



Trends, Challenges and Opportunities in the P/C Insurance Industry in 2017 & Beyond

**The Institutes' Management Development Program
University of Wisconsin
Madison, WI
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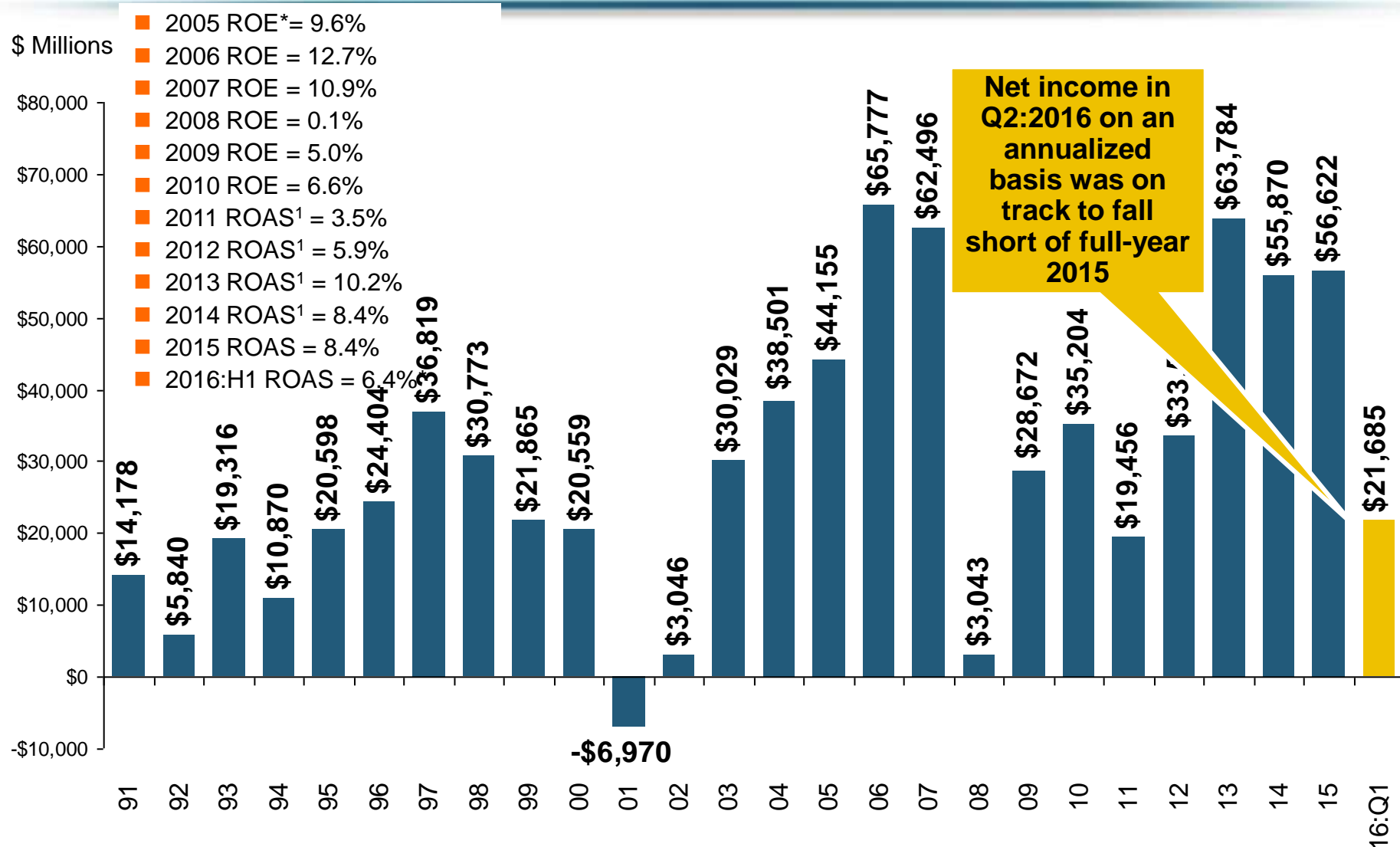
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P/C (Re)Insurance Industry Financial Overview

**The Past Few Years Have Been
Very Similar and Reasonably
Good**

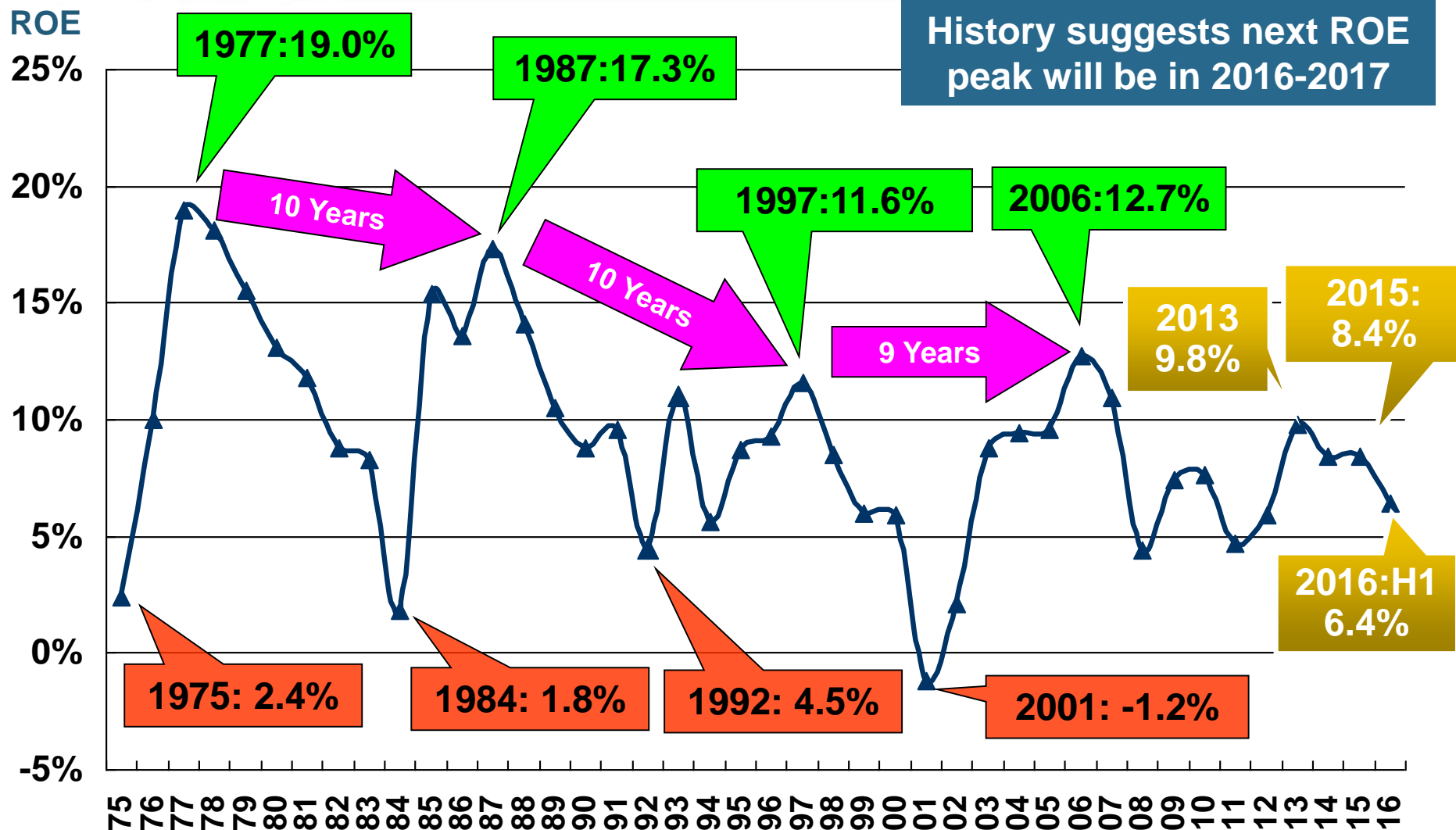
P/C Industry Net Income After Taxes 1991–2016:Q2



*ROE figures are GAAP; ¹Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 8.2% ROAS in 2014, 9.8% ROAS in 2013, 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009; 2015E is annualized figure based actual figure through Q3 of \$44.0

Sources: A.M. Best, ISO; Insurance Information Institute

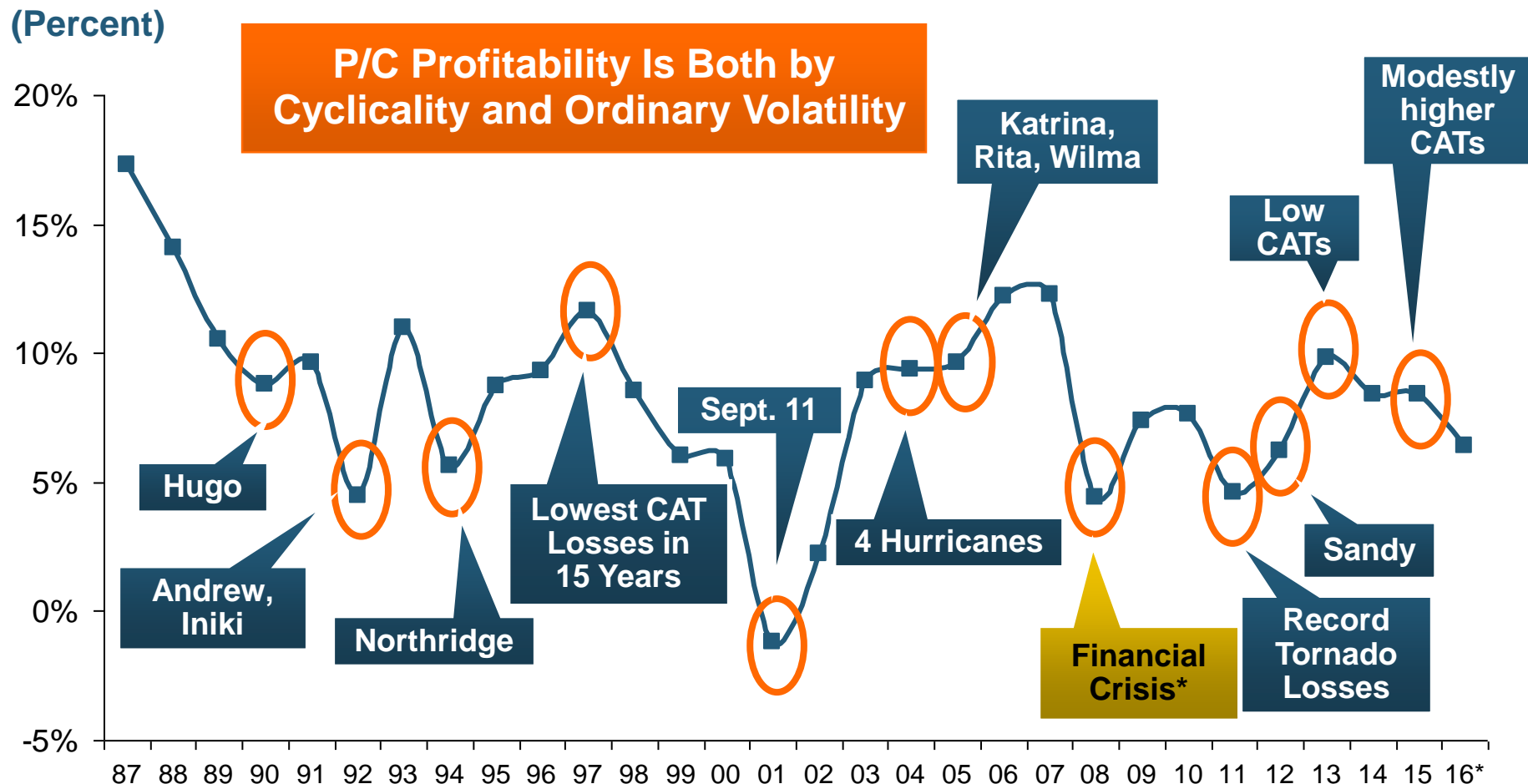
Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2016:H1



*Profitability = P/C insurer ROEs. 2011-15 figures are estimates based on ROAS data. Note: Data for 2008-2014 exclude mortgage and financial guaranty insurers.

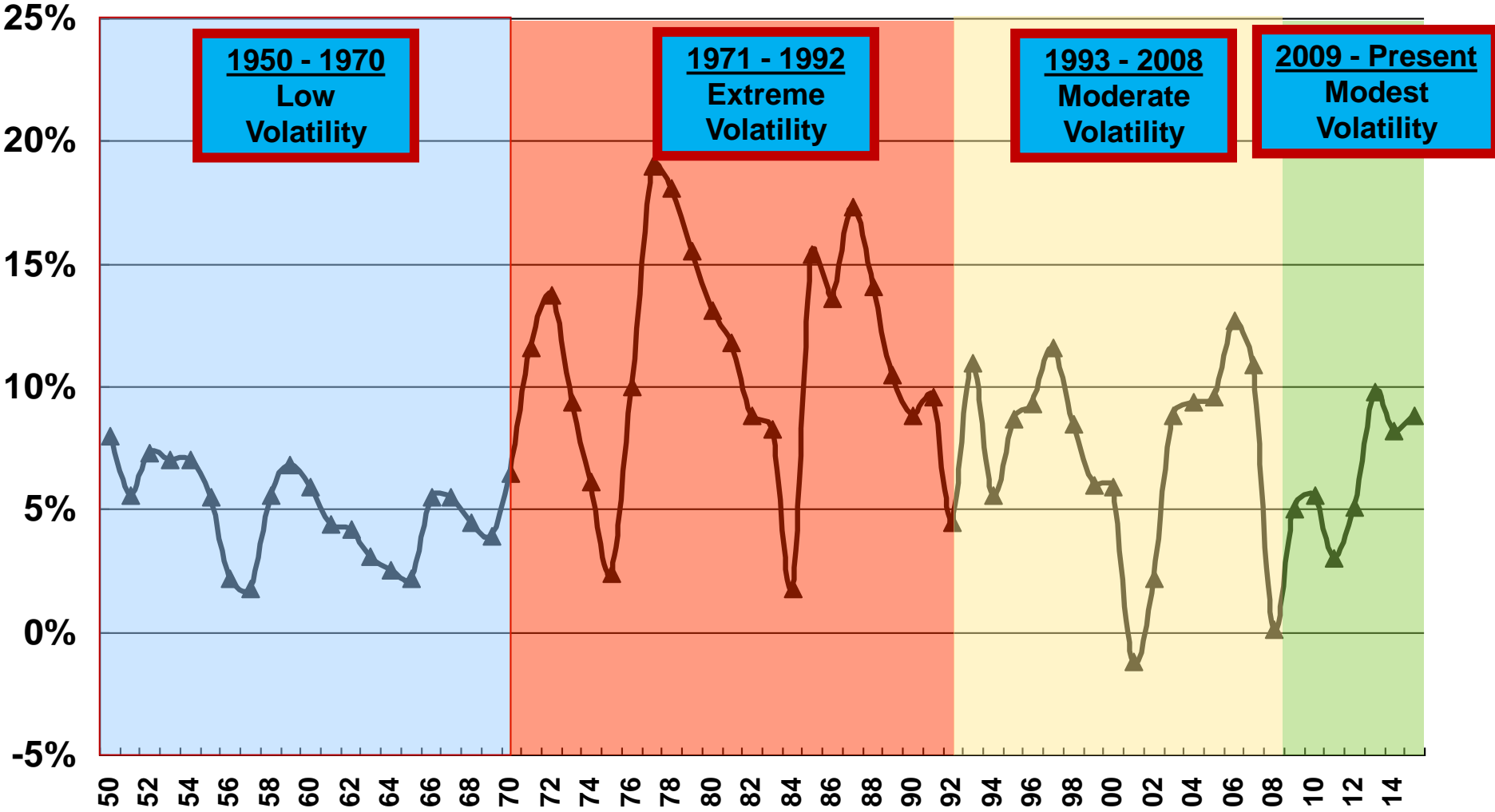
Source: Insurance Information Institute; NAIC, ISO, A.M. Best, Conning

ROE: Property/Casualty Insurance by Major Event, 1987–2016:H1

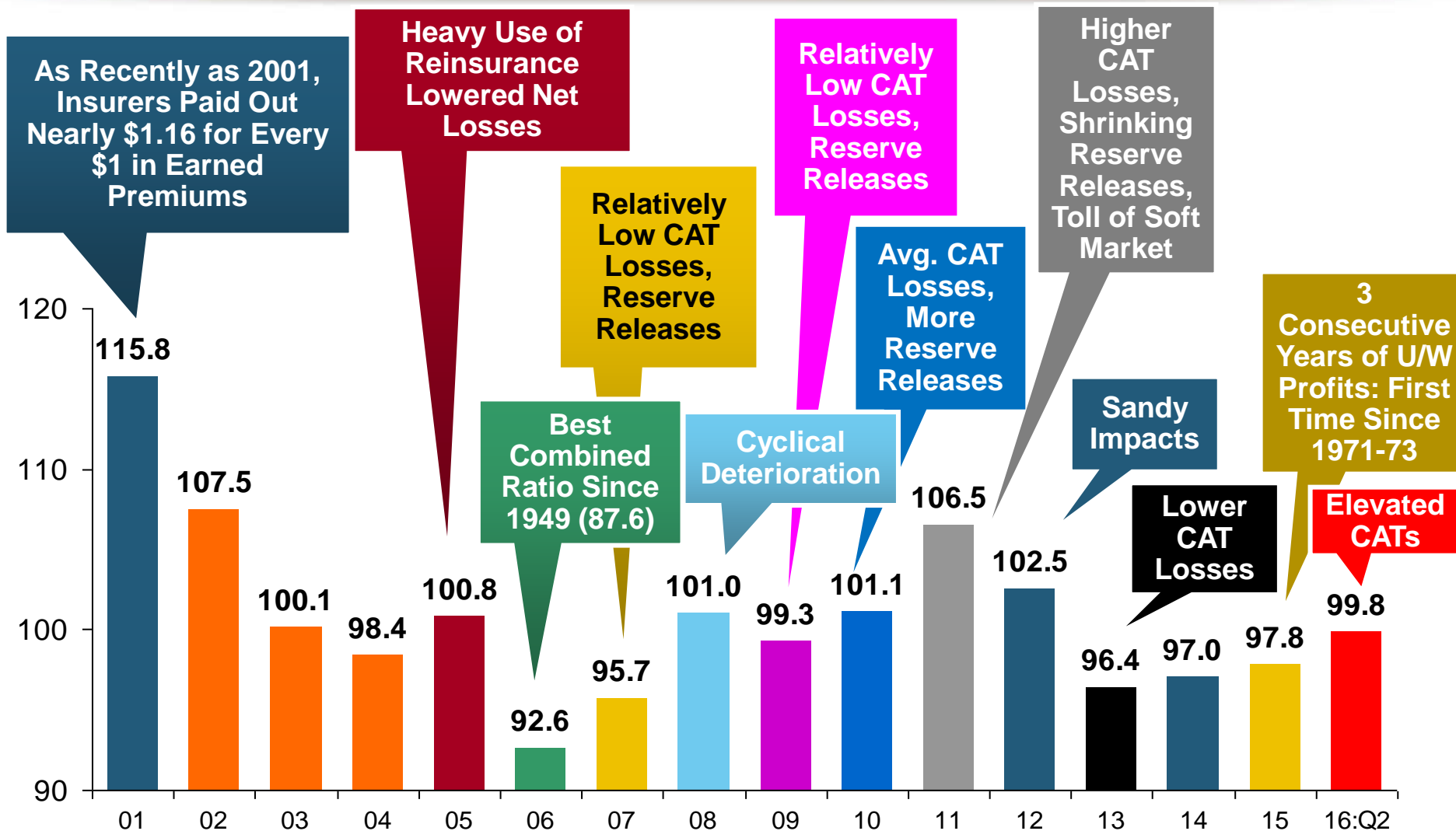


* Through 2016:H1. Excludes Mortgage & Financial Guarantee in 2008 – 2014.
Sources: ISO, *Fortune*; Insurance Information Institute.

P/C Insurance Industry ROE: Magnitude of Cyclical, Volatility Changes Over Time, 1950-2015



P/C Insurance Industry Combined Ratio, 2001–2016:Q2*

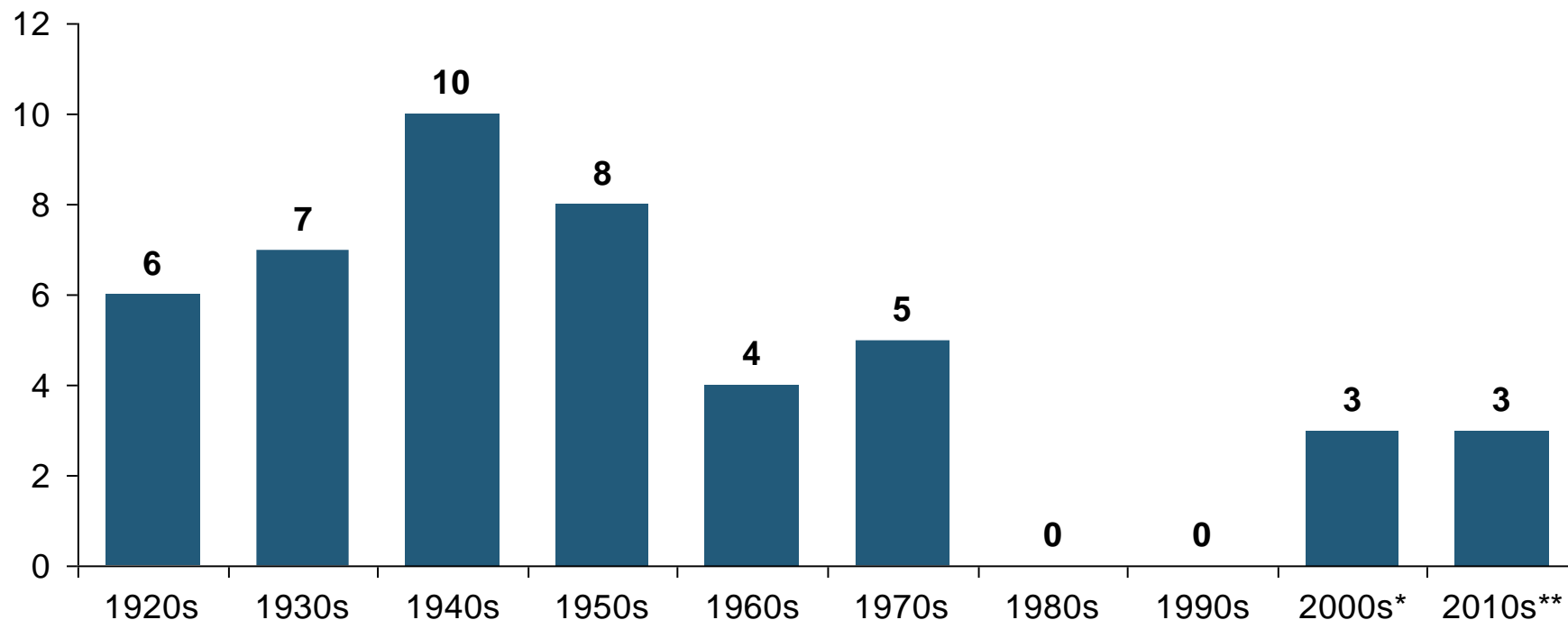


* Excludes Mortgage & Financial Guaranty insurers 2008--2014. Including M&FG, 2008=105.1, 2009=100.7, 2010=102.4, 2011=108.1; 2012:=103.2; 2013:= 96.1; 2014:= 97.0.

Sources: A.M. Best, ISO (2014-2015); Figure for 2010-2013 is from A.M. Best P&C Review and Preview, Feb. 16, 2016.

Number of Years with Underwriting Profits by Decade, 1920s–2010s

Number of Years with Underwriting Profits



**Underwriting Profits Were Common Before the 1980s
(40 of the 60 Years Before 1980 Had Combined Ratios Below 100) –
But Then They Vanished. Not a Single Underwriting Profit Was
Recorded in the 25 Years from 1979 Through 2003**

* 2009 combined ratio excl. mort. and finl. guaranty insurers was 99.3, which would bring the 2000s total to 4 years with an u/w profit.

**Data for the 2010s is for the period 2010 through 2015.

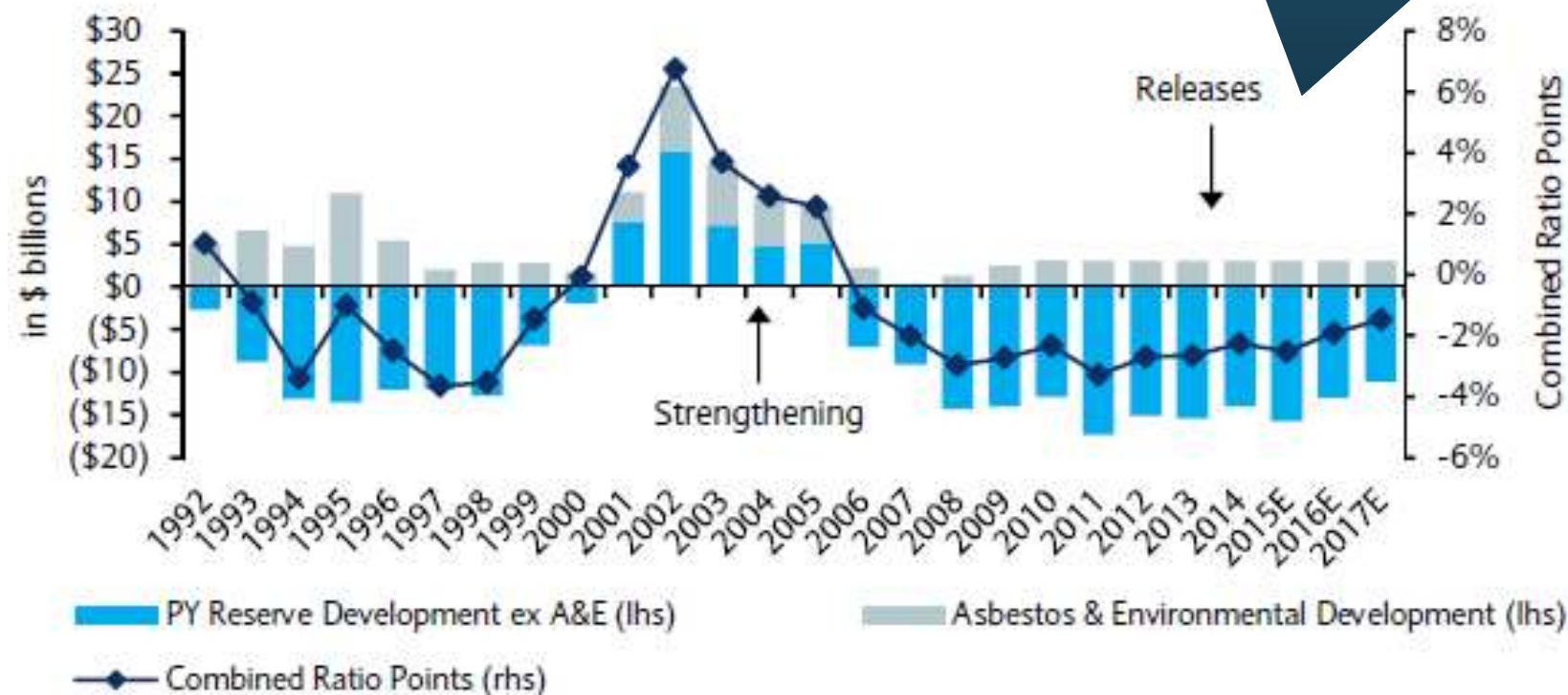
Note: Data for 1920–1934 based on stock companies only.

Sources: Insurance Information Institute research from A.M. Best Data.

P/C Insurance Loss Reserve Development, 1992 – 2017E*

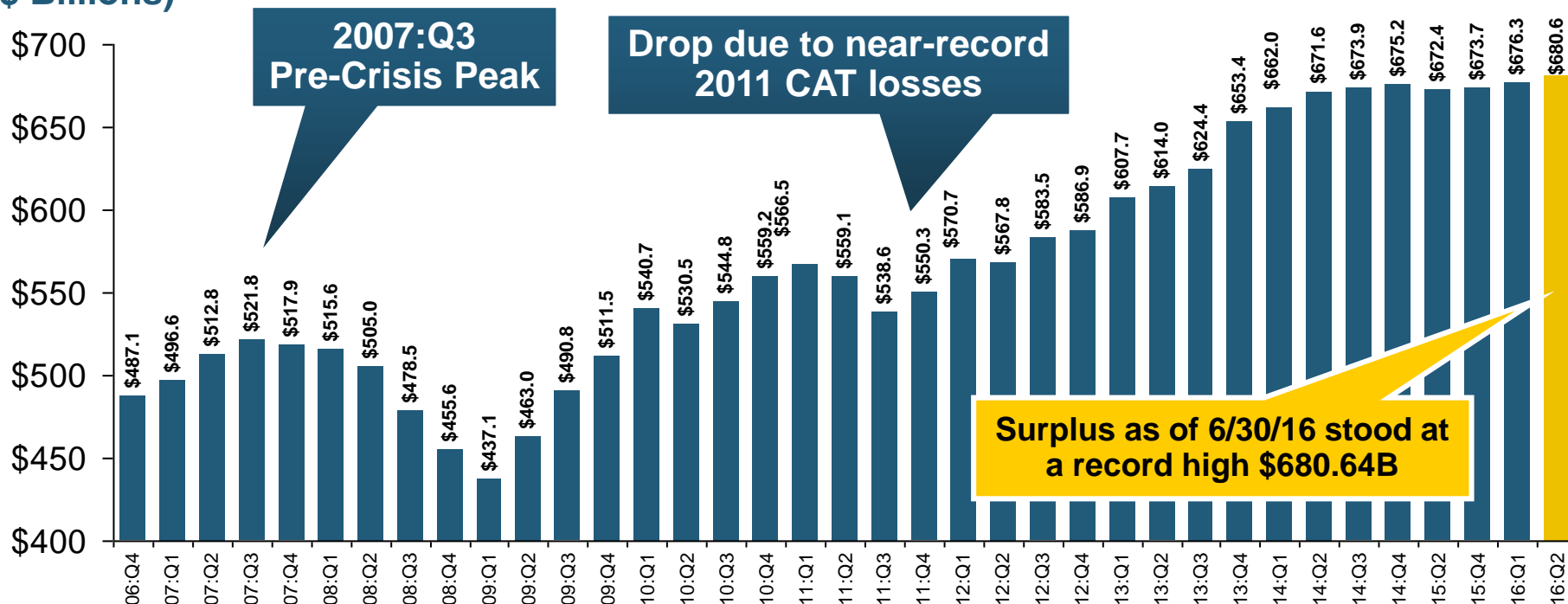
Reserve Change

Reserve releases are expected to gradually taper off slowly, but will continue to benefit the bottom line and combined ratio through at least 2017



Policyholder Surplus, 2006:Q4–2016:Q2

(\$ Billions)



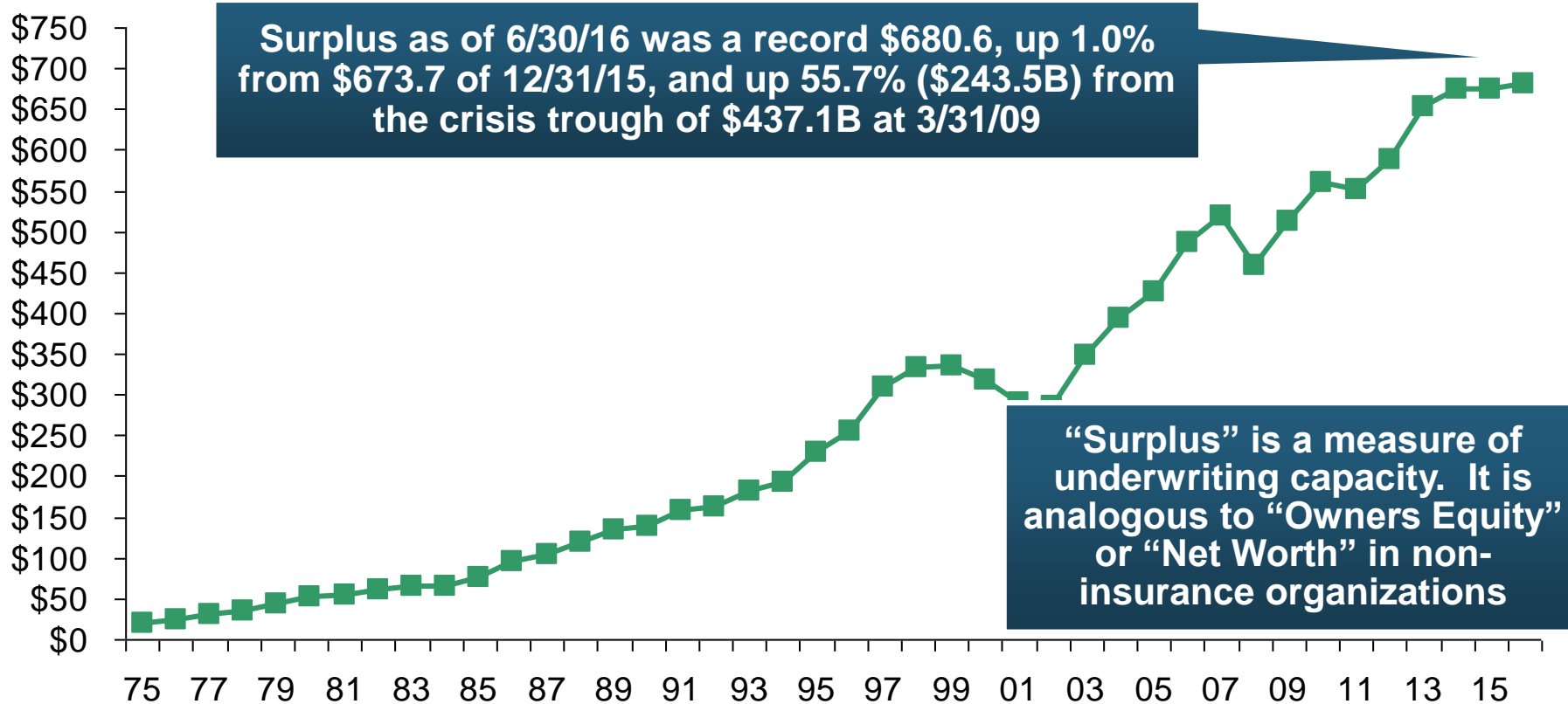
The industry now has \$1 of surplus for every \$0.76 of NPW, close to the strongest claims-paying status in its history.

2010:Q1 data includes \$22.5B of paid-in capital from a holding company parent for one insurer's investment in a non-insurance business.

The P/C insurance industry entered 2016 in very strong financial condition.

US Policyholder Surplus: 1975–2016*

(\$ Billions)



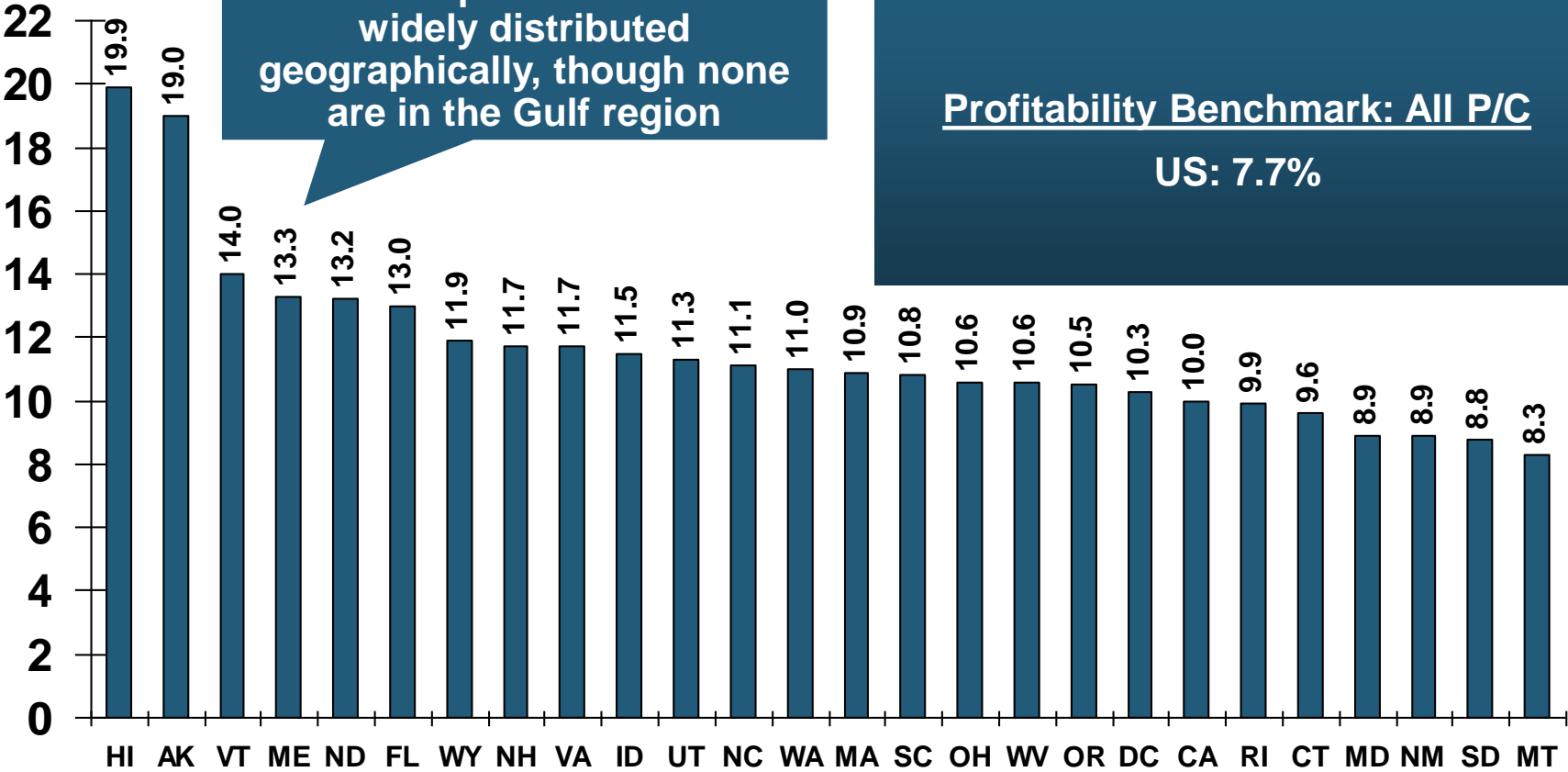
The Premium-to-Surplus Ratio Stood at \$0.76:\$1 as of 12/31/15, a Near Record Low (at Least in Recent History)

* As of 6/30/16.

Source: A.M. Best, ISO, Insurance Information Institute.

RNW All Lines, 2005-2014 Average: Highest 25 States

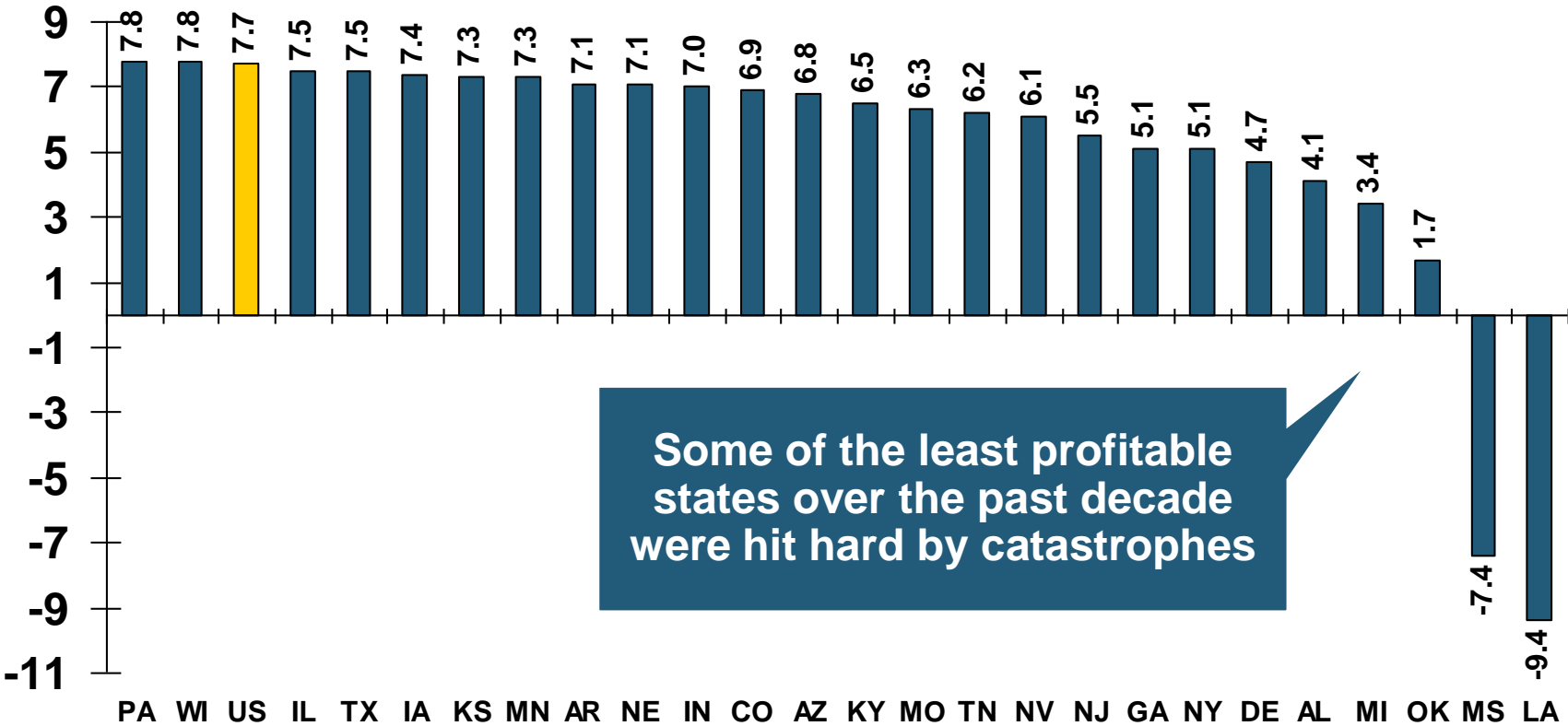
(Percent)



Source: NAIC; Insurance Information Institute.

RNW All Lines, 2005-2014 Average: Lowest 25 States

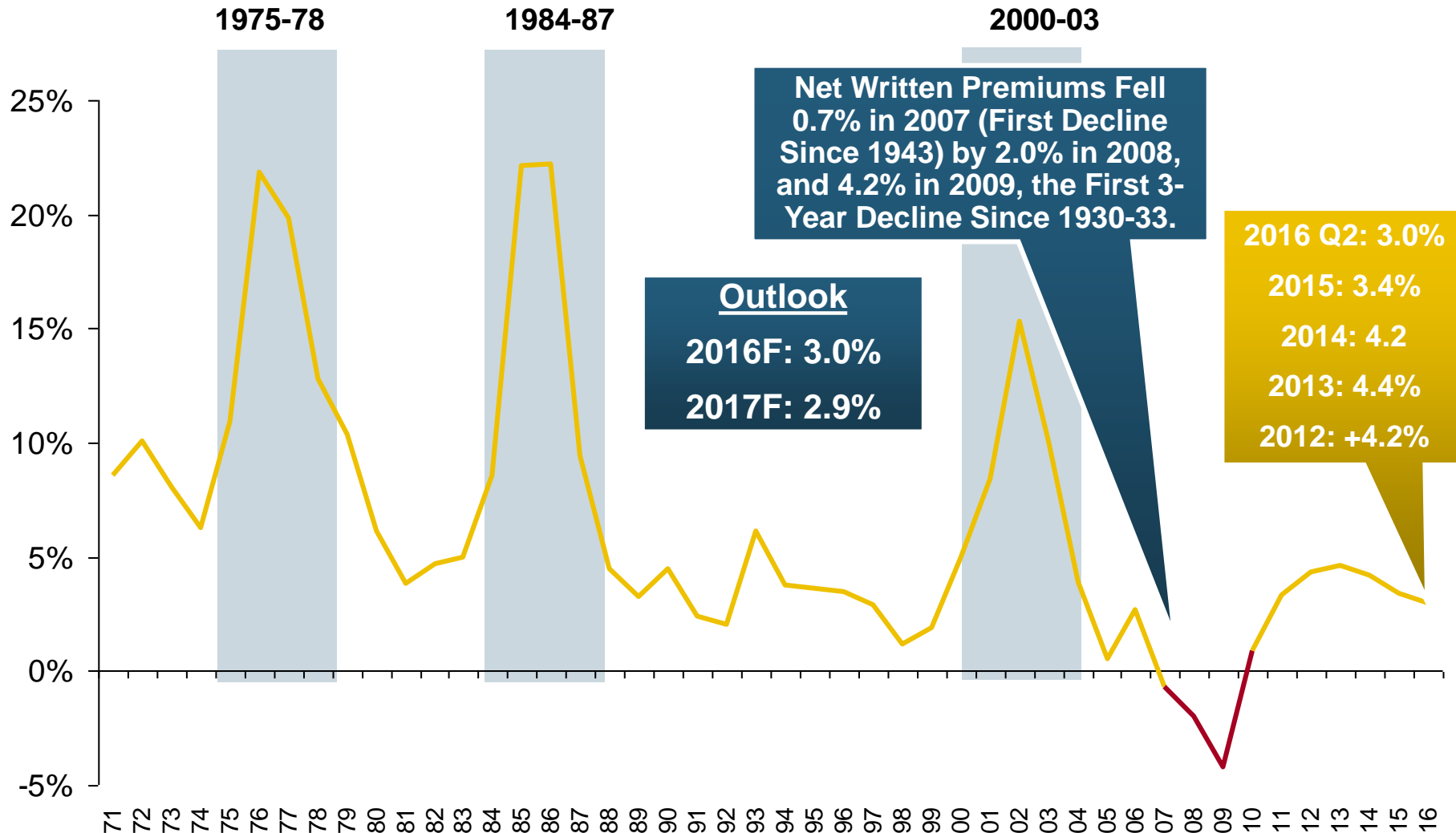
(Percent)



Source: NAIC; Insurance Information Institute.

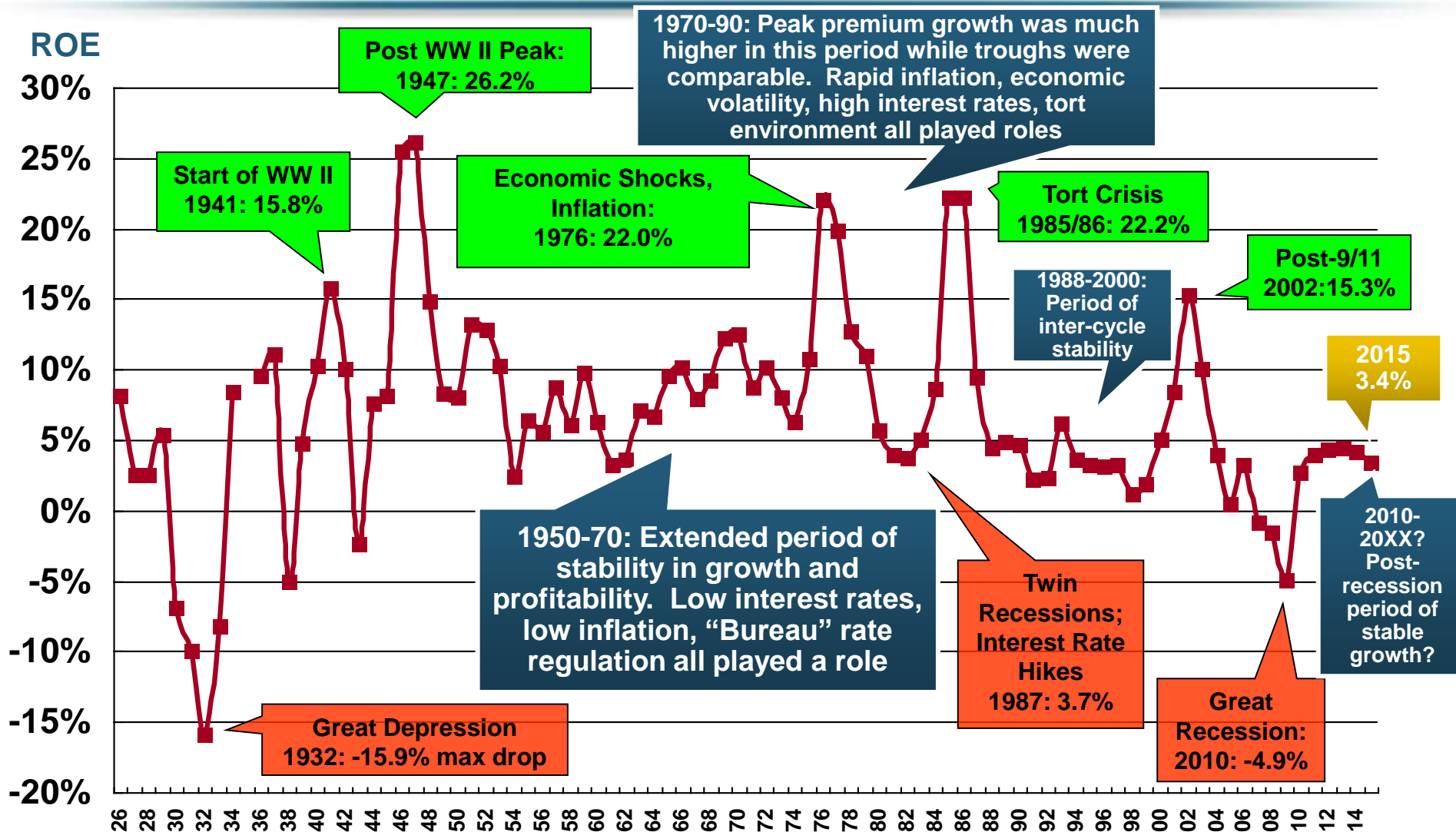
Net Premium Growth (All P/C Lines): Annual Change, 1971—2016:Q2

(Percent)



Shaded areas denote "hard market" periods
Sources: A.M. Best (1971-2013), ISO (2014-16).

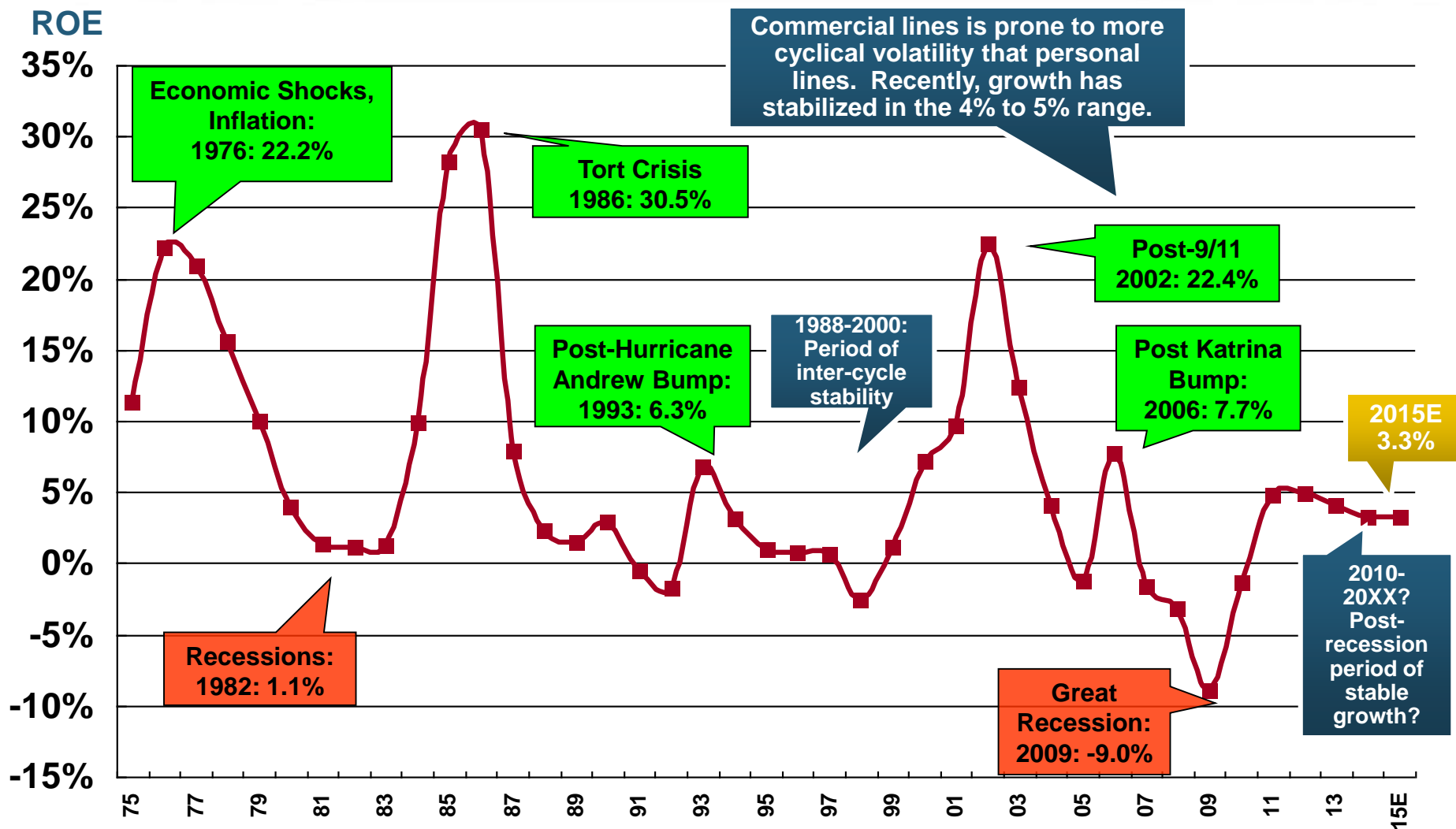
NPW Premium Growth: Peaks & Troughs in the P/C Insurance Industry, 1926 – 2015



Note: Data through 1934 are based on stock companies only. Data include state funds beginning in 1998.

Source: A.M. Best; Insurance Information Institute.

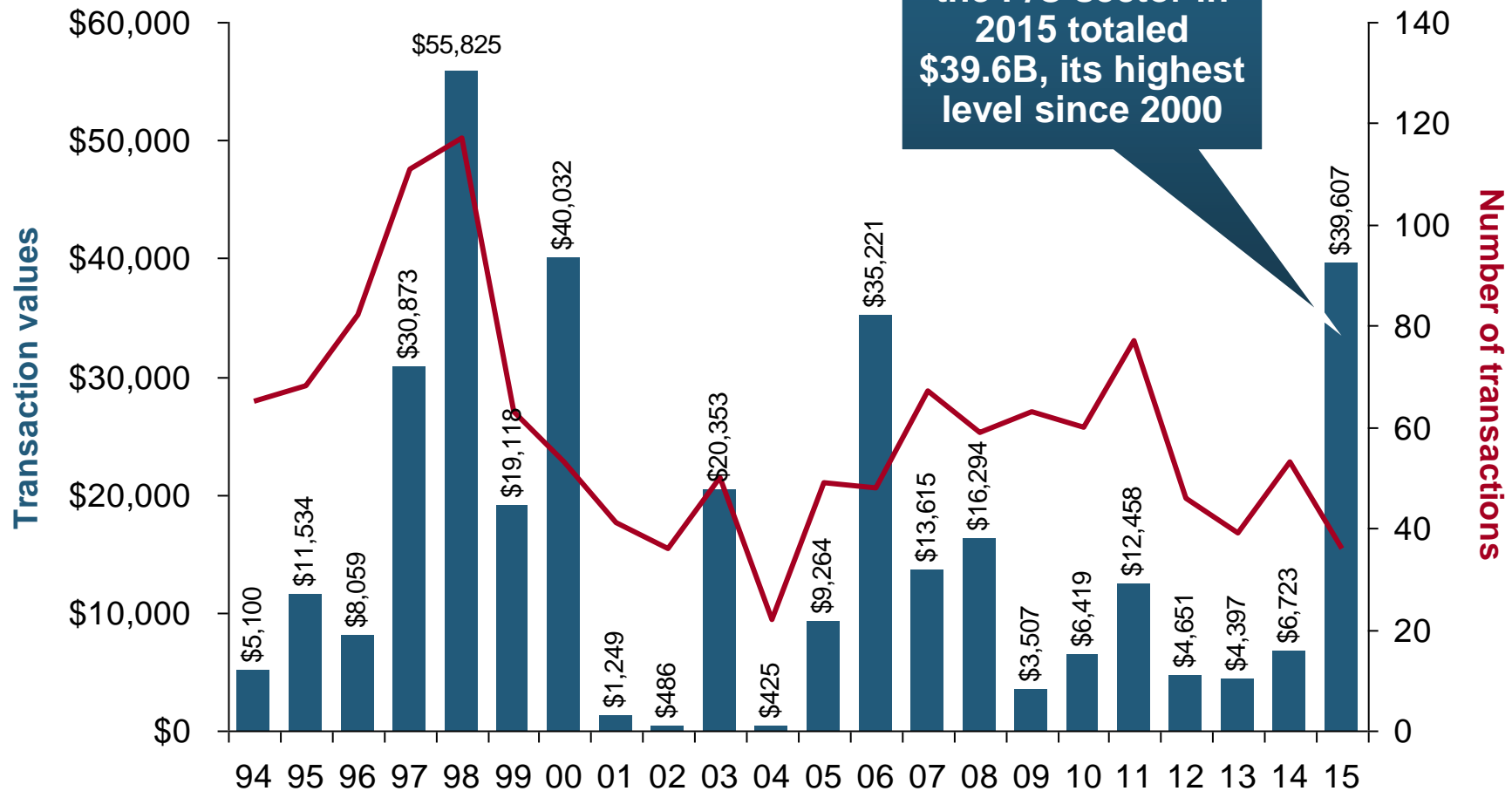
Commercial Lines NPW Premium Growth: 1975 – 2015E



Note: Data include state funds beginning in 1998.
Source: A.M. Best; Insurance Information Institute.

U.S. INSURANCE MERGERS AND ACQUISITIONS, P/C SECTOR, 1994-2015 (1)

(\$ Millions)

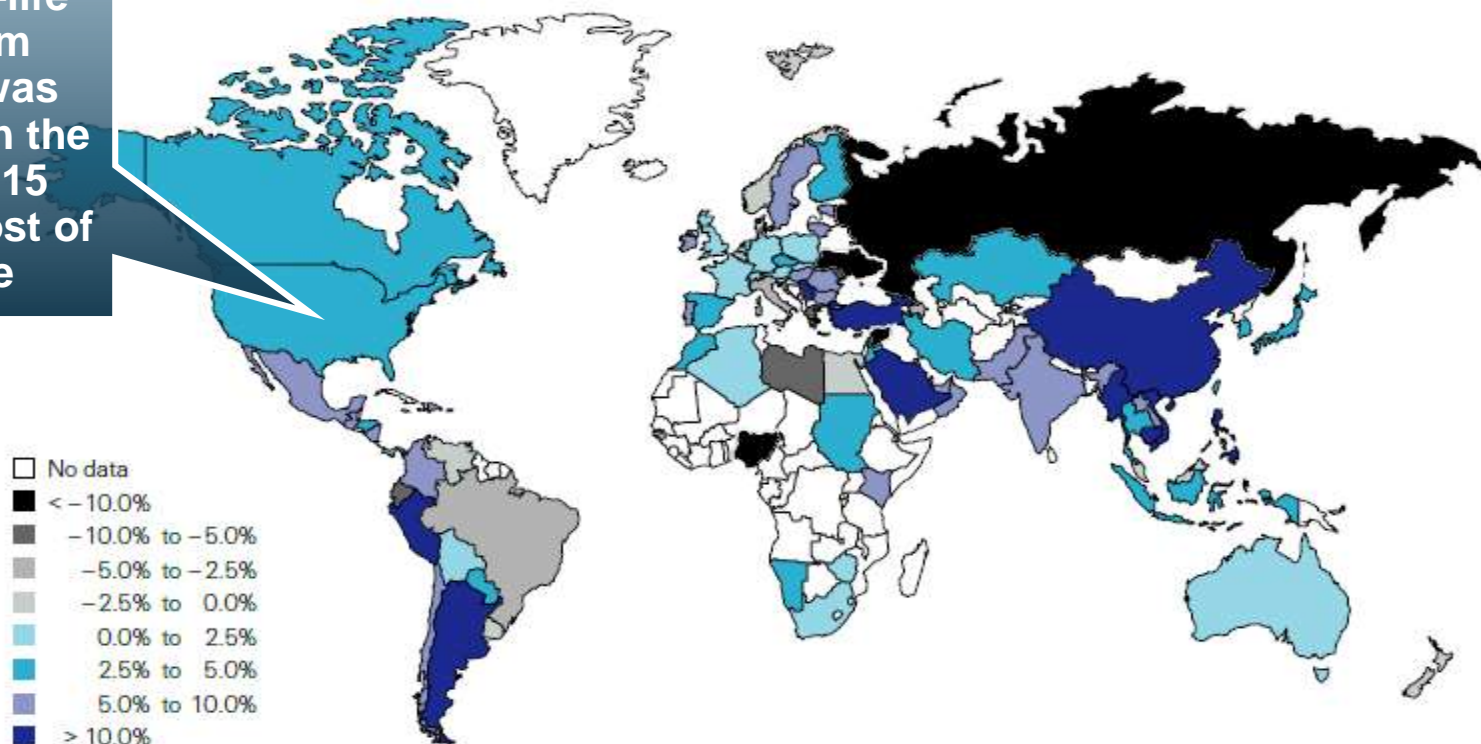


(1) Includes transactions where a U.S. company was the acquirer and/or the target.

Source: Conning proprietary database.

Non-Life Insurance: Global Real (Inflation Adjusted) Premium Growth, 2015

Real non-life premium growth was stronger in the US in 2015 than in most of Europe



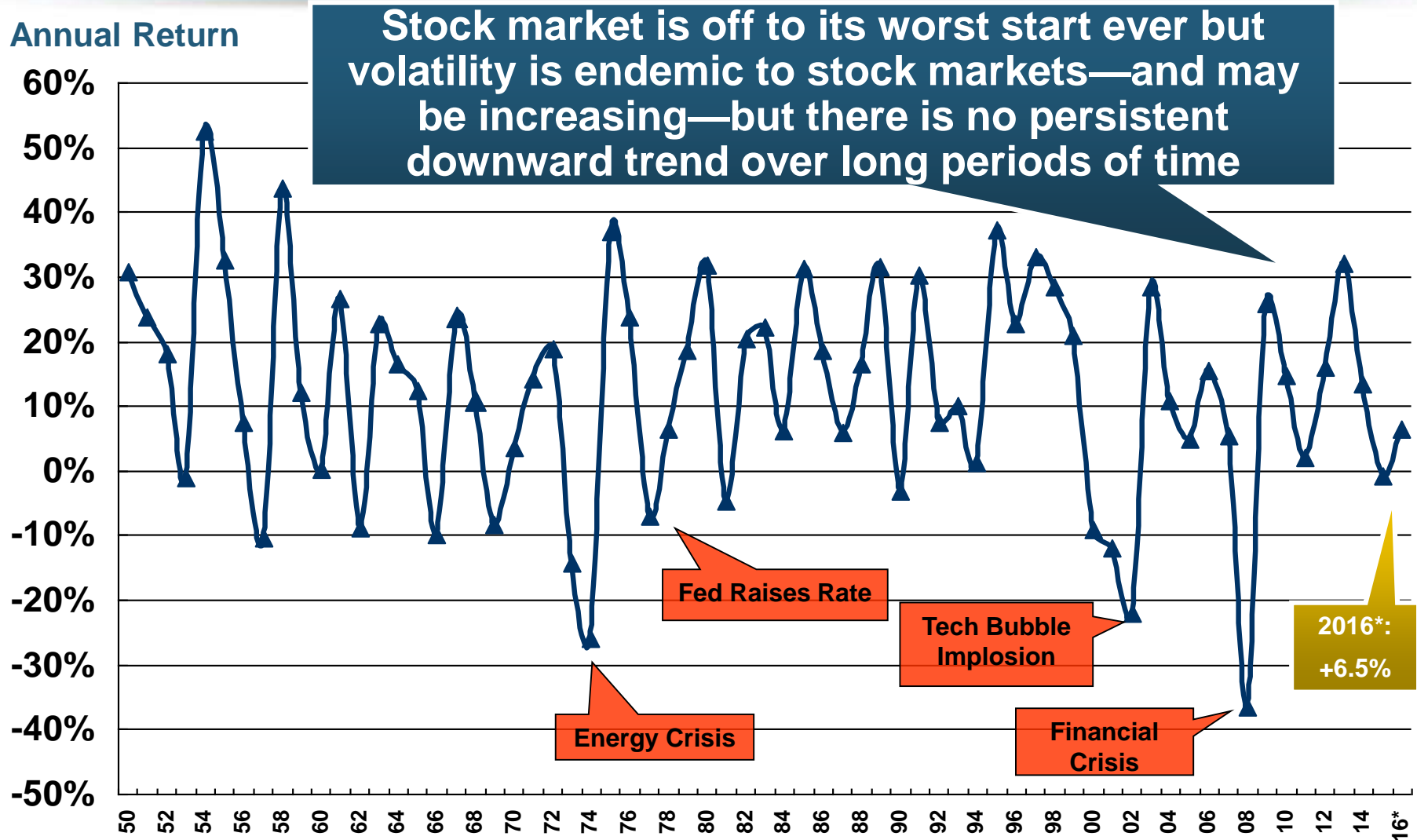
Market	Life	Non-Life	Total
Advanced	2.5	2.6	2.5
Emerging	12.0	7.8	9.8
World	4.0	3.6	3.8

INVESTMENTS: THE NEW REALITY

**Investment Performance is a Key
Driver of Profitability**

***Depressed Yields Will Necessarily
Influence Underwriting & Pricing***

S&P 500 Index Returns, 1950 – 2016*

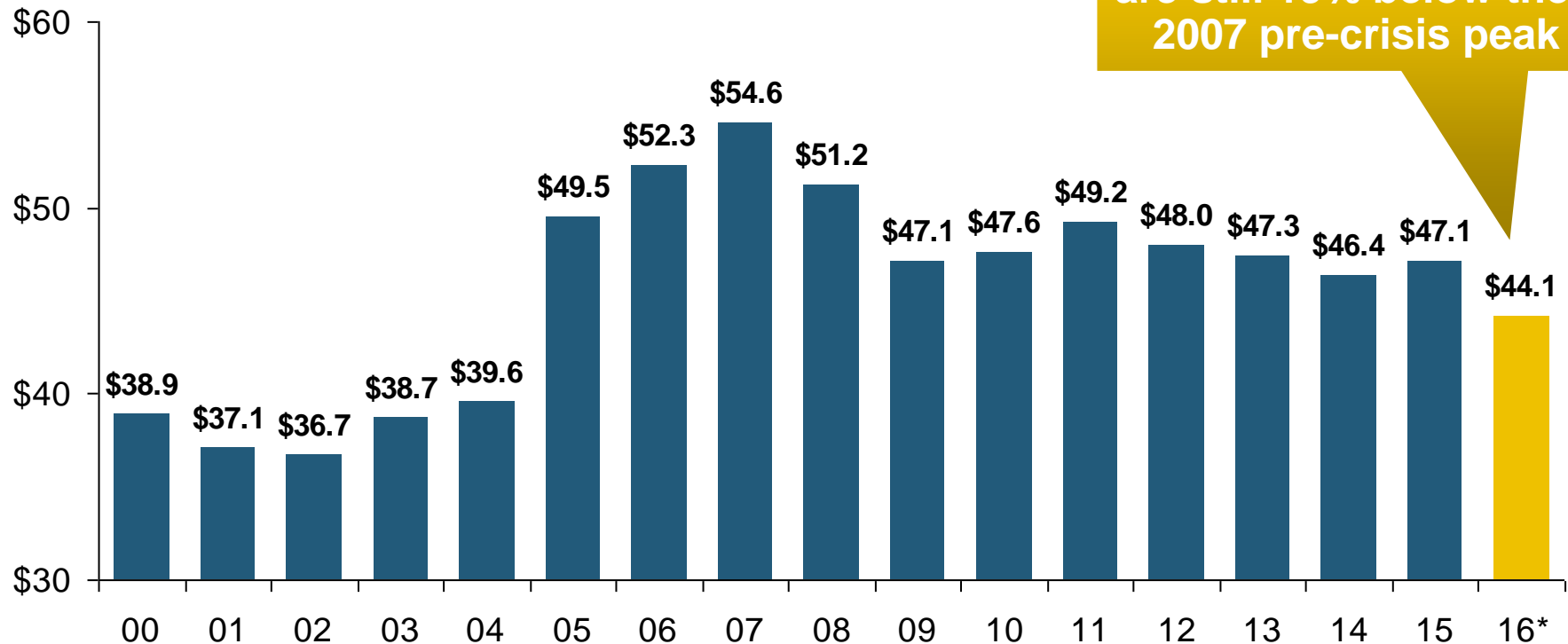


*Through Oct. 12 2016.

Source: NYU Stern School of Business: http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html Ins. Info. Inst.

Property/Casualty Insurance Industry Investment Income: 2000–2016:Q2¹

(\$ Billions)

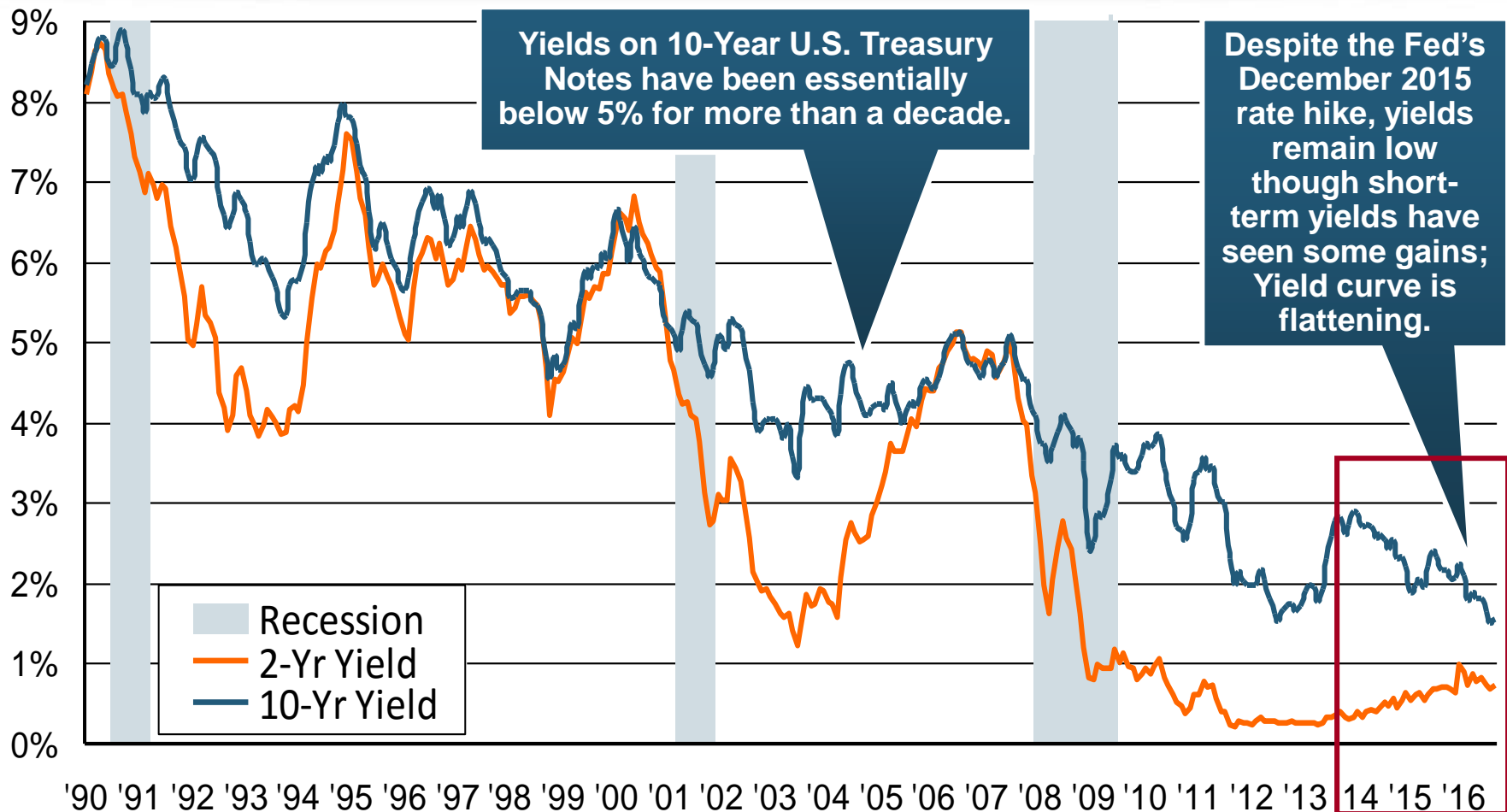


Due to persistently low interest rates, investment income fell in 2012, 2013 and 2014 but showed a small (1.9%) increase in 2015—another drop in 2016 seems likely.

*Annualized figure based on actual Q2:2016 net investment income earned of \$22.067B.

¹ Investment gains consist primarily of interest and stock dividends. Sources: ISO; Insurance Information Institute.

U.S. Treasury Security Yields: A Long Downward Trend, 1990–2016*



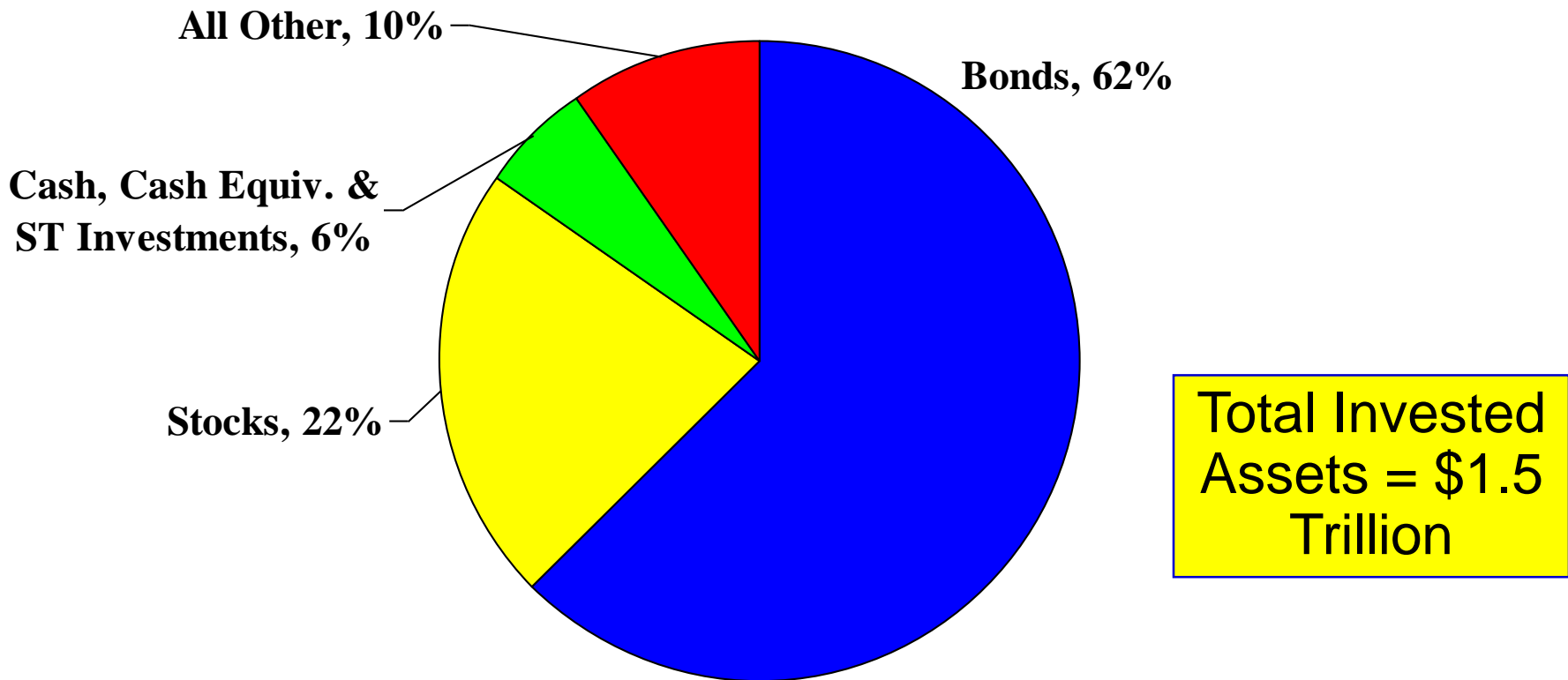
Since roughly 80% of P/C bond/cash investments are in 10-year or shorter durations, most P/C insurer portfolios will have low-yielding bonds for years to come.

*Monthly, constant maturity, nominal rates, through August 2016.

Sources: Federal Reserve Bank at <http://www.federalreserve.gov/releases/h15/data.htm>. National Bureau of Economic Research (recession dates); Insurance Information Institute.

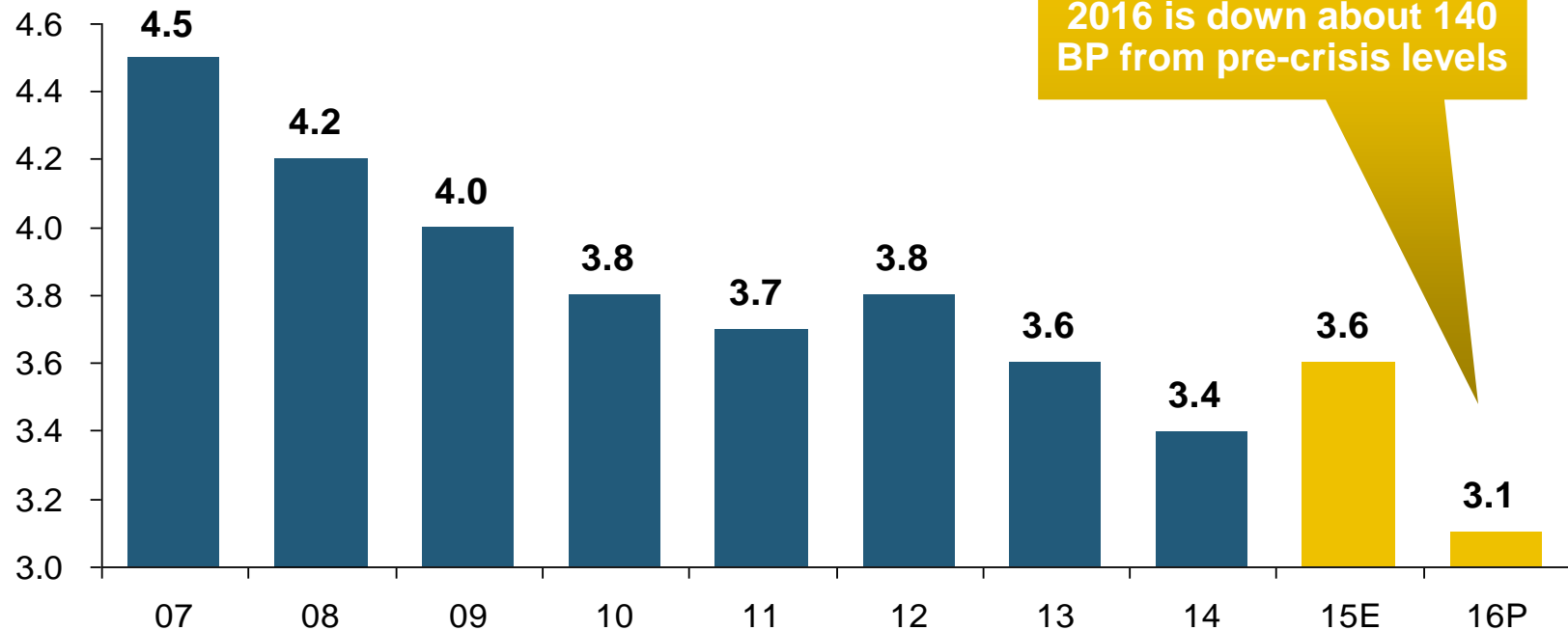
Distribution of Invested Assets: P/C Insurance Industry, 2013

\$ Billions



Net Investment Yield on Property/ Casualty Insurance Invested Assets, 2007–2016P*

(Percent)



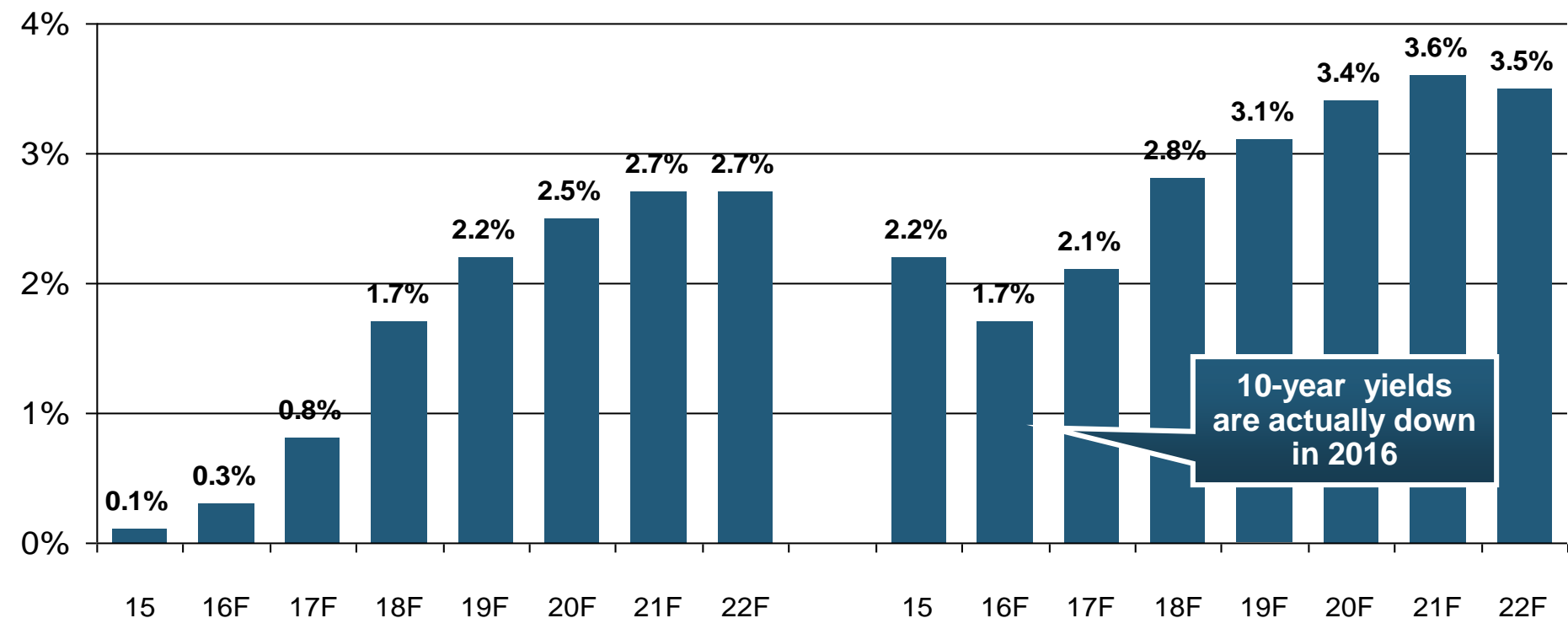
The yield on invested assets remains low relative to pre-crisis yields. The Fed's plan to raise interest rates in late 2015 has pushed up some yields, albeit quite modestly.

Interest Rate Forecasts: 2016 – 2021F

Yield (%)

3-Month Treasury

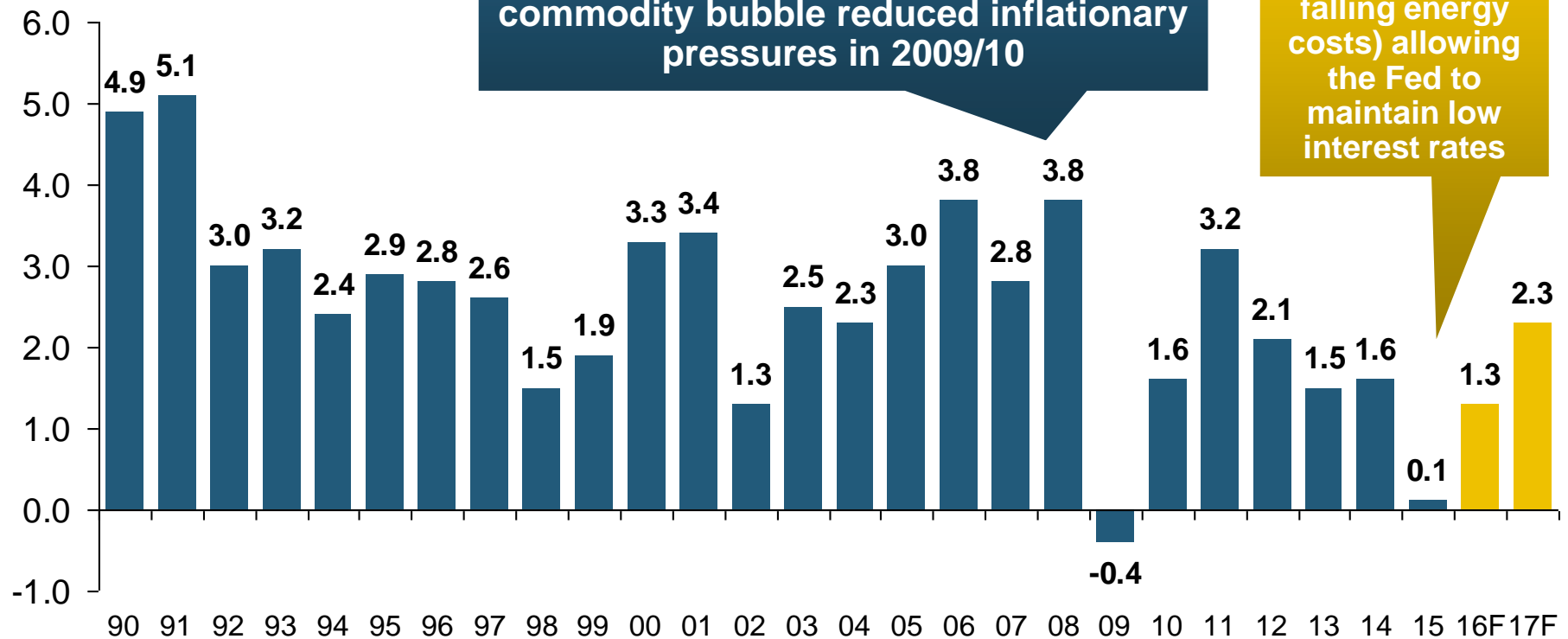
10-Year Treasury



A full normalization of interest rates is unlikely until 2019, more than a decade after the onset of the financial crisis.

Annual Inflation Rates, (CPI-U, %), 1990–2017F

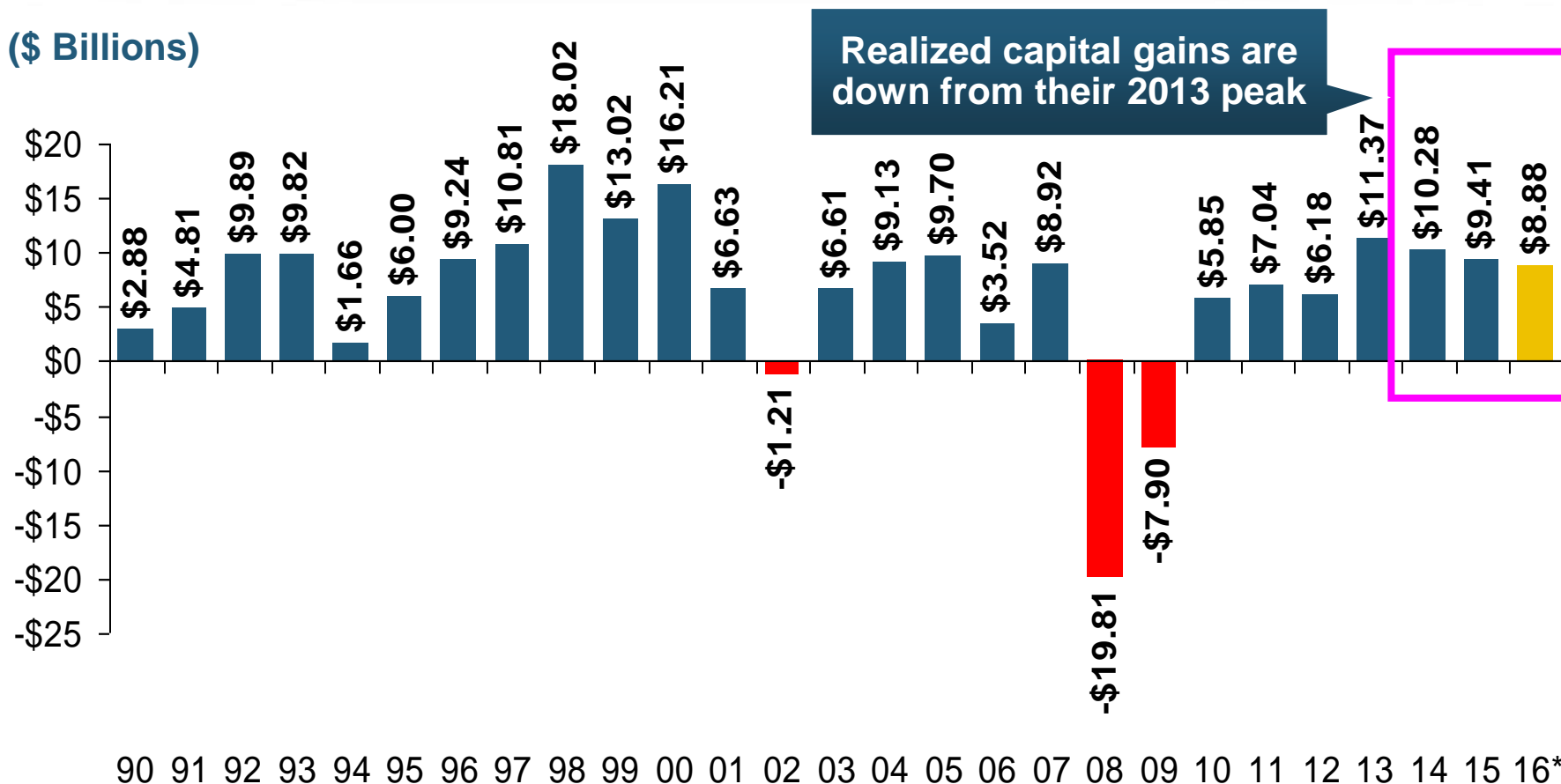
Annual Inflation Rates (%)



Slack in the U.S. economy and falling energy prices suggests that inflationary pressures should remain subdued for an extended period of times

P/C Insurer Net Realized Capital Gains/Losses, 1990-2016:Q2

(\$ Billions)

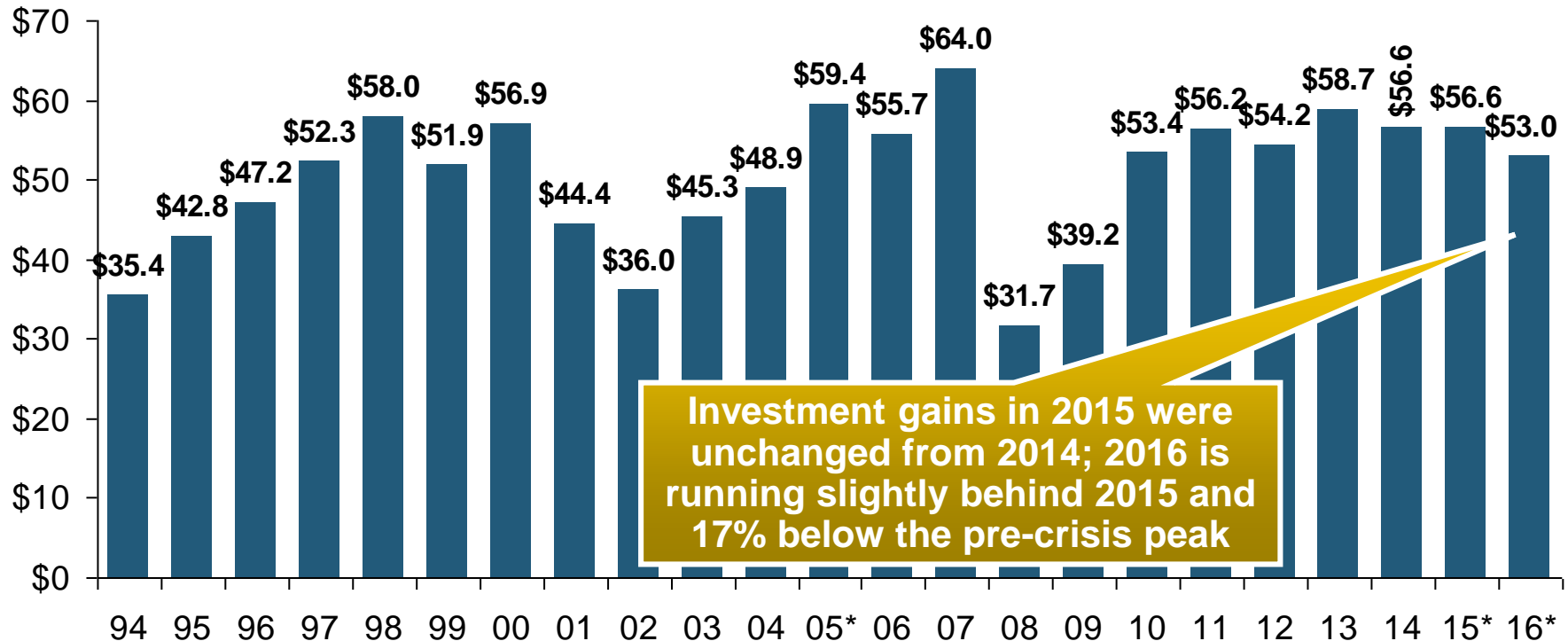


Insurers Posted Net Realized Capital Gains in 2010 - 2015 Following Two Years of Realized Losses During the Financial Crisis. Realized Capital Losses Were a Primary Cause of 2008/2009's Large Drop in Profits and ROE.

*Annualized based on actual of \$4.438B through Q2 2016
Sources: A.M. Best, ISO; Insurance Information Institute.

Property/Casualty Insurance Industry Investment Gain: 1994–2016:Q2¹

(\$ Billions)



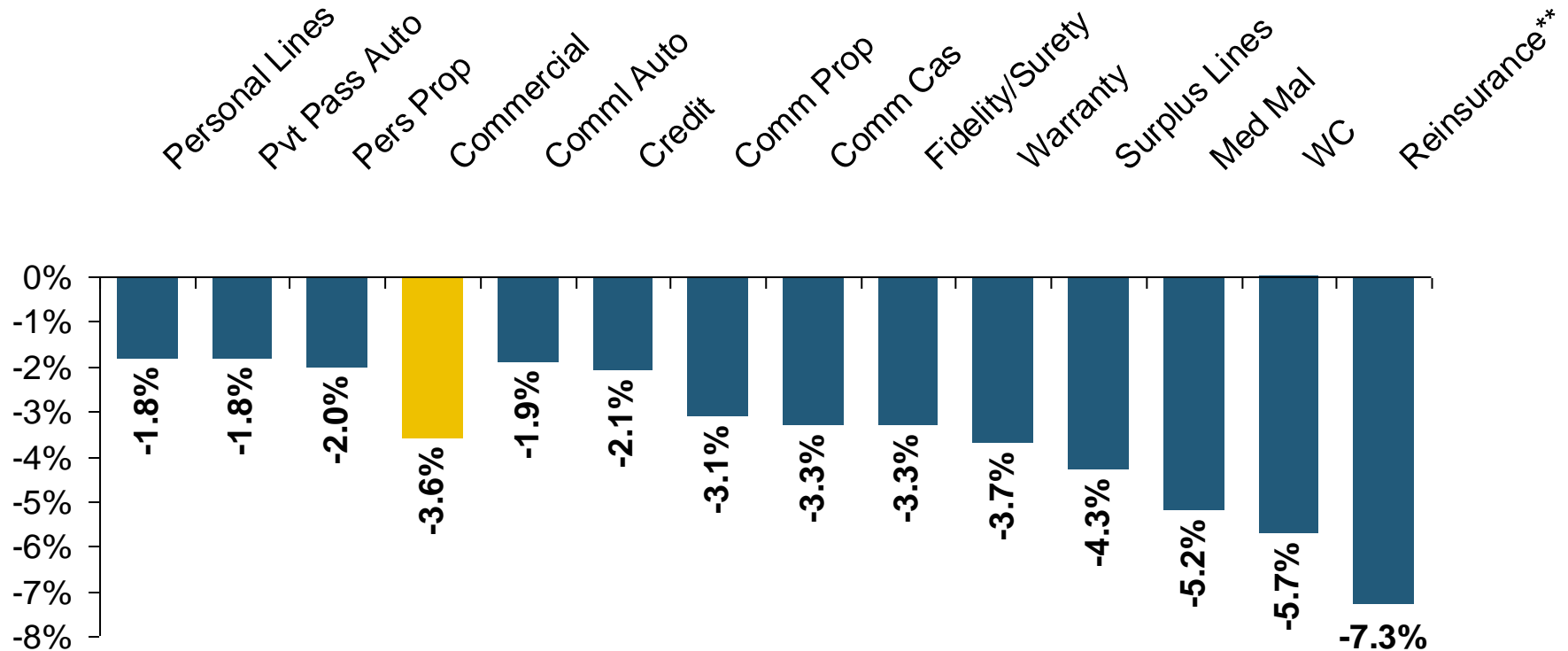
Total Investment Gains Were Flat in 2015 as Investment Income Rose Marginally and Realized Capital Gains Fell Slightly

¹ Investment gains consist primarily of interest, stock dividends and realized capital gains and losses.

* 2005 figure includes special one-time dividend of \$3.2B; 2016 figure is annualized based on actual Q2 2016 figure of \$26.505B.

Sources: ISO, SNL; Insurance Information Institute.

Reduction in Combined Ratio Necessary to Offset 1% Decline in Investment Yield to Maintain Constant ROE, by Line*



Lower Investment Earnings Place a Greater Burden on Underwriting and Pricing Discipline

*Based on 2008 Invested Assets and Earned Premiums

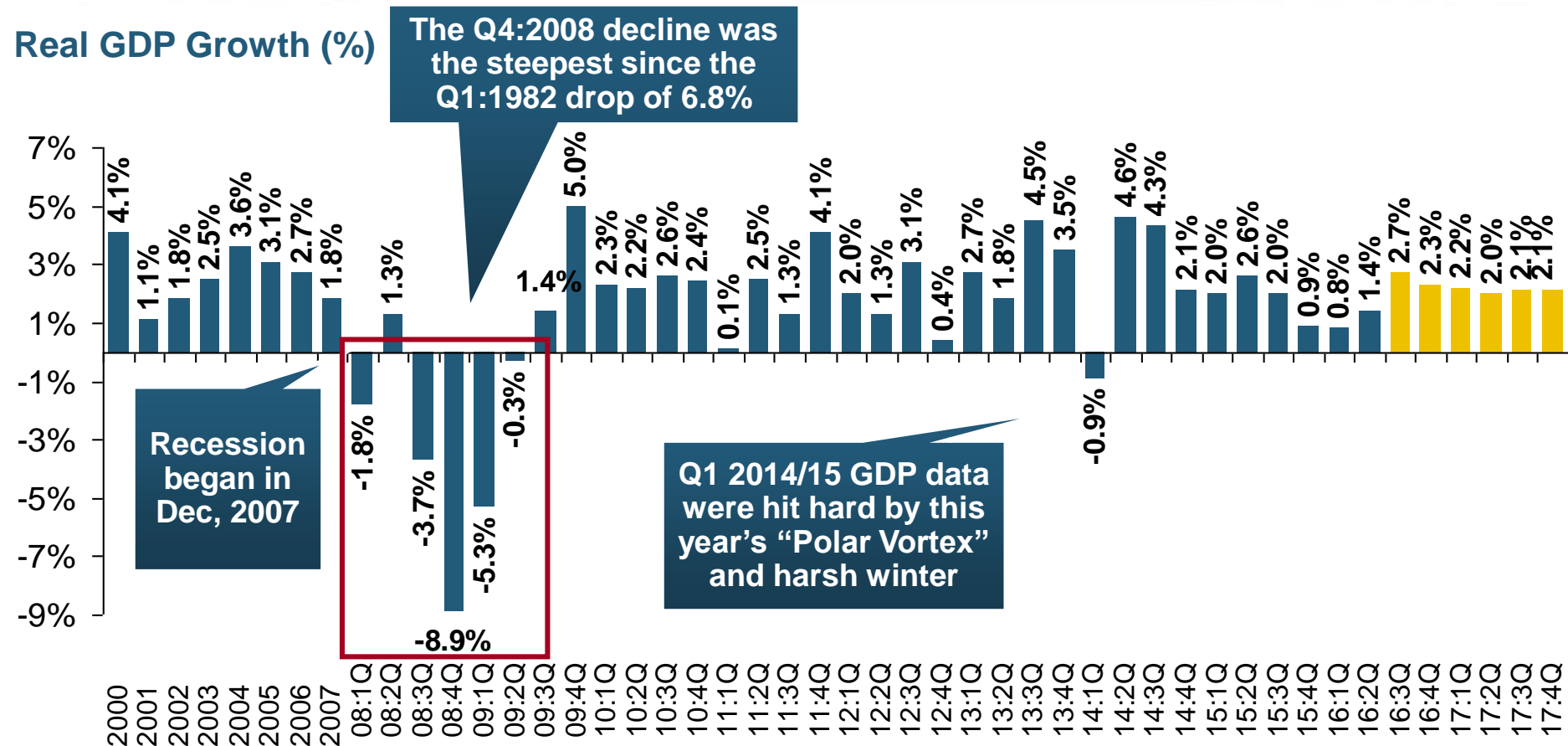
**US domestic reinsurance only

Source: A.M. Best; Insurance Information Institute.

THE ECONOMY

**The Strength of the Economy Will Greatly
Influence Insurer Exposure Base
Across Most Lines**

US Real GDP Growth*



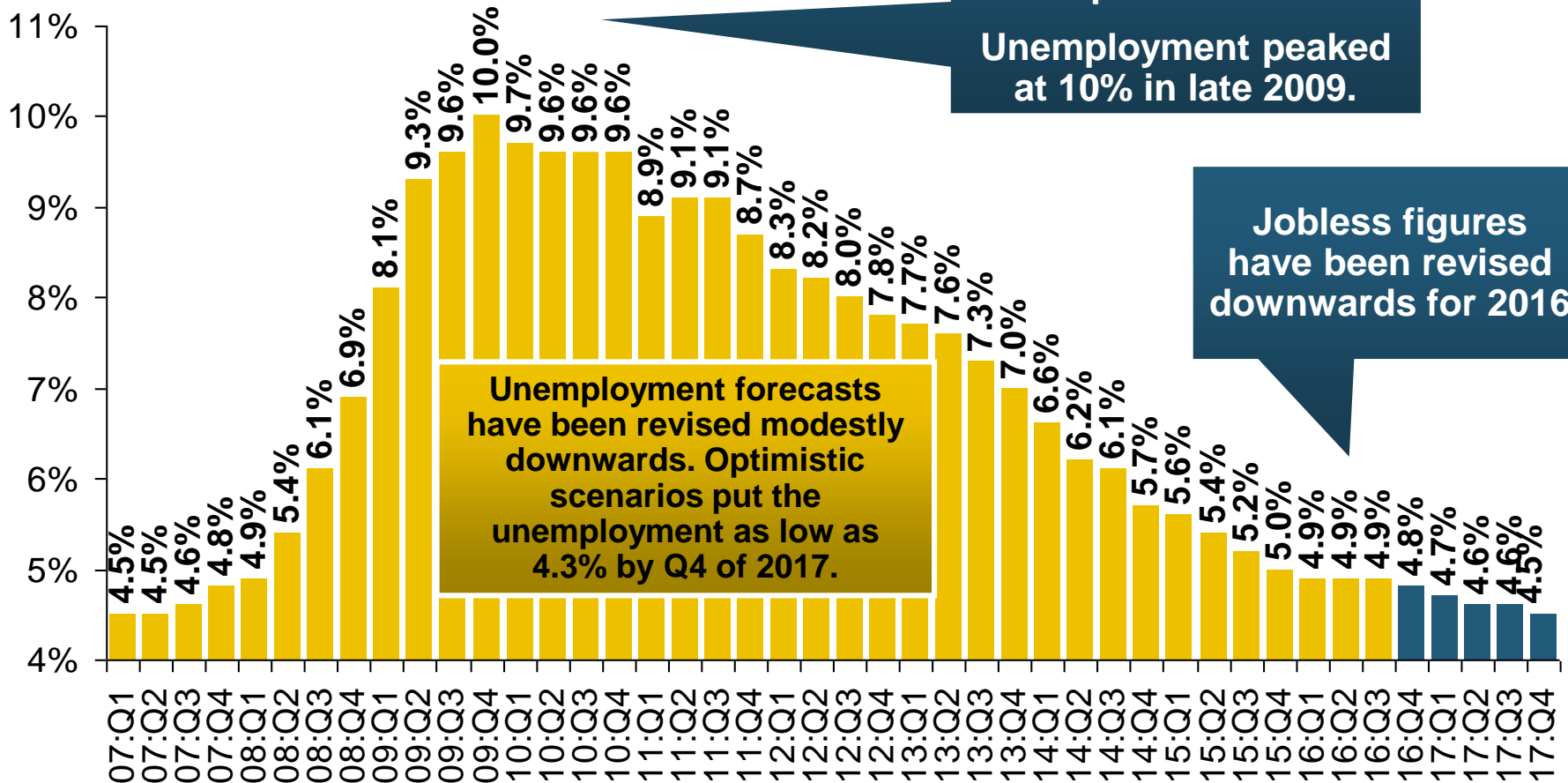
Demand for Insurance Should Increase in 2016 as GDP Growth Continues at a Steady, Albeit Moderate Pace and Gradually Benefits the Economy Broadly

* Estimates/Forecasts from Blue Chip Economic Indicators.

Source: US Department of Commerce, Blue Economic Indicators 10/16; Insurance Information Institute.

US Unemployment Rate Forecast

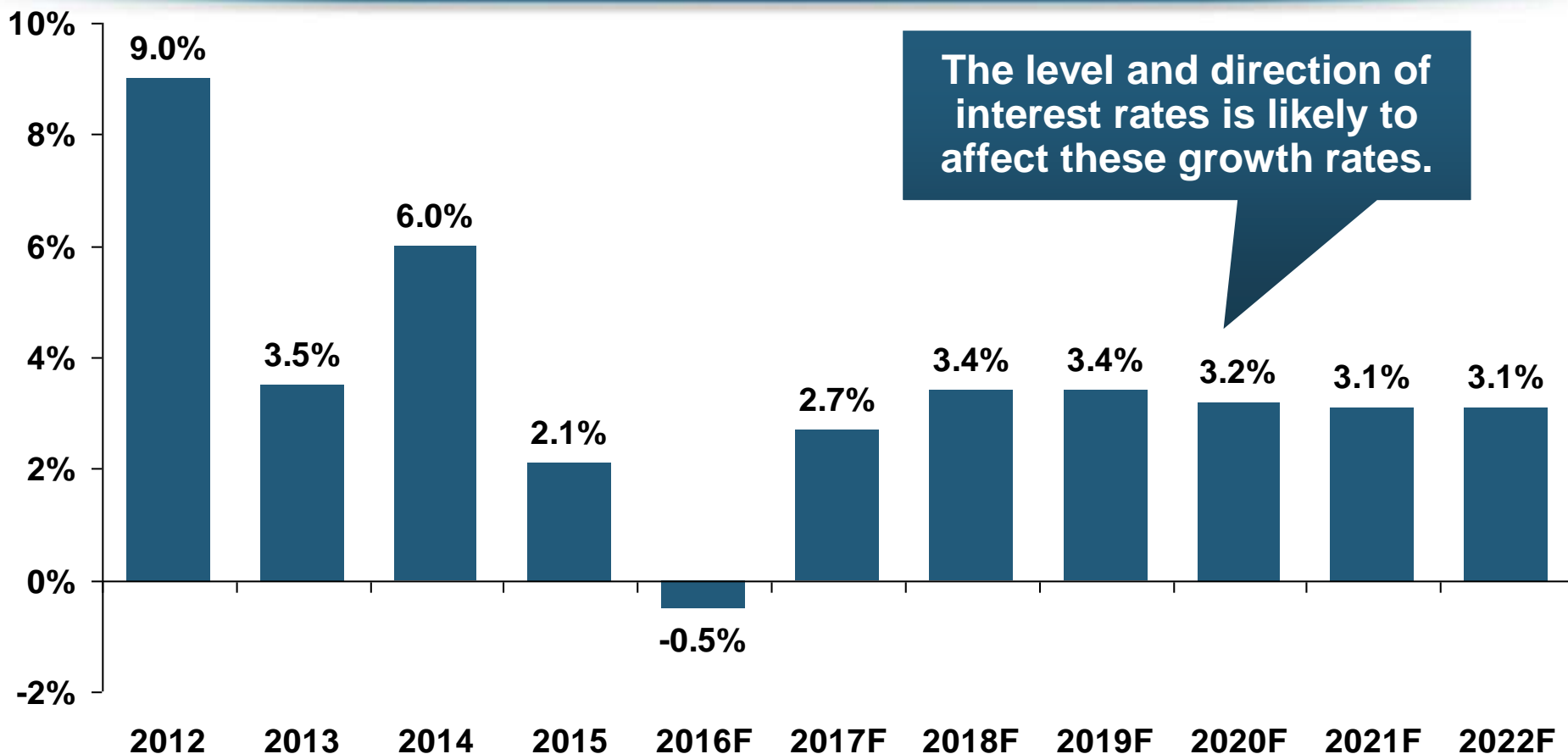
2007:Q1 to 2017:Q4F*



* ■ = actual; ■ = forecasts

Sources: US Bureau of Labor Statistics; Blue Chip Economic Indicators (10/16 edition); Insurance Information Institute.

Continued Business Investment Will Spur Modest Commercial Exposure Growth



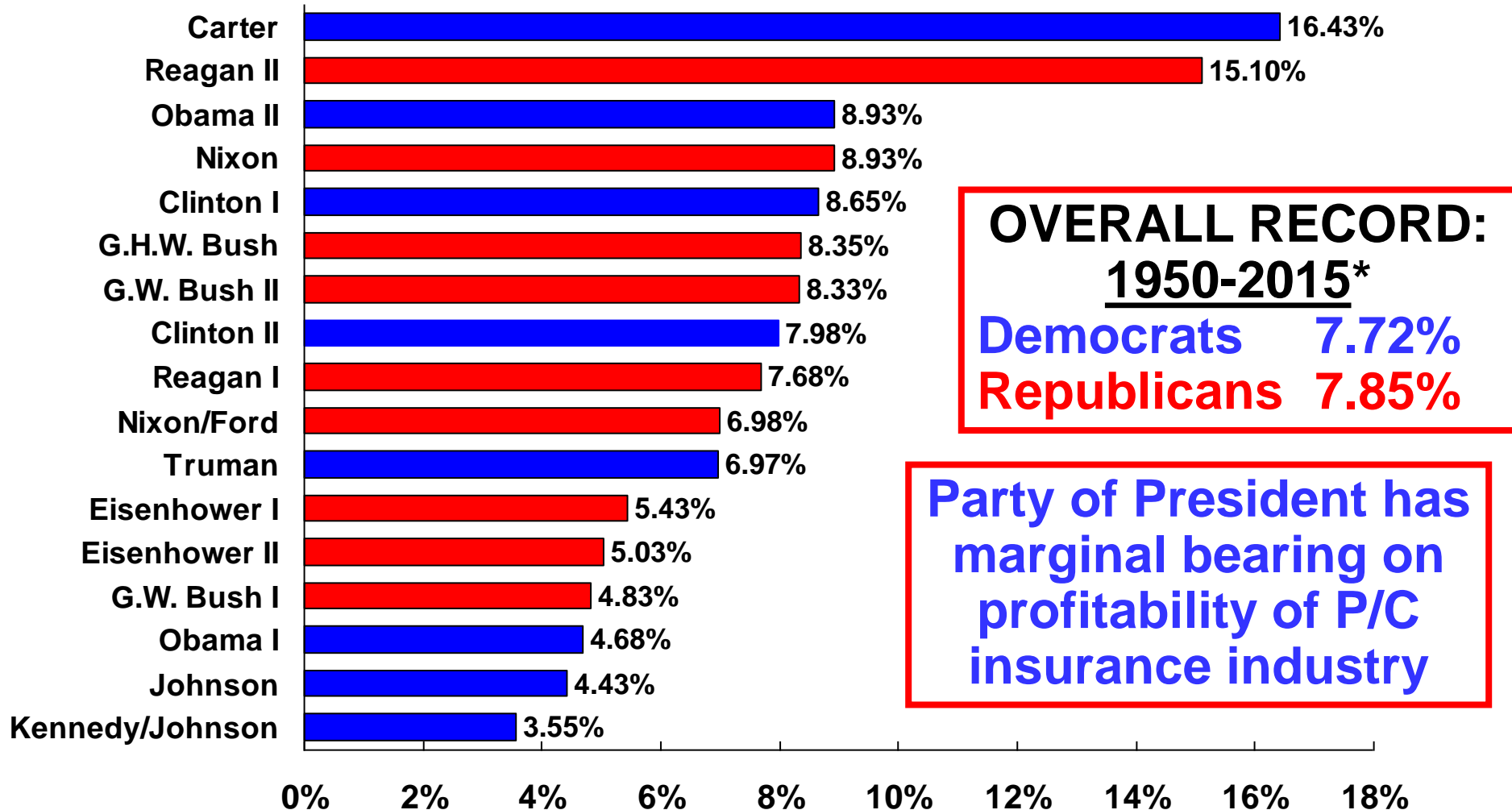
Business investment was a major drag on the economy in 2016 and adversely impacts commercial property and liability insurance exposures. Growth should begin a modest recovery in 2017.

Sources: Blue Chip Economic Indicators, 10/2016 (history and forecasts for 2016 and 2017, 10/2016 for forecasts for 2018-2022; Insurance Information Institute.

Profitability & Politics

***How Is Profitability Affected by
the President's Political Party?***

P/C Insurance Industry ROE by Presidential Administration, 1950-2015*



*Truman administration ROE of 6.97% based on 3 years only, 1950-52;.

Source: Insurance Information Institute

Trump vs. Clinton: Issues that Matter to P/C Insurers

Issue	Trump	Clinton
Economy	<i>Supply Side-Like Philosophy:</i> Lower taxes→Faster real GDP growth; Deficits likely grow as tax cuts are combined with targeted increased spending on Homeland Security, Defense, etc.	<i>Keynesian Philosophy:</i> More government spending on infrastructure, education, social services; Deficits likely increase as tax increases likely difficult to pass
Interest Rates	May trend higher with larger deficits; Shift from monetary policy to fiscal focus (tax cuts, government spending)	Status quo at the Fed; Net impact on interest rates unclear
Taxes	Favors lower tax rates for corporate and personal income tax rates; Tax code overhaul?	Unlikely to reduce taxes or embark on major overhaul of tax code
International Trade	Protectionist Tendencies (appeal primarily to manufacturing sector)	Has criticized Trans-Pacific Partnership but is a realist on international matters
Tort System	Doesn't like trial lawyers but seems to like filing lawsuits	Status Quo
Health Care	ACA should be repealed & replaced	Incremental Change

Auto & Home Insurance: State of the Personal Lines Market

**Auto Frequency and Severity Are an
Immediate Challenge**

***Dearth of Major CATs (Until Recently),
Pricing Discipline Has Helped Home***

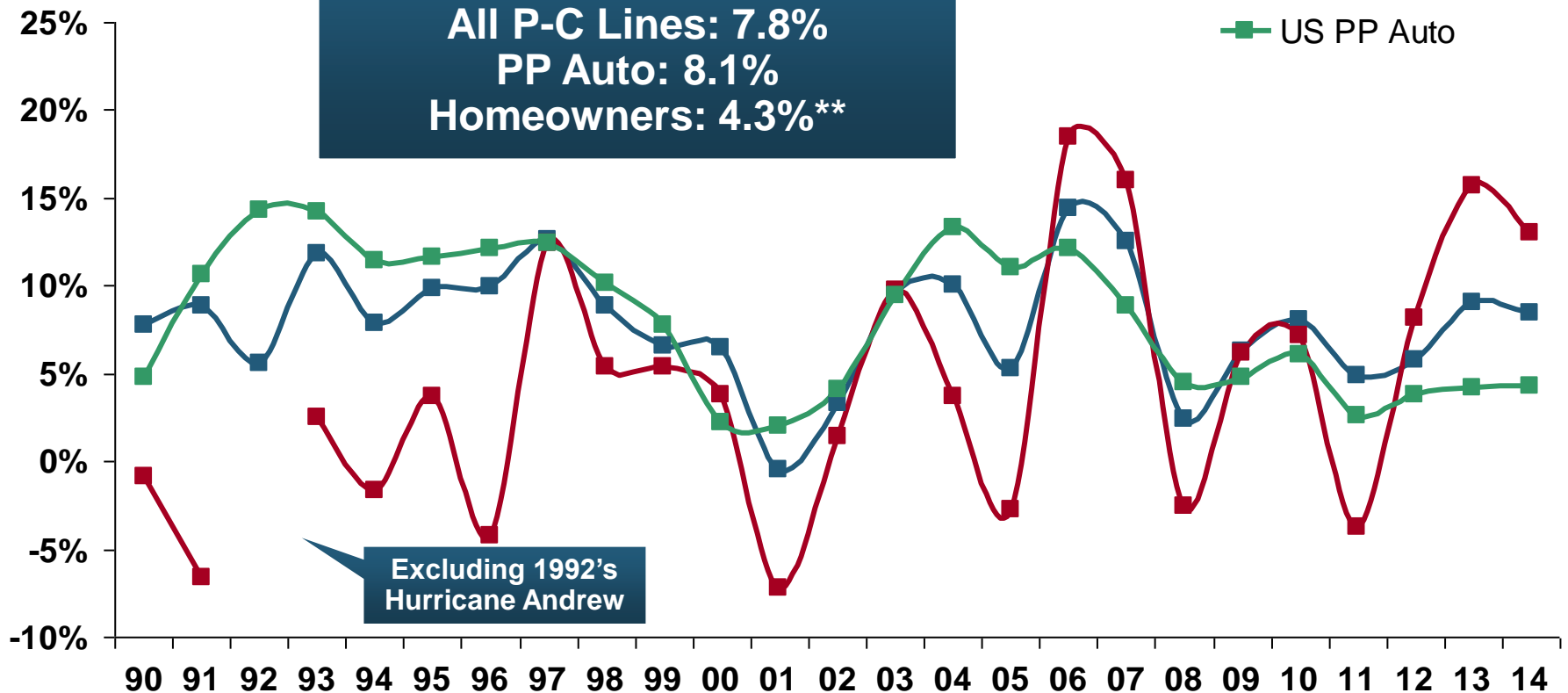
Return on Net Worth: All P-C Lines vs. Homeowners & Pvt. Pass. Auto, 1990-2014*

(Percent)

Average RNW: 1990-2013*

All P-C Lines: 7.8%
PP Auto: 8.1%
Homeowners: 4.3%**

■ US All Lines
■ US Home
■ US PP Auto



Pvt.Pass. Auto Has Consistently Outperformed the P-C Industry as a Whole. Homeowners Volatility is Associated Primarily With Coastal Exposure Issues

*Latest available.

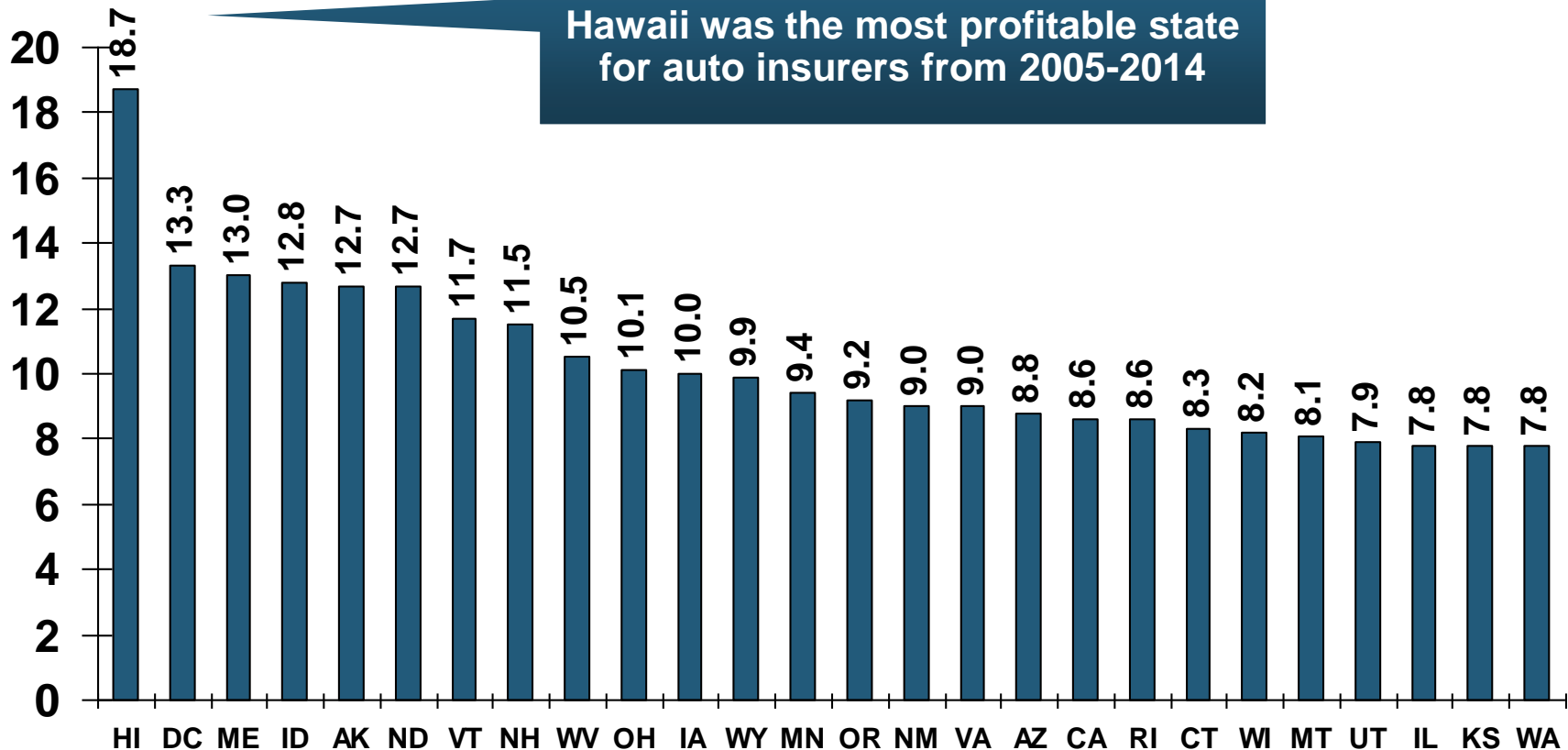
**Excludes 1992, the year of Hurricane Andrew. If 1992 is included the resulting homeowners RNW is 1.9%

Sources: NAIC; Insurance Information Institute.

RNW Pvt. Passenger Auto, 2005-2014

Average: Highest 25 States

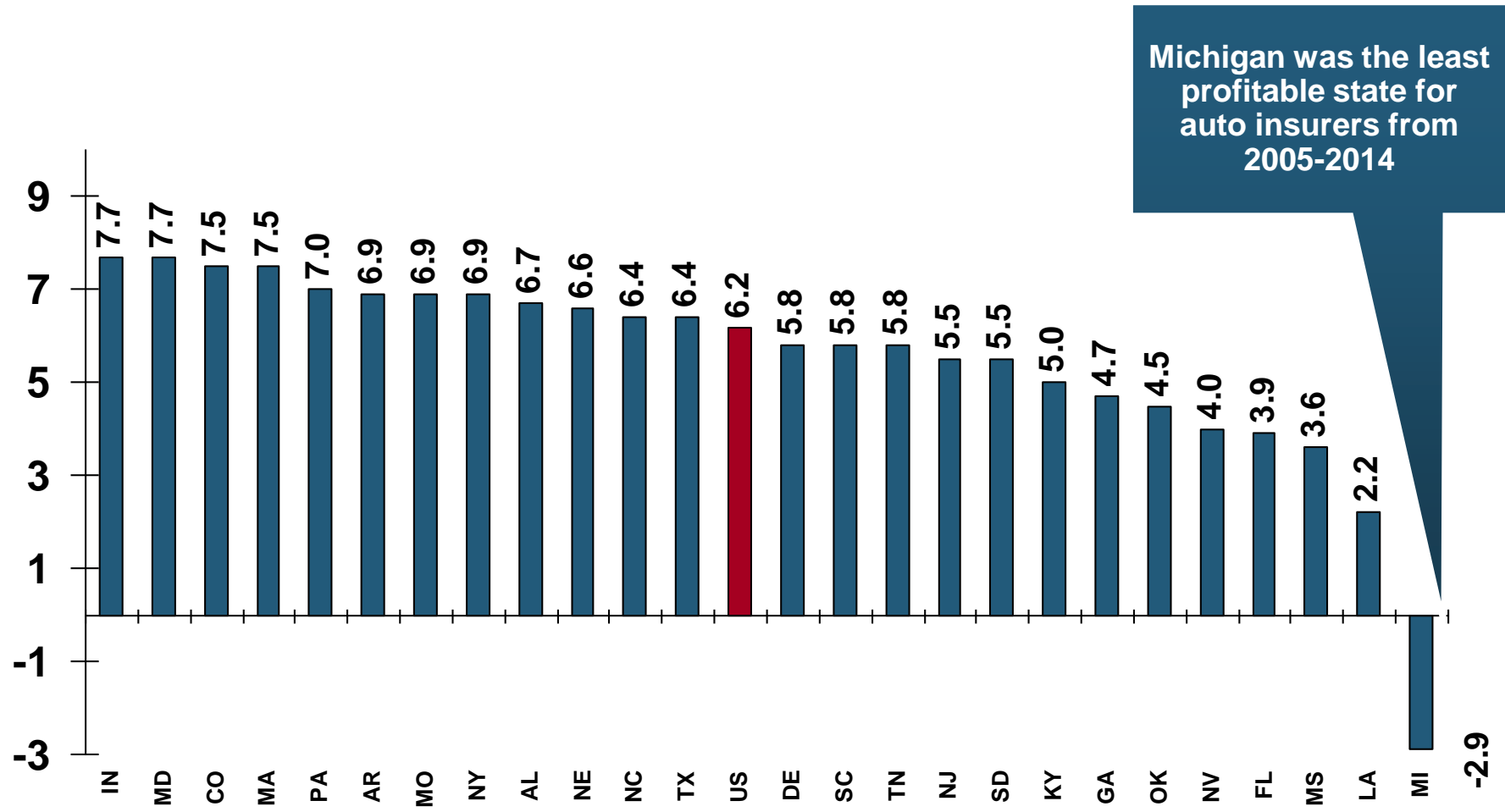
(Percent)



Sources: NAIC; Insurance Information Institute

RNW Pvt. Passenger Auto, 2005-2014 Average: Lowest 25 States

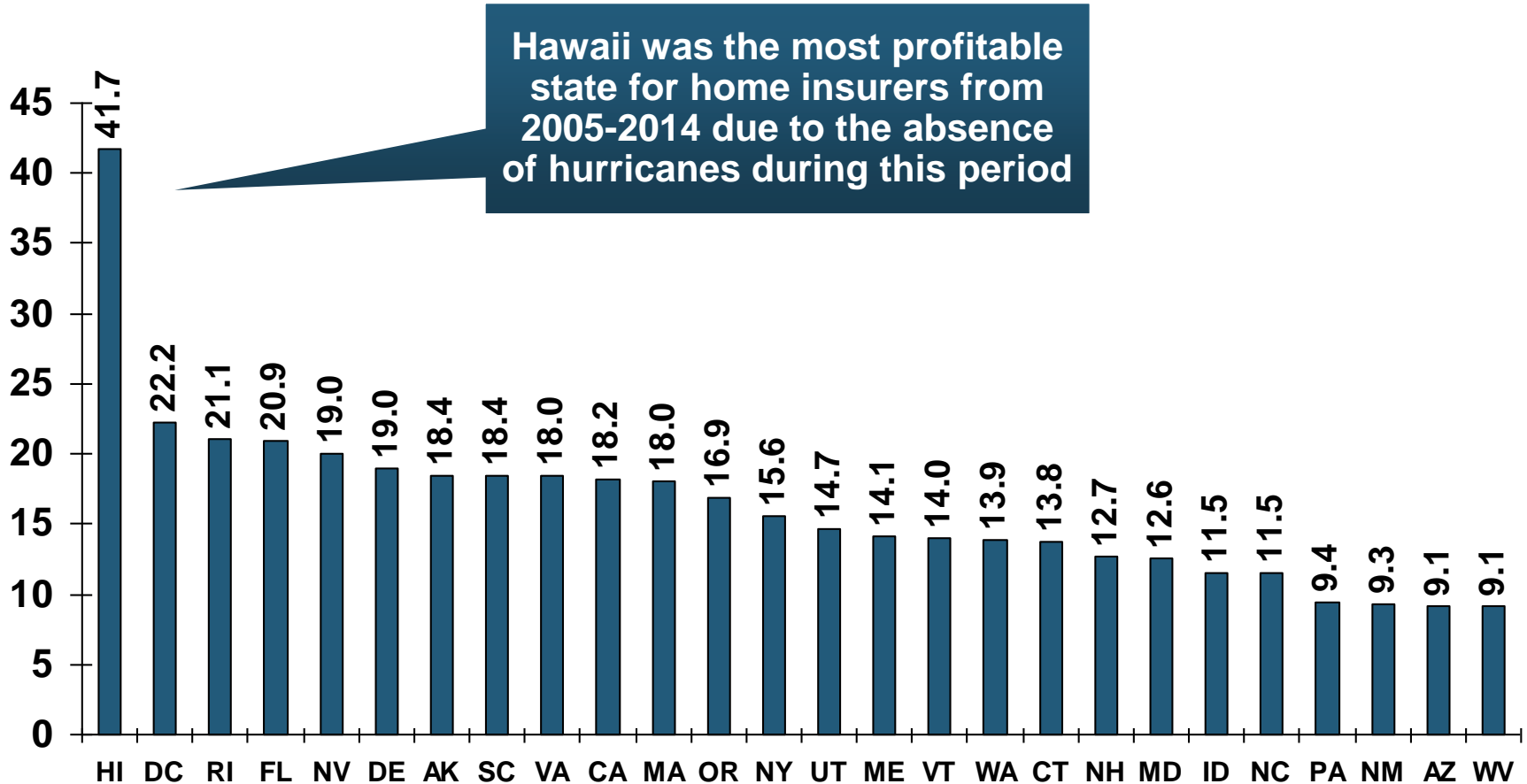
(Percent)



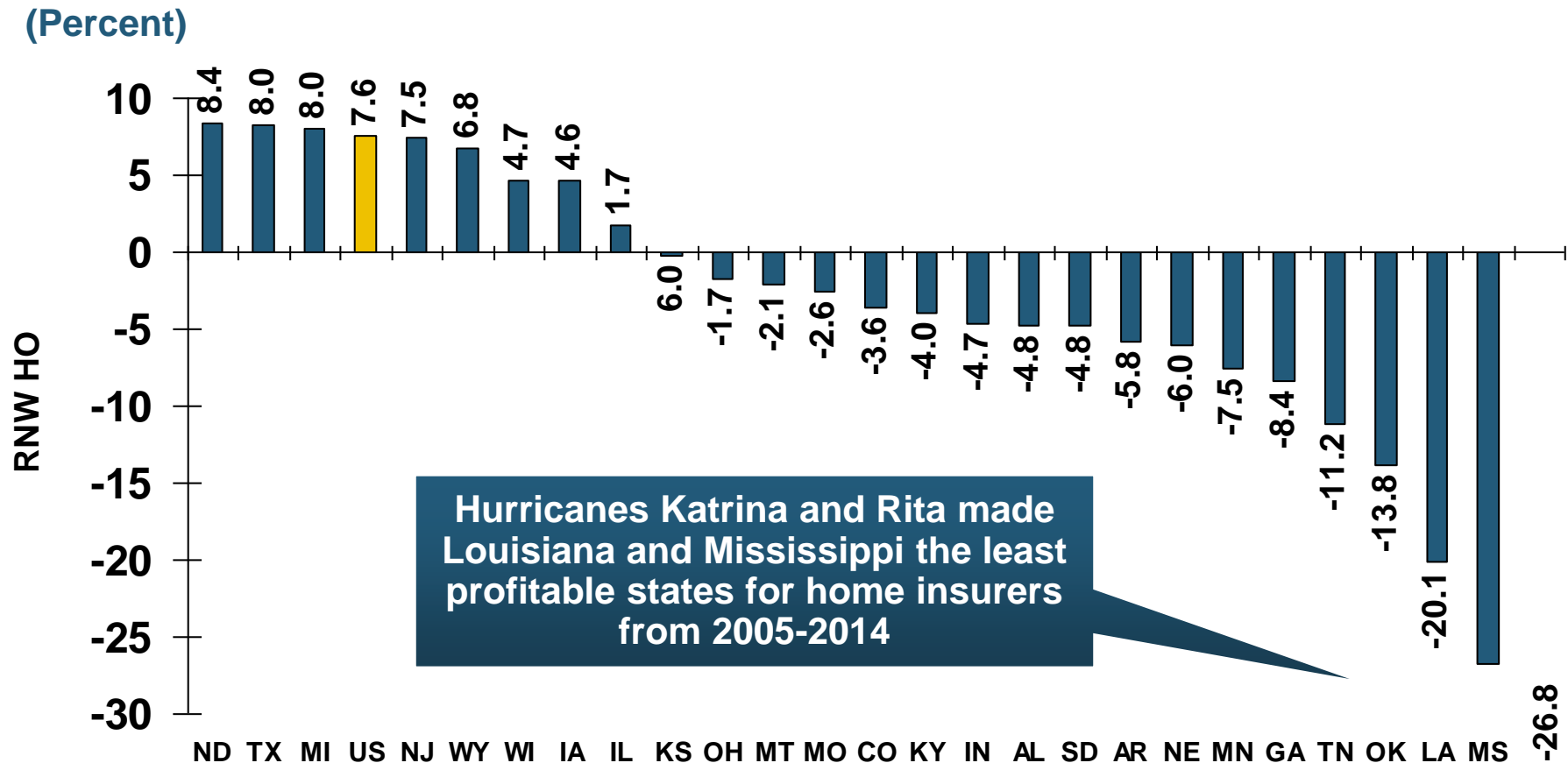
Sources: NAIC; Insurance Information Institute

RNW Homeowners Insurance, 2005-2014 Average: Highest 25 States

(Percent)



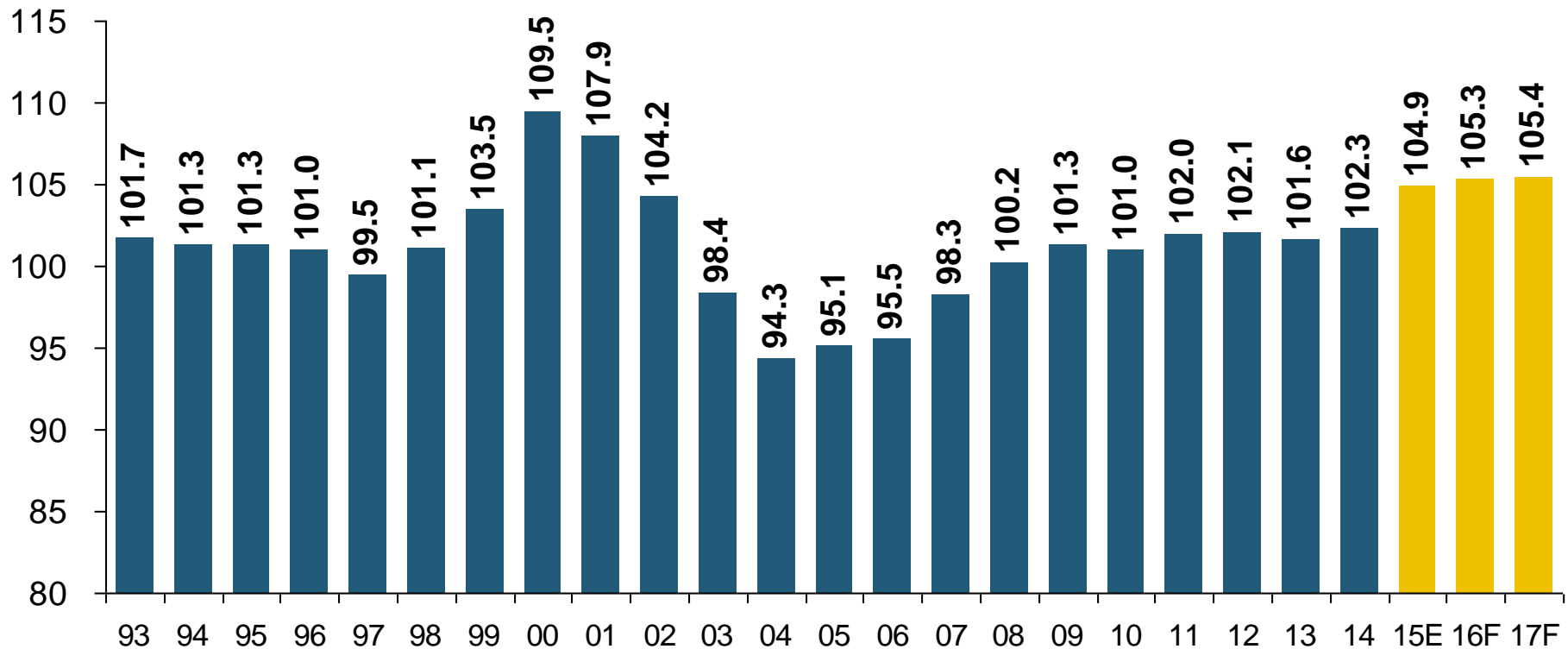
RNW Homeowners Insurance, 2005-2014 Average: Lowest 25 States



Personal Lines Underwriting Performance

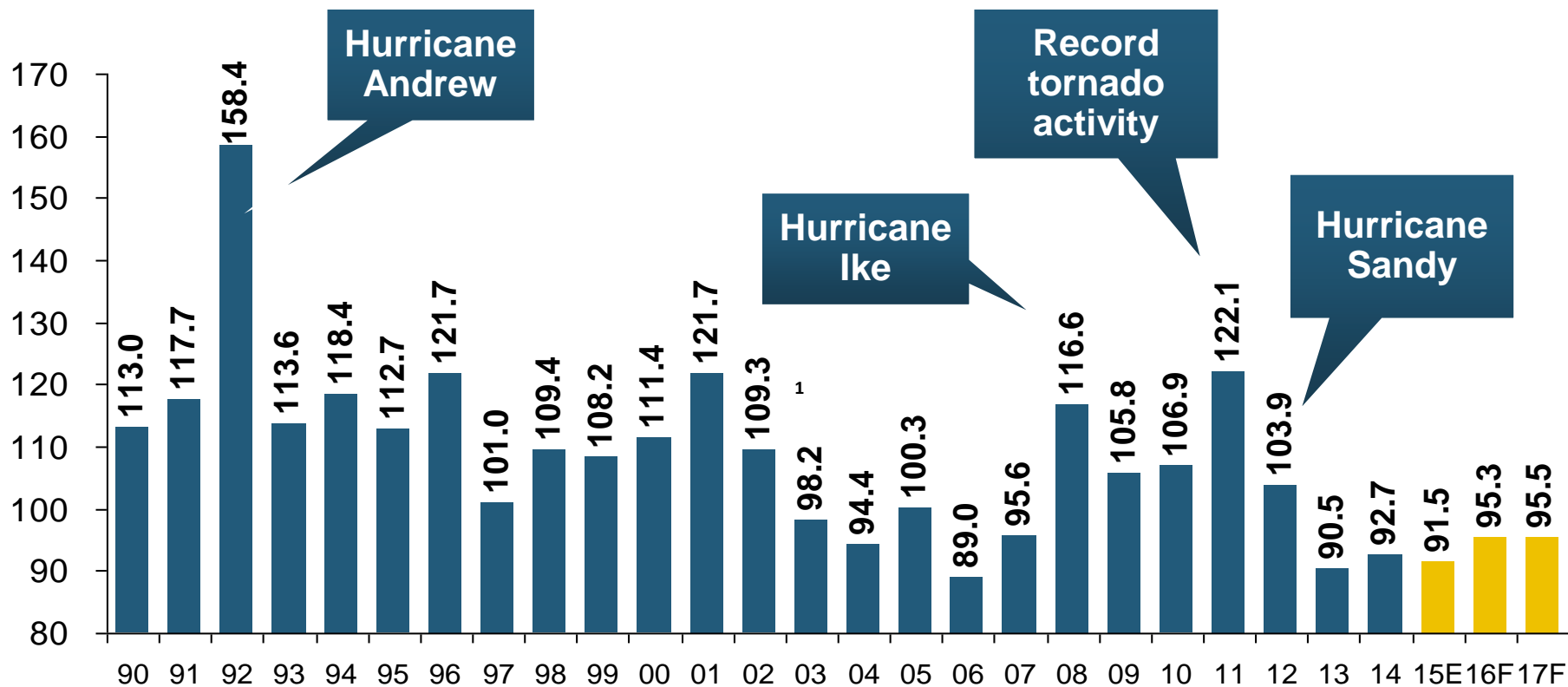
***Auto, Home Underwriting
Performance Exhibit Periods of
Both Stability and Volatility***

Private Passenger Auto Combined Ratio: 1993–2017F



Private Passenger Auto Underwriting Performance Is Showing the Strains of Rising Frequency (and Severity) Trends in Many States

Homeowners Insurance Combined Ratio: 1990–2017F



Homeowners Performance Has Improved Markedly Since the 2011/12's Large Cat Losses. Extreme Regional Variation Can Be Expected Due to Local Catastrophe Loss Activity. Results in 2016 Will Be Impacted by Severe Spring Weather

Loss Ratio Comparisons

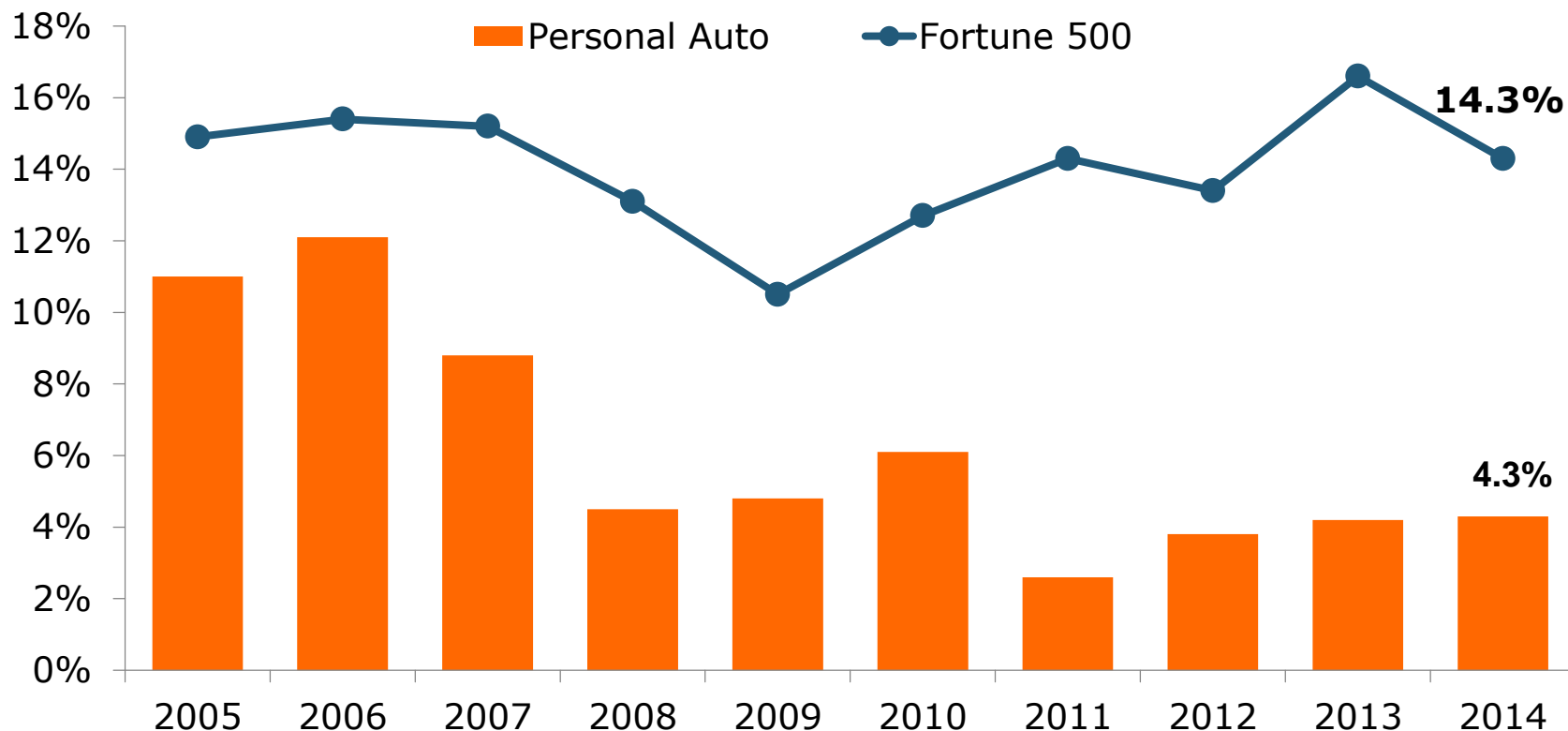
***Auto, Home Exhibit Wide Variety
Across States***

Claim Trends in Private Passenger Auto Insurance

**Rising Frequencies and Severities
in Many Coverages**

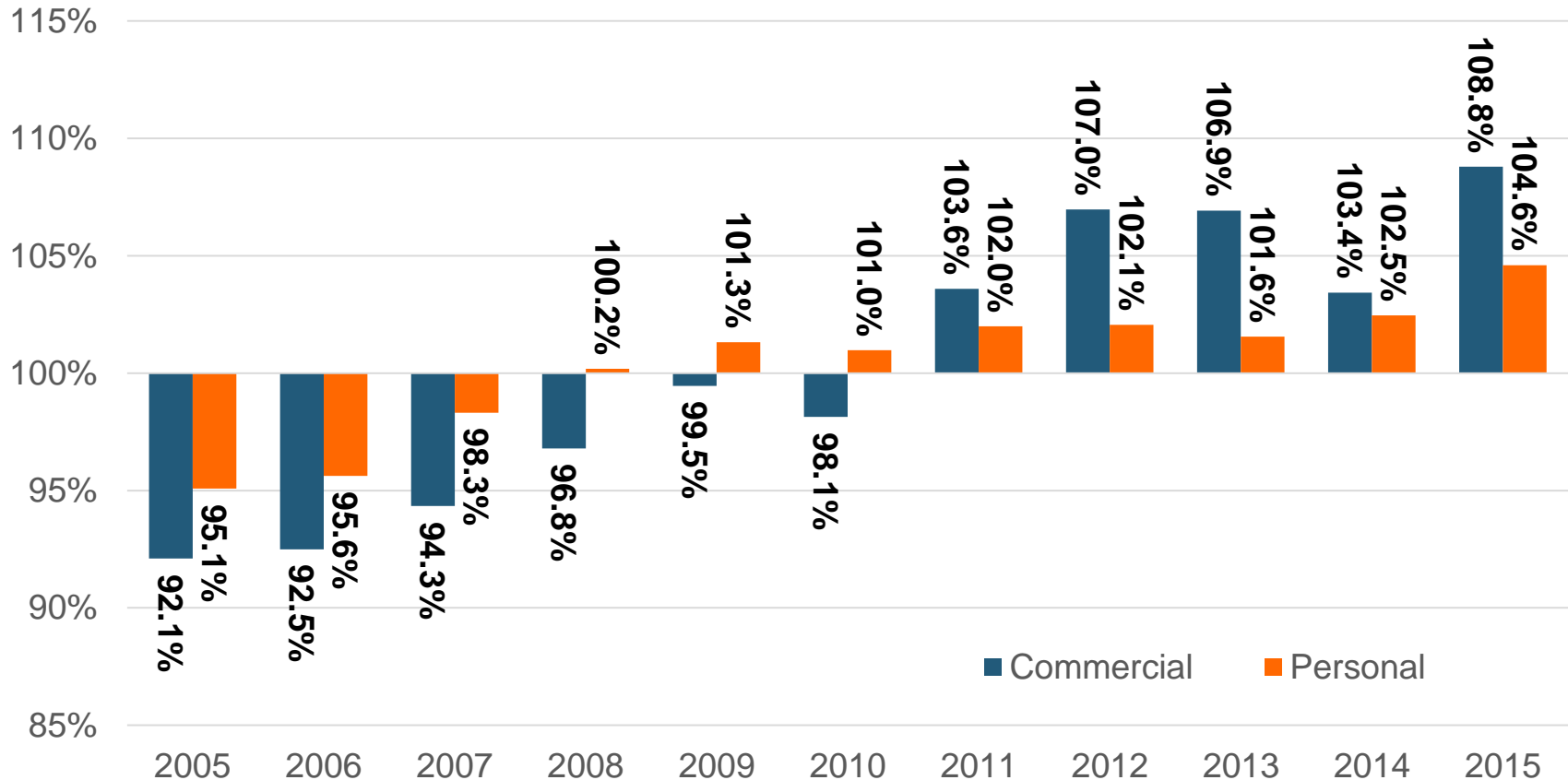
Will that Pattern Be Sustained?

Return on Net Worth: Personal Auto, 2005–2014



Auto Insurance Profitability Has Been Stuck at Low Levels.

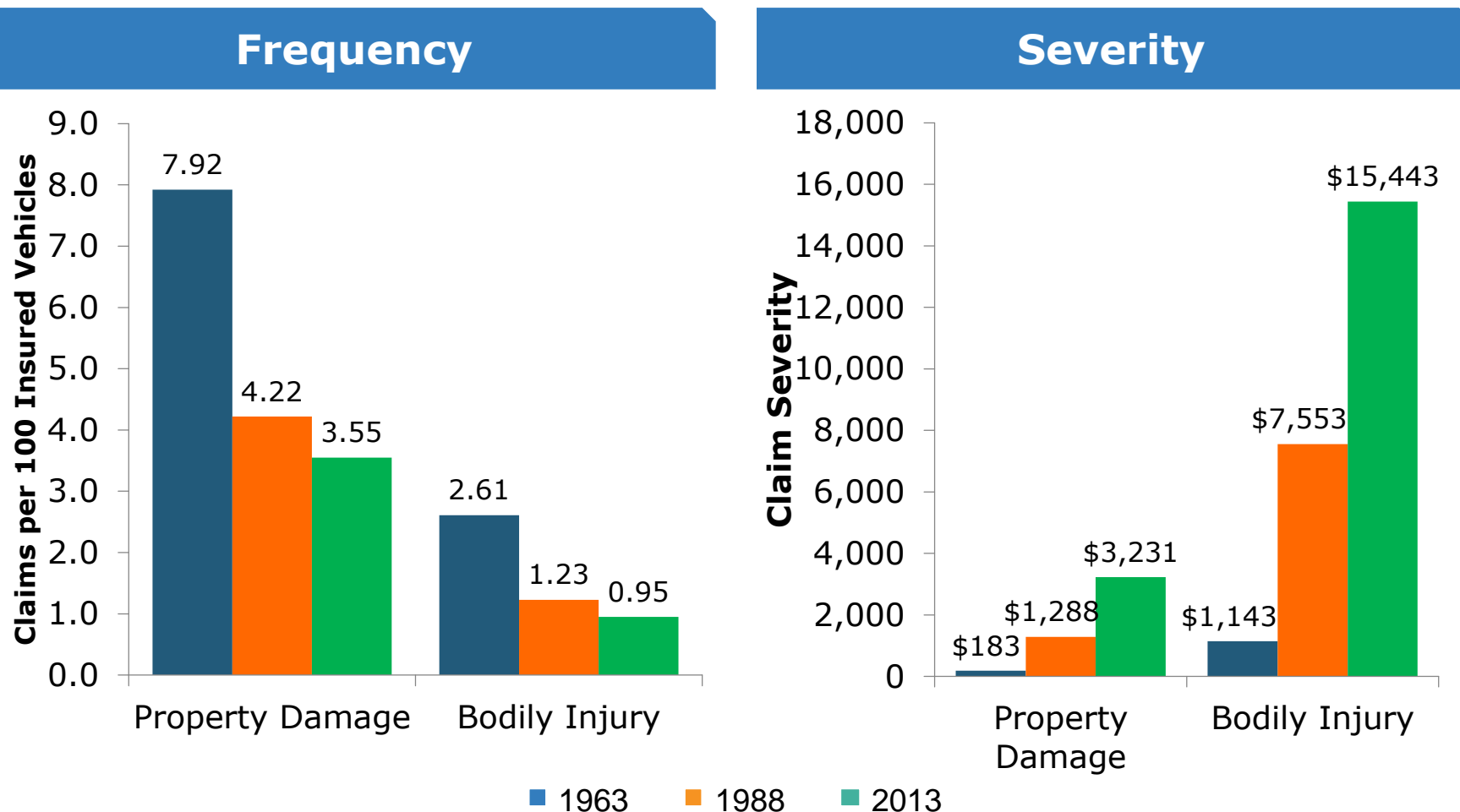
Auto Insurance Net Combined Ratios, Yearly, 2005-2015



**Loss Ratios Have Been Rising for A Decade.
2015 Return on Net Worth Is Likely Close to Zero or Negative.**

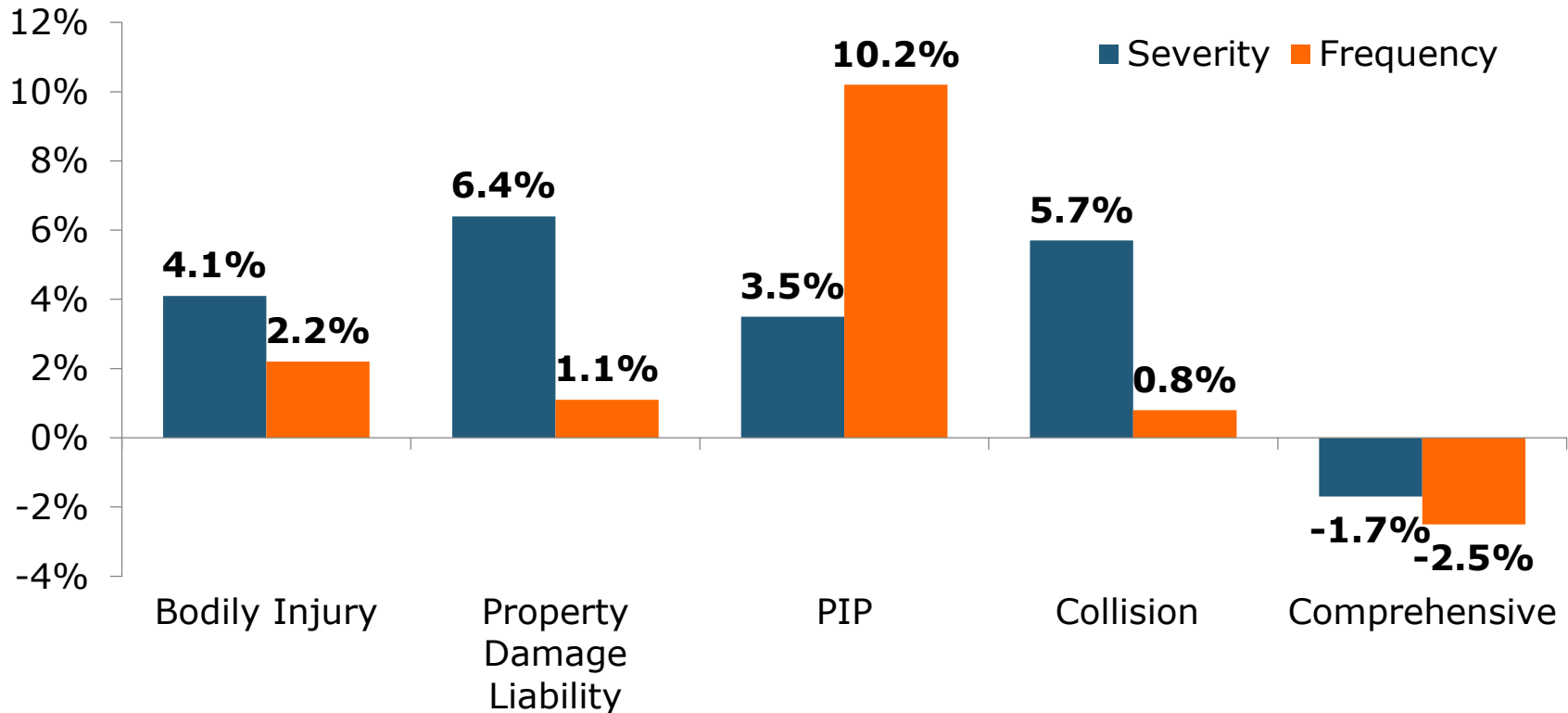
A Half Century of Auto Insurance: Frequency vs. Severity

In the Long Run, Frequency Falls. Severity Increases.



Why Personal Auto Loss Ratios are Rising: Severity & Frequency by Coverage, 2015 vs. 2014

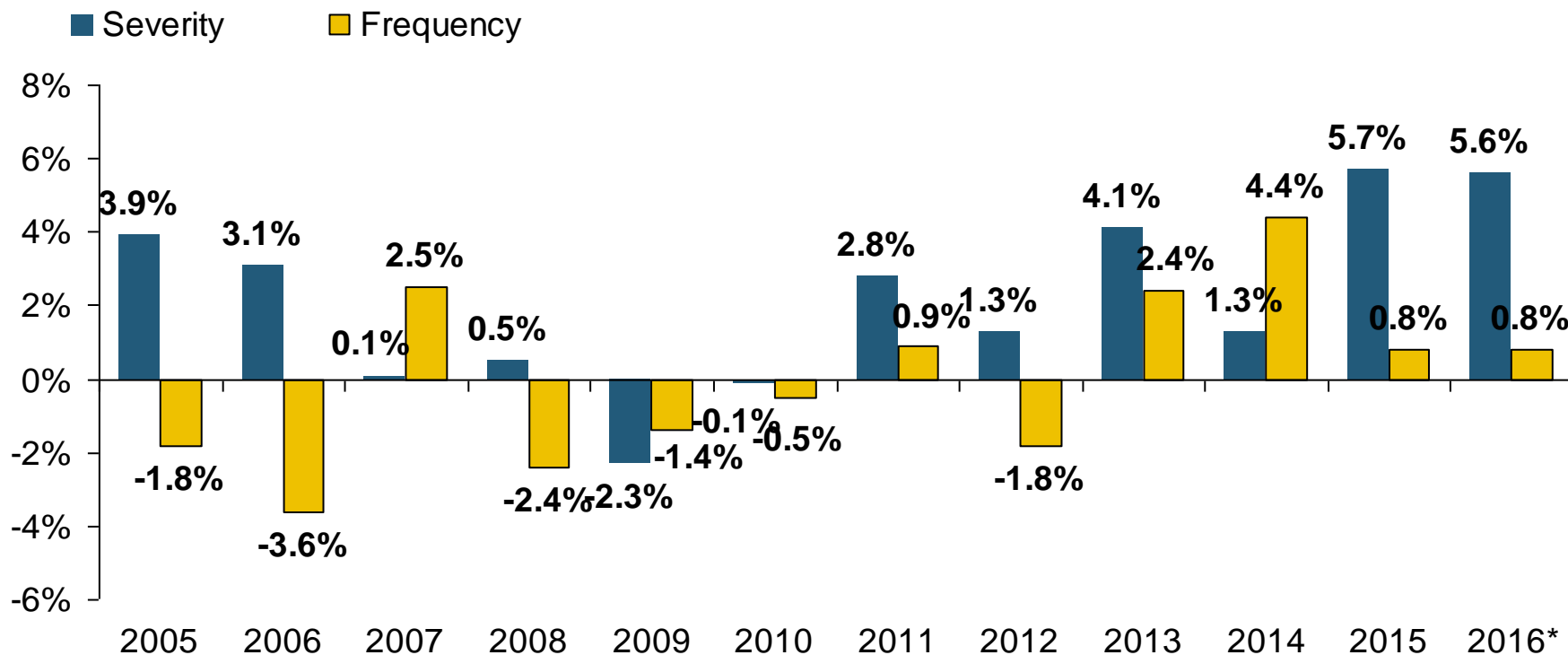
Annual Change,
2015 Over 2014



Across All Personal Coverage Types (Except Comprehensive) in 2015, Frequency and Severity Rose. This Pattern is Likely to Continue in 2016.

Collision Coverage: Severity & Frequency Trends Are Both Higher in 2016

Annual Change, 2005 through 2016*



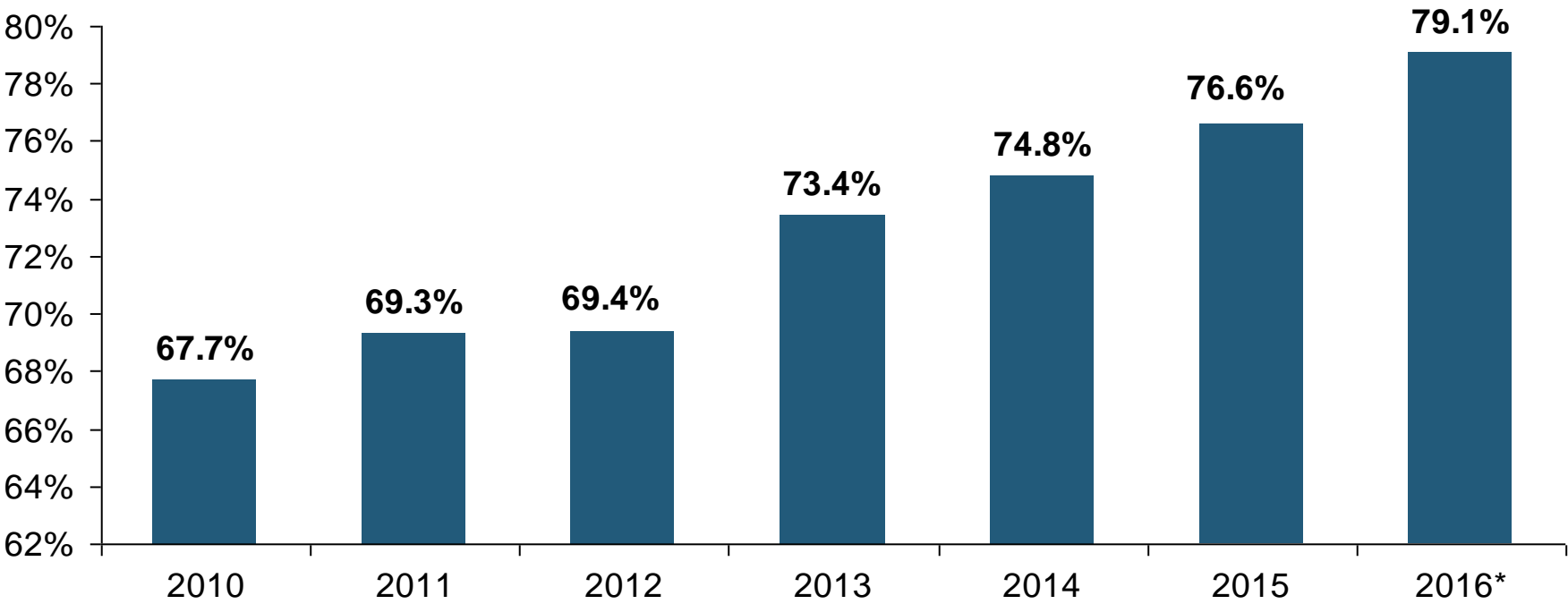
The Recession, High Fuel Prices Helped Temper Frequency and Severity, But this Trend Has Clearly Reversed, Consistent with Experience from Past Recoveries

*Four quarters ending with 2016 Q1.

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

Collision Loss Ratio Trending Upward: Private Passenger Auto, 2010 – 2016*

Loss Ratio



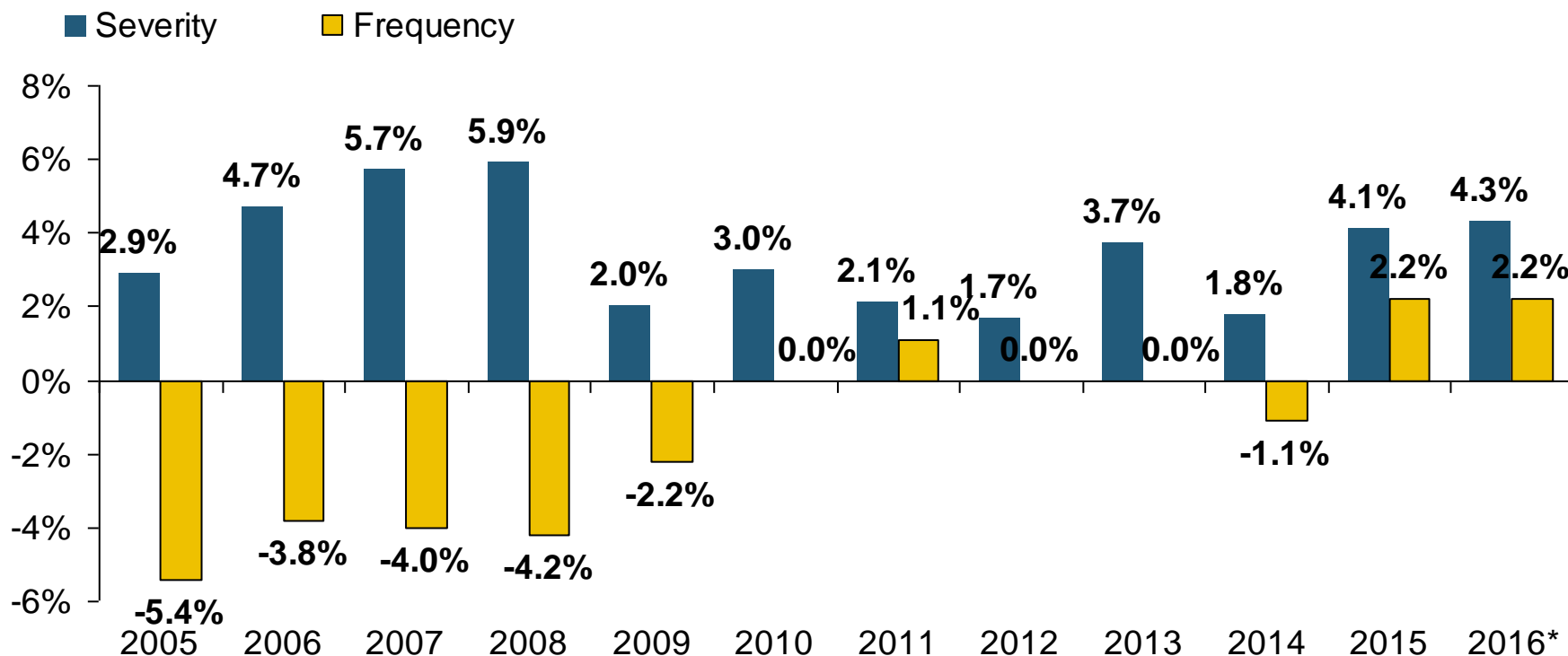
Collision Loss Ratios are Trending Steadily Upward

*2016 figure is for Q1.

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

Bodily Injury: Severity Trend Is Up, Frequency Decline Has Ended—Rising?

Annual Change, 2005 through 2016*



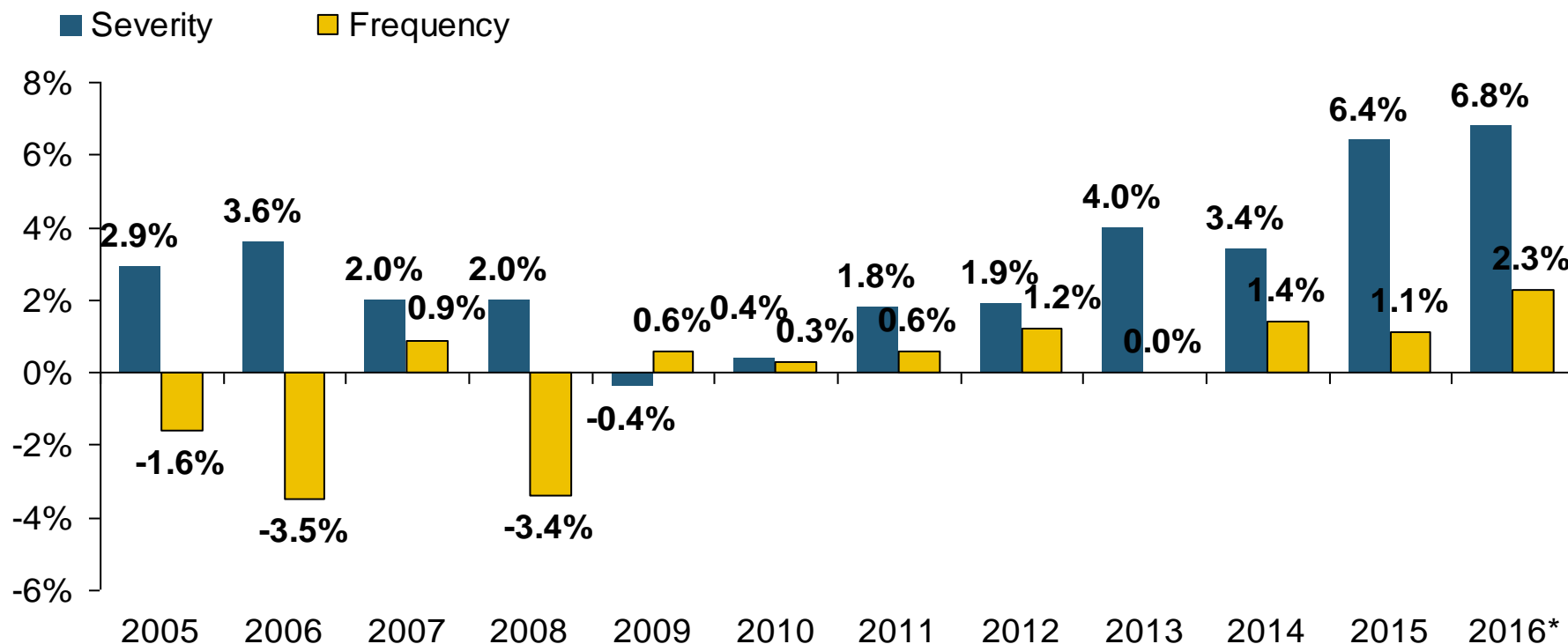
Cost Pressures Will Increase if BI Frequency and Severity Trends Persist

*2016 figure is for Q1.

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

Property Damage Liability: Severity and Frequency Are Up

Annual Change, 2005 through 2016*



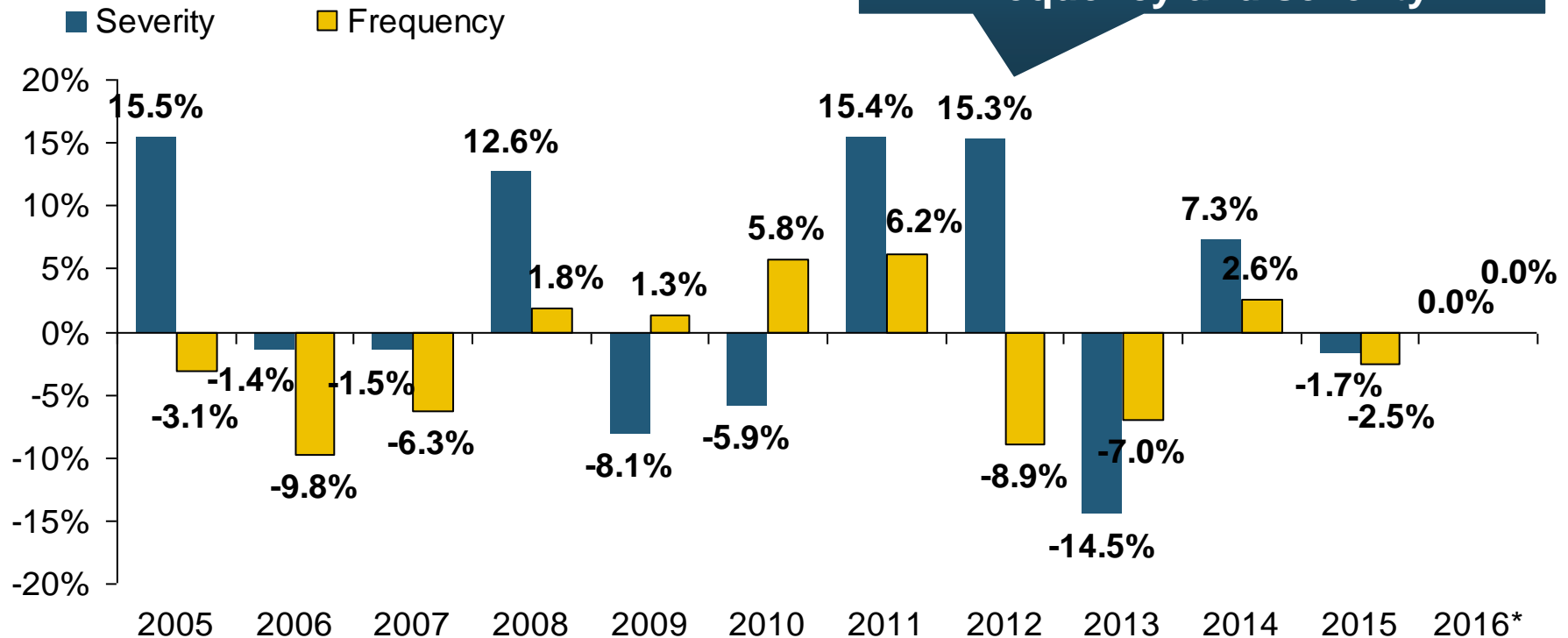
Severity/Frequency Trends Have Been Volatile, But Rising Severity since 2011 Is a Concern

*2016 figure is for Q1.

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

Comprehensive Coverage: Frequency and Severity Trends Are Volatile

Annual Change, 2005 through 2016*



Weather Creates Volatility for Comprehensive Coverage

*2016 figure is for Q1.

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

A Few Factors Driving Adverse Private Passenger Auto Loss Trends

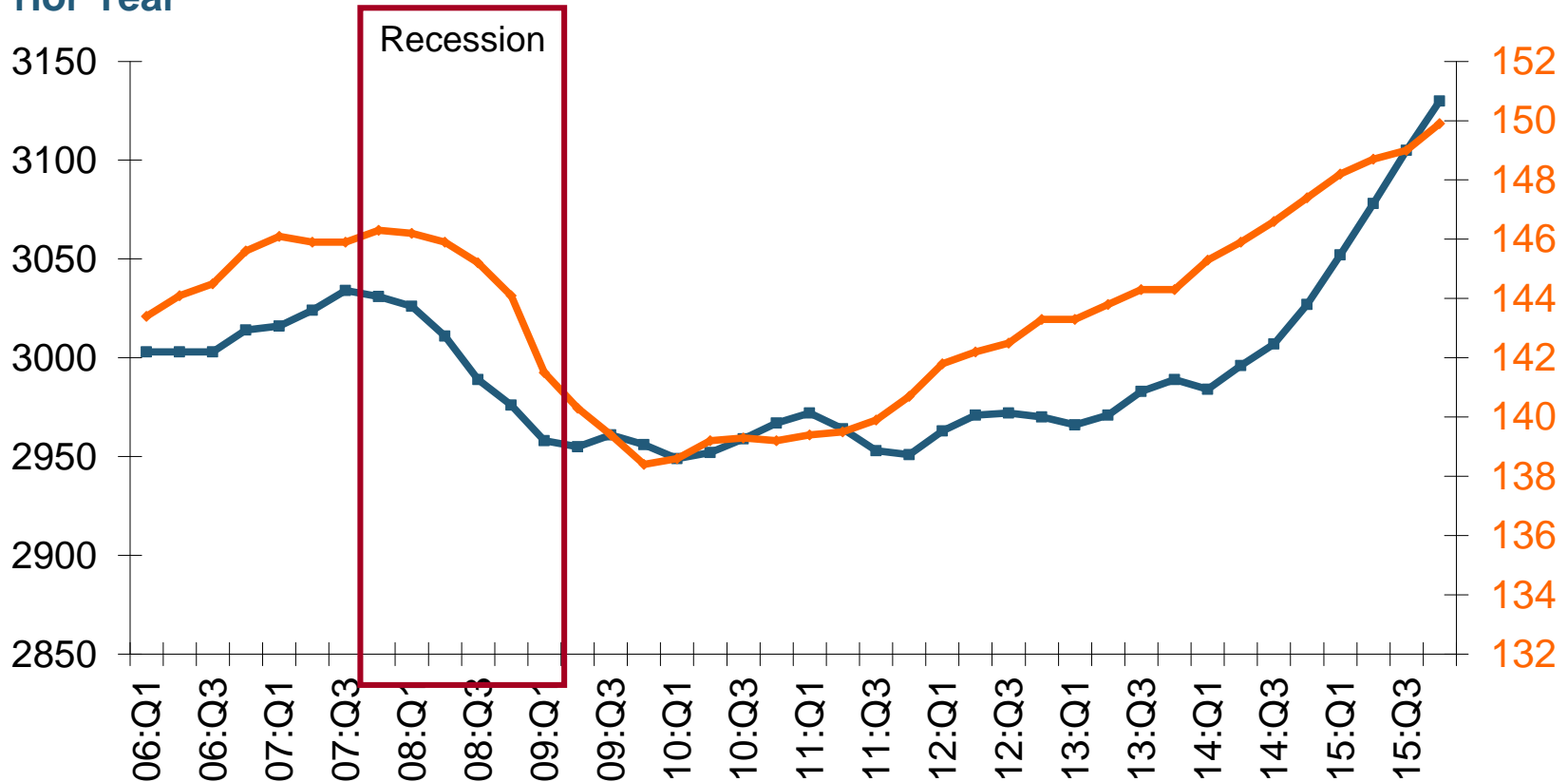
More People Driving, Lower Gas Prices, Higher Speed Limits...

Why Are People Driving More Miles? Jobs? 2006 - 2015

Billions of
Miles Driven
in Prior Year

— Miles Driven (left axis) — # Employed

Millions
Employed



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

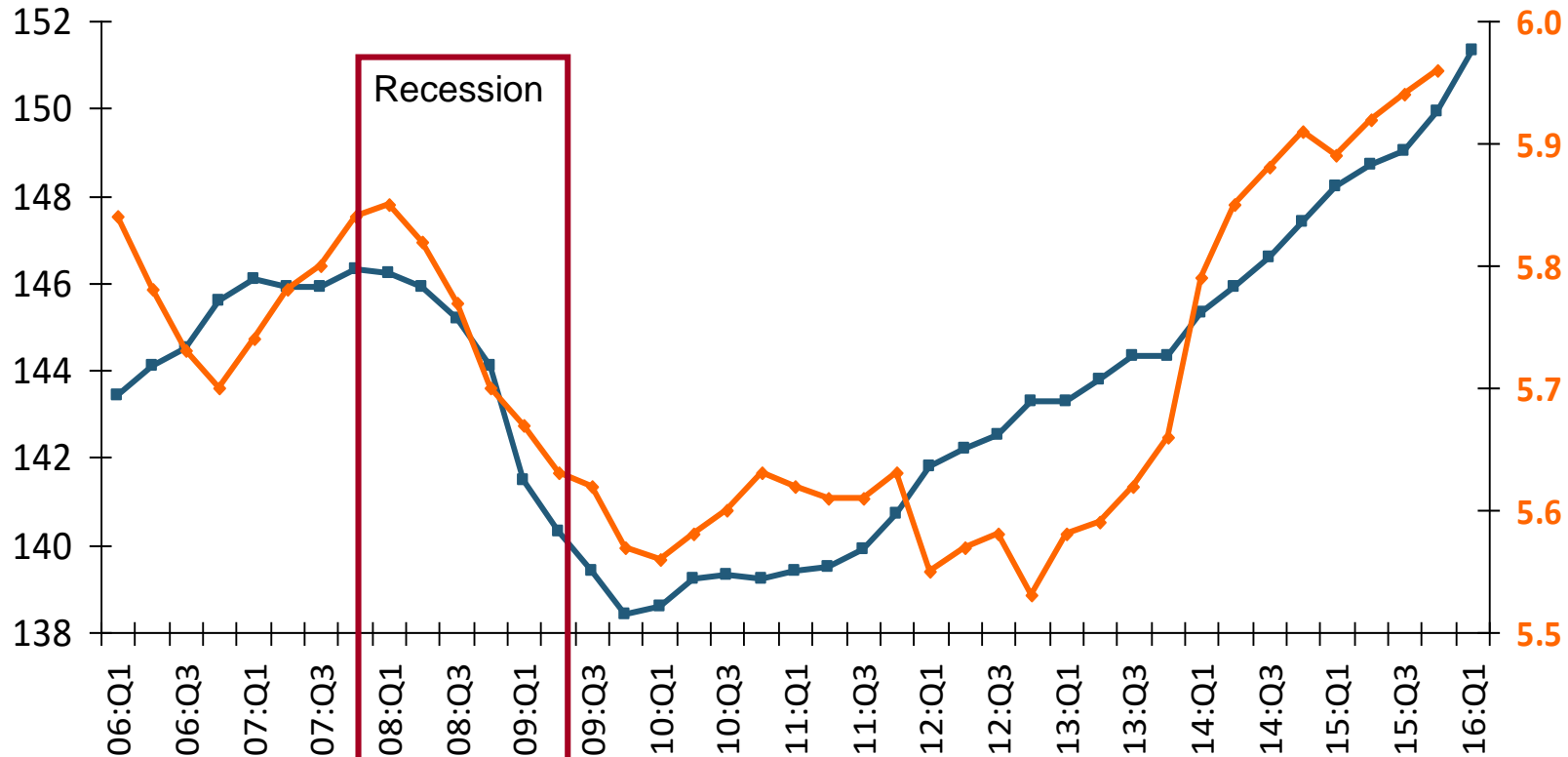
Sources: Federal Highway Administration (http://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm); Seasonally Adjusted Employed from Bureau of Labor Statistics; Insurance Institute for Highway Safety; Insurance Information Institute.

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

Number
Employed,
Millions

Number Employed (left scale) Collision Claim Frequency (right scale)

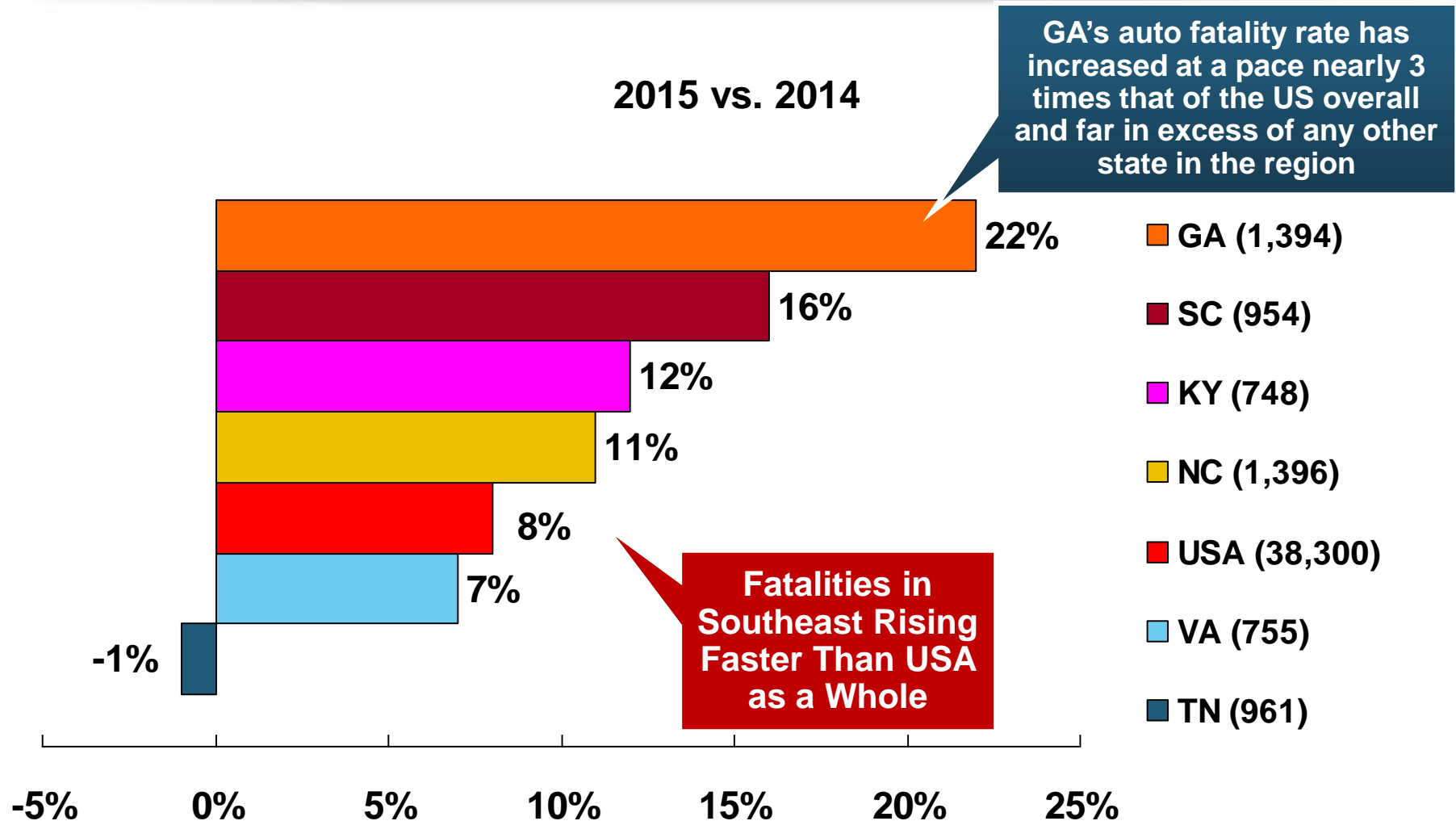
Overall
Collision Claims
Per 100 Insured
Vehicles



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 Four-Qtr Avg. Frequency from Insurance Services Office; Insurance Information Institute.

Change in Auto Fatalities by State: Especially Severe in Georgia

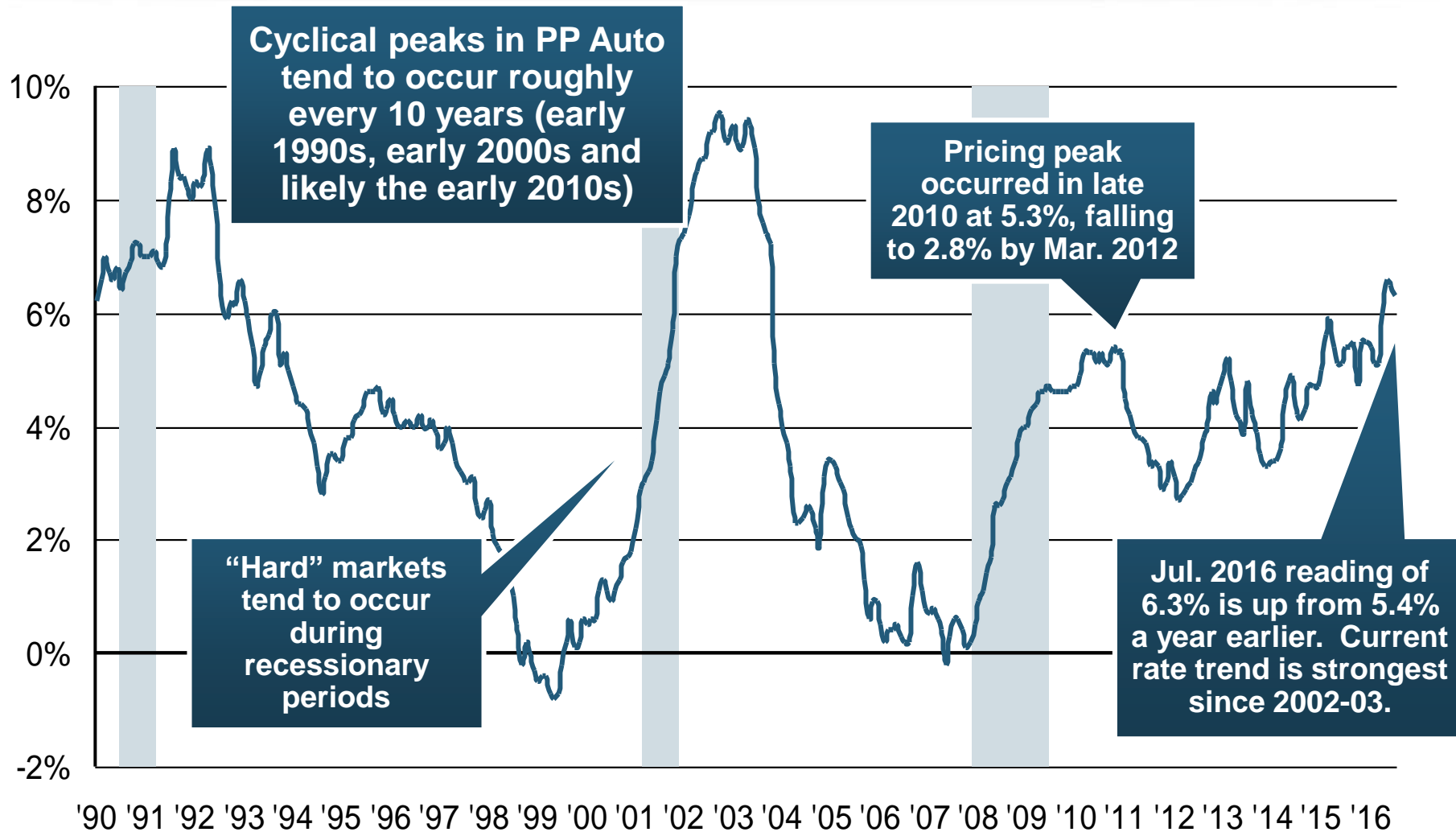


SOURCE: Estimates from National Safety Council.

Personal Lines Growth Drivers

**Rate and Exposure are Both
Presently Important
Growth Drivers**

Monthly Change in Auto Insurance Prices, 1991–2016*

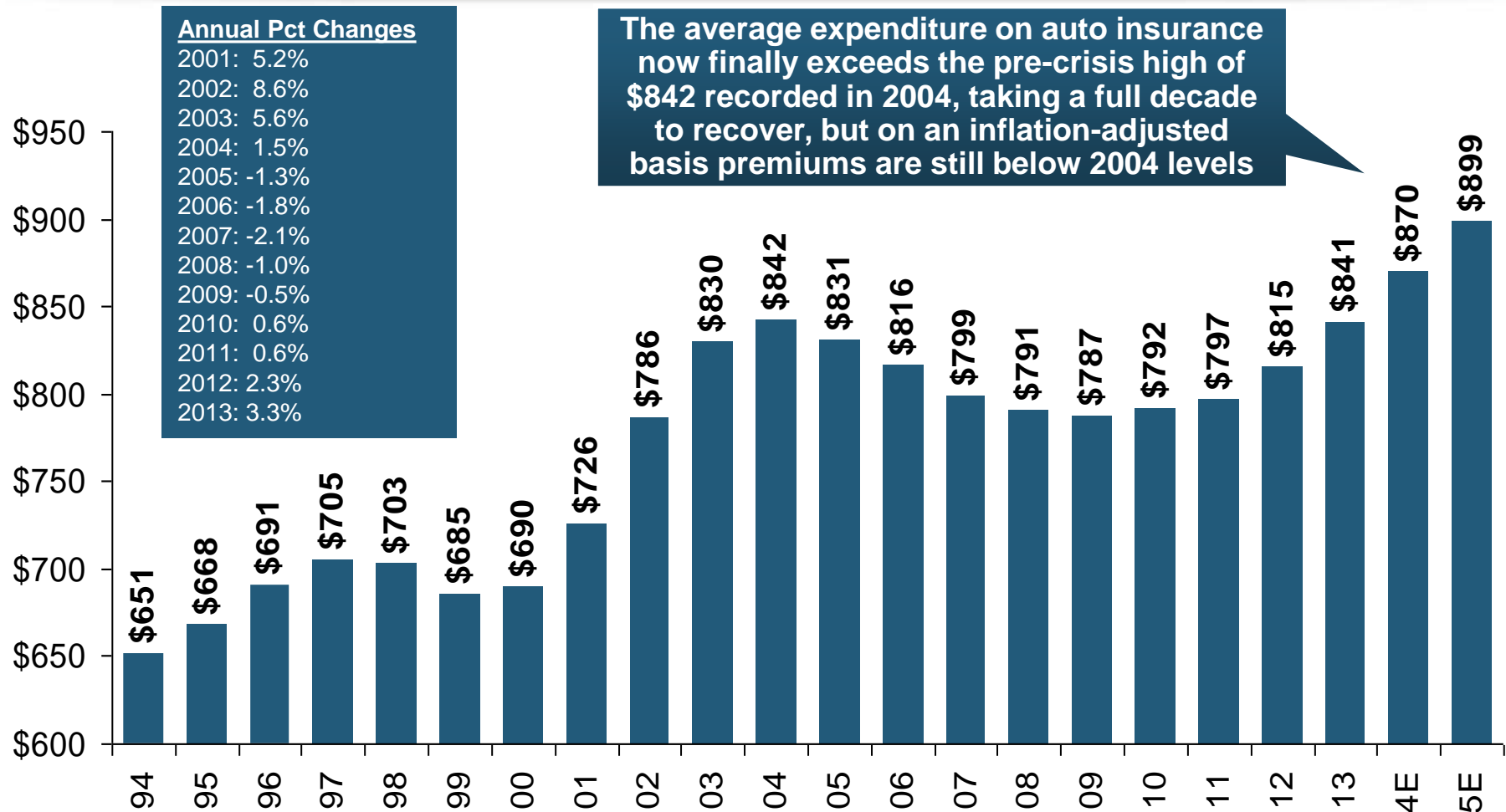


*Percentage change from same month in prior year; through July 2016; seasonally adjusted

Note: Recessions indicated by gray shaded columns.

Sources: US Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institutes.

Average Expenditures* on Auto Insurance, 1994-2015E

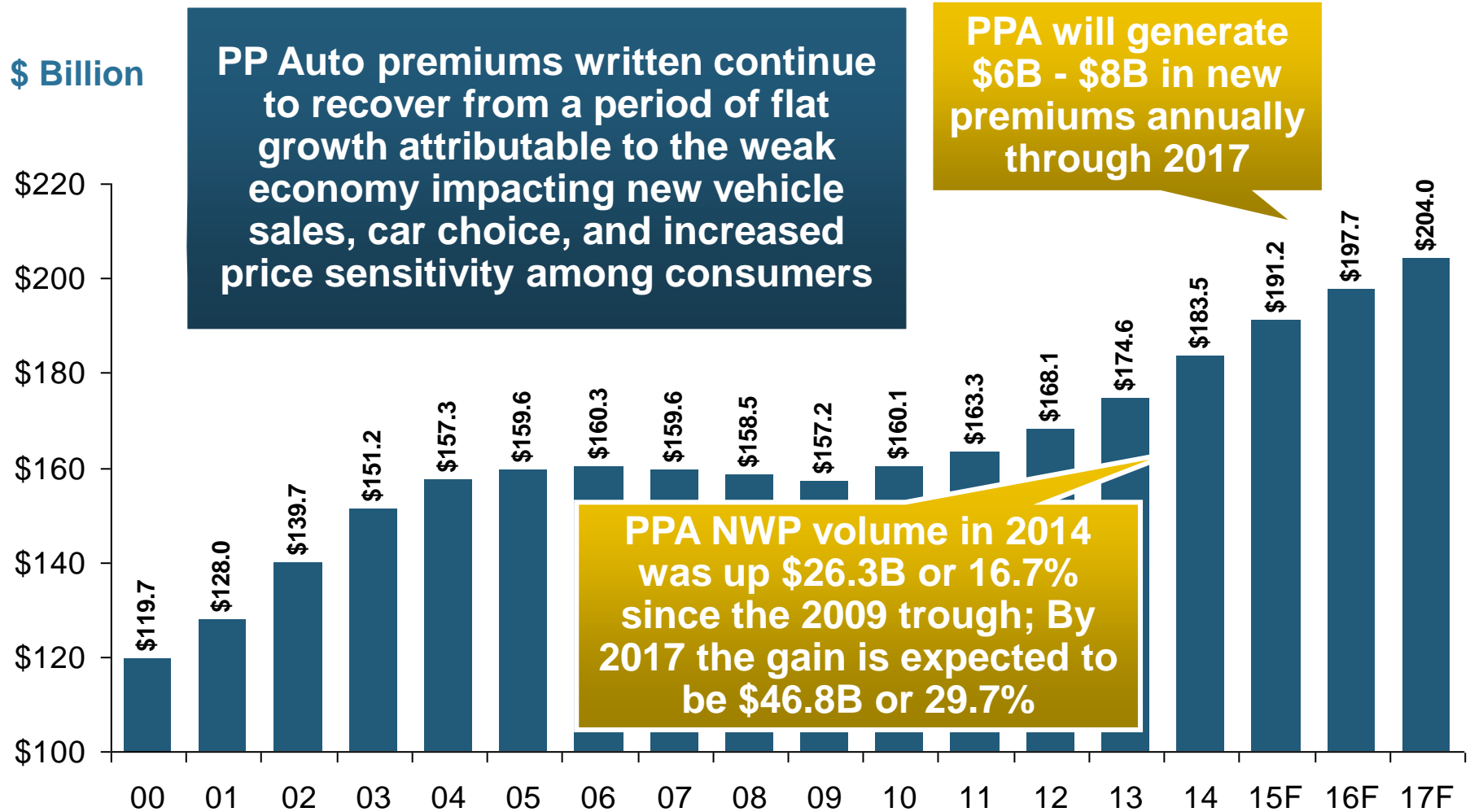


Across the U.S., auto insurance expenditures fell by 0.8% in 2008 and 0.5% in 2009 but rose 0.5% in 2010, 0.8% in 2011, 2.3% in 2012 and 3.3% in 2013; I.I.I. estimate is for +3.4% in 2014 and 2015.

* The NAIC data are per-vehicle (actually, per insured car-year)

Sources: NAIC for 1994-2013; Insurance Information Institute estimates for 2014-2015 based on CPI and other data.

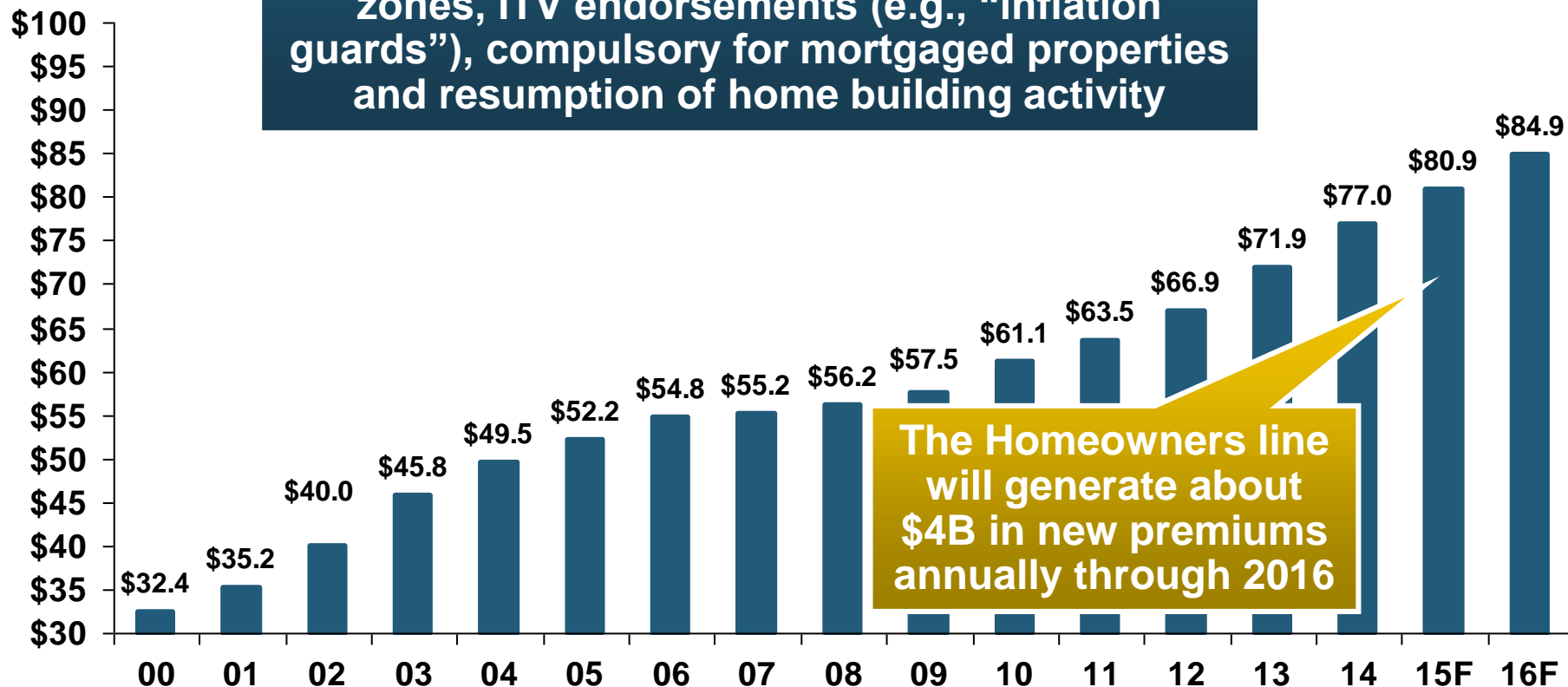
Private Passenger Auto Insurance Net Written Premium, 2000–2017F



Homeowners Insurance Net Written Premium, 2000–2016F

\$ Billions

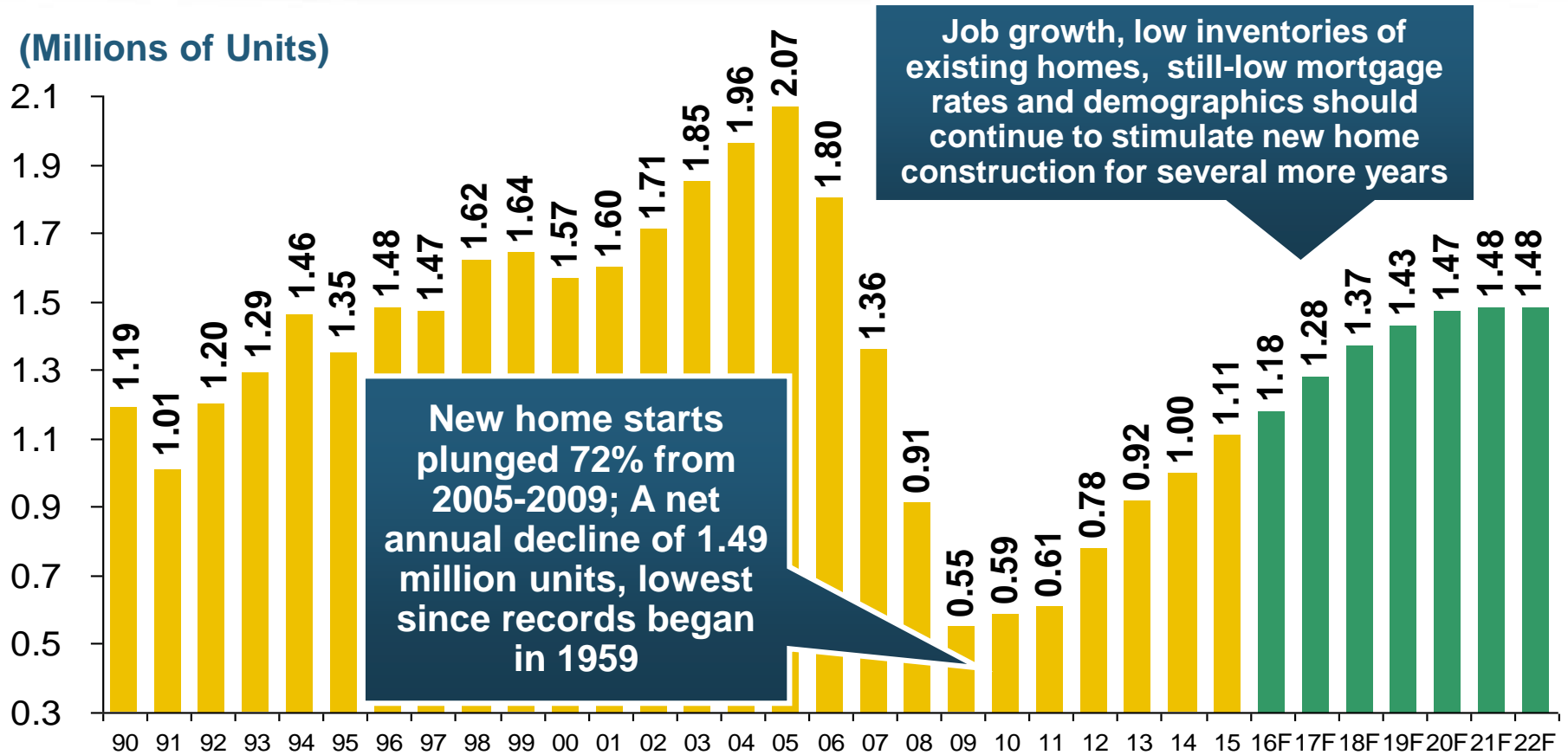
Homeowners insurance NWP continues to rise (up 150% 2000-2015F) despite very little unit growth during the real estate crash. Reasons include rate increases, especially in coastal zones, ITV endorsements (e.g., “inflation guards”), compulsory for mortgaged properties and resumption of home building activity



Personal Lines: Economic and Demographic Considerations

***Auto, Home Are Sensitive to
Underlying Economic
Conditions***

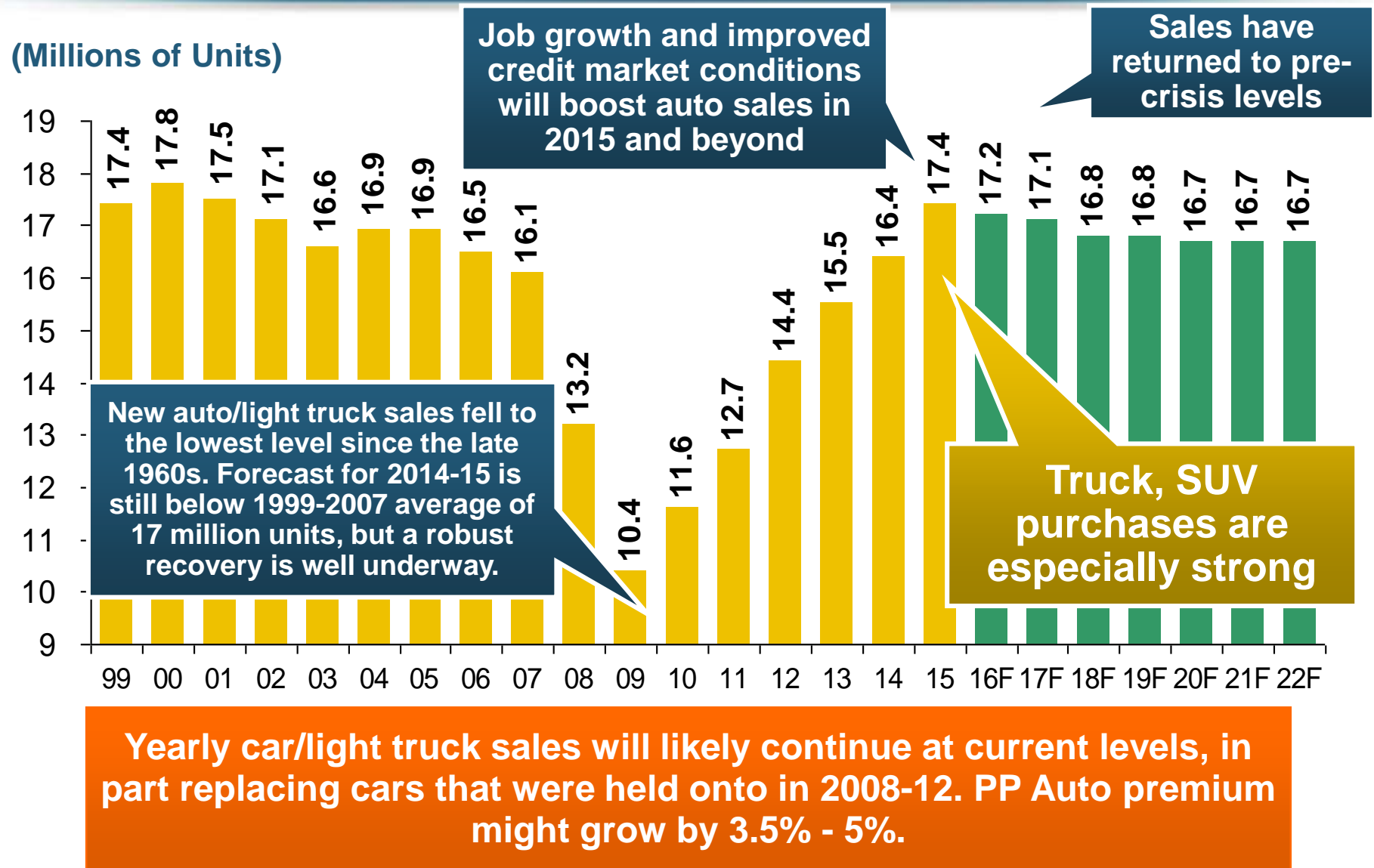
New Private Housing Starts, 1990-2022F



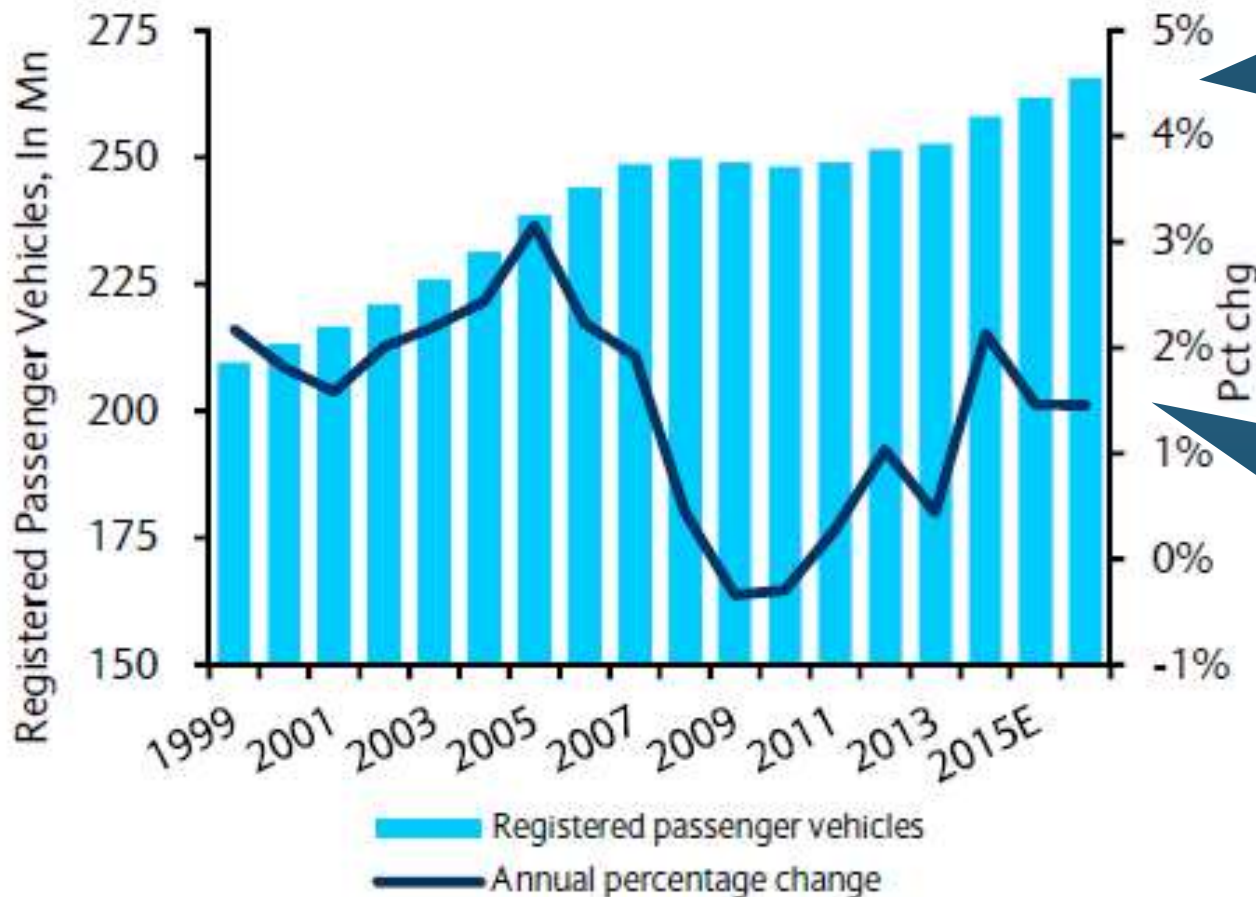
Insurers Are Continue to See Meaningful Exposure Growth in the Wake of the “Great Recession” Associated with Home Construction: Construction Risk Exposure, Surety, Commercial Auto; Potent Driver of Workers Comp Exposure

Source: U.S. Department of Commerce; Blue Chip Economic Indicators (10/16 for 2016-17; 10/16 for 2018-22F; Insurance Information Institute.

Auto/Light Truck Sales, 1999-2022F



Number of Registered Passenger Vehicles in US, 1999 – 2015E

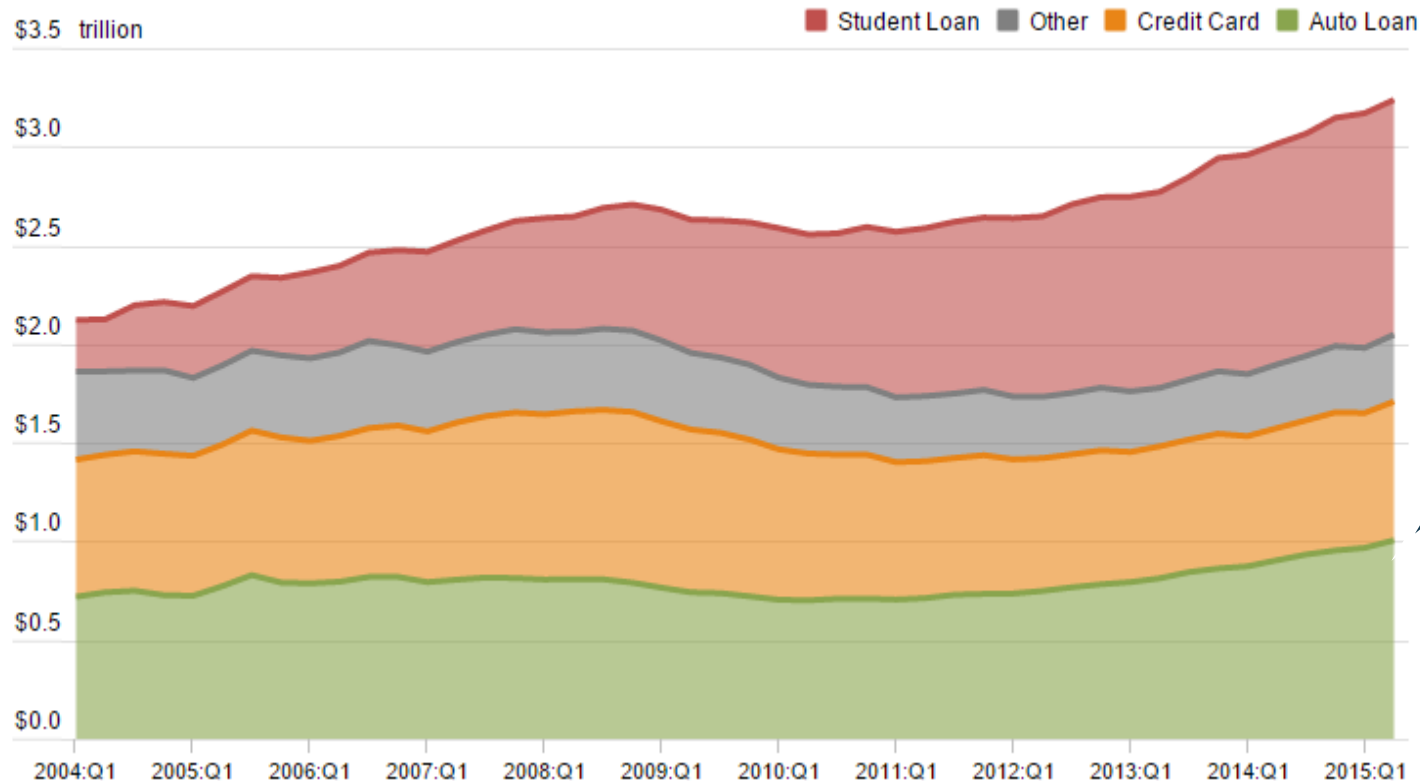


Vehicle registrations are growing once again and now finally exceed pre-crisis peak

Vehicle registrations are expected to increase at an annual rate of about 1.5% per year in 2015 and 2016

Auto Loans and Other Non-Housing Debt, 2004 – 2015*

Non-Housing Debt Balance



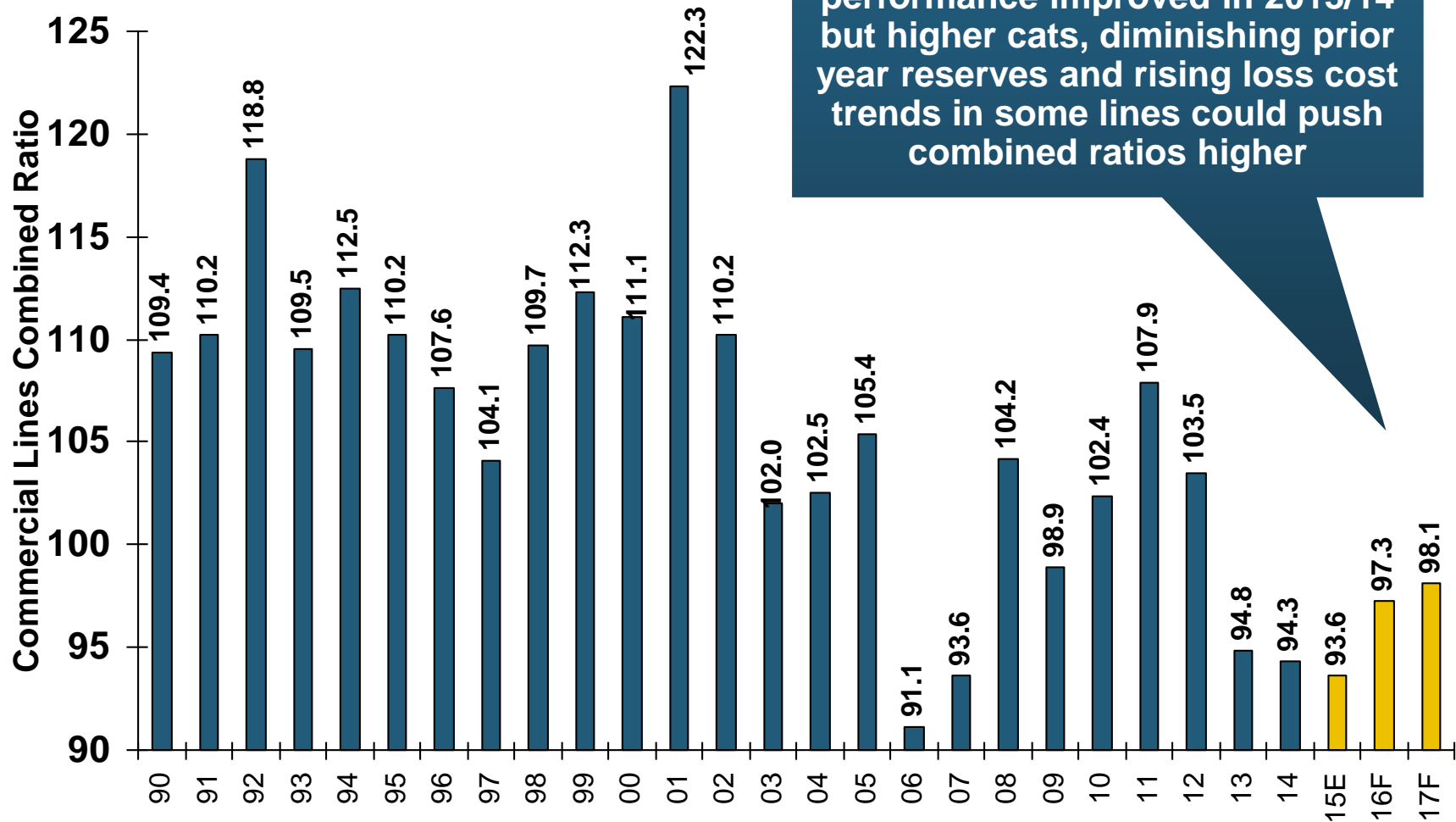
Banks are becoming increasingly aggressive in marketing auto loans

*As of Q1 2015.

Source: Federal Reserve Bank of NY Consumer Credit Panel/Equifax; I. I.I.

Commercial Lines Underwriting Performance

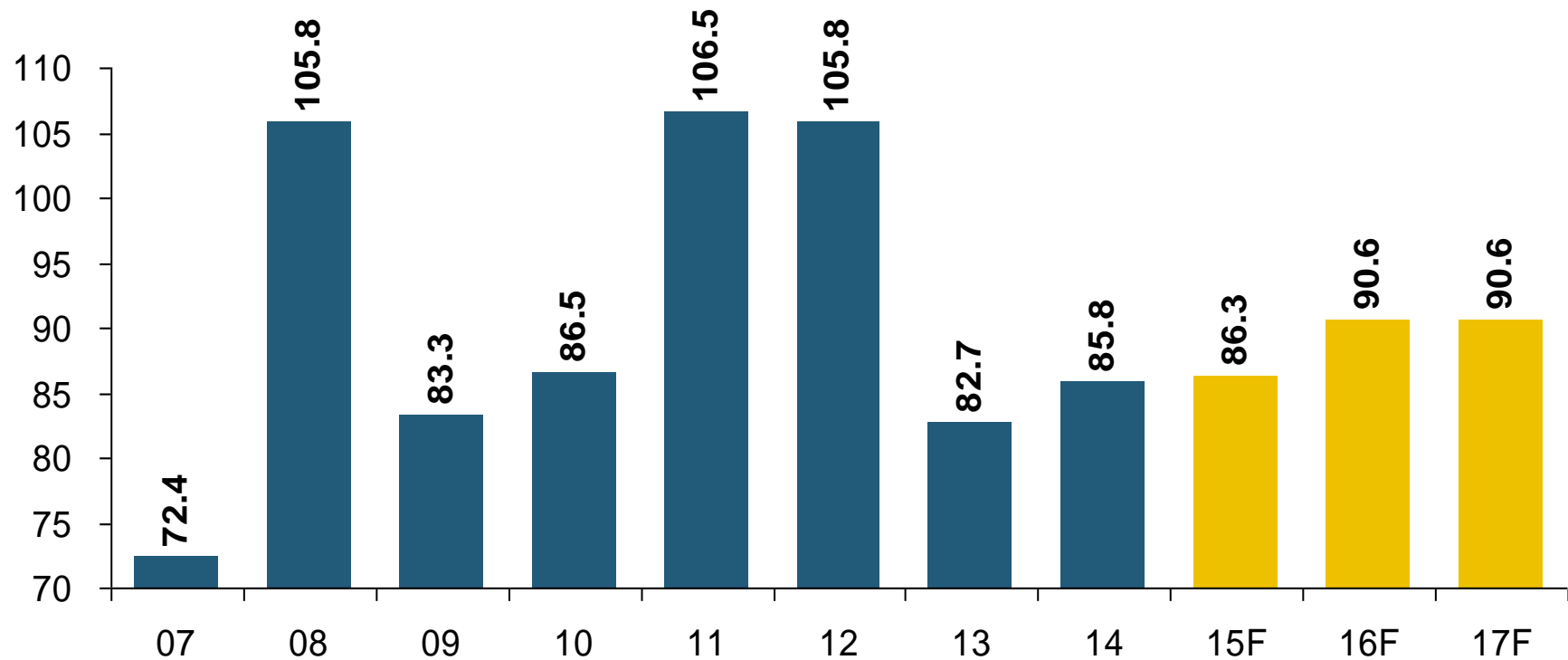
Commercial Lines Combined Ratio, 1990-2017F*



*2007-2012 figures exclude mortgage and financial guaranty segments.

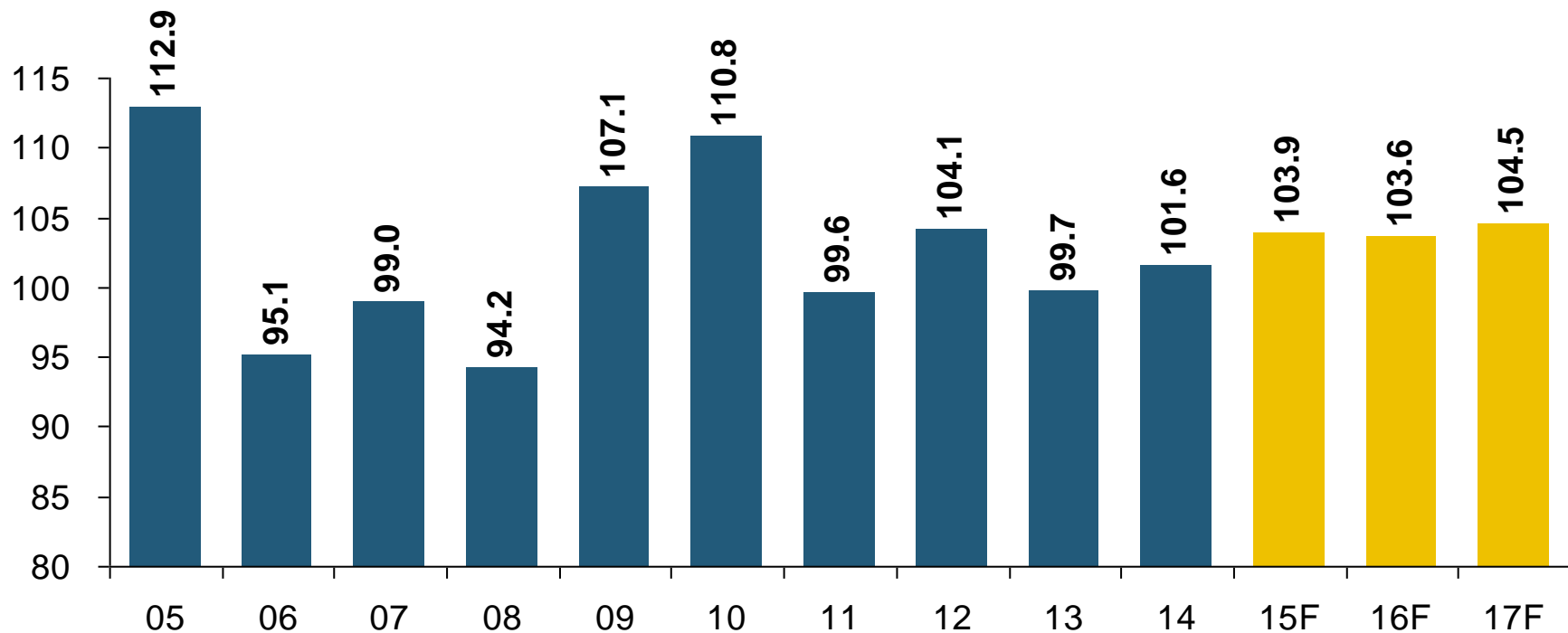
Source: A.M. Best (1990-2014); Conning (2015E-17F) Insurance Information Institute.

Commercial Property Combined Ratio: 2007–2017F



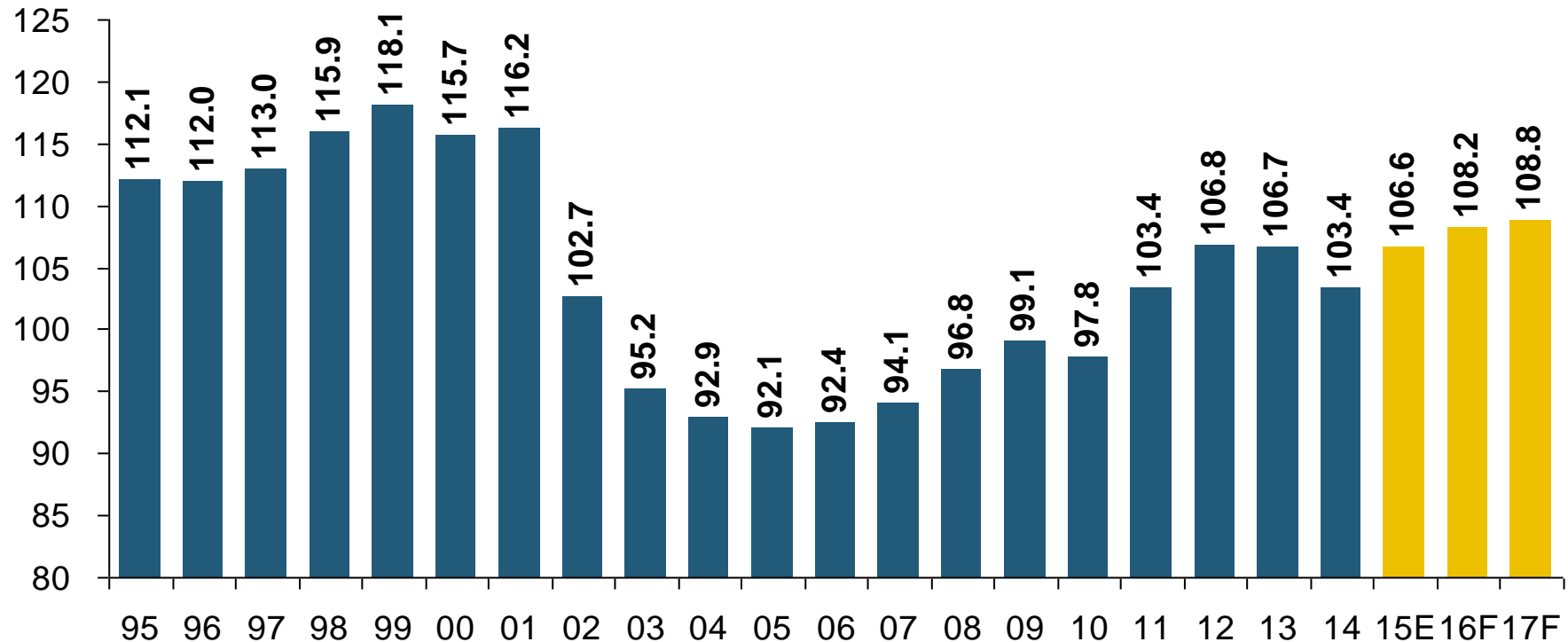
**Commercial Property Underwriting Performance
Has Improved in Recent Years, Largely Due to
Diminished CAT Activity**

General Liability Combined Ratio: 2005–2017F



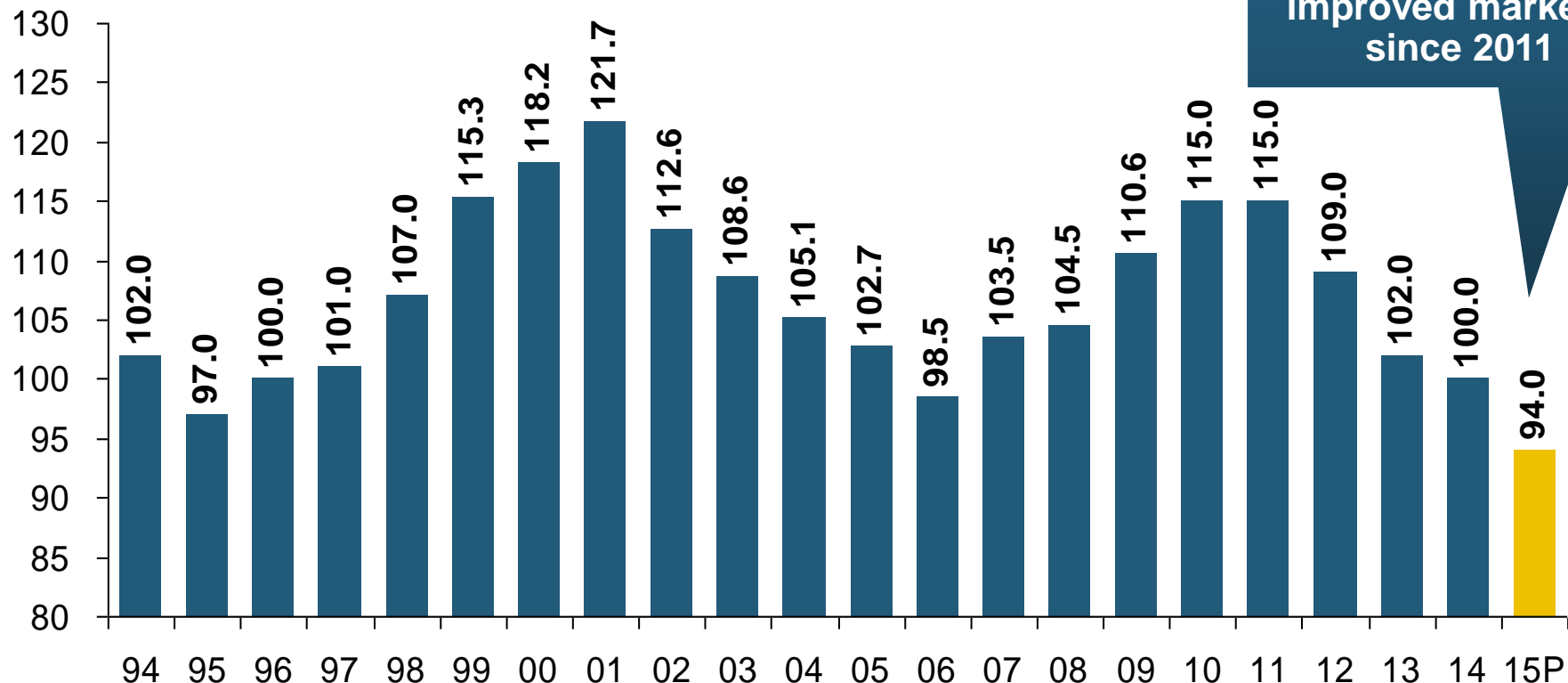
**Commercial General Liability Underwriting
Performance Has Been Volatile in Recent Years**

Commercial Auto Combined Ratio: 1993–2017F



Commercial Auto Results Are Challenged as Rate Gains Barely Have Yet to Offset Adverse Frequency and Severity Trends

Workers Compensation Combined Ratio: 1994–2015P

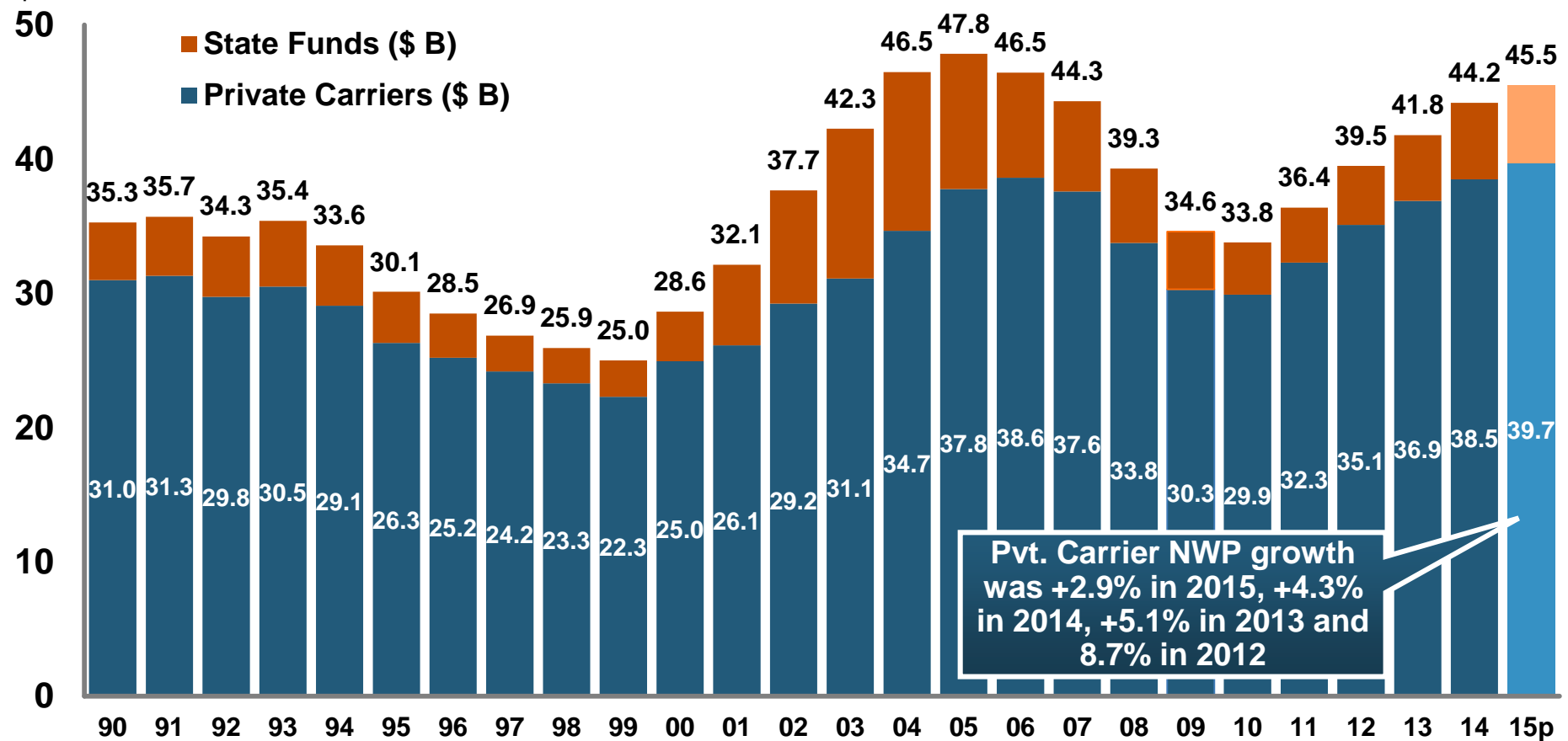


**Workers Comp Results Began to Improve in 2012.
Underwriting Results Deteriorated Markedly from 2007-
2010/11 and Were the Worst They Had Been in a Decade.**

Workers Compensation Premium: Fifth Consecutive Year of Increase

Net Written Premium

\$ Billions



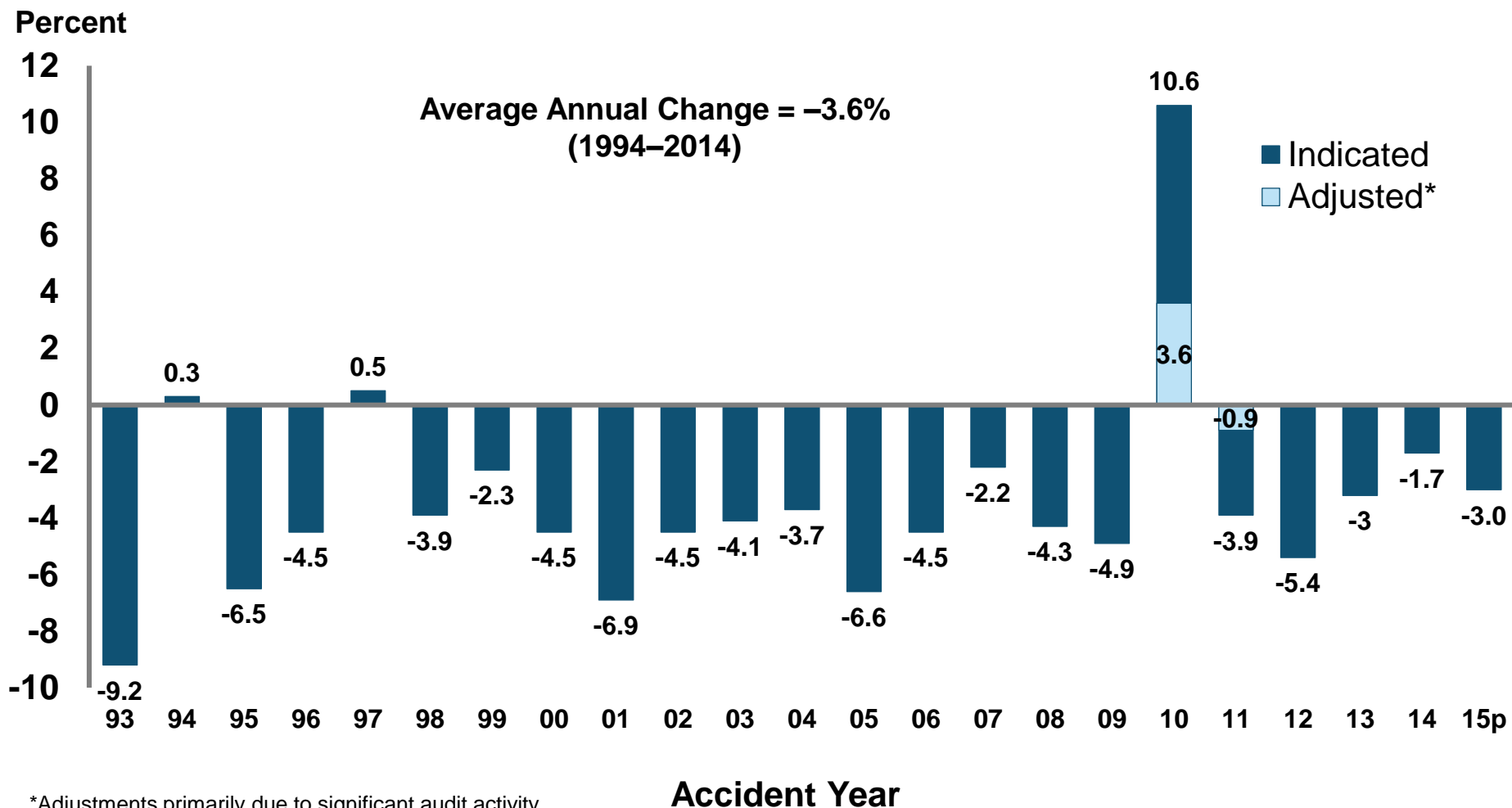
p Preliminary

Source: NCCI from Annual Statement Data.

Includes state insurance fund data for the following states: AZ, CA, CO, HI, ID, KY, LA, MD, MO, MT, NM, OK, OR, RI, TX, UT.

Each calendar year total for State Funds includes all funds operating as a state fund that year.

Workers Compensation Lost-Time Claim Frequency Declined in 2015



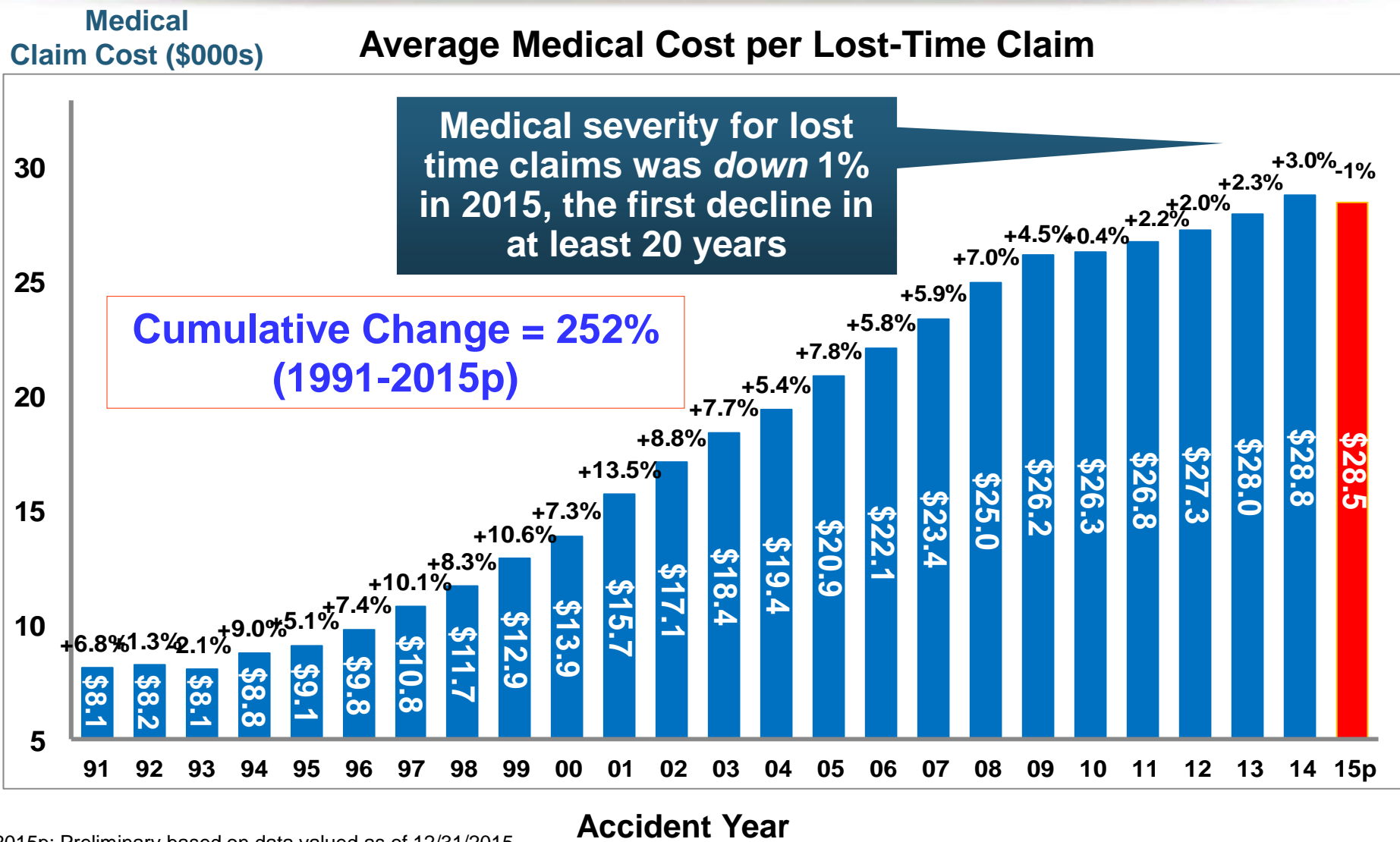
*Adjustments primarily due to significant audit activity.

2015p: Preliminary based on data valued as of 12/31/2015.

Source: NCCI Financial Call data, developed to ultimate and adjusted to current wage and voluntary loss cost level; Excludes high deductible policies; 1994-2014: Based on data through 12/31/14. Data for all states where NCCI provides ratemaking services, excluding WV.

Frequency is the number of lost-time claims per \$1M pure premium at current wage and voluntary loss cost level

Workers Compensation Medical Severity: Small Decrease in 2015



2015p: Preliminary based on data valued as of 12/31/2015.
1991-2013: Based on data through 12/31/2014, developed to ultimate
Based on the states where NCCI provides ratemaking services including state funds, excluding WV; Excludes high deductible policies.

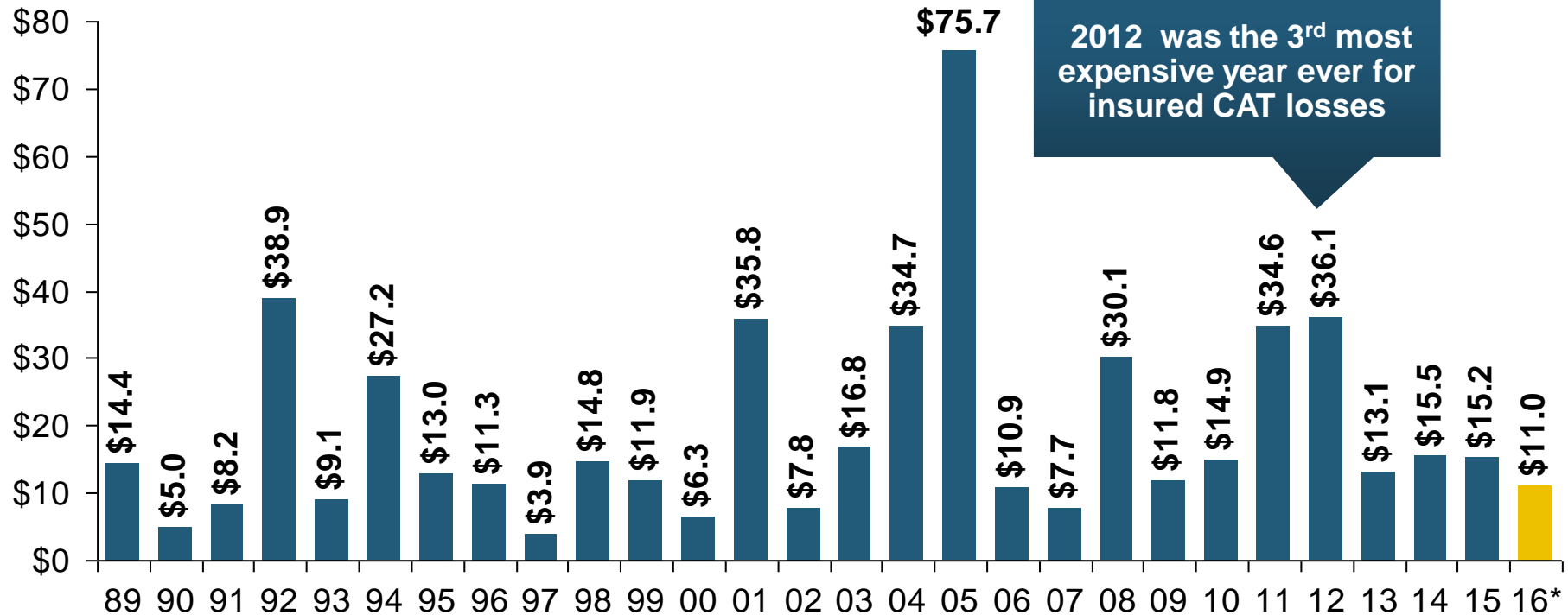
Insured Catastrophe Losses

**2013/14 and YTD 2015 Experienced Below
Average CAT Activity After Very High CAT
Losses in 2011/12**

***Winter Storm Losses Far Above Average in
2014 and 2015***

U.S. Insured Catastrophe Losses

(\$ Billions, \$ 2015)



2012 was the 3rd most expensive year ever for insured CAT losses

2013/14/15 Were Welcome Respite from 2011/12, among the Costliest Years for Insured Disaster Losses in US History. 2016 Is Off to a Costlier Start.

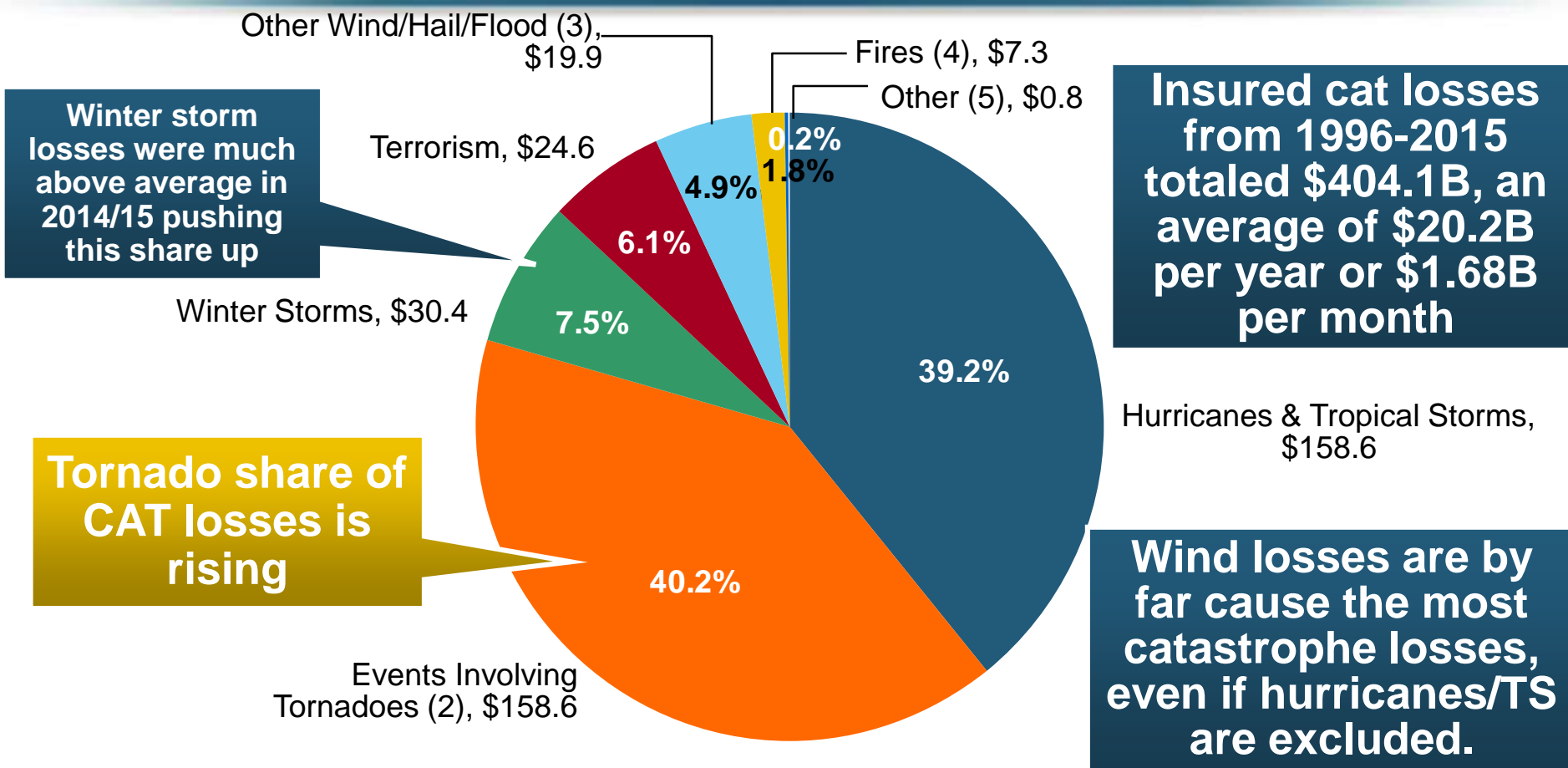
\$11.0B in insured CAT losses though 6/30/16

*Through 6/30/16. 2016 figure stated in 2016 dollars.

Note: 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01 (\$25.9B 2011 dollars). Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = \$12.2B (\$15.6B in 2011 dollars.)

Sources: Property Claims Service/ISO; Insurance Information Institute.

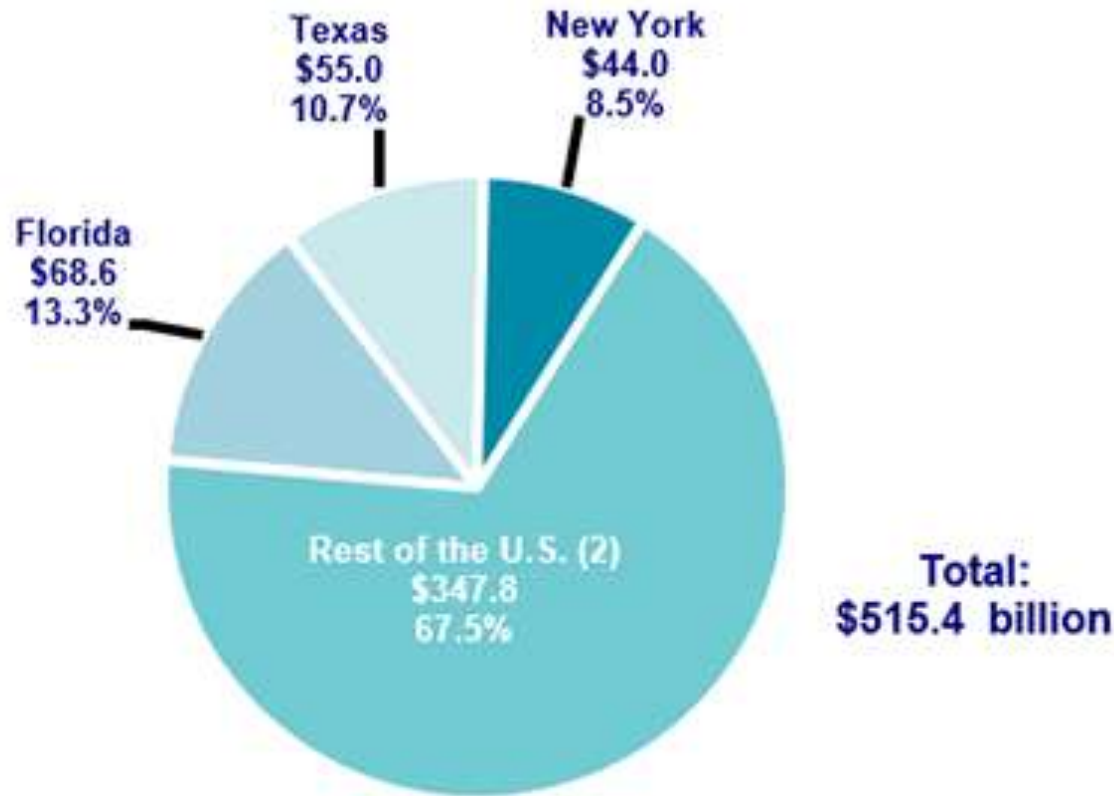
Inflation Adjusted U.S. Catastrophe Losses by Cause of Loss, 1996–2015¹



1. Catastrophes are defined as events causing direct insured losses to property of \$25 million or more in 2015 dollars.
2. Excludes snow.
3. Does not include NFIP flood losses
4. Includes wildland fires
5. Includes civil disorders, water damage, utility disruptions and non-property losses such as those covered by workers compensation.

Source: ISO's Property Claim Services Unit.

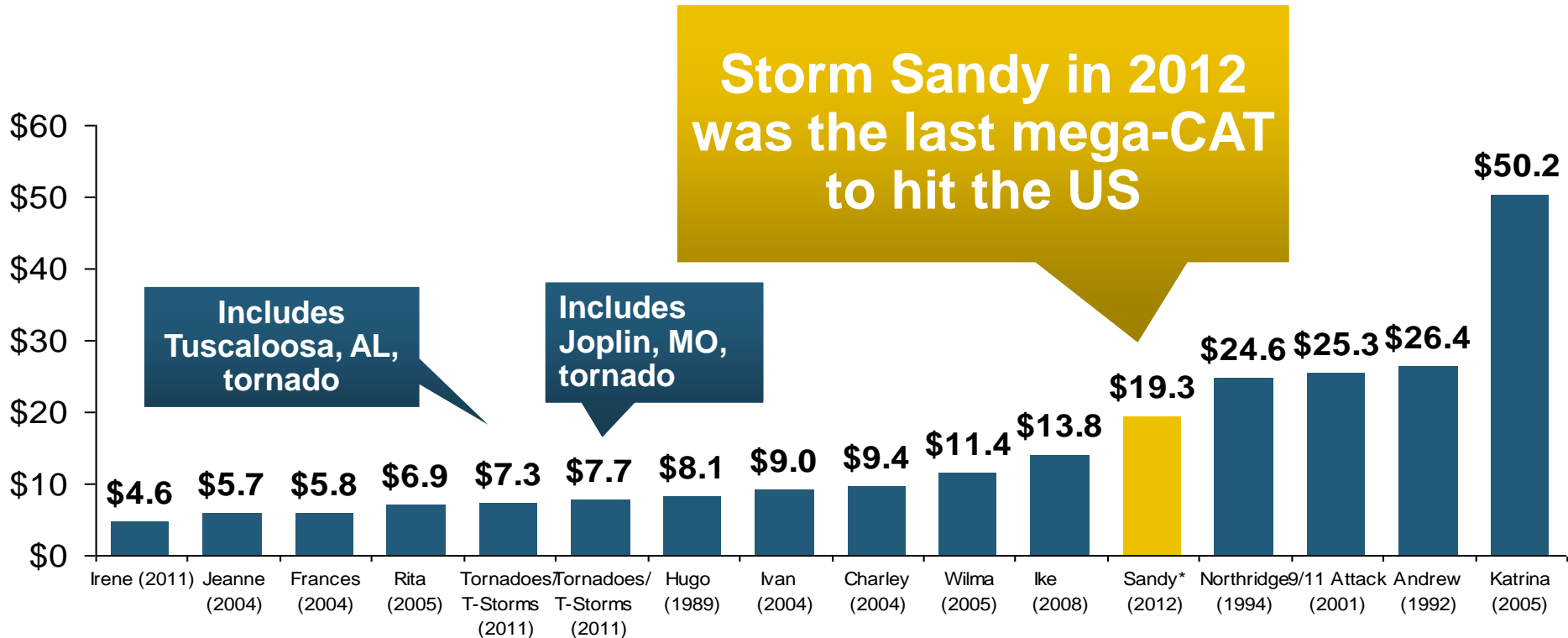
Top 3 States for Insured Catastrophe Losses, 1996-2005 (in 2015 Dollars)



Texas, Florida and New York lead the country in insured catastrophe losses over the past 20 years. These 3 states accounted for nearly 1/3 of all insured catastrophe losses over the past two decades

Top 16 Most Costly Disasters in U.S. History—Katrina Still Ranks #1

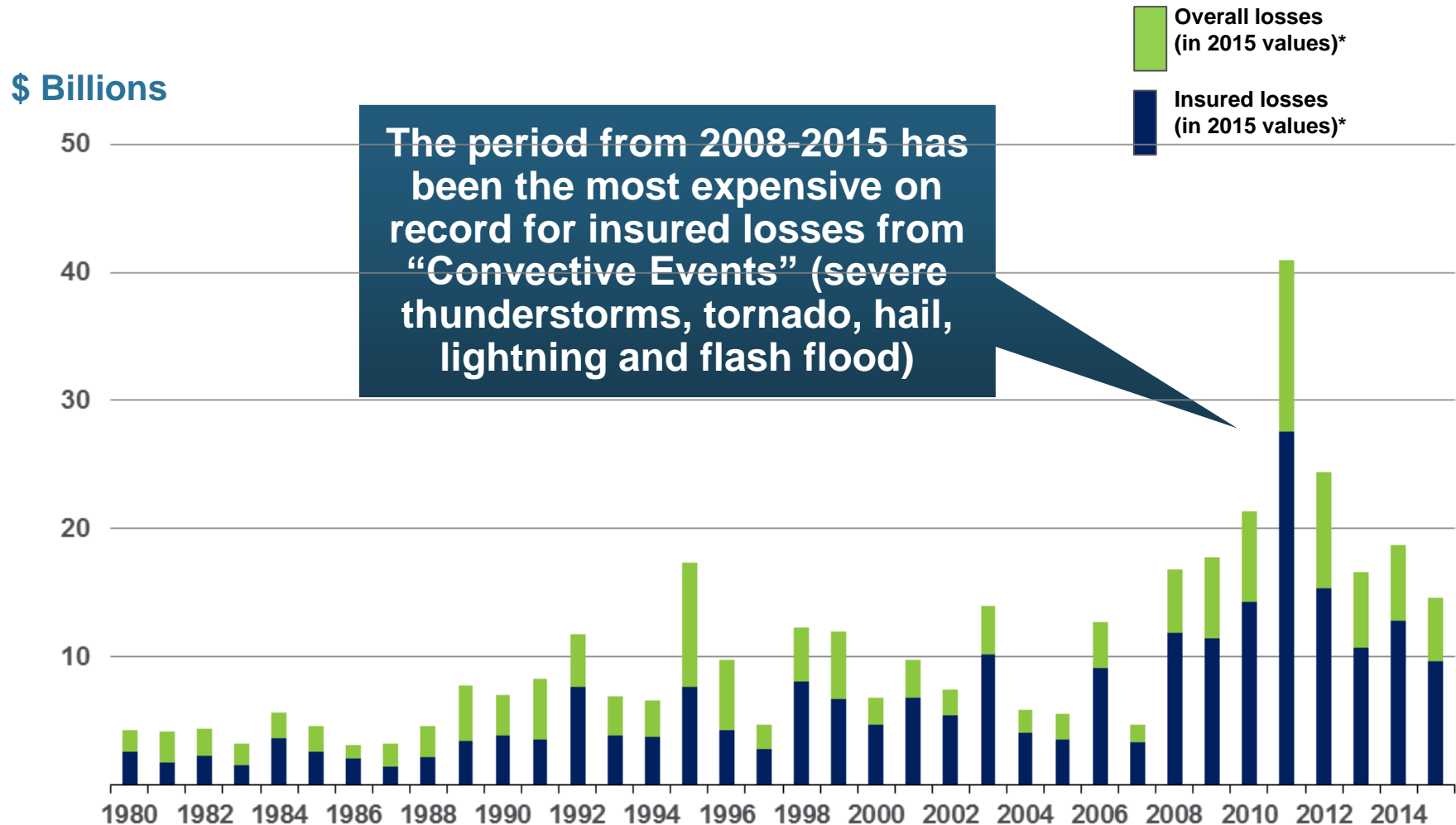
(Insured Losses, 2014 Dollars, \$ Billions)



12 of the 16 Most Expensive Events in US History Have Occurred Since 2004

Convective Loss Events in the US

Overall and insured losses, 1980 – 2015



*Losses adjusted to inflation based on CPI

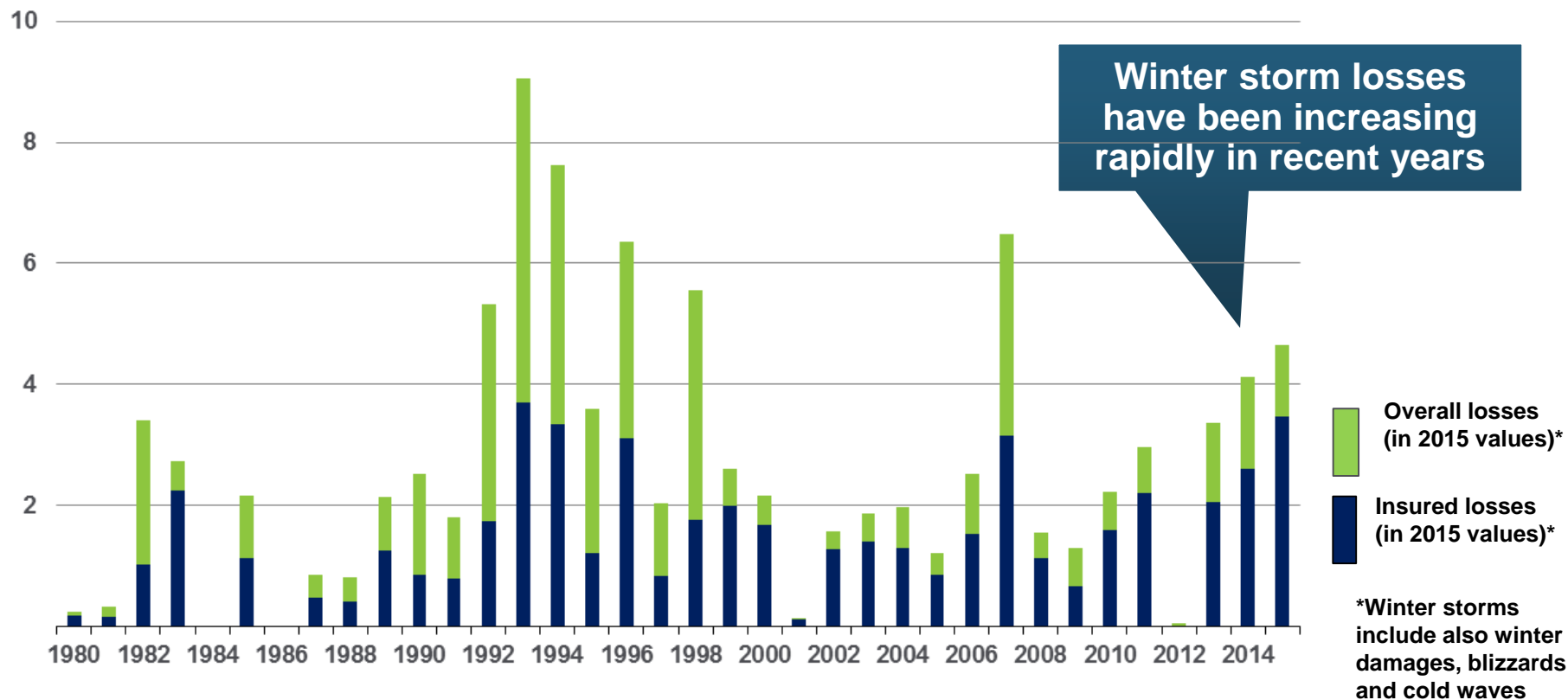
Source: Geo Risks Research, NatCatSERVICE

Analysis contains:

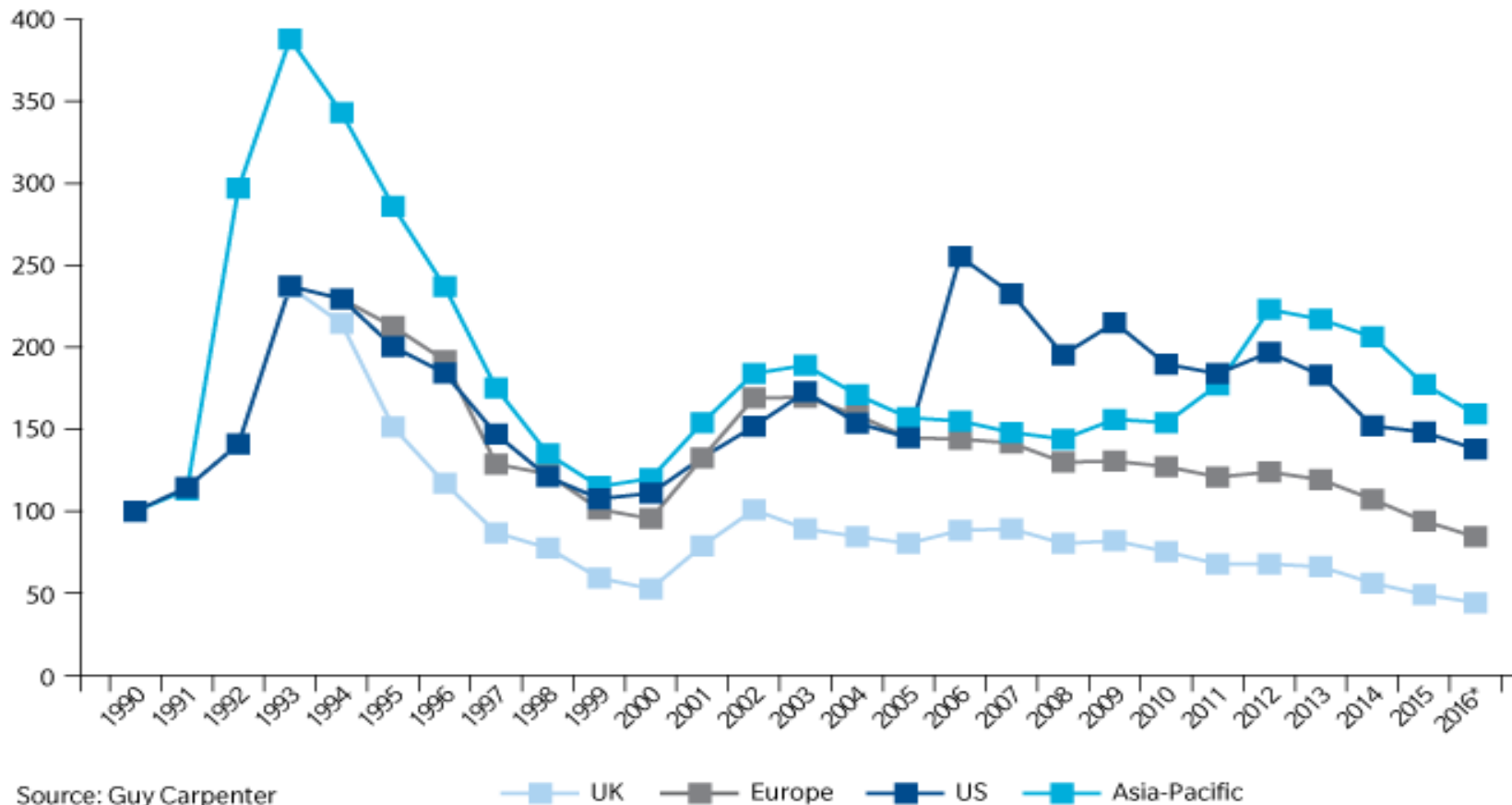
severe storm, tornado, hail, flash
flood and lightning

Winter Storm Losses in the US 1980 – 2015 (Overall and Insured Losses)*

\$ Billions

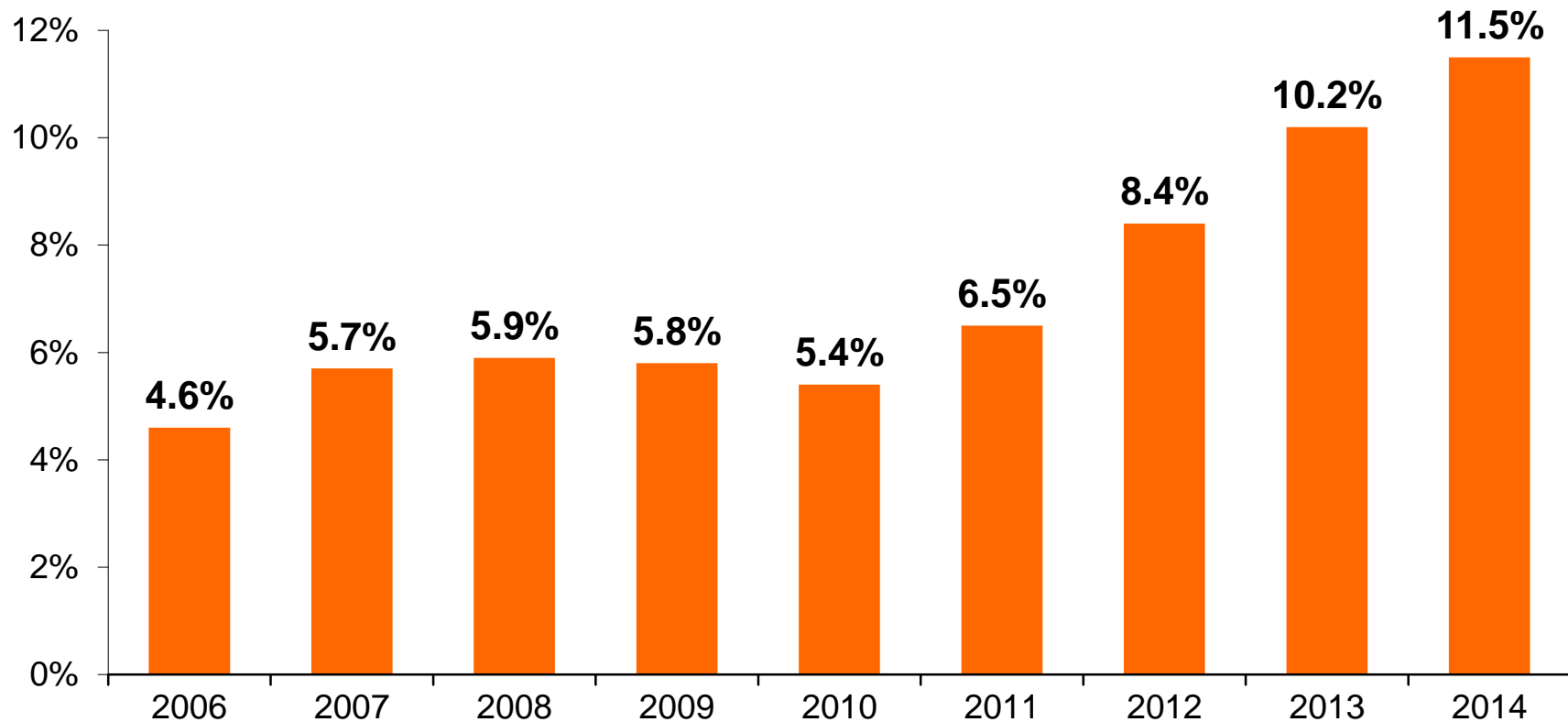


Regional Property Catastrophe ROL Index: 1990 – 2016



Record traditional capacity, alternative capital and low CAT activity have pressured reinsurance prices; ROEs are down only very modestly

Alternative Capital as a Percentage of Traditional Global Reinsurance Capital



Alternative Capital's Share of Global Reinsurance Capital Has More Than Doubled Since 2010.

2014 data is as of June 30, 2014.

Source: Aon Benfield Analytics; Insurance Information Institute.

INDUSTRY DISRUPTORS



**Technology, Society and
the Economy Are All
Changing at a Rapid Pace**

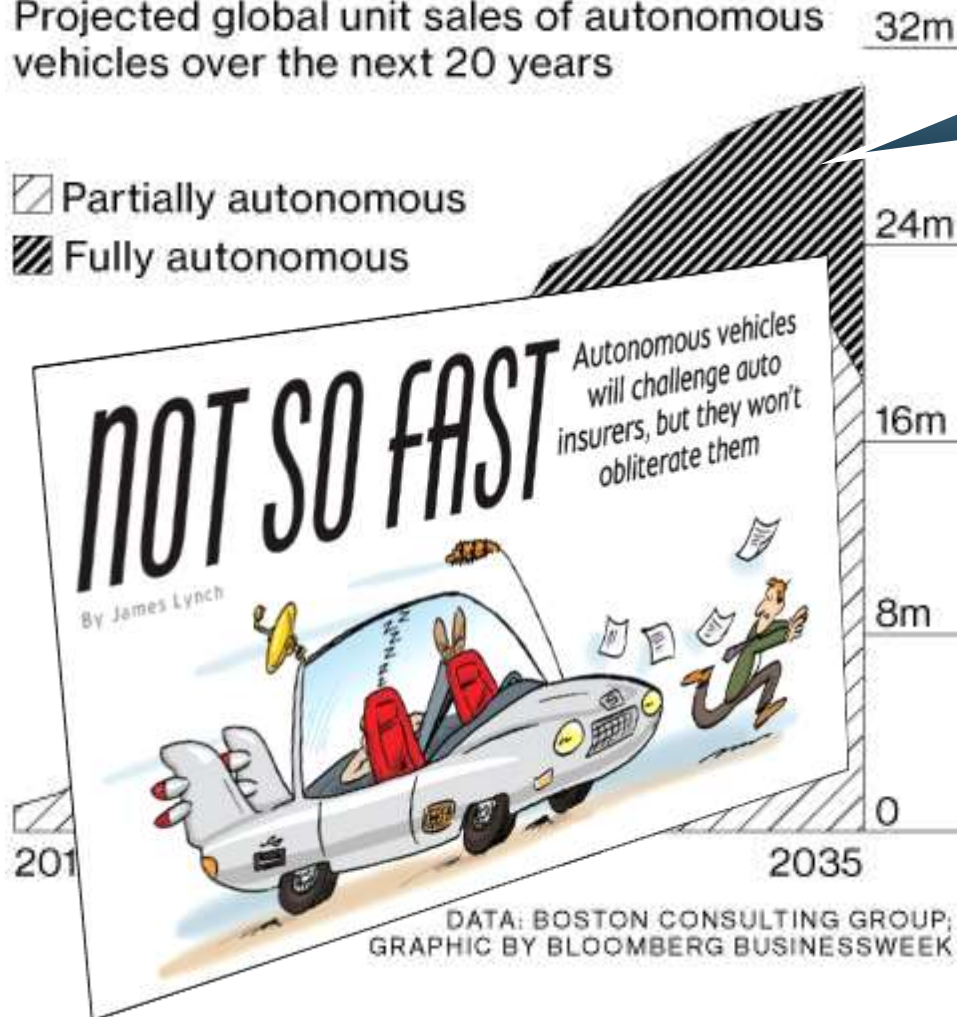
Thoughts on the Future

Media is Obsessed with Driverless Vehicles: Often Predicting the Demise of Auto Insurance

Hands-Free

Projected global unit sales of autonomous vehicles over the next 20 years

-  Partially autonomous
 Fully autonomous



By 2035, it is estimated that 25% of new vehicle sales could be fully autonomous models

Questions

- Are auto insurers monitoring these trends?
- How are they reacting?
- Will Google take over the industry?
- Will the number of auto insurers shrink?
- How will liability shift?

On-Demand/Sharing/Peer-to-Peer Economy Impacts Many Lines of Insurance

- The “On-Demand” Economy is or will impact many segments of the economy important to P/C insurers
 - ◆ Auto (personal and commercial)
 - ◆ Homeowners/Renters
 - ◆ Many Liability Coverages
 - ◆ Professional Liability
 - ◆ Workers Comp
- Many unanswered insurance questions
- Insurance solutions are increasingly available to fill the many insurance gaps that arise



U B E R



The Sharing Economy: An Update

**The On-Demand Economy Will
Transform the American
Workforce and the
P/C Insurance Industry Too**

The Sharing Economy Has Grown— And Attracted Political Scrutiny



The image is a collage centered around the sharing economy. In the middle, a white circle with a red border contains the text "the Sharing economy" in a cursive font. Surrounding this central circle are numerous logos of sharing economy companies, including BookMooch, GearCommons, Airbnb, ThredUP, TransferWise, TaskRabbit, BlaBlaCar, Postmates, Instacart, RelayRides, LiquiSpace, BoatBound, Lyft, Shared Earth, Elance, ODesk, Girl Meets Dress.com, Fiverr, LendingClub, Zopa, ParkatmyHouse, HourlyNerd, Peer2Peer Finance Association, Zipcar, WeWork, and Cookening. At the bottom of the collage are two portraits: Hillary Clinton on the left and Donald Trump on the right. The background is a gradient of blue and red.

Logos visible in the collage include:

- BookMooch
- GearCommons
- Peer2Peer Finance Association
- HourlyNerd
- ParkatmyHouse.com
- LendingClub
- Fiverr®
- Zopa™
- BookMooch
- Airbnb
- Zipcar
- WeWork
- Cookening
- ThredUP
- TransferWise
- TaskRabbit
- BlaBlaCar
- Postmates
- Instacart
- RelayRides
- LiquiSpace™
- BoatBound
- Lyft
- Shared Earth
- Elance
- ODesk
- Girl Meets Dress.com

Central text: *the Sharing economy*

Portraits: Hillary Clinton, Donald Trump

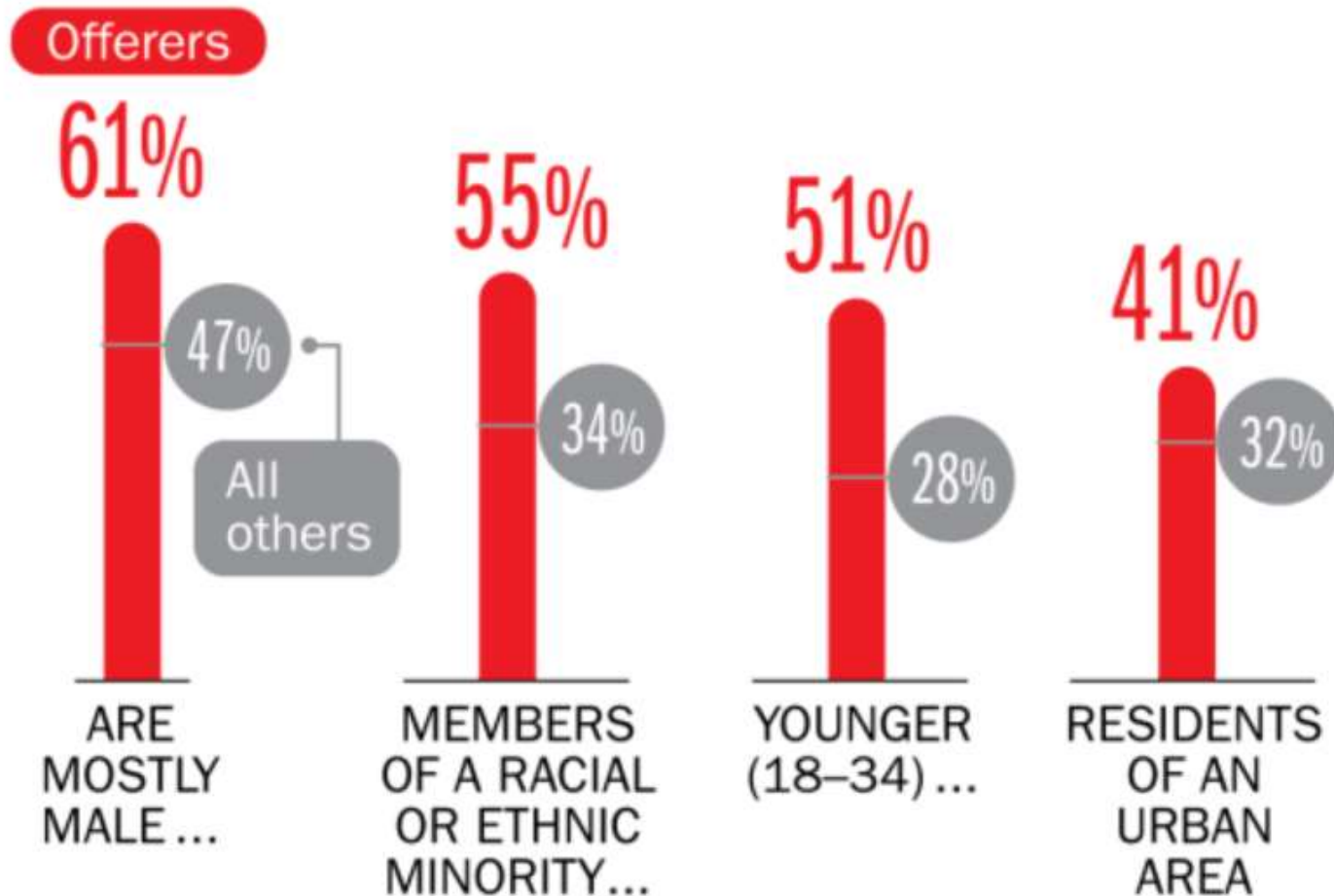
Political Skepticism About the 'Gig' Economy



*"Many Americans are making extra money renting out a spare room, designing a website ... even driving their own car. This on demand or so called 'gig' economy is creating exciting opportunities and unleashing innovation, **but it's also raising hard questions about workplace protections** and what a good job will look like in the future."*

--Hillary Clinton,
July 13, 2015

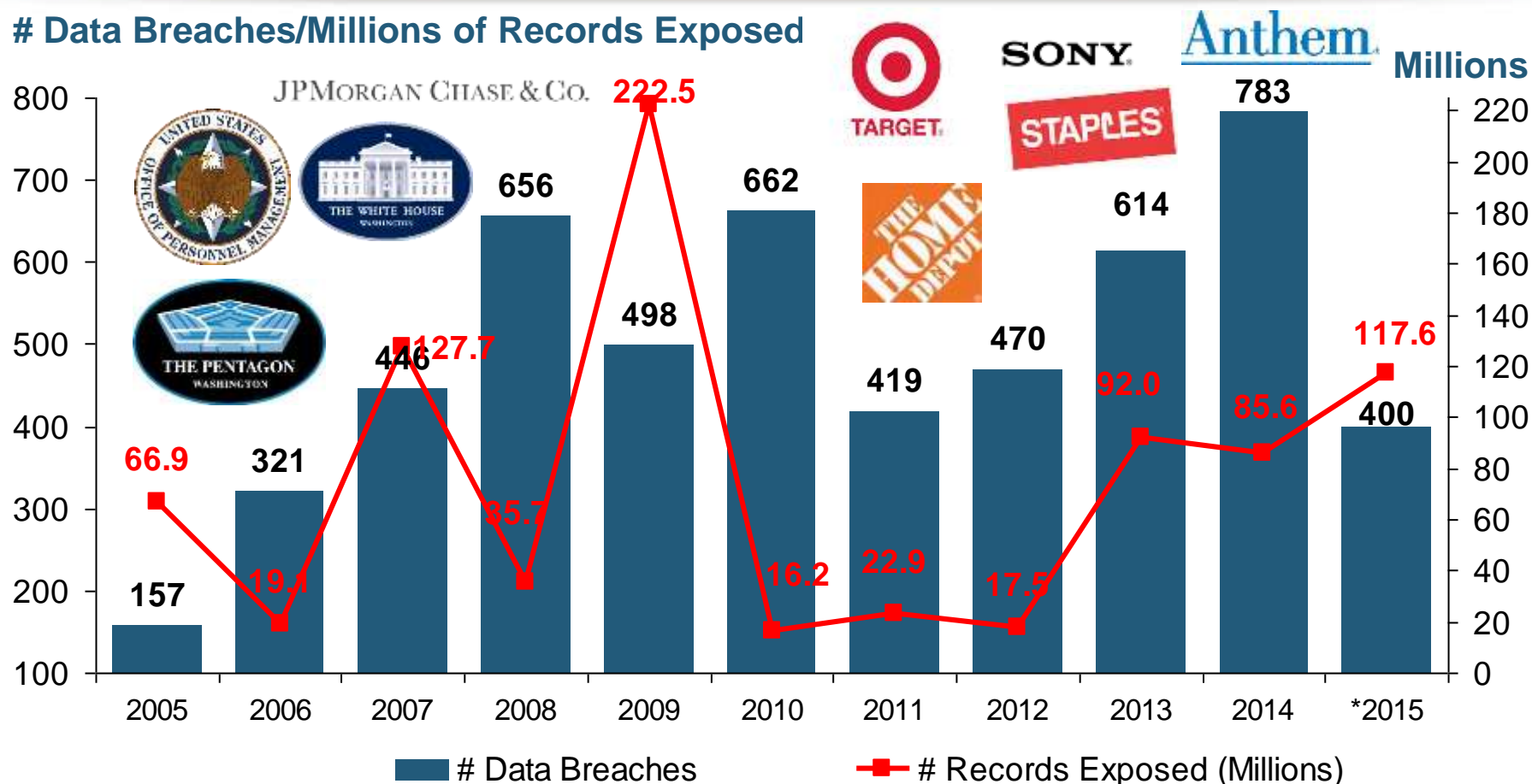
Americans Who Offer Services in the Sharing/Gig Economy Are Statistically More Prone to Workplace Injury



Young, urban minority males are the most likely to offer their services in the sharing economy.

Data Breaches 2005-2015, by Number of Breaches and Records Exposed

Data Breaches/Millions of Records Exposed



The total number of data breaches (+27.5%) hit a record high of 783 in 2014, exposing 85.6 million records. Through June 30, this year has seen 117.6 million records exposed in 400 breaches.*



AUTO TECHNOLOGY & THE FUTURE OF AUTO INSURANCE



**The Road to Fully Autonomous Vehicles:
Long, Dark and Full of Potholes**

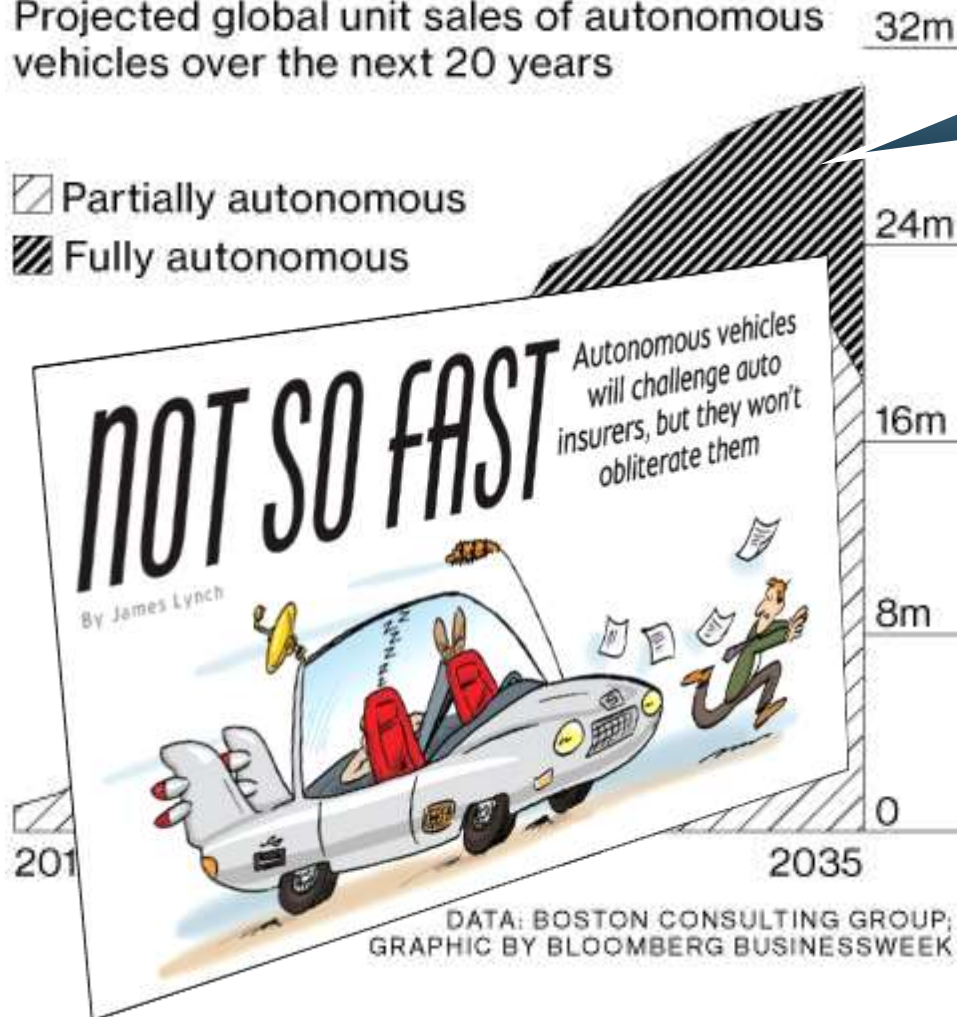
***Tales of the Death of Auto Insurance Are
Greatly Exaggerated***

Media is Obsessed with Driverless Vehicles: Often Predicting the Demise of Auto Insurance

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By 2035, it is estimated that 25% of new vehicle sales could be fully autonomous models

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- Will the number of auto insurers shrink?
- How will liability shift?

Media is Obsessed with Driverless Vehicles: Often Predicting the Demise of Auto Insurance

Some are predicting that the rise of autonomous vehicles will reduce claim frequency by 75% or more...

„,and that this technology will cause average auto insurance premiums to plunge

Fewer claims on car insurance

Insured drivers making claims each year (%)



Cost of car insurance to fall

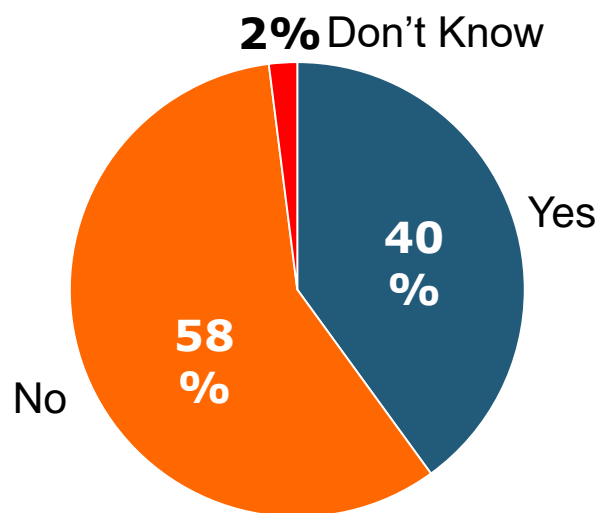
Estimated global average annual premium (\$)



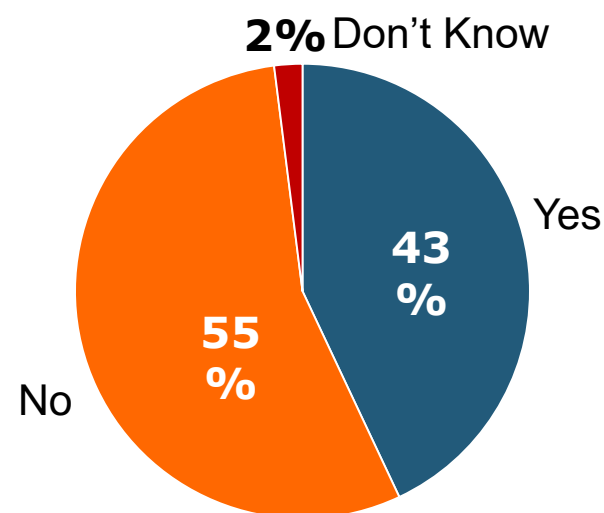
I.I.I. Poll: Auto Insurance

Q. Would you be willing to ride in a driverless car?

May 2015



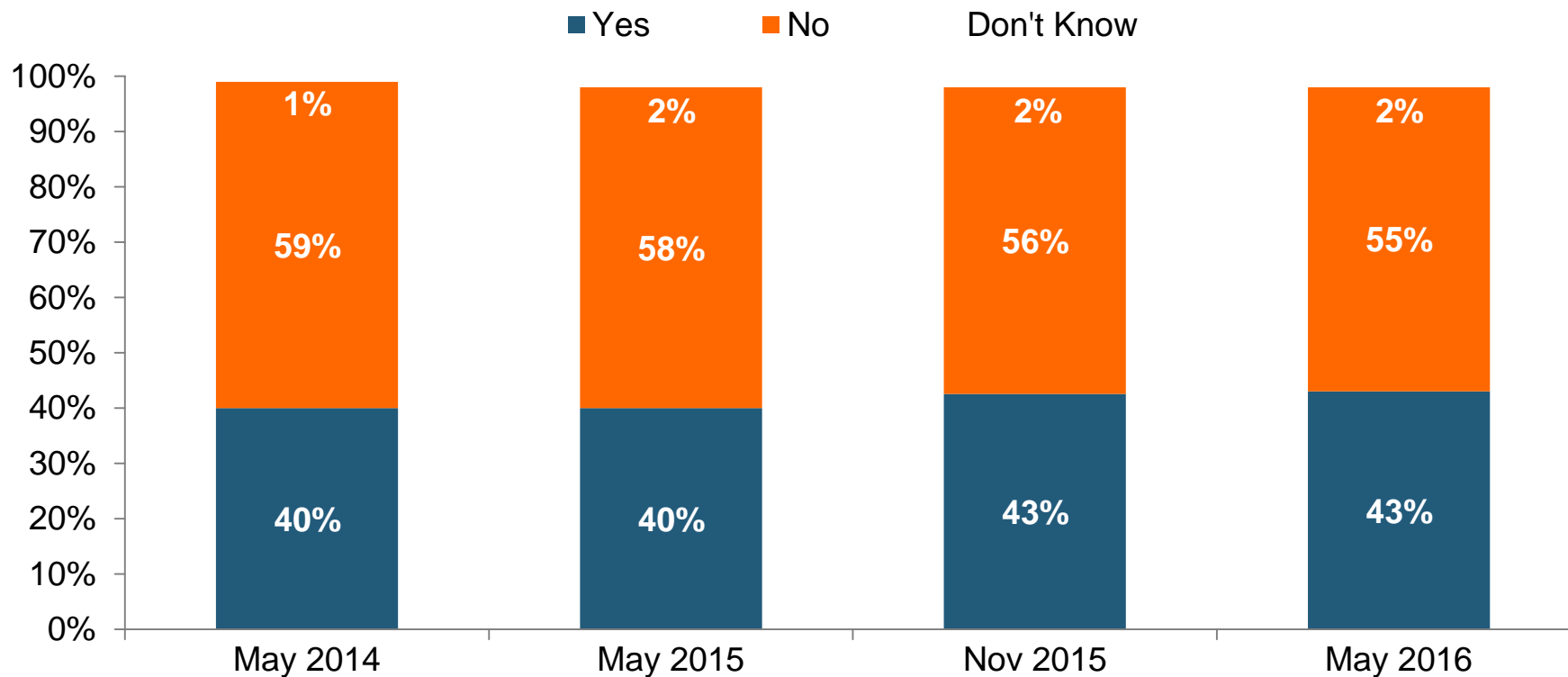
May 2016



**The Percentage Willing to Ride in a Driverless Car Rose Slightly;
71% of People Over 64 Were Unwilling to Ride.**

I.I.I. Poll: Driverless Cars

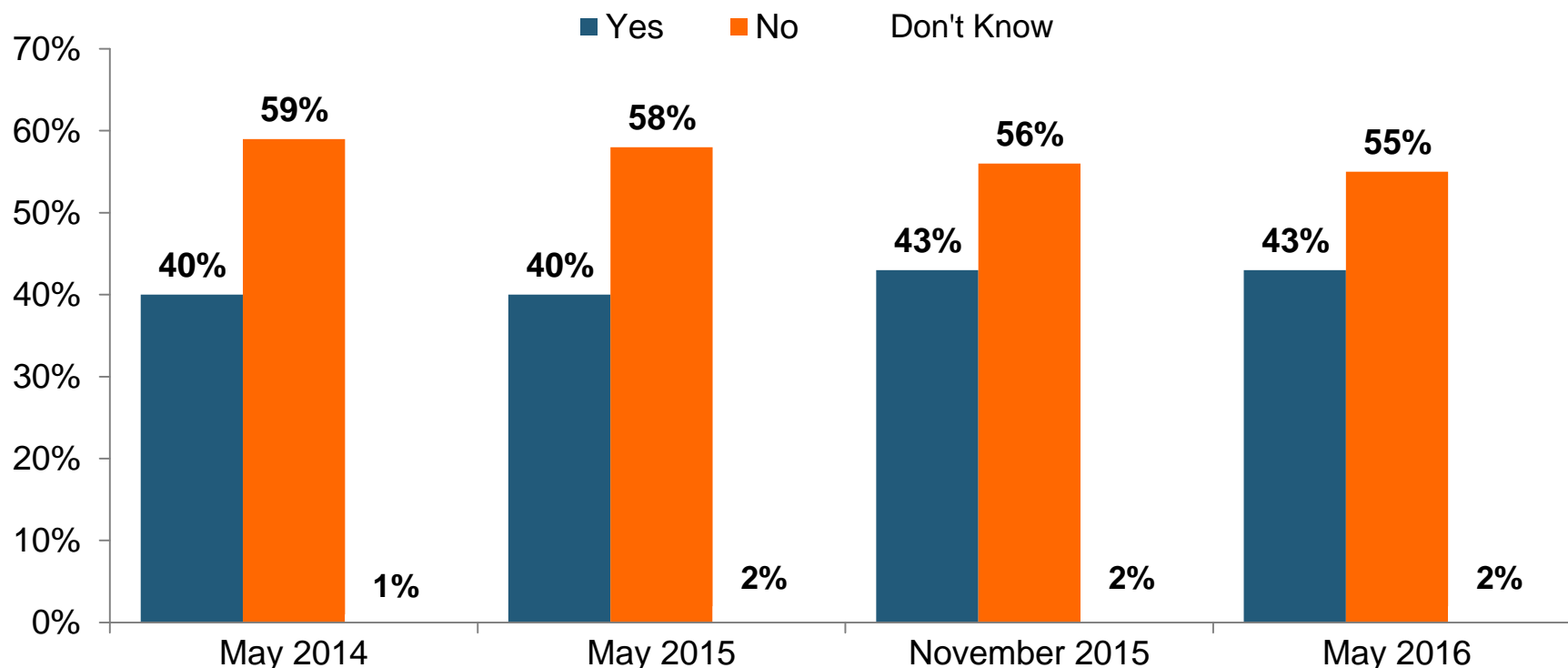
Q. Would you be willing to ride in a driverless car?



**The Percentage Willing to Ride in a Driverless Car Remains at 43%;
71% of People Over 64 Were Unwilling to Ride.**

I.I.I. Poll: Driverless Cars

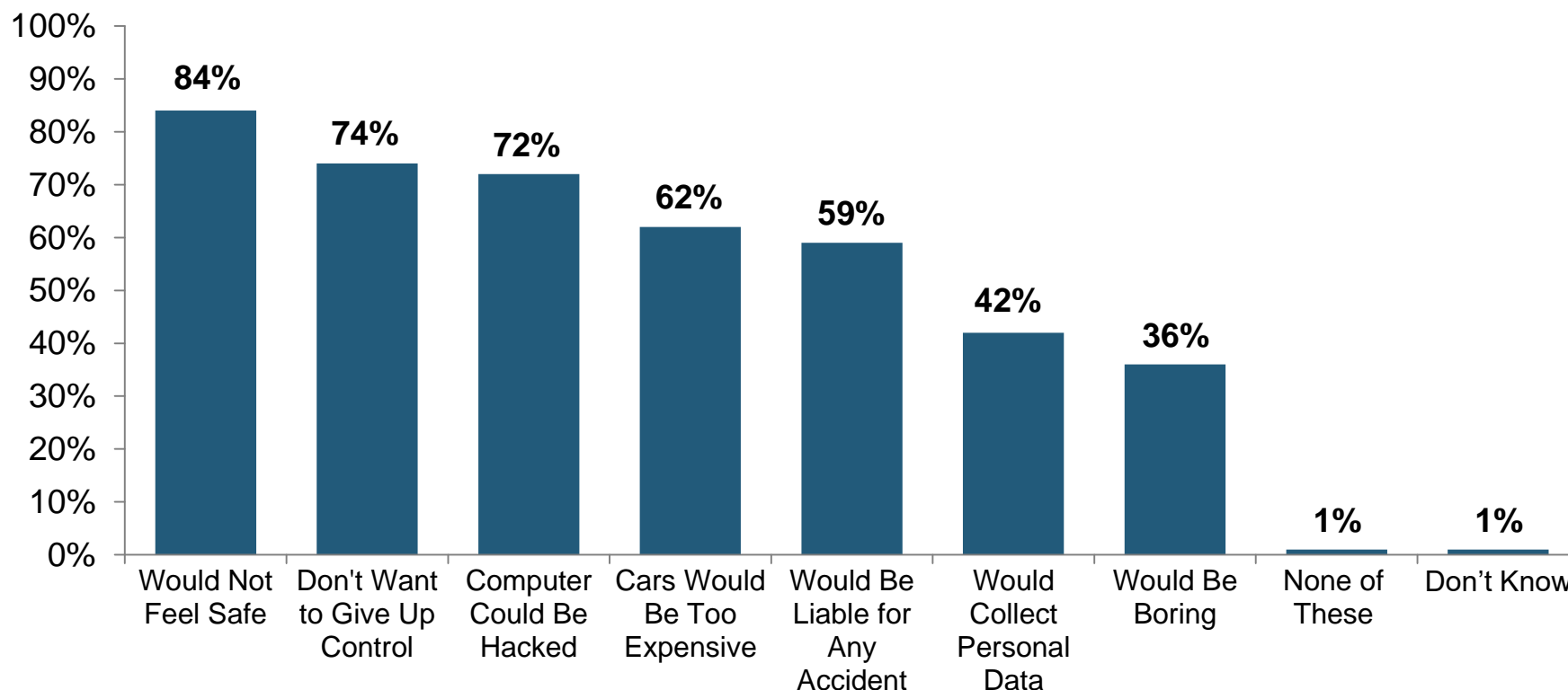
Q. Would you be willing to ride in a driverless car?



**The Percentage Willing to Ride in a Driverless Car Remains at 43%;
71% of People Over 64 Were Unwilling to Ride.**

I.I.I. Poll: Driverless Cars

Why Americans Would Not Want to Ride in a Driverless Car, May 2016¹



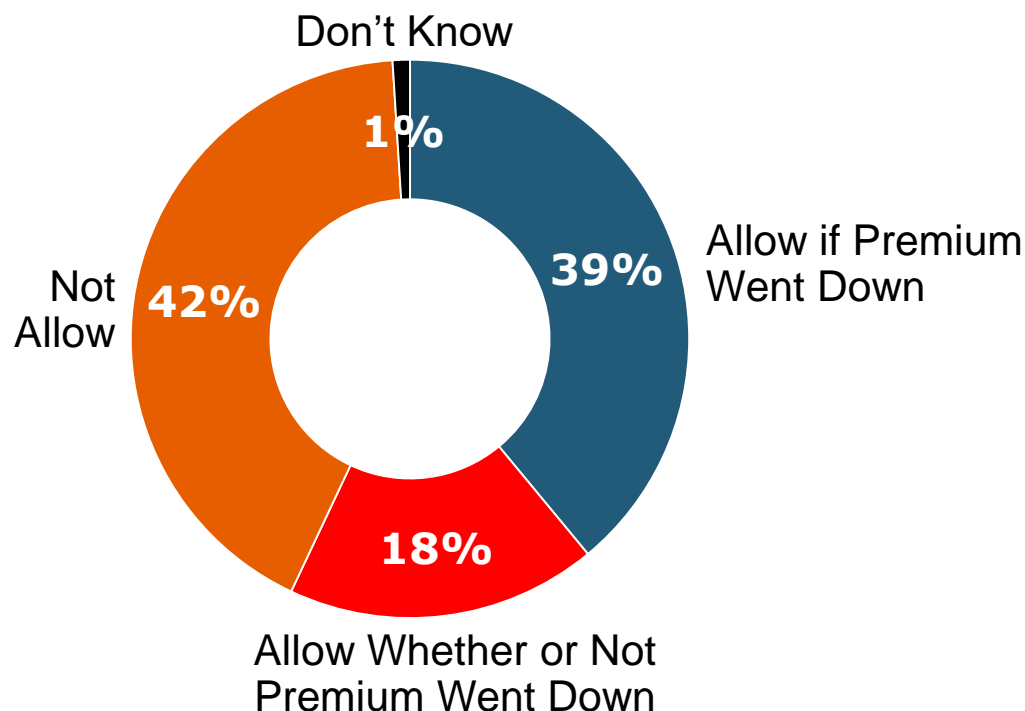
Safety Concerns Are Paramount Among Those Who Would Avoid Driverless Cars.

¹ Based on those who would not ride in a driverless car. Respondents could give more than one answer.
Source: Insurance Information Institute Annual *Pulse* Survey.

I.I.I. Poll: Telematics— Consumers Still Hesitant

Q

Would you allow your auto insurer to collect information about how and when you drive in order to set your auto insurance premium?



More Than Half of Auto Policyholders Would Allow Their Insurer to Collect Their Driving Information in Order to Set Premiums.

¹Asked of those who have auto insurance.

Source: Insurance Information Institute Annual *Pulse* Survey.

Telematics for Your Home: The Internet of Things

- The home is the next frontier for telematics
- Rapidly becoming a crowded space
- How and with whom will insurers partner?
- Can control increasing array of household systems remotely



- ◆ Heat, A/C
- ◆ Fire, CO detection
- ◆ Security Systems
- ◆ Cameras/Monitors
- ◆ Appliances
- ◆ Lighting

- Technology is adaptive

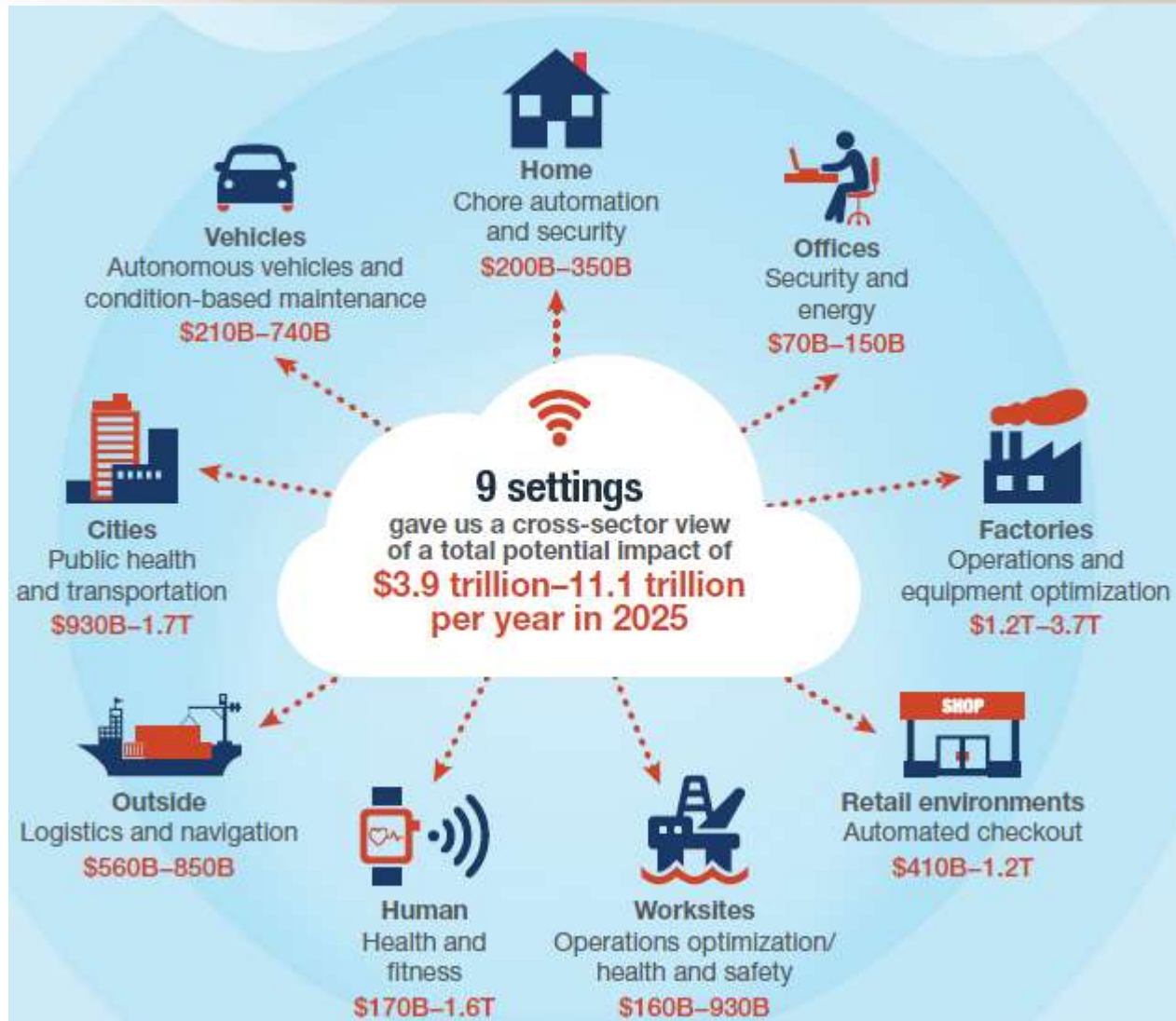
- ◆ *Uses sensors and algorithms to learn about you*



THE ‘INTERNET OF THINGS’

Capturing Economic Value Amid a Shifting Insurer Value Chain

The Internet of Things and the Insurance Industry



- The “Internet of Things” will create trillions in economic value throughout the global economy by 2025
- What opportunities, challenges will this create for insurers?
- What are the impact on the insurance industry “value chain”?

Sources: McKinsey Global Institute, *The Internet of Things: Mapping the Value Beyond the Hype*, June 2015; Insurance Information Institute.

Wearables Show Significant Potential to Reduce Workplace Injury, Death

■ Wearables Today Can Monitor:

- ◆ Location
- ◆ Heart rate
- ◆ Temperature
- ◆ Steps/Exertion
- ◆ Sweat
- ◆ Sleep

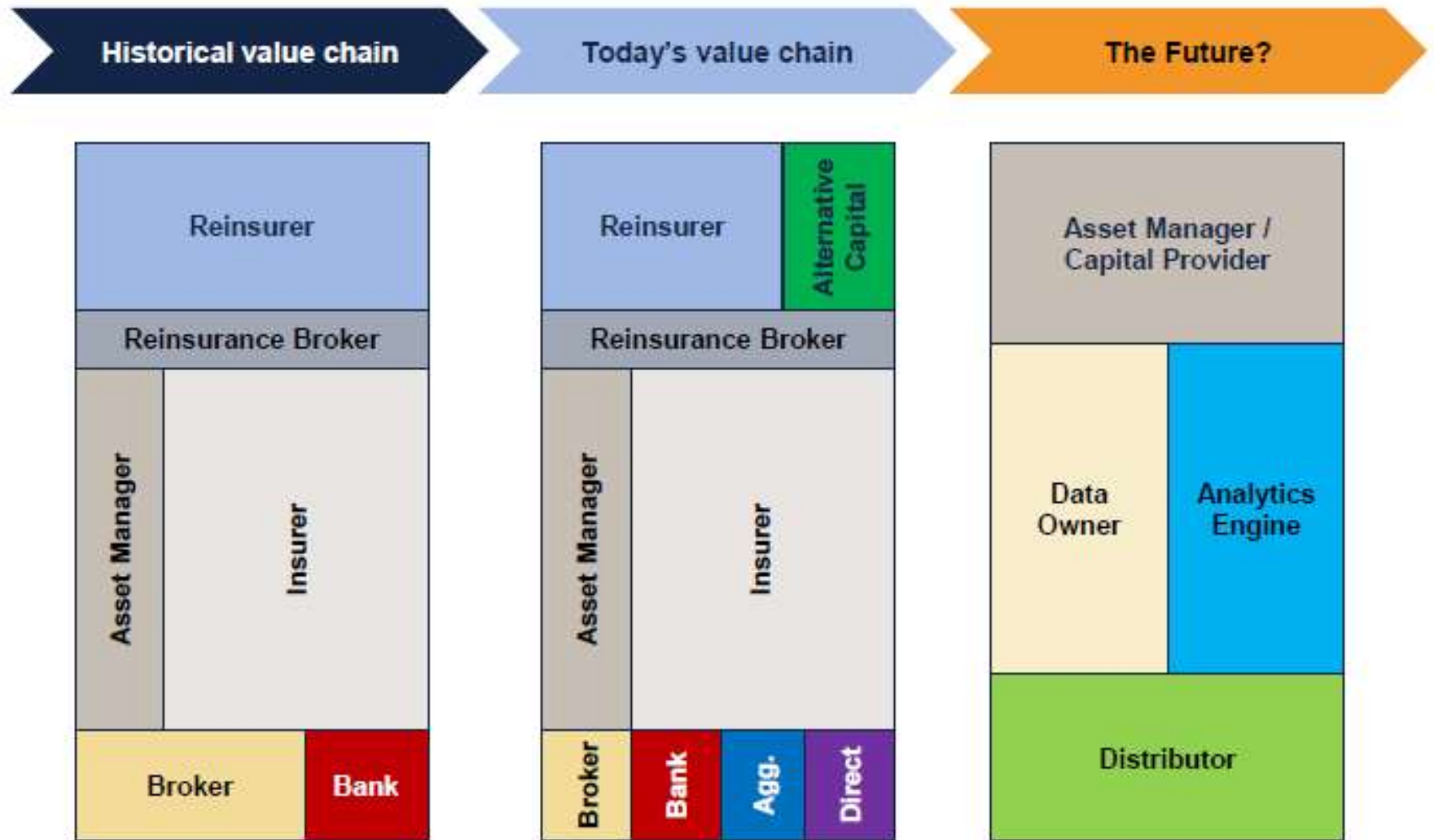


■ In the Near Future Could Monitor:

- ◆ Glucose level
- ◆ Oxygen levels
- ◆ Pain
- ◆ Nausea

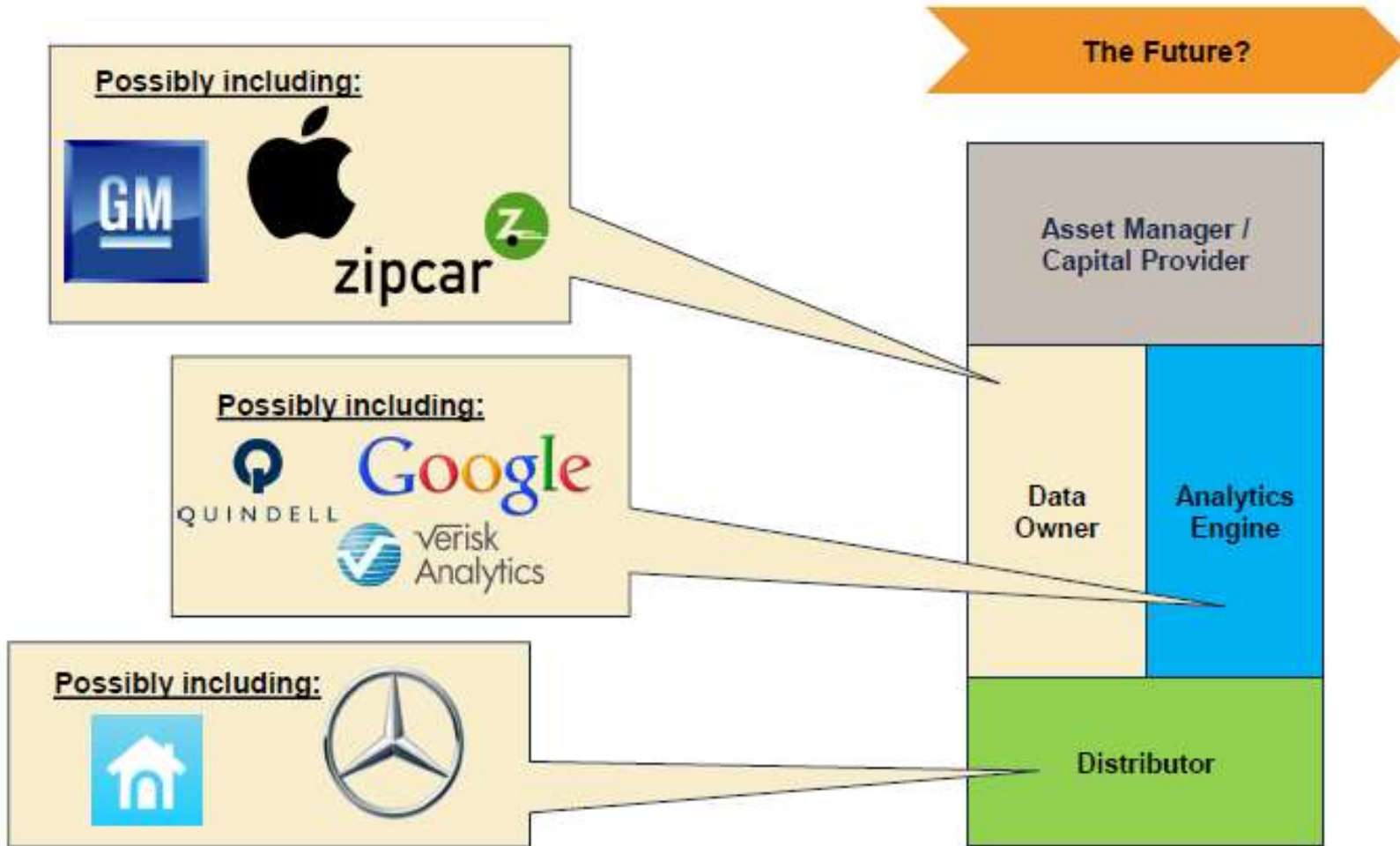


The Internet of Things and the Insurance Industry Value Chain



The Insurance Industry Value Chain Is Changing for Many Reasons

The Internet of Things and the Insurance Industry Value Chain



**Who owns the data? Where does It flow? Who does the analytics?
Who is the capital provider?**



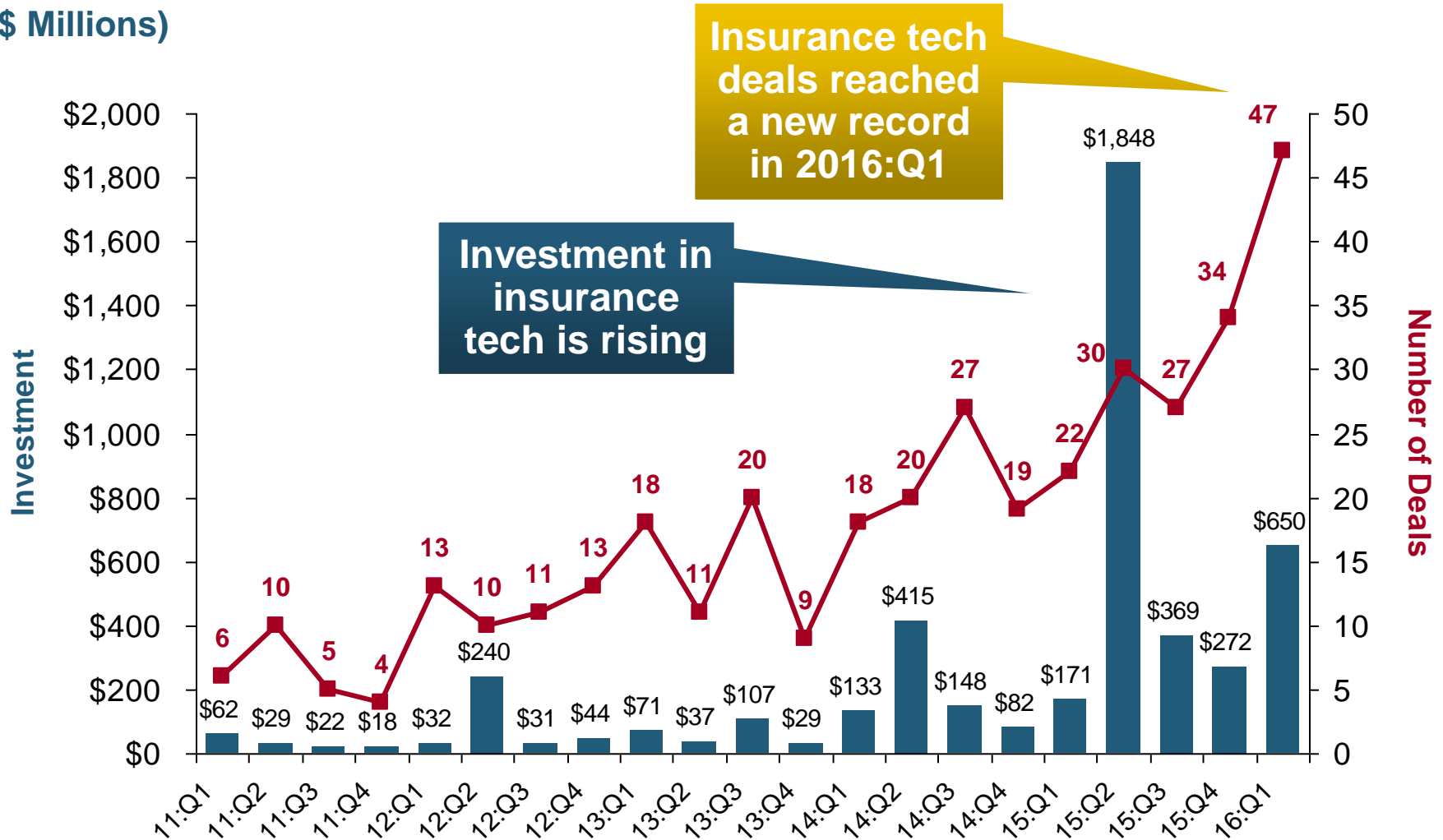
INSURANCE TECHNOLOGY: *FIN TECH ZEROES IN*

Number and Value of Deals Is Increasing

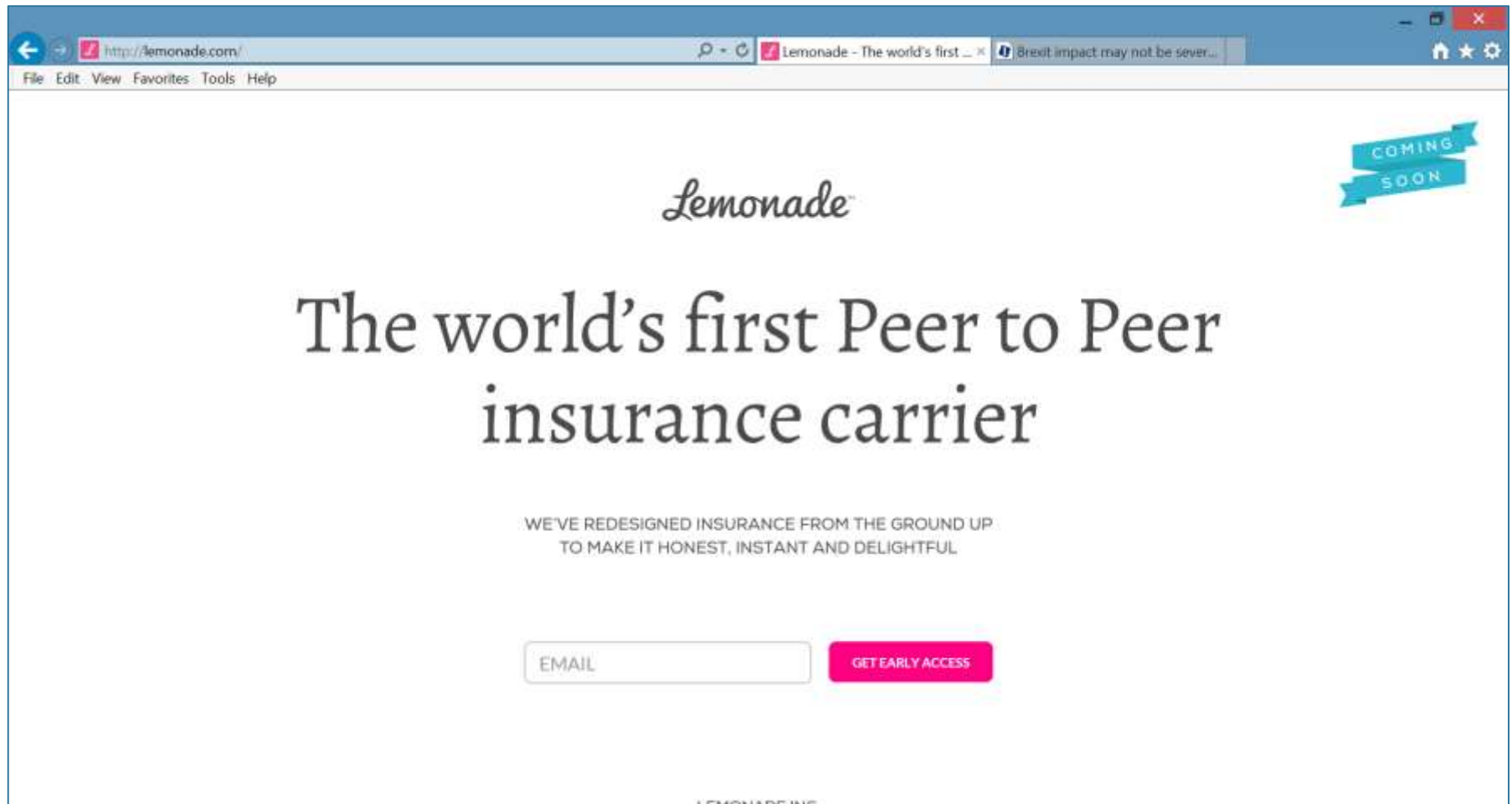
In Search of the Elusive Insurance 'Unicorn'

Insurance Technology Financing Trend: Change Is Coming

(\$ Millions)



Lemonade: Peer-to-Peer (P2P) Insurance



Lemonade: Sour Words About Insurance

Daniel Schreiber here, with updates from Lemonade.

I'm thrilled to report that a few days ago, by unanimous vote of our board and shareholders, **Lemonade became a Public Benefit Corporation**, and was also **awarded provisional 'B-Corp' certification. Both are firsts for an insurance carrier**, and are points of tremendous pride for our team.

Rebuilding insurance as a social good, rather than a necessary evil, is now part of our legal mission. **Our Chief Behavioral Officer, Professor Dan Ariely, says that "If you tried to create a system to bring out the worst in humans, it would look a lot like the insurance of today."** Working in partnership with nonprofits, and baking giving-back into our business model, holds the promise of a better insurance experience, and a more valuable insurance company.

In other news, I'm happy to say that we're putting finishing touches on our product and will be ready to launch in New York within weeks. The final step is for us to get our license, and if all goes to plan, we'll have that shortly.

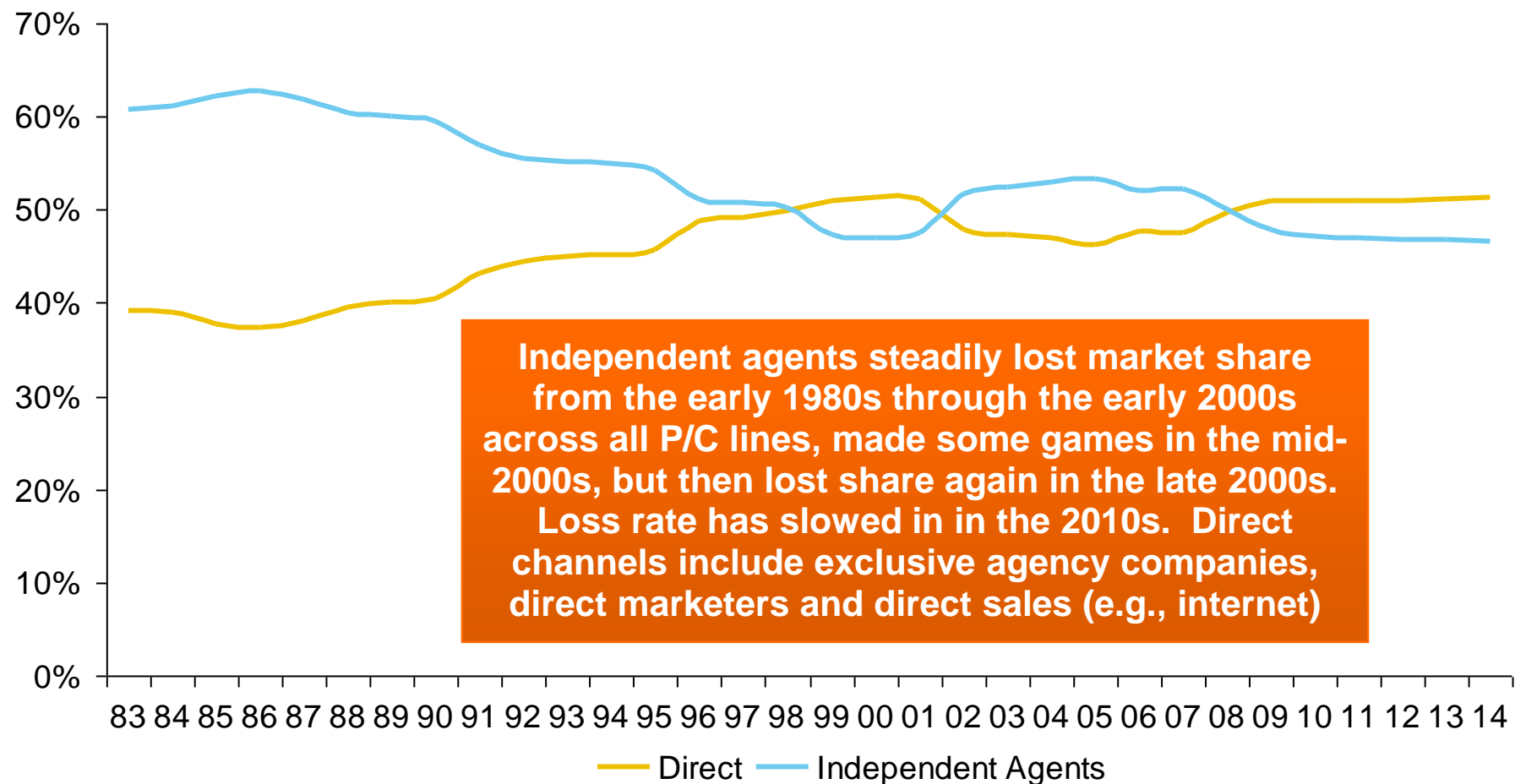
Be sure to follow us on [Twitter](#), [Facebook](#), and [LinkedIn](#) to stay in the know.

Until next time,
Daniel
@daschreiber

Distribution Trends

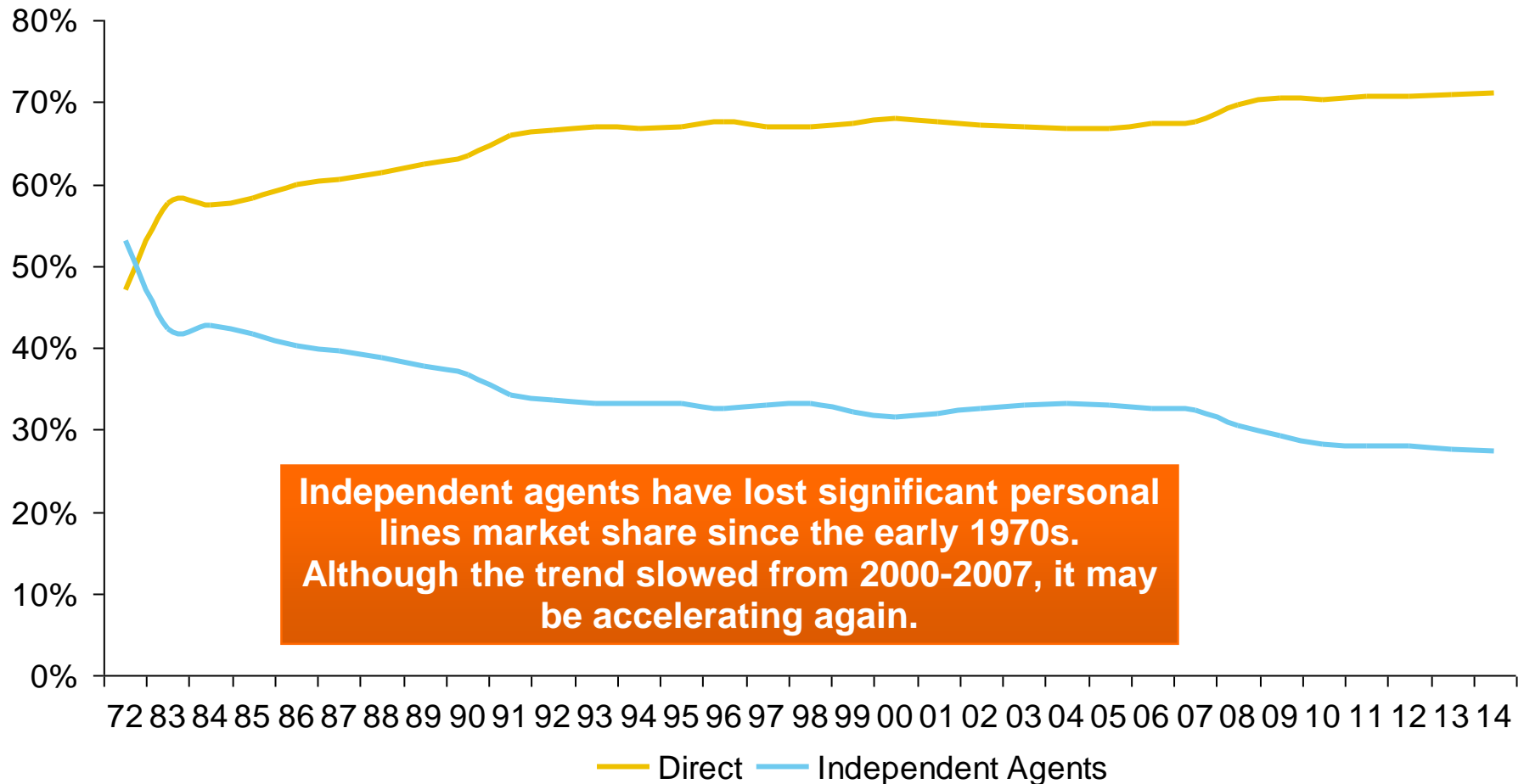
**Distribution by Channel Type
Continues to Evolve Around
the World**

All P/C Lines Distribution Channels, Direct vs. Independent Agents, 1983-2014



Source: Insurance Information Institute; based on data from Conning and A.M. Best.

Personal Lines Distribution Channels, Direct vs. Independent Agents, 1972-2014



Insurance Information Institute Online:

www.iii.org

*Thank you for your time
and your attention!*

Twitter: twitter.com/bob_Hartwig

Download at www.iii.org/presentations