

# Two Years Without Major Hurricanes: *Implications for Insurers and Policyholders*

**2008 National Hurricane Conference  
Orlando, FL  
April 4, 2008**



**Download at:**  
[www.iii.org/media/presentations/nhc2008](http://www.iii.org/media/presentations/nhc2008)

---

**Robert P. Hartwig, Ph.D., CPCU, 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*

- **Catastrophic Loss**
  - **Two Years Without Storms, But Not Without Disasters**
- **Acts of God and the Bottom (and Top) Line**
- **Reinsurance Markets**
  - **It Takes a Global Village to Insurance Against Major Hurricanes**
- **Financial Strength During the Decade of Disaster**
- **Hurricane Risk: Florida & Texas Cases Studies**
- **Post-Katrina Pricing Environment**
- **Claims-Paying Capacity**
- **Katrina Litigation Update**
- **Flood/Surge Risk: Complacency is a Already Setting In**

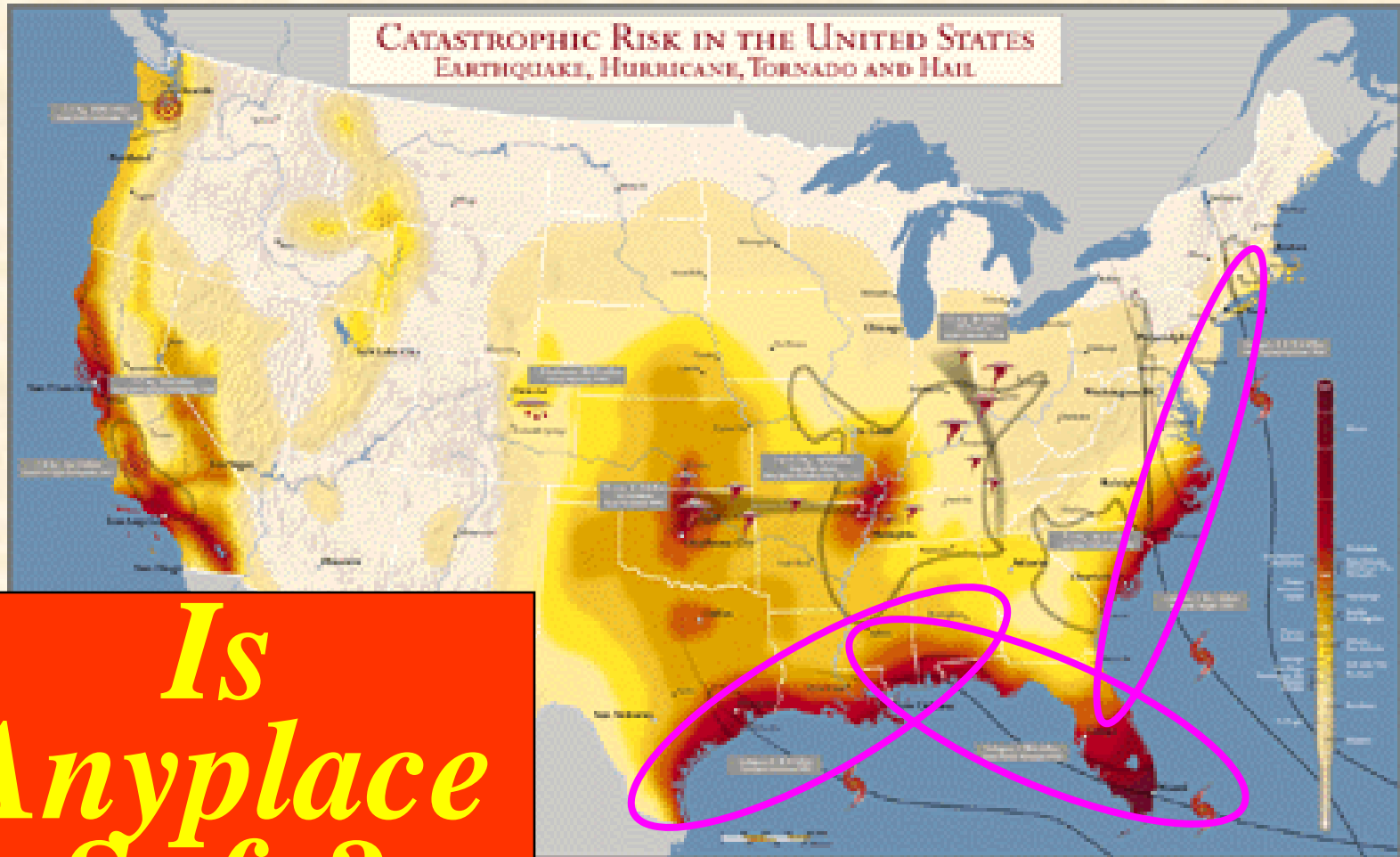
# CATASTROPHIC LOSS

**What Does the  
Future Hold?**





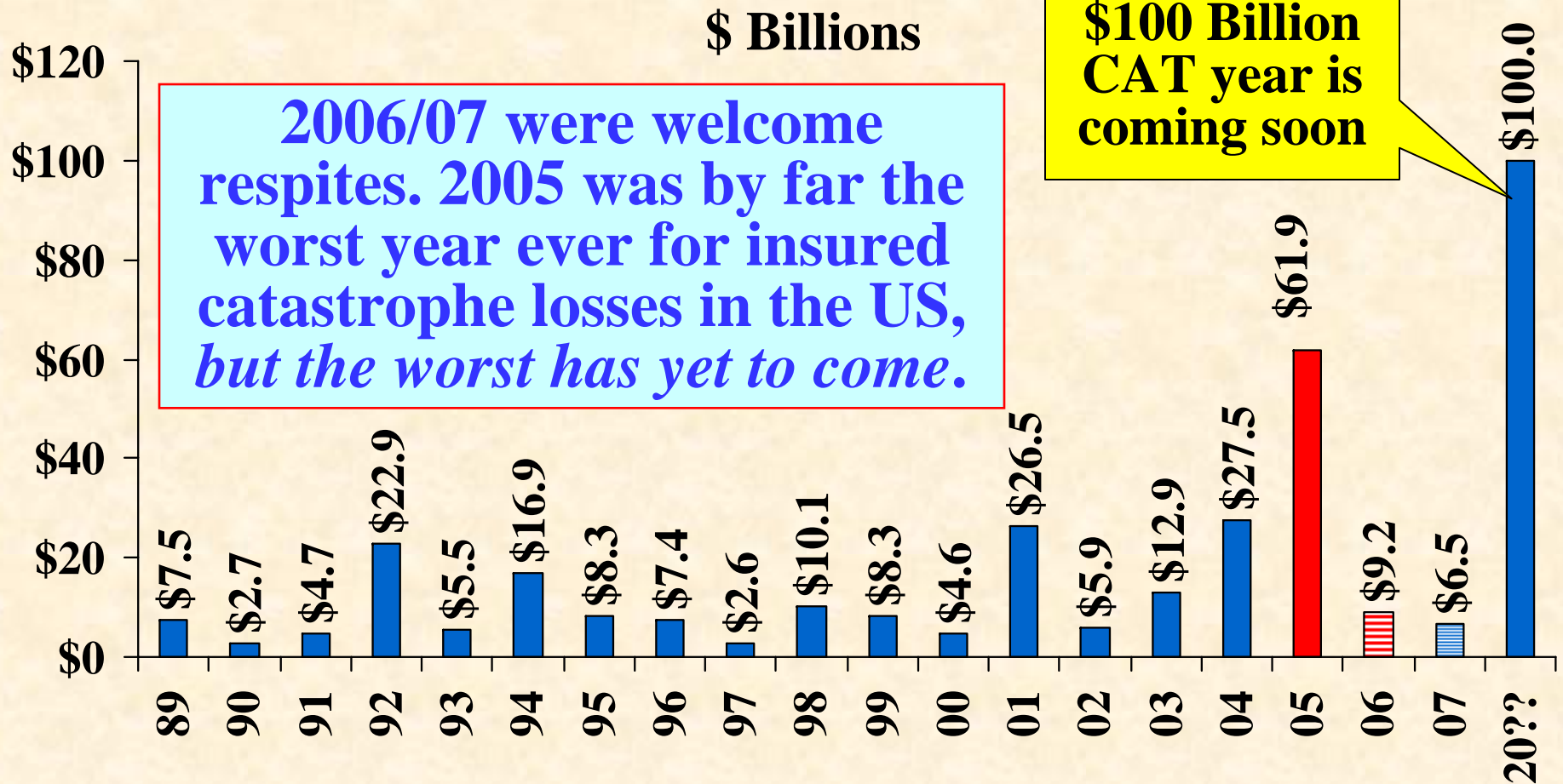
# *Most of US Population & Property Has Major CAT Exposure*



*Is  
Anyplace  
Safe?*



# U.S. Insured Catastrophe Losses\*



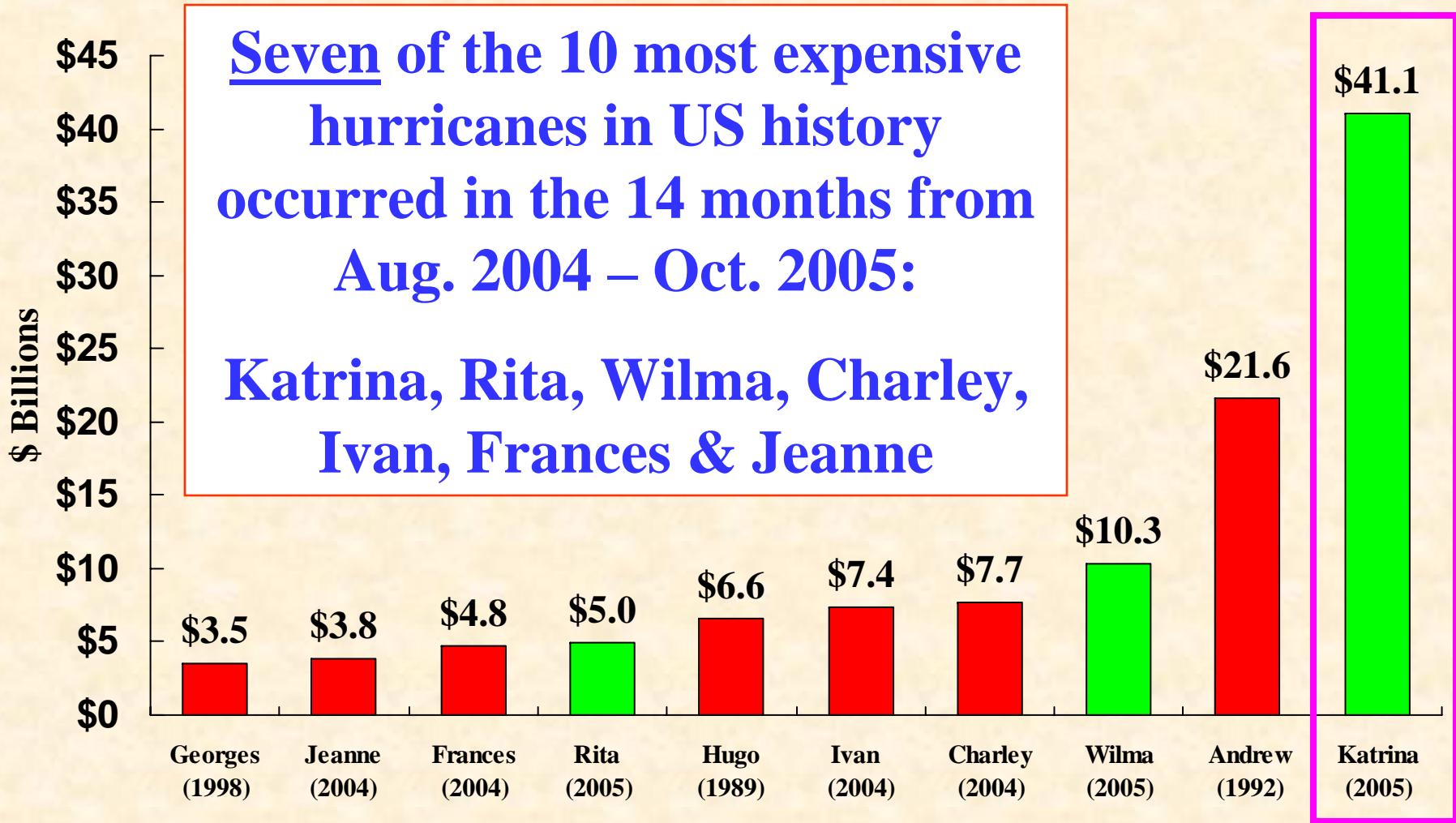
\*Excludes \$4B-\$6b offshore energy losses from Hurricanes Katrina & Rita.

**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. Non-prop/BI losses = \$12.2B.

Source: Property Claims Service/ISO; Insurance Information Institute

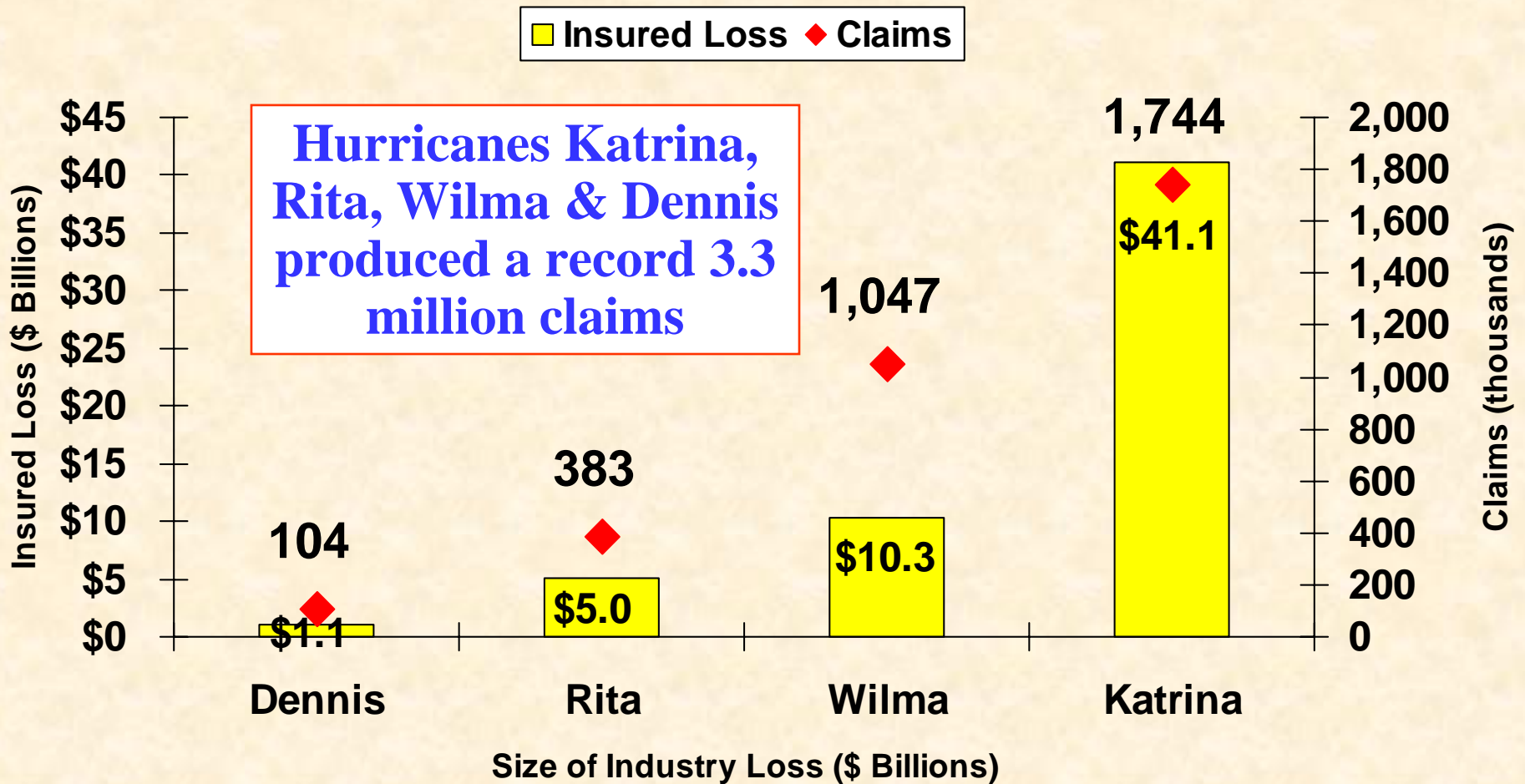


# Top 10 Most Costly Hurricanes in US History, (Insured Losses, \$2005)





# Insured Loss & Claim Count for Major Storms of 2005\*



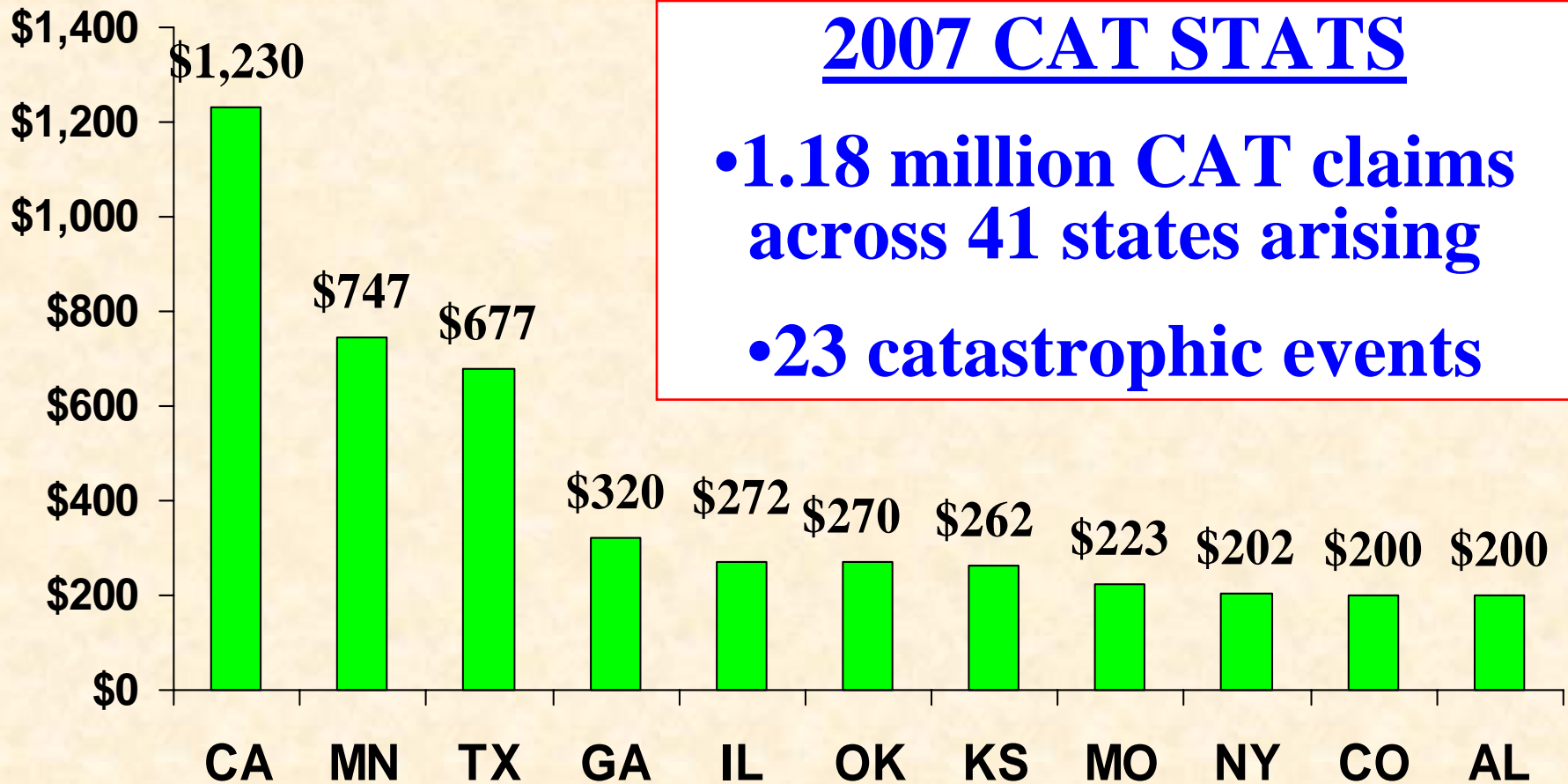
\*Property and business interruption losses only. Excludes offshore energy & marine losses.

Source: ISO/PCS as of June 8, 2006; Insurance Information Institute.



# States With Largest Insured Catastrophe Losses in 2007

\$ Millions





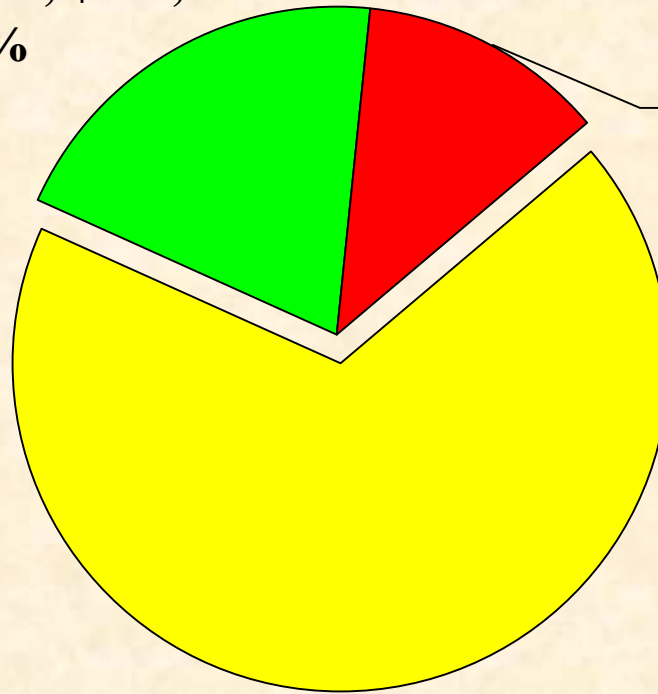
# *Distribution of 2007 US CAT*

## *Losses, by Type and Insured Loss*

**\$ Billions**

**Commercial, \$1.3 ,  
20%**

**Vehicle, \$0.8 , 12%**



**Personal, \$4.4 ,  
68%**

**Personal (home, condo, rental, contents etc.) accounted for 68% of all US insured CAT losses paid in 2007. CAT claim count was 1.18 million.**



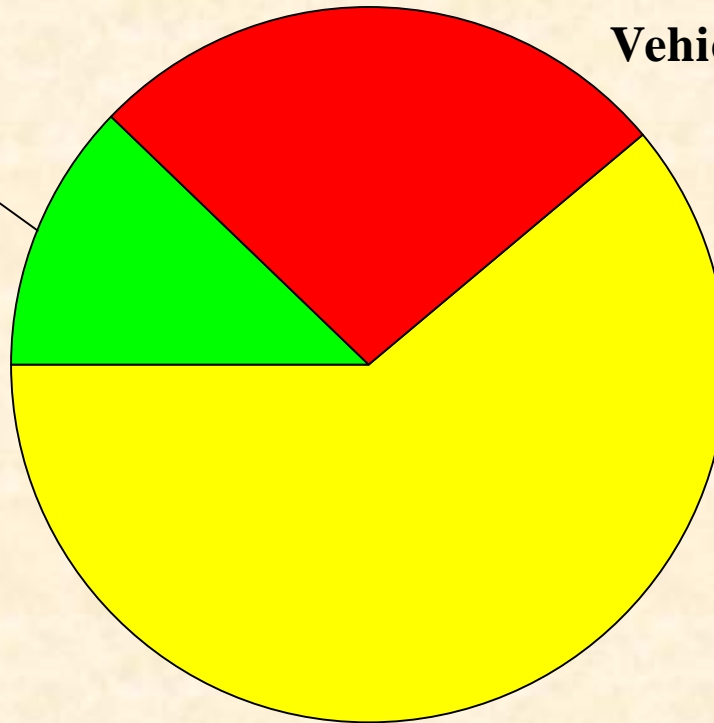
# *Distribution of 2007 US CAT*

## *Losses, by Type and Claim Count*

**Thousands of Claims**

**Commercial, 144 ,  
12%**

**Vehicle, 315 , 27%**



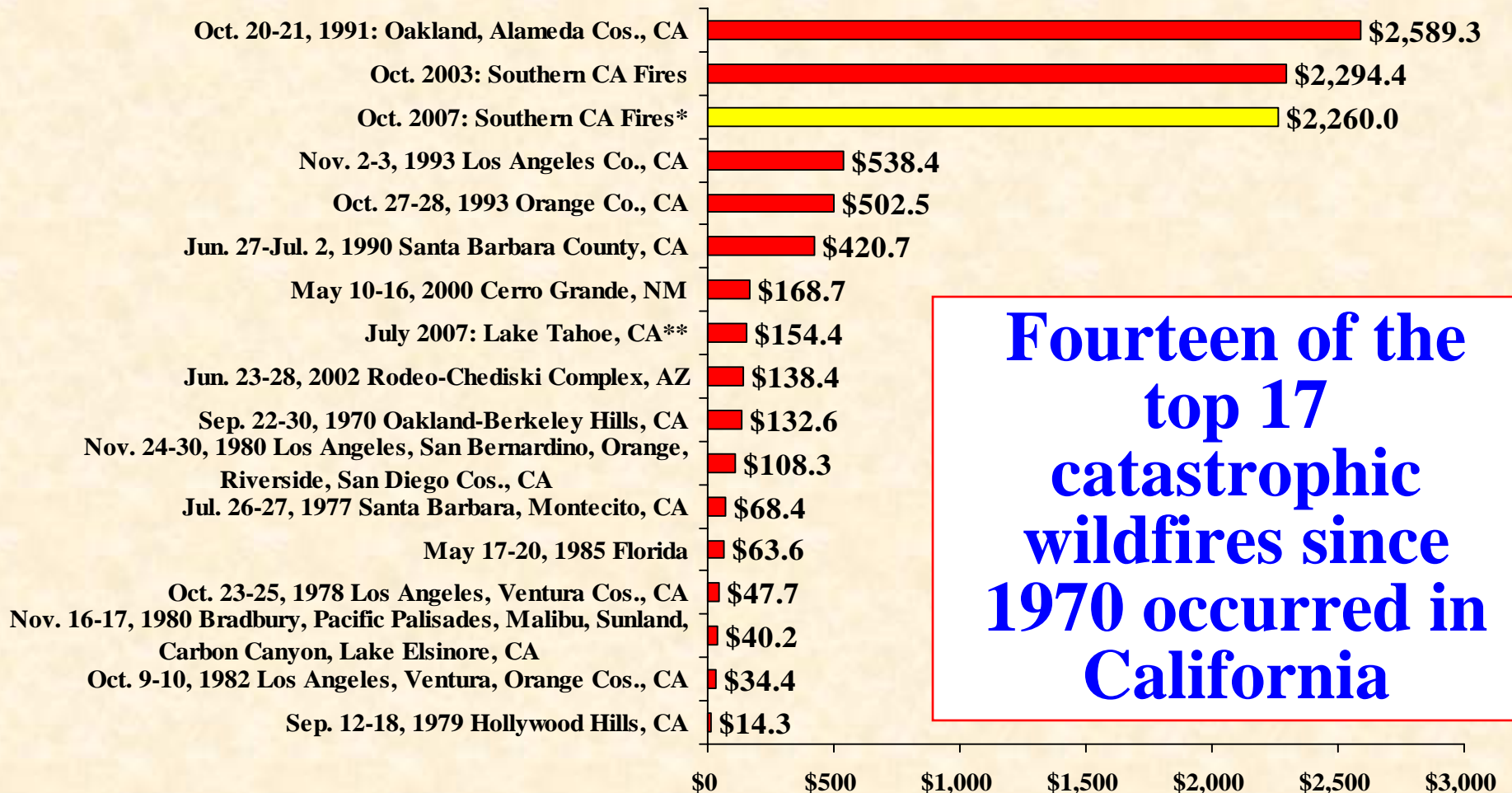
**Personal, 721 ,  
61%**

**Personal (home, condo, rental, contents etc.) accounted for 61% of all US insured CAT claims in 2007, but 68% of loss dollars paid.**



# Top Catastrophic Wildland Fires In The United States, 1970-2007

## Insured Losses (Millions 2007 \$)



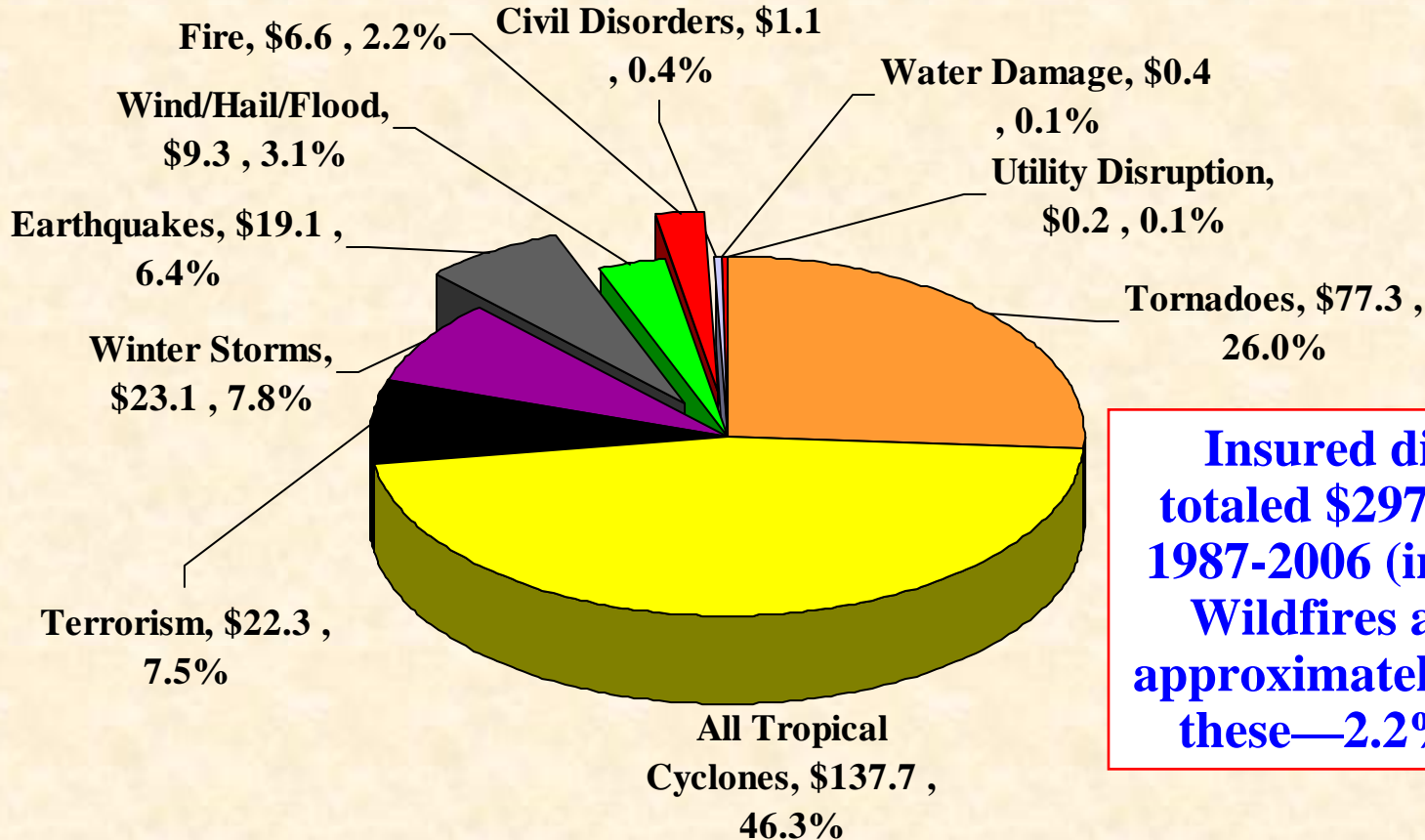
**Fourteen of the  
top 17  
catastrophic  
wildfires since  
1970 occurred in  
California**

\*Estimate from CA Insurance Dept., Jan. 10, 2008.

Source: ISO's Property Claim Services Unit; California Department of Insurance; Insurance Information Institute.



# Inflation-Adjusted U.S. Insured Catastrophe Losses By Cause of Loss, 1987-2006<sup>1</sup>



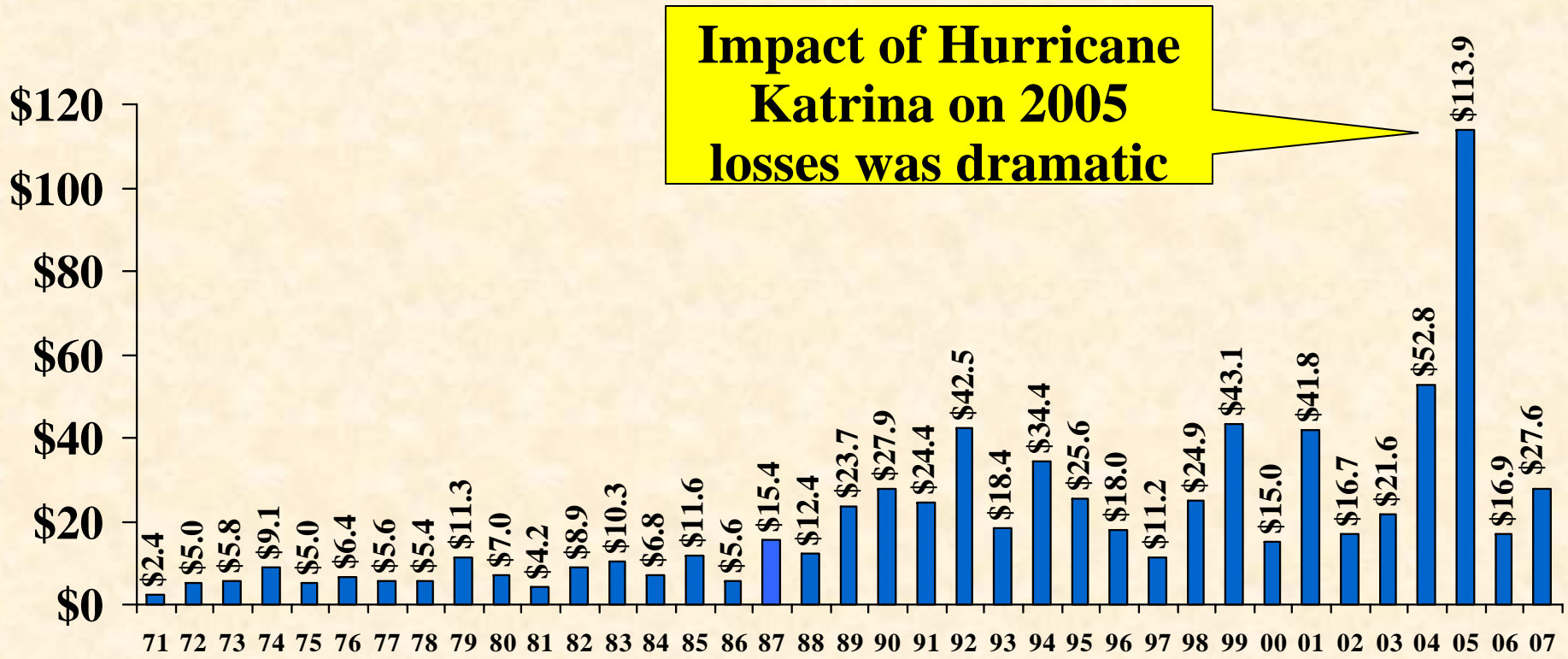
**Insured disaster losses totaled \$297.3 billion from 1987-2006 (in 2006 dollars). Wildfires accounted for approximately \$6.6 billion of these—2.2% of the total.**

<sup>1</sup> Catastrophes are all events causing direct insured losses to property of \$25 million or more in 2006 dollars. Catastrophe threshold changed from \$5 million to \$25 million beginning in 1997. Adjusted for inflation by the III.  
<sup>2</sup> Excludes snow. <sup>3</sup> Includes hurricanes and tropical storms. <sup>4</sup> Includes other geologic events such as volcanic eruptions and other earth movement. <sup>5</sup> Does not include flood damage covered by the federally administered National Flood Insurance Program. <sup>6</sup> Includes wildland fires.



# Global Insured Catastrophe Losses 1970-2007 (\$ 2007)

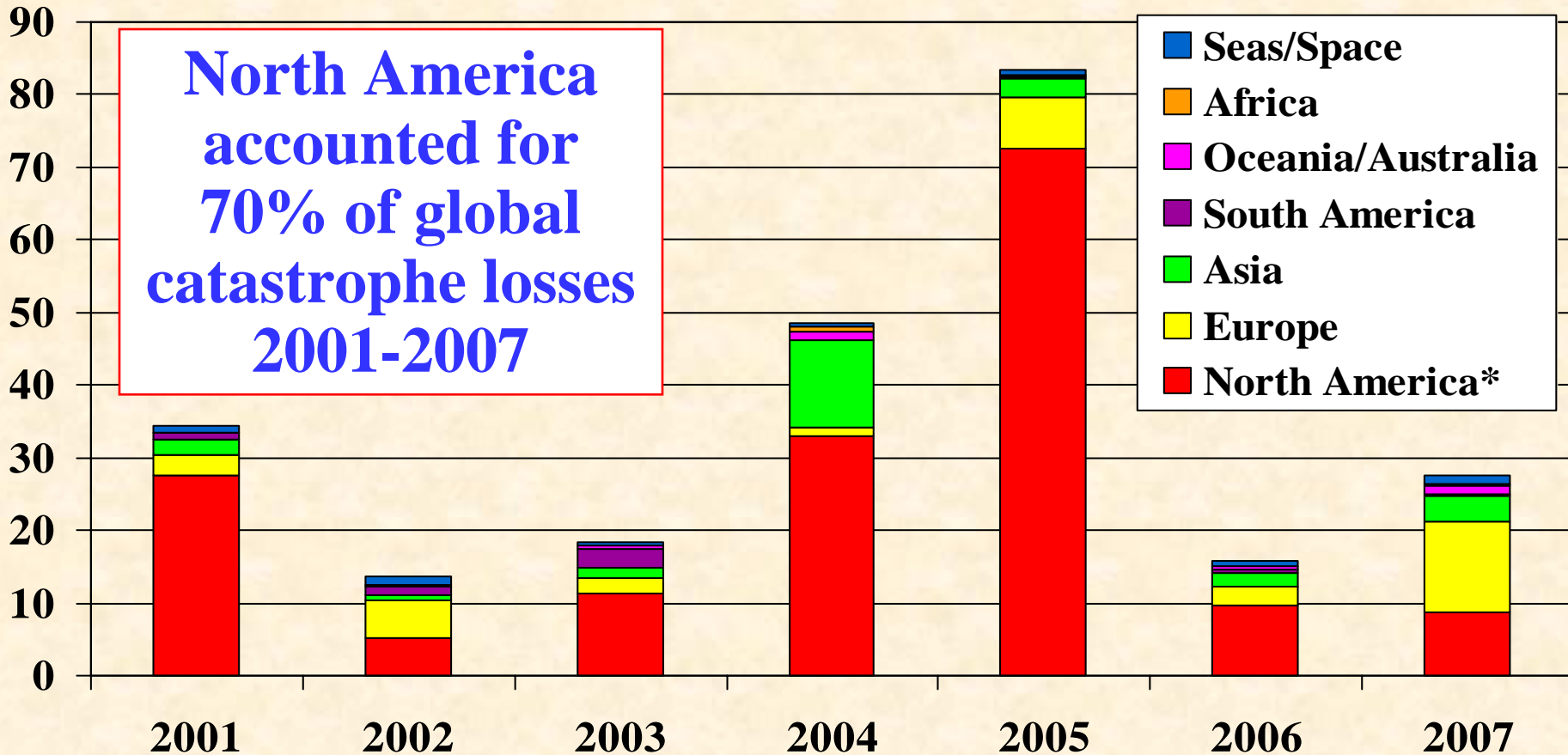
**\$ Billions**





# Global Insured Catastrophe Losses by Region, 2001-2007

**\$ Billions**



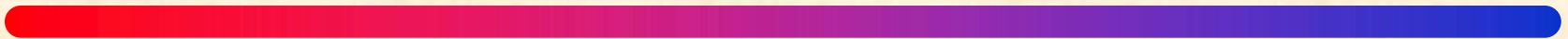
**North America  
accounted for  
70% of global  
catastrophe losses  
2001-2007**

- Seas/Space
- Africa
- Oceania/Australia
- South America
- Asia
- Europe
- North America\*

Notes: 2001-03 figures for N. America include US only. 2001 figure includes only property losses from 9/11.  
Source: Insurance Information Institute compiled from Swiss Re *sigma* issues.

# The 2008 Hurricane Season:

*Preview to Disaster?*





# *Outlook for 2008 Hurricane*

## *Season: 25% Worse Than Average*

	Average*	2005	2008F
Named Storms	9.6	28	13
Named Storm Days	49.1	115.5	60
Hurricanes	5.9	14	7
Hurricane Days	24.5	47.5	30
Intense Hurricanes	2.3	7	3
Intense Hurricane Days	5	7	6
Accumulated Cyclone Energy	96.2	NA	115
Net Tropical Cyclone Activity	100%	275%	<b>125%</b>

\*Average over the period 1950-2000.

Source: Philip Klotzbach and Dr. William Gray, Colorado State University, December 7, 2007.



# *Landfall Probabilities for 2008 Hurricane Season: Above Average*

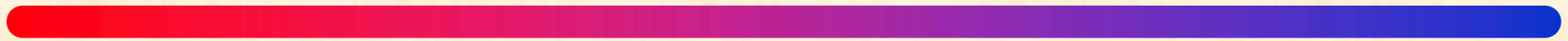
	Average*	2008F
Entire US East & Gulf Coasts	52%	60%
US East Coast Including Florida Peninsula	31%	37%
Gulf Coast from Florida Panhandle to Brownsville	30%	36%
Caribbean	NA	Above Average

\*Average over the past century.

Source: Philip Klotzbach and Dr. William Gray, Colorado State University, December 7, 2007.

# ACTS OF GOD & THE BOTTOM ( & TOP ) LINE

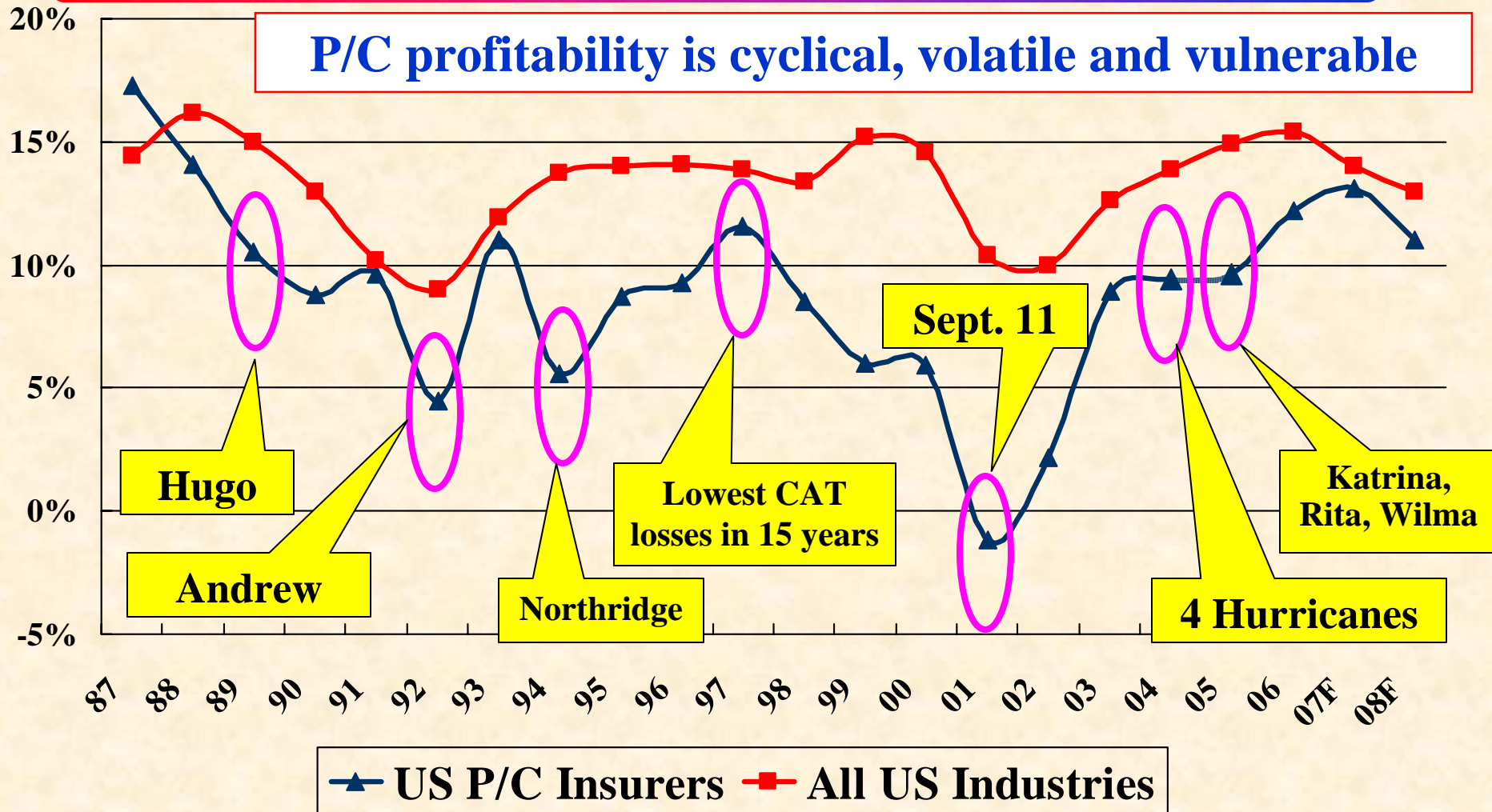
*Catastrophic Loss & Insurer  
Financial Performance*





# ROE: P/C vs. All Industries

## 1987–2008E

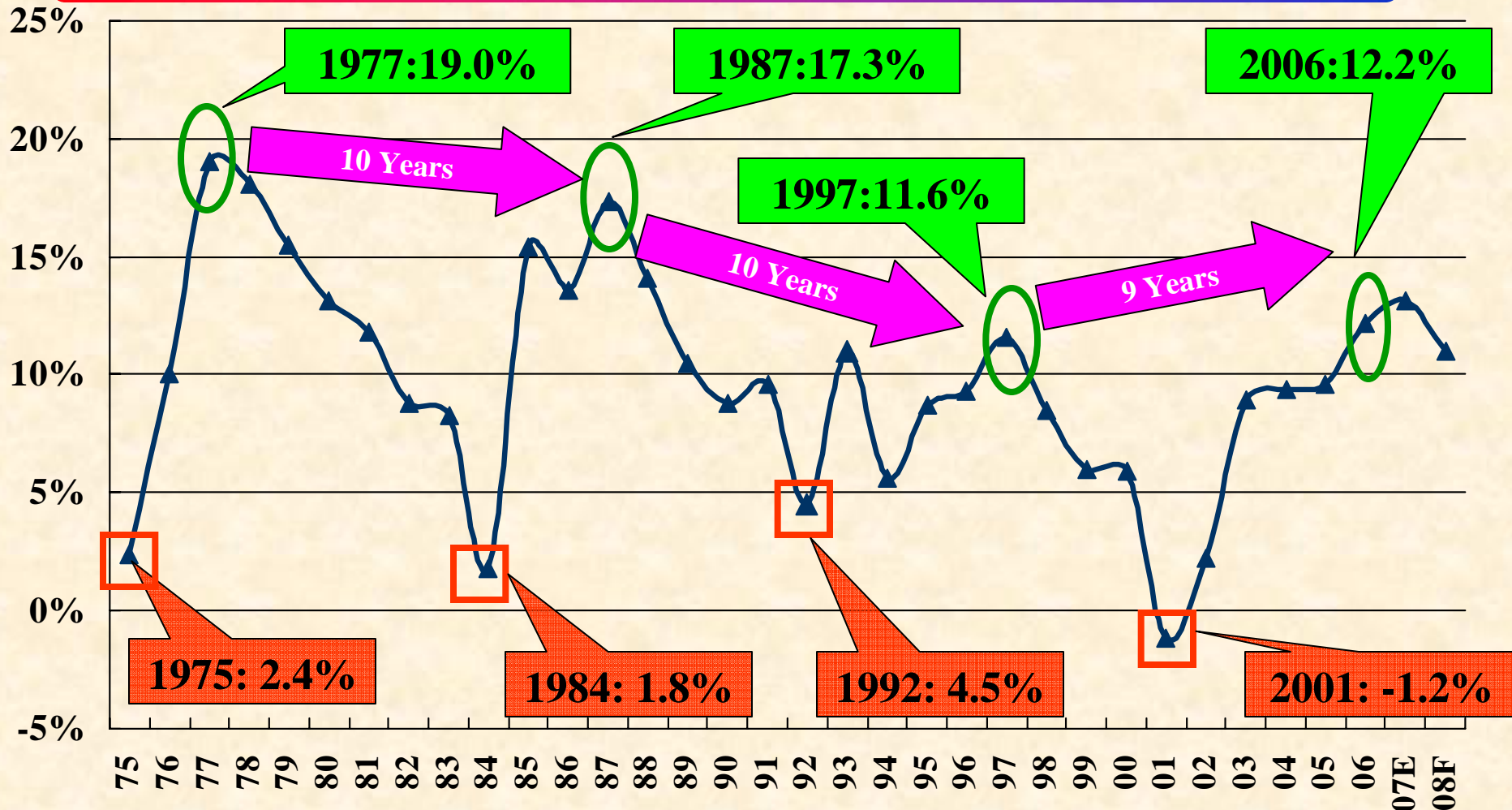


\*2007 is actual 9-month ROAS of 13.1%. 2008 P/C insurer ROE is I.I.I. estimate.

Source: Insurance Information Institute; *Fortune*



# Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2008F\*



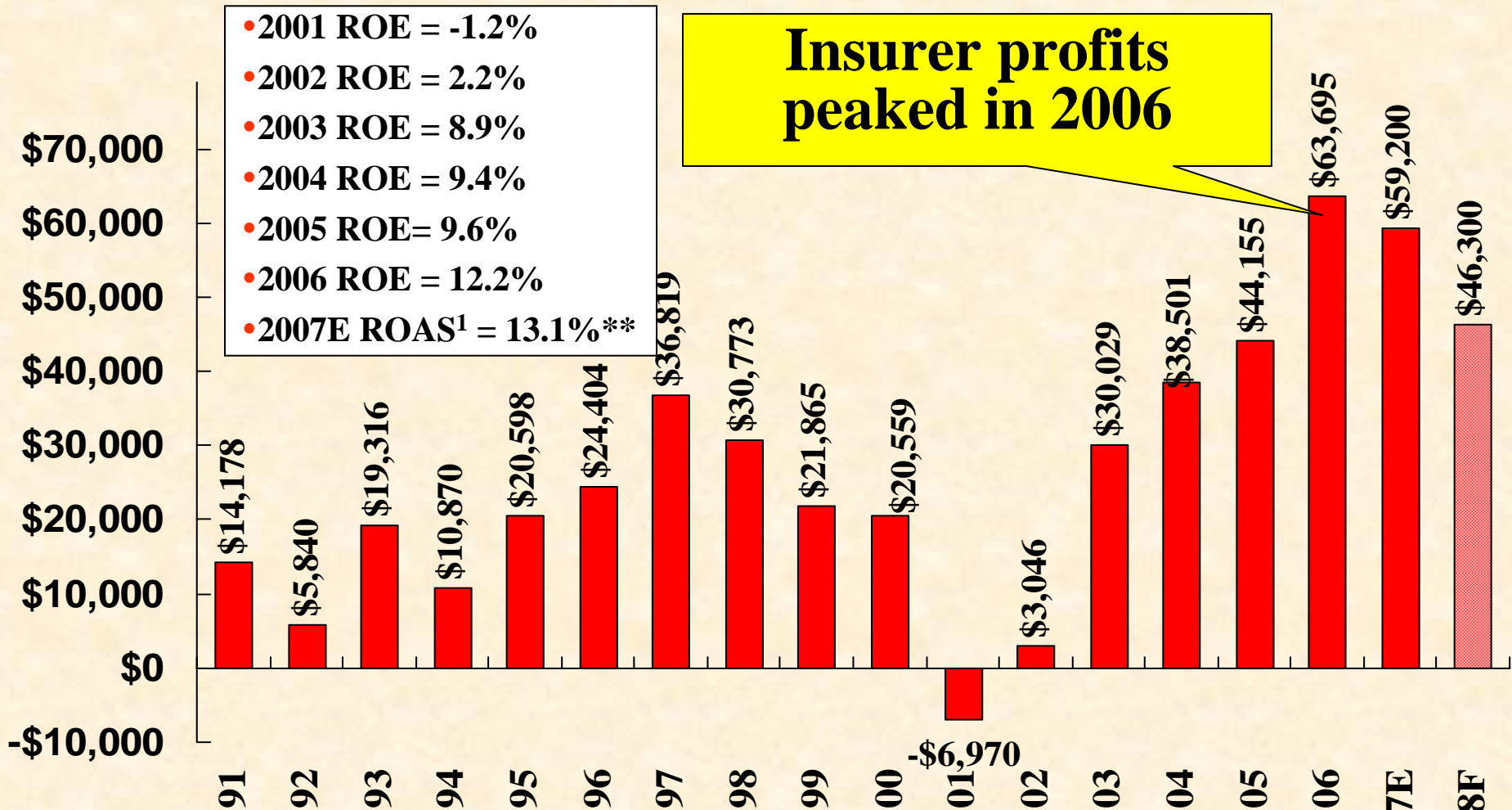
\*GAAP ROE for all years except 2007 which is actual 9-month ROAS of 13.1%. 2008 P/C insurer ROE is I.I.I. estimate.

Source: Insurance Information Institute; Fortune



# *P/C Net Income After Taxes*

## *1991-2008F (\$ Millions)\**

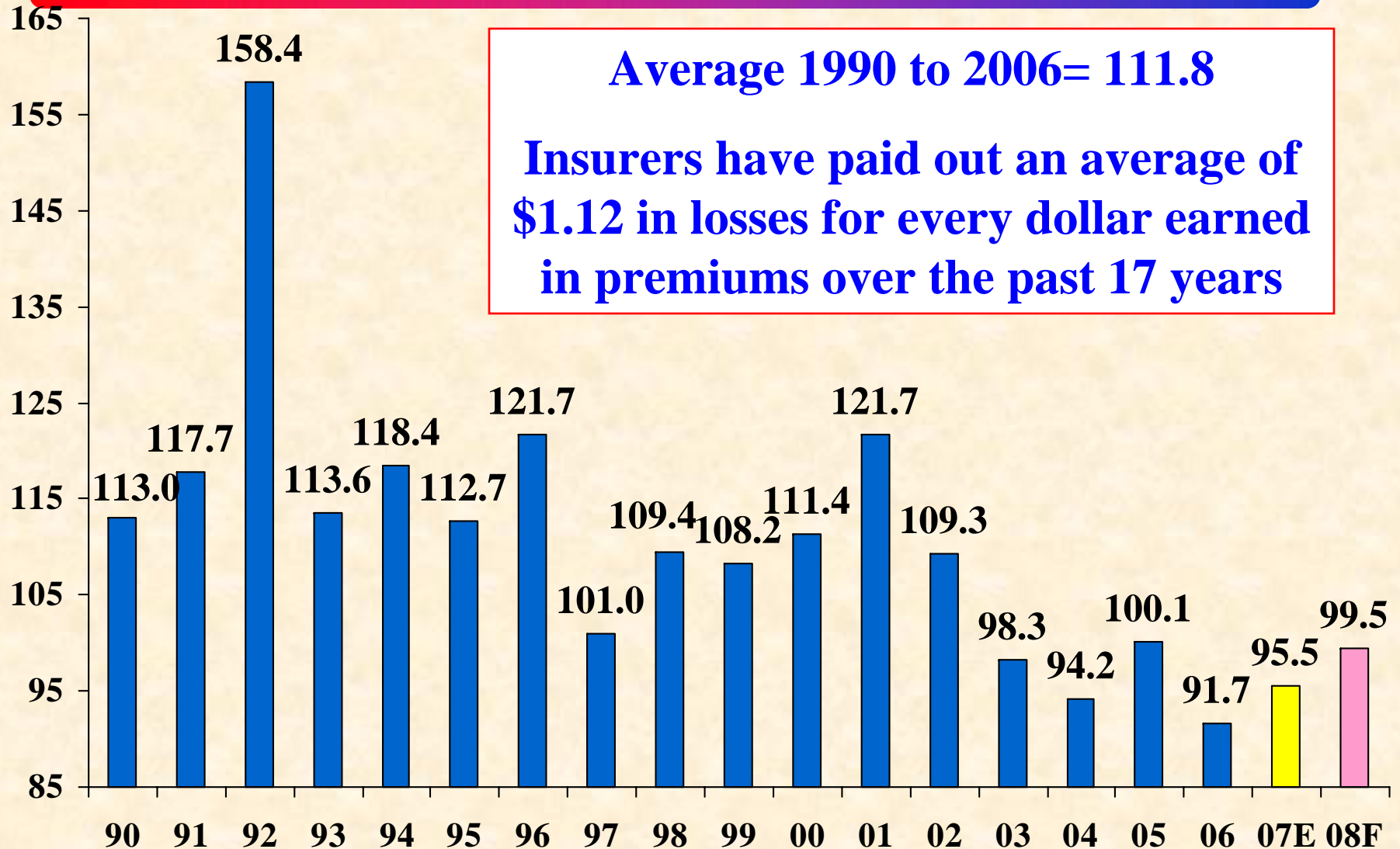


\*ROE figures are GAAP; <sup>1</sup>Return on avg. surplus. \*\*Return on Average Surplus; Actual 9-month 2007 result.

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



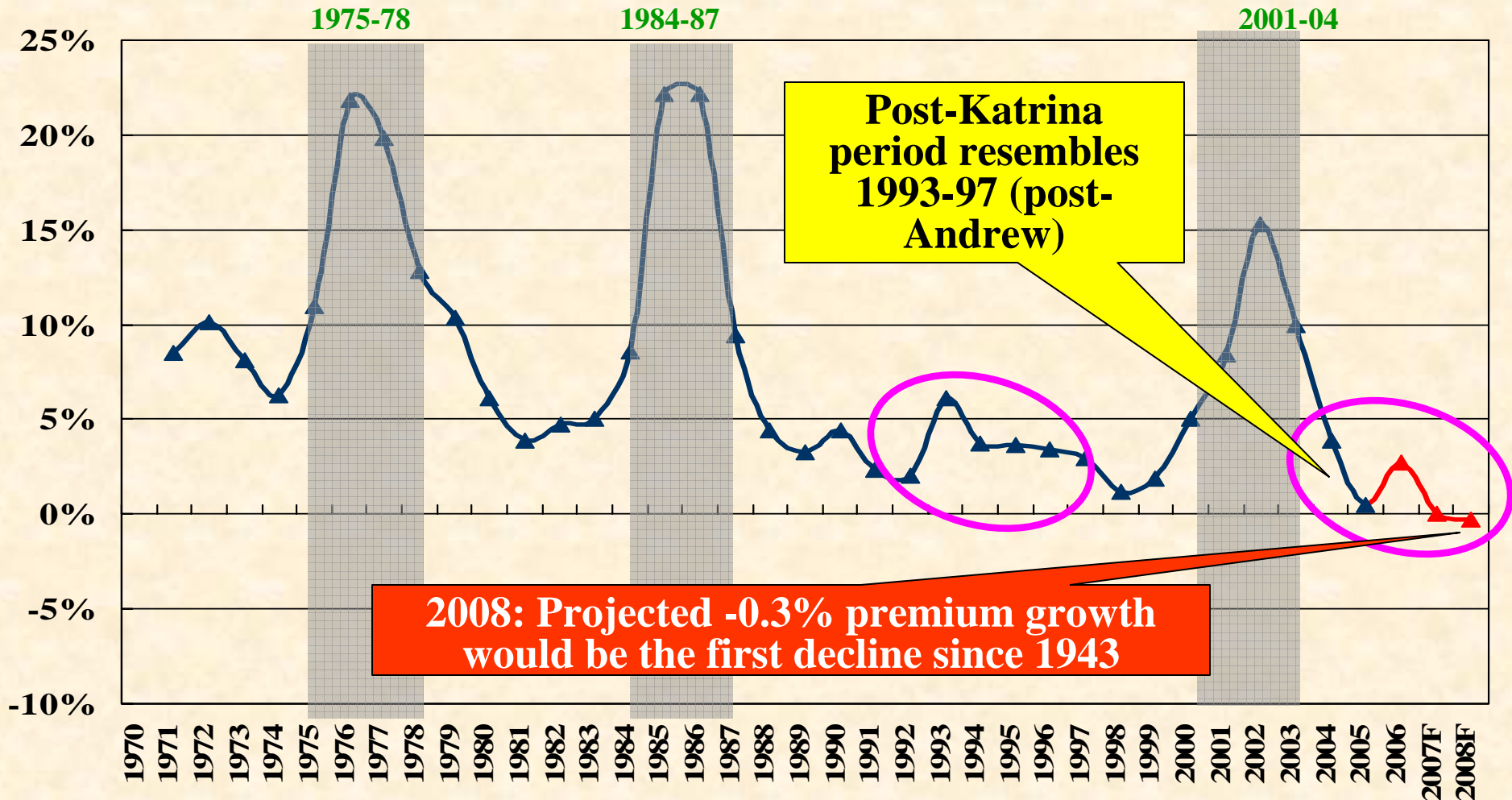
# Homeowners Insurance Combined Ratio



Sources: A.M. Best (historical and forecasts)



# Strength of Recent Hard Markets by NWP Growth\*

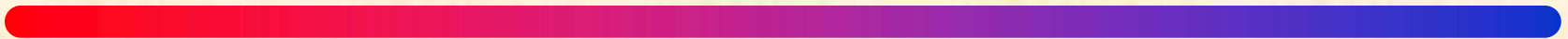


Note: Shaded areas denote hard market periods.  
Source: A.M. Best, Insurance Information Institute

\*2007 figure is actual 9-month figure.

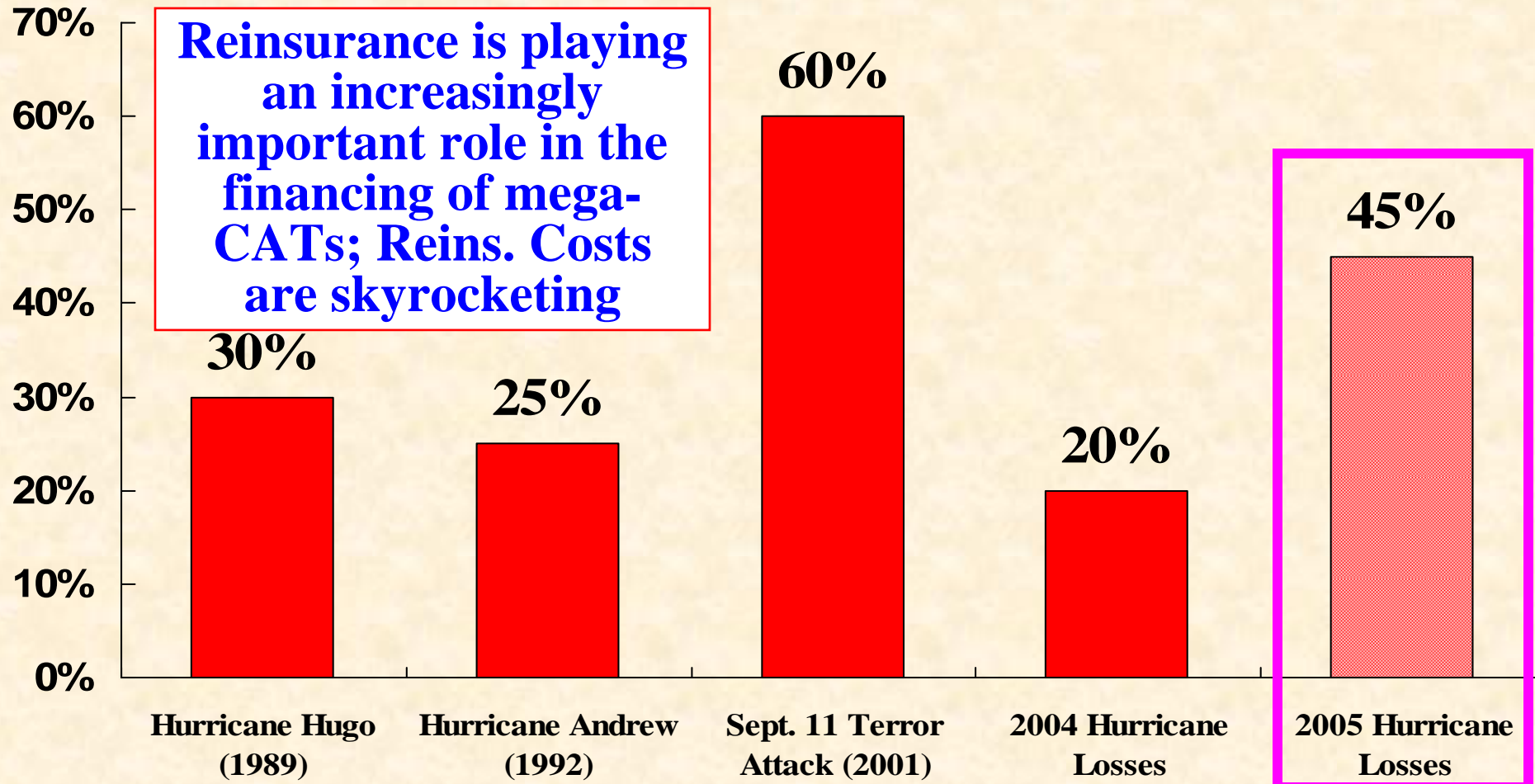
# REINSURANCE MARKETS

*It Takes a (Global) Village to  
Manage Large-Scale  
Hurricane Losses*





# Share of Losses Paid by Reinsurers, by Disaster\*



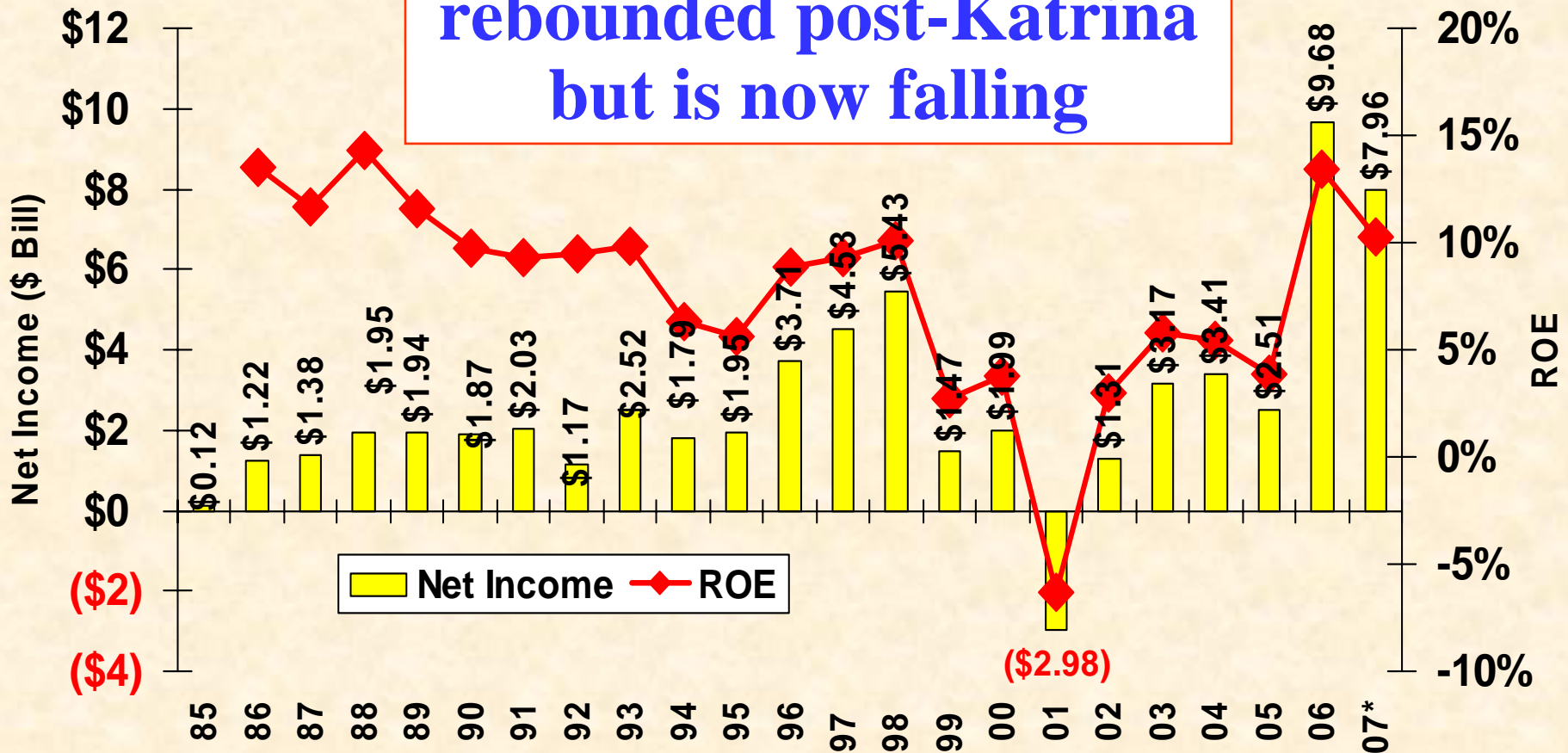
\*Excludes losses paid by the Florida Hurricane Catastrophe Fund, a FL-only windstorm reinsurer, which was established in 1994 *after* Hurricane Andrew. FHCF payments to insurers are estimated at \$3.85 billion for 2004 and \$4.5 billion for 2005.

Sources: Wharton Risk Center, Disaster Insurance Project; Insurance Information Institute.



# US Reinsurer Net Income & ROE, 1985-2007\*

Reinsurer profitability  
rebounded post-Katrina  
but is now falling



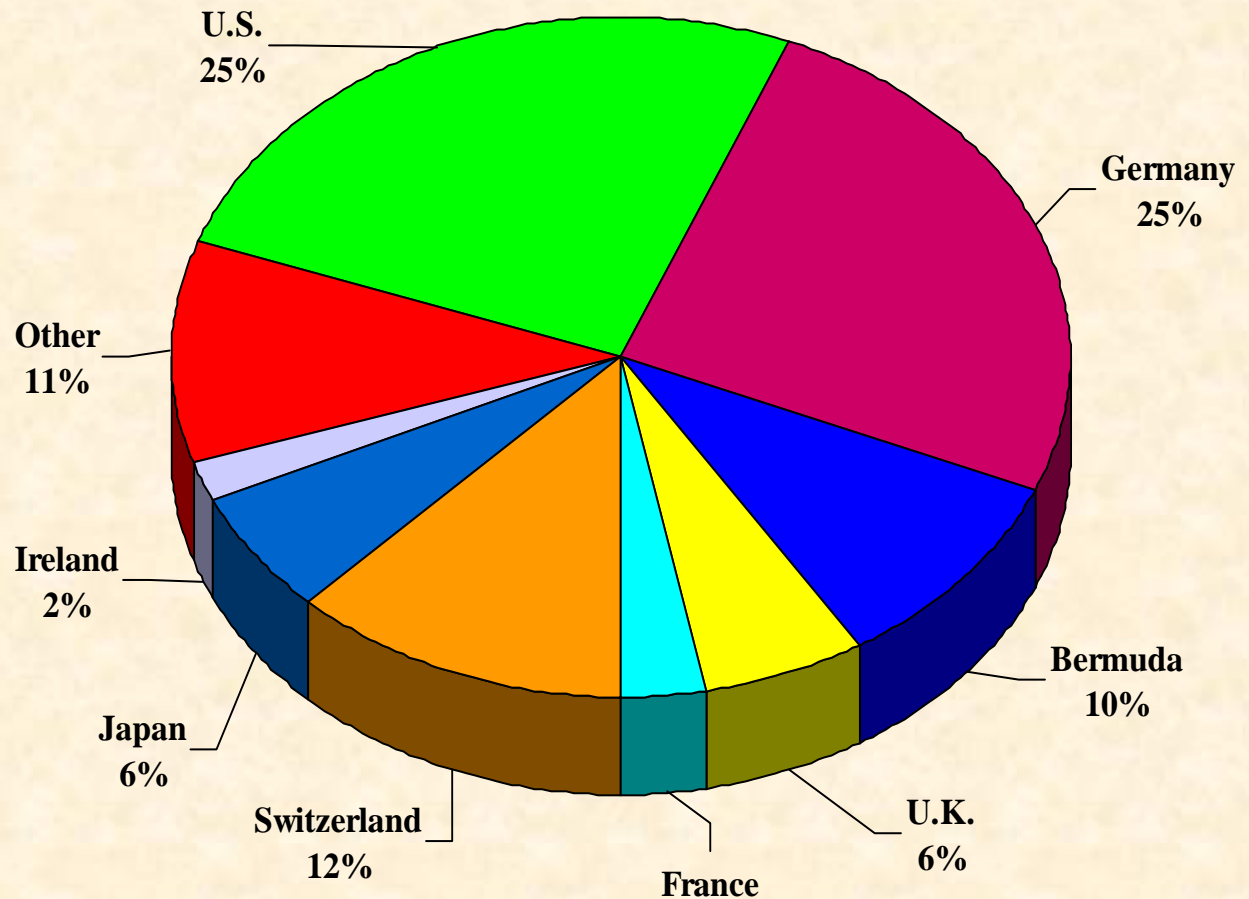


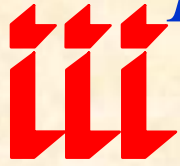
# Regional Distribution of Reinsurers by NWP, 2006

**Eight countries account for 89 percent of global reinsurance volume.**

International reinsurers from Germany, Switzerland and France account for 40 percent of global reinsurance volume.

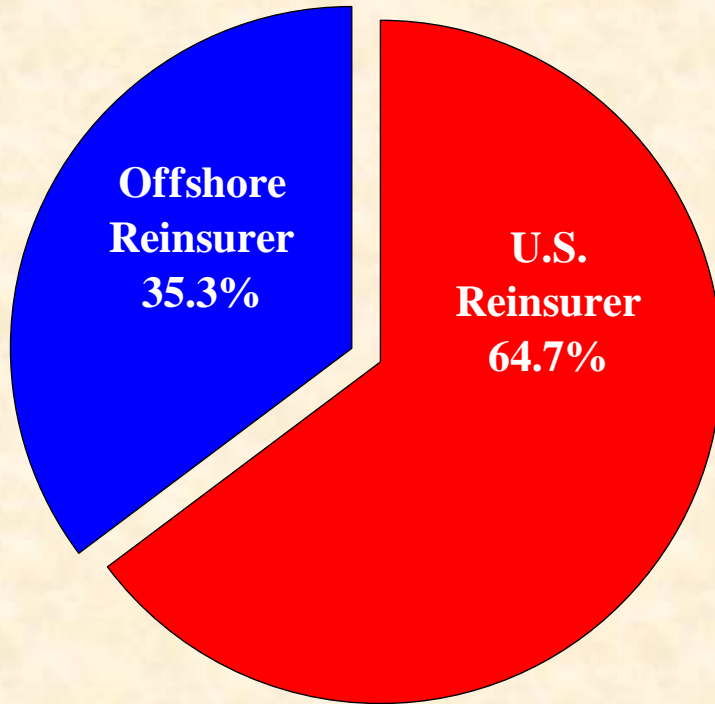
Bermuda is a growing market, with a 10 percent share. Lloyd's and London-based reinsurers account for 6 percent of the world market.



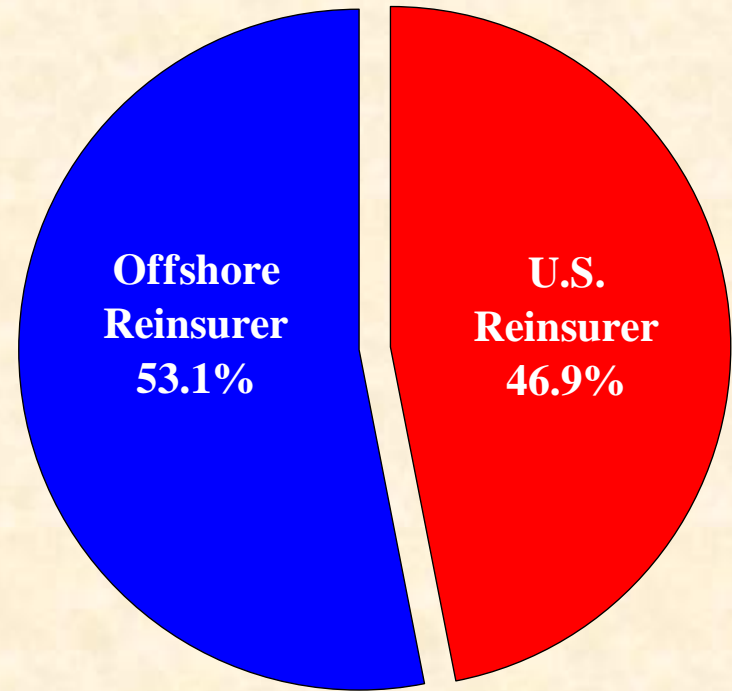


# Reinsurer Market Share Comparison: 1990 vs. 2006

**1990**



**2006**



**U.S. Reinsurer market share fell precipitously between 1990 and 2006**

# FINANCIAL STRENGTH & RATINGS

**Industry Has Weathered  
the Storms Well, But Cycle**

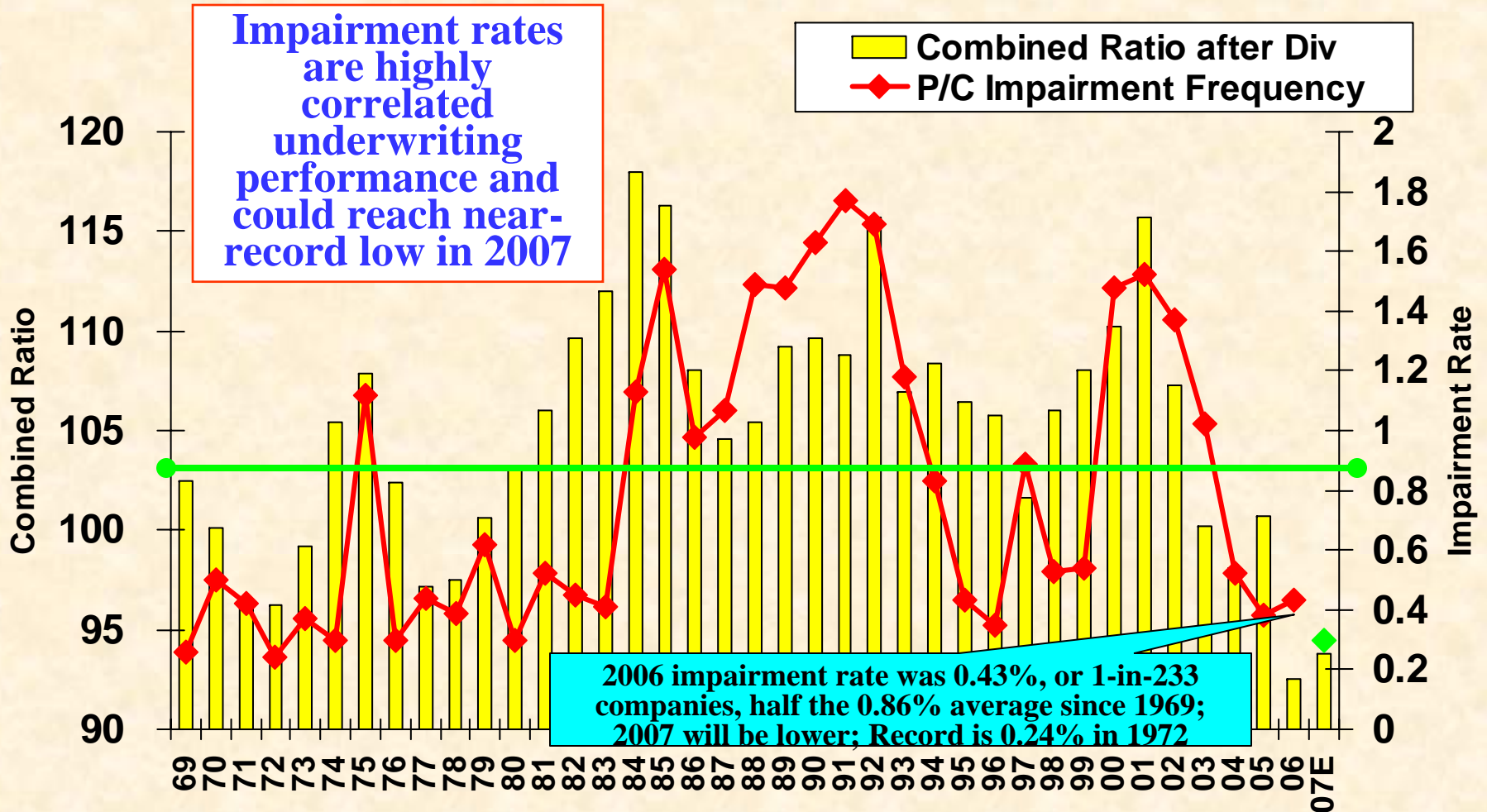


**May Takes Its Toll**





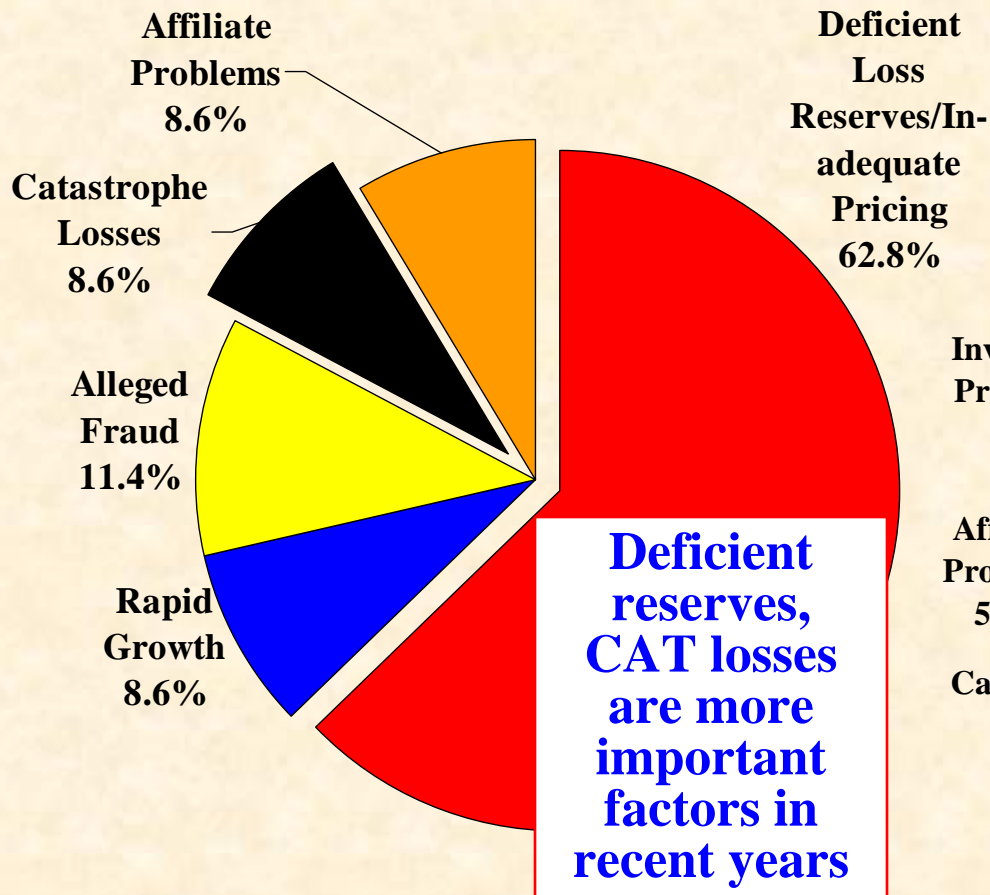
# *P/C Insurer Impairment Frequency vs. Combined Ratio, 1969-2007E*



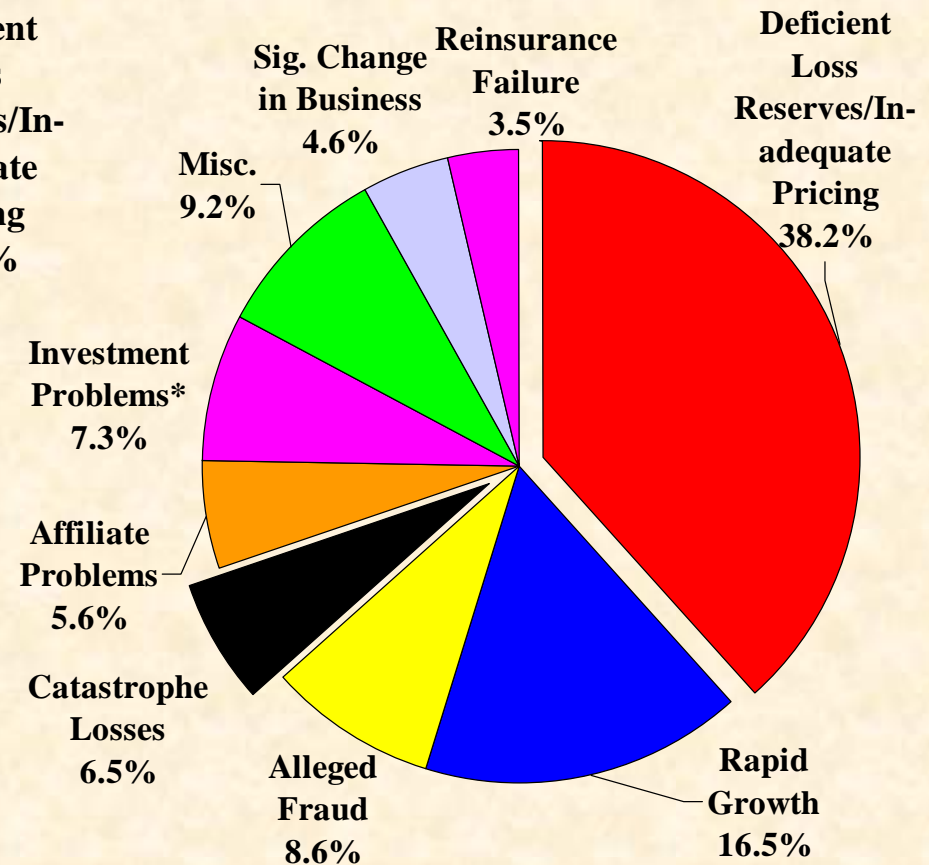


# Reasons for US P/C Insurer Impairments, 1969-2005

**2003-2005**



**1969-2005**

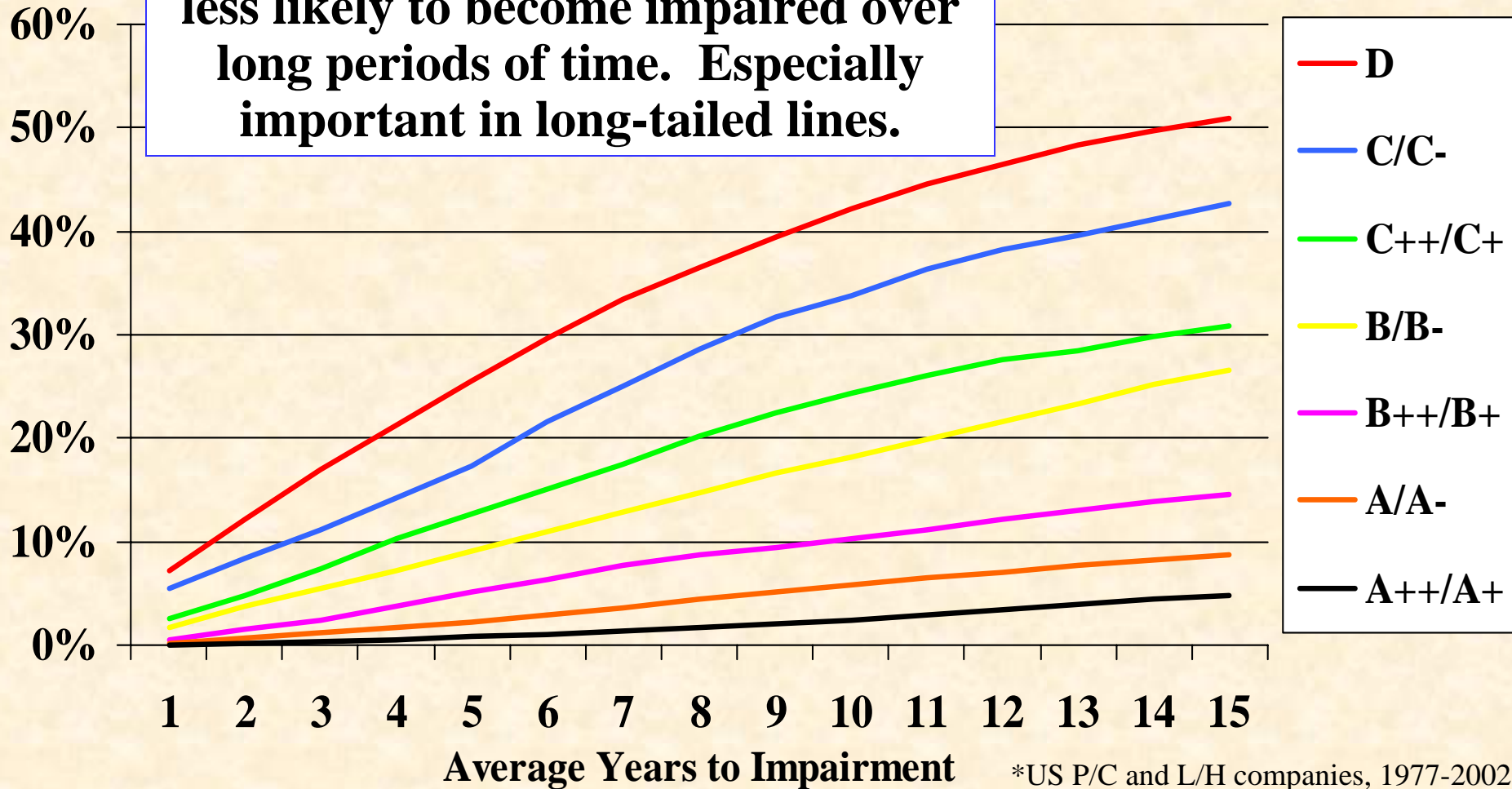


\*Includes overstatement of assets.



# Cumulative Average Impairment Rates by Best Financial Strength Rating\*

**Insurers with strong ratings are far less likely to become impaired over long periods of time. Especially important in long-tailed lines.**



\*US P/C and L/H companies, 1977-2002

***FLORIDA HURRICANES  
& INSURER  
PROFITABILITY:***

**Selling Home Insurance in  
Florida is Challenging**

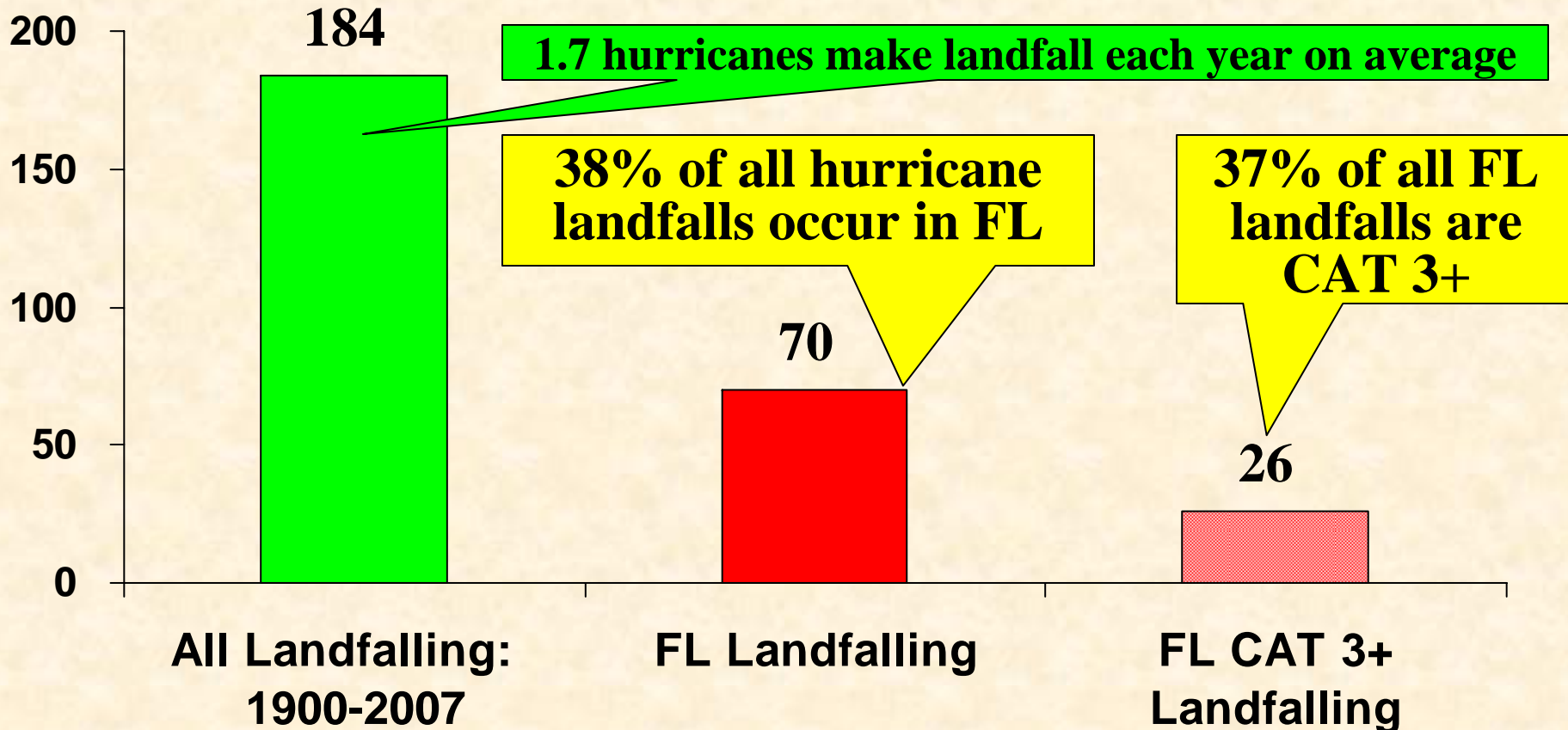




# Landfalling Hurricanes: 1900-2007

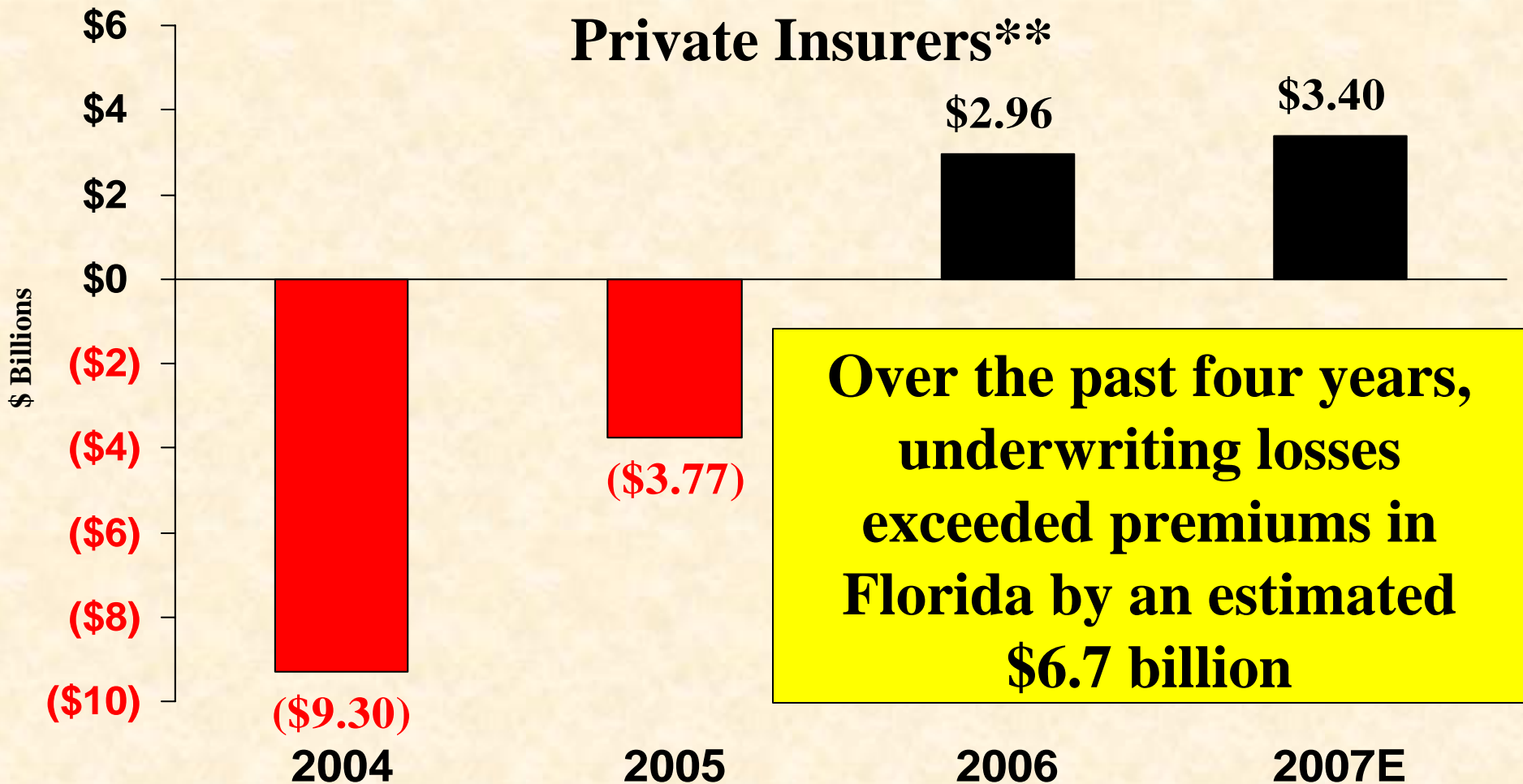
## FL Landfalls are Common

**A hurricane strikes FL every other year on average—CAT 3+ every 4 years**





# *Underwriting Gain (Loss) in Florida Homeowners Insurance, 2004 - 2007E\**



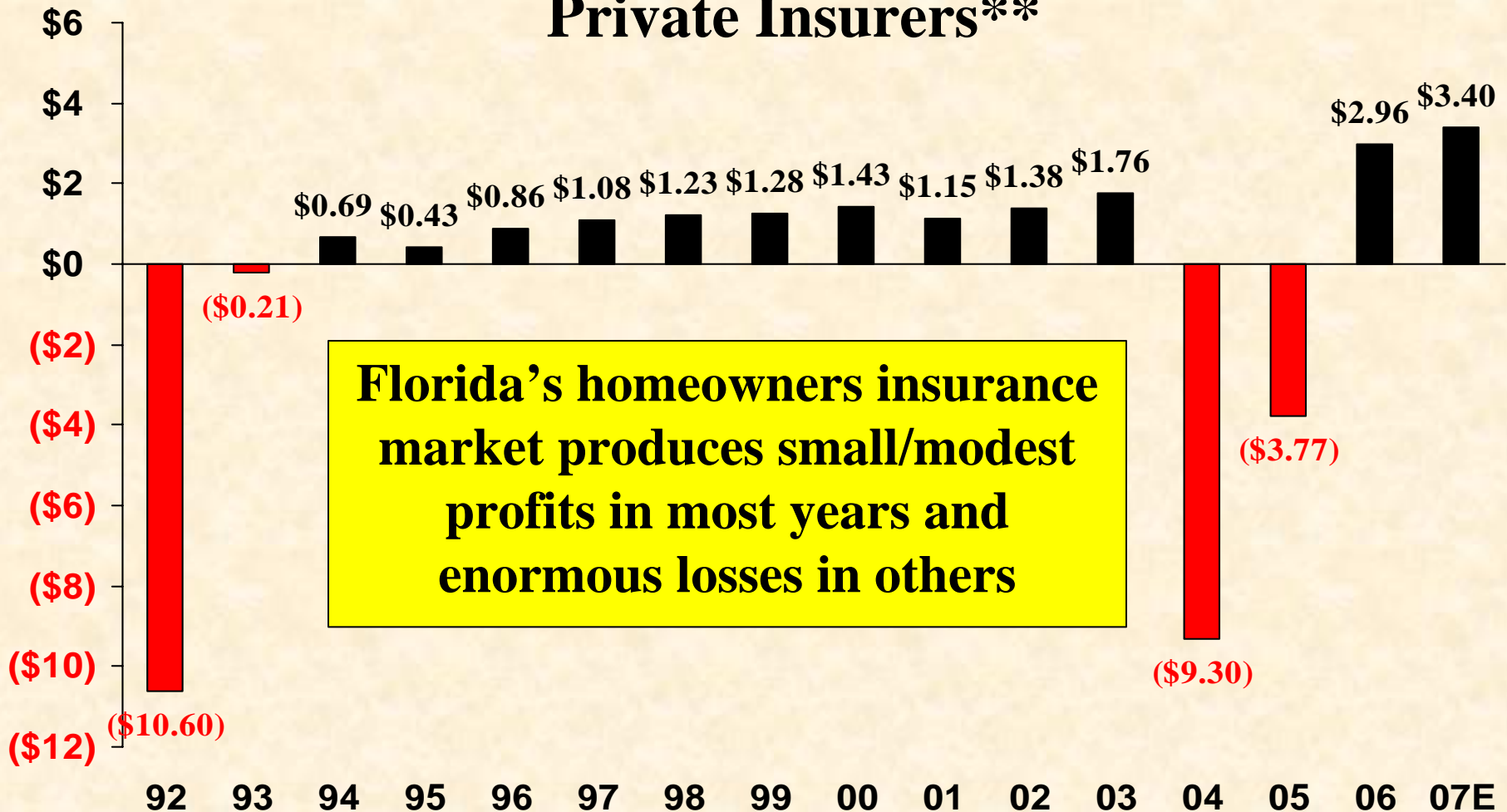
\*2007 estimate by Insurance Information Inst. based on historical loss, expense and premium data for FL.

\*\*Does not include Citizens Property Insurance Corporation results.



# Underwriting Gain (Loss) in Florida Homeowners Insurance, 1992-2007E\*

## Private Insurers\*\*



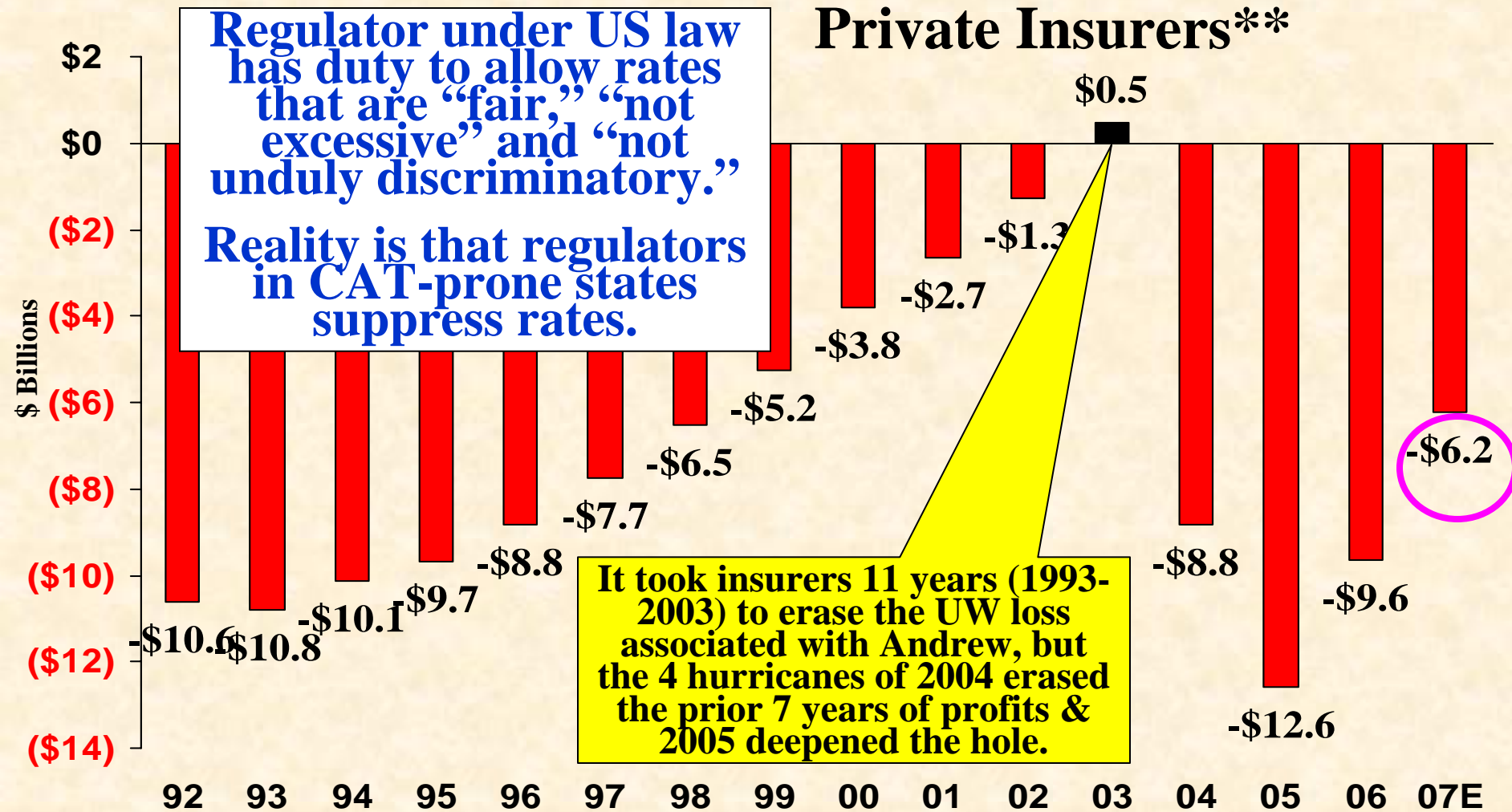
Florida's homeowners insurance market produces small/modest profits in most years and enormous losses in others

\*2007 estimate by Insurance Information Inst. based on historical loss, expense and premium data for FL.

\*\*Does not include Citizens Property Insurance Corporation results.



# Cumulative Underwriting Gain (Loss) in Florida Homeowners Insurance, 1992-2007E\*

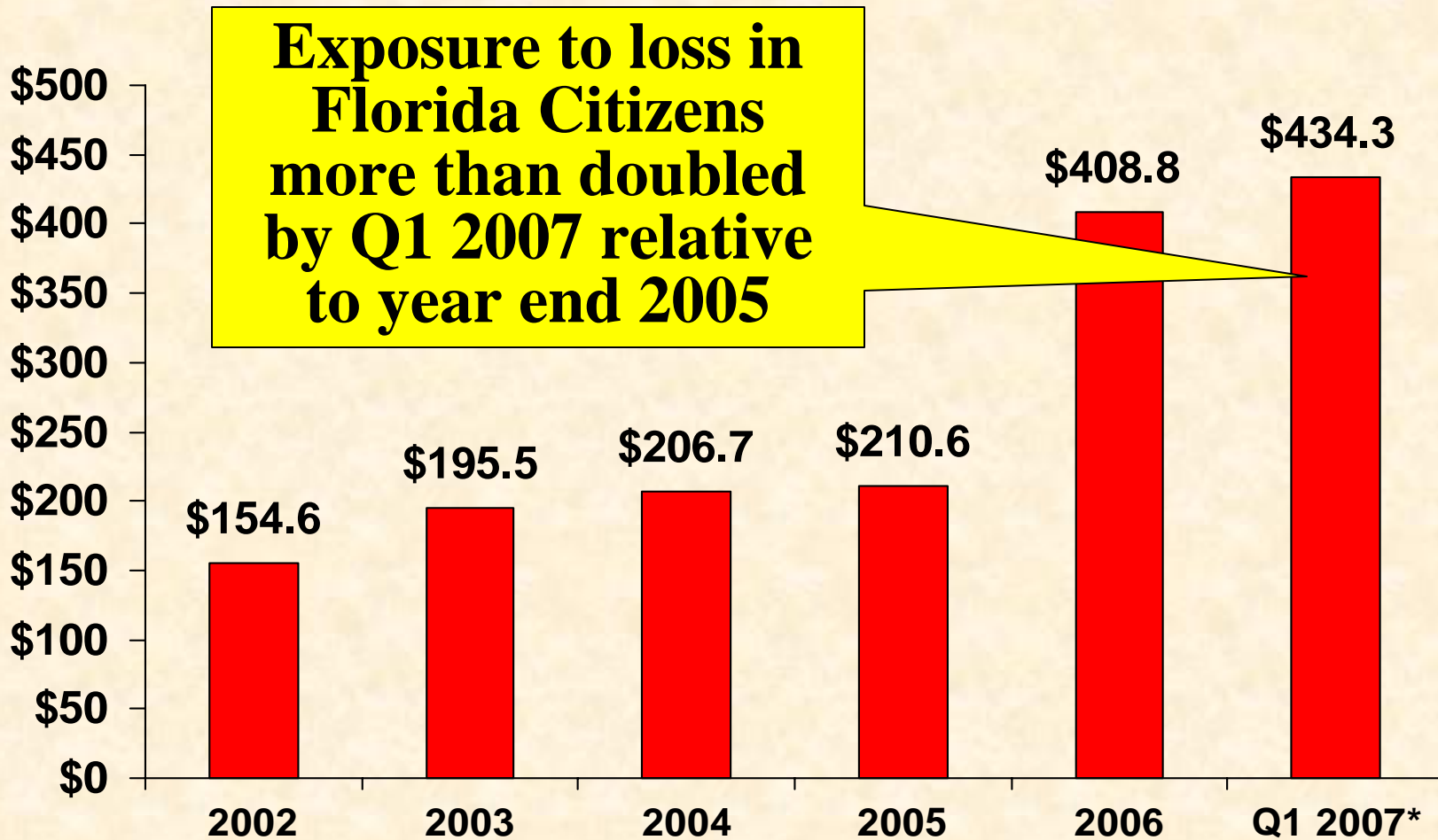


\*2007 estimate by Insurance Information Inst. based on historical loss, expense and premium data for FL.

\*\*Does not include Citizens Property Insurance Corporation results.

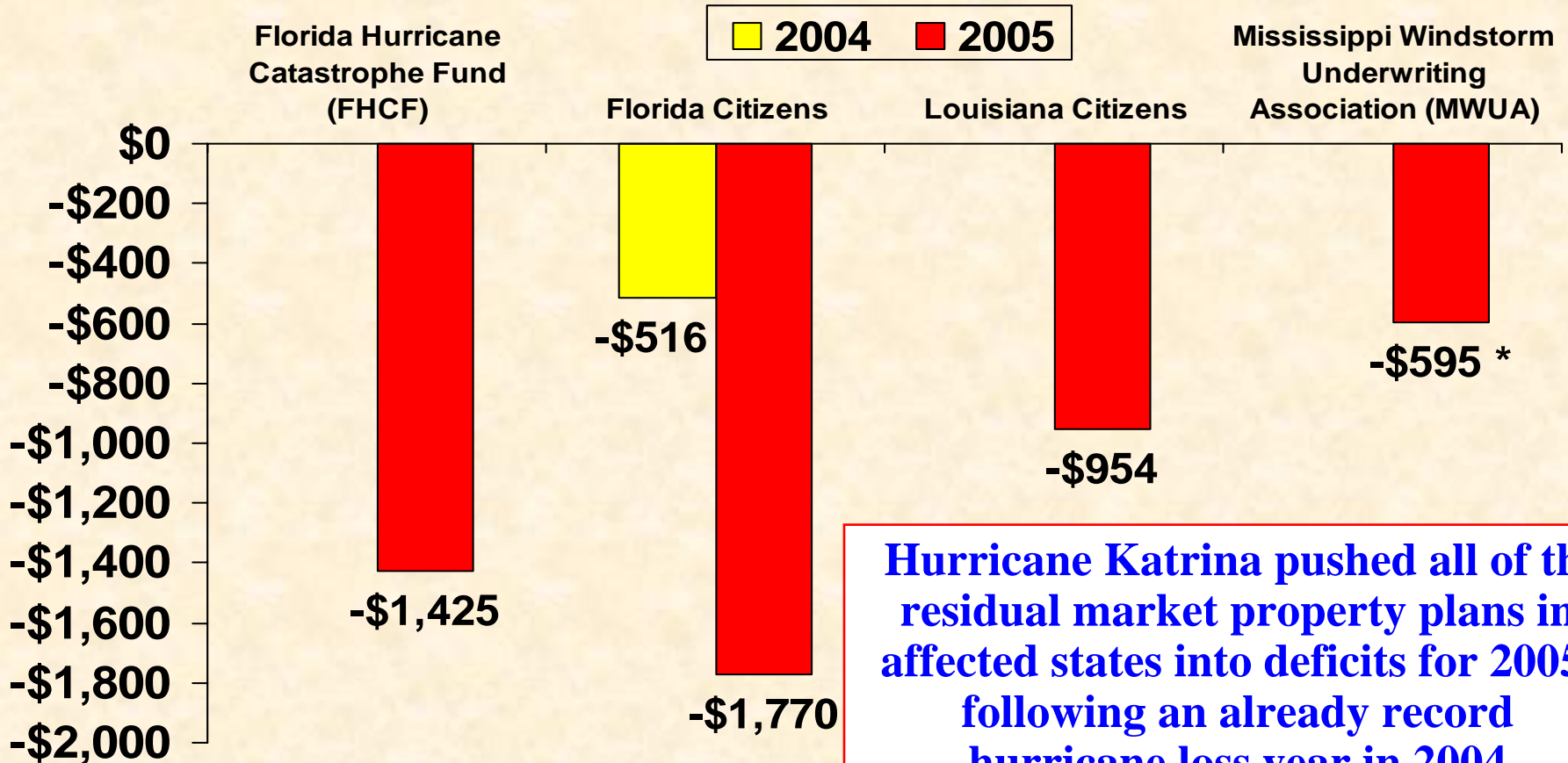


# *Florida Citizens Exposure to Loss (Billions of Dollars)*





# Major Residual Market Plan Estimated Deficits 2004/2005 (Millions of Dollars)



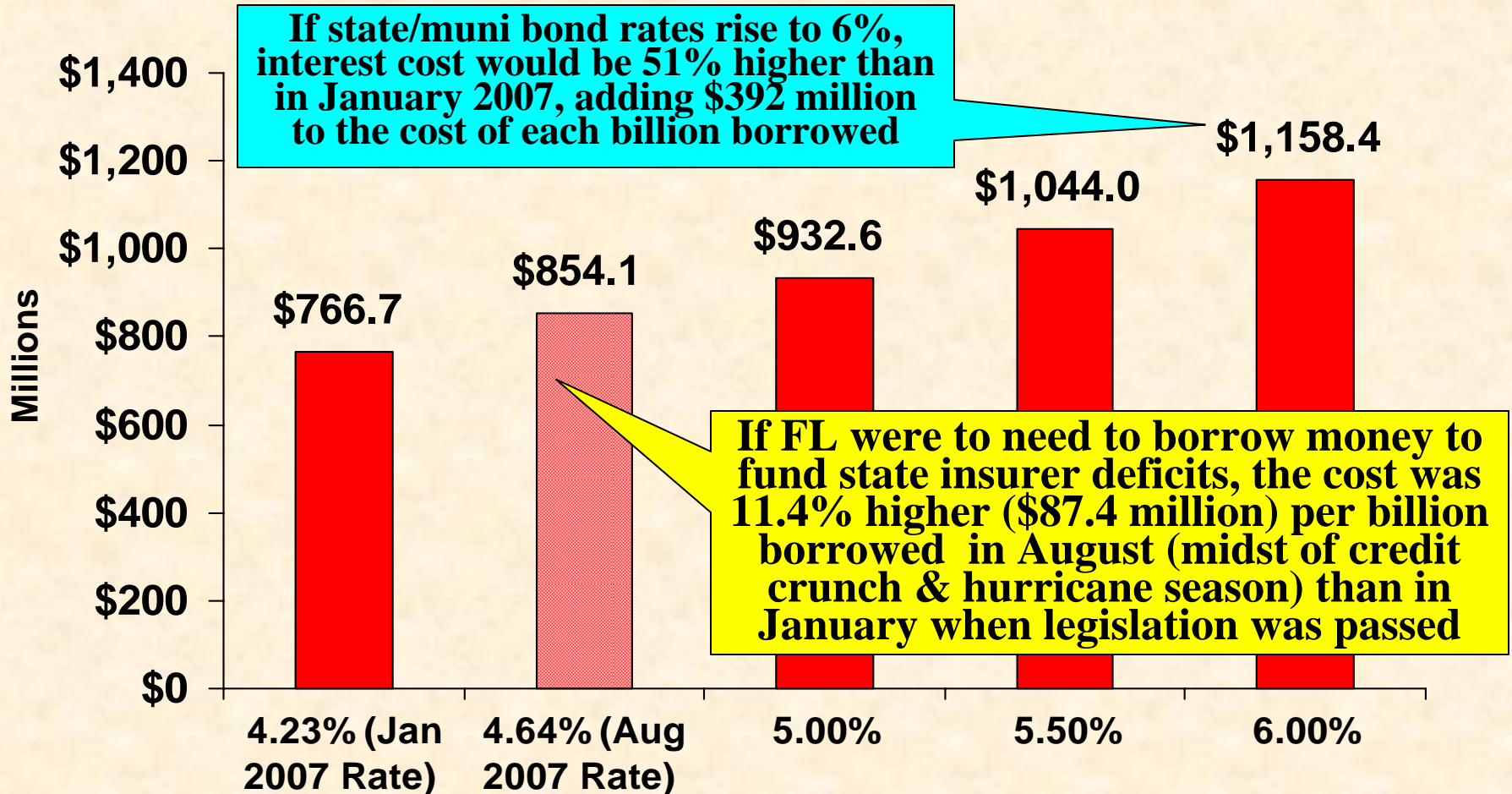
Hurricane Katrina pushed all of the residual market property plans in affected states into deficits for 2005, following an already record hurricane loss year in 2004

\* MWUA est. deficit for 2005 comprises \$545m in assessments plus \$50m in Federal Aid.



# Cost of Borrowing for State Could Exceed Expectations

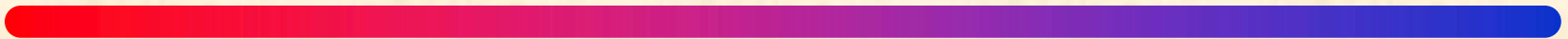
Interest Charge to Borrow \$1 Billion at State/Municipal  
Bond Rates, Amortized Over 30 Years



Source: Insurance Information Institute; Federal Reserve Board of Governors.

# ***TEXAS EXPOSURE & VULNERABILITY GROWS***

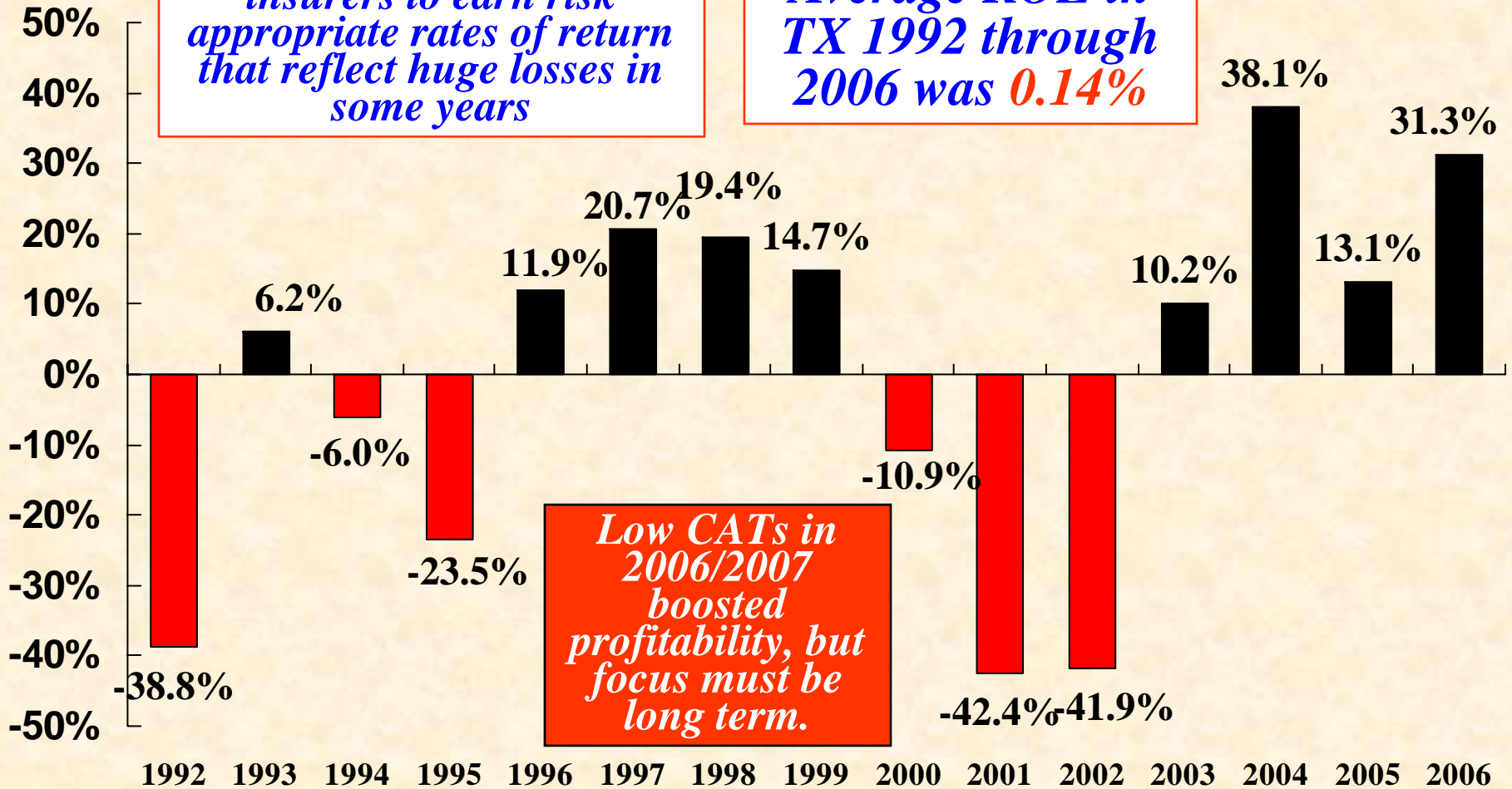
## **Coastal Building Boom**



# ROE for Homeowners Insurance in Texas, 1992 - 2006

*Texas will need to allow insurers to earn risk appropriate rates of return that reflect huge losses in some years*

*Average ROE in TX 1992 through 2006 was **0.14%***

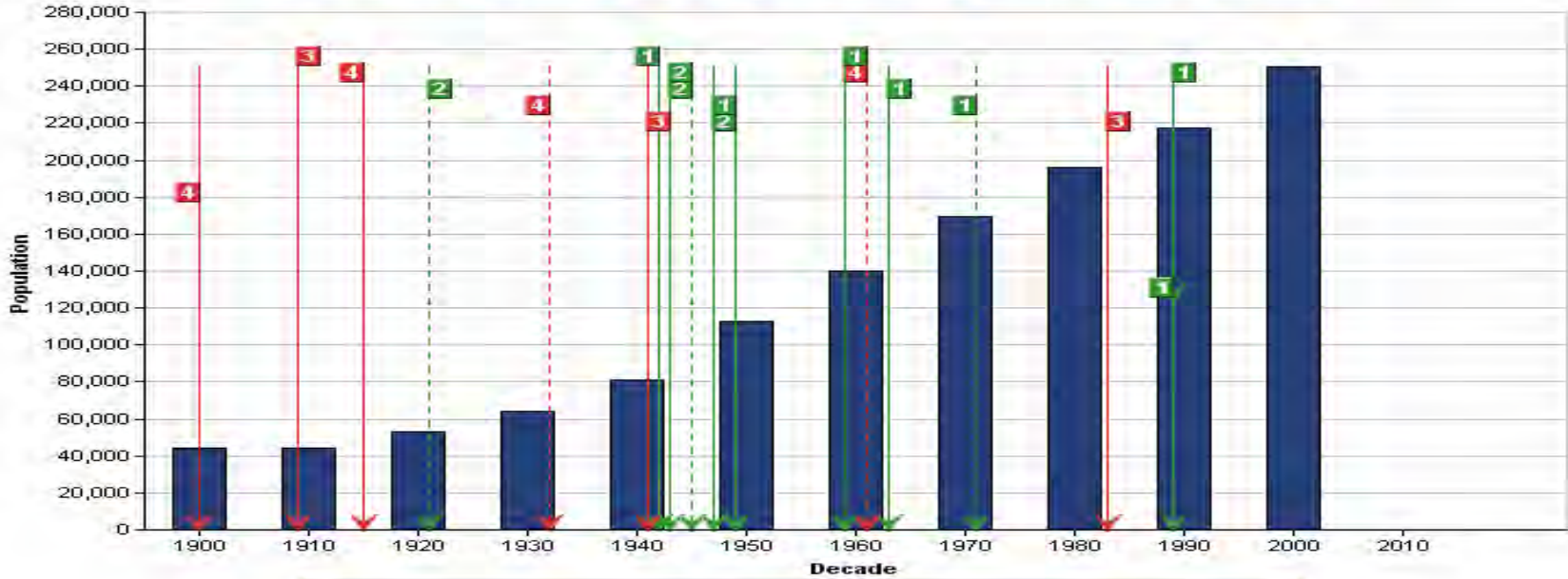


*Low CATs in 2006/2007 boosted profitability, but focus must be long term.*



# Historical Hurricane Strikes in Galveston County, TX, 1900-2007

## Hurricane Strikes vs Population for Galveston, Texas



Hurricane Strike Data: National Hurricane Center

Population Data: U.S. Census Bureau

NOTE: Population values may be missing in some counties, particularly for earlier periods. This is most often attributable to the fact that the county had not yet been established.

NOTE: There may be discrepancies between the strike data shown in this chart and the HURDAT strike data used in the Historical Hurricanes Tracks Tool.

The National Hurricane Center is currently updating the strike data used for these charts.

For more information visit [http://www.aoml.noaa.gov/hrd/data\\_sub/re\\_anal.html](http://www.aoml.noaa.gov/hrd/data_sub/re_anal.html)

NOTE: Population data is current as of 2000 U.S. Census. X-axis on graphs depict years through 2010 to illustrate storms that have occurred from 2000-2006.



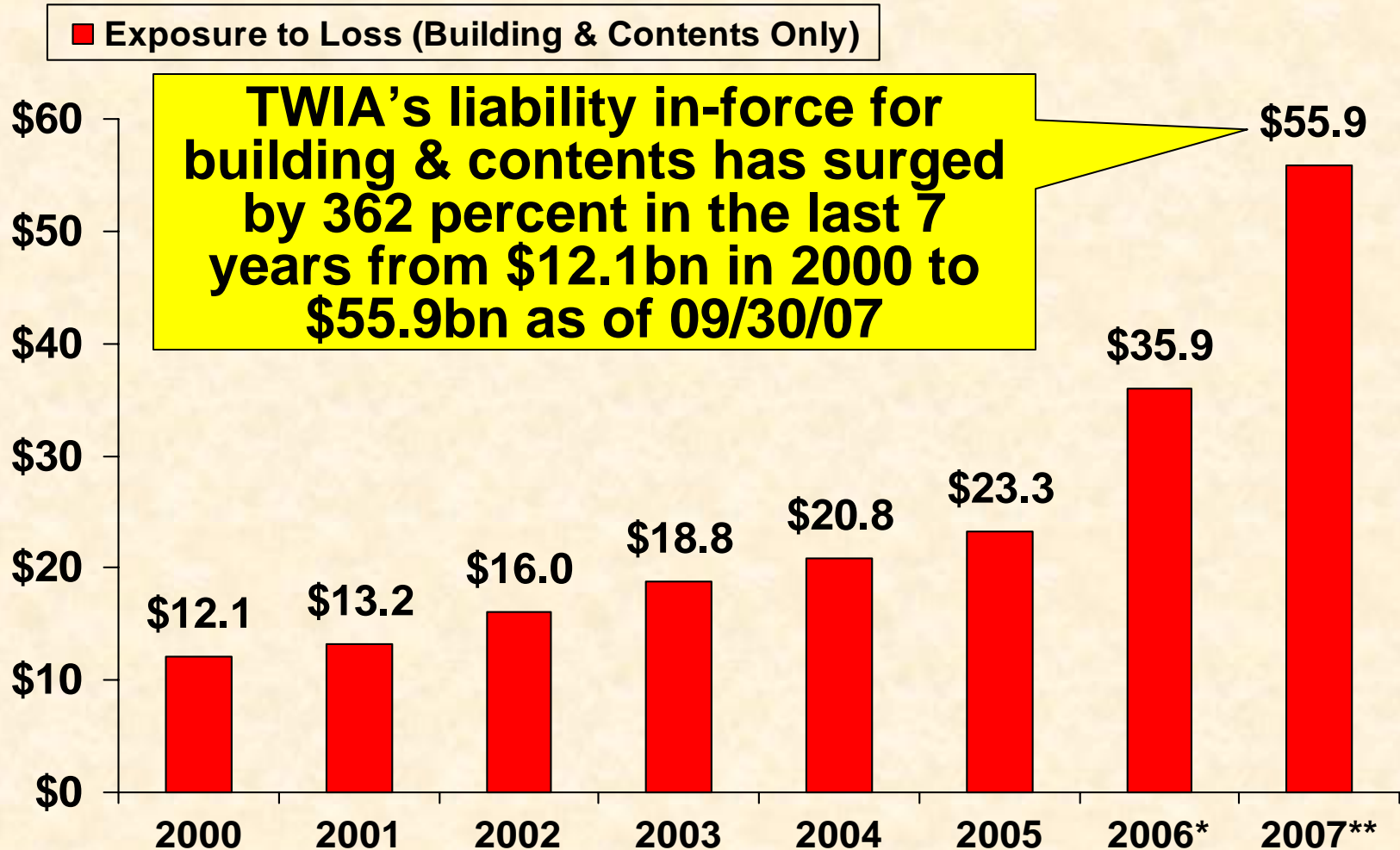
# *New Construction in Galveston: Will Dreams be Blown Away?*

- **More than \$2.3 Billion Residential, Commercial and Public Construction is Under Way in 2007**
- **More than 6,500 Residential Units Under Construction**
  - **Mostly condos, including several towers up to 27 stories high**
  - **One development by Centex Homes will consist of 2,300 condos and houses on 1,000 acres**
- **The Average Home Price Rose 89% to \$232,800 over the 4 Years Ending Jan. 2007**
- **Typical Price Range for Newer Condos: \$400,000 Up to \$1.5 Million**
  - **An undeveloped waterview lot can go for as much as \$300,000**
  - **Most will be insured via TWIA → Limits up to \$1.6 million + contents**
- **Inconvenient Truth: Galveston is Site of the Deadliest Natural Disaster in US History**
  - **At least 8,000 people were killed in a 1900 hurricane**
  - **3,600 homes were destroyed**
  - **The current seawall is only 15.6 ft. high; Katrina's storm surge was nearly 30 feet.**
- **Insured Losses Today from Repeat of 1900 Storm Would Exceed \$21 Billion**
  - **Would become the 3<sup>rd</sup> most expensive hurricane in US history (after Katrina and Andrew)**





# *TX Windstorm Insurance Association: Growth In Exposure to Loss (Building & Contents Only, \$ Billions)*

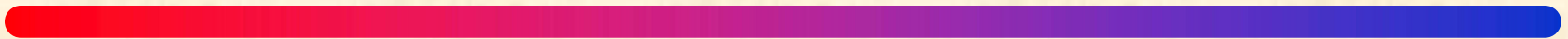


Source: TWIA; Insurance Information Institute;

\*As of 11/30/06; \*\*As of 09/30/07.

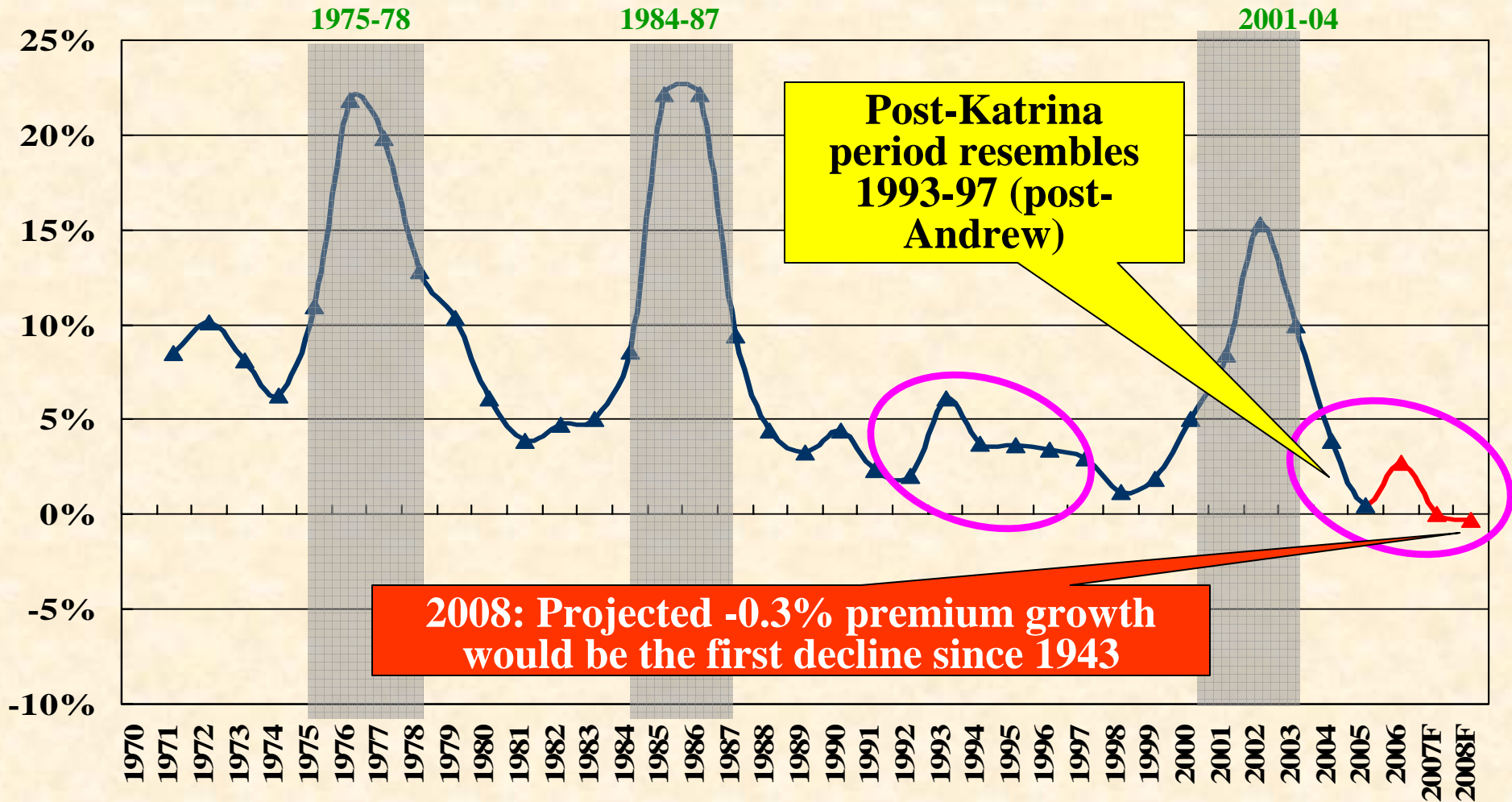
# PRICES

**Flat or Down Almost  
Everywhere: Coastal  
Pricing Reflects Risk**





# Strength of Recent Hard Markets by NWP Growth\*

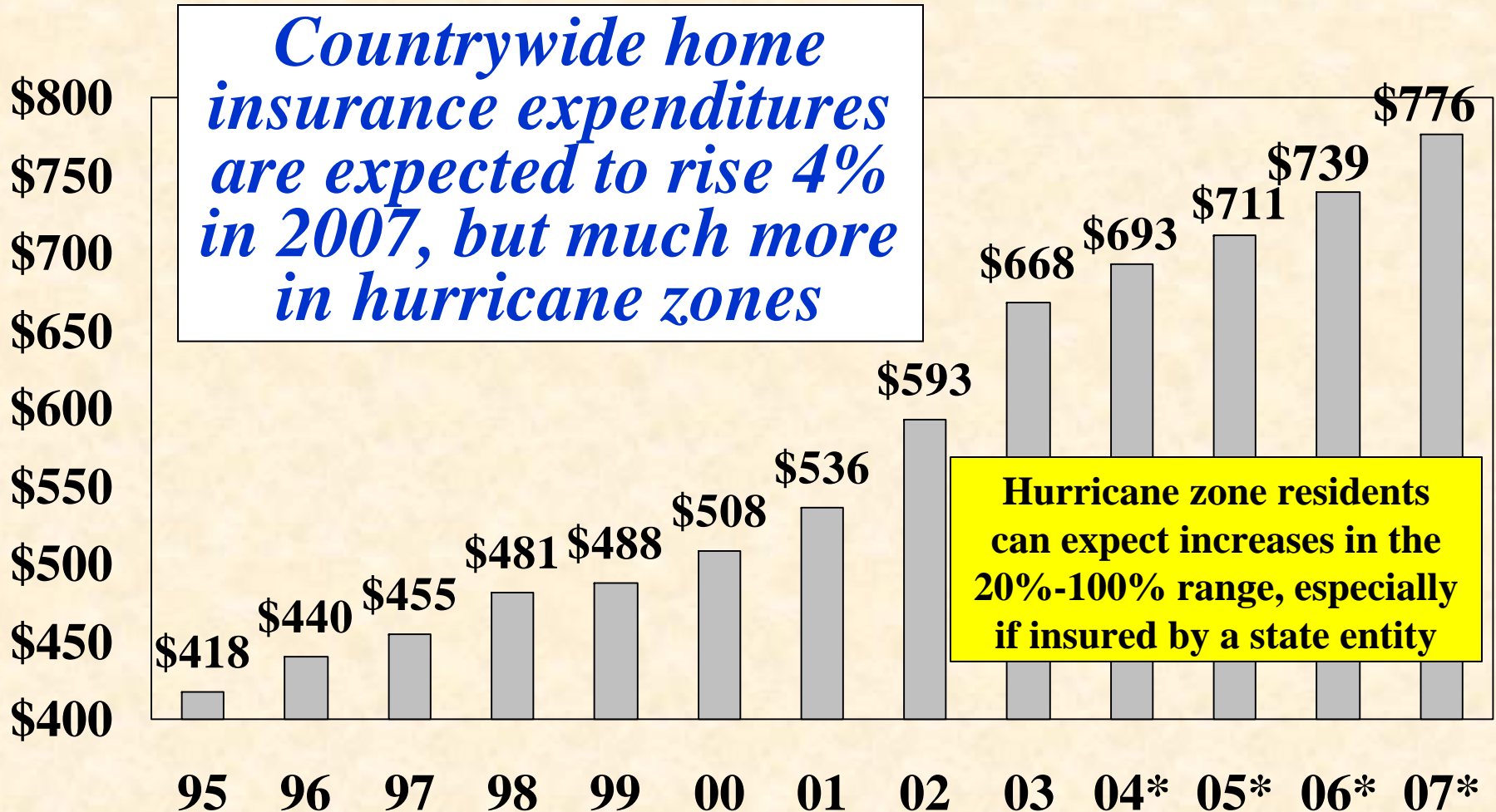


Note: Shaded areas denote hard market periods.  
Source: A.M. Best, Insurance Information Institute

\*2007 figure is actual 9-month figure.



# Average Expenditures on Homeowners Insurance

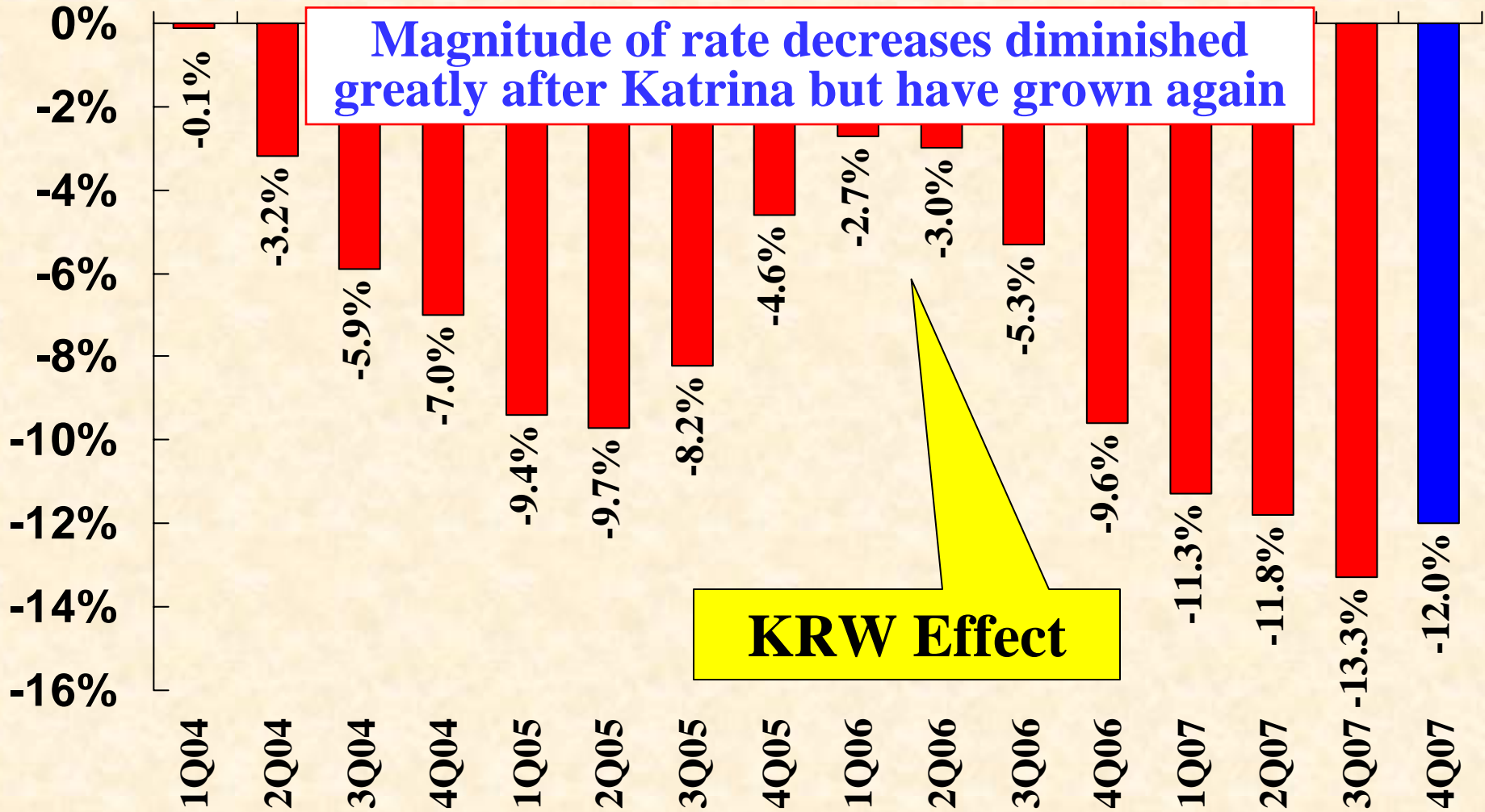


\*Insurance Information Institute Estimates/Forecasts

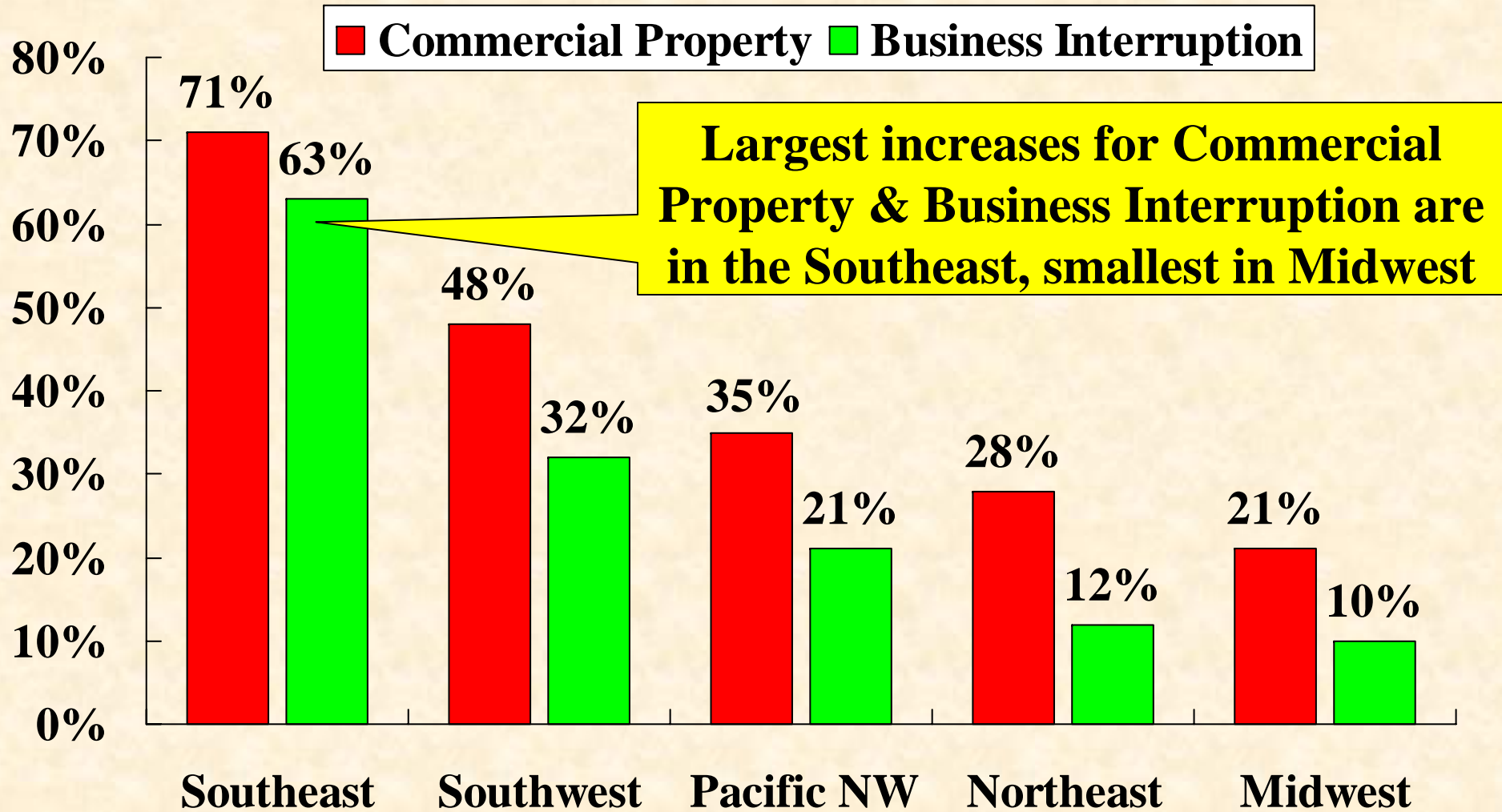
Source: NAIC, Insurance Information Institute



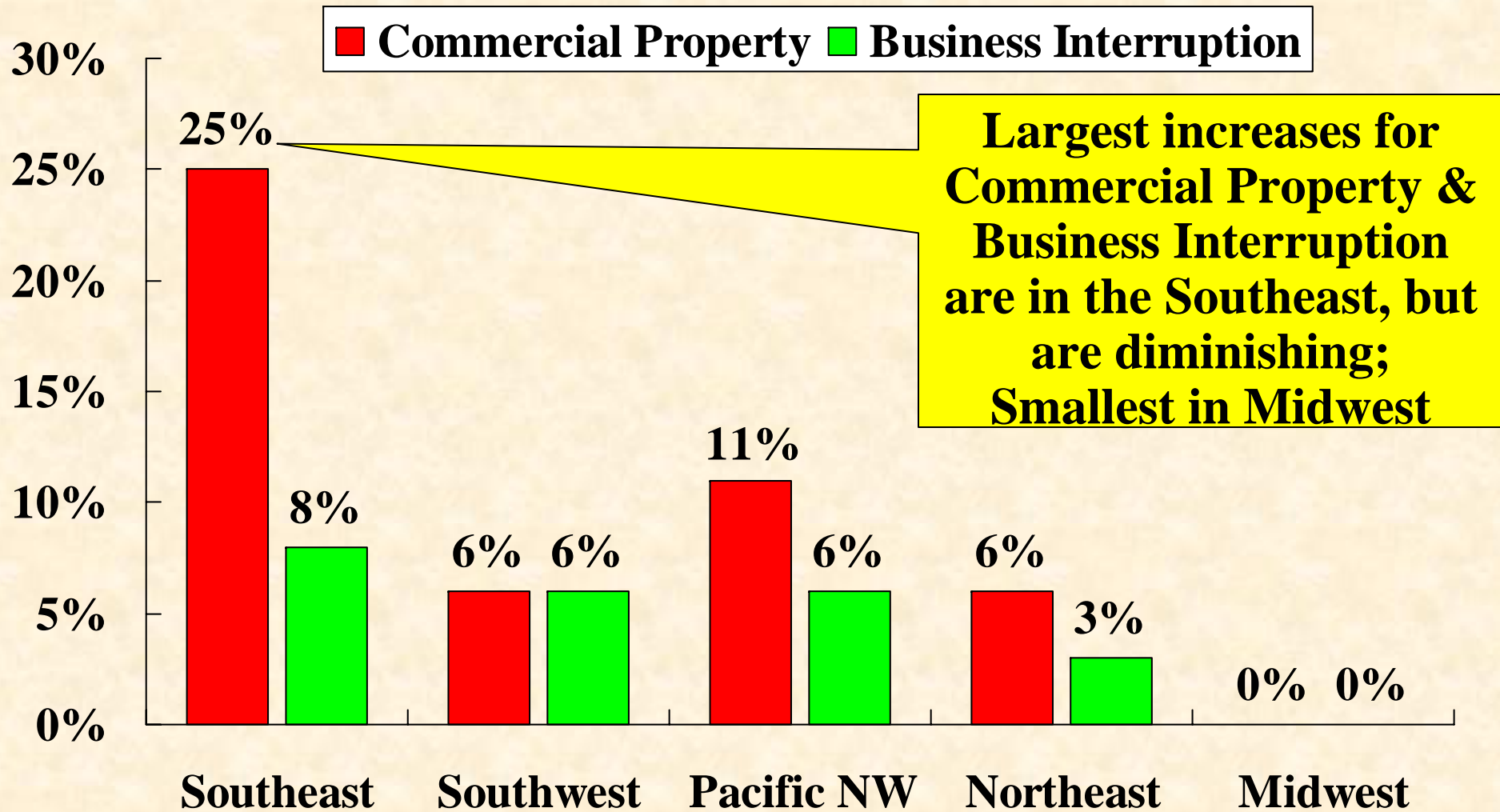
# Average Commercial Rate Change, All Lines, (1Q:2004 – 4Q:2007)



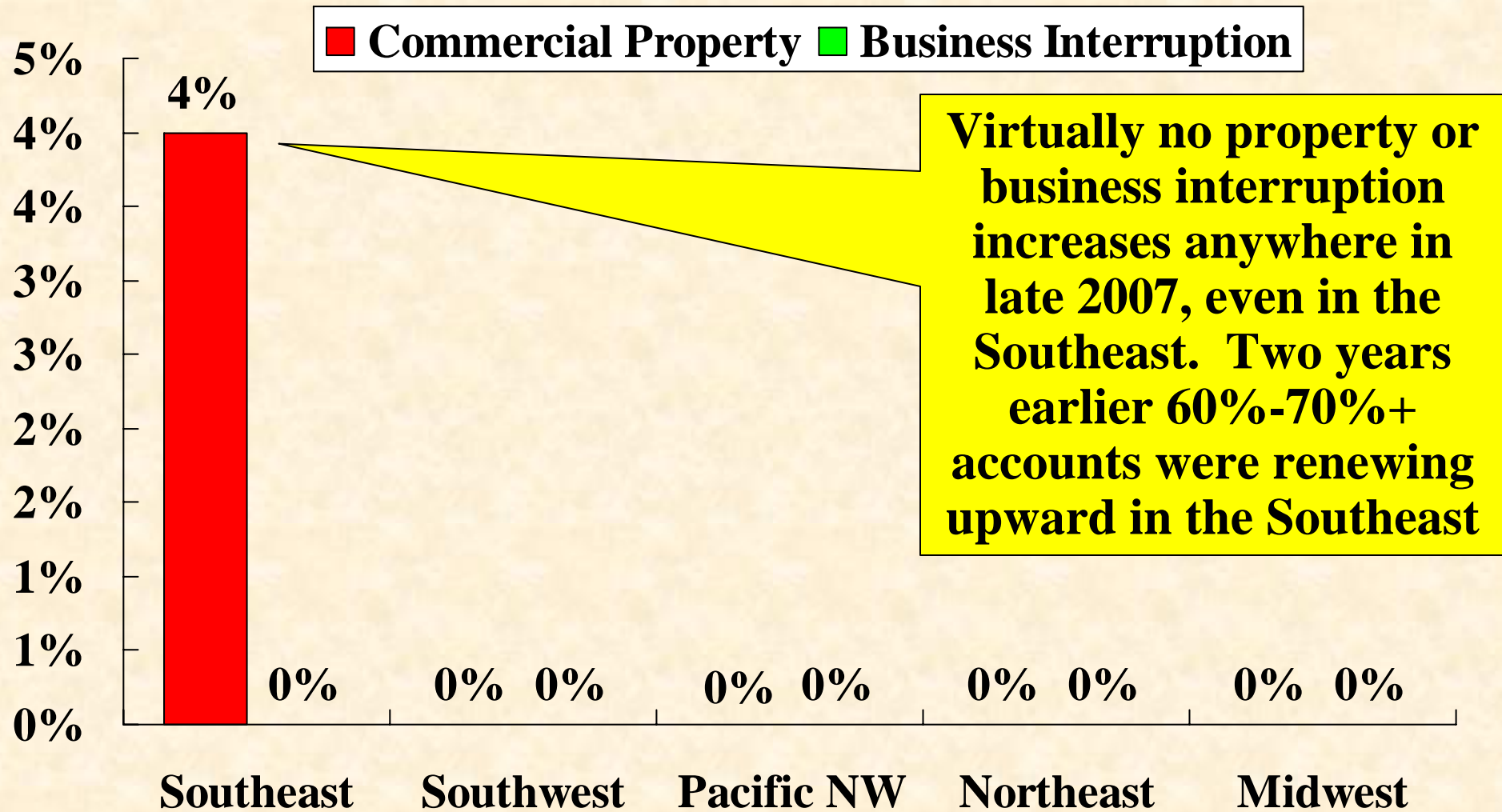
# Percent of Commercial Accounts Renewing with/Positive Rate Changes, 2<sup>nd</sup> Qtr. 2006



# Percent of Commercial Accounts Renewing w/Positive Rate Changes, 4<sup>th</sup> Qtr. 2006

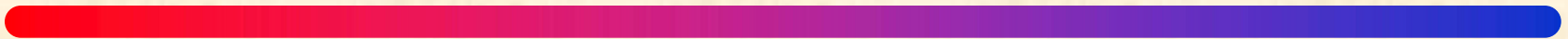


# Percent of Commercial Accounts Renewing Up/Positive Rate Changes, 4<sup>th</sup> Qtr. 2007



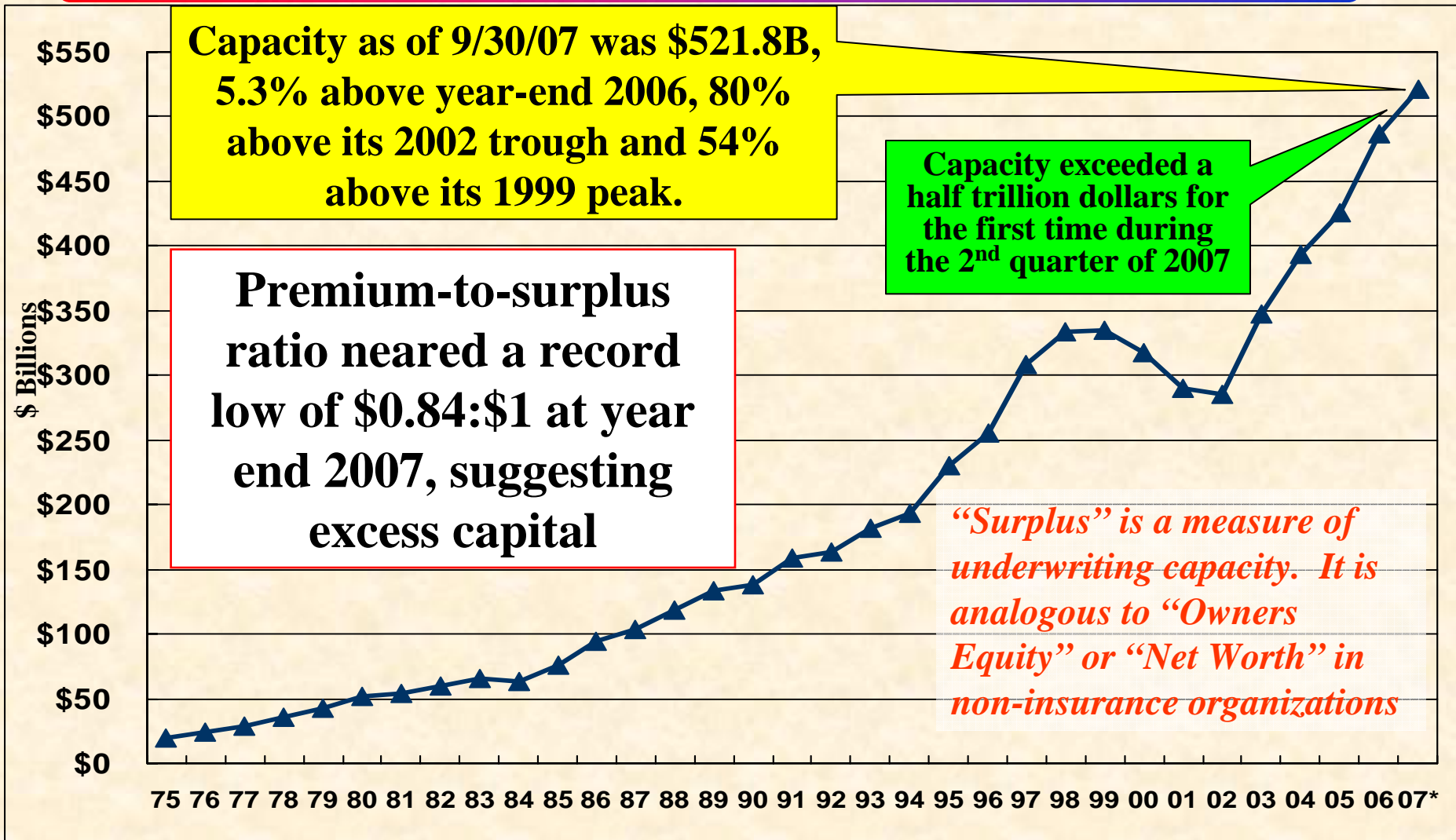
# CLAIMS PAYING CAPACITY

**2006/2007 Respite:  
Rebuilding Years**





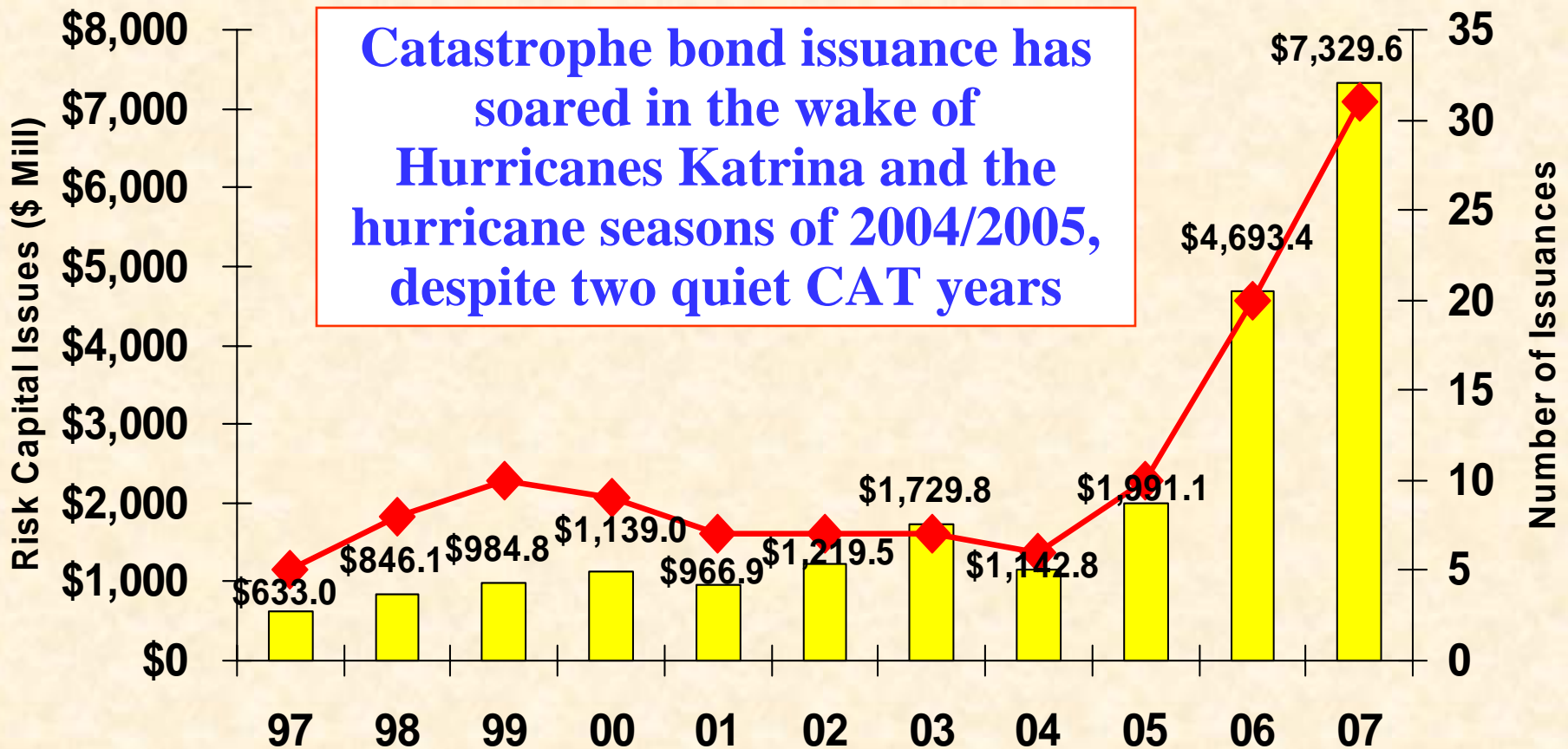
# U.S. Policyholder Surplus: 1975-2007\*





# Annual Catastrophe Bond Transactions Volume, 1997-2007

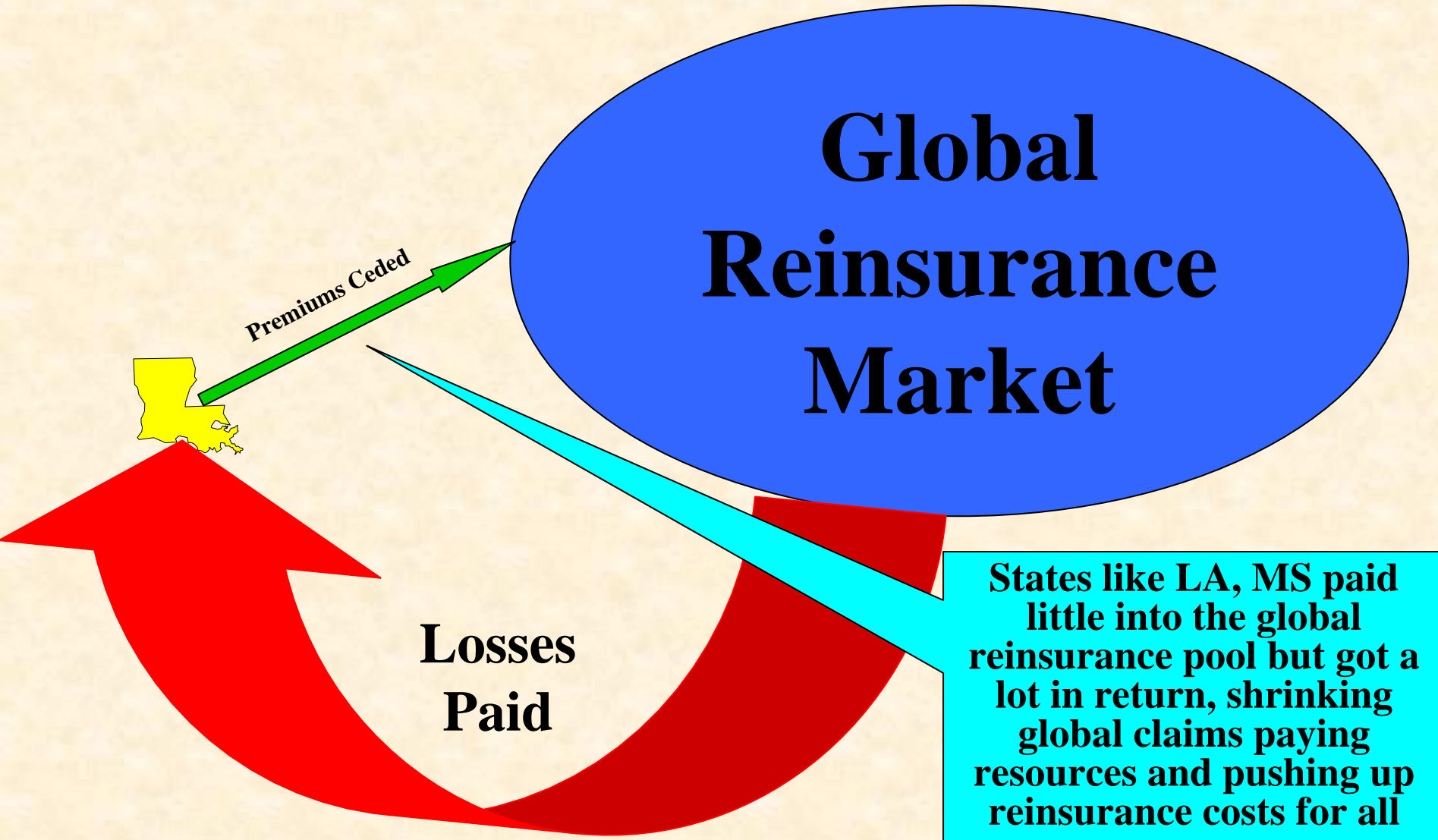
■ Risk Capital Issued ◆ Number of Issuances





# Reinsurance & Capital

## Markets are Globally Linked



# POST-KATRINA LITIGATION

*Suits Add to*

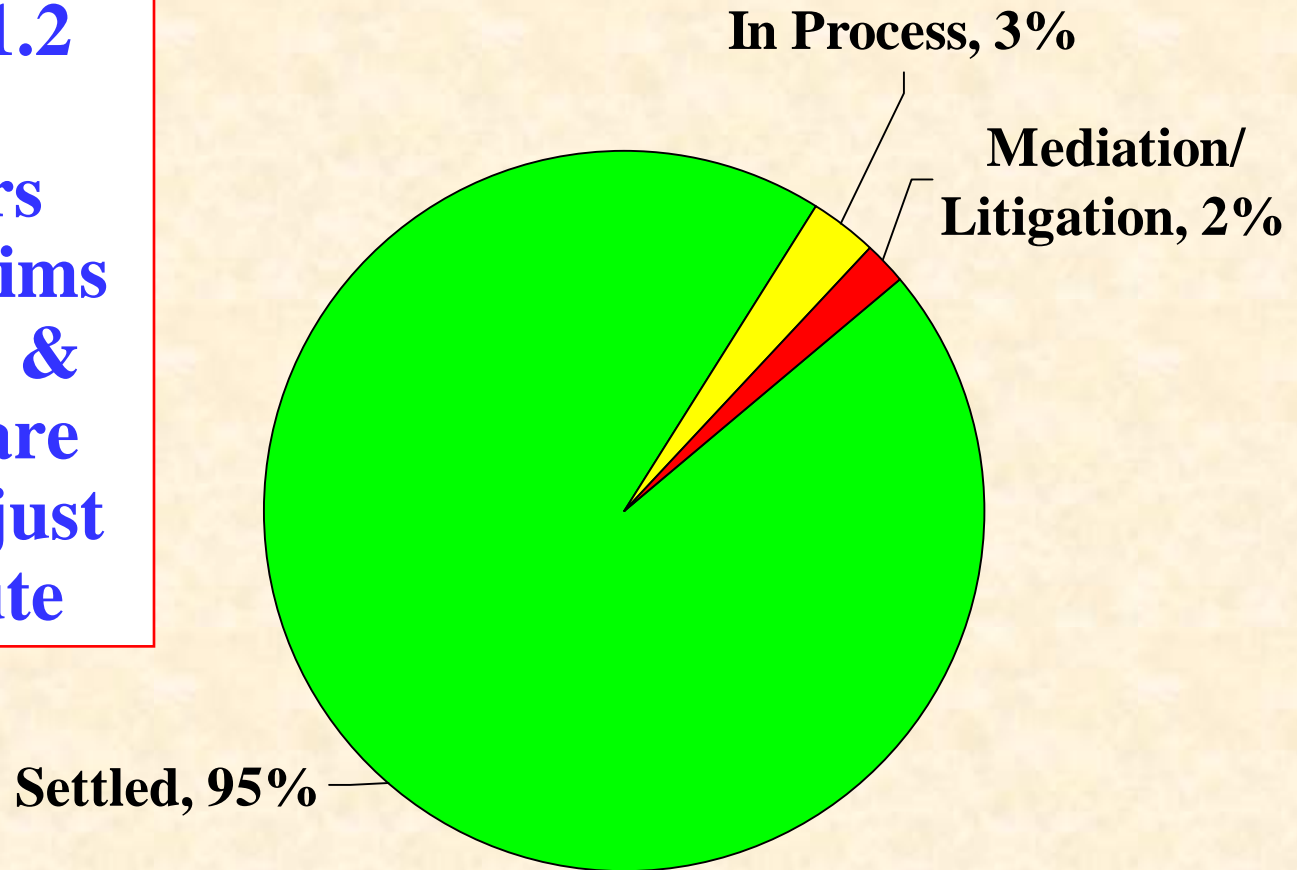
**iii** *Uncertainty, Expense*

---



# *Hurricane Katrina Claim Status on Storm's 1<sup>st</sup> Anniversary\**

**95% of the 1.2 million homeowners insurance claims in Louisiana & Mississippi are settled, with just 2% in dispute**

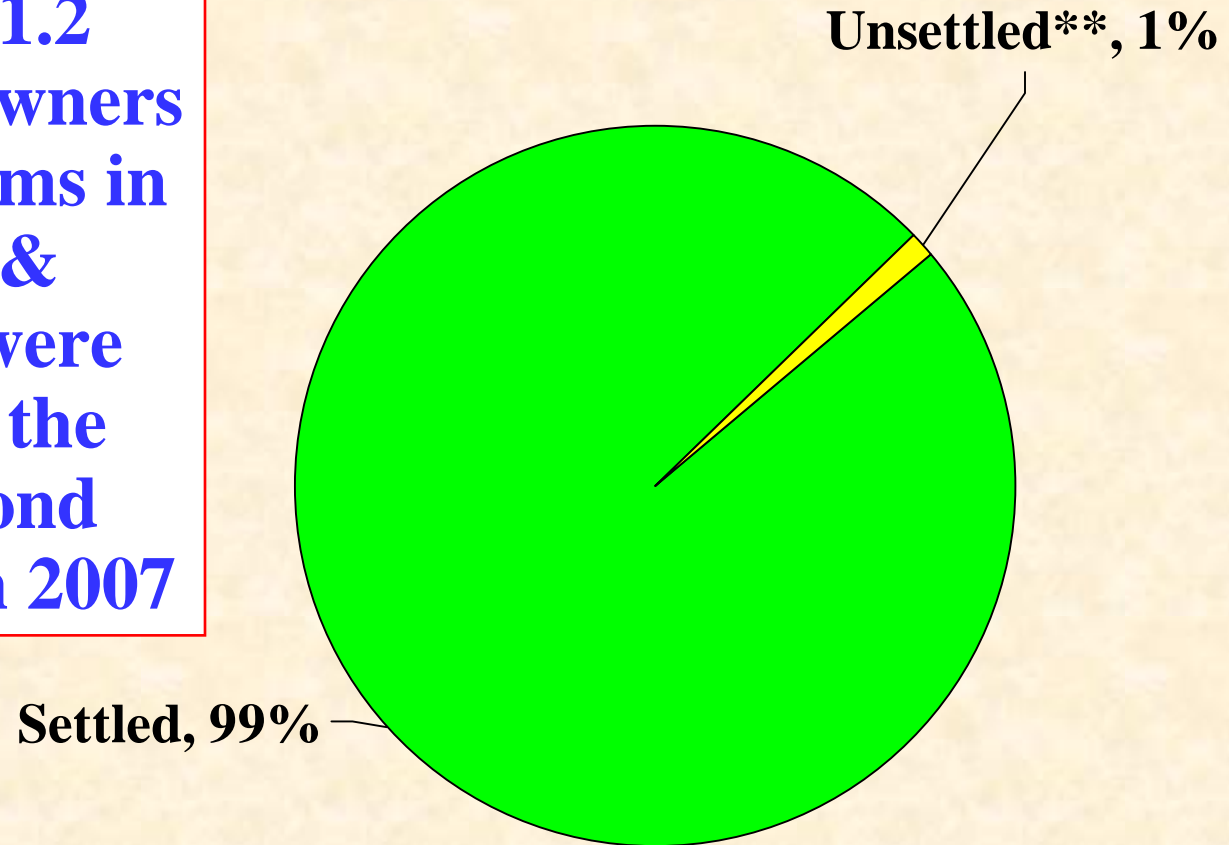


\*Hurricane Katrina made its north Gulf coast landfall August 29, 2005.  
Source: Insurance Information Institute survey, August 2006.



# *Hurricane Katrina Claim Status on Storm's 2<sup>nd</sup> Anniversary\**

**99% of the 1.2 million homeowners insurance claims in Louisiana & Mississippi were settled as of the storm's second anniversary in 2007**



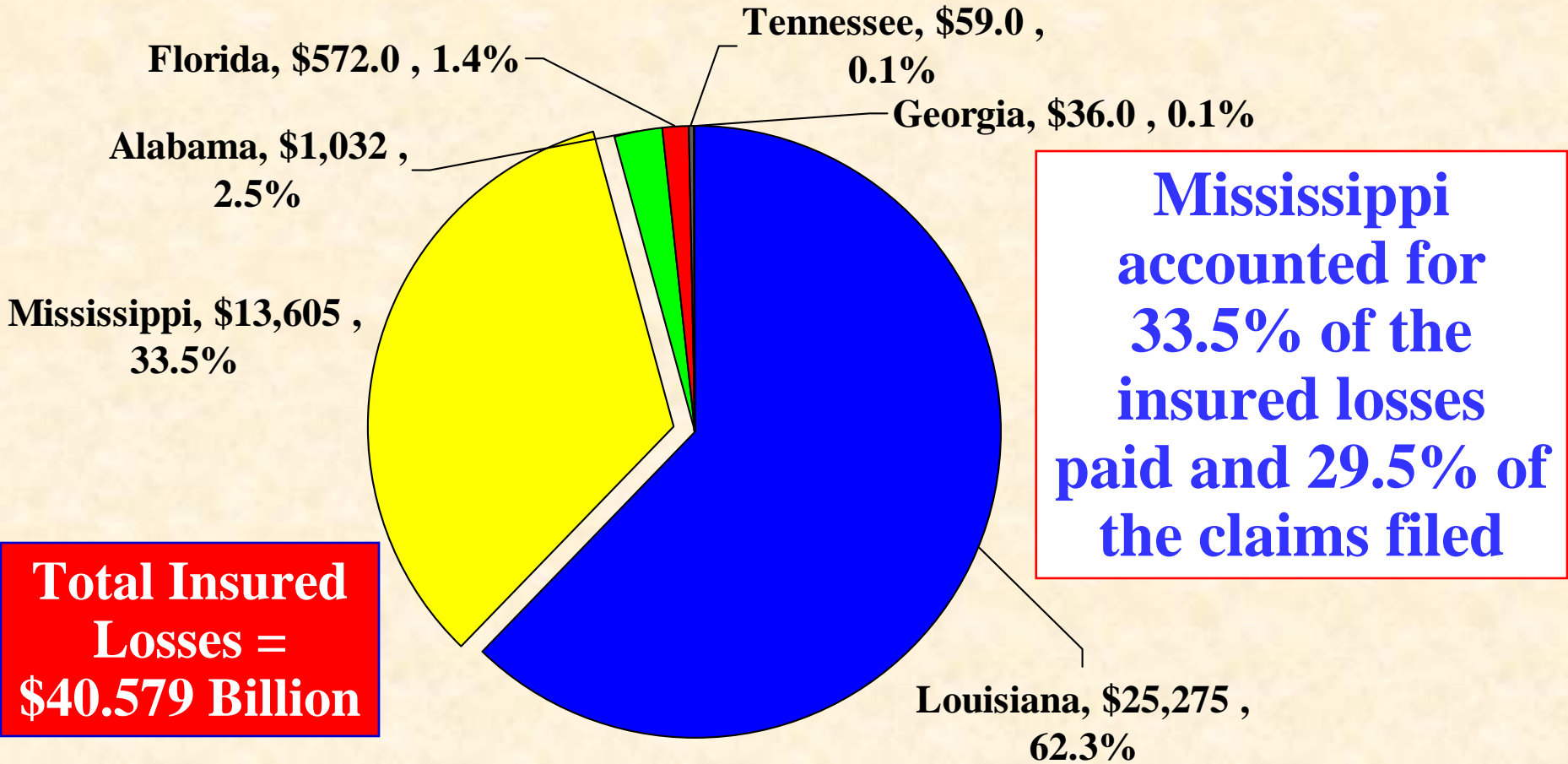
\*Hurricane Katrina made its north Gulf coast landfall August 29, 2005.

\*\*Unsettled implies that the claim is in the process of settlement, involved in mediation or litigated.

Source: Insurance Information Institute survey, August 2007.



# *Hurricane Katrina Insured Loss Distribution by State (\$ Millions)\**

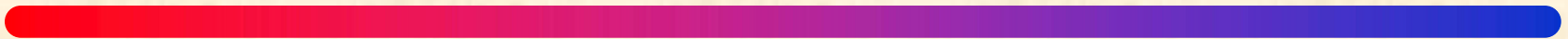


\*As of June 8, 2006

Source: PCS division of ISO.

# **Flood Insurance**

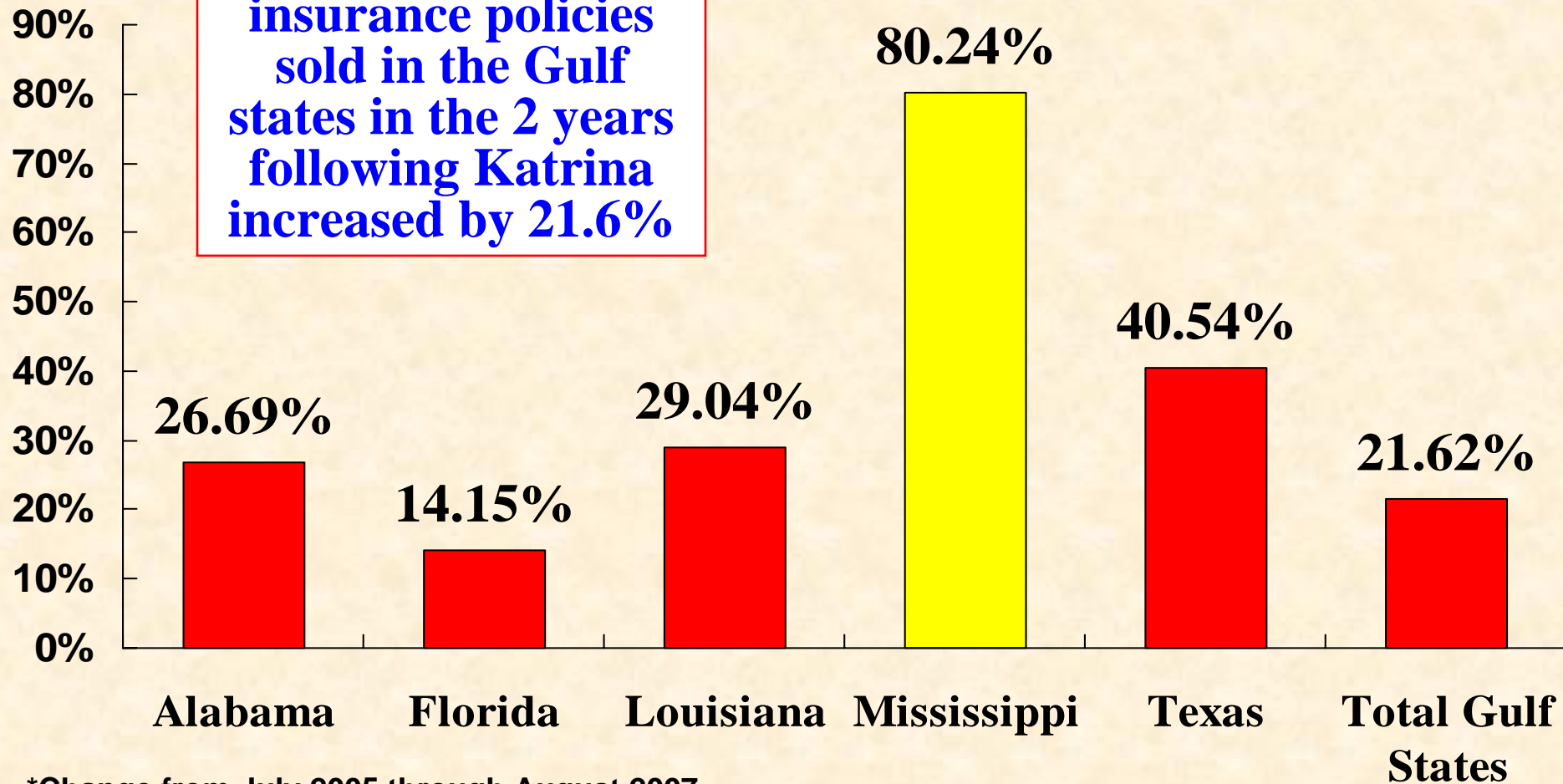
## **Analysis of Flood Policy Purchase and Lapse Rates Since Katrina in Florida**





# *NFIP Flood Policy Growth in Gulf States Since Katrina\**

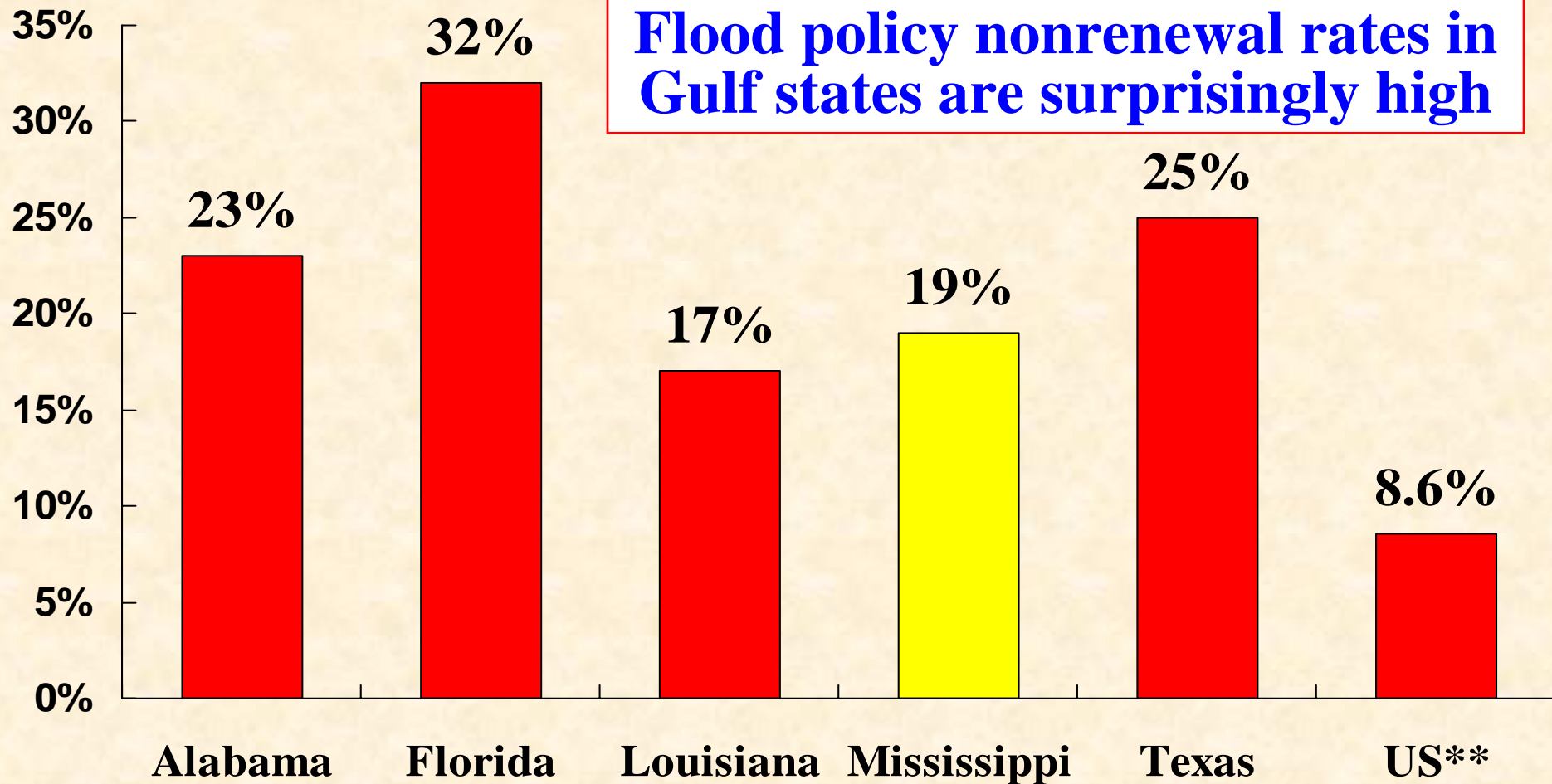
**The number of flood insurance policies sold in the Gulf states in the 2 years following Katrina increased by 21.6%**



\*Change from July 2005 through August 2007.  
Sources: NFIP ; Insurance Information Institute.



# Percentage of NFIP Flood Policies Issued Since Katrina That Are Not Renewed\*



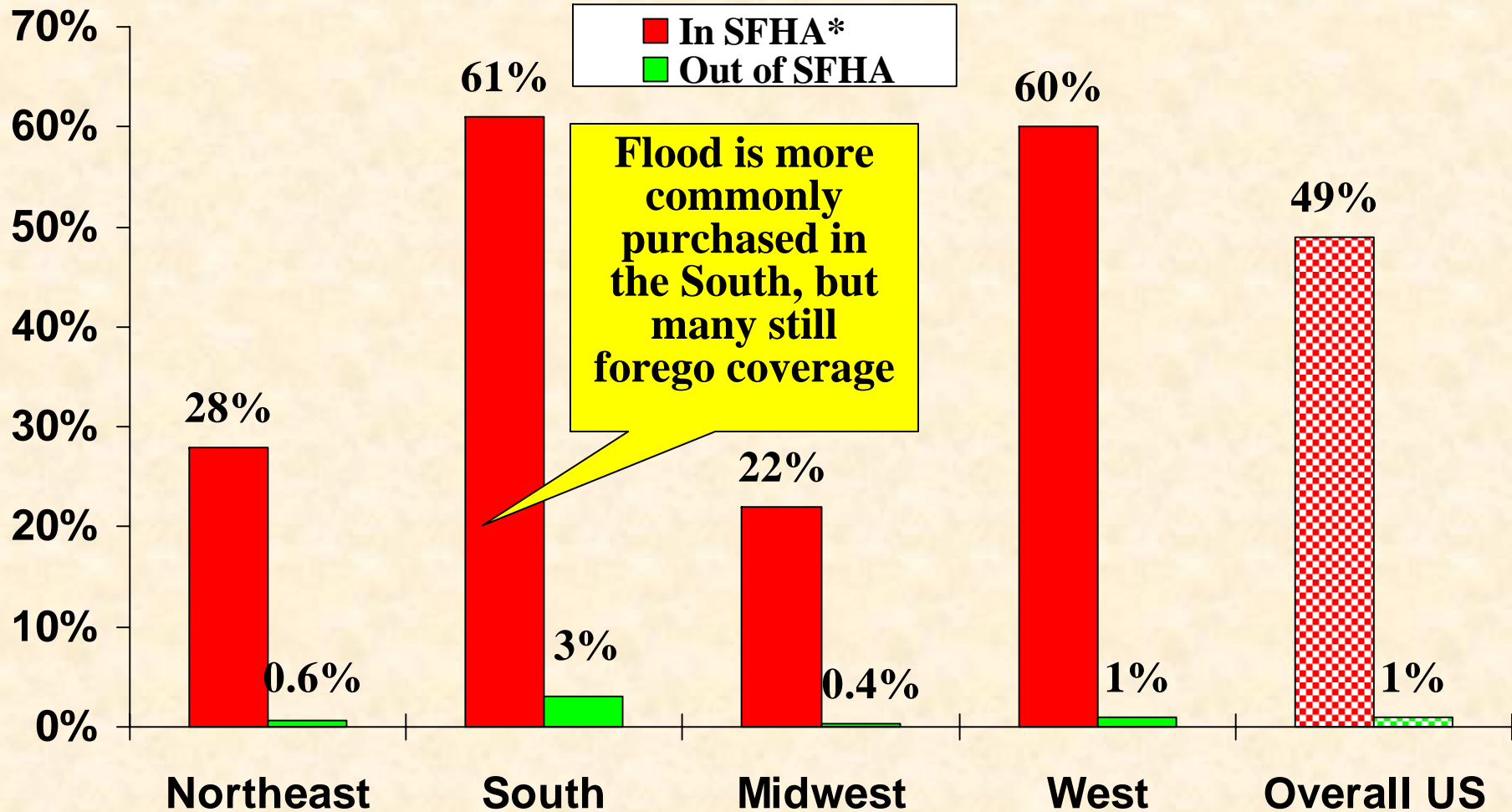
\*Policies issued since July 2005 as of August 2007. \*\*US figure is nonrenewal rate for all policies in force, average over 12 month period ending August 2007.

Sources: NFIP ; Insurance Information Institute.



# NFIP Flood Policy

## Penetration Rates, by Region

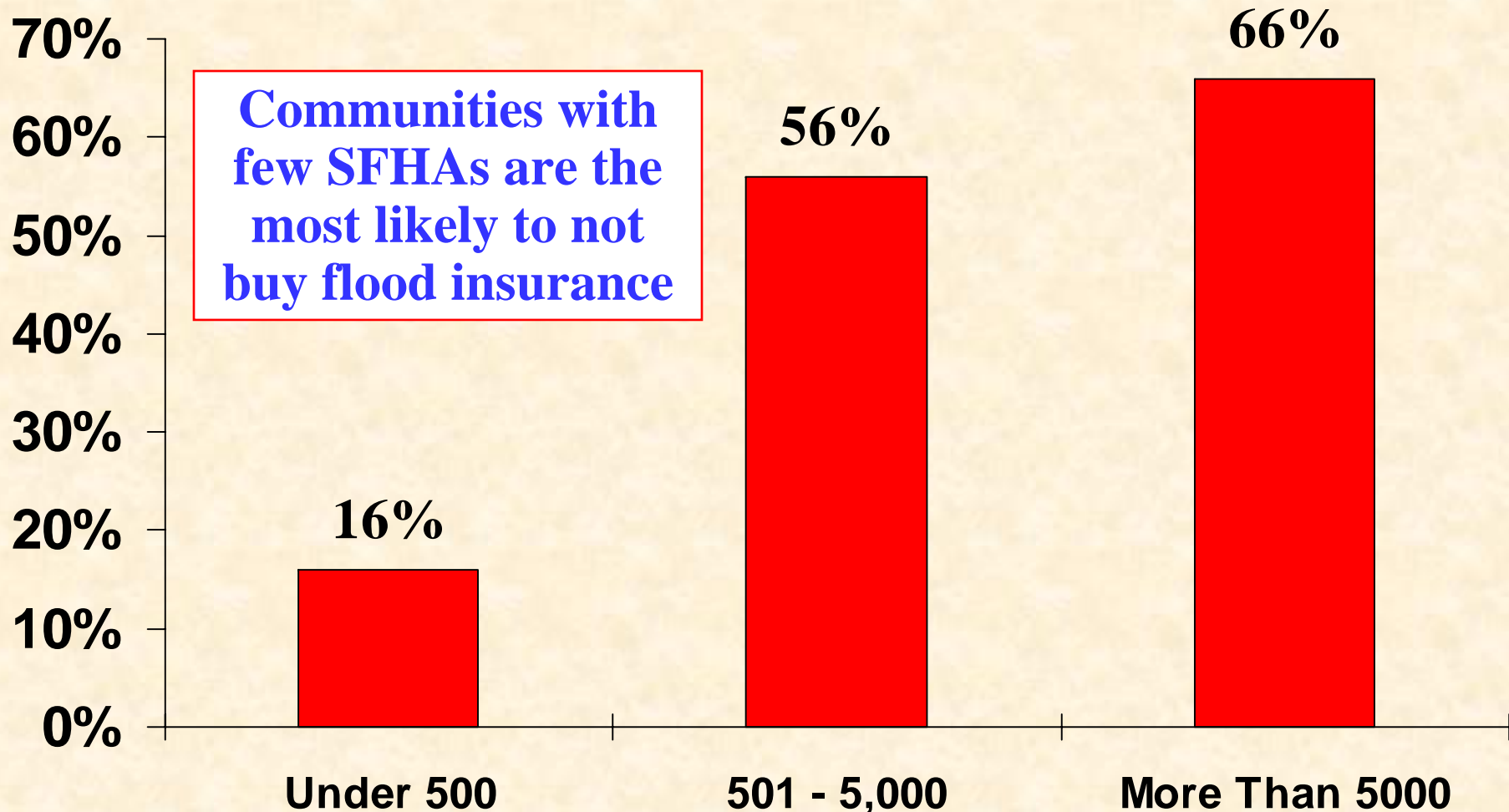


\*Special Flood Hazard Areas.

Source: *The National Flood Insurance Program's Market Penetration Rate: Estimates and Policy Implications*, RAND, 2006.



# *Proportion of Homes Buying Flood Insurance by No. of Homes in SFHA\**



\*Special Flood Hazard Areas.

Source: *The National Flood Insurance Program's Market Penetration Rate: Estimates and Policy Implications*, RAND, 2006.

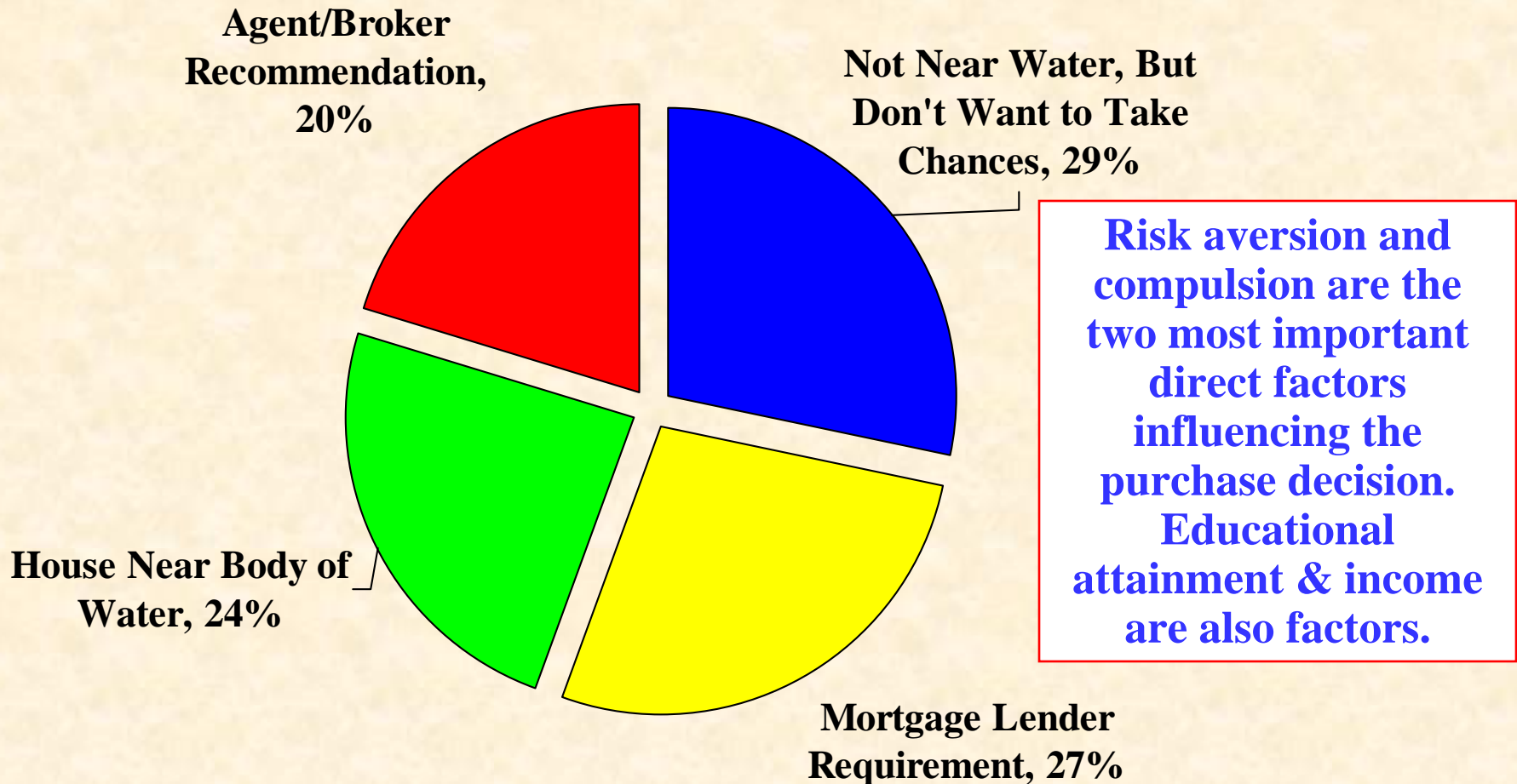


# *Factors Influencing NFIP Flood Penetration Rates*

- **Price**
- **Change in Price**
- **Number of Homes in a Community's Special Flood Hazard Area (SFHA)**
  - **Mandatory purchase requirements less vigorously enforced in communities with fewer structures in SFHAs**
  - **Questions about enthusiasm in selling or knowledge of agents regarding program**
- **Coastal Flooding Potential**
  - **Penetration rate much higher for coastal communities subject to flooding versus those that are not (63% vs. 35%)**
- **Mandatory Purchase Requirement**



# Reasons Why People Buy Flood Insurance



Source: Poll of 700 conducted by Opinion Research Corporation by Chubb Group of Insurance Companies, summarized in March 2006 press release "*Katrina Doesn't Motivate Many Homeowners to Protect Their Investment.*"



# *Additional Factors Influencing NFIP Flood Penetration Rates*

- **Education/Income of Homeowner**
- **Tendency to Decline Most Optional Coverages**
  - **Only 13% of CA homeowners buy earthquake insurance**
- **Lack of Understanding of Actual Risk**
  - **Most people do not understand the meaning or implications of 1-in-100 year flood risk**
  - **Most people have never looked at a flood map**
- **Coverage Limits (e.g., \$250K cap)**
- **Expectation of Post-Event Aid**
  - **Potentially a more important factor for future events**
- **Litigation Suggesting that Flood is Covered Under Standard Homeowners Insurance Policies**



# Summary

- Insured catastrophe losses are on the rise, in the US and globally
- Hurricanes are the #1 source of US catastrophe losses, by far
- Rapid coastal development (driven by strong demographics) & rising property values are the primary reasons for the upward trend in insured catastrophe losses in the US
  - Government subsidies to coastal dwellers exacerbate problem
- Financial impacts on property/casualty insurance industry have been severe (\$81 billion in hurricane losses in 2004/2005) but were manageable due to global spread of losses
- Expectations for more frequent & more severe storms is driving risk-based, actuarially sound rates upward
- Insurers remain deeply committed to helping policyholders reduce vulnerability by supporting stronger building codes and mitigation
  - But insurers have no control over local land use decisions
- Ultimately, insurance prices must reflect true risk
- Market signals on risk provide incentives to fortify structures
- Litigation creates unmanageable level of uncertainty



# *Insurance Information Institute On-Line*

---

**WWW.III.ORG**

*If you would like a copy of this presentation, please  
give me your business card with e-mail address*