

# The Cost of Terrorism:

## *How Much Can We Afford?*

**National Association of Business Economics  
46th Annual Meeting  
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**Robert P. Hartwig, Ph.D., CPCU, Senior Vice President & Chief Economist  
Insurance Information Institute ♦ 110 William Street ♦ New York, NY 10038  
Tel: (212) 346-5520 ♦ Fax: (212) 732-1916 ♦ bobh@iii.org ♦ www.iii.org**



# *Presentation Outline*

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- **TRIA Background & Update**
- **Is Terrorism an Insurable Risk—Yet?**
  - **Determinants of insurability**
  - **Workers comp-specific problems**
- **Capacity, Capital & Financial Strength**
- **The Global Face of Terrorism**
- **The Market for Terrorism Insurance**
- **Politicization of the Terrorism Threat**
- **Q & A**



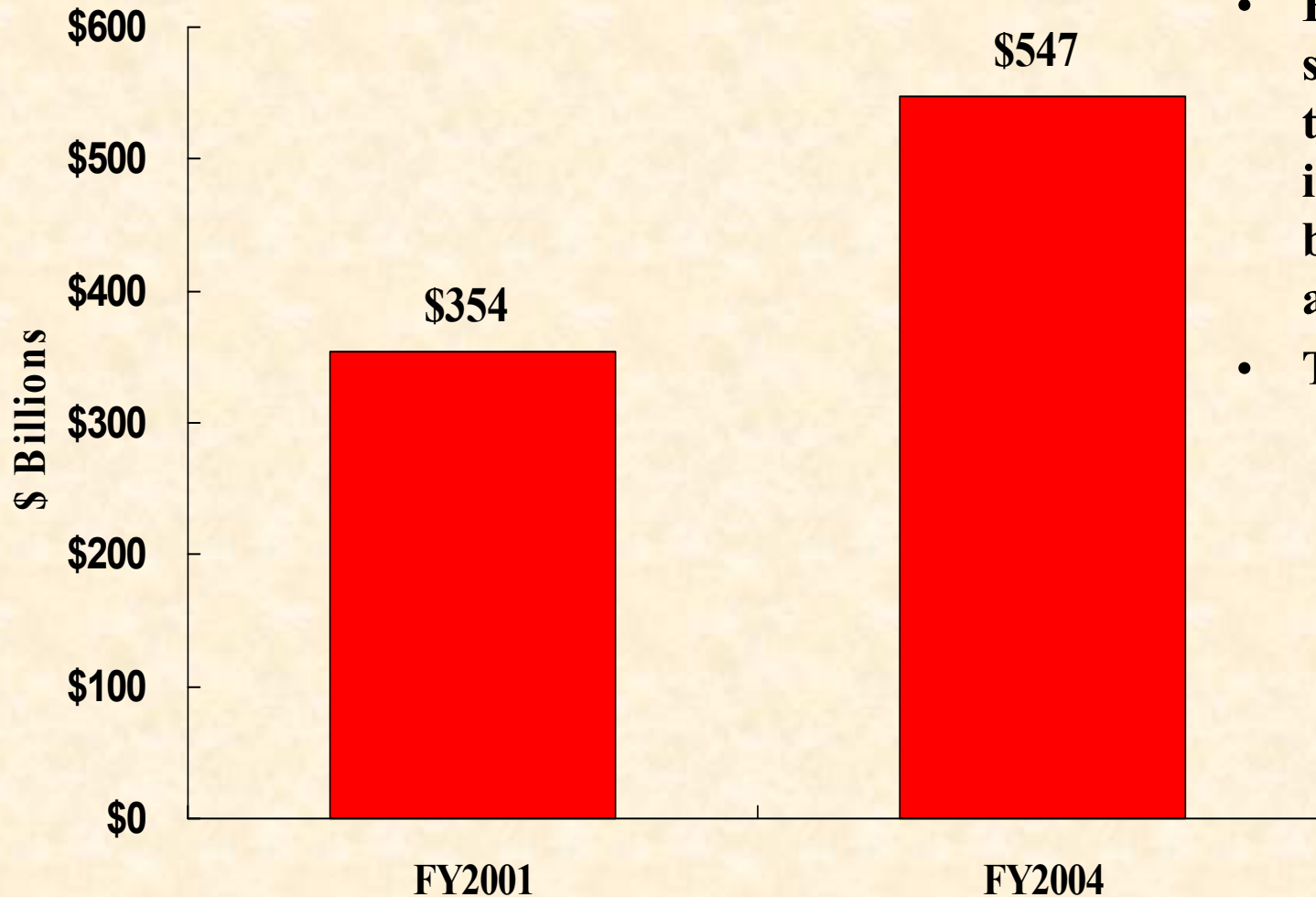
# *Terrorism Risk Insurance Act (TRIA):*

## *UPDATE*

- **TRIA expires 12/31/05 (enacted Nov. 26, 2002)**
- **Pan-industry coalition coalescing around a 2-year extension**
- **House subcommittee hearings held April 28—went well**
  - **H.B. 4634 introduced in June 2004**
  - **Passed by subcommittee September 30**
- **Senate hearings May 18—many committee members amenable BUT seem inclined to wait for Treasury study due June 2005**
- **Reauthorization opposed by some groups (e.g., CFA, AEI)**
- **Exclusionary language (except WC) for terror already developed by ISO & approved in 46 jurisdictions**



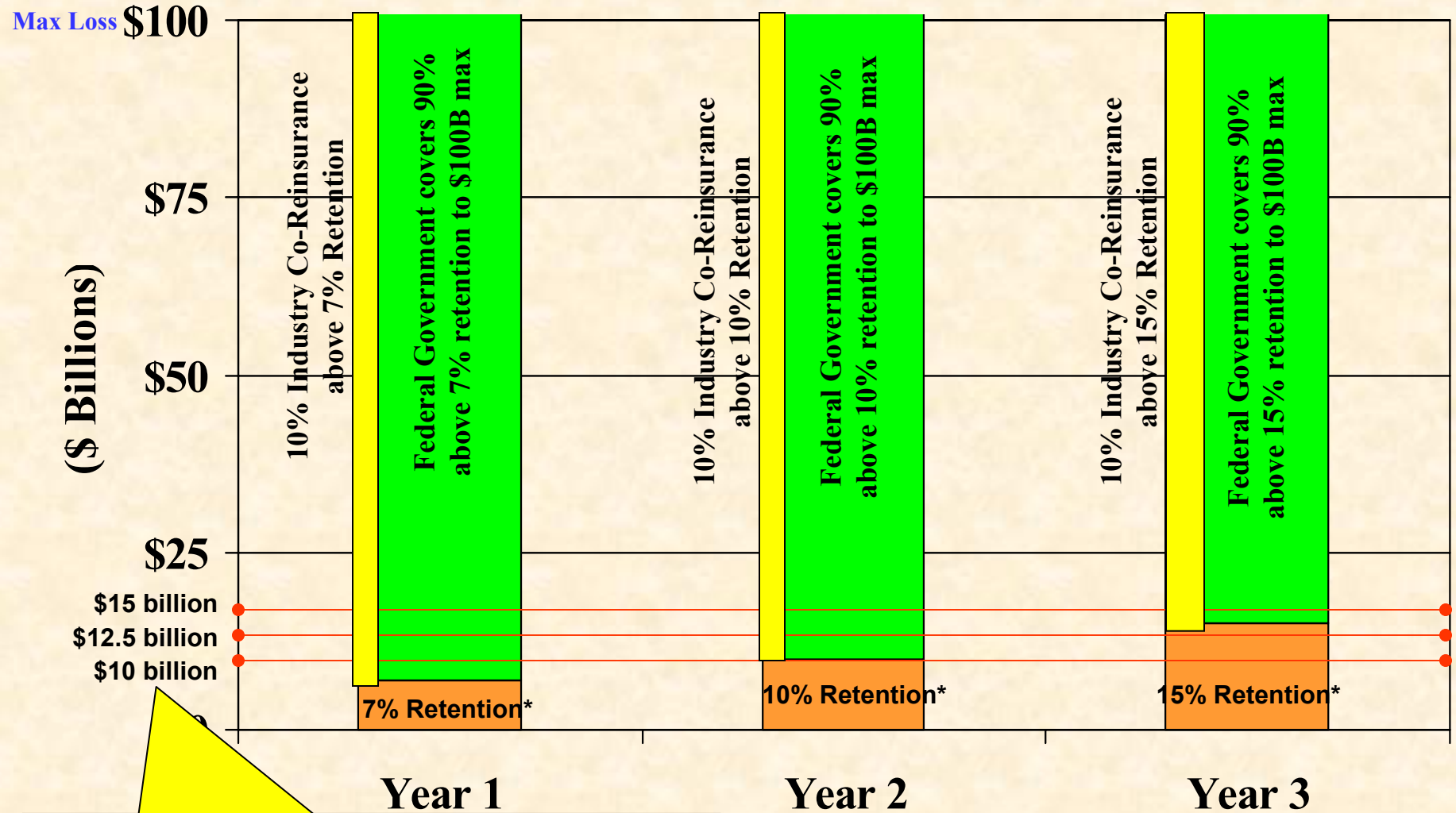
# *Federal National Security and Counterterrorism Spending*



- **Federal national security and anti-terror spending increased by 55% between FY2001 and FY2004**
- **Total Excludes:**
  - **Billions spent by state and local governments**
  - **Mitigation costs borne by private industry**
  - **Cost of terrorism insurance**



# Structure of the Terrorism Risk Insurance Program



Government recoups payouts below \$10B in Year 1, \$12.5 Year 2, \$15B Year 3 with 3% max surcharge on policy premium

\* Company retention based on direct premiums written.

Source: U.S. Congress, Insurance Information Institute.

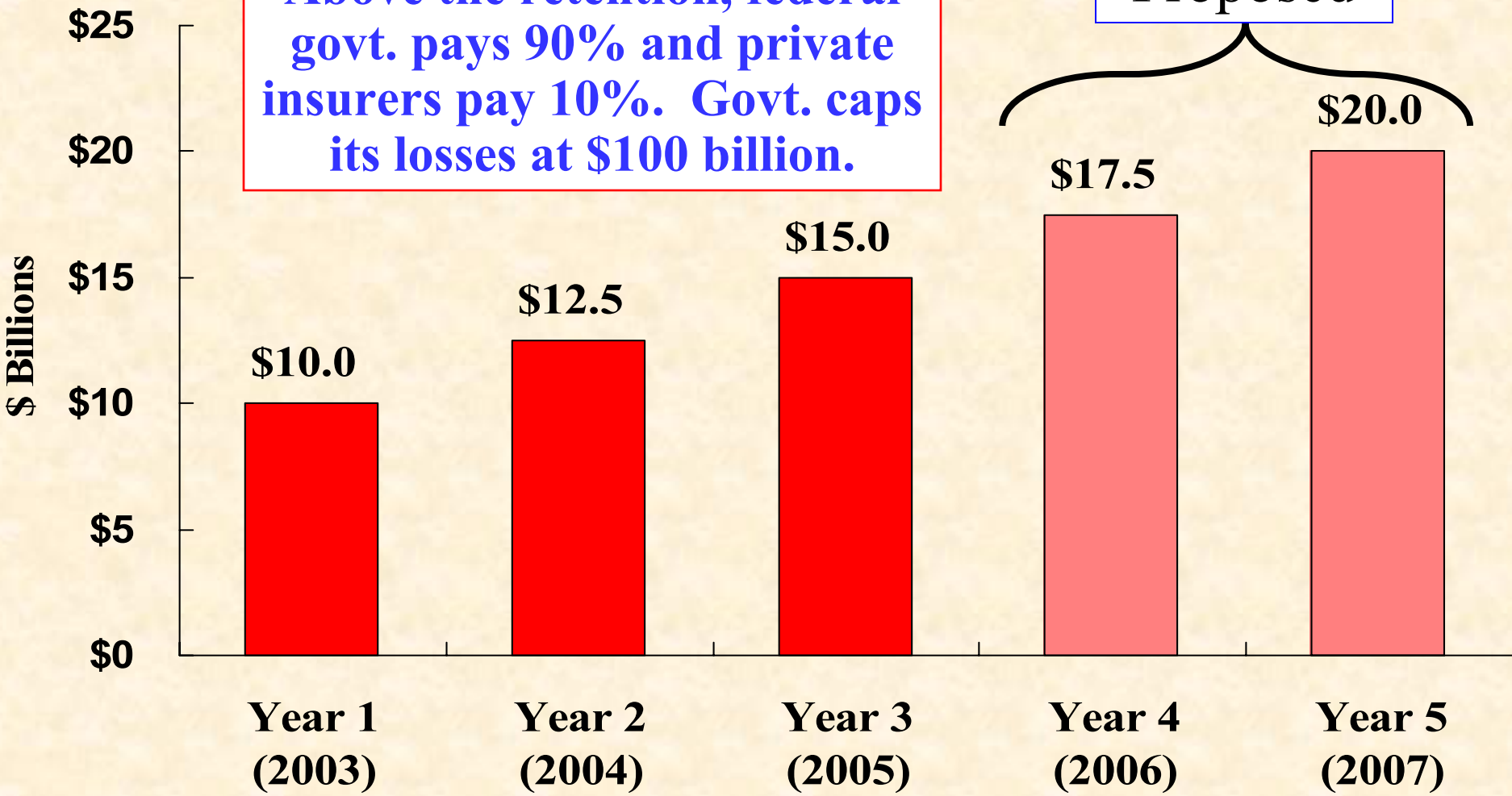


# *Insurance Industry Retention*

## *Under TRIA (\$ Billions)*

Above the retention, federal govt. pays 90% and private insurers pay 10%. Govt. caps its losses at \$100 billion.

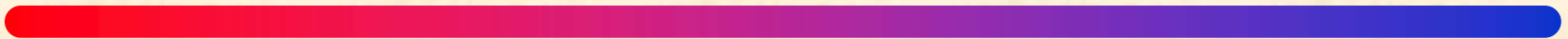
Proposed



Source: Insurance Information Institute

**ARE WE THERE YET?**

***THREE YEARS AFTER  
9/11, IS TERRORISM AN  
INSURABLE RISK?***





# *Terrorism Violates Traditional Requirements for Insurability*

<b>Requirement</b>	<b>Definition</b>	<b>Violation</b>
<b>Estimable Frequency</b>	<ul style="list-style-type: none"><li>• Insurance requires large number of observations to develop predictive rate-making models (an actuarial concept known as credibility)</li></ul>	<ul style="list-style-type: none"><li>• Very few data points</li><li>• Terror modeling still in infancy, untested.</li><li>• US intelligence infrastructure deeply flawed .</li></ul>
<b>Estimable Severity</b>	<ul style="list-style-type: none"><li>• Maximum possible/ probable loss must be at least estimable in order to minimize “risk of ruin” (insurer cannot run an unreasonable risk of insolvency though assumption of the risk)</li></ul>	<ul style="list-style-type: none"><li>• Potential loss is virtually unbounded.</li><li>• Losses can easily exceed insurer capital resources for paying claims.</li><li>• Extreme risk in workers compensation and statute forbids exclusions.</li></ul>

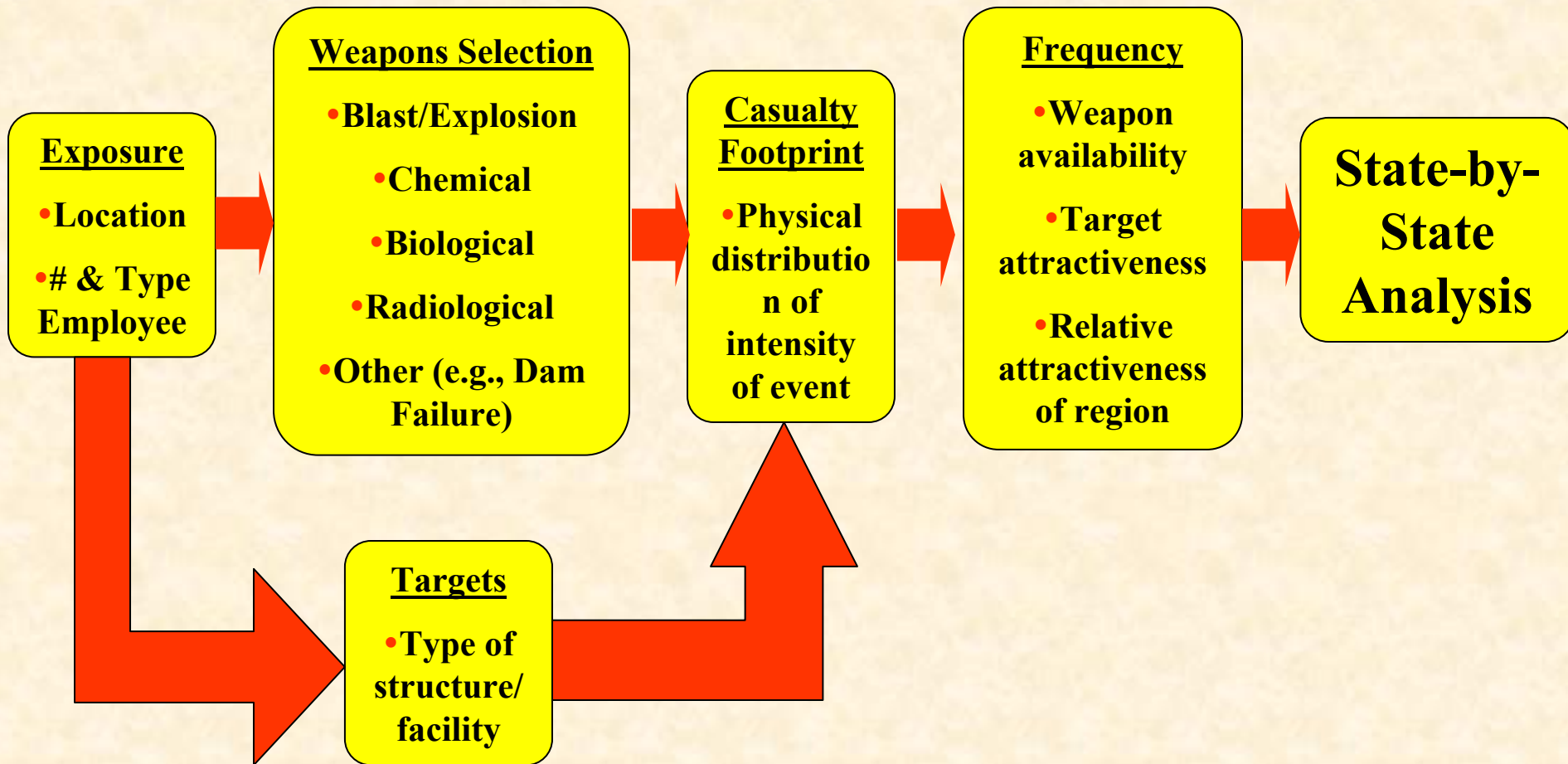


# Terrorism Violates Traditional Requirements for Insurability (cont'd)

Requirement	Definition	Violation
<b>Diversifiable Risk</b>	<ul style="list-style-type: none"> <li>• Must be able to spread/distribute risk across large number of risks</li> <li>• “Law of Large Numbers” helps make losses manageable and less volatile</li> </ul>	<ul style="list-style-type: none"> <li>• Losses likely highly concentrated geographically or by industry (e.g., WTC, power plants)</li> <li>• Take-up rate low outside most at-risk zones/industries leads to <i>adverse selection</i> problem</li> </ul>
<b>Random Loss Distribution/ Fortuity</b>	<ul style="list-style-type: none"> <li>• Probability of loss occurring must be purely random and fortuitous</li> <li>• Events are individually unpredictable in terms of time, location and magnitude</li> </ul>	<ul style="list-style-type: none"> <li>• Terrorism attacks are planned, coordinated and deliberate acts of destruction</li> <li>• Dynamic target shifting from “hardened targets” to “soft targets”</li> <li>• Terrorist adjust tactics to circumvent new security measures</li> <li>• Actions of US and foreign governments may affect likelihood, nature and timing of attack</li> </ul>



# *Modeling Severity & Frequency*





# *Additional Insurability Concerns*

## ■ **Information Problems:**

➤ Traditional Insurance assumes that emerging issue information is available and shared (Terrorism information sharing is “asymmetric” – Classified data is not shared).

## ■ **Unique Role & Responsibility of Government:**

➤ Insurance is designed for policyholders’ insurable interests (Victims of terrorism are mostly surrogate targets for attacks mainly aimed at government, and the government is in a unique position to influence the likelihood of attack based upon foreign policy.)



# *Additional Insurability Concerns*

## ■ **Surplus Impairment Risk:**

■ Statutory Accounting requires insurers to set aside reserves for the ultimate liabilities arising from the insurance policies they underwrite. (Insurers are *not allowed to post reserves for losses that have not occurred. Therefore, insurers are not allowed to post reserves specifically related to catastrophe losses from natural perils or terrorism until they actually occur. As a result, catastrophe losses deplete insurer's capital & surplus base intended for the security of all policyholders*).

## ➤ **Pre-Loss Funding:**

➤ Almost all insurance assumes that premiums are paid first, normally at the inception of the policy. (In terrorism programs or pools, private and public sector solutions, such as TRIA, often use a combination of pre-loss and post-loss funding. )



# *Terrorism & Workers Comp: Unique Insurability Problems*

- **Unlimited risk-of-ruin due to uncapped medical obligations and lifetime income payments**
  - 9/11 transformed many WC underwriting decisions into capital management decisions.
- **WC insurers cannot exclude terrorism in any state. WC “take-up” ratio = 100%**
  - With the exception of PA state WC laws do not even permit exclusion of war.
- **Traditional statewide rating approach is completely unsuitable for pricing terrorism**
  - Office worker in Times Square = Same premium as office worker in Rochester? *Also:* Lowest rated classes present disproportionate risk to terrorist loss (assuming an attack similar to 9/11): office, secretarial (8810).



# *Terrorism & Workers Comp: Unique Insurability Problems*

## ■ **New Exposure Basis:**

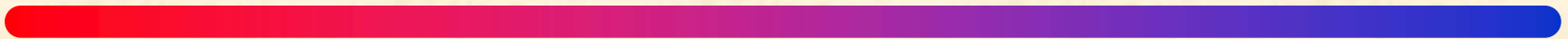
➤ Employees by location – not yet formally embraced by rating agencies – new underwriting & exposure management systems now required.

## ■ **Catastrophe Reinsurance:**

➤ Prior to 9/11, life insurers provided low-cost WC reinsurance over single event insurer retentions of \$10 million or less – with no Terrorism or NRBC exclusion. New Bermuda capacity has not replaced the life reinsurers, who exited market after 9/11. No NRBC is available to today for national account insurers.

# CAPITAL, CAPACITY & PERFORMANCE

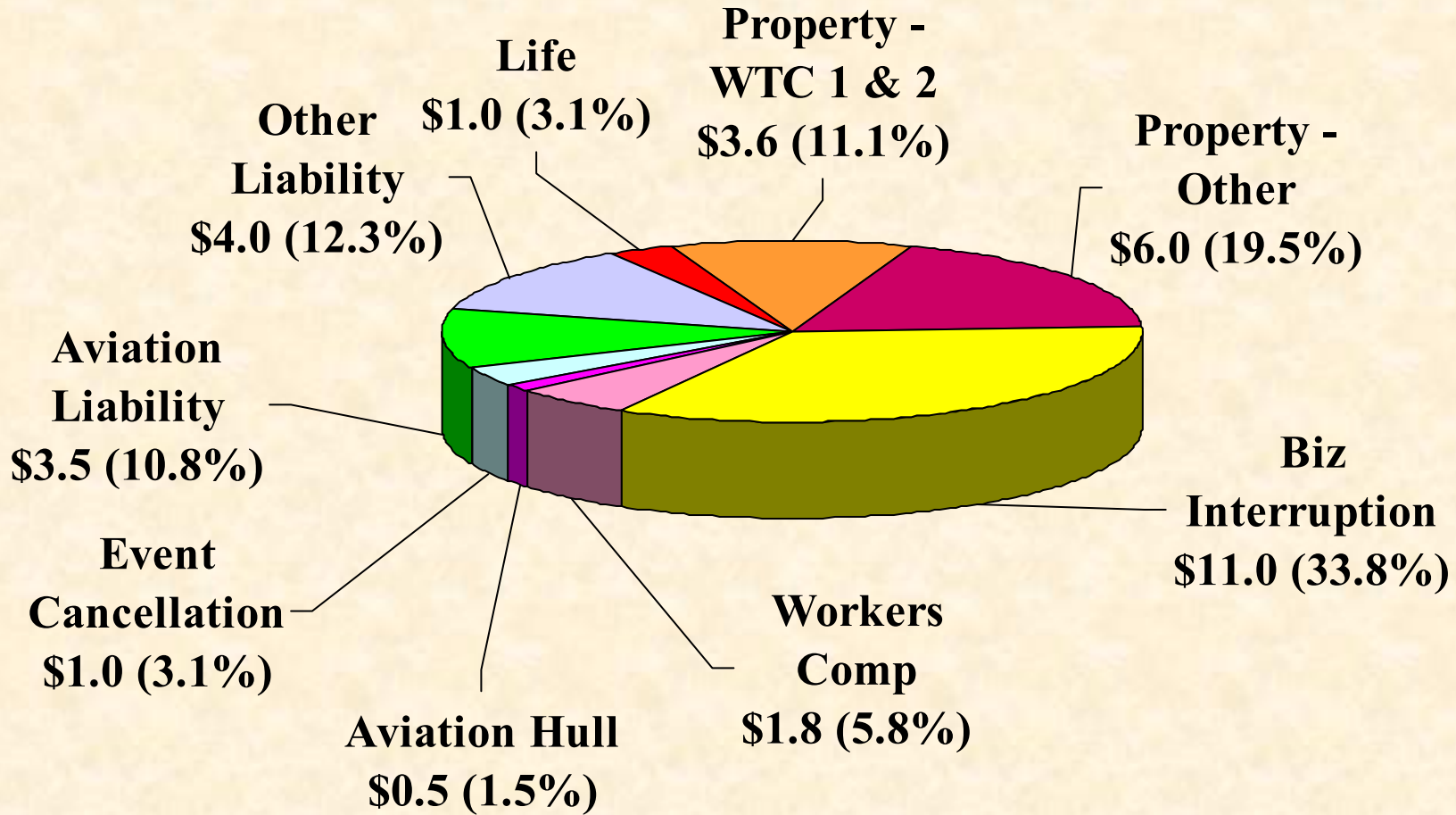
*CAN INSURERS AFFORD  
ANOTHER MAJOR TERRORIST  
ATTACK?*





# Sept. 11 Industry Loss Estimates

(\$ Billions)



## Current Insured Losses Estimate: \$32.5B

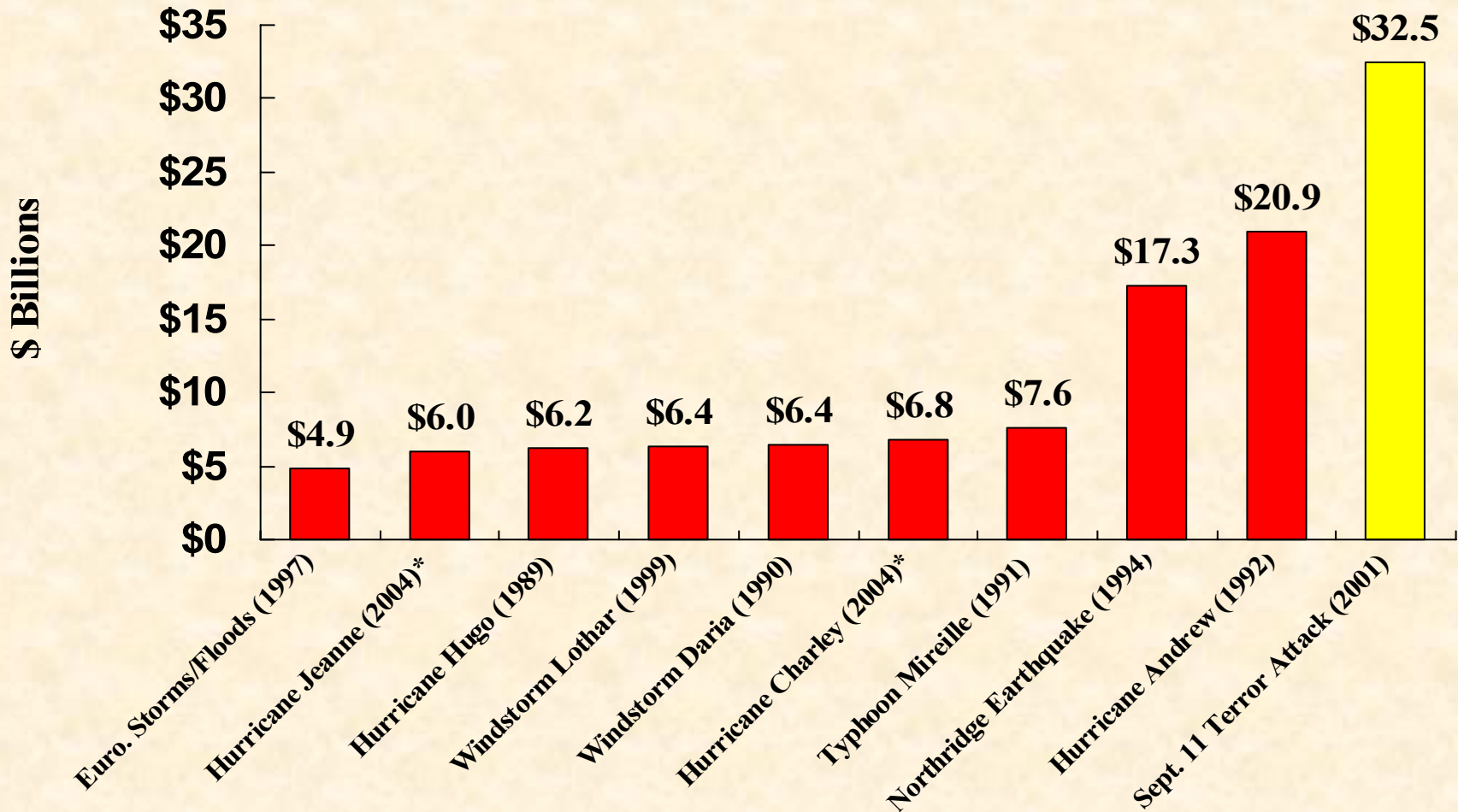


# *Death Toll from September 11, 2001 Terrorist Attack*

<b><u>EVENT</u></b>	<b><u>DEATHS</u></b>
<b>WTC victims (workers &amp; visitors)*</b>	<b>2,605</b>
<b>WTC hijacked jets (incl. 10 hijackers)</b>	<b>157</b>
<b>Pentagon victims on the ground</b>	<b>125</b>
<b>Pentagon hijacked jet (incl. 5 hijackers)</b>	<b>64</b>
<b>Pennsylvania jet crash (incl. 4 hijackers)</b>	<b>44</b>
<b>TOTAL</b>	<b>2,995</b>



# Top 10 Insured Losses Worldwide, 1970-2004 (\$2003)



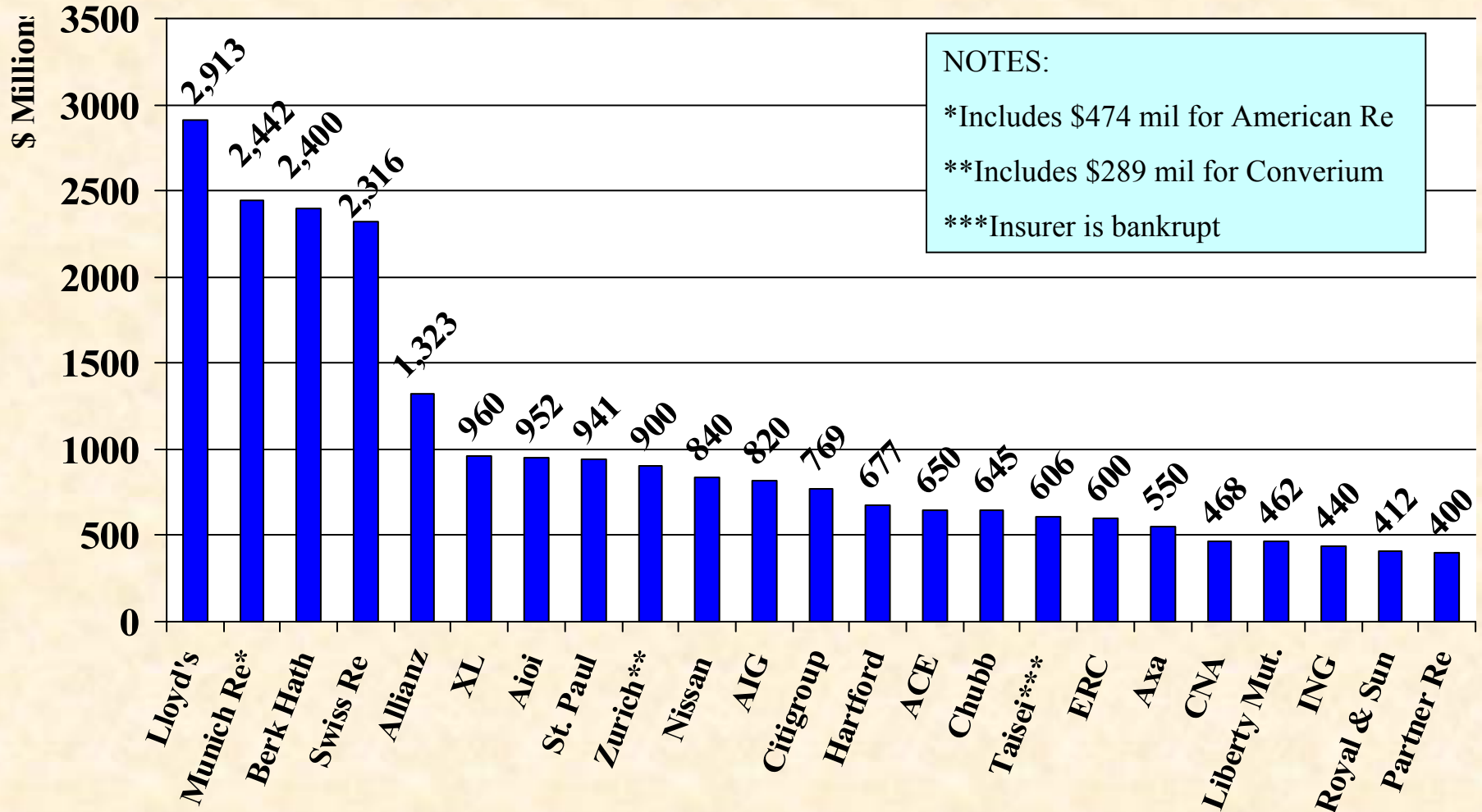
\*Insurance Information Institute estimate; Hurricane Charley figure is from ISO/PCS. Both in 2004 \$.  
Sources: Swiss Re, "Natural Catastrophes and Man-Made Disasters in 2003," *Sigma*, no. 1, 2004;  
except Sept. 11 estimate from Hartwig, Robert P., *2004 Mid-Year Property/Casualty Insurance Update*, Insurance Information Institute. Figure is stated in 2001 dollars.



# Insured Loss Estimates

(As of September 13, 2002)

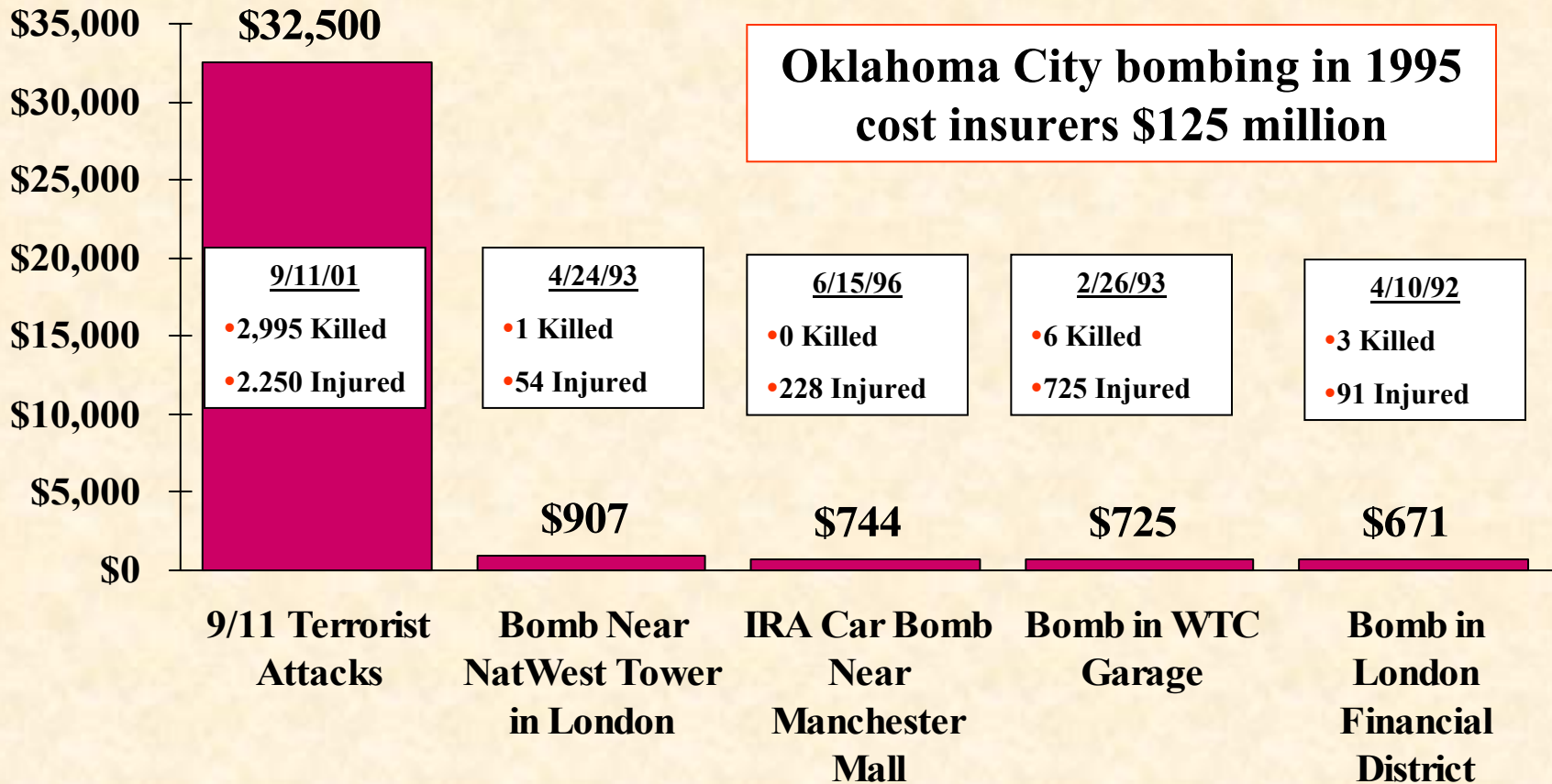
Top 20 Groups (pre-tax, net of reinsurance, \$ millions)





# Top 5 Costliest Terrorist Attacks (by insured property loss\*)

\$ Millions, Adjusted to 2001 Price Level

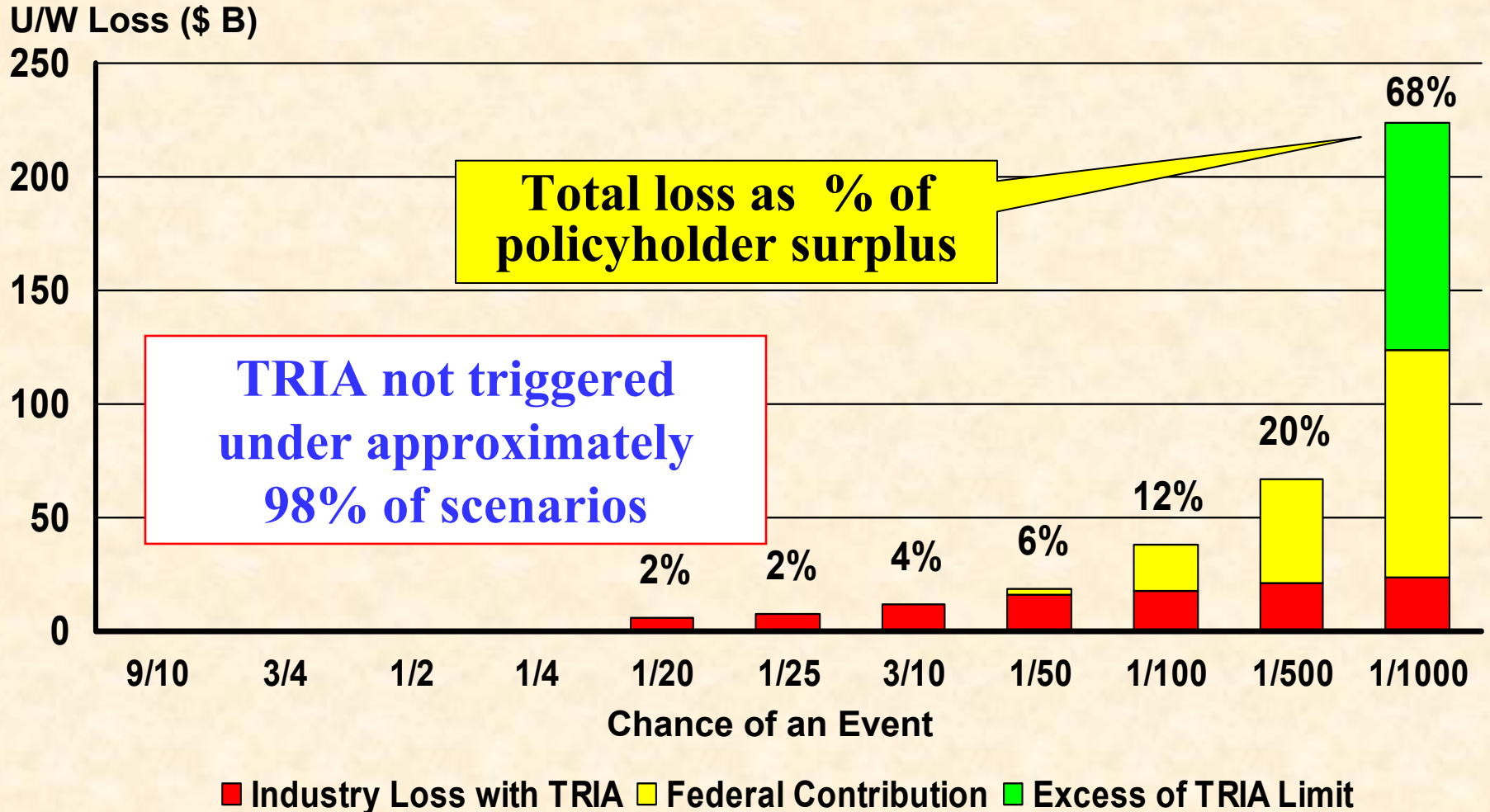


\*Includes property, business interruption and aviation hull losses.  
Source: Swiss Re; Insurance Information Institute.



# *Under Most Scenarios TRIA Is Dormant But Vital When Triggered*

## **P&C U/W Loss With and Without TRIA Support**

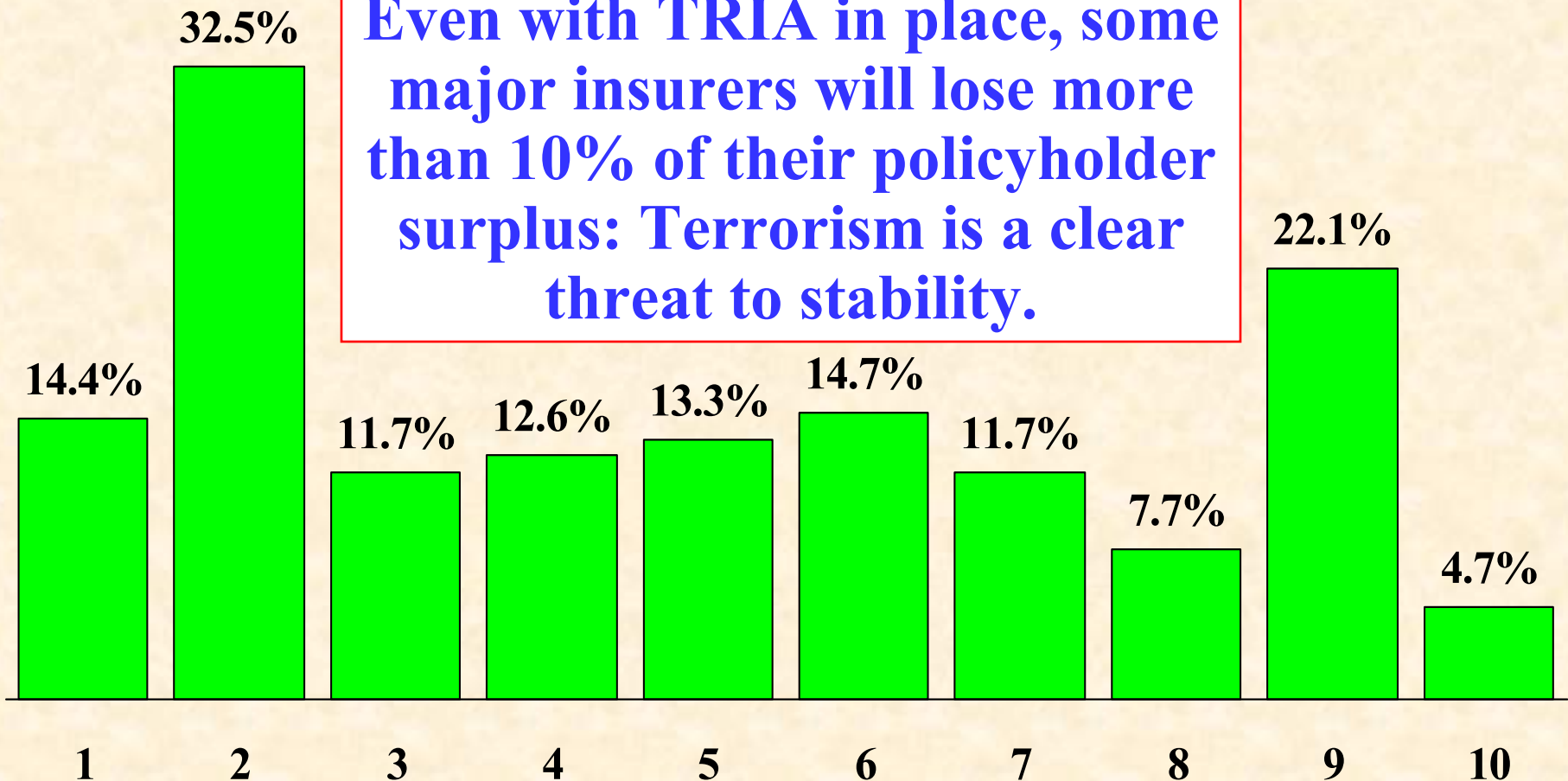




# *Percent of 2003 Surplus Lost Due to a \$25 Billion Terrorism Attack in 2004 With TRIA in Place*

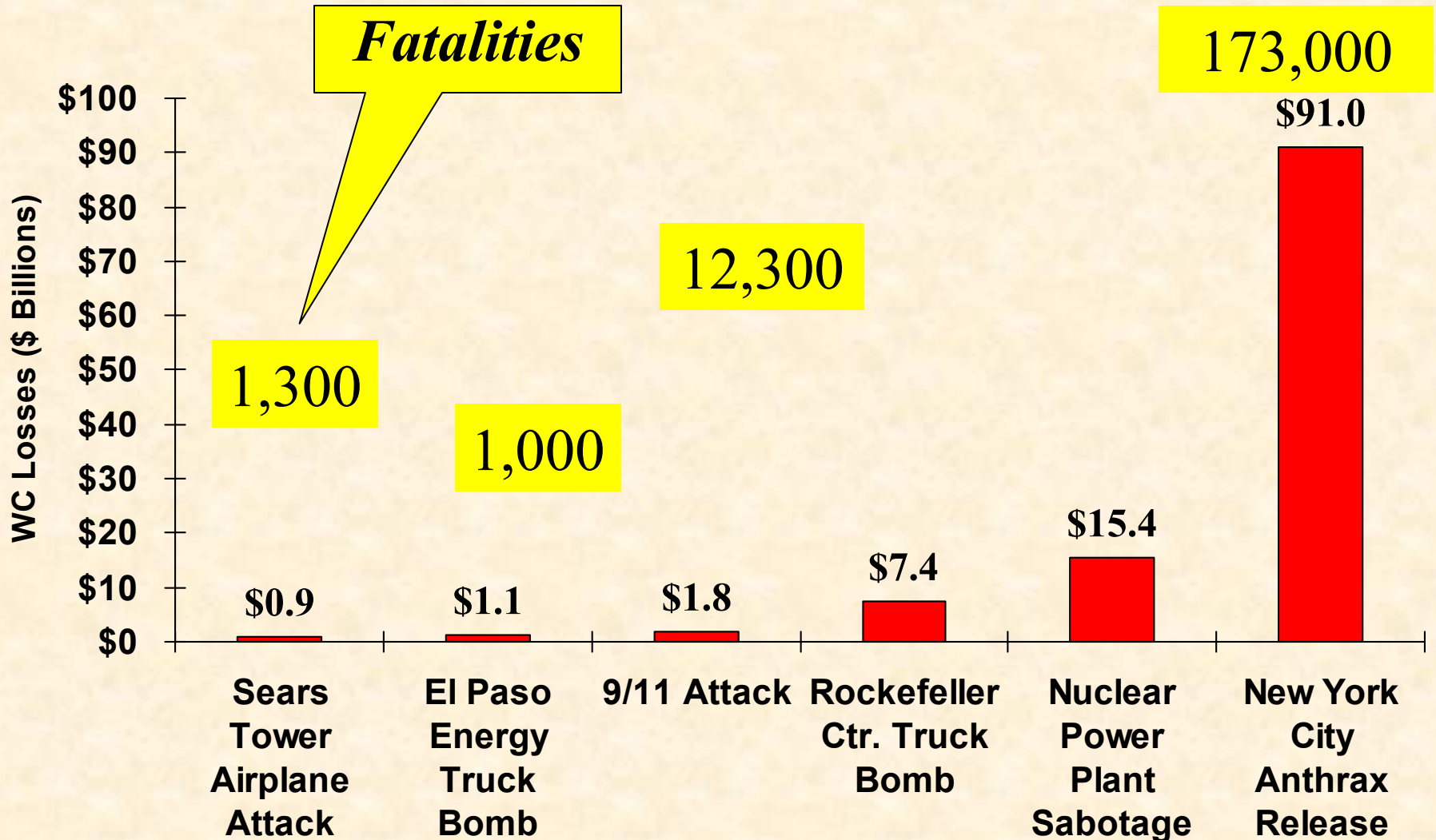
## **Top 10 US P/C Insurers by Market Share**

**Even with TRIA in place, some major insurers will lose more than 10% of their policyholder surplus: Terrorism is a clear threat to stability.**





# *Estimated Workers Comp Insured Losses & Deaths for Terrorist Events*

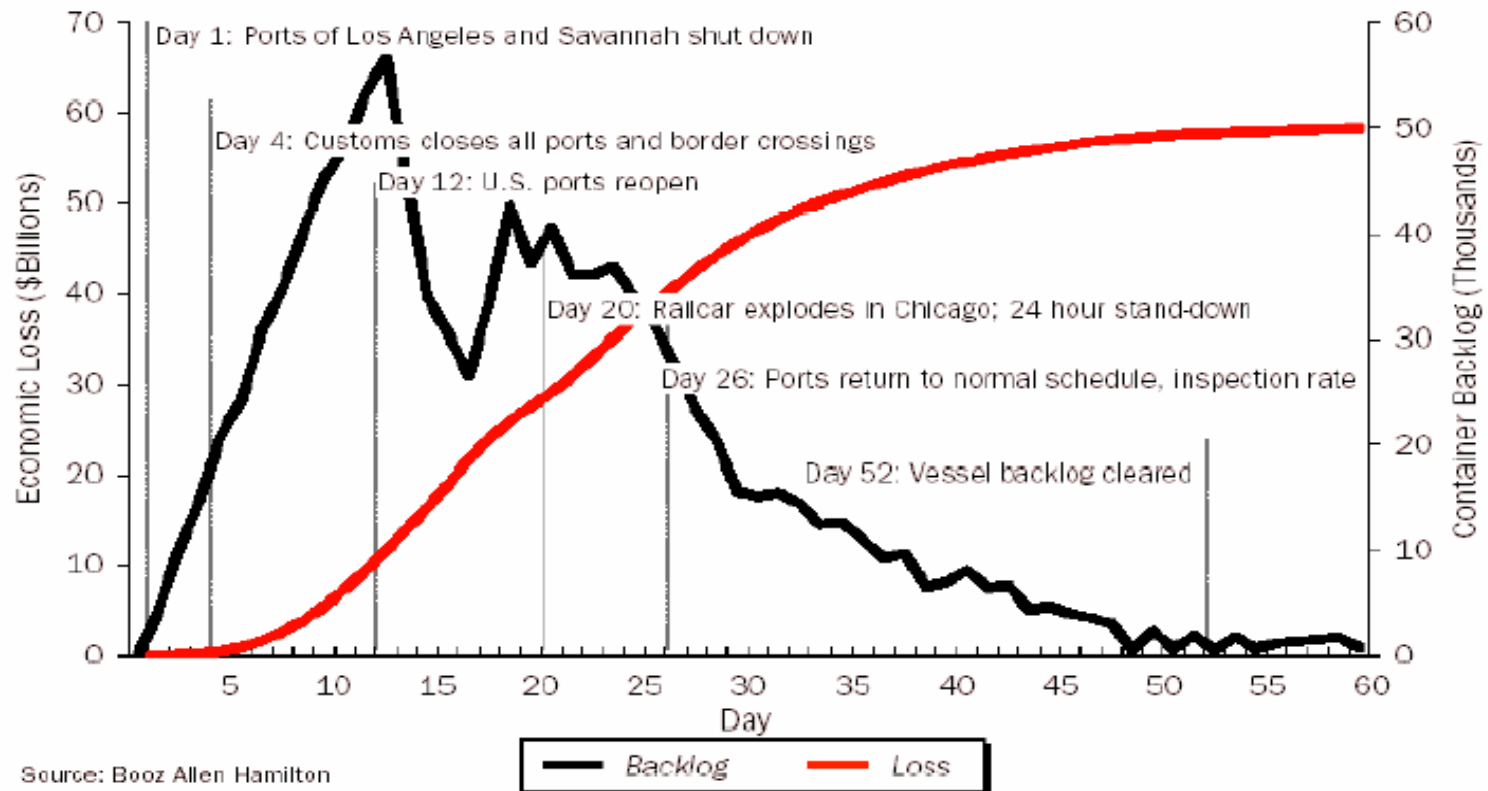




# Port Security War Game Estimates \$58B Impact from Simulated Terrorist Attack

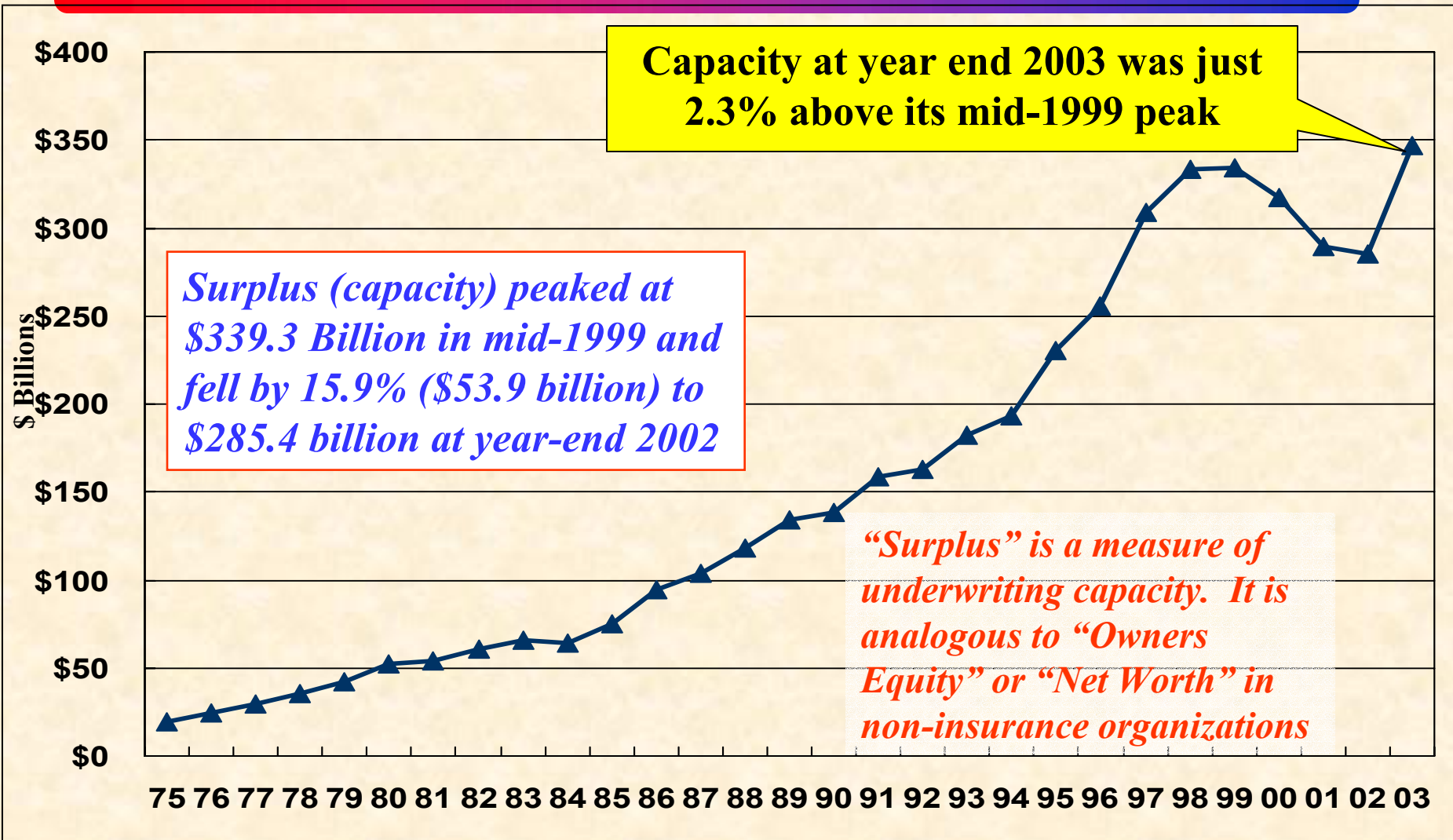
## PORT SECURITY WAR GAME—ECONOMIC IMPACT

### Exhibit 4





# U.S. Policyholder Surplus: 1975-2003





# Capital Myth: US P/C Insurers Have \$350 Billion to Pay Terrorism Claims

Total PHS = \$298.2 B as of 6/30/01  
= \$291.1 B as of 12/31/02  
= \$347.0 B as of 12/31/03

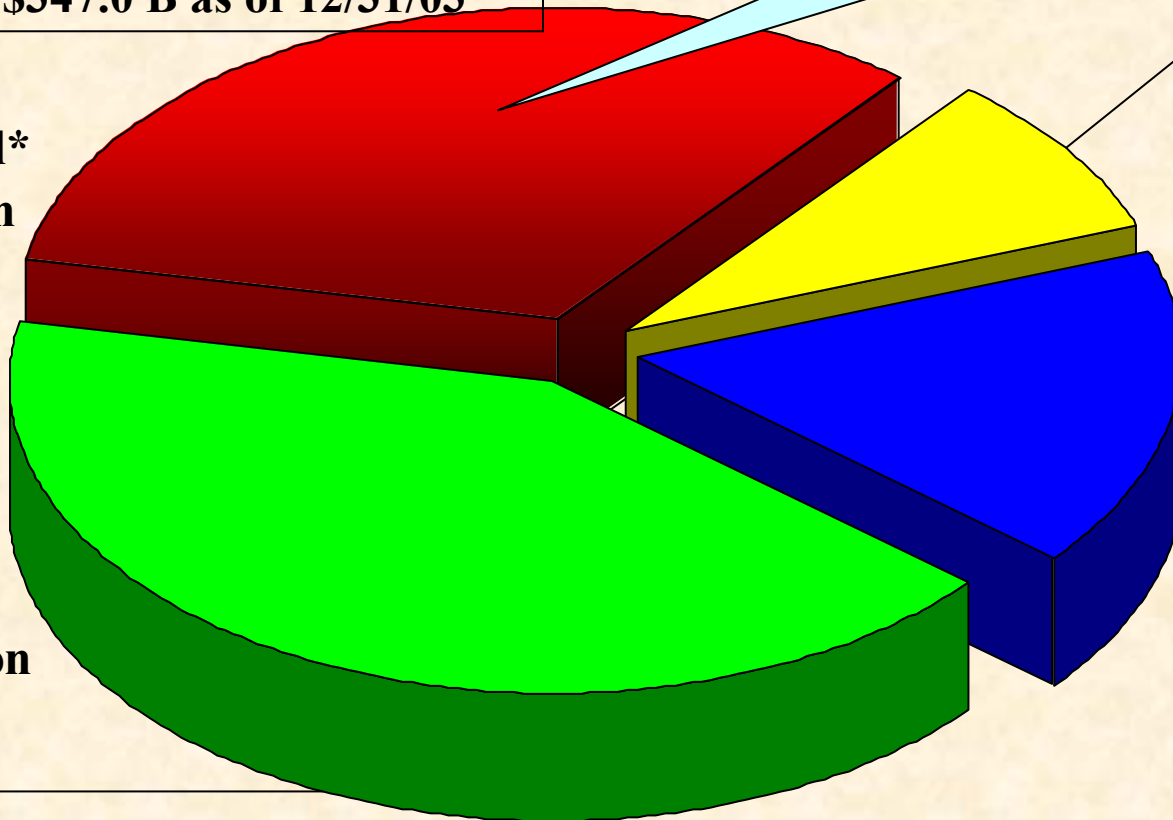
Only 33% of surplus backs "target" lines net of reserve deficiency

"Target" Commercial\*  
\$114 billion  
33%

Commercial Reserve Deficiency  
\$30 billion (est.)  
9%

Other Commercial  
\$58 billion  
17%

Personal  
\$146 billion  
42%

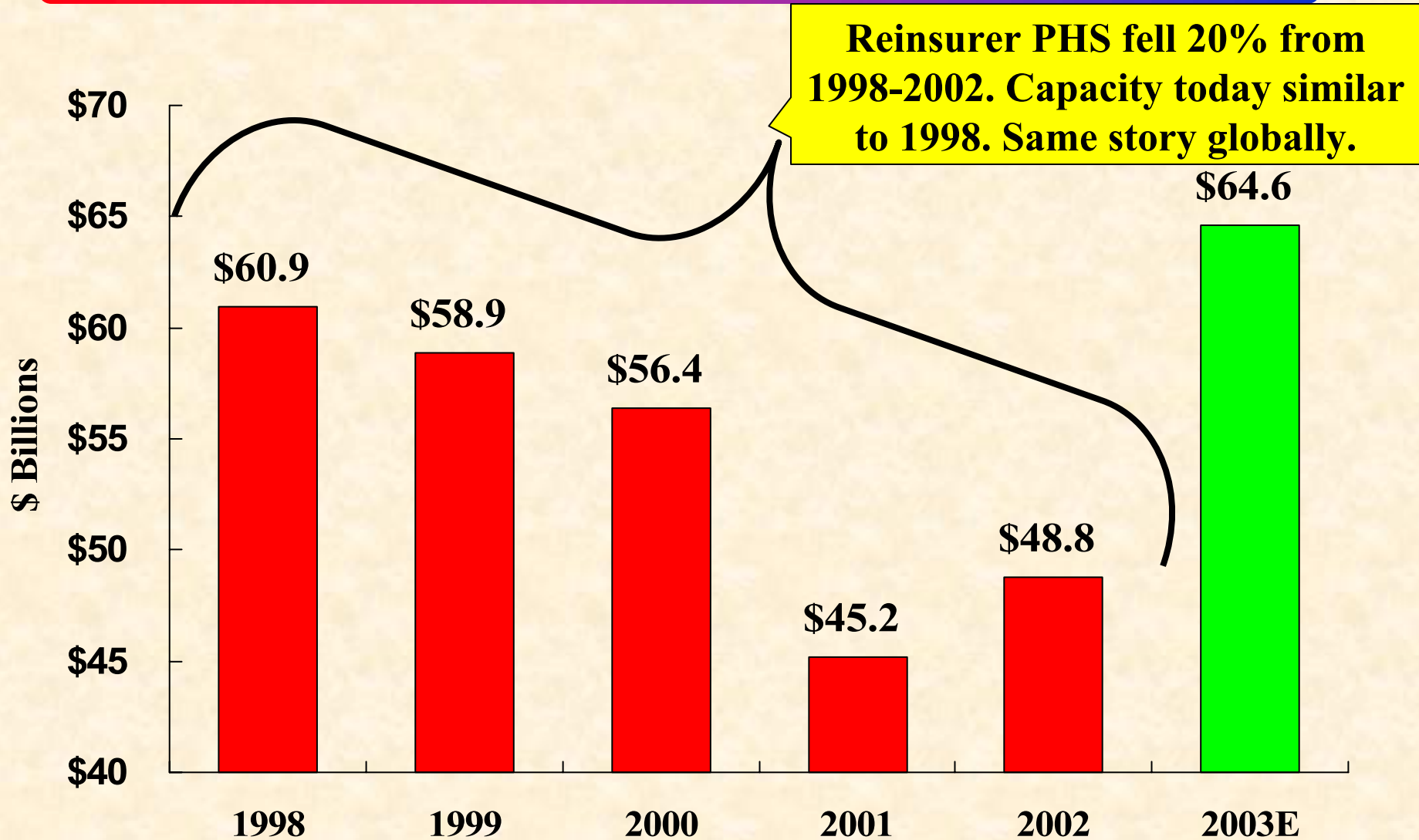


\*"Target" Commercial includes: Comm property, liability and workers comp; Surplus must also back-up on non-terrorist related property/liability and WC claims

Source: Insurance Information Institute estimates based on A.M. Best Q.A.R Data.



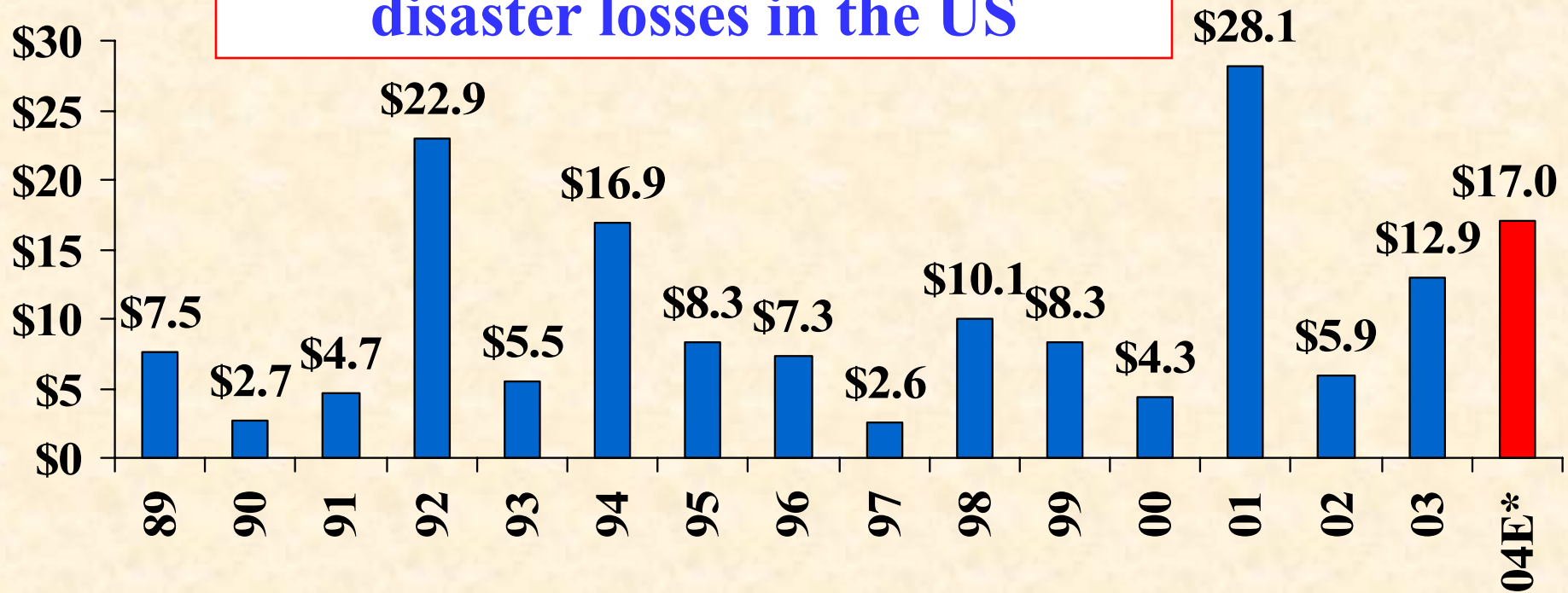
# *US Reinsurers: Change in Policyholder Surplus (\$ Billions)*





# *U.S. Insured Catastrophe Losses (\$ Billions)*

**2004 could become the second  
worst year ever for natural  
disaster losses in the US**



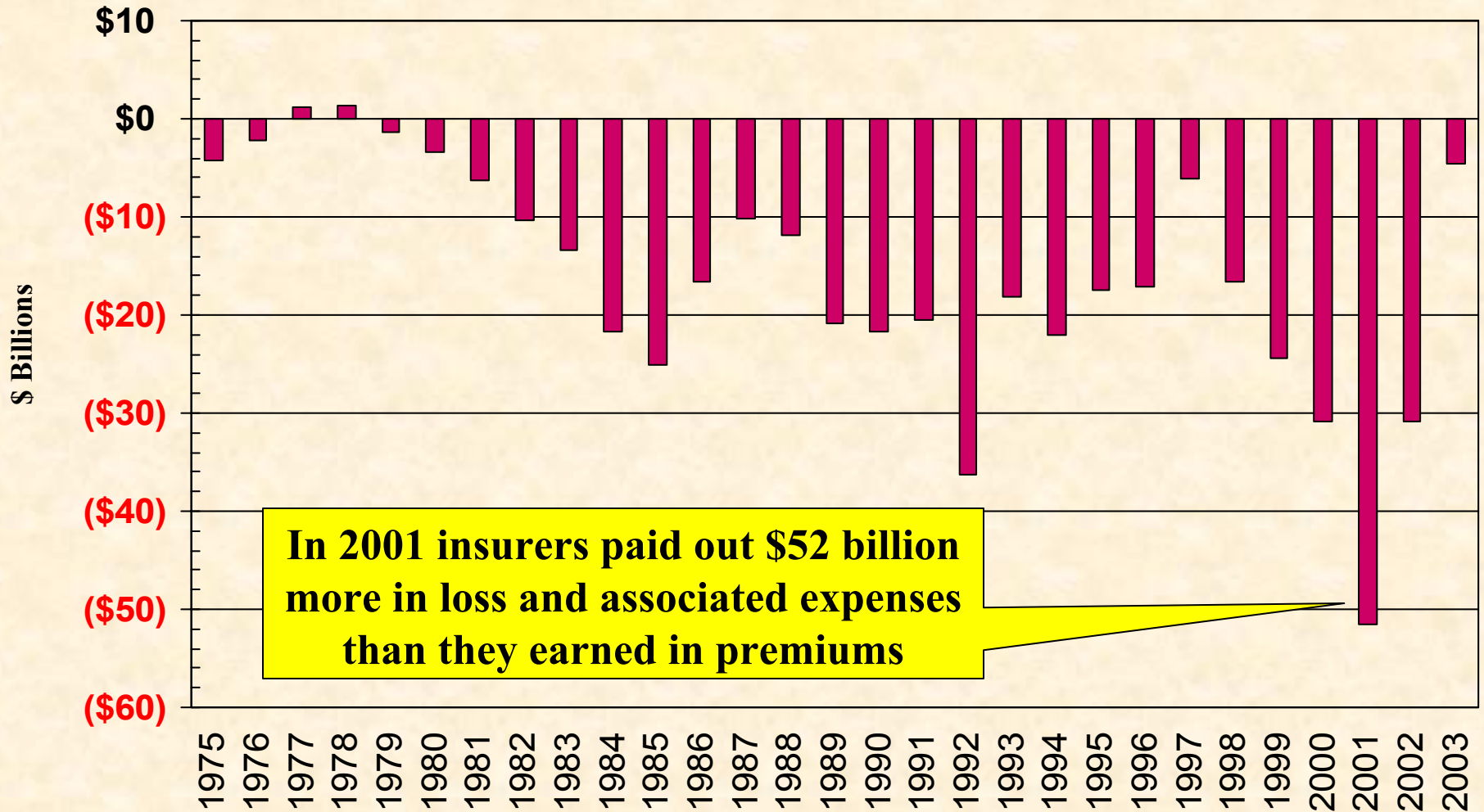
\*2004 figure is 2004 estimate as of September 20, 2004.

**Note:** 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims.

**Source:** Property Claims Service/ISO; Insurance Information Institute

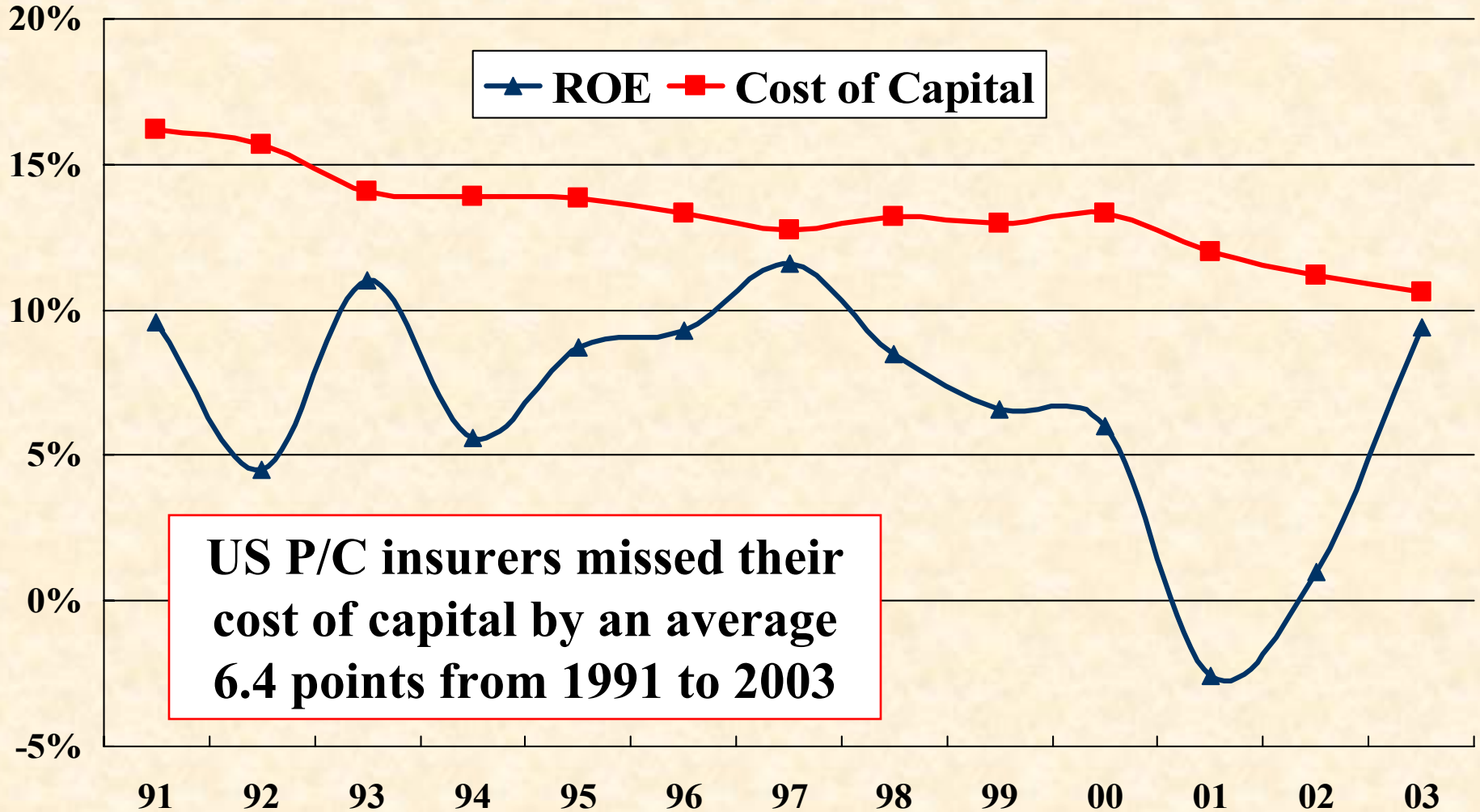


# *Underwriting Gain (Loss)* *1975-2003*



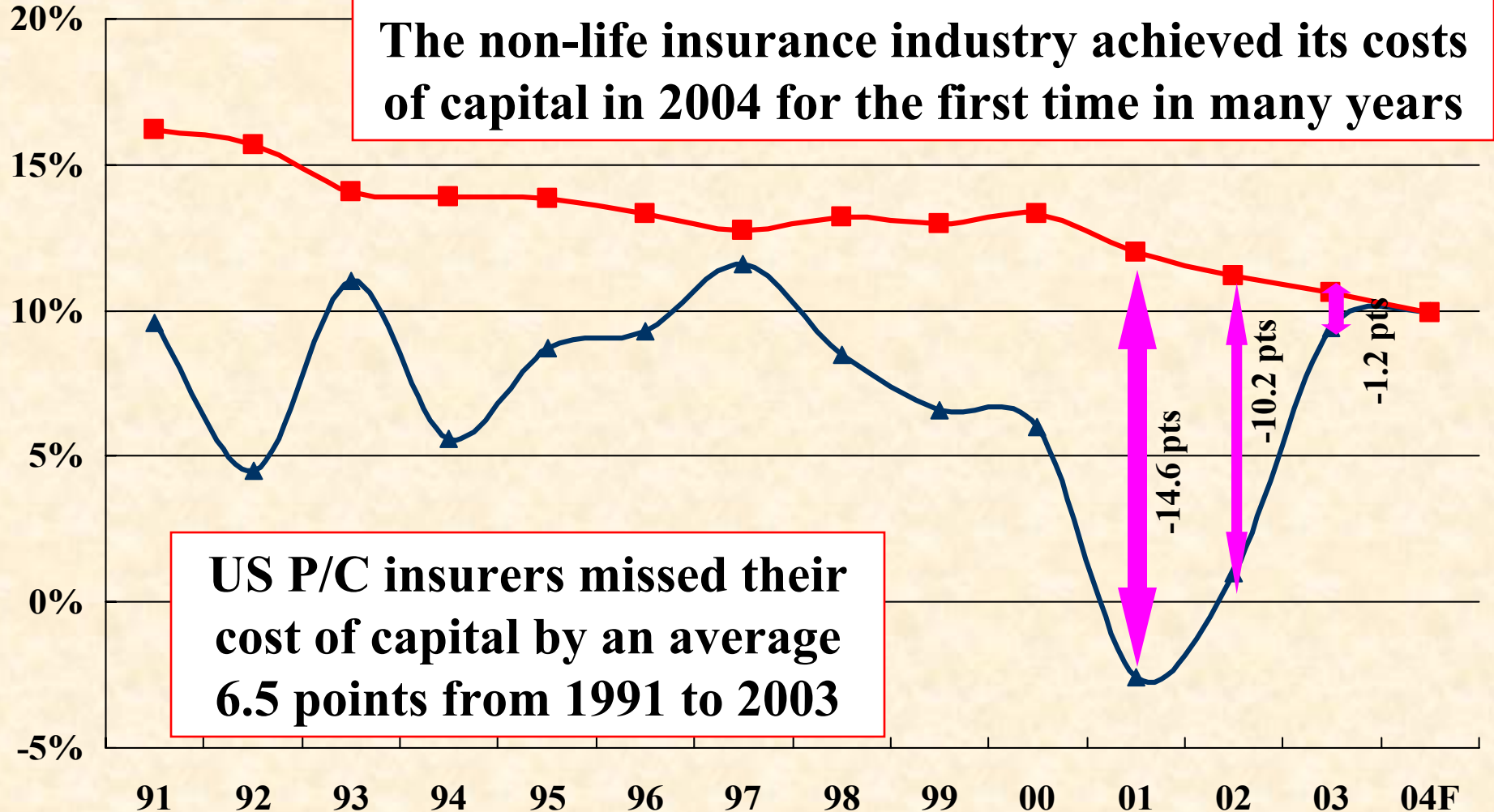


# Property/Casualty Insurer ROE vs. Industry Cost of Capital: 1991 – 2003





# *ROE vs. Cost of Capital:* *US P/C Insurance: 1991 – 2004F*

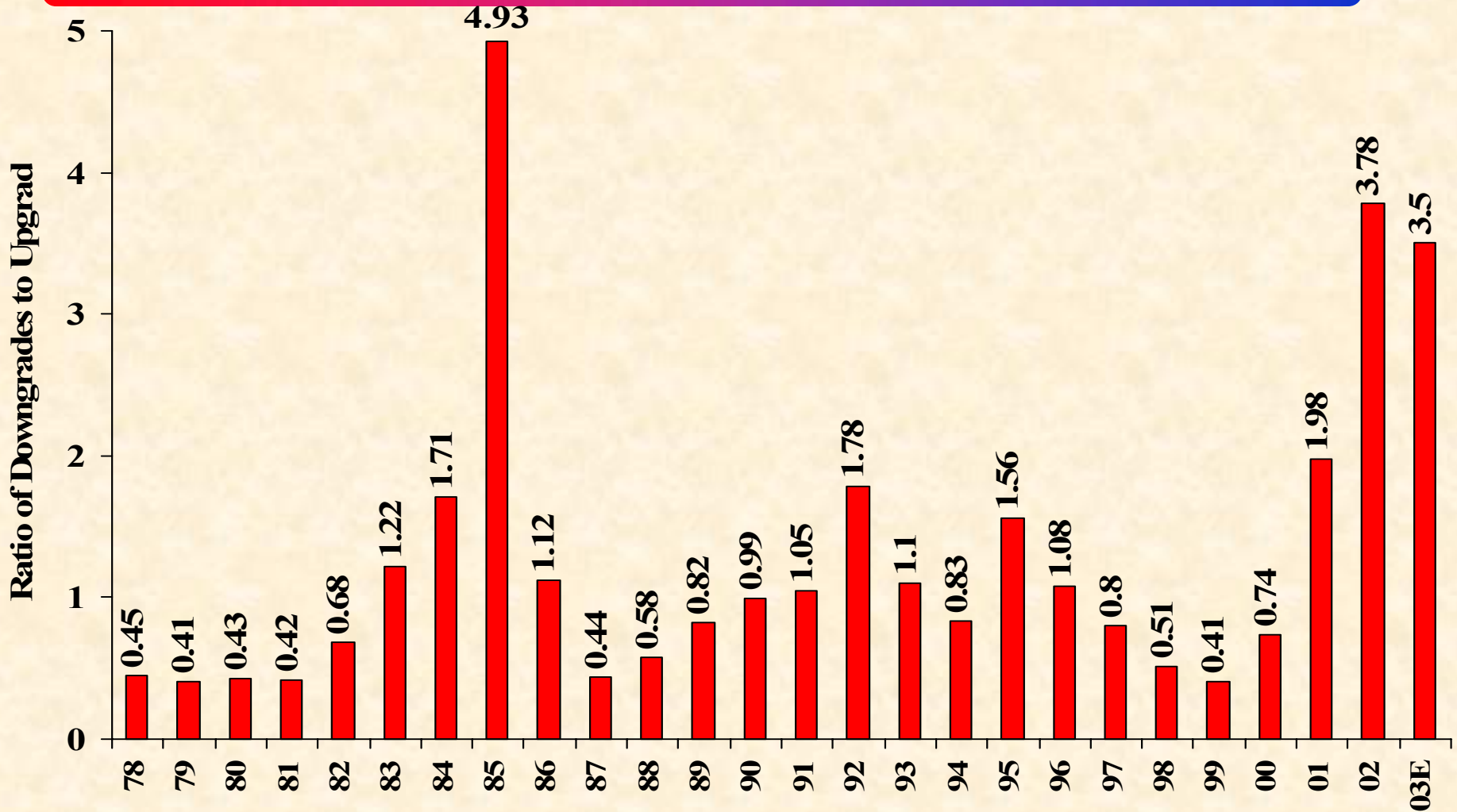


Source: The Geneva Association, Ins. Information Inst.

—▲— ROE —■— Cost of Capital



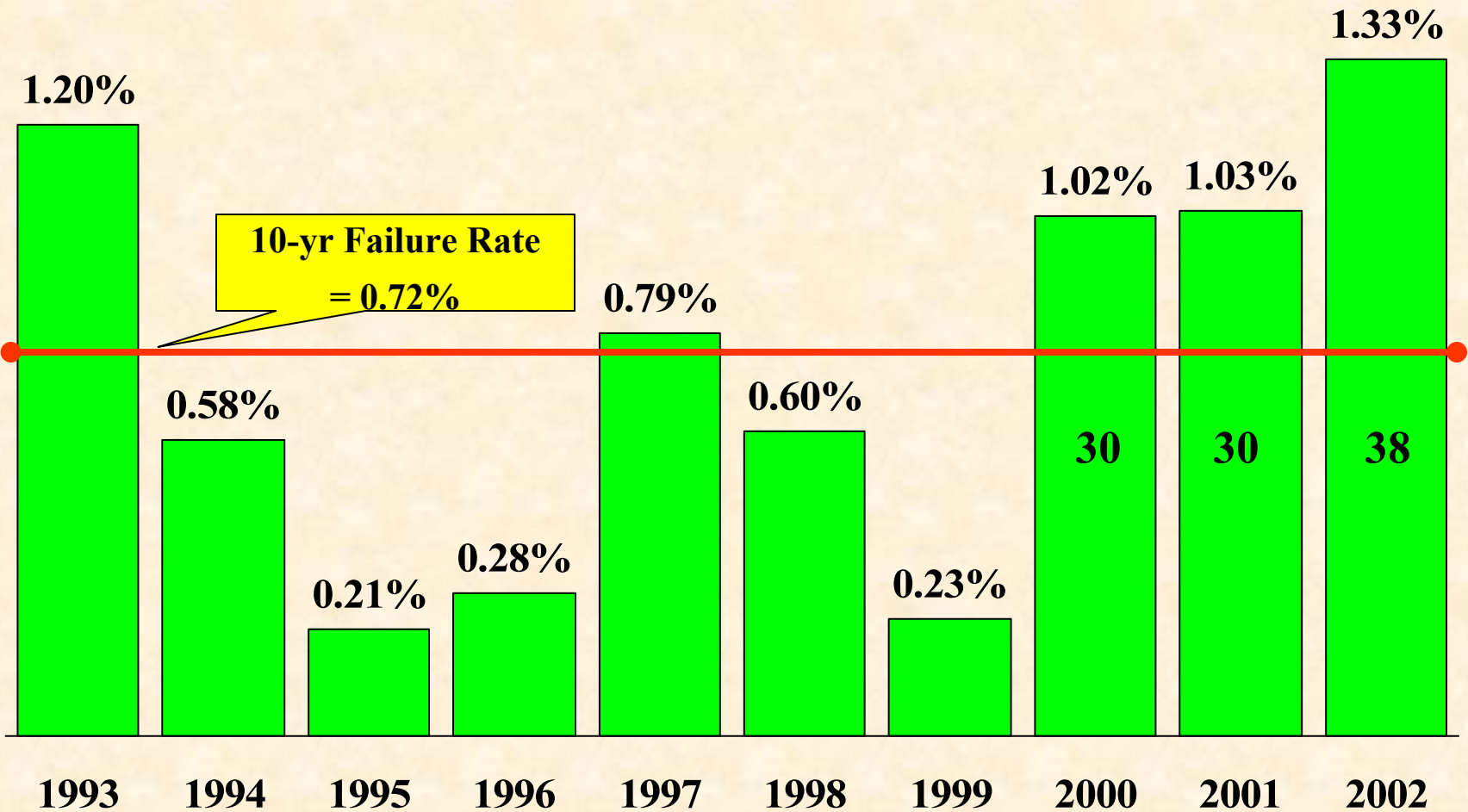
# Insurer Downgrade/Upgrade Ratio\*



Sources: *Impairment Rate and Rating Transition Study—1977 to 2002*, A.M. Best & Co.; 2003E from S&P.

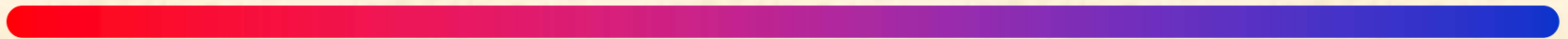
\*U.S. property/casualty and life/health insurers

# P/C Company Insolvency Rates: 1993 to 2002



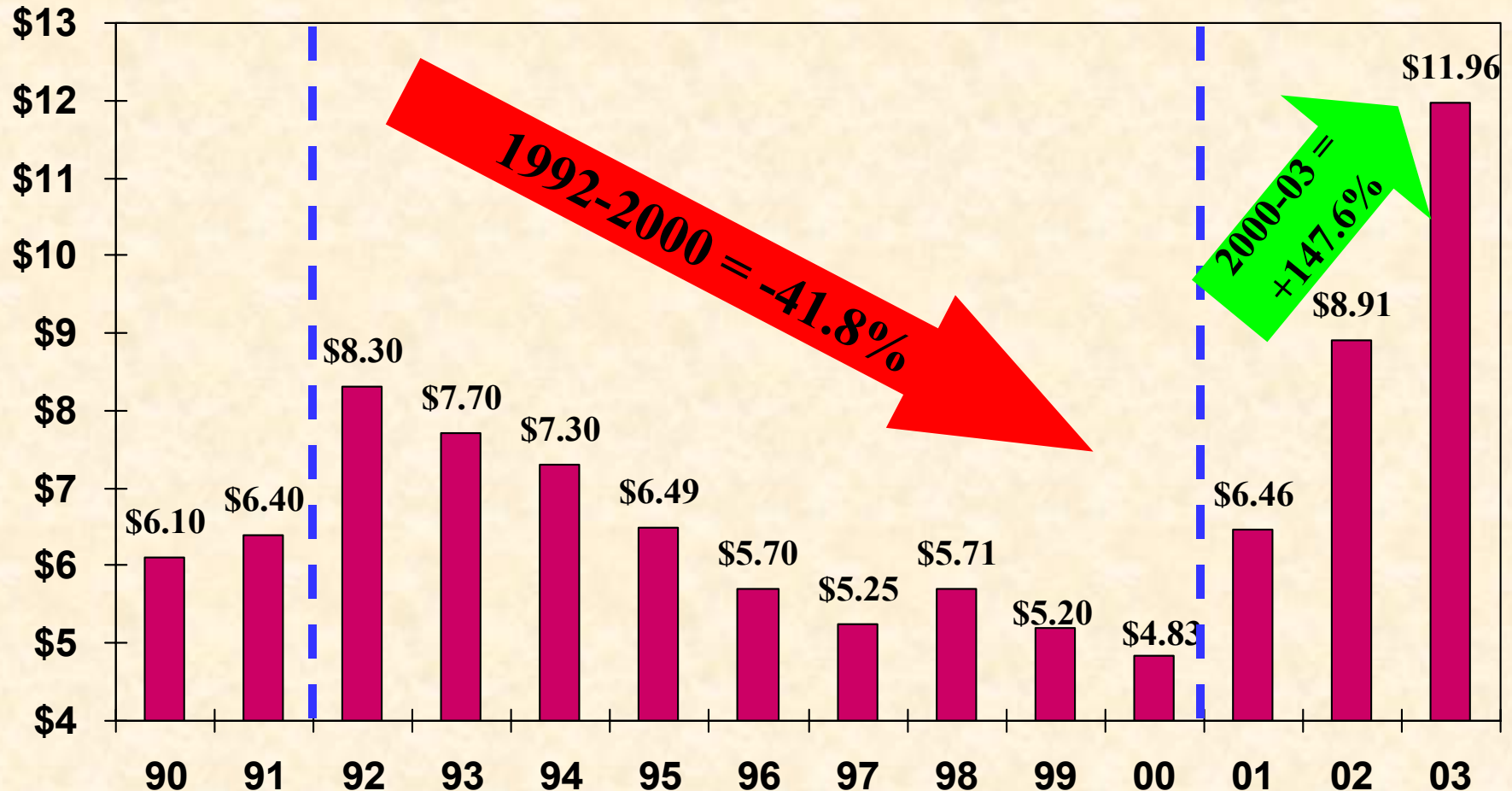
# PRICING ENVIRONMENT PRE/POST 9/11

*CAN BUYERS OF INSURANCE  
AFFORD ANOTHER MAJOR  
TERRORIST ATTACK?*





# Cost of Risk: 1990-2003\*



\* Cost of risk includes insurance premiums, retained losses and administrative expenses

Source: 2003 RIMS Benchmark Survey; Insurance Information Institute



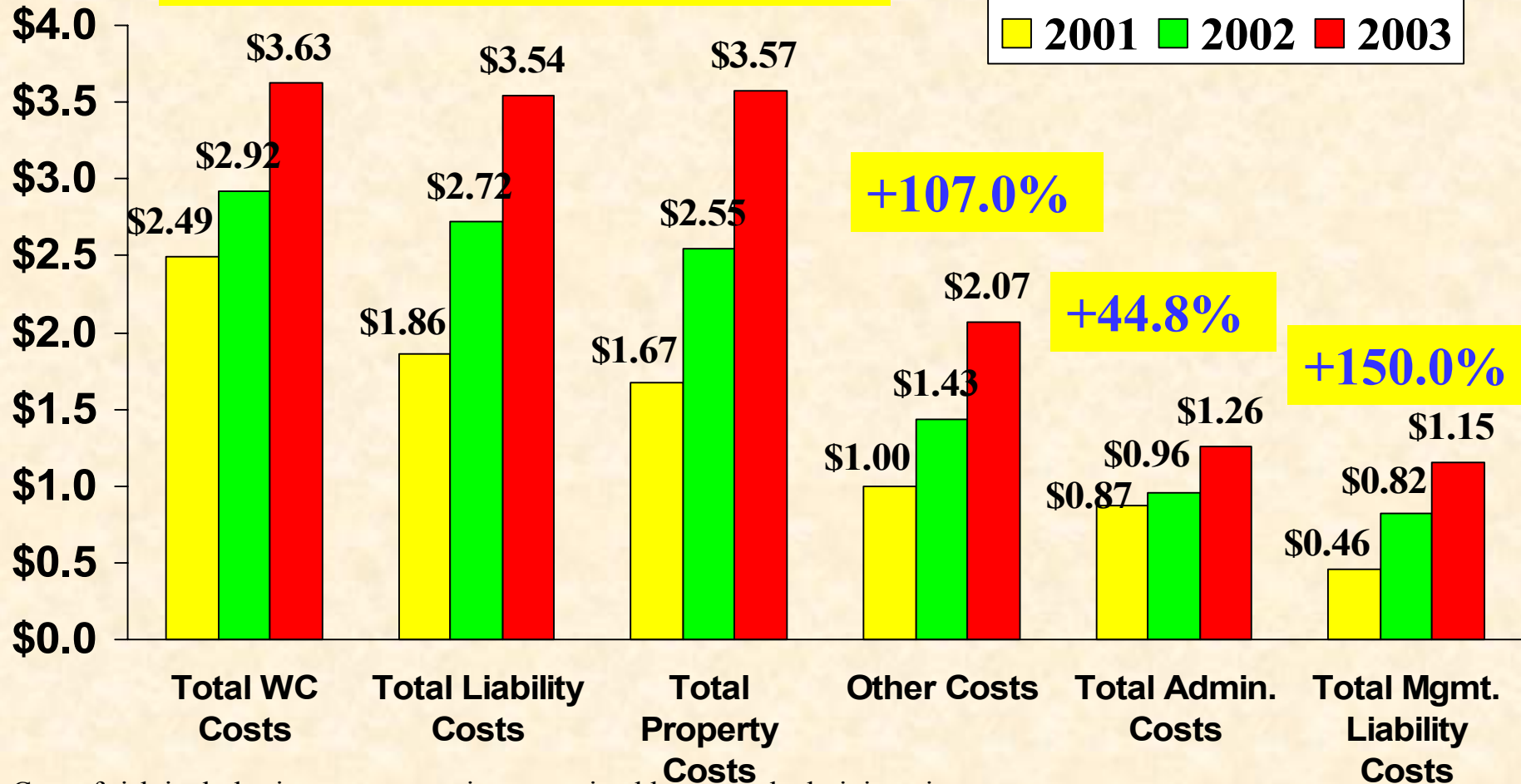
# Components of Cost of Risk Per \$1,000 of Revenue\*

% Change  
2001 -03

+45.8%

+90.3%

+113.8%



\* Cost of risk includes insurance premiums, retained losses and administrative expenses

Source: 2003 RIMS Benchmark Survey; Insurance Information Institute



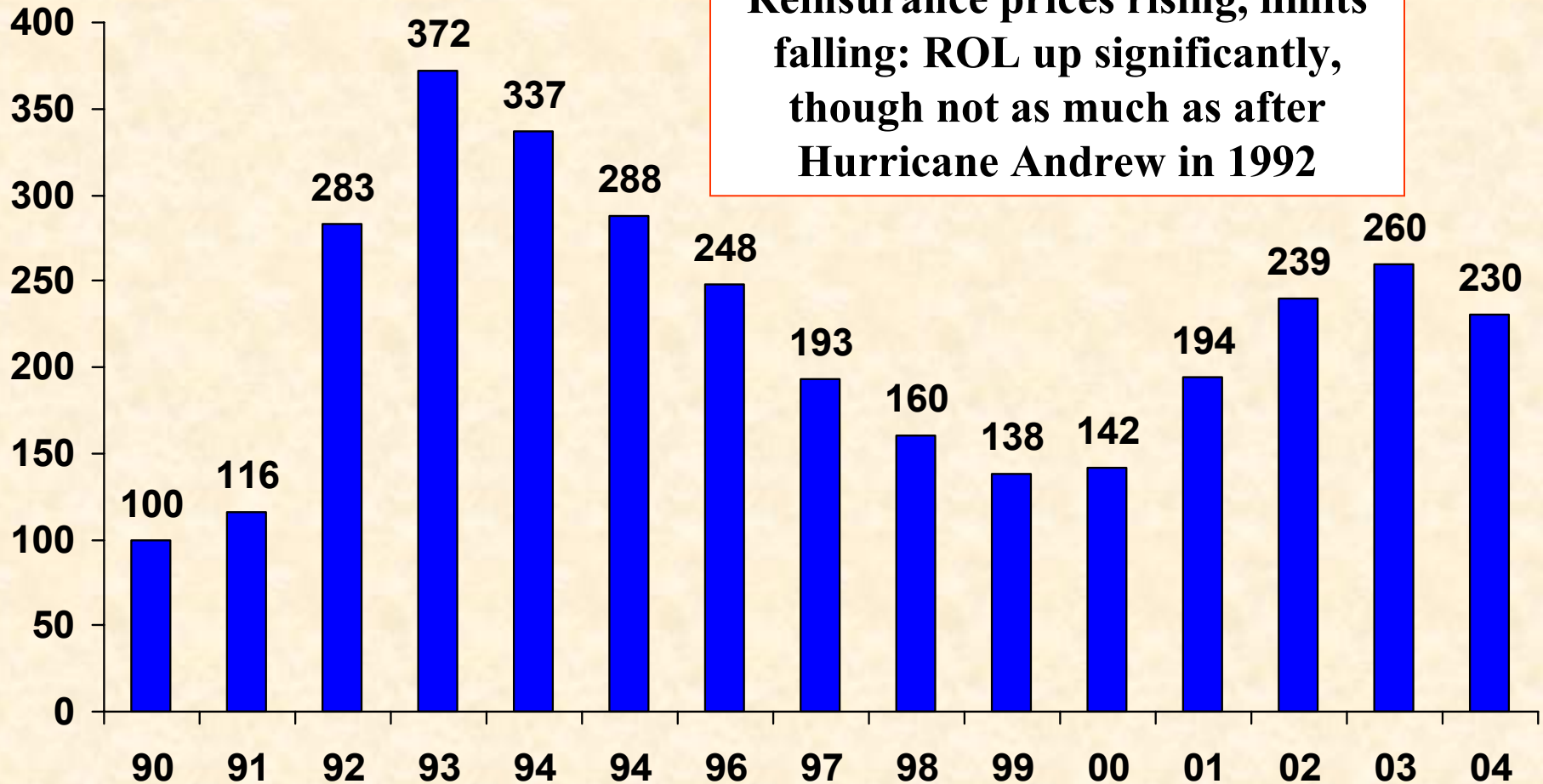
# Commercial Premium Rate Changes Are Sharply Lower



Source: MarketScout.com



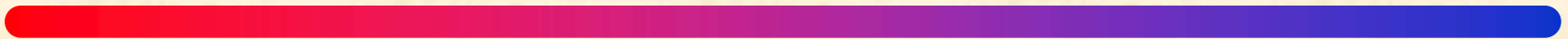
# World Rate-On-Line Index (1990 = 100)



Source: Guy Carpenter

# THE GLOBAL FACE OF TERRORISM:

*MOST MAJOR ECONOMIES HAVE  
CREATED PERMANENT  
GOVERNMENT-BACKED  
TERRORISM INSURANCE FUNDS*



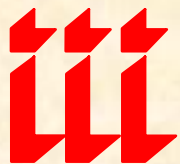


# *Governments Insuring Terror Risk*

## **Government Backed Terrorism Insurance Programs**

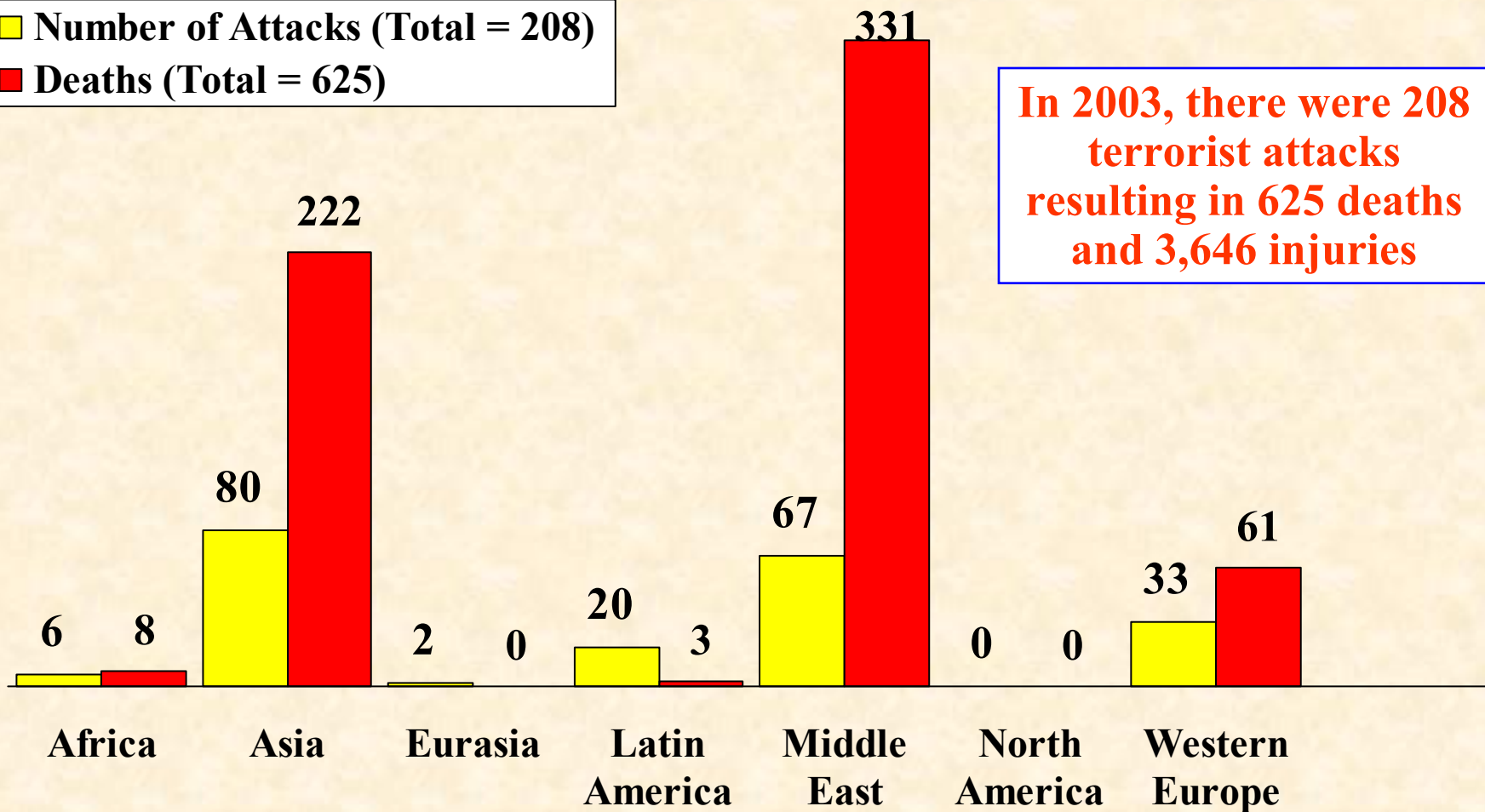
### **Terrorism Risk Insurance**

<b><u>Country</u></b>	<b><u>Provider</u></b>	<b><u>Details</u></b>
United Kingdom	Pool Re	Created in 1990's due to IRA terrorism losses.
Spain	Consorcio	Covers "Extraordinary Risks" such as Earthquake, Volcanic Eruption, Flood, Storm, Terrorism and Civil Commotion
South Africa	SASRIA	Created in 1929 due to political climate in South Africa - still in existence today.
Israel	PTCF	Covers losses triggered by politically motivated violence (including terrorism).
France	GAREAT	Created post September 11, pool with state guarantee for terrorism coverage.
Germany	Extremos	Created post September 11, pool with state guarantee for terrorism coverage
Australia		Created in November 2002



# Total International Terrorist Attacks, 2003 (Revised 22 June 2004)

■ Number of Attacks (Total = 208)  
■ Deaths (Total = 625)



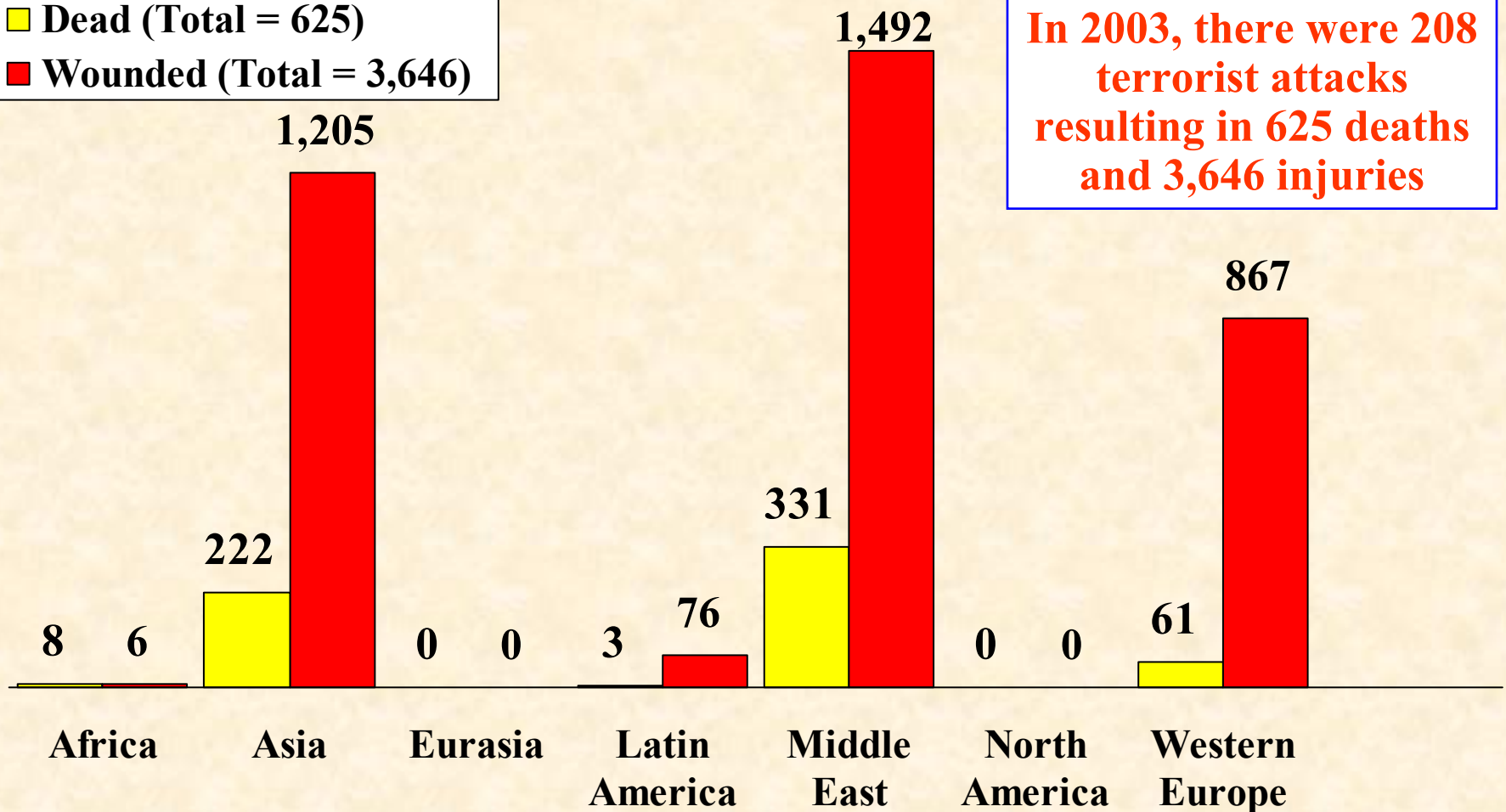
In 2003, there were 208 terrorist attacks resulting in 625 deaths and 3,646 injuries



# Total Casualties Caused by International Terrorist Attacks, 2003 (Revised 22 June 2004)

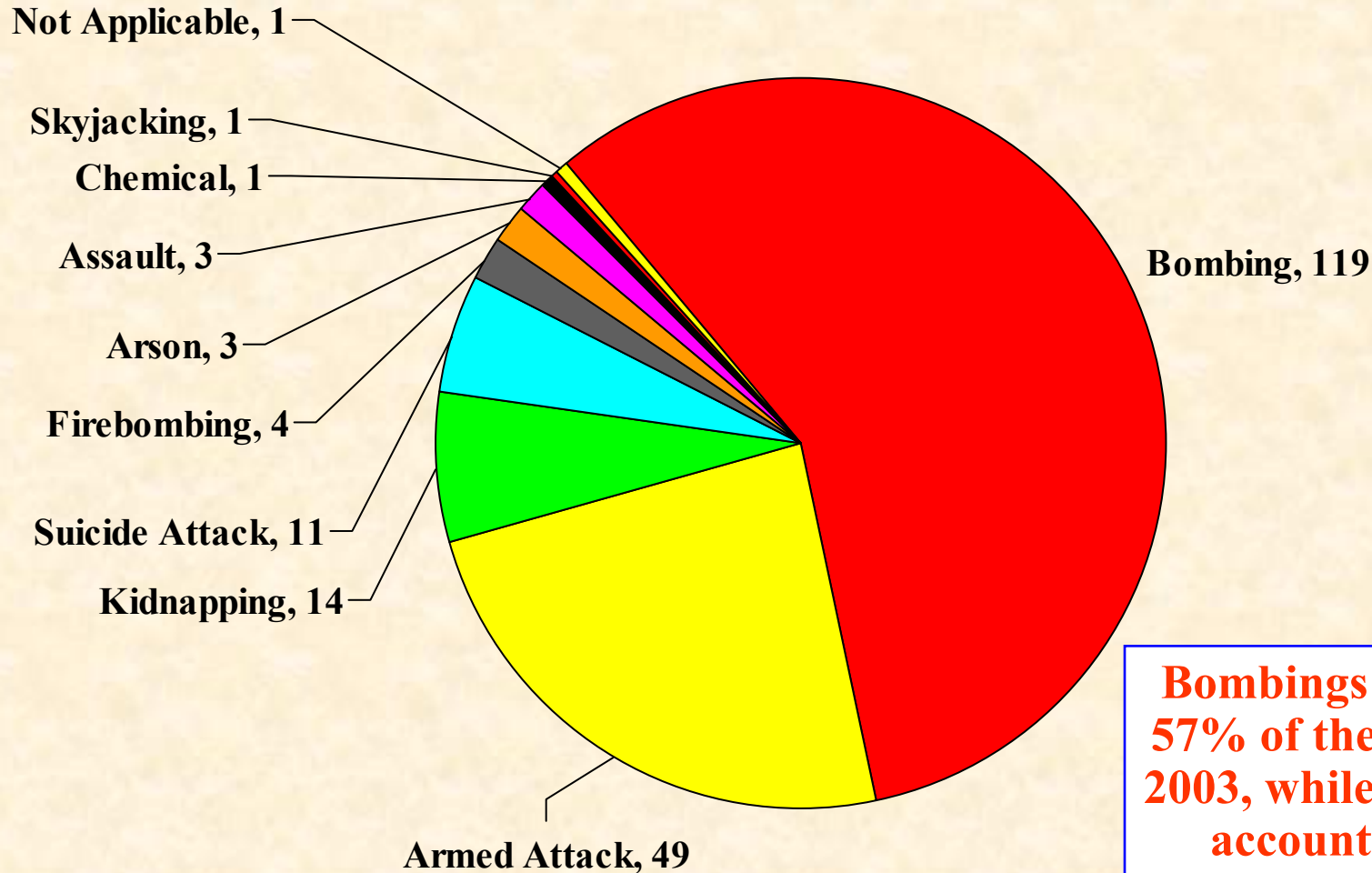
■ Dead (Total = 625)  
■ Wounded (Total = 3,646)

In 2003, there were 208 terrorist attacks resulting in 625 deaths and 3,646 injuries





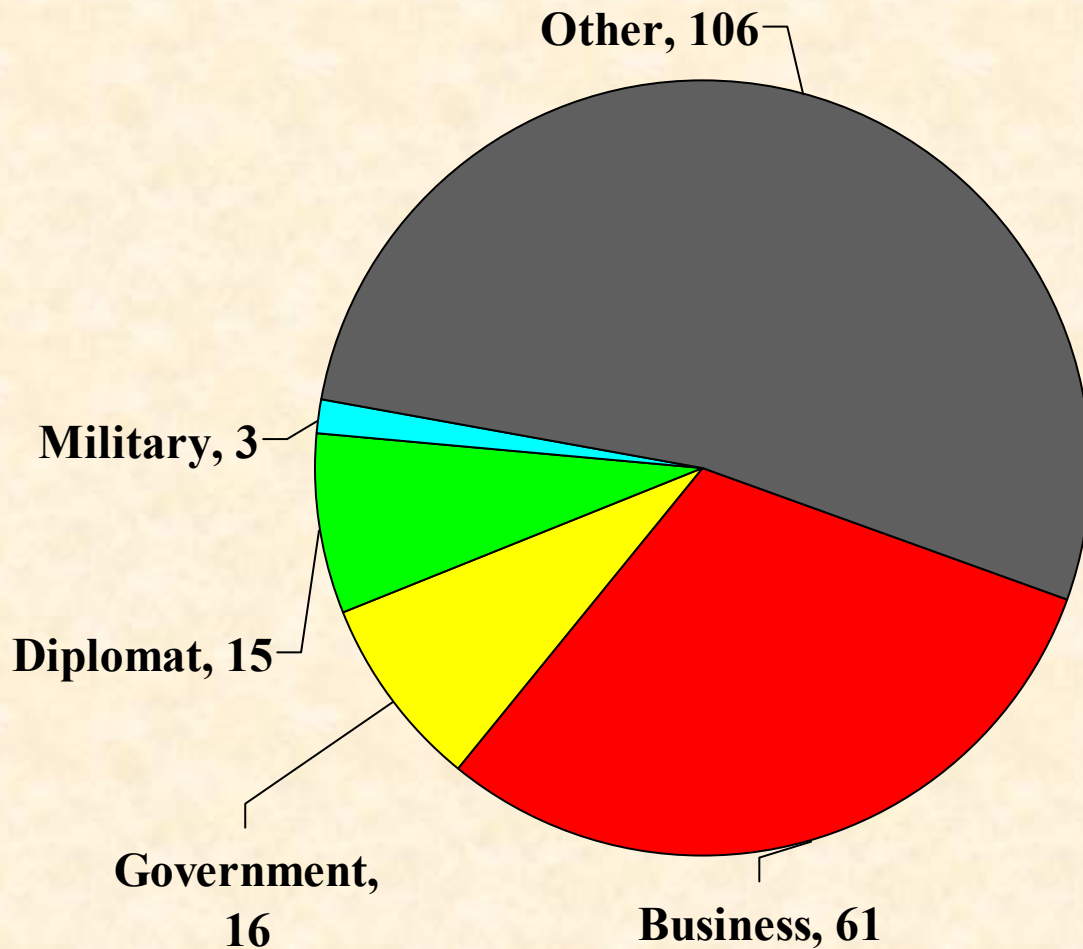
# International Terrorist Attacks by Type of Event, 2003



**Bombings accounted for 57% of the 208 attacks in 2003, while armed attacks accounted for 24%,**



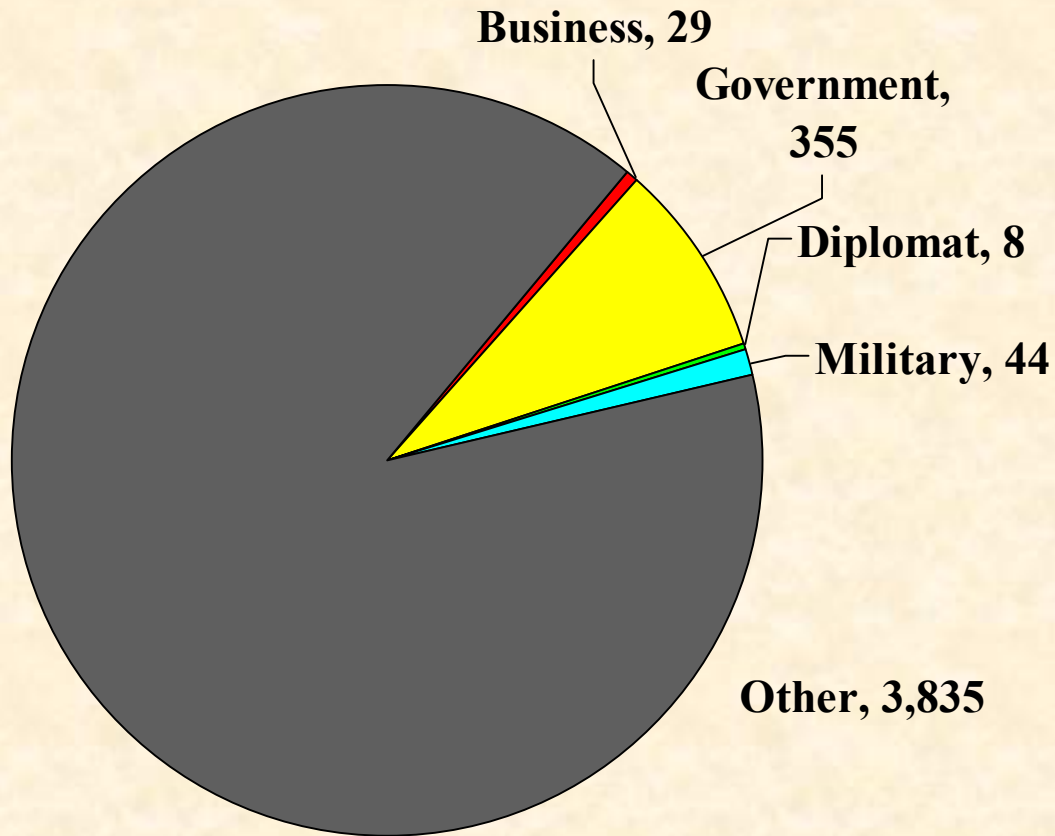
# *International Terrorist Attacks by Type of Facility Struck, 2003*



**Attacks on businesses accounted for 30% of the 201 terror attacks against facilities in 2003, while attacks against govt. facilities accounted for 8%,**



# International Terrorist Attacks by Casualty, 2003\*

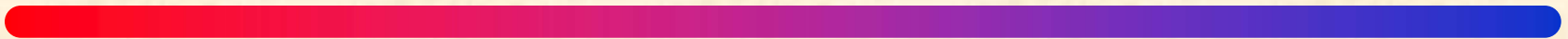


**Terrorist attacks killed more civilians than any other group (90% of the 4,271 casualties), followed by military personnel (1%) in 2003. Business personnel accounted for 0.7% of casualties (despite 30% of attacks being against business facilities).**

\*Total of 4,271 casualties consists of 625 deaths and 3,646 injuries.

Source: *Patterns of Global Terrorism*, US Department of State; Insurance Information Institute

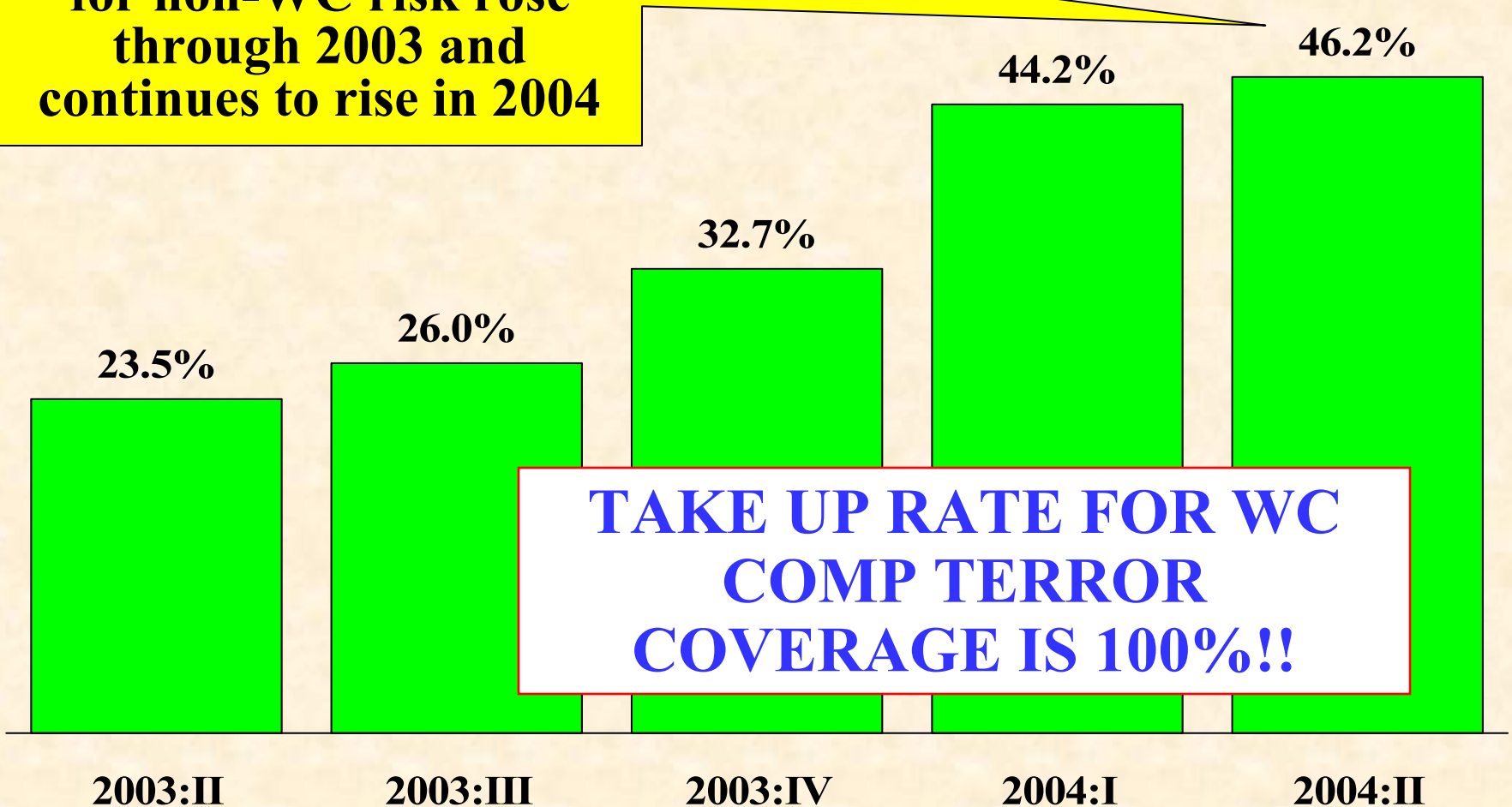
# The Market for Terrorism Coverage





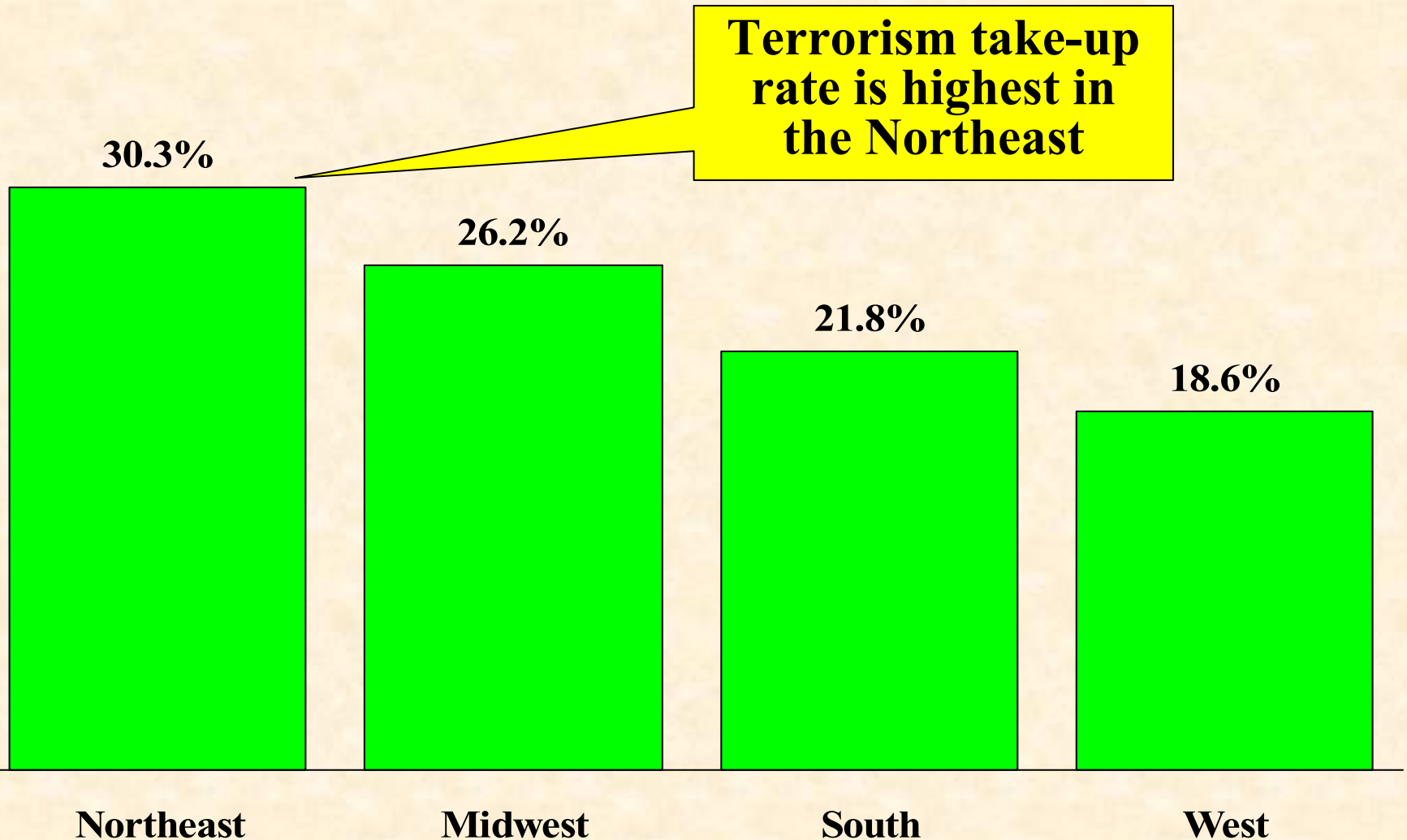
# *Terrorism Coverage Take-Up Rate Rising*

**Terrorism take-up rate  
for non-WC risk rose  
through 2003 and  
continues to rise in 2004**



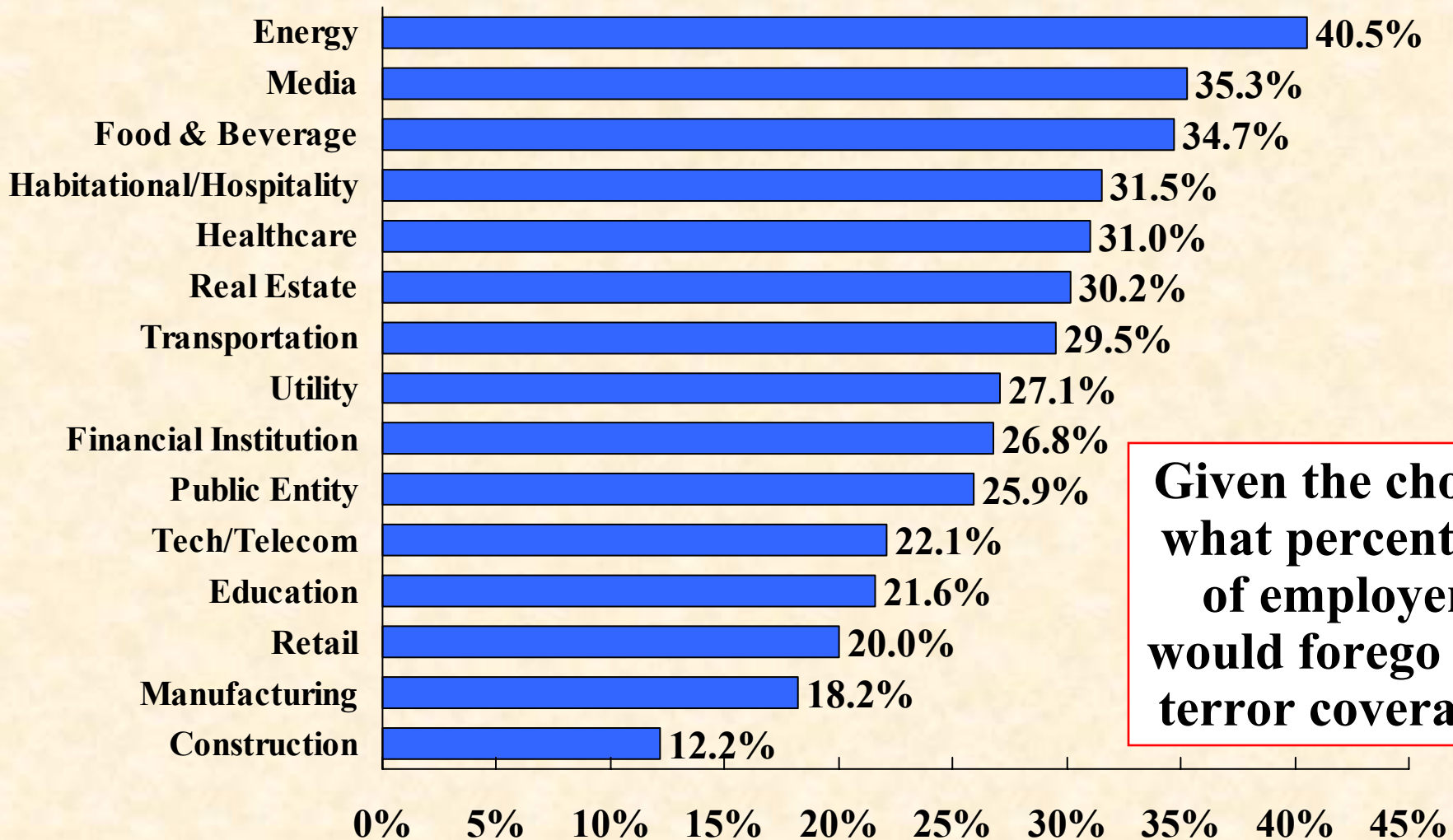


# *Terrorism Coverage: Take-Up Rates by Region*





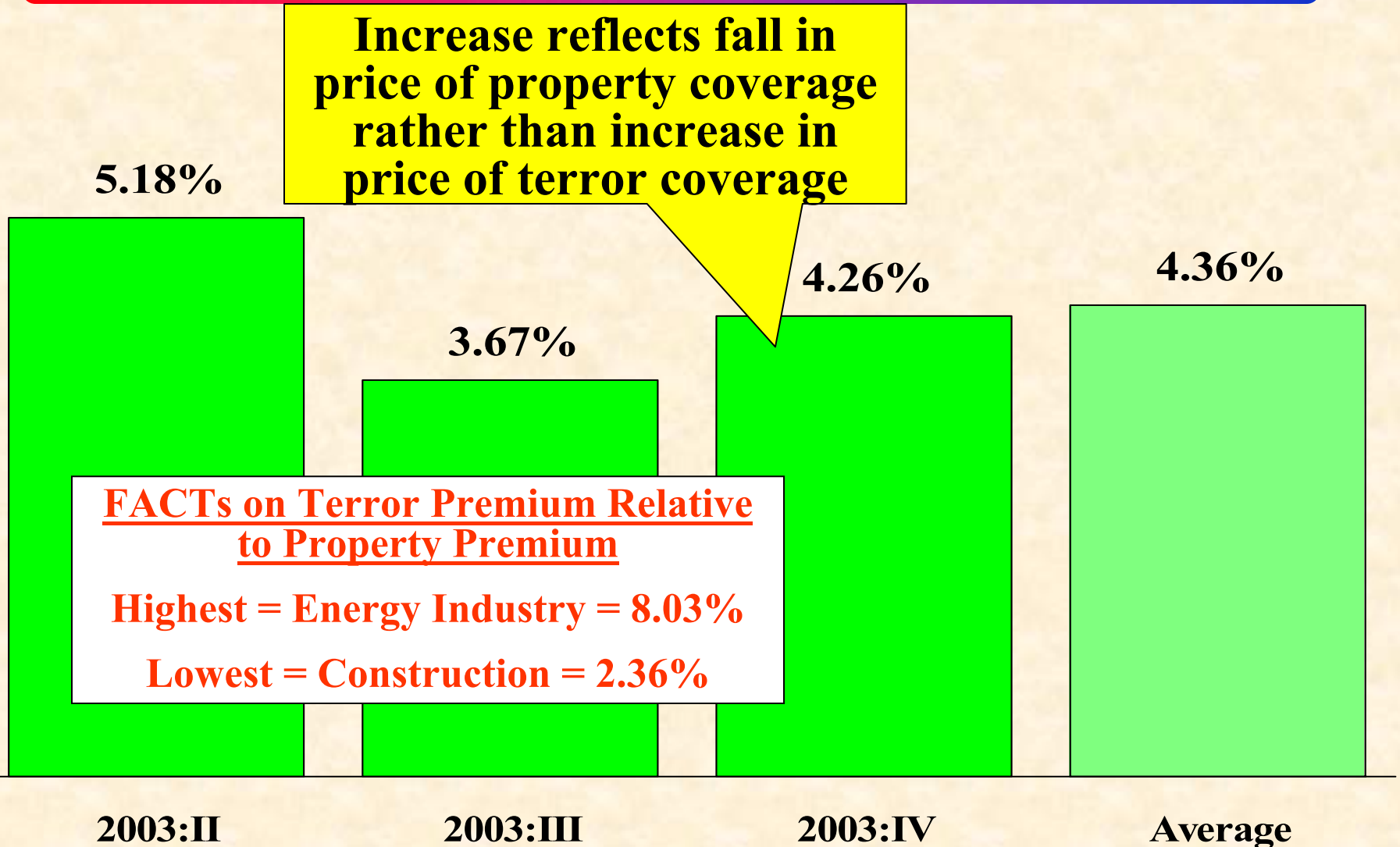
# *Terrorism Coverage: Take-Up Rates by Industry*

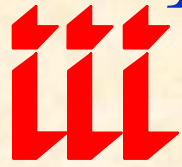


**Given the choice,  
what percentage  
of employers  
would forego WC  
terror coverage?**

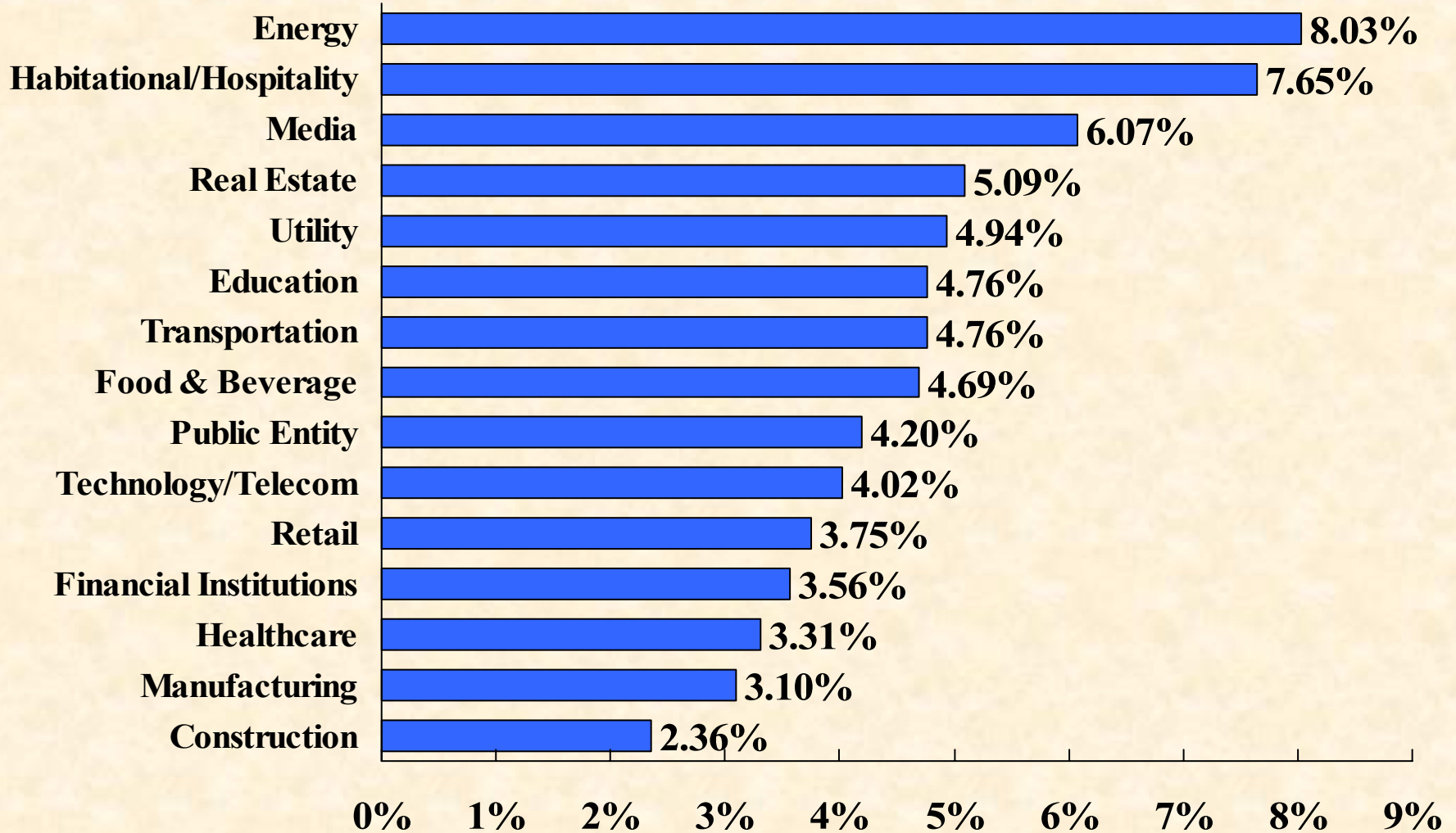


# *Terrorism Premium as a Percentage of Property Premium*





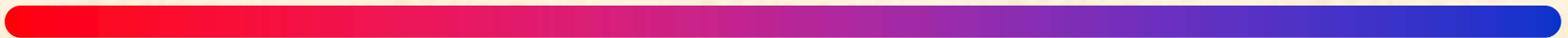
# *Terrorism Premium as Percentage of Property Premium, by Industry*



Source: Marsh, Inc.

# *THE POLITICIZATION OF TERRORISM*

▶	SEVERE
▶	HIGH
▶	ELEVATED
▶	GUARDED
▶	LOW





# *If They Don't Know, Insurers Can't Presume to Know Either*



# They're Here and Plans are "90% Complete" to Attack

## Ashcroft: Al-Qaeda plans U.S. attacks

Cites claims that plans are 90% complete

By Kevin Johnson and Mimi Hall  
USA TODAY

WASHINGTON — Attorney General John Ashcroft cited "credible intelligence from multiple sources" Wednesday indicating that terrorists plan to "hit the United States hard" in the next few months. He expressed concern that some operatives may already be in the USA preparing to strike.

Ashcroft and FBI Director Robert Mueller displayed photographs of seven people associated with al-Qaeda whom they are seeking. The seven are not linked to any specific threat and are not believed to be working together. Six had been previously identified; the seventh, Adam Yahye Gadahn, an American convert to Islam from California, was a new face. "They all should be considered armed and dangerous," Ashcroft said, urging Americans to be vigilant.

Some of the seven have spent considerable time in the USA, Ashcroft said. "We are not able to say with certainty where they are at this particular time," he said. The attorney general provided little new information about how attacks might be launched. Some of the information lacked the specificity that triggered the most recent major threat warning at Christmas, resulting in the cancellation of numerous international commercial flights.

Instead, Ashcroft cited claims, published after a train bombing in Madrid killed 191, that al-Qaeda plans for new attacks in the USA were 90% complete. And officials reiterated their fears about possible attacks on what Ashcroft called "attractive targets." They include Saturday's dedication of the National World War II Memorial in Washington, expected to draw about 125,000; a meeting of world economic leaders in Sea Island, Ga., on June 8-10; the Democratic National Convention in Boston on July 26-29, and the Republican National Convention in New York on Aug. 30-Sept. 2.

Homeland Security Secretary Tom Ridge said the warning from Ashcroft and Mueller is "a reminder that law enforcement leaders are coordinating their work to combat terrorism." He said there are no plans to raise the national threat level from yellow to orange, indicating a high risk of attack. That could cost state and local governments millions of dollars.

"We don't have to raise the threat level to raise our level of security," Ridge said. He said extra precautions could be taken where the threat may be greatest without subjecting less vulnerable places to the same costly deployments.



Aafia Siddiqui



Amer El-Maati



Adam Yahye Gadahn



Ahmed Khalifan Ghailani



Fazal Abdulrahman Mohammed



Abderrauof Idey



Adnan G. El Shukrijumah



Adnan G. El Shukrijumah

Bracing for the worst  
Security for gatherings, 3A

### WAR ON TERROR

# Al-Qaeda 'ready'

## Ashcroft puts nation on alert

By BRIAN BLOMQUIST  
Post Correspondent

WASHINGTON — Al-Qaeda terrorists inside America are "almost ready" for another attack, Attorney General John Ashcroft warned yesterday as he released photos of seven dangerous operatives.

Counterterrorism teams and local cops will be on high alert for the next few months, Ashcroft and FBI Director Robert Mueller told reporters.

Officials in New York said there is no specific information indicating the city is a target.

The nation's terror-alert level will stay at "elevated" code yellow for now.

Recent intelligence, which includes evidence gathered during the investigation into the pre-election bombings in Spain, says al-Qaeda is "90 percent" prepared for a planned attack, and Ashcroft suggested there's reason to believe the terrorist team recently moved operatives into the United States to get them in place for the next attack.

"This disturbing intelligence indicates al-Qaeda's specific intention to hit the United States hard," he said.

To avoid suspicion, al-Qaeda is trying to use operatives in their late 20s and 30s who could pass as European tourists and who might be traveling with children. The terror network also is trying to recruit South Asians and North Africans and even Americans to do its dirty work.

Events that could be targeted include the World War II Memorial dedication this weekend, the Fourth of July holiday, G-8 Summit in Atlanta, the United Democratic convention in

Boston, the Republican convention in New York City, and the national elections in November.

The FBI director asked the public for help in spotting seven suspected terrorists who could be part of the plot. They include:

- Abderrauof Idey, 38, one of five "martyrdom" volunteers whose messages were found on an al-Qaeda martyrdom video.
- He's a Canadian citizen born in Tunisia with flight training who prepared for a second wave of attacks on the United States after the 9/11 strikes.
- Adam Yahye Gadahn, 25, born in the U.S. He converted to Islam as a youth, trained in Afghan terror camps and served as a translator for Abu Zubaydah, top lieutenant to Osama bin Laden.
- Adnan Siddiqi, 32, a Pakistani who has a doctorate in neurological science and has studied at the Massachusetts Institute of Technology and Brandeis University in the Boston area, as well as in Houston. It's believed he left Boston in January 2003.
- Adnan El Shukrijumah, 28, an al-Qaeda member linked to Siddiqui and whose name has come up in interrogations of captured al-Qaeda lieutenant Khalid Sheik Mohammed. He speaks English, knows how to fly a plane, and lived in Florida.

■ Fazl Abdulrahman Mohammed and Ahmed Khalifan Ghailani, both about 30, who were indicted in the United States for their roles in the 1995 East Africa embassy bombings.

### SEEKING INFORMATION ALERT

These individuals are being sought in connection with possible terrorist threats against the United States.

**AHMED KHALIFAN GHAILANI**

**FAZL ABDULLAH MOHAMMED**

**AMER EL-MAATI**

**AAFIA SIDDIQUI**

**ADAM YAHYE GADAHN**

**ABDERRAUOF IDEY**

**ADNAN G. EL SHUKRIJUMAH**

CONTACT INFORMATION

IF YOU HAVE ANY INFORMATION CONCERNING THESE INDIVIDUALS, PLEASE CONTACT THE LOCAL FBI OFFICE OR THE NEAREST AMERICAN EMBASSY OR CONSULATE.

FACES OF EVIL: The FBI yesterday released this wanted poster of suspected terrorists who may be in this country — planning a new al Qaeda attack. Reuters

## U.S. scores big against Sadr

NAJAF, Iraq — U.S. troops scored a major success against Shiite gunman yesterday, arresting a key lieutenant of radical cleric Muqtada al-Sadr in clashes that killed 24 people and wounded nearly 50.

Iraq's national security adviser said Sadr had offered to remove his fighters from Najaf — except for those who live there. Sadr wanted U.S. and other coalition troops to "return to base," allowing Iraqi police to regain control of the city.

Sadr said he is making this offer because of "the tragic condition" in Najaf after weeks of fighting.

AP

- Most major government officials believe another attack is imminent
- Terrorists' plans are 90% complete for next attack
- Government has no idea of how, when, where, who or what kind of attack is next.



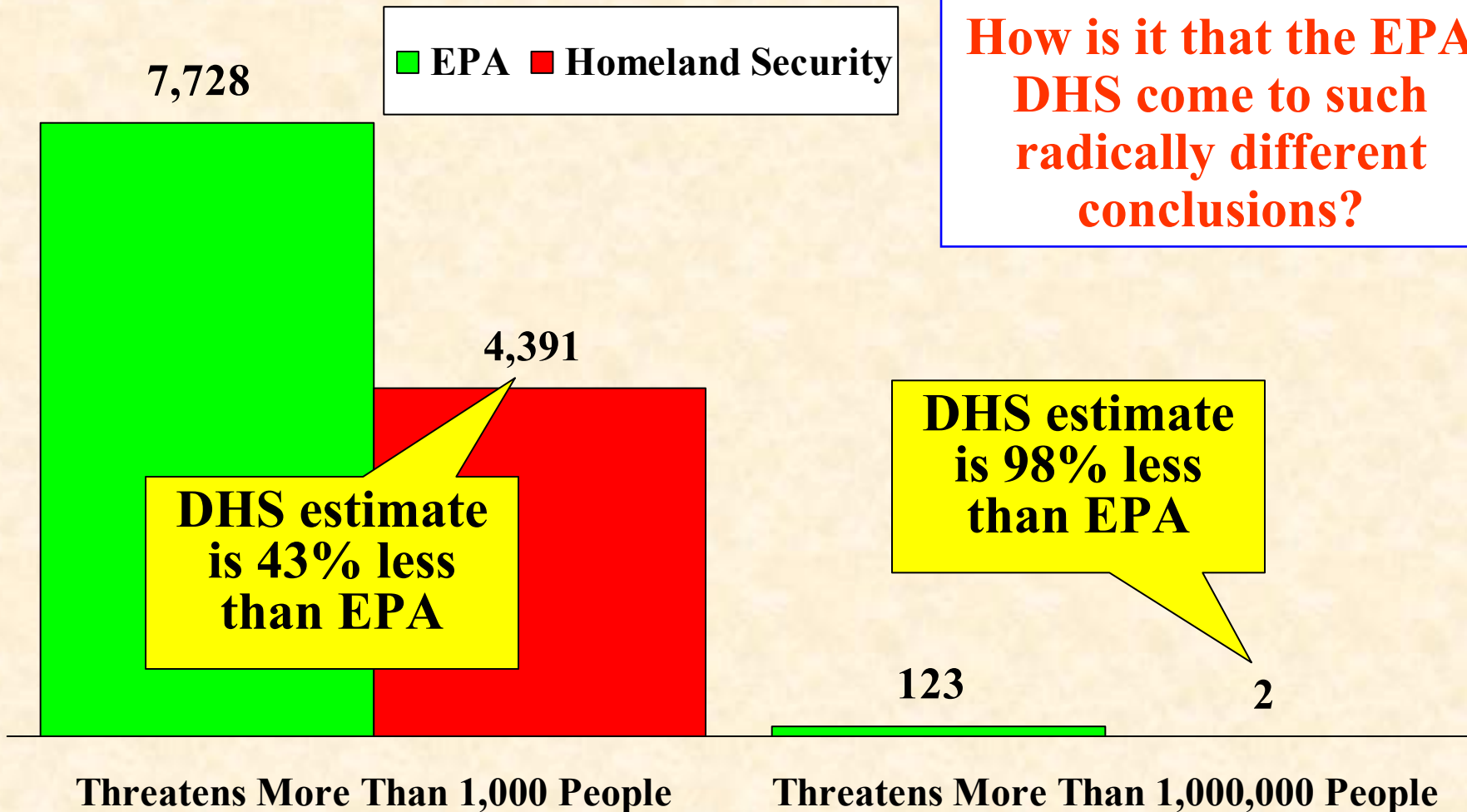
# *Ability of Terrorism to Affect Political Outcomes Also Suggests Terrorism Uninsurable*



- March 11 Madrid bombings taught us that terrorism can be used to not only kill people and destroy property, but affect political outcomes
- American actions abroad likely influence likelihood of attack in US. [e.g., Is Iraq an al Qaeda recruiting tool?]
- **Both seem to be inconsistent with insurability**



# Number of Chemical Plants that Could Threaten Nearby People





# *Summary*

- **Large scale attacks still not insurable even 3 years after 9/11**
- **Too many solvency-threatening scenarios**
- **Workers Compensation has many unique problems and take-up rate is 100%; No exclusions allowed**
- **Politicization of terror risk makes insuring against terror even more problematic**
- **Timely TRIA renewal in jeopardy**



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