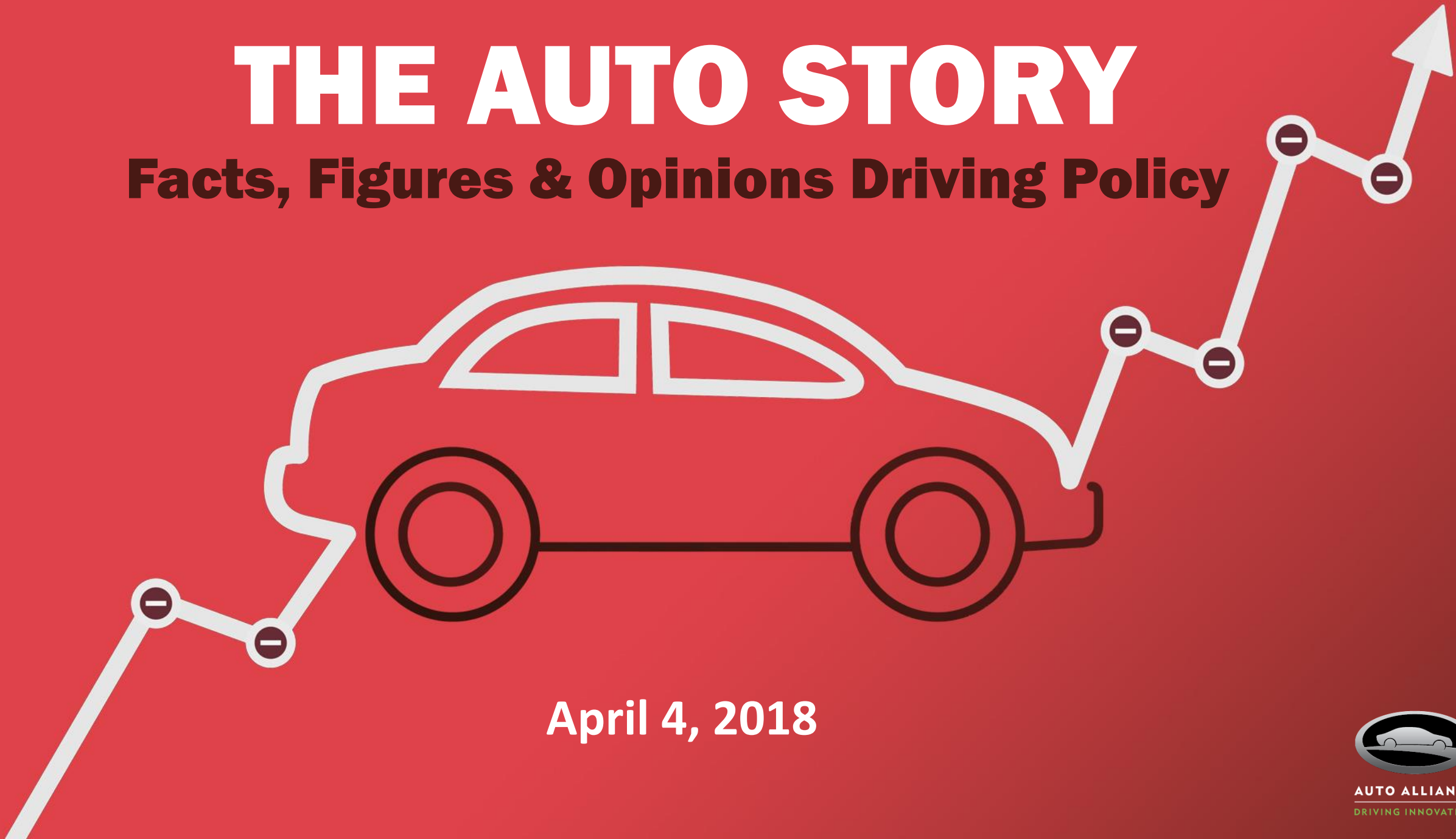


# THE AUTO STORY

**Facts, Figures & Opinions Driving Policy**



April 4, 2018



**AUTO ALLIANCE**  
DRIVING INNOVATION<sup>SM</sup>

# INTRODUCTION

The Alliance of Automobile Manufacturers is pleased to provide this analysis of **Facts, Figures and Opinions** that will shape the future of mobility in the United States.

We stand at the dawn of an amazing era for personal mobility that offers profound social good. Advancements in technology now coming into the car parc and those that will emerge over the next decade will make mobility ever safer, cleaner, quicker and less stressful. We shouldn't rush into the future, but it is in the interest of policymakers, manufacturers and the driving public that we smartly develop, test, and deploy new technology with an understanding that sooner is better than later. Simply put, lives are at stake – technology offers the promise of addressing crashes due to human error that now represent more than 90% of the risk factor.

- Section 1 of this Report looks at **Facts and Figures** that government decision-makers should consider as they address public policy questions regarding safety, fuel efficiency, technology and trade.
- Section 2 of this Report looks at **Public Opinion** on a range of issues before Congress and before state and local government bodies.

We thank you for taking the time to review this report and would be delighted to answer any questions that may arise.

Mitch Bainwol  
Alliance of Automobile Manufacturers



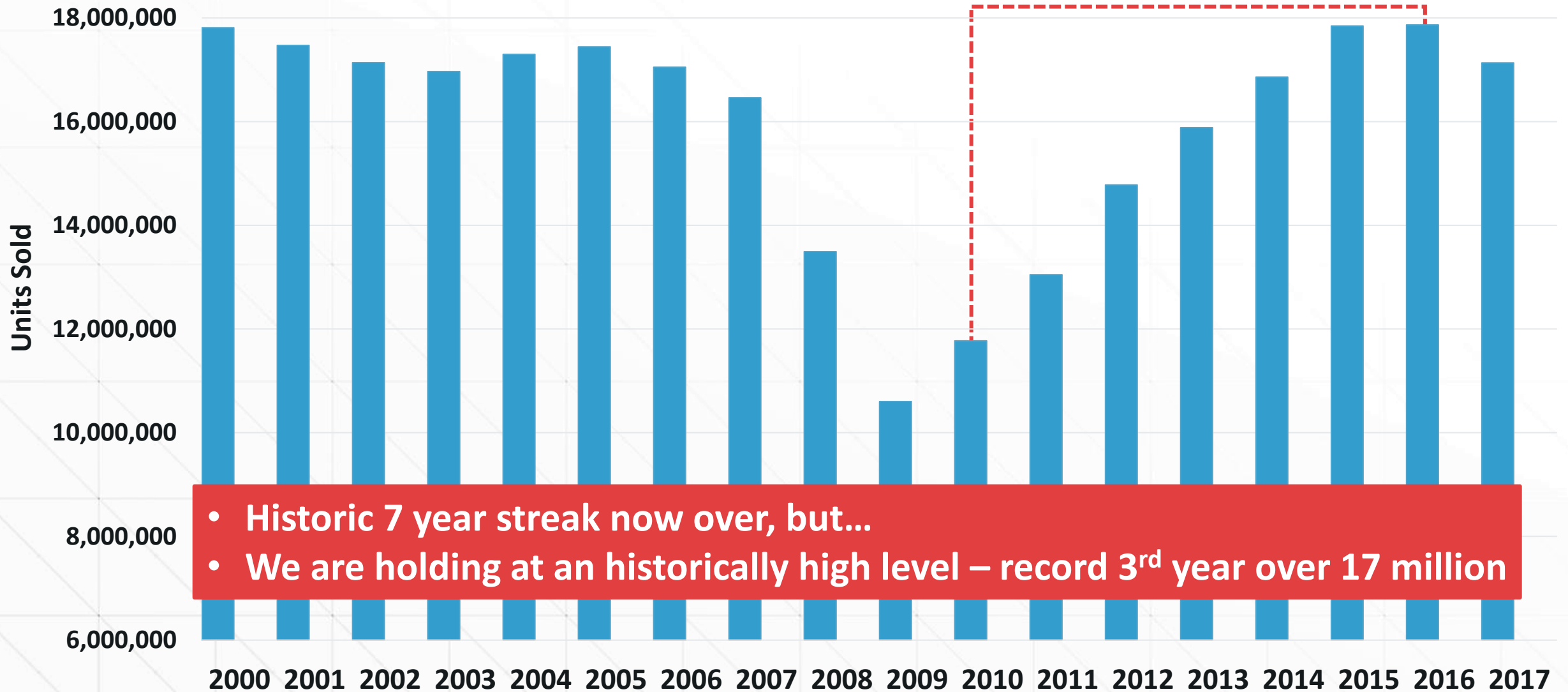
# Facts & Figures



# U.S. Auto Sales: 2000 Through 2017

- ❑ U.S. sales of light duty vehicles since 2000 look a bit like a “V” pattern with the 2008-2009 economic collapse nearly in the center of the period
- ❑ Good News: 2017 held at an historically high level and was a record third year in a row with sales over 17 million units
- ❑ Bad News: Unprecedented 7-year growth streak over
- ❑ Sales during 2000-2007 hovered within a band of 16-18 million units annually
- ❑ We now look to be selling vehicles at a very similar post-recovery clip
- ❑ Given the stability of the U.S. population and comparatively deep car ownership penetration levels, the upside in future domestic sales is fairly limited

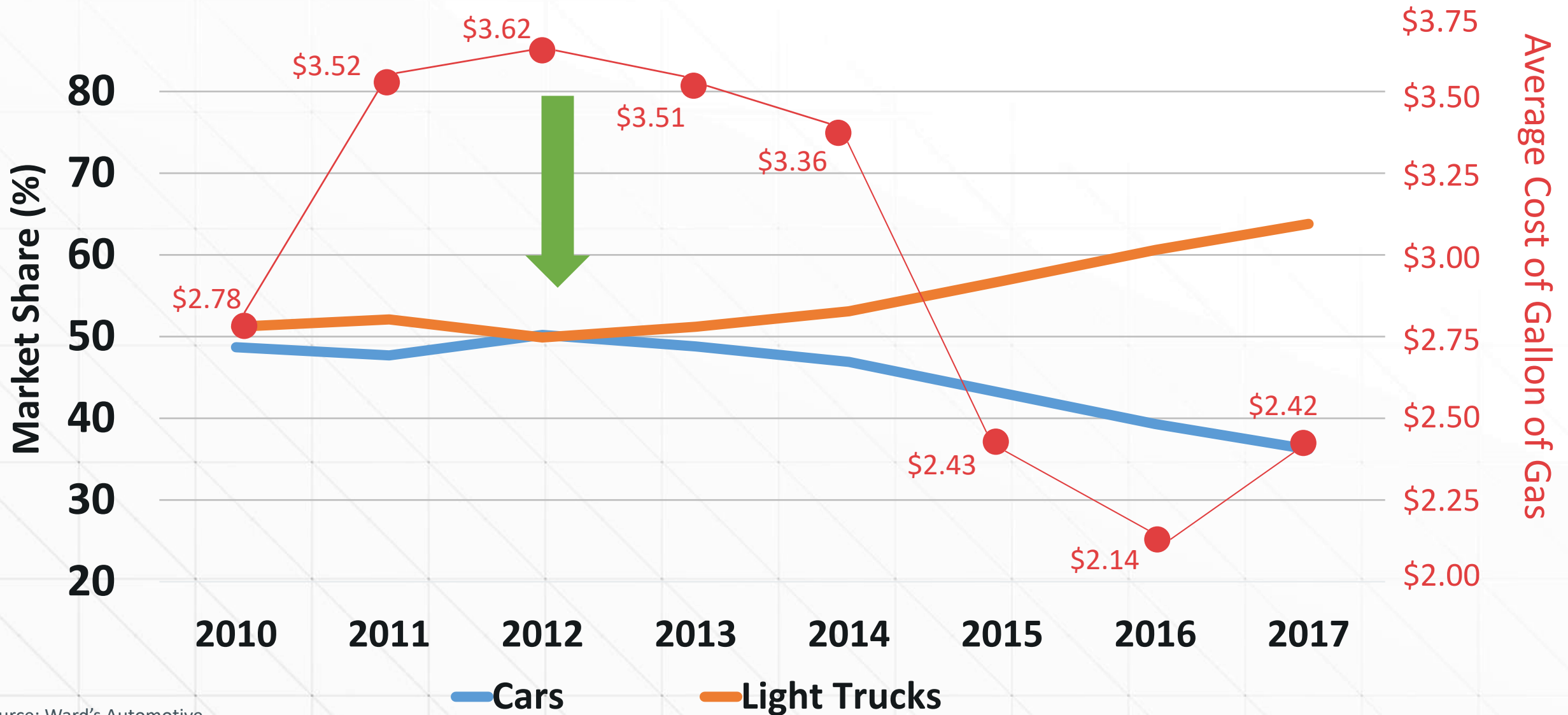
# New Light Vehicle Sales in the United States



# Share of Cars and Light Trucks: 2010 through 2017

- ❑ The sales of light trucks and cars were almost even during the 2010 to 2012 timeframe
- ❑ A pivotal moment happened just after President Obama's CAFE/GHG agreement was reached
- ❑ Trucks become more efficient under the agreement, enhancing their appeal
- ❑ Gas prices fell – adding fuel to the transition and effectively lowering the cost of truck ownership vis-à-vis cars
- ❑ The original agreement erroneously anticipated rising car shares coupled with declining truck shares

# Gas Prices and U.S. Light Vehicle Market Share

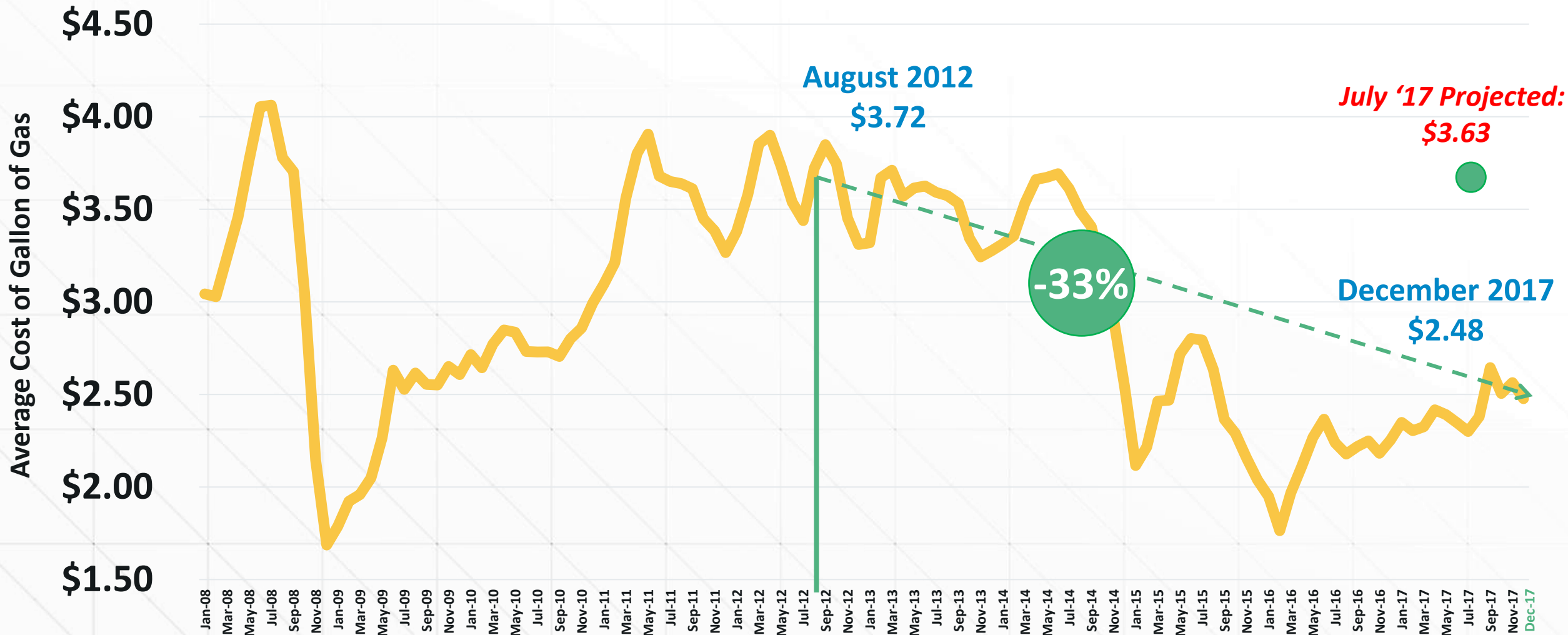


# The Price of Gas at the Pump Over the Last Decade

- ❑ First, it is evident that the price of gas varies significantly over time – it bounces around
- ❑ Second, at the time of the Obama GHG/CAFE deal, gas prices were rising and it was not irrational to anticipate that they would rise further
- ❑ But that's not what happened
- ❑ That matters because the importance of fuel economy to the consumer is absolutely tied to gas expense
- ❑ Gas prices fell almost 40% over five years from mid-2012 and remain far lower than projected
- ❑ While gas prices will continue to vary, due to a range of factors including increases in domestic production, the range of prices is likely to be far lower than planners anticipated when the 2011 agreement was reached



# Cost of A Gallon of Gas: Projection v Reality



**July '17 Projected:**  
**\$3.63**

**August 2012**  
**\$3.72**

**-33%**

**December 2017**  
**\$2.48**

# Fleet Mix Shift Accelerates Post 2013

- ❑ Over the last five years, as overall sales have increased by almost 10%, the sale of cars has decreased by more than a million units - almost 20%
- ❑ About half of the 5-year decline in the sale of cars occurred just last year, suggesting the trend line is intensifying
- ❑ Meanwhile the sales of light duty trucks have increased by almost 40%
- ❑ While the “footprint” approach and car/truck classification adjust for this trend in part, they fail to fully capture the impact of the shift from cars to trucks and the greater compliance challenge trucks face
- ❑ That is significant because trucks and cars within the same footprint do not perform equivalently to their respective standards, with trucks underperforming their car counterparts
- ❑ This is one key example of a market factor suggesting the need for additional standard flexibility

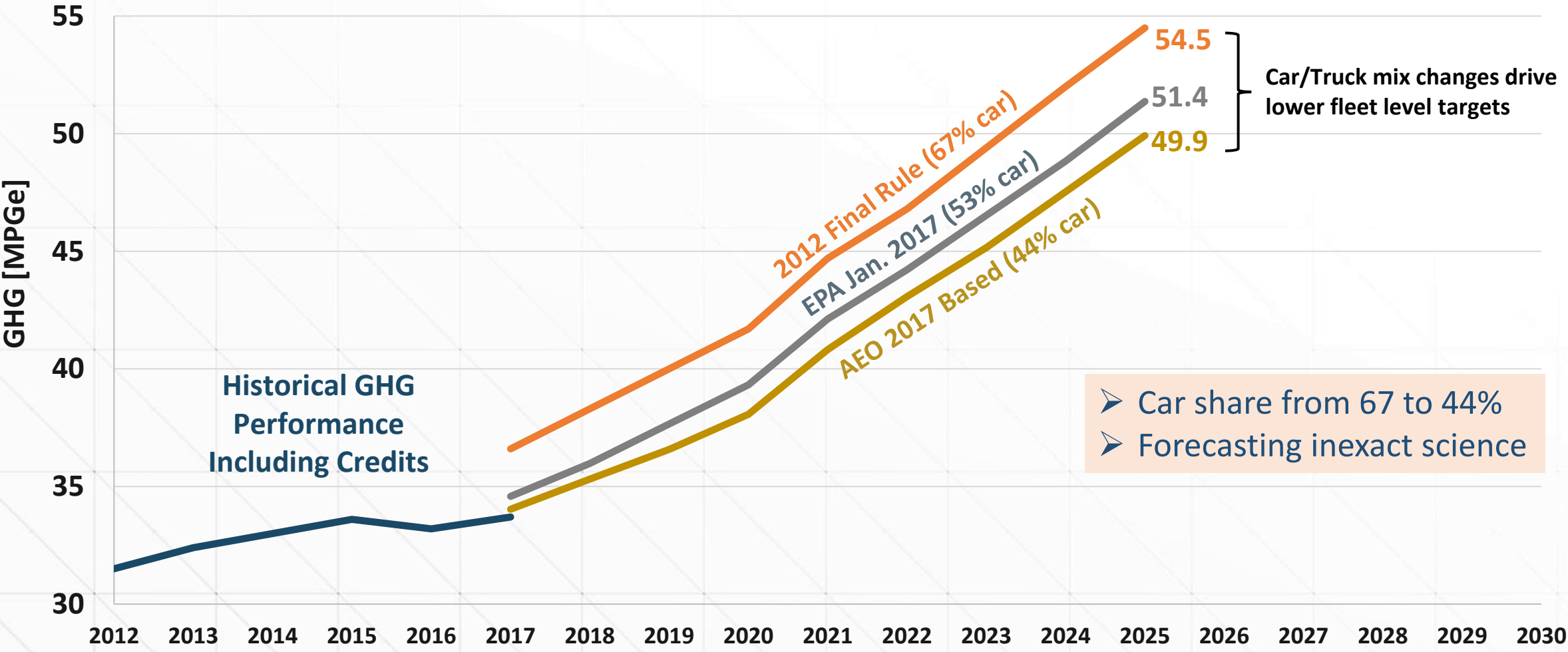
# Year-Over-Year Sales By Segment

Year	Cars		Lt. Duty Trucks		Overall Sales	
	Total	% Change	Total	% Change	Total	% Change
2013	7,238,951	- - -	7,736,523	- - -	14,975,474	- - -
2014	7,417,916	2.47	8,699,515	12.45	16,117,431	7.63
2015	7,205,163	(2.87)	9,711,183	11.63	16,916,346	4.96
2016	6,629,956	(7.98)	10,481,428	7.93	17,111,384	1.15
2017	5,967,384	(9.99)	10,843,264	3.45	16,810,648	(1.76)
<b>Change 2013-2017</b>		<b>(17.57)</b>		<b>40.2</b>		<b>12.3</b>

# Fleet Mix Impacts How the Agreement Gets Scored

- ❑ The top line (in orange) is an expression of the original agreement that envisioned a fleet average of 54.5 MPG by 2025
- ❑ The middle line (in blue) is a January 2017 recalculation of the 54.5 reflecting only the change in fleet mix
- ❑ The middle line does NOT reflect a change in stringency of the agreement but rather is just a formulaic revision to capture the changing buying habits of the American consumer
- ❑ The lowest line (in brown) is a January 2018 (just a year later) recalculation again reflecting only the further changes in fleet mix
- ❑ As the fleet mix continues to evolve, the number will self-adjust
- ❑ That does not mean that the car number itself is changing or the truck number itself is changing; it only reflects a change in the ratio between cars and trucks

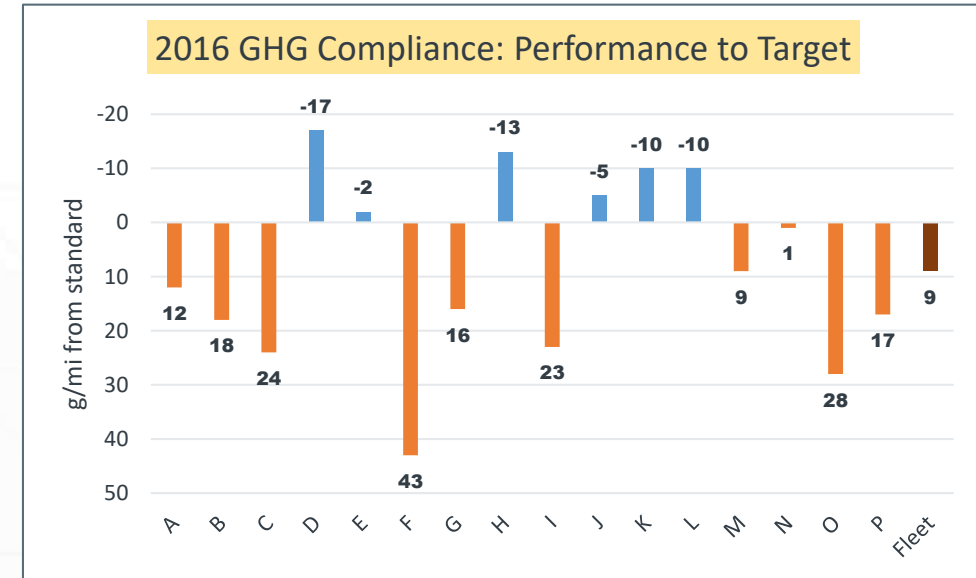
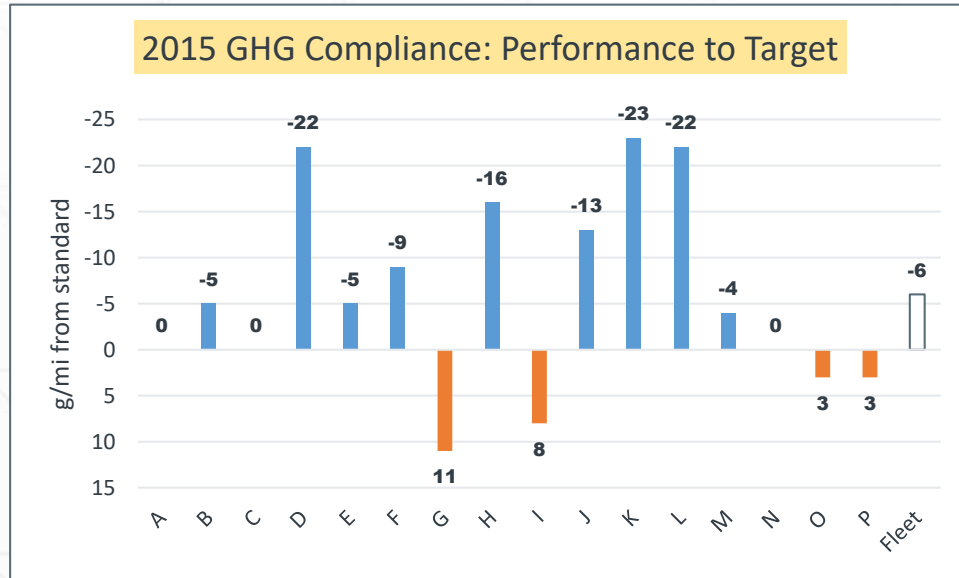
# Changes in Fleet Mix Automatically Adjust Mileage



# Compliance Pattern Approaching the “Mid Term”

- ❑ Until last year, automakers were over-complying with the Obama Fuel Economy / GHG schedule and that was regularly highlighted by EPA as a key rationale for maintaining the targets for MY 2022-2025
- ❑ According to EPA’s Performance Report issued earlier this year, over-compliance is history
- ❑ 10 OEMs under-complied in MY 2016, up from 4 in MY 2015
- ❑ As the target numbers ratchet up, compliance is moving in the wrong direction as consumers choose more light trucks, bigger engines and fewer alternative powertrains than anticipated
- ❑ The final determination that occurred in January of 2017 was oblivious to this trend, a significant flaw
- ❑ And, of course, the midterm of a 14 year program, in any event, is not in year 5

# Compliance in Years 4 and 5 of 14 Year Program



## GHG

- 4 manufacturers under-complied in 2015
- 10 manufacturers under-complied in 2016
- Overall fleet under-complied, for the first time, in 2016

## CAFE

- NHTSA Predicts the fleet will under-comply further in 2017MY

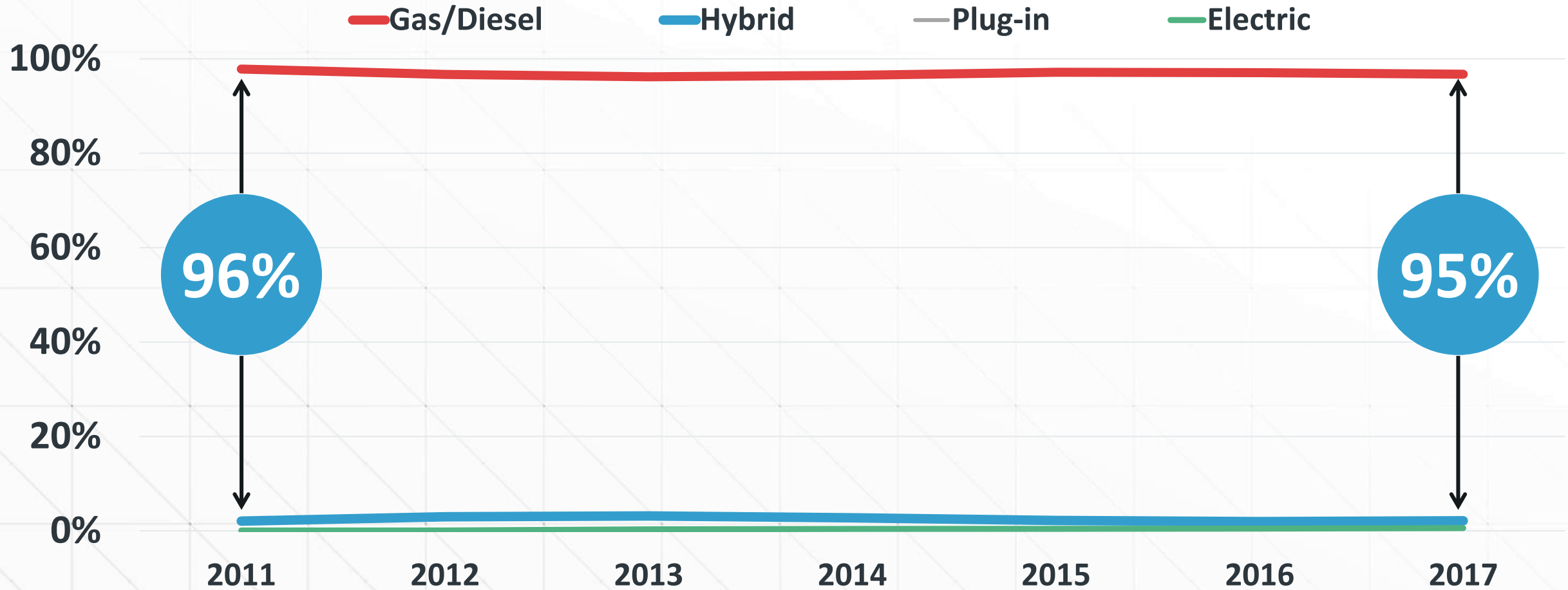


# Consumers Still Strongly Prefer Conventional Engines

- ❑ In 2011, conventional engines represented 98% of the market in new vehicle sales and the gap between conventional and alternative powertrains was a net of 96%
- ❑ Despite expectations, that number has not changed materially; in 2017 the percentage of conventional engines less the percentage of alternative powertrains was down a point, to 95%
- ❑ During this period of time, the number of alternative powertrain models offered to the public rose by 88%, from 49 in 2011 to 92 in 2017
- ❑ In many if not most cases, the alternative powertrains also were heavily subsidized to make them more attractive to consumers coming into the dealerships for a new vehicle
- ❑ So the issue has not been the availability of alternative powertrains
- ❑ Within the alternative powertrain segment, hybrids are down and pure electrics are up
- ❑ Most of the growth in pure electrics has come from cannibalizing hybrids



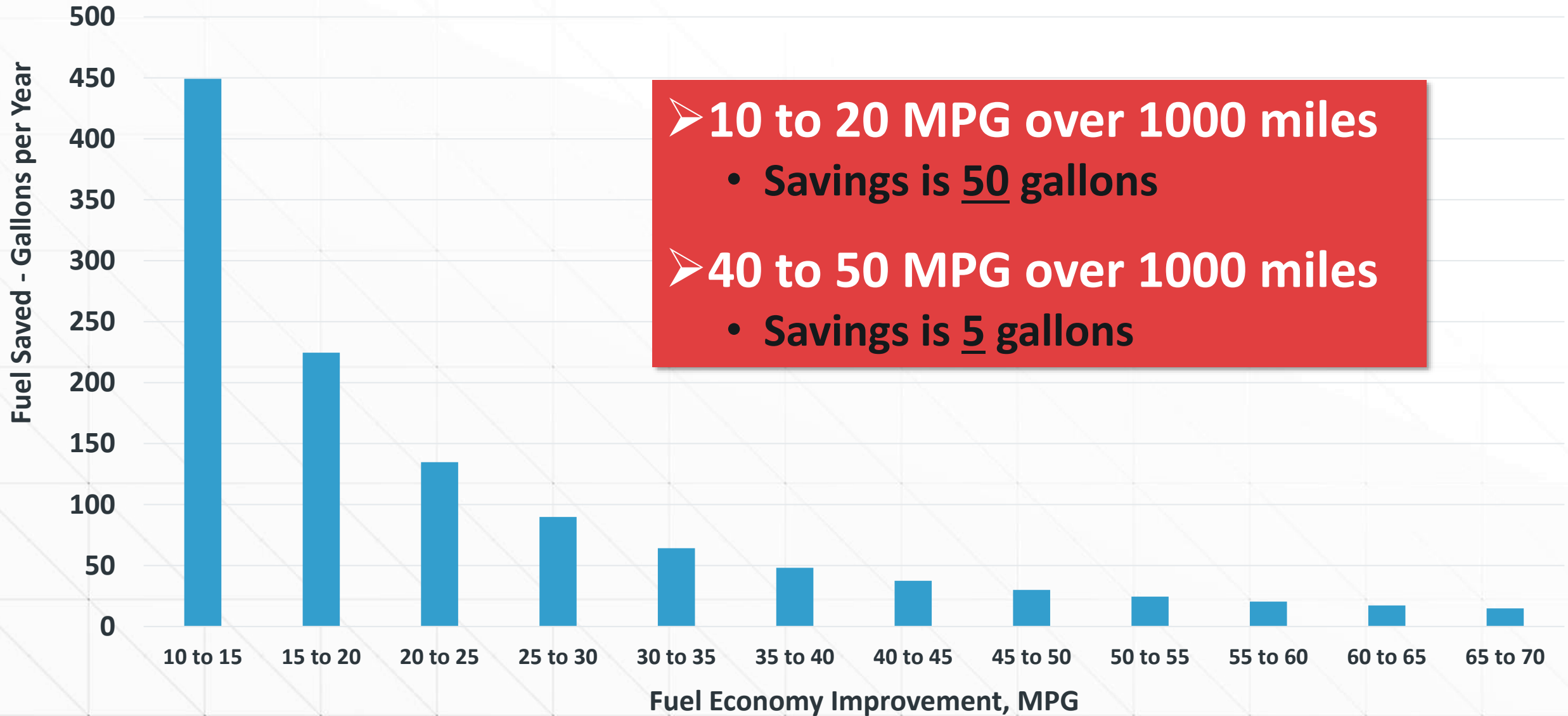
# Powertrain Share of Total Sales: 2011 - 2017



# Fuel Efficiency Savings are Dramatically Larger on the Front End of the MPG Curve

- ❑ Fuel savings from MPG gains look like a flipped hockey stick pattern
- ❑ If you achieve an MPG change of 10 to 20 MPG over 1000 miles, that produces savings of 50 gallons
- ❑ If you achieve an MPG change of 40 to 50 MPG over 1000 miles, that produces savings of just 5 gallons
- ❑ Thus, there is a 10 times multiple for savings on the front end of the curve relative to savings at the back end of the curve
- ❑ Especially given that the average age of a car on the road today is more than 11 years old, this mathematical reality means getting old cars off the road is far more impactful than marginal improvements at the back end of the curve

# Fuel Savings Decline as MPG Rises



➤ **10 to 20 MPG over 1000 miles**

- Savings is 50 gallons

➤ **40 to 50 MPG over 1000 miles**

- Savings is 5 gallons

# Savings from the 2011 Agreement Through 2025 Already are Largely Booked

- ❑ Because the math is moved so much by fleet turnover, the first half of the CAFE/GHG agreement disproportionately defines the success of the program through 2025
- ❑ Under the original agreement, 179 billion gallons of fuel are saved through 2025
- ❑ Those savings are only modestly influenced by potential stringency reductions, should they be deemed appropriate, such that:
  - ✓ If the slope rises by 1% annually after 2021, that yields more than 97% of the fuel savings through 2025
  - ✓ If the slope rises by 2% annually after 2021, that yields 98% of the savings
  - ✓ If the slope rises by 3% annually after 2021, that yields 99% of the savings

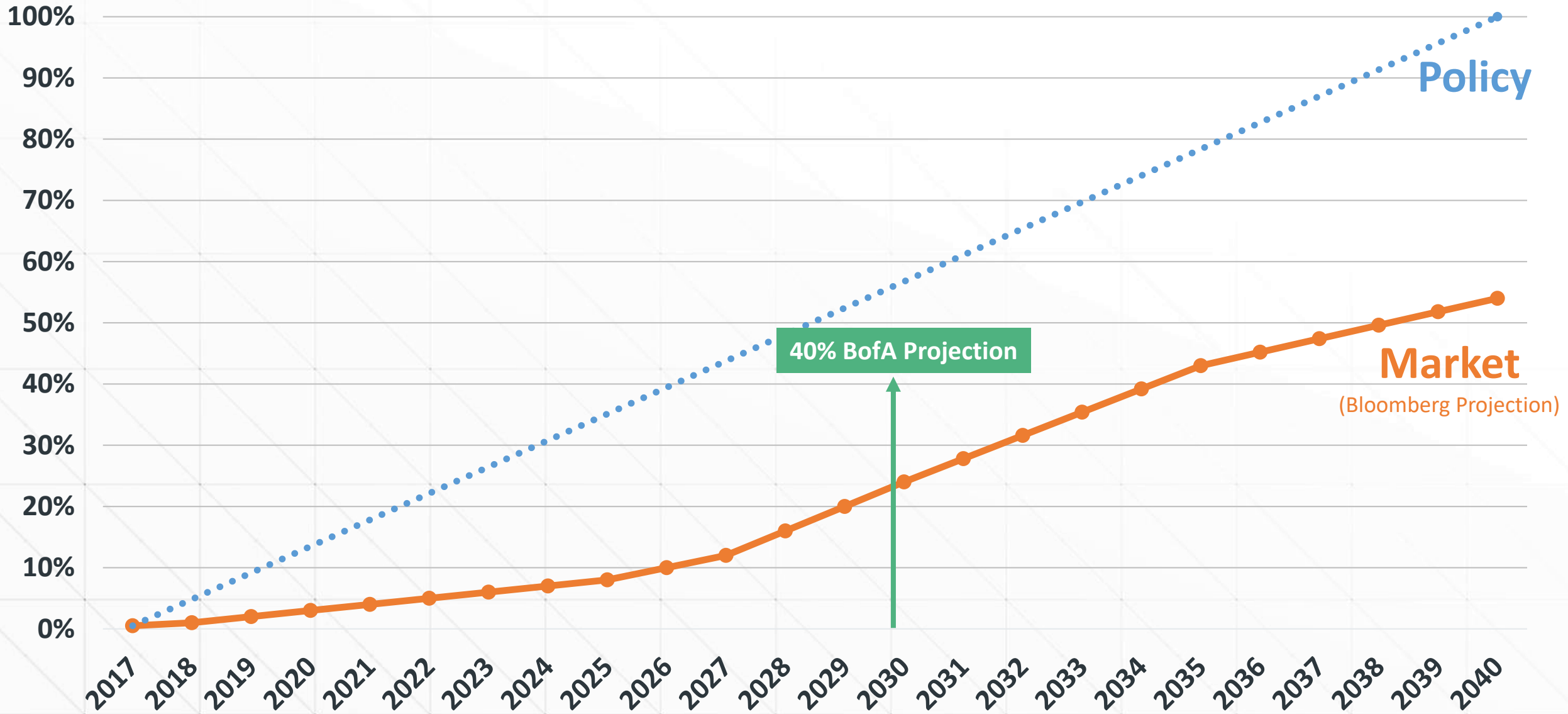
# Illustrative Fuel Savings Through 2025

	Gallons (billions)	% of NHTSA Savings as Proposed
<b>NHTSA as proposed <u>through 2025</u></b> (4.7% per year average)	<b>179.2</b>	
<b>2021 +1% increase per year</b>	<b>175.2</b>	<b>97+%</b>
<b>2021 +2% increase per year</b>	<b>176.3</b>	<b>98 %</b>
<b>2021 +3% increase per year</b>	<b>177.4</b>	<b>99 %</b>

# Policymakers 2040 Electrification Goal Does Not Match Market Trend

- ❑ Some policymakers support the idea that all new vehicles sold in 2040 should be pure electrics
- ❑ Bank of America projects EV penetration at 40% in 2030 while Bloomberg estimated recently that the market of new cars sold will hit about 55% electric in 2040, a substantial increase over current sales (about 1%) but a far cry from a monopoly on new sales
- ❑ The industry believes there will be an inflection point after which there will be a much higher adoption rate of electric and other zero emission vehicles, but nobody knows when or how uniform that will be
- ❑ The challenge of course - whether it's the CAFE program or standards for the sale of electric vehicles - is what should be done when market sales – a function of consumer choice – do not match the aspirations of planners
- ❑ This challenge is particularly difficult when public policy choices regarding tax credits, infrastructure development and other incentives to support electrification don't materialize

# Electrification: Policy v Market

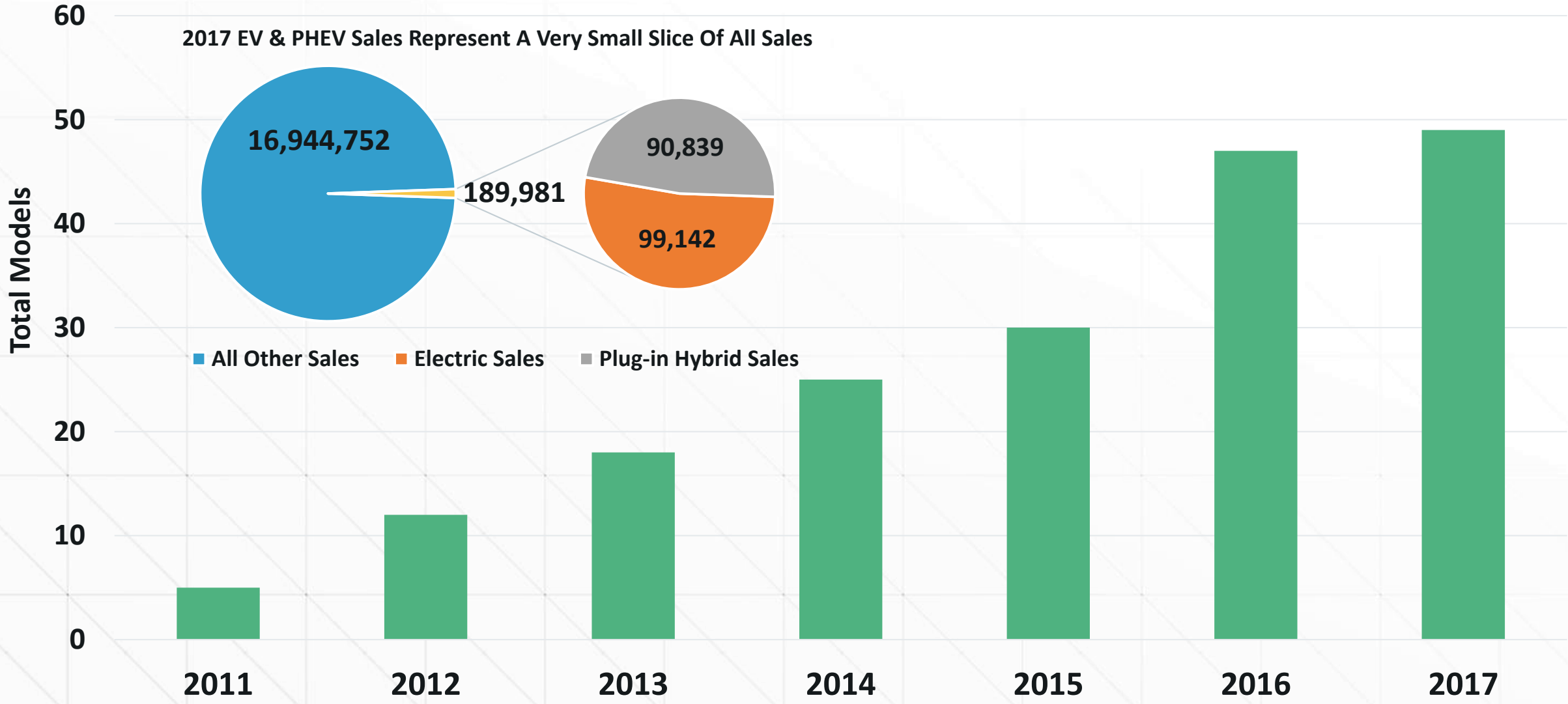


# More EV Options For Consumers

- ❑ The auto industry has invested billions of dollars in powertrain R&D and those dollars are bearing fruit in the number of EV models now in dealer showrooms
- ❑ As recently as 2012, there were fewer than 5 options; today there are 30 fully electric vehicles and 19 PHEVs on sale
- ❑ More models are in development and coming to market soon
- ❑ That said, in a market that generated 17 million units sold in 2017, only about 100,000 – or less than 1% of total sales -- were EVs
- ❑ While 100,000 units represent a doubling of sales from the low base of 2013, the growth rate has not yet taken off



# Total Electric And Plug-in Hybrid Vehicle Sales And Model Availability: 2011 - 2017



Source: Wards Automotive

# Outside of California, EV Sales are Tiny

- ❑ The auto industry not only has to meet the CAFE (NHTSA) and GHG (EPA and California) standards, but also a separate requirement in California and 9 other states to sell EVs - This requirement is referred to generally as the ZEV (Zero Emission Vehicle) Mandate
- ❑ The good news is that over the past five years, EV sales have almost doubled
- ❑ The bad news is that even so, EV sales nationally only constitute a miniscule 1% of all sales
- ❑ California absolutely leads the pack – doubling since 2013 to nearly 5% of new sales
- ❑ But the 177 states, those states that follow California’s requirement to sell EVs, are NOT selling EVs remotely close to California’s level and that is a huge problem, because those states demand the same level of sales and the ZEV Mandate requirement ramps up every year to 15% in 2025
- ❑ Part of the challenge in those 177 states is culture; California is somewhat distinctive in its pervasive commitment to go green- - but there are other inhibitors too in these 177 states that include terrain, weather, a lack of supporting infrastructure and fewer direct and indirect state incentives
- ❑ For more information, please see:  
<https://autoalliance.org/energy-environment/state-electric-vehicle-mandate/>

# ZEV Sales as a Percentage of Total Sales

State and Local Governments Not Leading

		California	177 States	Non-177	TOTAL
2013	Overall	2.30	0.56	0.30	0.58
	Government	2.43	0.32	0.20	0.41
2014	Overall	3.20	0.51	0.37	0.72
	Government	2.65	0.62	0.30	0.57
2015	Overall	3.07	0.49	0.30	0.68
	Government	3.17	0.98	0.39	0.72
2016	Overall	3.58	0.73	0.42	0.85
	Government	3.60	1.56	0.29	0.77
2017	Overall	4.57	1.03	0.44	1.07
	Government	4.11	2.08	0.54	1.22

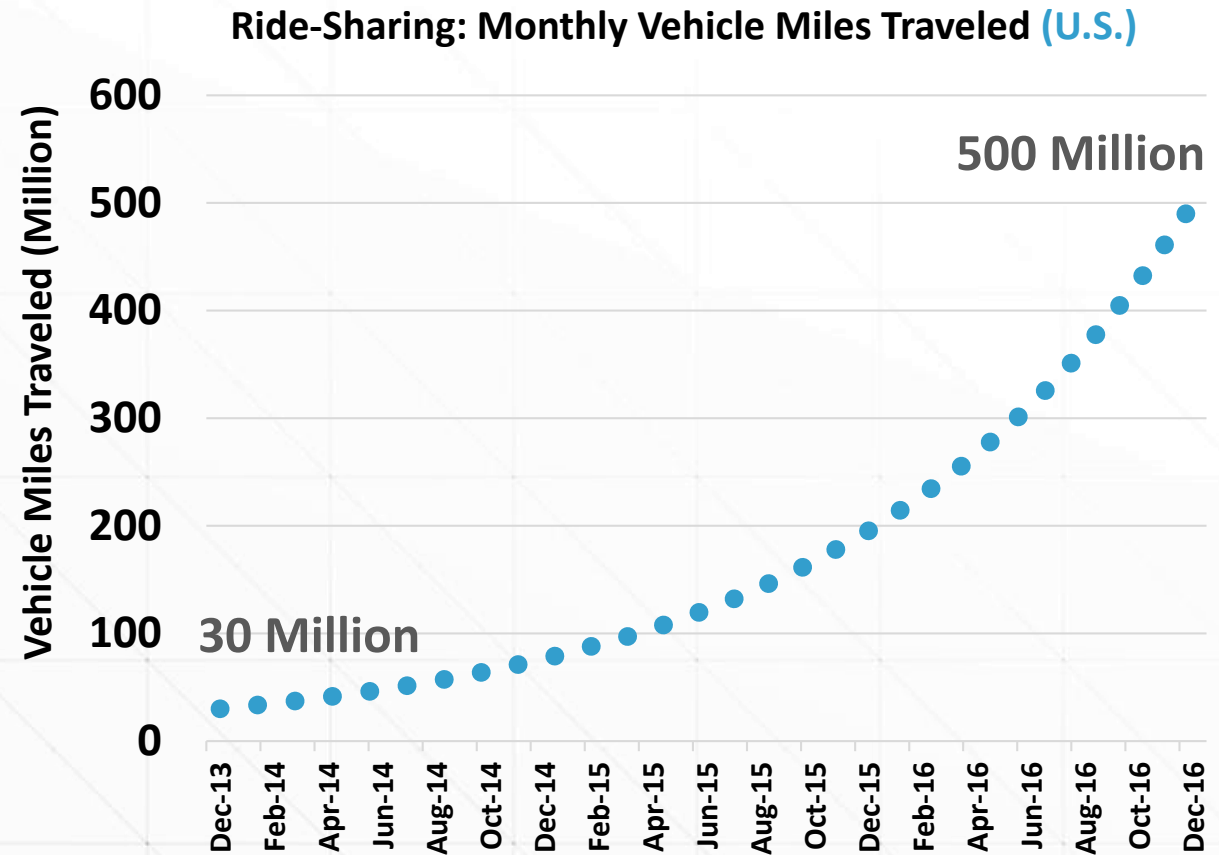
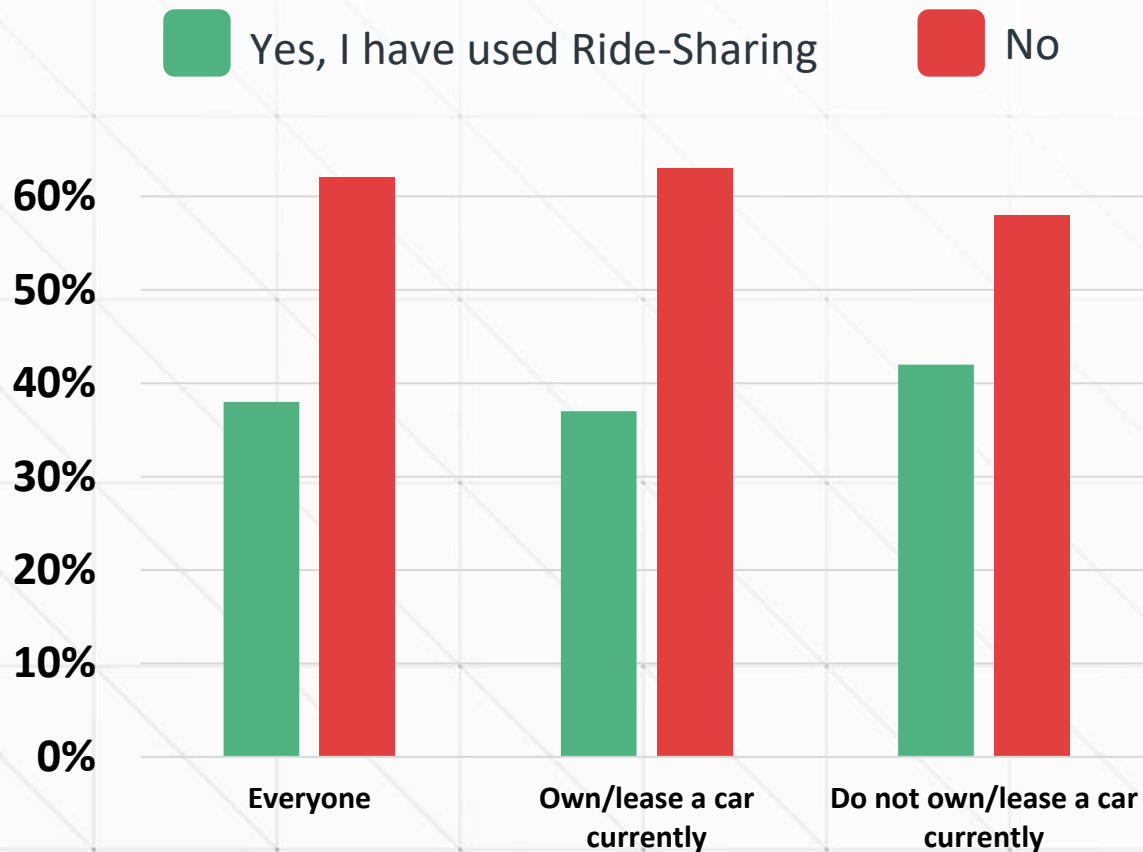
# Ride-Sharing is Changing Mobility Quickly

- ❑ Ride-Sharing is growing dramatically and still enjoys enormous upside expansion opportunities
- ❑ About 60% of the population has not yet tried Uber, Lyft or a similar service
- ❑ The younger you are, the more likely you are to be an active user of these services
- ❑ Monthly VMT (vehicle miles traveled) has risen from 30 million at the end of 2013 to an estimated 500 million at the end of 2016
- ❑ Ride-Sharing ultimately will reduce ownership rates; the question for which only time will tell is to what degree
- ❑ In the case of music, for instance, the transition from ownership to access happened quickly and virtually completely
- ❑ Mobility is different for a range of reasons (including joy of driving, functionality needs, desire for immediacy and control, etc.) but at the very least, the share of VMT will grow

# Ride-Sharing Usage and VMT

## U.S. Ride-Sharing Highlights

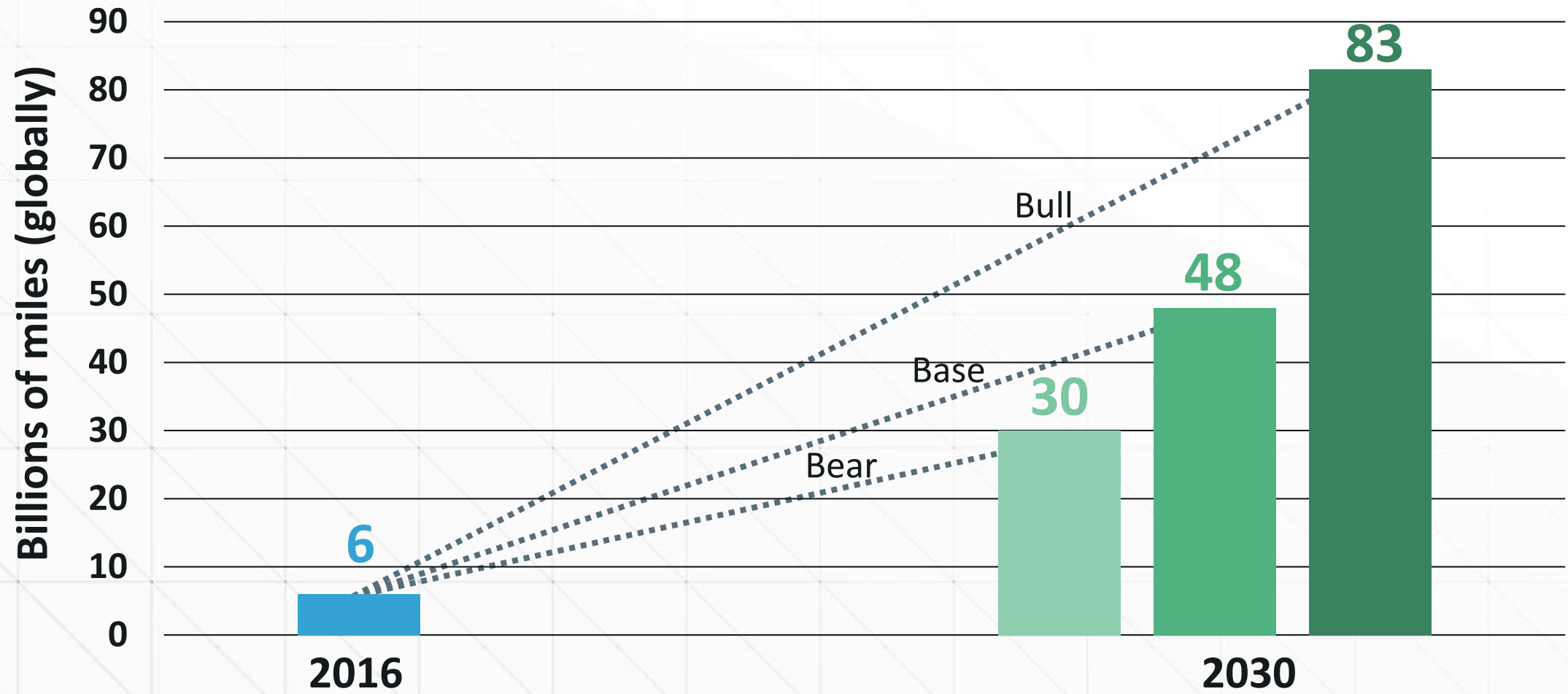
- Revenue in the "Ride-Sharing" segment amounted to \$11.8 billion in 2017
- Revenue is expected to show an annual growth rate of 19%



# Over the Next Quarter Century, Ride-Sharing Usage Grows Dramatically

- ❑ Goldman Sachs recently analyzed Ride-Sharing globally
- ❑ In 2016, Ride-Sharing accounted for an impressive 6 billion miles traveled
- ❑ Goldman Sachs makes three estimates of Ride-Sharing in 2030 – Bear, Base and Bull
  - ✓ Low estimate (Bear) shows a five times growth rate to 30 billion miles
  - ✓ Mid estimate (Base) shows an eight times growth rate to 48 billion miles
  - ✓ High estimate (Bull) shows a nearly fourteen times growth rate to 83 billion miles
- ❑ For some undetermined period of time, we will see BOTH an increase in Ride-Sharing miles AND an increase in the sale of units
- ❑ Presumably, at some point, ride-sharing will impact unit sales, but analysts disagree both on degree and timing

# Ride-Sharing Trips Projection

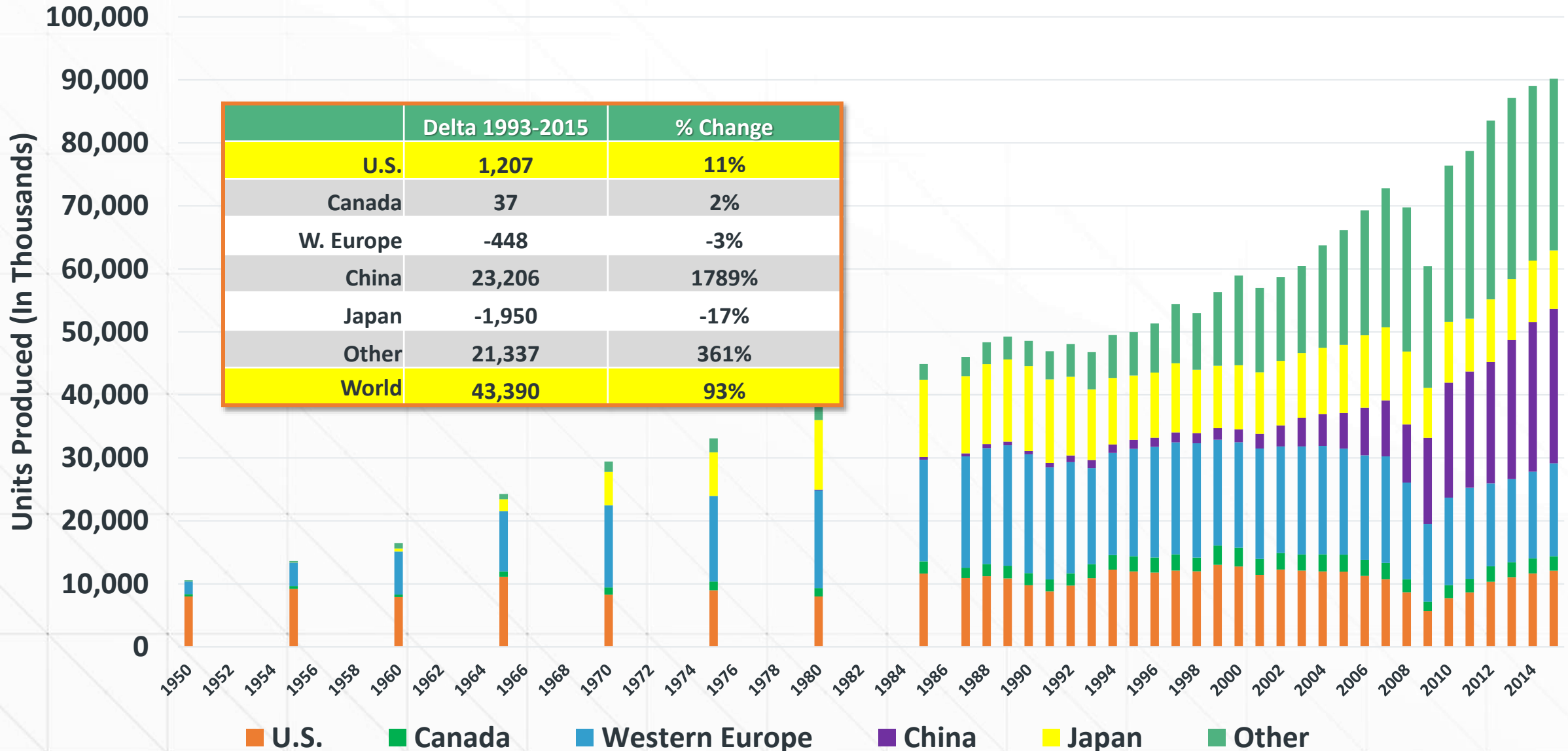


# The Demand for Ownership Continues to Grow, Driven by Developing Markets

- ❑ From 1950 to today, car production worldwide has risen from 10 million units to nearly 100 million units
- ❑ In 1950, most global production took place in the U.S.
- ❑ Over the decades, significant production was then added in Western Europe, Japan and now China
- ❑ The U.S. is now an important but not dominant producer
- ❑ During the last quarter century, production in the U.S., Europe and Japan has been relatively stable, while growth primarily is taking place in China and other developing markets
- ❑ Despite ride-sharing advances, global ownership in units is likely to grow for some time



# Global Market Production Over Time

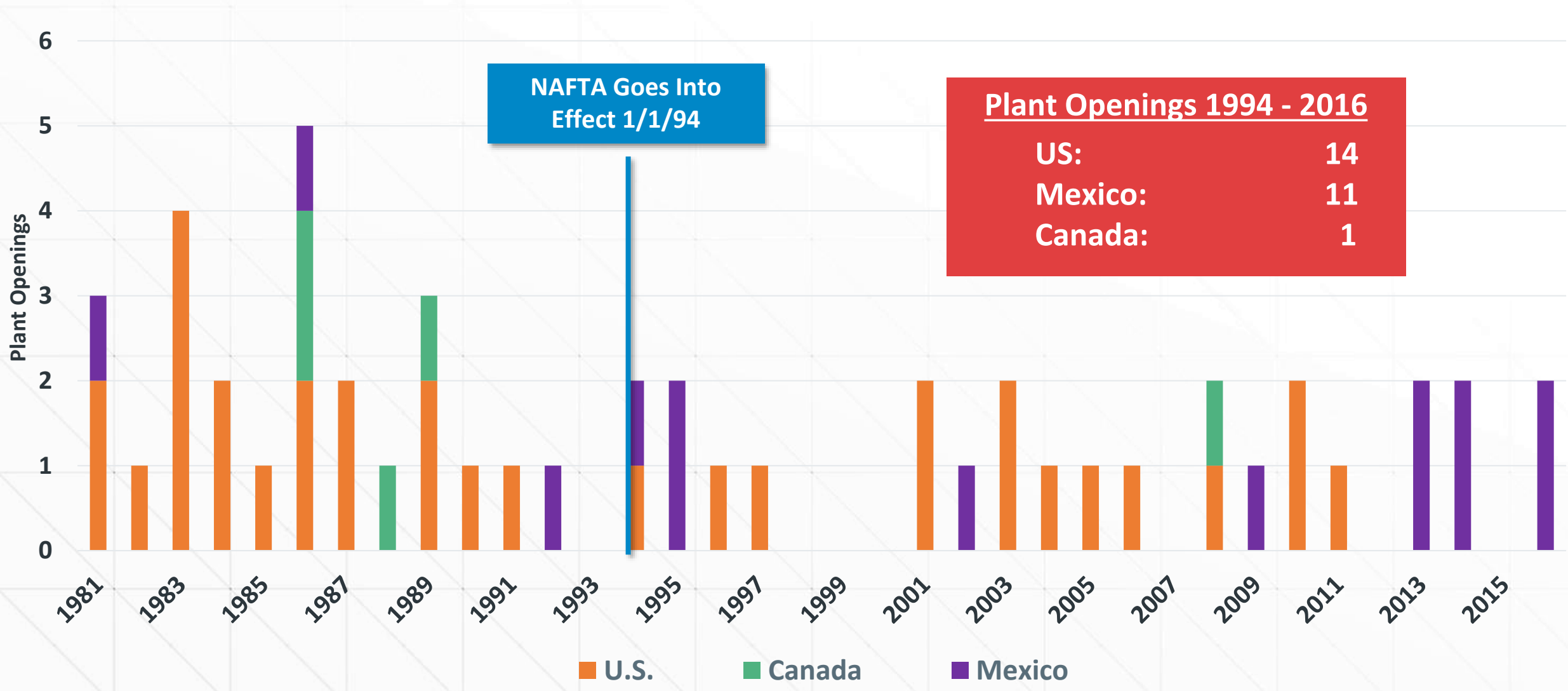


# New Assembly Plants in the NAFTA Region

## Pre and Post Agreement

- ❑ From 1981 until NAFTA took effect, 25 new plants were added in the NAFTA region - 18 in the U.S., 4 in Canada and 3 in Mexico
- ❑ Since the signing of NAFTA, 26 new plants have become operational - 14 in the U.S., 11 in Mexico and 1 in Canada
- ❑ Two more plants are underway in the U.S. (Volvo - South Carolina and Toyota/Mazda - Alabama)
- ❑ During this window of time, there has been significant production capacity added around the world, as global companies compete aggressively to meet rising demand
- ❑ Plants in Mexico and Canada rely a great deal on U.S. manufacturing suppliers
- ❑ The industry is united in the view that NAFTA, while in need of an update to meet the realities of the digital world, is fundamentally consistent with a strong automotive sector in the United States

# Plant Openings in NAFTA Region Since 1981

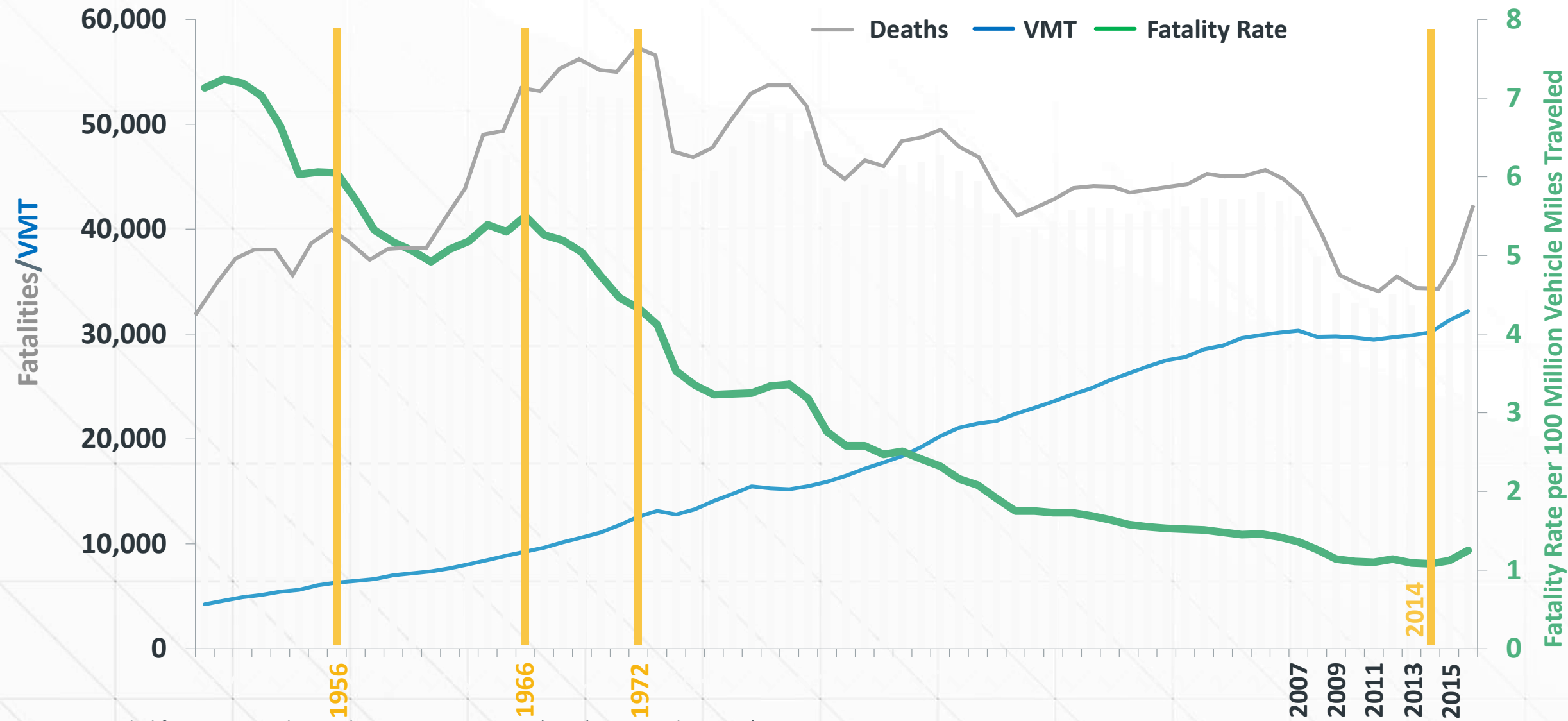


Source: Ward's Automotive

# Highway Fatalities Since 1950

- ❑ Highway fatalities today are lower than they were in the 1950s, despite a vastly increased population and nearly five times the vehicle miles traveled
- ❑ The peak in fatalities occurred in 1972 when the population was only about 60% of today
- ❑ The progress that occurred in recent decades was recognized by the Centers for Disease Control as one of the great public health success stories of the century
- ❑ Most of the progress achieved has been the result of two factors:
  - ✓ Behavioral improvements (less drunk driving and more frequent use of seatbelts)
  - ✓ Improved “crash worthiness” of vehicles
- ❑ Future improvements will come from new technologies that seek to reduce the severity of accidents or prevent crashes from happening altogether and that’s why driver assists, and ultimately autonomy, are critical to better outcomes

# Highway Fatalities by Year



Figures compiled from 2015 Fatality Analysis Reporting System (FARS) at [www.nhtsa.gov/FARS](http://www.nhtsa.gov/FARS)

# Causes of Highway Fatalities: Looking at the 2016 NHTSA Data

- ❑ 37,461 people were lost on the roads of America during 2016; 96.6% of those fatalities were related to human error, weather, road conditions or other factors; vehicle defects were not related
- ❑ 1% of those fatalities were related to defects in motorcycles, non-light duty trucks and miscellaneous vehicles
- ❑ Thus only 2.4% of all fatalities (910) were related to possible defects or maintenance in autos
- ❑ Of those 910, nearly 62% were related to improper tire maintenance – meaning less than 1% of fatalities (350) related to the possibility of a vehicle defect
- ❑ Of those 350, 19 fatalities involved vehicles MY 2013 or later and 5 of those involved impaired drivers and 9 were unbelted
- ❑ 77% of the 350 involved vehicles MY 2006 or earlier (2006 is about the average age of a car today)
- ❑ Age of cars is a huge factor in this limited point of the pyramid; fleet turnover is therefore crucial

# Causes of Highway Fatalities

**37,461: 2016 Total Fatalities from Motor Vehicle Traffic Crashes**

**96.6% (36,185)**

**Fatalities Not Related to Possible Vehicle Defects**

**1% (366)**

**Fatalities Related to Possible Defects in Motorcycles, Medium-Heavy Duty Trucks and Misc. Vehicles**

**2.4% (910)**

**Fatalities Related to Possible Defects or Maintenance in Light Duty Vehicles**

- 62% of fatalities from a vehicle defect were the result of tire maintenance



(zoom)

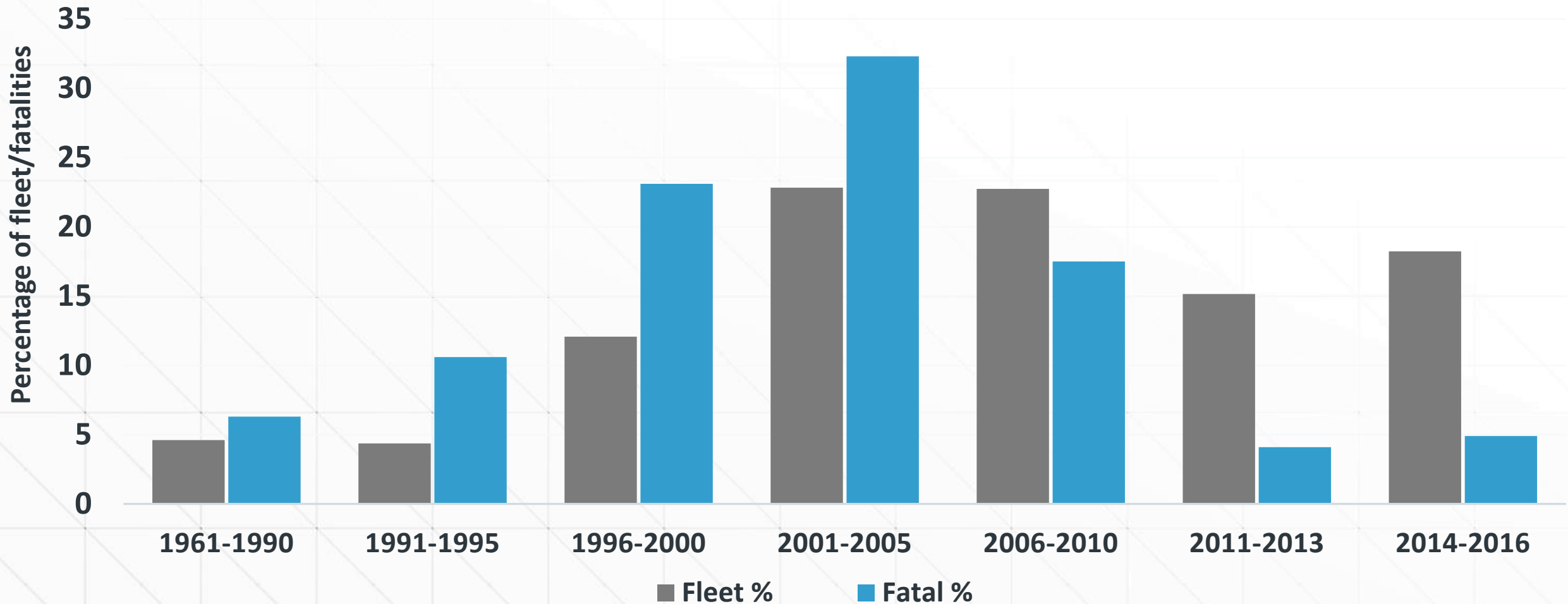
- About 2/3 of the 910 resulted from maintenance faults
- Thus less than 1% of fatalities in LDV are defect-related
- Huge correlation to age of cars

# Possible Defect Related Fatalities By Model Year

- ❑ Looking at NHTSA data, the relationship between outcomes and age of vehicle is striking
- ❑ More specifically, the next slide shows the percentage of fatalities related to possible defects compared to the percentage of the overall fleet for groups of model years
- ❑ 21% of the fleet in 2016 were from MY 2000 or earlier; that 21% represented 40% of all fatalities related to possible defects
- ❑ 45% of the fleet in 2016 were from MY 2001-2010; that 45% represented 50% of all fatalities related to possible defects
- ❑ 33% of the fleet in 2016 were from MY 2011 or newer; that 33% represented 9% of all fatalities related to possible defects
- ❑ Increasing the rate of fleet turnover will save lives



# U.S. Auto Fleet and 2016 Fatalities Connected To Possible Defects/Maintenance Issues By Model Year





# The Consumer IS King

*Opinions – Attitudes – Preferences*

Survey Data from Alliance Index, Morning Consult and AudienceNet

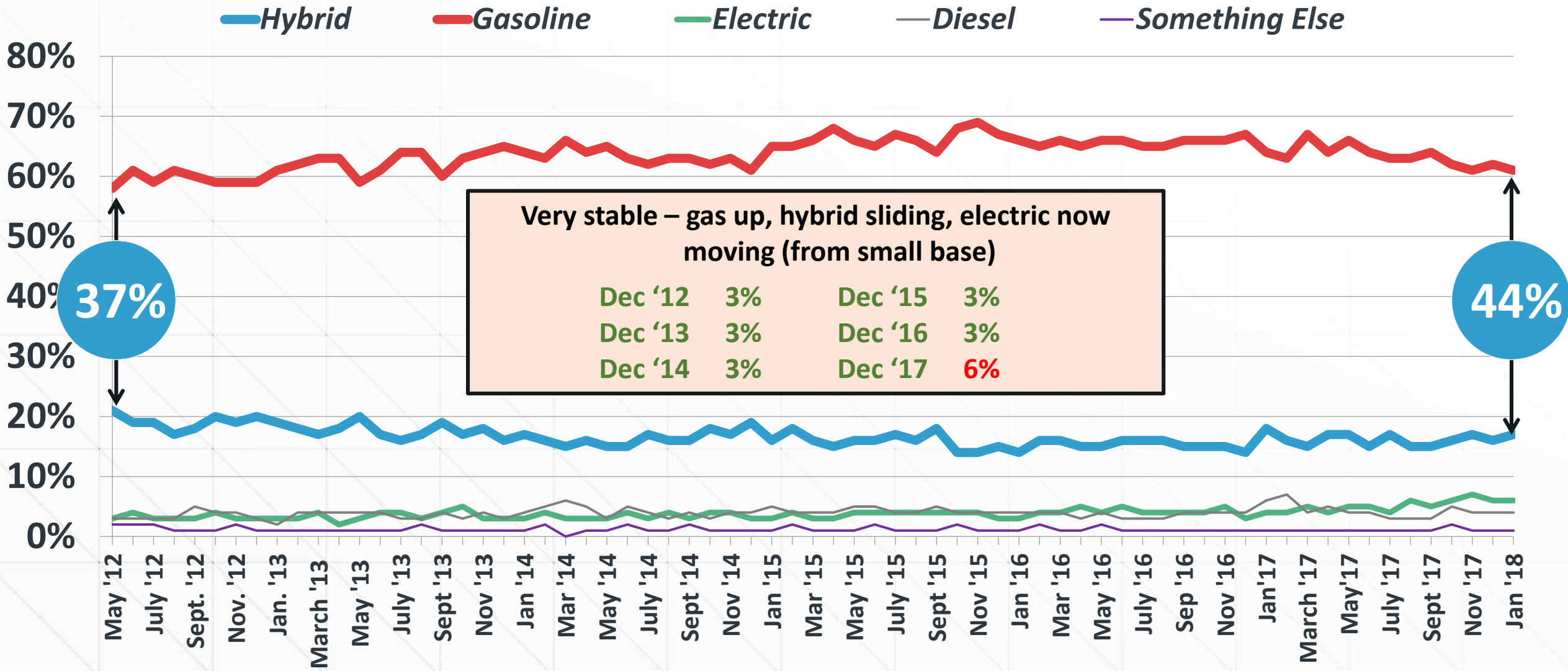
A close-up photograph of a hand holding a red gas pump nozzle. The nozzle is the central focus, with a black handle and a silver nozzle tip. The background is a blurred gas station scene with a blue sky and green foliage. A green rectangular banner is overlaid across the middle of the image, containing the text "FUEL ECONOMY" in white, bold, uppercase letters.

**FUEL ECONOMY**

# Car Buyers Remain Highly Interested in Gas

- ❑ Since May of 2012, on a nightly basis, we have asked car buyers what kind of powertrain they want in their next car
- ❑ This is an “aspirational” question – what they say they want to do rather than recording what they did in their last purchase and it does not necessarily line up with actual practice, though it does suggest what people are thinking about
- ❑ Early on, we expected to see a material jump in the aspiration to buy alternative powertrains
- ❑ That has not happened; rather, interest in gas engines is actually higher than it was nearly six years ago
- ❑ This unanticipated outcome likely is the case for two reasons:
  - ✓ The price of gas dropped
  - ✓ Fuel efficiency gains yielded even more gas savings, especially when you consider the average person is trading in a car that is around a decade old
- ❑ In the early days of this question, “hybrids” were essentially seen as a proxy for all alternative powertrains
- ❑ That is beginning to change; in recent months we finally have seen interest in EVs rise

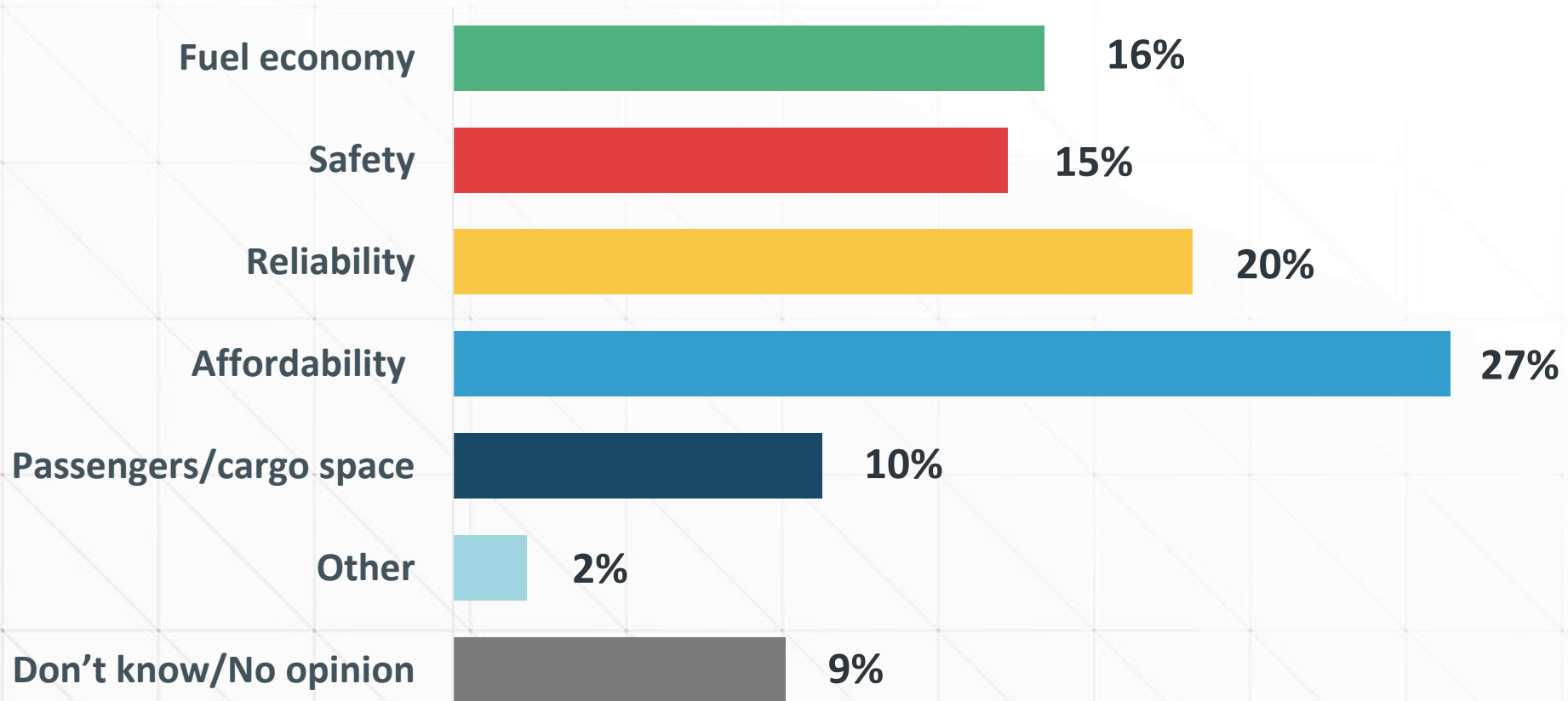
# What Type of Engine Will Your Next Vehicle Most Likely Be Powered By?



# Fuel Economy is NOT the Key Factor Determining Vehicle Choice

- ❑ Especially in today's low gas price environment, Affordability (27%) and Reliability (20%) are more important factors than Fuel Economy when choosing a car to buy
- ❑ Safety (15%) is essentially tied with Fuel Economy (16%)
- ❑ The average car is older than 11 years; when it is turned in for a like model consumers are experiencing roughly a 25% increase in fuel efficiency, coupled with lower gas prices – presenting a double win from their perspective
- ❑ If and when gas prices rise materially, we could expect the importance of fuel economy to move up as well
- ❑ But there is NO evidence that gas prices will soon rise to levels that will rearrange the priorities of consumers
- ❑ One CEO of a global petroleum company described the energy market as one characterized by “forever low” prices for gas
- ❑ Low gas prices coupled with increasingly efficient engines in new cars are satisfying consumer hopes for fuel savings

# *Thinking about the next vehicle you buy, which single factor will be the most important to your purchase?*

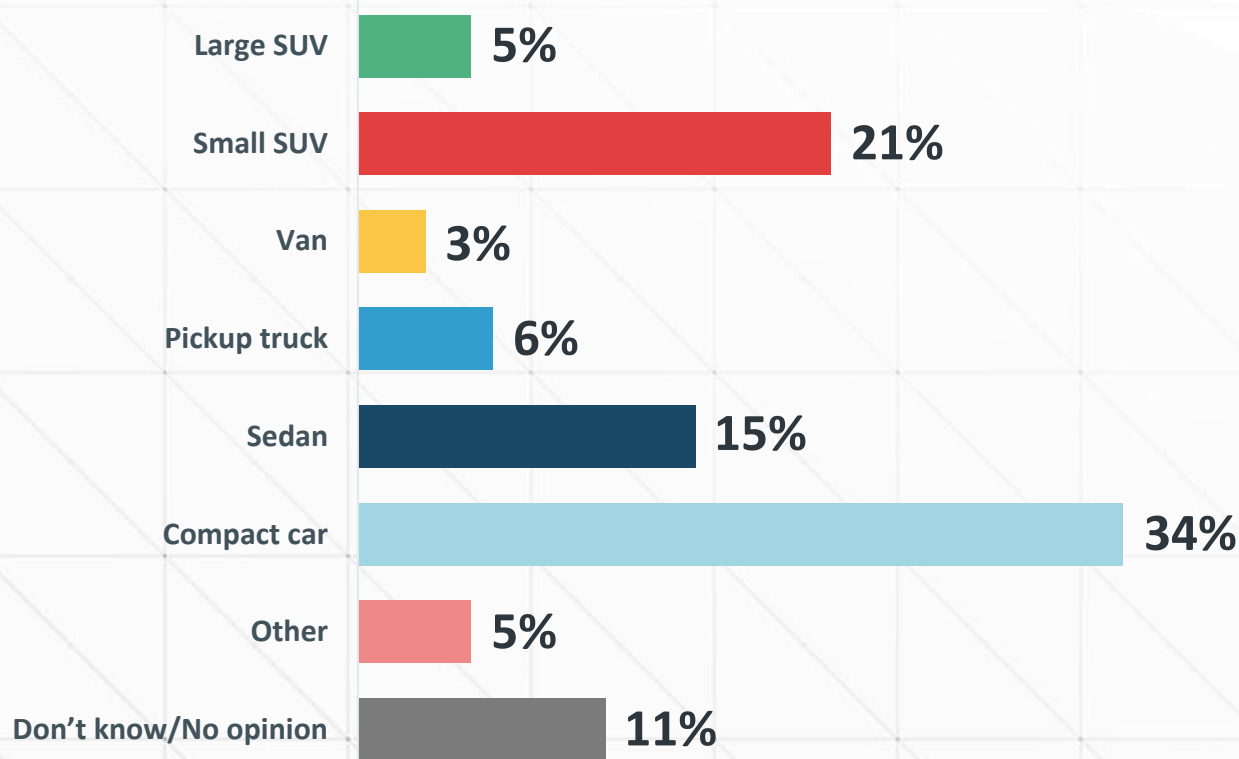


# Expectations About Gas Prices are Key

- ❑ Consumers respond to gas prices in a very big way
- ❑ At \$2.00 a gallon, consumers choose SUVs, vans and pick-ups over cars and sedans by a net margin of 13 points
- ❑ At \$4.00 a gallon, consumers choose cars and sedans over SUVs, vans and pick-ups by a net margin of 14 points – so there is a net 27 point swing
- ❑ By any definition, that is a highly significant, even massive, shift in buying behavior linked to a single factor
- ❑ Given the sensitivity or relevance of gas prices to buying decisions, it is vital to assess what consumers perceive about the future of gas prices

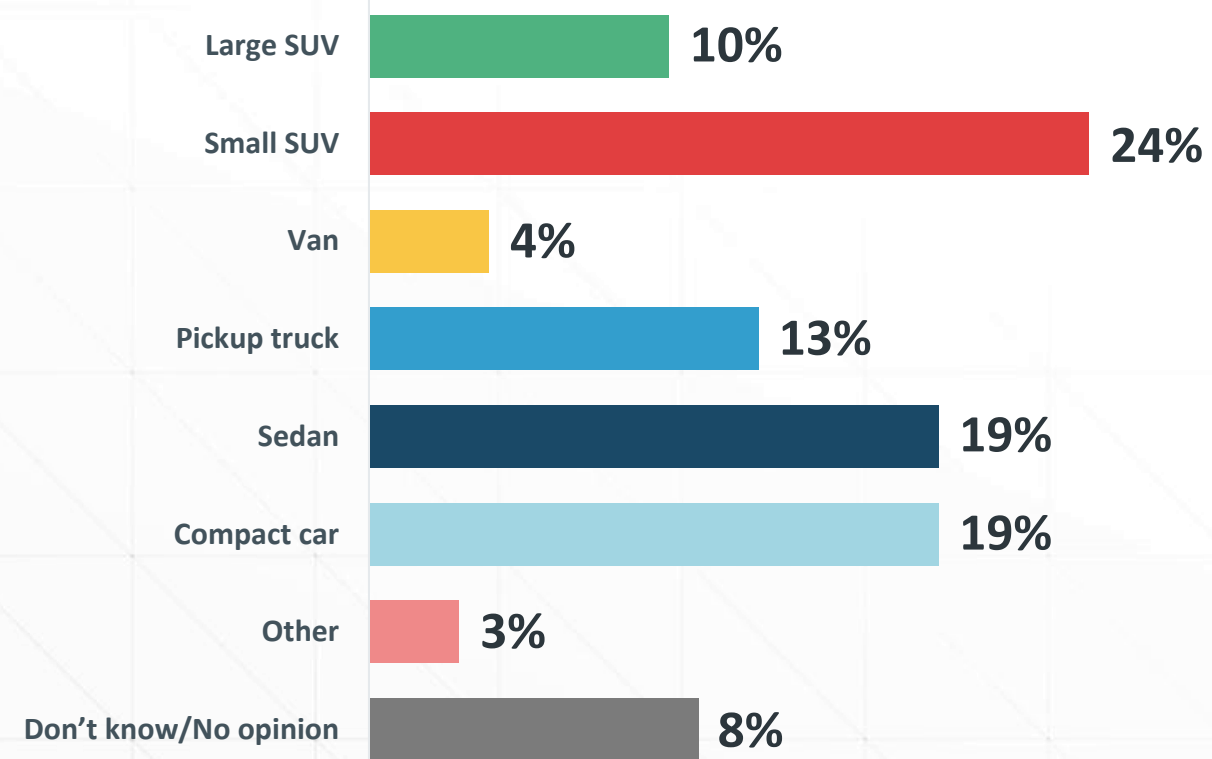


If you were going to buy a new vehicle today and **gas cost \$4.00 a gallon**, which of the following would you buy?



**Car/Sedan +14**

If you were going to buy a new vehicle today and **gas cost \$2.00 a gallon**, which of the following would you buy?



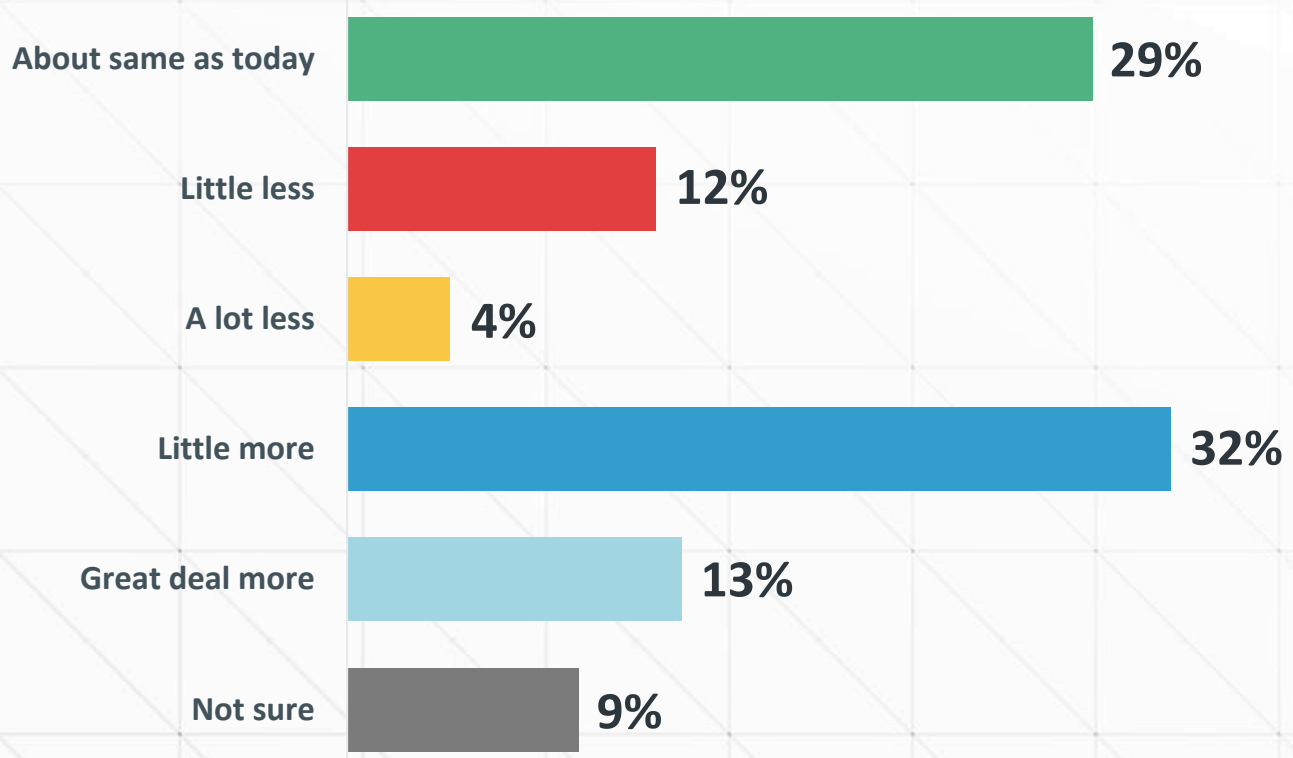
**Truck +13**

# Consumers are NOT Expecting a Big Increase in Gas Costs

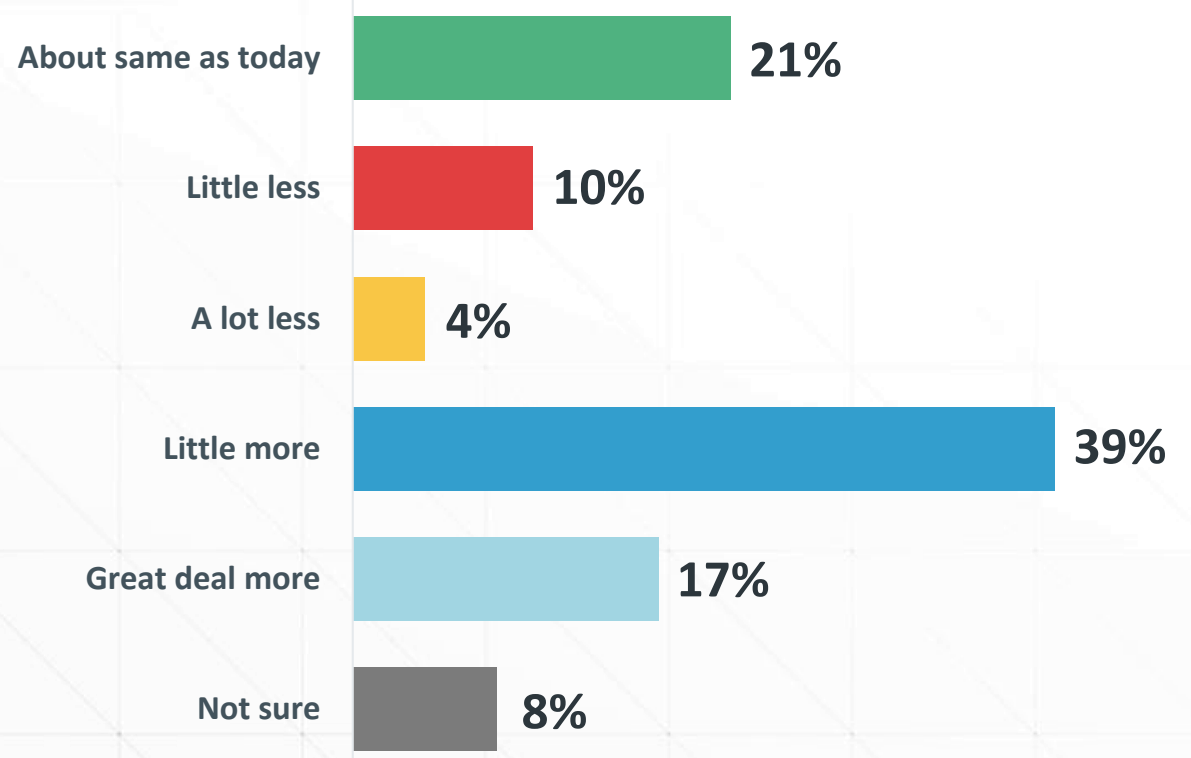
- We split sampled this question to see how consumers viewed gas prices change over a year versus over five years
- The results were nearly identical
- Whether the horizon is a year from now or five years from now, most consumers think that gas prices will not move very much
- A year from now, 77% said gas prices would be lower, the same or slightly up
- Five years from now, 74% said gas prices would be lower, the same or slightly up
- Five years from now, only 1 in 6 expect gas prices to be a “great deal more”

**A year from now** will the cost of gasoline be about the same as it is today, a little less than today, a lot less than today, a little more than today, or a great deal more than today

**Five years from now** will the cost of gasoline be about the same as it is today, a little less than today, a lot less than today, a little more than today, or a great deal more than today?



Status Quo = 77  
Great Deal More = 13

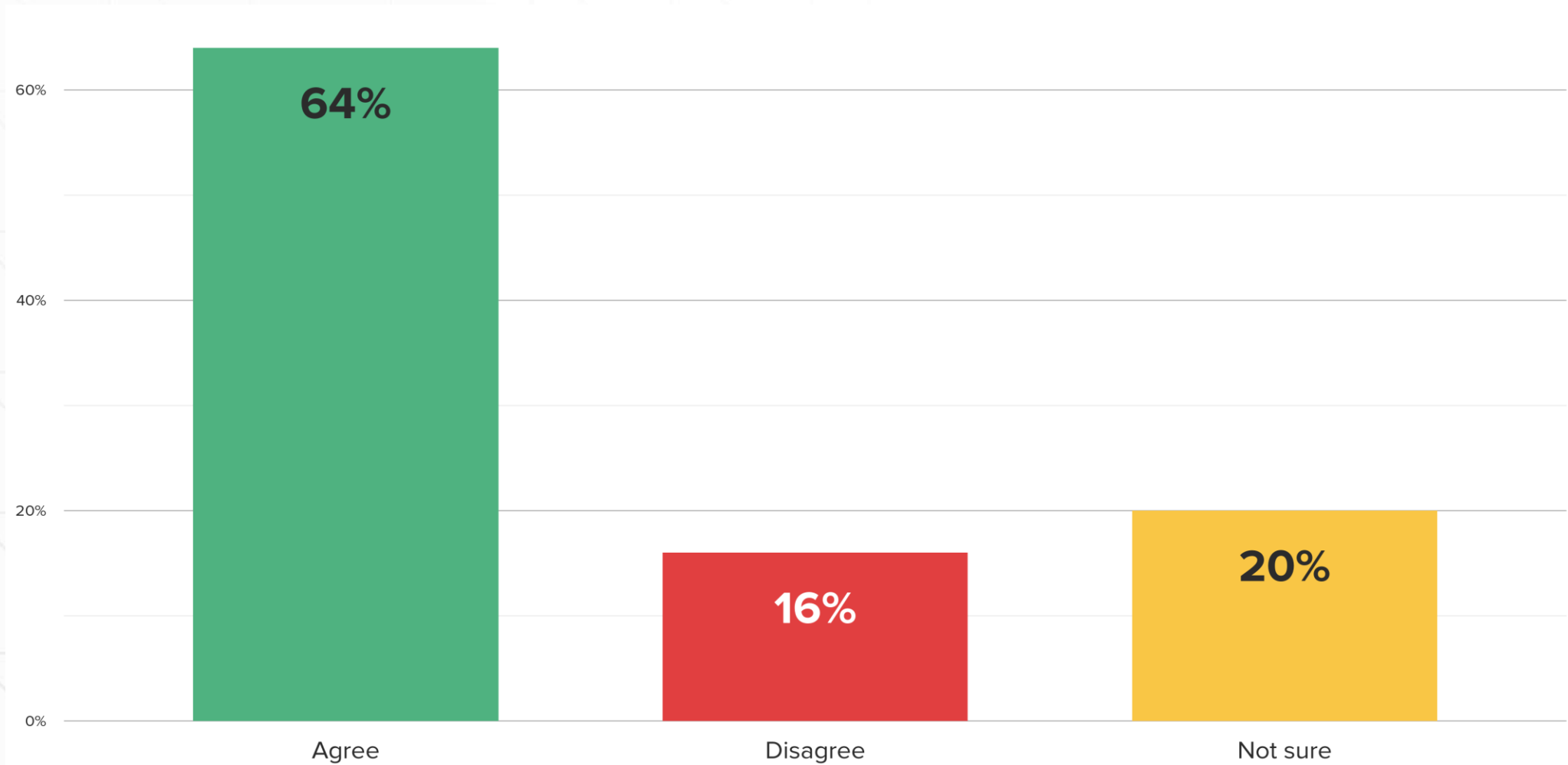


Status Quo = 74  
Great Deal More = 17

# “Conceptually” - Fuel Efficiency Standards are Popular

- ❑ It is perfectly rational for people to favor increased fuel efficiency standards... and they do by good margins (4 to 1)
- ❑ Everyone likes the idea of fuel efficiency and we see this finding highlighted often by NGOs and others to argue there is public support for the highest possible standards
- ❑ But it is one of those facts that is nice but not compelling at the end of the day
- ❑ That’s because the question is a bit like asking if you would like to live in a big house on the ocean with acres of land and a beautiful swimming pool supported by a team of amazing household help
- ❑ For most, that’s an easy yes – until you introduce the question of cost.... And then you get a more meaningful measure of commitment that is more predictive of buying behavior

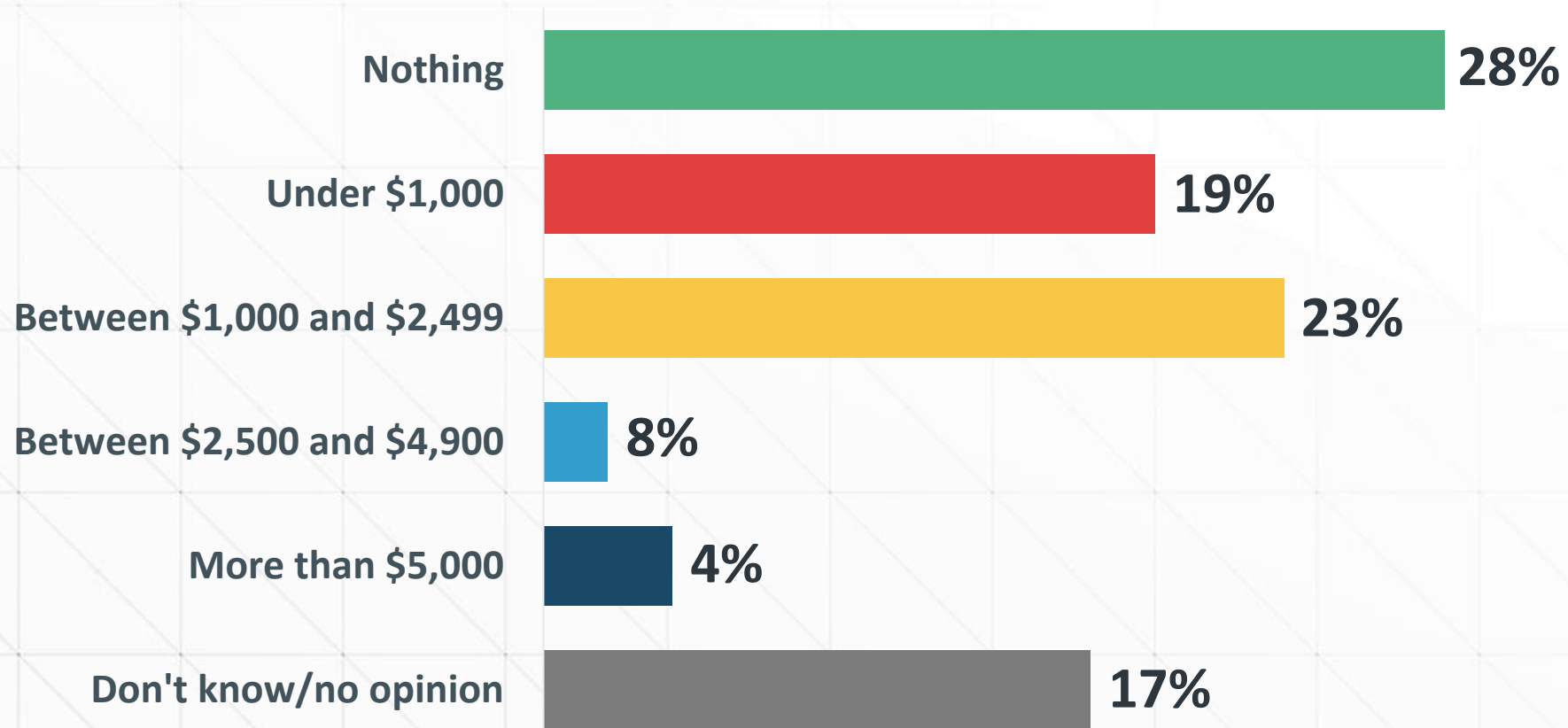
*The U.S. govt should continue to increase fuel efficiency standards and enforce them...*



# Limited Appetite to Pay for Fuel Efficiency

- ❑ Putting your money where your mouth is - that's a phrase we all know well because it so clearly indicates whether someone is serious about a position they espouse
- ❑ In this context, we see that more than half of those with an opinion (47% of 83%) would pay either nothing (28%) or under \$1000 (19%) to meet the standards
- ❑ Moreover, ONLY 12% would pay \$2500 or more to back up their position – and when you look at market behavior rather than polling data, the picture is even more bleak
- ❑ Younger people value fuel efficiency more than older people (32% of 18-29 would pay under \$1000, far fewer than the 56% of 65+ seniors who would pay under \$1000)
- ❑ While very few people are willing to pay more than \$2500, more Men (16%) than Women (10%) are willing to make a material investment for fuel efficiency
- ❑ Willingness to pay definitely correlates to party and ideology, but even Democrats and Liberals are reluctant to put up big dollars to pay for fuel efficiency

# *How much more are you willing to pay for a new car so it will meet the government's new fuel economy standards?*

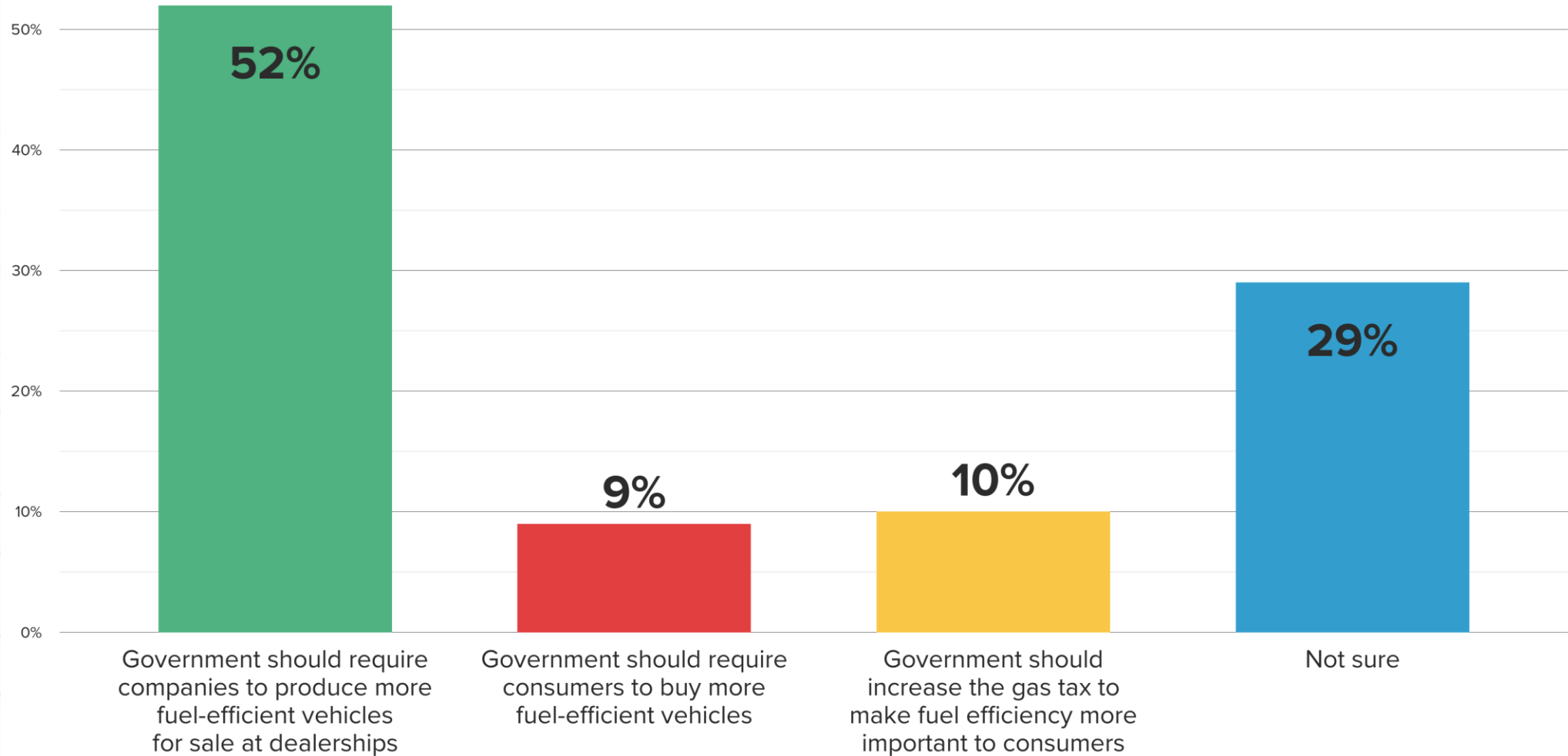


# A Production Mandate Makes More Sense to Most Than a Consumption Mandate or Higher Gas Taxes

- Almost a third of the respondents are not sure about the best way to get more fuel-efficient vehicles on the road
- But of those with an opinion, the overwhelming majority (52%) favor a production mandate over a consumption mandate (9%) or a gas tax (10%) to encourage the purchase of more fuel-efficient cars
- There are presently three different mandates on consumption in the U.S. marketplace
- That doesn't make sense to most people who think instead that if there is going to be a mandate, it would be better to require the production of more fuel-efficient vehicles (rather than consumption) and let the market work its will
- And, of course, in today's marketplace, manufacturers already are offering many high MPG and alternative powertrain options



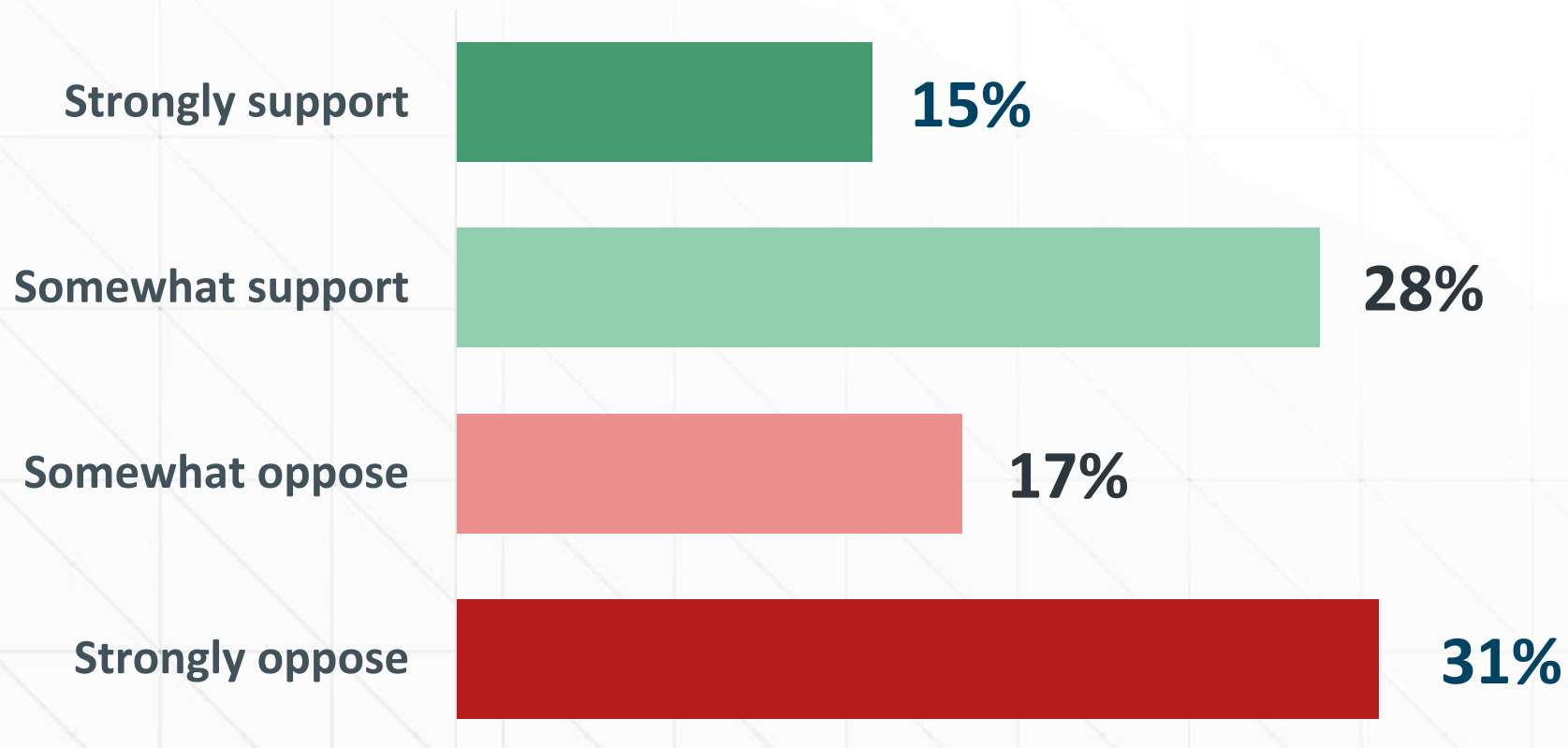
# *...the best way for the government to achieve the goal of having more fuel-efficient vehicles on the road*



# A Ban on Gas “in the Future” Looks Like a Close Call

- ❑ 48% oppose the ban (17% somewhat, 31% strongly) while 43% support it (28% somewhat, 15% strongly)
- ❑ Note the intensity of opposition (31%) is twice the intensity of support (15%)
- ❑ There also is a striking difference of opinion by party
  - ✓ Republicans oppose the ban 66 – 28%
  - ✓ Democrats support the ban 59 – 34%
- ❑ Men are against by 10 points while women are evenly split
- ❑ 18-29 favors the ban 58 - 32% while seniors 65+ oppose it 53 - 37%
- ❑ If the target date was near term or less nebulous, support likely would drop

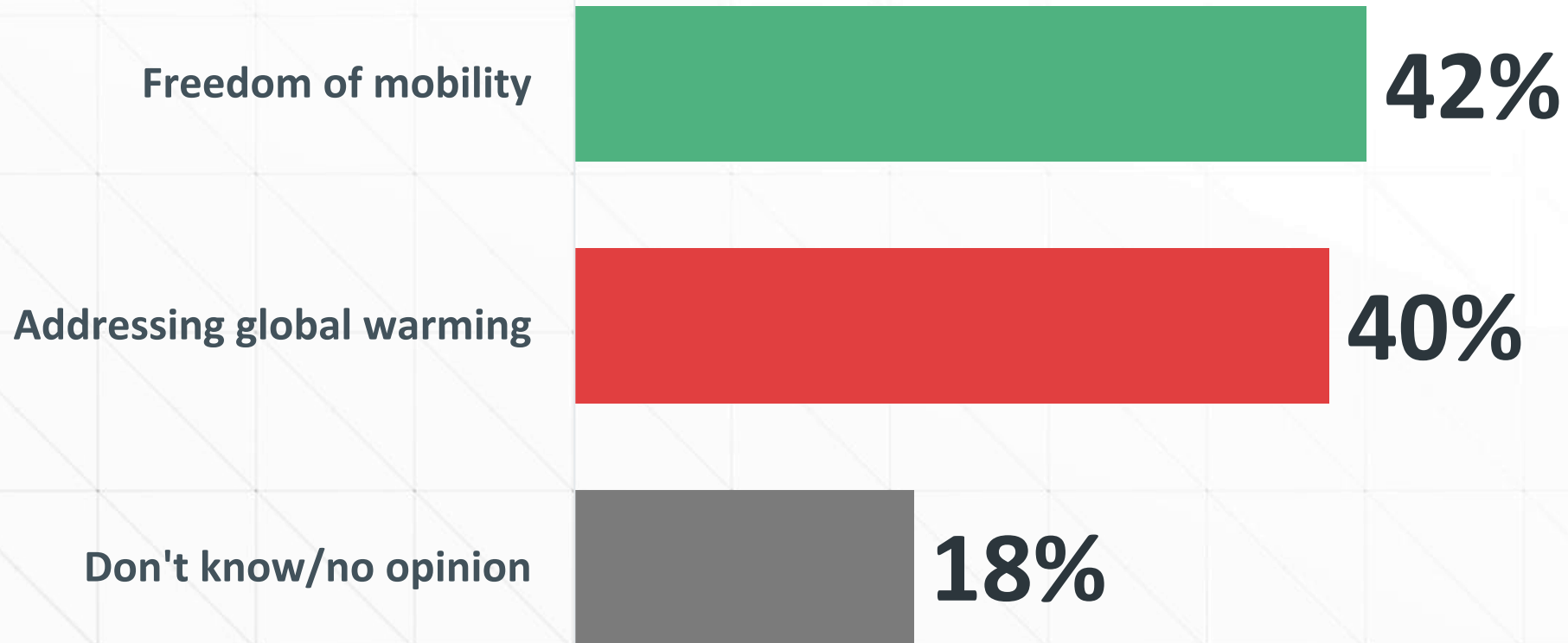
***Some countries around the world and states at home are proposing a ban on using gasoline & diesel-powered engines in the future. How much do you support this proposal?***



# Freedom of Mobility = Global Warming

- ❑ Freedom of mobility and climate are both important issues
- ❑ This question was designed to test how different segments of Americans reflect on these issues by asking them in essence to choose which is most important
- ❑ Net-Net, the answer is they are both prioritized similarly
- ❑ Car owners are more likely to choose mobility – as you might expect – than the sample of adults used in this particular survey
- ❑ When you peel the onion a bit, however, you see there are very different perspectives at work
- ❑ Republicans (59-25% for mobility) are far more likely to choose freedom of mobility while most Democrats choose global warming (57-26% for climate) – and there are generational and gender differences as well

# *As a society, what is more important, freedom of mobility or addressing global warming?*



# Fuel Economy

***“I would not pay more for higher fuel economy standards ... smaller cars are not always practical depending on family size or purpose of vehicle, i.e. towing, carrying big loads.” (Male, 50+)***





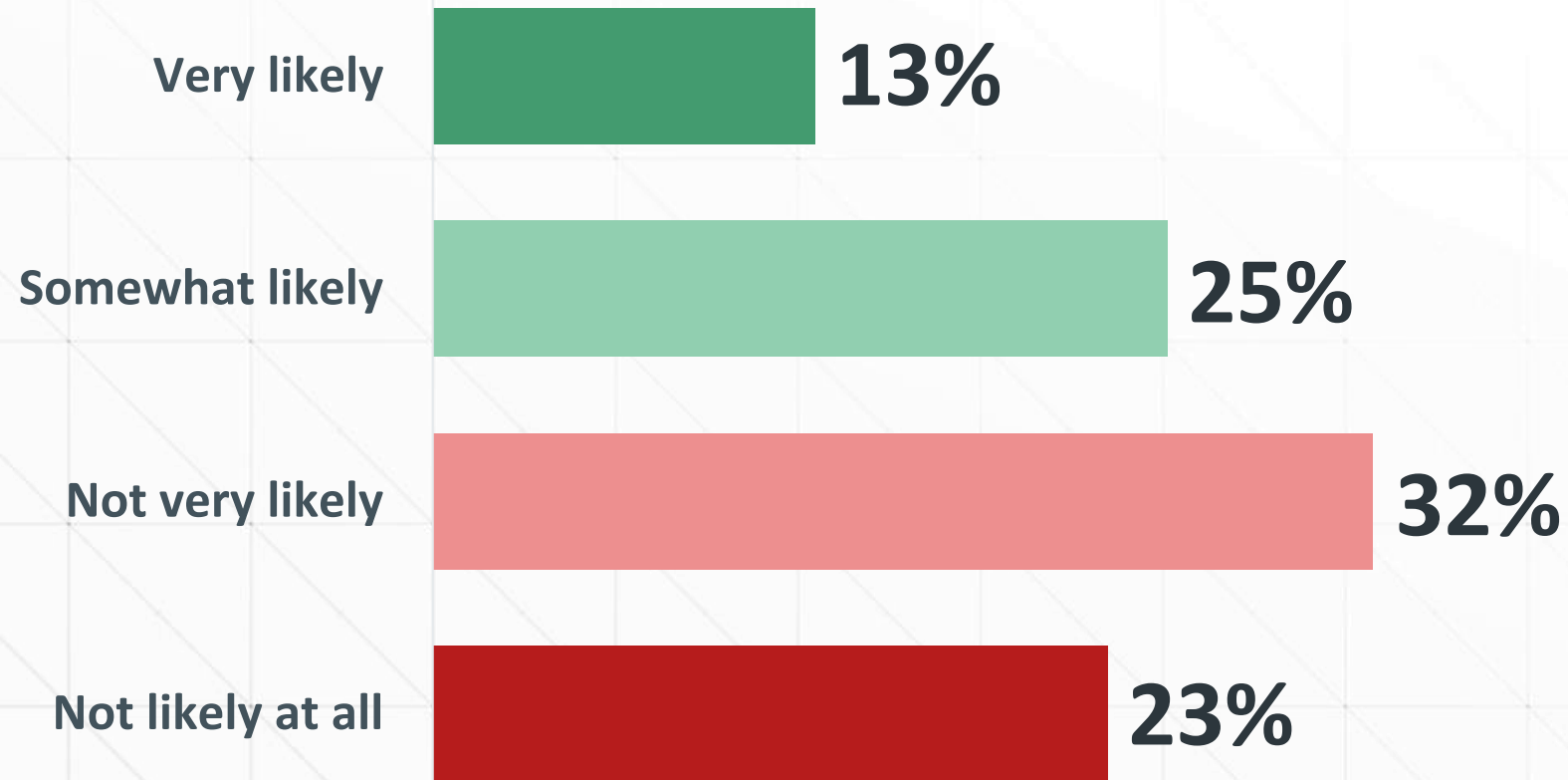
**ELECTRIFICATION**

# More Say They Will Consider EVs Than Actually Do

- ❑ 38% say they will “consider” purchasing an EV when they are next in the market for a new car with about a third of those saying they are “very likely” to do so
- ❑ There is an enormous gap between those who say they will look at such a purchase and those who actually decide to buy an EV, which is just about 1% in today’s market
- ❑ 55% say they are not likely to consider an EV
- ❑ While there are not major differences by gender on this question, there are significant differences by age and party
  - ✓ 18-29 year olds are open to considering an EV by 55 - 38% while 65+ seniors are not by 69 – 23%
  - ✓ Democrats are evenly split at 47% while Republicans are disinclined to go with EV by 69 – 26%



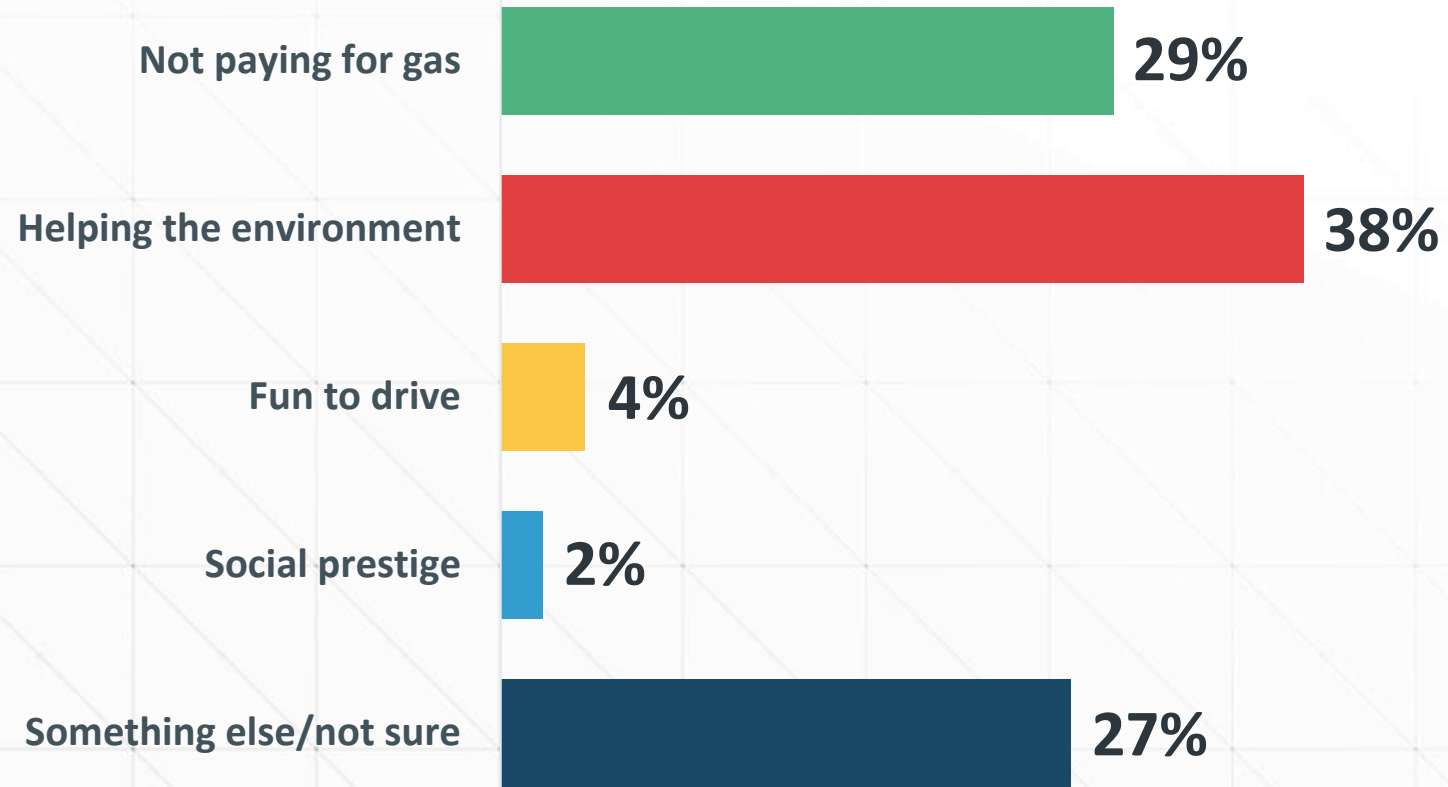
# *How likely are you to consider purchasing an electric vehicle the next time you buy a new car?*



# Reasons to Buy an Electric Vehicle

- ❑ We asked why someone might want to buy an EV and gave them these options – no gas payment, helps the environment, fun, social prestige, something else and not sure
- ❑ Two answers dominated: 29% said no gas payments and 38% were motivated by helping the environment
- ❑ So economic self-interest and altruism both play a part in the calculus
- ❑ That said, there were differences by gender, age and party as there often are:
  - ✓ Women were more motivated than men by altruism, but even men were more driven by helping the environment than saving money (women were 43-27% environment/gas while men were 33-30% environment/gas)
  - ✓ Democrats were especially driven by the climate implication while Republicans were more driven by gas savings, but not by much (Democrats were 51-24% environment/gas while Republicans were 32-25% gas/environment)

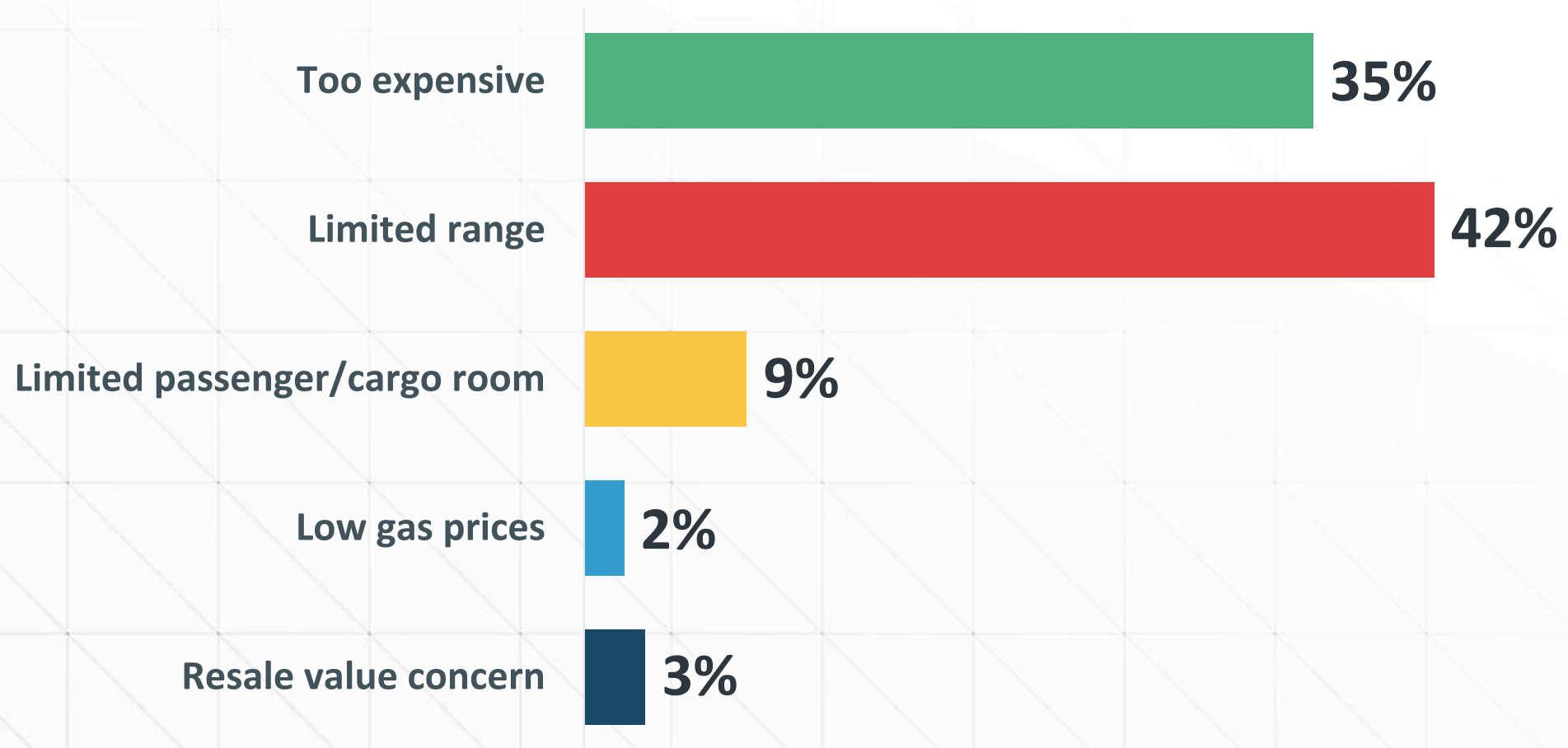
# Which factor makes you most interested in buying an electric car?



# Reasons NOT to Buy an Electric Vehicle

- We provided five specific reasons why someone might not want to buy an EV to see what popped
- The reasons were cost, range, space/utility, price of gas and resale value
- It's all about cost (35%) and range (42%) – the other factors barely registered
- Range anxiety remains a huge challenge, especially when the vehicle would not be a second car
- And when it is a second car, the cost becomes an even bigger concern
- There were not huge differences by gender or party on this question, though younger respondents were more likely to say expense and older respondents were more likely to say range

# *What is the leading reason you might not want to buy an electric car?*

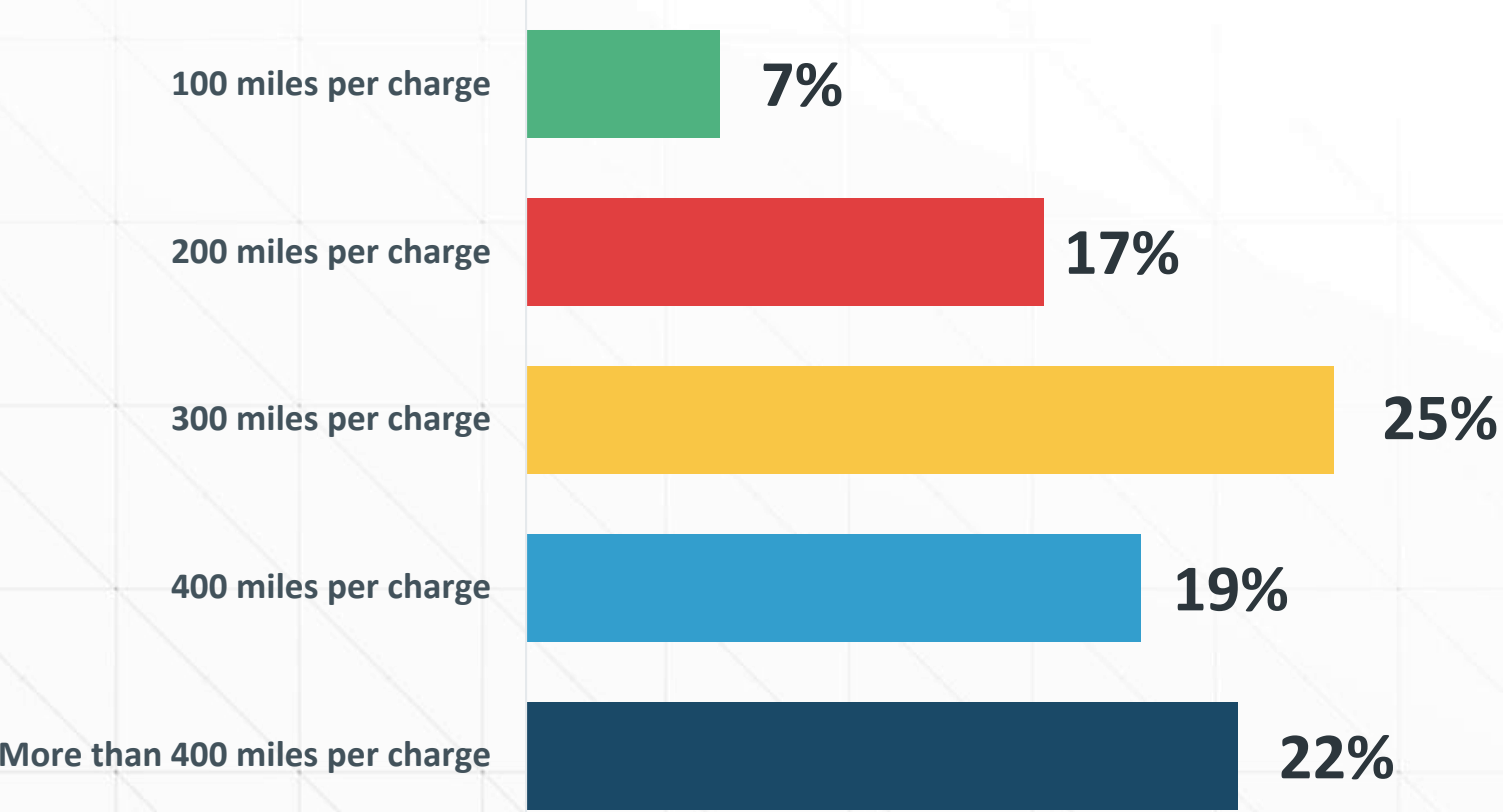


# How Much Range is Enough?

- ❑ We asked how much range per charge would be necessary to make someone seriously consider the purchase of an electric car
- ❑ Almost half of those responding (41% of 88%) were looking for at least 400 miles per charge
- ❑ 24% of those responding were looking for less than 200 miles per charge
- ❑ An additional 25% were looking for at least 300 miles per charge
- ❑ Men are looking for more range than women, Republicans more than Democrats and seniors more than the young

	<u>Men</u>	<u>Women</u>	<u>Republicans</u>	<u>Democrats</u>	<u>Other</u>	<u>18-29</u>	<u>65+</u>
Under 300	21	25	20	27	22	32	19
300	27	24	23	30	23	23	25
400 or more	45	37	49	36	42	34	45

# *What would the mileage range per charge have to be for you to seriously consider buying an electric car?*

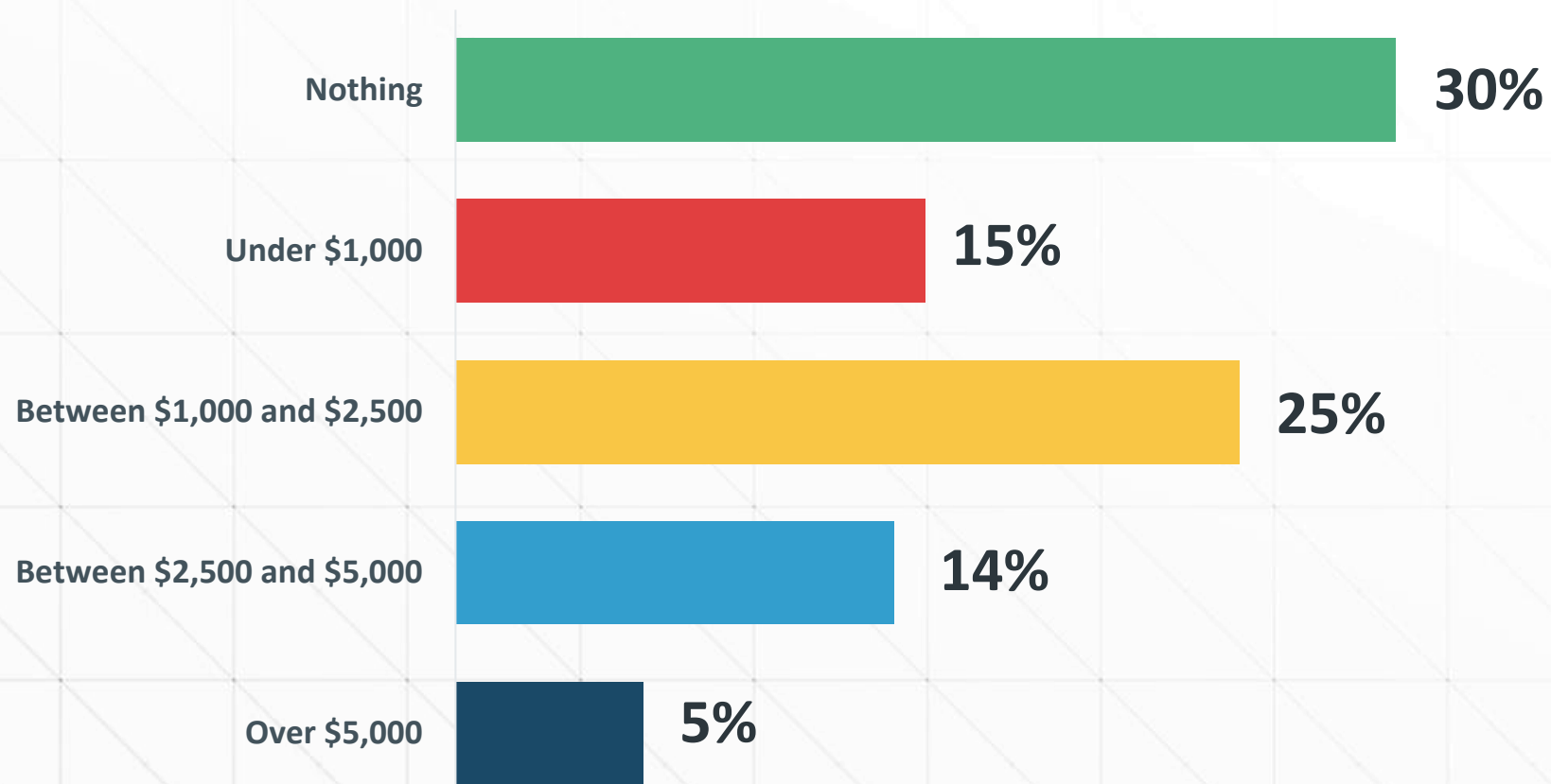


# What is Not Having to Buy Gas Worth?

- ❑ This question provides some insight into the degree of resistance to EVs we see in many buyers
- ❑ Half of those answering the question indicated they would only spend \$1000 or less to avoid having to buy gas, and most of those said they would pay nothing
- ❑ Only 5% said they would pay more than \$5000, a number that does not capture the full cost difference
- ❑ And the resistance is profound even among buyers who would ordinarily be more climate sensitive
  - ✓ Only 24% of 18-29 year olds would pay more than \$2500 to avoid buying gas; only 5% more than \$5000 (granted, there is an ability to pay question here as well)
  - ✓ Only 23% of Democrats would pay more than \$2500 to avoid buying gas; only 6% more than \$5000



# *How much more would you pay for an electric car to avoid having to buy gas?*



# The Public Opposes Mandates to Buy EVs

- ❑ We ask a very simple question to determine whether people think the market should dictate the adoption of EVs or whether government should require consumers to buy them
- ❑ The answer isn't close – there is an overwhelming view that market behavior should determine the adoption rate (64 - 16%)
- ❑ That, of course, is not how the current system works; California requires the sale of a rising number of Zero Emission Vehicles (typically EVs) and nine other states follow that requirement
- ❑ Given the lopsided opinion on this question, the preference for market over mandate holds across gender, age and party – though it is a little less pronounced among Democrats and the young

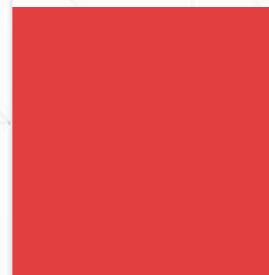
# *Is the best way to increase sales of electric cars to...*

Let market forces through  
consumer choice decide  
when electric vehicles are  
purchased



**64%**

Government mandate  
consumers purchase those  
vehicles



**17%**

# Electrification

- ***“I have never owned an electric car. I do not want to be a pioneer when it comes to my primary mode of transportation. I will wait - years! - to see how electric cars really play out in the U.S.” (Male, 36-49)***
- ***“I might be open to owning one if it was cost effective for my family... finding a refill station could also be a problem” (Male, 36-49)***
- ***“If the price were in my range including changes at home for charging, charging it didn’t cost more than gas and charging stations were convenient, I would definitely consider it.” (Female, 50+)***



The image shows the interior of a car with a futuristic, digital aesthetic. A prominent green banner with the text "AUTONOMY / TECH" is centered across the dashboard. The car's interior is illuminated with blue light, and various glowing icons are overlaid on the scene, connected by a network of white lines. These icons include a car, a road, a location pin, a satellite, a battery, a music note, a person, a car with a pulse line, a car with a gear, and a car with a signal tower. The background shows a blurred view of a road and other vehicles, suggesting motion and connectivity.

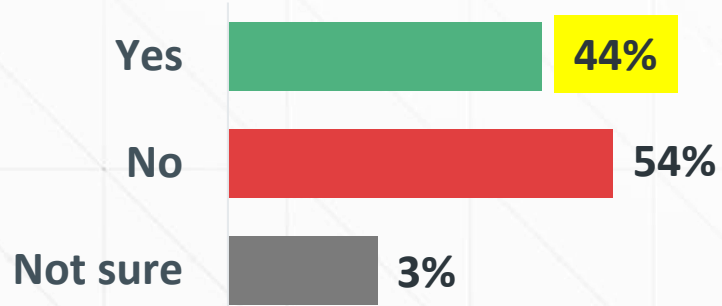
# AUTONOMY / TECH

# The Driver Assists People Think They Have...

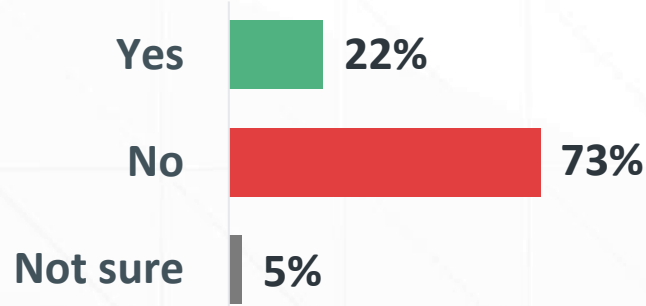
- We asked what driver assists people think they have in their vehicles and while their perceptions may be inaccurate, they are still interesting and a useful measure to assess their attitudes about coming technologies
- Adaptive cruise control (45%) and a backup camera (44%) are the two systems most identified
- Automatic braking (28%), blind spot monitoring (23%) and lane keeping (22%) follow
- All of these technologies, and more, are rapidly appearing as either options or standard equipment in new cars
- Thus, turning over the fleet is key to deployment and achieving their associated benefits

# Does the vehicle you currently drive have ...

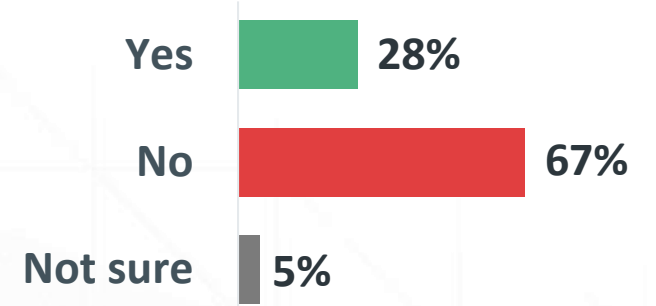
*a backup camera?*



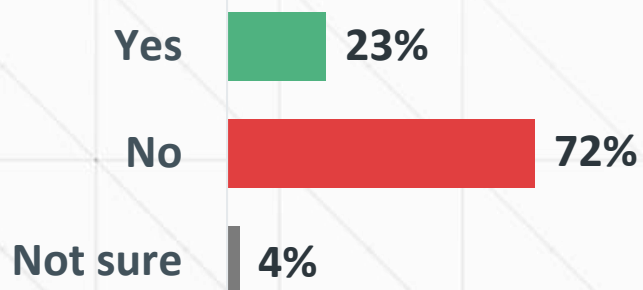
*lane keeping technology?*



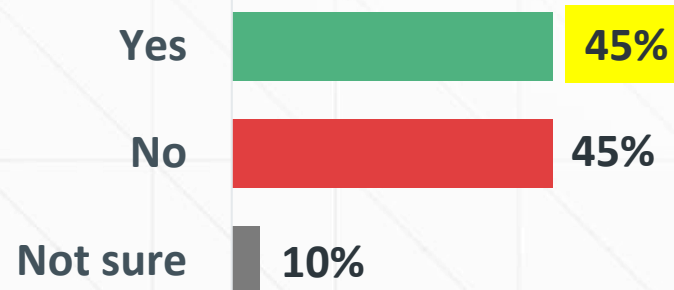
*automatic braking?*



*blind spot monitoring?*



*adaptive cruise control?*



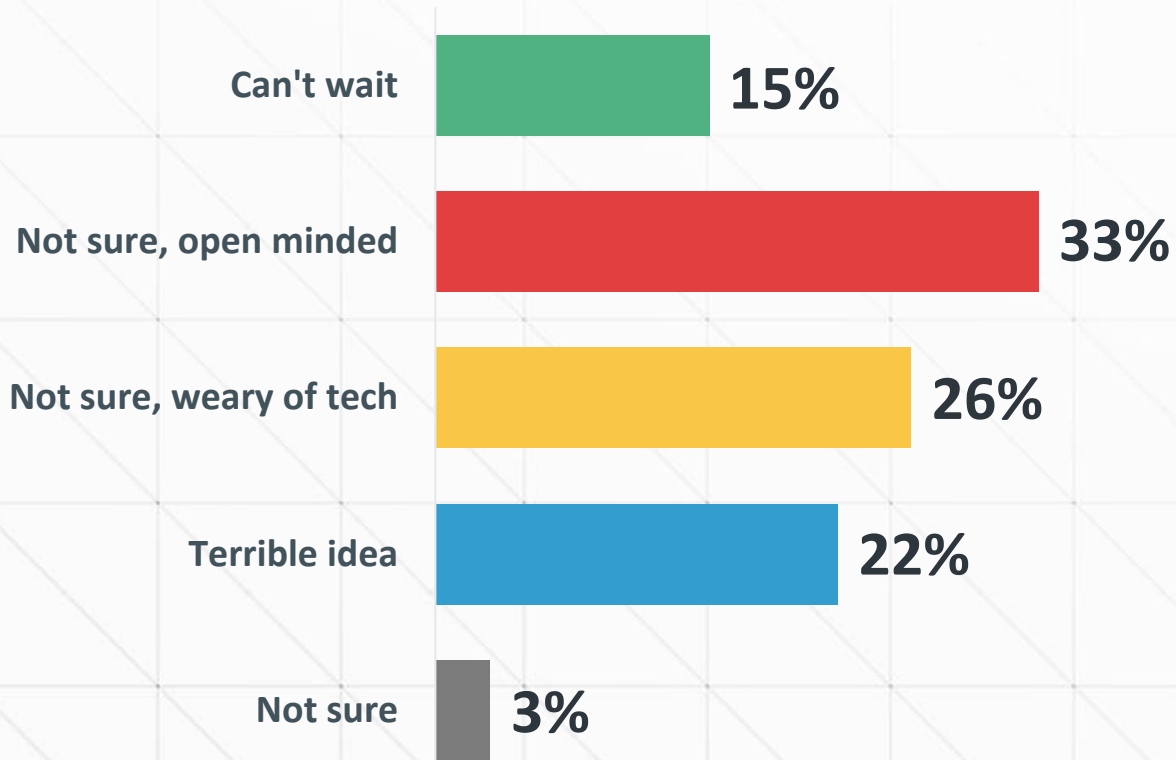
# Autonomous vs Self Driving

- We tested people's reaction to both "autonomous" and "self driving" cars to see if there was a difference, and later to assess whether experience with driver assists and practices with social media impact their perspective
- On the first question, there is NOT a big difference triggered by the different terms
- In both cases, there is very much a split reaction, with about half the public either positive or open and the other half either wary or quite negative
- Men are slightly more receptive than women and Democrats are a little more positive than Republicans
- As expected, the younger you are the more enthusiastic you are about technology, with 18-29 year olds almost 2 to 1 positive and 65+ seniors about 2 to 3 negative

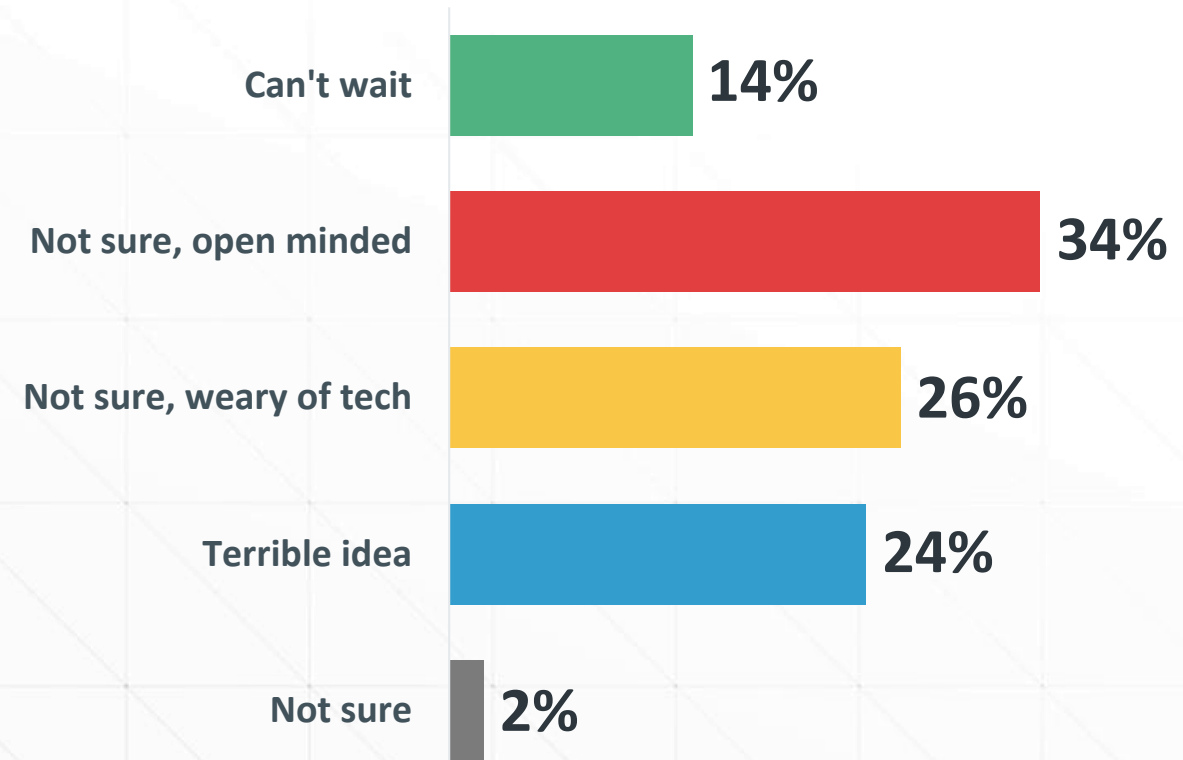


*What best describes your view about so-called autonomous vehicles that drive for you?*

*What best describes your view about so-called self-driving vehicles that drive for you?*



48 - 48



48 - 50

# Experience with Advanced Driver Assists Correlates to Enthusiasm for Autonomy

- ❑ This question looks at attitudes about AVs and self-driving vehicles by perceived ADAS utilization levels
- ❑ As you might guess, there is a clear and strong correlation; the more sophisticated the capabilities of the car someone has driven, the more eager they are to enjoy full autonomy
- ❑ We find that for those folks who have experienced no driver assist technologies, the idea of AVs is net negative (42% positive/open versus 53% wary/terrible)
- ❑ But for those who have experienced 4 or 5 of these technologies, the idea of AVs is strongly net positive (63% can't wait/open versus 36% wary/terrible)
- ❑ Use of technology is therefore determinative and inspires enthusiasm for higher degrees of sophistication

*What best describes your view about so-called autonomous vehicles that drive for you?*

	Driver Assists			Total
	None	1-3	4-5	
You can't wait for this awesome technology	11.1%	12.4%	32.9%	15.1%
You're not sure, but keeping an open mind	31.1%	35.1%	30.6%	33.2%
You're not sure, but kind of wary of the technology	27.7%	27.6%	18.3%	26.2%
You think it's a terrible idea	25.5%	21.0%	17.4%	21.9%
Not sure	4.5%	3.9%	.8%	3.6%

*What best describes your view about so-called self-driving vehicles that drive for you?*

	Driver Assists			Total
	None	1-3	4-5	
You can't wait for this awesome technology	12.0%	10.7%	28.7%	13.7%
You're not sure, but keeping an open mind	29.6%	37.0%	32.0%	34.0%
You're not sure, but kind of wary of the technology	27.6%	27.8%	13.3%	25.7%
You think it's a terrible idea	27.3%	22.1%	25.4%	24.2%
Not sure	3.5%	2.4%	.6%	2.5%

# Social Media Use Correlates to Enthusiasm for AVs

- ❑ This question looks at attitudes about AVs and self-driving vehicles by social media practices
- ❑ We asked people about how many different social media platforms they used and how much time they spent on those platforms and then we segmented them by their use profiles
- ❑ As you might imagine, here too there is a clear and strong correlation; the more someone engages in social media, the more eager they are to enjoy full autonomy
- ❑ We find that for those folks who are “non users” the idea of AVs is dramatically net negative (27% can’t wait/open versus 67% wary/terrible)
- ❑ But for those who are “high users” the idea of AVs is net positive and almost exactly flipped (67% can’t wait/open versus 29% wary/terrible)
- ❑ Over time – and relatively quickly – the percent of non users of social media will dwindle, and with that will come a decline in those who are most negative about autonomy

***What best describes your view about so-called autonomous vehicles that drive for you?***

	Social Media Score				Total
	High User	Mod. User	Low User	Non User	
You can't wait for this awesome technology	28.8%	15.4%	9.6%	4.3%	15.0%
You're not sure, but keeping an open mind	38.5%	37.0%	29.0%	23.0%	33.2%
You're not sure, but kind of wary of the technology	18.9%	27.1%	30.7%	25.0%	26.2%
You think it's a terrible idea	9.9%	18.0%	26.6%	41.7%	21.9%
Not sure	3.8%	2.5%	4.1%	6.0%	3.7%

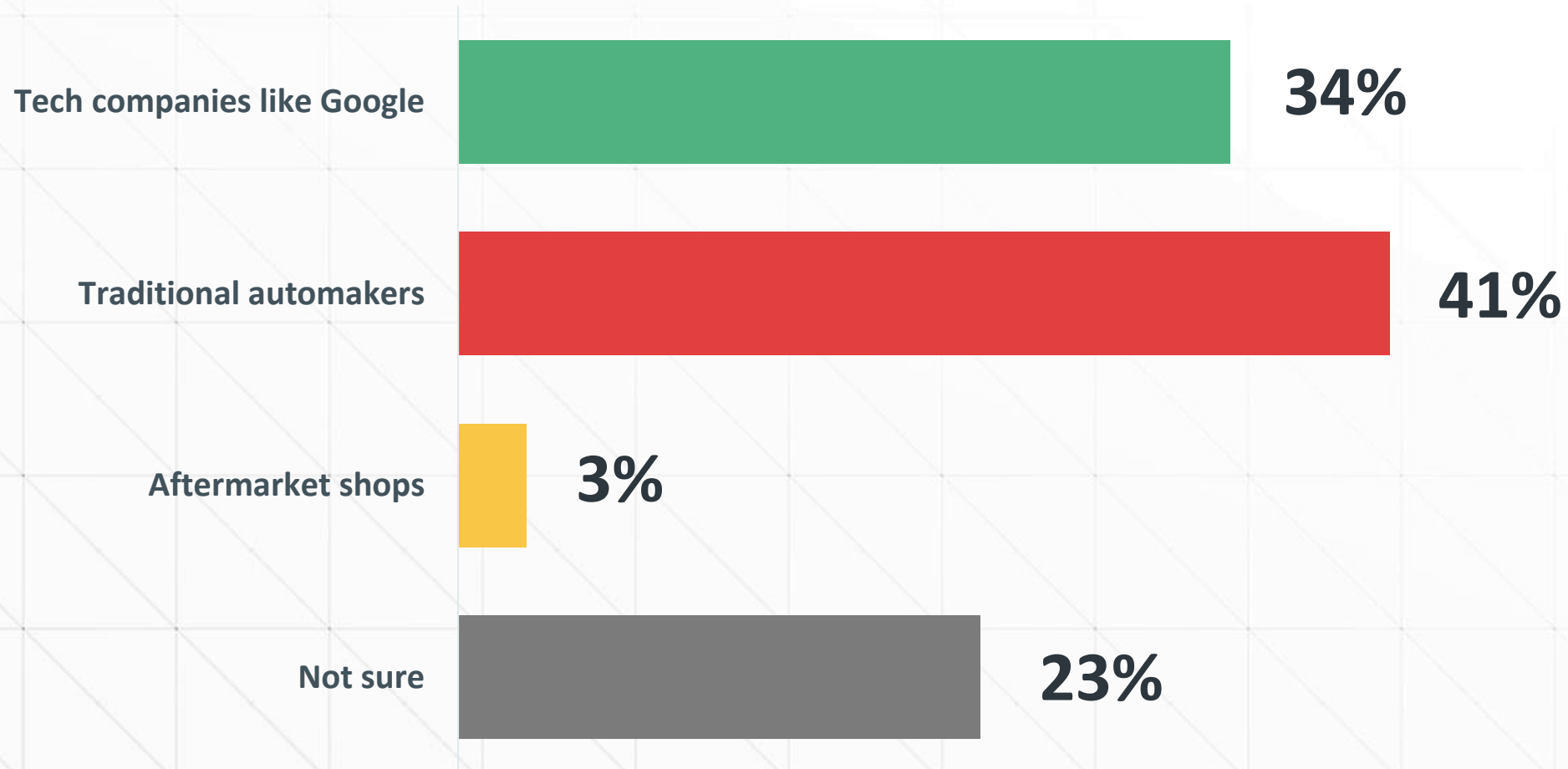
***What best describes your view about so-called self-driving vehicles that drive for you?***

	Social Media Score				Total
	High User	Mod. User	Low User	Non User	
You can't wait for this awesome technology	24.8%	12.3%	11.8%	5.8%	13.6%
You're not sure, but keeping an open mind	40.0%	37.3%	31.4%	22.6%	34.0%
You're not sure, but kind of wary of the technology	19.9%	27.2%	27.1%	25.7%	25.6%
You think it's a terrible idea	13.8%	21.0%	26.6%	42.5%	24.2%
Not sure	1.6%	2.3%	3.0%	3.4%	2.6%

# Which Companies are Being Looked to for Autonomous Technology

- We asked a simple question – who do you trust most to put self-driving technology in cars
- To some extent, it's a false dichotomy – increasingly it is clear that car companies are going to build cars and tech companies are going to work collaboratively with OEMs on the software and hardware that are the building blocks for autonomy
- That said, traditional automakers nose out tech companies by a little, though there are differences generationally
- We've also learned previously that when you ask the question about from who you expect ultimately to buy these new autonomous vehicles, you see that the gap rises in favor of traditional OEMs

# *Who do you trust most to put self-driving technology in cars?*



# Autonomy

- ***“Driverless cars would reduce a ton of human caused accidents. I know they are testing it out over sections of some cities. Once that is reliable then the roads will be much safer.”*** (Male, 18-35)
- ***“Driverless cars may be around in 10 years so I hope most of the distracted people are in those cars instead of of driving themselves.”*** (Male, 36-49)
- ***“I would trust a smart car over other human drivers. I don’t think the average American would necessarily feel the same way. I could see people being uncomfortable being a passenger and not being in control. But as the technology becomes more prevalent and more tried and true, I think people will come around.”***(Female, 50+)
- ***“I see in-car technology being huge for improving road safety. The more we can minimize the effects of human error, the better. So any steps toward computer assisted driving/Self-driving technology will help reduce mistakes.”*** (Female, 18-35)





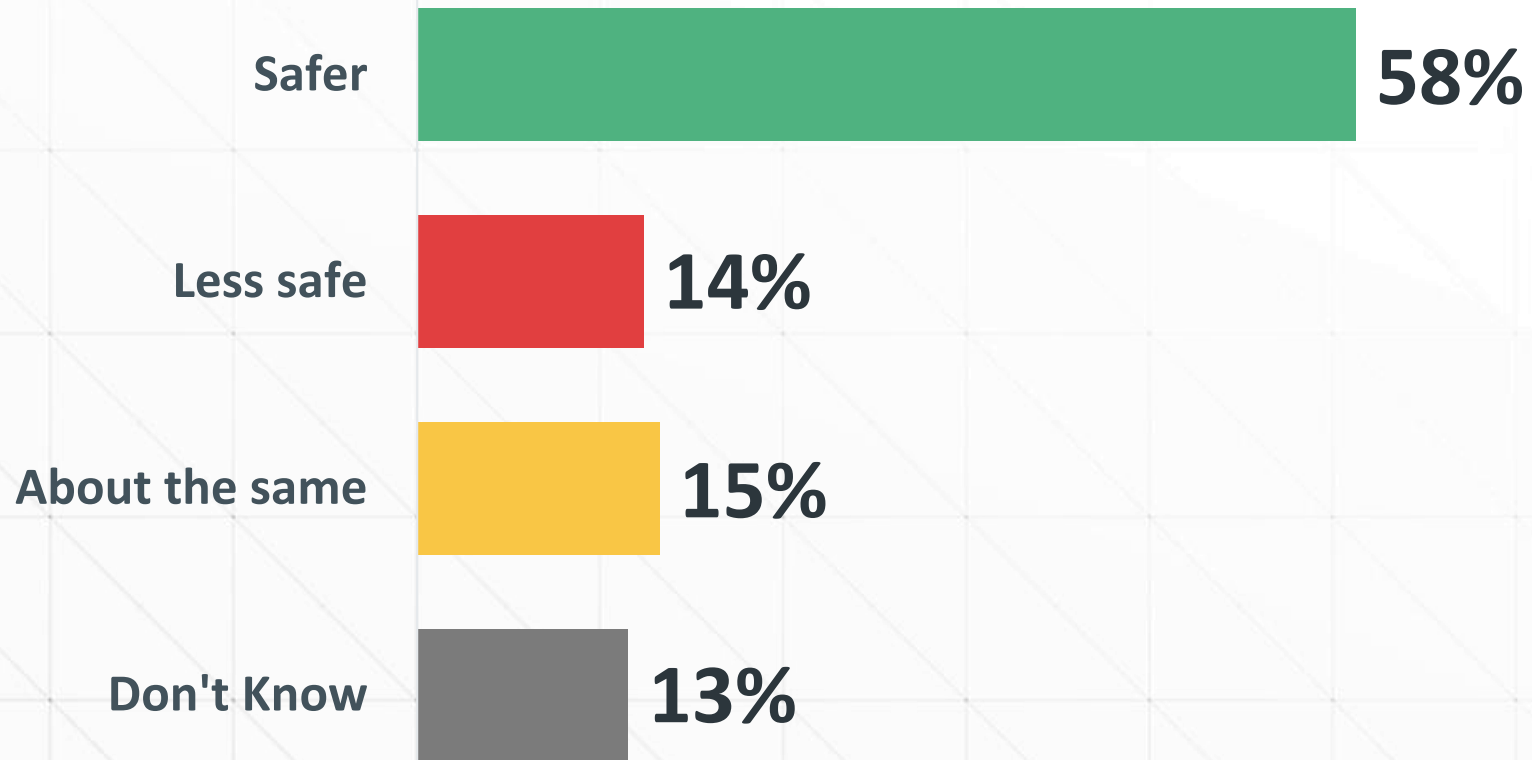
A woman with dark hair is driving a car at night. She is wearing a teal sweater and has a seatbelt on. In the passenger seat, a young child with long hair is sleeping peacefully, holding a large, fluffy white stuffed animal. The car's interior is dimly lit, and the background shows blurred city lights through the windshield. A green rectangular box is overlaid on the center of the image, containing the word "SAFETY" in white, bold, sans-serif capital letters.

**SAFETY**

# Americans Believe (Correctly) that Cars are Safer

- We asked whether people think cars are safer than they were ten years ago and the answer is a pretty resounding yes
- We did not get into the nuance or specifics whether that increased safety is due to better crash worthiness (yes) and/or newer crash avoidance technologies (yes)
- Men are more likely to say cars are safer (64% safer – 12% less safe) than women (52-16%)
- The older you are the more likely you are to say cars are safer – 18-29 years olds (44-18%) and seniors 65+ (72-10%)
- There is no partisan or ideological break on this question, but there are sharp differences by income – under 50K (51-17%) and 100K+ (72-6%)

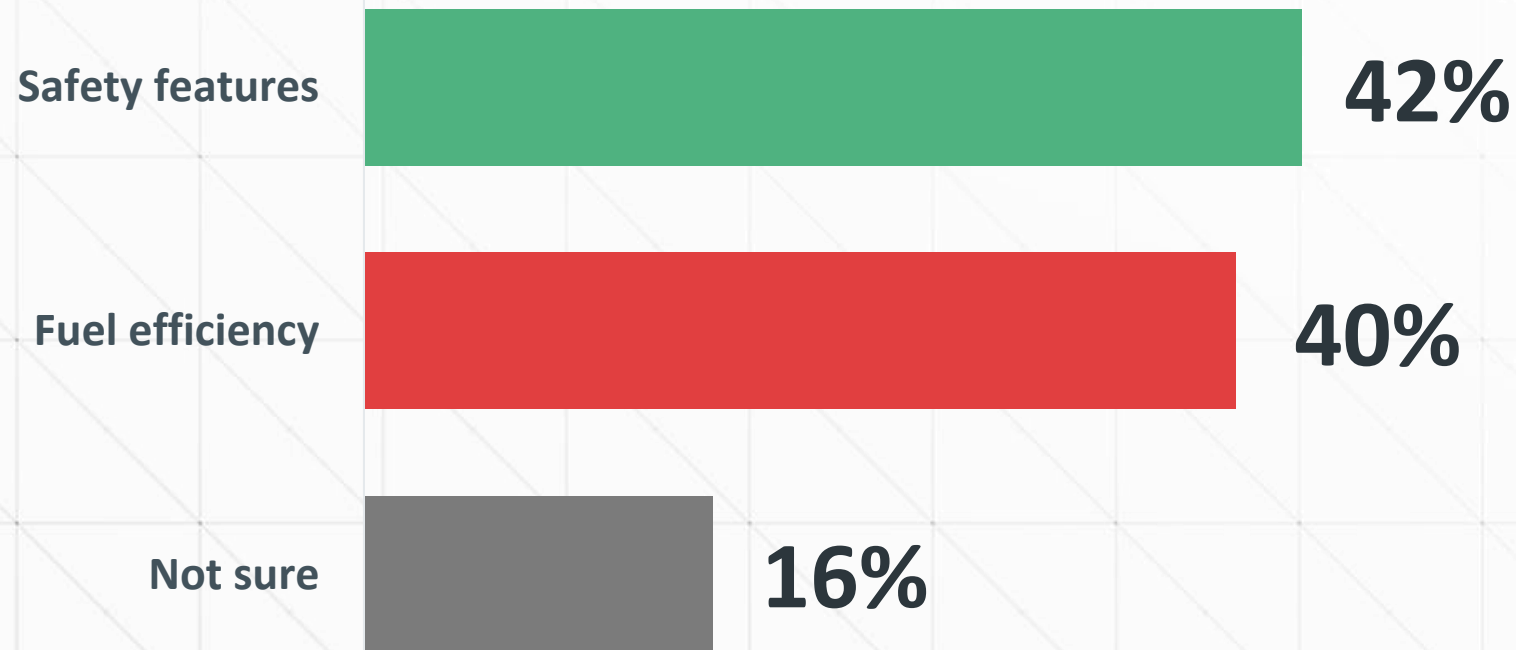
# *Would you say that the safety of cars today compared to ten years ago are...*



# As a Binary Choice, Safety Narrowly Tops Fuel Efficiency

- We asked what someone would want to do if they had \$2000 on their next car purchase to put into safety features or additional fuel economy
- By the narrow margin of 42% to 40%, folks chose safety first
- There was a minor gender gap; men were 42-41% in favor of fuel efficiency while women were 43-39% in favor of safety
- Car owners under 40 and over 65 chose safety narrowly while those in between chose fuel efficiency
- Republicans were 10 points more likely to choose safety while Democrats were 4 points more likely to choose safety; other voters were 8 points in favor of fuel efficiency

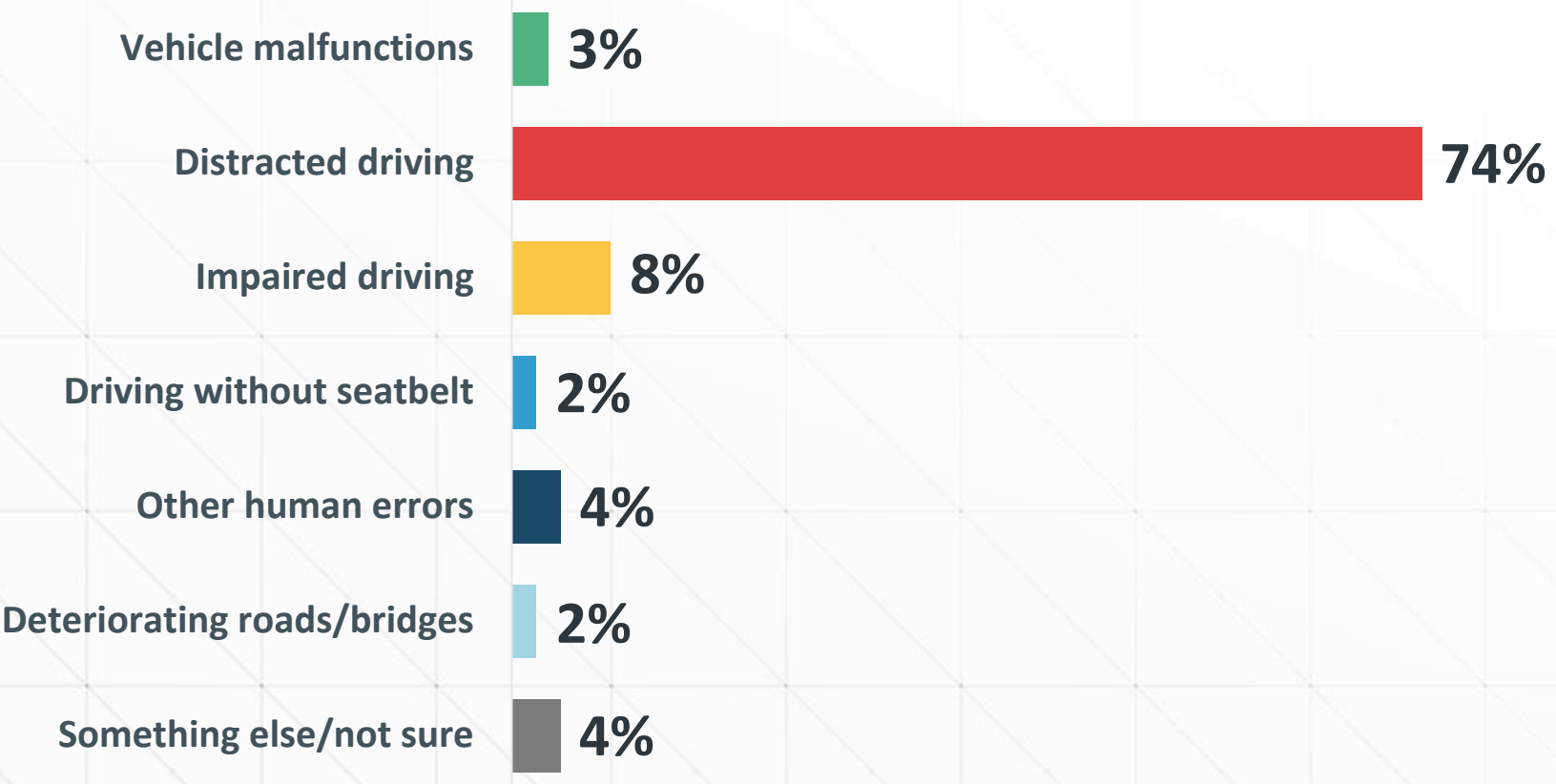
***If you had to spend an additional \$2,000 on the purchase of your next vehicle, would you prefer to spend that money on safety features like blind spot monitoring and automatic braking or would you prefer to spend that money on additional fuel efficiency?***



# Distraction “Seen” as Key Cause of Rising Fatalities

- ❑ This question asks people their perception of the factor most responsible for increased road fatalities in recent years, and the options were vehicle malfunctions, deteriorating roads and bridges and a host of behavioral factors including distracted driving, impaired driving, driving without seatbelts and other human errors
- ❑ Vehicle malfunctions was the answer for 3%, deteriorating roads and bridges was the answer for 3% and the combination of human behavioral factors totaled 88%
- ❑ Note – we split sampled this question with vehicle malfunctions first and last – 3% was the answer when it was listed first; 1% was the answer when it was listed last
- ❑ Of those human factors, distraction was the overwhelming choice as most responsible
- ❑ That is not an accurate assessment, but it is a pervasive perspective that indicates a high degree of driver frustration with their fellow drivers who they see operating their phones on the road

***In recent years, the number of fatalities on the roads have increased after decades of decline. What is most responsible for this increase? Vehicle malfunctions, distracted driving, impaired driving, driving without seatbelts, other human errors, deteriorating roads and bridges or something else?***

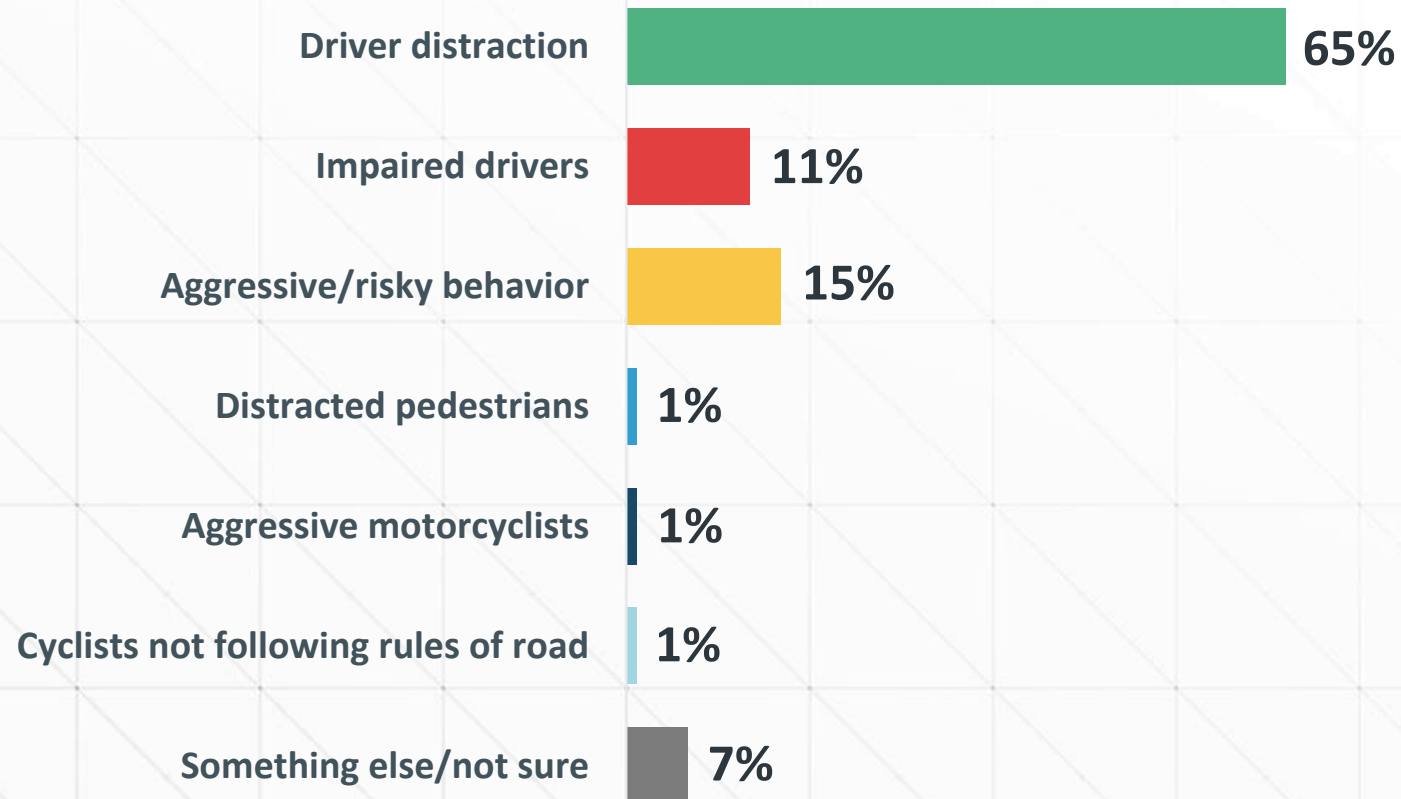


# Distraction Seen as Biggest Source of Human Error

- ❑ We then asked what type of human error is the leading cause of increasing roadway fatalities and the answer amplified the results of the previous question
- ❑ The choices were driver distraction, impaired drivers, aggressive or risky driving, distracted pedestrians, aggressive motorcyclists and cyclists failing to adhere to rules of the road
- ❑ Driver distraction (65%) was overwhelmingly first, followed by aggressive or risky driving (15%) and then impaired drivers (11%) – nothing else registered significantly
- ❑ While distraction is a big problem, especially the use of hand held devices within vehicles, the NHTSA data on fatalities indicates that impairment is a far more consequential challenge
- ❑ DUI continues to account for nearly 1/3 of all road fatalities



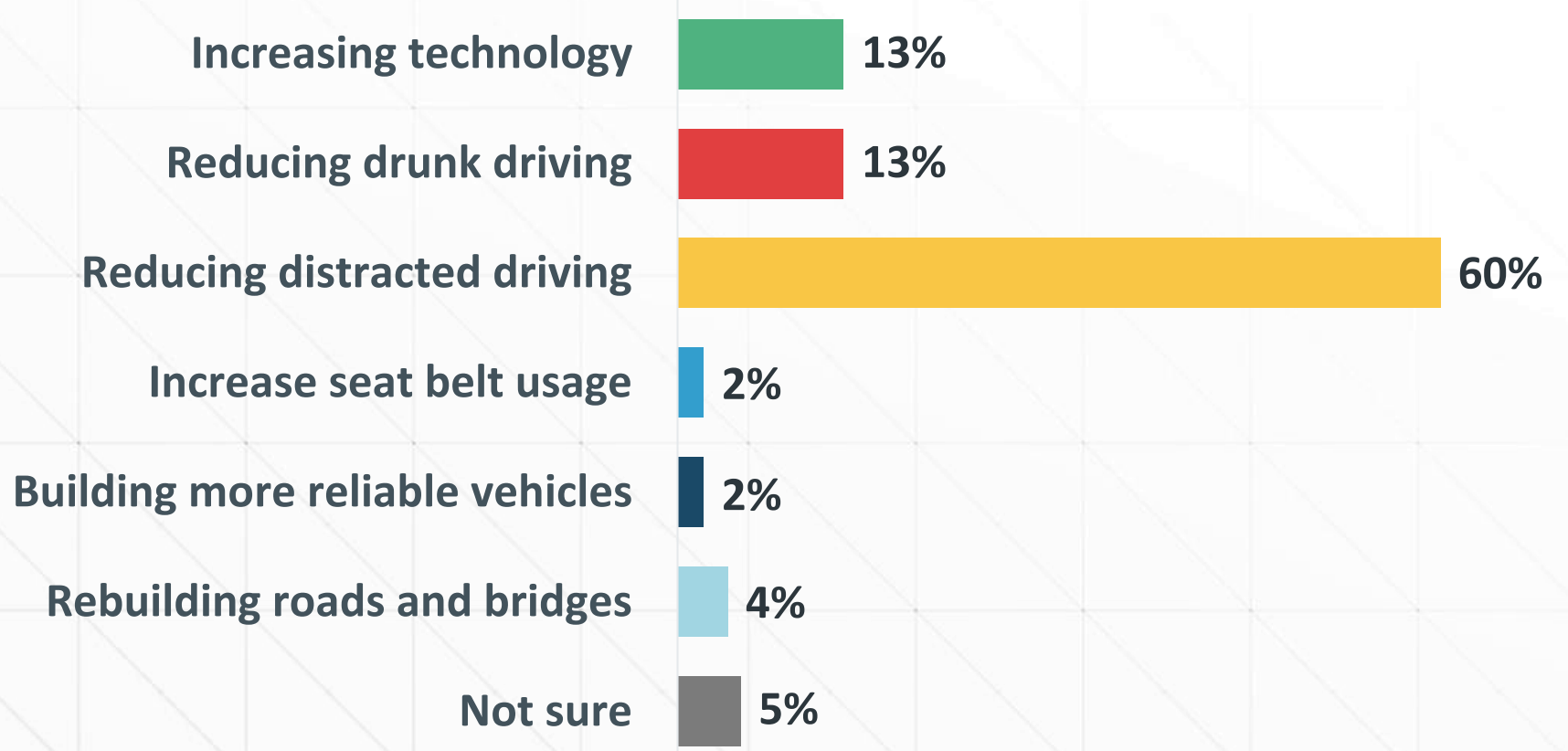
***More specifically, which type of human error is the leading cause of increasing roadway fatalities? Is it driver distraction, impaired drivers, aggressive or risky driving behavior, distracted pedestrians, aggressive motorcyclists, cyclists failing to adhere to rules of the road or something else?***



# Technology (Incorrectly) Seen as Less Important to Reduce Fatalities Than Other Factors

- ❑ We then asked what is the most important step to reduce the number of fatalities on the roads, and the options were increasing technology, rebuilding roads and bridges, building more reliable vehicles and addressing the behavioral factors of drunk driving, distracted driving and seat belt usage
- ❑ Once again, distraction pops as the dominant answer (60%)
- ❑ Next was reducing drunk driving (13%) and then increasing technology (13%)
- ❑ There were generational differences – the young were more likely to say tech is the answer (ah, the wisdom of youth)
- ❑ We have made great progress over the decades as a country reducing (though not eliminating) human errors, especially reducing drunk driving and increasing belt usage
- ❑ That progress has slowed down and thus technology that mitigates human risk represents the great promise for improvements in safety outcomes

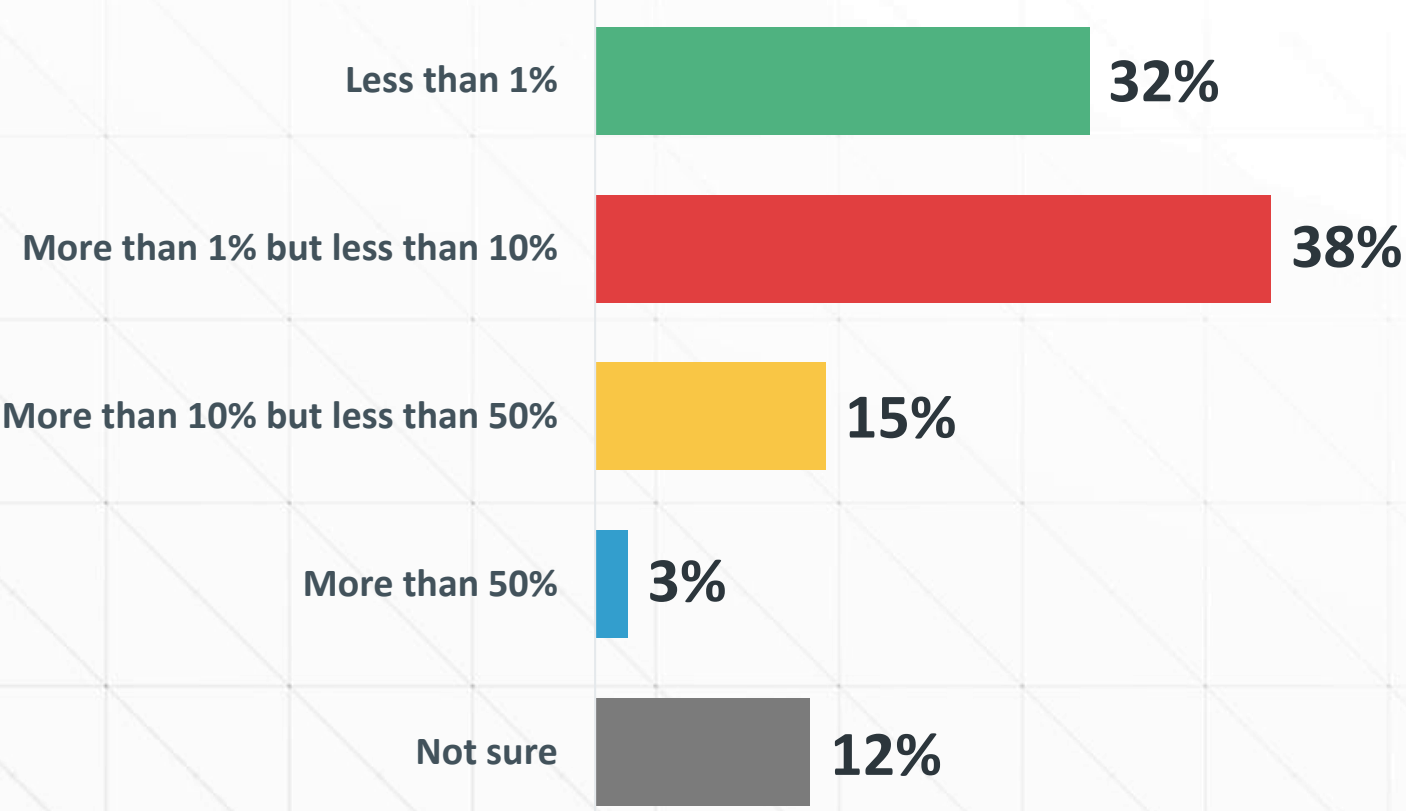
***What is the most important next step to reduce the number of fatalities on the road... increasing technology, reducing drunk driving, reducing distracted driving, increasing seat belt usage, building more reliable vehicles, or rebuilding roads and bridges?***



# People Understand Car Accidents Rarely are Due to Car Defects

- We asked what percentage of car accidents people think are the result of car defects rather than human error, weather or road conditions
- 70% said that defects are the cause of less than 10% of accidents, while 3% said that defects were the cause of less than 1% of accidents
- Only 18% thought that defects are responsible for more than 10% of accidents
- On this question, facts and opinions line up well
- We hear from NHTSA often that 94% of accidents are the result of human error
- Unsaid usually is that most of the remaining accidents are not the result of defects but factors like weather and road conditions

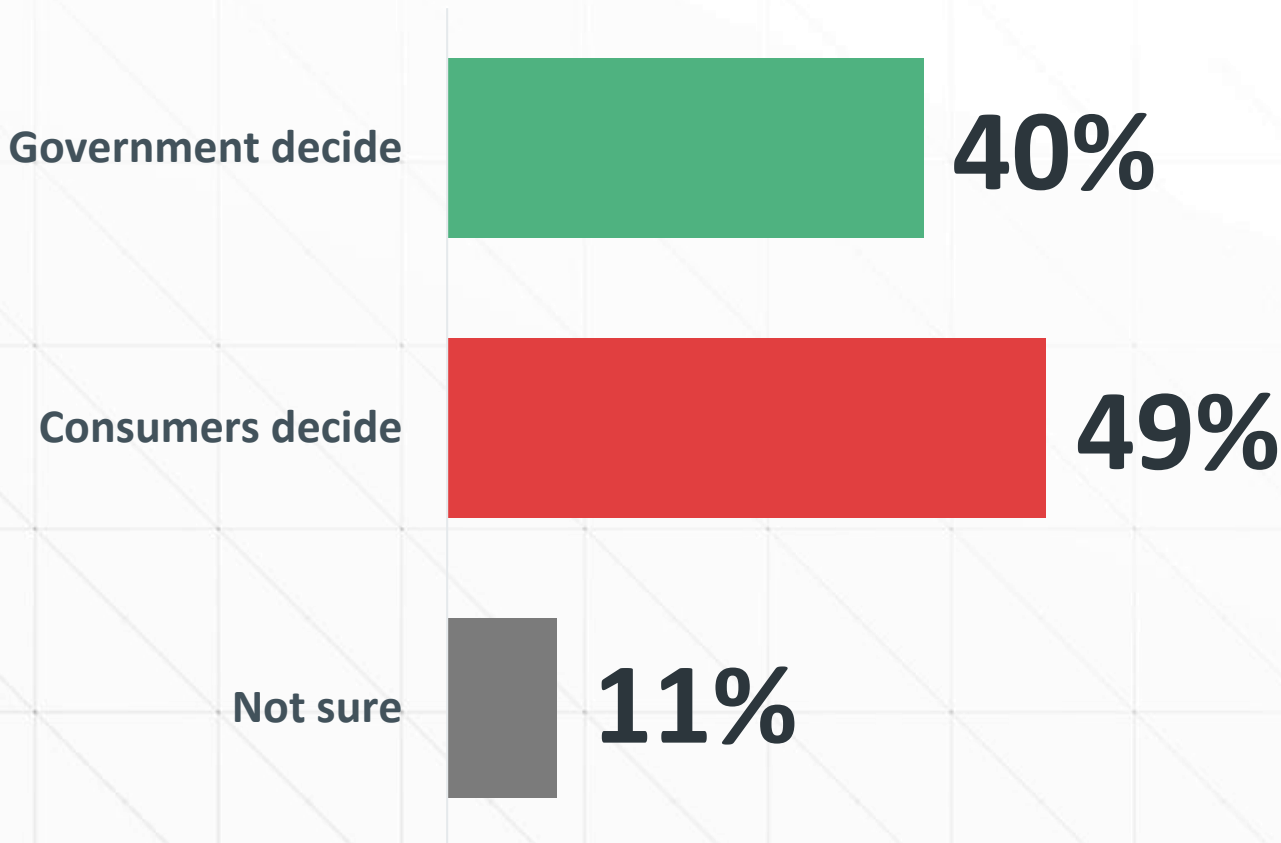
***What percentage of car accidents are the result of car defects rather than human error, weather, or road conditions...less than 1%, more than 1% but less than 10%, more than 10% but less than 50% or more than 50%?***



# Consumers Want to Decide for Themselves Which Safety Technologies to Buy

- We asked whether government should decide what safety technologies go in cars and require them as standard equipment – raising costs of vehicles – or whether consumers should decide which safety technologies they want to buy as options
- Consumers (50%) come in ten points over government (40%), given the affordability implications
- Women are a little more likely to want that decision than men
- If you are under 40, you are evenly split while if you are over 40, you favor consumer choice
- Republicans prefer choice (63 – 29%) while Democrats favor the mandate option (52 – 38%)

***Should government decide what safety technologies are in cars and require them as standard equipment, increasing the cost of vehicles, or should consumers decide which safety technologies they want to buy as options?***



# Safety

- ***“Phones have become more essential in driving, with operating music and other functions, and can be very distracting.” (Male, 18-35)***
- ***“I think the progress toward self-driving and self-parking cars prevents accidents because it reduces driver error. It's sad but I don't trust other drivers. I trust cars more... I would think that the vast majority of accidents (90%) are due to driver error.” (Female, 18-35)***
- ***“Backup cameras reduce the chance of running over someone or hitting an object when in reverse, blind spot detection alerts drivers when it is safe to change lanes and so on. Other technology such as the use of smartphones in cars distracts drivers and helps create accidents... I think 95% of accidents are caused by human mistakes.” (Male, 50+)***





LEFT  
EXIT 47 C  
←   
Vernor Hwy

EXIT 47 B  
  
Bridge to  
Canada  
EXIT ↓ ONLY

# NAFTA



25  
MPH



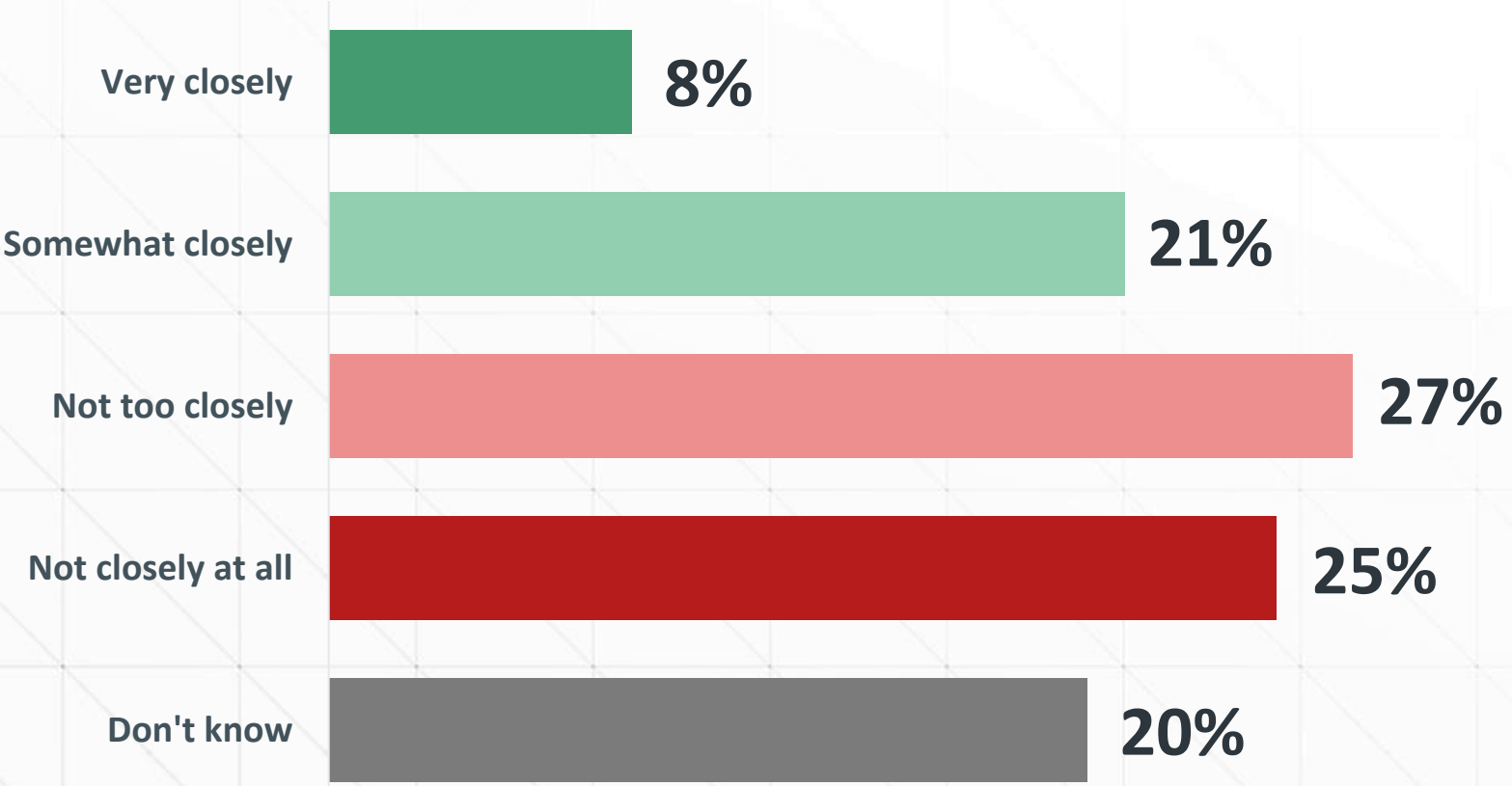
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# The Public is NOT Following the NAFTA Debate Closely

- ❑ We ask a straight up question about how closely folks are following the debate
- ❑ They basically have this one largely tuned out
- ❑ Only 8% say they are watching it closely, while 21% say they are watching it somewhat closely
- ❑ But 72% either are not watching it closely, or at all, or even know enough to express an opinion
- ❑ While men follow it a bit more than women, there is not a significant difference by party

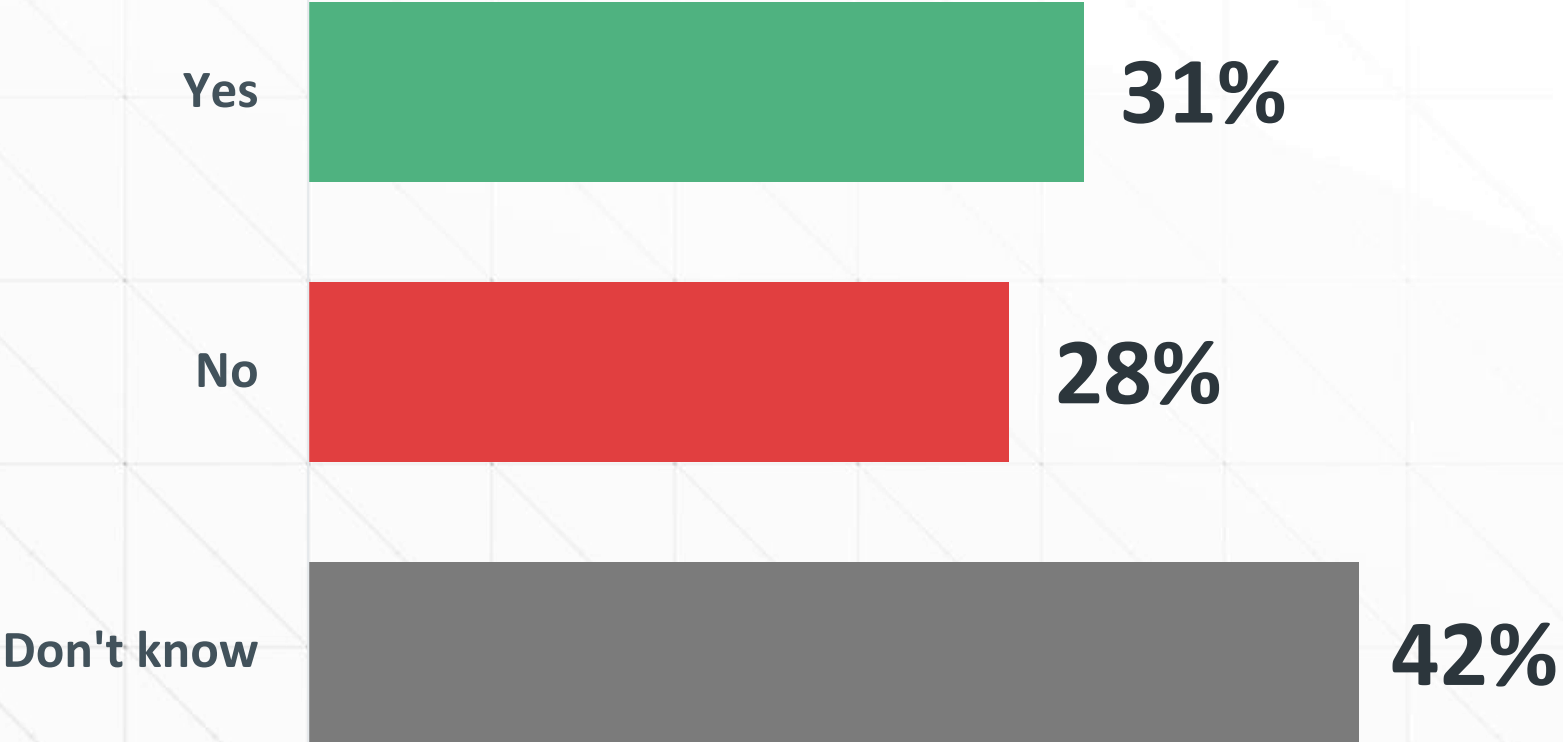
***How closely are you following the current debate about the North American Free Trade Agreement, otherwise known as NAFTA?***



# NAFTA Not Seen as Bad for the U.S.

- ❑ We asked whether the agreement is good or bad for our country and more people said either “don’t know” or “no opinion” than said that it was either good or bad
- ❑ “Good” narrowly beat “Bad” 31 - 28%
- ❑ Younger Americans were 13 points net positive (31 - 18%) while seniors 65+ were 16 points net negative (24 – 40%)
- ❑ Democrats were 24 points net positive (43 – 19%) while Republicans were 14 points net negative (25 – 39%)
- ❑ Men were slightly negative (33 – 36%) while women were modestly positive (28 – 20%), though hard opinion of the agreement was very low

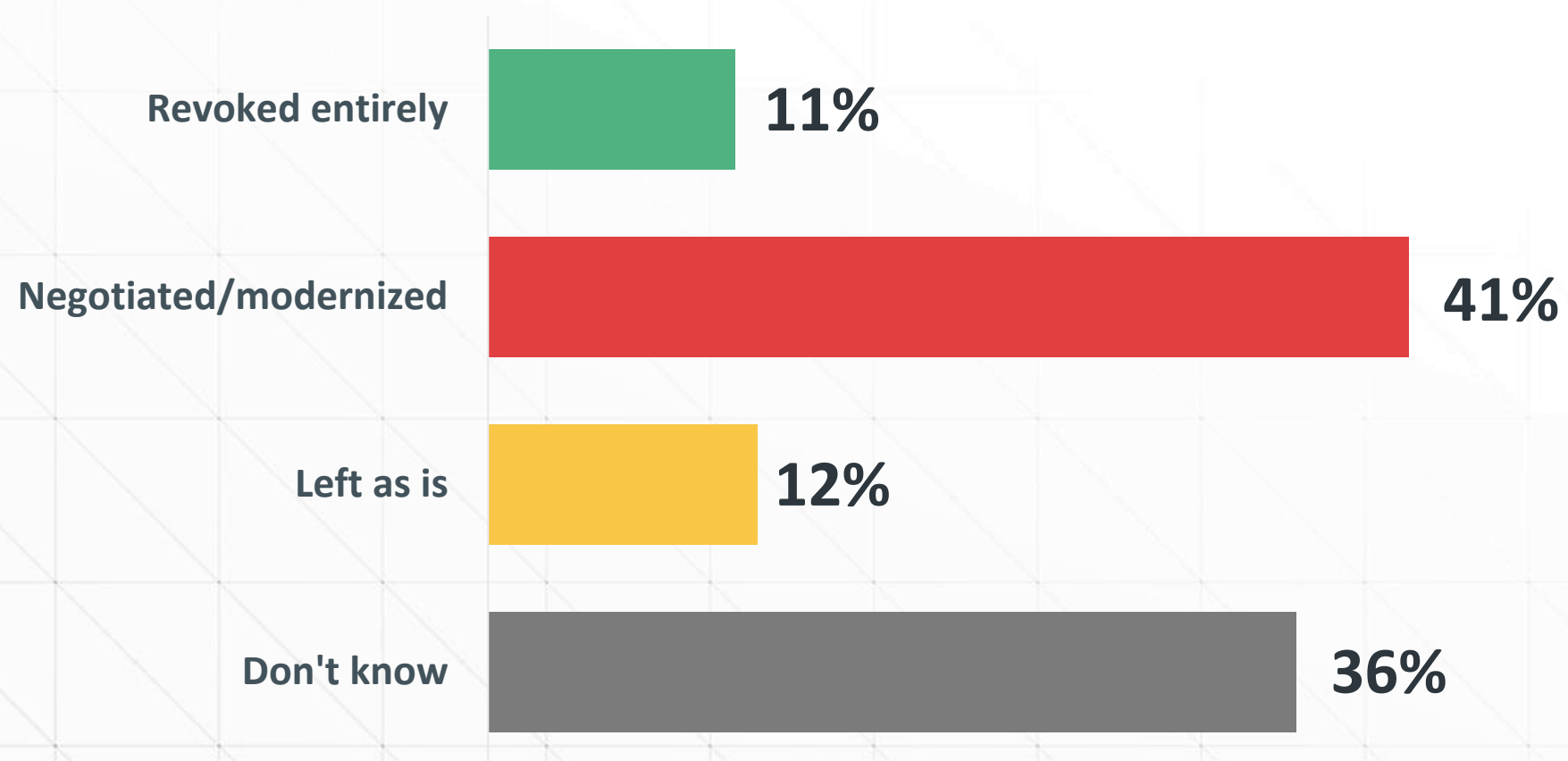
***NAFTA, which provided for freer trade between Mexico, Canada, and the U.S. was negotiated in the early 1990s. In your opinion, has the agreement generally been good for the United States?***



# Strong Impulse to Mend But Not End NAFTA

- ❑ We asked whether people thought NAFTA should be revoked, left as is, or renegotiated and modernized
- ❑ Renegotiate/modernize was the big winner, at 41%
- ❑ Only 11% wanted to revoke NAFTA
- ❑ Only 12% wanted to leave it as is
- ❑ While Republicans were somewhat more inclined to revoke than Democrats (17% to 7%) and Democrats were somewhat more inclined to leave as is than Republicans (20% to 6%) the middle course option was the clear top choice for both parties (Democrats at 42% and Republicans at 46%)

# *Should NAFTA be...*

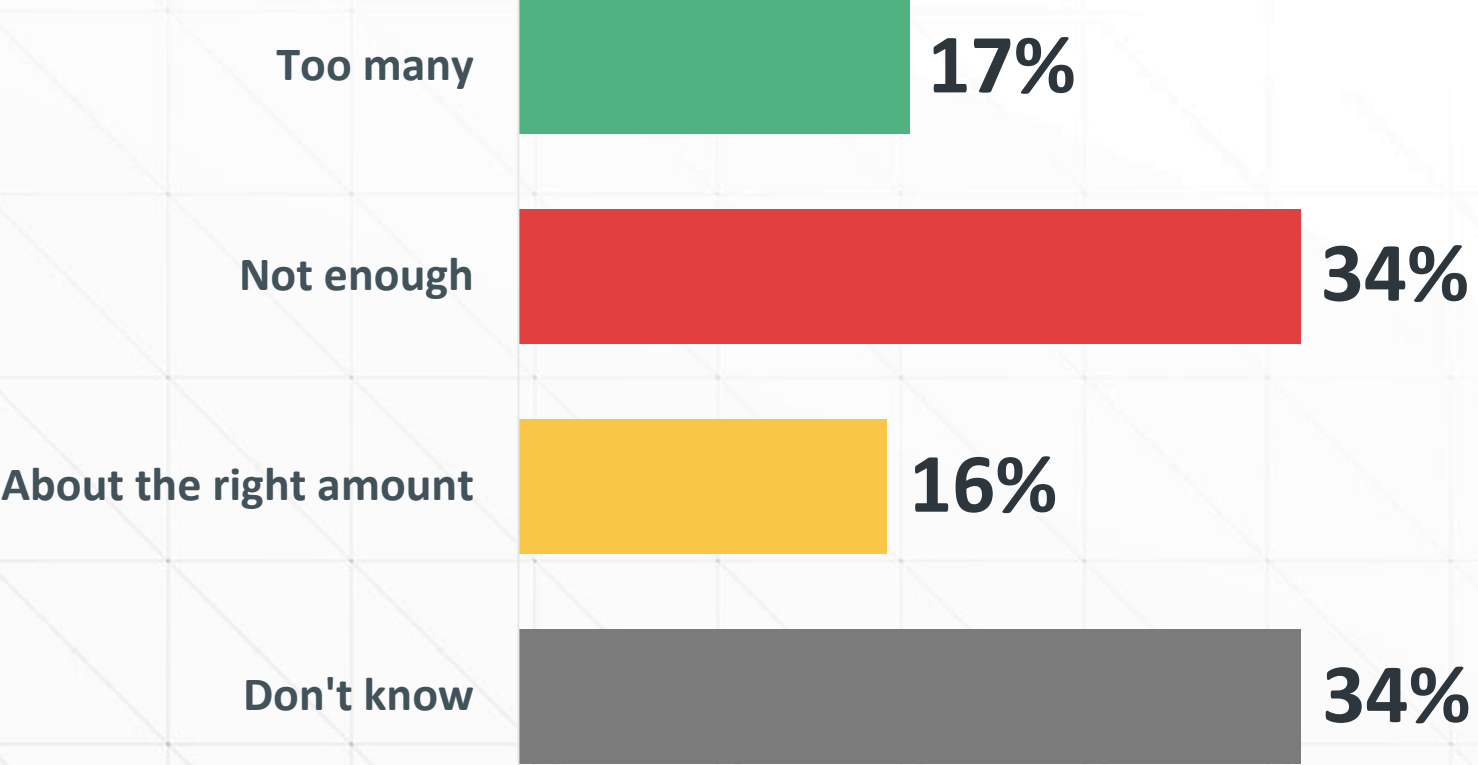


# For Most, More Free Trade Would be Good

- ❑ While noting that Mexico has free trade agreements with nearly 50% of the global market and the U.S. has free trade agreements with under 10% of the global market, we asked whether we should have more agreements or fewer
- ❑ Two thirds of the respondents had a hard opinion, of which just more than half (34%) concurred with the statement that more free trade would be desirable
- ❑ 17% thought we have too many free trade agreements while 16% thought we have the right amount
- ❑ Age and gender mattered less than party on this question
- ❑ Republicans are 5 points net in favor of more rather than less agreements while Democrats are 26 points net in favor of more than less agreements



# *Does the United States have too many, or not enough, free trade agreements?*



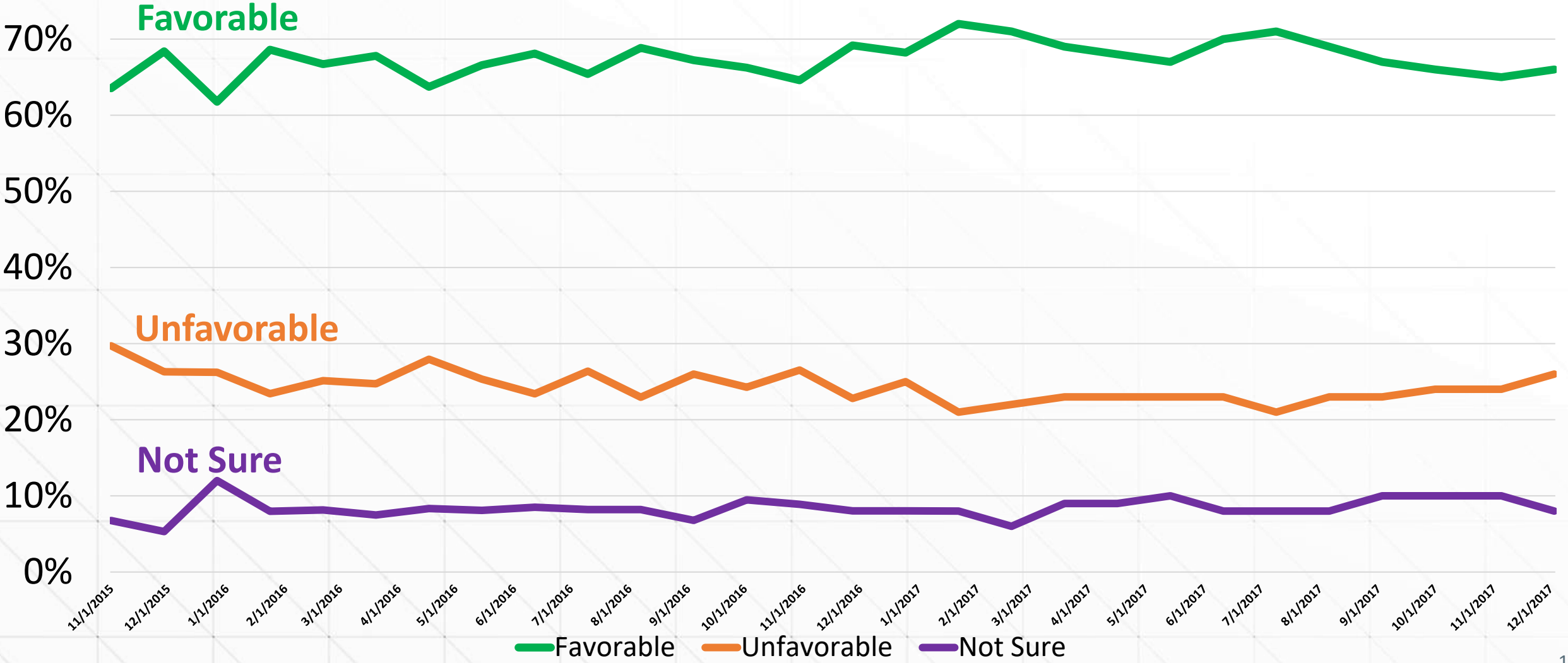


**INDUSTRY IMAGE**

# Car Owners Like the Auto Industry a Bunch

- ❑ This question reflects the opinion of car owners of the auto industry over the past couple of years
- ❑ The numbers are remarkably consistent, with favorables hovering in the mid 60's
- ❑ Car owners have a strikingly strong impression of the industry
- ❑ The industry is measured not by the public policy debates of the day but by the cars that consumers purchase and drive
- ❑ We've seen many data points indicating that consumers view today's cars as safer, cleaner and of higher quality – and these good favorables are the reward

# Opinion Of The Auto Industry: November 2015 - November 2017

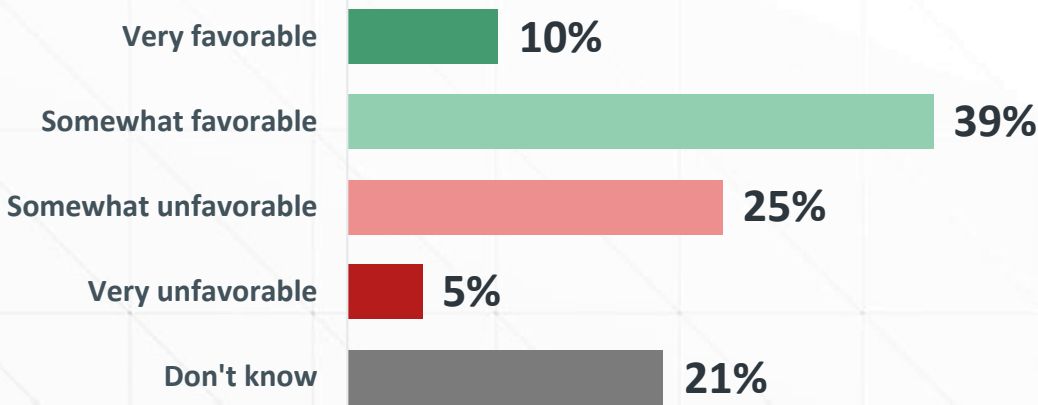


## Adults Have Strong Perceptions as Well

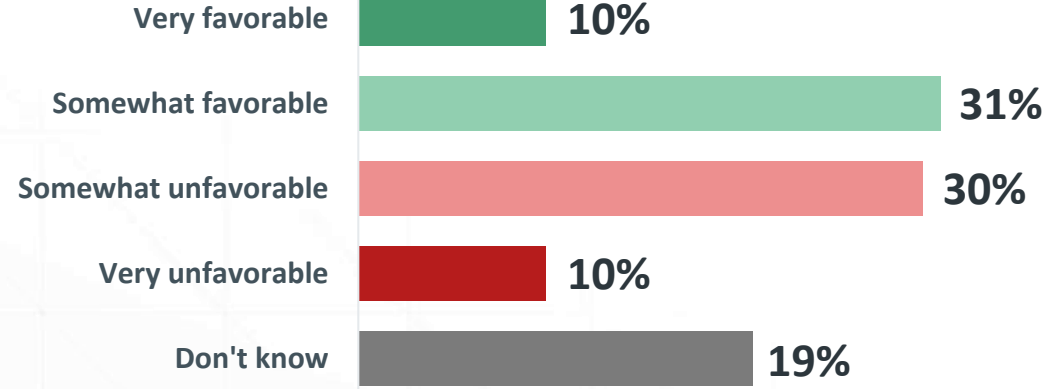
- ❑ This question is presented to adults rather than car owners, and as a consequence, the favorables are good but not as strong as they are with the set of Americans who choose to own vehicles
- ❑ Here are comparisons of four groups – auto industry, auto dealers, telecom industry and Internet companies
- ❑ All are net favorable; we have previously tested a broader range of industries and many are net unfavorable

# How Americans view Autos, Dealers, Internet Companies and Telecoms

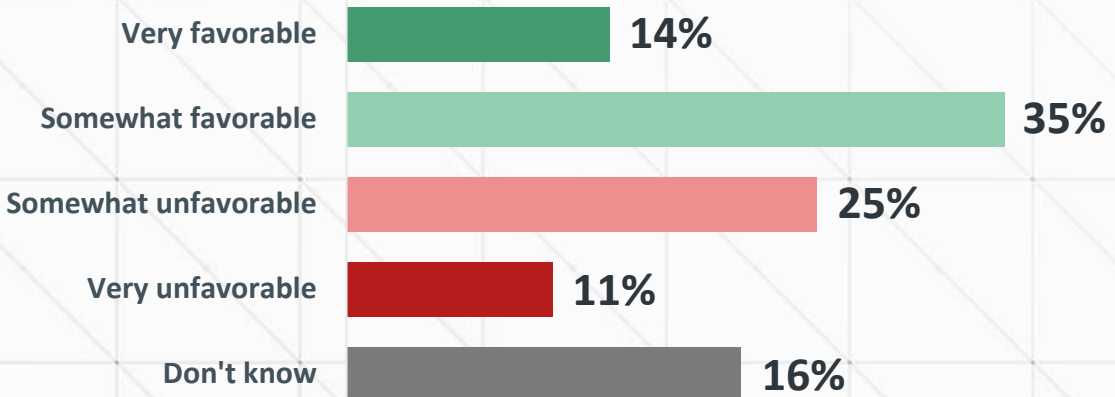
## *Auto Industry* 49% Favorable | 30% Unfavorable



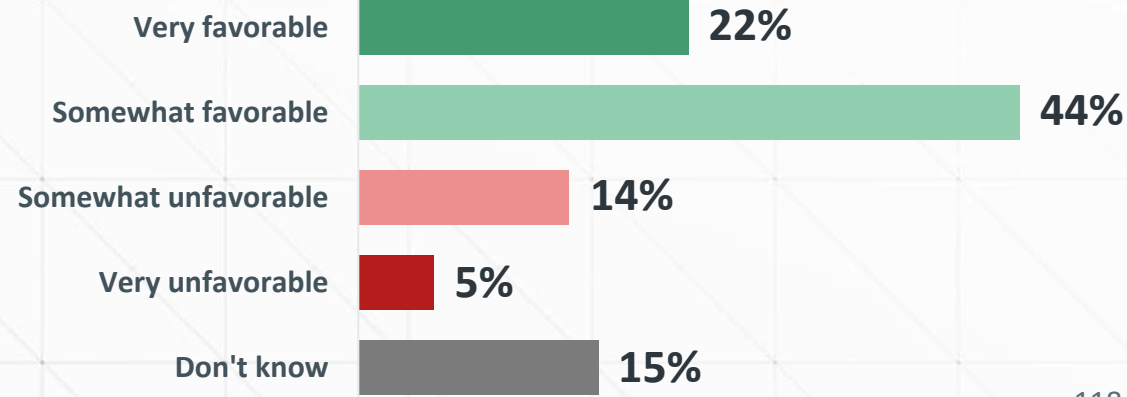
## *Auto Dealers* 41% Favorable | 40% Unfavorable



## *Telecom Industry* 49% Favorable | 36% Unfavorable



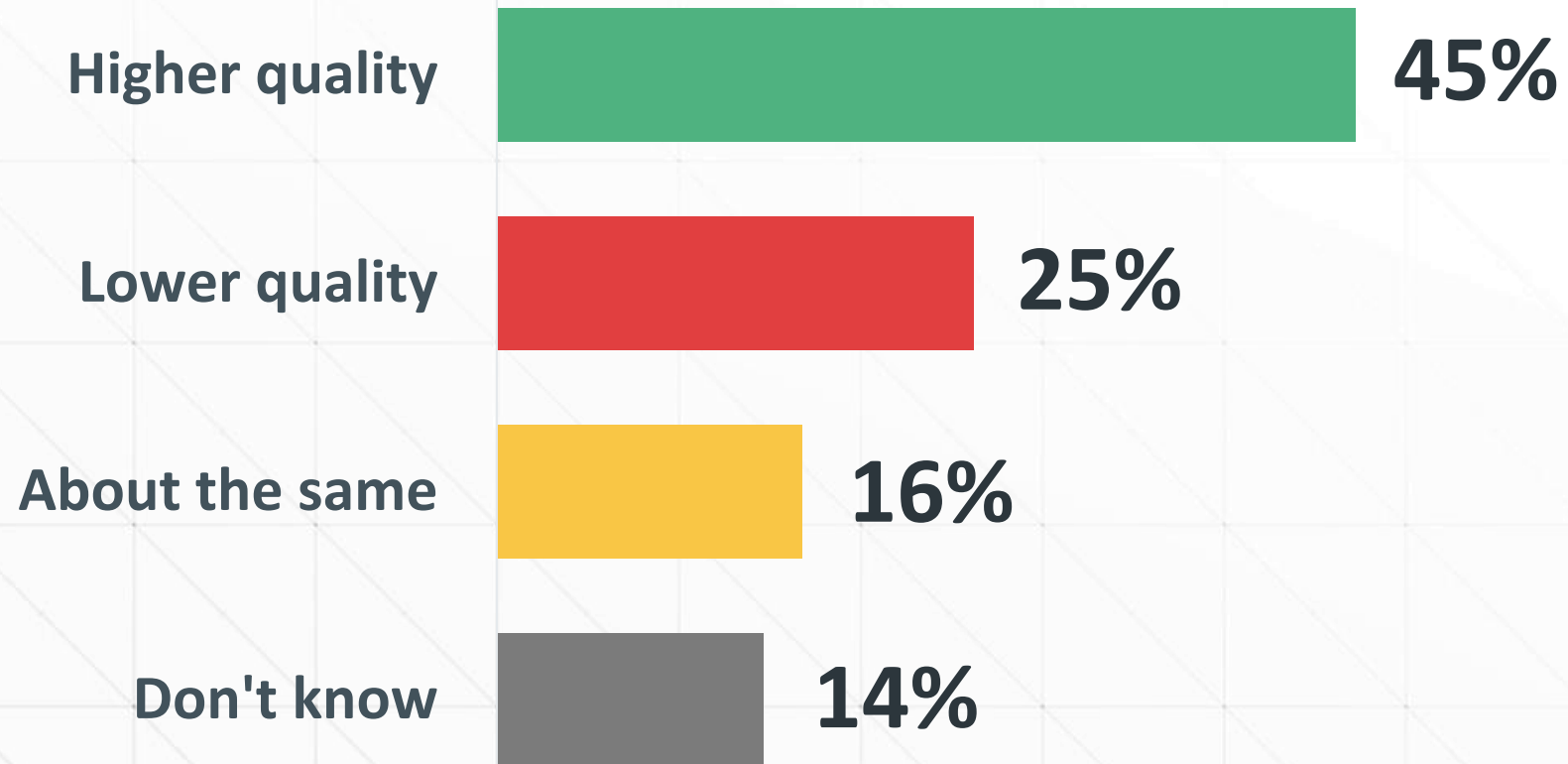
## *Internet Companies* 66% Favorable | 19% Unfavorable



# Most People See Rising Car Quality

- ❑ This question asked adults (rather than car owners) about the quality of cars today compared to ten years ago
- ❑ By almost 2 to 1 (45 - 25%), people said quality was higher with 16% saying it was about the same and 14% without an opinion – among car owners, the numbers are even stronger
- ❑ Men were net 31 points higher quality while women were net 11 points higher quality
- ❑ 65+ seniors were the most positive age group at net 30 points higher quality
- ❑ There was no meaningful statistical difference by party or ideology
- ❑ Higher quality cars last longer, which is a bit of a challenge because it's great when people buy new cars

***Would you say that the quality of cars today compared to ten years ago are...***





# Industry Image

- ***“The car manufacturers and technology companies have to compromise and work together in order to progress.” (Male, 36-49)***
- ***“The auto industry is a driver of the economy and a leading employer. I see the next generation of cars being a combined effort [between auto and tech industries] through cross-licensing and joint ventures since car manufacturers know how to build cars and the tech companies know software, so why reinvent the wheel?” (Male, 50+)***



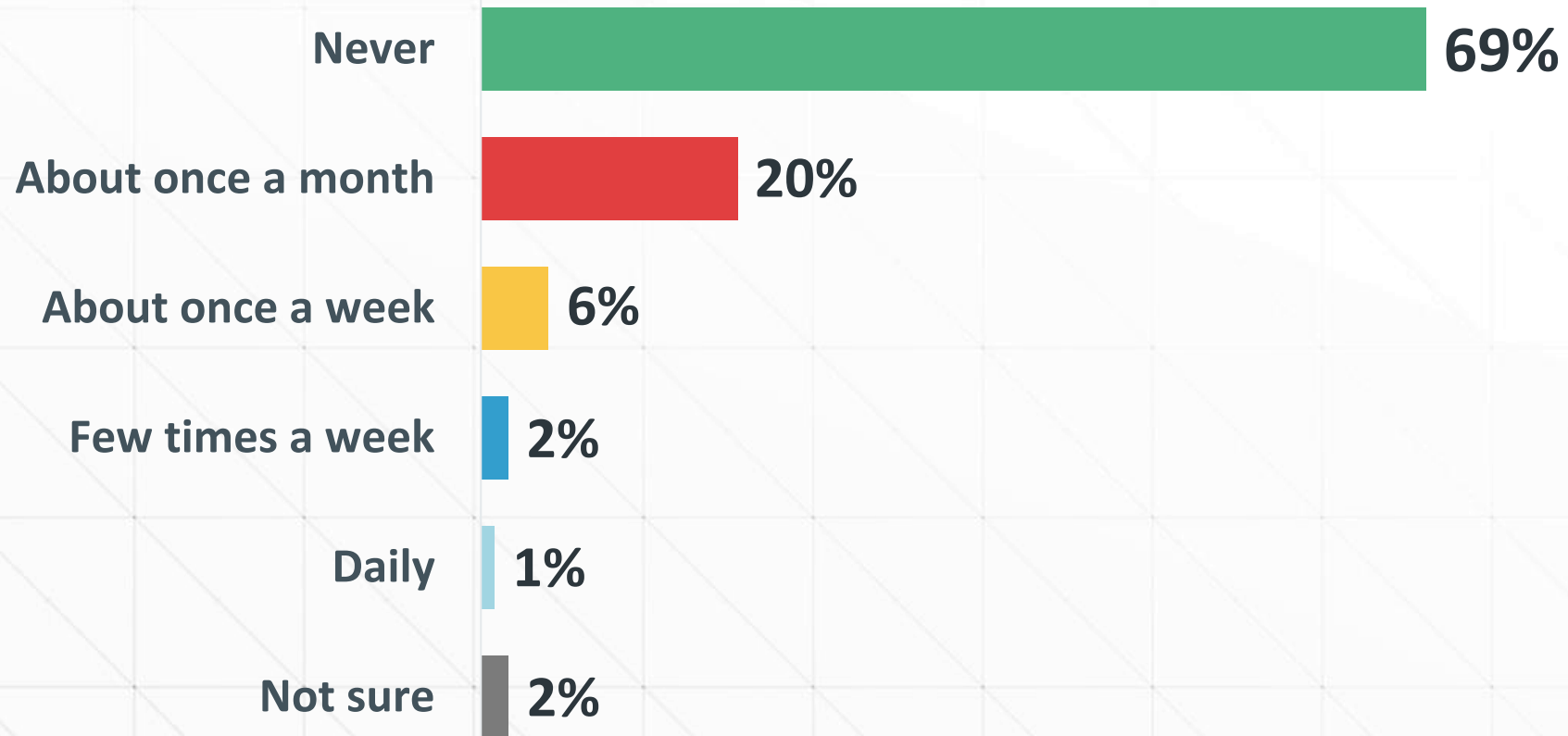


**SHARING**

# Lots of Folks Still Have Not Used Ride-Sharing

- ❑ This question was posed in our Index to car owners rather than adults
- ❑ Of car owners, 69% have not ever used a Ride-Sharing service like Uber or Lyft
- ❑ We have asked adults this same question previously and, with this broader group, the answer was about 60% - consistent with findings we have seen in surveys by other groups
- ❑ Only about 9% of car owners use these services once a week or more
- ❑ There is no break by gender, a limited break by party that probably merely reflects age, but as we would expect, there are very significant differences by age group
- ❑ 53% of 18-29 car owners use these services at least once a month while only 8% of seniors 65+ do the same

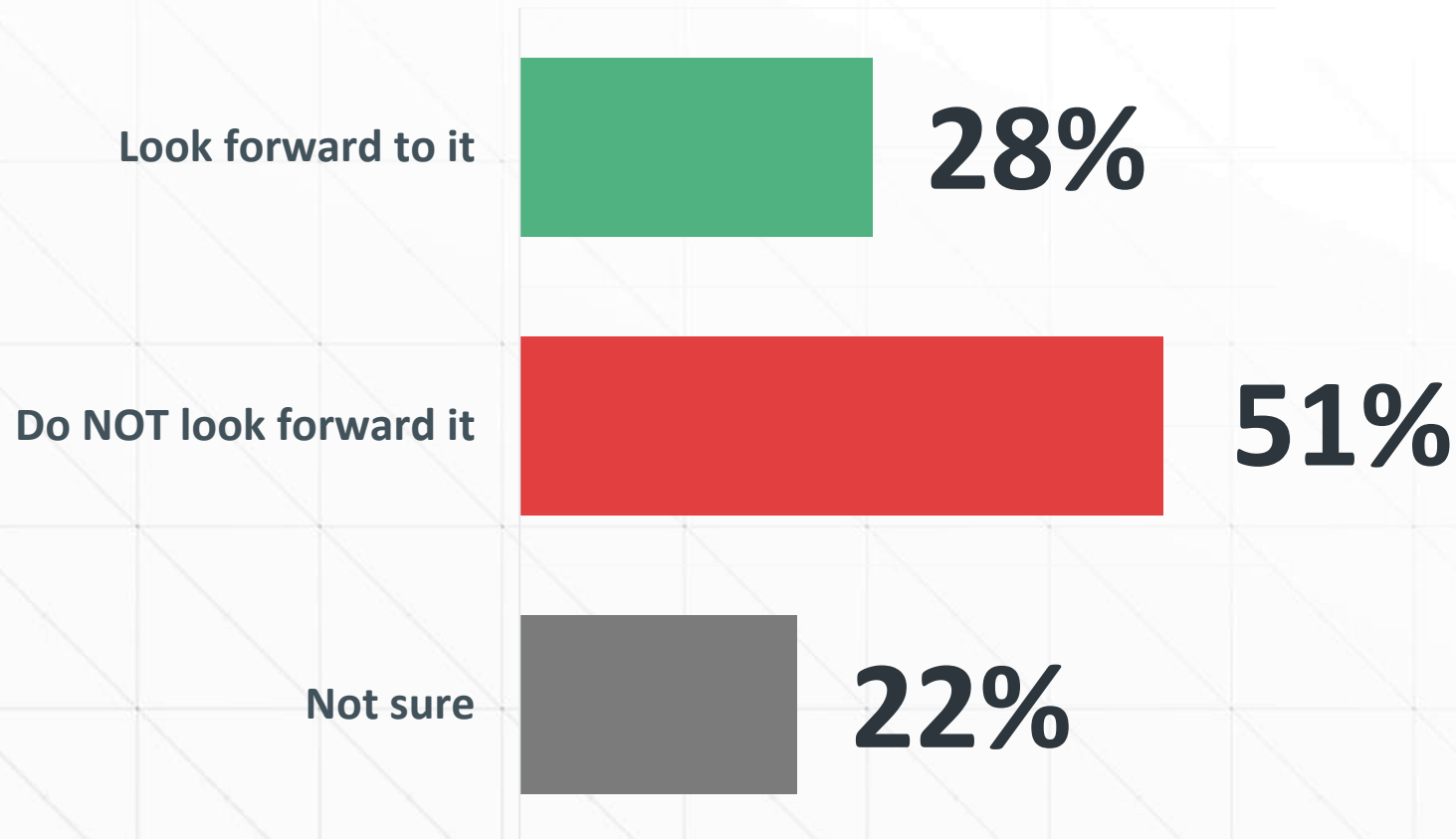
***How often do you use Ride-Sharing services like Uber or Lyft... never, about once a month, about once a week, a few times a week, or daily?***



# Currently Dubious About Autonomous Ride-Sharing

- This question asks folks if they look forward to the innovation (in about ten years from now) of autonomous Ride-Sharing that will be less expensive for riders because there will be no human driver
- A majority of respondents (51%) said they did NOT look forward to this innovation while 28% said they did
- Those 18-29 were evenly split; seniors 65+ were strongly negative (64-15% NOT looking forward)
- We see that the natural reaction to this idea lacks enthusiasm but we also know that experience can change attitudes quickly, as it has about the more general question of AVs

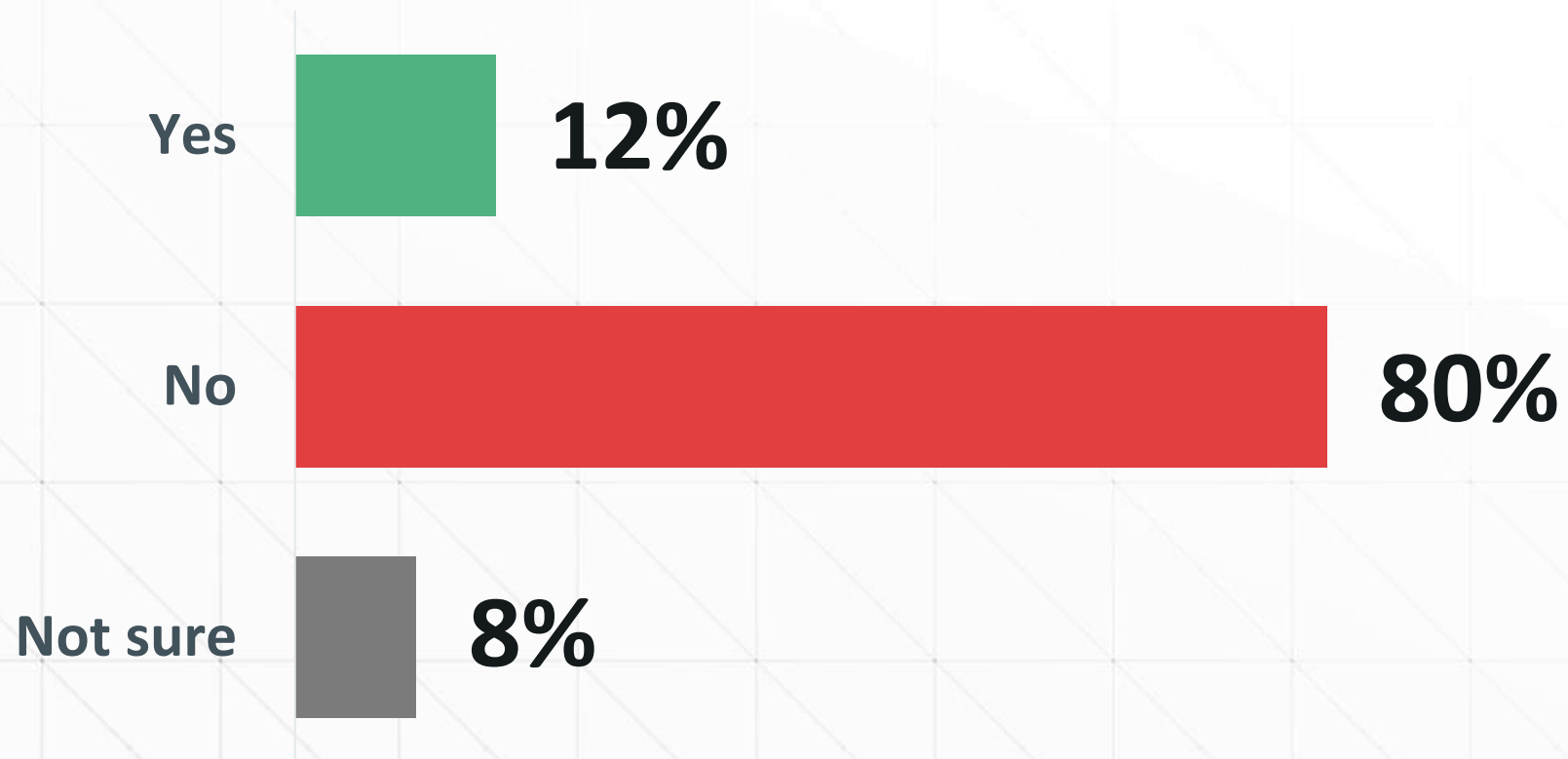
*Many say that in about 10 years from now, ride-sharing services like Uber and Lyft will operate with self-driving electric vehicles that will be less expensive for riders because there will be no human driver. Do you look forward to this innovation or not?*



# Desire for Ownership Strong Even Given Ride-Sharing

- We ask a very direct question about whether these services impact a car buyer's perspective on purchasing a new car in the future
- The answer in this group of car owners was an emphatic no
- 80% of 92% with an opinion indicated that they would buy a new car regardless of the availability of these services; only 12% said it would impact the likelihood of doing so
- There was no real difference in attitude by party
- Women were stronger on ownership than men
- That said, almost a third of those under 29 indicated that the likelihood of purchasing a new car could be impacted – only 7% of seniors were in that camp

# Will the availability of Ride-Sharing services like Uber and Lyft impact the likelihood of you buying a new car in the future

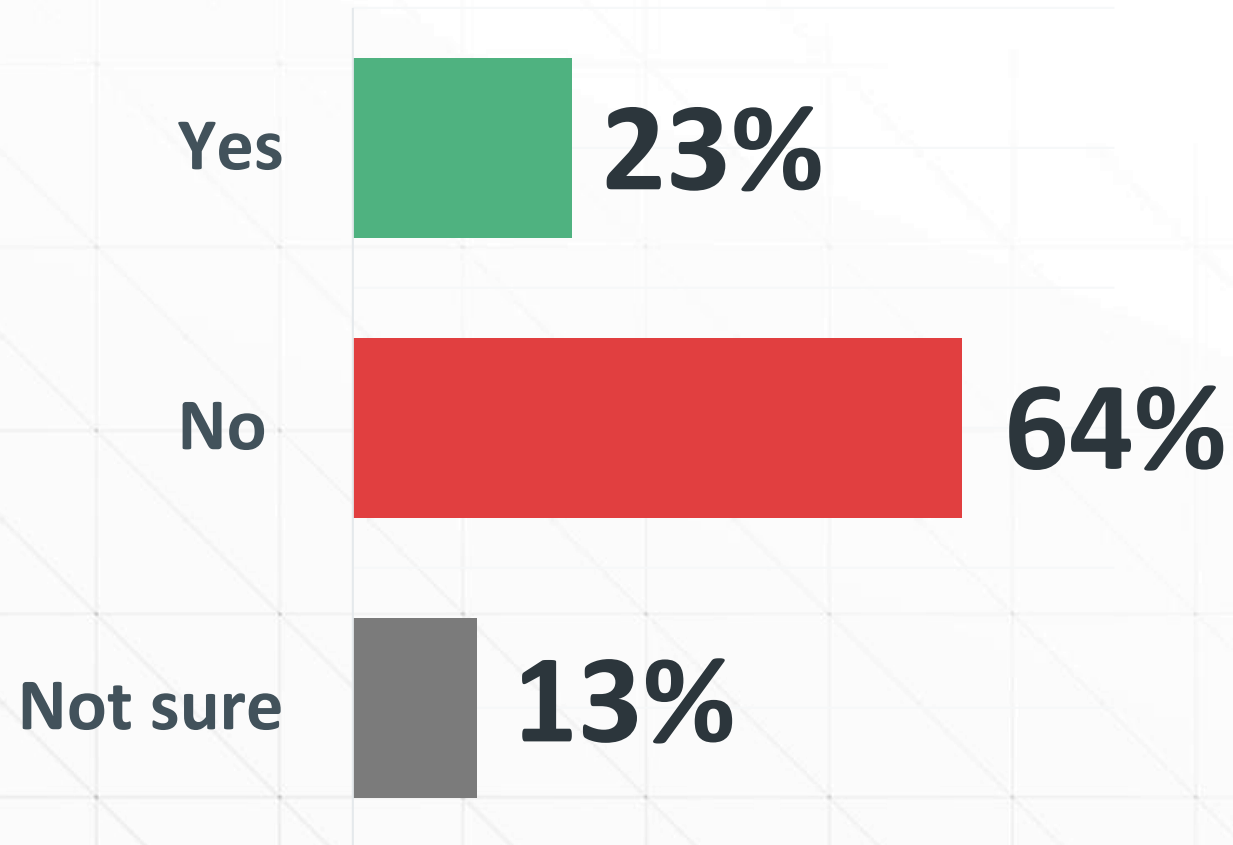




## Ride-Sharing Likely to Cut Into Rentals While Traveling

- This question asks whether Ride-Sharing services will undermine the use of rental cars while traveling
- While the answer was almost 3 to 1 no, there is clearly more immediate risk for rental car companies than there is on the broader ownership question
- The generational question is especially relevant here, with almost 40% of those 18-29 already suggesting impact on the probability of renting a car
- By comparison, only 12% of seniors 65+ indicated their rental car usage could be affected

*Will the availability of Ride-Sharing services like Uber and Lyft impact the likelihood of you renting a car while traveling?*



# Sharing

- ***“Not as convenient, can't always trust or feel confident in your driver, no access to a car immediately if there is an emergency.” (Female, 18-35)***
- ***“I like having ‘my’ vehicle... knowing it's always there for me, as well as never having to wonder who else is driving it or ‘what’ is going on inside.” (Male, 36-49)***
- ***“I don't like the idea as you have to coordinate schedules and are at the mercy of other people using the car as well... I have three kids involved in many activities. I enjoy having the freedom of having my own car.” (Female, 36-49)***





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