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Hurricane Katrina: Insurance Losses and National Capacities for Financing Disaster Risks

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Rawle O. King
Analyst in Industry Economics
Government and Finance Division

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Hurricane Katrina: Insurance Losses and National Capacities for Financing Disaster Risks

Summary

On August 29, 2005, Hurricane Katrina made landfall on the Gulf Coast with high velocity winds and a 30-foot storm surge accompanied by heavy rainfall. Katrina has proven to be the most devastating disaster in recent U.S. history, exceeding Hurricane Andrew (1992) and the terrorist attacks on the World Trade Center (2001). Coastal towns and cities were flooded, with parts of Mississippi completely devastated and no buildings left standing in some towns. New Orleans was deluged by flood water from Lake Pontchartrain and also from the Mississippi River after levees broke.

Catastrophe-insured losses in 2005 totaled $61.2 billion from 24 disasters. Estimated insured losses from Katrina alone were $40.6 billion. Despite the severity of storm damages, Hurricane Katrina and other catastrophes in 2005 did not threaten the solvency and claims-paying ability of the property/casualty (p/c) insurance industry. Insurers benefitted from favorable market conditions during the last three years and experienced significant growth in policyholder surplus. Insurers, in fact, earned record profits in each of the last three years — 2004-2006.

In the aftermath of Katrina, policymakers, disaster experts, and insurance company representatives have expressed concerns about the potential vulnerability of the insurance industry to a future mega-catastrophic event and raised questions about what role, if any, the federal government should play in financing catastrophe risks. Most insurance market analysts note that there is no state in the union that is not subject to catastrophe exposure, and the current state of affairs suggests that the exposures are far greater than the insurance industry is now prepared to handle.

Although the insurance industry has emerged largely intact from Hurricane Katrina and is better capitalized now than ever, it simply does not have sufficient capital to pay for a mega-catastrophe. This fact is not new. Insurers and financial market experts knew after Hurricane Andrew in 1992 that outside capital was needed to supplement industry capacity.

As Members of Congress explore ways to respond to the increasing risk and uninsured losses from tropical storms, earthquakes, and disruptive and costly inland flooding, they may be called upon to consider federal policy alternatives to build national capabilities for disaster risk management. Among measures that might be explored are various legislative proposals to pre-fund the cost of disasters with insurance or capital market instruments (risk securitization).

This report will be updated as events warrant.

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Hurricane Katrina: Insurance Losses and National Capacities for Financing Disaster Risks

Introduction

On August 29, 2005, Hurricane Katrina struck several states along the Gulf Coast from Louisiana to the western edge of the Florida panhandle (including Mississippi and Alabama), causing deaths, injuries, property and infrastructure damage, economic loss, and human suffering.[1] The storm caused an unprecedented amount of damage to residential, industrial (largely oil and chemical-related), and commercial property. Hurricane Katrina was different from other hurricanes because of the extensive flooding that resulted from a record 30-foot storm surge and the breaching of three levees that protected New Orleans from Lake Pontchartrain and the Mississippi River. Katrina left over a million people without electricity, communications, and drinking water; casualties are expected to number in the hundreds.[2]

In the aftermath of Hurricane Katrina, concerns have been expressed by insurance industry participants, emergency managers, policymakers, and disaster policy experts about the following:

- the unprecedented property damages and huge recovery costs and challenges facing the region — Louisiana, Mississippi, and Alabama — and nation;
- the long-term budgetary implication of federal disaster recovery expenses, given that the American people will ultimately be responsible for the cost of Hurricane Katrina through either taxes, insurance policy premiums, or federal post-disaster assistance;

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[1] According to the U.S. National Hurricane Center, Hurricane Katrina initially made landfall between Hallandale Beach and Aventura, Florida as a Category 1 storm on August 25, 2005, then made a second landfall on August 29th near southeastern Louisiana (Buras-Triumph, Louisiana) as a Category 4 storm with winds of 140 miles per hour.

[2] The last hurricane that made a direct hit on New Orleans was Hurricane Betsy in 1965. The storm surge from Betsy left 50% of the city under water and 60,000 residents homeless. Following Hurricane Katrina, New Orleans evacuation plans removed 80% of the metropolitan area's 1.4 million people, but failed to empty the city of thousands who were forced to remain for various reasons in neighborhoods susceptible to flooding.

- whether or not, in light of the massive flood-related claims filed by property owners and the resulting financial deficits in the NFIP, the program should be overhauled/restructured to operate more like a private insurance company;

- the vulnerability of the property insurance industry to a future mega-catastrophic event of such magnitude that a substantial portion of the industry could not support its various obligations, which could lead to a ripple effect of potential insolvencies of multi-state insurers; and

- whether and how the federal government could improve our nation's ability to insure and mitigate risks of large-scale natural disasters.

There appears to be growing support among policymakers and disaster policy experts on the need to reexamine how the country manages and finances economic (non-insured) and insured losses and to seek new and innovative ways to do both.[3] Traditional disaster policy has focused on coping with disasters, using warnings before the disaster strikes, emergency relief and hazard insurance after a disaster occurs, and hazard reduction measures, such as levees and floodplain management/land-use ordinances, to reduce damages from disasters. With this in mind, economists note that individual households and businesses have two options to reduce losses from natural disasters: pre-disaster mitigation that reduces physical/environmental vulnerabilities, and risk financing designed to reduce financial vulnerabilities. The first step in the disaster risk management framework is to mitigate damages from disasters. The residual economic risk can then be managed with risk financing strategies. Financing is thus an integral part of managing catastrophe risk; it would not be feasible to quickly reconstruct the damaged property and infrastructure following Hurricane Katrina, and also to restore the livelihood of the affected persons, without adequate financial arrangements.

As Members of Congress explore ways to respond to the destruction caused by Hurricane Katrina, the long-term budgetary implications of disaster recovery expenses incurred by the federal government, as well as federal potential alternatives to build national capabilities for financing disaster risk may emerge as a prime consideration. The 110th Congress will likely continue to consider various approaches to ensure the availability and affordability of disaster insurance to protect residential and commercial property against future disasters. This debate could involve finding ways to improve insurers' access to capital in the reinsurance, banking, and securities markets to ensure adequate capacity and solvency of the industry to meet consumer needs.

The U.S. Economy and Natural Disasters

When a disaster occurs, productive resources in a particular region or state are destroyed or crippled. Resources from other parts of the country must be redirected

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[3] Jeff Harrington, "A Spur for a National Fund?," *St. Petersburg Florida Time*s, Aug. 30, 2005, p. 1.

to compensate the victims and rebuild or repair that which is lost. Whether the disaster-affected region or state is better or worse off depends on what portion of their losses, if any, are covered by insurance or government disaster assistance.

Physical damage to the general building stock and the infrastructure following Hurricane Katrina could very well lead to a reduction in the flow of goods and services and an aggregate loss of income to the local, state and national economy. The degree to which the storm disrupts the economy depends on the magnitude and duration of the disaster, the structure of the local economy, the geographical areas affected, the population base, and the time of day the disaster occurs. The largest effects on output, employment, wages, and capital stock occur at the local or regional level, and to a lesser extent at the national level, depending on whether economic activity is sufficiently impeded or whether the disaster affects a large enough percentage of the population or an important industry. For example, the U.S. economy in 1994 was adversely affected by the Northridge earthquake and the winter storms in the South, Midwest, and East, which affected 50% of the U.S. population, disrupted construction in the housing industry, and caused significant reductions in the output of automobiles, steel and appliances. National estimates for economic growth/output were revised downwards as a result of these series of natural disasters.

During a disaster recovery period, the affected region or state will engage in redevelopment and cleanup efforts (assuming a willingness on the part of investors and the public to redevelop the area) that tend to increase local employment and other economic activities. Insurance payments and disaster assistance (government purchases and income transfer payments) provide a flow of funds into the area. Realizing the potential for profits, investors will likely be attracted to the building boom in the devastated area.

Although private domestic investment becomes important in terms of facilitating production, employment, and the demand for products, the apparent positive contribution to the area's aggregate income from increased investment spending is largely ambiguous. The reason is that the investment does not represent net additions to the stock of capital. As destroyed physical assets are replaced with assets that incorporate the latest advanced technology, the productivity of a community's physical assets and the incomes generated from those assets will be enhanced. Depending on how much of the loss is recovered from the rest of the country, the affected region may be better off. The nation as a whole, however, is unambiguously hurt by the disaster.

Catastrophe Losses from 2005 Hurricanes

According to the Insurance Services Office's (ISO) Property Claim Services unit, catastrophe-insured losses in 2005 totaled $61.2 billion from 24 disasters.[4] As **Table 1** shows, catastrophe losses from Hurricane Katrina alone are estimated at about $40.6 billion, making Hurricane Katrina the costliest disaster in U.S. history,

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[4] ISO defines a catastrophe as an event that causes $25 million or more in insured property losses and affects a significant number of property and casualty policyholders and insurers.

exceeding Hurricane Andrew (1992) and the terrorist attacks on the World Trade Center (2001).[5]

Table 1. Ten Most Costly Catastrophes in the United States
($ billions)

Rank	Date	Disaster	Losses	In 2005 dollars
1	Aug. 2005	Hurricane Katrina	$40.6	$40.6
2	Aug. 1992	Hurricane Andrew	15.5	21.6
3	Sept.2001	WTC Terrorist Attacks	18.8	20.7
4	Jan. 1994	Northridge, CA Earthquake	12.5	16.5
5	Oct. 2005	Hurricane Wilma	10.3	10.3
6	Aug. 2004	Hurricane Charley	7.5	7.7
7	Sept. 2004	Hurricane Ivan	7.1	7.4
8	Sep. 1989	Hurricane Hugo	4.2	6.6
9	Sep. 2005	Hurricane Rita	5.6	5.6
10	Sept. 2004	Hurricane Frances	4.6	4.8

Source: Insurance Services Office, Property Claims Service.

Total economic (non-insured) damages from 2005 hurricanes are expected to exceed $200 billion, with the federal government expected to spend over $109 billion for post-disaster assistance, plus more than $8 billion in tax relief.[6] This $109 billion amount includes $89.6 billion in post-disaster assistance and $19.3 billion in insurance claim payments under the NFIP. As of December 31, 2006, the NFIP had borrowed $16.75 billion from the U.S. Treasury — an amount that far exceeds the aggregate amount of claims paid in the history of the program.[7] The $89.6 billion appropriated by Congress includes $11.5 billion in U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) funds for five states (Alabama, Florida, Louisiana, Mississippi, and Texas) affected by

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[5] Insured loss estimates for Hurricane Katrina are likely to change as the extent of losses becomes better known. Disaster experts and catastrophe modeling firms expect the insured loss figures to change as more is known about the levels of water contamination and economic losses from business interruption and adjustments for losses covered by residual market mechanisms and foreign reinsurers. The figures will also change as the courts resolve lawsuits filed on behalf of policyholders involved in disputes (i.e., wind versus flood damages) with their insurers over claims for damages from Hurricane Katrina.

[6] Matt Fellowes and Amy Liu, "Federal Allocations in Response to Katrina, Rita and Wilma: An Update," *The Brookings Institutions*, located at [http://www.brookings.edu/metro/pubs/20060712_katrinafactsheet.pdf#search=%22community%20development%20block%20grant%20and%20katrina%20flood%20relief%22].

[7] U.S. Government Accountability Office, *Hurricane Katrina: GAO's Preliminary Observations Regarding Preparedness, Response, and Recovery*, GAO-06-442T, (Washington: Mar. 8, 2006), p. 38.

Hurricanes Katrina, Rita, and Wilma.[8] The majority of the CDBG funds will be used to compensate homeowners in Louisiana and Mississippi for the value of their homes, up to their insured value or $150,000, whichever is less.[9] Grants are now available to thousands of homeowners outside of Special Flood Hazard Areas, commonly known as the flood plain or the flood zone, who were not required by federal law to purchase flood insurance.[10]

Property/Casualty Insurers Withstood Record Catastrophe Losses

The p/c industry experienced favorable financial and underwriting conditions during 2005 despite record catastrophe losses. There are four reasons the p/c industry emerged financially strong from record catastrophe losses of $60.1 billion in 2005 following record losses of $27.5 billion in 2004.

First, insurers learned important lessons from Hurricane Andrew in 1992, and these lessons prompted them to make changes to both protect the industry's balance sheets and stabilize the property insurance markets in the aftermath of a moderate hurricane.[11] For example, after Hurricane Andrew, the Florida state legislature worked with private insurers and regulators to create a hurricane catastrophe system designed to mitigate losses to the insurance industry and prevent insurers from withdrawing from the Florida insurance market. The Florida Hurricane Catastrophe Fund was created as a reinsurance-like entity funded by a portion of insurance premiums and managed by the Florida State Board of Administration. Florida also began using percentage deductibles tied to the value of homes instead of a dollar amount such as $500 per claim. Florida created a state regulated insurer of last resort to provide insurance when no company is willing to underwrite disaster risks. These strategies for countering the challenges presented by hurricanes saved the property insurance industry from financial disaster after the 2004 and 2005 hurricane seasons.

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[8] The CDBG funds were allocated as follows among the Gulf states: Alabama, $74.4 million; Florida, $82.9 million; Louisiana, $6.2 billion; Mississippi, $5.1 billion; and Texas, $74.5 million. For more information, see CRS Report RL33330, *Community Development Block Grant Funds in Disaster Relief and Recovery*, by Eugene Boyd.

[9] On June 15, 2006, President Bush signed into law the fourth emergency supplemental, for $19.8 billion, in support of short- and longer-term needs of the Gulf Coast. The $19.8 billion includes $5.2 billion in additional CDBG funds, with $4.2 billion intended for Louisiana and the remaining $1 billion to support the renovation and construction of affordable rental housing in the affected states.

[10] In order to qualify for the $150,000 compensation, the home must: (1) be outside the flood zone established by the federal government; (2) be owner-occupied; and (3) have had homeowner or similar insurance coverage at the time of Katrina's landfall. These criteria were established to eliminate the possibility of assistance to homeowners who lived within a known flood area and yet did not maintain flood insurance or homeowners who did not maintain standard home insurance.

[11] For more information on insurance lessons learned form Hurricane Andrew, see CRS Report RL32825, *Hurricane and Disaster Risk Financing Through Insurance: Challenges and Policy Options*, by Rawle O. King.

Second, insurers experienced strong underwriting gains following the imposition of sound risk management practices. After the four major hurricanes in 2004, insurers imposed tighter underwriting standards and sought regulatory approval for higher rates. However, insurers faced regulatory scrutiny when they sought to adjust rates to reflect higher catastrophe risk and higher reinsurance costs. Not able to get approval to charge higher rates, some insurers opted to limit their overall exposure in hurricane-prone areas along the Gulf and Atlantic coasts. This, in turn, precipitated an insurance availability and affordability problem that continues through early 2007.

Third, insures were able to withstand record catastrophe losses in 2005 because policyholder surplus[12] — a measure of claims-paying capacity — rose unexpectedly by 9.2% in 2005, from $393.5 billion at year-end 2004 to $427.1 billion as of December 31, 2005. **Table 2** shows that at the end of the third quarter of 2006, the p/c industry had $467.6 billion in policyholder surplus, supporting about $325.4 billion in earned premiums. Only a fraction of this industry-wide total surplus, however, would be available to compensate victims of a catastrophic event. Insurers must rely on this same limited pool of surplus to pay for other potentially catastrophic and unpredictable risks, such as terrorism, mold, and medical malpractice and asbestos liability claims.

Prior to Hurricane Hugo in 1989, the insurance industry had not experienced any losses from a single disaster of over $1 billion. Today, a one billion dollar disaster is quite common, predictable, and manageable, but most insurance experts would agree that the $100 billion-plus catastrophic event remains a challenge for the U.S. property/casualty insurance industry.[13] Estimates of the probable maximum losses (PMLs) from a catastrophic earthquake or hurricane striking the U.S. range up to $120 billion, and this figure could be even higher depending on the location, time, and intensity of the event. The PML loss from a Category 5 hurricane directly hitting a densely populated area along the Gulf and Atlantic Coasts (e.g., Miami-Ft. Lauderdale) could exceed the total capacity (policyholder surplus) of the U.S. insurance industry.[14]

The *fourth* reason insurers were able to withstand record catastrophe losses in 2005 was their high investment income. Investment income rose by 15.8% in 2005 compared to 2.4% in 2004. Rising interest rates that boost the industry's substantial bond portfolio and strong stock market gains allowed insurers to generate $49.5 billion on their investment portfolio.

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[12] Policyholder surplus is referred to as "net worth" or "owners equity" in other industries. It represents the financial resources (capital) that stand behind every policy underwritten by an insurer.

[13] Ross J. Davidson, Jr., "Working Toward a Comprehensive National Strategy for Funding Catastrophe Exposures," *Journal of Insurance Regulation*, vol. 7, no. 2, winter 1998, p. 134.

[14] David J. Cummins, Neil A. Doherty, and Anita Lo, "Can Insurers Pay for the 'Big One'? Measuring the Capacity of an Insurance Market to Respond to Catastrophic Losses," *Journal of Banking and Finance*, 2002, vol. 26, p. 557-583.

Table 2. Property/Casualty Insurance Industry Financial Results: 2001-2006*

($ billions)

	2001	2002	2003	2004	2005	2006*
Earned Premiums	311.5	348.5	386.3	412.6	$417.7	$325.4
Losses Incurred	234.5	238.8	238.7	246.4	311.4	212.2
Loss Adjustment Expenses Incurred	40.9	44.8	50.0	53.2	110.3	87.7
Policyholder Dividends	2.4	1.9	1.9	1.6	1.9	1.1
Net Underwriting Gain	(52.6)	(30.8)	(4.9)	5.0	(5.9)	24.4
Investment Income	37.7	37.2	38.6	39.6	49.5	37.5
Miscellaneous Income (Loss)	1.1	(0.8)	0.0	(0.5)	0.9	0.2
Pre-Tax Operating Gain	(13.8)	5.6	33.8	44.1	44.5	62.1
Realized Capital Gains (Losses)	6.6	(1.2)	6.6	9.3	9.7	1.5
Federal Income Taxes (Credit)	(0.2)	1.3	10.3	14.7	11.2	18.7
Net income after taxes	**(7.0)**	**3.0**	**30.0**	**38.7**	**43.0**	**44.9**
Policyholder surplus (End of period)	**295.4**	**290.6**	**247.0**	**393.5**	**427.1**	**467.6**

Source: Insurance Services Office, Property Claims Service.

* Preliminary nine-month estimates of property/casualty industry's operating results, as of October 2006.

Since the late 1980s, several major catastrophes[15] have caused insurers, reinsurers, stakeholder groups, and policymakers to question whether the p/c insurance industry has the capacity to insure a mega-catastrophic event. In the aftermath of Hurricane Katrina, some Members of Congress have expressed concerns about the availability and affordability of natural disaster insurance for residents and business owners in disaster-prone states.[16] In the short-run, in order to make homeowners insurance available and affordable, state governments have created state-sponsored insurance pools to provide catastrophe insurance (or reinsurance) coverage at subsidized rates. These state-sponsored insurance programs, however, are inadequately capitalized to handle the mega-catastrophic event. The Florida Hurricane Catastrophe Fund (FHCF), for example, began 2007 with about $1 billion in cash and total insured residential values of $1.8 trillion. FHCF issues up to $15 billion of reinsurance to residential insurers at about 30% the up-front cost of private reinsurance by shifting the actual cost of risk into the future with long-term post-event debt financing. Given the short-term nature of the state-sponsored disaster risk

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[15] These natural disasters include Hurricanes Hugo and Georges (1989); Loma Prieta, California earthquake (1989); Hurricanes Andrew and Iniki (1992); Midwest floods (1993); Northridge, California earthquake (1994); Hurricane Fran (1996); Red River floods (1997); World Trade Center and Pentagon terrorist attacks (2001); and Hurricane Katrina (2005).

[16] Mark Foley, "Insurance Industry in Need of Change", *The Miami Herald*, Sept. 8, 2005, p. A18.

financing, some disaster experts have proposed that the federal government play a role in the financing of natural disaster risks.

Major Federal Disaster Insurance Legislation

Appendix A provides a summary of major federal disaster insurance legislation introduced in Congress from 1973 through 2007. Since the early 1970s, Congress has considered several legislative proposals to establish a federal disaster insurance/reinsurance program, but none were enacted until the passage of the Terrorism Risk Insurance Act (TRIA) of 2002.[17] Most of those calls for action typically followed a major disaster and public policy debate about how best to respond to the U.S. exposure to high levels of risk from natural disasters, primarily hurricanes, floods, earthquakes, and windstorm risks. TRIA provided a temporary federal reinsurance backstop once a high insurance industry loss is sustained. The law, which was scheduled to expire at the end of 2005, was extended through December 31, 2007.[18]

The first of these proposals — H.R. 4480 and H.R. 4462, introduced in the 101st Congress — sought to address only the earthquake hazard.[19] Later bills, such as H.R. 21 in the 106th Congress and H.R. 1552 in the 108th Congress, adopted an "all-hazard" approach to covering most natural hazards, including hurricanes, earthquakes, and volcanoes. Both H.R. 21 and H.R. 1552 would have established a federal program to provide reinsurance to improve the availability of homeowners' insurance. The two bills took slightly different approaches, however. Whereas H.R. 21 would have established a new federal disaster reinsurance fund to provide up to $25 billion in annual coverage to state insurance pools, H.R. 1552 would have authorized the Secretary of the Treasury to establish a program to make reinsurance coverage available through the auctioning of contracts.

110th Congress

Federal disaster insurance legislation has been introduced in the 110th Congress that would

- establish a federal program to provide reinsurance to improve the availaiblity of homeowners' insurance — H.R. 330;

- establish a federal program to provide reinsurance for state natural catastrophe insurance programs to help the United States better manage and insure risks of large-scale natural disasters — H.R. 91;

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[17] P.L. 107-297; 116 Stat. 2322.

[18] CRS Report RS21979, *Terrorism Risk Insurance: An Overview*, by Baird Webel.

[19] Elliott Mitter, "Alternative National Earthquake Insurance Programs," *Earthquake Spectrum*, Aug. 1991, vol. 7, no. 3, p. 757.

- change U.S. tax law to allow insurers to accumulate catastrophe reserves on a tax-preferred basis — H.R. 164.

109th Congress

In the 109th Congress, Representative Ginny Brown-Waite introduced two federal disaster insurance bills. The Homeowners' Insurance Availability Act of 2005 (H.R. 846) would have allowed the Secretary of the Treasury to auction $25 billion of contracts for reinsurance coverage to private insurers and reinsurers in six regions across the country. A newly established National Commission and Insurance Loss Costs would have been established to advise the Treasury regarding the estimated loss costs associated with the contracts for reinsurance coverage. The Homeowners' Insurance Protection Act (H.R. 4366) would have established a National Commission on Catastrophe Preparation and Protection and authorized the sale of reinsurance contracts backed by the federal government to eligible state catastrophe funds. Senator Bill Nelson introduced similar legislation (S. 3117).

Representative Mark Foley introduced the Policyholder Disaster Protection Act (H.R. 2668) that would have amended the Internal Revenue Code (IRC) to permit insurers to establish tax-deductible reserve funds for catastrophic events. Senator Bill Nelson introduced similar legislation (S. 3116) in the Senate.

Representative Carolyn Maloney introduced the Natural Catastrophe Insurance Act (H.R. 4507) that would have authorized the Secretary of the Treasury to establish a federal reinsurance program to provide reinsurance to state-sponsored catastrophe insurance programs and "qualified" entities. The purpose of the program was to be twofold: improve the availability of property insurance for residential and commercial property and improve the solvency of private catastrophe insurance markets. The minimum level of retained losses from a single event of covered peril was to be $50 billion for the state-sponsored catastrophe insurance/reinsurance program, and the maximum aggregate federal liability was $25 billion. (The federal government covers the reinsurance layer between $50-$75 billion.)

Senator Bill Nelson introduced S. 3114 to establish the bipartisan Commission on Catastrophic Disaster Risk and Insurance Act of 2006 to assess the condition of the property and casualty insurance and reinsurance markets in the aftermath of Hurricanes Katrina, Rita, and Wilma in 2005. Representatives Kendrick B. Meek and Debbie Wasserman Schultz introduced similar legislation (H.R. 5587/H.R. 5891).

Senator Bill Nelson also introduced S. 3115, the Catastrophe Savings Accounts Act of 2006, to amend the Internal Revenue Code to create tax-exempt catastrophe savings accounts to pay expenses resulting from a presidentially declared major disaster. Representative Tom Feeney introduced similar legislation in the House (H.R. 4836).

108th Congress

The 108th Congress considered several major federal disaster insurance bills, but the approach that received the most attention involved changing federal tax law to authorize tax-deferred treatment of private insurers' catastrophe reserves.[20] Allowing private insurers to build up catastrophe reserves to pay natural disaster-related claims that have a low probability of occurrence, it is argued, would lower insurers' costs of holding capital and, in turn, lower the premiums they must charge for a given level of disaster coverage. Alternatively, critics charge that the tax deductibility of catastrophe reserves would cause the U.S. Treasury to lose tax revenue paid by insurers. Would the lost tax revenue be an acceptable price to pay to achieve the public-sector goal of reducing overall disaster losses? How would someone measure success? These were central questions in the debate.

All federal disaster insurance/reinsurance bills, including TRIA, share one feature: they seek to improve the nation's ability to finance catastrophe risk through insurance, as opposed to increased direct spending for federal disaster assistance. Their justification has been based on the argument that such initiatives will: (1) enhance the current catastrophe funding system; (2) make property insurance more available and affordable in high-risk areas; (3) promote the funding of research studies (i.e., earthquake science, actuarial science, economics, and finance) on disaster insurance issues; and (4) expand our knowledge and understanding of the scientific and financial aspects of natural hazards. In addition, proponents of federal disaster insurance have argued that such a scheme would reduce dependence on "free" disaster assistance and support efficient risk management by households and businesses.[21]

Opponents to federal intervention in catastrophe insurance markets believe there is sufficient private sector capacity and federal intervention would only crowd out private capital for insuring disasters and stifle innovative catastrophe risk financing through insurance. Moreover, critics of federal intervention say such measures would conflict with long-established sociological, economic, and actuarial principles that focus on the "true" cost of government programs (the opportunity cost of the funds), the foregone benefits of a competitive insurance marketplace (e.g., cost efficiency and rate competition), and the absence of consumer choice (the ability to decide whether to purchase coverage).[22]

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[20] For more information on the catastrophe insurance market failure and possible tax policy approaches to solving the catastrophe funding problems see CRS Report RL33060, *Tax Deductions for Catastrophic Risk Insurance Reserves: Explanation and Economic Analysis*, by David Brumbaugh and Rawle King.

[21] Ross J. Davidson Jr., "Working Toward a Comprehensive National Strategy for Funding Catastrophic Exposures," *Journal of Insurance Regulation*, vol. 7, no. 2, winter 1998, p. 134.

[22] Howard Kunreuther and Richard J. Roth, Sr., *Paying the Price: The Status and Role of Insurance Against Natural Disasters in the United States* (Washington: Joseph Henry Press, 1998), p. 92.

Citing the development of new financial instruments to fund catastrophe coverage and expanded reinsurance capacity, critics of public insurance systems say there is no need for a federal insurance program at this time. They insist that such programs would shield the private sector from loss while creating sizable taxpayer-financed subsidies that undermine private-sector incentives for efficient risk management. Moreover, it has been argued that these programs would encourage population growth and development in high-risk, hurricane-prone areas that should not be developed, and would allow insurers to "cherry pick" the best risks and send the federal government the poor risks.

Concluding Remarks

Historically, Congress has been reluctant to enact federal disaster insurance legislation because of a lack of consensus on what will work, and concerns about adequate provisions for mitigation and avoidance of unnecessary government intrusion into markets being adequately served by private sector financial entities. Congressional reluctance to establish a federal disaster insurance program has been based on the recognition that such a program would conflict with sociological, economic, and actuarial principles that emphasize the "true" cost of government programs (the opportunity cost of the funds), the forgone benefits of a competitive insurance marketplace (e.g., cost efficiency and rate competition), and the absence of consumer choice (the ability to decide whether to purchase coverage).[23]

The federal government has played an important role in the U.S. economic system by assuming risks that the private sector either will not undertake at any price, or will accept but at a price so high that most potential beneficiaries will not purchase the coverage. For example, government risk-bearing now occurs in environmental disasters, nuclear-plant accidents, toxic waste dumps, and flooding. Establishing an explicit federal disaster insurance system to ameliorate the potential damages to homes and commercial buildings stemming from natural disasters would represent another government risk-bearing program — one that could expose taxpayers to funding demands if program revenues fail to cover costs, or if returns are lower than expected. Nevertheless, supporters of a federal disaster insurance program argue that it would be justified by the national scope of the Hurricane Katrina disaster, and by the inability of the private insurance industry to handle future high payouts from a mega-catastrophic event without federal government involvement.

As Members of the 110th Congress explore long-term ways to respond to Hurricane Katrina, consideration might be given to whether there is a need to improve the nation's ability to finance catastrophic risk and, if so, how. Previous Congresses responded to similar concerns by considering legislation to create a federal catastrophe reinsurance program for residential property. Despite broad support for several bills over the past few years, Congress did not authorize a federal

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[23] Paul R. Kleindorfer and Howard Kunreuther, "Challenges Facing the Insurance Industry in Managing Catastrophic Risks," in *The Financing of Catastrophe Risk*, ed., Kenneth A. Front (Chicago: University of Chicago Press, 1999), p. 149.

reinsurance program until the enactment of the Terrorism Risk Insurance Act of 2002.

Finally, most observers would agree that for the very highest layers of catastrophe risk, the government (and consequently the taxpayer) is now, by default, the insurer of last resort. In the 110th Congress, any one of a number of policy options could be pursued, and will likely be influenced by whether it can be shown that potential losses from Hurricane Katrina are beyond the capacity of private markets to diversify natural hazard risks. Members will likely be grappling with several policy questions. For example, will reinsurance and securitization be enough to maintain insurance solvency after a mega-catastrophic hurricane or earthquake? How can the various funding sources available for catastrophe insurance be expanded and refined to cope with a catastrophic hurricane? Finally, what role, if any, should the federal government play in catastrophe insurance?

Appendix A. Summary of Federal Disasters Insurance Legislation: 1973-2007

Bill Number (Sponsor)	Bill Title	Purpose
110th Congress (2007-2008)		
S. 292 (Nelson)	Bipartisan Commission on Insurance Reform	Establishes a bipartisan commission on insurance reform.
H.R. 164 (Jindal)	Policyholder Disaster Protection Act of 2007	Changes U.S. tax law to allow insurers to accumulate catastrophe reserves on a tax-preferred basis.
H.R. 330 (Brown-Waite)	Homeowners' Insurance Availability Act of 2007	Establishes a federal program to provide reinsurance to improve the availaiblity of homeowners' insurance.
H.R. 91 (Brown-Waite)	Homeowners Insurance Protection Act of 2007	Establishes a federal program to provide reinsurance for state natural catastrophe insurance programs to help the United States better manage and insure risks of large-scale natural disasters.
109th Congress (2005-2006)		
S. 3114 (Nelson)	Commission on Catastrophic Disaster Risk and Insurance Act of 2006	Establishes the bipartisan Commission on Catastrophic Disaster Risk and Insurance Act of 2006 to assess the condition of the property and casualty insurance and reinsurance markets in the aftermath of Hurricanes Katrina, Rita, and Wilma in 2005
S. 3115 (Nelson)	Catastrophe Savings Accounts Act of 2006	Amends the Internal Revenue Code to create tax-exempt catastrophe savings accounts to pay expenses resulting from a presidentially declared major disaster.
S. 3117 (Nelson)	Homeowners Protection Act of 2006	Amends the Internal Revenue Code of 1986 to permit insurers to establish tax-deductible reserve funds for catastrophes.
H.R. 4836 (Feeney)	Catastrophe Savings Accounts Act of 2006	Same as S. 3115.
H.R. 5891 (Wasserman)	Catastrophic Disaster Risk and Insurance Commission Act of 2006	Same as S. 3114.
H.R. 5587 (Meek)	Commission on Catastrophic Disaster Risk and Insurance Act of 2006	Same as S. 3114.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 4507 (Maloney)	Natural Catastrophe Insurance Act of 2006	Establishes a federal reinsurance program to provide reinsurance to state-sponsored catastrophe insurance programs, and "qualified" entities.
H.R. 4366 (Brown-Waite)	Homeowners' Insurance Protection Act of 2005	Establishes a national commission on catastrophe preparation and protection and authorizes the sale of federal reinsurance contracts to eligible state catastrophe funds.
H.R. 4320 (Oxley)	National Flood Insurance Program Commitment to Policyholders and Reform Act of 2005	Amends the Flood Disaster Protection Act of 1973 and the National Flood Insurance Act of 1968 to increase the defined area having special flood hazards, increase from $350 to $2,000 the civil monetary penalty for mortgage lenders failures to require flood insurance, establishes a flood insurance appeals process, increases FEMA's borrowing authority, requires FEMA to report semi-annually to Congress on the financial status of the NFIP, and other purposes.
H.R. 4133 P.L. 109-106 (Fitzpatrick)	National Flood Insurance Program Further Enhanced Borrowing Authority Act of 2005	Amends the National Flood Insurance Act of 1968 to increase from $3.5 billion to $18.5 billion, through FY2008, the total amount which FEMA may borrow from the Secretary of the Treasury.
H.R. 2668 (Foley)	Policyholder Disaster Protection Act of 2005	Same as S. 3117.
H.R. 846 (Brown-Waite)	Homeowners' Insurance Availability Act of 2005	Instructs the Secretary of the Treasury to implement a reinsurance program available only through contracts for reinsurance coverage purchased at regional auctions.
S. 24 (Hutchison)	Emergency Reserve Fund Act of 2005	Establish an emergency reserve fund to provide timely financial assistance in response to domestic disasters and emergencies.
108th Congress (2003-2004)		
H.R. 253/S. 2238 P.L. 108-264 (Bereuter/Bunning)	Flood Insurance Reform Act of 2003	Amends the NFIA to extend the NFIP's authorization through September 30, 2008, and establishes a pilot program for mitigation of severe repetitive loss properties.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 670 (Baker)	Flood Loss Mitigation Act of 2003	Amends the NFIA to authorize the Director of FEMA to carry out mitigation activities that reduce flood damages to qualified repetitive loss structures.
H.R. 1552 (Weldon)	Homeowners' Insurance Availability Act of 2003	Same as H.R. 846 in the 109th Congress.
H.R. 2020 (Moore)	Hurricane, Tornado, and Related Hazards Research Act	Requires the Director of Office of Science and Technology Policy to establish an Interagency Group to be responsible for the development and implementation of a coordinated federal windstorm and related hazards reduction research development, and technology transfer program (the Windstorm and Related Hazard Impact Reduction Program).
H.R. 4186 (Foley)	Policyholder Disaster Protection Act of 2004	Same as H.R. 2668 in 109th Congress.
S. 1607 (Graham)	Homeowners' Insurance Availability Act of 2003	Same as H.R. 4186 in 108th Congress.
107th Congress (2001-2002)		
H.R. 785 (Foley)	Policyholder Disaster Protection Act of 2001	Same as H.R. 268 in 109th Congress.
H.R. 1428 (Bereuter)	Two Floods and You Are Out of the Taxpayers' Pocket Act of 2001	Amends NFIA to require the Director of FEMA, in awarding grants for mitigation activities, to give priority to properties for which repetitive flood insurance claim payments have been made (repetitive claim properties), and other purposes.
H.R. 1789 (Shaw)	Amend the IRC to Exempt from Income Tax State-Created Organizations	Amends the Internal Revenue Code of 1986 to exempt from income tax state-created organizations providing property and casualty insurance for property for which such coverage is otherwise unavailable.
H.R. 3210 P.L. 107-297 (Oxley)	Terrorism Risk Insurance Act of 2002	Establishes a three-year Terrorism Insurance Program in the Department of the Treasury to pay the federal share of compensation for insured losses resulting from acts of terrorism.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 3592 (Moore)	Hurricane, Tornado, and Related Natural Hazards Research Act	Same as H.R. 2020 in 108th Congress.
H.R. 4025 (Weldon)	Homeowners' Insurance Availability Act of 2002	Same as H.R. 846 in 109th Congress.
S. 797 (Gramm)	Policyholder Disaster Protection Act of 2001	Amends the Internal Revenue Code of 1986 to add to the list of 501(c) (tax-exempt) organizations any nonprofit association created before January 1, 1999, by state law and organized and operated exclusively to provide property and casualty insurance coverage for losses occurring due to natural disasters within the state, for which the state has determined that coverage in the authorized insurance market is not reasonably available to a substantial number of insurable real properties.
S. 1748 (Gramm)	Terrorism Risk Insurance Act of 2001	Establishes in the Department of the Treasury the Terrorism Insured Loss Shared Compensation Program to pay the federal share of compensation for insured losses resulting from an act of terrorism occurring during specified periods through December 31, 2004.
S. 1751 (Gramm)	Terrorism Risk Insurance Act of 2001	Substantially similar to S. 1748.
106th Congress (1999-2000)		
H.R. 21 (Lazio)	Homeowners' Insurance Availability Act of 1999	Establishes a federal program to provide reinsurance to state insurance programs and private insurers/reinsurers, covering earthquakes and fires following hurricanes, tsunamis, volcanic eruptions, and tornadoes.
H.R. 481 (Mink)	Earthquake, Volcanic Eruption, and Hurricane Hazards Insurance Act of 1999	Requires the Director of FEMA to establish a three-part insurance, reinsurance and mitigation program to provide national coverage and mitigation for residential property losses in earthquake-prone, volcanic eruption-prone, or hurricane-prone states.
H.R. 2728 (Bereuter)	Two Floods and You Are Out of the Taxpayers' Pocket Act of 1999	Same as H.R. 1428 in 107th Congress.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 2749 (Foley)	Policyholder Disaster Protection Act of 1999	Amends the Internal Revenue Code of 1986 to allow insurers to create tax-deferred reserves to fund future catastrophic losses from natural disasters.
H.R. 3303 (Burr)	Natural Disaster Insurance Solvency Act of 1999	Establishes the National Disaster Insurance Solvency Fund (NDISF) as a non-federal agency to hold, invest, and distribute private insurance solvency reserve amounts for rare catastrophic events. Directs the NDISF to establish and maintain a Catastrophe Emergency Solvency Reserve Account as a tax-exempt custodial account to hold all contributions of solvency reserve amounts.
S. 1361 (Stevens)	Natural Disaster Protection and Insurance Act of 1999	Amends Earthquake Hazards Reduction Act of 1977 to provide for an expanded federal program of hazard mitigation, relief, and insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, and volcanic eruptions.
105th Congress (1997-1998)		
H.R. 219 (Lazio)	Homeowners' Insurance Availability Act of 1997	Creates a federal reinsurance program to allow states to purchase reinsurance contracts to cover natural disaster losses above $25 billion in a single year.
H.R. 230 (McCollum)	Natural Disaster Protection and Insurance Act of 1997	Creates an integrated three-part program to encourage disaster risk mitigation, expand catastrophe insurance coverage at adequate rate levels, and mandate several catastrophe insurance studies on tax-deductibility of pre-event catastrophe reserves and flood insurance. To expand the supply of catastrophe reinsurance in the private market, the Treasury Secretary would auction federal excess-of-loss contracts in the $25-$50 billion layer of insured losses to insurers, reinsurers, and state, regional and privately established and capitalized national pools.
H.R. 579 (Mink)	Earthquake, Volcanic Eruption, and Hurricane Hazards Insurance Act of 1997	Same as H.R. 481 in 106th Congress.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 3728 (Obey)	Disaster Relief Partnership Act	Amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act to return primary responsibility for disaster relief to the states; establishes a national disaster insurance program to provide coverage to states against certain losses and costs arising from disasters.
104th Congress (1995-1996)		
H.R. 1731 (Mink)	Earthquake, Volcanic Eruption, and Hurricane Hazards Insurance Act of 1995	Same as H.R. 579 in 105th Congress.
H.R. 1856 (Emerson)	Natural Disaster Protection Act of 1995	Amends the Stafford Act to establish a federal disaster mitigation and insurance program.
H.R. 4115 (Frazer)	Residential Windstorm Insurance Plan Act of 1996	Instructs the Director of FEMA to study the advisability and feasibility of establishing a residential windstorm insurance program designed to provide windstorm insurance to residential property owners unable to obtain coverage in the private market.
S. 1043 (Stevens)	National Disaster Protection and Insurance Act of 1995	Amends the Earthquake Hazards Reduction Act of 1977 by adding new definitions to the existing acts, as well as three interrelated programs — hazard mitigation, relief, and insurance and reinsurance — against the risk of catastrophic natural disaster, such as hurricanes, earthquakes, volcanic eruptions, and tsunami.
103rd Congress (1993-1994)		
H.R. 62 (Bereuter)	National Flood Insurance Compliance, Mitigation, and Erosion Management Act of 1993	Amends the NFIA to make changes designed to increase compliance with the mandatory purchase requirement, to establish ratings and incentives for community floodplain management programs, and to mitigate flood and erosion risks.
H.R. 764 (de Lugo)	Windstorm Hazard Reduction Plan Act of 1993	Directs the Director of FEMA to develop a plan for establishing and carrying out a national windstorm insurance program and to submit it to specified committees of Congress.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 935 (Mink)	Earthquake, Volcanic Eruption, and Hurricane Hazards Insurance Act of 1993	Same as H.R. 1731 in the 104th Congress.
H.R. 1302 (Shaw)	Hurricane Hazard Reduction Act of 1993	Establishes a national hurricane insurance program that features an excess loss reinsurance program to provide reinsurance coverage to private insurers and reinsurers for hurricane-related losses that would otherwise be ineligible for coverage.
H.R. 2873 (Mineta)	Natural Disaster Protection Partnership Act of 1994	Amends the Robert T. Stafford Act by adding several new definitions and three new titles relating to disaster mitigation, mandatory purchase of disaster coverage, and the establishment of the Natural Disaster Protection Fund, with three accounts to provide: (1) direct loans to insurers and state insurance pools; (2) grants to eligible states for the repair of facilities and infrastructure; and (3) funds for hazard mitigation activities of the states.
H.R. 3185 (Talent)	Flood Insurance Reform and Relief Act of 1993	Amends the NFIA to make changes to the NFIP in the area of structural elevation requirements.
H.R. 3191 (Kennedy)	National Flood Insurance Reform Act of 1994	Amends the NFIA to make changes designed to increase compliance with the mandatory purchase requirement, establish ratings and incentives for community floodplain management programs, and mitigate flood and erosion risks.
S. 1350 (Inouye)	Natural Disaster Protection Act of 1993	Amends the Earthquake Hazard Reduction Act of 1977 to authorize FEMA to establish three interrelated programs focusing on disaster loss mitigation, expanded insurance protection against earthquakes, and an excess-loss reinsurance program for multi-hazards, including hurricanes, tornadoes, and volcanic eruptions.
102nd Congress (1991-1992)		
H.R. 3021 (Rinaldo)	Presidential Insurance Commission Act of 1991	Establishes a Presidential Commission on Insurance.
H.R. 4792 (Mink)	Earthquake and Volcanic Eruption Hazard Reduction Act	Same as H.R. 935 in 105th Congress

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 5447 (Campbell)	Riot Reinsurance Act of 1992	Reauthorizes the program under title XII of the National Housing Act to provide reinsurance through FEMA against property losses resulting from riots or civil disorders.
S. 1276 (Dodd)	Presidential Insurance Commission Act of 1991	Same as H.R. 3021.
S. 2533 (Inouye)	Earthquake and Volcanic Eruption Hazard Reduction Act	Same as H.R. 4792.
101st Congress (1989-1990)		
H.R. 4480 (Swift)	Federal Earthquake Insurance and Reinsurance Act of 1990	Creates the Federal Earthquake Insurance and Reinsurance Corporation to make earthquake and volcanic eruption insurance available to homeowners and business owners.
H.R. 4462 (Brown)	National Earthquake Insurance and Reinsurance Act of 1990	Requires the Director of FEMA to identify earthquake hazards nationwide and make this information available to affected communities. Also authorizes the Director to establish a national earthquake insurance and reinsurance program.
H.R. 4915 (Brown)	Earthquake Hazards Reduction Amendment Act of 1990	Amends the Earthquake Hazards Reduction Act of 1977 to carry out a newly established National Earthquake Insurance Program.
100th — 99th — 98th (1983-1988)		
No major federal disaster insurance bills introduced.		
97th Congress (1981-1982)		
H.R. 1369 (Danielson)	Federal Disaster Insurance Act of 1981	Establishes within the Department of the Treasury the Federal Disaster Insurance Corporation to provide every citizen and resident of the United States who makes an application and qualifies, with insurance against damage to or loss of property due to natural disasters. Repeals the National Flood Insurance Act of 1968.
96th Congress (1979-1980)		
H.R. 1922 (Danielson)	Federal Disaster Insurance Act of 1979	Same as H.R. 1369 in 97th Congress.
95th Congress (1977-1978)		

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 4643 (St. Germain)	Disaster Insurance Corporation Act of 1977	Establishes a Disaster Insurance Corporation to encourage private insurance companies to provide insurance against catastrophic losses, and to reinsure such companies against abnormally high losses resulting form the provision of such insurance.
94th Congress (1975-1976)		
H.R. 1677 (Flood)	National Catastrophic Disaster Insurance Act of 1975	Establishes within the Office of Federal Insurance Administrator in the Department of Housing and Urban Development a program of federal insurance against catastrophic natural disasters utilizing the private insurance industry, particularly risk-sharing pools of insurance companies, while preserving state regulation.
H.R. 8718 (Danielson)	Federal Disaster Insurance Act of 1975	Same as H.R. 1369 in 97th Congress.
S. 741 (Scott)	National Catastrophic Disaster Insurance Act of 1975	Establishes a program of federal insurance against catastrophic disasters. Similar to H.R. 1677.
S. 3884 (Brooke)	Federal Insurance Administrator Act	Establishes a Federal Insurance Administrator in HUD whose function would be to issue charters to corporations for carrying out the business of insurance, particularly as it relates to floods and federal entities set up to manage flood hazards under the National Flood Insurance Act of 1968.
93rd Congress (1973-1974)		
H.R. 4772 (Flood)	National Catastrophic Disaster Insurance Act of 1973	Same as H.R. 1677 in 94th Congress.
H.R. 4920 H.R. 6317 H.R. 6317 H.R. 7457 H.R. 8833 (Danielson)	Federal Disaster Insurance Corporation Act of 1973	Creates a Federal Disaster Insurance Corporation to insure against losses due to major natural disaster.
H.R. 6744 (Roybal)	Natural Disaster Insurance Act of 1973	Authorizes the Secretary of HUD to establish a program of federal insurance against natural disasters.
H.R. 6903 H.R. 6904 H.R. 6905 (Flood)	Federal Disaster Insurance Act of 1973	Establishes a national program of federal insurance against catastrophic disasters.

Bill Number (Sponsor)	Bill Title	Purpose
H.R. 7433 (Rees)	National Catastrophic Disaster Insurance Act of 1973	Same as H.R. 4772.
H.R. 7604 (Morgan)	Federal Disaster Insurance Act of 1973	Establishes a national program of federal insurance against catastrophic disasters.