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

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Summary

On August 29, 2005, Hurricane Katrina made landfall on the Gulf of Mexico coast with high velocity winds, storm surge, heavy rain, flooding, coastal erosion, hail, and tornadoes. The storm caused deaths, injuries, property and infrastructure damage, economic loss, and human suffering to the coastal region of Louisiana, Mississippi, and Alabama. Private insurer losses from Hurricane Katrina for damaged, destroyed, or flooded homes and businesses, and for offshore oil and gas platforms that were either damaged, lost or missing and presumed sunk in the Gulf of Mexico, are estimated to be in the range of \$40 to \$60 billion. This amount would make Katrina the costliest insured loss from a single event in U.S. history, exceeding Hurricane Andrew (1992) and the terrorist attacks of September 11, 2001. Total economic losses, including insured and uninsured property and flood damages are expected to exceed \$200 billion.

In the aftermath of Katrina, policy makers, disaster experts, and insurance companies have expressed concerns about the financial costs and challenges of recovering from Hurricane Katrina. Further, they note the potential vulnerability of the insurance industry to a future mega-catastrophic event, and raise questions about what role, if any, the federal government should play in financing catastrophe risks.

Despite the severity of damages, insurers are well-equipped to manage the financial impact of a catastrophe on this scale. The U.S. personal lines insurers have benefitted from recent favorable market conditions and have built up policyholder surplus for an unexpected event like Katrina. A. M. Best, an insurance rating and information agency, reports that almost all rated companies will be able to meet their commitments. A few individual companies' ratings may be lowered.

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 will likely emerge largely intact from Hurricane Katrina and is better capitalized now than ever, it simply does not have sufficient capital to fund 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. Since then, new capital has entered the catastrophe insurance market.

As Members of Congress explore ways to respond to Hurricane Katrina, 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.

Contents

Introduction	1
The U.S. Economy and Natural Disasters	3
Insured Losses from Hurricane Katrina	4
Insurance Industry's Overall Exposure to Disasters	7
Major Federal Disaster Insurance Legislation	9
Conclusion	12

List of Tables

Table 1. Top 10 Insured Property Losses in United States	5
Table 2. Property/Casualty Insurance Industry Financial Results: 2000-2004 ...	9
Appendix A. Summary of Federal Disasters Insurance Legislation: 1973-2005	15

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

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 hurricane caused extensive flooding and wind damage to property, businesses, and infrastructure as a result of heavy rain, high velocity winds, and a record 30-foot storm surge. Hurricane Katrina was different from other hurricanes because of the extensive flooding that resulted from the record 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 government officials, insurance industry participants, and disaster experts about:

- 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;
- the vulnerability of the property insurance industry to a mega-catastrophic event of such magnitude that a substantial portion of the

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.

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 mitigate losses and finance large insured losses from catastrophic events.

There appears to be growing support among policymakers and disaster policy experts on the need to reexamine how this nation manages and finances disaster risk 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.

Three broad disaster-related policy issues or questions will likely be debated:

- Most disaster experts would agree that the losses paid by the insurance industry and the federal government to help policyholders and citizens, respectively, recover from catastrophe are enormous. This increase in catastrophe losses has triggered public policy debate about the financing and management of catastrophic risks associated with natural disasters. What should be the appropriate role of government in the financing and management of catastrophic risk, given the recognized inadequacies of traditional government approaches to coping with disasters? (These traditional approaches include using warnings before disaster strikes, emergency relief and hazard insurance after a disaster occurs, and hazard reduction measures such as levees to reduce damages from a future disaster.)

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

- What disaster risk management strategies should government pursue given, as some experts suggest, that the increasing frequency and severity of catastrophic events have been complicated by growing population density, the geographic concentration of economic resources in disaster-prone areas, and, as some assert, climate change?
- The government's increasing role as a bearer of risk has been triggered by insurance companies' unwillingness or inability to finance catastrophe risks in the wake of major disasters since the early 1990s. Financial market participants have developed capital market innovations designed to manage and transfer risk. What legislative alternatives are available to pre-fund the cost of disasters with insurance or capital market instruments (risk securitization)? Can sufficient capacity be directed to financing catastrophe risk through the access of capital in the financial markets?

Prior to Katrina, Members of the 109th Congress had already begun debating an extension of the federal terrorism risk insurance legislation — a debate that is likely to now include consideration of ways to pre-fund the cost of both natural and man-made disasters. This debate is likely to occur within the framework of finding ways to ensure the availability and affordability of disaster insurance to protect residential and commercial property against future disasters. This 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 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.

Insured Losses from Hurricane Katrina

As **Table 1** shows, private insurer losses from Hurricane Katrina are estimated to be \$40-\$60 billion. This would make the tropical storm the costliest natural disaster in U.S. history, exceeding Hurricane Andrew in 1992 and the September 11, 2001 terrorist attacks. These insured loss figures include damages caused by the storm's landfall in Florida on August 25, 2005, that led to an estimated \$600 million to \$2 billion in insured losses, as well as dozens of offshore oil and gas platforms reported either lost, damaged, or missing and believed sunk. Total damages are expected to exceed \$200 billion, with the federal government expected to spend over \$100 billion for response and recovery efforts associated with Hurricane Katrina in Alabama, Florida, Louisiana, Mississippi, and other affected areas.⁴ These amounts will exceed the initial cost for recovery from the September 11 terror attacks.⁵

⁴ On September 2, 2005, President Bush signed into law the Emergency Supplemental Appropriations Act (Public Law 109-61), which provided \$10.5 billion in emergency supplemental funds for Hurricane Katrina-related disaster relief. Due to the catastrophic nature of Katrina, the President subsequently requested an additional \$51.8 billion for emergency FY2005 supplemental resources for the Departments of Defense and Homeland Security and the Army Corps of Engineers.

⁵ Theo Francis, "Insurance Costs to Rise," *Wall Street Journal*, Sept. 6, 2005, p. C1.

Table 1. Top 10 Insured Property Losses in United States
(\$ billions)

Rank	Date	Disaster	Losses	Losses In 2004 Dollars
1	Aug. 2005	Hurricane Katrina	*\$35.0	??
2	Aug. 1992	Hurricane Andrew	15.5	20.9
3	Sept. 2001	WTC Terrorist Attacks	18.8	20.1
4	Jan. 2004	Northridge, CA Earthquake	12.5	15.9
5	Aug. 2004	Hurricane Charley	7.5	7.5
6	Aug. 2004	Hurricane Ivan	7.1	7.1
7	Sept. 1989	Hurricane Hugo	4.1	6.4
8	Aug. 2004	Hurricane Frances	4.6	4.6
9	Aug. 2004	Hurricane Jeanne	3.7	3.7
10	Sept. 1998	Hurricane Georges	2.9	3.4

Source Insurance Service Office, Property Claims Service

*Preliminary estimate from Risk Management Solutions, Newark, California.

Insured loss estimates are likely to change as the extent of losses becomes better known. Disaster experts and modeling firms expect the numbers to change as more is known about the levels of water contamination and economic losses from business interruption and displacement of residents in New Orleans, Biloxi, Pascagoula, and Gulfport. These figures will also change when more accurate information about the economic costs of interruption of oil supply and exports of commodities such as grain becomes available. Most of the U.S. energy operations are in the Gulf Coast region.

Most insurance market analysts would agree that insurers will be able to pay all Katrina-related claims without triggering insurer insolvencies or market disruption. Despite the severity of damages, insurers are well-equipped to manage the financial impact of a catastrophe of this scale. The U.S. personal lines insurers have benefitted from recent favorable market conditions and have built up policyholder surplus for an unexpected event like Katrina. As **Table 2** (see p. 9) shows, the industry as a whole earned \$38.7 billion in net after-tax income in 2004, and policyholder surplus increased by 13.4%, or \$46.5 billion, to a record \$393.5 billion for the same year. A. M. Best, an insurance rating and information agency, reports that almost all rated companies will be able to meet their commitments. A few individual companies' ratings may, however, be lowered.

Although the insurance industry will emerge largely intact from Hurricane Katrina and is better capitalized now than ever, the industry simply does not have sufficient capital to fund 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. Since then, new capital entered the catastrophe insurance market.

Insurers learned important lessons from Hurricane Andrew that prompted them to make changes to both protect the industry's balance sheets and stabilize the

property insurance markets in the aftermath of a small-to-moderate hurricane.⁶ For example, after Hurricane Andrew, the Florida state legislature worked with 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 measures saved the property insurance industry from financial disaster after the four major hurricanes in 2004. Neither Louisiana, Mississippi, nor Alabama, however, have a similar catastrophe fund to compensate hurricane victims at a level comparable to what is available in Florida.

Most insurance analysts predict that Hurricane Katrina will likely result in higher pricing and restricted coverage in the hardest-hit areas.⁷ Insurers who specialize in coverage for offshore oil rigs and platforms, for example, have already announced 50% increases in premium prices.⁸ In addition, insurance rating agencies are now comparing their insurers' modeled catastrophe exposures to the potential market share exposure to determine the need for rating action. Insurance market analysts note that insurers with accurate loss exposure projections will be able to manage their losses within their capital base. Those that are shown to not have accurate loss exposure projections could suffer a rating downgrade.

When claims adjusters are finally able to assess the hundreds of thousands of damaged structures, they will likely face major challenges in distinguishing the portion of damage attributable to wind or flood. What was the wind damage before the levees broke and flooding began? This is important because wind damages are covered under standard commercial and residential property insurance policies, but floods are not.⁹ The central question of when the wind-driven rain or rising floodwater came in and when the wind came in will determine how flood claims are apportioned among the National Flood Insurance Program (NFIP), private insurers, and individuals.

It is quite likely that policyholders who lack federal flood insurance coverage might take advantage of vague policy language in their homeowners insurance policies to argue that the ultimate cause of damage was not flooding, but breaches of

⁶ For more information on insurance lessons learned from Hurricane Andrew, see CRS Report RL32825, *Hurricane and Disaster Risk Financing Through Insurance: Challenges and Policy Options*, by Rawle O. King.

⁷ Theo Francis, "U.S. Insurers Brace for Cost of Hurricane Katrina," *Asian Wall Street Journal*, Aug. 31, 2005, p. A4.

⁸ Ulrike Dauer, "Oil-Rig Insurers Expect Price Jumps," *Wall Street Journal*, Sept. 8, 2005, p. A5."

⁹ Bill Mellander, "Payouts Hinge on the Cause of Damage," *New York Times*, Aug. 31, 2005, p. C5.

the New Orleans levees.¹⁰ Insurers are likely, however, to argue that they did not price the flood risk in the homeowners policy, and hence did not set aside reserves to pay such claims.¹¹

Although the purchase of federal flood insurance is mandatory for certain property owners as a condition of eligibility for loans from federally regulated lending institutions, many residents in flood-prone areas impacted by Katrina did not have flood insurance.¹² According to the Insurance Information Institute, only about 30% of homes in Louisiana are protected by flood coverage, and even fewer homeowners in Mississippi and Alabama purchased the coverage. A problem is that, although mortgage lenders required homeowners in flood zones to buy flood coverage, these institutions reportedly have no system in place to ensure that homeowners keep the coverage in force. In addition, banks that provide mortgage loans on property found to be uninsured for flood damage might incur losses should homeowners who cannot afford reconstruction abandon both the property and the mortgage commitment.

Insurance Industry's Overall Exposure to Disasters

The increasing magnitude of both insured and uninsured losses from natural disasters represents an ongoing challenge for both governments and the private sector.¹³ Natural disasters typically result in large government outlays for disaster relief assistance, and they place a financial strain on private disaster insurance markets. The federal government alone, facing fiscal constraints to cover the losses to the private sector, will find it costly and challenging to meet long-term disaster-related spending. In addition, insurers have been and will continue to be reluctant to cover properties in high-risk areas because of high long-run costs (which translates into high prices for disaster insurance) and low demand for disaster insurance.¹⁴

Most insurance market analysts note that there is no state in the Union that is not subject to catastrophe exposure, and the current situation suggests that the projected exposures are far greater than the insurance industry is currently prepared to handle. The insurance industry's financial capacity and surplus to underwrite a \$100 billion-plus billion dollar mega-catastrophic event remains in doubt.

¹⁰ Theo Francis and John D. McKinnon, "Paying For Flood Damage Looms As Big Challenge," *Wall Street Journal*, Sept. 9, 2005, p. A1.

¹¹ *Ibid.*

¹² For more information on the National Flood Insurance Program and mandatory flood purchase requirements, see CRS Report RL32972, *Federal Flood Insurance: The Repetitive Loss Problem*, by Rawle O. King.

¹³ CRS Report R132825, *Hurricanes and Disaster Risk Financing Through Insurance: Challenges and Policy Options*, by Rawle O. King.

¹⁴ The high long-run costs and low demand for disaster insurance result from insurers having to hold huge amounts of capital to pay claims resulting from rare but potentially large catastrophe losses, and the limited willingness of many consumers to pay risk-based premiums for disaster insurance, respectively.

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 and casualty insurance industry. 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.¹⁵ 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 surplus¹⁶) of the U.S. insurance industry.¹⁷

Table 2 shows that in 2004, the industry had \$393.5 billion in policyholder surplus, supporting about \$423.3 billion in written premiums. Only a fraction of this industry-wide total surplus amount, however, would be available to compensate victims of a catastrophic event. Moreover, 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. Insurance market analysts note that in the event of a catastrophe in the \$50 billion to \$100 billion range, there is always the possibility that financially exposed insurers may have to liquidate bonds and other financial assets in order to pay catastrophe-related claims, triggering an adverse impact on U.S. financial markets.¹⁸

In order to make catastrophe insurance available and affordable, state governments have created state-sponsored insurance pools to provide catastrophe insurance (or reinsurance) coverage at subsidized rates. Most insurance market experts agree that these state-run insurance programs, however, are inadequately capitalized to handle the mega-catastrophic event. Consequently, some of these experts have suggested the creation of some sort of federal financial backstop or tax policy to allow property insurers who are exposed to mega-catastrophe losses to prepare in advance by establishing tax-deferred pre-event catastrophe reserves. Such efforts have been proposed in previous Congresses.

¹⁵ For example, a magnitude 7.0 earthquake in the Newport-Inglewood Fault in Los Angeles could cause \$95 to \$120 billion in insured losses, and a repeat of the 1906 earthquake in San Francisco could result in \$105 billion in insured losses; see Raymond J. Burby, ed., *Coping with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities* (Washington: Joseph Henry Press, 1998), p. 4.

¹⁶ 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.

¹⁷ 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.

¹⁸ 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.

**Table 2. Property/Casualty Insurance Industry Financial Results:
2000-2004**
(\$ billions)

	2000	2001	2002	2003	2004
Net Written Premiums	\$299.7	\$323.5	\$369.7	\$404.1	\$423.3
Percentage Change	5.3%	8.0%	14.3%	9.4%	4.7%
Earned Premiums	294.0	311.5	348.5	386.3	412.6
Losses Incurred	200.9	234.5	238.8	238.7	246.4
Loss Adjustment Expenses Incurred	37.8	40.9	44.8	50.0	53.2
Other Underwriting Expenses	82.6	86.4	93.8	100.7	106.4
Policyholder Dividends	3.9	2.4	1.9	1.9	1.6
Underwriting Gain (Loss)	(31.2)	(52.6)	(30.8)	(4.9)	5.0
Investment Income	40.7	37.7	37.2	38.6	39.6
Miscellaneous Income (Loss)	0.4	1.1	(0.8)	0.0	(0.5)
Operating Income (Loss)	9.9	(13.8)	5.6	33.8	44.1
Realized Capital Gains (Losses)	16.2	6.6	(1.2)	6.6	9.3
Federal Income Taxes (Credit)	5.5	(0.2)	1.3	10.3	14.7
Net Income After Taxes	20.6	(7.0)	3.0	30.0	38.7
Policyholder Surplus (End of Period)	323.0	295.4	290.6	247.0	393.5

Source: Insurance Services Office, Property Claims Service.

Major Federal Disaster Insurance Legislation

Several major catastrophes since the late 1980s have caused insurers and policymakers to continually question whether the industry has the capacity to deal with the next catastrophe.¹⁹ Government-provided programs for flood insurance, as well as other interventions in private disaster insurance markets, often are justified to overcome the failure of private markets to offer adequate and affordable disaster insurance. As pointed out above, disaster-prone states have sought to address insurance shortages with the creation of state-sponsored catastrophe insurance

¹⁹ 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).

programs to provide coverage to homeowners and business at subsidized rates. In the aftermath of Hurricane Katrina, some Members of Congress have expressed concerns about the availability and affordability of natural disaster insurance for homeowners.²⁰ Members may be asked to consider proposals for improving insurers' access to capital in the reinsurance, banking, and securities markets to ensure adequate capacity and solvency of the industry to meet consumer needs.

Appendix A provides a summary of major federal disaster insurance legislation introduced in Congress from the early 1970s through 2005. Throughout this period, the Congress considered dozens of bills to amend the National Flood Insurance Program (NFIP). Some of them were enacted into law, or FEMA (or its predecessor HUD) bypassed the legislative process and made administrative changes to the program to reflect these measures. Not all of these bills in the appendix were included in the analysis that follows.

Since the late 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 2002.²¹ TRIA provided a temporary federal reinsurance backstop once a high insurance industry loss is sustained. The law is scheduled to expire on December 31, 2005. Two bills, H.R. 1153 (Capuano) and S. 467 (Dodd), have been introduced in the 109th Congress to extend the terrorism insurance program.²² Some members of the insurance industry are seeking to have TRIA extended for at least two years, while the industry continues to work to expand the private market for managing terrorism risk.

Previous Congresses responded to the catastrophe funding problem — i.e., insurers' concerns about potential market failure in catastrophe insurance markets — by considering legislation to create a federal catastrophe insurance/reinsurance program for residential property. The first of these proposals — H.R. 4480 and H.R. 4462, introduced in the 101st Congress — sought to address only the earthquake hazard.²³ 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.

²⁰ Mark Foley, “Insurance Industry in Need of Change”, *The Miami Herald*, Sept. 8, 2005, p. A18.

²¹ P.L. 107-297; 116 Stat. 2322.

²² CRS Report RS21979, *Terrorism Risk Insurance: An Overview*, by Baird Webel.

²³ Elliott Mitter, “Alternative National Earthquake Insurance Programs,” *Earthquake Spectrum*, Aug. 1991, vol. 7, no. 3, p. 757.

The 108th Congress considered several major federal disaster insurance bills, but the approach that received the most attention involved changing federal tax policy to authorize tax-deferred treatment of private insurers' catastrophe reserves.²⁴ 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 goal of reducing overall disaster losses? How would someone measure success? These were central questions in the debate.

In the 109th Congress, Representative Ginny Brown-Waite introduced the Homeowners' Insurance Availability Act of 2005 (H.R. 846). This bill is identical to H.R. 21, introduced in the 106th Congress by Representatives Rick Lazio and Bill McCollum to establish a federal program that provides catastrophe reinsurance to state insurance programs and private insurers.

All federal disaster insurance 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.

Opponents of federal disaster insurance say such measures 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).²⁵ 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

²⁴ 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.

²⁵ 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.

the federal government the poor risks. Rather than providing insurance protection for natural hazard losses, J. Robert Hunter, Director of Insurance for Consumer Federation of America, for example, argue that the federal government should take actions to expand private-sector capacity for insuring disaster losses. 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.²⁶

Conclusion

Some of the major disaster-related policy issues associated with Hurricane Katrina are: (1) the large insured and uninsured losses associated with the storm; (2) rising federal government outlays for disaster assistance; and (3) the private insurance market’s lack of capacity to handle the next catastrophic event should it exceed \$100 billion in private insured losses. In addition to federal responsibility for emergency management, which includes a range of authorities and activities (e.g., technical assistance, preparedness or mitigation funding, and grants and loans), previous policy options presented to Congress in response to natural disasters have included:

- establishing a federal financial — insurance or reinsurance — backstop for the insurance industry in the event of a mega-catastrophe event;
- changing the tax treatment of catastrophe risk insurance by permitting insurance companies to establish tax-deductible reserve funds for catastrophes;
- facilitating the passing of certain catastrophic risks to the capital markets through the sale of insurance-linked securities to potential investors; and
- establishing a publicly funded emergency reserve fund to provide timely financial assistance in response to domestic disasters and emergencies, the approach advocated in S. 24, Emergency Reserve Fund of 2005 (Hutchison).

Policy considerations for the 109th Congress may include an assessment of the government’s increasing role since the devastating terrorists attacks of September 11, 2001 and Hurricane Katrina as a bearer of risk, and finding ways to finance (pre-fund) and manage catastrophe risk through public-private partnerships.

Historically, Congress has been reluctant to enact federal disaster insurance legislation because of (1) a lack of consensus on what will work and (2) concerns

²⁶ 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.

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 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).²⁷

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 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 Congresses, the full Congress did not authorize a federal 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 109th 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?

²⁷ 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.

Appendix A. Summary of Federal Disasters Insurance Legislation: 1973-2005

Bill Number (Sponsor)	Bill Title	Purpose
109th Congress (2005-2006)		
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.
H.R. 2668 (Foley)	Policyholder Disaster Protection Act of 2005	Amends the Internal Revenue Code of 1986 to permit insurers to establish tax-deductible reserve funds for catastrophes.
H.R. 3669 (Ney)	National Flood Insurance Program Enhancement Borrowing Authority Act of 2005	Amends the National flood Insurance Act of 1968 (NFIA) to increase from \$1.5 billion to \$3.5 billion, through FY2008, the total amount which the Director of FEMA may borrow from the Secretary of the Treasury with the President's approval.
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.
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 109 th 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 109 th Congress.
S. 1607 (Graham)	Homeowners' Insurance Availability Act of 2003	Same as H.R. 4186 in 108 th Congress.

107th Congress (2001-2002)		
H.R. 785 (Foley)	Policyholder Disaster Protection Act of 2001	Same as H.R. 268 in 109 th 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.
H.R. 3592 (Moore)	Hurricane, Tornado, and Related Natural Hazards Research Act	Same as H.R. 2020 in 108 th Congress.
H.R. 4025 (Weldon)	Homeowners' Insurance Availability Act of 2002	Same as H.R. 846 in 109 th 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 107 th Congress.
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 106 th Congress.

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 105 th 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 tsunamis.
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.
H.R. 935 (Mink)	Earthquake, Volcanic Eruption, and Hurricane Hazards Insurance Act of 1993	Same as H.R. 1731 in the 104 th 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 105 th Congress
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		
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 97 th Congress.
95th Congress (1977-1978)		
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 from 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 97 th 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 94 th 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.
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.