The Long Shadow of September 11:

Terrorism & Its Impacts on Insurance and Reinsurance Markets

July 25, 2002

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http://www.iii.org/media/hottopics/insurance/sept11/

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Presentation Outline

- Timeline of Terror & Immediate Industry Response
- What will it cost & who's going to pay?
- Terror exclusions
- Cyber Terrorism
- Next Attack?
- Implication for the Insurance Industry
  - Financial
  - Capacity
  - Pricing
- Modelling Terror
- Federal Backstop: What's Happening in Washington?

Timeline of Terror:

How We Got Here

Timeline of Terror

- 8:46AM: American Airlines Flight 11 Strikes North WTC Tower

- 9:03AM: United Airlines Flight 175 Hits South Tower

Timeline of Terror

- 9:43AM: American Airlines Flight 77 Strikes Pentagon

- 10:05AM: South Tower of WTC Collapses

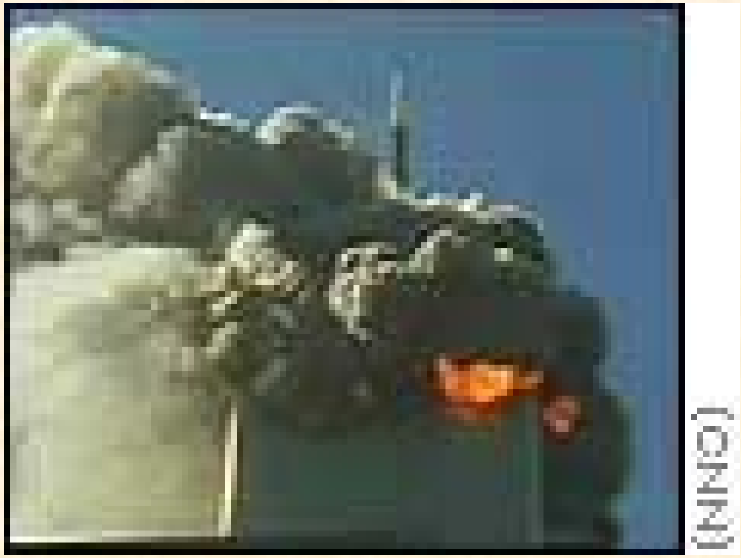
Timeline of Terror

- 10:10AM: United Airlines

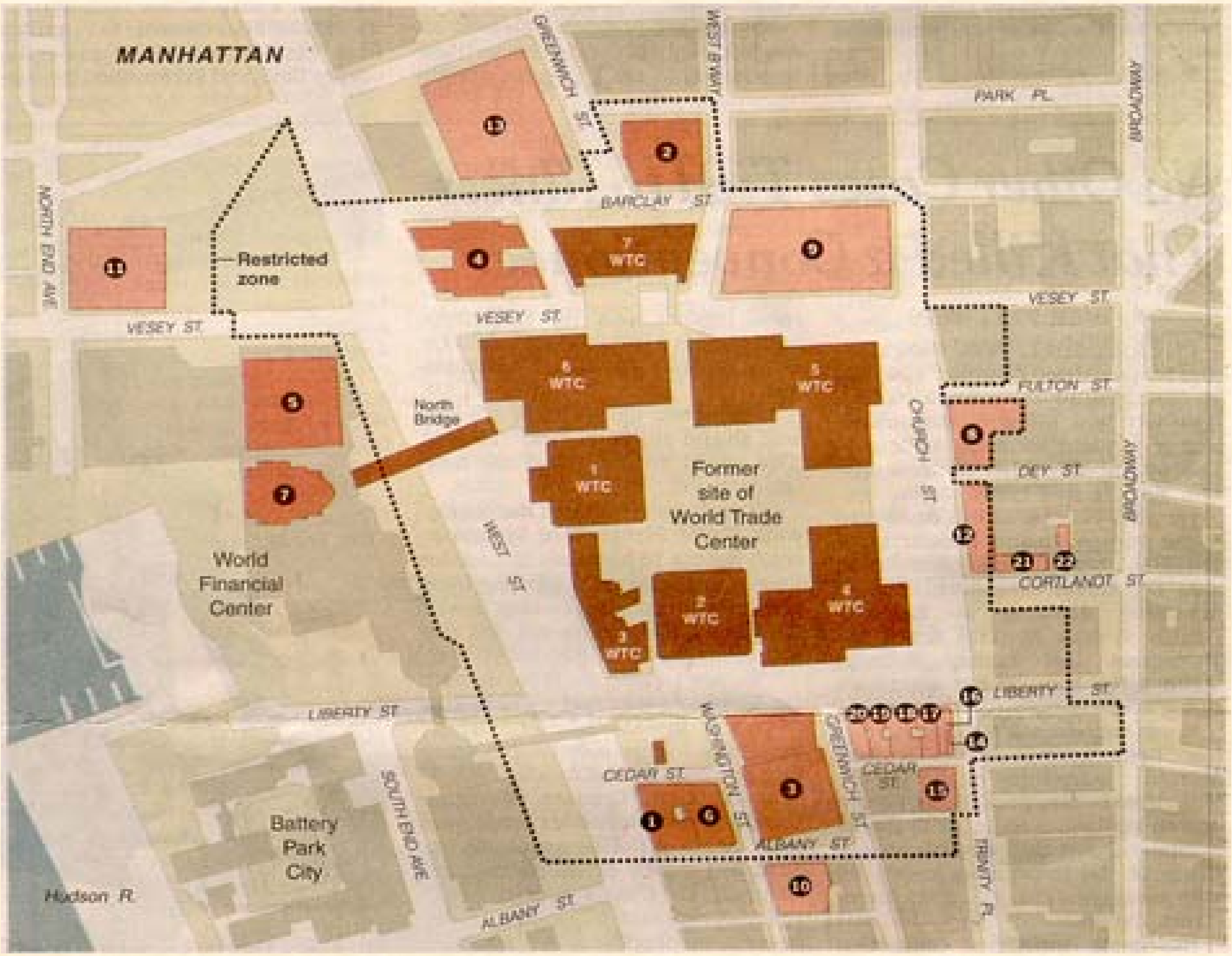
  Flight 93 Crashed in PA

- 10:28AM: North Tower of

  WTC Collapses



Damage at WTC Site



Brown = Destroyed

Red = Severe Damage

Pink = Moderate Damage

26 million sq. ft. of office space damaged or destroyed

I.I.I.: Too Close for Comfort

Distance from WTC Towers to Insurance Information Institute Offices = 500 meters

Timeline of Terror

- Anthrax attacks begin in early October

Since Then…

He did it.

Here's where he is (was).

Military Option Selected

Bombs Away!

Immediate Market Response: Shock but No Panic

- Reassured "world" that insurers can and will pay claims
    - No "act of war" or terrorism exclusions in place
- Aviation insurers virtually eliminate 3rd party war cover
- CAT reinsurers impose terrorism exclusions
- Primary commercial insurers adopt terror exclusions in most states on case
- Push in Washington to establish a terror pool (like Pool Re in U.K.)
- Limited stand-alone terror coverage market evolves

Source: Insurance Information Institute.

What's this Going to Cost & Who's Going to Pay for It?

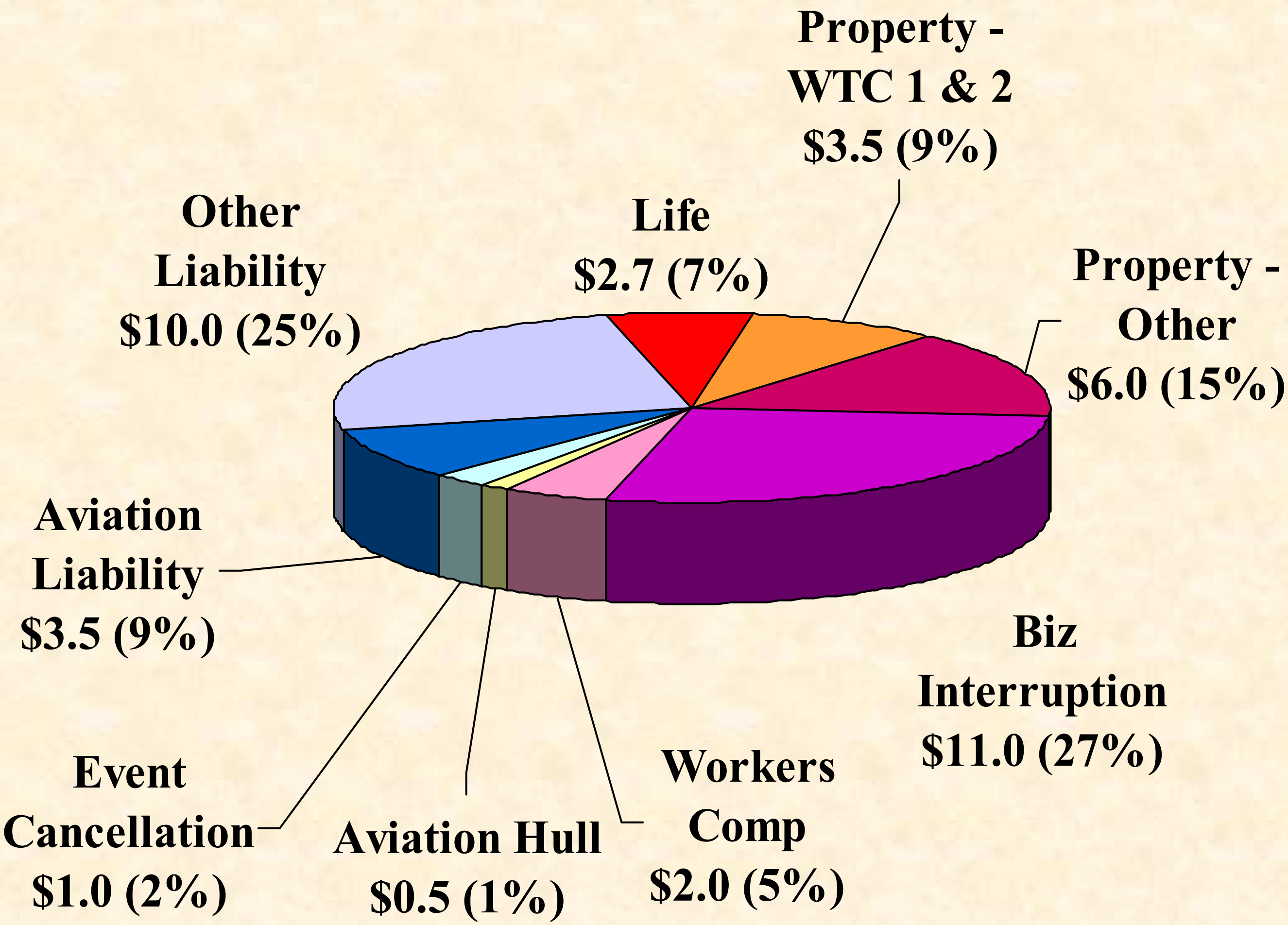
Sept. 11 Insured Loss Estimates

- Biggest insured CAT is US and world history ($40B)
  - Hurricane Andrew: $15.5B (1992$); $20B (2000$)
- 100+ insurers worldwide have made announcements accounting for about $25B in insured losses
- Industry loss estimates ranged from low of $30 billion to $70 billion (I.I.I. Estimate $40.2B)
  - First WC disaster ($2.0B); 2,250 physically injured
  - First life disaster ($2.7B); 3,132 killed
  - Anthrax Issue? WC exposure if out of course of employment
- Estimated NYC economic losses are $83 billion
- Insurance will pay biggest share by far
  - Fed. Govt. promised $21.5B, excluding Victims Comp. Fund
- Where would NY be today if terror exclusions were adopted after 1993 WTC bombing?

Source: Insurance Information Institute

Sept. 11 Industry Loss Estimates

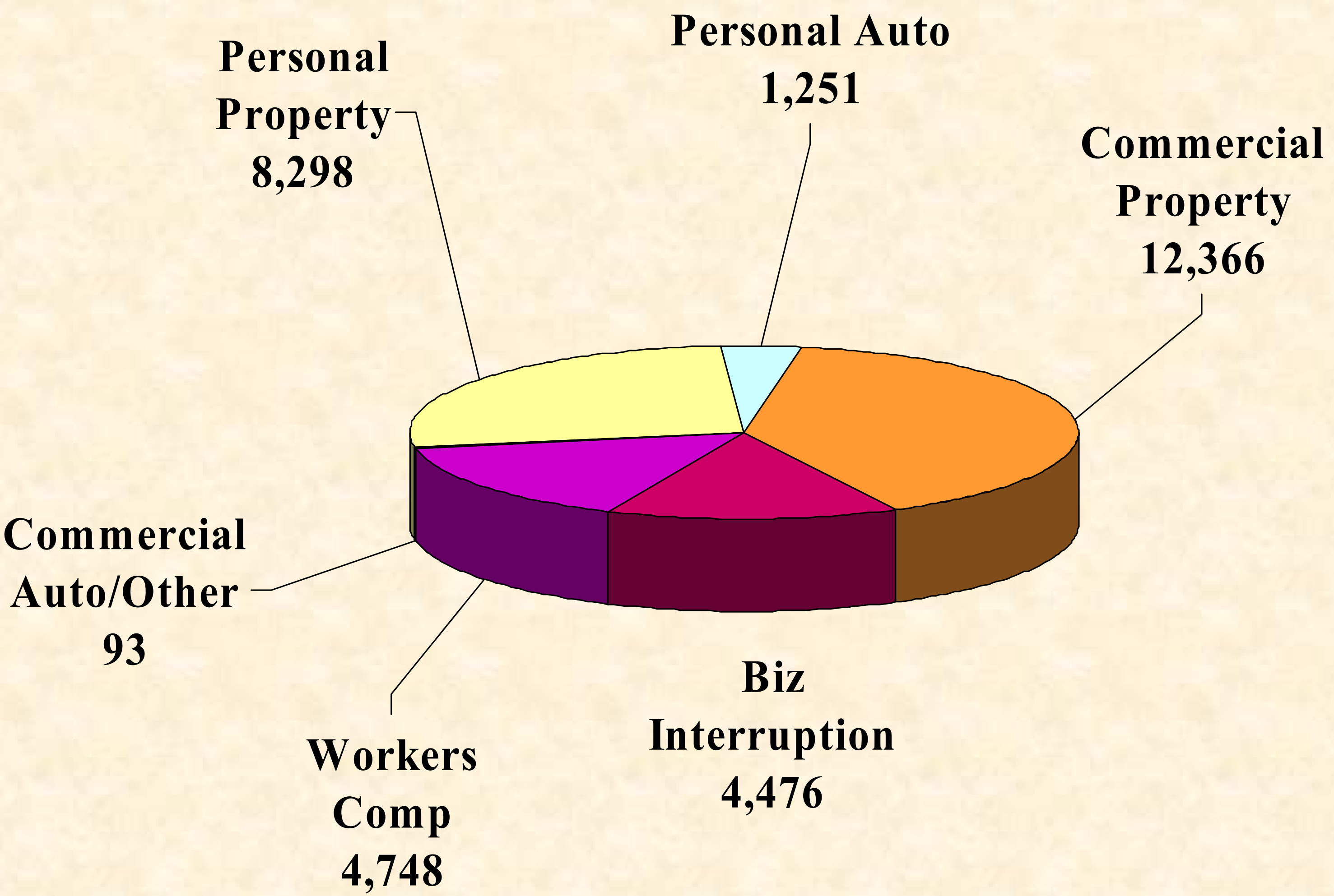
($ Billions)



Insured Losses Estimate: $40.2B

Source: Insurance Information Institute, July 2002

WTC Claim Breakdown
Total Claim Count = 31,232*



*Reported to Disaster Insurance Information Office (DIIO) as of June 5, 2002; Excludes life claims.

Source: Insurance Information Institute

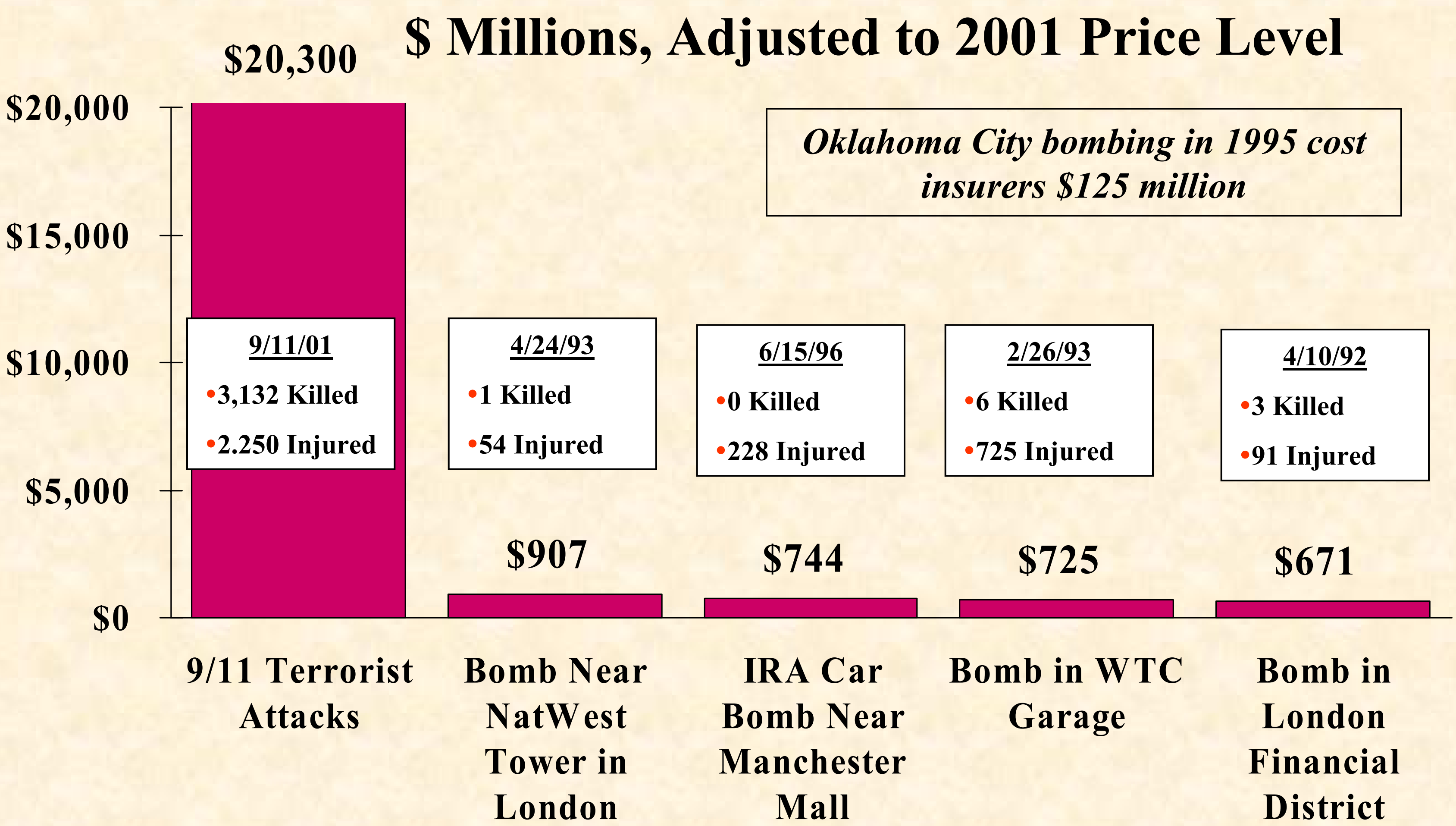
*Death Toll from September 11 Attack**

WTC Victims (workers & visitors)*	2,742
WTC Hijacked Jets (incl. 10 hijackers)	157
Pentagon Victims on Ground	125
Pentagon Hijacked Jet (incl. 5 hijackers)	64
Pennsylvania Hijacked Jet (incl. 4 hijackers)	44
TOTAL FATALITIES	***3,132***

***There were also an estimated 2,250 non-fatal injuries**

Source: Official City of New York estimate as of Jan. 18, 2002; Ins. Info Inst.

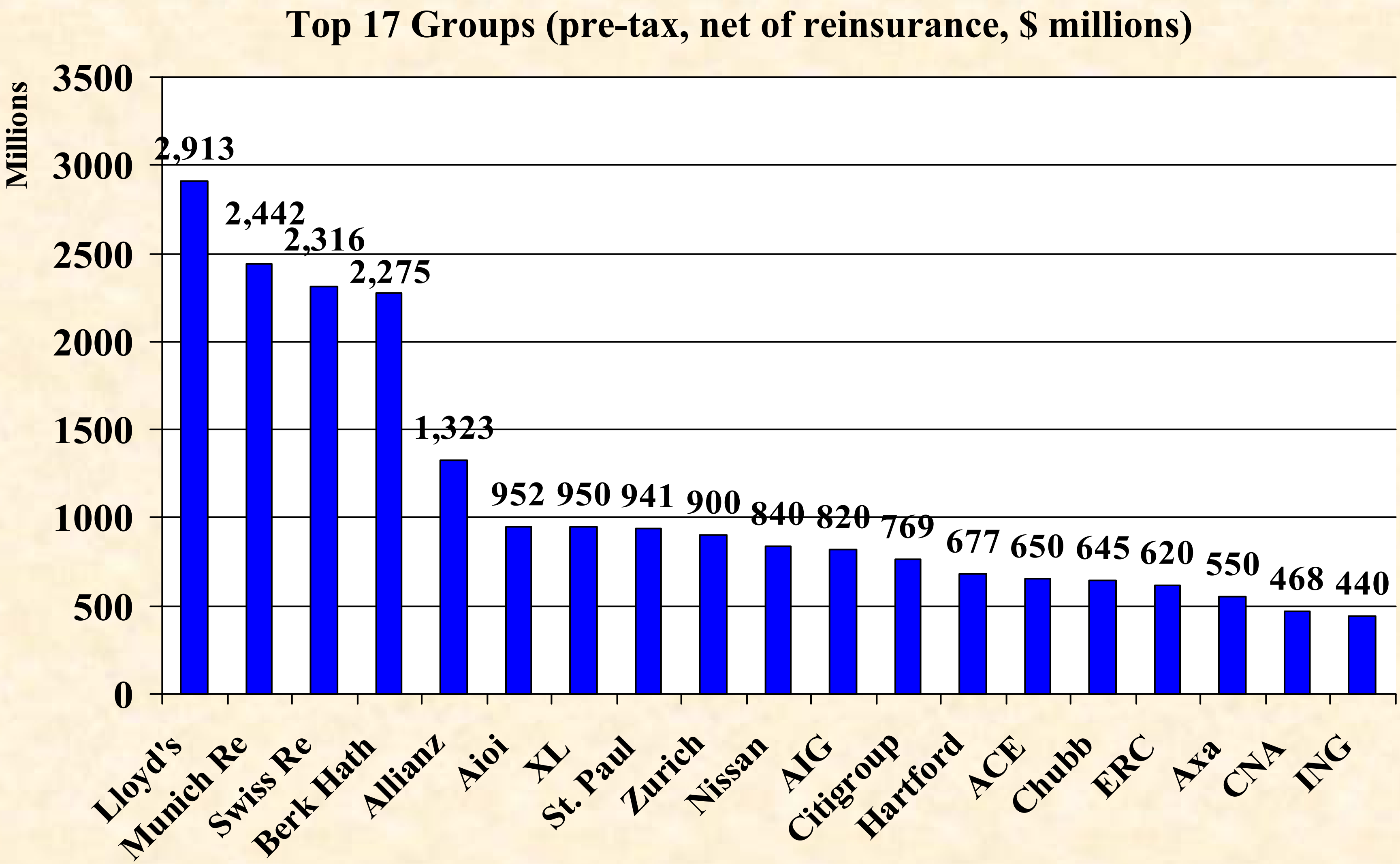
Top 5 Costliest Terrorist Attacks (by insured property loss)*



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

*Insured Loss Estimates**

(updated through July 19, 2002)

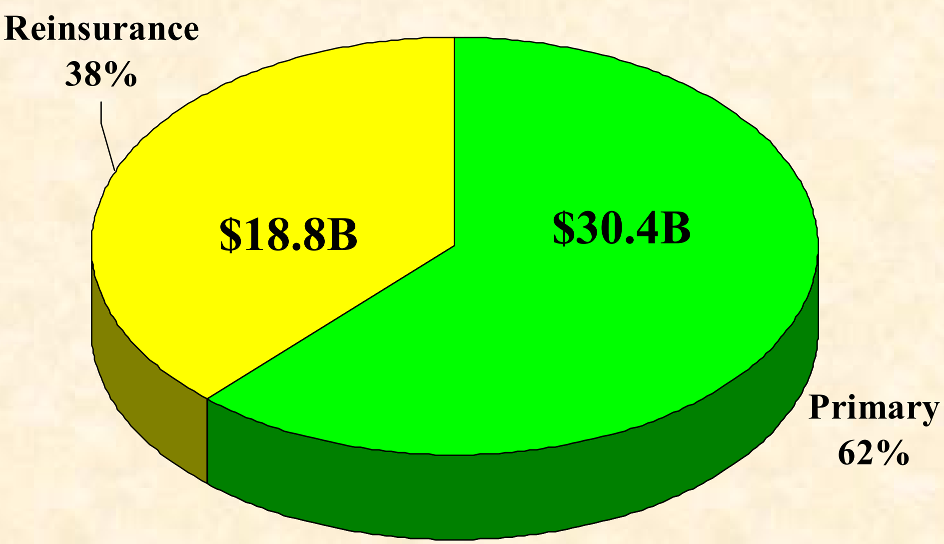


Source: Morgan Stanley, Benfield Research, Insurance Information Institute as of July 19, 2002.

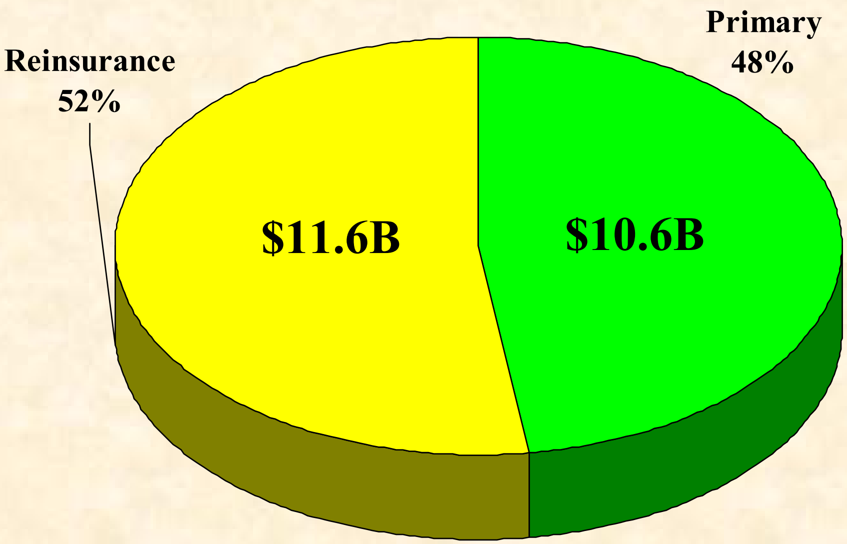
9/11 Gross vs. Net Losses*

(Life & Non-Life)

GROSS LOSSES = $49.3 B



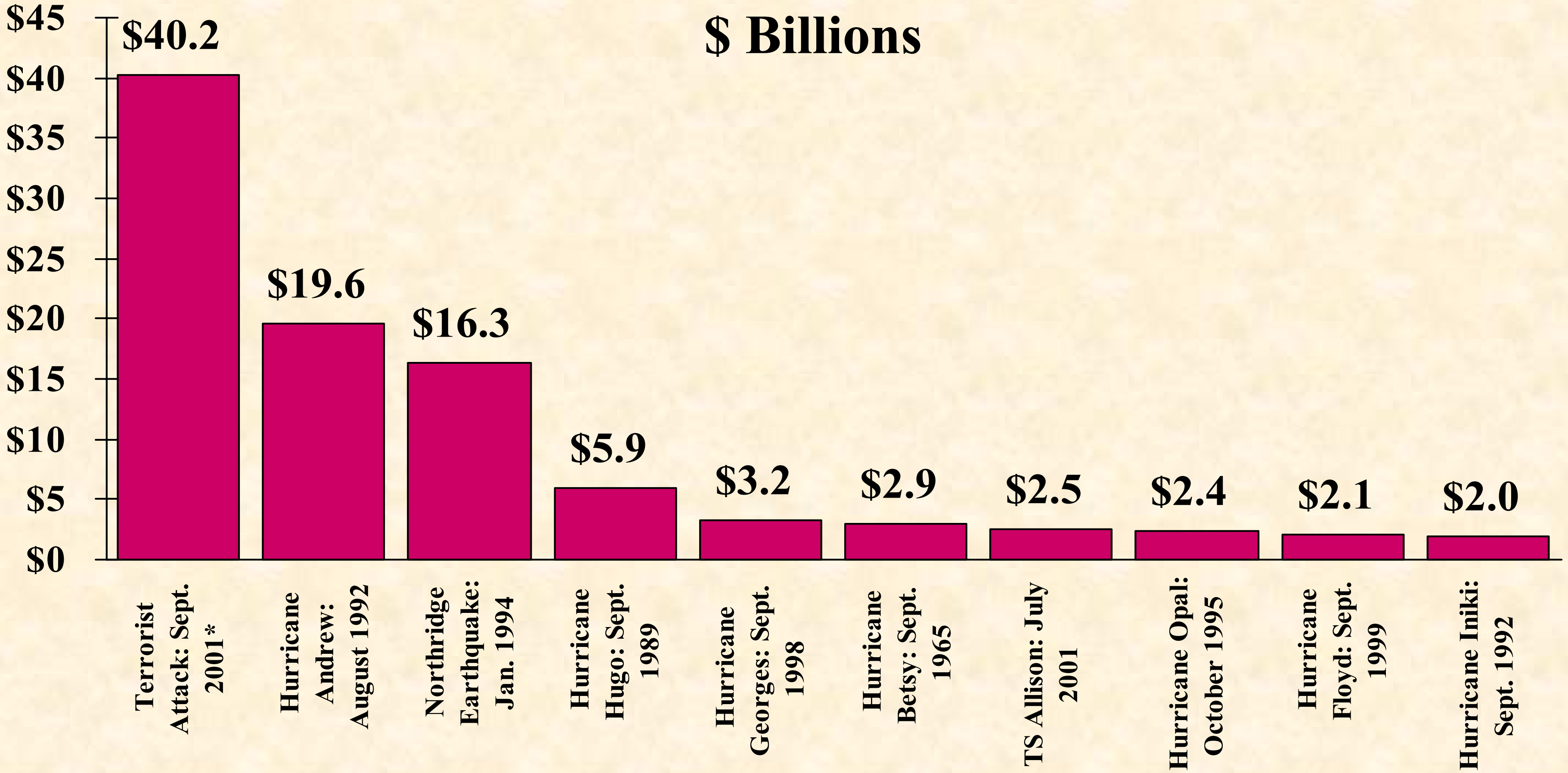
NET LOSSES = $22.2 B



Implies $27B in reinsurance involved. System worked because of spread of risk and reinsurance. What about the next attack?

*Gross: before adjusting for reinsurance recoverables;
Net: After adjusting for reinsurance recoverables.
Source: Insurance Information Institute, as of February 2002.

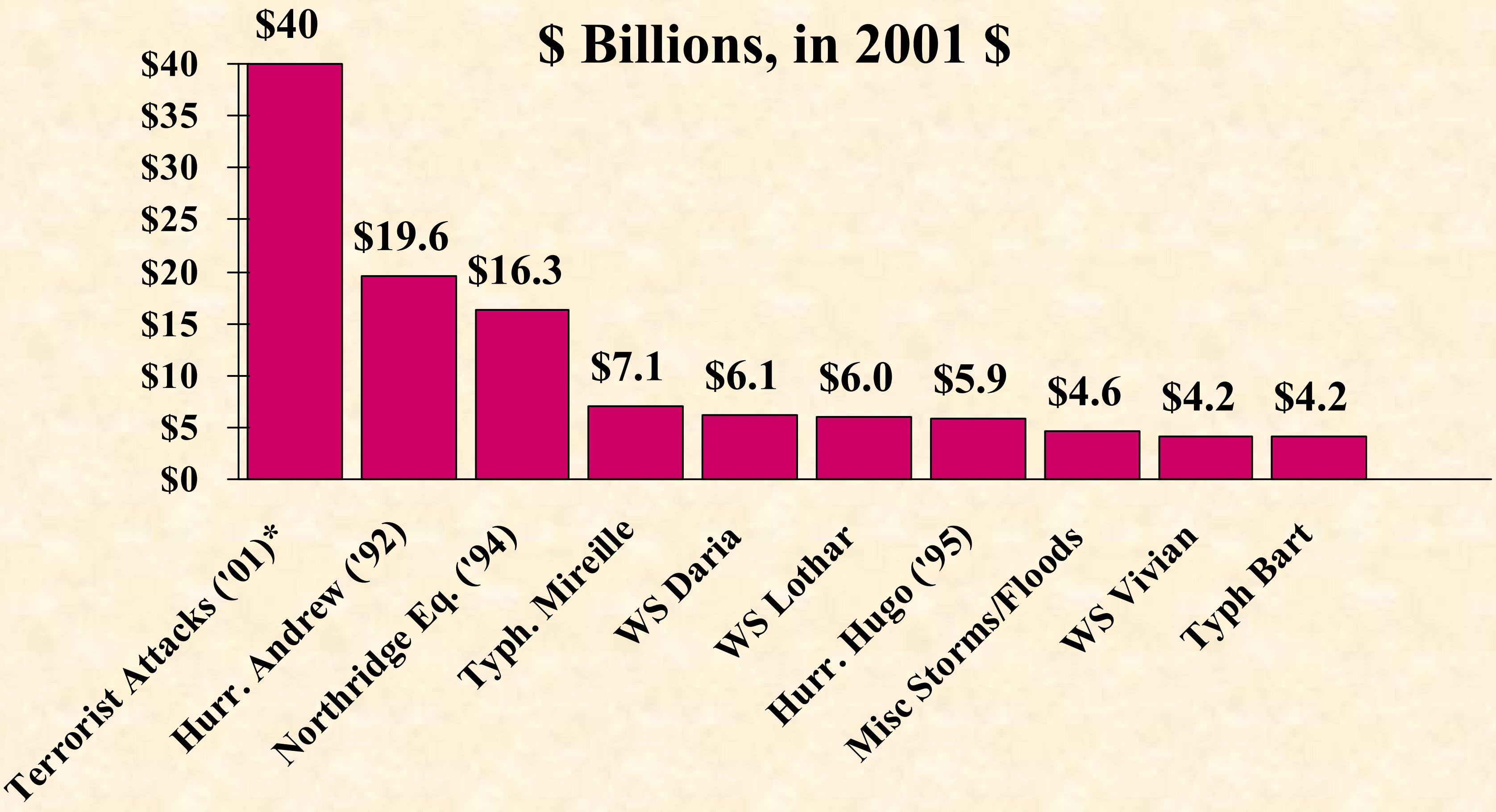
10 Costliest Disasters in U.S. History
(by insured loss, 2001 $)



*Estimate includes propertyand business interruption losses as well as liability, workers comp, life, aviation and other coverages.

Source: Insurance Services Office, Insurance Information Institute.

World: Top 10 Biggest Catastrophes (by insured loss)

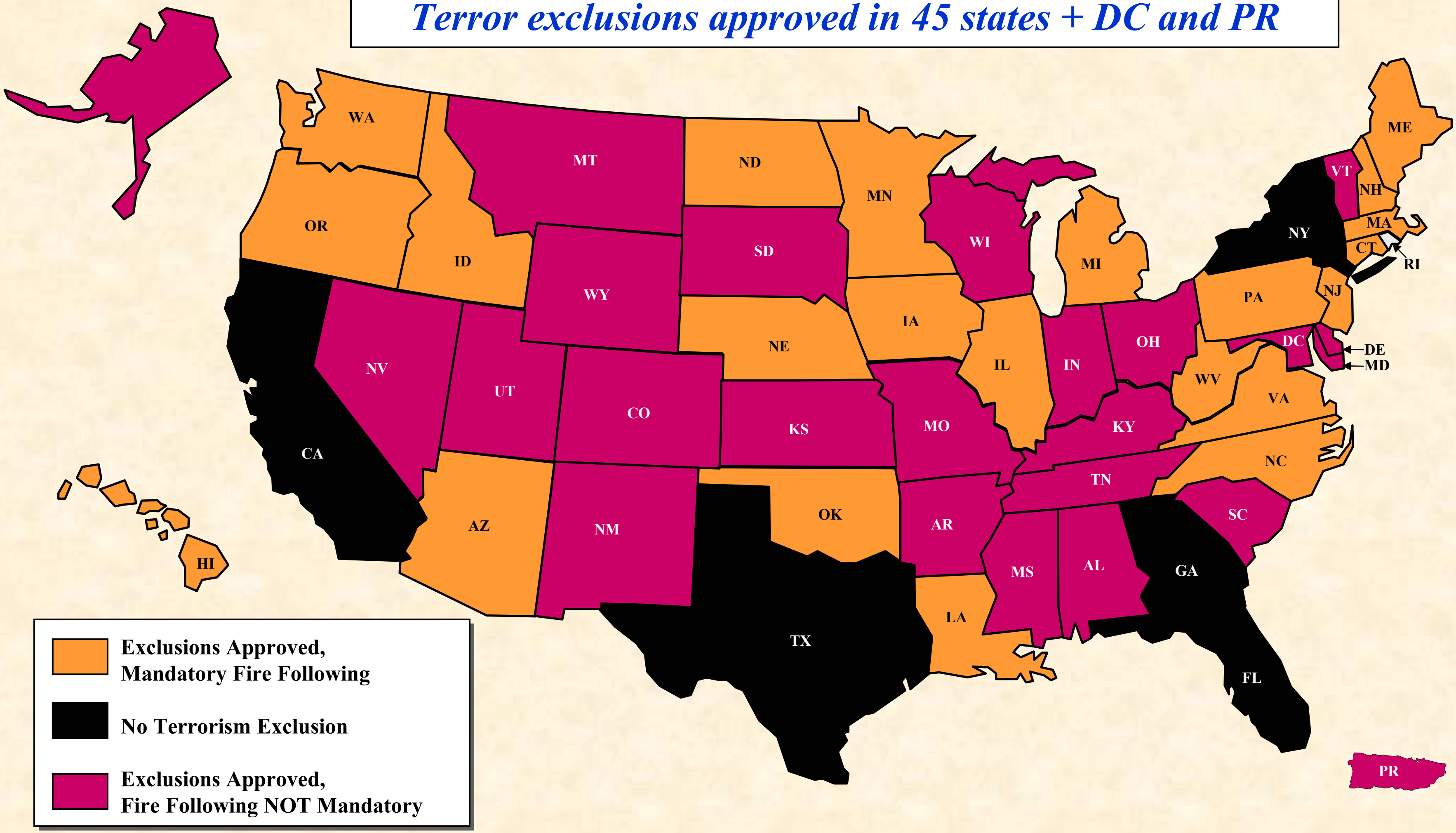


*III Estimate; Includes life, liability and workers compensation losses.
Source: Swiss Re, Insurance Information Institute.

Terrorism Exclusions

Terrorism Exclusions

Terror exclusions approved in 45 states + DC and PR



ISO Definition of Terrorism Used in Property and Liability Exclusions:

"**<u>Terrorism</u>**" means activities against persons, organizations or property of any nature:

1. **That involve the following or preparation for the following:**
   a) **Use or threat of force or violence;**
   b) **Commission or threat of a dangerous act; or**
   c) **Commission or threat of an act that interferes with or disrupts an electronic, communication, information, or mechanical system; and**

Definition of Terrorism Under both Property and Liability Exclusions:

2. When one or both of the following applies:

   a) **The effect is to intimidate or coerce a government, or to cause chaos among the civilian population or any segment thereof, or to disrupt any segment of the economy; or**

   b) **It is reasonable to believe the intent is to intimidate or coerce a government, or to seek revenge or retaliate, or to further political, ideological, religious, social or economic objectives or to express (or express opposition to) a philosophy or ideology.**

Original ISO Exclusion for Property Coverages:

Applied to Physical Damage:

- *"Loss or damage caused directly or indirectly by terrorism, including action in hindering or defending against an actual or expected incident of terrorism. Such loss or damage is excluded regardless of any other cause or event that contributes concurrently or in any sequence to the loss."*

Proposed Exclusion for General Liability Coverages:

Applied to bodily injury, property damage, and personal and advertising injury:

- Arising directly or indirectly, out of “terrorism,” including any action taken in hindering or defending against an actual or expected incident of “terrorism” regardless of any other cause or event that contributes concurrently or in any sequence to the injury or damage.

One Major Commercial Insurer's Endorsement and Definition:

Exclusion of:

Any act of one or more persons, whether known or unknown and whether or not agents of a sovereign power, for Terrorist Purposes…

…Terrorist Purposes means the use or threatened use of any unlawful means, including the use of force or violence against any person(s) or propert(ies), for the actual or apparent purpose of intimidating, coercing, punishing or affecting society or some portion of society or government.

NEXT ATTACK: Will the war exclusion apply?

Cyberrisks & Terrorism

*What Does Cyber (Usually) Insurance Cover?**

- Denial or Loss of Service
- Malicious intrusion (e.g., hacking)
- Theft of intellectual property (e.g., patents, copyrights)
- Theft of confidential information (e.g., credit card data)
- Extra expense costs (to recreate data & get back online)
- Expert assistance
- Liable/Slander
- Cyber-extortion (e.g., Implication for the Insurance Industry
- ***NOTE: Traditional commercial property/liability policies may provide little or no protection.***

Source: Insurance Information Institute

*Terms of coverage can vary considerably by company.

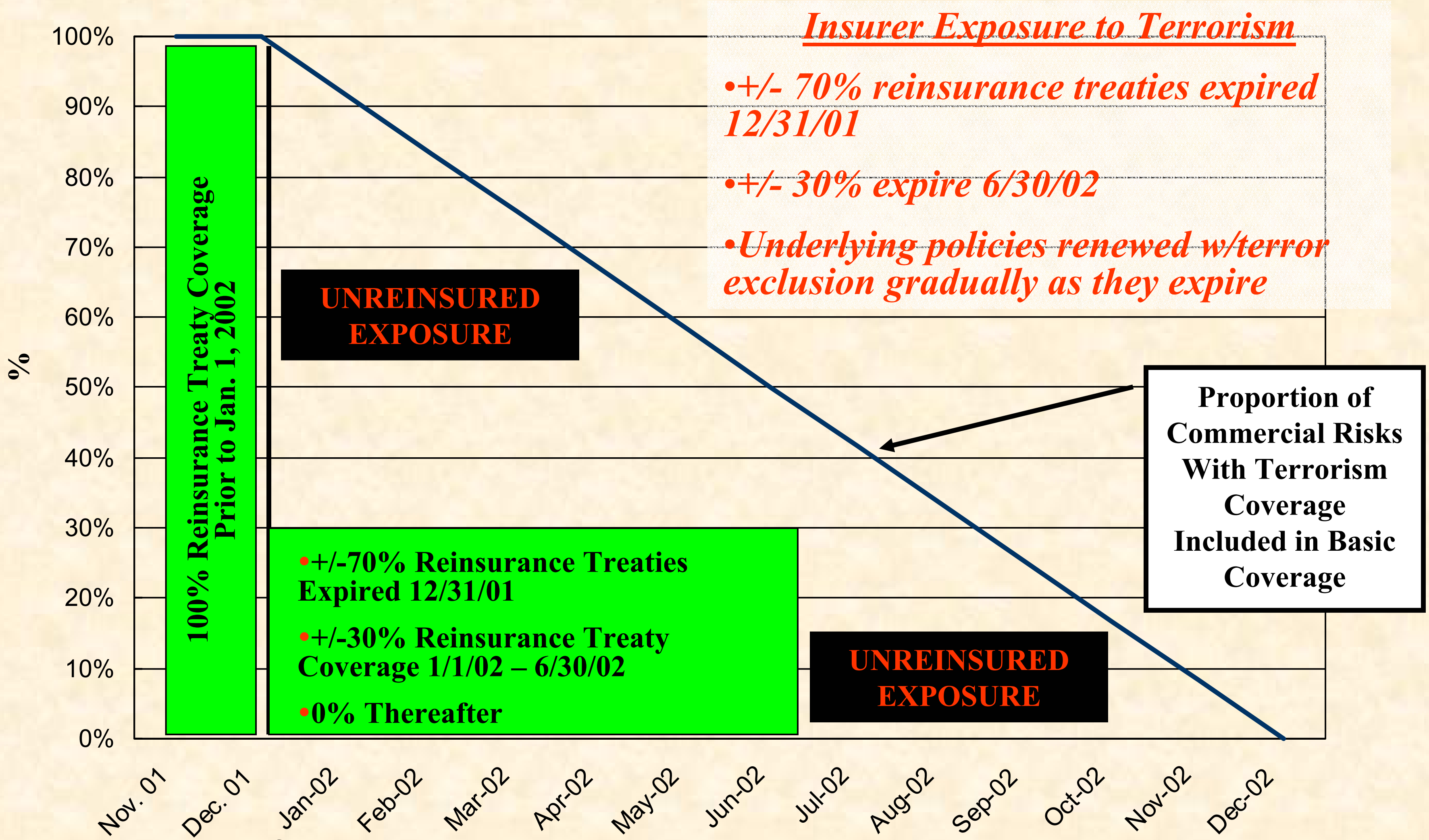
CyberInsurance & Terrorism

- Insurer definition of terror broad enough to include terrorism, therefore exclusion could apply if added
- Insurers could easily exclude, so far appear to have not done so
  - Threat from terrorism not significantly distinct from ordinary cyberrisks (e.g., hacking, DOS, viruses, etc.)

Source: Insurance Information Institute

What About the Next Attack?

Insurers Overexposed to Terror Risk in 2002



Source: Insurance Information Institute

* Excludes workers comp, which will carry no terrorism exclusion.

GAO Report: Highlights Economic Vulnerabilities

- GAO Report Released February 27, 2002
- Major Findings: www.house.gov/financialservices/022702t2.htm

1. ***Insurers Shifting Terrorism Risk to Property Owners/Businesses***
   - Reinsurers withdrawing from market for terrorism
   - Primary insurers excluding coverage as their exposure increases
2. ***As Business Exposure to Uninsured Risks Rise, so do Potential Economic Consequences***
   - Economic consequences from next attack could be more severe
3. ***Potential Economic Consequences of Not Having Terrorism Insurance are Cause for Concern***

- Conclusions
  - ➢ Congressional action is "properly a matter of public policy"
  - ➢ Consequences of inaction are "may be real and potentially large"
    - "A decision not to act could have debilitating financial consequences for for businesses…their employees, lenders, suppliers, and customers."
    - Government will face difficulties if it waits to act after an attack: "difficult to implements quickly—and extremely expensive."

Joint Economic Committee, US Congress: Report Findings

- JEC Report Released May 2002; Heavy III input

- Major Findings:

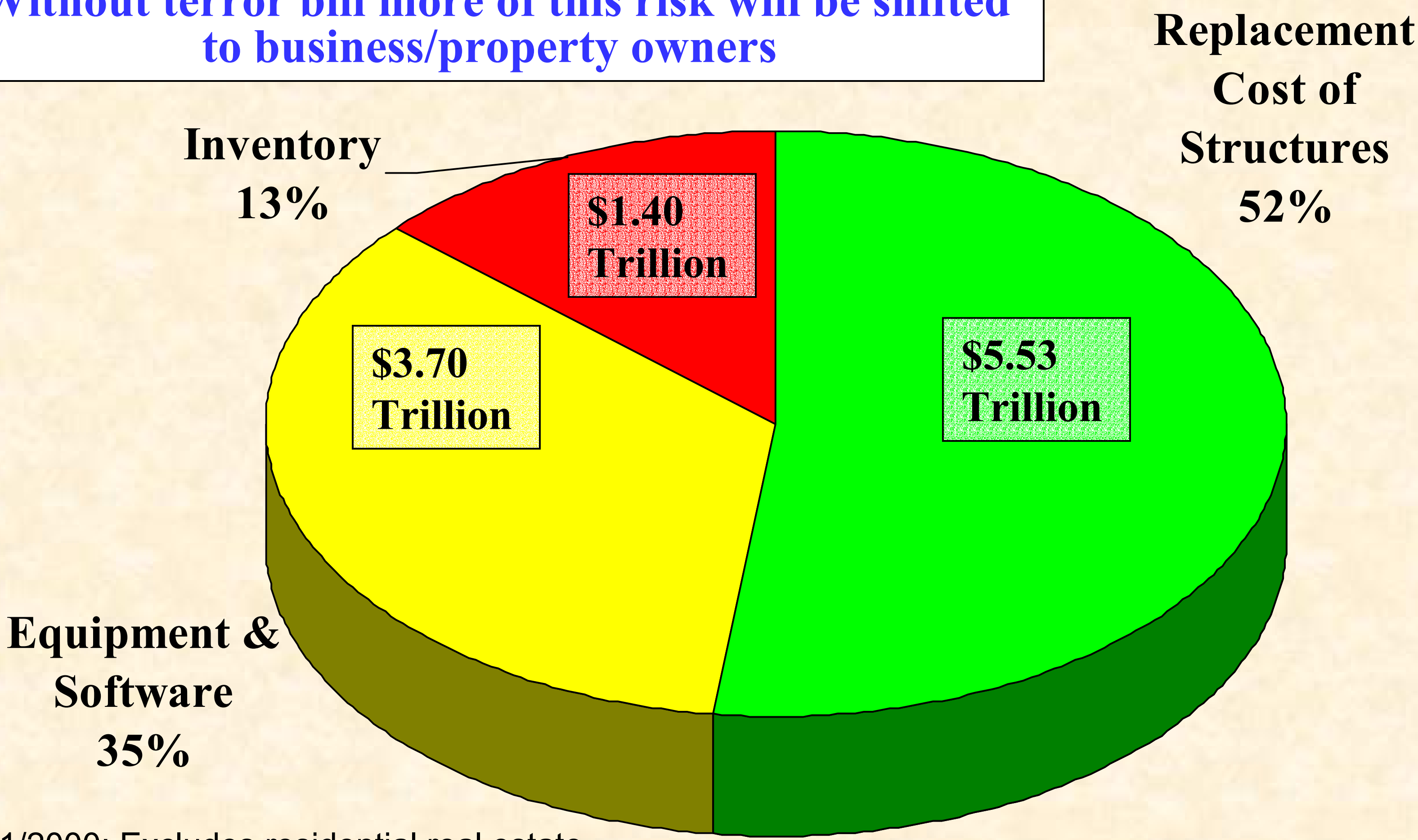
1. ***Market for Terrorism Insurance Remains Limited***
   - Only small number of insurers actively providing stand-alone terror cover
   - When available, coverage is expensive, limited and offered with restrictive terms

2. ***Problems Associated with Terrorism Insurance Pose a Significant Threat to Sustained Economic Growth***
   - Lack of terror insurance stopping some business deals, esp. real estate and construction projects where terror cover necessary to obtain funding
   - High cost of terror insurance diverts resources from other more productive uses, negatively affecting investments and jobs.
   - Low coverage limits mean that businesses are bearing a huge amount of risk themselves. In the event of another attack, insurance payments will not be available to the same degree for rebuilding.

Commercial Real Estate: Value at Risk*

TOTAL = $10.6 Trillion

Without terror bill more of this risk will be shifted to business/property owners

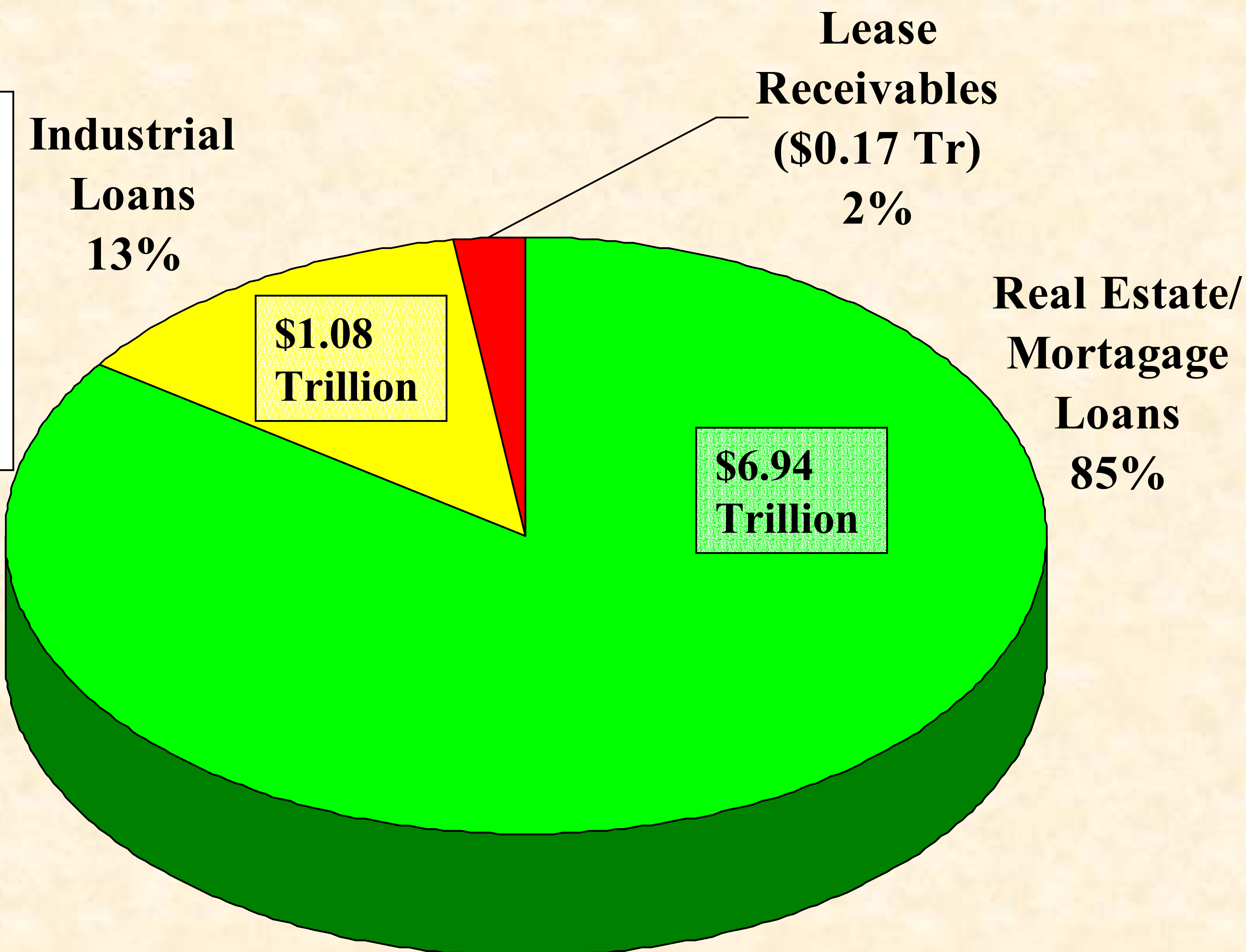


*As of 12/31/2000; Excludes residential real estate.
Source: Morgan Stanley, FDIC, Federal Reserve; Insurance Information Institute.

*Commercial Real Estate Debt: Debt at Risk**

TOTAL = $8.2 Trillion

Without terror bill more of this risk will be shifted to commercial lenders/landlords



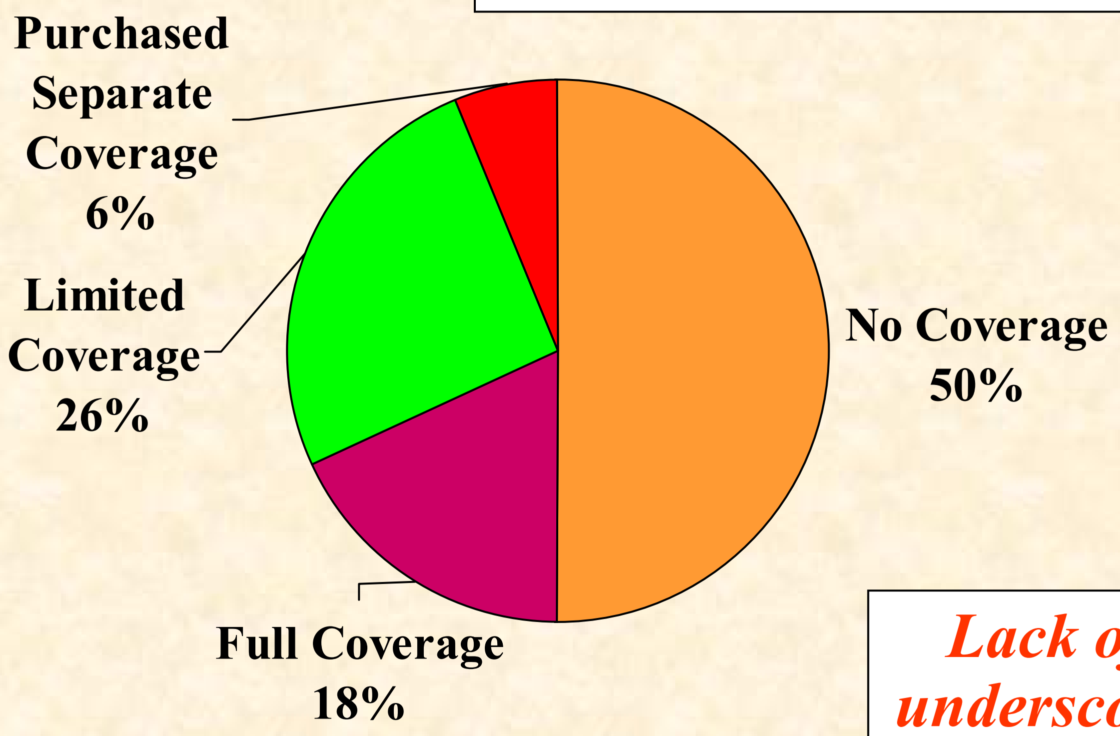
*As of 12/31/2000; Excludes residential real estate.

Source: Morgan Stanley, FDIC, Federal Reserve; Insurance Information Institute.

Most Businesses Have Little or No Terrorism Coverage

Lenders vs. Commercial Mortgage Holders

- Cigna/Durst/4 Times Square/$5 mill for cover
- GMAC require purchase on 40,000 properties w/$100 billion in loans across US.

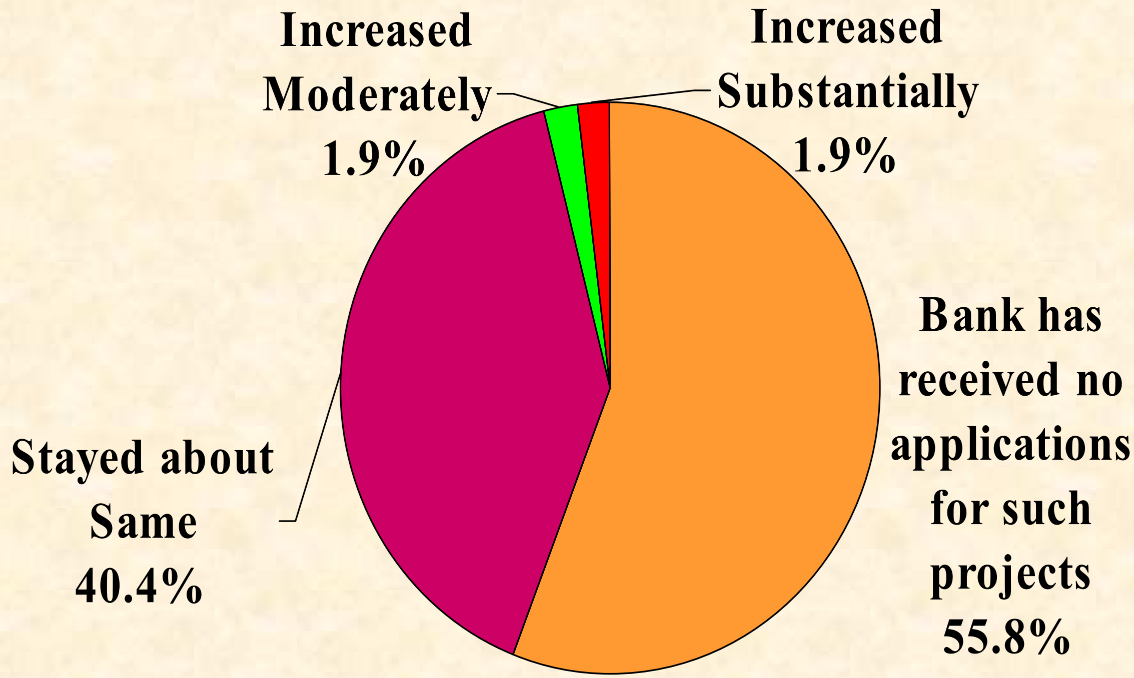


Lack of coverage underscores need for federal backstop

Source: Prudential Securities: *2002 Insurance Buyers Survey, June 2002*

But Most Banks Don't Yet Seem to Recognize the Risk

BANKER POLL: Rejection Rate for High-Profile or Heavy Traffic Commercial Real Estate Properties (Since 9/11) Has…



Source: Federal Reserve survey of large bank lending practices, April 2002.

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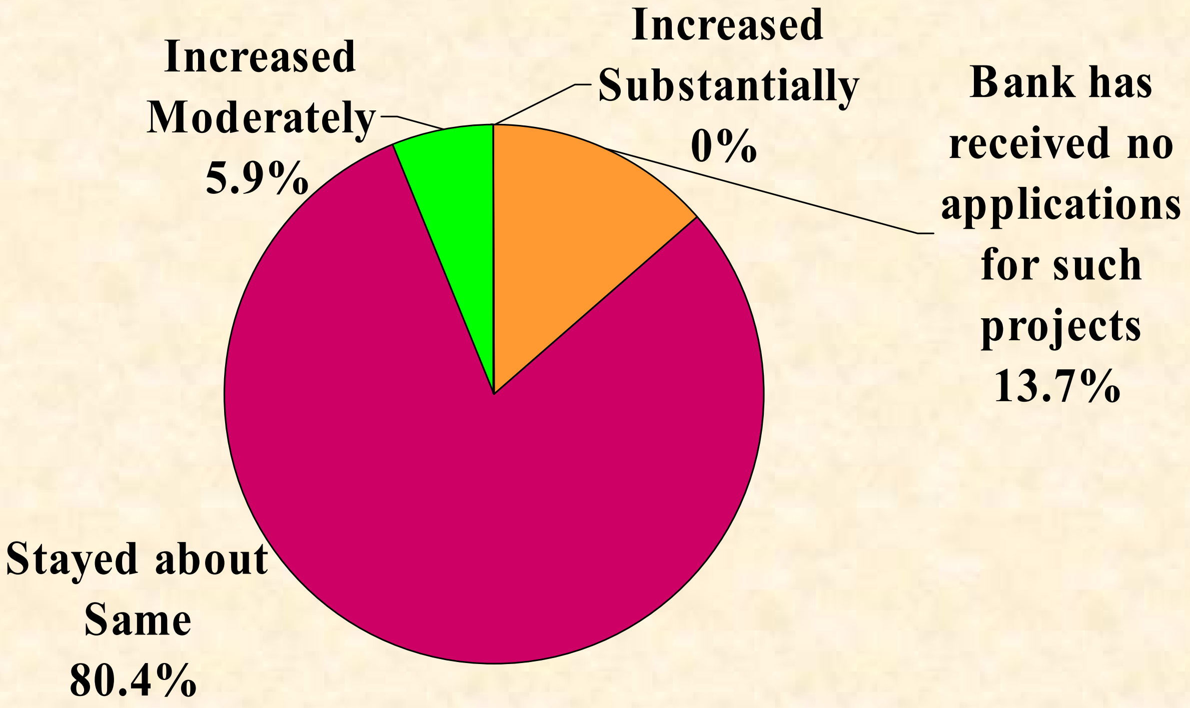


Source: Federal Reserve survey of large bank lending practices, April 2002.

Federal Backstop: Winner/Loser Matrix

TERRORISM BILL PASSES

ATTACKS OCCUR			NO ATTACKS OCCUR
	SCENARIO 4 **WINNERS:** •Primary insurers/Reinsurers/Brokers •Capital Markets-Focused Firms **LOSERS:** •REITs •Credit Sensitive Firms	***SCENARIO 1*** **WINNERS:** •Primary insurers/Reinsurers/Brokers •REITS **LOSERS:** None	
	SCENARIO 3 **WINNERS:** •Reinsurers/Brokers •Capital Markets-Focused Firms •Asset managers w/fixed-income focus **LOSERS:** •Primary insurers •REITs •Credit Sensitive Firms •Asset managers w/equity focus	***SCENARIO 2*** **WINNERS:** •Primary insurers/Reinsurers/Brokers •Capital Markets-Focused Firms; Less so for credit-sensitive firms **LOSERS:** •REITs	

NO TERRORISM BILL PASSES

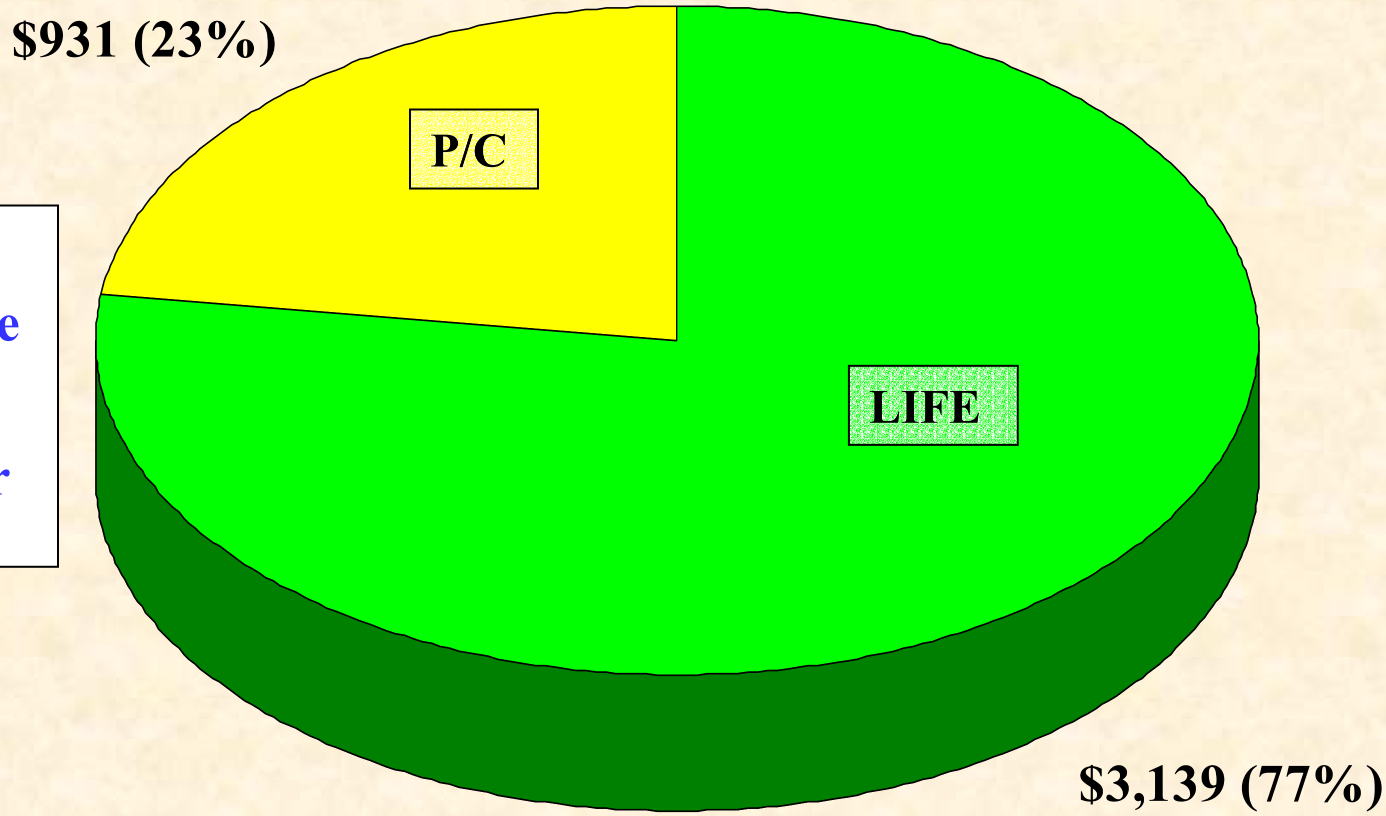
Source: Morgan Stanley

Capacity:

How Much Money Do We Really Have?

Capital Myth 1: Insurers Have $4 Trillion in Assets to Pay Terrorism Claims

Total = $4.1 Trillion (as of 12/31/00)



The Facts

P/C insurers have $931 *billion* in assets compared to $3.1 *trillion* for life insurers

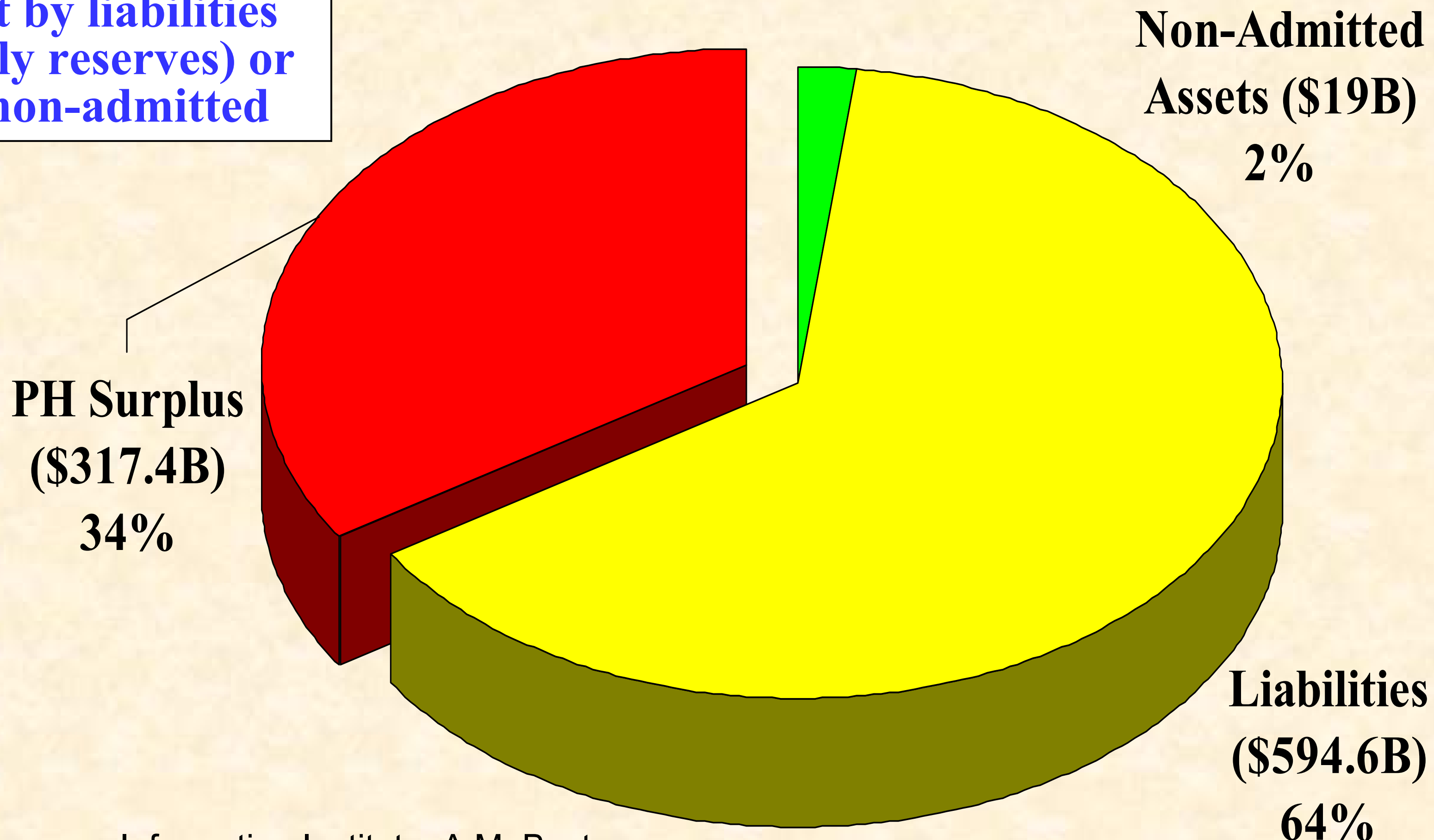
Source: Insurance Insurance Information Institute

Capital Myth 2: P/C Insurers Have Nearly $1 Trillion in Assets to Pay Terrorism Claims

The Facts

66% of Assets are offset by liabilities (mostly reserves) or are non-admitted

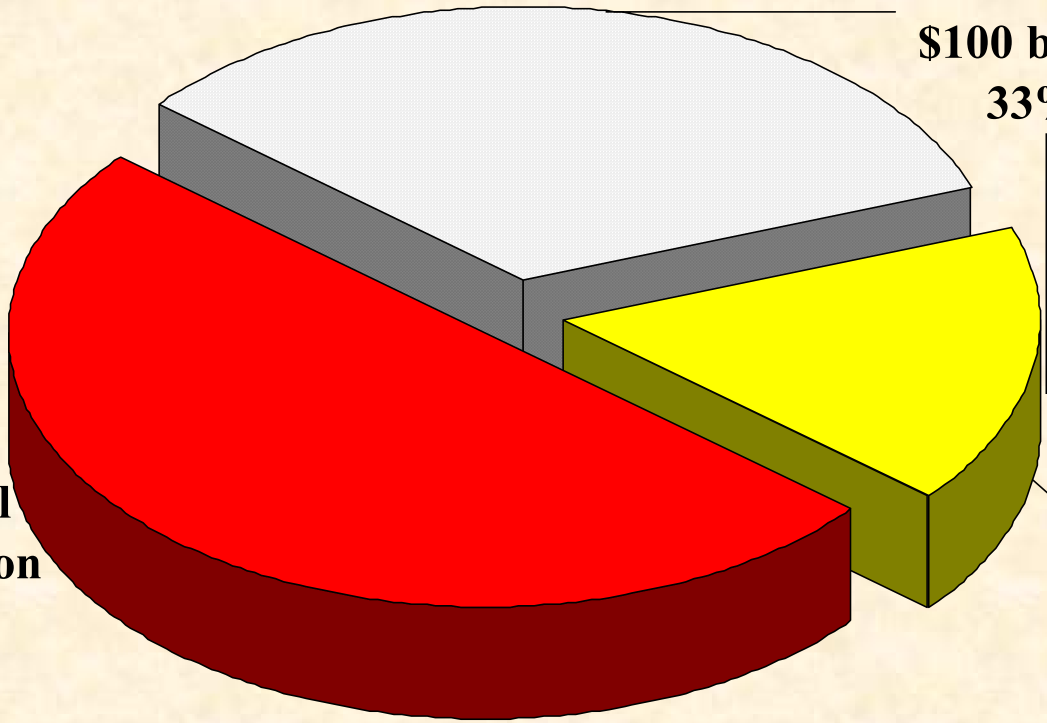
Assets = Liabilities + Policyholder Surplus



Source: Insurance Information Institute; A.M. Best

Capital Myth 3: P/C Insurers Have $300 Billion to Pay Terrorism Claims

Total PHS = $298.2 B as of 6/30/01



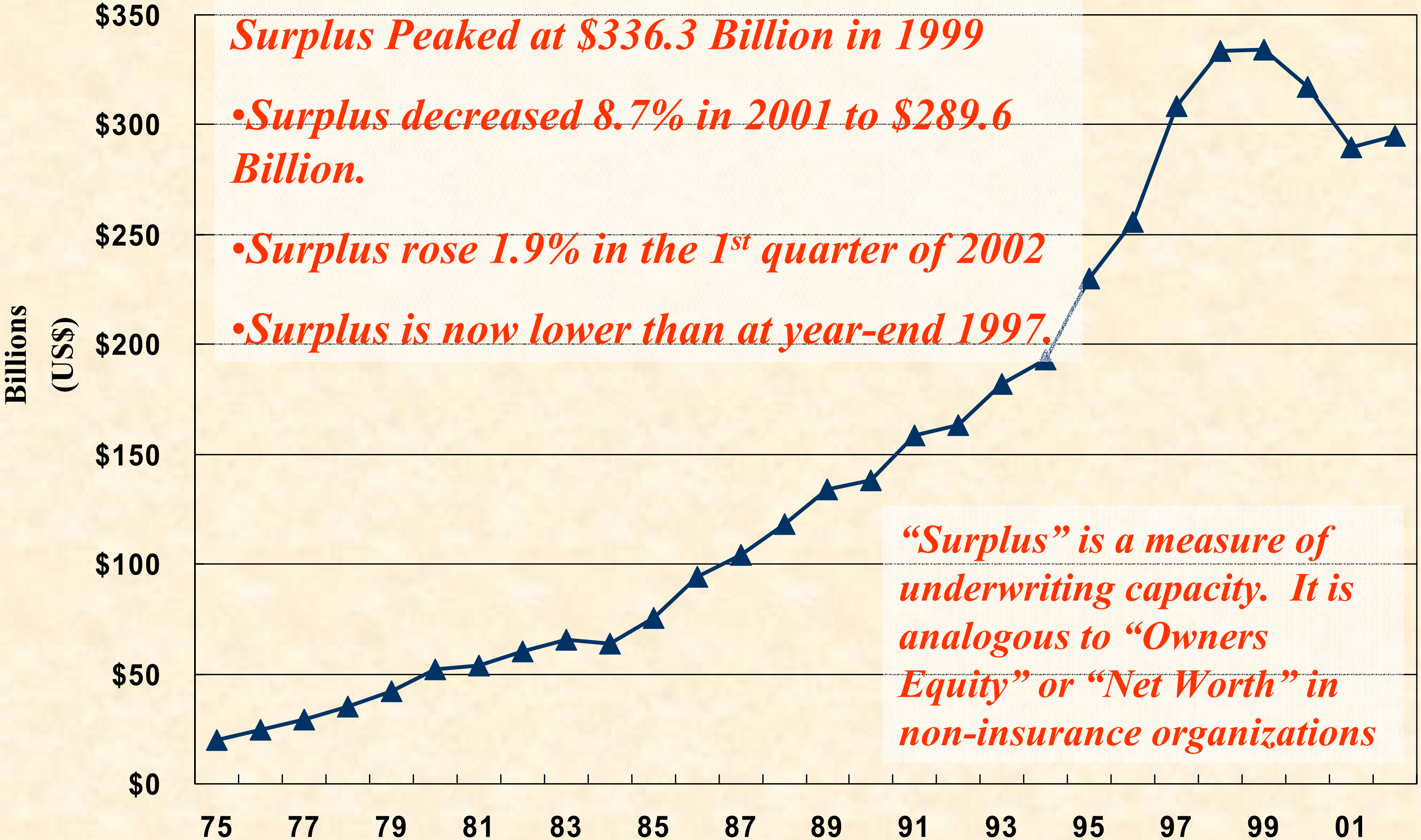
The Facts

Only 33% of industry surplus backs up "target" lines.

*"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

*Policyholder Surplus: 1975-2002**



Surplus Peaked at $336.3 Billion in 1999

- ***Surplus decreased 8.7% in 2001 to $289.6 Billion.***
- ***Surplus rose 1.9% in the 1st quarter of 2002***
- ***Surplus is now lower than at year-end 1997.***

"Surplus" is a measure of underwriting capacity. It is analogous to "Owners Equity" or "Net Worth" in non-insurance organizations

*As of 1st quarter 2002

Source: A.M. Best, Insurance Information Institute

Capacity Crunch Brings Opportunity

- Rapid rush of capital in to offshore domiciles; U.S. and European insurers had no problem raising cash equity and bond markets
  - But some new cash is hedge fund/venture capital = short term
- "Flight to Quality" Big, highly-rated insurers benefit
- Risk modeling firms begin research:
  - Terror risk generally
  - WC especially (no terror exclusions approved)

Source: Insurance Information Institute.

Fresh Capital: Top 15 Deals

(Completed as of July 12, 2002)

CGNU	$1,700D	Endurance	800V
Swiss Re	1,600V	Arch Capital	763S
Axis (Marsh)	1,600S	Chubb	600D
Ace Ltd.	1,150S	St. Paul	575TP
Winterthur	1,100U	Wellington	564S
AIG	1,000CD	*ALL OTHERS*	*7,281*
Montpelier	1,000PE	**Total Completed**	**= $28,037**
Converium	985S	**Pending**	**= $16,431**
Allied World	959S	**GRAND TOTAL**	**= $44,468**
XL Capital	819S		

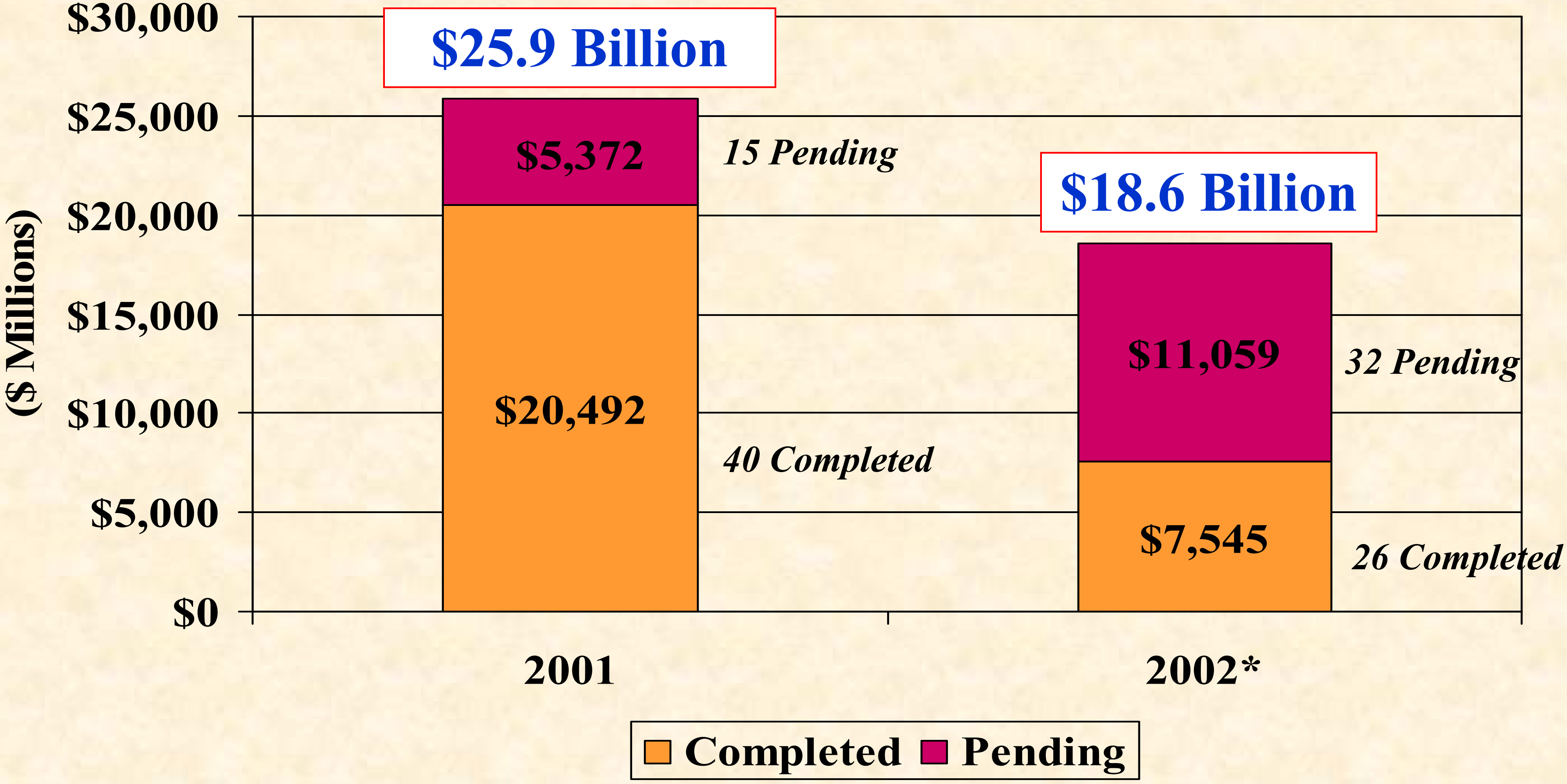
Will they shorten the hard market?

Type of Issuance: CD=Convertible Debt; D= Debt; PE=Private Equity;S=Stock;TP=Trust Preferred; U=Unspecified; V=Various

Source: Morgan Stanley

Capital Raising by P/C Insurers Since September 11, 2001*

Capital Raising by P/C Insurers Since 9/11 Totals $44.5B



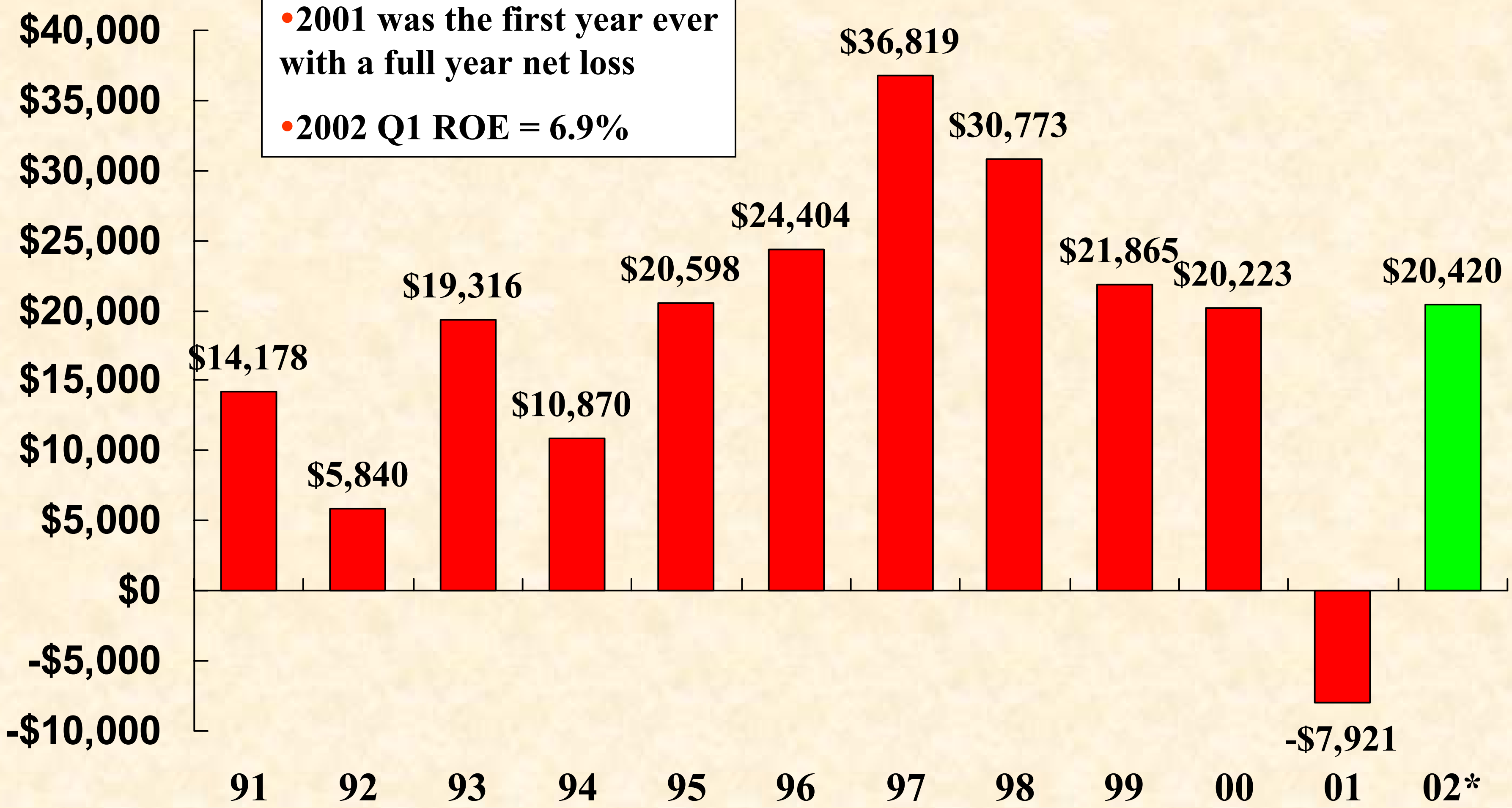
*As of July 12, 2002.

Source: Morgan Stanley

Financial Implications for the U.S. Non-Life Insurance Industry

P/C Net Income After Taxes 1991-2002 ($ Millions)

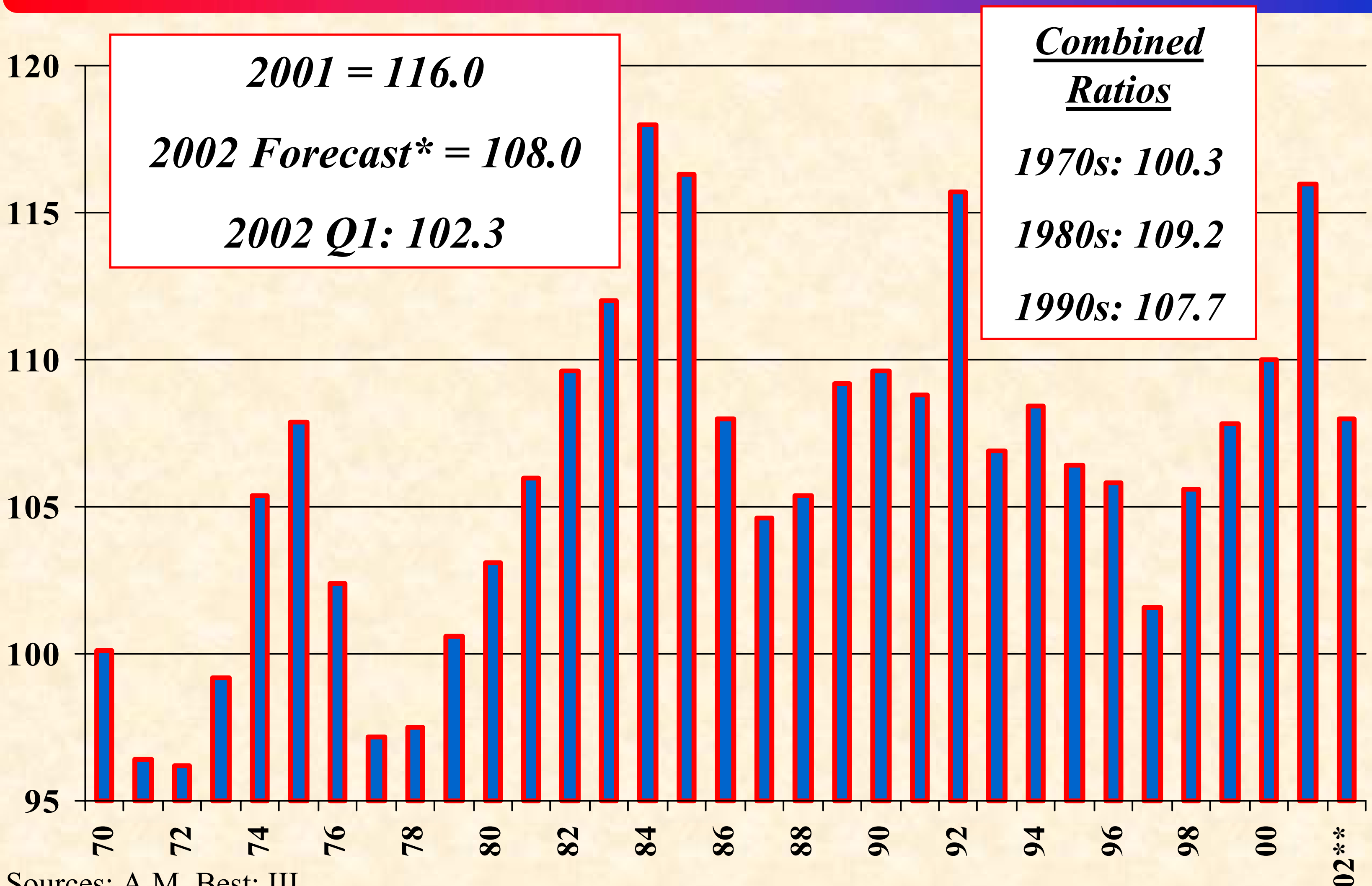
- 2001 was the first year ever with a full year net loss
- 2002 Q1 ROE = 6.9%



*I.I.I. estimate based on first quarter 2002 data.

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

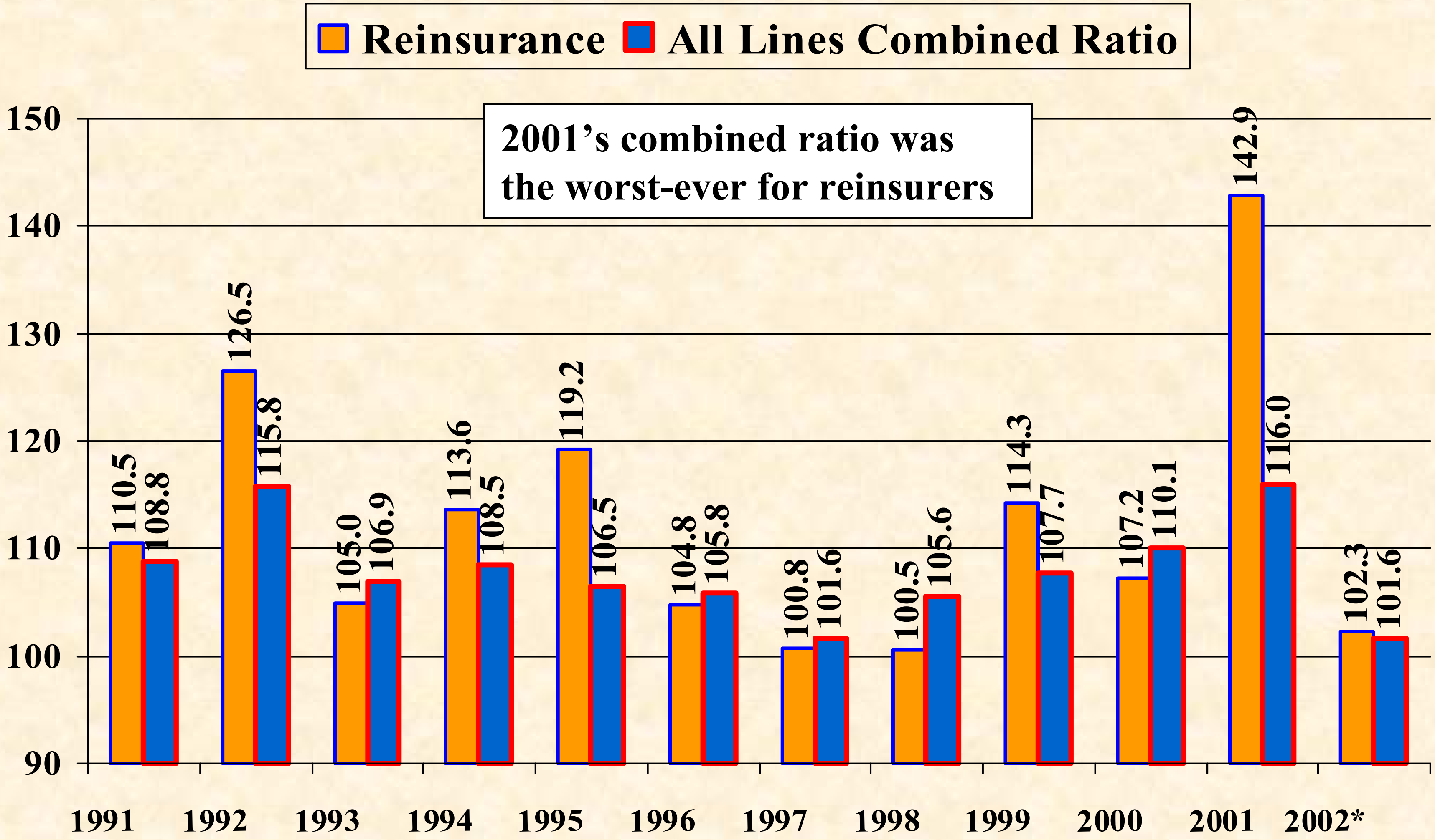
P/C Industry Combined Ratio



Sources: A.M. Best; III

* Based on III 2002 Groundhog Forecast

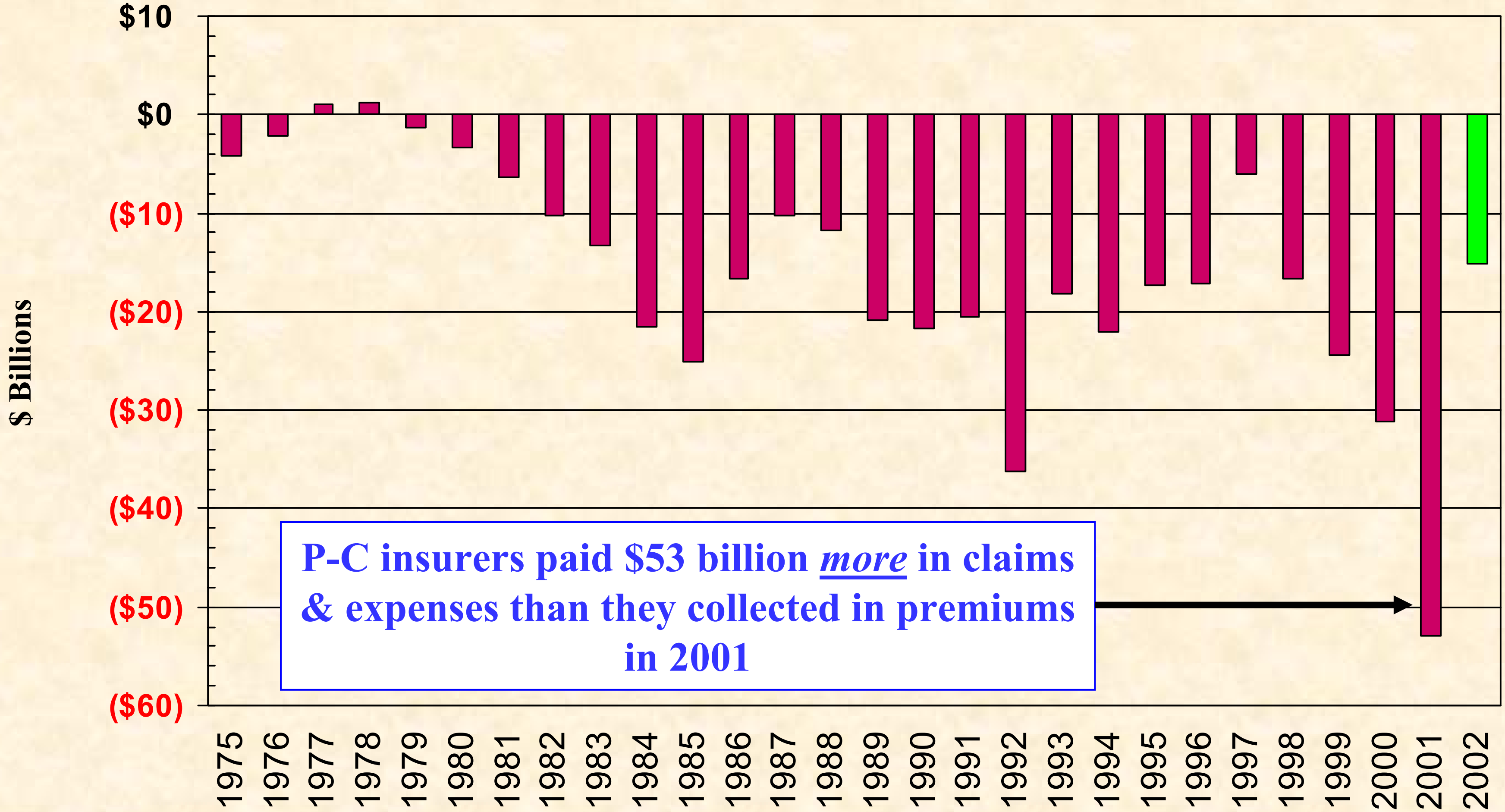
Combined Ratio: Reinsurance vs. P/C Industry



*First Quarter 2002

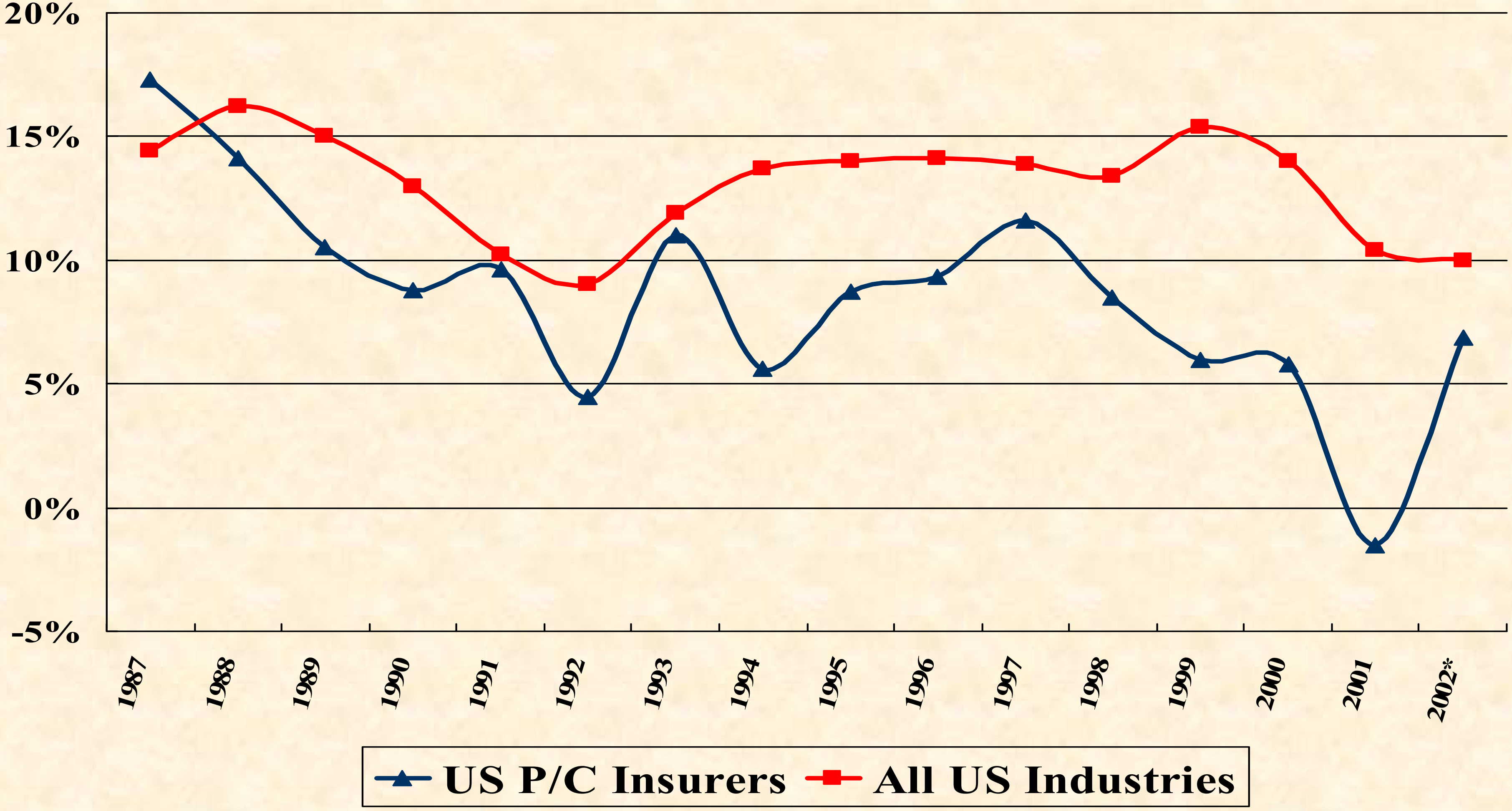
Source: A.M. Best, ISO, Reinsurance Association of America, Insurance Information Institute

*Underwriting Gain (Loss) 1975-2002**



*Annualized estimate based on first quarter 2002 data.
Source: A.M. Best, Insurance Information Institute

ROE: P/C vs. All Industries 1987–2002*



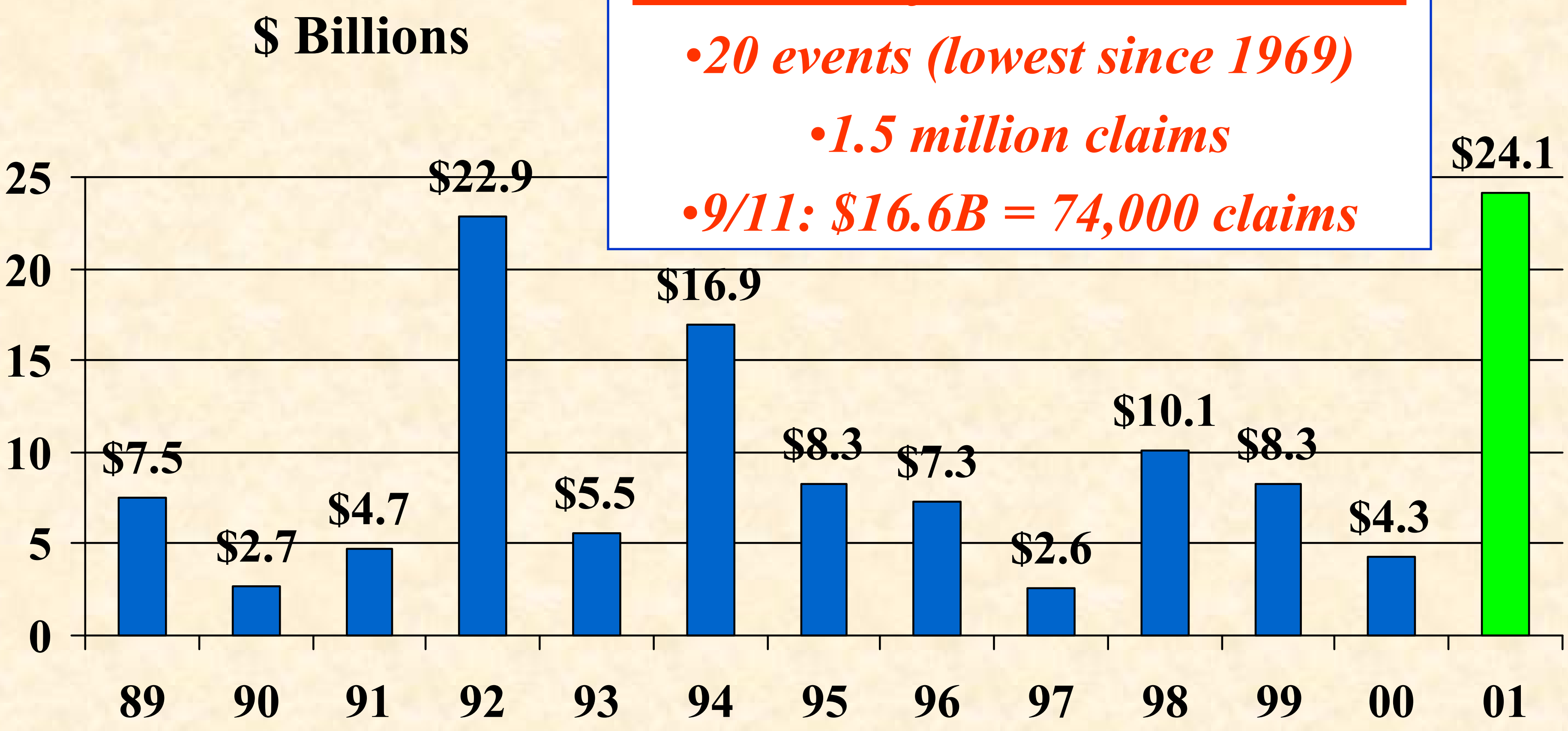
*Estimate

Source: Insurance Information Institute; *Fortune*

U.S. Insured Catastrophe Losses

CAT Losses for 2001 Set a Record

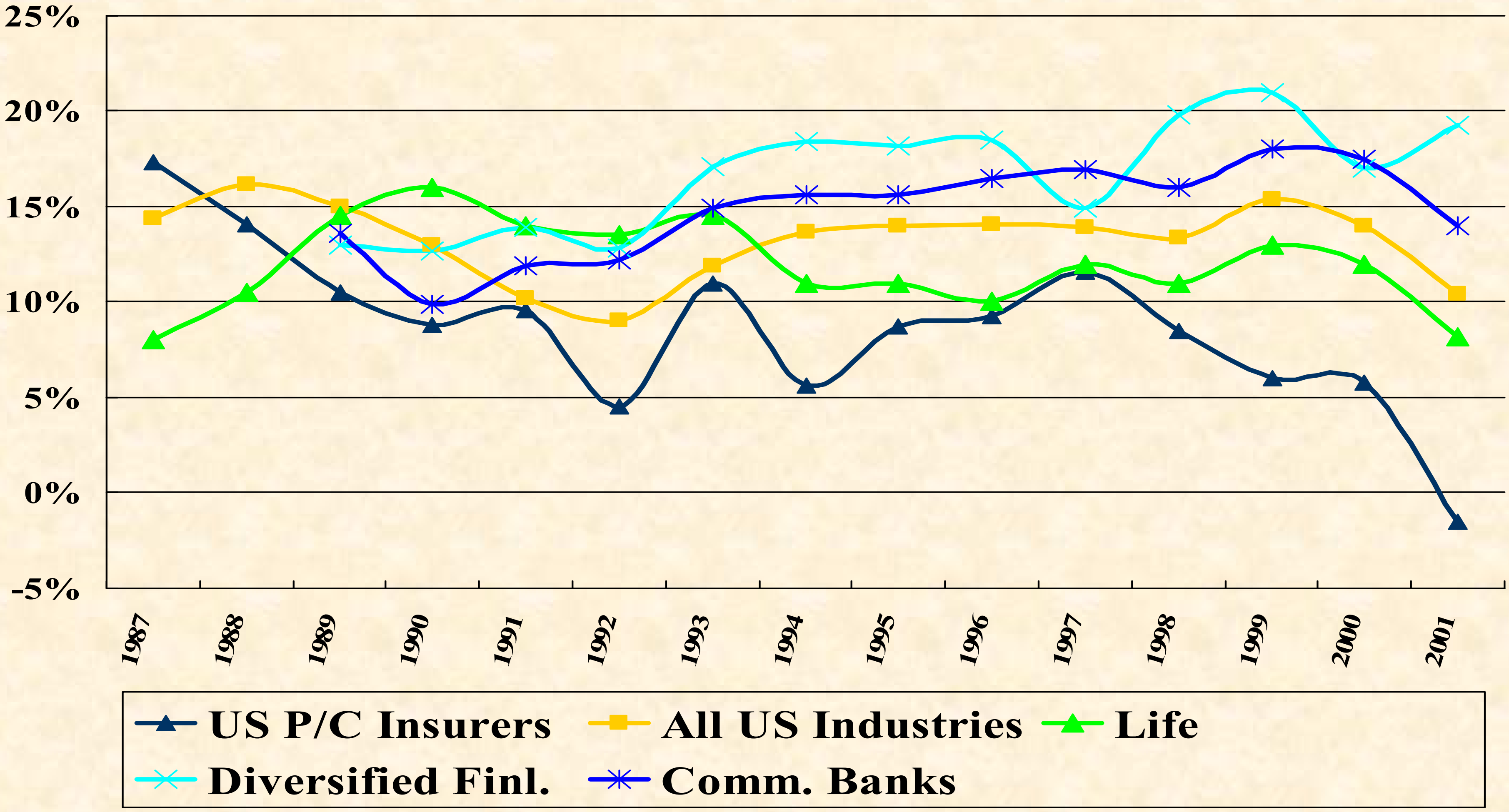
- 20 events (lowest since 1969)
- 1.5 million claims
- 9/11: $16.6B = 74,000 claims



* Includes $16.6B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims.

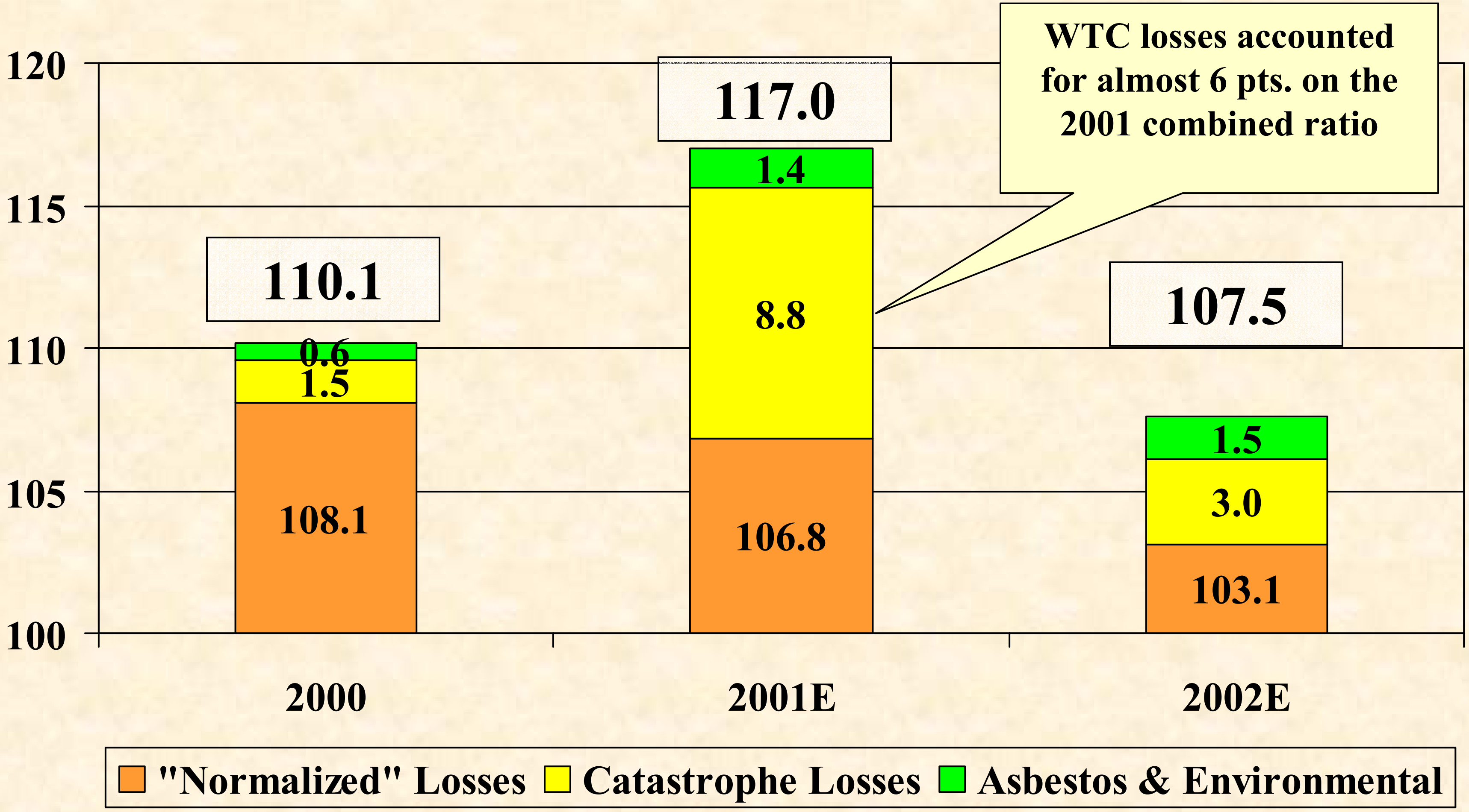
Source: Property Claims Service, Insurance Information Institute

ROE: Financial Services Industry Segments, 1987–2001



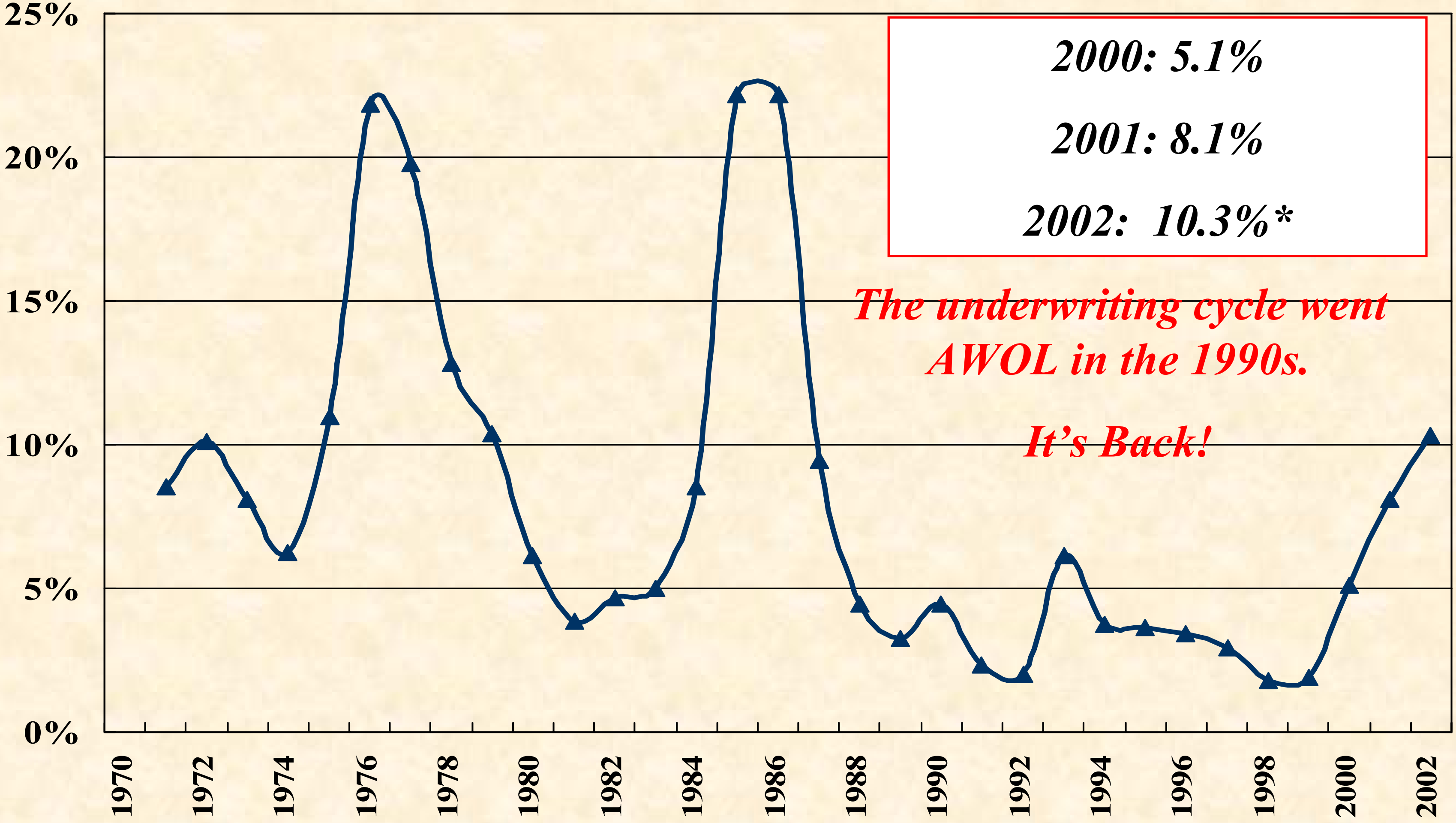
Source: Insurance Information Institute; *Fortune*

Combined Ratio Components



Source: A.M. Best.

Growth in Net Premiums Written (All P/C Lines)



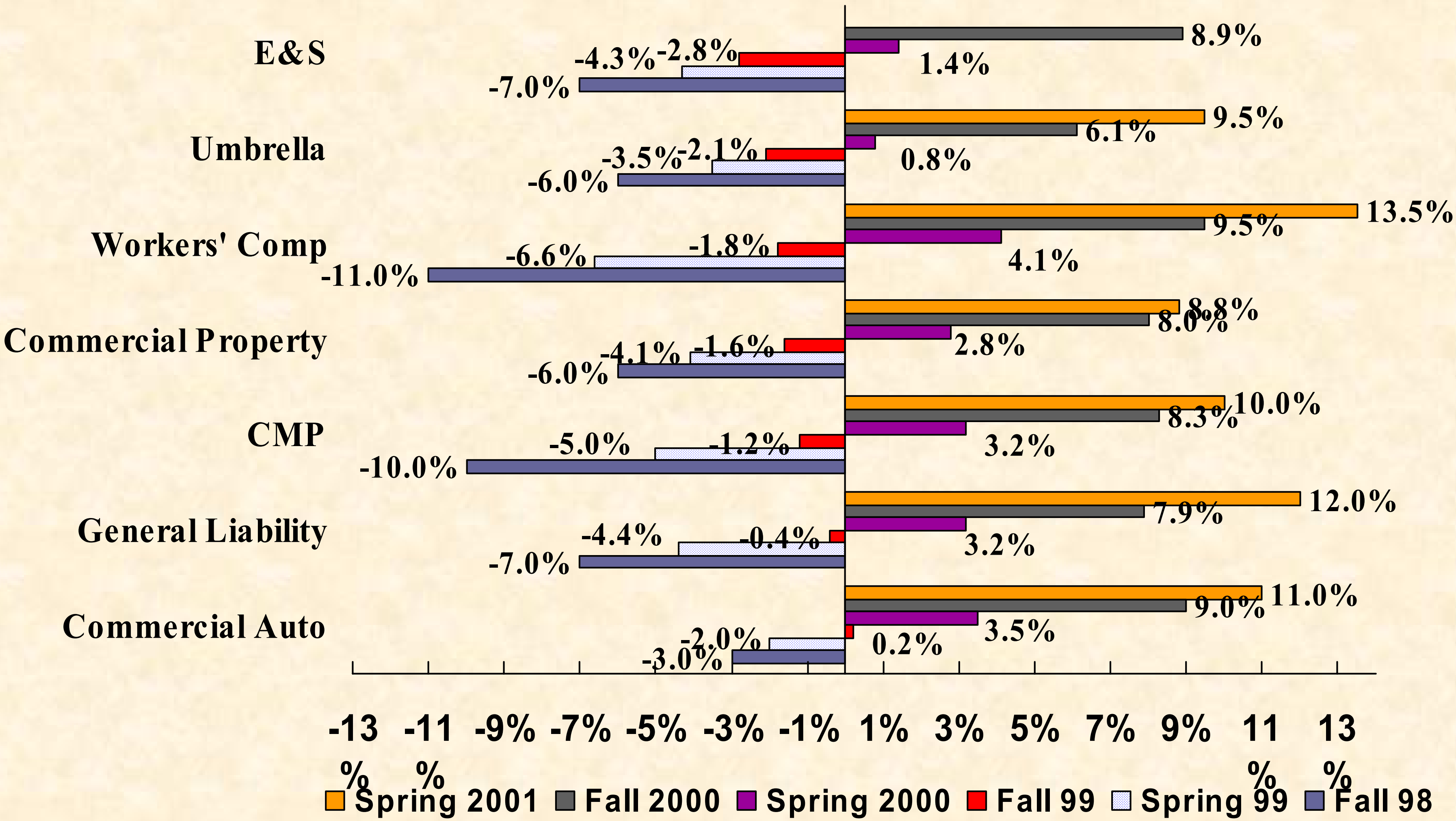
*Estimate based on first quarter 2002

Source: A.M. Best, Insurance Information Institute

Pricing:

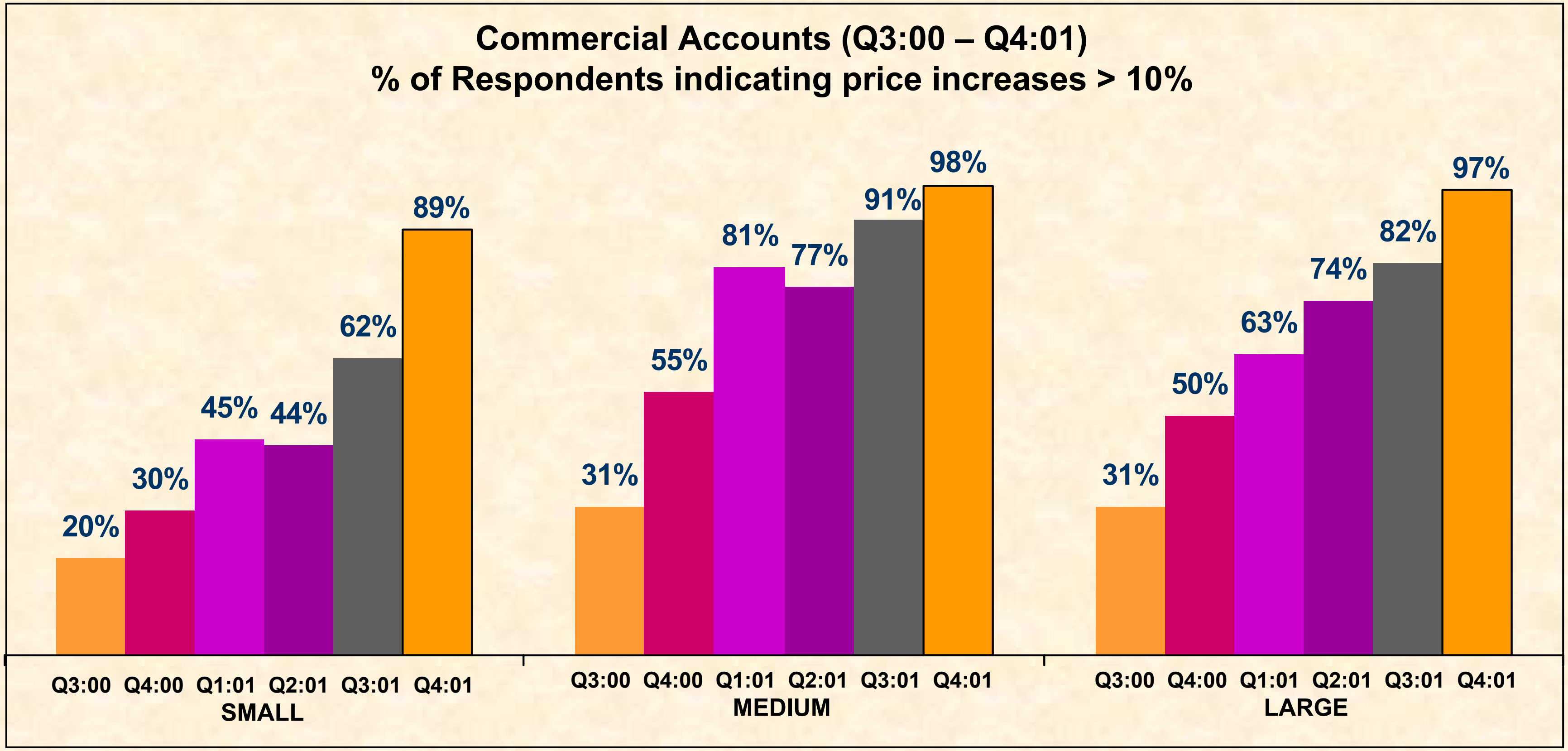
What's Going On?

Pre-Sept. 11: Average Price Change of Commercial Insurance Renewals



Source: Conning

CIAB Rate Survey



Source: Council of Insurance Agents and Brokers

CIAB Rate Survey

Second Quarter 2002

Rate Increases By Size of Account

	No Change	Up 1-10%	10-20%	20-30%	30-50%	50%-100%	>100%
Small (<$25K)	4%	8%	40%	35%	7%	1%	0%
Med ($25-$100K)	1%	4%	19%	43%	28%	1%	0%
Large (>$100K)	1%	4%	10%	32%	31%	4%	3%

Source: Council of Insurance Agents and Brokers

CIAB Rate Survey

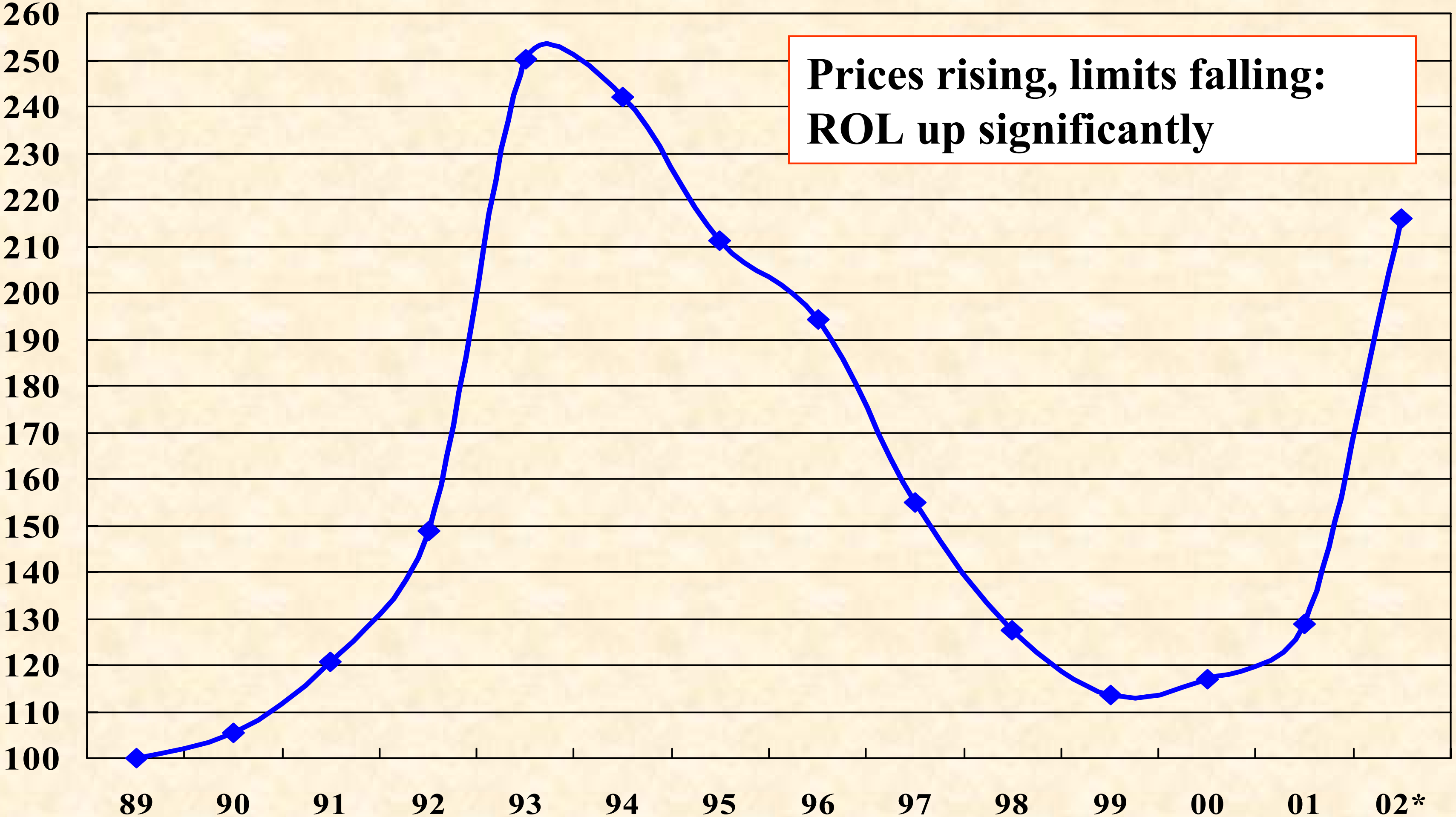
Second Quarter 2002

Rate Increases By Line of Business

	No Change	Up 1-10%	10-20%	20-30%	30-50%	50%-100%	>100%
Comm. Auto	2%	6%	28%	39%	21%	1%	1%
Workers Comp	5%	13%	19%	32%	15%	5%	2%
General Liability	2%	9%	24%	45%	15%	2%	1%
Comm. Umbrella	2%	4%	10%	20%	27%	17%	16%
Comm. Property	3%	4%	16%	30%	31%	13%	1%
Business Interr.	3%	8%	32%	33%	10%	1%	0%
Surety Bonds	10%	13%	16%	14%	6%	0%	1%

Source: Council of Insurance Agents and Brokers

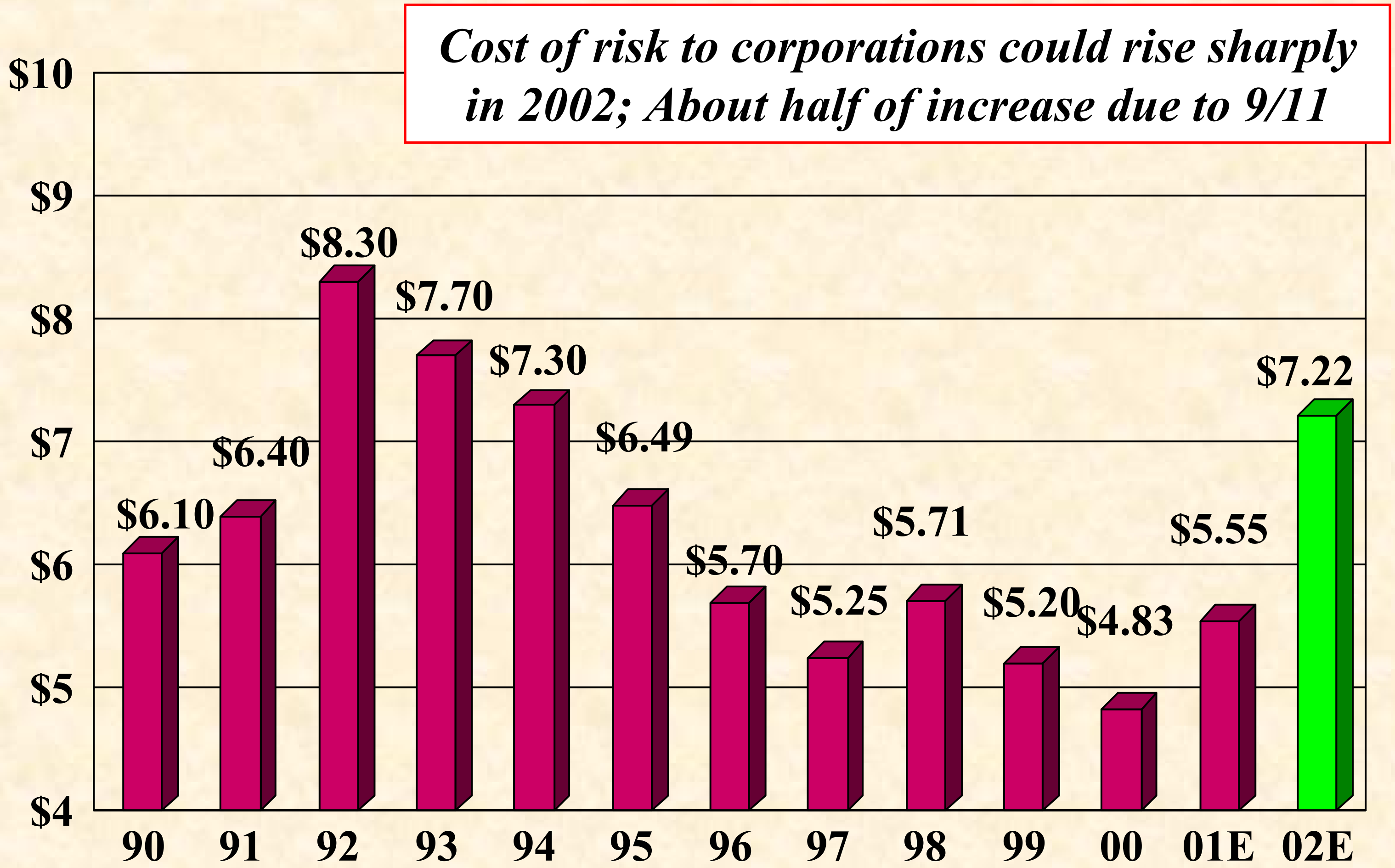
Rate On Line Index
(1989=100)



Source: Guy Carpenter

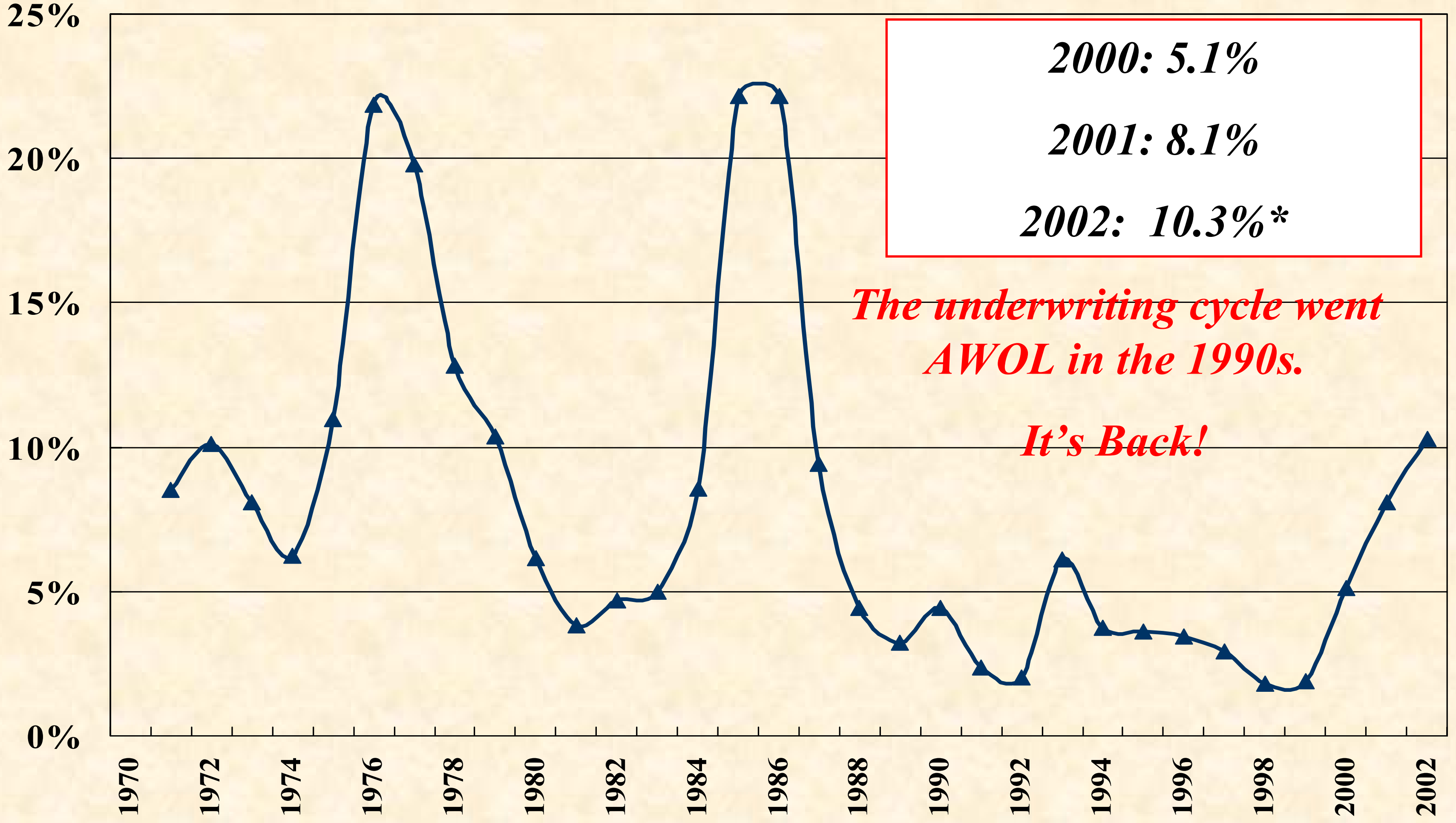
*** III Estimate**

Cost of Risk per $1,000 of Revenues: 1990-2002E



Source: 2001 RIMS Benchmark Survey; Insurance Information Institute estimates.

Growth in Net Premiums Written (All P/C Lines)



*Estimate based on first quarter 2002

Source: A.M. Best, Insurance Information Institute

Cause for Rise in Insurance and Reinsurance Pricing

- WTC has made underwriters aware of new types of risks and larger potential losses
- Standard deviation of loss is wider than previously expected
- Amount of risk capital required to support insurance is greater than formerly understood
- Industry's liquidity needs are greater than previously understood
- Capacity being reduced results in supply versus demand pressures
- Investment shortfalls
- Many problems beyond WTC (Enron, D&O, med mal…)

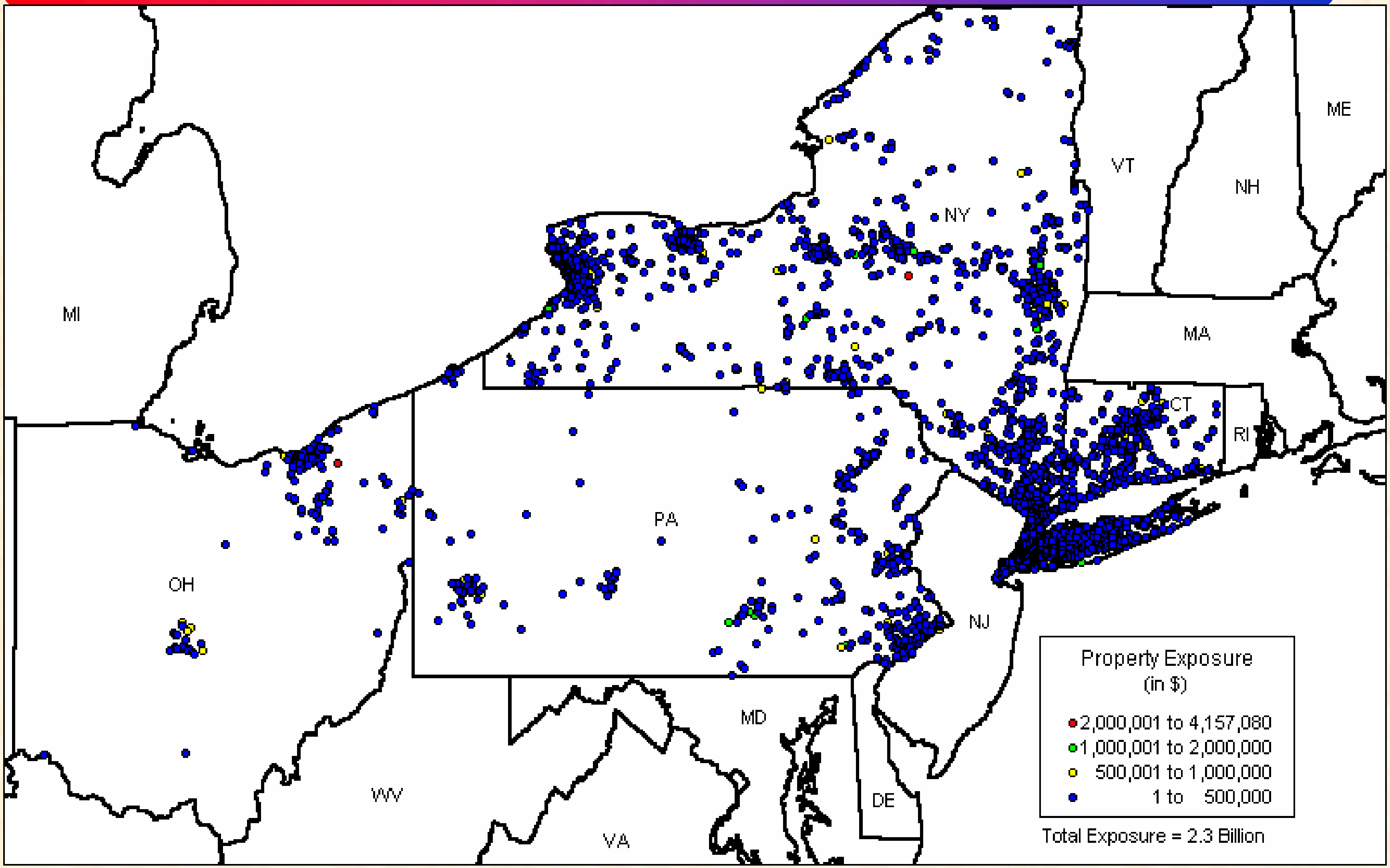
Reasons Why Market Will Remain Hard

- Total capital raised less than what was lost from 9/11
- Capacity lost is greater than dollar losses from attack suggest
  - More caution on the part of insurers/reinsurers means more capital needed per dollar of risk assumed
- Demand up (we're more at risk as a nation now)
- Poor results in many important lines for reason other than 9/11
- Poor investment results
- Wall Street pressure

Assessing the Threat of Terrorism to the Insurance Industry:

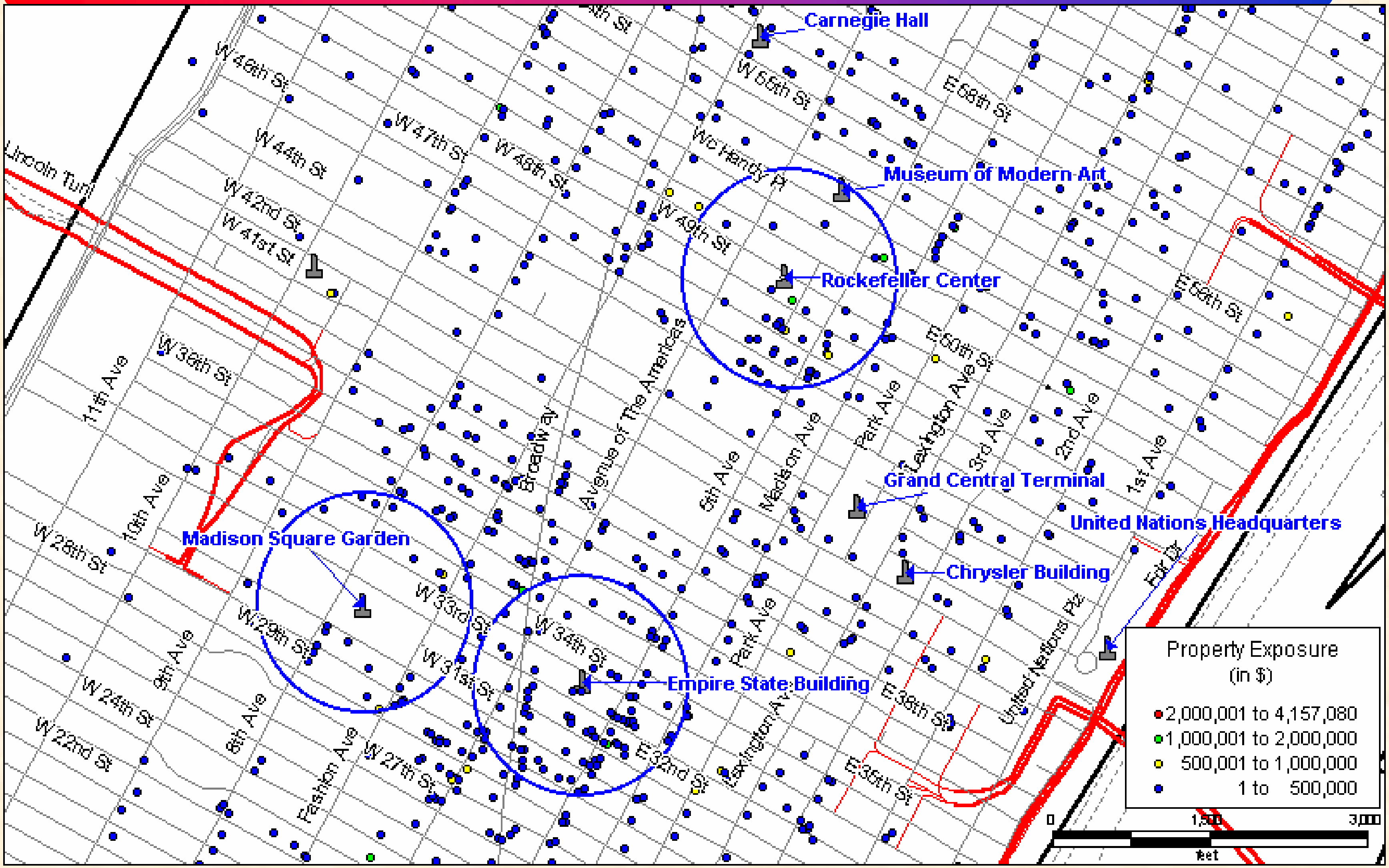
Terrorism Modelling & Risk Analysis

Property Exposure Per Location Overview



Source: Modelling by Herbert Clough. Inc.

Midtown Manhattan 1,000 ft Radius

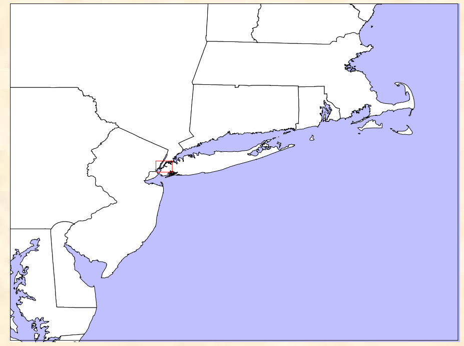


Source: Modelling by Herbert Clough. Inc.

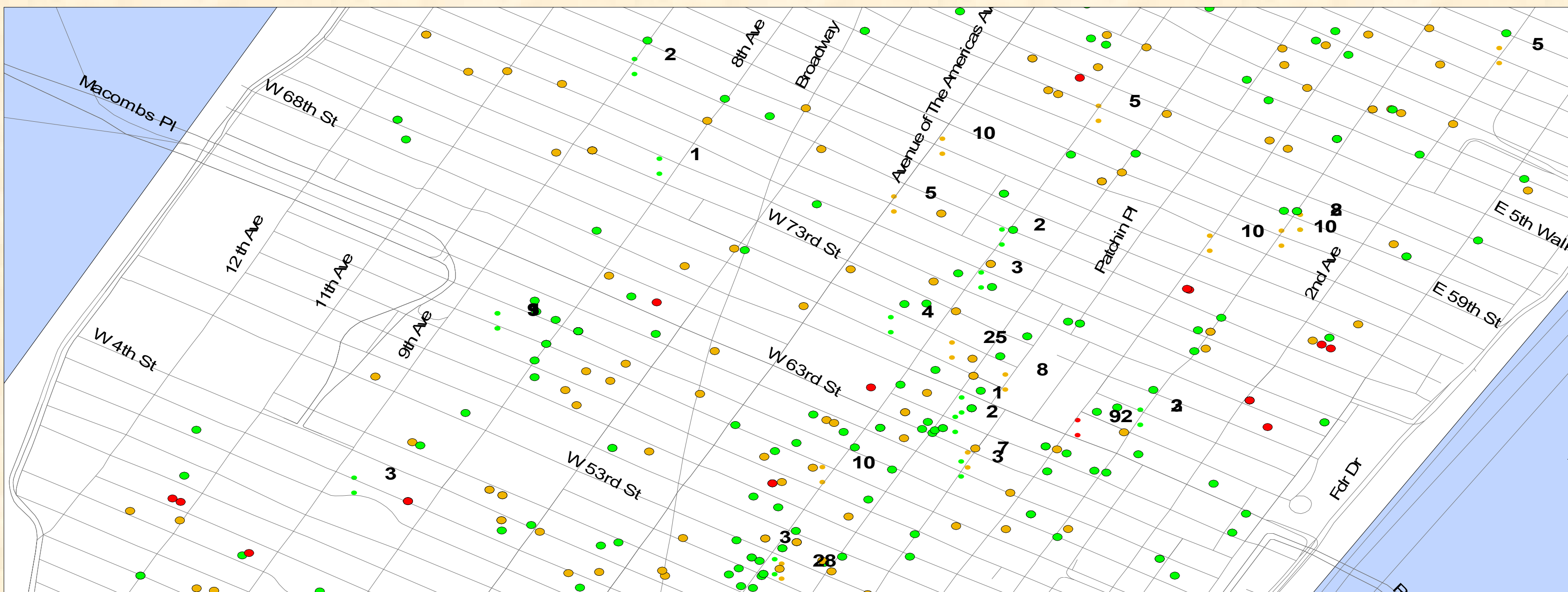
Property and Worker's Comp Exposure Per Location

Property And Worker's Comp
Exposure Per Location

New York, NY



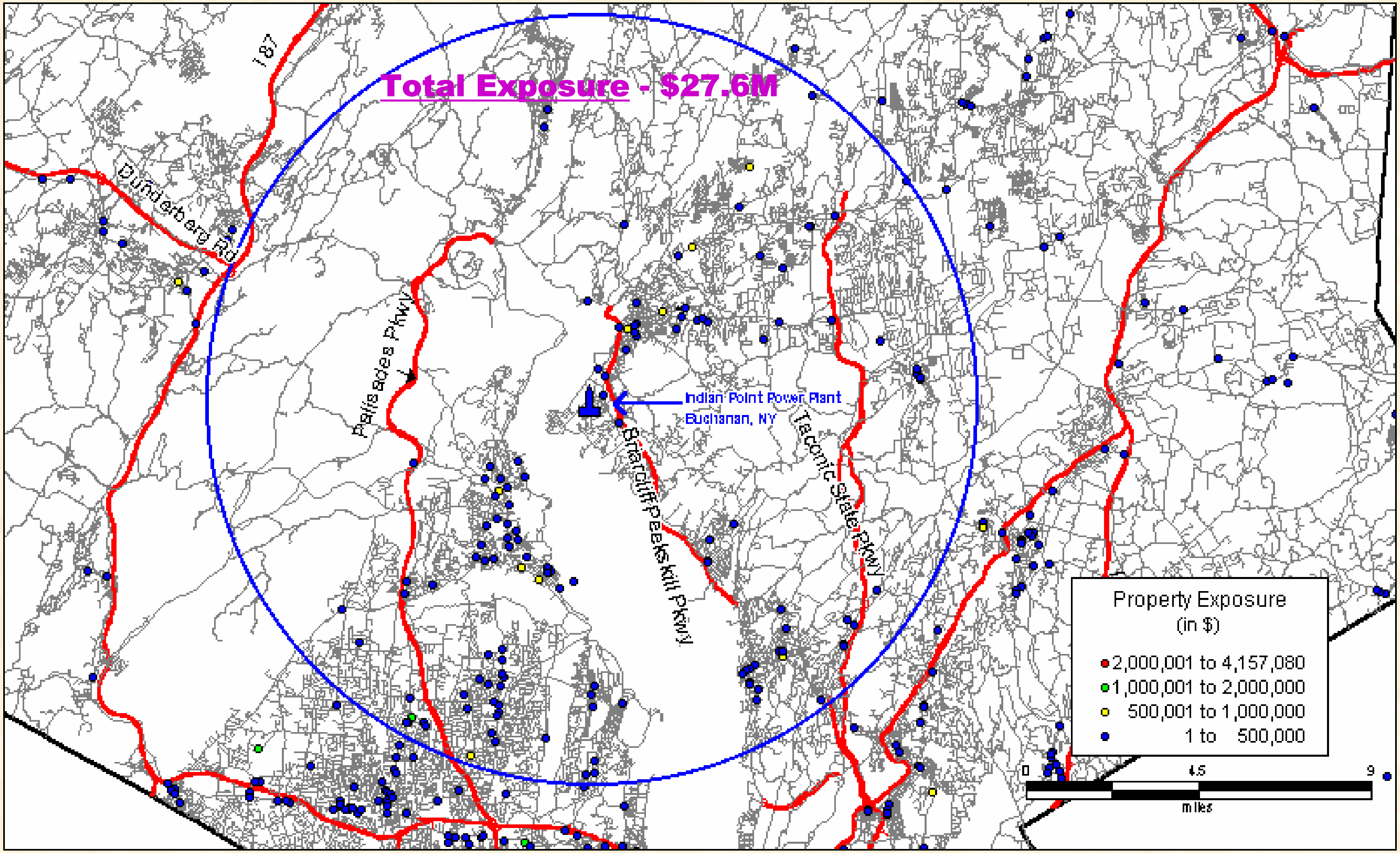
Property Exposure
(in $)
2,000,000 to 42,400,000
100,000 to 2,000,000
1,000 to 100,000
Employees Per Location
Over 50
5 to 50
1 to 5



Herbert Clough Inc. 11/2001

Source: Modelling by Herbert Clough. Inc.

Indian Point Power Plant*
10 Mile Radius



Source: Modelling by Herbert Clough, Inc.

*Peekskill, NY

Terror Coverage Criteria & Offering Companies

Key Criteria

Size of Company

Size of Class of Risks

Geographic Spread of Exposure

Lines of Business

Desired Capacity

Quality of Available Data

Willingness to Pay Premium

Property Per Risk

Readily Available (including NBC)

Opportunistic Premium

Capacity Up to Occurrence Limits

Companies Offering Cover

ACE-USA

AIG

Allianz

Arch Capital

AXIS Specialty

Berkshire Hathaway

Oil Insurance Ltd

Lloyd's of London

Specialty Risk Insurance & Reinsurance Luxembourg [Zurich, XL, Swiss Re, SCOR, Hannover Re, Allianz)

Source: GeneralCologne Re; *The Betterley Report* and *Risk and Insurance.*

The Federal Backstop for Property/Casualty Insurance:

What's Happening in Washington?

What Insurers Want in a Federal Backstop

- **Public/private plan**
- **Maximizes availability**
- **Minimizes costs**

A Federal Backstop for Insuring the Peril of Terrorism

- SENATE (S.B. 2600, passes June 18, 2002)
  - 2-yr plan
  - Industry aggregate deductible of $10B in 2002, $15B in 2003
    - Company deductible = (Mkt. Share) x ($10B) in 2002, (x $15B in 2003)
  - 80% fed share below $10B, 90% above
  - Govt. liability capped at $100B
- HOUSE (H.R. 3210, passed Nov. 29, 2001)
  - 3-year loan guarantee program
    - Industrywide losses must exceed $1B, or
    - industrywide losses exceed $100 million *and* those losses exceed 10% of surplus *and* 10% of net premium written of an *individual commercial* carrier.
  - Criticized by industry for complexity of loan repayment/ assessment formula; some view triggers as too high.
- Original Industry Proposal: Pool (similar to Pool Re in U.K.)
  - Called for creation of pool that would receive premiums for terrorist act coverage and pay losses
  - Fed steps in only as pool becomes depleted
  - Effort failed early on

Federal Terrorism Insurance Program?

Government Backed Terrorism Insurance Isn't Unprecedented

Country	Terrorism Risk Insurance Provider	Details
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.

Source: Swiss Re Focus Report: Terrorism

Why is a Terrorism Insurance Program so Hard to Get???

U.S. Government Backed Insurance Isn't Unprecedented

- FDIC (bank deposits)
- National Flood Insurance Program
- The Price-Anderson Act (Nuclear Contamination)
- Federal Crop Insurance
- The Overseas Private Investment Corp. (Overseas Political Risk)
- The National Insurance Development Program (Urban Riots and Civil Disorder)

Insurance Information Institute On-Line

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