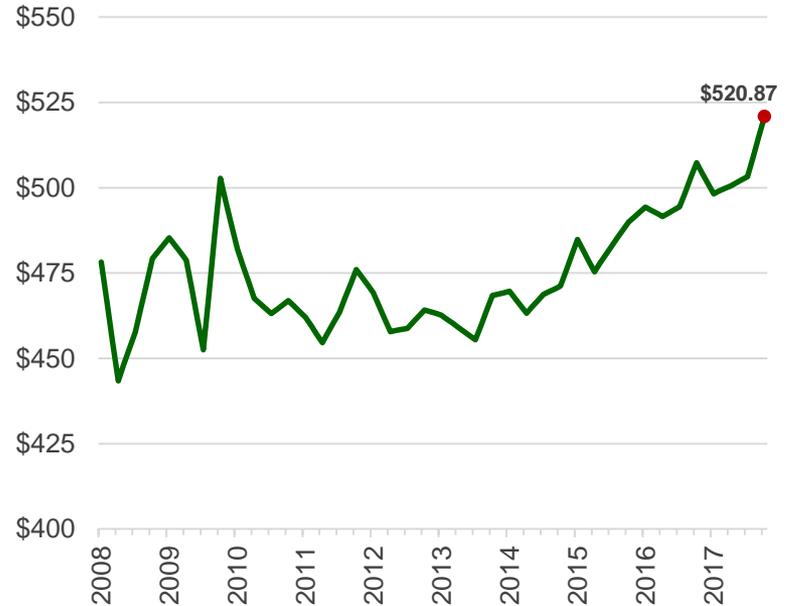
Extended terms keeping monthly payments low, despite record financing amounts and rising interest rates

US Average Amount Financed



Source: Federal Reserve, New Car Loan at Finance Companies

Auto Loan Monthly Payments



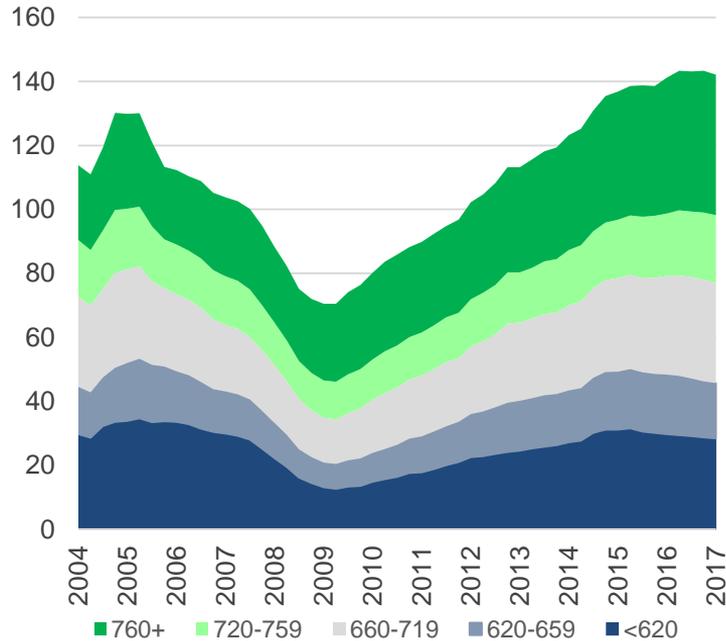
Source: Federal Reserve, Author's Calculations



US: Borrowing Conditions

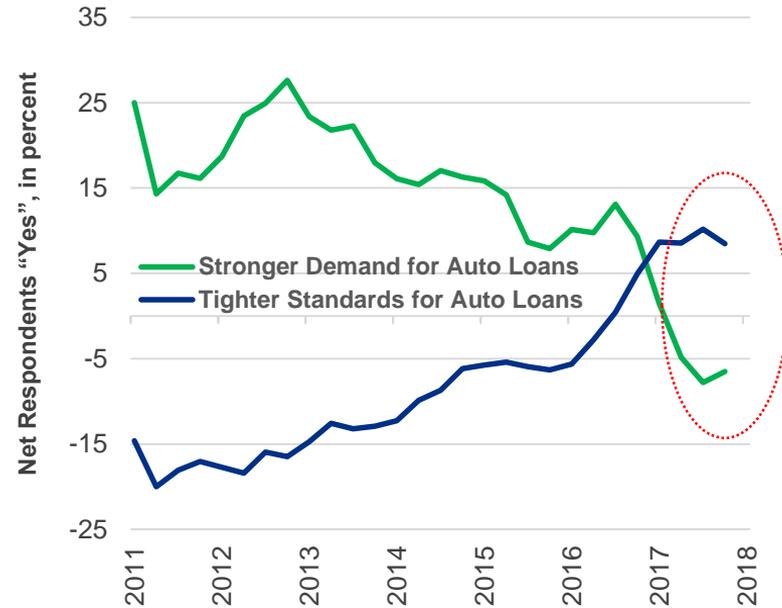
Tightening lending standards have curbed share of subprime loan originations

US Auto Loan Originations by Credit Score (Bils., 4Q Avg.)



Source: Federal Reserve Bank of New York

Auto Loan Availability



Source: Federal Reserve, Federal Reserve Loan Officer Survey, 4 quarter average

Sales Success – All About Mix

You Can't Sell What You Don't Have

TOYOTA: Trucks deliver 'great start' to 2018

February 1, 2018 @ 3:40 pm
Laurence Iltis

54 Shares



Toyota's U.S. light-truck sales set a record in January, up 25 percent to 102,543 vehicles. Photo credit: DAVID PHILLIPS



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OFFICIAL

Crossovers help Mazda post its best January sales in 24 years

A rough month for Mazda cars, though.

JOEL STOCKDALE Feb. 1st 2018 at 4:59 PM



GM: Fleet, crossovers help keep volume in the black

February 1, 2018 @ 12:18 pm
Michael Wayland

46 Shares



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Hyundai sees tough U.S. market, after dismal 2017

January 25, 2018 @ 6:31 am
Hyunjoon Jin
Reuters

0 Shares



SEOUL -- Hyundai Motor Co. said challenges are expected to persist in the U.S. market, where its sales have already been battered by a lack of crossovers/SUVs, after earlier reporting its worst annual earnings in seven years.



JANUARY SALES

U.S. sales start 2018 with a gain behind trucks, spiffs, fleet

Toyota, Nissan, GM rise; Ford, Honda, FCA slip

February 1, 2018 @ 9:15 am

David Phillips

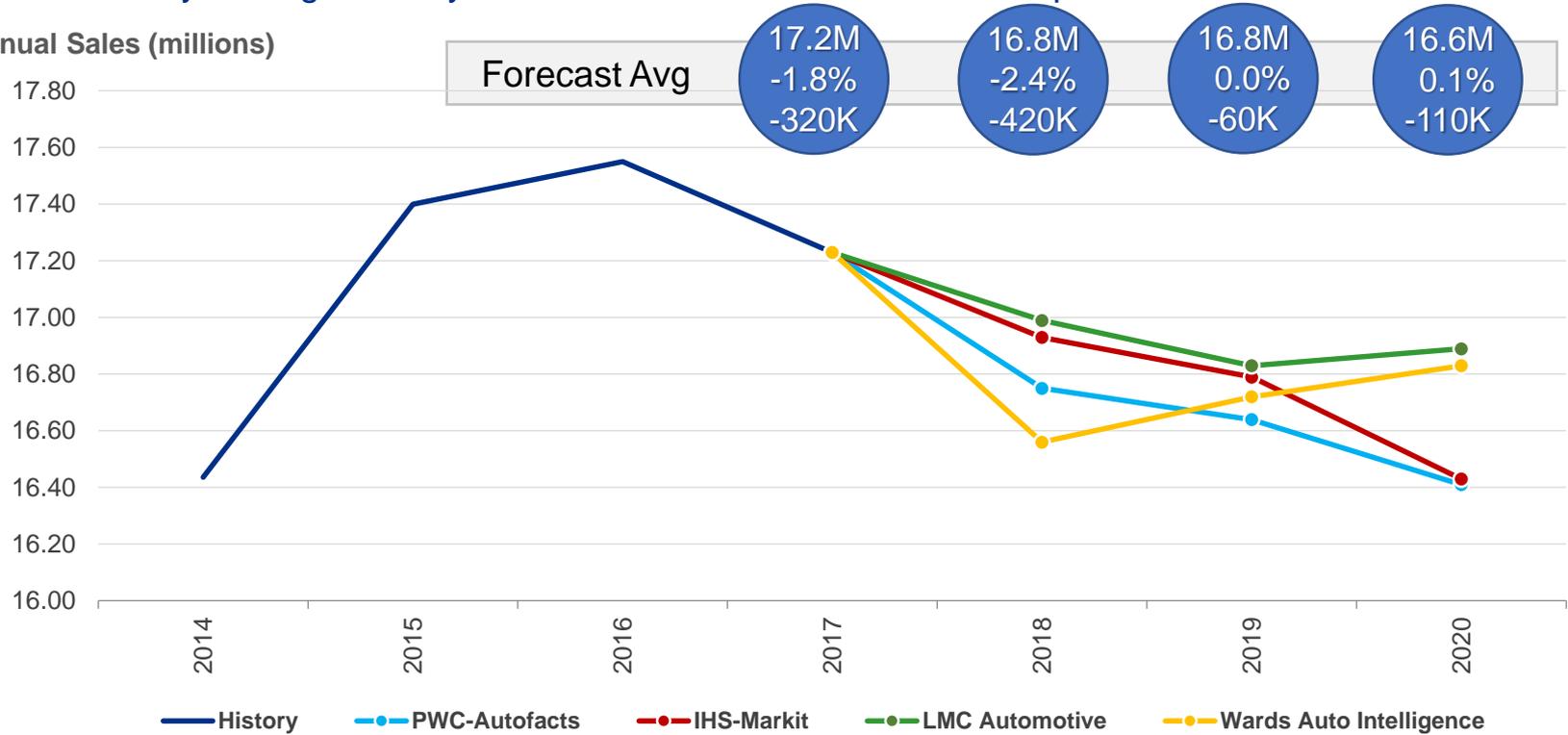
176 Shares



US: Light Vehicle Sales Outlook

Forecasts vary among firms – yet all reflect different rates of sales taper

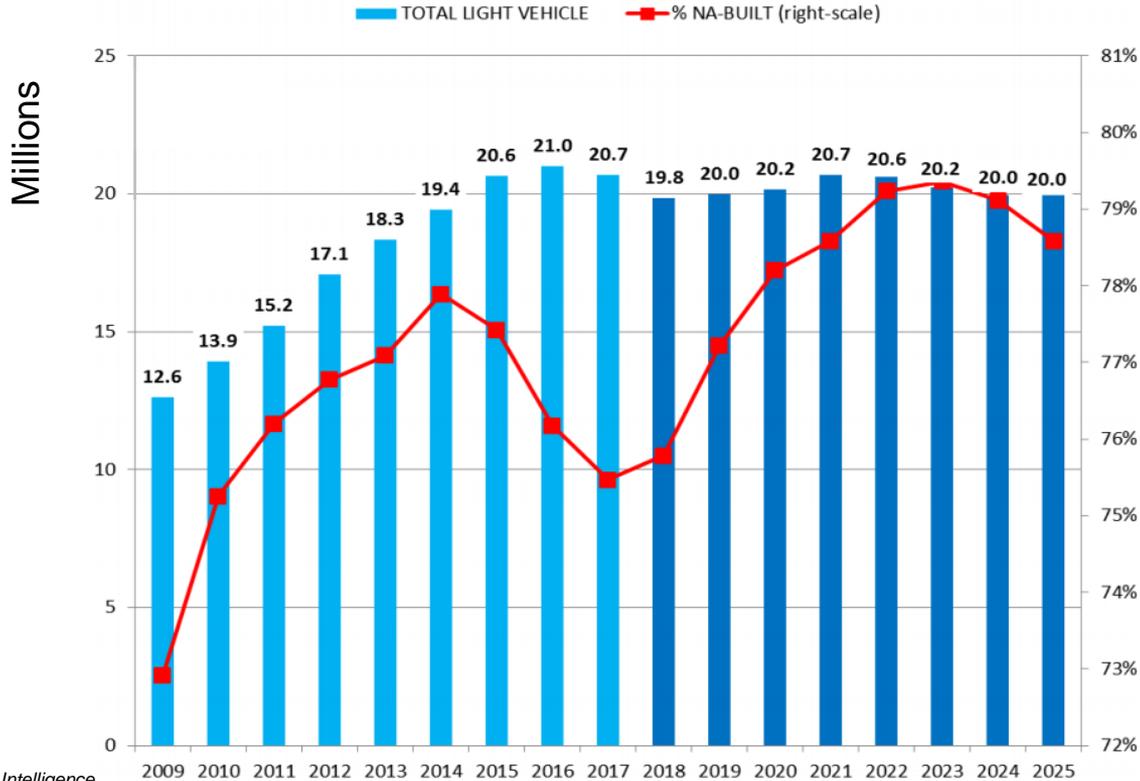
Annual Sales (millions)



Source: 1Q 2018 OESA Affiliate Forecast Matrix – PWC/Autofacts, IHS Markit, LMC Automotive, Wards Auto Intelligence



North America Light Vehicle Sales



- Sales declines forecast for US, Canada and Mexico in 2018
- Sales trend recovers in 2019 and retains stable demand outlook
- Sourcing penetration climbs as output transitions from car to truck, helped by added capacity expansion

Source: Wards Auto Intelligence



US: Recession Probability

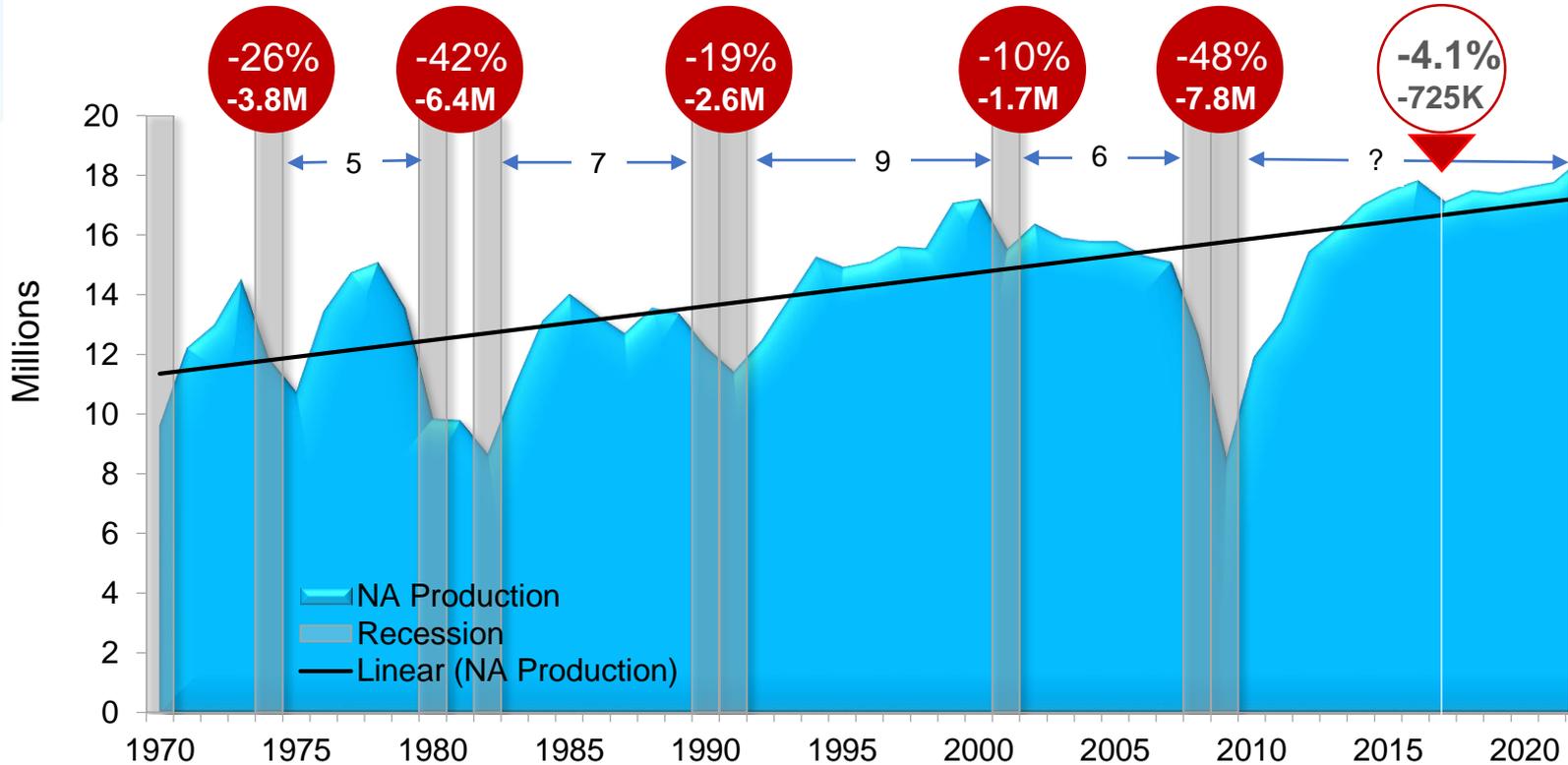
The current U.S. economic expansion began in mid-2010.

When is it most likely to end?



Source: WSJ Survey of Economic Forecasters

North America – Industry Production Cycles



Source: Wards Auto Intelligence, IHS-Markit

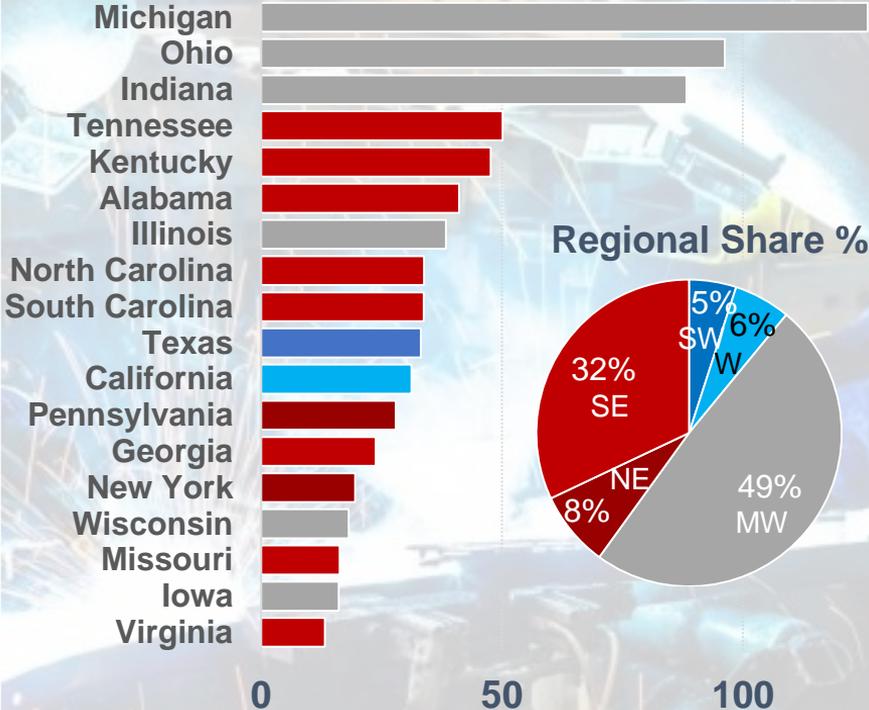


Planning Through Peaks and Valleys

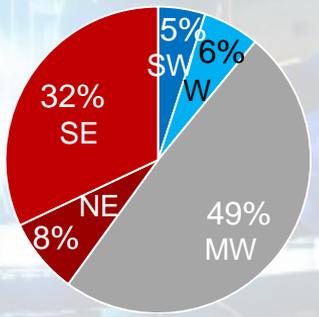
Top Automotive States



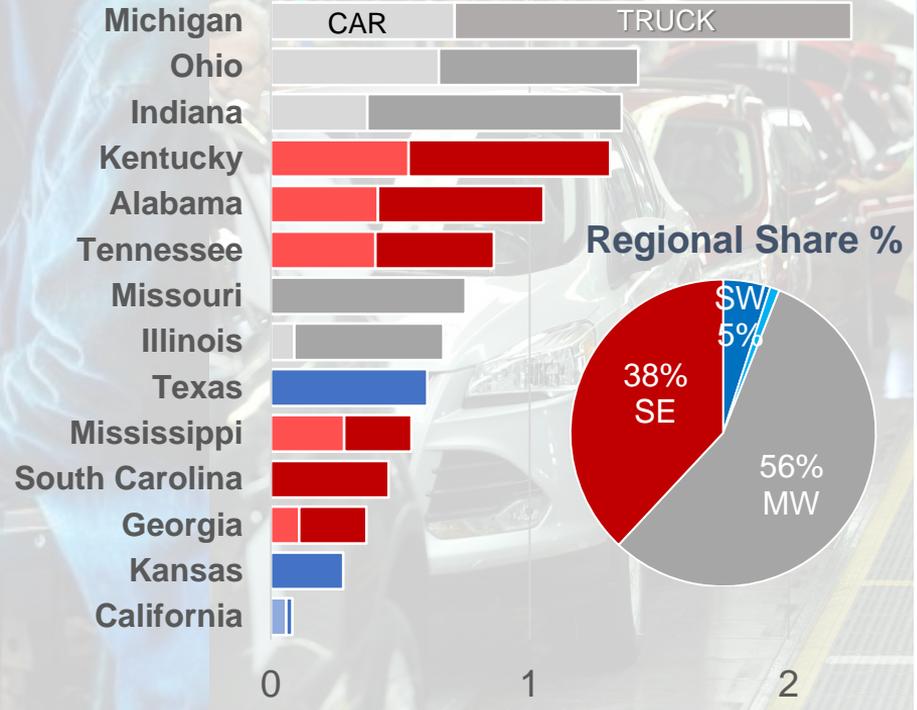
Top 20 - Supplier Employment (000s)



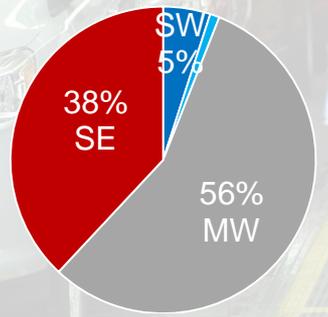
Regional Share %



US Vehicle Output - 2016 (Millions)



Regional Share %



Source: 2017 MEMA Economic Study – 2015CY ; Share of total direct employment

Source: LMC Automotive, OESA Analysis



North America Vehicle Production Forecast



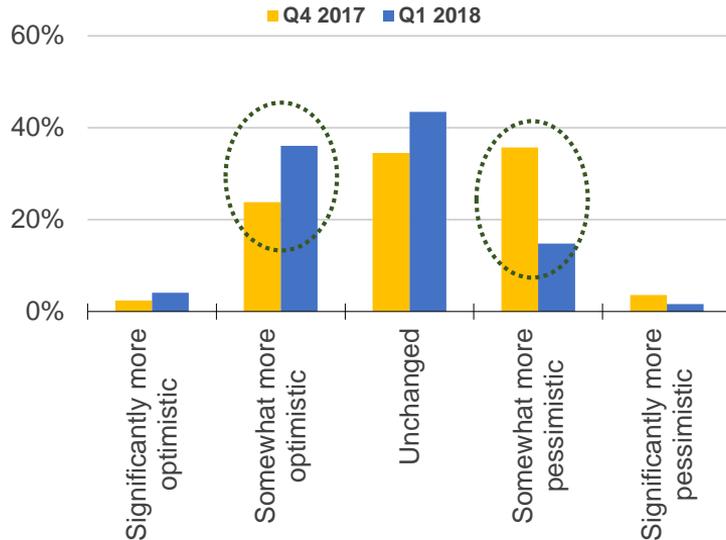
(in millions)	2018					2019 Forecast	2020 Forecast
	1Q Forecast	2Q Forecast	3Q Forecast	4Q Forecast	2018 Forecast		
Autofacts [®]	4.31	4.51	4.09	4.14	17.05	17.62	18.18
IHS Markit [®]	4.45	4.60	4.19	4.13	17.37	17.37	17.43
LMC AUTOMOTIVE	4.39	4.51	4.21	4.19	17.30	17.07	17.29
WARDS AUTO	4.39	4.48	4.22	4.08	17.17	17.53	17.73
Forecast Average	4.39	4.53	4.18	4.14	17.22	17.40	17.66
Forecast Spread	0.14	0.12	0.13	0.11	0.32	0.55	0.89
2017 Average	4.51	4.47	4.07	4.26	17.31		

Source: 1Q 2018 OESA Affiliate Forecast Matrix – PWC/Autofacts, IHS Markit, LMC Automotive, Wards Auto (Car/Trk Class 1-5)

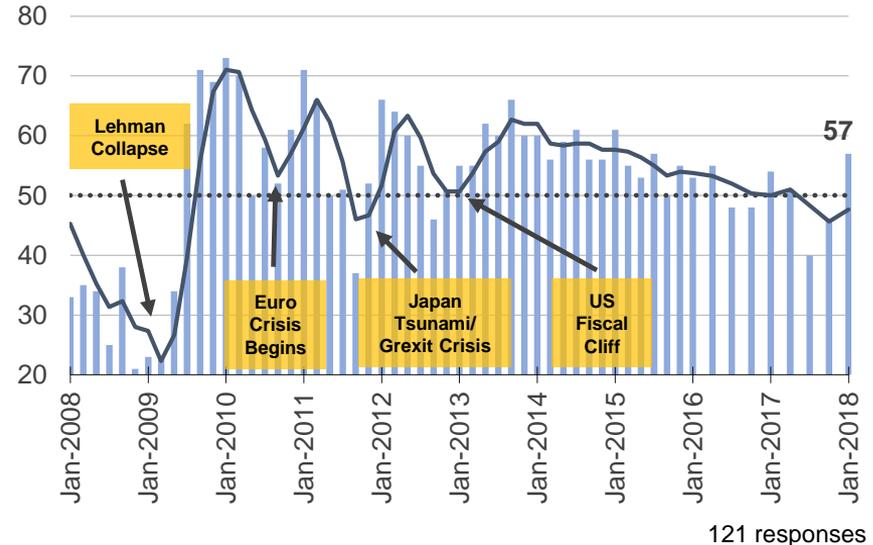
OESA Supplier Barometer: 1Q 2018 Results

Describe the general twelve month outlook for your business. Over the past three months, has your opinion become...?

Current Supplier Outlook (Share of Respondents)



Supplier Barometer Index: (SBI and 6m Average)



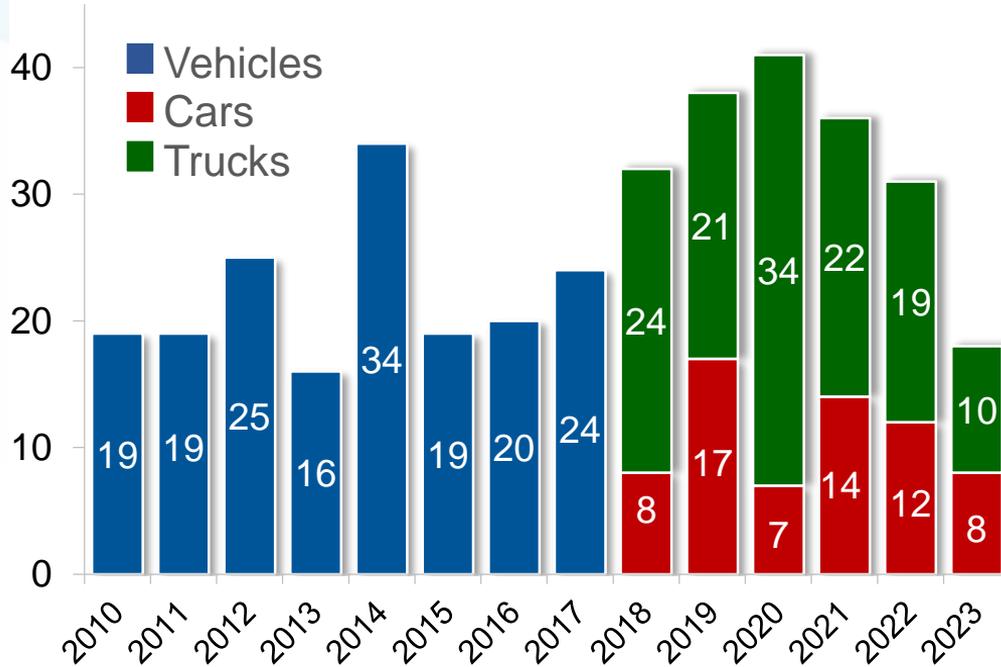
SBI Score = 57; soars 11 points from Q4 level of 46
Tax Reform, a more hopeful view on NAFTA and continued Market Strength all Drive Optimism

Passenger Cars: Under Pressure

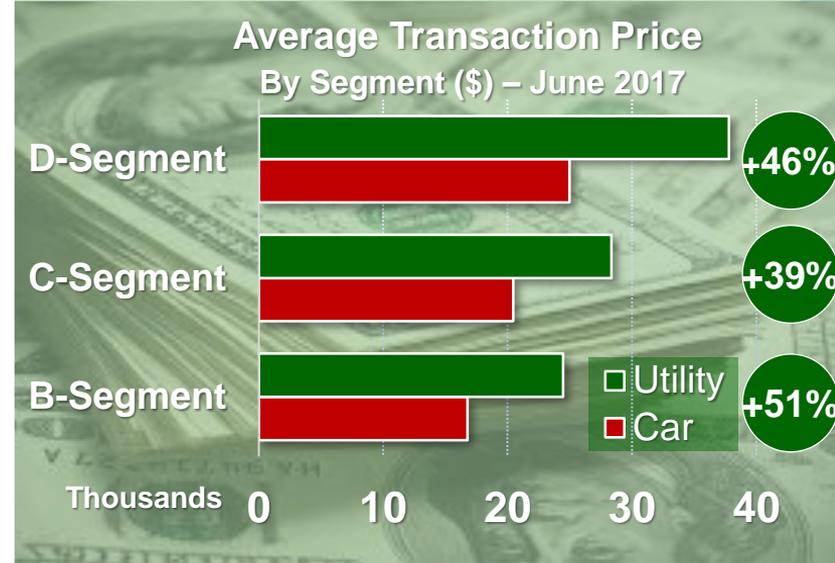
Steady March To Reduce US3 Car Portfolios and Utilize Global Sourcing

Segment	 FIAT CHRYSLER AUTOMOBILES		
A/B		 Fiesta	 Sonic
C	 Dart	 Focus	 Volt?  Verano  Cruze?
D	 200	 Fusion	
E		 Taurus	 LaCrosse?  Impala?  CT6?

Future Launch Activity



Source: IHS Markit, Kelly Blue Book



The Race to Fill White Space

Utility



TOYOTA

FT-AC

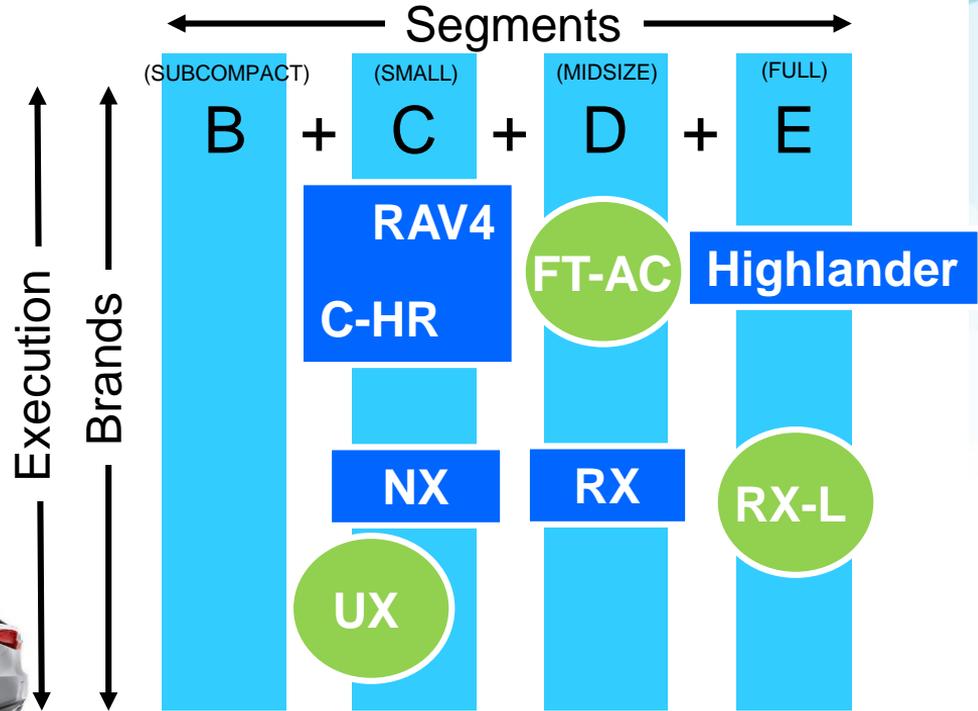


UX



LEXUS

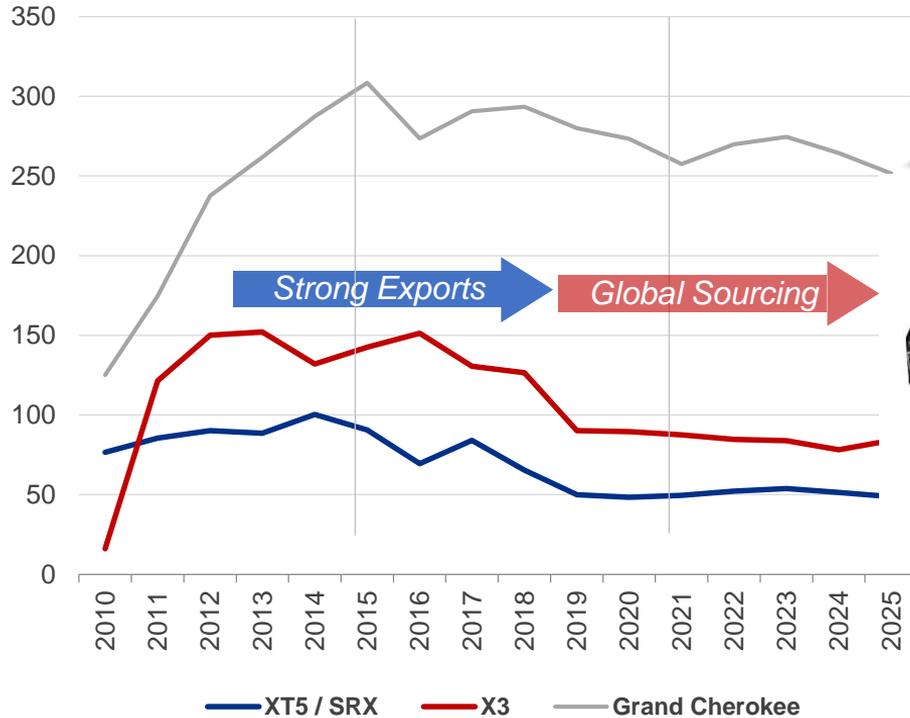
RX 350L



Double Edged Sword of Strong Exports

Overseas Demand Often Drives Local Sourcing

Annual Production (Thousands)



-16%
(-51K)



-39%
(-55K)



-45%
(-41K)



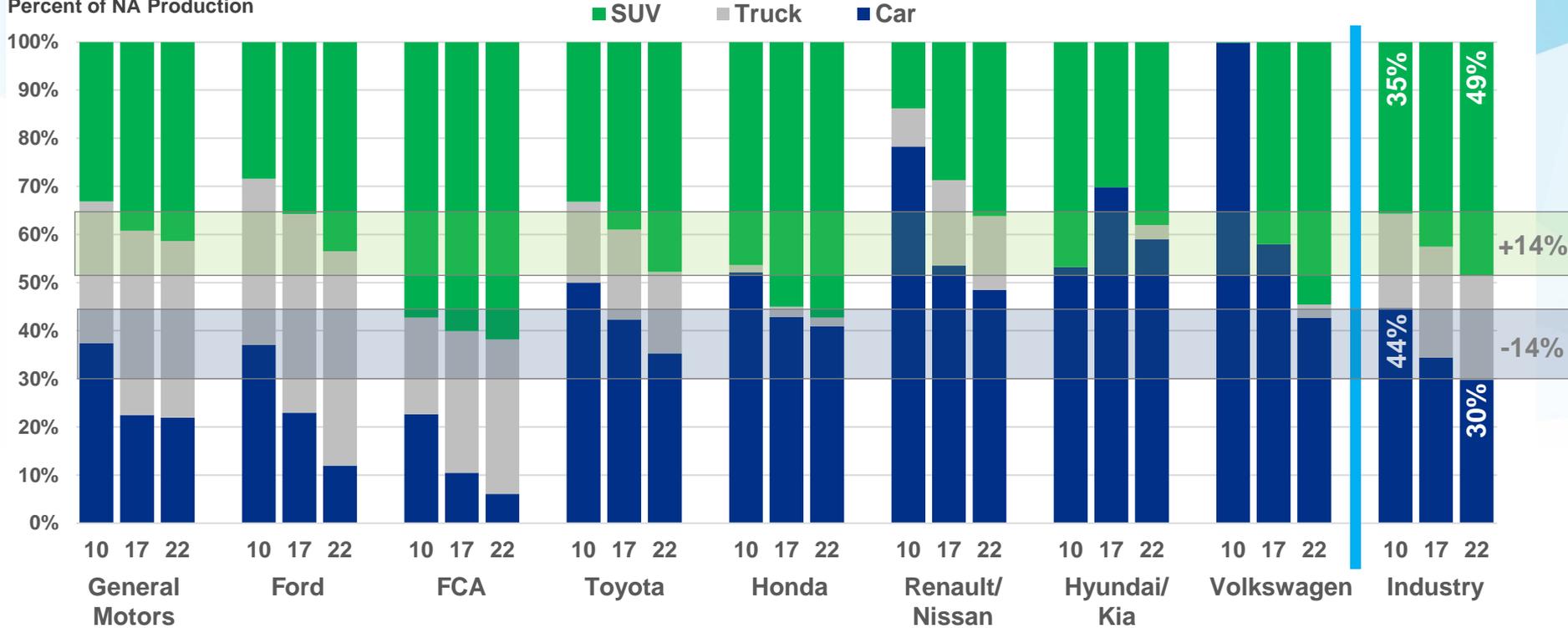
- 25% import tariff, cut to 15% by 7/1
- Luxury growth
- Minority ownership cap removed



North American Vehicle Production

Segment Shares Highlight Portfolio Strategy Differences

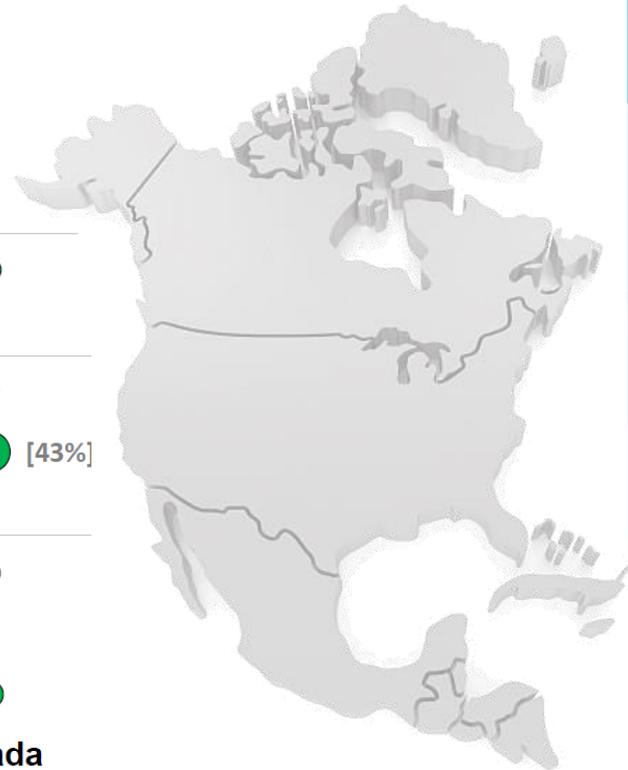
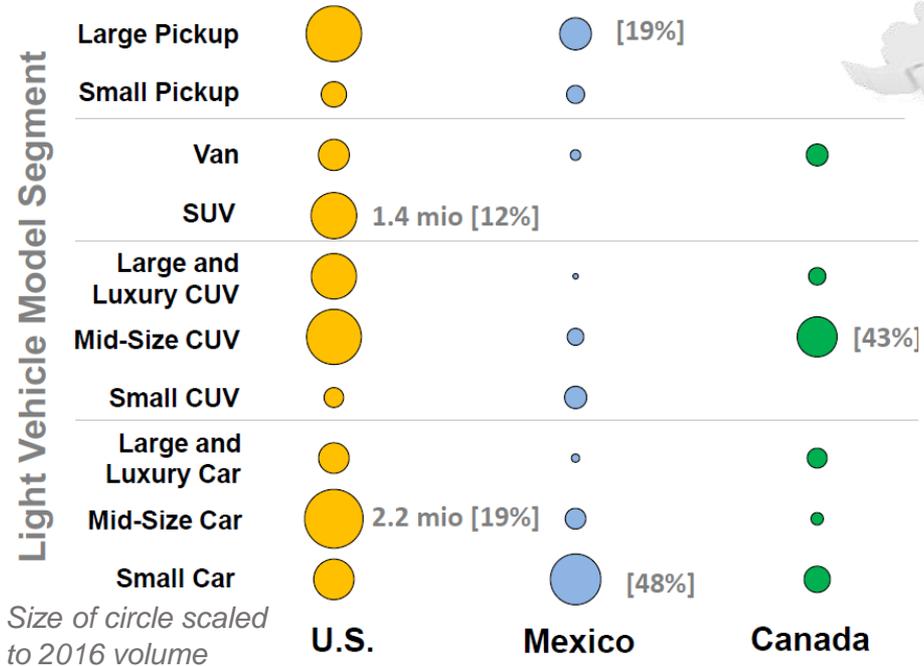
Percent of NA Production



Sources: Automotive News, IHS Markit



North American Light Vehicle Output By Country and Segment

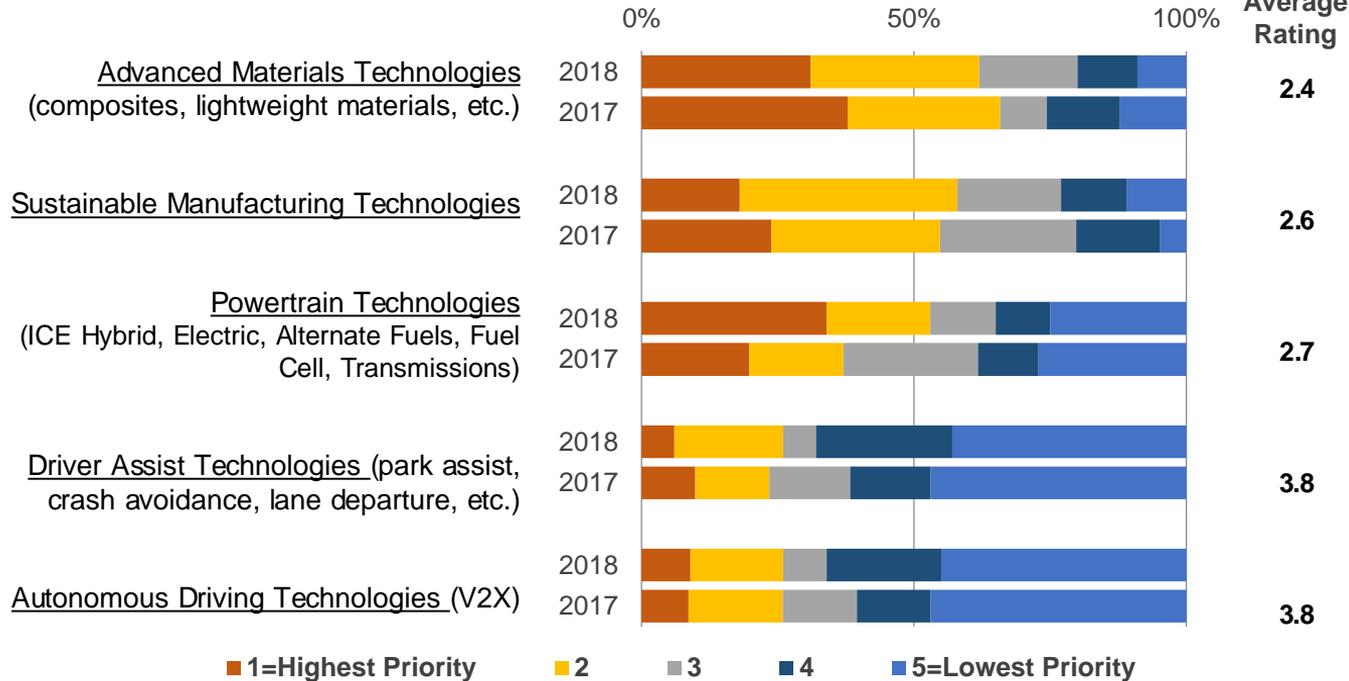


Source: Wards, Federal Bank of Chicago, T. Klier



Research & Development Technology Investments

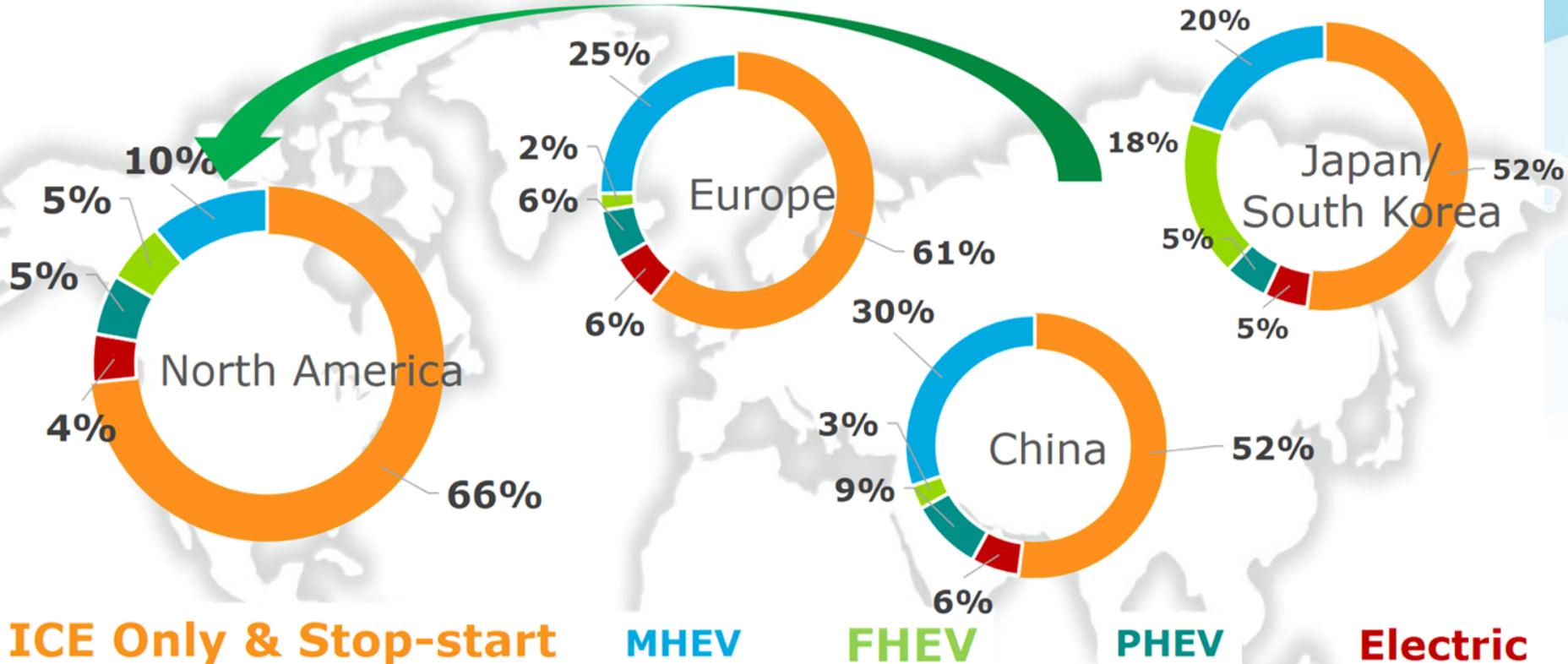
If you had additional dollars for R&D investment, rating in terms of importance, how would you allocate it across the following technology areas?



Source: 1Q 2018 Supplier Barometer



Global Propulsion Design Islands - 2025



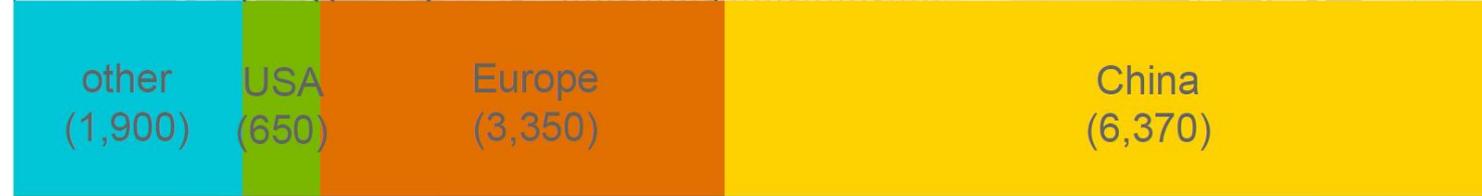
Global BEV Demand By Market

2017 BEV Sales ('000s)

China: 465
Europe: 132
USA: 93
Other: 30

720k
China: 65%

2027 BEV Sales (000s) – CAGR from 2017 = 33%



12.3mn
China: 52%

Source: LMC Automotive Global Hybrid & EV Forecast

0 2,000 4,000 6,000 8,000 10,000 12,000



Planning Dynamics

Electrification Push Drives Profound Change



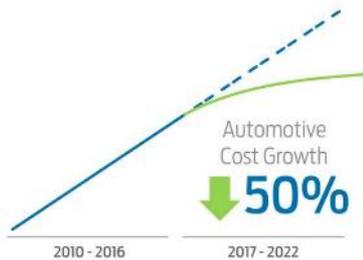
BMW Aims to Cut Parts Costs by \$2.4 Billion in E-Car Shift

September 13, 2017 - Bloomberg

- German automaker seeks to trim component spending by 5%
- Suppliers to face more competition amid savings

We are reducing the pace of cost growth

Automotive Cost Performance



Future 5-Year Incremental Efficiencies

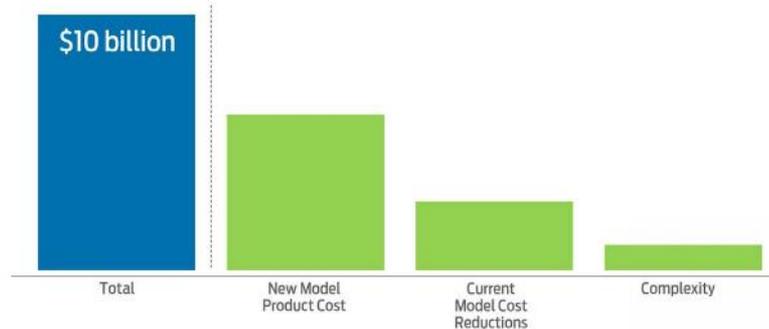
Product Engineering **\$4 Billion**

Material Cost **\$10 Billion**



Reducing global material cost by an incremental \$10 billion through 2022

2018 - 2022 Plan by Workstream (Billions)



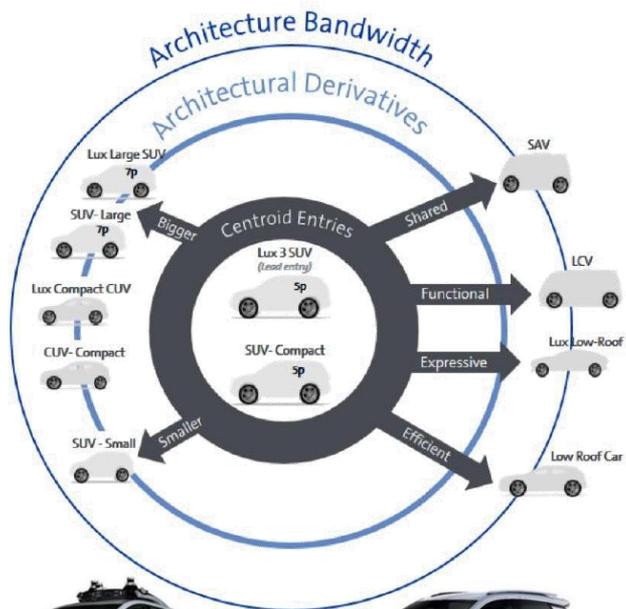
Mercedes will cut costs to fund EVs

September 11, 2017 - AutoNews

'to launch a \$4.8 billion cost-cutting program'



GM – Future Electrification Bandwidth and Plan



GM Autonomous Vehicle
180 Cruise test vehicles

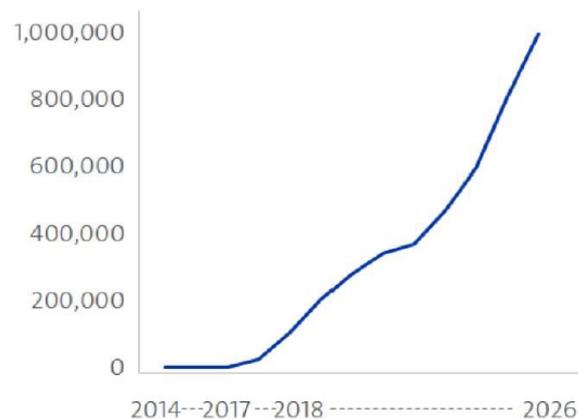


New CUV entries
two entries by 2020



- FLEXIBLE STRATEGY
 - BUILD SCALE
 - LEVERAGE CHINA

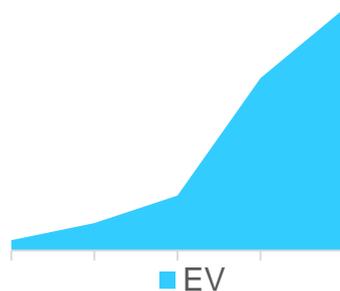
GM Global EV Volume Forecast



The EV Profit Challenge



'All In'



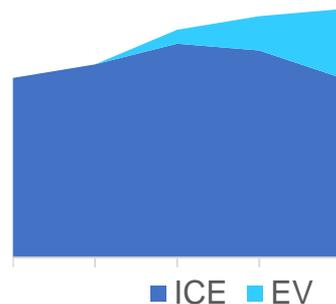
- Clean sheet design
- Ground up capex
- 'New Everything'
- Must scale to survive
- Low margin of error



"We wanted to wait for the fifth generation (to scale) to be much more cost competitive," *BMW CEO Harald Krueger*

Expects its EVs to be profitable by 2020 after first EV launched in 2013.

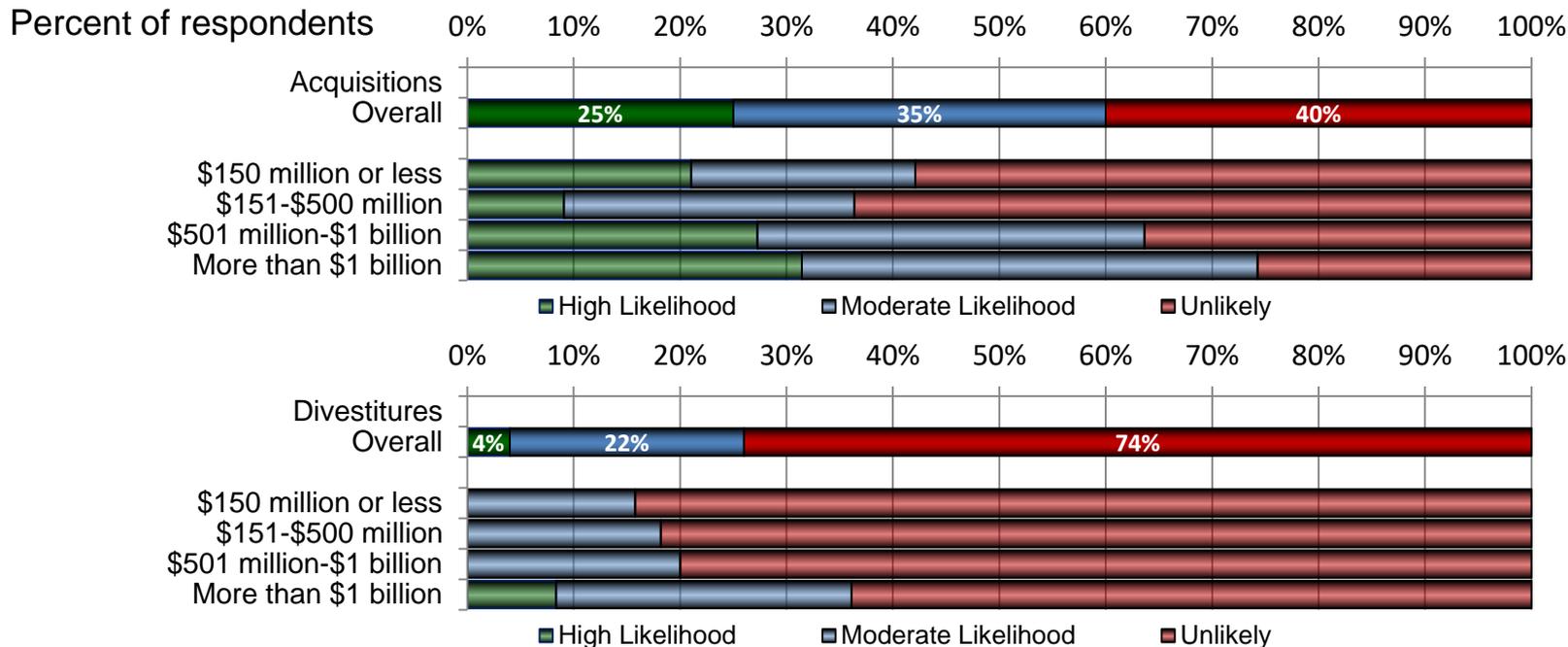
'Incremental'



- Incremental approach
- Incremental capex
- Weighs on current profits, yet can reinvest proceeds
- Enables transition

OESA Supplier Barometer: 2018 Planning

Over the next 12 months, what is the likelihood that your company will make acquisitions and/or divestitures?



Up from 2017 levels, suppliers are actively assessing acquisitions and divestitures; acquisitions from larger companies, divestitures from smaller (ref appendix)

Summary

- **Market:** Global opportunity, US demand slowing, divergent performance
- **Offense:** SUV growth/Truck peak—opportunities and risks (*i.e. competition*)
- **Defense:** Growing scope of passenger car dislocation, turbulence
- **Strategy:** Requires counter-cyclical innovation planning
- **Flexibility:** Liquidity is key; vital to balance 'Core' vs Emerging
- **Stretch:** Surge in BEV opportunities, not all created equal - prioritize



Thank You!

Federal Reserve Bank of Chicago- Detroit Automotive Symposium

Detroit, Michigan
June 1, 2018

Mike Jackson

Executive Director, Strategy and Research
Original Equipment Suppliers Association

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