

In the Presence of Disaster

Insurance Impacts and Issues

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TOP HEADLINES

[N.C. Insurance Commissioner Lowers Auto Insurance Rates](#)

Friday, April 14 - North Carolina Insurance Commissioner Jim Long signed a settlement this week reducing private passenger auto insurance rates 2.9 percent. The lower rates will take effect Nov. 15, 2006. [More...](#)

[Federal Judge Holds Insurer's Water Damage Exclusion Valid And Enforceable](#)

Thursday, April 13 - The American Insurance Association (AIA), NAMIC, and the Property Casualty Insurers Association of America (PCI) responded on Thursday to the April 11 ruling by the U.S. District Judge for the Southern District of Mississippi denying a motion by plaintiffs Elmer and Alexa Buente for partial summary judgment in their lawsuit against Allstate Insurance Company. [More...](#)

[New Hampshire: Attorney General and Insurance Commissioner Announce Appointment of Insurance Fraud Attorney](#)

Thursday, April 13 - Insurance Commissioner Roger A. Seigny and Attorney General Kelly Ayotte announced on Thursday the creation of an Insurance Fraud Prosecutor position at the Department of Justice, and the appointment of Catherine Tucker as the Insurance Fraud Prosecutor for the State of New Hampshire. [More...](#)

RECENT HEADLINES

[FEMA Provides Flood Recovery Guidance to Coastal Parishes of Louisiana to Support Rebuilding Efforts](#) (April 13)

[Insurance Council Says Supreme Court Ruling Will Help Industry Combat Fraud and Protect Policyholders](#) (April 13)

[Kentucky Becomes 22nd State To Join Compact](#) (April 12)

[Statement From NAIC President Alessandro Iuppa on Federal Insurance Bill](#) (April 12)

[NCOIL Strongly Opposes Optional Federal Charter: Says OFC Does Not Serve Public](#) (April 6)

[Federal Regulation of Insurance Press Conference to be Held April 5](#) (April 5)

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Catastrophe Issues

Issue Briefs

[Property/Casualty Insurance: Providing the Foundation of Economic Recovery](#) (Published: 10/12/2005)

[Compulsory 'All-Perils' Coverage Would Worsen Disaster Insurance Problems](#) (Published: 1/31/2006)

[Decisions by Florida Lawmakers on No-Fault, Property Insurance Reforms Likely to Have National Public Policy Implications](#) (Published: 3/3/2006)

[Managing Terrorism Risk Requires Federal Financial Role and Broad Industry Participation](#) (Published: 3/29/2006)

Catastrophe Issues

Public Policy Paper

[Insuring the Uninsurable: Private Insurance Markets and Government Intervention in Cases of Extreme Risk](#)

(Published: 6/21/2005)

Online Hurricane Resource Center

[NAMIC Online News Coverage](#)

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[Regulatory Bulletins and Notices](#)

[Disaster Relief Links and Resources](#)

Catastrophe Issues

Today's Presentation

- The Presence of Disaster
- Insurance Industry Impacts
- Insurance Industry Issues

Natural Disaster

Today's Headlines

- Heed lessons of 1906 quake and Katrina
- Storm causes natural disaster in Mongolia
- Disasters: the good, the bad, and the ugly
- Wasted opportunity in Big Easy?
- Nigeria: Natural Disaster Cause of Crash
- Disaster Expert to Lecture on Tsunami
- Bracing for the next big one
- Predicting quakes still elusive
- Swiss assess effects of Chernobyl disaster

Natural Disaster

Deadliest disasters (20th century)

- Influenza pandemic of 1917 (20 million lives worldwide)
- 1932 famine in the Soviet Union (5 million dead)
- Yangtze flood/famine in China in July 1931 (3.7 million dead).

Disasters

Five countries with highest number of disasters (1900-2002)

- United States (655)
- India (459)
- China (420)
- Philippines (355)
- Indonesia (276)

OECD

Natural Disaster – Andrew

Hurricane Andrew

- 81 percent of the costs paid by insurers
- \$15.5 billion insurance payments (\$1992)
- Payments were 50 percent more than all premiums collected in Florida for the past twenty-two years

Natural Disaster – Northridge

Northridge Earthquake

- 55 percent of the costs paid by insurers
- \$12.5 billion insurance payments (\$1994)
- Payments work out to \$1,352 per person for those living in Los Angeles County (equals the entire amount of premiums collected in this century for earthquake insurance)

Natural Disaster – Katrina

Hurricane Katrina

- 9 days from tropical depression to dissipation
- 30 foot storm surge at highest points
- Flooding caused by breach of three levees
- 1,204 death toll
- 500,000 homeless
- 50,000 of 180,000 homes may be bulldozed
- 250,000 properties and 200,000 cars destroyed

Natural Disaster – Katrina et al

Katrina will eventually account for \$40 billion to \$60 billion in insured losses; Rita, somewhere in the neighborhood of \$4 billion to \$7 billion; Wilma, \$6 billion to \$10 billion.

And unlike past storms, Katrina will probably result in far more losses on commercial lines than on personal lines.

Natural Disaster – Insurer Cost

U.S. Insured Catastrophe Losses

1992	\$22.9	1999	\$8.3
1993	\$5.5	2000	\$4.6
1994	\$16.9	2001	\$26.5
1995	\$8.3	2002	\$5.9
1996	\$7.4	2003	\$12.9
1997	\$2.6	2004	\$27.5
1998	\$10.1	2005	\$50+

Natural Disaster – Insurer cost

<u>Year</u>	<u>Event</u>	<u>Cost (Billions)</u>
2005	Hurricane Katrina	50+
1992	Hurricane Andrew	21
1994	Northridge Earthquake	16
2004	Hurricane Charley	8
2005	Hurricane Wilma	4–10
2004	Hurricane Ivan	7
1989	Hurricane Hugo	6
2004	Hurricane Frances	5
2004	Hurricane Jeanne	4
2005	Hurricane Rita	3–6

Natural Disaster

- Earthquake
- Eruption
- Slides
 - Landslide
 - Avalanche
- Windstorm
 - Hurricane
 - Cyclone
 - Typhoon
- Flood
- Epidemic
 - SARS
 - Avian Flu
- Wave/Surge
 - Tsunami/Tidal
- Wildfire
- Drought
- Extreme Temp
- Meteorite
- Locusts

Natural Disaster

Wildfires

The Oakland/Berkeley Tunnel fire (1991) was the third costliest fire in U.S. history, and resulted in \$2 billion in insured losses (\$1997). The total U.S. losses from catastrophic wildfires was \$6.5 billion (\$2004) between 1970 and 2004, corresponding to an average insured loss of just over \$400 million per fire. Two fires in California in 2003 caused combined insured losses of \$2.1 billion.

Natural Disaster

Thunderstorms

The worst year in recent history (2003) saw nearly \$8 billion in insured thunderstorm losses. Hail is an important consequence of thunderstorms. The costliest hailstorm in Colorado history was \$625 million (\$1990). The cumulative annual insured losses from U.S. thunderstorms have averaged \$3 billion per year since 1980 (\$2004).

Natural Disaster

Winter storms

These storms often fall below the threshold of being cataloged among official loss statistics, yet cumulatively yield more than \$1 billion each year in insured losses. The most costly winter storm in recent history was a \$2.3 billion (\$2004) event in 1993. A 1998 ice storm produced the largest loss in Canadian history, and combined Canadian/US losses stood in excess of \$1.2 billion.

Natural Disaster

Drought

Agriculture is well-recognized as a climate-and-weather sensitive sector. Hazards include drought, excessive rain, flood, hail, heat waves, windstorm, wildfire, insect infestation, and plant diseases.

Drought is one of the most pervasive hazards, as illustrated by the \$8.3 billion total economic losses in the U.S. in 2002.

Weather Disaster – Globally

- About \$80 billion per year in weather-related economic losses
- \$20 billion of these losses are insured
- Weather-related losses represent about 90 percent of all natural disaster losses
- Data does not include aggregate losses from non-catastrophic events such as lightning, soil subsidence, and gradual sea-level rise

Weather Disaster – Trends

- **Occurrence**

less than 200 events in the 1950's to 1,600 events in the 1990s

- **Economic Loss**

tenfold increase during the same four-decade period, from \$4 billion in the 50's to \$40 billion in the '90s

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Weather Disaster – Trends

- **Insured Loss**

losses due to weather disasters were negligible in the 50's; by the 1990s, they were up to \$9.2 billion a year

- **U.S. Loss**

between 1985 and 1999, 14 percent of the world's weather disasters hit the U.S., causing 58 percent of the world's insurance losses

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Natural Disaster – Trends

- Inflation-adjusted economic losses from catastrophic events rose by 8-fold between the 1960s and 1990s
- Insured losses rose by 17-fold in that same period
- Real dollar damages of a given-sized natural disaster have been doubling every 14 years
- From 1992-1997, eleven catastrophes cost more than \$1 billion each

Natural Disaster - Trends

Taking the available knowledge into account, it would appear reasonable to operate under the assumption that the insurance industry will experience a U.S. catastrophic loss of at least \$20 billion on average approximately every 15 years.

Towers-Perrin

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Natural Disaster – Potential

Event

Cost (billions 2005)

Hurricanes

- Category 5 in Houston 40
- Category 5 in Tampa 65
- Category 5 in Miami 155
- Category 5 in New York 96

Earthquakes

- 7+ in Los Angeles 140
- 8+ in San Francisco 200
- 7.5+ New Madrid (St Louis/Memphis) 90

Market Impacts

Insurance Regulators

- Enforce laws & regulations
- Encourage insurers to be reasonably “generous”
- Maintain viable insurance markets

Insurance Companies

- Pay legitimate claims
- Preserve reputation
- Financial management

Government (State and Federal)

- Damage control and assistance
- Political support
- Rebuild

Market Impact – Florida

Although awarded significant premium increases in the wake of major hurricane losses in 2004, seven private insurers in Florida decided to stop writing new homeowners policies or exited the market.

Market Impact – Massachusetts

The largest homeowners insurer in Massachusetts will not renew 14,000 policies on Cape Cod and nearby islands because of projected increases in storm losses.

Market Impact – New York

MetLife – plans to limit the number of new homeowners policies it offers in the New York metropolitan area in order to limit its exposure to the severe hurricanes that are predicted in the next few years.

Allstate – will no longer offer any homeowners policies in New York City, Long Island or Westchester County in order to limit its exposure.

Market Impact – Surplus lines

- There has been substantial growth in so-called “surplus lines” insurers who are currently collecting \$33 billion in the U.S. in 2005, up 65 percent since 2002.
- Surplus lines carriers can help address availability issues but are largely outside the regulatory framework for pricing and the absence of solvency regulation, and non-admittance to risk-spreading pools renders consumers more vulnerable.

Market Impact – Regulation

- Regulators response to changing conditions (rate increases, changes in coverage terms, etc.)
- Dual regulatory authority of federal and state governments converge and can create potential points of conflict (flood)

Market Impact – FL Regulation

- Required insurers in state to renew and limit rate increases after Andrew
- Created residual market facilities to underwrite new policies (at subsidized rates)
- Merged in 2002 into Citizens Property Insurance Corporation (writes 1/3 of market)
- Created Florida CAT Fund (FHCF) for reinsurance where insurers retain \$4.5 billion and claims capped at \$15 billion annually

Market Impact – CA Regulation

- Mandated earthquake coverage offer following Northridge
- Established the California Earthquake Authority (CEA) in 1994 to provide coverage
- CEA policies tend to cover higher-risk areas and uses percentage deductibles (15%)
- At end of 2004, claims paying ability stood at \$6.9 billion

Market Impact – Regulation

- Mississippi Attorney General Jim Hood alleges the exclusions of flood losses violate state law
- Texas Attorney General (at request of the Department of Insurance) seeks injunction against Allstate denials of ALE without proof of damage

Market Impact – Disaster Aid

<u>Year</u>	<u>Event</u>	<u>Amount (Billions)</u>
2005	Hurricane Katrina	62 (est.)
2001	9/11 Terrorist attacks	20
1994	Northridge Earthquake	15.5
2004	Florida Hurricanes	14
1992	Hurricane Andrew	10.8
1989	Loma Prieta Earthquake	7.6
1993	Midwest Floods	7.0
1989	Hurricane Hugo	3.1

Market Impact – Disaster Aid

- Requests for all forms of disaster relief doubled between the mid-1980s and mid-1990s
- Total federal disaster-related payments amounted to \$119 billion between 1993 and 1997 (\$1993)
- Federal aid for Hurricane Katrina alone is anticipated to top \$200 billion
- Inflation-corrected federal relief payments for weather disasters grew 6-fold from the late 1960s to the early 1990s

REDEFINING "CATASTROPHE"

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Natural Disaster – Re-experience

Sharing and Reducing the Financial Risks
Of Future ***“Mega-Catastrophes”***

Robert E. Litan

Hurricane Katrina: Profile of a ***Super Cat***

Risk Management Solutions

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Natural Disaster – Non-linear impact

Lessons from Katrina

The property losses stem from multiple factors, among them, wind (including tornadoes following the hurricane), flood, fire, looting, mold, and environmental contamination. Virtually every property-casualty insurance line has been impacted, including homeowners, commercial property, personal and commercial automobile, and environmental liability.

Natural Disaster – Non-linear impact

Lessons from Katrina

- As buildings disintegrate under wind or flood loads, they create debris that increases the damage to buildings
- Nearby damage to infrastructure prevents pumps from operating, limits water availability for fire hoses, and compromises other vital equipment
- Failure of telecommunications means that timely information does not reach emergency managers
- Flooded roads and evacuated personnel means that fires are left to burn

Natural Disaster – Non-linear impact

Lessons from Katrina

- At low levels of damage people help their neighbors; at high levels of damage the community is overwhelmed, unable to rescue each other, and casualties quickly escalate
- Faced with high levels of damage and pollution in the reconstruction process, decisions are made to demolish whole neighborhoods, rather than to repair and save some of the less damaged properties
- Pollution – creates clean up delay, damage, litigation

Natural Disaster – Non-linear impact

...until Katrina ravaged the Gulf Coast, few may have understood the importance of the region's ports to the nation's **supply chain**. How many knew that a quarter of the country's stocks of green coffee beans are held at the Port of New Orleans – one of the world's busiest – or that half of the London Metal Exchange's reserves of zinc were warehoused there?

Natural Disaster – Cat-follow-Cat

- 100 million cubic yards of waste material will require identification, collection, management, and disposal (5x Andrew levels)
- It may take up to two years to complete disposal operations
- Closed landfills may need to be reopened to accommodate the waste volume
- 7 million gallons of oil were released in southeast Louisiana

Natural Disaster – Cat-follow-Cat

Drought in the Southwest and dryness elsewhere in the nation, **combined with trees killed by hurricanes**, makes it likely that spring and summer will see “significantly higher than normal” wildfire activity. Over two million acres of forest and grassland have already been destroyed this year, a record and a level rarely reached until mid-year in even active years...

National Interagency Fire Center

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Natural Disaster – Climate change

- The destructiveness (peak winds and duration) of tropical storms and hurricanes in the Atlantic and western North Pacific has more than doubled since the 1970s
- The frequency of Category 4 and 5 hurricanes has also almost doubled in all ocean basins

Natural Disaster – Climate change

The ocean has absorbed 84 percent of the globe's warming – effectively delaying the effect of climate change on surface air temperatures – and that the trend is unmistakably associated with human activities.

Scripps Institute of Oceanography

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Natural Disaster – Climate Change

Global climate change, for example, might be increasing the frequency of El Niño events, which lead with regularity to drought, fires, flooding and famine. The warming of the surface of the Atlantic Ocean might be increasing the frequency and severity of hurricanes.

Natural Disaster – “Megacity” impact

“Megacities”

Rapid rates of growth of urban centers in developing countries, almost synonymous with high population density and the spread of informal housing, increases vulnerability to natural disasters.

Natural Disaster – “Megacity” impact

- scale and complexity (which complicate monitoring of and rapid response to emergencies)
- considerable ecological impacts – large energy and water use, as well as large amounts of waste
- proximity to natural hazards, especially given their coastal or riverine locations
- widespread “irregularity” of many settlements

Natural Disaster – Demography

Florida

- adds about 130,000 households each year
- the coastal population has grown 37 percent (from 7.7 million to 10.5 million) from 1980-93
- three-fourths of the state's population now resides in coastal counties
- Property at risk will soon reach \$1 trillion...

Natural Disaster – hazards/disasters

natural hazards – which are geophysical events such as volcanic eruptions, floods, earthquakes or tsunamis

natural disasters – which involve the interaction of natural hazards and social systems.

Two societies might face a similar *exposure* to natural hazards, but they may have very different disaster profiles.

OECD (2002)

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REVISITING “INSURABILITY”

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Natural Disaster – Insurability

“Mega-catastrophe” is a single natural disaster, or a combination of lesser disasters in a 12 month period (the standard insurance contract period), whose consequences for insurers are so large that *going forward* they become “uninsurable”, or the potential or actual subjects of exclusions in standard policies (e.g., terrorism). Put another way, mega-catastrophes cause insurance markets to “fail” in some significant respect.

Robert E. Litan

Natural Disaster – Insurability

This state of affairs is caused by a number of factors, including:

- 1) climate changes that have increased the frequency of severe hurricanes along the Atlantic and Gulf coasts
- 2) considerable economic growth in areas subject to earthquake and hurricane risks
- 3) the failure of individuals, firms and governments to mitigate the potential damage caused by natural disasters

Natural Disaster – Insurability

- **Moral Hazard**

The degree that insurance (or something else) reduces insured's incentives to mitigate risk and leads to potentially higher losses from catastrophes that increases insurers' financial risk.

- **Independence/Correlation**

Natural or man-made disasters (terrorism) typically violate the independence condition, since many insureds in a given geographic area or areas are damaged at the same time when these occur.

Natural Disaster – Insurability

- **Adverse Selection**

When insurance is purchased *only* by those exposed to high risks of claims. There is an element of this for hurricane/earthquake risks as many individuals choose to live in high risk locations and purchase insurance.

- **Law of large numbers**

The ability to develop reasonably accurate estimates of future losses to set appropriate prices and structure capital to efficiently manage their cash flows (difficult with low-probability, high-consequence events affected by many factors and considerable uncertainty).

Natural Disaster – Insurability

- **Timing Risk**

Insurers who provide insurance with catastrophe claim potential confront the possibility of having to pay such claims well before they are able to collect sufficient premiums to cover their costs because of the uncertain timing of disasters.

Natural Disaster – Insurers

Insurance premiums, when adjusted for risk exposure, can provide powerful incentives for policyholders to reduce their risk exposure, by purchasing or upgrading structures that are better insulated against disaster risks, and by applying political pressure on, or at least not opposing, state and local officials who adopt and enforce building codes and land use policies designed to reduce loss exposures in the event of future natural disasters.

Natural Disaster – Insurers

There are several means by which insurers can manage and diversify their catastrophic risk, including:

- 1) reducing their concentration of exposures
- 2) modifying coverages
- 3) encouraging risk mitigation
- 4) purchasing reinsurance
- 5) utilizing catastrophe-hedging financial instruments
- 6) holding more capital
- 7) establishing catastrophe reserves

Natural Disaster – State Plans

- Rates can be politically influenced and contain cross subsidies between low and high-risk property owners within a state
- Encourage excessive risk taking by property owners and undermine the financial solidity of these plans
- Financial shortfalls in these plans due to a catastrophe would be imposed to some extent on the general insurance market and taxpayers

Natural Disaster – Federal Aid

Federal disaster assistance undoubtedly reduces financial hardships, but it may also discourage individuals and state and local governments from purchasing adequate insurance against future losses. *In effect, it subsidizes development in disaster-prone areas (ones for which insurers might be reluctant to provide coverage), and it weakens people's incentives to take actions that would reduce the cost of future natural disasters.*

Congressional Budget Office

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Natural Disaster – Insurability

- There is market failure for mega-catastrophes: losses/risks are so great that market-based premiums are not charged
- If adequate insurance is not charged then U.S. taxpayers pay for uninsured catastrophe claims in the form of disaster relief
- In the long run, providing disaster relief to uninsured individuals and firms is inefficient, because it fails to encourage those in harm's way to accept the cost of their risks or to take steps to reduce their loss exposure

Natural Disaster – Insurability

We need a national dialogue on natural disaster risk management and financing

- Should rebuilding after loss be controlled in disaster prone areas?
- Who should bear the risk of loss on such rebuilding?
- If insurance is allowed, should the risk be socialized through subsidized or assessable government pooling programs?
- How do we minimize the disincentive for consumers to purchase adequate insurance that post-disaster government aid provides?

INSURANCE “INTEGRITY”

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Disaster Issues

Hurricane Insurance Litigation

Tuepker v. State Farm

Werby v. USAA

Buente v. Allstate

Jim Hood v. Mississippi Farm Bureau Insurance, et al.

In re Allstate Insurance Company (TX)

Disaster Issues

Buente v. Allstate (MS)

In its ruling, the Court held that the water damage exclusion in this policy is clear, unambiguous, 'drawn quite broadly' and with 'the clear purpose of excluding damage caused by inundation from coverage.' Citing numerous prior cases, the Court concluded that, 'The exclusions found in the policy for damage attributable to flooding are valid and enforceable policy provisions.'

Disaster Issues

In re Allstate Insurance Company (TX)

The state district court ruled that the company will not have to pay additional living expenses (ALE) to policyholders displaced by Hurricane Rita if their homes were not damaged. The action was brought by the Texas Attorney General at the request of the Texas Department of Insurance.

Disaster Issues

Task Force on Natural Disasters

**The Federal Government's Role in
Catastrophe Insurance**

**Maintaining a Competitive Marketplace for
Catastrophe Insurance**

**Reforming the National Flood Insurance
Program**

Catastrophe Mitigation

Natural Disaster

Questions?

Corporate Governance

Thank You

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