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Distracted Driving
Trends, Challenges, Solutions

Georgia House Distracted Driving Committee
Atlanta, GA
August 28, 2017

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Insurance Information Institute and
Clinical Associate Professor of Finance ♦ Darla Moore School of Business
University of South Carolina

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Distracted Driving

Assessing the Scale and Scope of the Problem

Driven to Distraction: The Facts

- **Distracted driving is responsible for more than 3,100 crash deaths annually in the US**
  - Approximately 10% of all fatal car crashes are attributed to distracted driving (3,477 distracted driving deaths in 2015 out 35,097 from all causes)
- **Distracted driving behaviors (all forms) lead to more than 420,000 injuries each year**
- **Nearly 1/3 of all U.S. drivers 18 to 64 years old read or send text or email messages while driving**
- **Simply knowing the risks of distracted driving has not yet translated into reducing the behavior**
  - *Implication: Awareness alone is unlikely to solve the problem*

Source: Abstracted from NHTSA, "Investigation and Prosecution of Distracted Driving Cases," May 2017, accessed 8/25/17 at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf

Fatal Crashes Affected by Distracted Driving, 2015

More than 3,100 people are killed each year in distracted driving crashes and more than 420,000 are injured.

	Crashes	Drivers	Fatalities
Total fatal crashes	**32,166**	**48,613**	**35,092**
Distracted-affected fatal crashes			
Number of distracted-affected fatal crashes	3,196	3,263	3,477
Percent of total fatal crashes	10%	7%	10%
Cellphone in use in distracted-affected fatal crashes			
Number of cellphone distracted-affected fatal crashes	442	456	476
Percent of fatal distracted-affected crashes	14%	14%	14%

Distracted driving accounts for as much as 10% of fatal crashes

Source: NHTSA data from Insurance Information Institute at: http://www.iii.org/fact-statistic/distracted-driving

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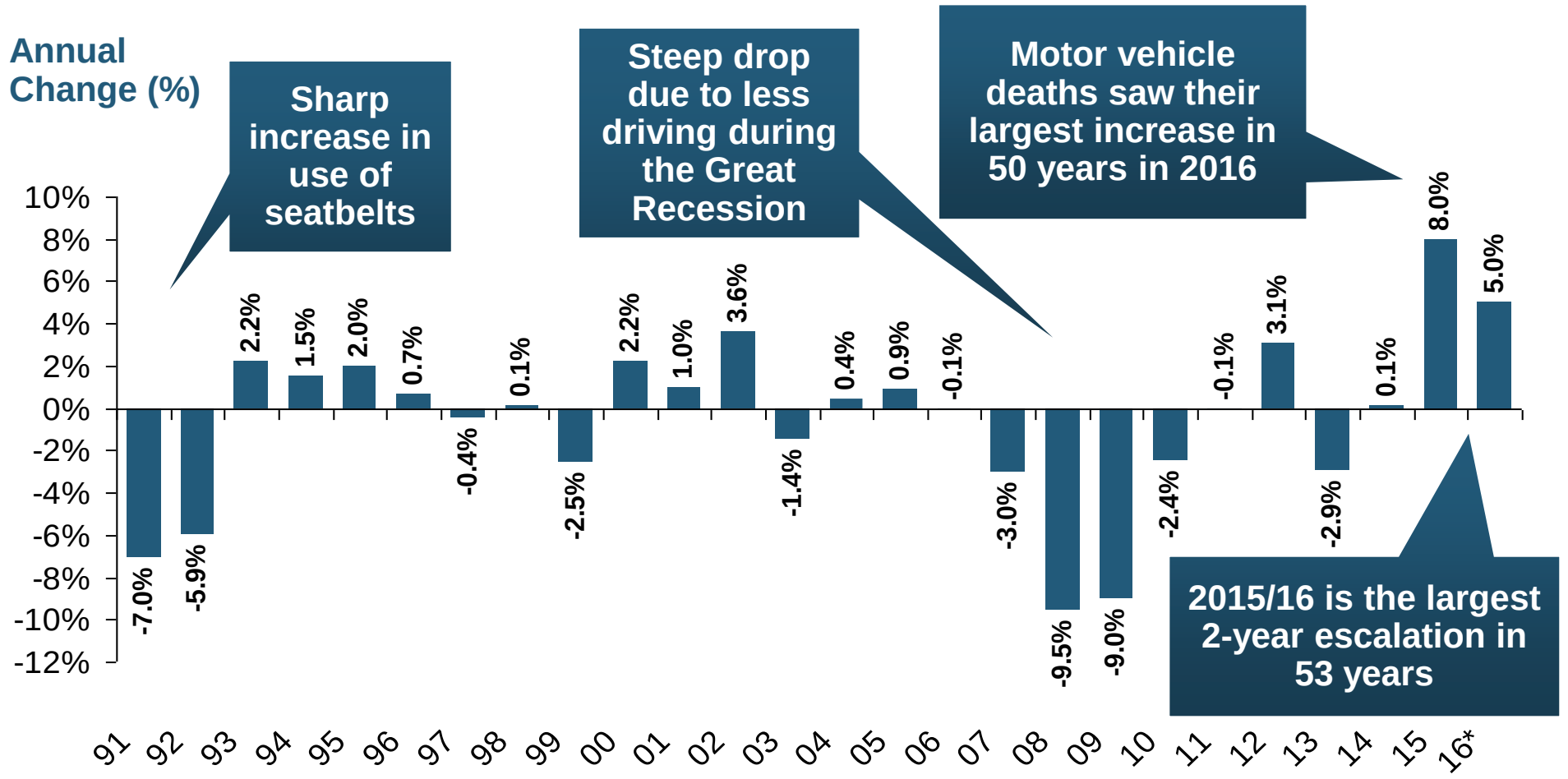
Auto Fatalities Are Rising

Fatal Auto Accidents Are Rising Faster in Georgia than the US Overall

U.S. Annual Change in Automobile Deaths, 1991- 2016*

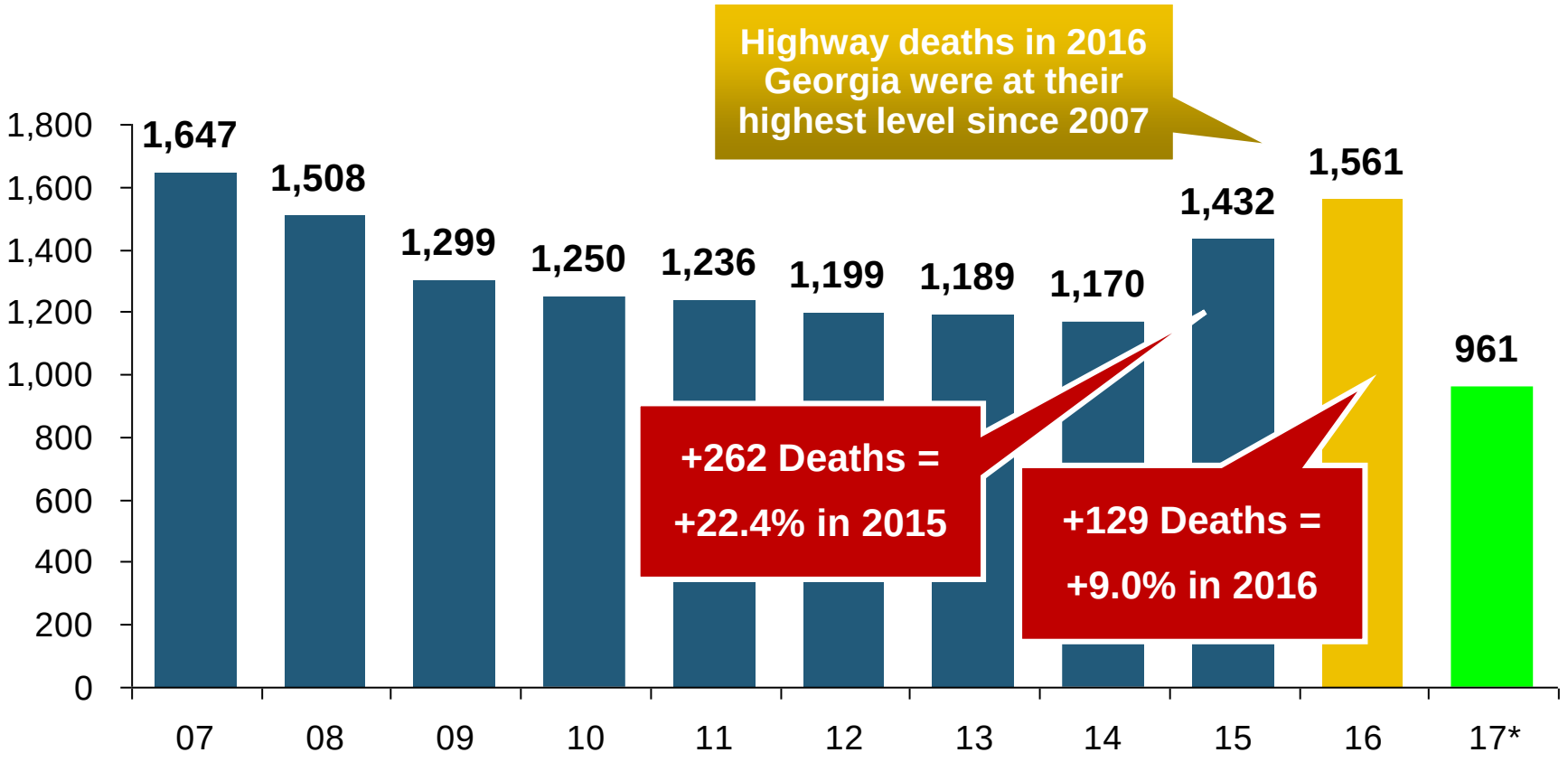


Driving Has Been Getting Safer For Decades, But Recent Trend Is Discouraging—40,200 Deaths in 2016—and Likely More in 2017

*2016 data is an estimate through Dec. 31.

Source: National Safety Council.

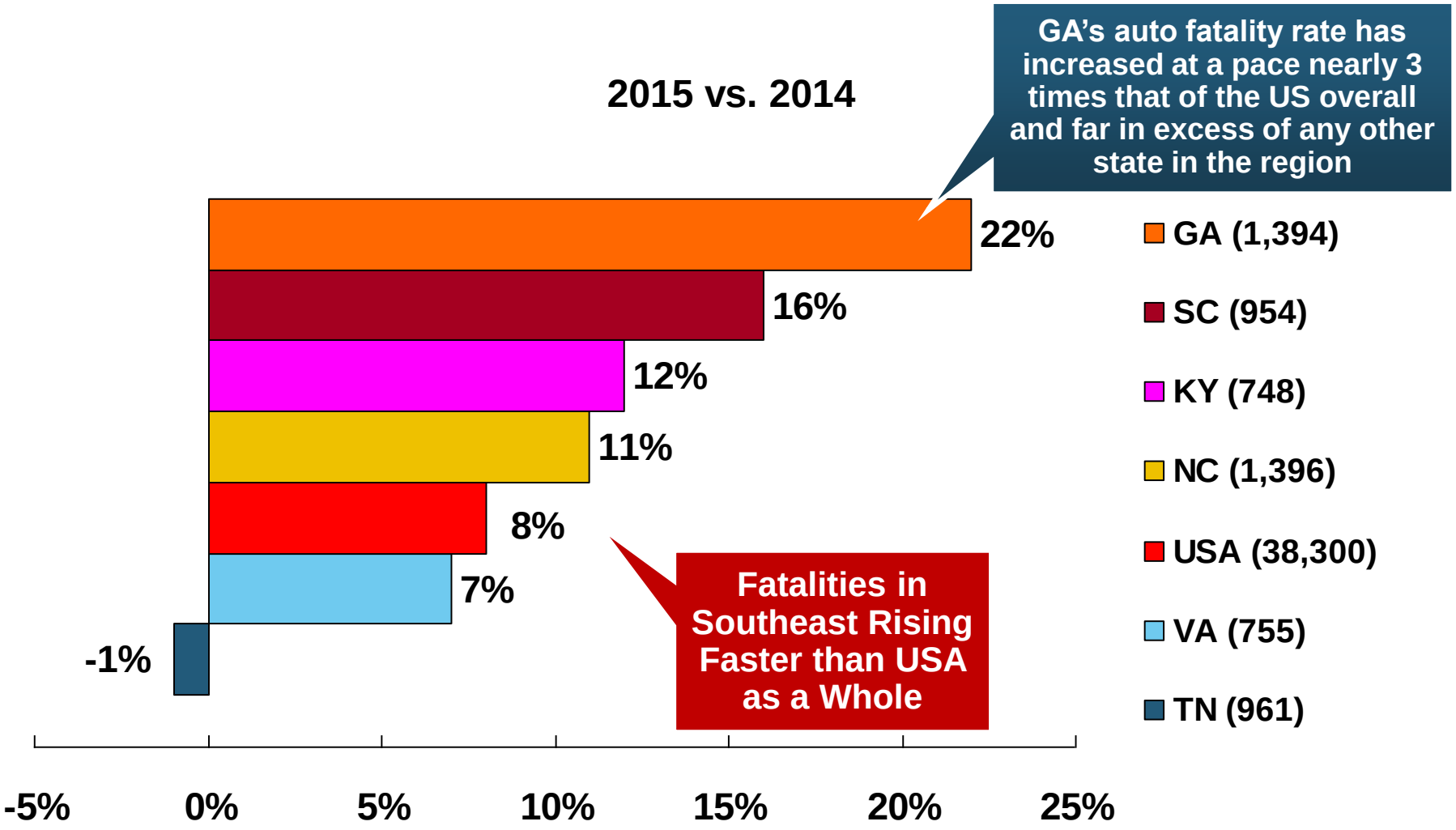
Georgia Highway Fatalities, 2007–2017*



Highway fatalities surged in Georgia in 2015-2016.
As of Aug. 26, 961 highway deaths had been recorded in GA.

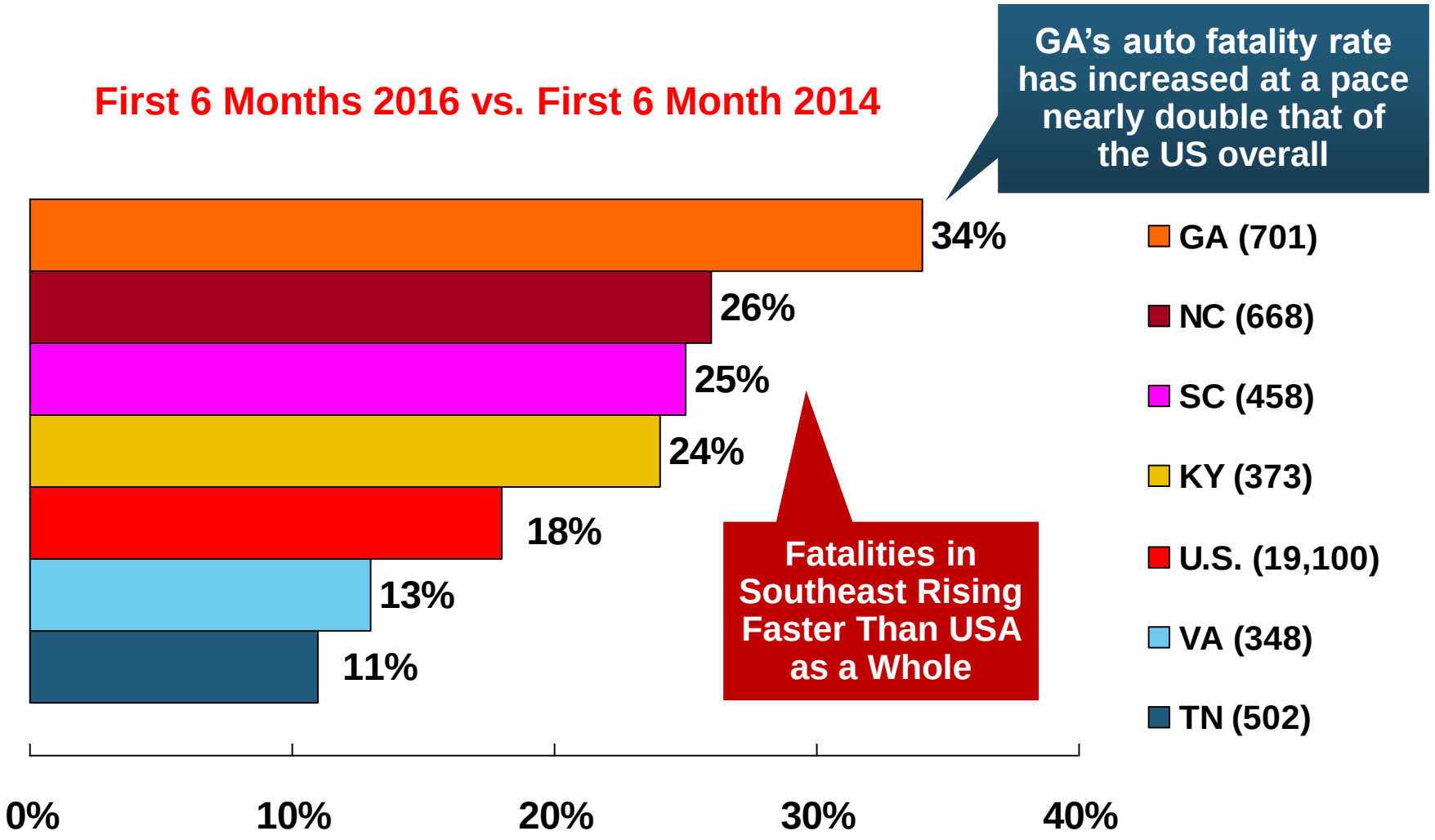
*As reported through Aug. 26, 2017.
Sources: Georgia Department of Transportation accessed 8/26/17 at x

Change in Auto Fatalities by State: Especially Severe in Georgia



SOURCE: Estimates from National Safety Council.

Change in Auto Fatalities by State: Especially Severe in Georgia



SOURCE: Estimates from National Safety Council.

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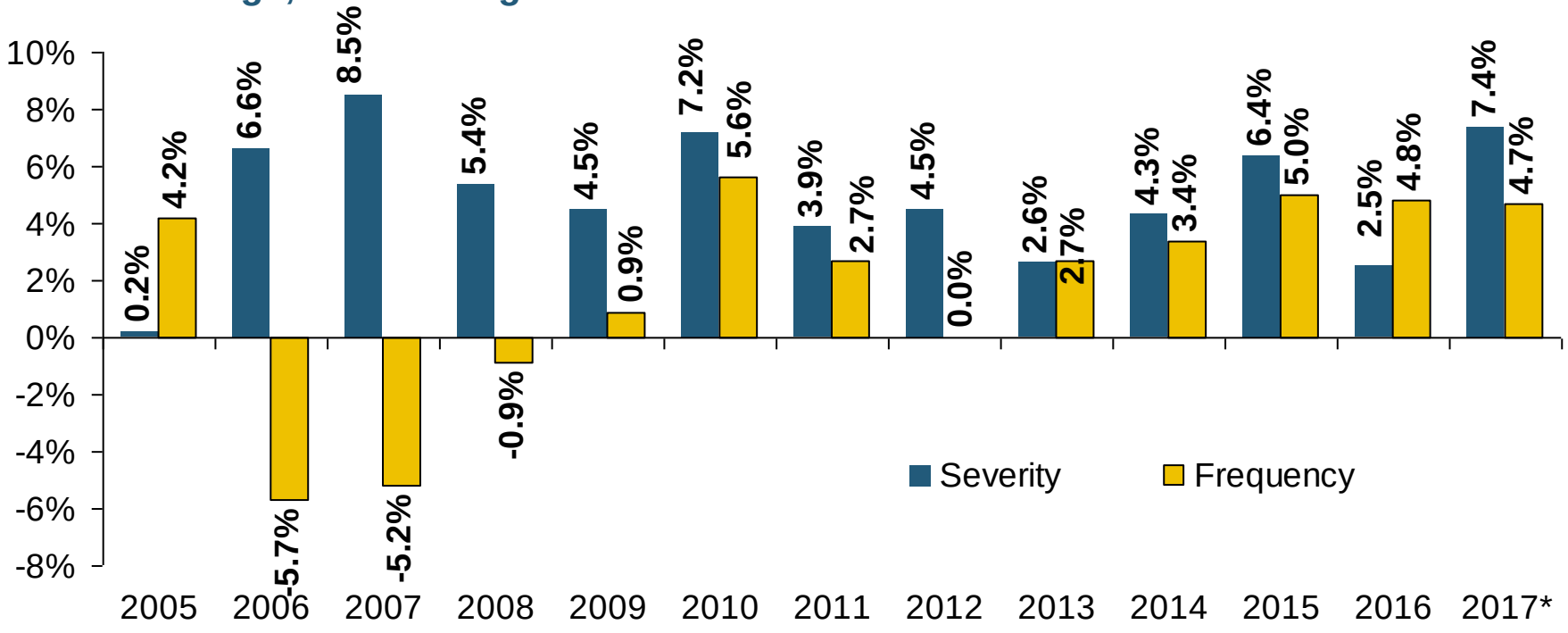
Private Passenger Auto Frequency & Severity Trends in Georgia vs. Southeast States and US

Frequency, Severity and Loss Ratios Are Up in Georgia

Distracted Driving is a Contributing Factor

Georgia Coverage: BI Severity & Frequency Trends Are Both Higher in Recent Years*

Annual Change, 2005 through 2017*

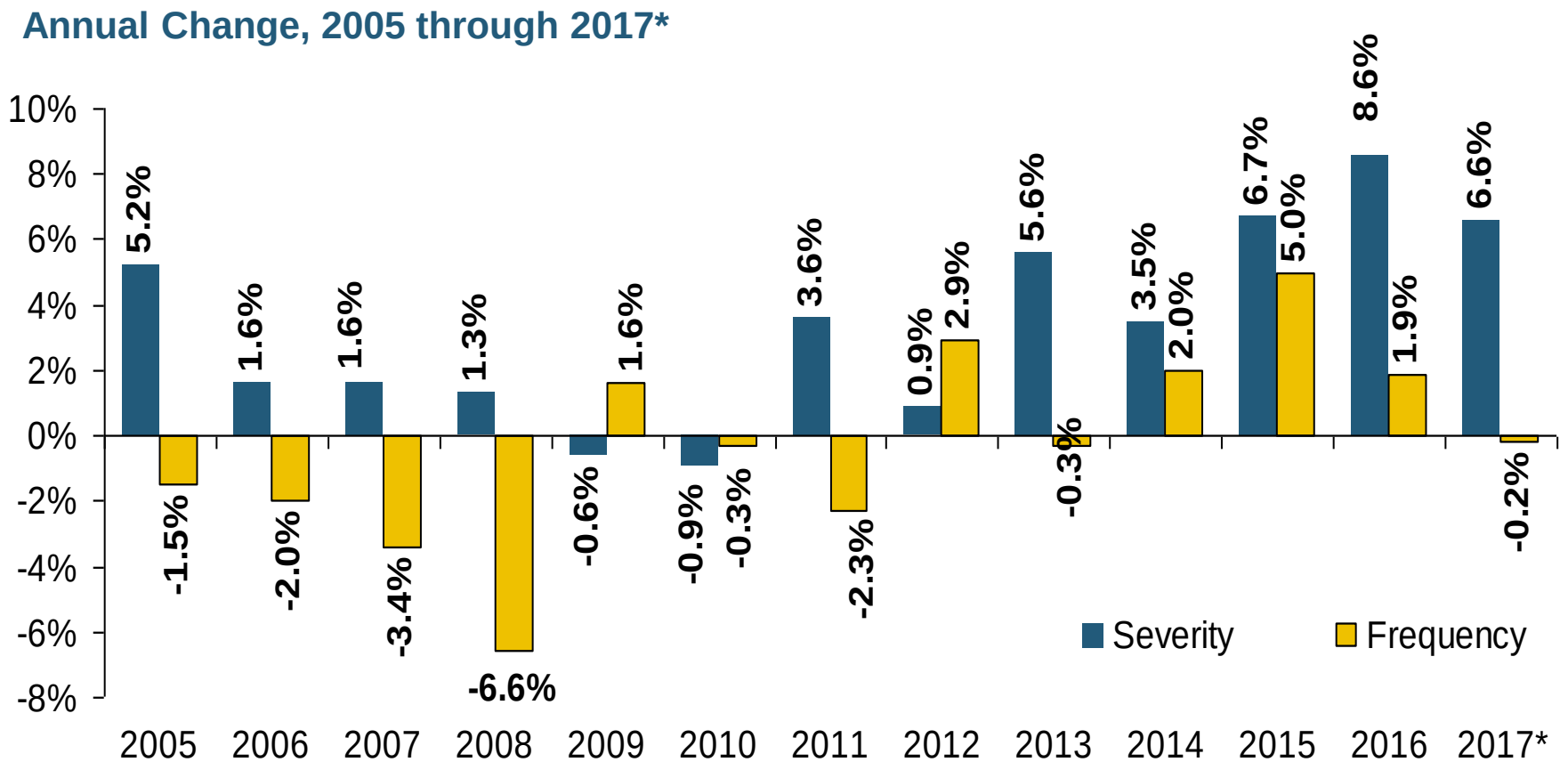


Distracted Driving Is One of Numerous Factors Pushing Bodily Injury Claim Frequency and Severity Higher

*2017 data are for the 4 quarters ending March 31, 2017.

Source: ISO/PCI *Fast Track* data; Insurance Information Institute

Georgia Coverage: Prop. Damage Liability Frequency Trends Are Higher in 2014-2017*



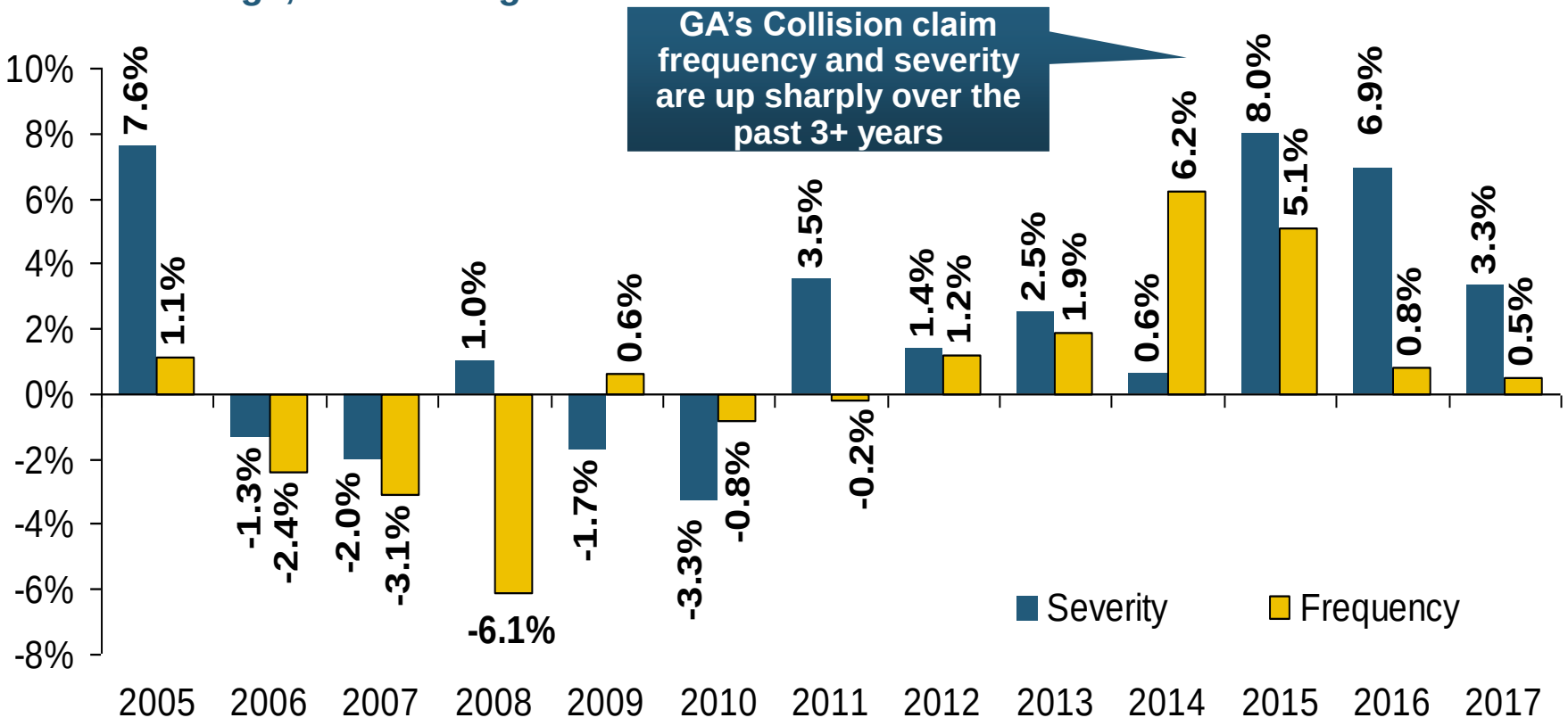
Distracted Driving Is One of Numerous Factors Pushing Porperty Damage Liability Claim Frequency and Severity Higher

*2017 data are for the 4 quarters ending March 31, 2017.

Source: ISO/PCI *Fast Track* data; Insurance Information Institute

Georgia Coverage: Collision Frequency Trends Are Higher in 2014-2017*

Annual Change, 2005 through 2017*



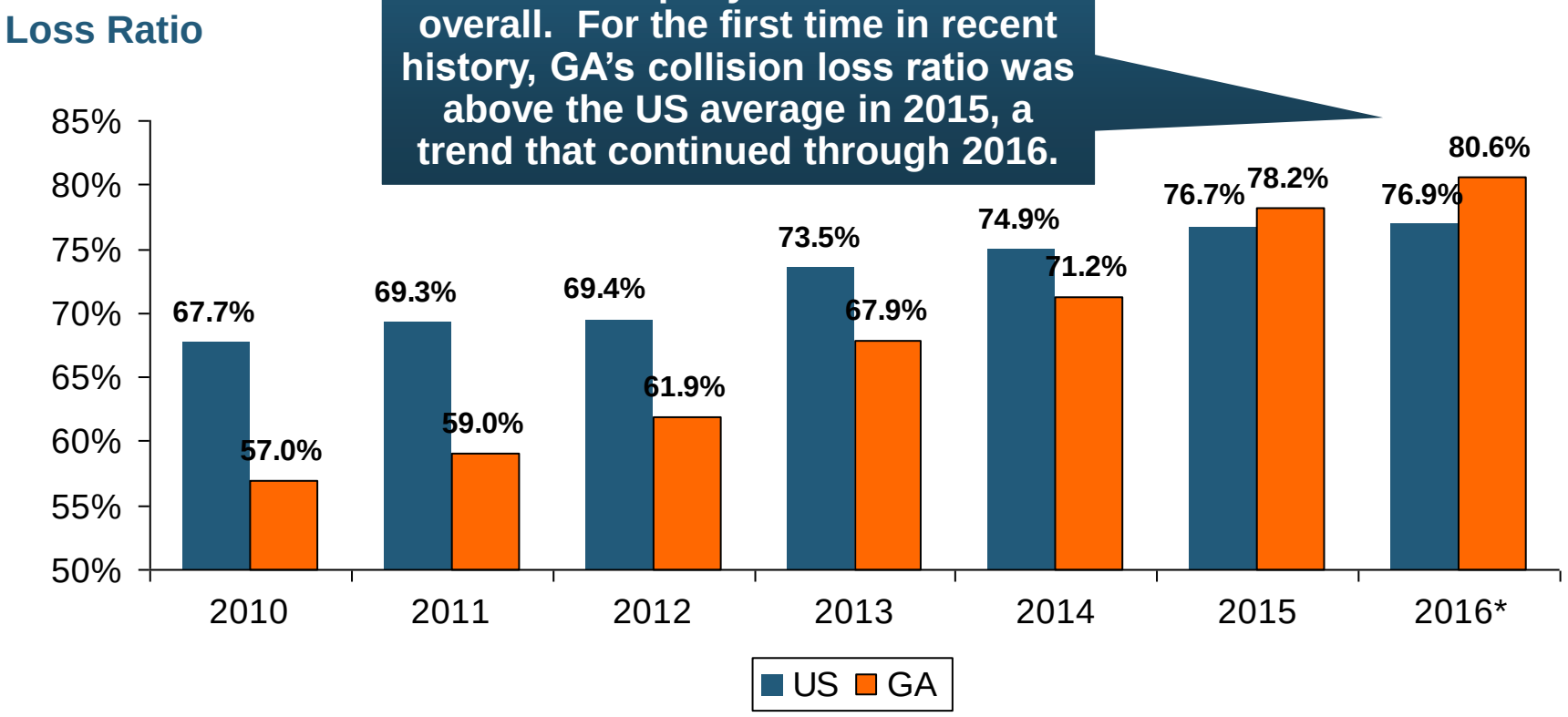
The Recession, High Fuel Prices Helped Temper Frequency and Severity, But this Trend Has Clearly Reversed, Consistent with Experience from Past Recoveries

*2017 data are for the 4 quarters ending March 31, 2017.

Source: ISO/PCI *Fast Track* data; Insurance Information Institute

Collision Loss Ratio Trending Upward: Pvt. Passenger Auto, GA vs. US, 2010 – 2016*

GA's Collision loss ratio is up 23.6 percentage points since 2010, rising far more rapidly than in the US overall. For the first time in recent history, GA's collision loss ratio was above the US average in 2015, a trend that continued through 2016.

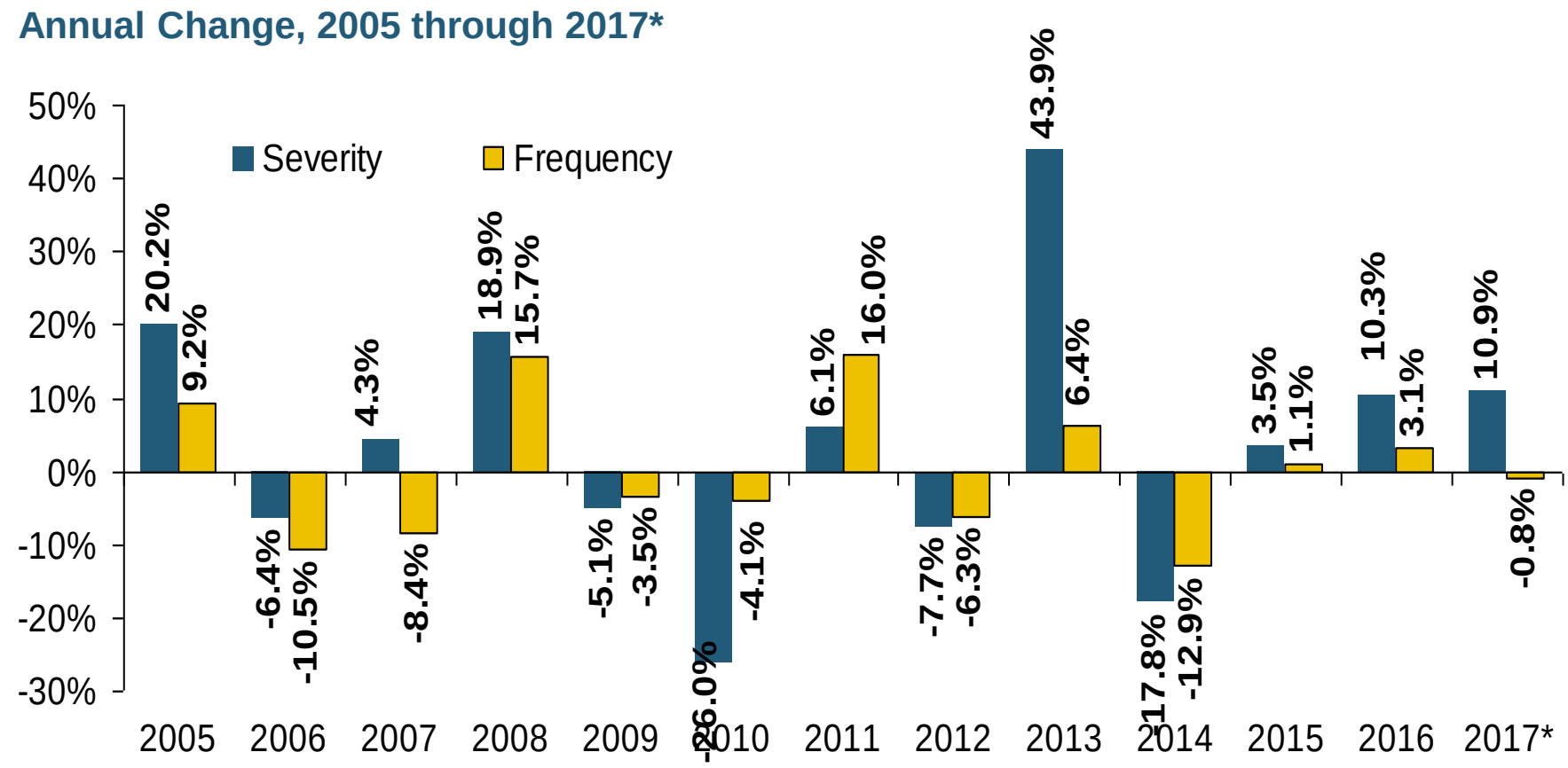


Collision Loss Ratios are Rising Much Faster in Georgia than the US Overall

*2016 data are for the 4 quarters ending Dec. 31, 2016.

Source: ISO/PCI *Fast Track* data; Insurance Information Institute

Georgia Coverage: Comprehensive Frequency, Severity Typically Tied to Weather Events

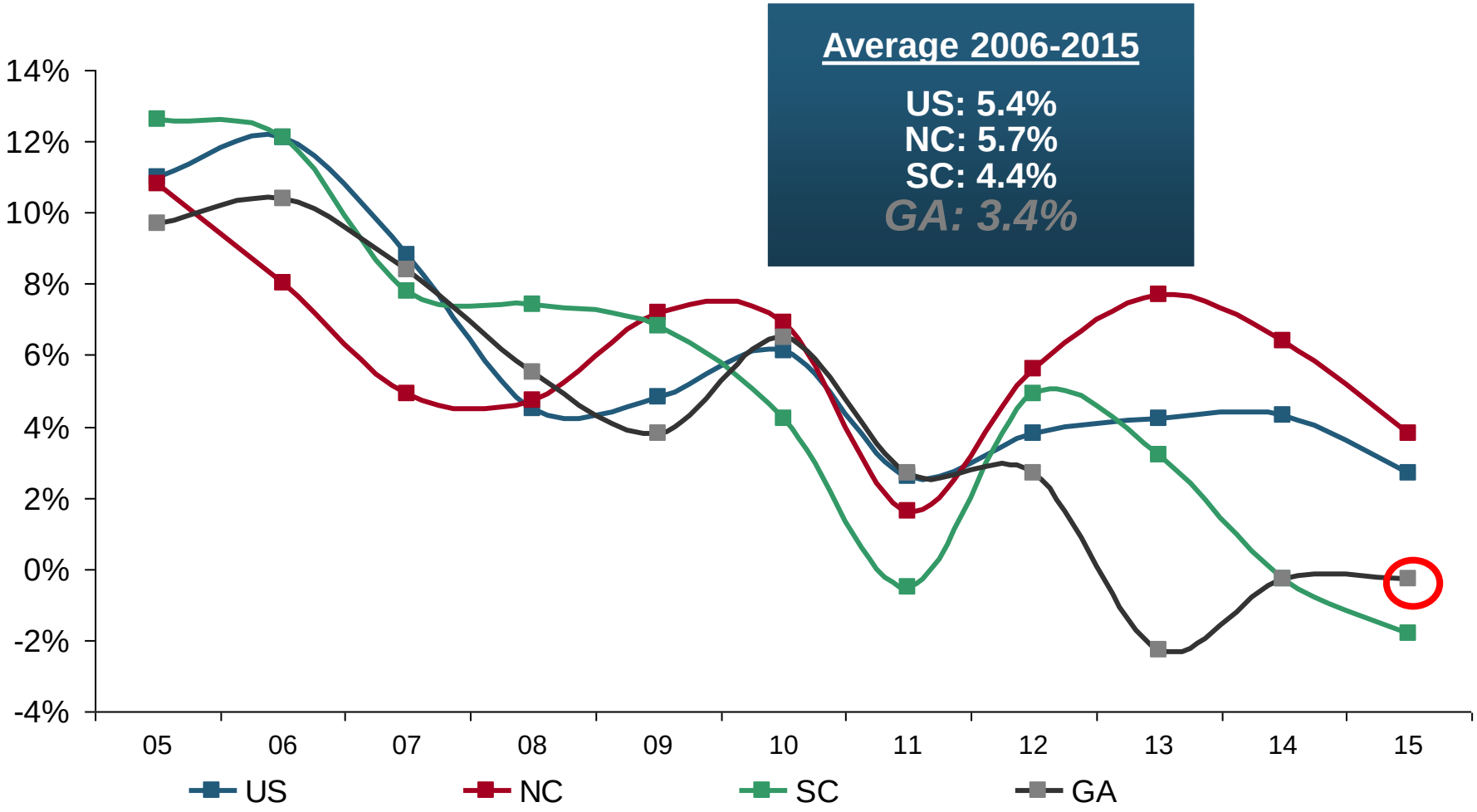


Weather Events Drive Volatility in Comprehensive Coverage

*2017 data are for the 4 quarters ending March 31, 2017.

Source: ISO/PCI *Fast Track* data; Insurance Information Institute

RNW PP Auto: NC, SC and GA vs. U.S., 2005-2015



Source: NAIC.

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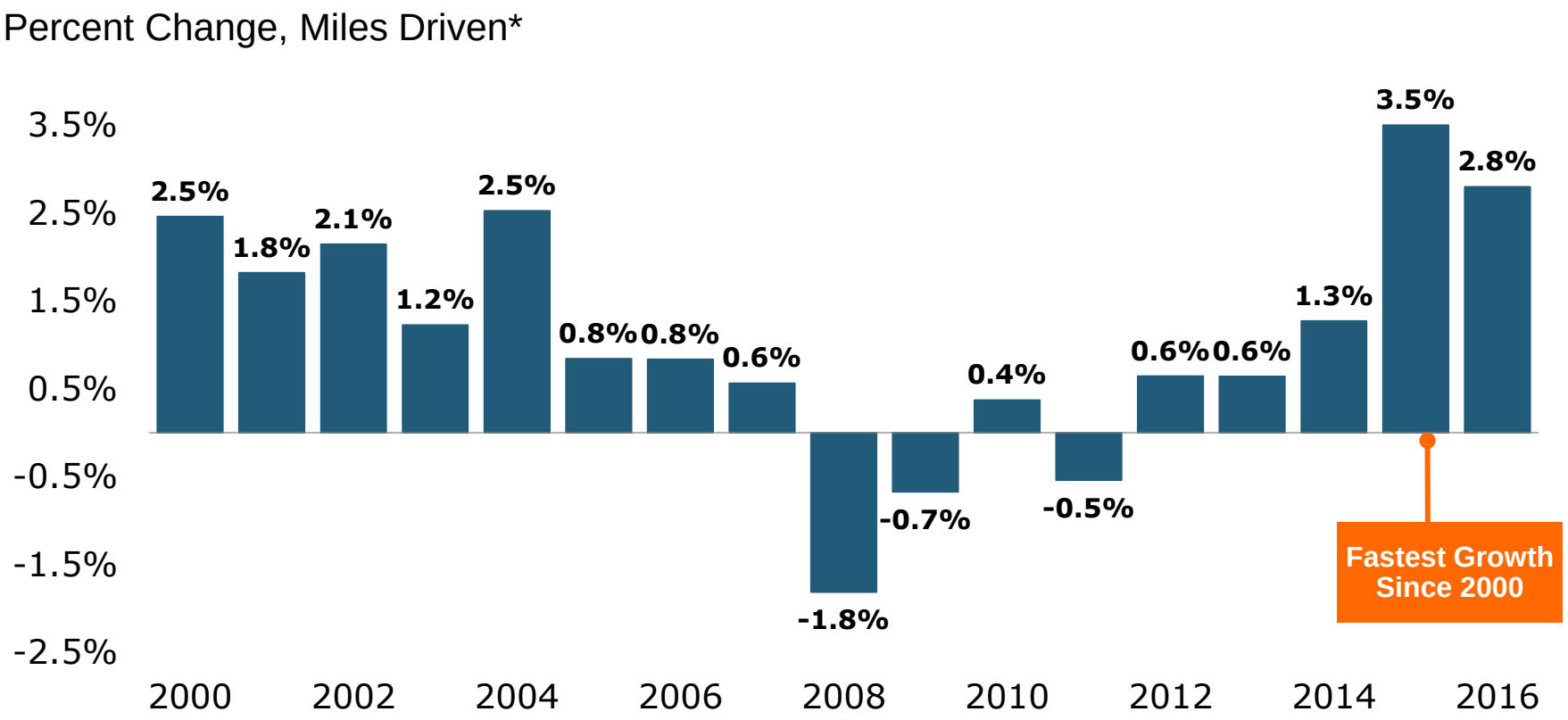
A Few Factors Driving Adverse Private Passenger Auto Loss Trends

More Jobs, Better Economy, More People Driving, Lower Gas Prices, More Expensive Cars, Higher Speed Limits…

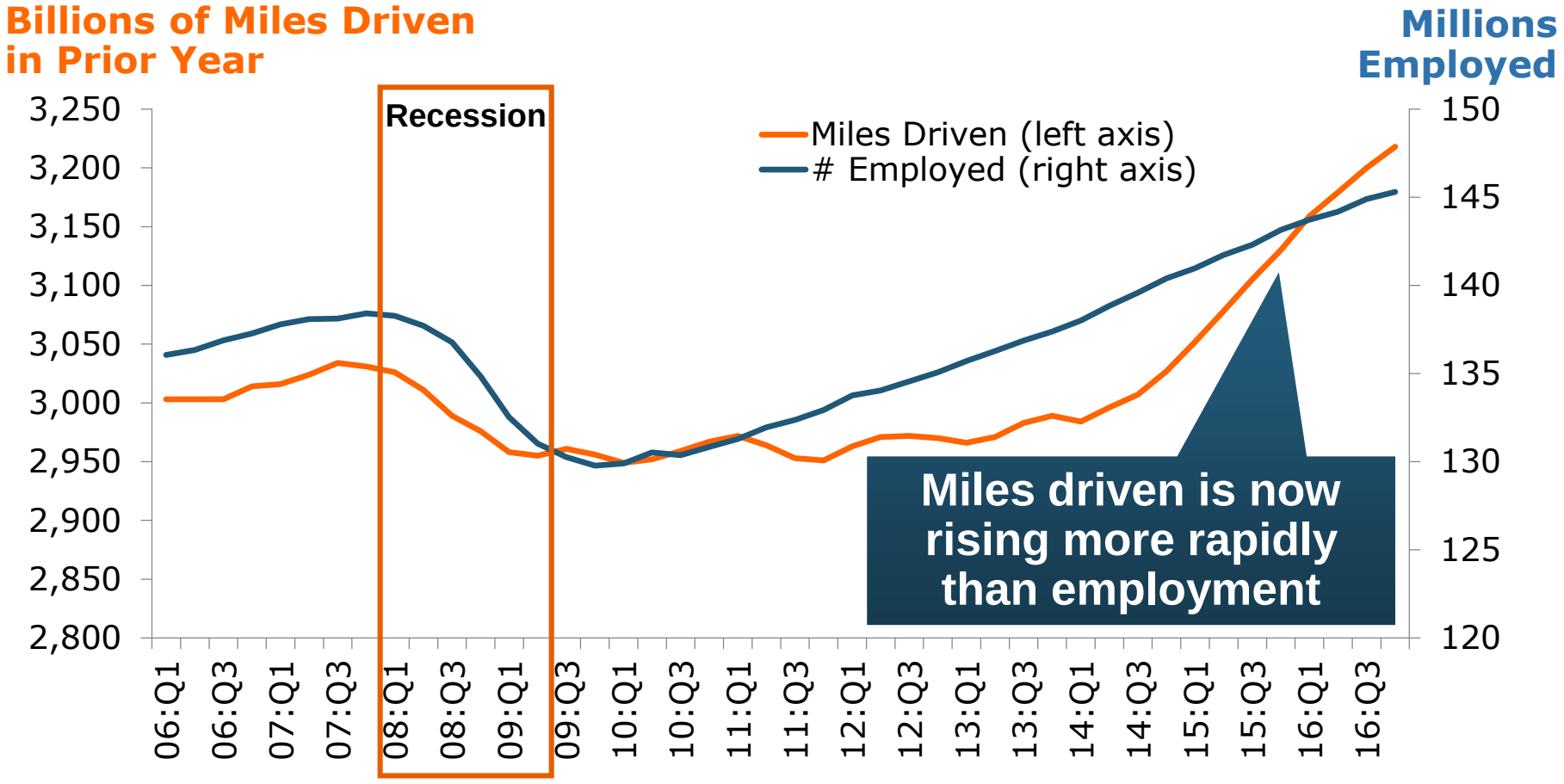
America is Driving More Again: 2000-2016



Tremendous Growth In Miles Driven. The More People Drive, The More Frequently They Get Into Accidents.

*2000-2015: Moving 12-month total vs. prior year. 2016 data through Dec. 2016 vs. Dec. 2015.
Sources: Federal Highway Administration; National Bureau of Economic Research (recession dates); Insurance Information Institute.

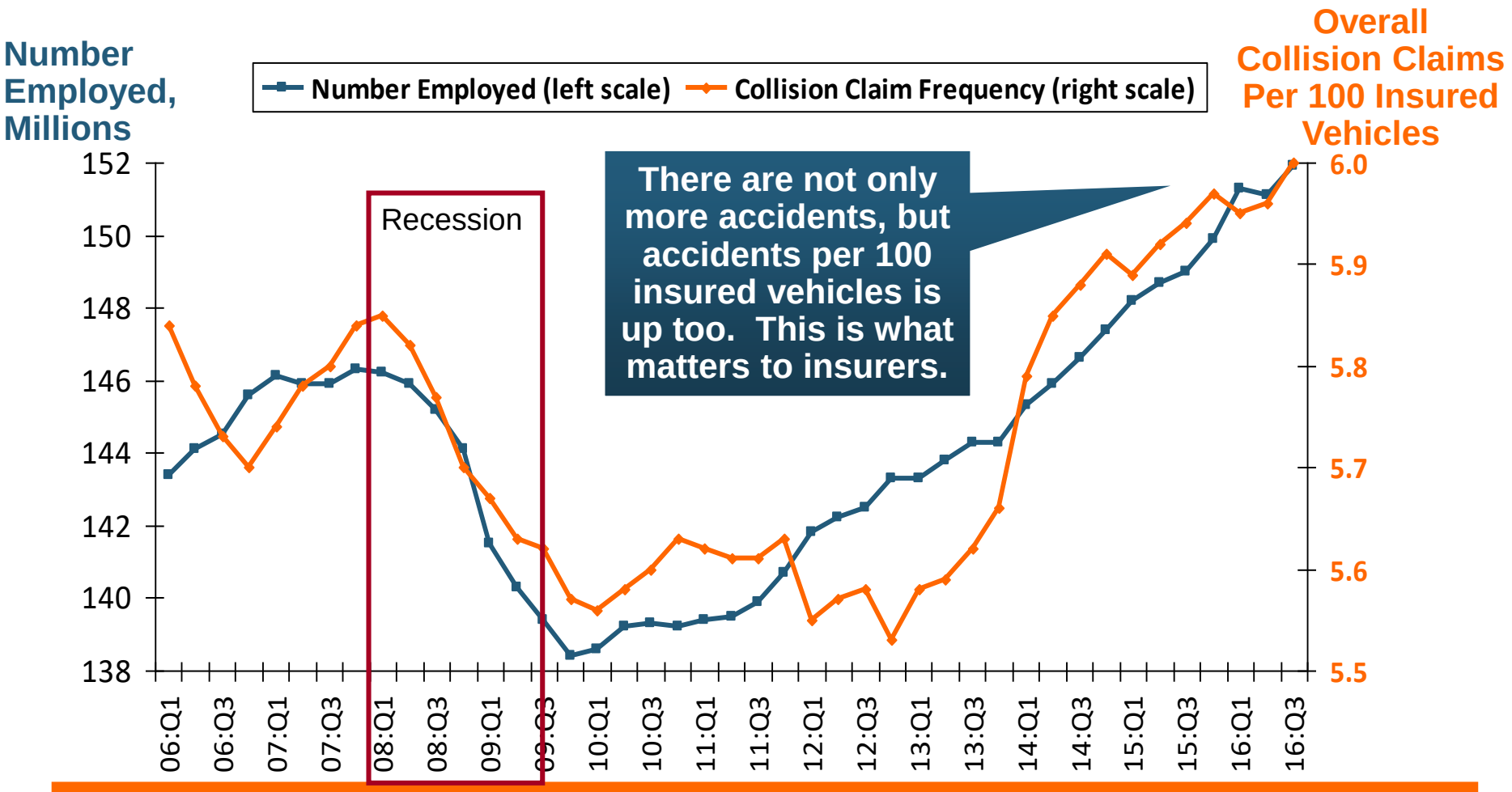
Why Are People Driving More Miles? Is it Jobs? 2006-2016:Q4



People Drive to and from Work and Drive to Entertainment. Out of Work, They Curtail Their Movement.

Sources: Federal Highway Administration; Seasonally Adjusted Employed from Bureau of Labor Statistics (Series ID CES0000000001); Insurance Institute for Highway Safety; Insurance Information Institute.

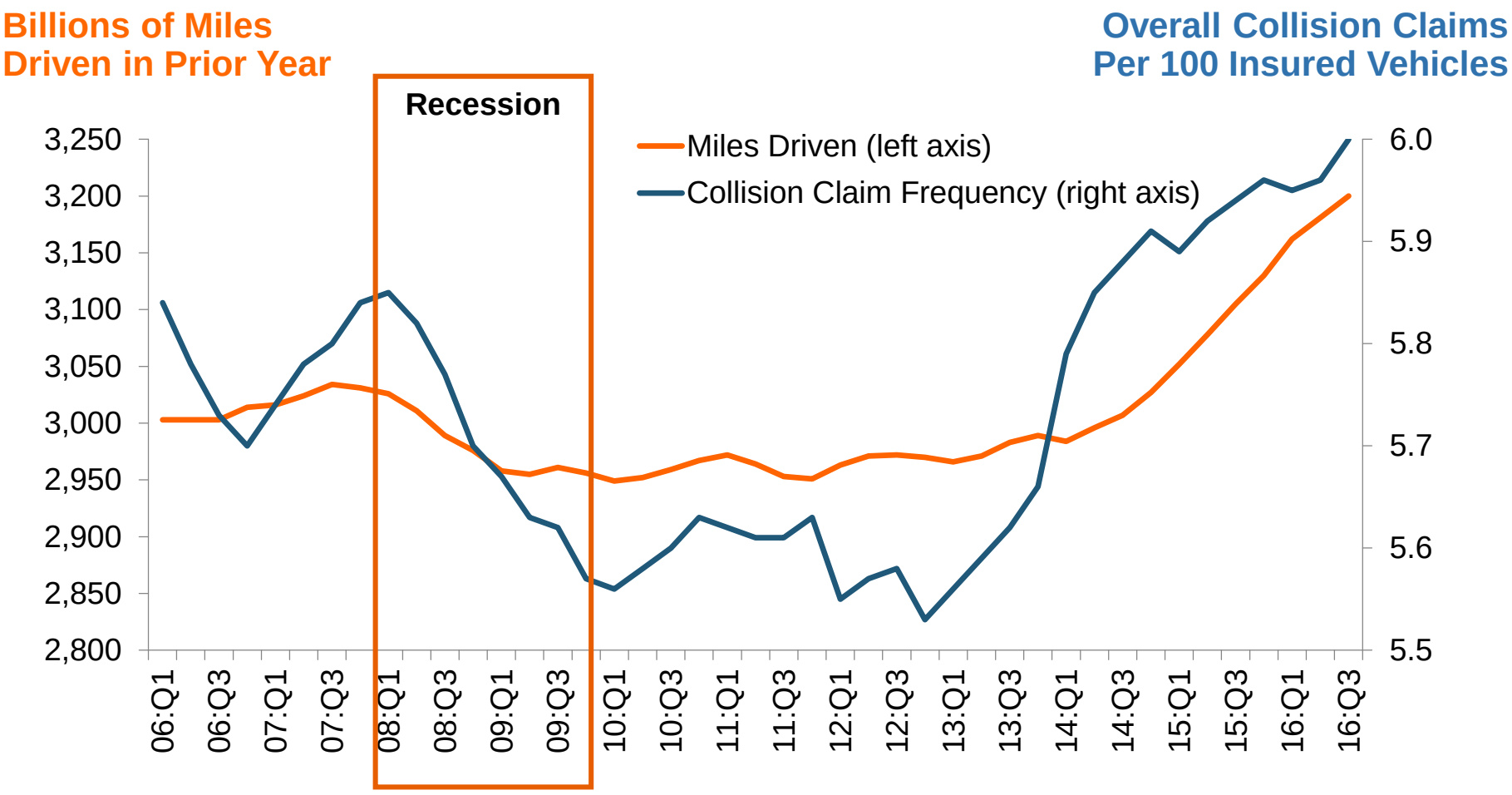
More People Working and Driving => More Collisions, 2006-2016:Q3



When people are out of work, they drive less. When they get jobs, they drive to work, helping drive claim frequency higher.

Sources: Seasonally Adjusted Employed from Bureau of Labor Statistics; Rolling 4-Qtr. Avg. Frequency from Insurance Services Office; Insurance Information Institute.

More Miles Driven
→ More Collisions, 2006-2016:Q3

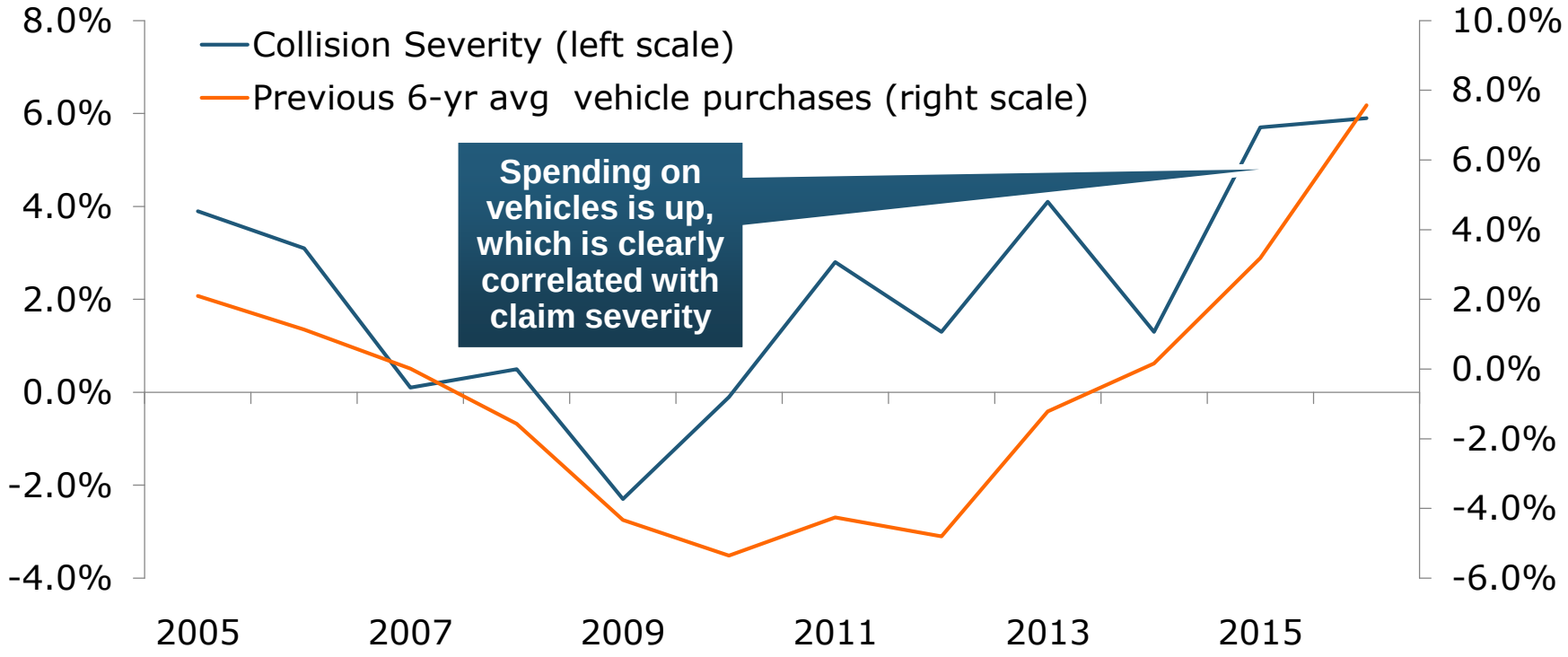


The More Miles People Drive, the More Likely They are to Get in an Accident, Helping Drive Claim Frequency Higher.

Sources: Federal Highway Administration; Rolling four-quarter average frequency from ISO, a Verisk Analytics company; Insurance Institute for Highway Safety; Insurance Information Institute.

Does Spending on Vehicles Affect Claim Severity?

Annual Change, 2005 through 2016



As the Economy Has Gotten Better, People Are Spending More on Vehicles – When Those Cars Wreck, Severity Increases.

* Claim Frequency Through Second Quarter.

Source: ISO, a Verisk Analytics company; Bureau of Labor Statistics Consumer Expenditure Survey (vehicle purchases – net outlay)
Insurance Information Institute.

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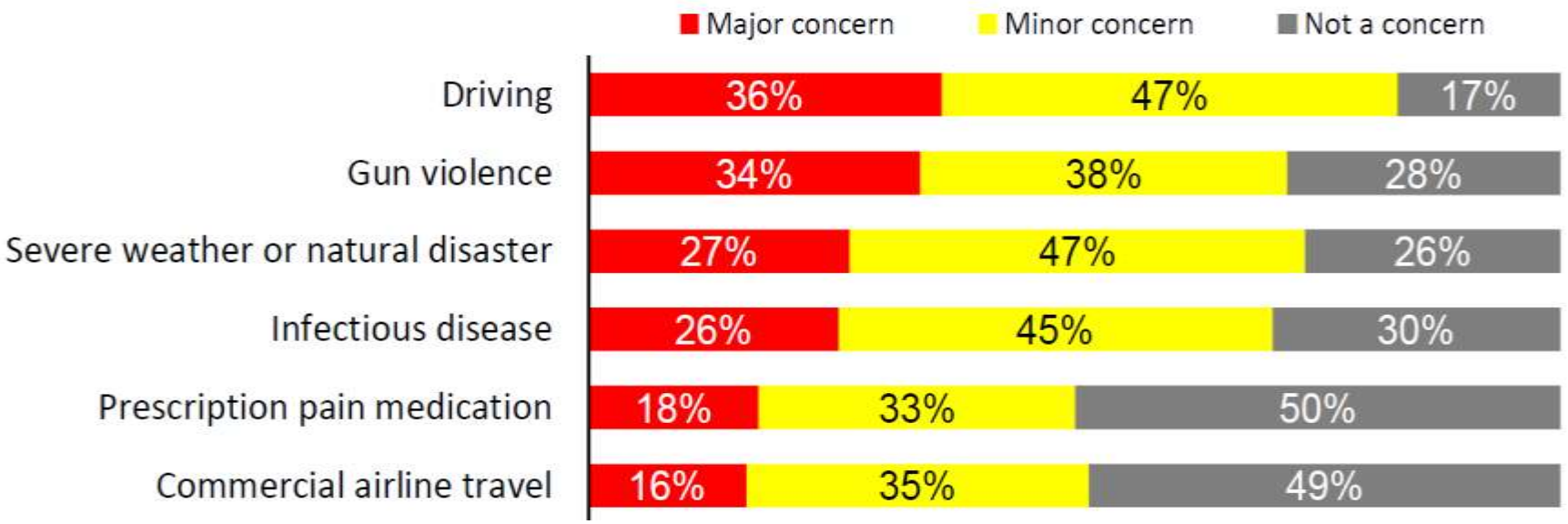
Distracted Driving:
Sizing Up the Problem

Assessing the Cost of Distracted Driving Is Elusive

Driving Remains Among the Greatest Recognized Risks to Families

Q: How concerned are you about each of the following as a cause of injury or death for your family?

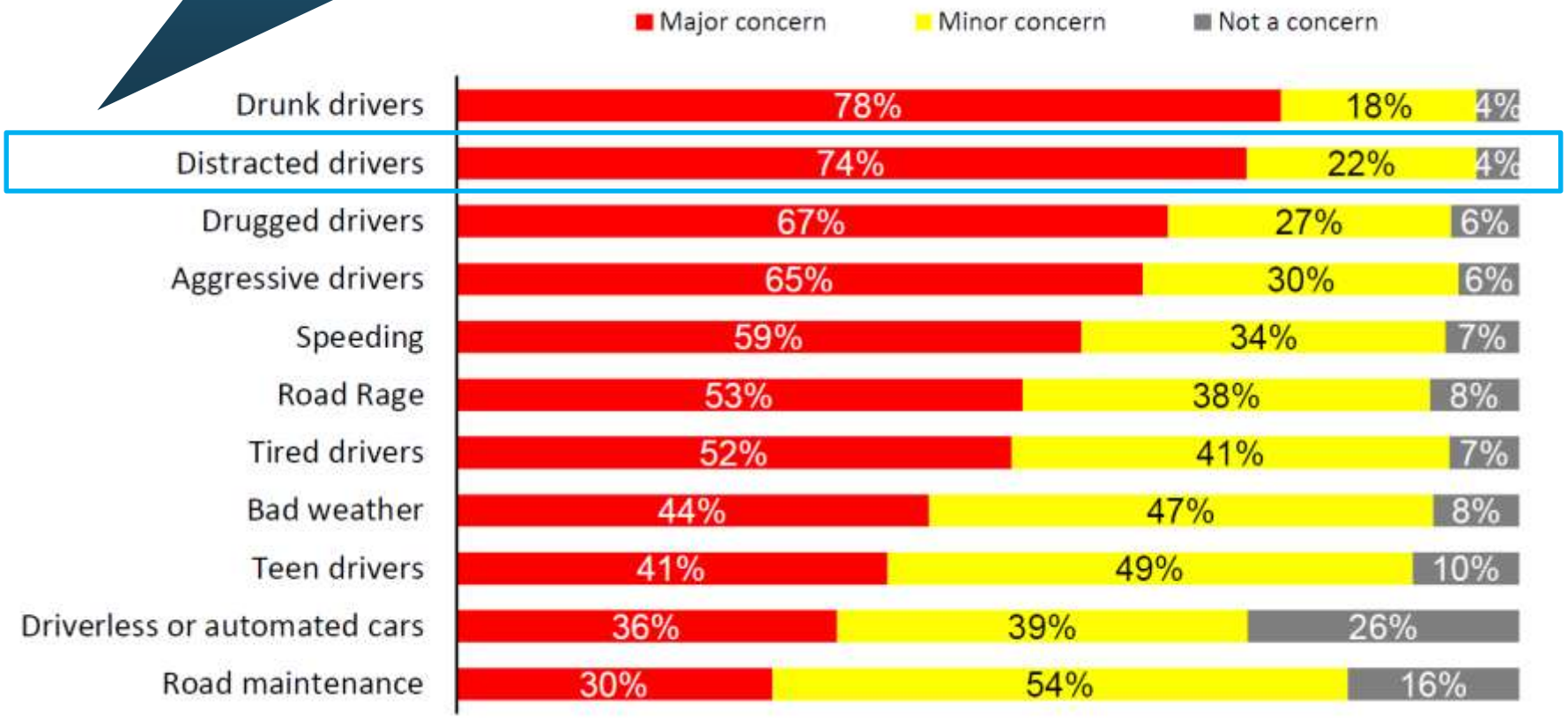
Driving-related risks are a major concern in American families



Source: National Safety Council, Driver Safety Public Opinion Poll (February 2017), accessed at http://www.nsc.org/NewsDocuments/2017/Driver-Safety-Poll.pdf

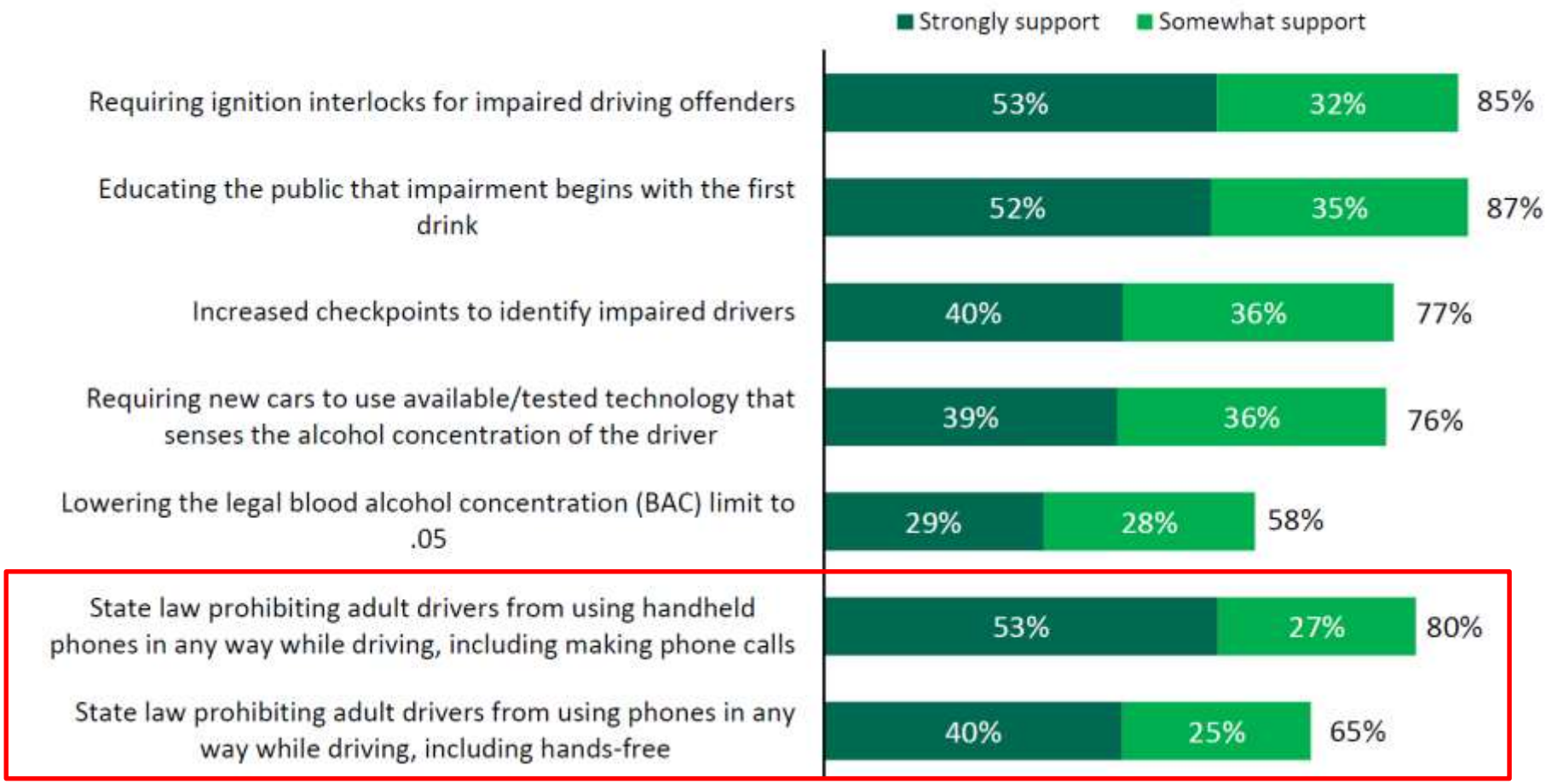
Distracted Driving Ranks as a Top Traffic Safety Concern

Distracted driving is a "Major Concern" for 3 out of 4 drivers, ranking it #2 among traffic safety concerns—and now rivaling drunk driving



Source: National Safety Council, Driver Safety Public Opinion Poll (February 2017), accessed at http://www.nsc.org/NewsDocuments/2017/Driver-Safety-Poll.pdf

There Is Limited Support for Significant Restrictions on Cell Phone Usage While Driving



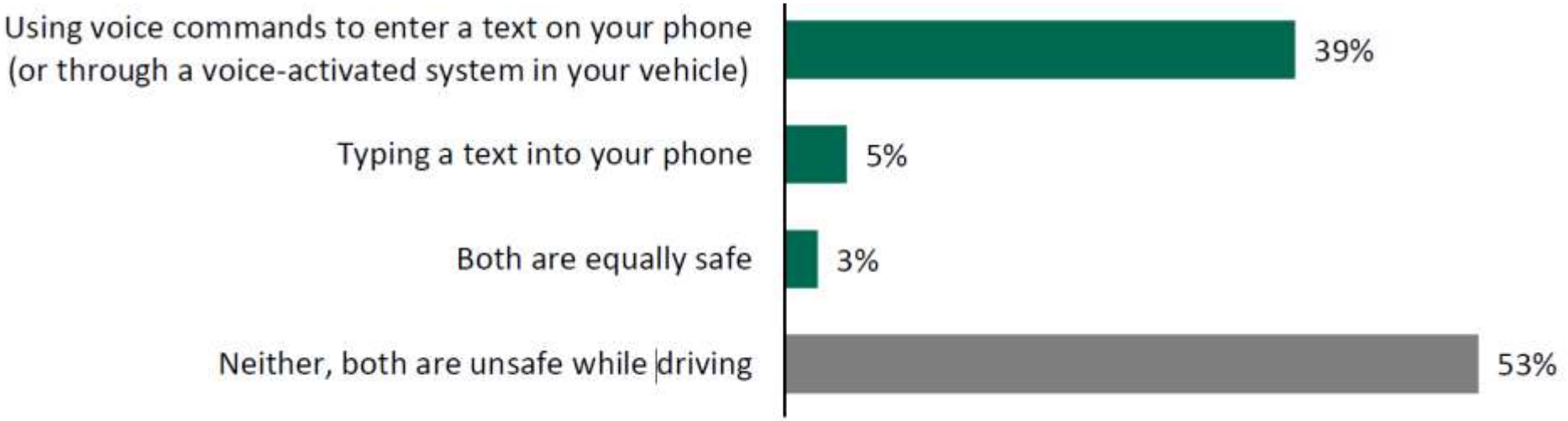
Interpretation: Separating people from their phones while driving may be impossible—and impractical

Source: National Safety Council, Driver Safety Public Opinion Poll (February 2017), accessed at http://www.nsc.org/NewsDocuments/2017/Driver-Safety-Poll.pdf

There Is Limited Support for Significant Restrictions on Cell Phone Usage While Driving

Q: Which do you feel is safer to do while driving?

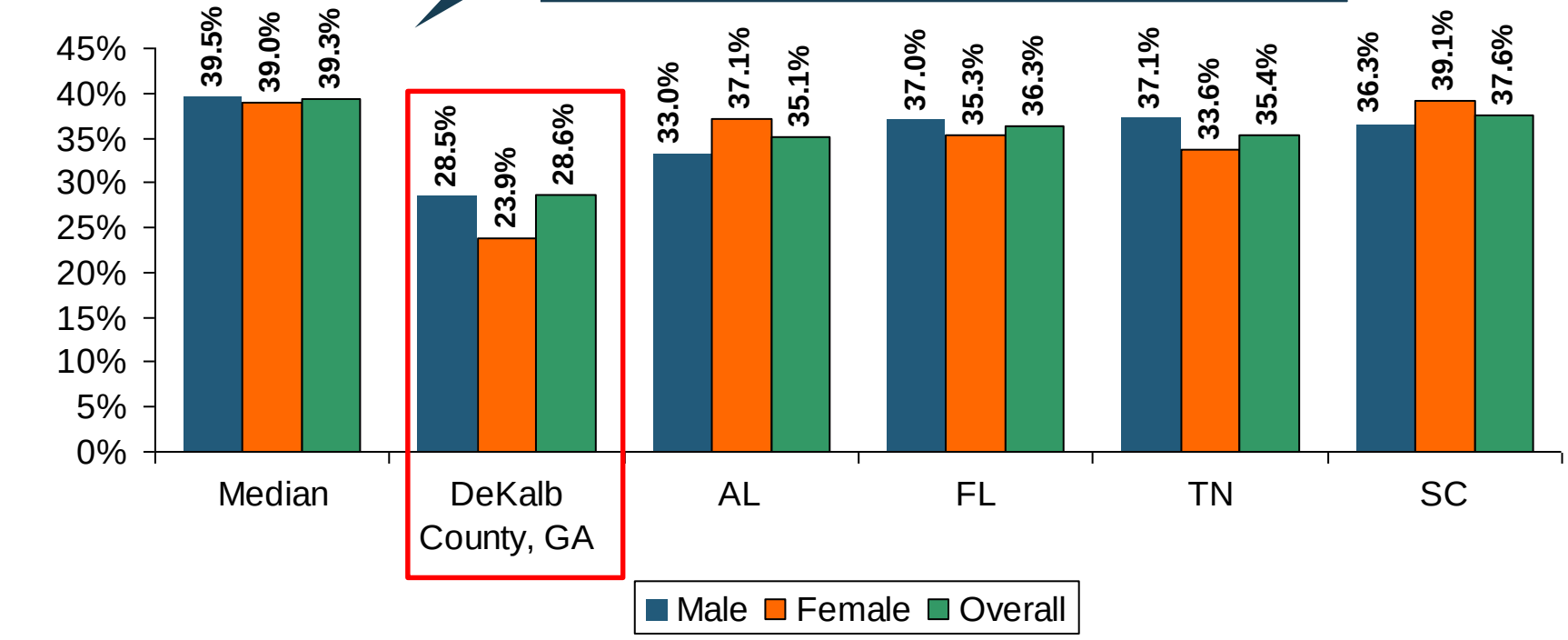
Though not proven to be demonstrably safer, many people are comfortable using voice-activated text messaging systems



Source: National Safety Council, Driver Safety Public Opinion Poll (February 2017), accessed at http://www.nsc.org/NewsDocuments/2017/Driver-Safety-Poll.pdf

Percentage of HS Students Texting/Emailing While Driving a Car or Other Vehicle, 2015*

Across all sampled states, nearly 40% of HS students texted or emailed while driving with 30 days of the survey. Data are unavailable for GA, but urbanized areas (including DeKalb County) tend to have lower rates of HS texting/emailing.



*On at least 1 day during the 30 days prior to the survey, among the 61.3% of students who had driven during the past 30 days.

Source: Centers for Disease Control and Prevention, "Youth Risk Behavior Surveillance—United States 2015," *Morbidity and Mortality Weekly*, June 10,2015.

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Distracted Driving

Assessing the Scale and Scope of the Problem

Driven to Distraction: The Facts

- **Distracted driving is responsible for more than 3,100 crash deaths annually in the US**
  - Approximately 10% of all fatal car crashes are attributed to distracted driving (3,477 distracted driving deaths in 2015 out 35,097 from all causes)
- **Distracted driving behaviors (all forms) lead to more than 420,000 injuries each year**
- **Nearly 1/3 of all U.S. drivers 18 to 64 years old read or send text or email messages while driving**
- **Simply knowing the risks of distracted driving has not yet translated into reducing the behavior**
  - *Implication: Awareness alone is unlikely to solve the problem*

Source: Abstracted from NHTSA, "Investigation and Prosecution of Distracted Driving Cases," May 2017, accessed 8/25/17 at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf

What Is Distracted Driving?

- **Distracted Driving: A Definition**
  - *"When a driver's attention is diverted away from driving by a secondary task that requires focusing on an object, event, or person not related to the driving task."*

- All distractions compromise a driver's ability to some extent and threaten the safety of that driver, other drivers, passengers, pedestrians and cyclists in the vicinity.

- Every time a driver adjusts a radio, tends to an irritable child, adjusts A/C or heating, applies make up, shaves, talks to passengers, eats, or reads a map (paper or electronic), the driver is engaging in a distracting task or activity.

Source: Abstracted from NHTSA, "Investigation and Prosecution of Distracted Driving Cases," May 2017, accessed 8/25/17 at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf

What Is Distracted Driving?

- **Distractions are not just physical in nature, they are often mental**

- When drivers think about things other than driving, for example an argument with a spouse/significant other or financial problems, they can become distracted from the task of driving.

- ***Can't humans simply multi-task our way through these distractions?***

Source: Abstracted from NHTSA, "Investigation and Prosecution of Distracted Driving Cases," May 2017, accessed 8/25/17 at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf

The Multi-Tasking Myth

- **Multi-Tasking Is a Myth!**
  - Most people actually engage in *task switching*, not multi-tasking. Human cognitive ability does not allow us to engage more than one conscious task simultaneously.
  - As people add additional tasks or the tasks become more complex, switching takes longer and people can experience mental overload.
  - Based on extensive research, many psychologists have concluded that when people switch between tasks, productivity is reduced.
  - Being able to subtly switch tasks is helpful in many circumstances but it can conflict with safety when operating a motor vehicle.

Source: Abstracted from NHTSA, "Investigation and Prosecution of Distracted Driving Cases," May 2017, accessed 8/25/17 at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf

Consequences of the Multi-Tasking Myth

- A car traveling at 55 miles per hour covers more than 80 feet every second.
- Sending or reading a text message can take the driver's eyes off the road for an average of 4.6 seconds.
- Sending or reading a text message while driving a vehicle at 55 miles per hour means, therefore, that *the vehicle will travel the length of a football field* without any visual guidance
- Even when a driver appears to be "looking," he may not be "seeing." As a driver focuses attention on a task other than driving, he begins to suffer from "inattentional blindness."
  - Inattentional blindness means that a person fails to notice something fully visible because attention is focused on a task other than driving. For example, a driver conversing on a cellphone may fail to see many of the visual cues around him

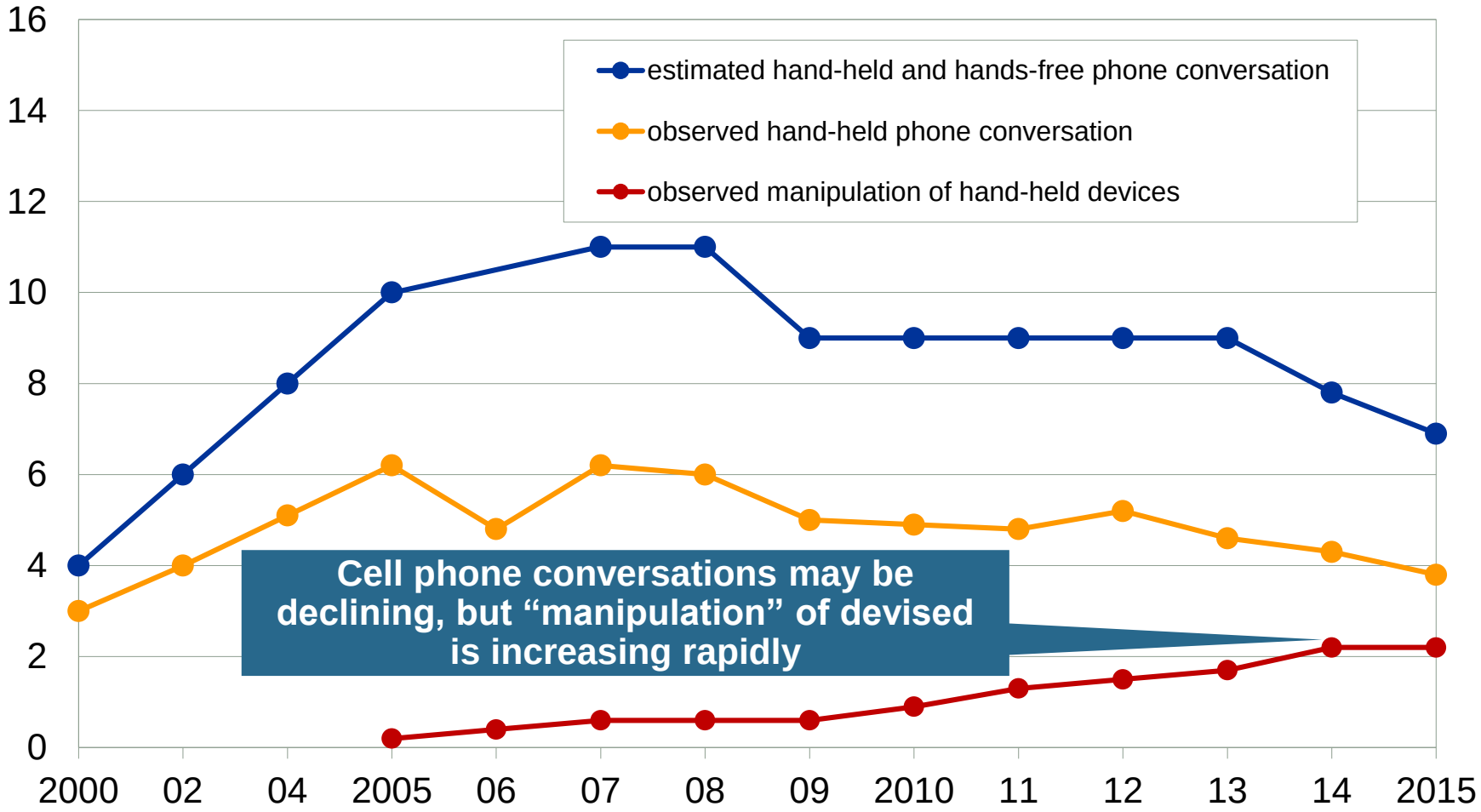
How Common is Talking on a Cell Phone or Texting While Driving?

- **It is estimated that 7% of drivers are having phone conversations at any given moment of the day in 2015**

- **An estimated 2.2% of all drivers and 4.9% of drivers est. to be 16-24 years old were observed to be texting or otherwise manipulating handheld devices while driving in 2015**
  - Up 267% for all drivers (from 0.6%) and 345% (from 1.1%) for those 16-24 since 2009

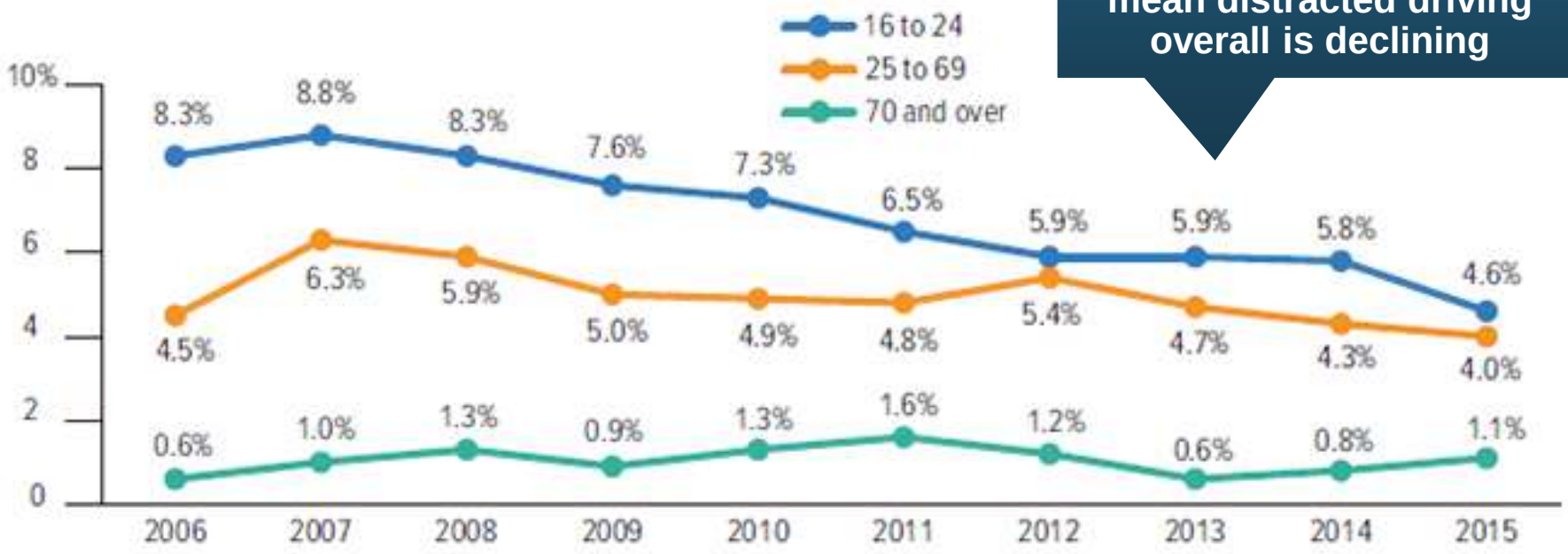
Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

Percent US Drivers Using Cellphones at Any Given Daylight Time, 2000-15



Driver Hand-Held Cell Phone Use by Age

The fact that hand-held cell phone use appears to be declining (except among older drivers) does *not* mean distracted driving overall is declining



Source: NHTSA data from Insurance Information Institute at: http://www.iii.org/fact-statistic/distracted-driving

Who's Doing the Talking and Texting? *Younger Drivers*

- **Younger drivers are far more likely to use a cell phone while driving.**
  - About 5% of those age 16-24 were observed talking on cell phones and another 5% were manipulating handheld devices while at intersections during daylight hours
  - For those age 25-60, 4% were talking on a cell phone and 2% were manipulating handheld devised
  - Only 1% of people age 70+ were observed talking on cell phones and 1% were manipulating handheld devices

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

Summary of Research on Distracted Driving: *It's Not Just Cell Phones*

- **Using a cellphone while driving increases crash risk.**
  - There is growing evidence that talking on a cellphone increases crash risk. Researchers have consistently linked texting or otherwise manipulating a cellphone to increased risk.

- **Cellphones and texting aren't the only things that can distract drivers.**
  - NHTSA defines distracted driving as any activity that could divert attention from the primary task of driving: electronic gadgets, adjusting a radio, eating and drinking, reading, grooming, and interacting with passengers.

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

Summary of Research on Distracted Driving: *It's Not Just Cell Phones*

- **It's not clear that banning hand-held phone use and texting reduces crashes.**
  - This is the case even though IIHS research has documented that bans on hand-held phone use reduce overall phone use.
  - Crashes have increased in recent years, but overall cellphone use has not. That means something else is contributing to crash frequency…
  - Drivers are distracted by things other than cellphones, so prohibiting phone use alone will not eliminate distracted driving.
  - Broader countermeasures that keep drivers from becoming distracted or that mitigate the consequences of distracted driving, such as crash avoidance technology, may be more effective than cellphone bans.

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

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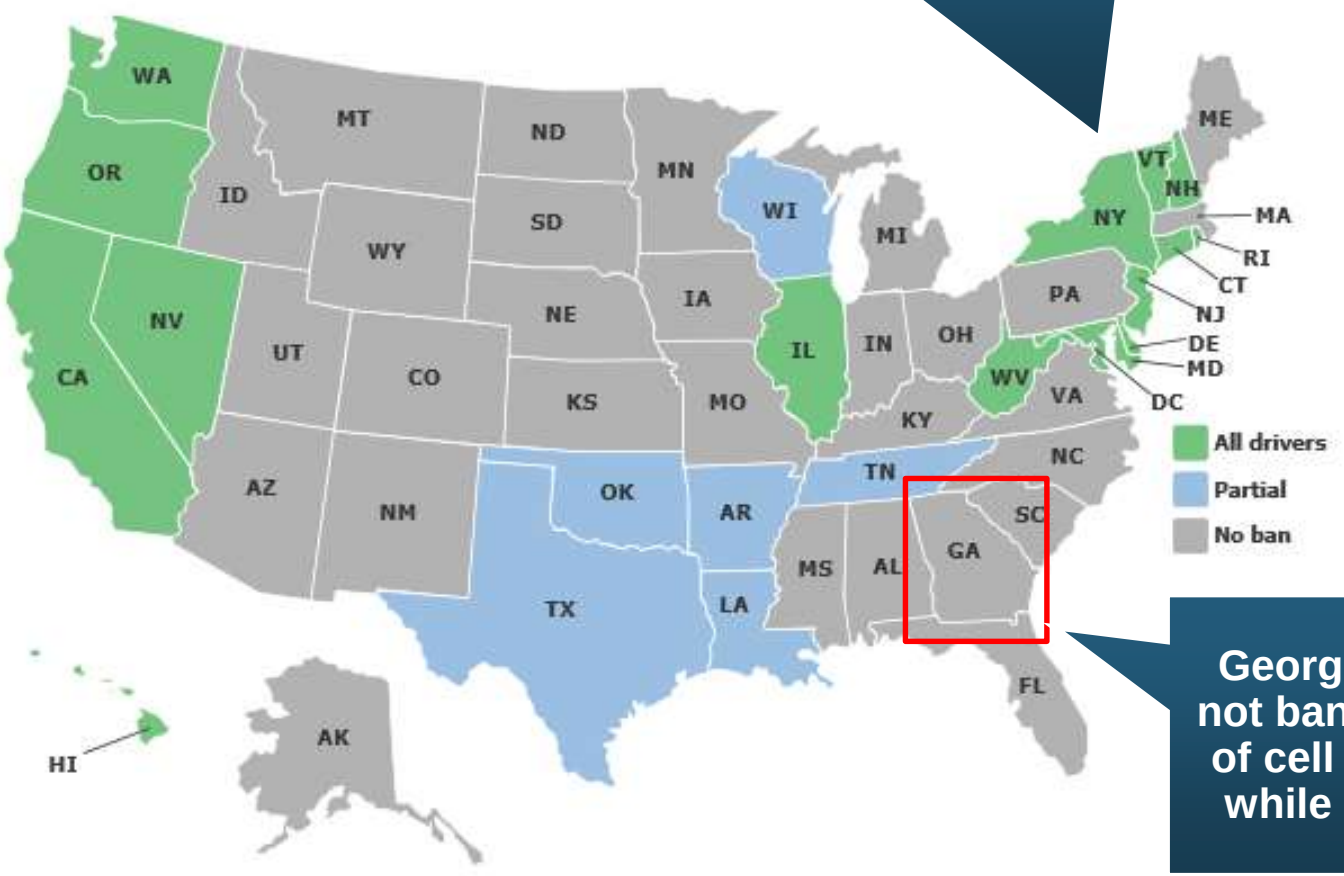
Cell Phones and the Law

Summary of State Regulations Governing the Use of Handheld Mobile Devices and Texting

Hand-Held Devices: Use While Driving Is Still Permitted in Most States

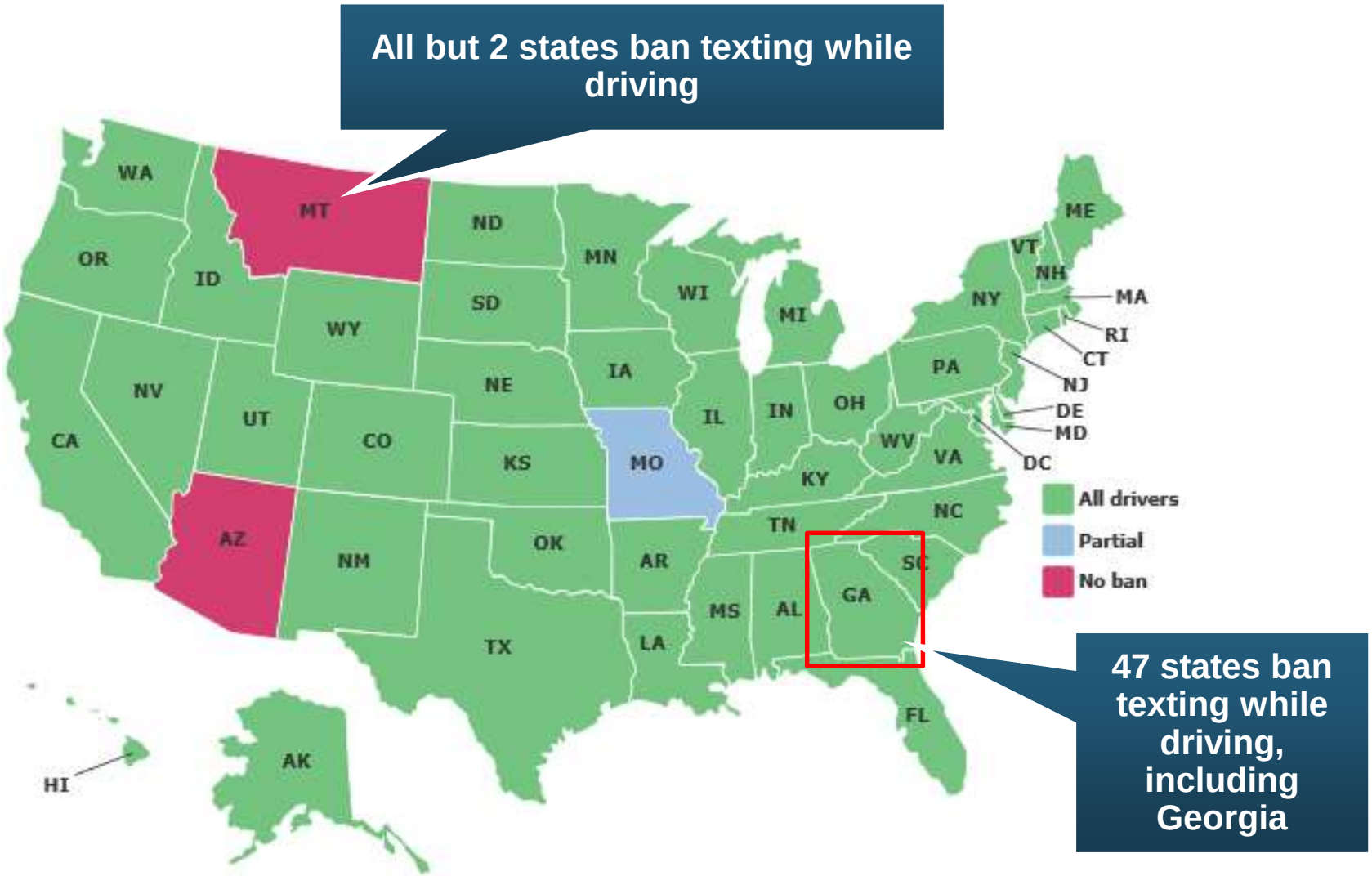
Use of held-held held devices is fully banned in only 15 states and DC, mostly in the Northeast and West



Georgia does not ban the use of cell phones while driving

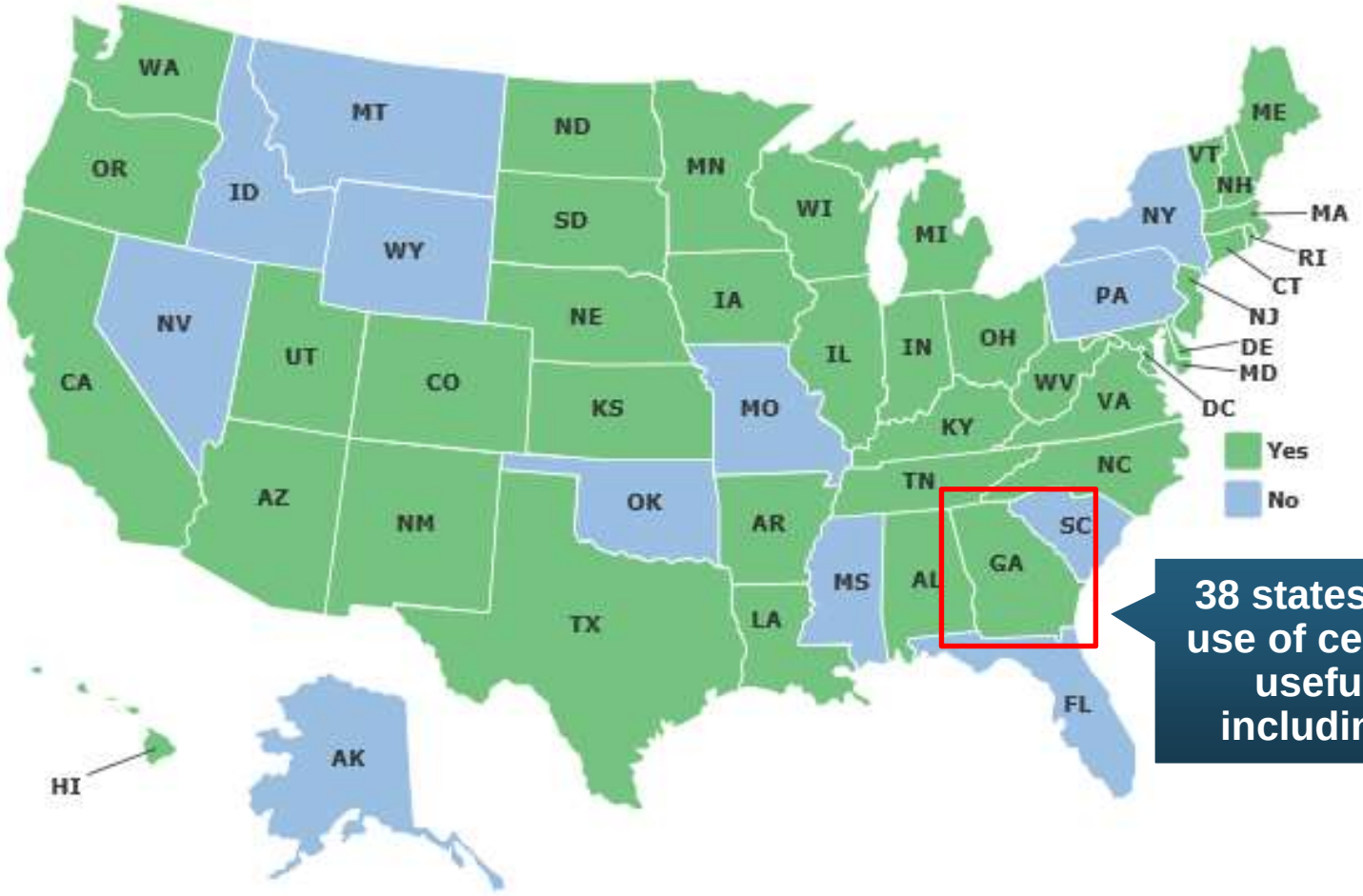
Source: Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/laws/cellphonelaws?topicName=distracted-driving

Texting While Driving: Generally Banned Across the US



Source: Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/laws/cellphonelaws?topicName=distracted-driving

Cell Phones and Youthful Drivers: Variety of Approaches Across the US



38 states restrict the use of cell phones by useful drivers, including Georgia

Source: Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/laws/cellphonelaws?topicName=distracted-driving

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Solutions to the Distracted Driving Epidemic

Education Is Necessary but Insufficient

Can Technology Help?

Is Technology the Solution to the Distracted Driving Crisis?

- **With more than 3,100 deaths and 420,000 injuries each year, the costs associated with distracted driving behaviors remain at unacceptably high levels**
- **Local, state and national education campaigns seem to have had only limited success**
- **Implication: Education is important, but not sufficient to reduce deaths and injuries associated with distracted driving**

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

Is Technology the Solution to the Distracted Driving Crisis?

- **Crash avoidance technology may be the most promising avenue for reducing crash risks related to distractions of any type**

- **Studies suggest technologies such as collision warning systems may not reduce the prevalence of distracted driving but can help prevent or mitigate crashes**

- **Warnings can redirect a distracted, inattentive or sleepy driver's attention back to the roadway if it detects the potential for a collision. Some systems attempt to avoid the collision altogether if a driver does not respond fast enough or does not respond at all.**

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

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- Automakers are integrating "infotainment" systems into vehicles to let drivers plug in or wirelessly connect portable electronic devices such as cellphones to vehicle entertainment and communication systems.

- Many newer infotainment systems and portable devices can be controlled using voice commands.
  - *Several experimental studies have shown that drivers take shorter glances away from the roadway and keep their eyes on the road for a greater proportion of the time when interacting with a portable device using voice commands than when using their hands.*

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- **Problem: Voice systems are not all designed the same, and the benefits can vary.**
  - An IIHS study found that drivers were able to place calls and enter addresses into a navigation system during highway driving more quickly and keep their eyes on the roadway longer when using a system in which a single detailed voice command was used to complete the tasks compared with a system in which multiple voice commands were used to navigate different menus.
  - However, drivers experience many more errors when entering an address using a single voice command than when entering it using voice commands
  - The net effects of voice recognition technology on crash risk remain unknown

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- **NHTSA has issued voluntary guidelines for integrated infotainment systems in an effort to minimize the visual and manual distraction potential of these systems.**

- **Phone applications that restrict or limit access to electronic devices also have been developed.**
  - There is some evidence that these technologies reduce the number of calls made/received

- **Apps: Insurers and InsurTech firm have invested in technologies that allow real-time monitoring of driving behaviors.**
  - Some apps are used by insurers for underwriting or by vehicle owner to monitor vehicle operation. Poor driving due to distractions could raise auto premiums

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Is Technology the Solution to the Distracted Driving Crisis?

- **With more than 3,100 deaths and 420,000 injuries each year, the costs associated with distracted driving behaviors remain at unacceptably high levels**
- **Local, state and national education campaigns seem to have had only limited success**
- **Implication: Education is important, but not sufficient to reduce deaths and injuries associated with distracted driving**
  - There is growing evidence that talking on a cellphone increases crash risk. Researchers have consistently linked texting or otherwise manipulating a cellphone to increased risk.

Source: Abstracted from Insurance Institute for Highway Safety and the Highway Loss Data Institute, accessed 8/25/17 at: http://www.iihs.org/iihs/topics/t/distracted-driving/qanda

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Rising Highway Fatalities: Georgia's #1 Public Health Crisis?

Is Society Too Complacent About Highway Deaths and Injuries?

GDOT Recognizes the Problem

Georgia Dept. of Transportation in 2015 launched its "Drive Alert, Arrive Alive" campaign in an effort to reduce highway fatalities

Source: Georgia Dept. of Transportation http://www.dot.ga.gov/DS/SafetyOperation/DAAA accessed 2/22/17.

Summary of Georgia's Rapid Rise in Auto Accident Frequency, Severity & Fatalities

- **Many Factors Are Contributing to the Mounting Death Toll on Georgia's Highways**
  - **Distracted Driving**
  - **Recovering Economy**
  - **More Jobs→ More Miles Driven**
  - **Increased Vehicle Density**
  - **Favorable Demographics→Results in More Drivers**
  - **Lack of Highway Infrastructure Investment**
  - **Lower Gas Prices**
- **More Accidents, More Severe Accidents, More Expensive Cars All Impacting Insurance Rates**
- **Can't Rely Solely on New "Autonomous" Technologies**

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Thank you for your time and your attention!

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