



# Understanding and Preparing for Disasters Caused by Terrorist Acts

**American Bar Association Meeting  
Chicago, IL  
August 3, 2012**

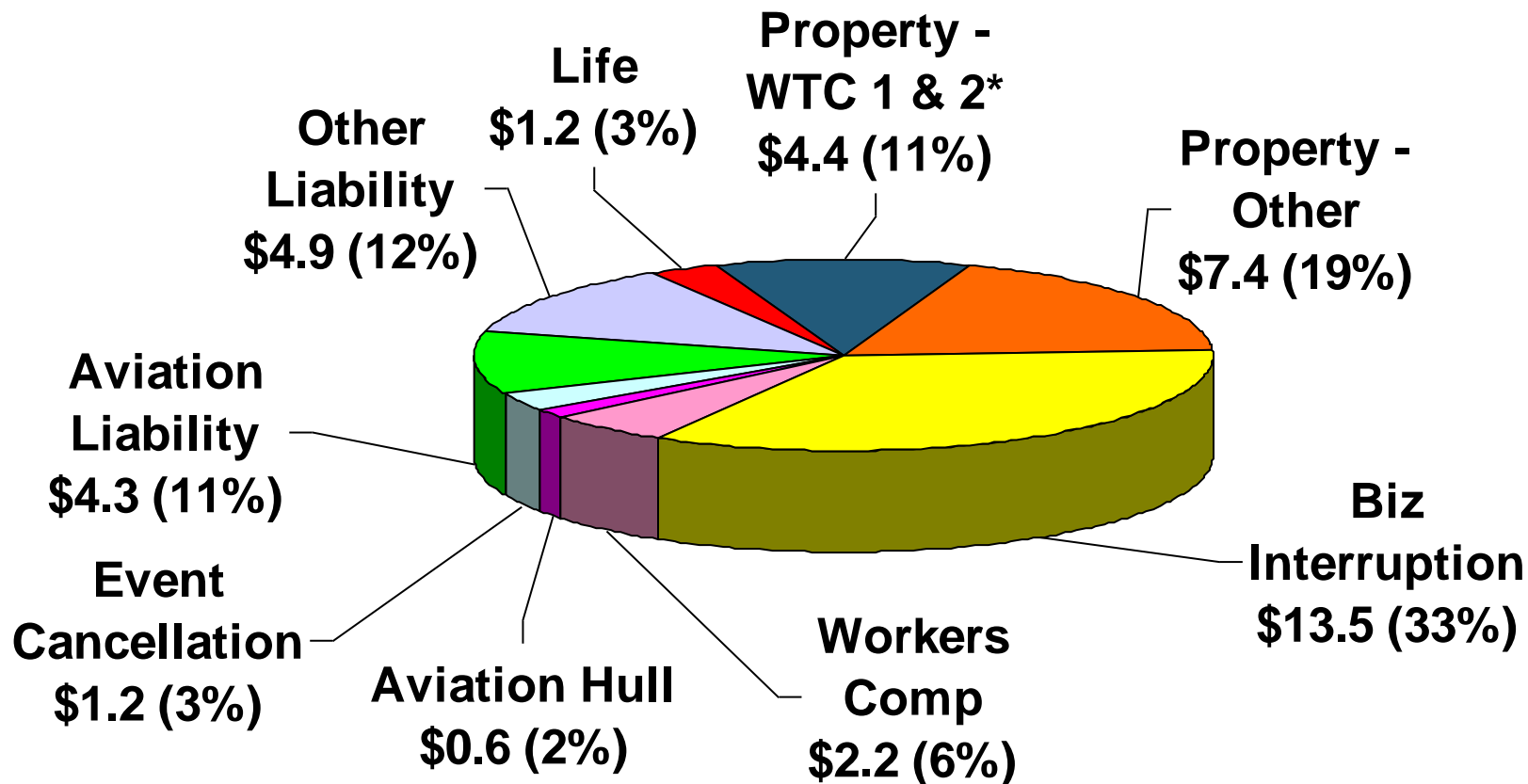
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# **Terrorism Loss Summary**

**September 11 Remains the Most  
Costly and Deadly Event in History,  
But Terrorism Remains a Global  
Threat**

# Loss Distribution by Type of Insurance from Sept. 11 Terrorist Attack (\$ 2010)

**(\$ Billions)**



**Total Insured Losses Estimate: \$40.0B**

\*Loss total does not include March 2010 New York City settlement of up to \$657.5 million to compensate approximately 10,000 Ground Zero workers or any subsequent settlements.

Source: Insurance Information Institute.

# Top 20 Terrorist Attacks by Insured Loss (Millions of 2010 Dollars)

Rank	Date	Country	Location	Event	Insured property loss (1)	Fatalities
1	September 11, 2001	United States	New York, Washington DC, Pennsylvania	Hijacked airliners crash into World Trade Center and Pentagon	\$23,140	2,982
2	April 24, 1993	United Kingdom	London	Bomb explodes near NatWest tower in the financial district	\$1,117	1
3	June 15, 1996	United Kingdom	Manchester	Irish Republican Army (IRA) car bomb explodes near shopping mall	\$917	0
4	April 10, 1992	United Kingdom	London	Bomb explodes in financial district	\$826	3
5	February 26, 1993	United States	New York	Bomb explodes in garage of World Trade Center	\$770	6
6	July 24, 2001	Sri Lanka	Colombo	Rebels destroy 3 airliners, 8 military aircraft and heavily damage 3 civilian aircraft	\$491	20
7	February 9, 1996	United Kingdom	London	IRA bomb explodes in South Key Docklands	\$319	2
8	June 23, 1985	North Atlantic	Irish Sea	Bomb explodes on board of an Air India Boeing 747	\$199	329
9	April 19, 1995	United States	OK, Oklahoma City	Truck bomb crashes into government building	\$179	166
10	September 12, 1970	Jordan	Zerqa, Dawson's Field (disused RAF airstrip in desert)	Hijacked Swissair DC-8, TWA Boeing 707, BOAC VC-10 dynamited on ground	\$157	0
11	September 6, 1970	Egypt	Cairo	Hijacked PanAm B-747 dynamited on ground	\$136	0
12	April 11, 1992	United Kingdom	London	Bomb explodes in financial district	\$118	0
13	November 26, 2008	India	Mumbai	Attack on two hotels; Jewish center	\$104	172
14	March 27, 1993	Germany	Weierstadt	Bomb attack on a newly built, still unoccupied prison	\$87	0
15	December 30, 2006	Spain	Madrid	Bomb explodes in car garage at Barajas Airport	\$71	2
16	December 21, 1988	United Kingdom	Lockerbie	Bomb explodes on board of a PanAm Boeing 747	\$70	270
17	July 25, 1983	Sri Lanka		Riot	\$58	0
18	July 7, 2005	United Kingdom	London	Four bombs explode during rush hour in a tube and bus	\$58	52
19	November 23, 1996	Comoros	Indian Ocean	Hijacked Ethiopian Airlines Boeing 767-260 ditched at sea	\$56	127
20	March 17, 1992	Argentina	Buenos Aires	Bomb attack on Israel's embassy in Buenos Aires	\$47	24

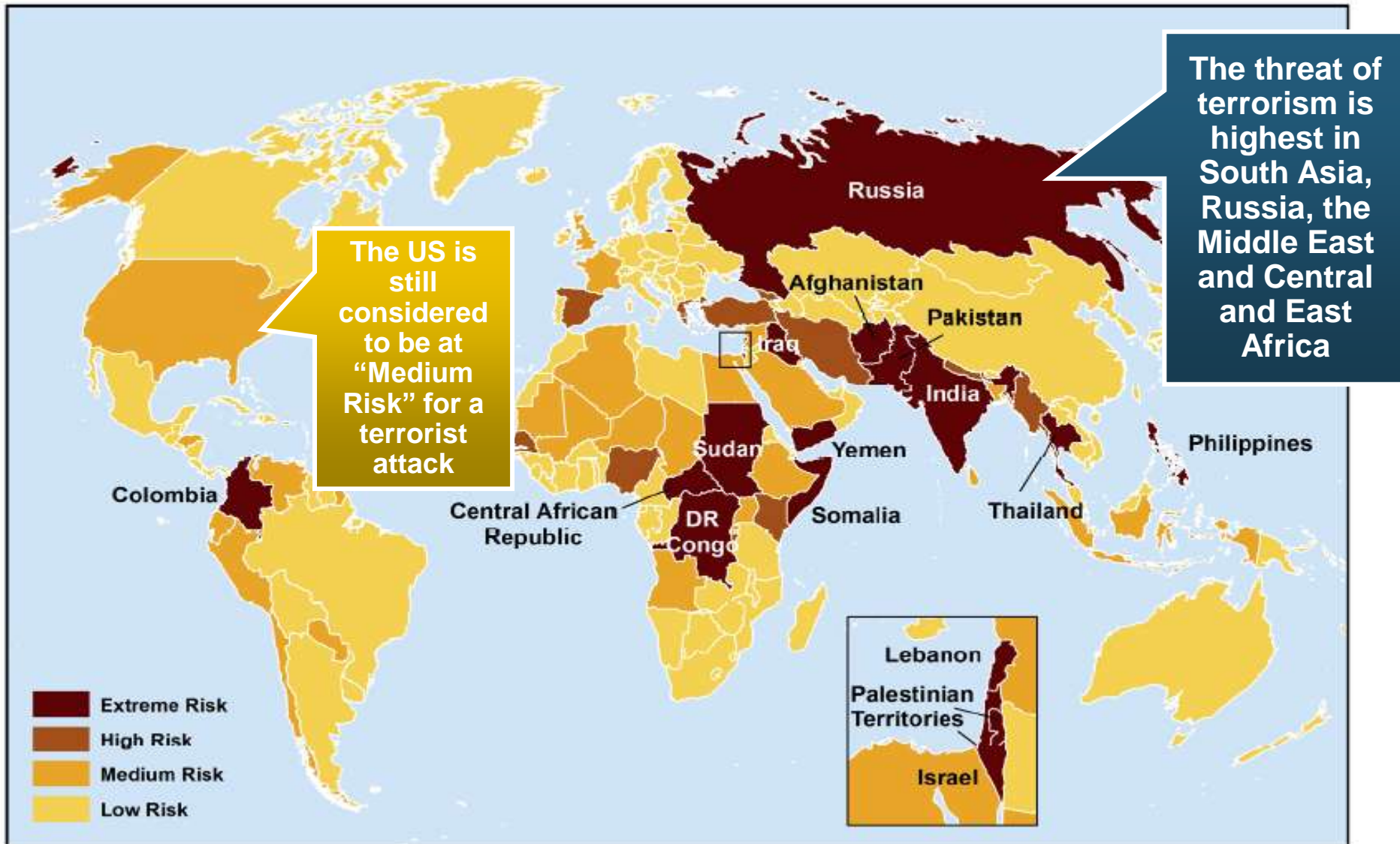
9/11 remains, by far, the most expensive terrorist attack in global history at \$23.1 billion (2010 \$) in property and business interruption losses. WC, liability, life insurance and other losses bring the total to \$40 billion

The 2008 attack in Mumbai was the last significant attack in terms of insured losses

(1) Includes property, bodily injury and aviation hull losses.

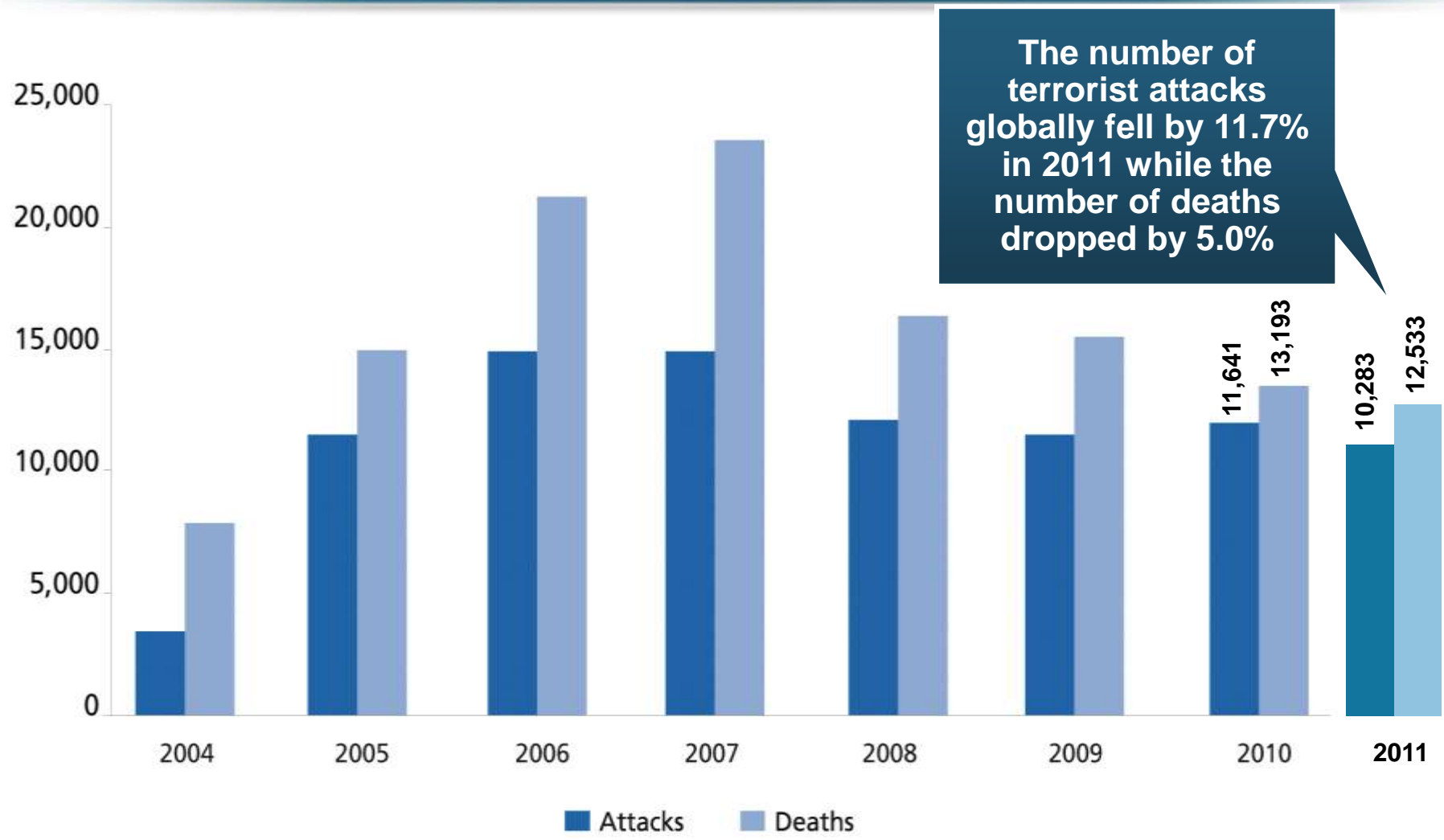
Sources: Swiss Re; Adjustment to 2010 dollars by the Insurance Information Institutes using BLS CPI data.

# Terrorist Risk Index, 2011



Sources: Maplecroft Terrorism Risk Index; Guy Carpenter; Insurance Information Institute.

# Global Terrorist Attacks and Deaths, 2004-2011



Sources: National Counterterrorism Center, 2011 Report on Terrorism; Guy Carpenter; Insurance Information Institute.

# **Terrorism Threat Scenarios**

**Modeled Terrorism Losses Show  
How Costly Attacks Could  
Potentially Be Under a Wide Variety  
of Scenarios**

# Models of Property and WC losses (Insured and Uninsured)\*

Attack Scenario	Losses (\$ billions)			
	WC	Property	Total	Simulated Range
Conventional				
10-Ton Truck Bomb	\$11	\$11	\$22	\$7-\$66
1-Ton Truck Bomb	2	5	7	2-21
NBCR				
5-kiloton Nuclear Bomb	320	310	630	210-1,900
Outdoor Anthrax	160	240	400	130-1,200
Radiological Attack	0.5	62	63	20-190
Indoor Sarin Attack	5	1	6	2-18

\*Based on Risk Management Solutions (RMS) models.

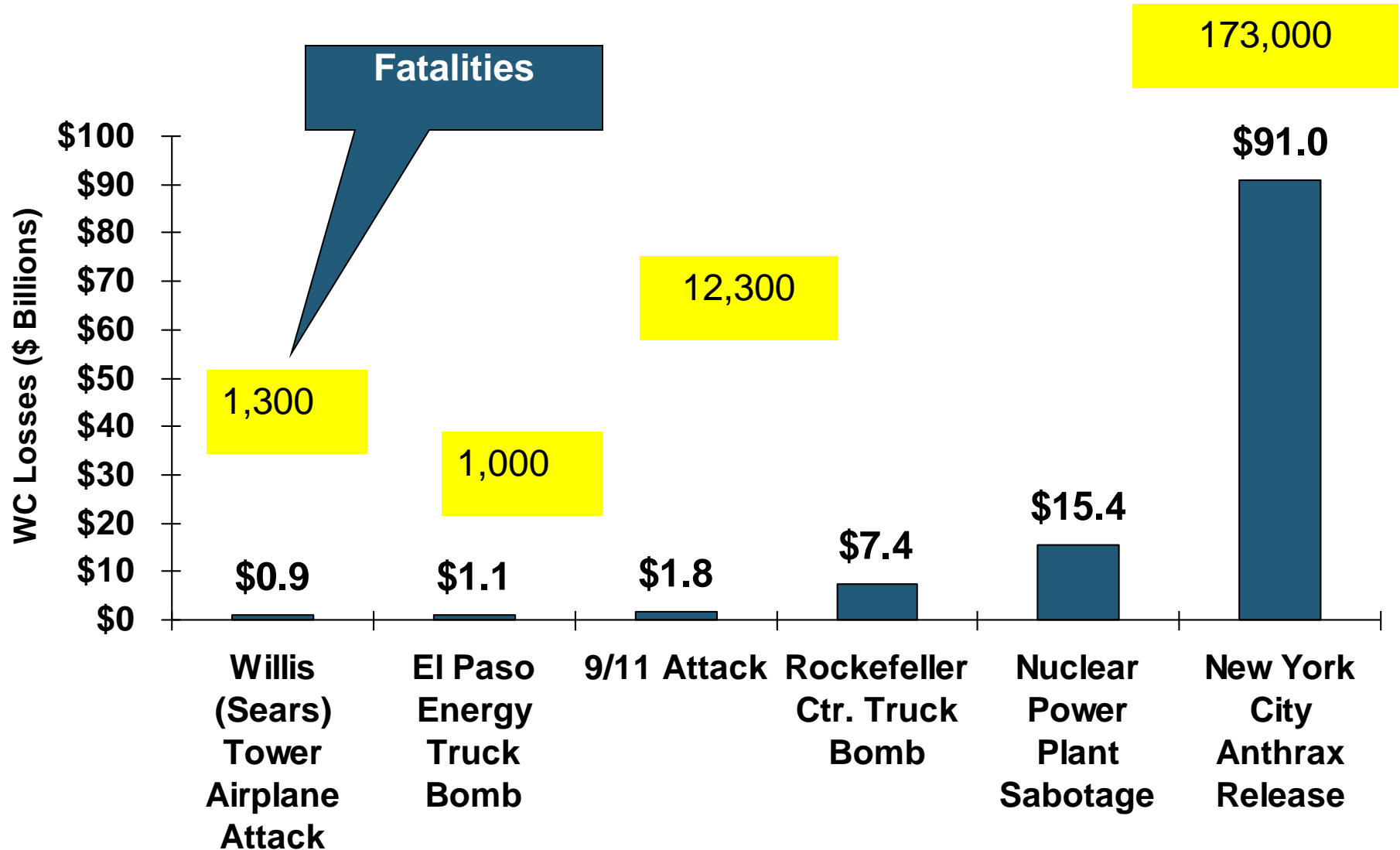
Source: RAND, *Trade-Offs Among Alternative Government Interventions in the Market for Terrorism Insurance*



# Insured Loss Estimates: Large NBCR Attack (\$ Billions)

Type of Coverage	New York	Washington	San Francisco	Des Moines
Group Life	\$82.0	\$22.5	\$21.5	\$3.4
General Liability	14.4	2.9	3.2	0.4
Workers Comp	483.7	126.7	87.5	31.4
Residential Prop.	38.7	12.7	22.6	2.6
Commercial Prop.	158.3	31.5	35.5	4.1
Auto	1.0	0.6	0.8	0.4
Total	\$778.1	\$196.8	\$171.2	\$42.3

# Estimated Workers Comp Insured Losses & Deaths for Terrorist Events



# **Nature of Likely Insured Losses**

**Definition of Terrorist Attack Will  
Need to Evolve With Technology**

***We Are Now in the Age of  
Cyber Terror***

# “Traditional” Losses Arising from Terror Attack Scenarios

Risk	Concern
Property	<ul style="list-style-type: none"><li>• Cost to repair, rebuild, replace</li></ul>
Casualty	<ul style="list-style-type: none"><li>• Death/injury of workers</li><li>• Death/injury customers &amp; other 3<sup>rd</sup> parties</li></ul>
Liability	<ul style="list-style-type: none"><li>• Claims of negligence (direct &amp; 3<sup>rd</sup> party)</li></ul>
Business Interruption	<ul style="list-style-type: none"><li>• Loss of income/extra expense may exceed insurance and company resources</li></ul>

# “Less Traditional” Losses Arising from Terror Attack Scenarios

<b>Risk</b>	<b>Concern</b>
<b>Contingent Business Interruption</b>	<ul style="list-style-type: none"><li>• Upstream damage/dislocations interfere with ability to operate</li></ul>
<b>D&amp;O</b>	<ul style="list-style-type: none"><li>• Shareholders could allege management/directors did not take prudent steps to prevent attack or manage its effects</li></ul>
<b>Latent Liability</b>	<ul style="list-style-type: none"><li>• Claims of disability/disease/death well after the event (e.g., first responders post 9/11)</li></ul>
<b>Political Risk</b>	<ul style="list-style-type: none"><li>• Global political landscape and economic opportunities could shift</li><li>• US government policy influences risk</li></ul>

# “Non-Traditional” Losses Arising from Terror Attack Scenarios

Risk	Concern
Cyber Risk	<ul style="list-style-type: none"><li>• Infiltration, disruption or disruption</li><li>• Could involve your IT, or up/downstream</li></ul>
Investment Risk	<ul style="list-style-type: none"><li>• Terrorist attack will likely negatively influence investment opportunities, possibly for extended period</li></ul>
Reputational Risk	<ul style="list-style-type: none"><li>• Loss of income/extra expense may exceed insurance and company resources</li></ul>
Regulatory Risk	<ul style="list-style-type: none"><li>• Responses could impact performance</li></ul>
Economic Risk	<ul style="list-style-type: none"><li>• State of the economy pre/post-attack influences performance</li></ul>

# Cyber Risk Threat Spectrum: Terrorism is a Concern

Threat	Resources	Methods	Objectives	Examples
Nation-state, sleeper insiders	High	Highly targeted	Strategic sabotage	Stuxnet
Advanced persistent threat	High	Targeted, manual remote control	IP theft	Aurora, Ghostnet
Persistent threat	Medium	Targeted, manual remote control	IP theft, defacement	Night Dragon, "Anonymous"
Disgruntled insider with access to ICS	Low	Targeted: social engineering	Sabotage	Maroochy
Insider with access to IT network	Low	Targeted: social engineering	Sabotage	IT examples
Organized crime	Medium	Highly volume, automated	Identity theft	Zeus, Conflicker

Combination of cyber attack with inside access

Highly targeted (low volume) attacks; Dedicated afford to do harm

- **Stuxnet: Autonomous Attack Sabotaging Iranian Uranium Enrichment Facilities**
  - ◆ Likely created by US and Israeli intelligence services
  - ◆ Based on deep insider intelligence, planted deep inside perimeter using USB sticks
- **Advanced Persistent Threats (APT) = Manual Control**
  - ◆ Human-powered, but demonstrated ability to penetrate almost any defense

# **History and Summary of the Federal Terrorism Risk Insurance Program**

**TRIA and Its Successors Are a  
Runaway Success**

***Programs Have Cost the Government  
Effectively Nothing, But With Tangible  
Economic Benefits***



# Key Provisions: Terrorism Risk Insurance Program Reauthorization Act (TRIPRA)

## ■ TRIPRA Trigger (*Note: Program Expires Dec. 31, 2014*)

- ◆ An event must cause at least \$100 million in aggregate property and casualty insurance losses

## ■ Certification

- ◆ Must be certified by Treasury Secretary
- ◆ Definition of a certified terrorist act was expanded under TRIPRA to include both domestic and foreign acts of terrorism

## ■ Individual Insurer Retention

- ◆ Insurers are responsible for a deductible equal to 20% of Direct Earned P/C premiums

## ■ Co-Payments

- ◆ Insurers must pay a co-pay equal to 15% of the loss above individual retention

## ■ Industry Retention Level

- ◆ The industry as a whole must retain \$27.5B in combined retentions and co-pays before federal assistance kicks in

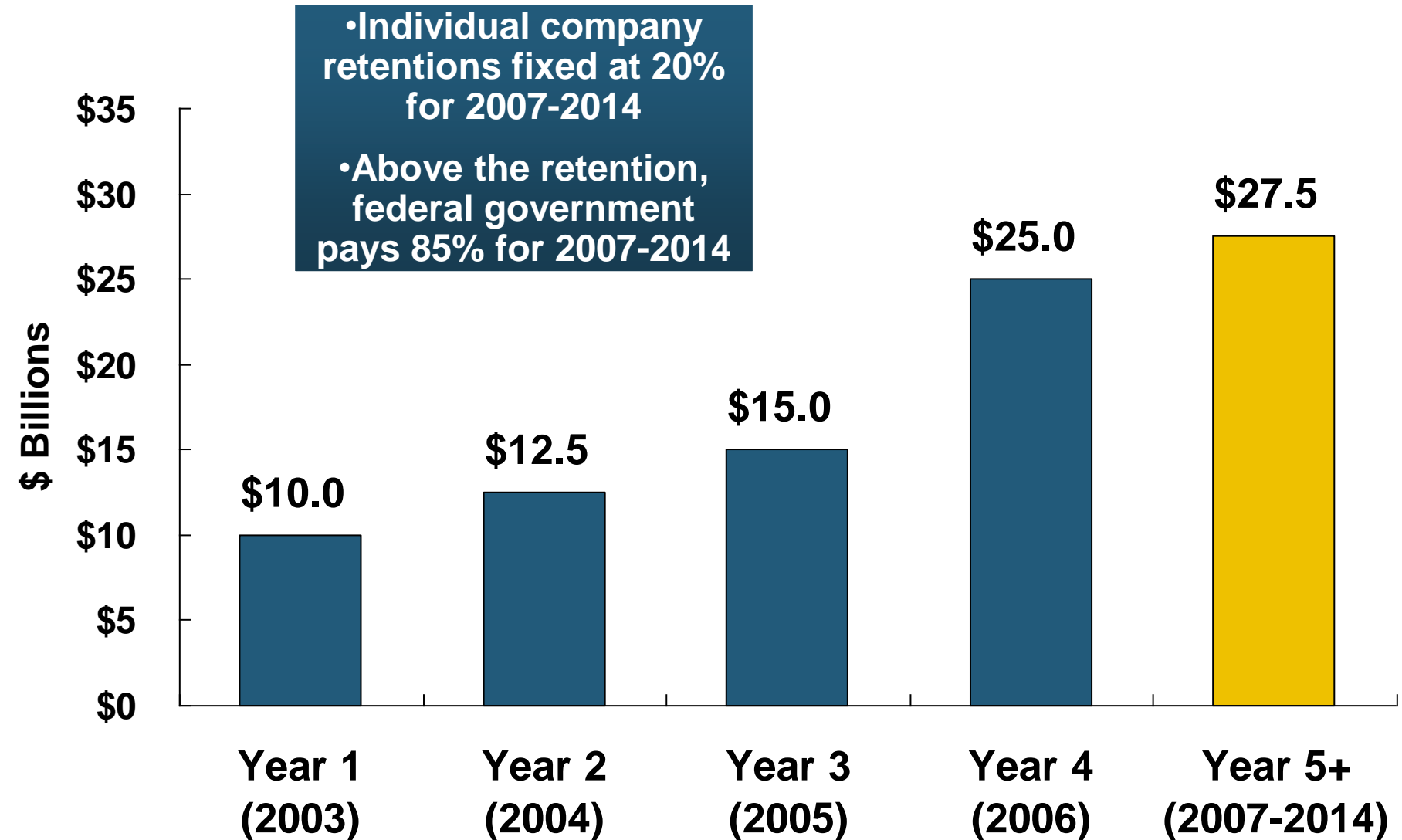
## ■ Program Cap

- ◆ Program is capped at \$100B/yr. for insured losses (federal & insurer combined)

## ■ Make Available Requirement

- ◆ Insurers must make coverage available to participate in program
- ◆ Covers Commercial Lines Only, but also excludes the following commercial lines: Med Mal, Crop, Commercial Auto, Burglary and Theft, Surety, Professional Liability (except D&O), Farm Owners Multi-Peril

# Insurance Industry Retention Under TRIA and Its Successors (\$ Billions)



# Terrorism Coverage Take-Up Rate Rising



Terrorism coverage take-up rate for 2009 reached at record 61% by 2009 (latest available)

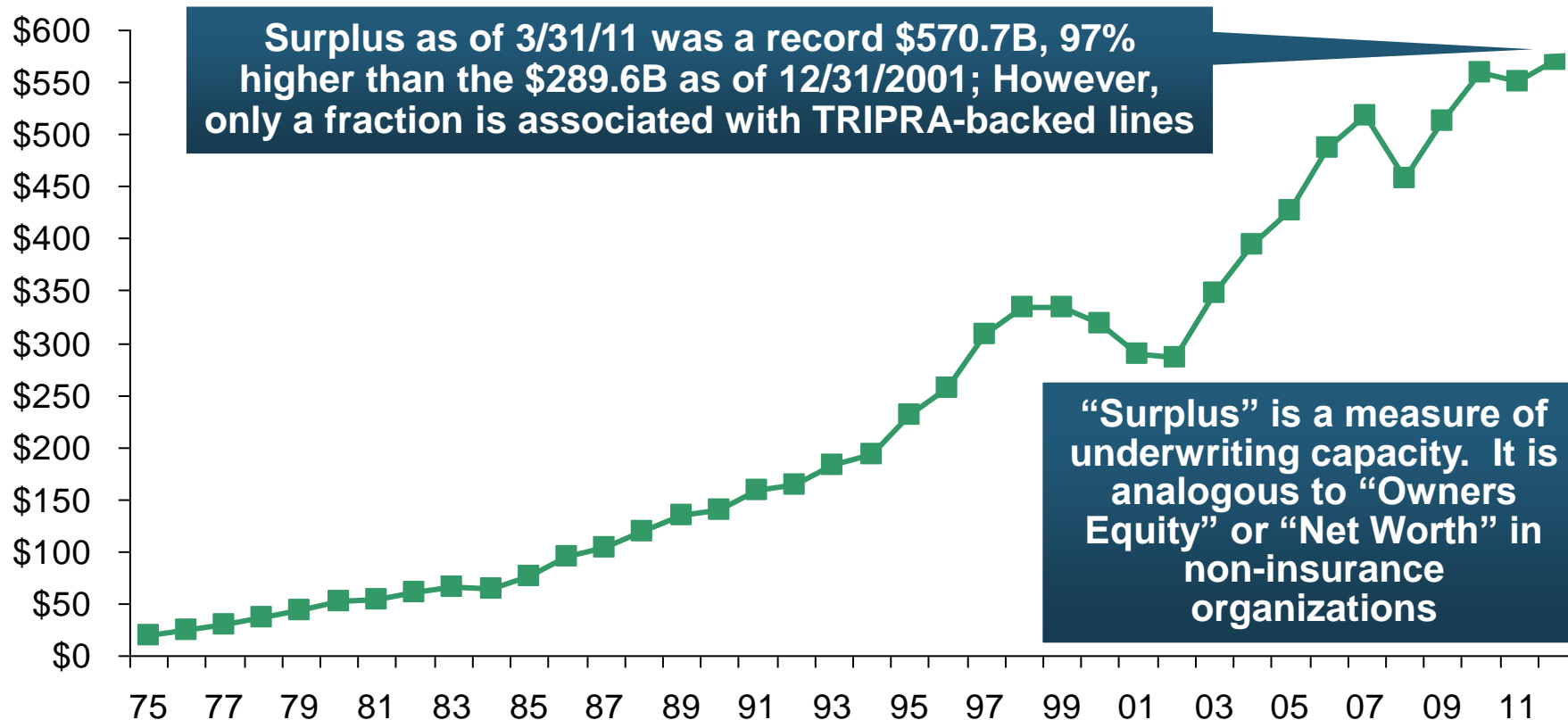


# **SURPLUS/CAPITAL/CAPACITY in the P/C Insurance Market**

**Are Private P/C Insurers and  
Reinsurers Able to Absorb Losses  
from a Large Terrorist Attack?**

# US Policyholder Surplus: 1975–2012\*

(\$ Billions)



**While the Industry's Capacity Has Expanded Since 2001, So Have Potential Liabilities; Only a Fraction of Surplus is Available to Pay Terrorism Losses. Most Backs Lines Excluded by TRIPRA.**

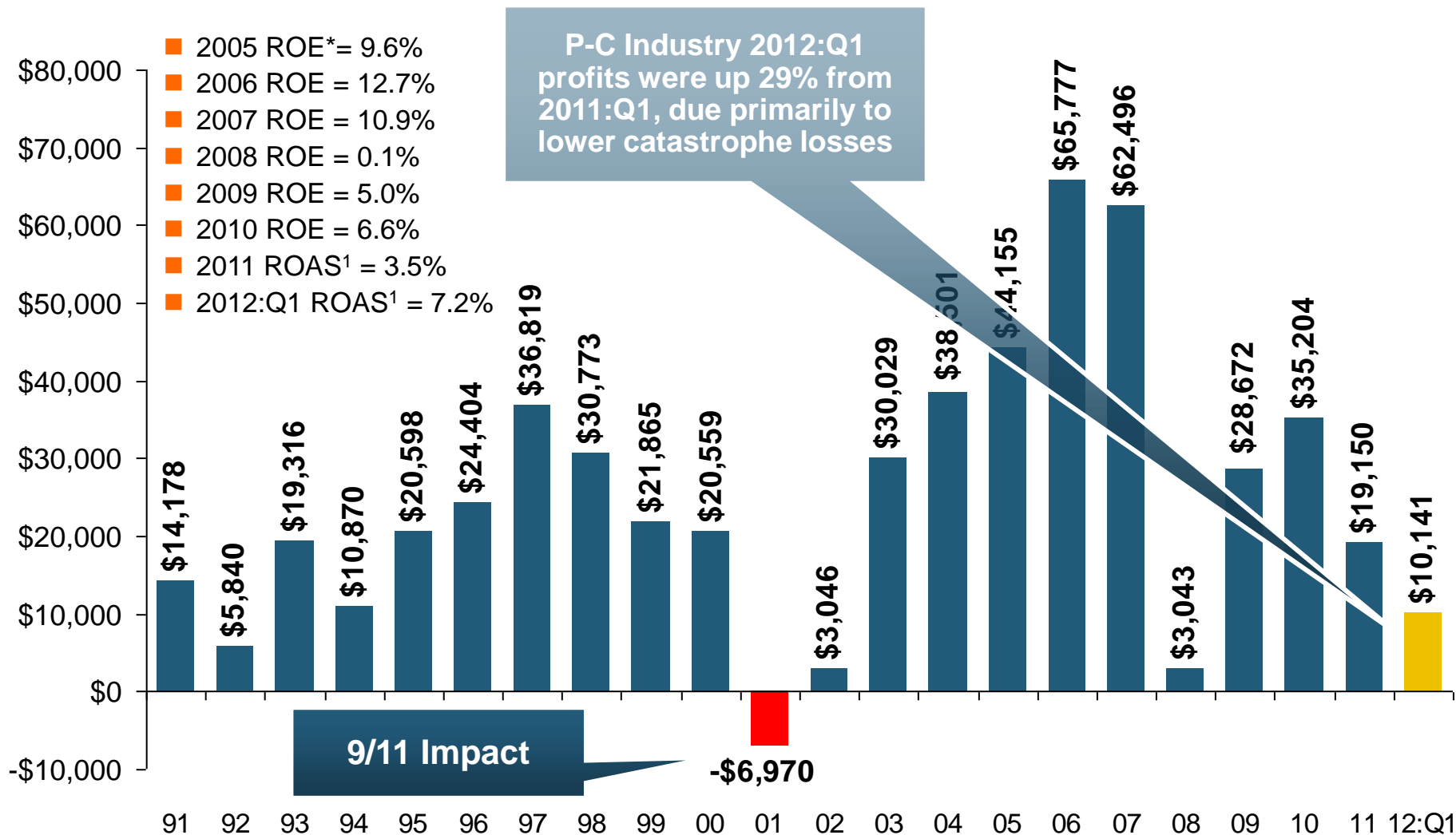
\* As of 3/31/12.

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

# **Impact of 9/11 on P/C Insurance Markets: Performance and Pricing**

**9/11 Was a Shock to US and  
Global Insurance and  
Reinsurance Markets**

# P/C Net Income After Taxes 1991–2012:Q1 (\$ Millions)

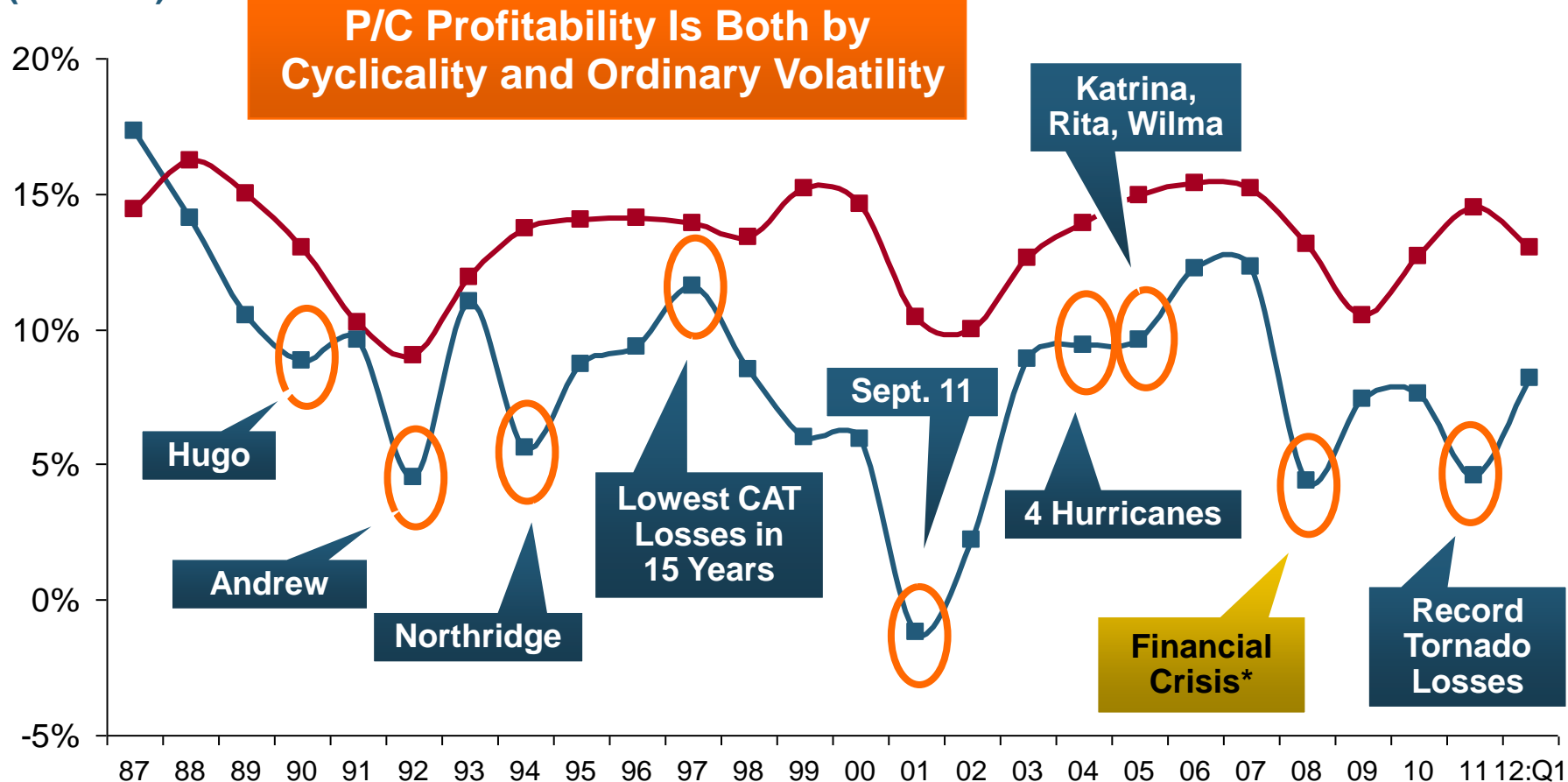


\* ROE figures are GAAP; <sup>1</sup>Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 8.2% ROAS for 2012:Q1, 4.6% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009.

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

# ROE: Property/Casualty Insurance vs. Fortune 500, 1987–2012:Q1\*

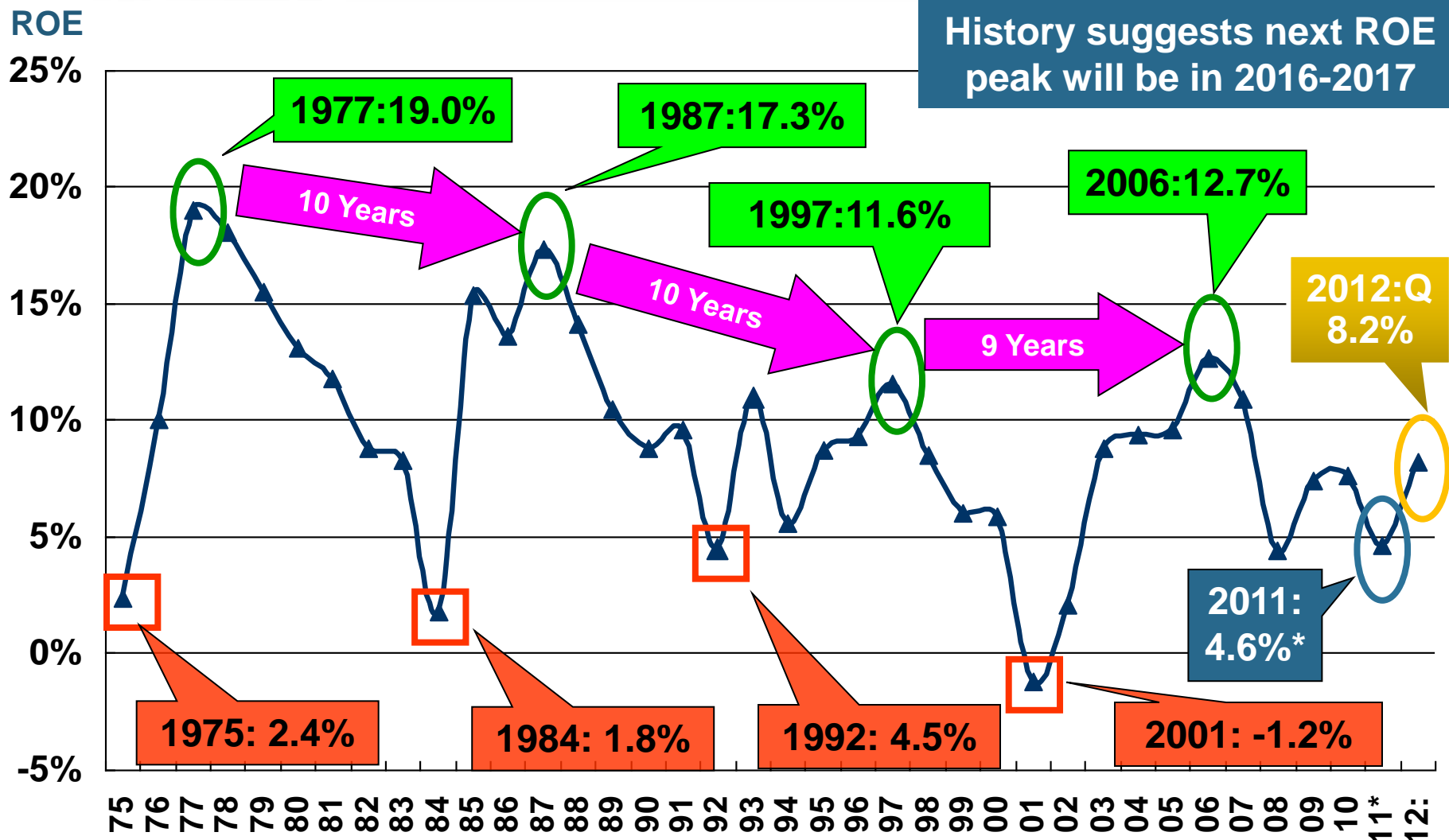
(Percent)



\* Excludes Mortgage & Financial Guarantee in 2008 – 2012. 2012 Fortune 500 figure is III estimate.  
Sources: ISO, *Fortune*; Insurance Information Institute.



# Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2012:Q1\*

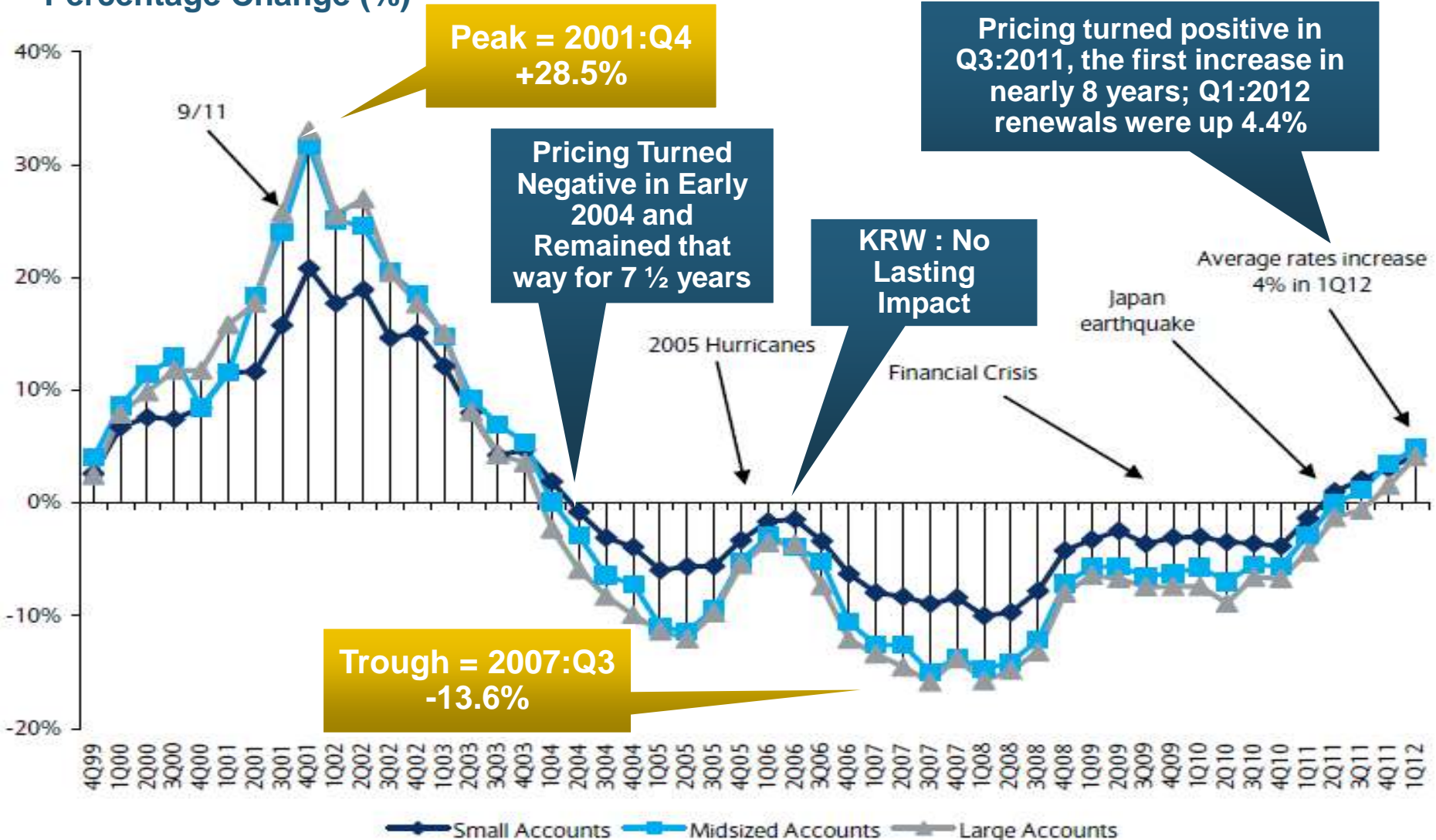


\*Profitability = P/C insurer ROEs. 2011 figure is an estimate based on ROAS data. Note: Data for 2008-2012 exclude mortgage and financial guaranty insurers. 2012:Q1 ROAS = 7.2% including M&FG.

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

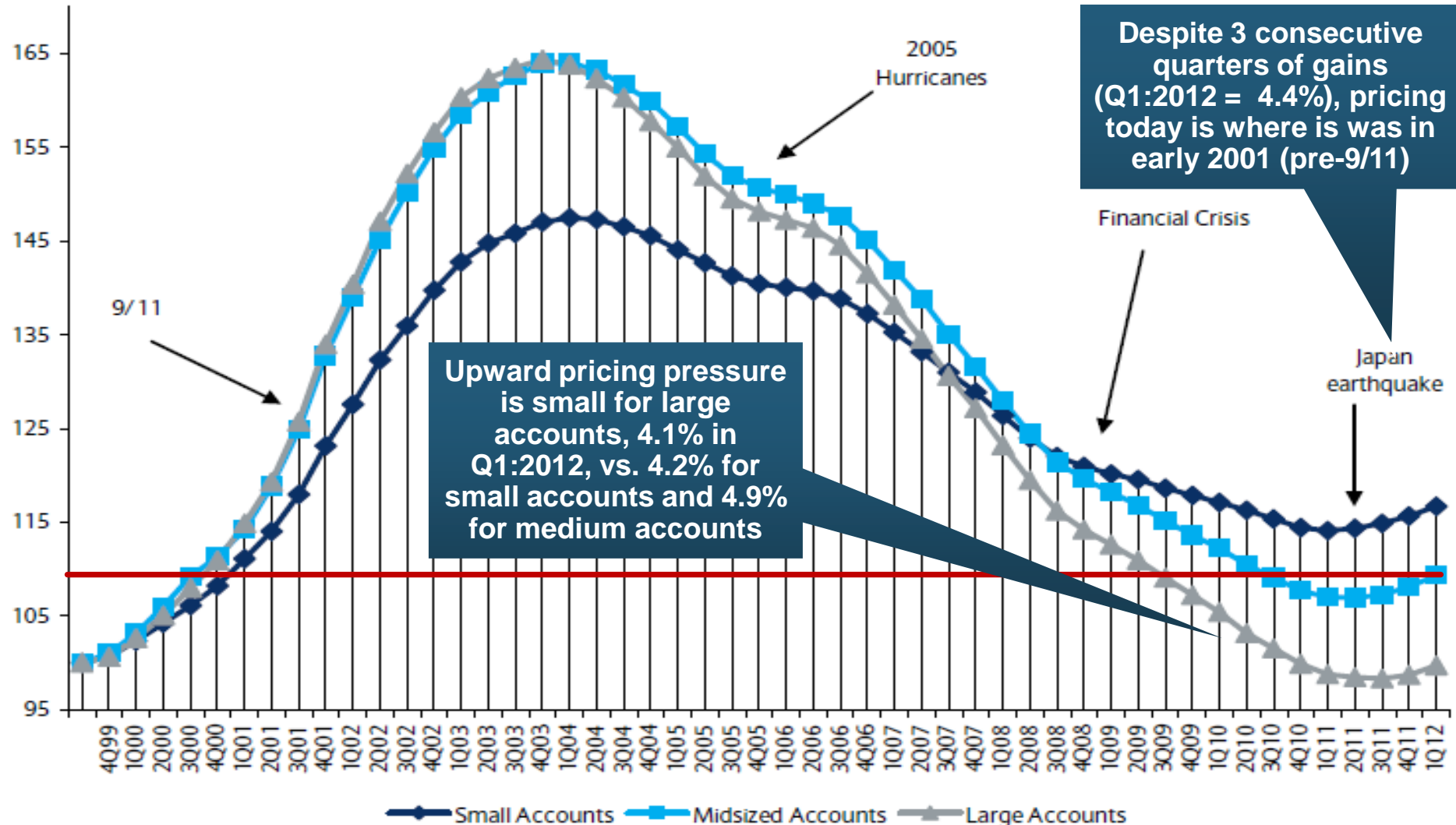
# Change in Commercial Rate Renewals, by Account Size: 1999:Q4 to 2012:Q1

Percentage Change (%)

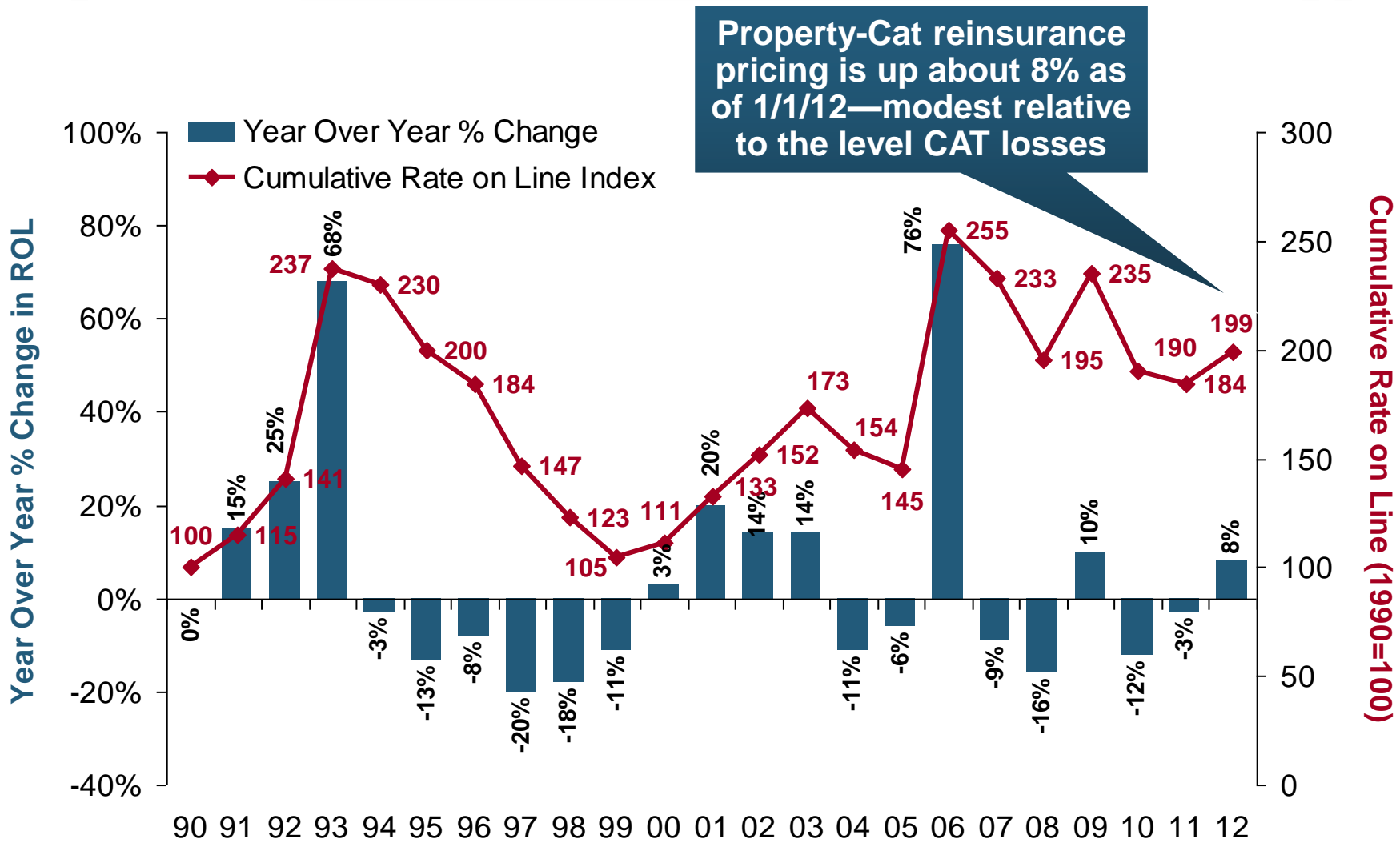


# Cumulative Qtrly. Commercial Rate Changes, by Account Size: 1999:Q4 to 2012:Q1

1999:Q4 = 100



# Global Property Catastrophe Rate on Line Index, 1990—2012 (as of Jan. 1)



Sources: Guy Carpenter; Insurance Information Institute.

Insurance Information Institute Online:

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