

Emerging Issues in Today's (and Tomorrow's) Insurance Industry



**PRESENTED TO:
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Emerging Risks



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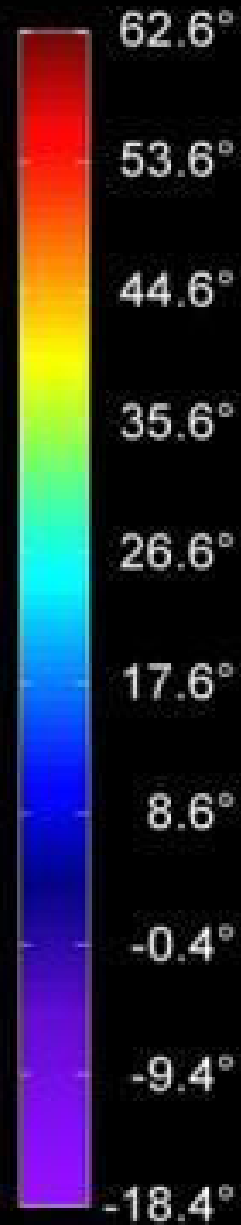
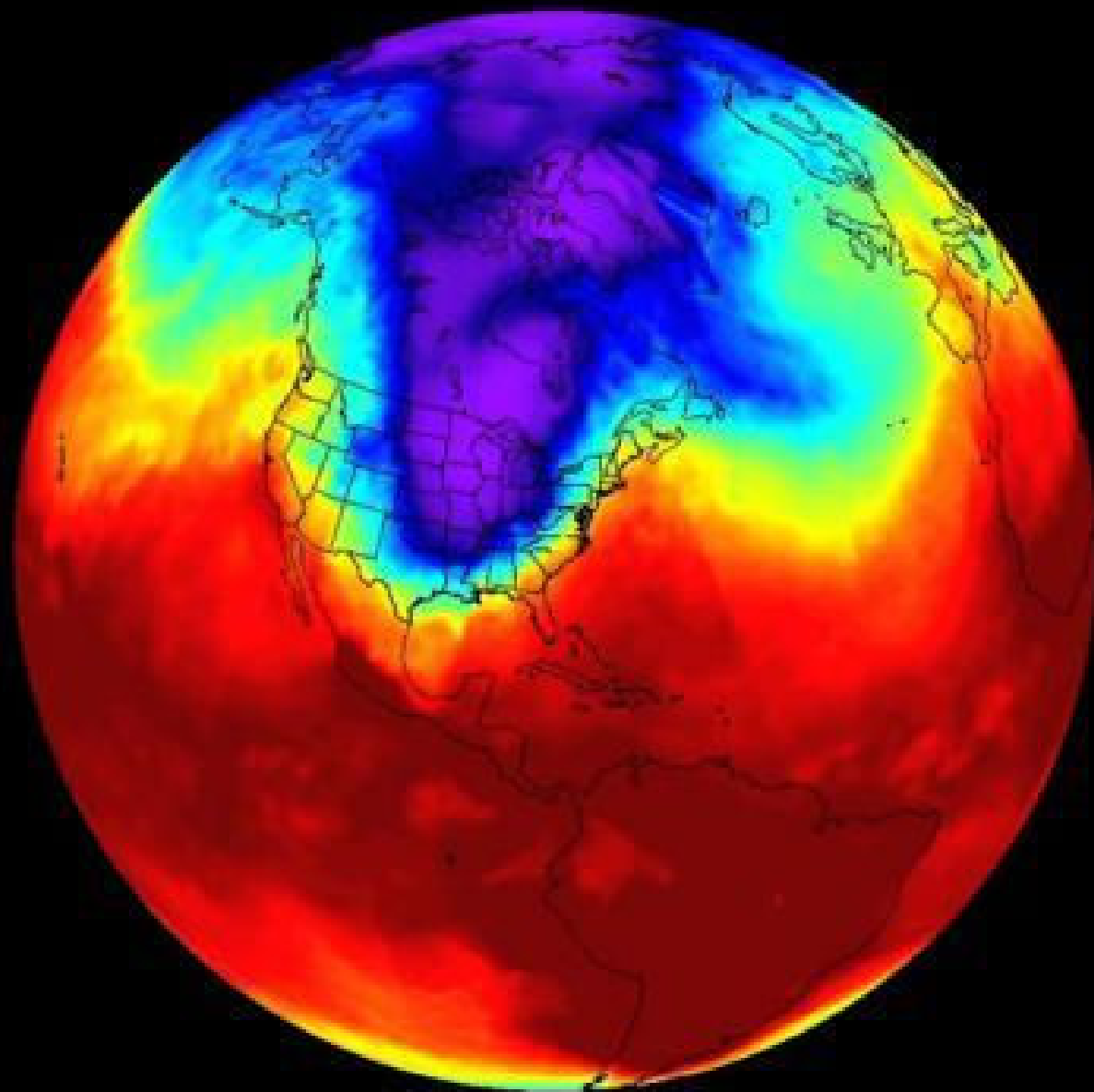
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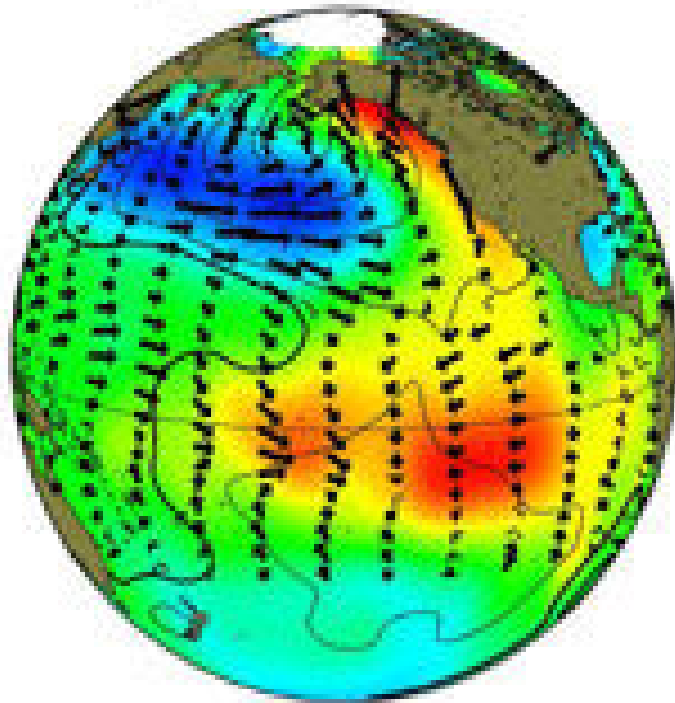
Jan. 06, 2014

Pacific Negative Decadal Oscillation

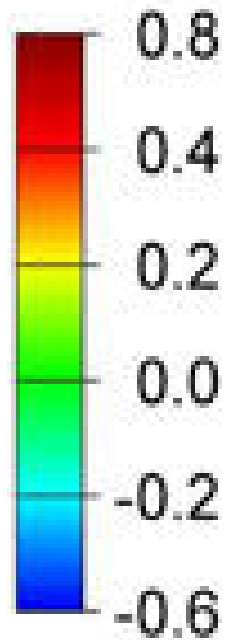
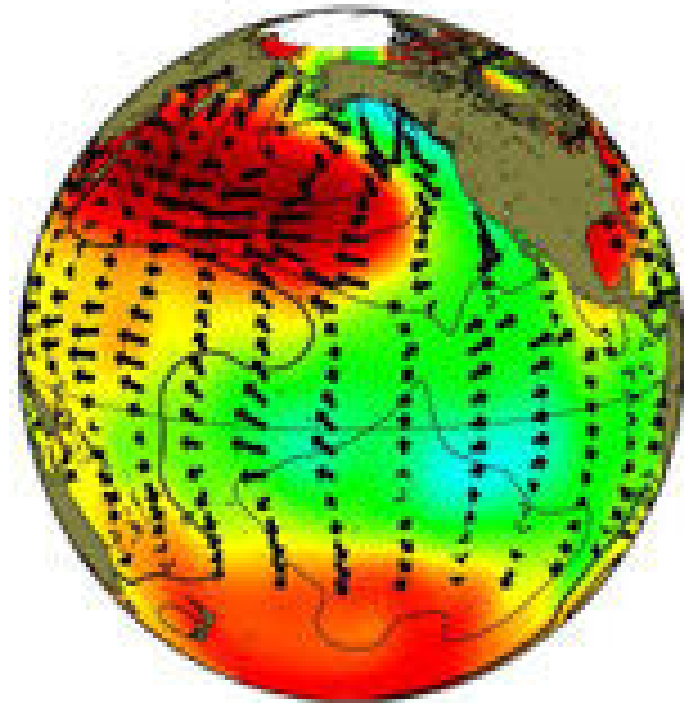


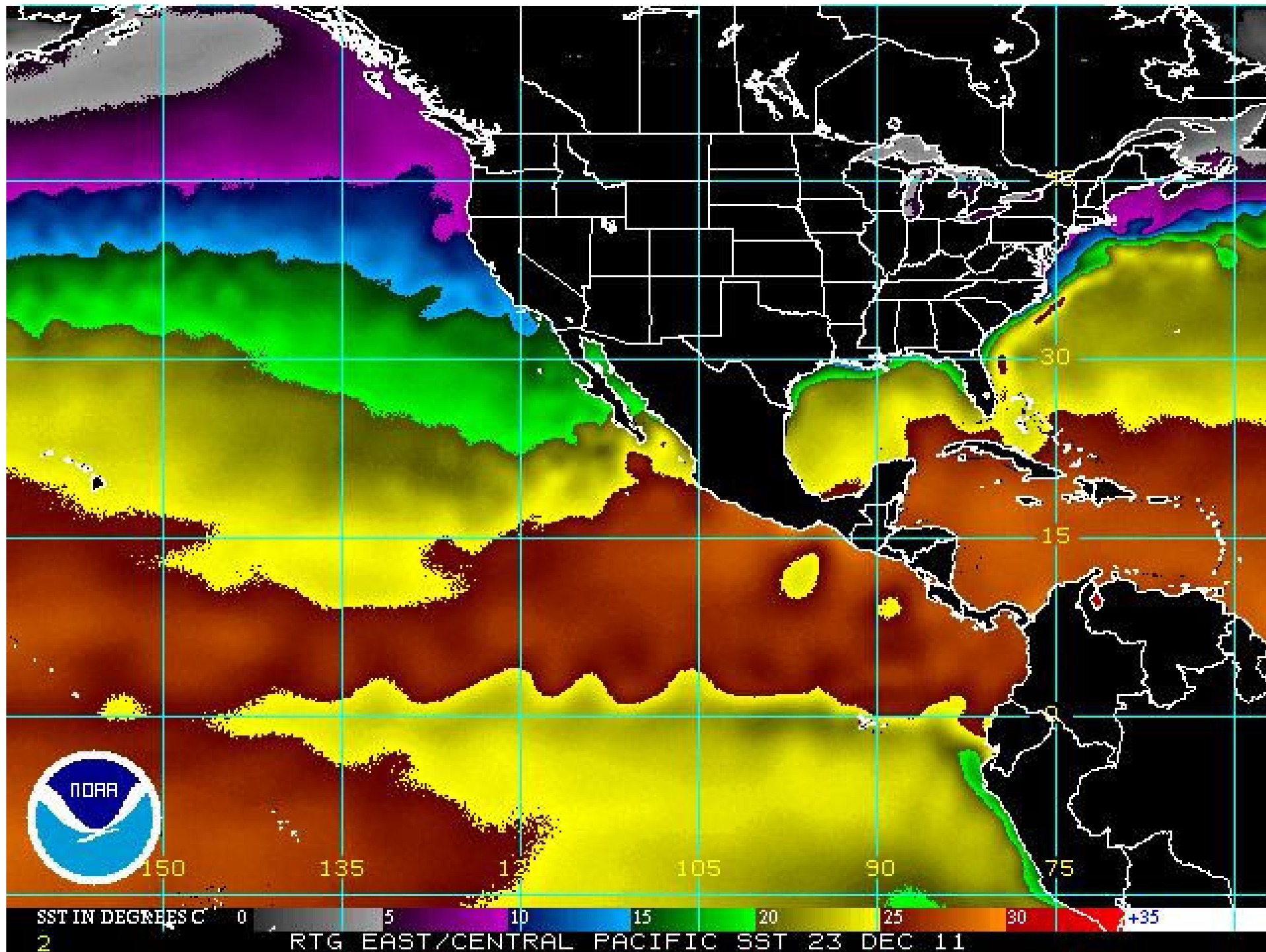
Pacific Decadal Oscillation

positive phase



negative phase

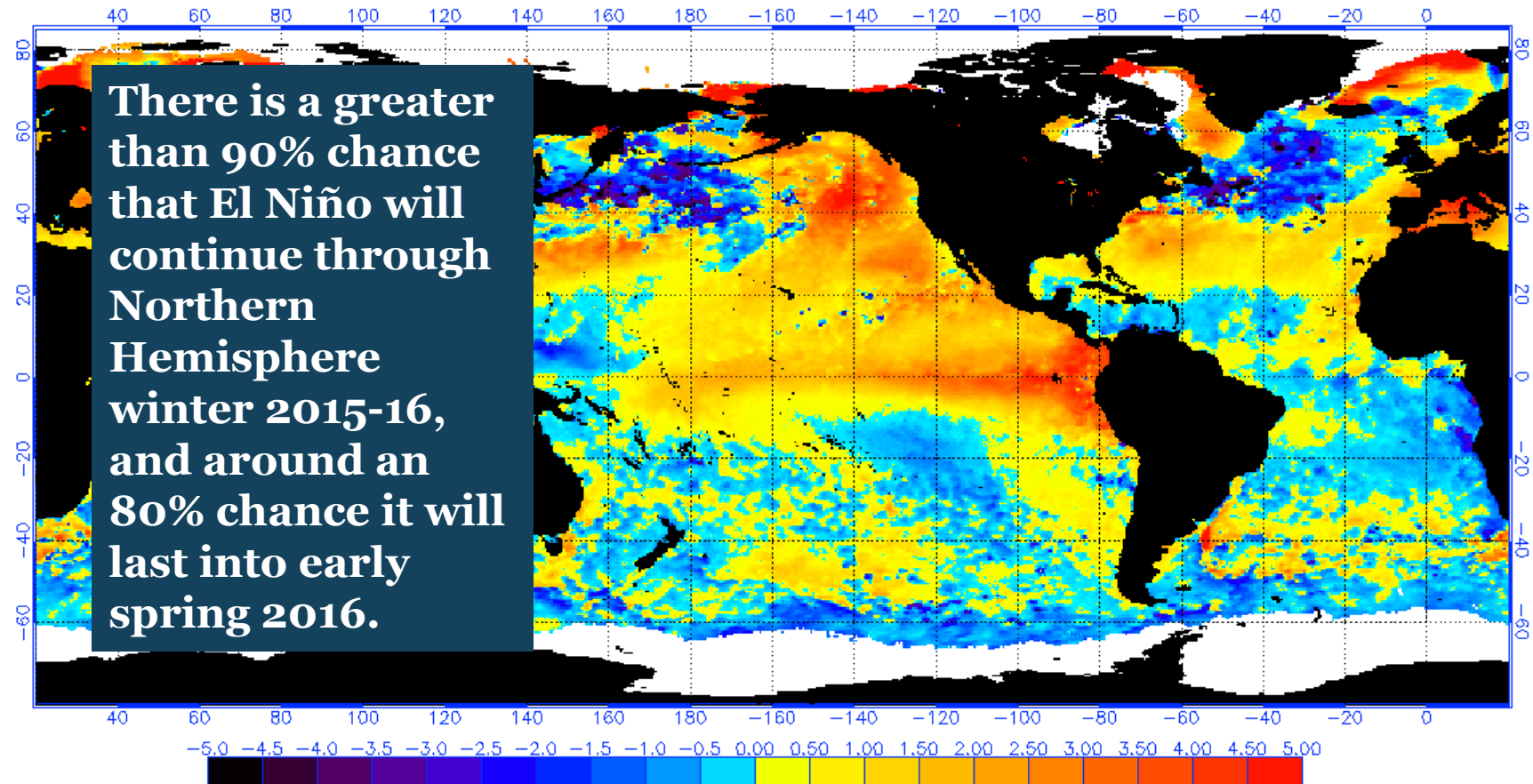




El Niño



NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 7/9/2015
(white regions indicate sea-ice)

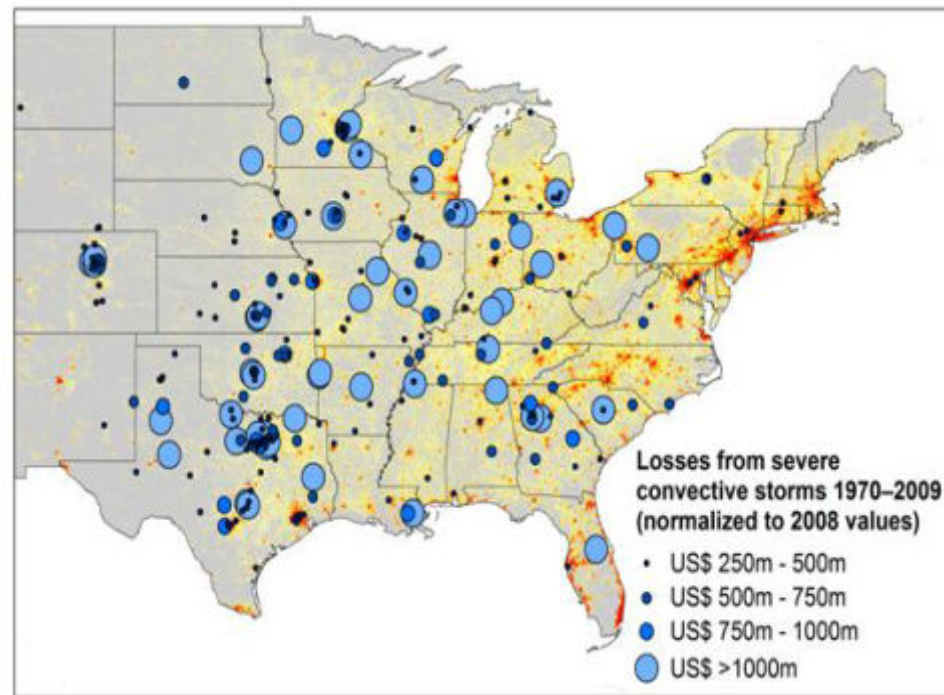


New Research Suggests Increase in Convective Activity Is Costly for Insurers



- Study examines convective (hail, tornado, thunder squall and heavy rainfall) events in the US with losses exceeding US\$ 250m in the period 1970–2009 (80% of all losses)
- Past losses are normalized (i.e., adjusted) to currently exposed values
- After normalization there are still increases of losses
- Increases are correlated with the increase in the meteorological potential for severe thunderstorms and its variability

For the first time research shows that climatic changes have already influenced US thunderstorm losses



Emerging Risks



1. Coronal Mass Ejections (CME)
2. Regional/Global Food Shortages
3. Severe weather related events
4. Geo-political instability
5. Moral hazard

Where are we?



- Global Terror
- State Sponsored Terror
- Lone Wolves
- More severe weather events
- Increase in cyber events
- Severity v. Frequency
- Over regulation
- Food shortages
- Power Grid exposures
- Genome modification
- Longer life expectancies
- 3-D Printers
- Autonomous cars
- Unmanned Aerial Vehicles (UAV)
- Nanotechnology
- Excess capacity & surplus
- Genetically modified foods
- Wildfires

AAMGA Emerging Issues & Trends Committee



- Record high capacity
- Wholesale consolidation
- Attracting & retaining new/specialized talent
- Cyber security & data loss
- Wholesale distribution value proposition
 - Market diversification – Market loss
 - Comparative raters – selling with emphasis on price v. service
 - Pressure on commission / Contingent commissions
 - Carriers performing more agency tasks
- Carrier consolidation

AAMGA Emerging Issues & Trends Committee



- Technology Investments
- CAT Exposures
 - Weather pattern changes
 - CAT Bonds & Insurance Linked Securities
 - Increased focus on risk management
 - Solar storms & CME's
 - Power grid blackouts
- Knowledge transfer / Lack of perpetuation plans
- Non-traditional “insurers”
 - Google/Facebook & Amazon

AAMGA Emerging Issues & Trends Committee





What does the future hold?

How Big Are Liability Insurance Markets in Major Economies?

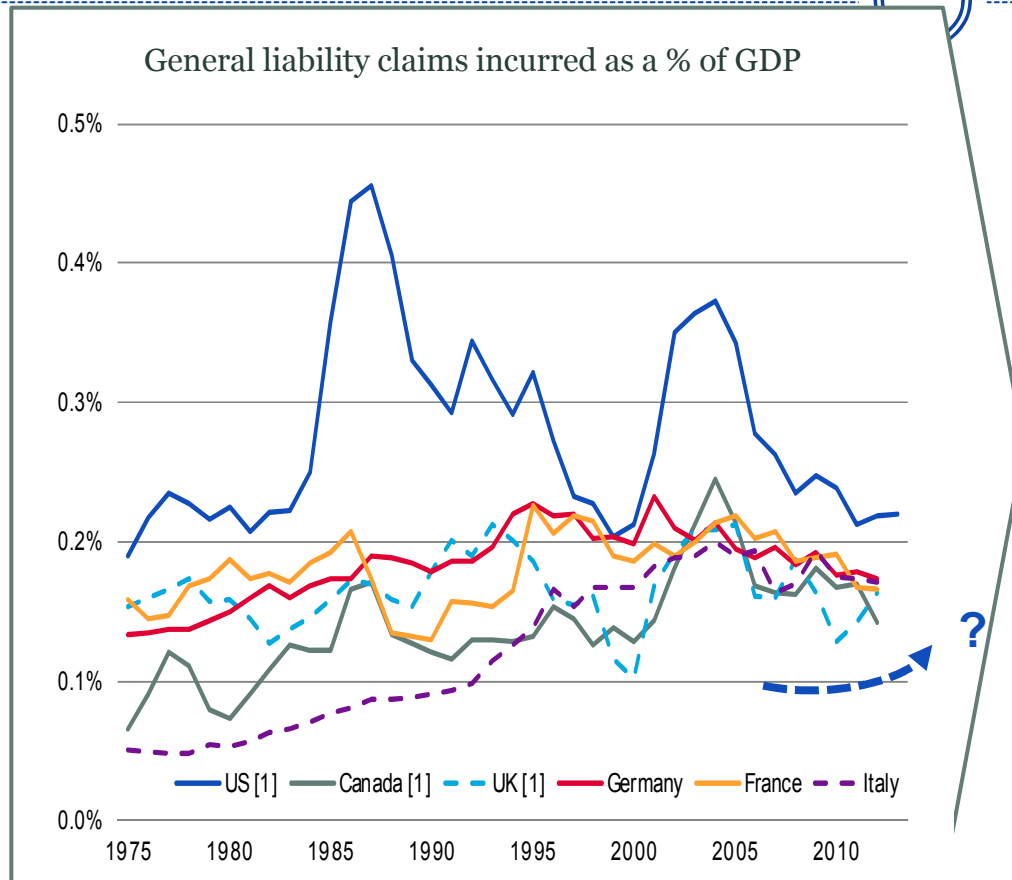
Rank		Premiums & GDP (USD billions)			Percentage Shares	
		Liability	Total Non-Life	GDP	Liability/ Total Non-Life	Liability/ GDP
1	US	84.0	531.2	16'802	15.8%	0.50%
2	UK	9.9	99.2	2'521	10.0%	0.39%
3	Germany	7.8	90.4	3'713	8.7%	0.21%
4	France	6.8	83.1	2'750	8.2%	0.25%
5	Japan	6.0	81.0	4'964	7.3%	0.12%
6	Canada	5.2	50.5	1'823	10.3%	0.29%
7	Italy	5.0	47.6	2'073	10.6%	0.24%
8	Australia	4.8	32.7	1'506	14.8%	0.32%
9	China	3.5	105.5	9'345	3.3%	0.04%
10	Spain	2.2	31.0	1'361	7.0%	0.16%
Top 10		135	1'150	46'900	11.8%	0.29%
World		160	1'550	61'700	10.3%	0.26%

The US and UK have the highest shares of liability premiums relative to GDP

Liability premiums in China account for a much smaller share of GDP

Liability insurance premiums totaled \$160 billion in 2013, accounting for 0.26% of global GDP. This also equates to 10% of global non-life premiums and 23% of global commercial lines premiums

General Liability Claims Incurred as a Percent of GDP

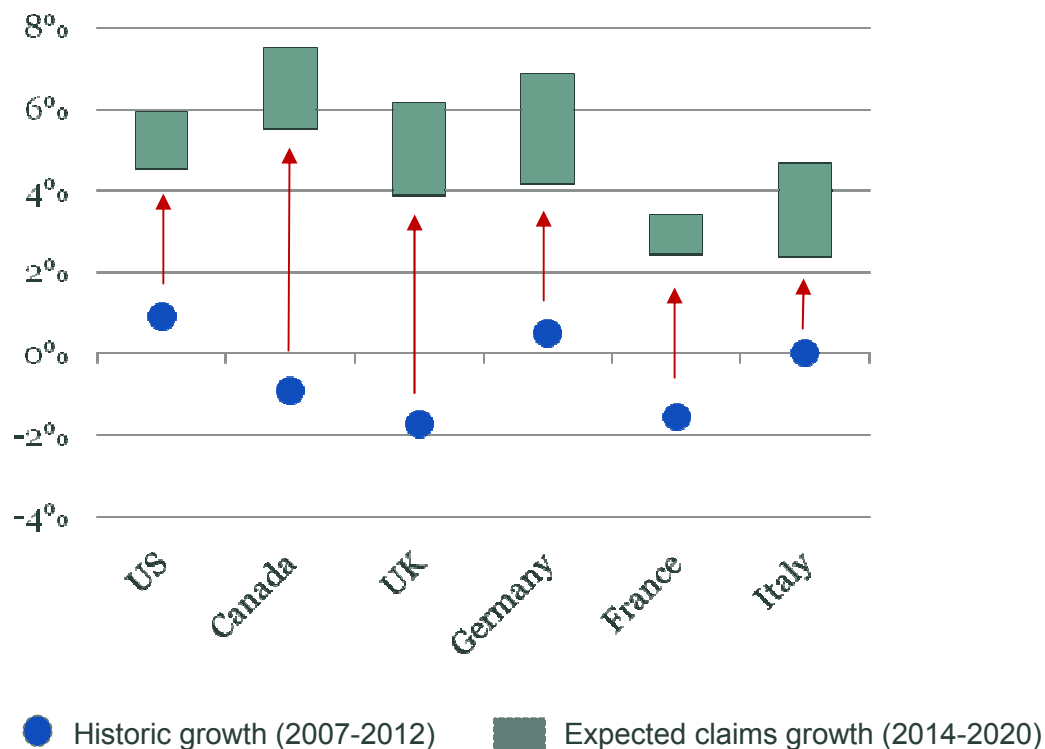


Question as to what will happen when the current period of reserve releases runs its course

- Traditionally, liability claims grow faster than GDP.
- The decline in claims began in 2004 and was revealed by a turn in the reserves cycle. Improved safety reduced the frequency of claims.
- After 2008, underlying claims trends slowed down due to the global recession.
- The question is whether economic drivers of claims costs have begun to accelerate in the US and some other countries.
- If historical trends re-emerge, then claims trends are likely to rise with stronger economic growth and at a pace greater than that of overall GDP

Some Expect Higher Claim Cost Growth to Resume in Post-Crisis Era

Range of Expected Liability Claims Growth (2014-20) vs historic growth (2007-12)



- US, Canada, and the UK have the highest GDP forecasts; France and Italy the lowest.
- The UK and France have historically shown low growth of claims in relation to GDP.
- Canada and Germany have historically high correlations of claims growth to wage and CPI inflation.



Total GDP at Risk



1.	New York City:	\$90.36B
2.	Los Angeles:	\$90.32B
3.	Chicago:	\$42.35B
4.	San Francisco:	\$41.35B
5.	Houston:	\$31.66B
6.	Washington, DC:	\$26.60B
7.	Miami:	\$23.45B
8.	Philadelphia:	\$19.43B
9.	Atlanta:	\$16.61B
10.	Boston:	\$16.30B

Source: Lloyd's City Risk Survey: 2015-2025



Total GDP at Risk



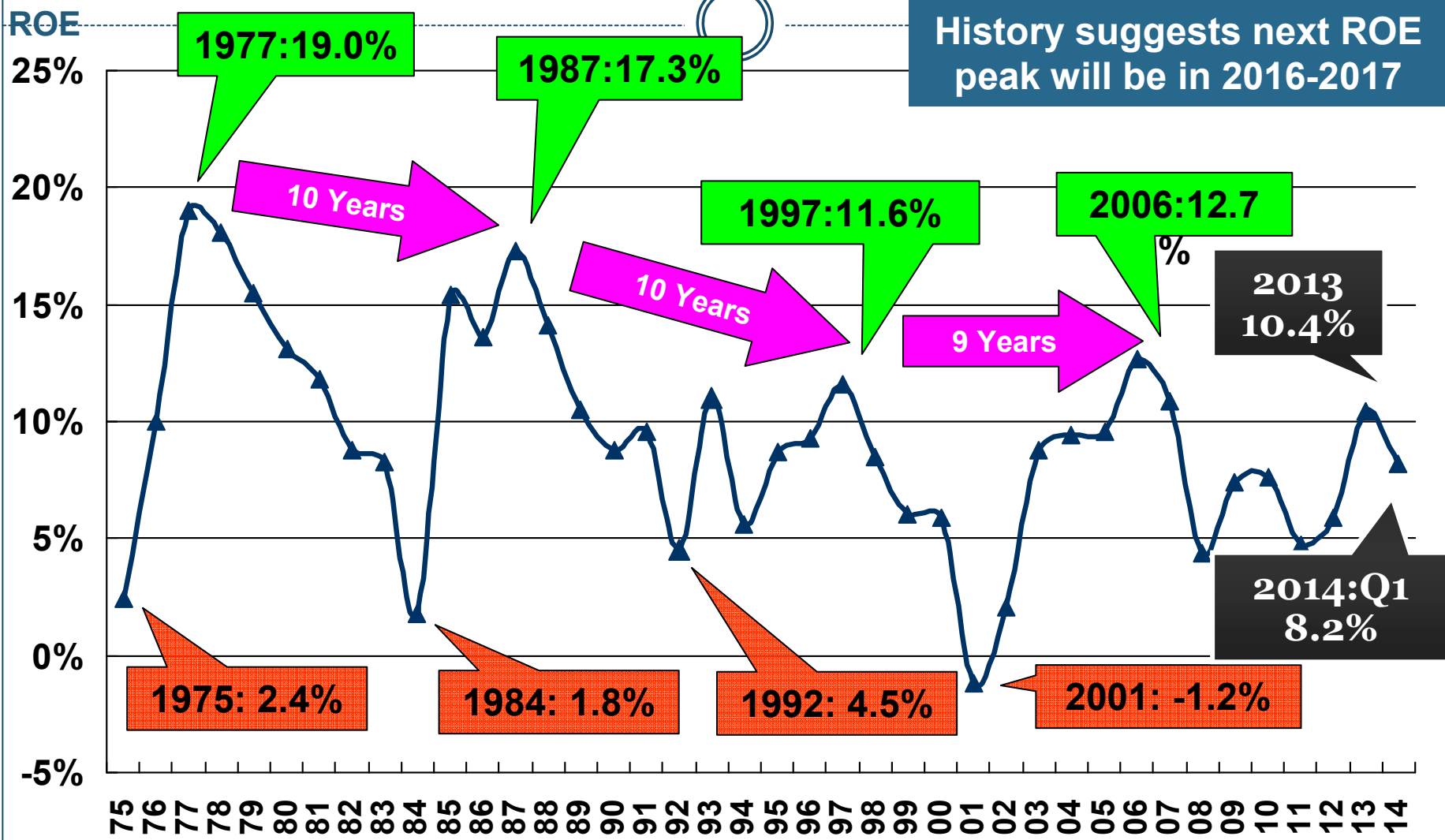
Chicago

- Average Annual GDP: \$574.97B
- Total GDP @ Risk: \$42.35B
- Top Risks
 - Market Crash: \$11.98B
 - Oil Price Shock: \$7.5B
 - Cyber Attack: \$6.71B
 - Flood: \$6.23B
 - Human Pandemic \$3.55B

Source: Lloyd's City Risk Survey: 2015-2025



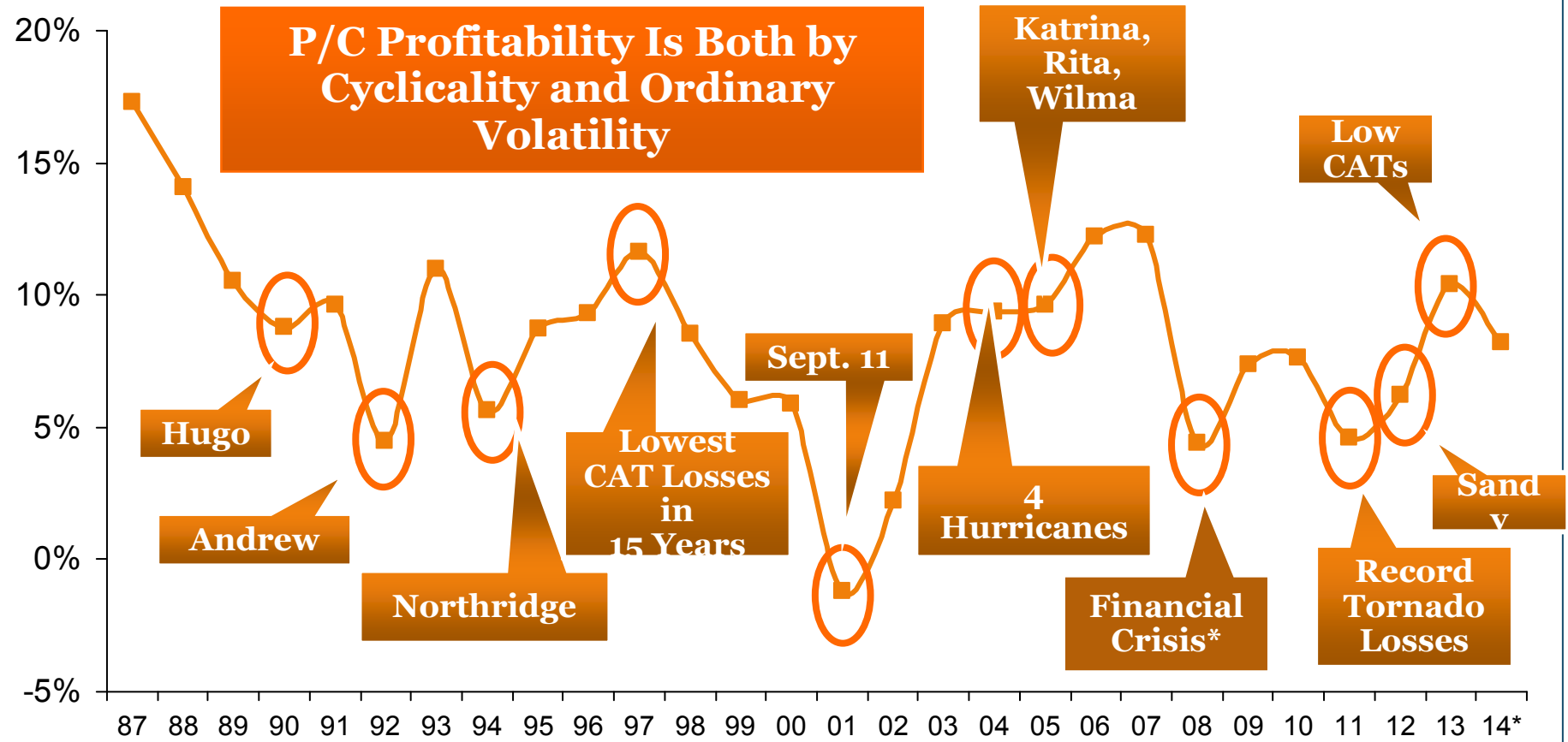
Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2014:Q1*



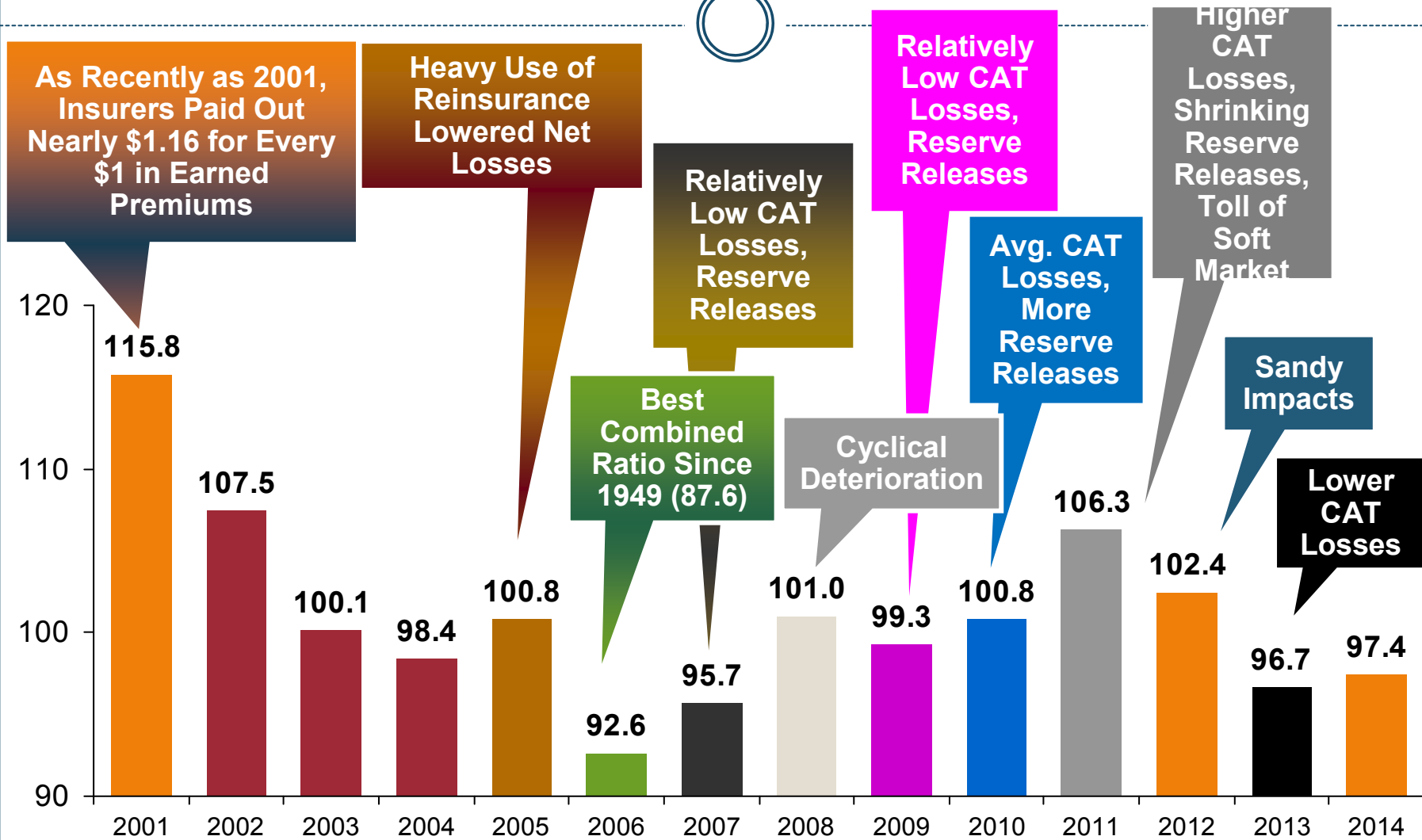
*Profitability = P/C insurer ROEs. 2011-14 figures are estimates based on ROAS data. Note: Data for 2008-2014 exclude mortgage and financial guaranty insurers.

ROE: Property/Casualty Insurance by Major Event, 1987–2014:Q1

(Percent)



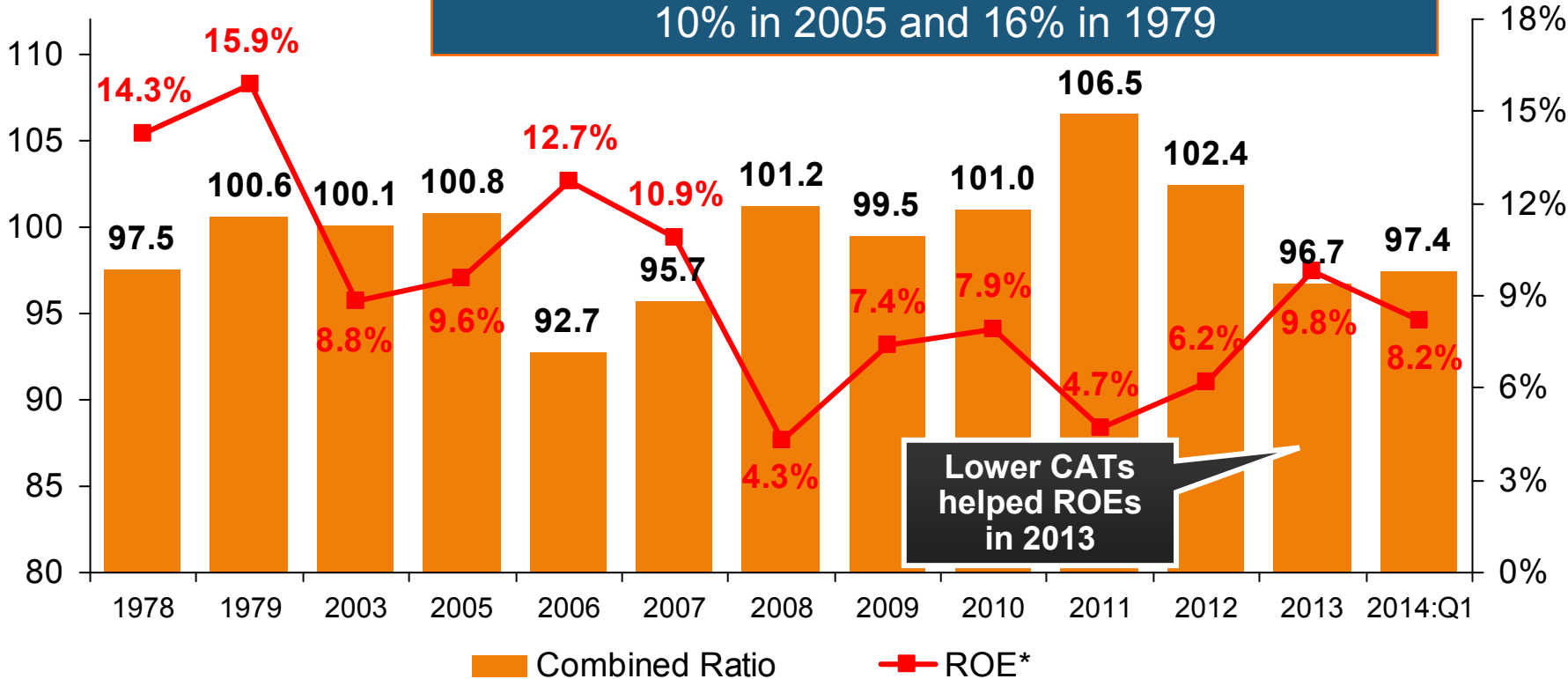
P/C Insurance Industry Combined Ratio, 2001–2014:Q1*



A 100 Combined Ratio Isn't What It Once Was: Investment Impact on ROEs

Combined Ratio / ROE

A combined ratio of about 100 generates an ROE of ~7.0% in 2012/13, ~7.5% ROE in 2009/10, 10% in 2005 and 16% in 1979



Combined Ratios Must Be Lower in Today's Depressed Investment Environment to Generate Risk Appropriate ROEs

* 2008 -2014 figures are return on average surplus and exclude mortgage and financial guaranty insurers. 2014:Q1 combined ratio including M&FG insurers is 97.3; 2013 = 96.1; 2012 =103.2, 2011 = 108.1, ROAS = 3.5%.
Source: Insurance Information Institute from A.M. Best and ISO Verisk Analytics data.

INDUSTRY DISRUPTORS

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

Thoughts on the Future

Technology and Insurance



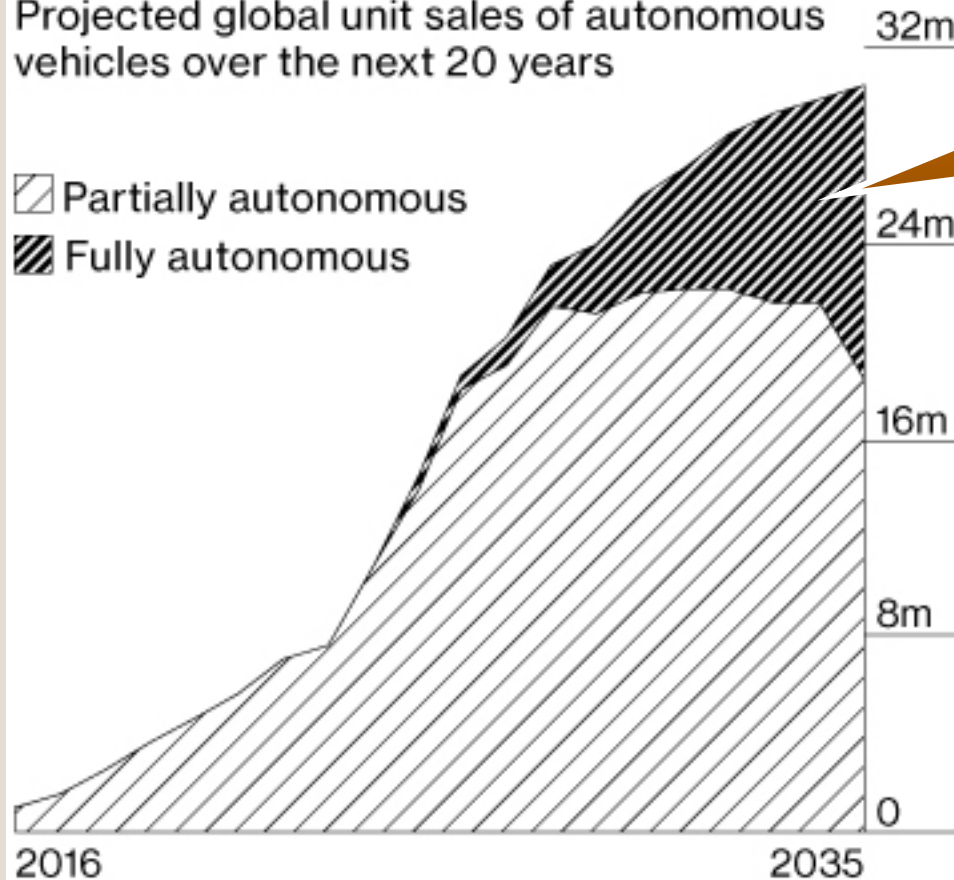
**Rapid Technological Innovations
Are Impacting Many Segments of
the P/C Insurance Industry**

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



DATA: BOSTON CONSULTING GROUP;
GRAPHIC BY BLOOMBERG BUSINESSWEEK

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



A Few Thoughts on the Future of Auto Insurance



- Global auto insurance premiums written total about \$600B
 - ~80% personal, 20% commercial
 - US accounts for more than 1/3 of this total (about \$210B in 2014)
- Innovations in automobile safety will, over time, reduce claim frequency but severities could still rise as repair costs escalate
 - Claim activity clearly not immune to economy
- Frequency declines could lead price declines, aiding profitability

A Few Thoughts on the Future of Auto Insurance



- More cars, not fewer will be on highways in the US, world
 - Exposure (insured car years) grows even as frequency declines
- Timeline for large numbers of mass produced autonomous vehicles on American highways is wildly optimistic
 - Mid-2030s is more likely timeframe; Transition occurring through mid-century
 - Tech media is enamored with anything involving Google, Apple
- Auto insurance will be the largest, most important of all P/C lines for many years to come

Labor on Demand: Huge Implications for the US Economy, Workers & Insurers

THE WALL STREET JOURNAL

There's an Uber for Everything Now
Apps do your chores: shopping, parking, cooking, cleaning, packing, shipping and more

Will **YOUR** job be reduced to an app?



Send in the Drones: Potential Rapid Adoption in Industry; Media Loves It



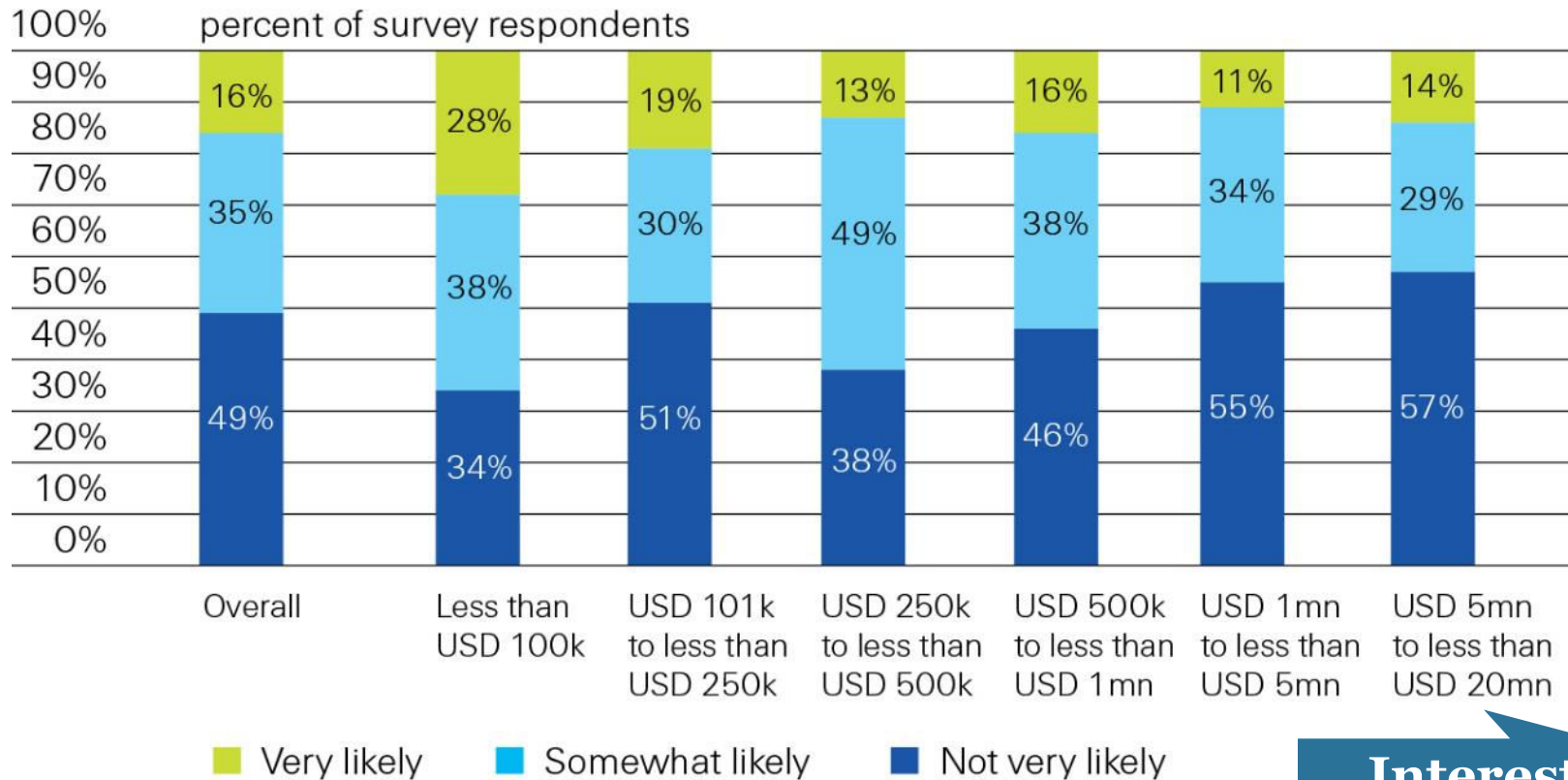
- **Drones or Unmanned Aerial Vehicle (UAV) technology is seeing rapid adoption rate in many industries, including insurance**
- **FAA granting Section 333 exemptions for commercial use and testing of UAVs**
- **At least 5 insurers have received permission to test**
- **Wide variety of applications: claims, pre-event property inspections...**
- **Insurers partnering with construction industry to guide R&D and regulation of UAV use via *Property Drone Consortium*: www.propertydrone.org**



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The Property Drone Consortium represents a collaboration among insurance carriers, construction industry leaders and supporting enterprises who have agreed to work together to promote research, development and the establishment of regulations for the use of Unmanned Aerial System (UAS) technology across the insurance and construction industries.

Proportion of Businesses Interested in Buying Insurance Online



Likelihood of small US businesses buying insurance online directly from the insurer, overall and by annual company revenue, in 2013

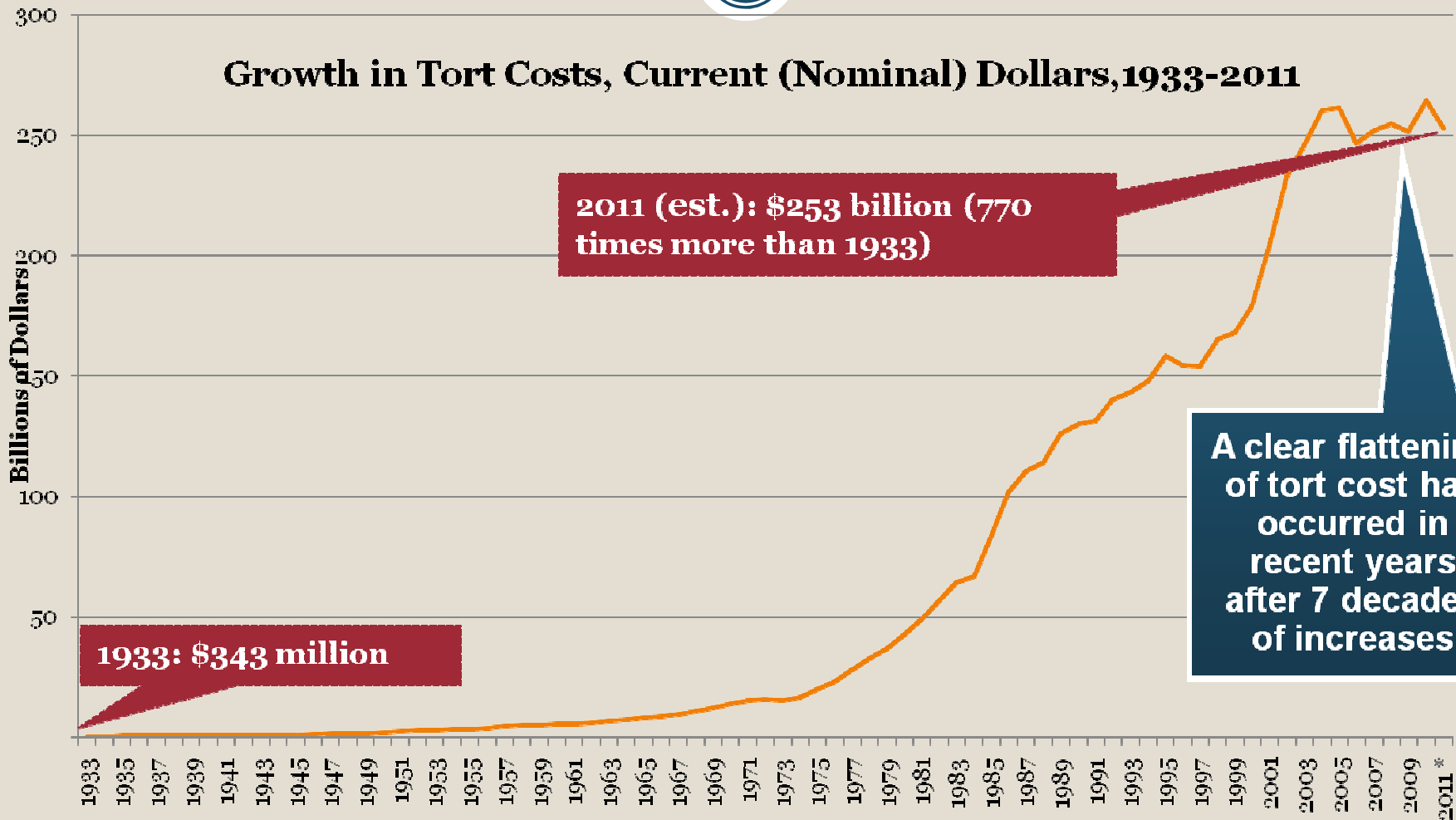
Source: Swiss Re from "Voice of the Small Commercial Insurance Consumer Survey." Deloitte, March (2013)

**Interest
diminishes
with
account
size**

US Tort Cost Trends: 1933-Current Era

**Examination of Long-Term
Escalation of Tort Costs and
Evidence of a “Bending” in
the Cost Curve**

Tort Costs: Rising for Eight Decades



1933: \$343 million

2011 (est.): \$253 billion (770 times more than 1933)

A clear flattening of tort cost has occurred in recent years after 7 decades of increases

* Projected

Sources: *Trends in Tort Costs*, Towers Watson; Insurance Information Institute.

**List of Emerging Risks
Future Tort Cost Drivers is
Endless**

**New Risks Emerge Every Day
*Can They Be Contained and
Managed?***

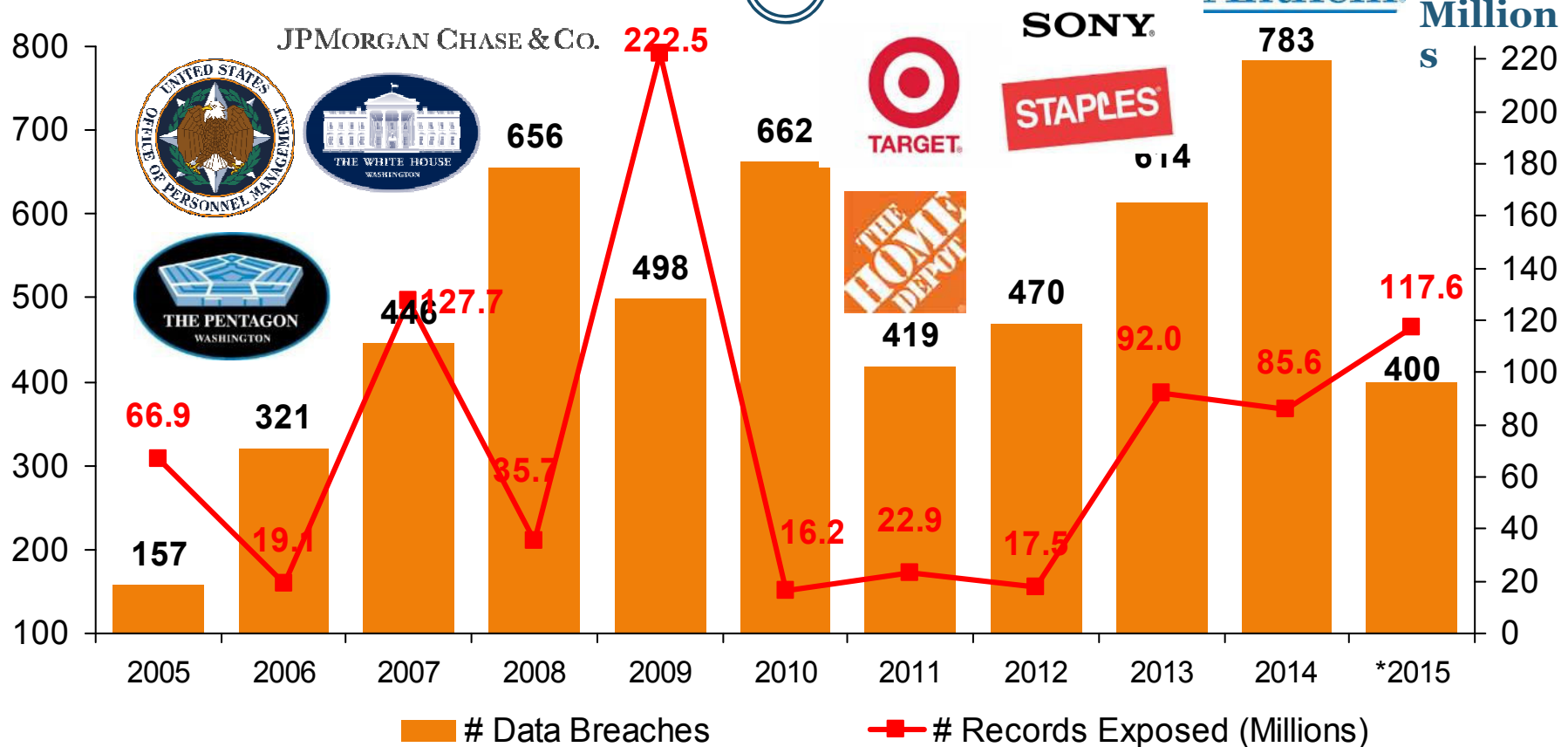
A Few Concerns...



- **Return of Historical Tort Cost Trends Based on Historical Cost Drivers**
- **Reversal of Current Favorable Loss Development in Casualty Line**
- **Emergence of New Risks**
 - Fracking
 - Cyber Risk
 - Autonomous Vehicles
 - GMOs
 - New Generation of Environmental Risks
 - Climate Change Litigation
- **Reversal/Erosion of Tort Reforms in US**
- **Export of Mass Tort/Class Action/Collective Redress to Europe, Asia**
- **Third-Party Financing of Litigation**
- **Old Issues: Asbestos, Hurricane Katrina, Hurricane Sandy (flood litigation)**

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.*

*Figures as of June 30, 2015, from the Identity Theft Resource Center, <http://www.idtheftcenter.org/images/breach/ITRCBreachReport2015.pdf>

Evolving Threats: Cyber Crime and Cyber Terrorism



State sponsored groups:

- Foreign government sponsored
- Sophisticated and well-funded

Organized cyber criminals:

- Traditional organized crime groups
- Loosely organized global hacker crews

Hacktivism:

- Politically-motivated hackers
- Increasing capabilities

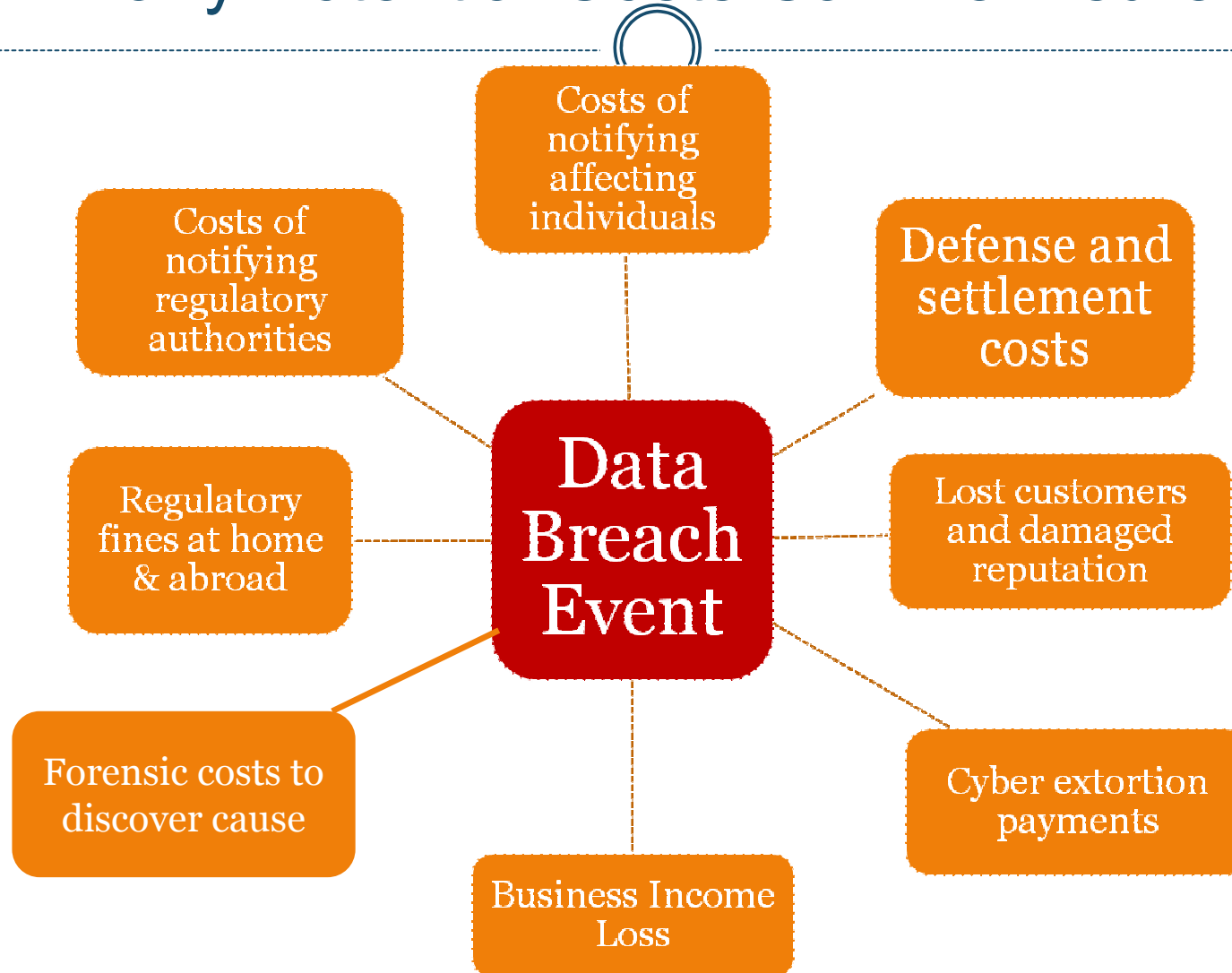
Insiders:

- Easy access to sensitive information
- Difficult to detect

Terrorists:

- Destruction of physical **and** digital assets

Data/Privacy Breach: Many Potential Costs Can Be Insured



Source: Zurich Insurance; Insurance Information Institute

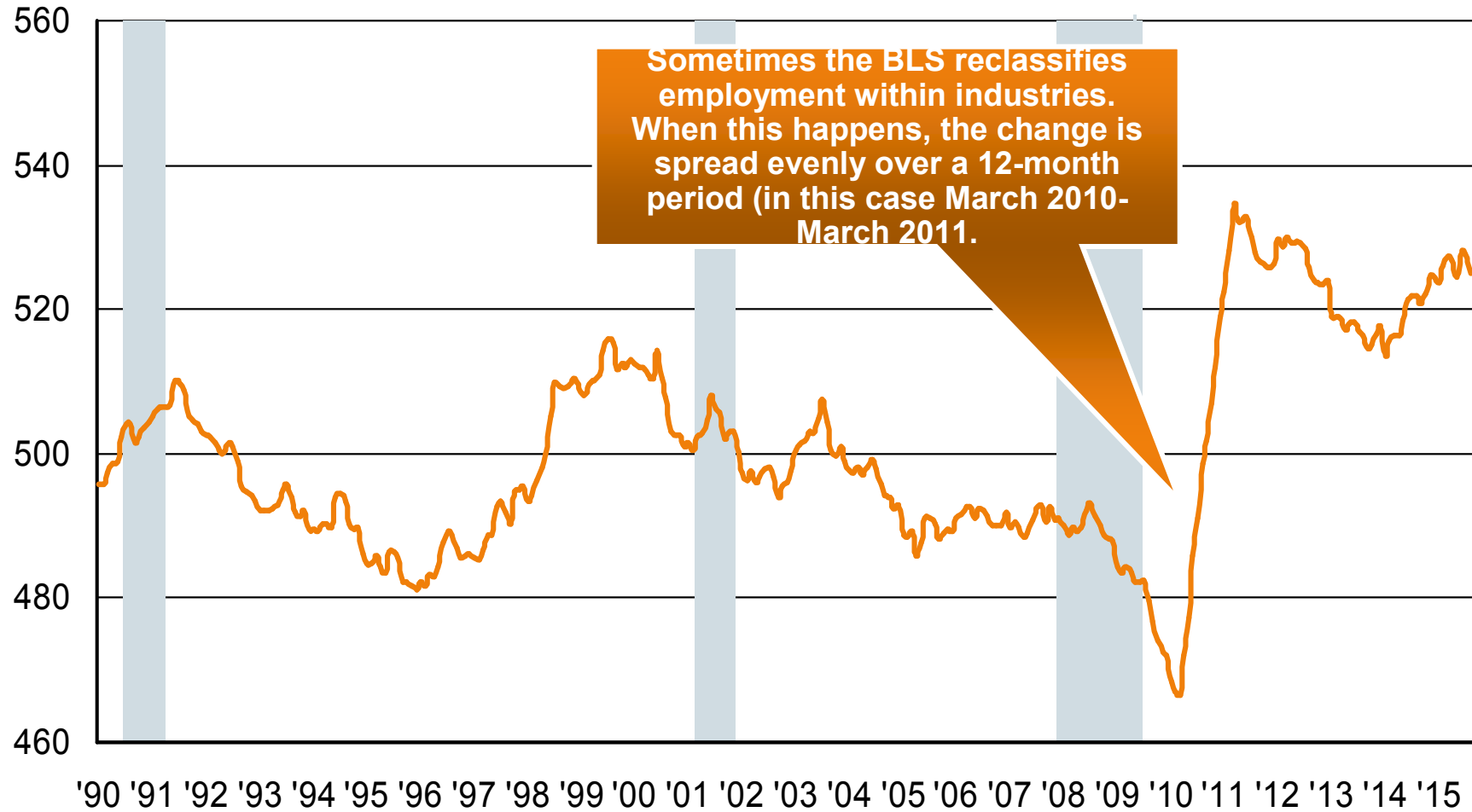
Overview of Insurance Sector Employment Changes*

Insurance Subsector	July 2015 Employment	August 2015 Employment	Change
CARRIERS			
P-C Direct	526,000	525,500	-500
Life Direct	364,300	365,500	+1,200
Health/Medical Direct	520,500	521,900	+1,400
Title & Other Direct	78,300	78,100	-200
Reinsurers	25,600	25,800	+200
OTHERS			
Agents/Brokers	735,300	735,400	+100
3rd-Party Administration	178,500	177,800	-700
Claims Adjusters	50,500	50,200	-300

*Data are through August 2015 and are preliminary (i.e., subject to later revision); seasonally adjusted.

U.S. Employment in the Direct P/C Insurance Industry: 1990–2015*

Thousands

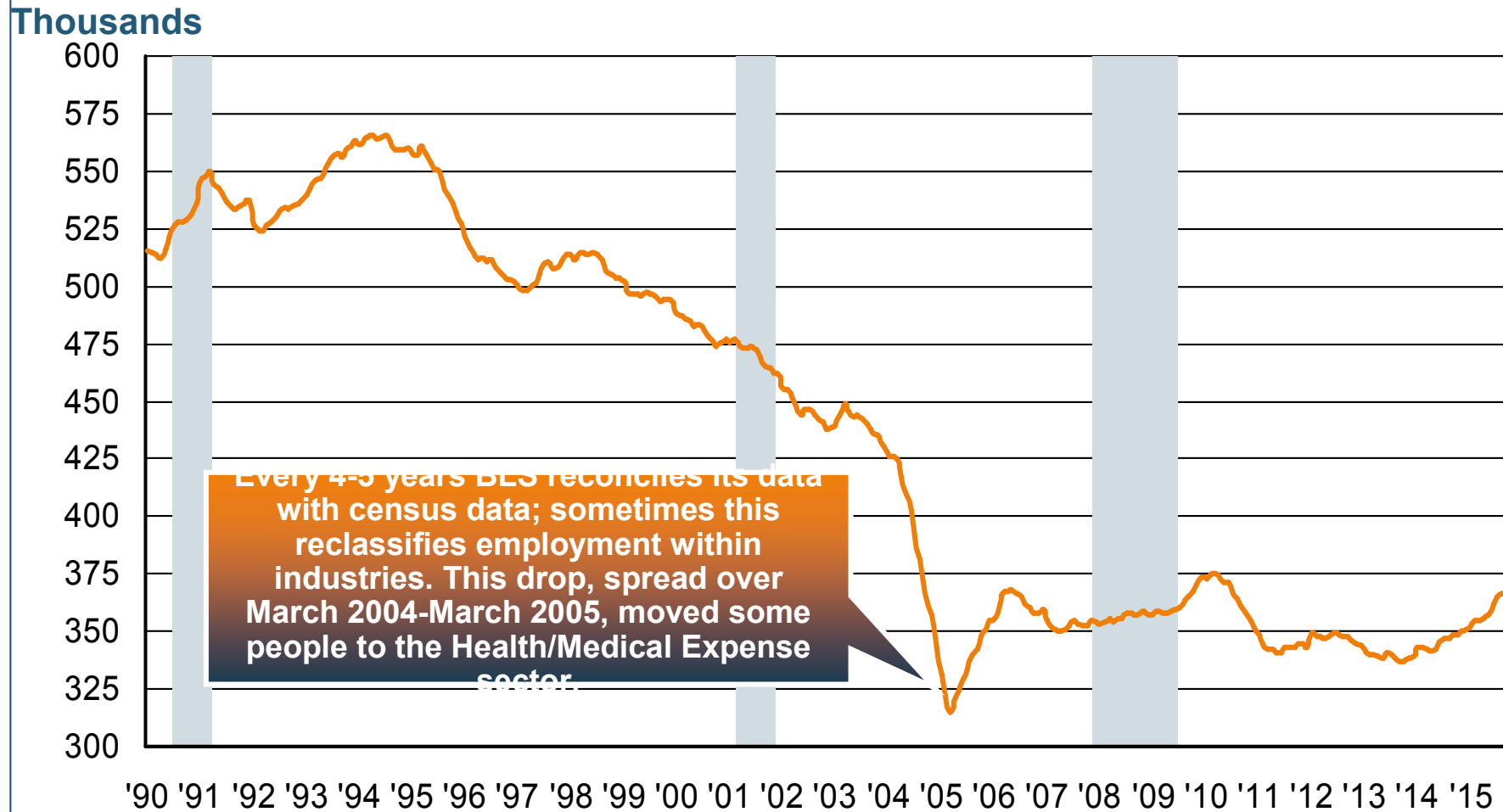


*As of August 2015; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in the Direct Life Insurance Industry: 1990–2015*



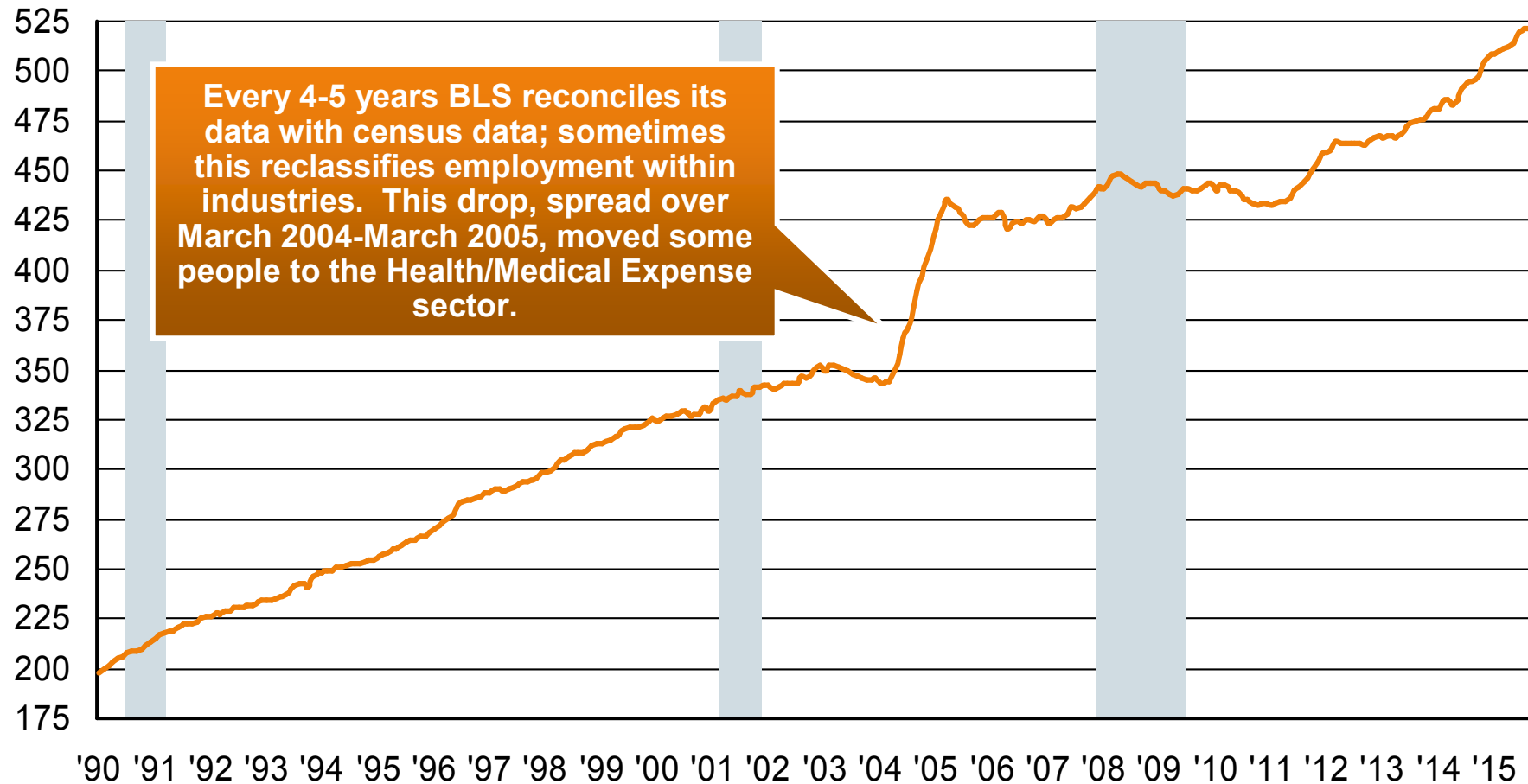
*As of August 2015; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in the Direct Health-Medical Insurance Industry: 1990–2015*

Thousands



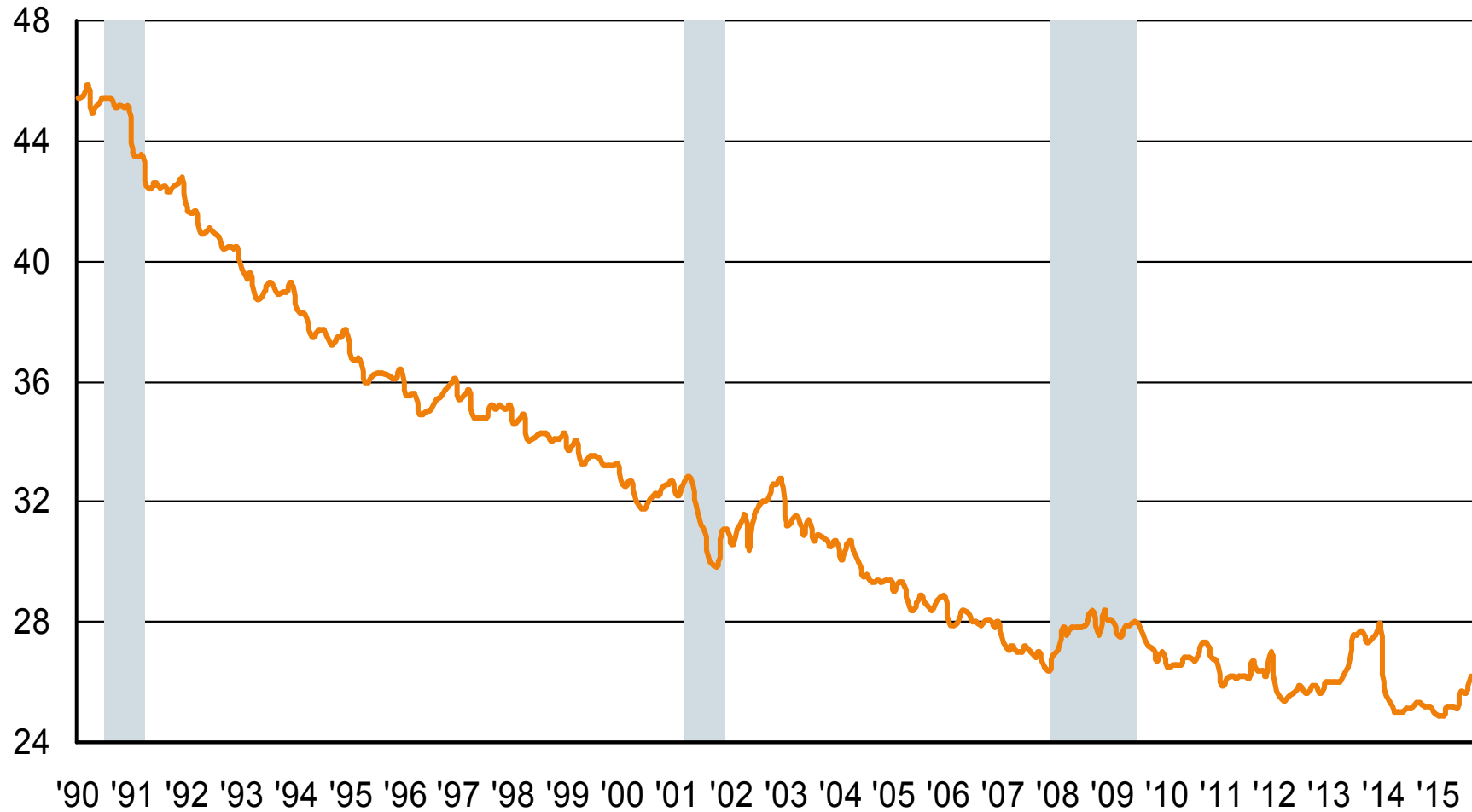
*As of August 2015; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in the Reinsurance Industry: 1990–2015*

Thousands



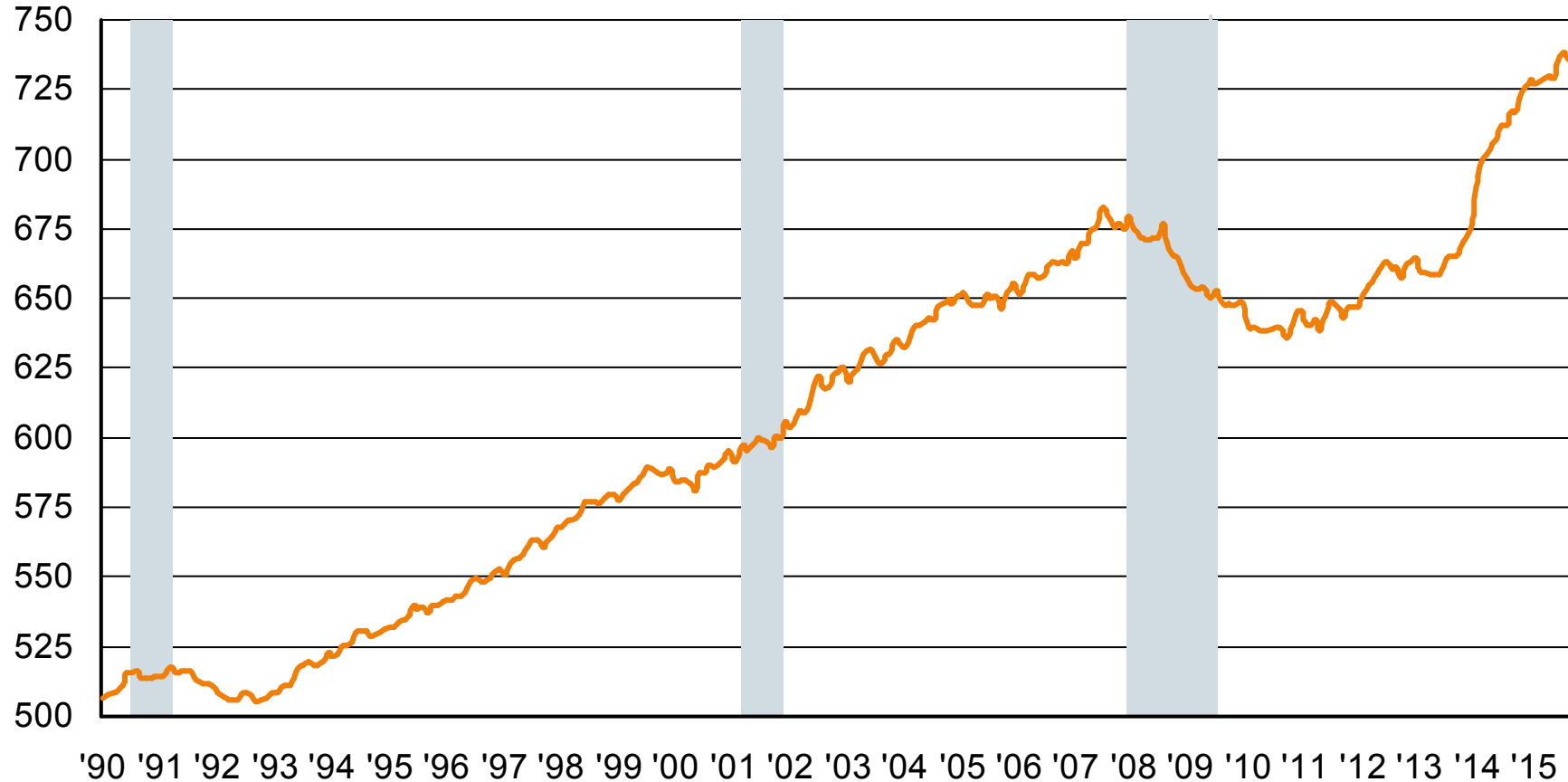
*As of August 2015; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in Insurance Agencies & Brokerages: 1990–2015*

Thousands



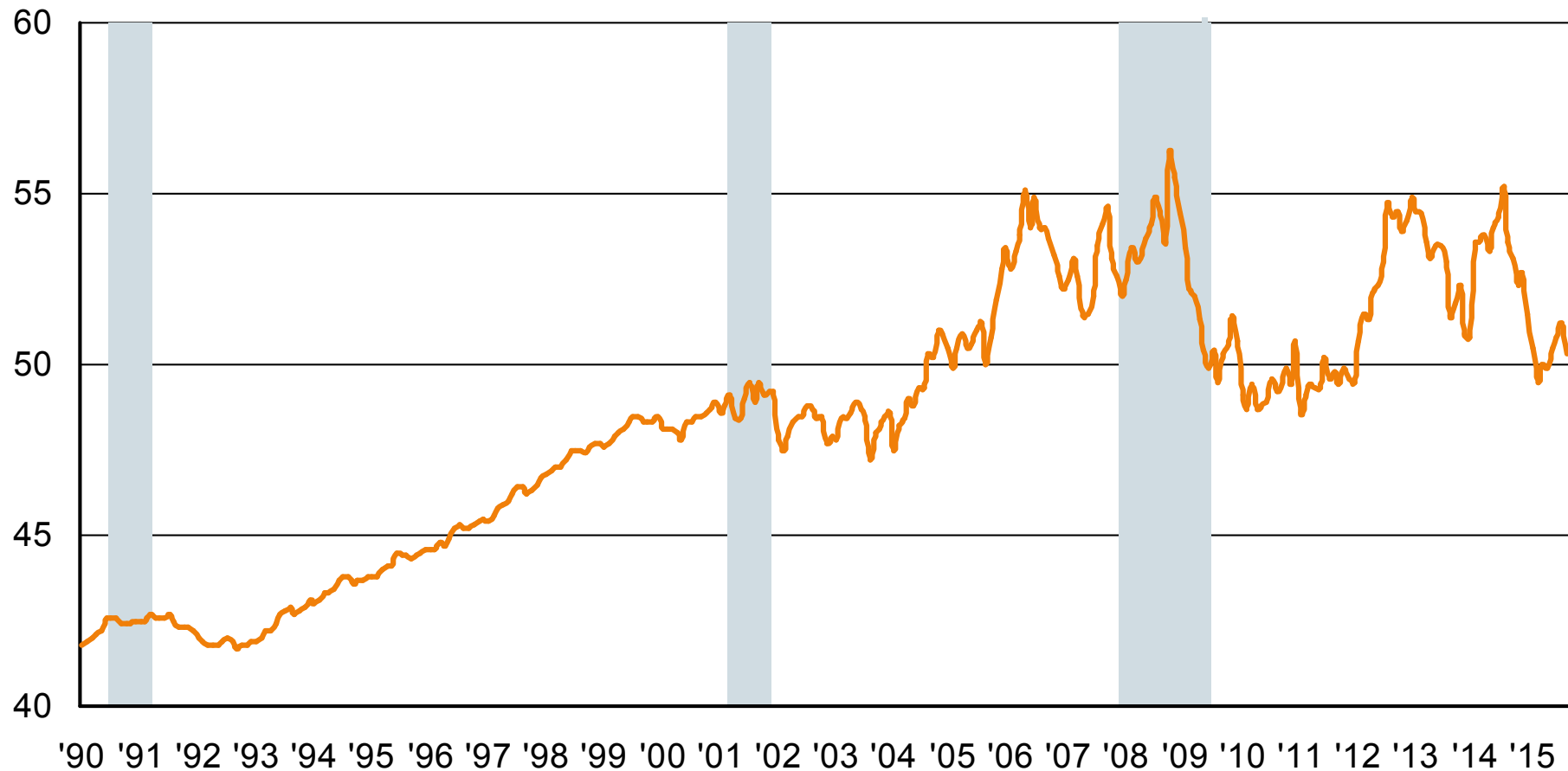
*As of August 2015; not seasonally adjusted. Includes all types of insurance.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in Insurance Claims Adjusting: 1990–2015*

Thousands



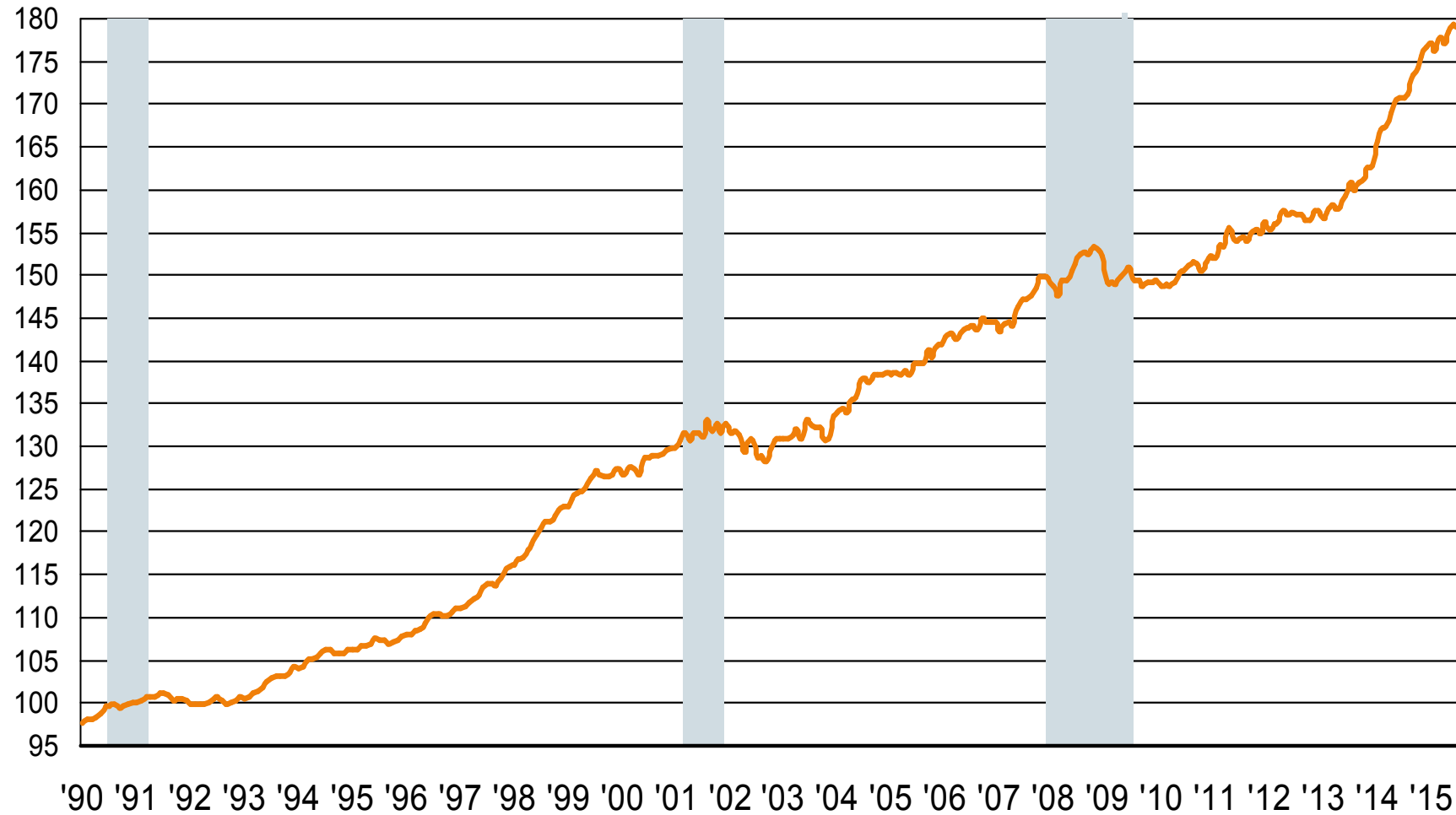
*As of August 2015; not seasonally adjusted.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

U.S. Employment in Third-Party Administration of Insurance Funds: 1990–2015*

Thousands



*As of August 2015; not seasonally adjusted. Includes all types of insurance.

Note: Recessions indicated by gray shaded columns.

Sources: U.S. Bureau of Labor Statistics; National Bureau of Economic Research (recession dates); Insurance Information Institute.

12 Industries for the Next 10 Years: Insurance Solutions Needed

Health Care

Health Sciences

Energy (Traditional)

Alternative Energy

Petrochemical

Agriculture

Natural Resources

Technology (incl. Biotechnology)

Light Manufacturing

Inourced Manufacturing

Export-Oriented Industries

Shipping (*Rail, Marine, Trucking, Pipelines*)

Many industries are poised for growth, though insurers' ability to capitalize on these industries varies widely

Thank You



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