



Insurance Institute for Highway Safety
Highway Loss Data Institute

Trends in crashing

Communications Committee Meeting
Insurance Information Institute

Washington, D.C. • June 14, 2015

Matt Moore, Vice President

iihs.org

IHS is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from crashes on the nation's roads.

HLDI shares this mission by analyzing insurance data representing human and economic losses from crashes and other events related to vehicle ownership.

Both organizations are wholly supported by auto insurers.

Member groups

Acceptance Insurance
ACE Private Risk Services
Affirmative Insurance
Alfa Alliance Insurance Corporation
Alfa Insurance
Allstate Insurance Group
American Family Mutual Insurance
American National
Ameriprise Auto & Home
Amica Mutual Insurance Company
Auto Club Enterprises
Auto Club Group
Auto-Owners Insurance
Aviva Insurance
Bankers Insurance Group
Bitco Insurance Companies
California Casualty Group
Capital Insurance Group
Censtat Casualty Company
Chubb & Son
Colorado Farm Bureau Mutual Insurance Company
Concord Group Insurance Companies
COUNTRY Financial
CSAA Insurance Group
CSE Insurance Group
Direct General Corporation
Erie Insurance Group
Esurance
Farm Bureau Financial Services
Farm Bureau Insurance of Michigan
Farm Bureau Mutual Insurance Company of Idaho
Farmers Insurance Group
Farmers Mutual Hail Insurance Company of Iowa
Farmers Mutual of Nebraska
Florida Farm Bureau Insurance Companies
Frankenmuth Insurance

Gainsco Insurance
GEICO Corporation
The General Insurance
Georgia Farm Bureau Mutual Insurance Company
Goodville Mutual Casualty Company
Grange Insurance
Hallmark Financial Services
Hanover Insurance Group
Haulers Insurance Company
The Hartford
Horace Mann Insurance Companies
ICW Group
Imperial Fire & Casualty Insurance Company
Indiana Farmers Mutual Insurance Company
Infinity Property & Casualty
Kemper Corporation
Kentucky Farm Bureau Mutual Insurance Companies
Liberty Mutual Insurance Company
Louisiana Farm Bureau Mutual Insurance Company
Main Street America Group
Mercury Insurance Group
MetLife Auto & Home
MiddleOak
Mississippi Farm Bureau Casualty Insurance Company
MMG Insurance
Munich Reinsurance America, Inc.
Mutual of Enumclaw Insurance Company
Nationwide
New Jersey Manufacturers Insurance Group
Nodak Mutual Insurance Company
Norfolk & Dedham Group
North Carolina Farm Bureau Mutual Insurance Company
Northern Neck Insurance Company
Ohio Mutual Insurance Group
Old American County Mutual Fire Insurance Company
Old American Indemnity Company

Oregon Mutual Insurance
Pekin Insurance
PEMCO Insurance
Plymouth Rock Assurance
Progressive Insurance
PURE Insurance
The Responsive Auto Insurance Company
Rockingham Group
Safe Auto Insurance Company
Safeco Insurance
Samsung Fire & Marine Insurance Company
SECURA Insurance
Sentry Insurance
Shelter Insurance
Sompo Japan Insurance Company of America
South Carolina Farm Bureau Mutual Insurance Company
Southern Farm Bureau Casualty Insurance Company
State Auto Insurance Companies
State Farm Insurance Companies
Tennessee Farmers Mutual Insurance Company
Texas Farm Bureau Insurance Companies
The Travelers Companies
United Educators
USAA
Utica National Insurance Group
Virginia Farm Bureau Mutual Insurance
West Bend Mutual Insurance Company
Western National Insurance Group
Westfield Insurance
XL Group plc

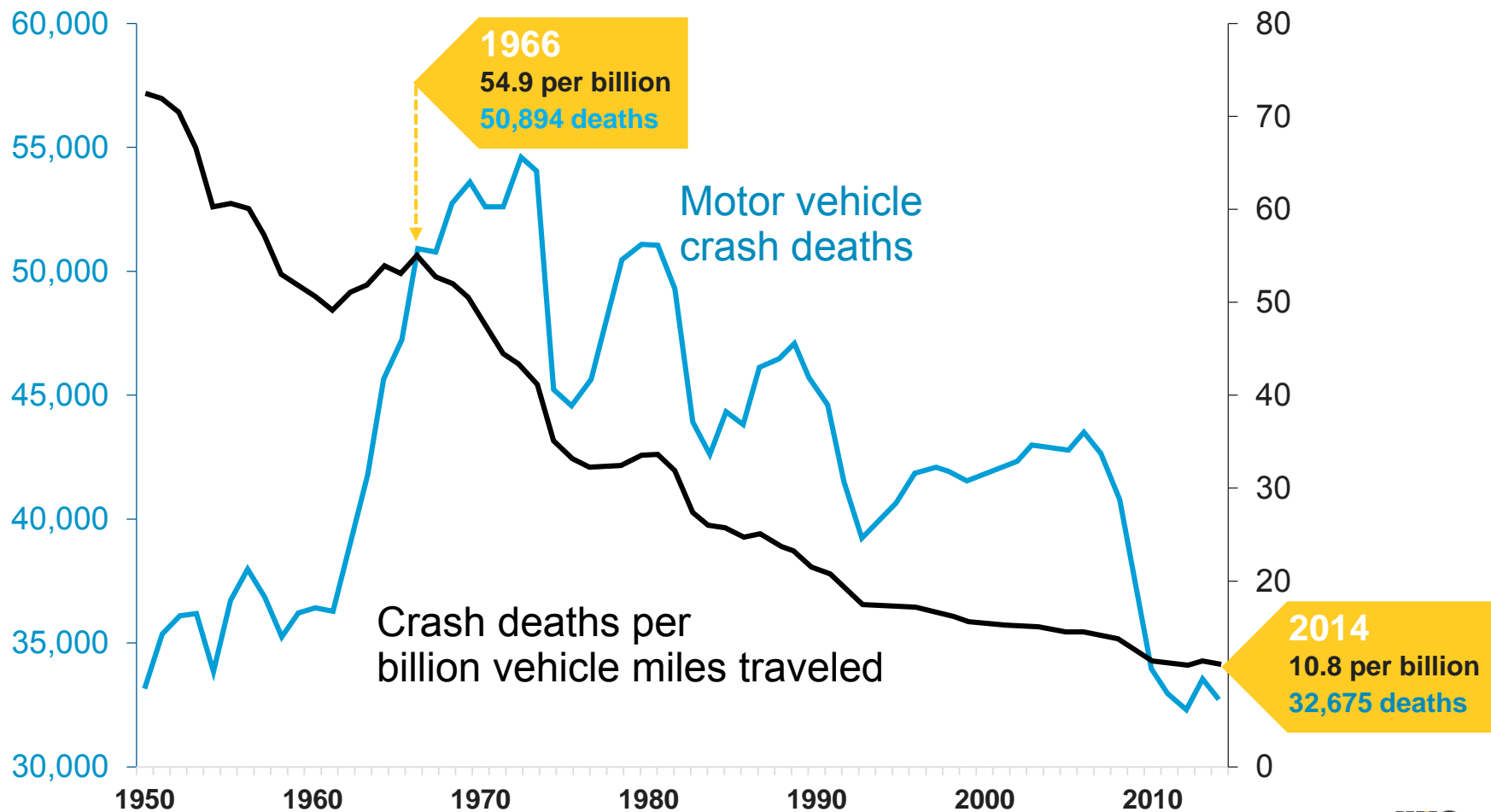
Funding associations

American Insurance Association
National Association of Mutual Insurance Companies
Property Casualty Insurers Association of America

Fatal crash trends

Motor vehicle crash deaths and deaths per billion vehicle miles traveled

1950-2014



INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

2015 Marks Largest Increase in Traffic Deaths in 50 Years

CBS News, 2/17/16

U.S. Traffic Deaths Increase Sharply in 2015

Reuters, 2/5/16

Motor Vehicle Deaths in 2015 Increased by the Largest Percent in 50 Years

Daily News, 2/18/16

Auto Fatalities at 7-year High in 2015

ABC News, 2/5/16

Traffic Deaths Jump by Most Since 1966, Safety Group Says

Houston Chronicle, 2/17/16

NSC: Motor Vehicle Deaths in 2015 Increased by Largest Percentage in 50 Years

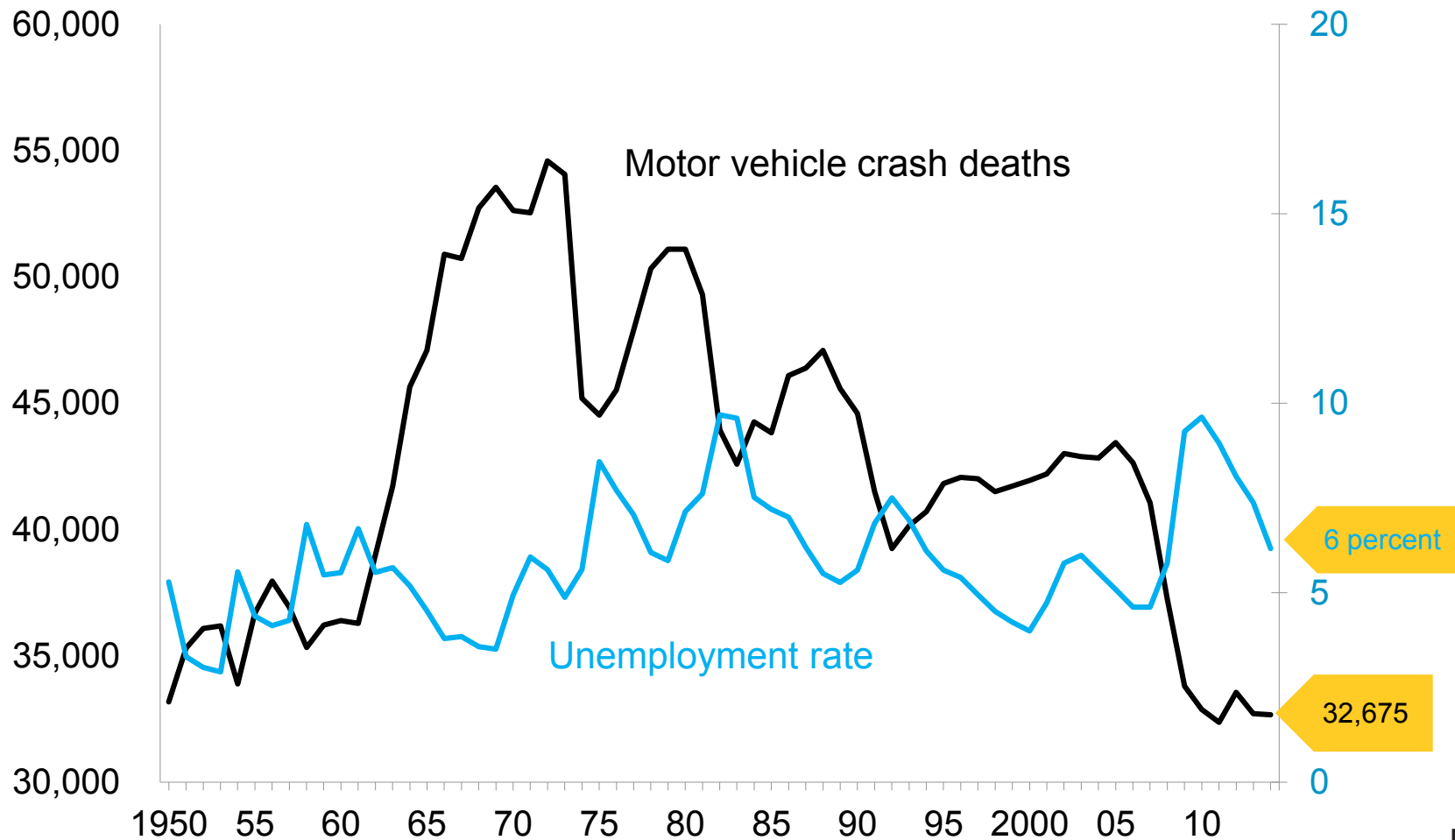
National Safety Council, 2/17/16

2015 Brought Biggest Percent Increase in U.S. Traffic Deaths in 50 Years

Newsweek, 2/17/16

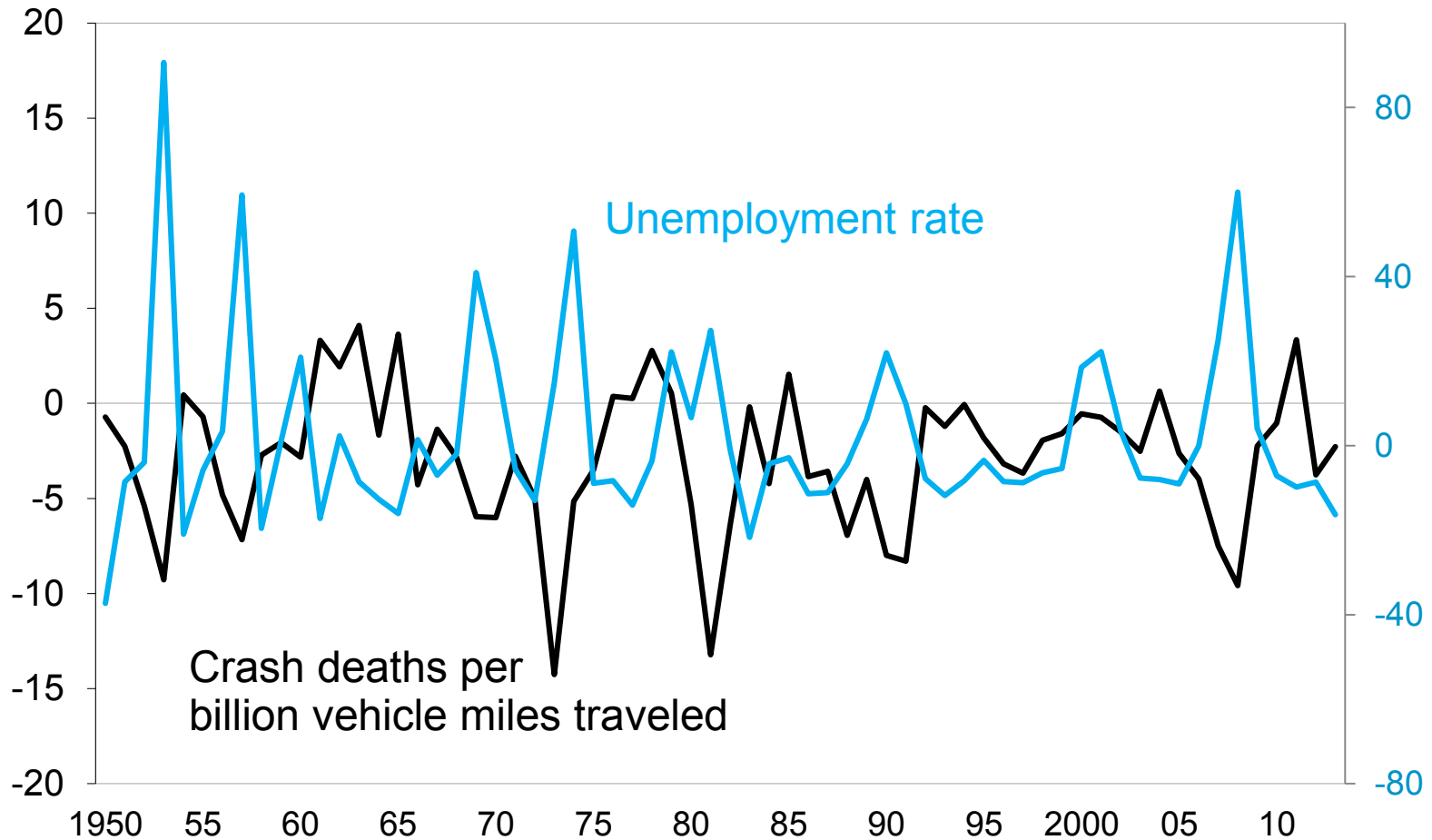
US motor vehicle crash deaths and unemployment rate

1950-2014



Year-to-year percent changes in US motor vehicle crash deaths per billion vehicle miles traveled and unemployment rate

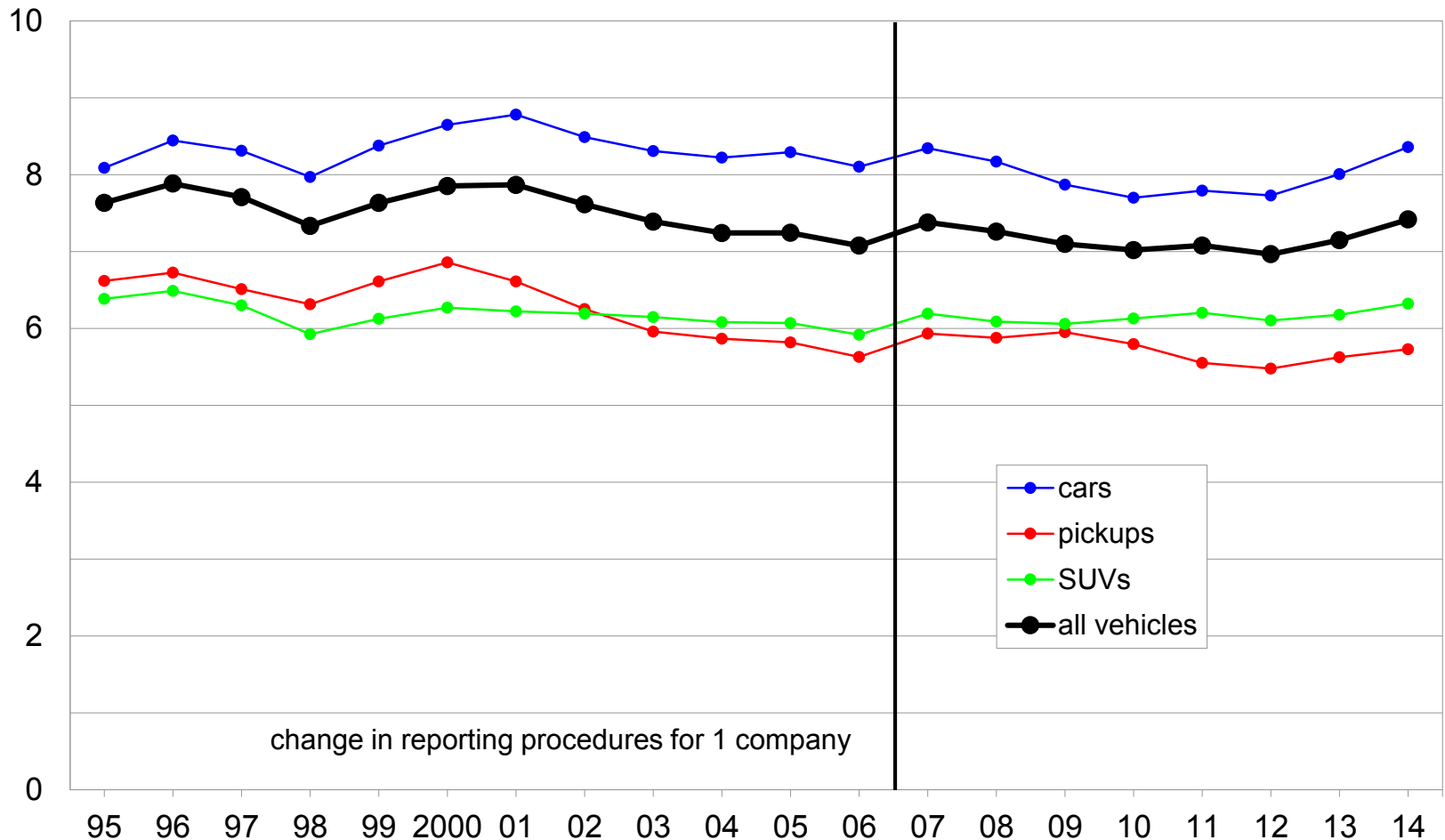
1951-2014



Collision loss trends

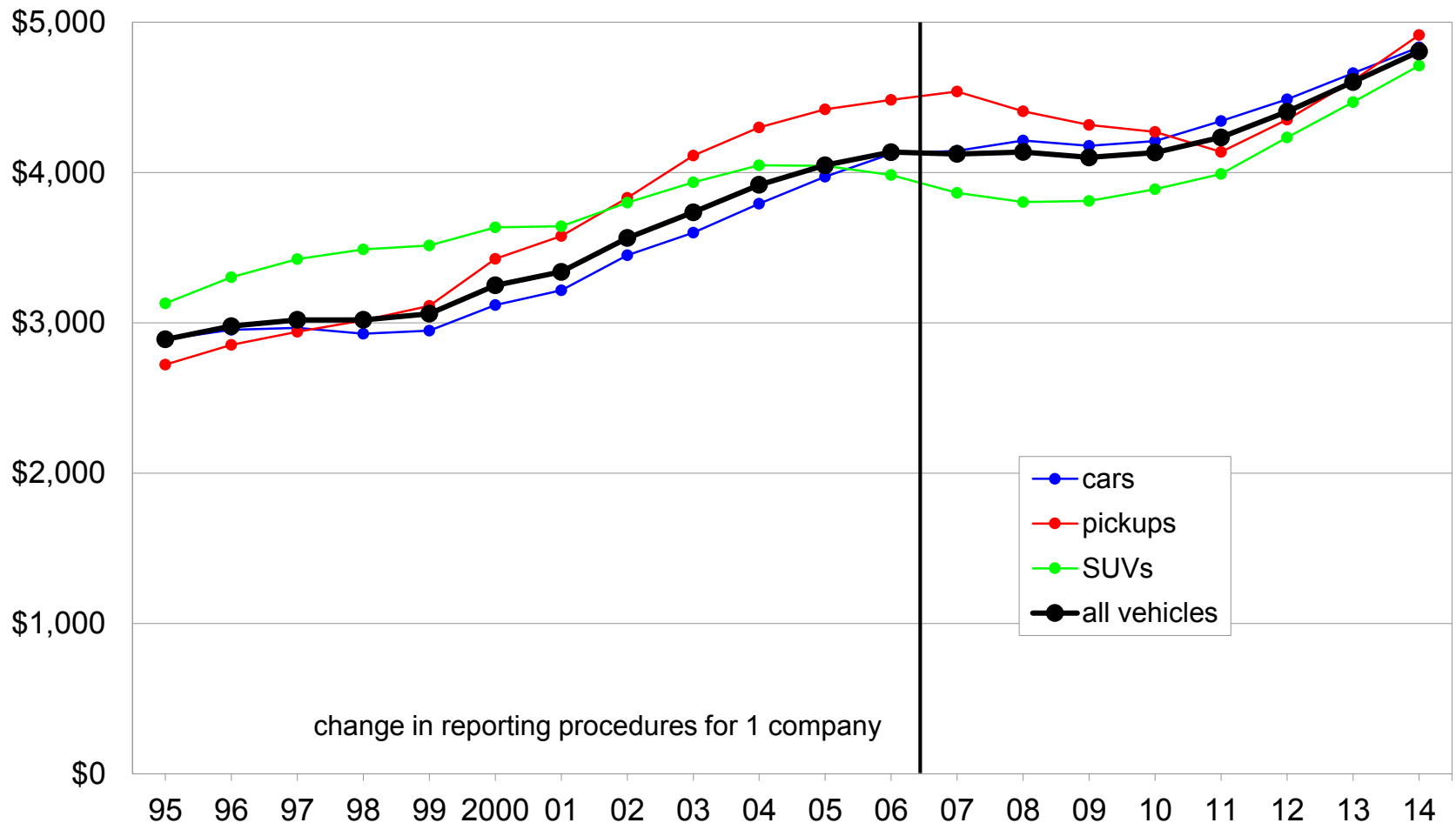
Collision claim frequencies

By calendar year and vehicle type, 4 most current model years
Claims per 100 insured vehicle years



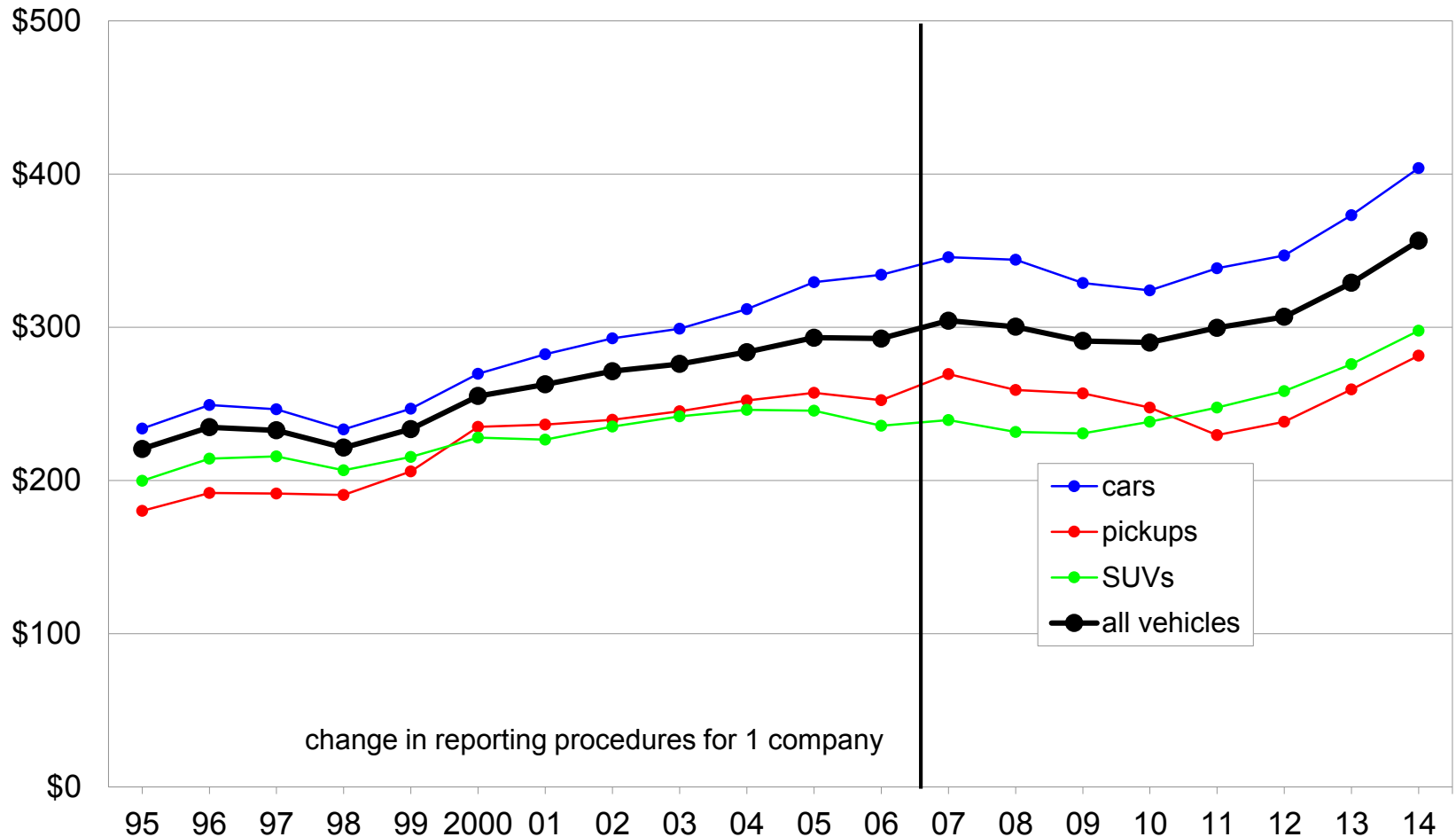
Collision claim severities

By calendar year and vehicle type, 4 most current model years



Collision overall losses

By calendar year and vehicle type, 4 most current model years



Changes in teen driver exposure



The Washington Post, 8-1-13

Teens in no hurry to land a driver's license, AAA finds

Collision Week, 6-10-2013

Millennial Generation Might Like Cars after All

Automotive News, 5-17-13

The death of driving? Don't make any funeral plans

The New York Times, 6-30-13

The End of Car Culture

Today, 7-12-13

Teens waiting longer to take the wheel

The Detroit News, 8-6-13

GM economist debunks talk that the younger set doesn't like cars

Deseret News, 7-14-13

Teens delaying driving to avoid car-ownership costs

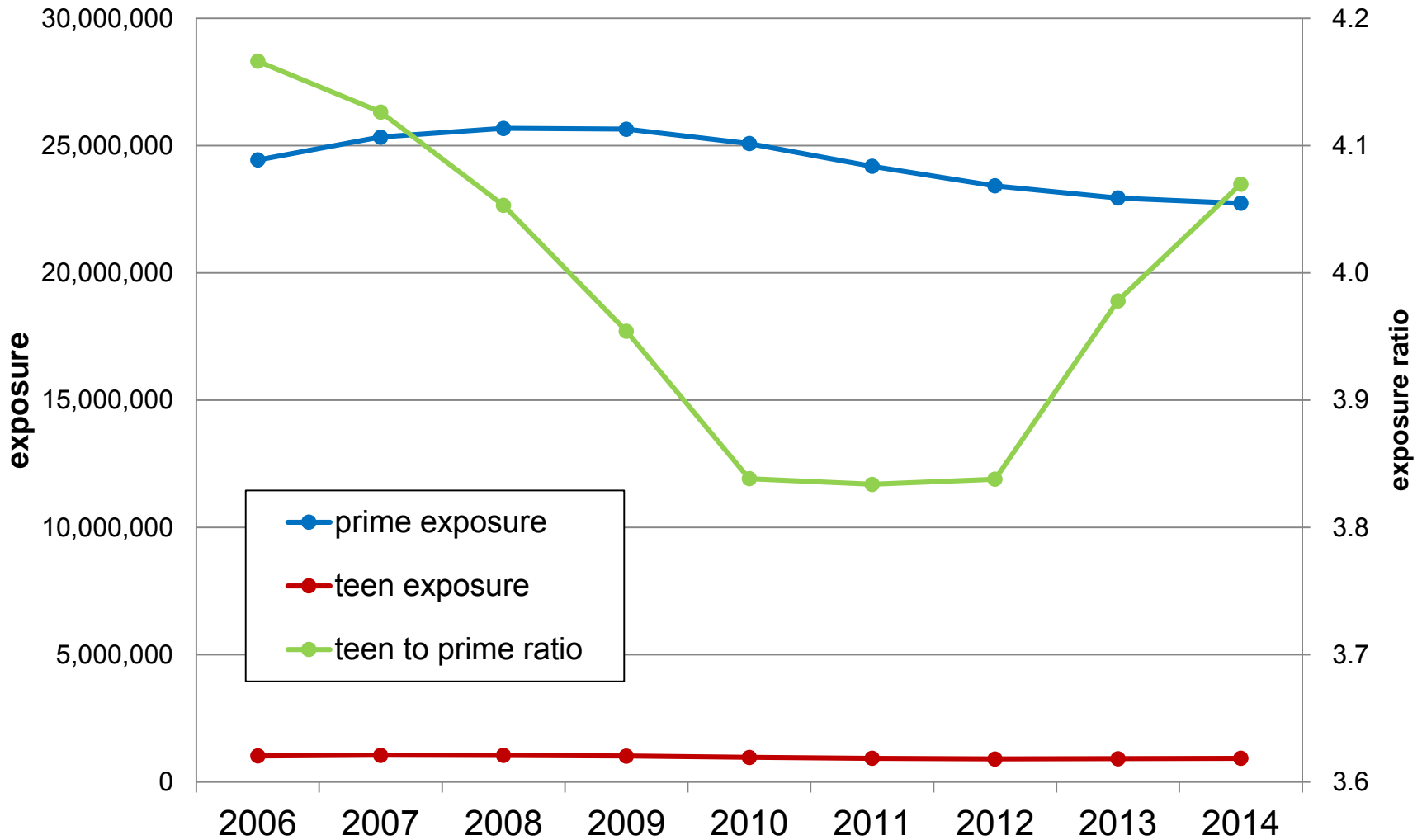
Changes in teen exposure

Study design

calendar years	2006-14
model years	rolling 10
teen exposure	8.7 million years
prime exposure	220 million years
covariates	unemployment spread, census population ratio, GDL intermediate licensing age
study variable	teen-to-prime exposure ratio

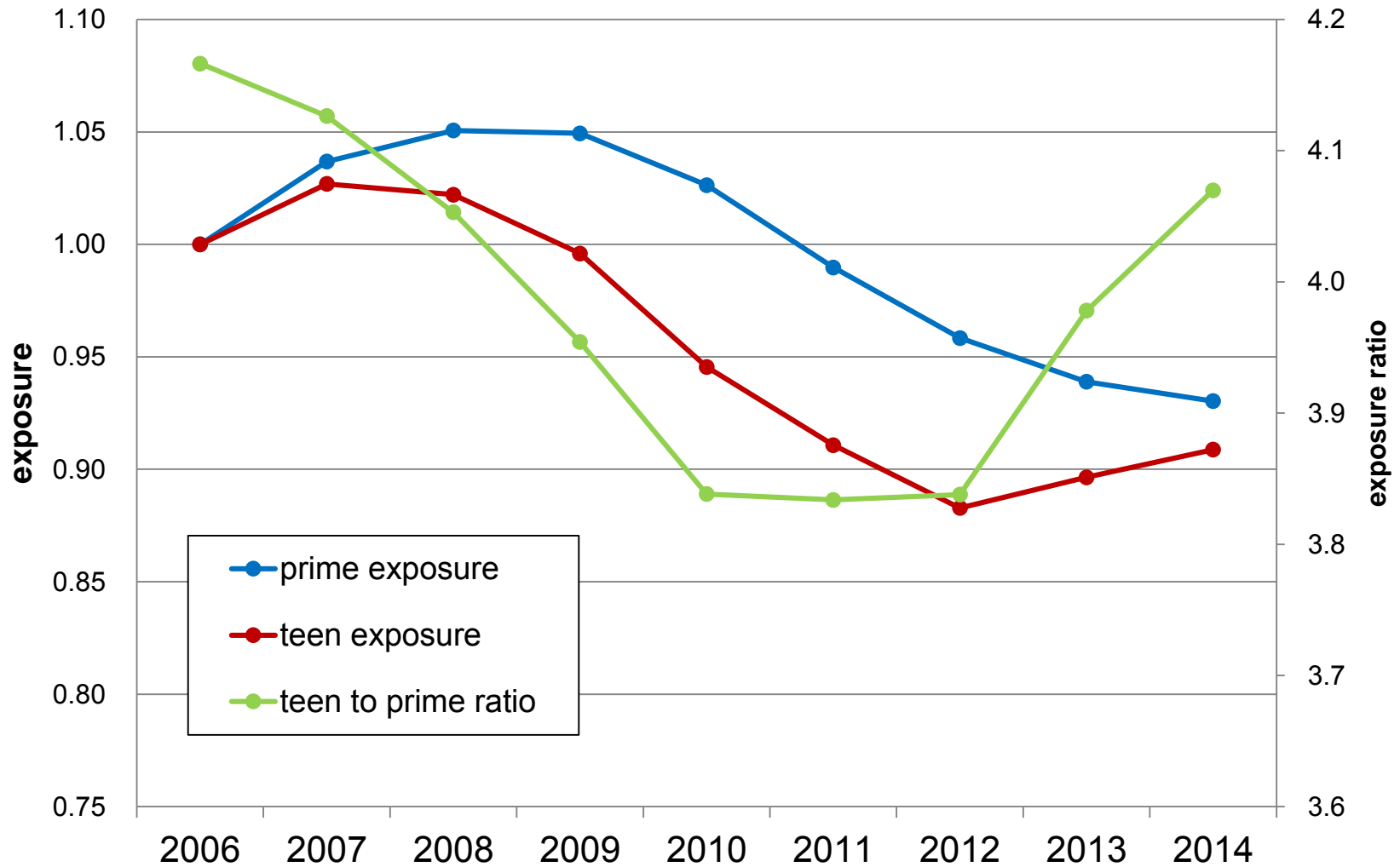
Comparison of national teen and prime exposure

2006-14



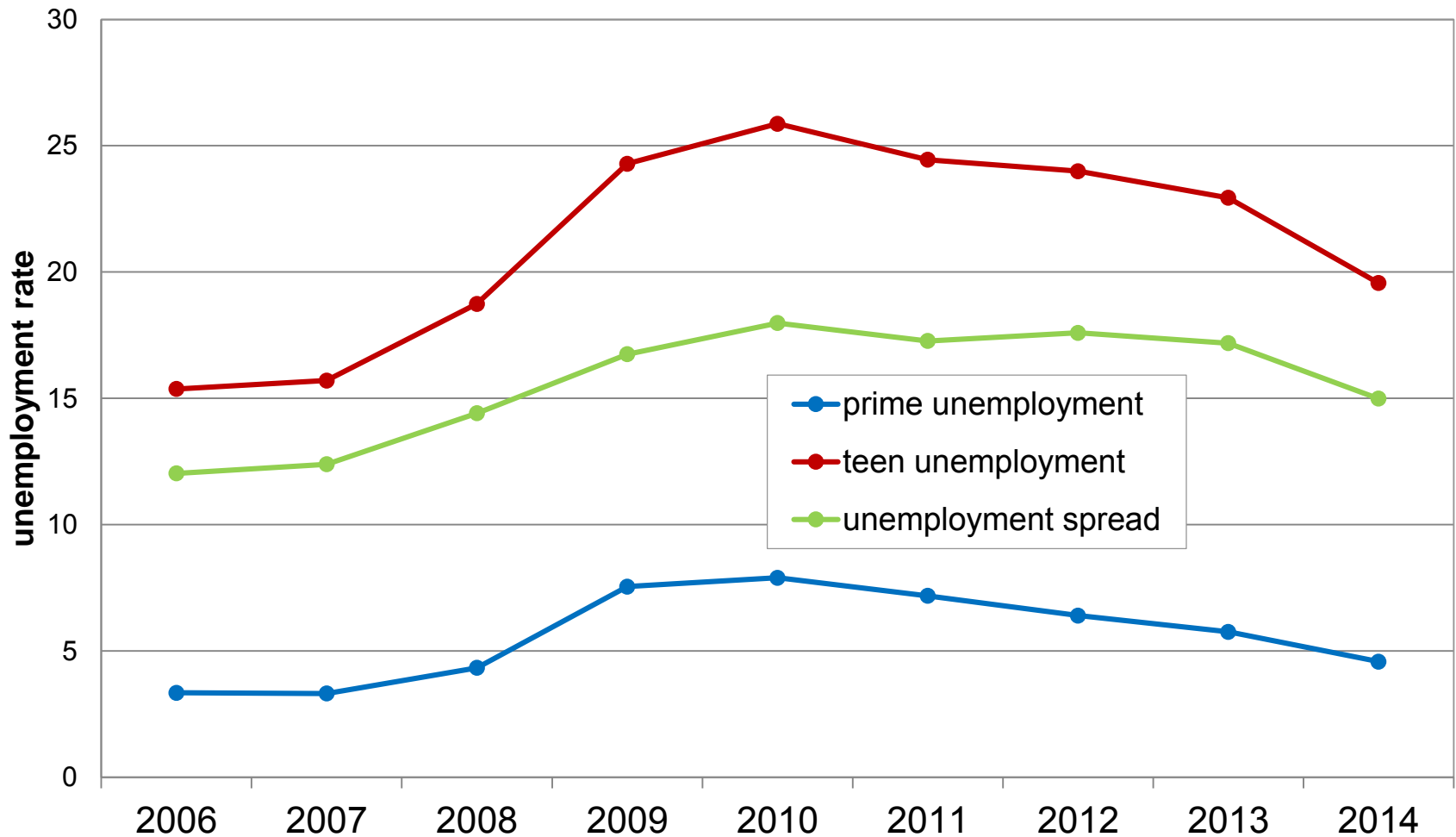
Comparison of national teen and prime exposure

2006-14, indexed to 2006



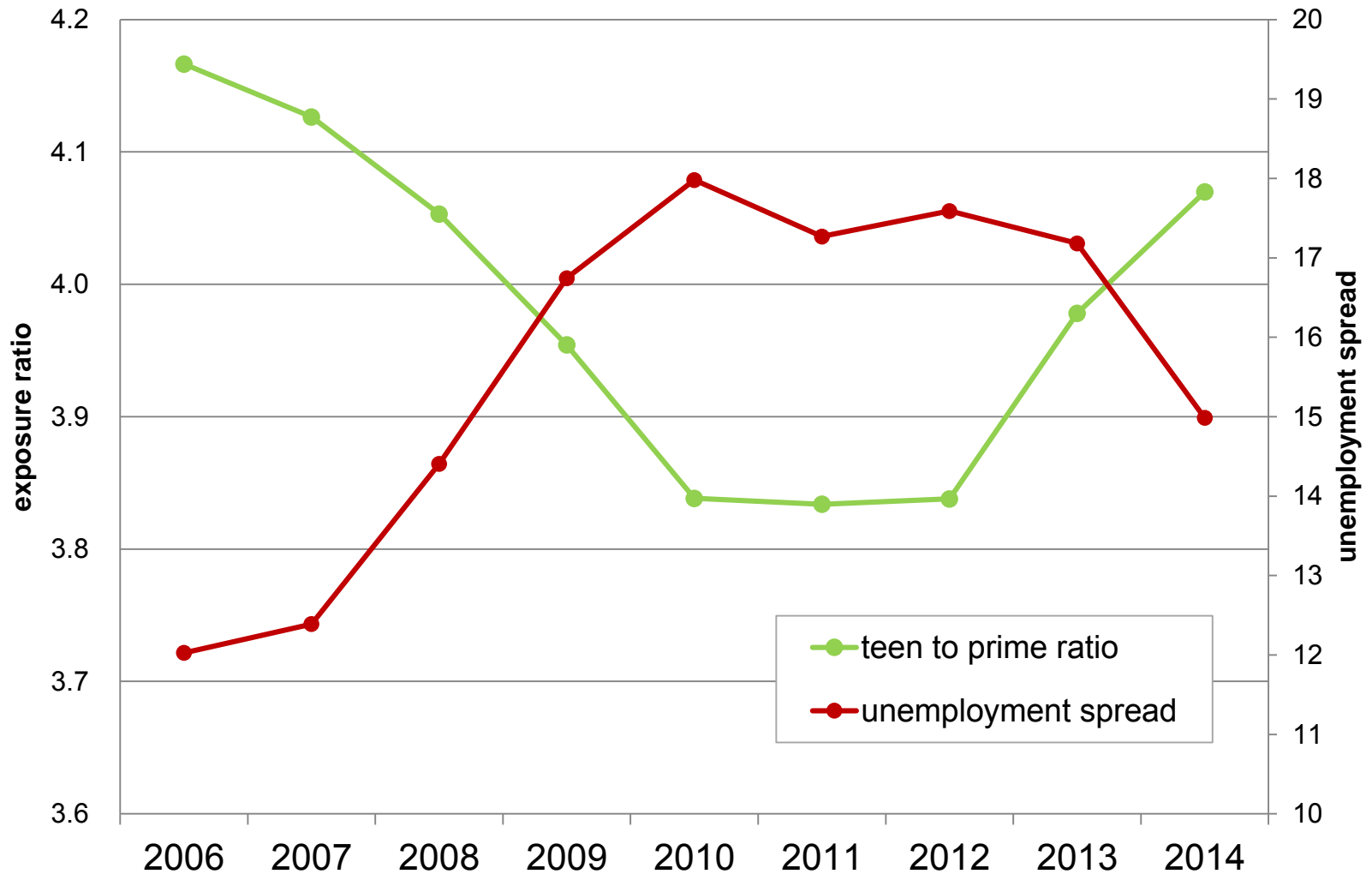
Comparison of national teen and prime unemployment rates

2006-14



Comparison of national teen and prime exposure

2006-14, indexed to 2006



Teen technology



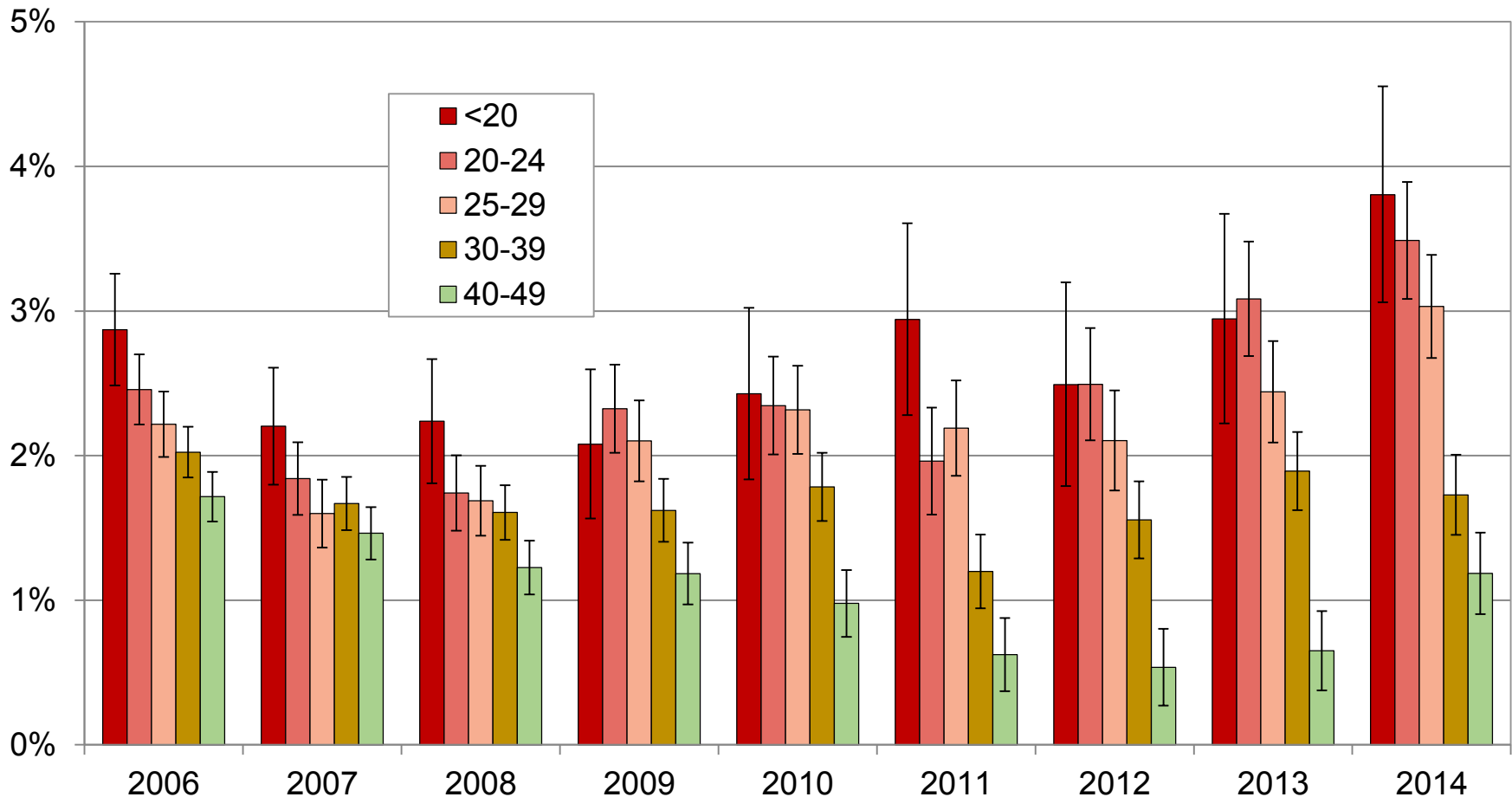
Collision claim frequencies and violent crime rates

Violent crime rate

calendar years	2006-14
model year	1998-2015
exposure	478,859,131
claims	2,935,483
independent variables	vehicle age, vehicle type, rated driver age, gender, marital status, deductible, risk, registered vehicle density, state, percent of resident with high school or higher education, violent crime rate, and violent crime rate by driver age

Increase in collision claim frequency for each additional violent crime per 1,000 people

By calendar year and rated driver age group



Alcohol related fatalities and enforcement

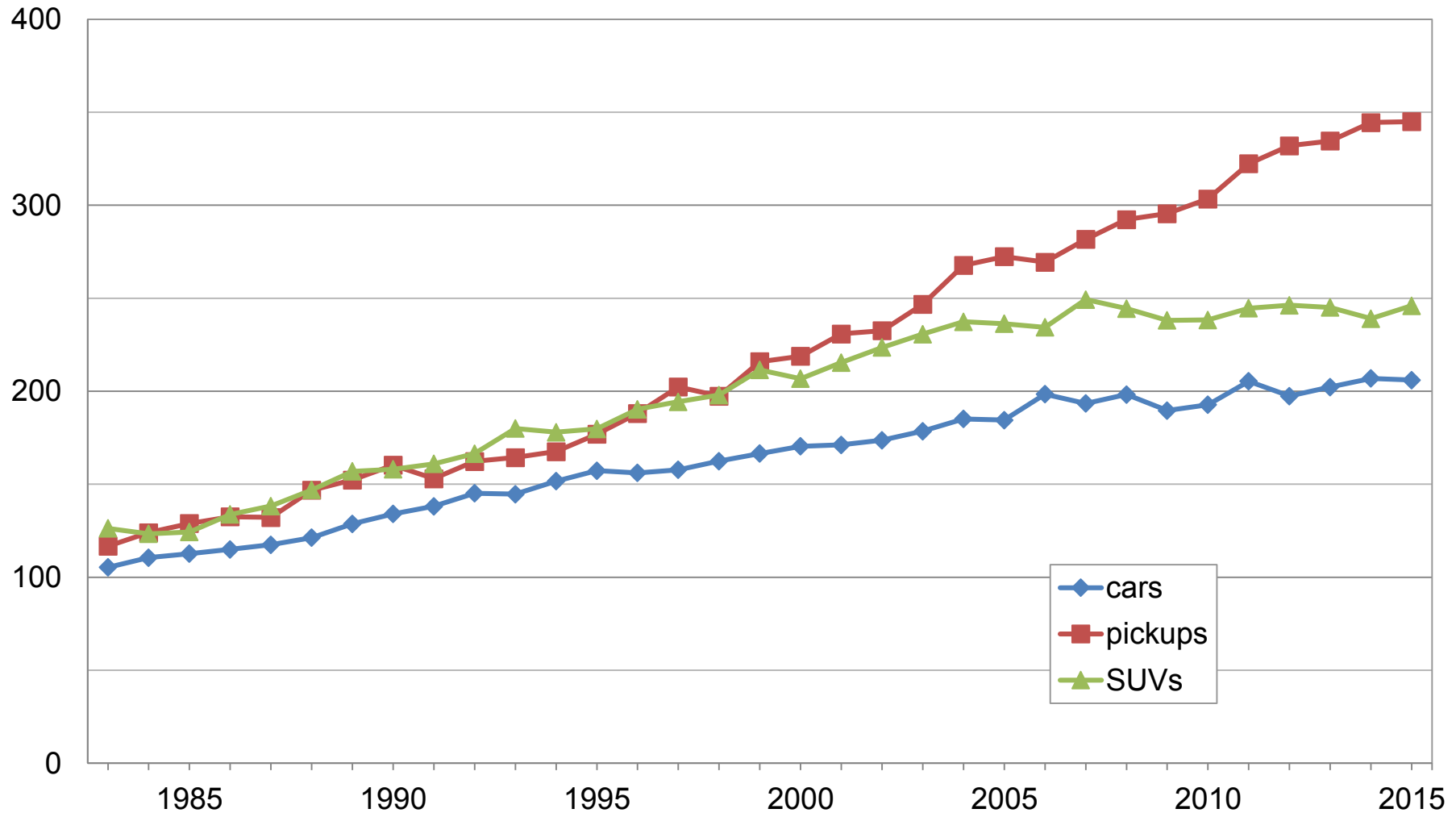
- ▶ 2014 motor vehicle fatalities: 31 percent of fatally injured passenger vehicle drivers had BAC ≥ 0.08 percent
- ▶ Impact of alcohol enforcement:
 - A review of studies of sobriety checkpoint programs found a median decline of 22 percent in fatal crashes thought to involve alcohol (Elder, et. al., 2002).
 - In the absence of special enforcement efforts, as few as 1 in 2,000 drivers with a high BAC are arrested (Williams, 1989).
 - An 18 percent reduction in injury and fatal crashes was found in California with roving patrols (Stuster & Blowers, 1995).
 - In Michigan DUI saturation patrols reduced the proportion of alcohol positive drivers involved in fatal crashes by 14 percent (Fell, Tippetts, & Levy, 2008)

Speed related fatalities and enforcement

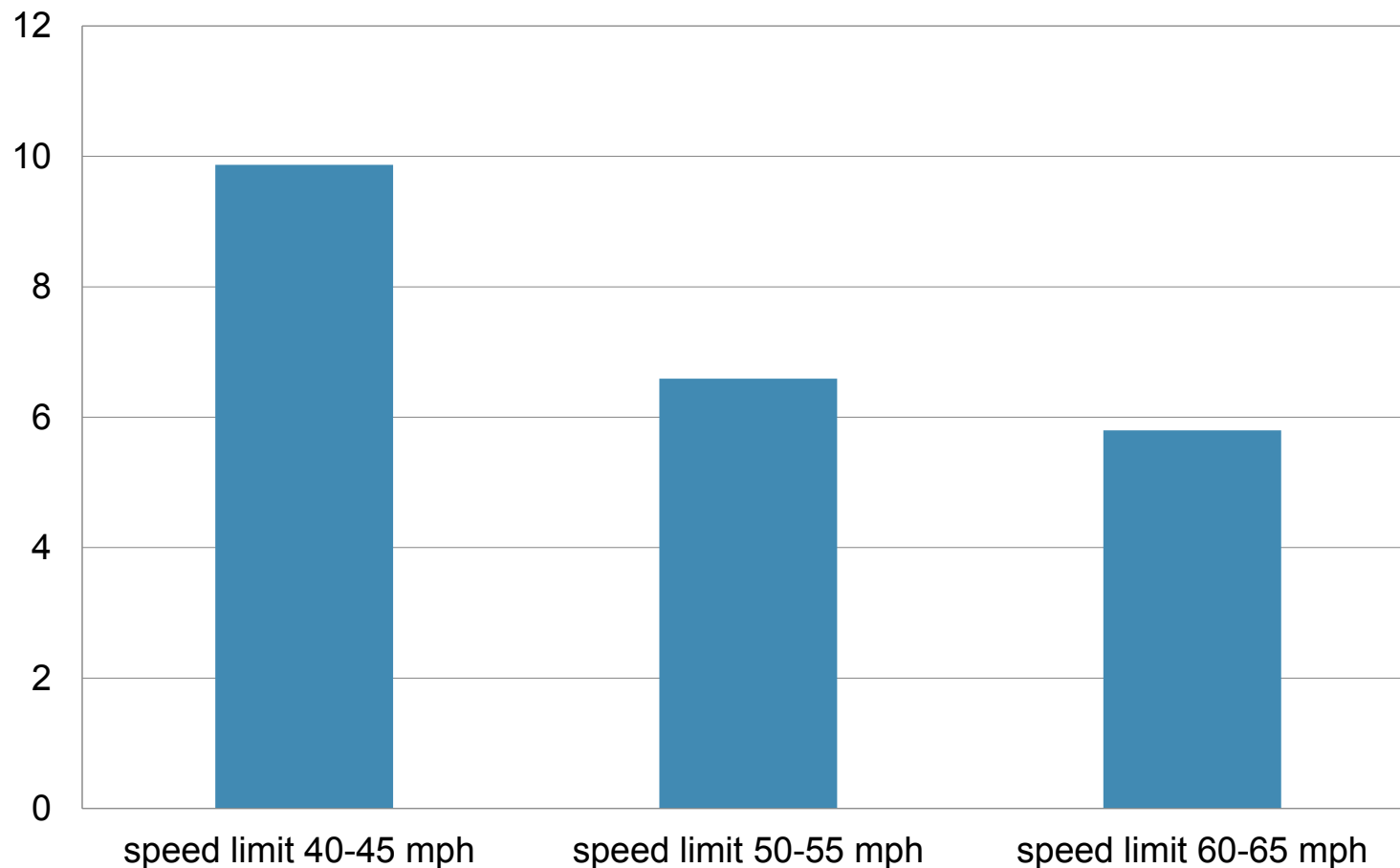
- ▶ 2014 motor vehicle fatalities: Speeding was a factor in 28 percent of motor vehicle crash deaths
- ▶ Impact of speed enforcement:
 - Speed enforcement programs reduce speed related crashes 1-11 percent and the number of vehicles traveling over the limit by 10-19 percent (Stuster, 1995).
 - Violent crimes decline 1-8 percent in special speed enforcement areas (Stuster, 1995).
 - Average speeds return to pre-enforcement levels after enforcement has been removed (Hauer, et al., 1982).

Average vehicle horsepower

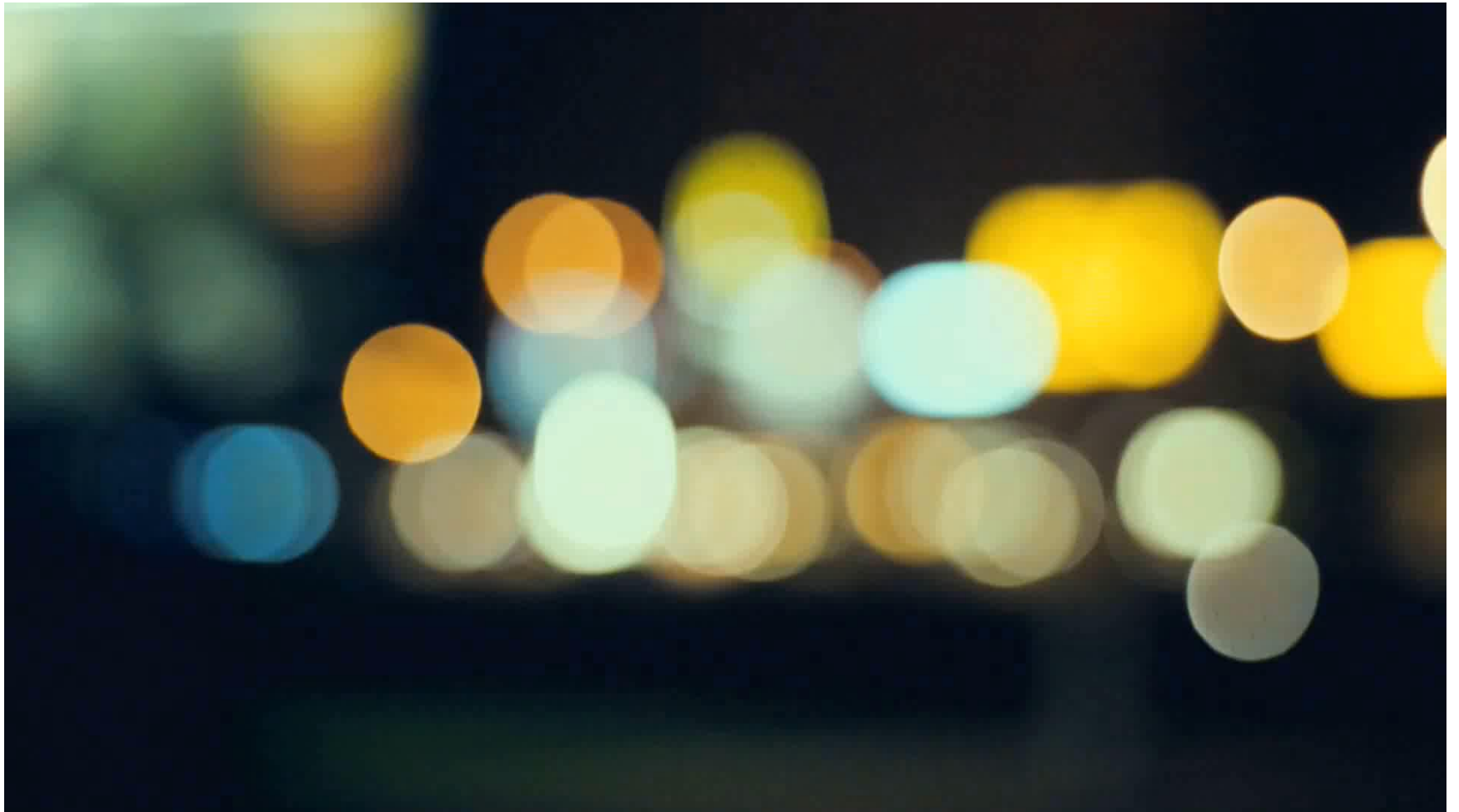
1983-2015 model years



Percent increase in mean vehicle speed per 10 horsepower/100 lb. increase by speed limit



Front crash prevention

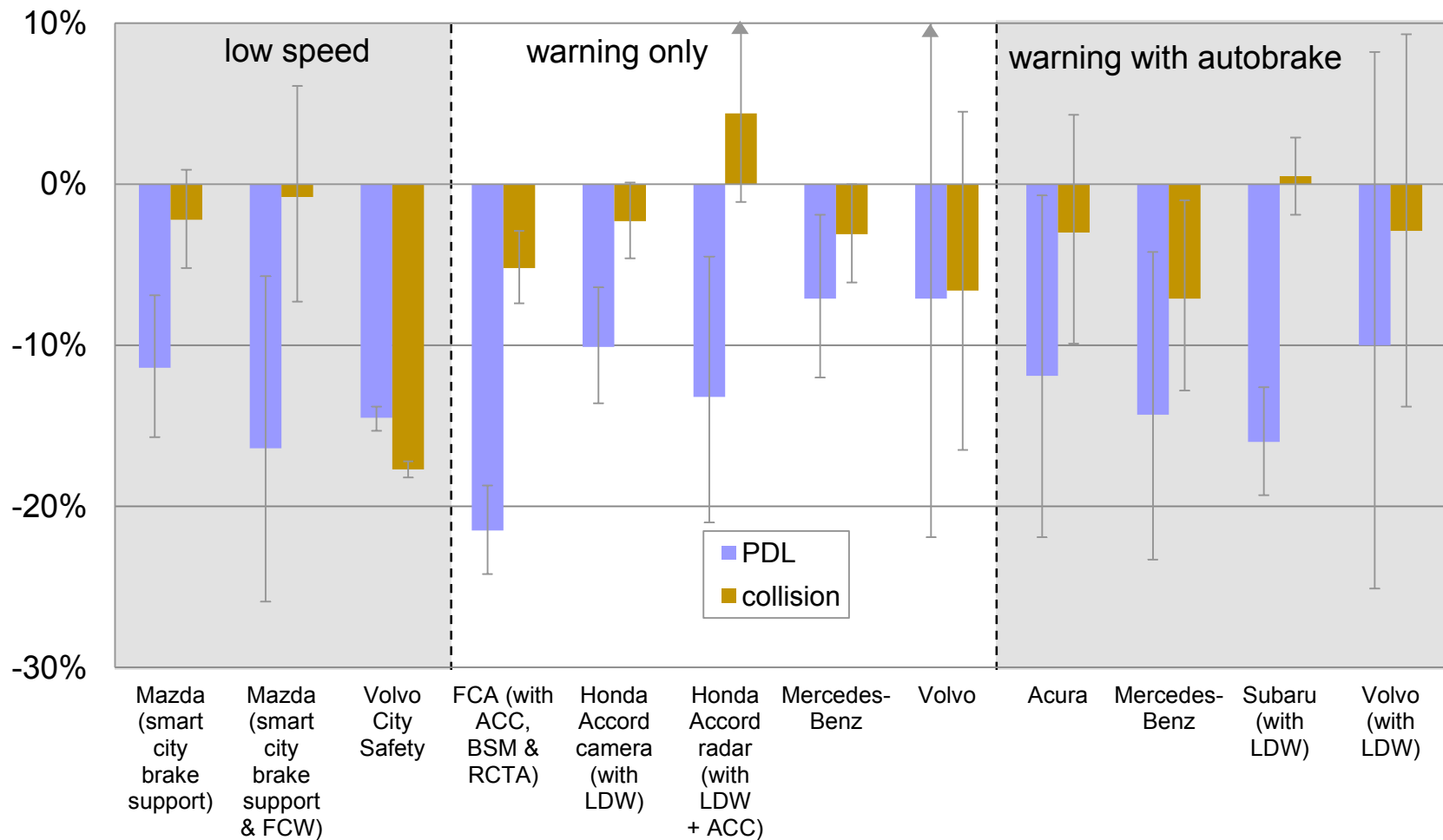




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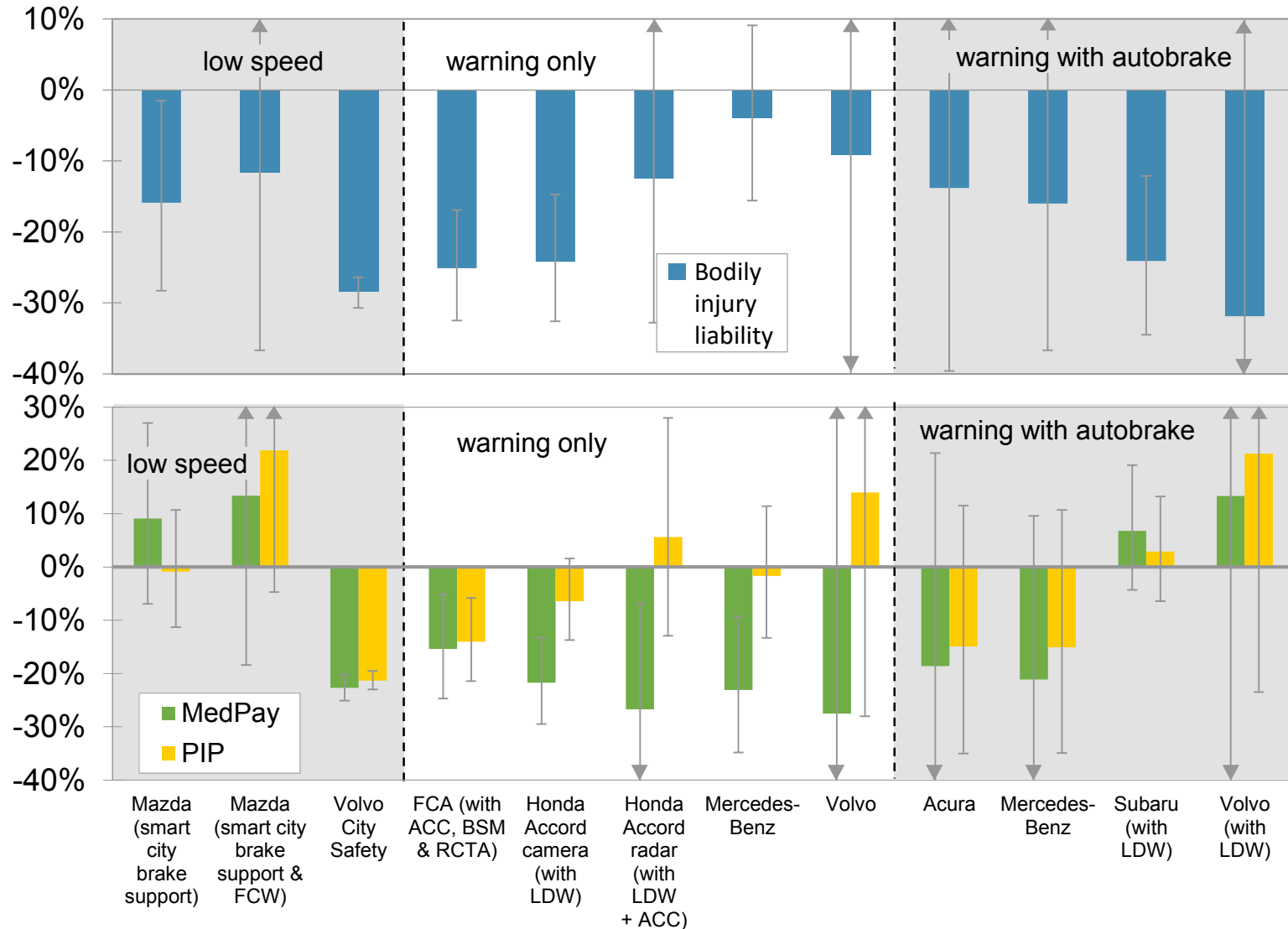
Front crash prevention systems

Change in claim frequency



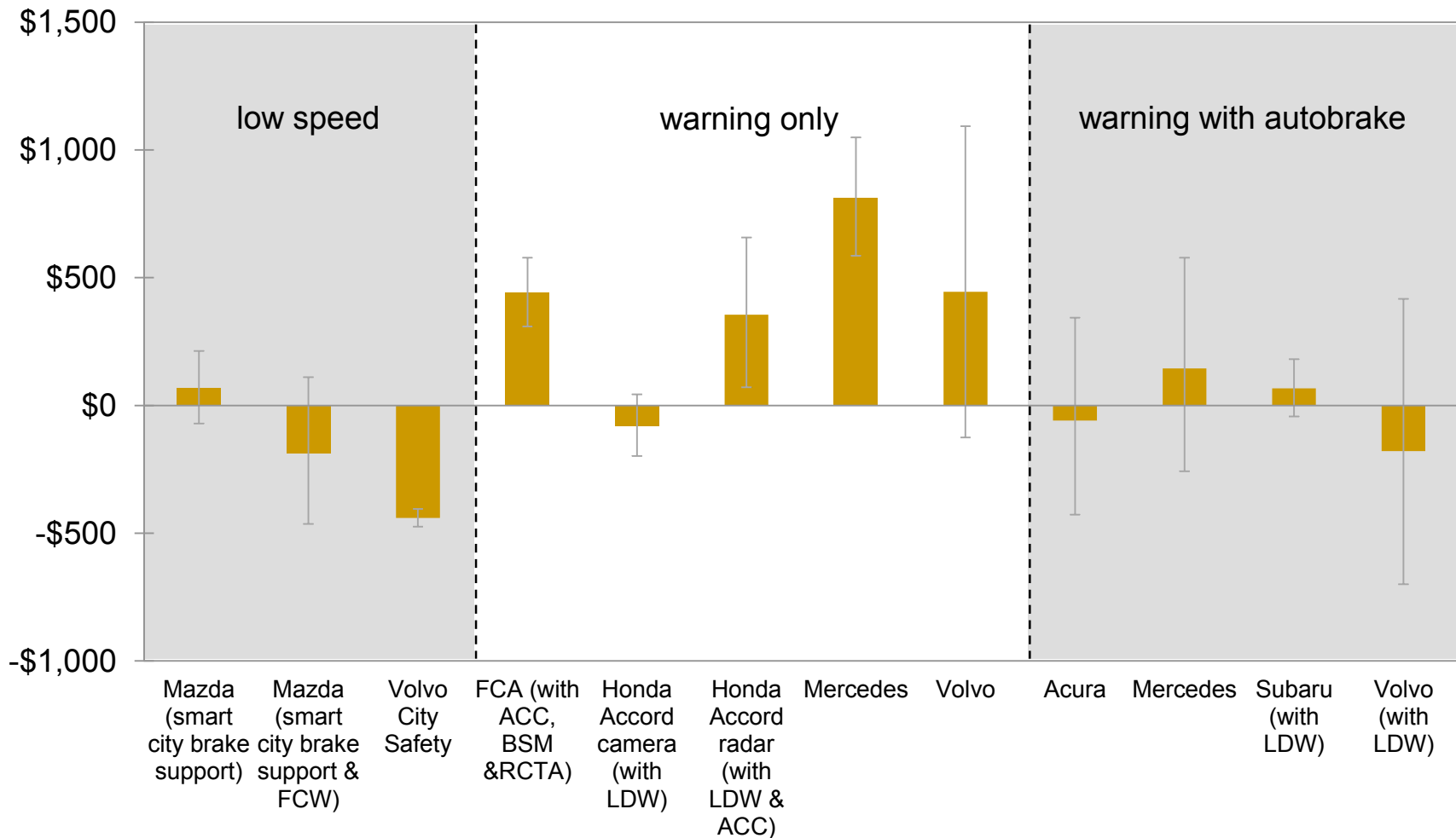
Front crash prevention systems

Change in claim frequency



Front crash prevention systems

Change in collision claim severity



Honda Accord forward collision warning

Camera vs. radar



available on trims other than Touring

change in collision
claim severity
-\$145

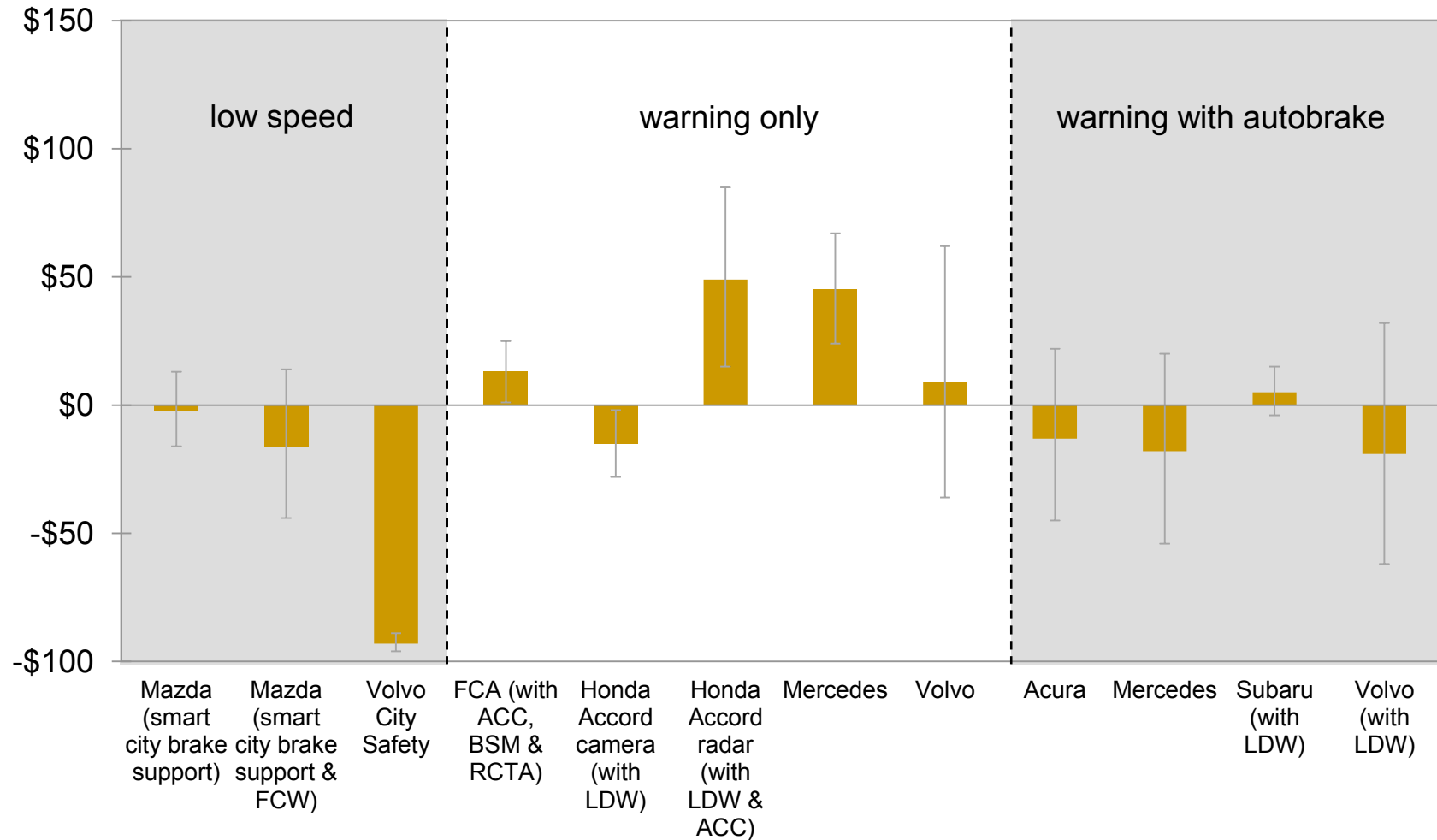


standard on Touring trim

change in collision
claim severity
\$522

Front crash prevention systems

Change in collision overall losses



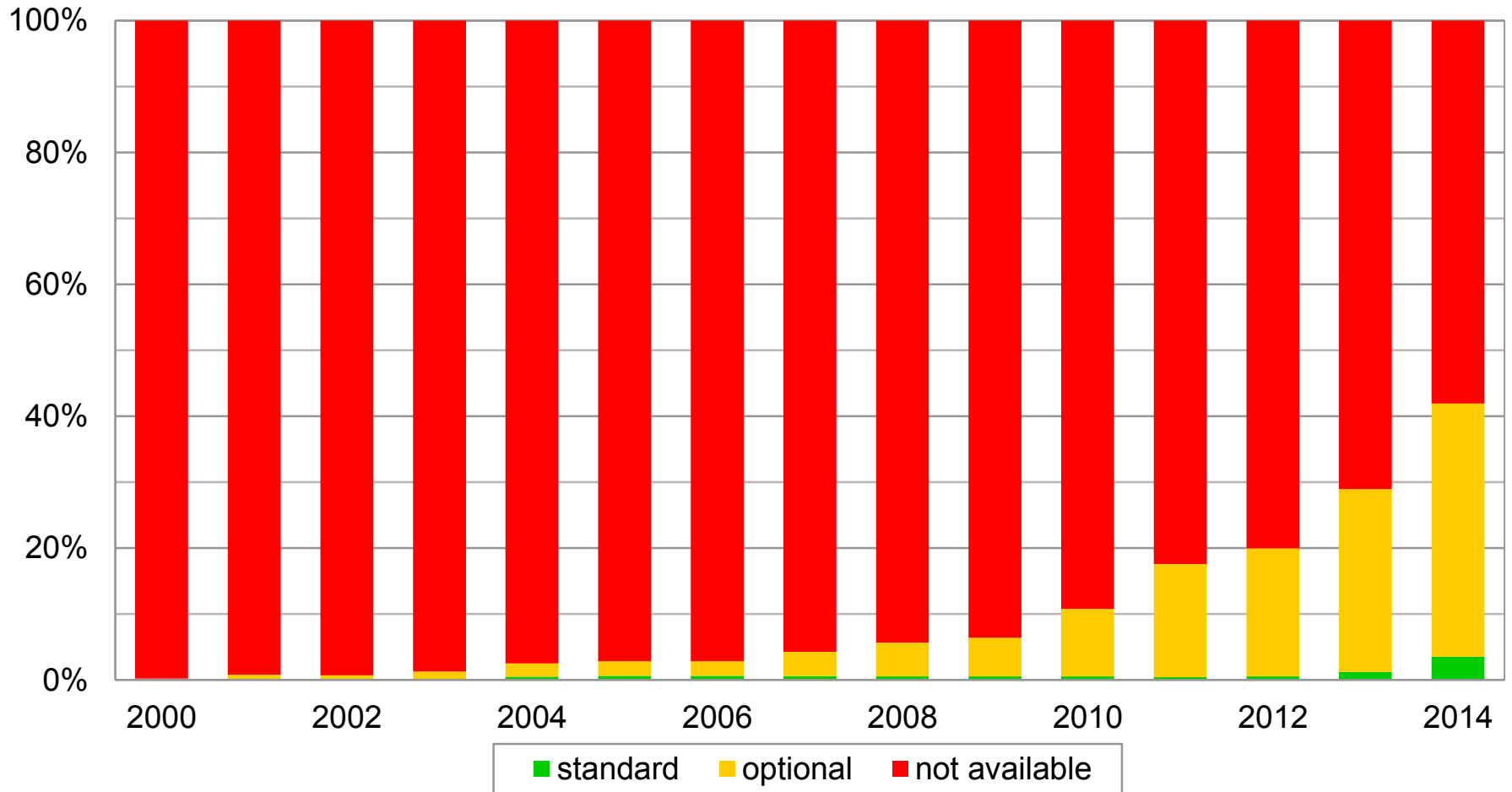
Mercedes "Sorry" Advertisement



The percentage of vehicles in the U.S. fleet with advanced safety systems

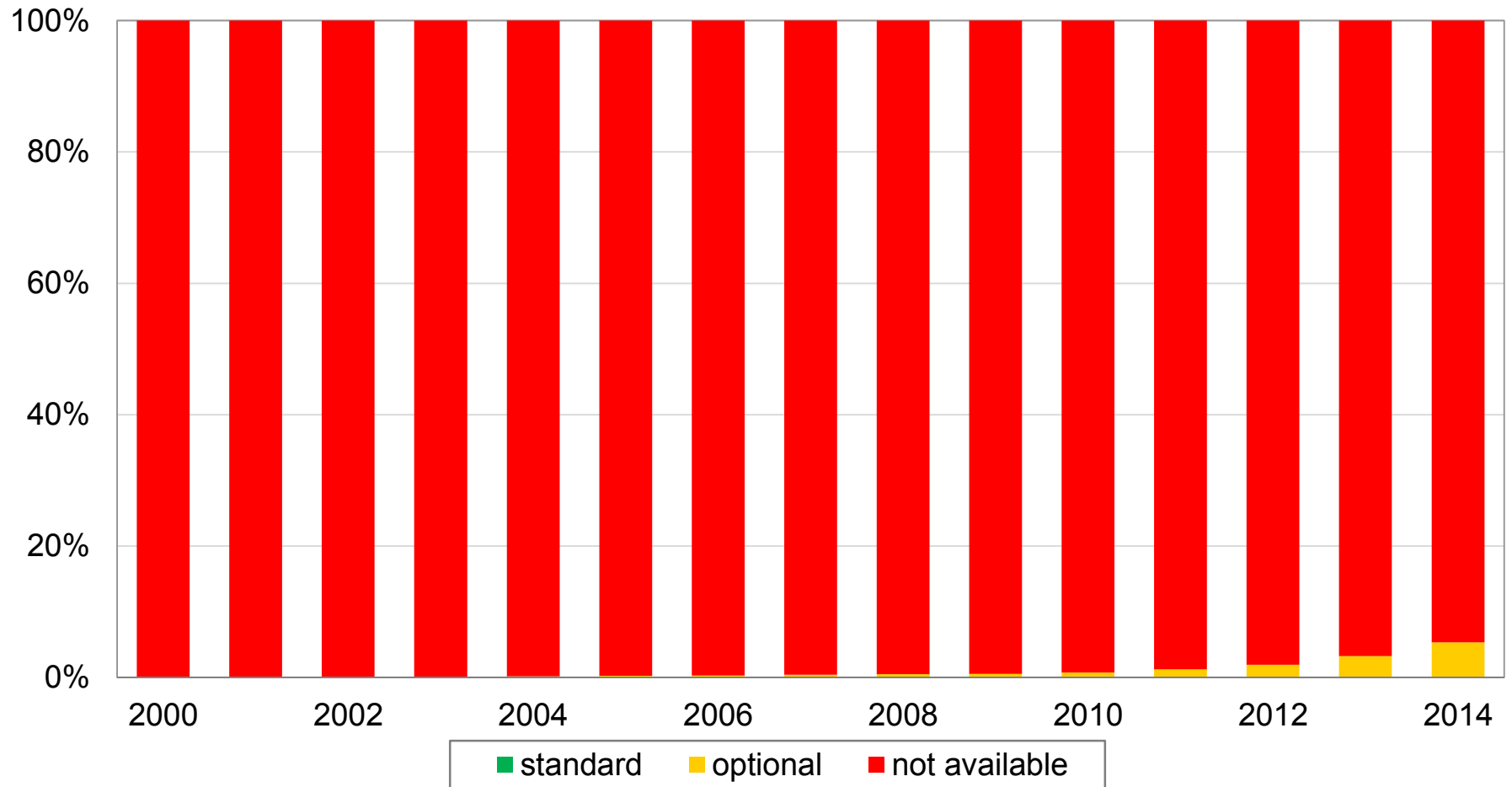
New vehicle series with front crash prevention

By model year



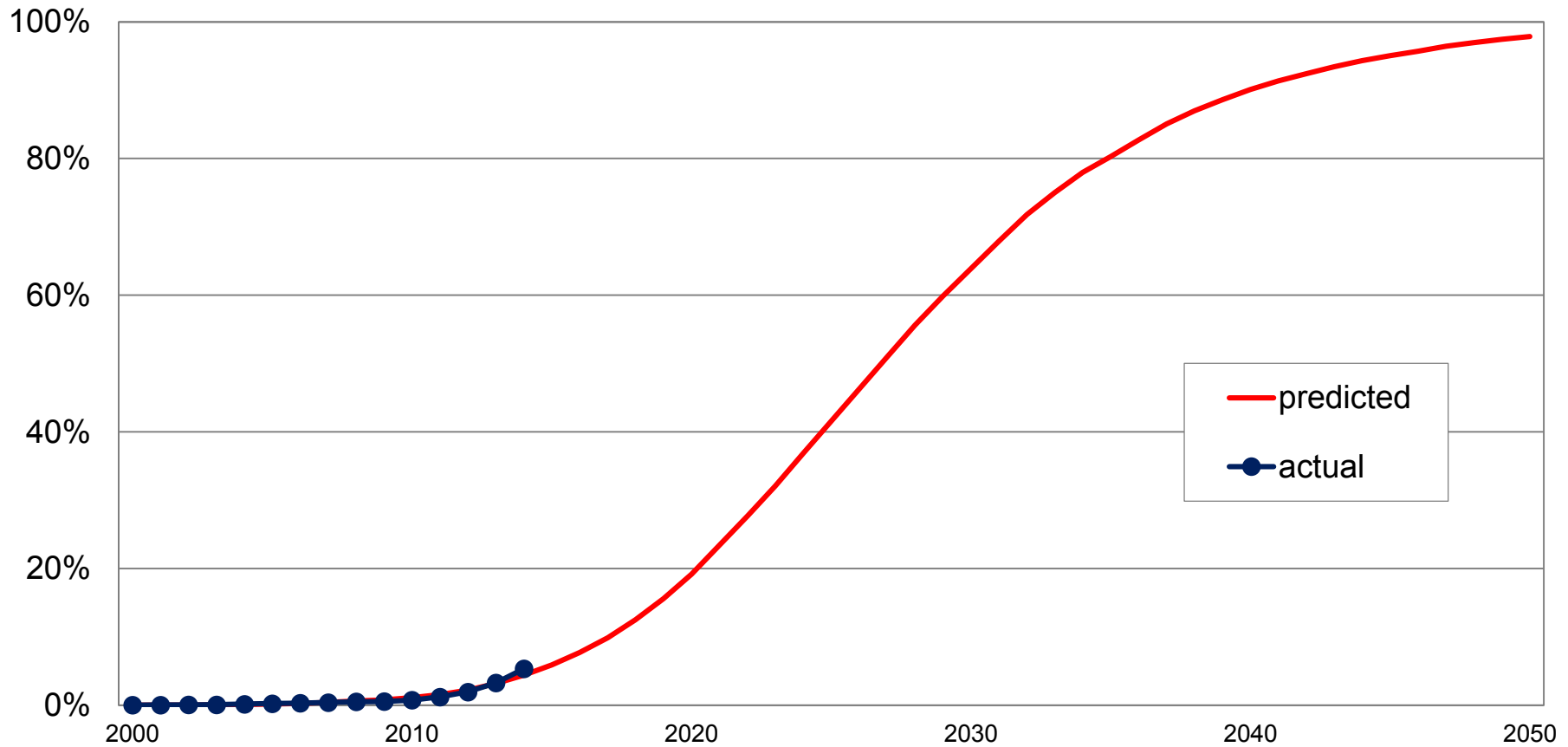
Registered vehicles with front crash prevention

By calendar year



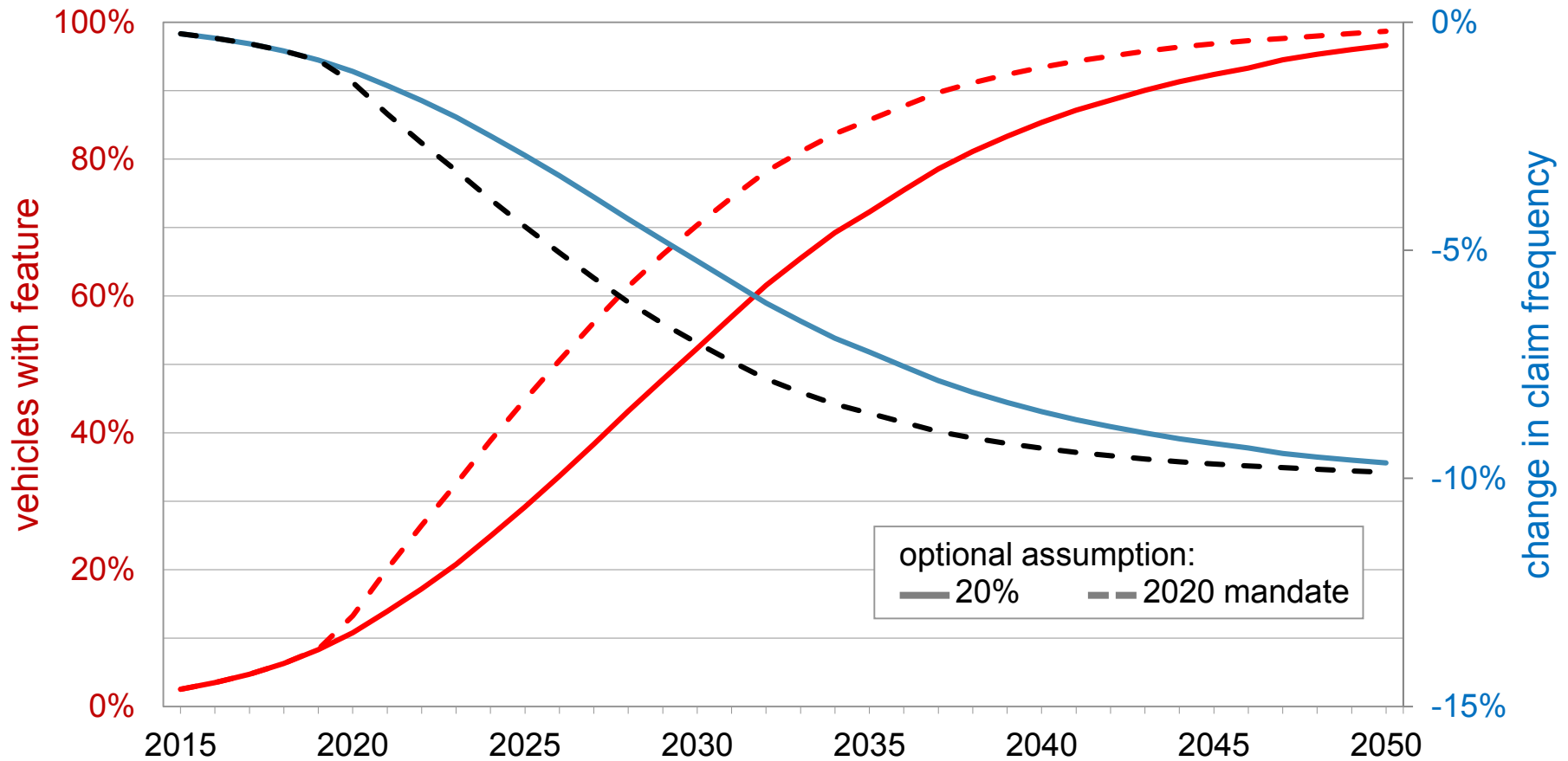
Registered vehicles with available front crash prevention, actual and predicted

By calendar year



Estimated change in PDL claim frequency due to increased fitment of FCW systems

Based on estimated effect of 10%



Competing visions of autonomous driving



8:03
71°
abc
goodmorningamerica.com

FORMER NSA LEAKER EDWARD SNOWDEN CLAIMS HE WAS A TRAINED SPY, NOT JUST A H

WARNING

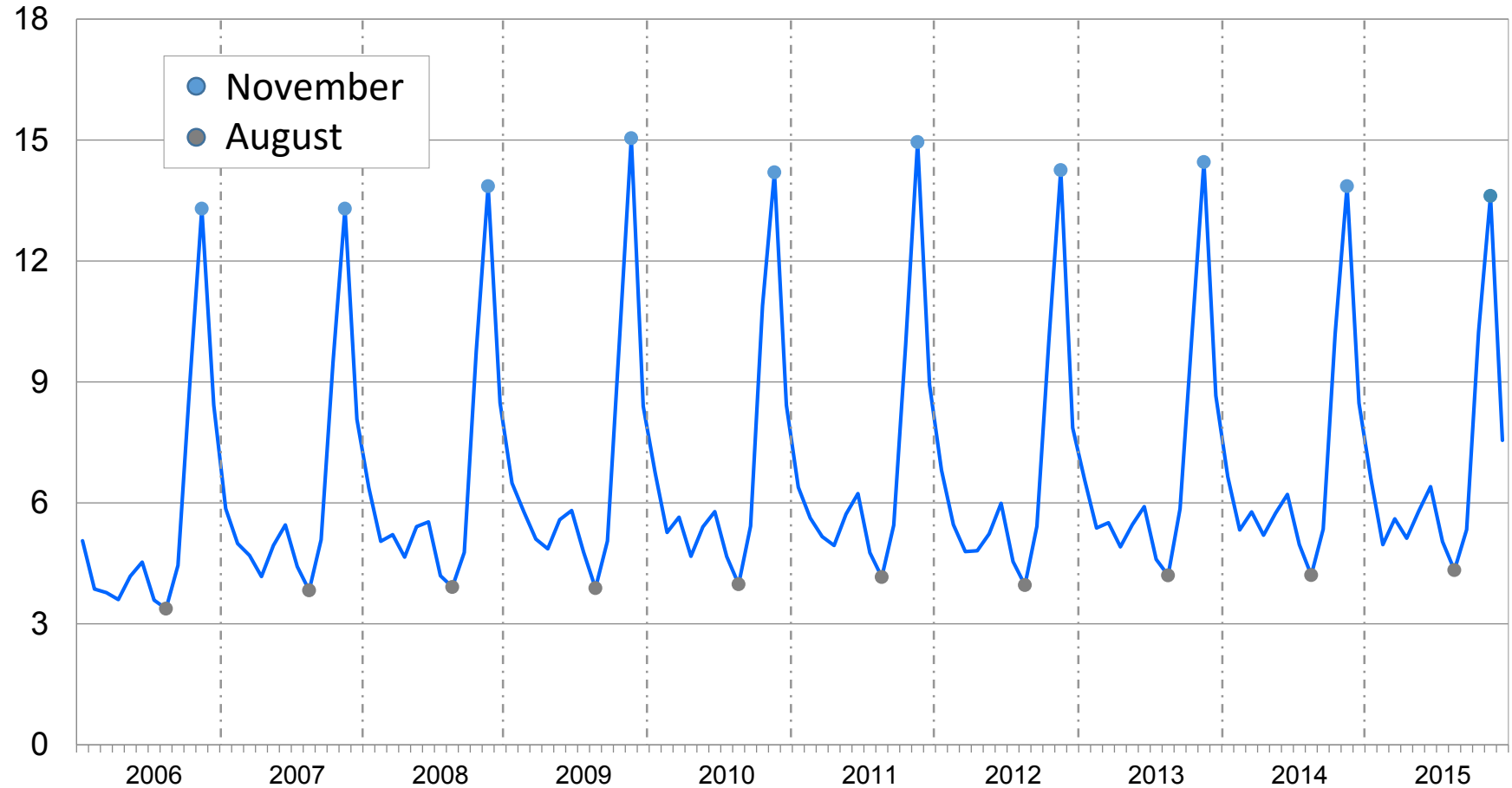
THE TESTS YOU ARE ABOUT TO WITNESS WERE PERFORMED
BY PROFESSIONAL STUNTMEN AND DRIVERS ON A CLOSED COURSE
IN A CONTROLLED ENVIRONMENT.

HYUNDAI INSISTS THAT YOU DO NOT, UNDER ANY CIRCUMSTANCES,
ATTEMPT ANY OF THE FOLLOWING TESTS.

Animal strikes

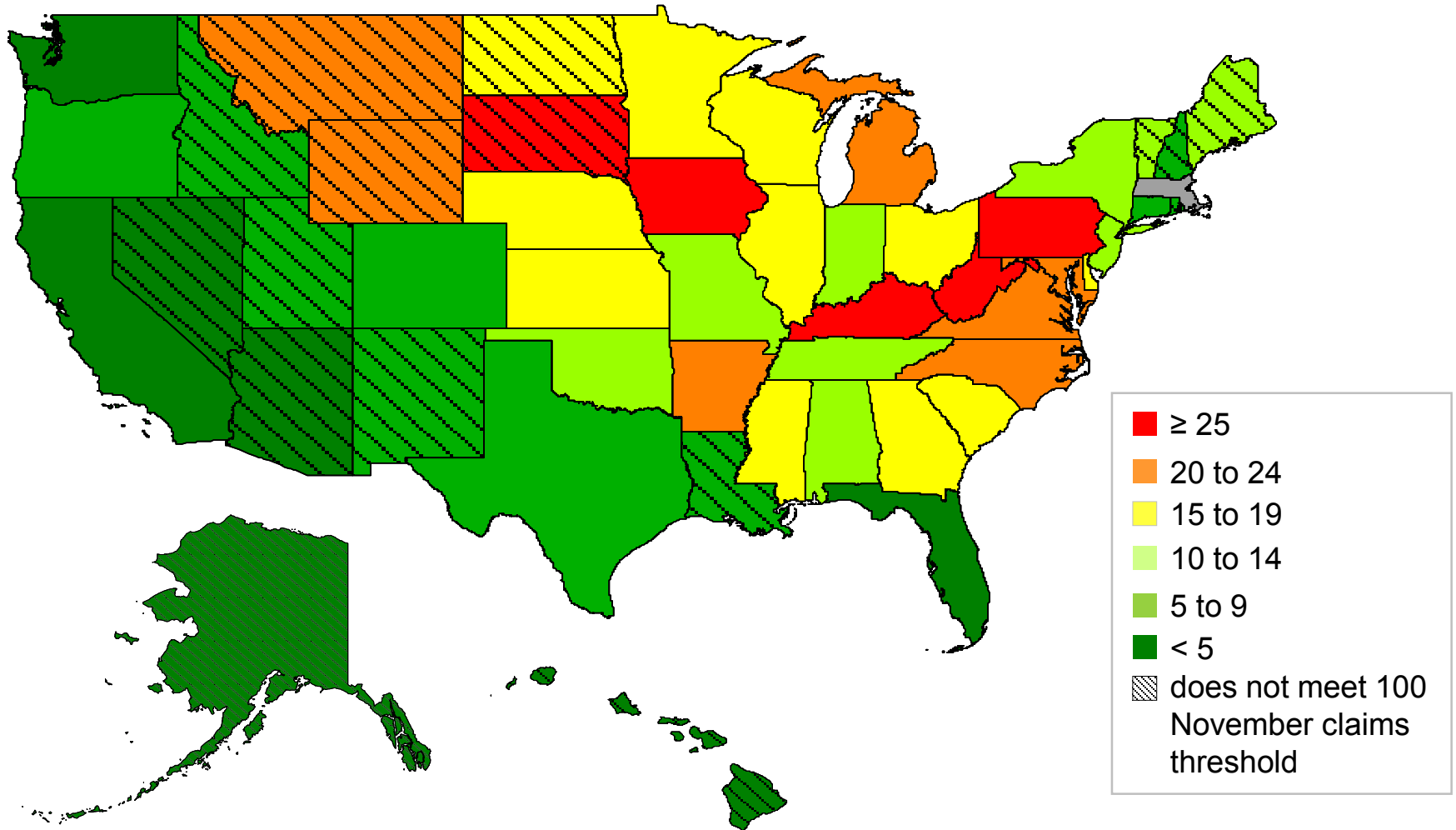
National comprehensive claim frequencies for animal strikes

January 2006 through December 2015



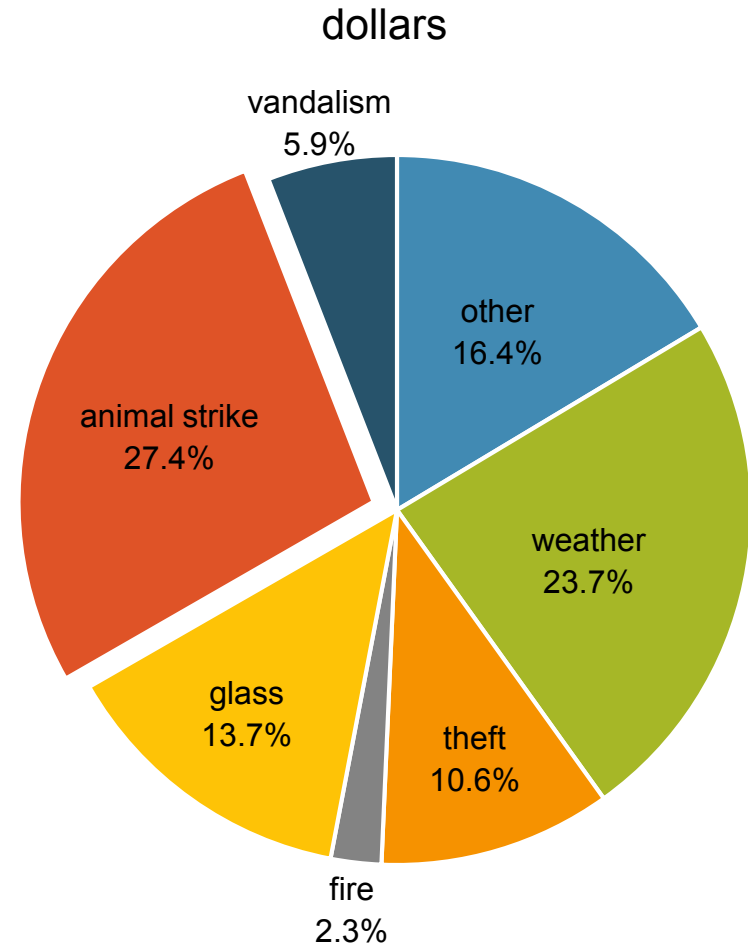
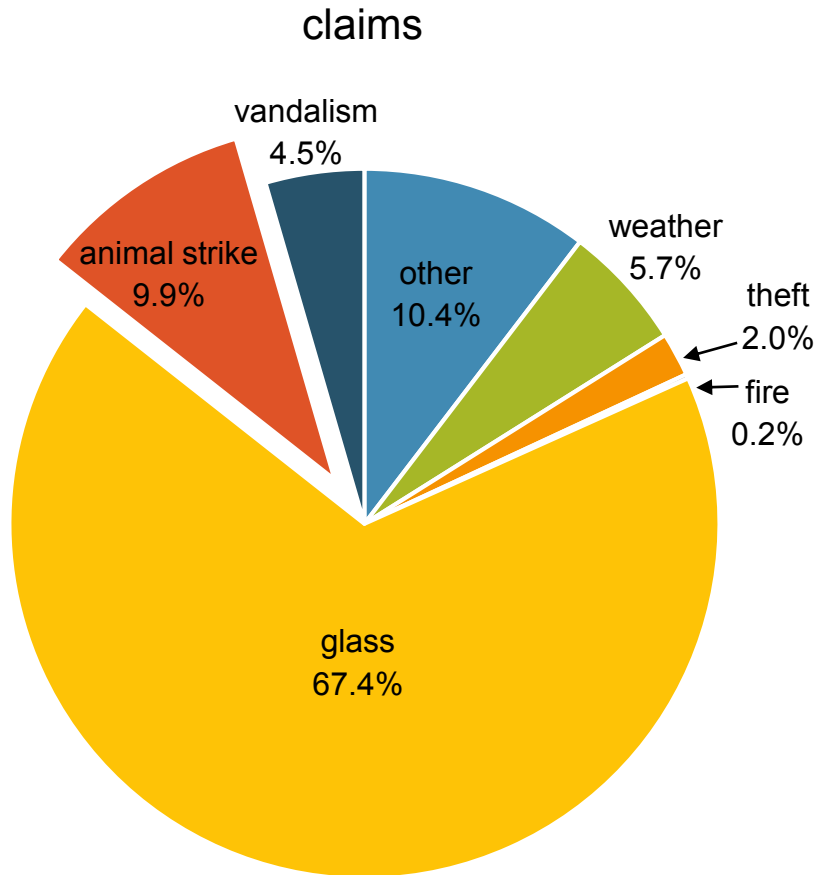
November animal-strike claims

Per 1,000 insured vehicle years



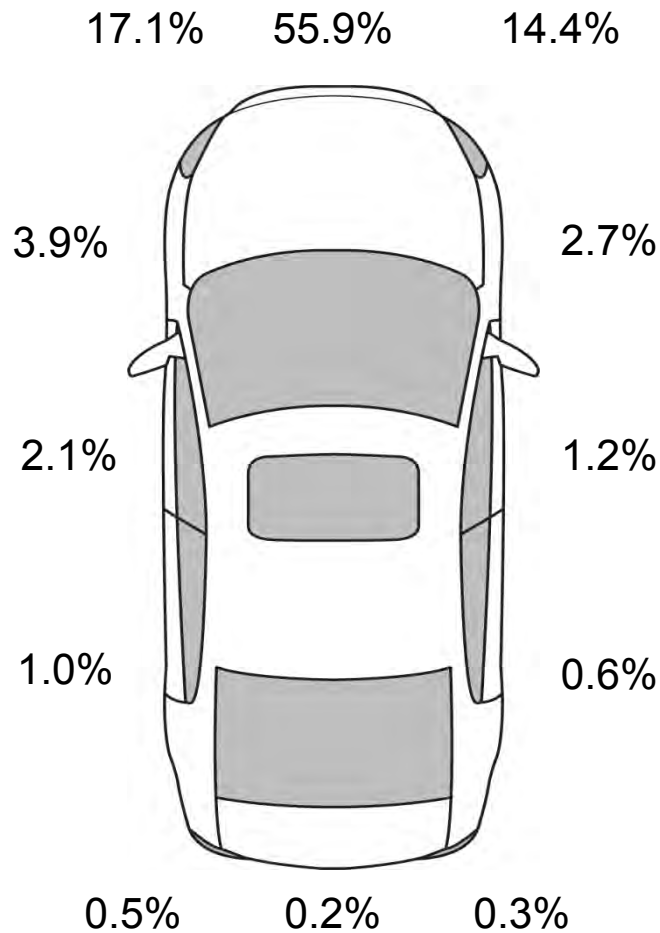
Comprehensive claims and dollars

By loss type, 2013-15 models

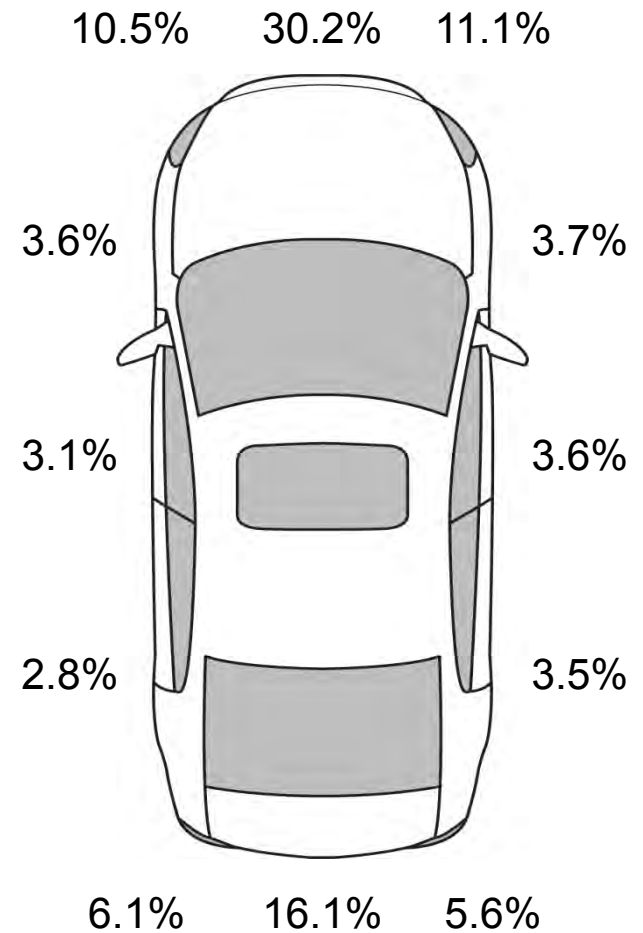


Point of impact distribution

calendar years 2004-13 and model years 2001-14

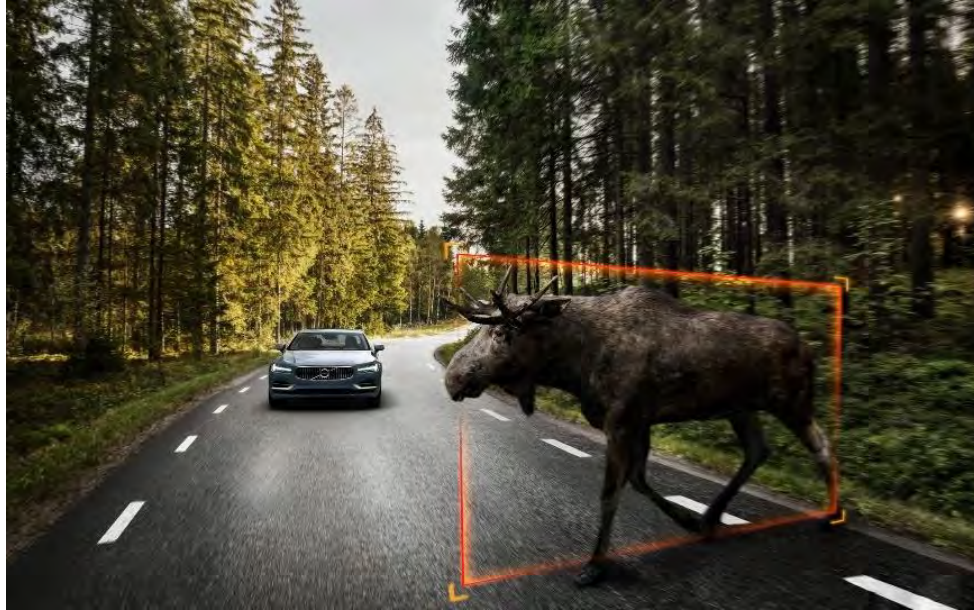


animal-strike claims



collision claims


Large animal crash prevention system



2017 Volvo S90



2017 Volvo XC90



Y94 radio talk show
Fargo, ND



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More information and links
to our YouTube channel
and Twitter feed at iihs.org

iihs.org