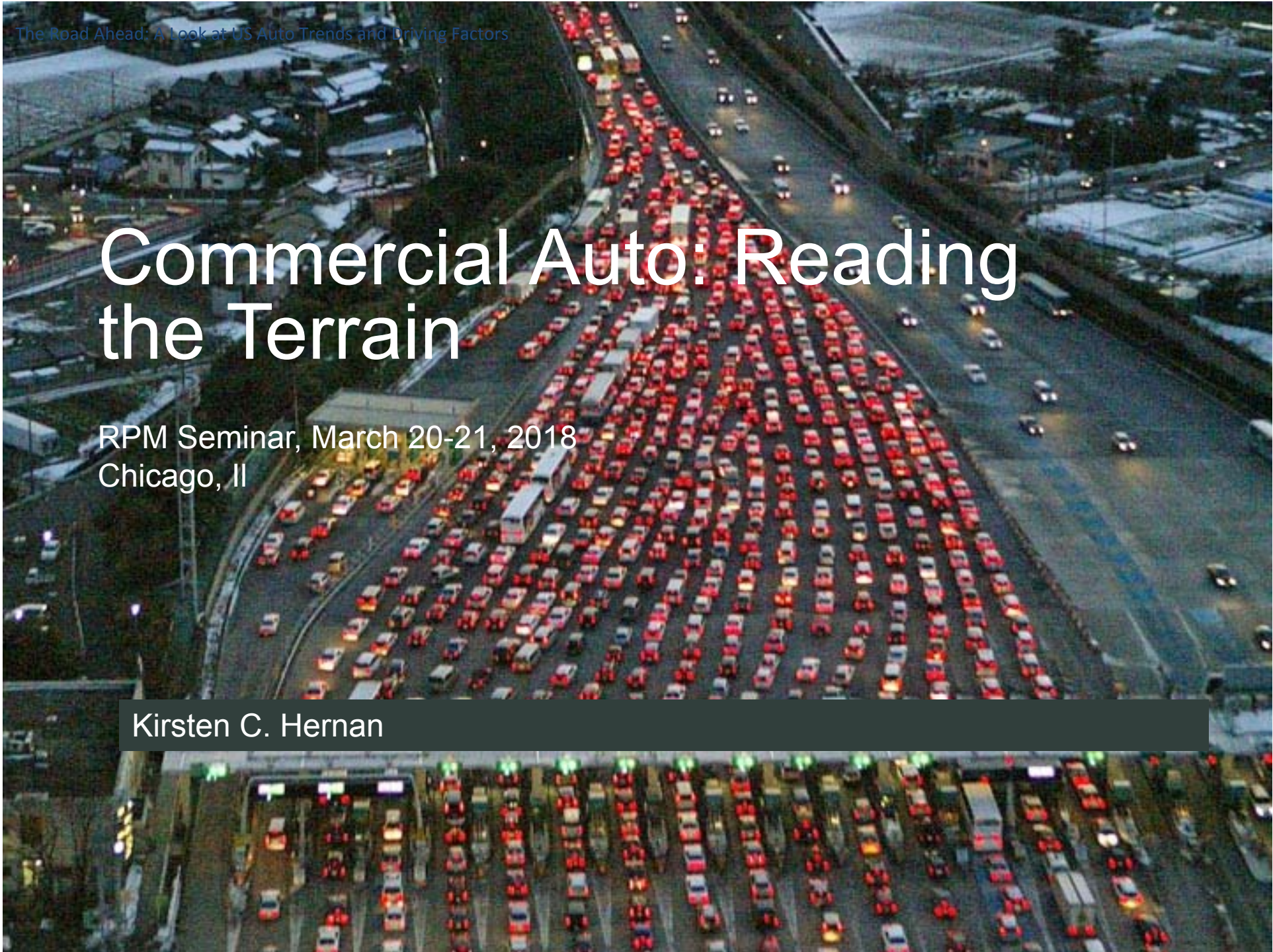


The Road Ahead: A Look at US Auto Trends and Driving Factors

Commercial Auto: Reading the Terrain

RPM Seminar, March 20-21, 2018
Chicago, IL

Kirsten C. Hernan



US Commercial auto insurance industry results have been deteriorating since 2010 driven by several waves of activity



Source: 2015 and prior: Conning Insurance Segment Report: Commercial Auto, Mid-Year 2017. 2016 estimate and 2017-2019 forecasts: Conning Total Industry Forecasts 2017Q2

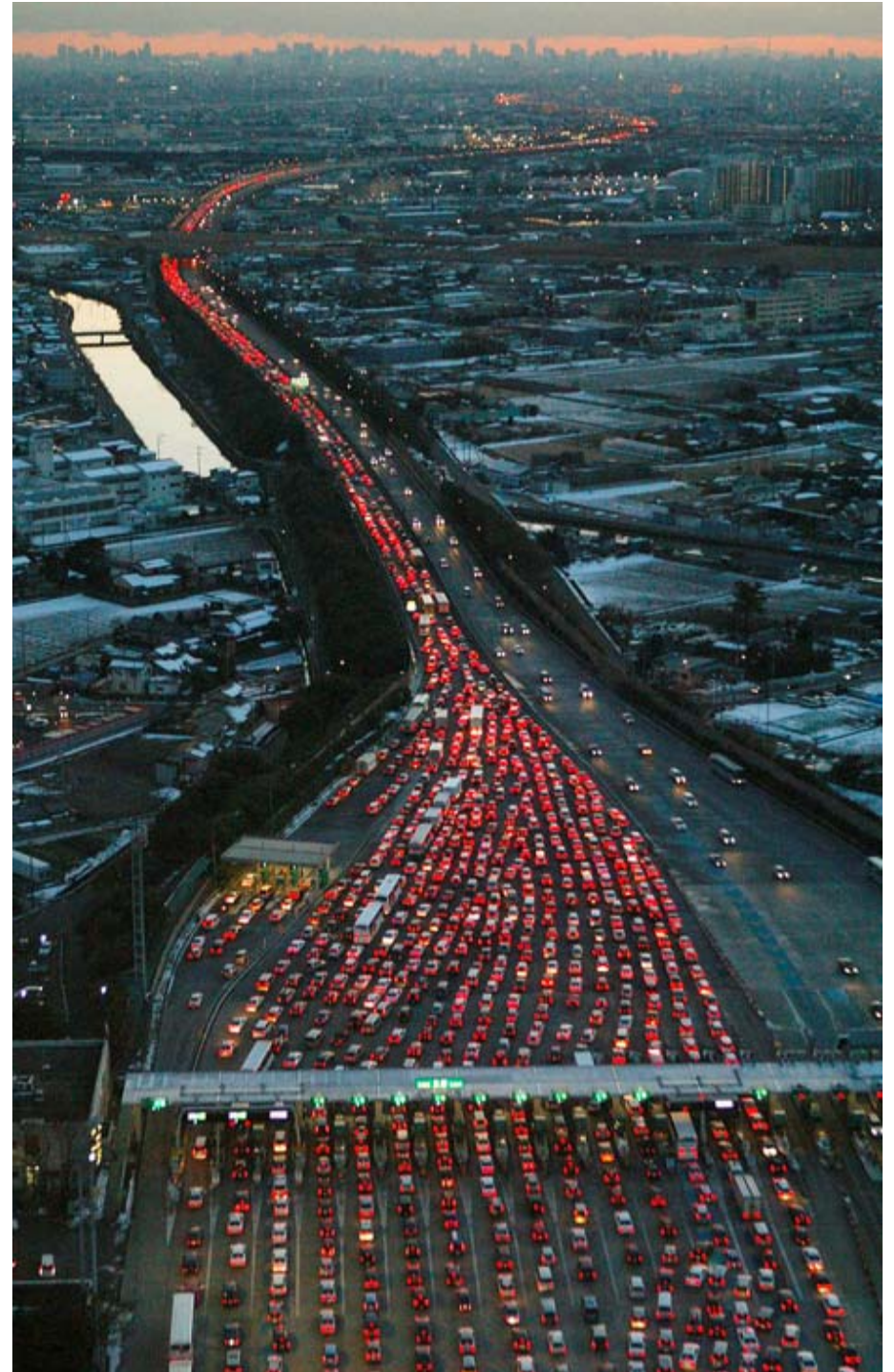


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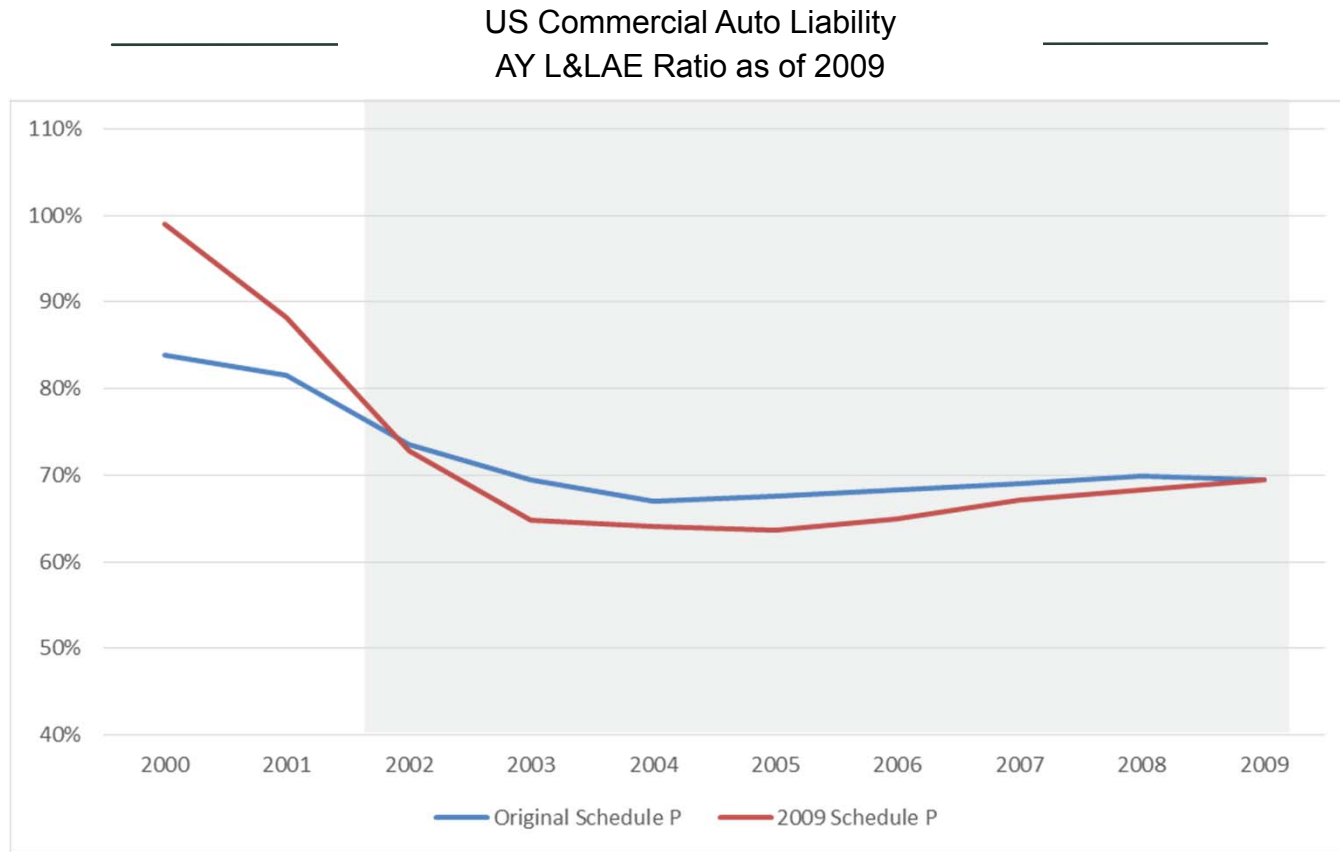
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Commercial Auto: Reading the Terrain

- A look through the rear-view mirror
 - Where we started
 - The two waves in deterioration
- The road ahead
 - Discussion of potential drivers for the next wave



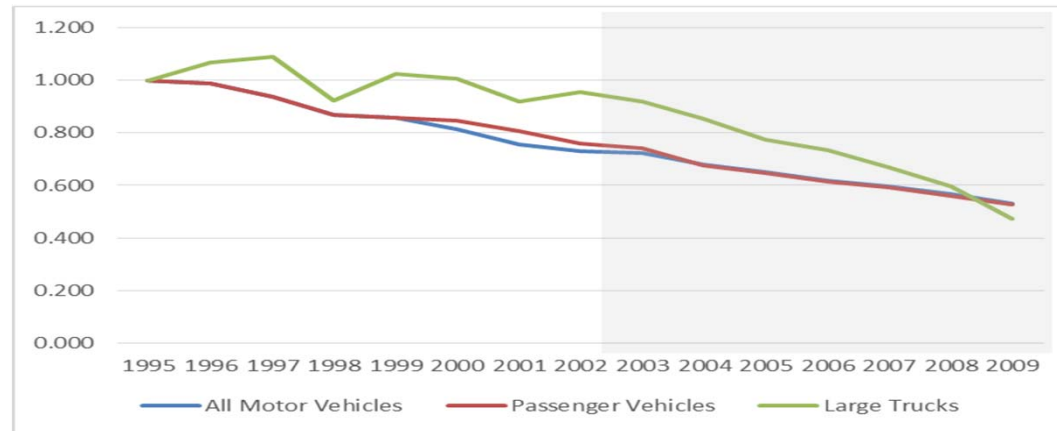
Prior to 2010, the industry had experienced relatively benign loss ratios for nearly a decade



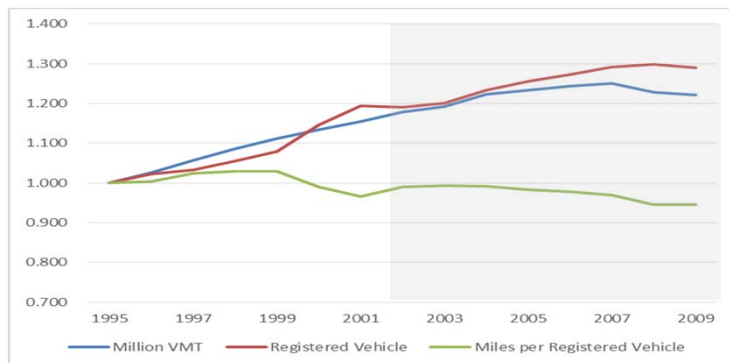
Source: SNL Insurance Statutory Financials, Schedule P ,Part 1

The industry benefited from and began to expect continued decline in accident rates

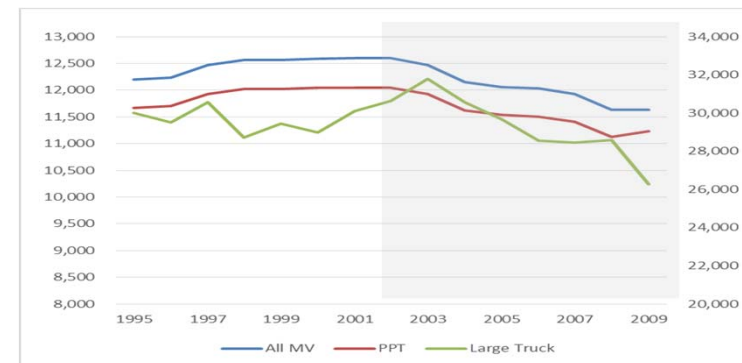
Crashes Per Registered Vehicle
Indexed to 1995



VMT and Reg Vehicles
All Motor Vehicles Indexed to 1995



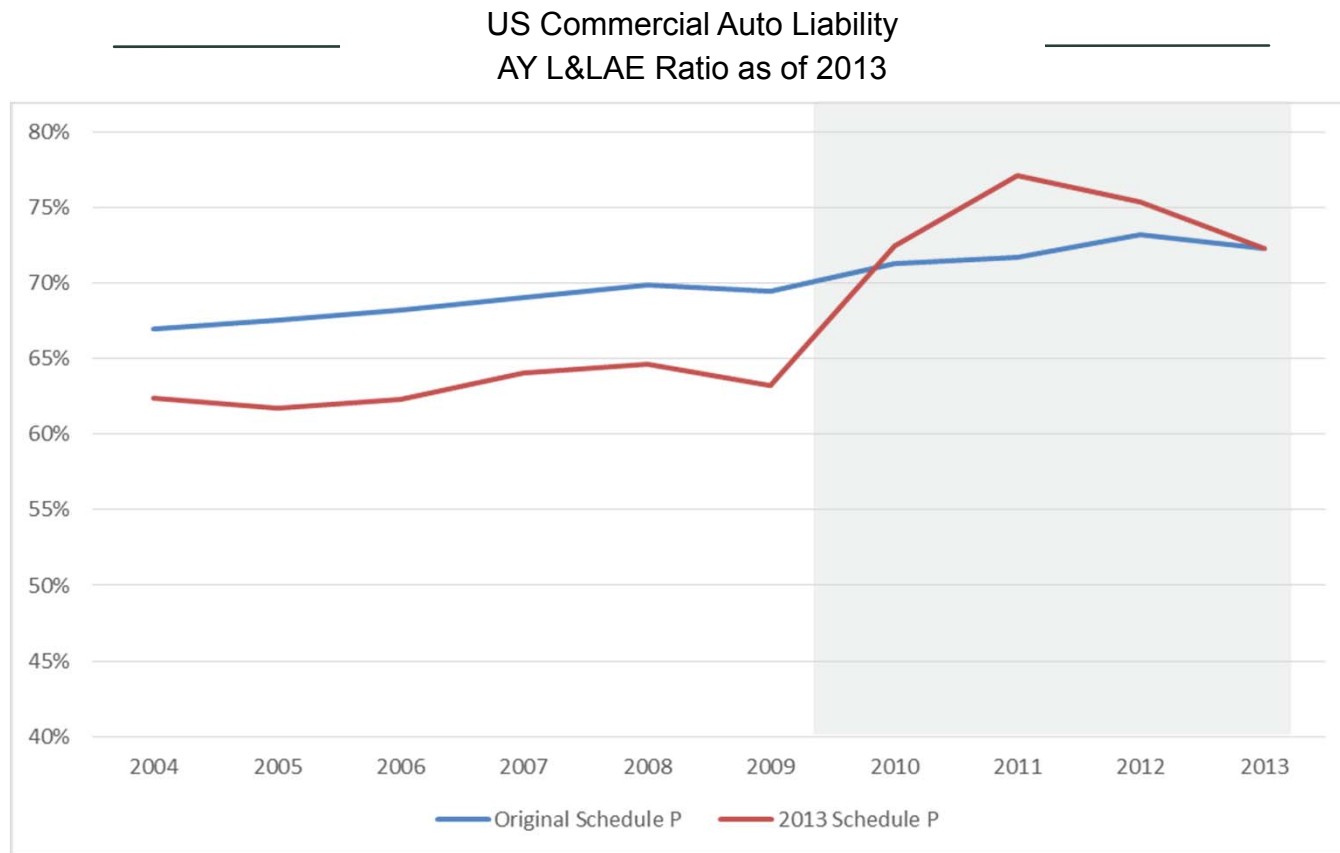
Miles per Registered Vehicle



Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, http://www.bts.gov/publications/national_transportation_statistics/ and Swiss Re Analysis. Note: 2008 and prior restated to adjust for methodology changes in VMT and Registered vehicles



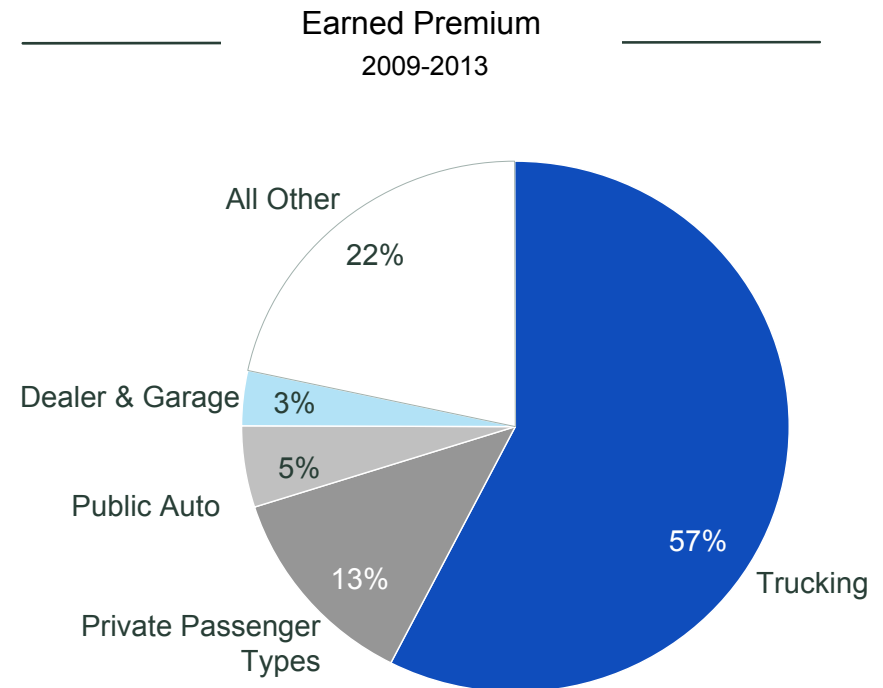
A look back at 2013 shows that in increase in loss ratios starting about 2010 (Wave 1)



Source: SNL Insurance Statutory Financials, Schedule P, Part 1

Wave 1: rise in commercial auto driven by worsening experience in trucking, the largest segment

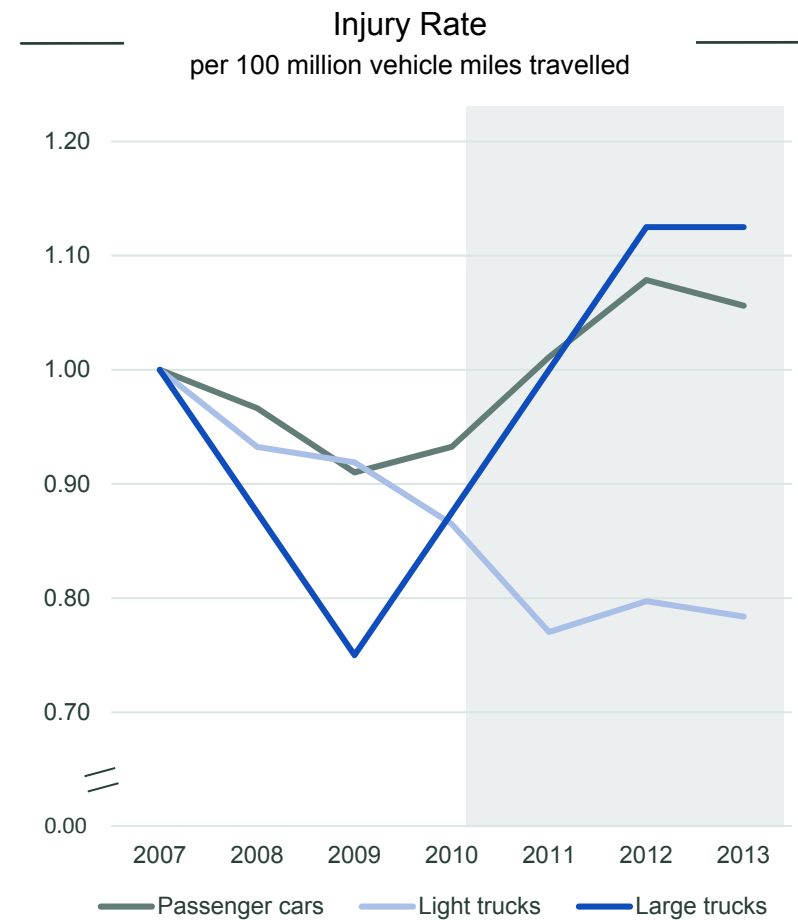
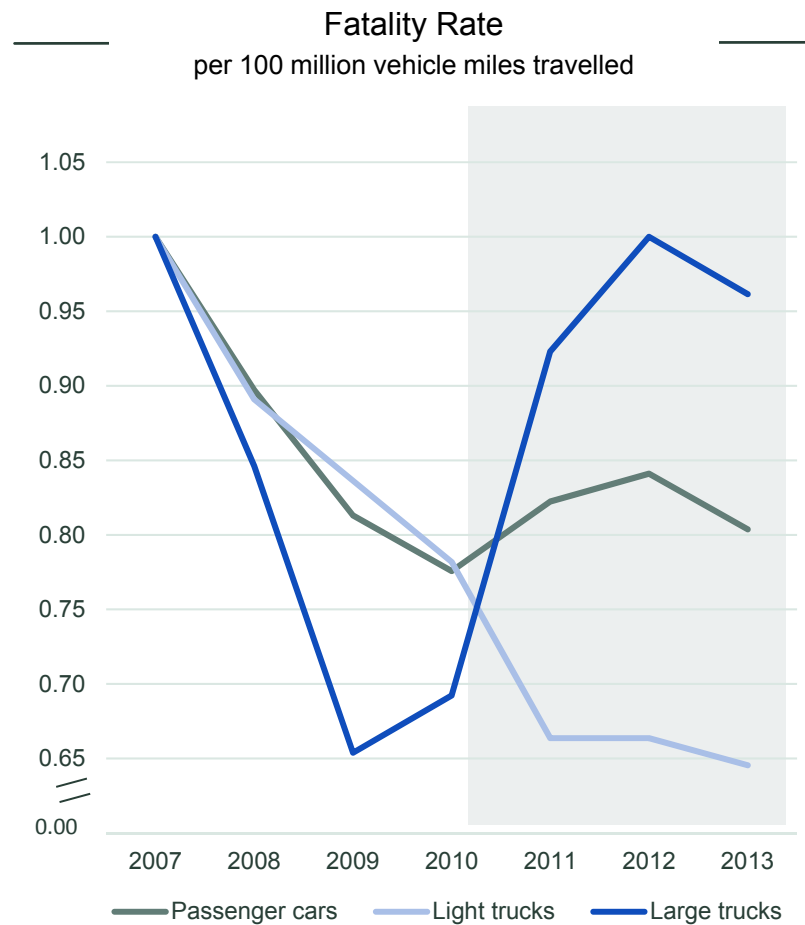
	CAGR 2009-2013		
	Severity	# Claims	Inc L&ALAE
Extra Heavy	3.5%	5.2%	8.9%
Medium	3.6%	3.1%	6.8%
Private Pass	0.4%	0.8%	1.3%
US Auto	1.4%	1.1%	2.5%



What drove this increase in severity for large trucks?

Source: ISONet, Swiss Re analysis. st and 3rd party covers, CAGR: Compound Annual Growth Rate; Heavy; 20,000-45,000 lbs; Extra Heavy: >45,000 lbs

Truck fatalities and injuries were on upswing during the same period, resulting in increased frequency and severity

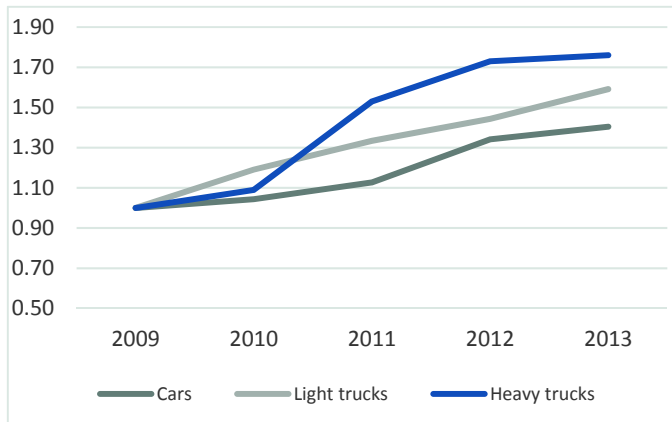


Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, http://www.bts.gov/publications/national_transportation_statistics/

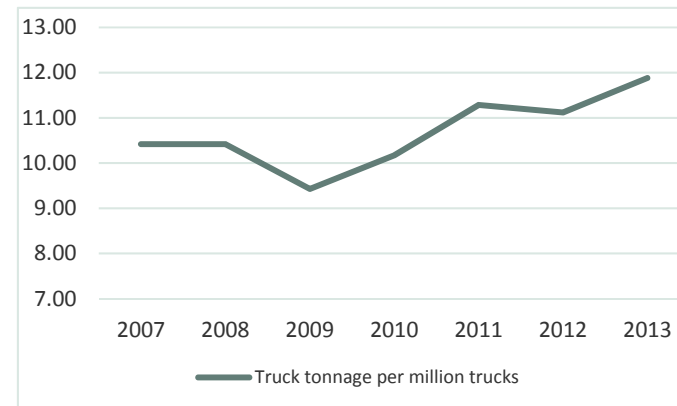


Trucking losses partly explained by economic conditions where growth has outpaced other sectors in recent years

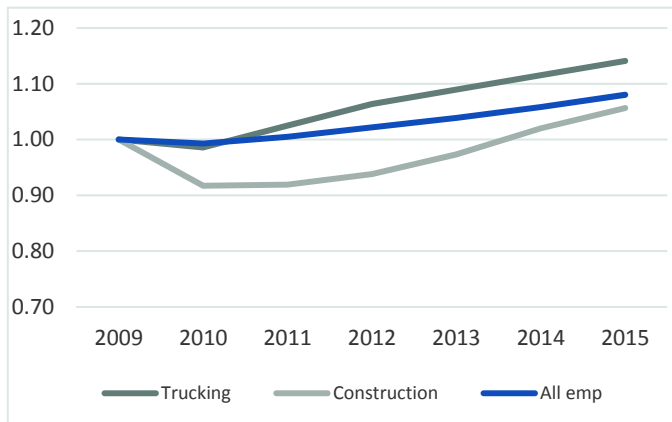
New Retail Vehicle Sales



Total Tonnage Transported per 1 million registered trucks



Employment Over Time



Key Observations

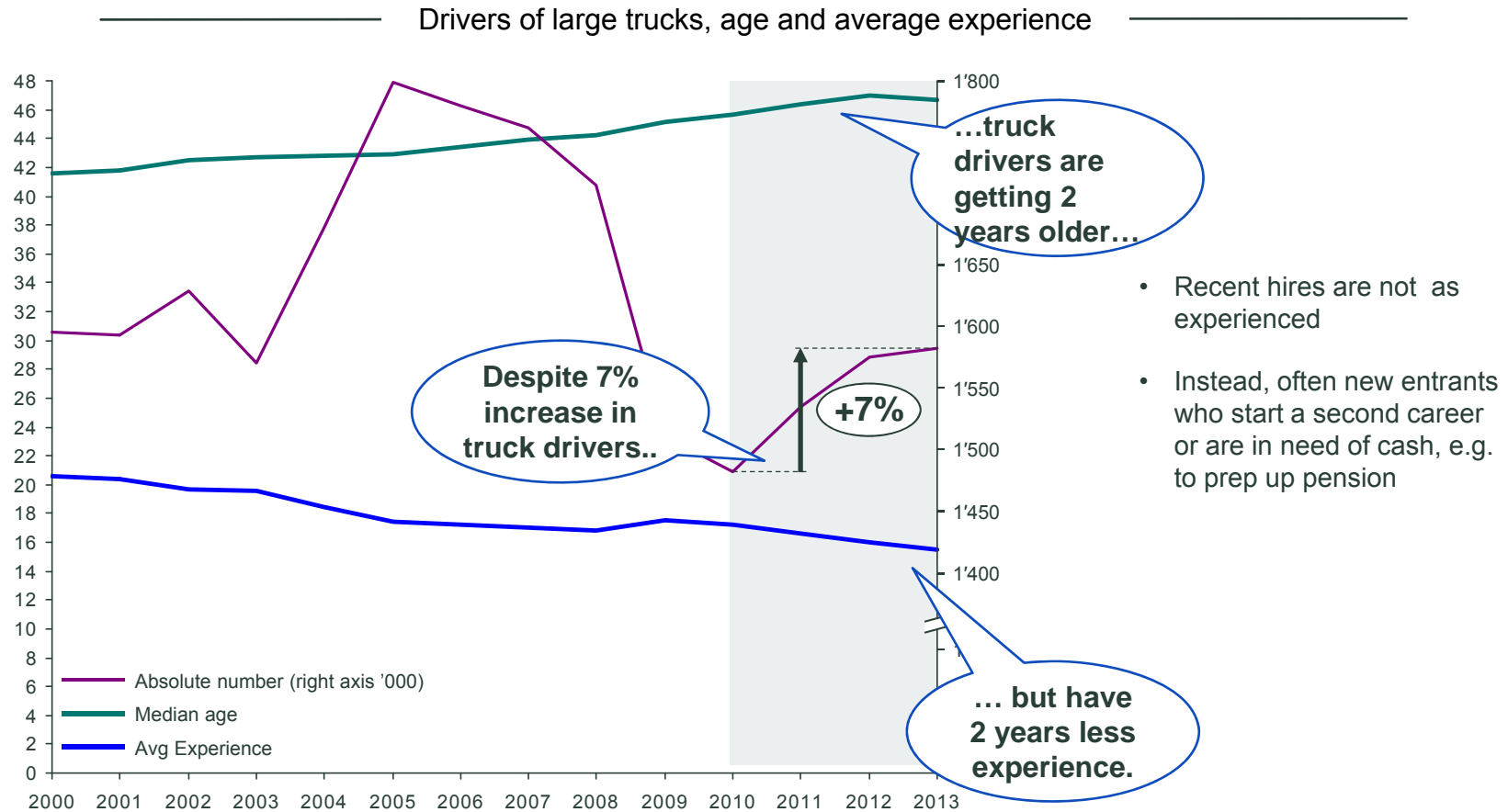
Trucking industries seemed to have recovered more quickly post recession compared to other sectors

- More new trucks being sold versus other vehicles
- Trucking employment bounced back more quickly
- More goods being transported

Source: Ward's communication, Bureau of Labor Statistics, U.S. Department of Transportation, Bureau of Transportation Statistics, and Swiss Re Analysis

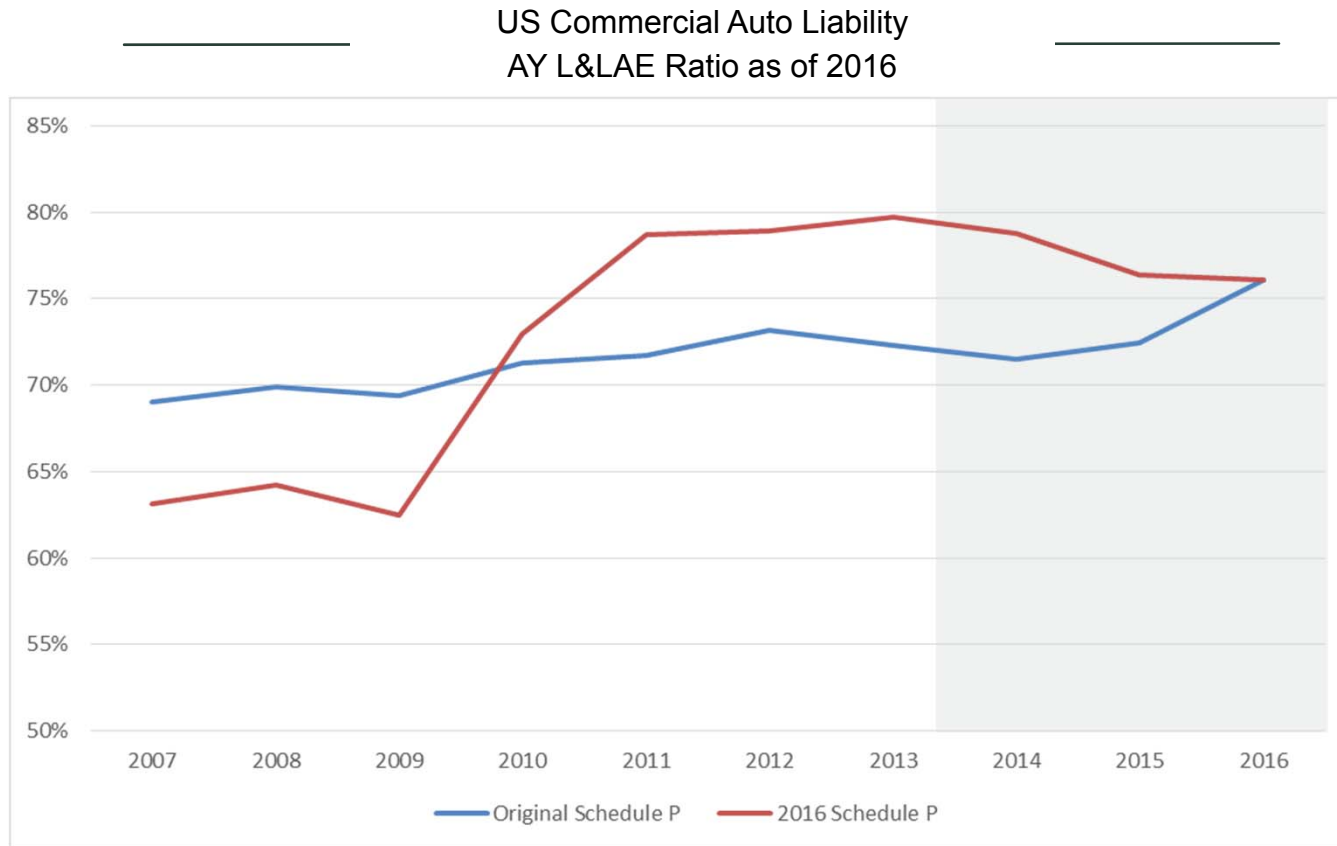


In addition, truck driver experience had dropped, despite an increase in average age of the larger driver population



Source: Ward's communication, Bureau of Labor Statistics, U.S. Department of Transportation, and Swiss Re Analysis

Commercial Auto loss ratios continued at escalated levels through 2016, again surprising the industry (Wave 2)

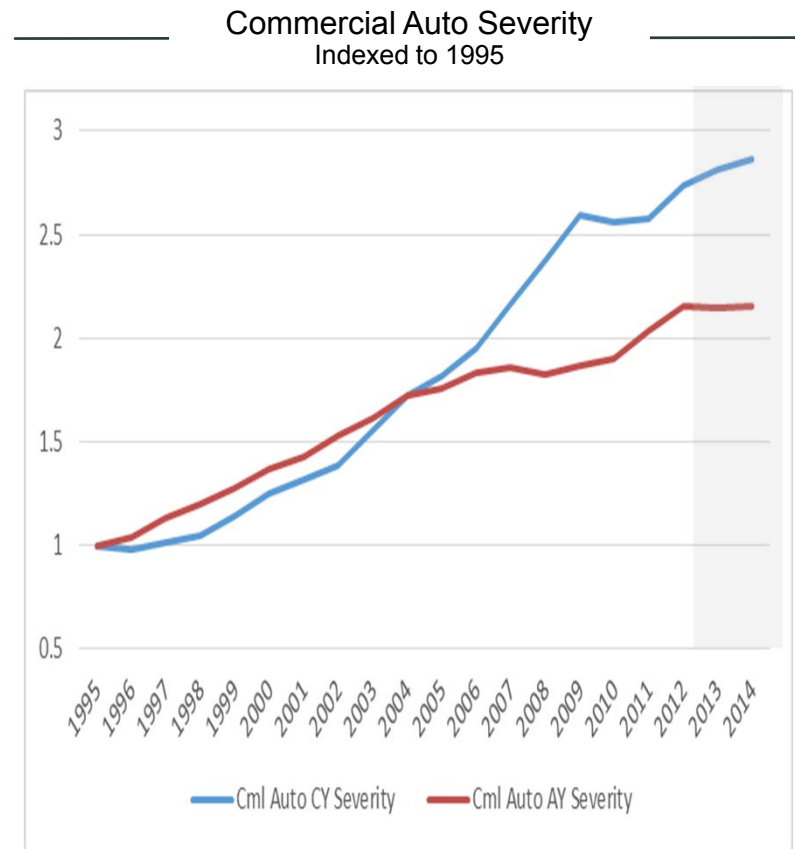
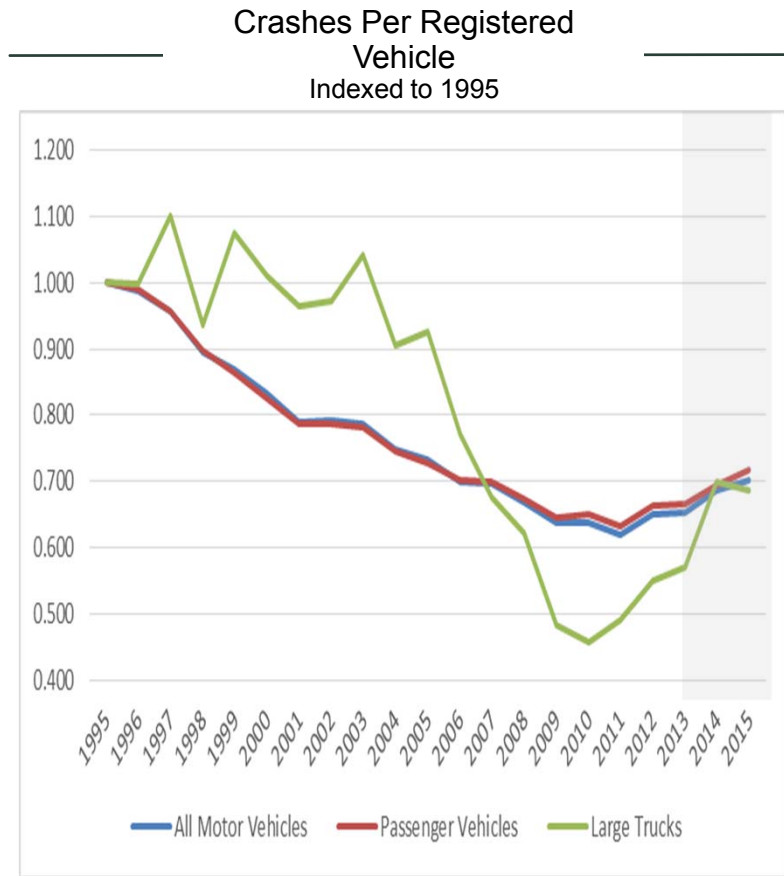


Source: SNL Insurance Statutory Financials, Schedule P, Part 1



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Wave 2 increases driven by upward shift in frequency and return to consistent positive severity trend post-recession



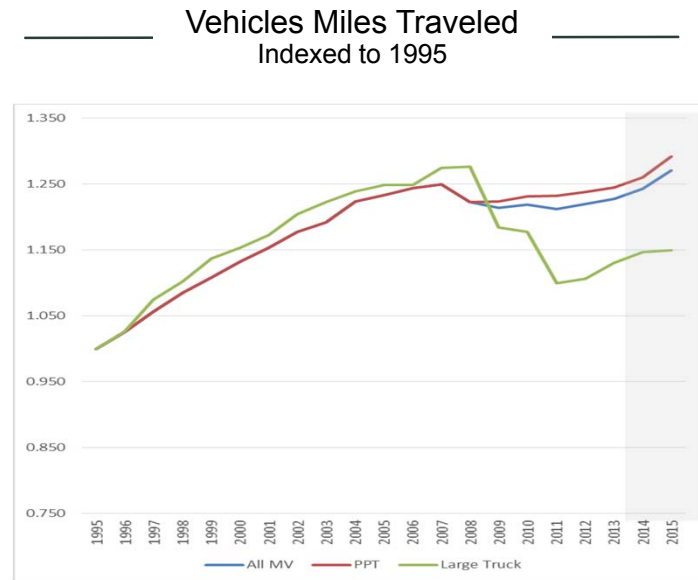
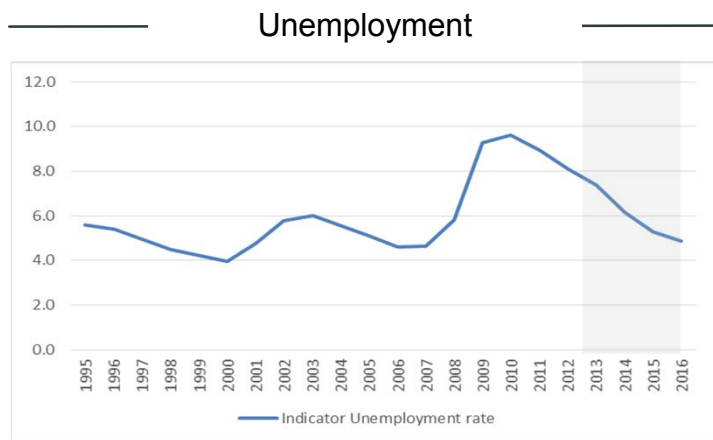
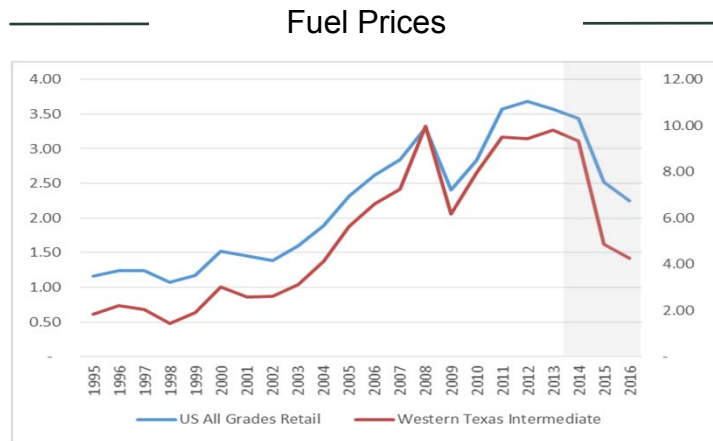
Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, http://www.bts.gov/publications/national_transportation_statistics/, ISO Verisk Commercial Auto Trends CA-2017_002 and Swiss Re Analysis



Swiss Re

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Recent frequency trends driven by economic factors that have lead to increased miles and vehicles on the road



Source: Energy Information Administration, U.S. All Grades All Formulations Retail Gasoline Prices (Dollars per Gallon); Oxford Economics, U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics*, http://www.bts.gov/publications/national_transportation_statistics/ and Swiss Re Analysis. Note: 2008 and prior restated to adjust for methodology changes in VMT and Registered vehicles

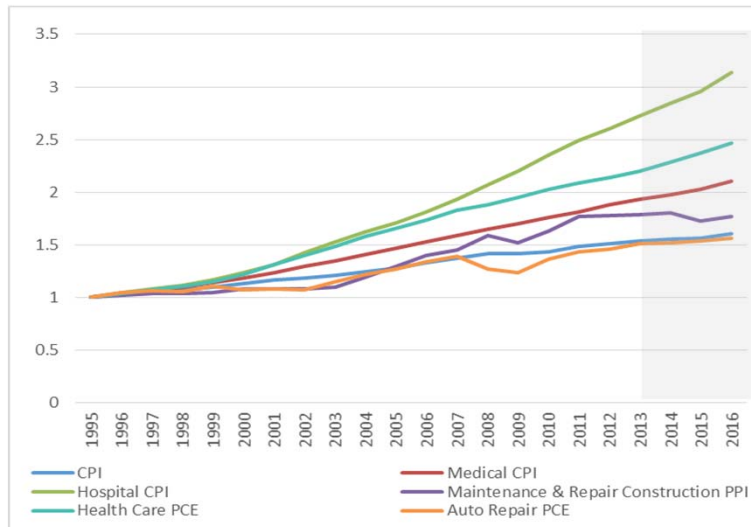


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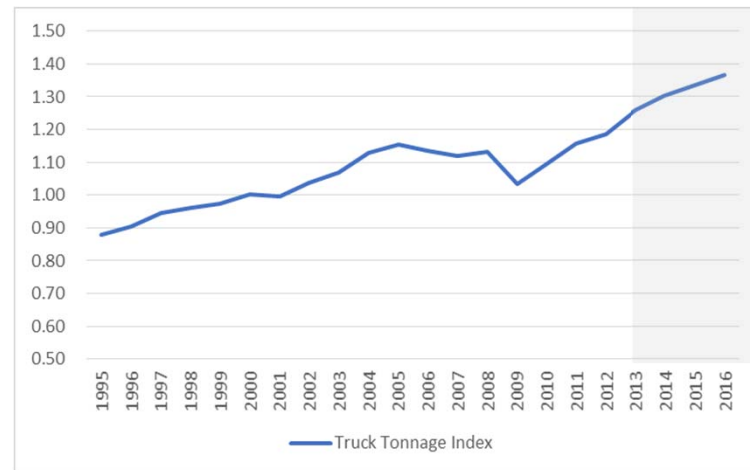
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Commercial Auto Severity is also impacted by rise in costs and drivers of accident severity

CPI, PPI & PCE Trends
Indexed to 1995



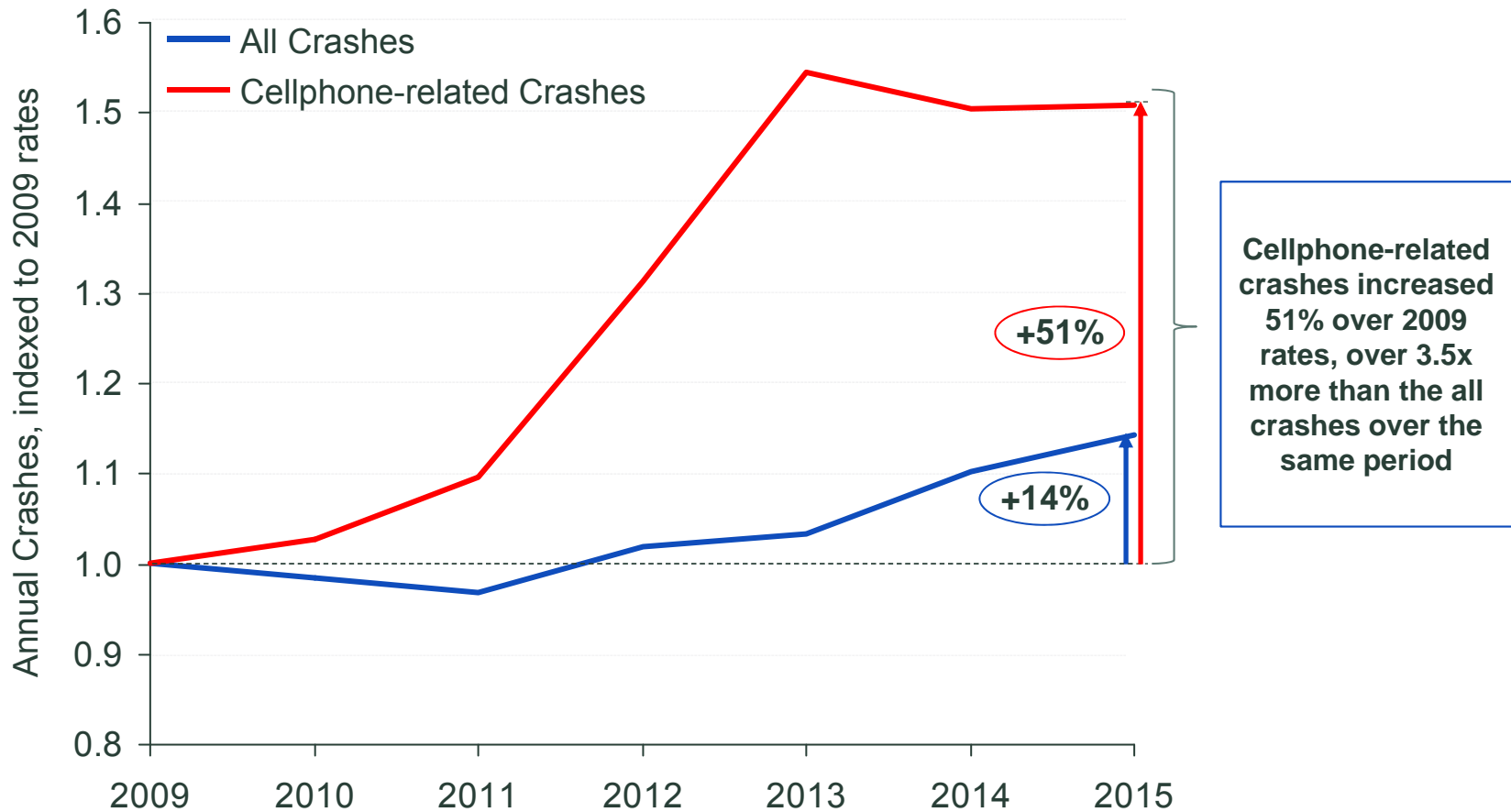
Truck Tonnage Index
Indexed to 2000



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, U.S. Department of Transportation, Federal Highway Administration



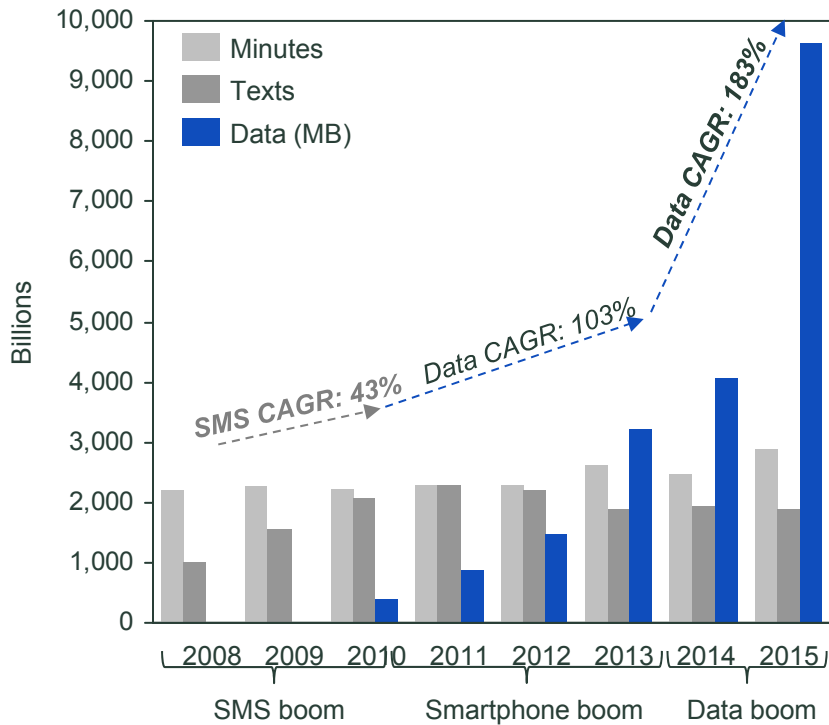
Distracted driving also contributed...since 2009, increases in cellphone-related outpaced overall rate by over 3.5x



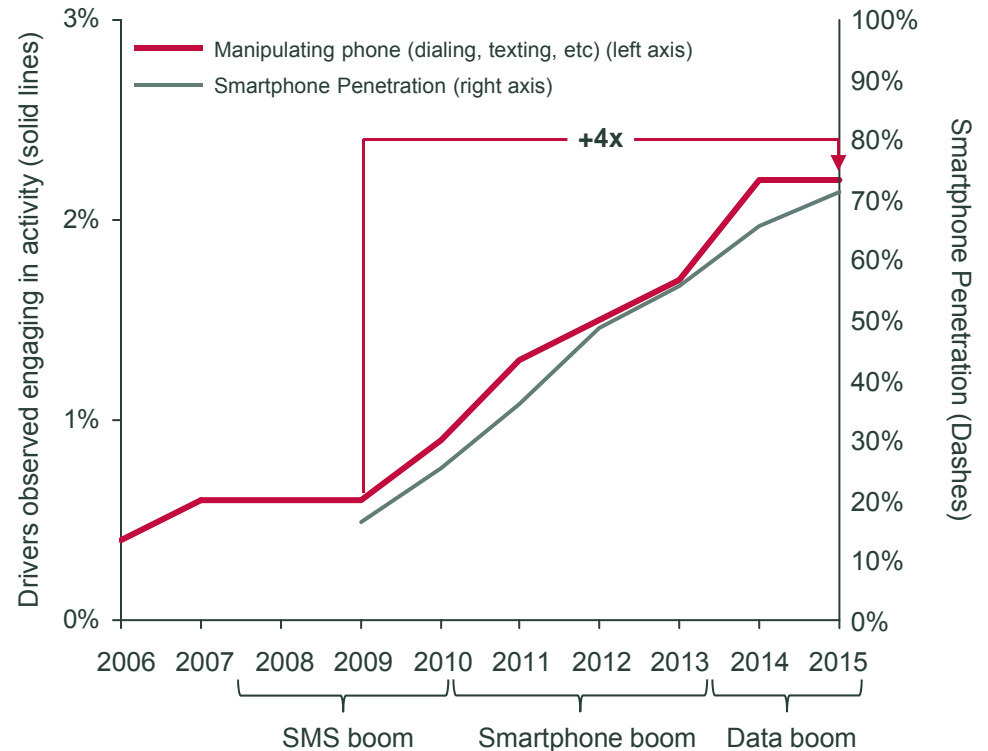
Source: General Estimates System (GES), Federal Highway Administration, Highway Statistics and Swiss Re analysis



Usage has evolved considerably, driven by the smartphone boom and the increase in visual and cognitive distraction



Usage shifted from simple conversations to more immersive interactions, commensurate with increase in smartphones and data usage

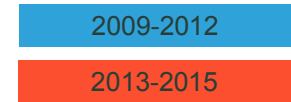


NHTSA studies have shown that observable manipulation of phones while driving has gone up 4-fold during since 2009

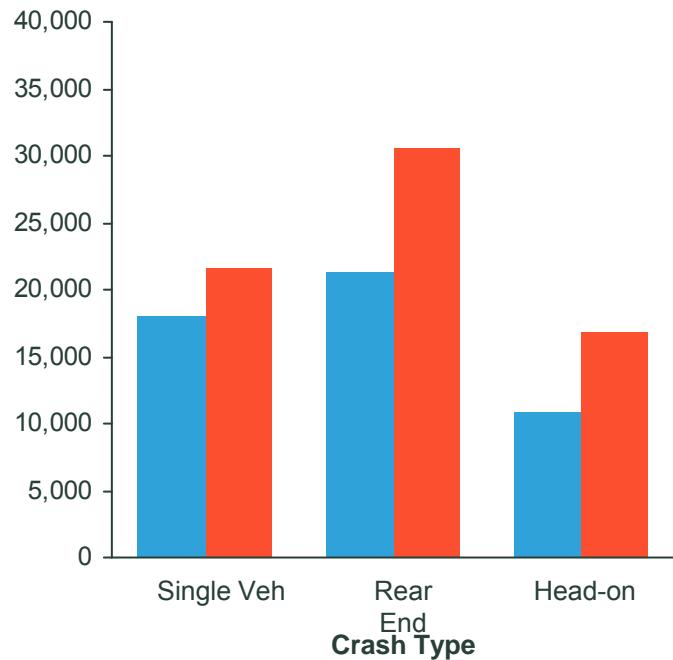
Source: CTIA Annual Wireless Survey, Driver electronic device use in 2015 (Traffic Safety Facts Research Note., NHTSA, 2016 and Swiss Re Analysis)

Distracted driving crash profile shifting to higher speeds, more multi-vehicle crashes, leading to increasing severity

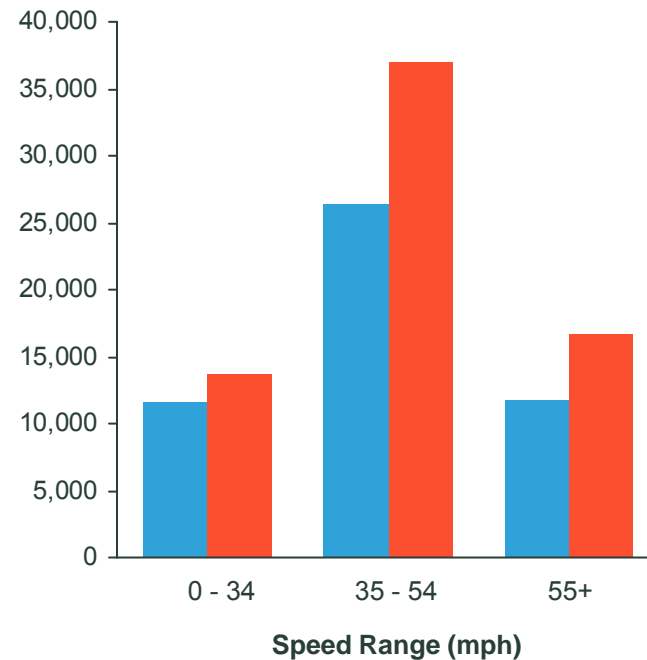
Cellphone-related distracted crashes per year



More multi-vehicle crashes



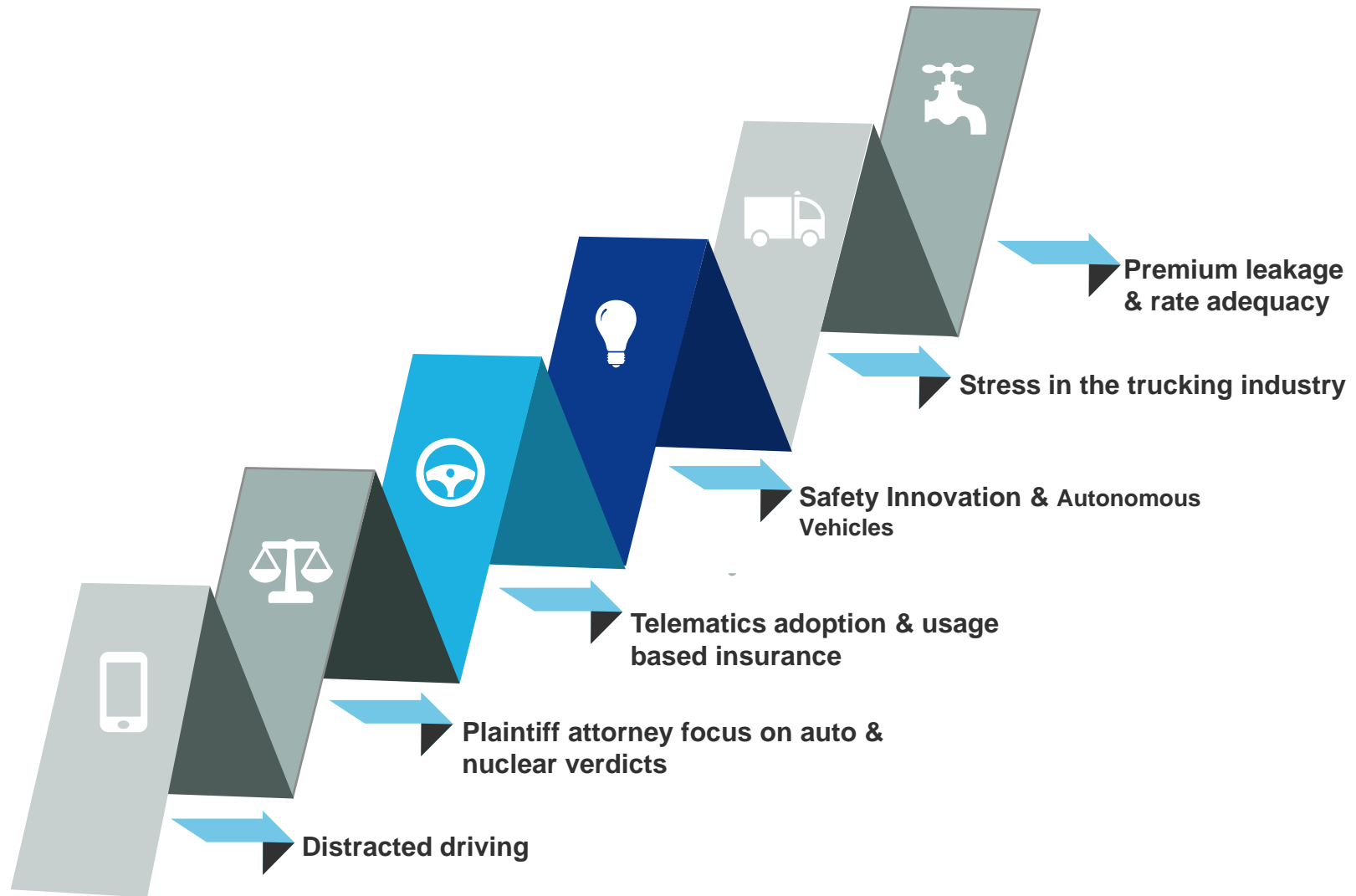
More crashes at higher speeds



Source: General Estimates System (GES), Federal Highway Administration, Highway Statistics and Swiss Re analysis



What's the next wave for commercial auto?



Polling question

What do you think will have the biggest impact on Auto going forward?

- A. Distracted Driving
- B. Plaintiff attorney focus on auto & nuclear verdicts
- C. Telematics adoption & usage based insurance
- D. Safety Innovation & Autonomous Vehicles
- E. Stress in the trucking industry
- F. Premium leakage & rate adequacy
- G. Other

Plaintiff attorneys have increased focus on auto and large verdicts have become more commonplace



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Contact Us for a Free Consultation

Jury awards \$42 million verdict to victims of 2010 crash

Jury hands record \$165 million award in FedEx crash case

Jury awards \$37 million to man paralyzed in crash after driver put his car in neutral



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Our Semi Truck Accident Attorneys Can Get You the Compensation You Deserve



TRUCK ACCIDENT VICTIM?

YOU NEED THE STRONG ARM

Los Angeles Jury Awards \$29 Million in Auto Accident Case



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Marion County Jury Awards \$52 Million to Florida Family Involved in Devastating Car Accident



CAR ACCIDENT?
DON'T WAIT, CALL 8
888-8888
Collins, Barnes

Telematics (vehicle tracking) technology has been around for 20+ years, but traction in insurance has been elusive

- Personal Lines:
 - Fairly well developed insurance scoring, multiple players
 - App-based solutions appear to be the near-term device of choice
 - Limited acceptance by consumers.
- Commercial Lines:
 - Less developed scoring and fewer players
 - Seeing increase customer desire, particularly from fleet customers
 - Dongle-based solutions appear predominant for variety of reasons.

Where does telematics go?

- Networked sharing of data
- Opportunity for additional fee-based services
- Fairness of technology, particularly to Millennials
- Impact on autonomous vehicles

The road to fully autonomous vehicles will be seamless incorporation of ADAS, most of which are here today

- Advanced Driver Assistance Systems (ADAS) are and will continue to make a positive impact in auto
 - e.g., Automated Electronic Braking (AEB): Seeing significant favourable impact on reducing accidents
- but...
 - Near-term increased physical damage and property damage claim costs
 - Still further development
 - Limited availability in vehicles
 - Technology not always accepted
 - e.g. lane departure and blind spot audible warning turned off by vehicle owners



Autonomous vehicles are coming, but may take a bit longer than the hype

Pros

- Drivers at fault 81% of time
- Impact of distraction eliminated
- Less injury and death
- Reduced drunk driving
- More cars with less traffic, congestion
- Efficient traffic patterns likely to improved mileage & reduced pollution

Cons

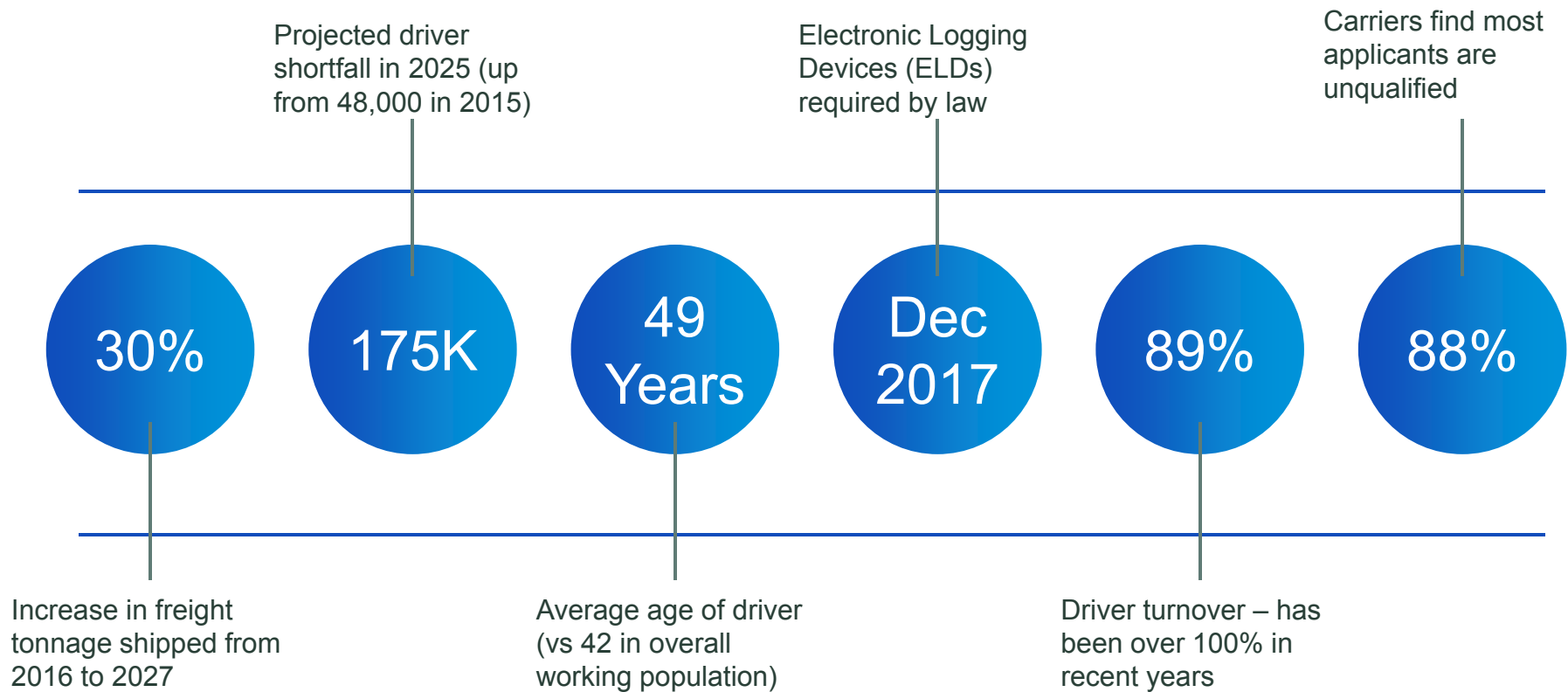
- Potential of cyber/hacking
- Dependency on external infrastructure
- Sensor interference due to weather
- Over-reliance reduces driving ability
- Increased repair cost
- Complicates Insurance – who is responsible?

Adoption

- Average vehicle age is 11.6 year (~50% higher for trucks)
- Costs could be prohibitive (median HHD <\$60K)
- Law must catch up with technology
- Many people like to drive
- Lack of trust in the technology

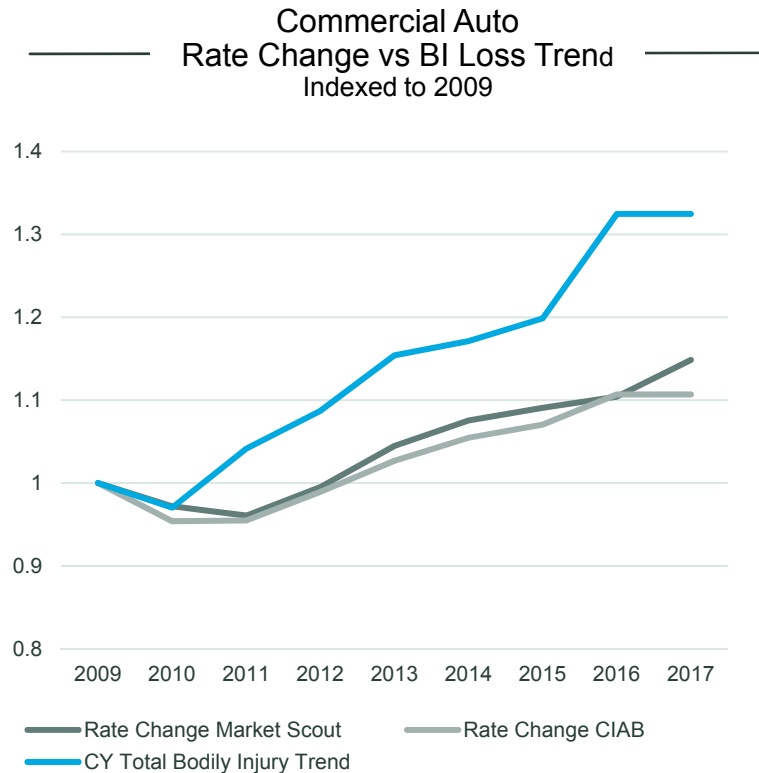
Source: "Top 20 Pros and Cons Associated With Self-Driving Cars," Auto Insurance Center, Bureau of transportation Statistics, U.S. Bureau of the Census, retrieved from FRED, Federal Reserve Bank of St. Louis.

The stress in the trucking industry will continue to challenge the industry



Source: American Trucking Association.

While rates have been increasing, they continue to lag loss trends and may exacerbate premium leakage



Sources of Commercial Auto Premium Leakage

- Number of autos
- Business classification
- Vehicle type and use
- Garaged location
- Valuation of vehicles, service & maintenance
- Mileage radius
- Driver details
- Qualification of operators

Source: Market Scout, CIAB and ISO Verisk Commercial Auto Trends, "The Challenge of Auto Insurance Premium Leakage", Verisk Insurance Solutions.

Kirsten C. Hernan



Kirsten Hernan is the former Head of Trend Spotting at Swiss Re, where she was charged with providing forward looking analysis, rooted in and quantitative methods, to help position Swiss Re's underwriting and improve risk assessment.

Prior to joining Swiss Re, Kirsten was a managing director at Deloitte Consulting, focusing on strategy, operations and advanced analytics. As a leader in Deloitte's Insurance, she lead numerous engagements focused on leveraging analytics to deliver insights and enable understanding of business trends to drive better business decisions and processes. She was also a co-inventor of Deloitte's Claims Predictive Modeling solutions that enables enhanced segmentation strategies.

Prior to joining Deloitte, Kirsten was a Senior Vice President of ACE Limited (now Chubb), functioning in a variety of financial, operational and actuarial roles. Most recently, she was responsible for assessing and revamping internal pricing and cost allocation processes to more accurately project costs and improving the integrity and confidence in projected results for ACE's subsidiary ESIS, Inc.

Prior roles include Division Financial and Operations Officer for several ACE USA divisions, where Kirsten was charged with all planning and financial analysis and management, identifying opportunities to improve results and maximize profit potential, increasing the efficiency and effectiveness of the organization through improved process flow and increased capabilities, and ensuring compliance with corporate and regulatory requirements and existence of adequate management controls for this business. Additionally, Kirsten has served in a variety of actuarial pricing and reserving functions related to both traditional and specialty lines.

She is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries.