

REACHING ZERO CRASHES

6-5-4-3-2-1-0

*A DIALOGUE ON THE ROLE OF
ADVANCED DRIVER ASSISTANCE SYSTEMS*

OCTOBER 27 | 2016



**National
Transportation
Safety Board**



The Changing Auto Safety Landscape

NTSB / NSC Event

October 2016

Washington, DC

1,000

member companies

48

Member groups that write more than \$1 billion annually

50

States in which a PCI member is domiciled

42

Percentage of U.S. auto insurance premiums written by PCI members

50

States in which PCI has retained lobbyist



Auto Insurers Support ADAS

- PCI = long history of support/funding for auto safety
 - Air bags, seat belts, AEB
 - Urged NHTSA to include crash avoidance technologies in NCAP
 - Insurance Institute for Highway Safety and numerous other auto safety partners
- PCI = Political clout (\$3.6m) weighing in for auto safety
 - Congress/state legislatures; state/federal agencies
 - Amplify auto safety partners
 - Public safety campaign
- Insurers = significant market incentives (\$B) for safer cars

Auto Insurer ADAS Concerns

- Uncertain rules of the road
 - Questions about liability
 - Questions re safety technology effectiveness
 - Consumers often disable/ignore safety features
 - Messy transition
 - Consumer overconfidence
- Insurers base rates on data

Auto Insurer ADAS Concerns

- History of problems with mandatory insurance discounts
 - Advocating safety technology = mandatory discount penalty
 - Discounts may become permanent even after technology is standardized (and deducted from allowable cost-based pricing)
 - Base pricing before discounts is often suppressed
 - Other loss factors may overwhelm safety savings
 - Insurers rely on loss history/cost-based pricing NOT hope & hype

Hope & Hype

PCI poll:

70% of
Americans think
motor vehicle
accidents are
decreasing

Forbes:

“No Need For
Insurance: How
Self-Driving
Cars Will Disrupt
A \$200 Billion
Industry”

ADAS = The End of Auto Insurance?

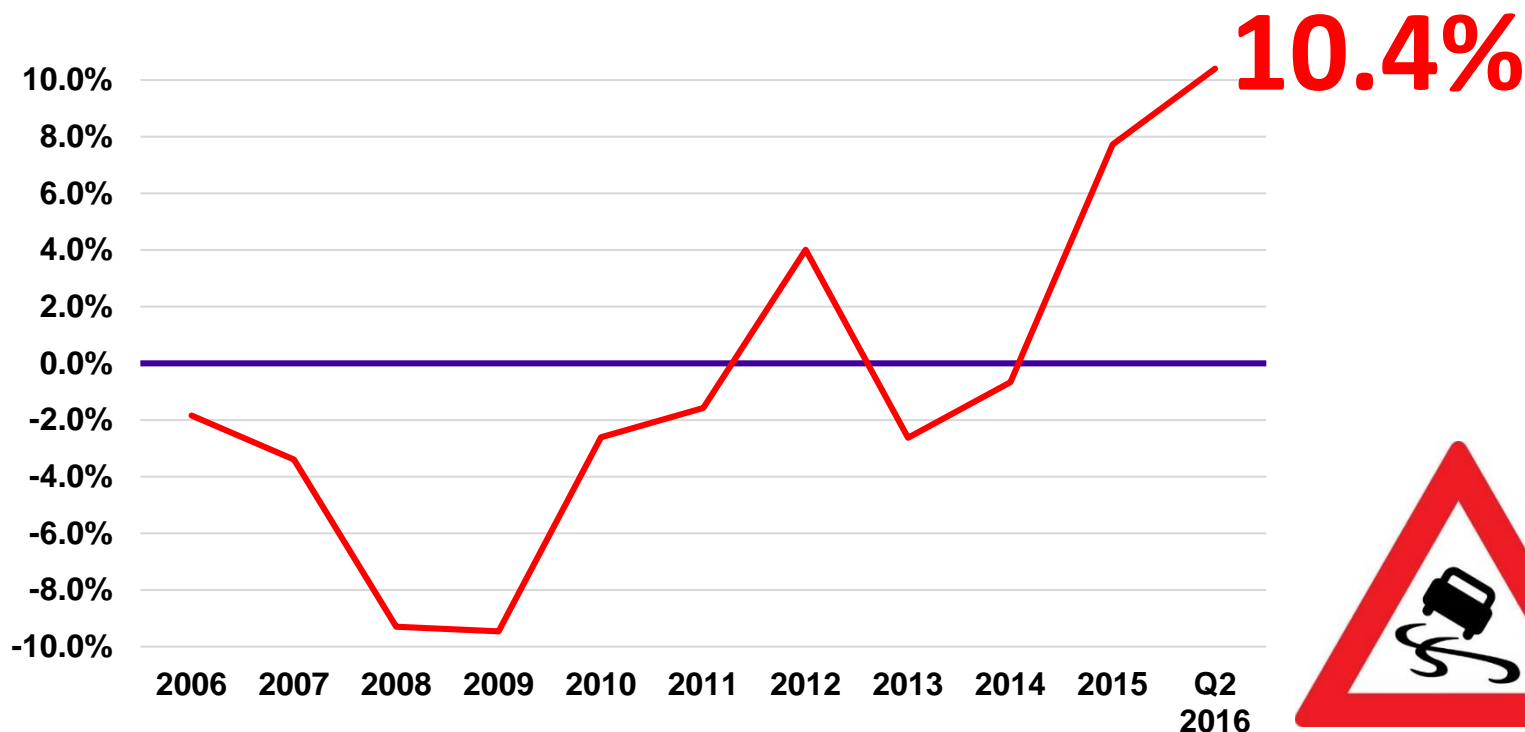
**"THE REPORTS OF MY DEATH HAVE BEEN
GREATLY EXAGGERATED."**

MARK TWAIN

© Lifehack Quotes



Reality: Auto Deaths Rapidly Increasing

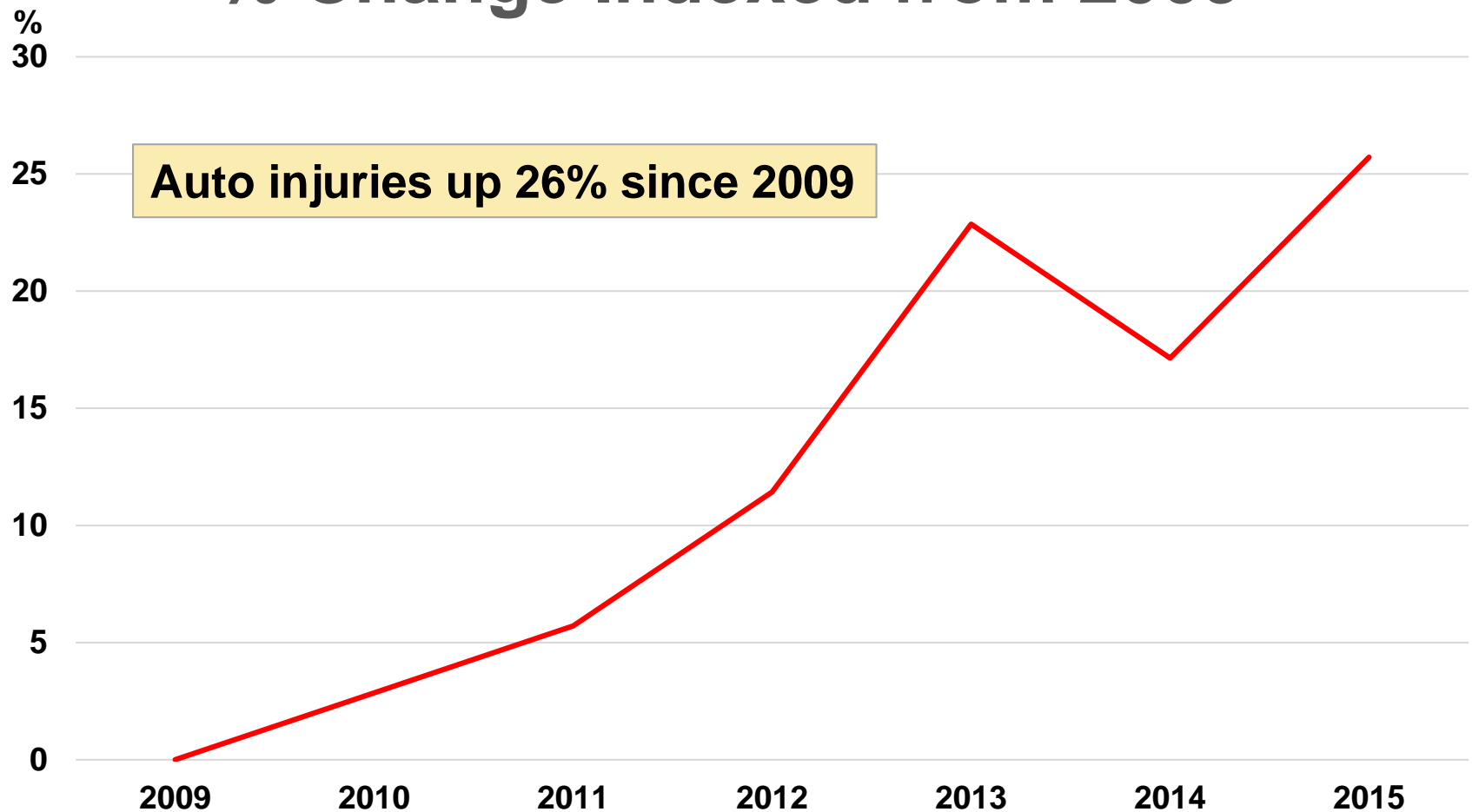


Source: PCI using NHTSA data



Reality: Auto Injuries Rising

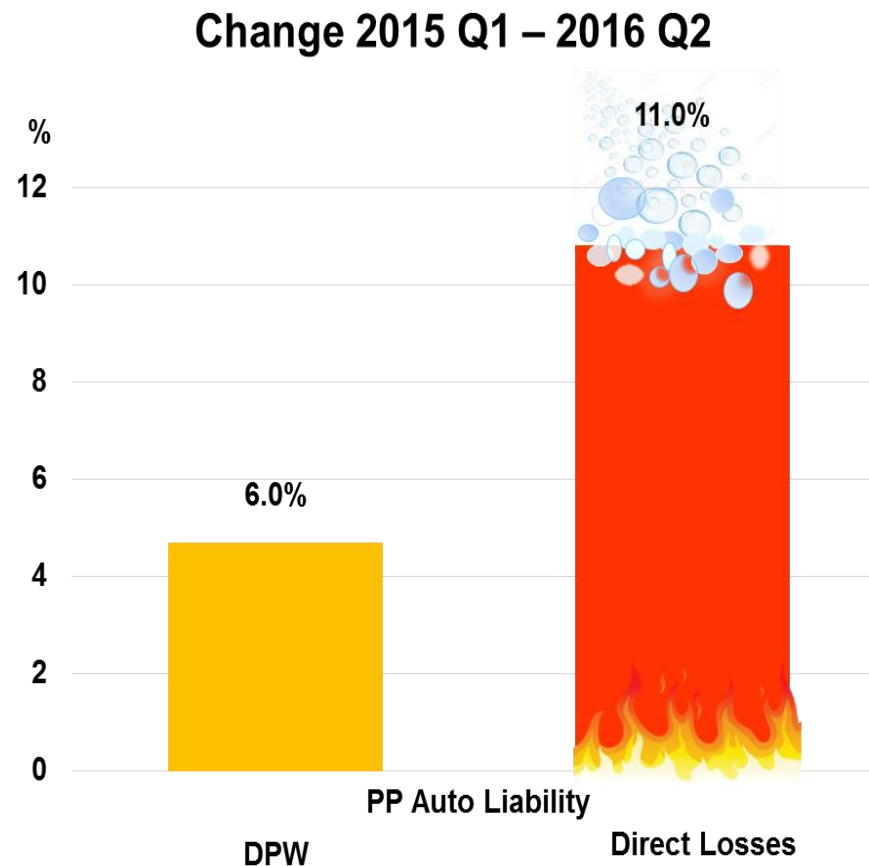
% Change Indexed from 2009



Source: PCI using National Safety Council data, Medically consulted auto injuries, indexed by PCI

Reality

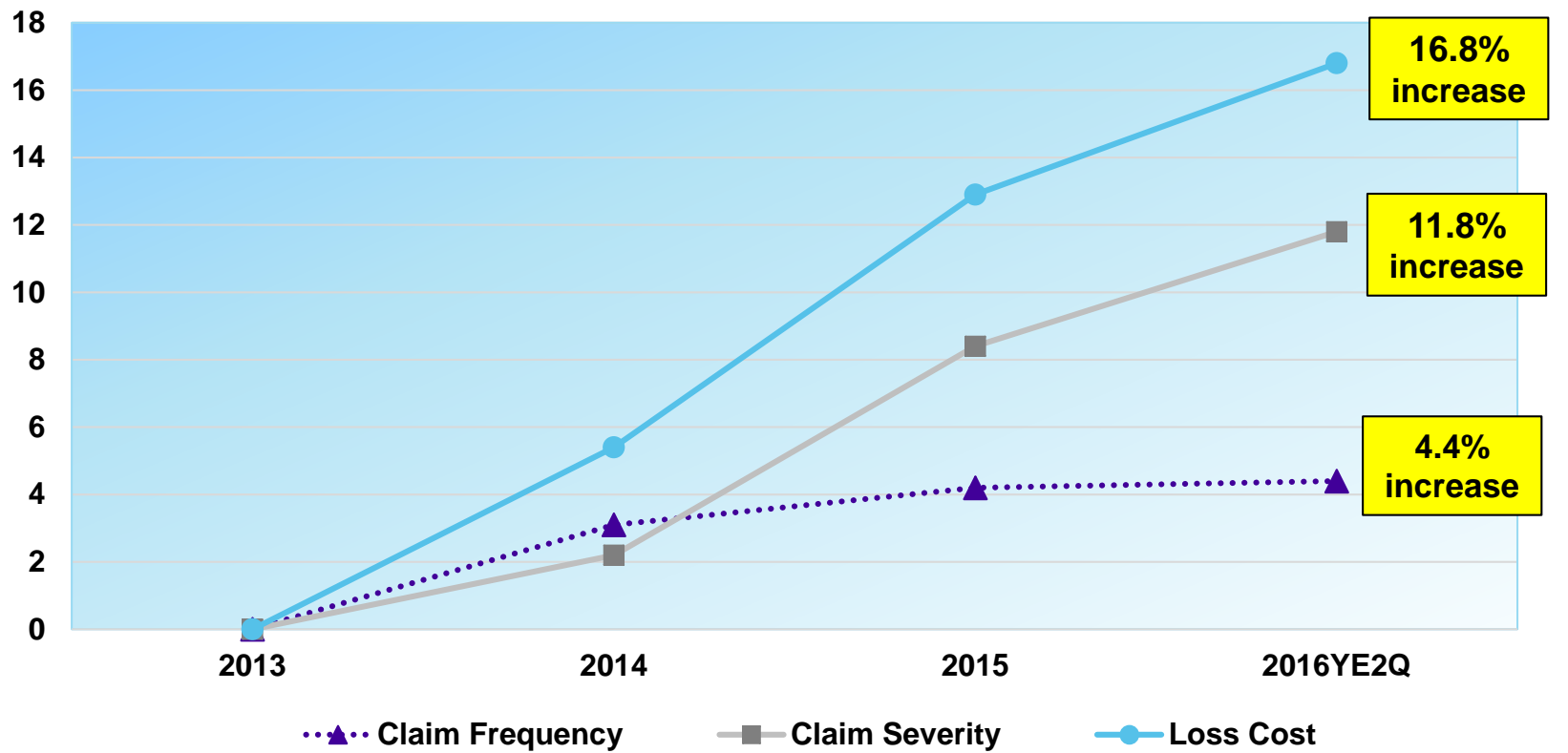
Auto accident insurance losses increasing at nearly twice rate increases



Source: PCI using SNL Financial

The New Normal: Spiking Frequency and Severity

% Change
since 2013

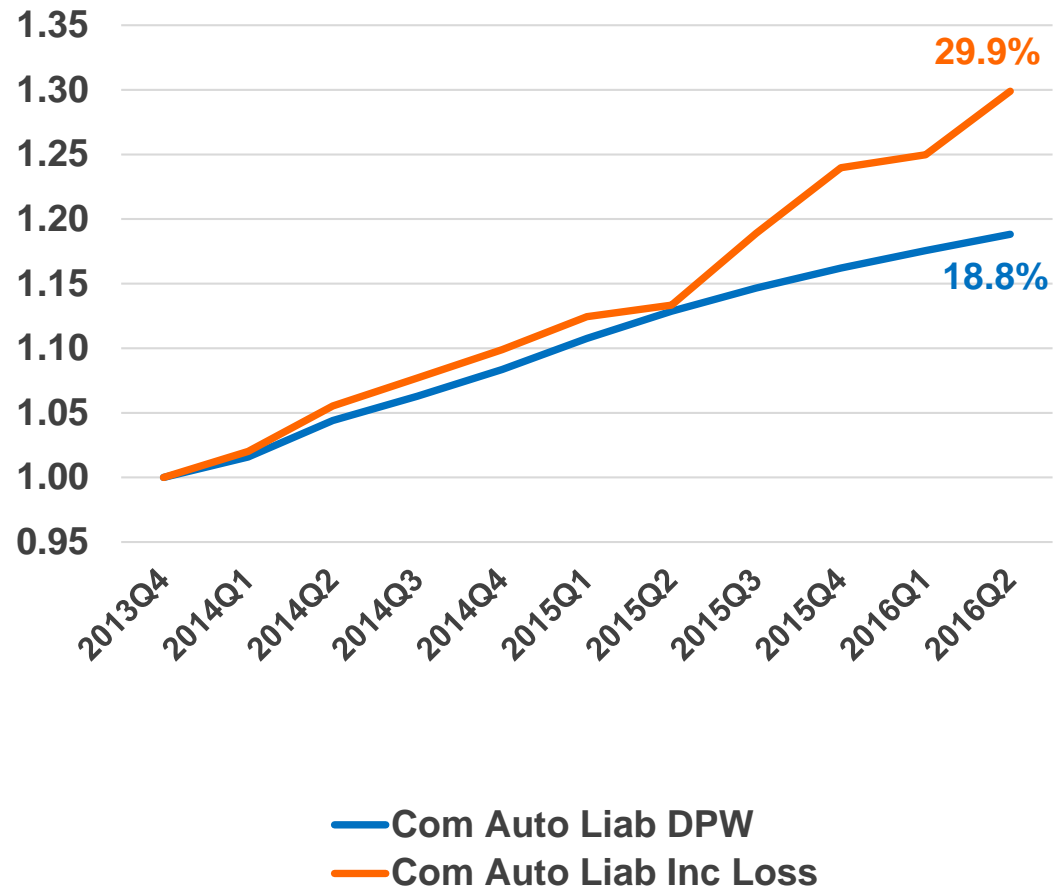


Vehicle Damage = PD Liability + Collision coverages.

Data points reflect year-end, and combined rolling four quarters for 2016(2Q).

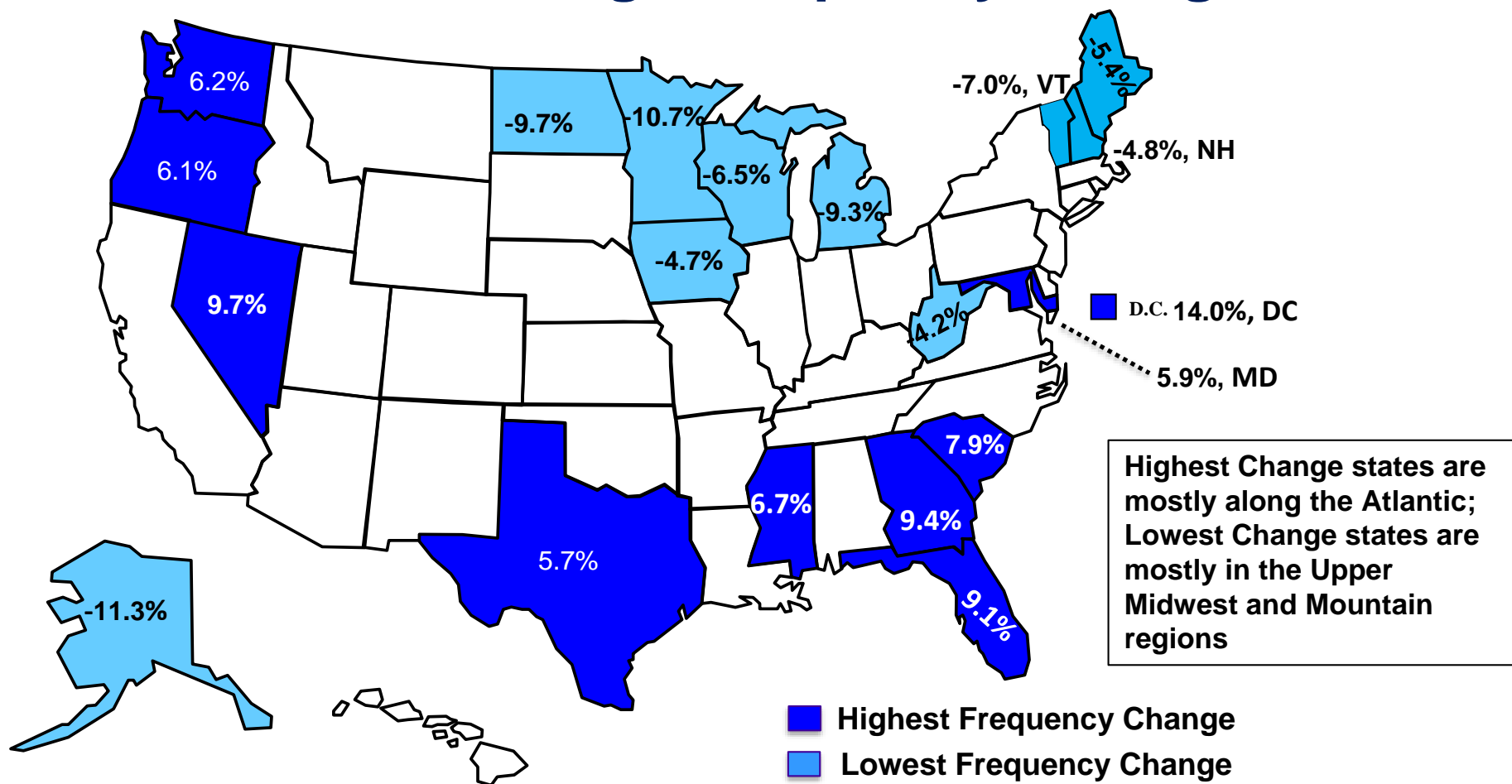
Source: PCI using PPA Fast Track Monitoring System, ISS, NISS and ISO

Commercial Auto Liability - Spiking Loss Growth Exceeds Premium Increases



Source: PCI using SNL Financial
Notes: Represents 4 quarter rolling change from year-end 2013.

States with Highest and Lowest Vehicle Damage Frequency Changes



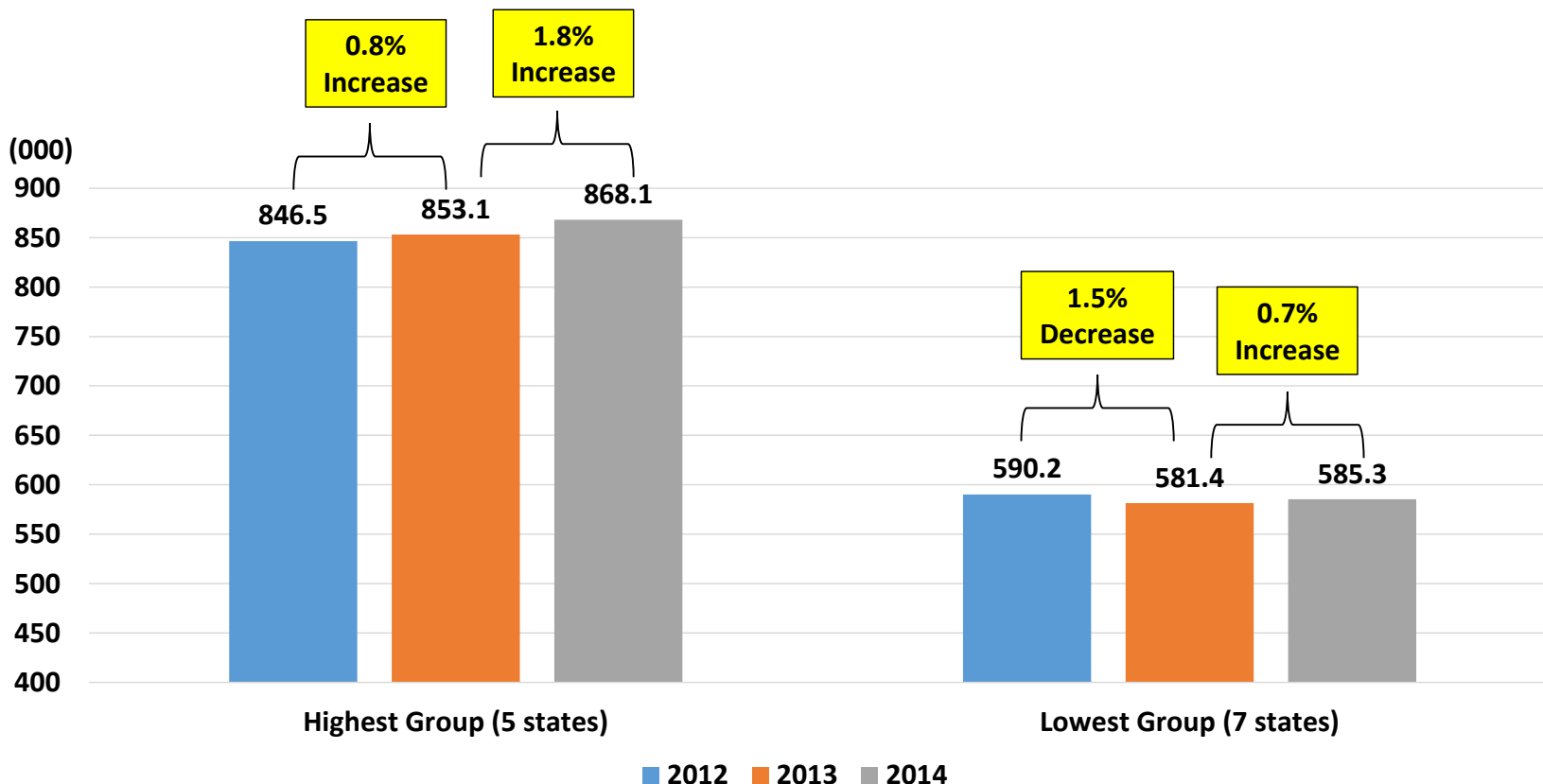
The above two groups of 10 states each have the highest and lowest PD Liability + Collision frequency changes from combined rolling 4 quarters 2014(1) to combined rolling 4 quarters 2016(1).
Source: PCI via Society of Actuaries using PPA Fast Track Monitoring System data

Frequency/Severity Trend Factors

- Strong trend correlations
 - Traffic congestion/Distracted driving
 - Miles driven/employment
- Additional trend factors
 - Demographics – more older/younger drivers
 - Weather (unusual events) ; Road conditions;
 - Drugs (Marijuana, compound drugs)
- Top long-term factors: Alcohol, speeding and distracted driving
- Severity factors
 - Vehicle technology and materials
 - Increasing medical costs
 - Speed limits
 - Tort law

Traffic Congestion: Urban Travel Growing Faster in High Frequency Growth States

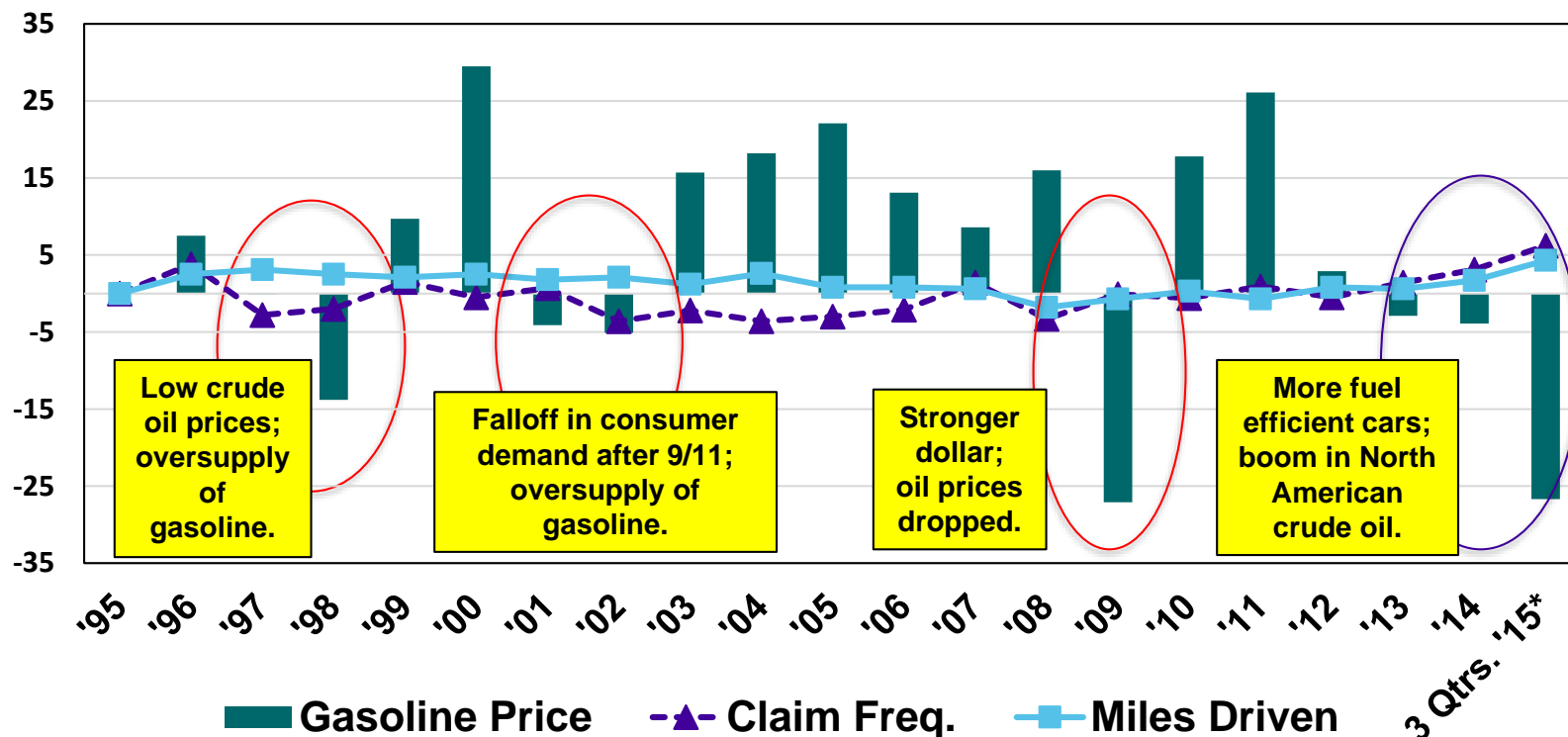
Growth in Urban Miles Traveled per Urban Lane Miles



Source: PCI using Federal Highway Association (FHWA) data

Recent Correlation among Lower Gasoline Prices, More Miles Driven and Accident Claim Frequency

% Annual Change



Claim frequency fell in 1997-1998, 2001-2002 and 2009 despite lower gasoline prices.

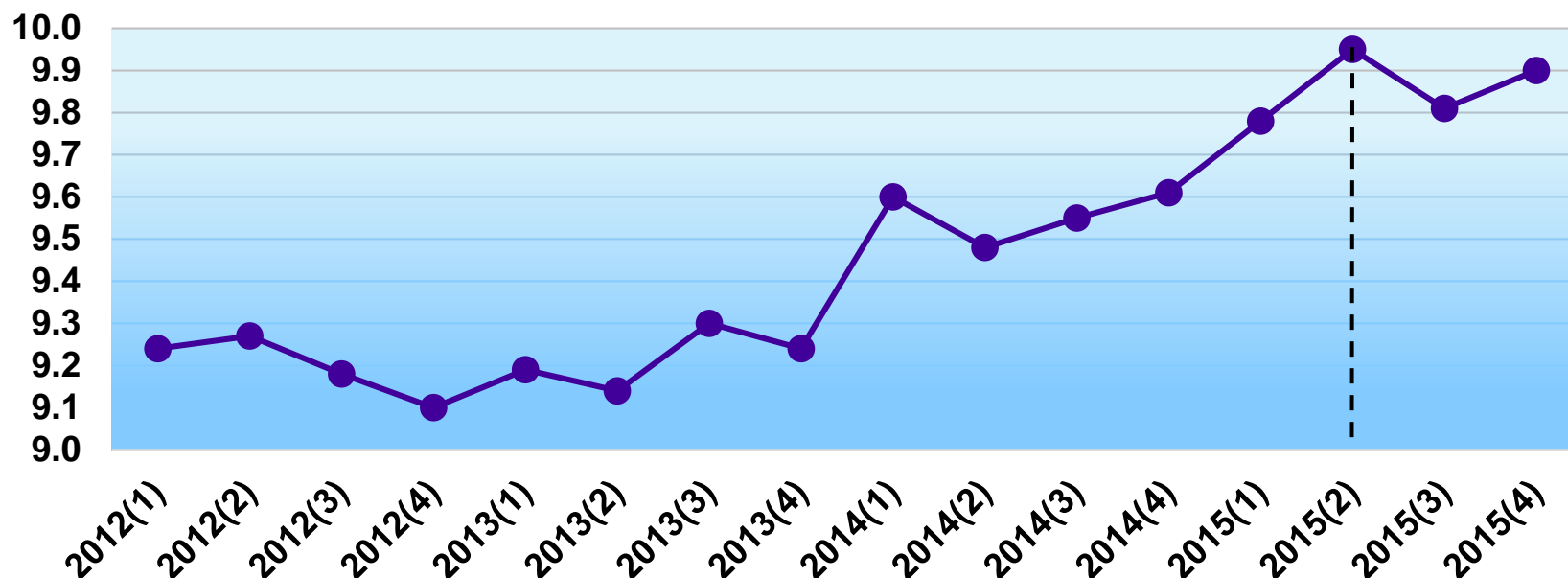
* Last data point: Changes in claim frequency and miles driven reflect first 3 qtrs. of 2014 to first 3 qtrs. of 2015.

Change in gasoline prices reflects 2014 to 2015 (entire years).

Source: FHWA and PCI

Wet Weather in the South Drives Frequency In 2015

PD Liab. & Coll. Claims
per 100 Ins. Cars

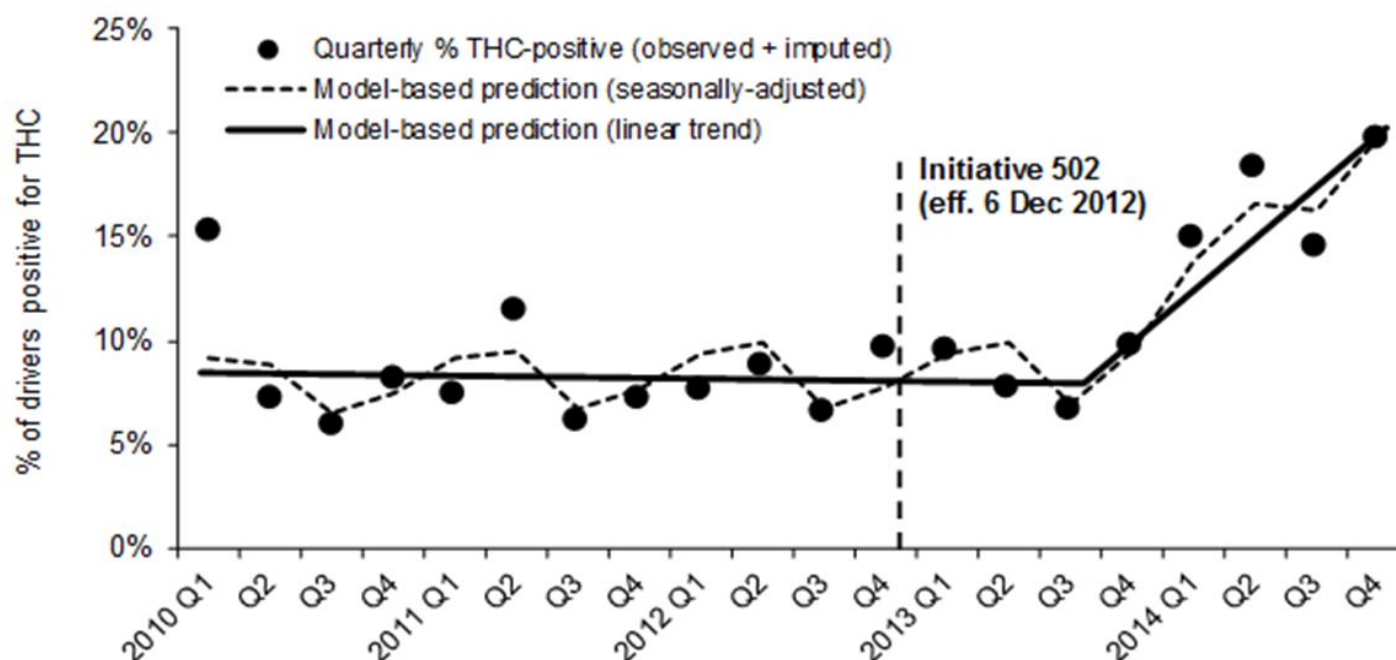


States include FL, GA, IN, MS, SC and TX; all are in the group with the highest claim frequency growth in 2015(2) [compared to 2013(2)] and have above avg. precipitation during this quarter.

Source: PCI using NOAA data

Key Findings

Figure 1. Quarterly average proportion of drivers involved in fatal crashes who were positive for THC and modeled seasonally-adjusted linear trend before and after Washington Initiative 502 took effect on 6 December 2012 legalizing recreational use of marijuana for adults aged 21 years and older, Washington, 2010 – 2014

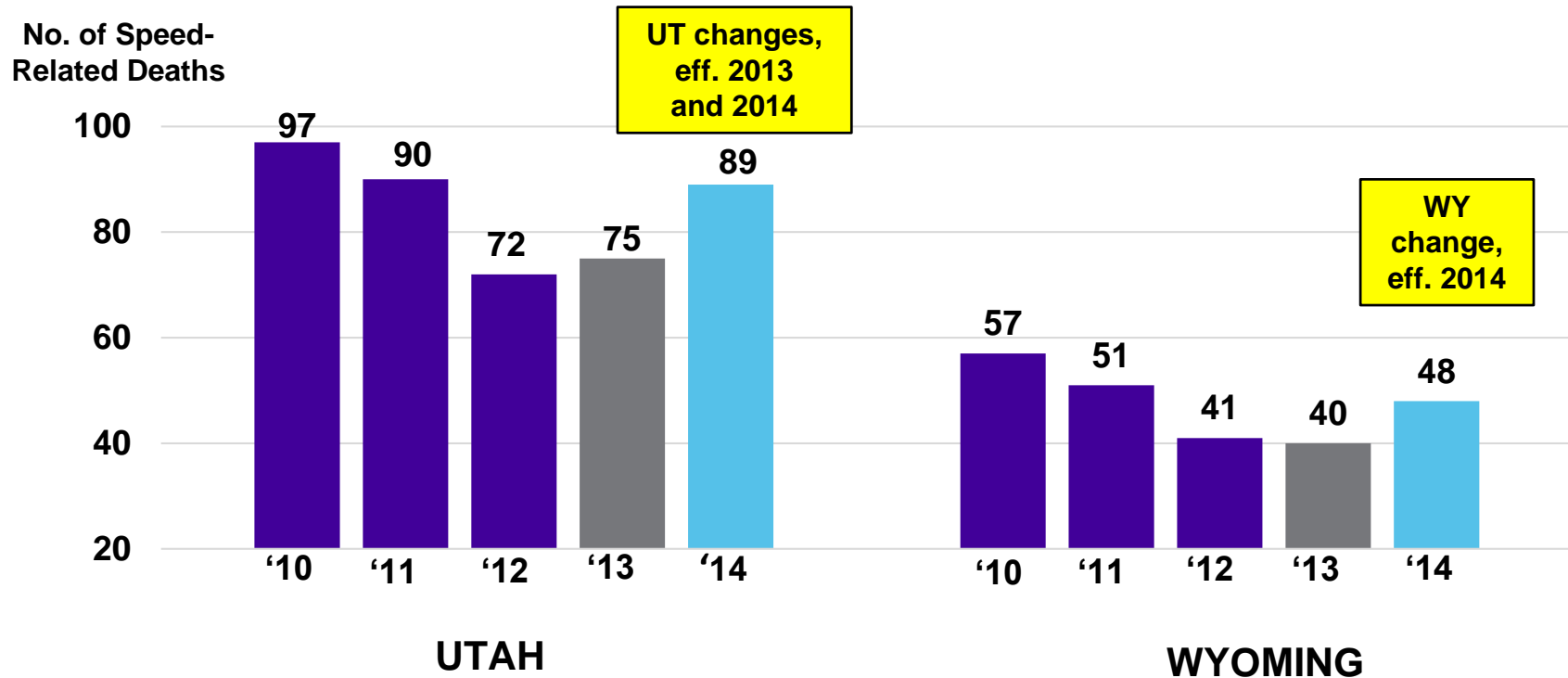


Data: Washington Traffic Safety Commission, 2010 – 2014.

Drivers positive for THC based on results of blood toxicological tests. Results imputed 10 times when driver was not tested or test results were unknown; results reflect averages from 10 imputed values for each driver. Model-based predictions are from binomial regression model with identity link function, indicator variables for seasons, and a two-part linear spline with change in slope on 5 September 2013 (39 weeks after effective date of Initiative 502)

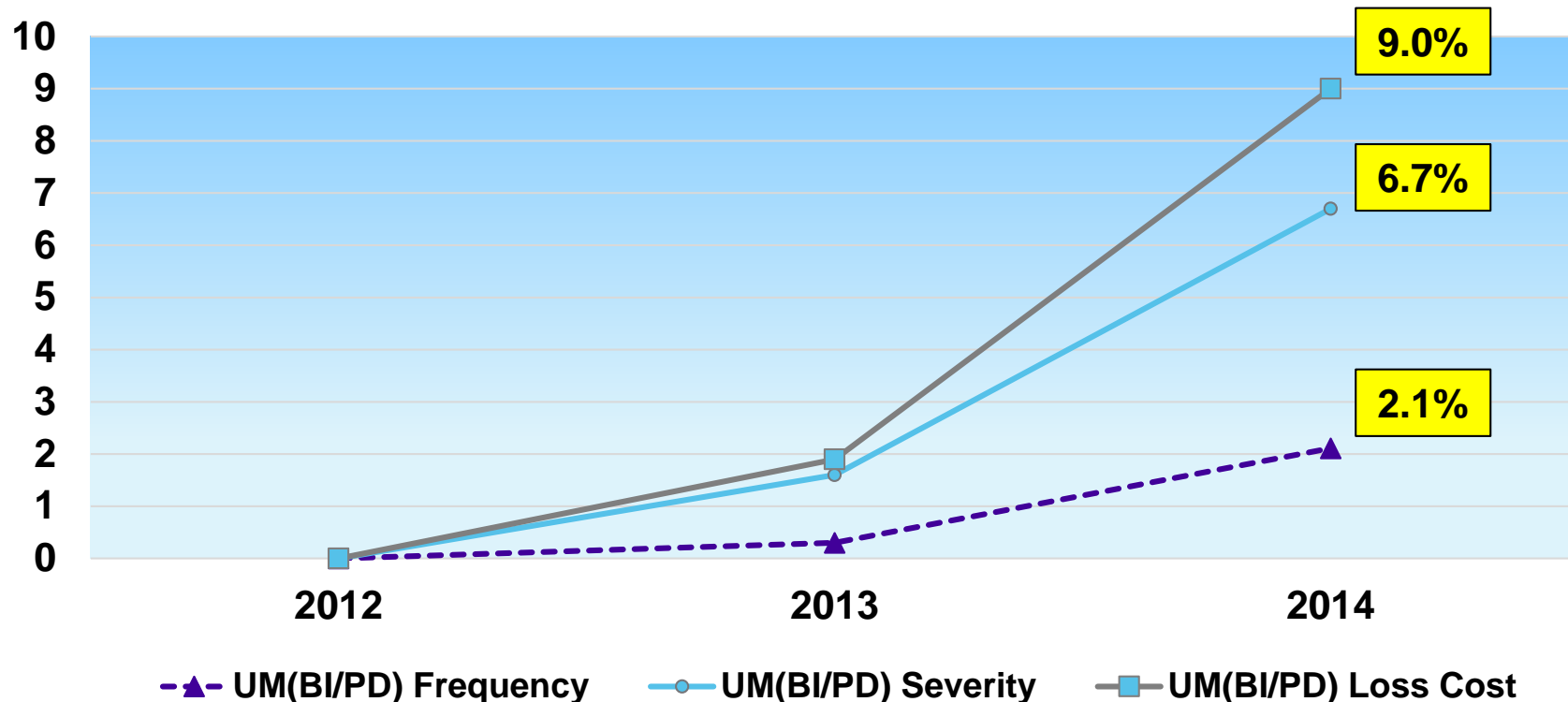
Findings and graphs from AAA Traffic Safety Foundation.

Increasing Speed Limits = Increasing Traffic Deaths



Uninsured Motorist Bodily Injury/Property Damage Loss Experience Has Grown Since 2012

% Change since 2012

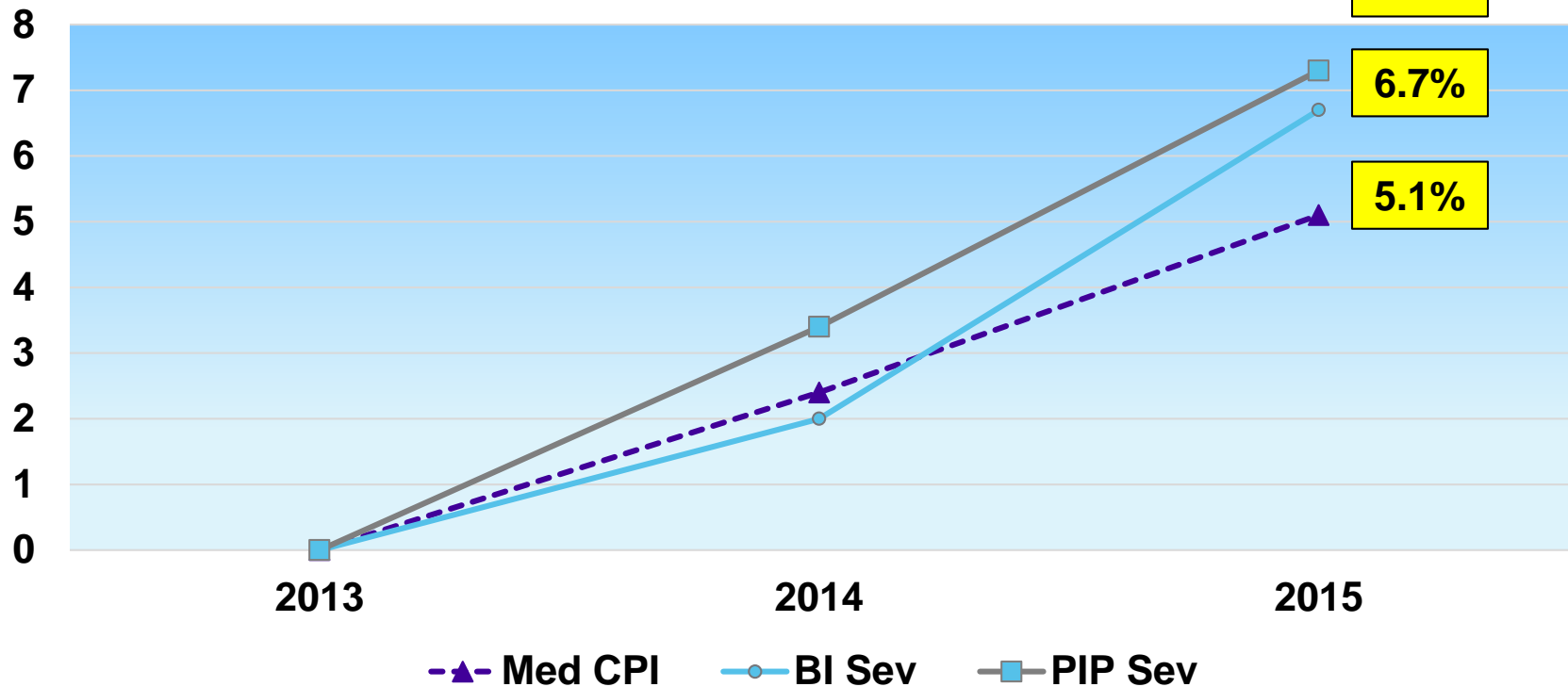


Source: PCI using projected Independent Statistical Service claims data

Auto Medical Increasing + Worse than Medical CPI

Auto Injury Severity and Medical Cost CPI Indices

% Change since 2013



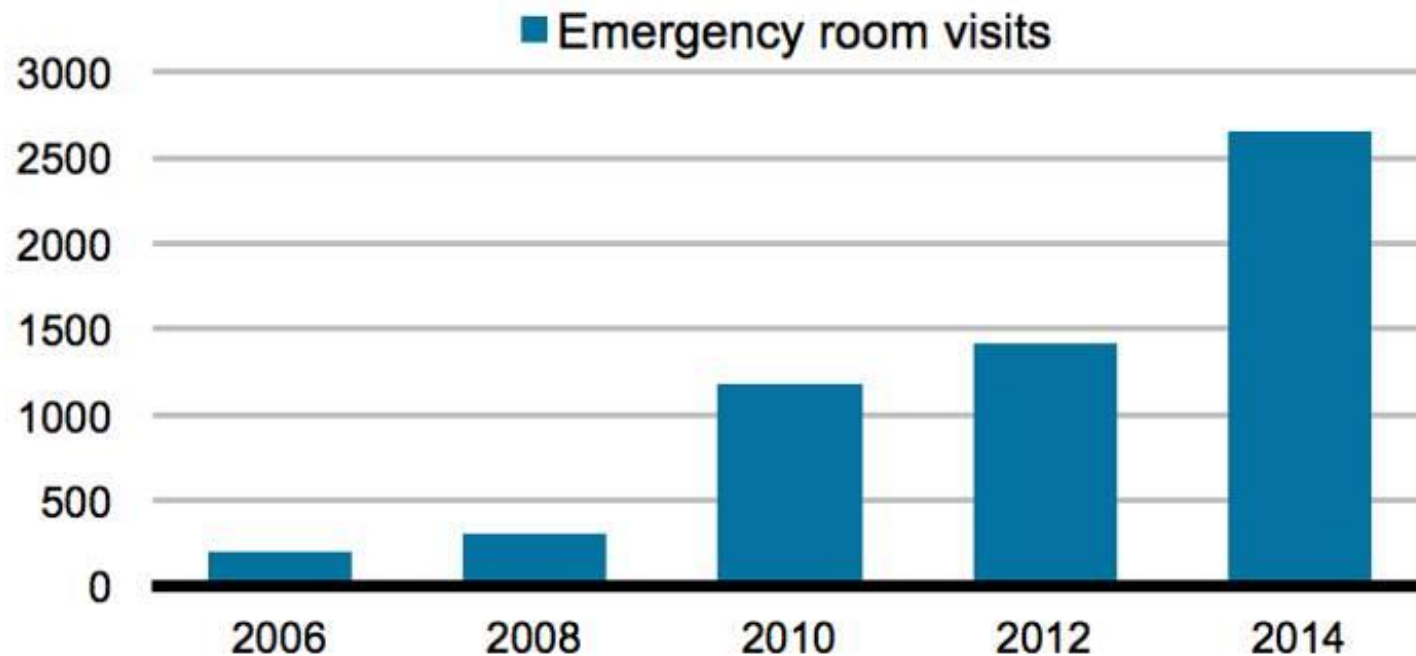
Source: PCI using

1. Auto: PPA Fast Track Monitoring System, ISS, NISS and ISO
2. Medical CPI: Bureau of Labor Statistics

Distracted Walking Visits to ER

Rising Risk

U.S. injuries per year involving distracted pedestrians using cellphones, based on the Consumer Product Safety Commission's sampling of emergency room visits



Source: Consumer Product Safety Commission / WSJ Research | WSJ.com

Difference in what we say and what we do...

	Reported	Estimated
Crashes	6.3 M	17-29 M
	AAA	True Motion
Phones	66%	92%
Text	41%	71%

True Motion: Top 10 Distracted Driving Apps



1. GOOGLE MAPS



2. POKEMON GO



3. ANDROID MESSAGING



4. FACEBOOK



5. YOUTUBE



6. WAZE



7. AMAZON MUSIC



8. CHROME



9. PANDORA



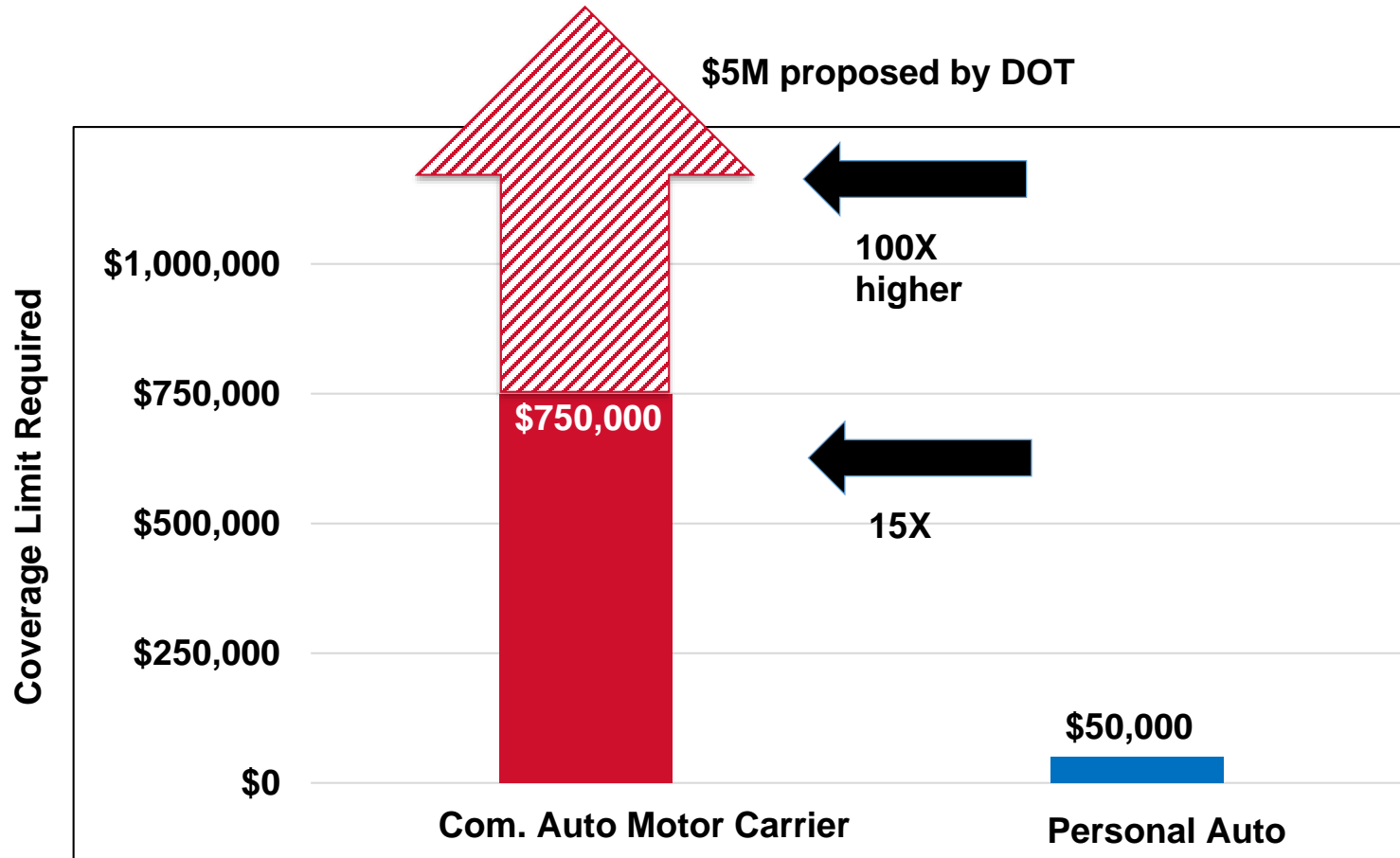
10. NETFLIX

Source: True Motion

Self-Driving Cars Still Need Insurance



Commercial Auto vs. Personal Auto Minimum Financial Responsibility



PCI Raises Awareness

