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United States Government Accountability Office  
Washington, DC 20548

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May 17, 2010

The Honorable Spencer Bachus  
Ranking Member  
Committee on Financial Services  
House of Representatives

Subject: *Natural Catastrophe Insurance Coverage Remains a Challenge for State Programs*

Dear Mr. Bachus:

Natural catastrophes can adversely affect U.S. residents and businesses by causing extensive property damage. The 2005 hurricanes and other recent natural disasters have had significant effects on the cost of obtaining insurance against such risks, especially in high-risk areas. As private market insurers have raised their premium rates, an increased number of residents have obtained coverage through state-sponsored natural catastrophe programs. Questions have been raised concerning whether some of these programs will be able to pay losses in the event of a major catastrophe. Several legislative proposals have been made that would create a federal role in supporting these state programs.

In a previous report for you, GAO identified public policy goals for government involvement in natural catastrophe insurance and applied those goals to potential changes in the federal government's role.<sup>1</sup> Those goals were developed based on insights from past GAO work, a review of legislative histories, and interviews with public and private sector experts, and included (1) charging premium rates that reflect the risk of loss, (2) encouraging broad participation, (3) encouraging the private market to provide natural catastrophe insurance, and (4) limiting costs to U.S. taxpayers. In other work, we have discussed the importance of mitigation efforts in reducing the damage and losses that could result from a natural catastrophe.<sup>2</sup> The information that follows updates our past work by evaluating the extent to which these public policy goals, as well as the goal of increased mitigation, are supported by selected state natural catastrophe insurance programs, selected legislative proposals for increasing the federal role in natural catastrophe insurance, and selected natural catastrophe insurance programs in other countries.

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<sup>1</sup>See GAO, *Natural Disasters: Public Policy Options for Changing the Federal Role in Natural Catastrophe Insurance*, [GAO-08-7](#) (Washington, D.C.: Nov. 26, 2007).

<sup>2</sup>See GAO, *Natural Hazard Mitigation: Various Mitigation Efforts Exist, but Federal Efforts Do Not Provide a Comprehensive Strategic Framework*, [GAO-07-403](#) (Washington, D.C.: Aug. 22, 2007).

To assist Congress as it considers legislative proposals that would increase the federal role in natural catastrophe insurance coverage, you asked us to provide a briefing on (1) the current status of key state natural catastrophe insurance programs, and the extent to which the state programs support public policy goals identified in prior GAO reports; (2) the extent to which proposed changes to federal involvement in natural catastrophe insurance support policy goals identified in prior GAO reports; and (3) how natural catastrophe insurance is provided in selected other countries. We provided a briefing for the minority staff on April 16, 2010, on the results of our review and the briefing slides are reproduced in the enclosure to this letter. In response to questions asked during the briefing, we have added clarifying information to the briefing slides.

We conducted our work from August 2009 through May 2010 in accordance with all sections of GAO's Quality Assurance Framework that are relevant to our objectives. The framework requires that we plan and perform the engagement to obtain sufficient and appropriate evidence to meet our stated objectives and to discuss any limitations in our work. We believe that the information and data obtained, and the analysis conducted, provide a reasonable basis for any findings and conclusions.

## **Background**

State natural catastrophe insurance programs generally provide coverage against damage from natural disasters to property owners in high-risk areas or to those who are unable to obtain such coverage in the private market. Private sector insurers, and many state insurance entities, seek to limit exposure to large losses by transferring a portion of this risk to reinsurers and, less often, to the capital markets through insurance-linked securities (ILS) such as catastrophe bonds.<sup>3</sup> However, some state entities do not use such means to protect against catastrophic losses, but instead use post-event funding mechanisms, including assessments on primary insurers, proceeds from general revenue, and bonds. Some states have commented that participation in the reinsurance markets is expensive and results in high premium rates for policyholders, who may therefore decide not to purchase coverage, and that they would prefer to use the post-funding mechanisms described above. Reliance on post-event funding, by concentrating risk within the state instead of the broader private market, can put state finances at risk in the event of a major natural catastrophe. Several legislative proposals before Congress are intended to either facilitate the transfer of risk from state programs to the broader reinsurance and capital markets or to shift a portion of natural catastrophe risk from the states to the federal government.

## **Summary**

We reviewed state natural catastrophe insurance programs in Alabama, California, Florida, Louisiana, Mississippi, North Carolina, New Jersey, South Carolina, and Texas. We found that most of the state programs in our review had grown since 2005. In particular, the insurance programs in Mississippi, Texas, and Florida experienced the most growth in total exposure to loss since 2005, with increases of 495 percent, 147 percent, and 146 percent, respectively. Also, the combined total exposure of over \$2 trillion in the Florida insurance and reinsurance programs far exceeded that of all other programs combined. With respect to the public

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<sup>3</sup>Reinsurance is insurance for insurers that enables the insurer to transfer some its risk to another insurer, called a reinsurer. Insurance-linked securities are capital market instruments that cover insured catastrophe risks. They were developed as an alternative to traditional reinsurance.

policy goals for government involvement in natural catastrophe insurance, we found that support varied across the state programs. Six of the 10 programs charged rates that did not fully reflect the risk of loss, potentially discouraging private market involvement and mitigation efforts by property owners. However, charging rates that do not fully reflect the risk of loss can also potentially increase broad-based participation in state programs. Officials from 7 of the 10 programs said that they took steps to encourage private market participation, and officials from 9 programs told us that they are implementing or considering ways to encourage mitigation, including providing mitigation credits or attempting to develop a more effective mitigation plan. Officials from most of the programs said they encourage broad participation in their programs; however, a few said they specifically discourage it and instead try to encourage homeowners to purchase insurance from the private market. For example, the programs in Louisiana, Mississippi, and New Jersey discourage participation because they consider themselves insurers of last resort. Of these three, Louisiana and New Jersey said they charge premium rates that they deem to be at or above what private market rates would be for comparable coverage, which could further discourage public participation in those state programs.

We identified four proposals contained in proposed legislation that would increase the federal role in natural catastrophe insurance and could affect the reinsurance industry's participation in natural catastrophe insurance markets: facilitation of risk transfer, guarantees of state pre- and post-event bonds, a federal lending facility for qualified state natural catastrophe insurance programs, and a federal reinsurance program.<sup>4</sup> We found that these proposals involve trade-offs that would have to be balanced. For example, while these proposals could lower premium rates for and increase public participation in state natural catastrophe programs, they could discourage private market participation and mitigation efforts and increase taxpayer exposure to potential costs. In particular, a federal guarantee of state bonds could give state programs access to capital at reduced or below-market costs, allowing state programs to continue to charge premium rates that do not fully reflect risks or even to lower their premium rates. Furthermore, it could result in decreased reinsurance purchases by some state programs and increased reliance on post-event funding, which could increase taxpayers' exposure to the potential costs in the event of state financial difficulties. In addition, a federal reinsurance program could reduce costs for state programs, but unless the federal program charged premiums that fully reflect the risk of loss, it could inadvertently encourage further development and population growth in areas with high natural catastrophe risk. However, if steps were taken to address certain limitations in the various proposals, the effects of the proposals might be different. For example, while some proposals could have the effect of discouraging private market participation, additional steps could be taken to encourage participation.

We reviewed natural catastrophe insurance programs in several countries that face similar hazards (Australia, Canada, France, Germany, Japan, New Zealand, and Switzerland), and none of them had made any significant changes since we reviewed them in 2008.<sup>5</sup> We found that while these countries face similar natural catastrophe risks as the United States, the

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<sup>4</sup>For example, similar proposals are contained in the House and Senate versions of the Homeowners' Defense Act of 2009 (H.R. 2555, 111th Congress, 1st Sess., and S. 505, 111th Congress, 1st Sess., respectively).

<sup>5</sup>See GAO, *Natural Hazard Mitigation and Insurance: The United States and Selected Countries Have Similar Natural Hazard Mitigation Policies but Different Insurance Approaches*, [GAO-09-188R](#) (Washington, D.C.: Dec. 22, 2008).

extent of natural catastrophe risk differs and the government structure and cultures also differs leading each country to create unique methods of insuring risks that do not appear directly transferable to the United States. For example, though other countries also face the risk of hurricanes and earthquakes, reinsurers we spoke to said that hurricanes and earthquakes in the United States present the largest exposure to catastrophic losses in the world, and the magnitude of this risk presents unique challenges in insuring these risks. One approach used by several countries that has been offered in the United States is the federal government acting as a reinsurer for natural catastrophe risk, as discussed earlier. This option would involve balancing advantages, such as increasing insurers' willingness to write coverage for natural catastrophe losses and limiting the need for some types of post-event government payouts, against disadvantages, such as displacement of private reinsurers and reduced market discipline.

### **Scope and Methodology**

To determine the current status of key state natural catastrophe insurance programs, and the extent to which the state programs support public policy goals identified by GAO in prior reports, we reviewed and contacted officials from the state-run programs in Alabama, California, Florida, Louisiana, Mississippi, North Carolina, New Jersey, South Carolina, and Texas and compared these programs to our public policy goals. We did not verify information provided by the programs. To determine how proposed changes to federal involvement in natural catastrophe insurance compare to policy goals identified in prior GAO reports, we analyzed several options for federal involvement: facilitation of risk transfer, guarantees of state pre- and post-event bonds, a federal lending facility for qualified state natural catastrophe insurance programs, and a federal reinsurance program. We selected these options because they would increase the federal role in natural catastrophe insurance and could affect the reinsurance industry's participation in natural catastrophe insurance markets. As part of this work, we interviewed industry participants, including officials from the programs listed above and insurance and reinsurance industry groups. To determine how natural catastrophe insurance is provided in selected other countries, building on past work, we obtained publicly available information on the current status of natural catastrophe insurance in Australia, Canada, France, Germany, Japan, New Zealand, and Switzerland—as well as any key changes to these programs—and spoke to officials from several of these countries. To the extent possible, we also identified any practices that may be applicable to natural catastrophe programs in the United States based on type of catastrophe risk, government structure, and culture.

## Agency Comments

We provided a draft of this letter and the attached briefing to the Department of the Treasury for their review. Treasury officials provided technical comments, which we incorporated into the briefing as appropriate.

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As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution of this report until 30 days from the report date.

At that time, we will provide copies to interested congressional committees, the Secretary of the Treasury, and other interested parties. In addition, the report will be available at no charge on our Web site at <http://www.gao.gov>. If you or your staff has any questions about this report, please contact me at (202) 512-8678, or [williamso@gao.gov](mailto:williamso@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Patrick Ward, Assistant Director; Grace Haskins, Philip Curtin, Carrie Watkins, Abbie David, Joseph Applebaum, Charles Bausell, Jay Smale, Jennifer Schwartz, and Marc Molino.

Sincerely yours,



Orice Williams Brown  
Director, Financial Markets  
and Community Investment

Enclosure



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## Natural Catastrophe Insurance Coverage Remains a Challenge for State Programs

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House Committee on Financial Services  
Minority Staff  
April 16, 2010

- Introduction
- Objectives
- Summary of Findings
- Scope and Methodology
- Background
- Discussion of Findings

Natural catastrophes can adversely affect U.S. residents and businesses by causing extensive property damage. The 2005 hurricanes and other recent natural disasters have had significant effects on the cost of obtaining insurance against such risks, especially in high-risk areas. As private market insurers have raised their premium rates, an increased number of residents have obtained coverage through state-sponsored programs. Concern exists that some of these programs may be unable to pay losses in the event of a major catastrophe. Several legislative proposals have been made that would create a federal role in supporting these state programs.

In a previous report, GAO identified public policy goals for government involvement in natural catastrophe insurance (based on insights from past GAO work, review of legislative histories, and interviews with public and private sector experts) and applied those goals to potential changes in the federal government's role.<sup>1</sup> Those goals included (1) charging premium rates that reflect the risk of loss, (2) encouraging broad participation, (3) encouraging the private market to provide natural catastrophe insurance, and (4) limiting costs for U.S. taxpayers. In other work, we have discussed the importance of mitigation effort to reducing the damage and losses that could result from a natural catastrophe.<sup>2</sup>

As requested, we are, among other things, evaluating the extent to which these public policy goals, as well as the goal of increased mitigation, are supported by:

- state natural catastrophe programs in Alabama, California, Florida, Louisiana, Mississippi, North Carolina, New Jersey, South Carolina, and Texas;
- proposals for changing the federal role in natural catastrophe insurance similar to those in House and Senate versions of the Homeowners' Defense Act of 2009; and
- selected natural catastrophe programs in other countries.

<sup>1</sup>See GAO, *Natural Disasters: Public Policy Options for Changing the Federal Role in Natural Catastrophe Insurance*, GAO-08-7 (Washington, D.C.: Nov. 26, 2007). <sup>2</sup>See GAO, *Natural Hazard Mitigation: Various Mitigation Efforts Exist, but Federal Efforts Do Not Provide a Comprehensive Strategic Framework*, GAO-07-403 (Washington, D.C.: Aug. 22, 2007).

Specifically, the Ranking Member of the House Committee on Financial Services requested that we answer the following questions:

- (1) What is the current status of key state natural catastrophe insurance programs, and to what extent do the state programs support public policy goals identified in prior GAO reports?
- (2) To what extent do proposed changes to federal involvement in natural catastrophe insurance support policy goals identified in prior GAO reports?
- (3) How is natural catastrophe insurance provided in selected other countries?

- We found that most state programs in our review had grown since 2005, and that most programs charged rates that do not reflect the full risk of loss, potentially discouraging private market involvement and efforts to mitigate damages from natural catastrophes, but that most of the states we reviewed were taking steps to encourage such mitigation. We also found that adherence to public policy goals varied across state programs. The public policy goals are (1) charging premium rates that reflect the risk of loss, (2) encouraging broad participation, (3) encouraging the private market to provide natural catastrophe insurance, and (4) encouraging mitigation.
- We identified four proposals contained in past proposed legislation that would increase the federal role in natural catastrophe insurance and could affect the reinsurance industry's participation in natural catastrophe insurance markets: facilitation of risk transfer, guarantees of state pre- and post-event bonds, a federal lending facility for qualified state natural catastrophe insurance programs, and a federal reinsurance program.<sup>3</sup> However, we found that the proposals would involve trade-offs that would have to be balanced. For example, while these proposals could lower premium rates for and increase public participation in state natural catastrophe programs, they could discourage private market participation and mitigation efforts and increase taxpayer exposure to potential costs.
- We found that while some of the selected countries face similar natural catastrophic risks as the United States, the extent of natural catastrophe risk differs, leading each country to create unique methods of insuring risks.

<sup>3</sup> For example, similar proposals are contained in the House and Senate versions of the Homeowners Defense Act of 2009 (H.R. 2555, 111th Congress, 1st Sess., and S. 505, 111th Congress, 1st Sess.).

- To determine the current status of key state natural catastrophe programs, and the extent to which the state programs support public policy goals identified by GAO in prior reports, we reviewed and contacted officials from the state-run programs in Alabama, California, Florida, Louisiana, Mississippi, North Carolina, New Jersey, South Carolina, and Texas and compared them to our public policy goals. We did not independently verify information provided by the program officials.
- To determine how proposed changes to federal involvement in natural catastrophe insurance compare to policy goals identified in prior GAO reports, we analyzed several options for federal involvement: facilitation of risk transfer, guarantees of state pre- and post-event bonds, a federal lending facility for qualified state natural catastrophe insurance programs, and a federal reinsurance program. We selected these options because they would increase the federal role in natural catastrophe insurance and could affect the reinsurance industry's participation in natural catastrophe insurance markets. As part of this work, we interviewed industry participants including officials from the programs listed above and insurance and reinsurance industry groups.
- To determine how natural catastrophe insurance is provided in selected other countries, building on past work, we obtained publicly available information on the current state of natural catastrophe insurance in Australia, Canada, France, Germany, Japan, New Zealand, and Switzerland—as well as any key changes to these programs—and spoke to officials from several of these countries. To the extent possible, we also identified any practices that may be applicable to natural catastrophe programs in the United States based on type of catastrophe risk, government structure, and culture.

- Natural catastrophes such as hurricanes and earthquakes can adversely affect U.S. residents and businesses by causing extensive property damage.
- The increased frequency and severity of major natural disasters in recent years has had significant effects on the cost of obtaining insurance against such risks, especially in high-risk areas.
- As private sector insurers have raised their premium rates, many residents have chosen to obtain coverage through state-sponsored programs.
- Some state-sponsored programs do not use reinsurance or capital markets to protect against catastrophic losses because they are structured to post-fund losses, with the result being that many of these programs are at financial risk.
- Several bills have been proposed that would create a federal role in supporting these state programs.

- **Alabama Insurance Underwriting Association (AIUA)** - Formed in the early 1970s to provide insurance for homeowners located in coastal areas who are unable to obtain coverage in the private insurance market.
- **California Earthquake Authority (CEA)** - Established in 1996 as a publicly managed, largely privately funded entity. Companies that sell residential property insurance in California must either offer their own earthquake insurance product or, for a fee, become a participating insurance company of CEA.
- **Florida Hurricane Catastrophe Fund (Florida Cat Fund)** - Created in November 1993 after Hurricane Andrew, the purpose of the Florida Cat Fund is to protect and advance the state's interest in maintaining insurance capacity in Florida by providing reinsurance to insurers for a portion of their catastrophic hurricane losses.
- **Florida Citizens Property Insurance Corporation (Florida Citizens)** - Established in 2002 as a not-for-profit, tax-exempt government corporation to provide state-backed insurance coverage, including wind damage coverage for homeowners who cannot get coverage in the private market.

- **Louisiana Citizens Property Insurance Corporation (LCPIC)** – Designed to be the insurer of last resort and required by the state to charge rates higher than those of private market insurance companies.
- **Mississippi Windstorm Underwriting Association (MWUA)** - Created in 1987, to provide windstorm and hail insurance to coastal area homeowners and businesses that are unable to obtain wind and hail coverage from private insurance carriers.
- **New Jersey Insurance Underwriting Association (NJIUA)** - Created in 1968 to provide property insurance to any person unable to obtain insurance in the private market.
- **North Carolina Insurance Underwriting Association (NCIUA)** - Created in 1998 to provide 18 coastal counties with windstorm and hail insurance for principle residences.
- **South Carolina Wind and Hail Underwriting Association (SCWHUA)** - Provides coverage for wind and hail damage in the coastal area of the state designated as "Beach."
- **Texas Windstorm Insurance Association (TWIA)** - Created in 1971 as a pool of all property and casualty insurance companies authorized to write coverage in Texas. TWIA provides basic wind and hail insurance coverage for Gulf Coast property owners who might otherwise be left uninsured.

- We found that most state programs in our review had grown since 2005, and that most programs charged rates that do not fully reflect risk of loss, potentially discouraging private market involvement and mitigation, but that most states we reviewed were taking steps to encourage mitigation.

### Recent State Legislative Changes

#### Florida Citizens (2009):

- Increased rates up to 10 percent per year until rates are judged actuarially sound.
- Increased rates over 5- year period in line with increased Florida Hurricane Catastrophe Fund reinsurance rates.
- Required to report to the legislature by 12/1/10 on efforts to reduce its wind-only coverage exposure in designated high-risk areas by 25 percent from its February 2001 level, and if that level is not attained must limit future eligibility for wind-only coverage to achieve that benchmark.

#### North Carolina Coastal Property Insurance (2009):

- Reduced coverage limits to \$750,000.
- Required program to retain surplus from year to year.
- Capped assessments on insurers following an event at \$1 billion.
- Ordered North Carolina Rate Bureau to create a voluntary beach and coastal mitigation program.

Recent State Legislative Changes (cont.)

Texas Windstorm Insurance Association (2009):

- Ordered Texas Department of Insurance to develop an incentive plan to encourage insurers to write insurance on a voluntary basis and minimize reliance on TWIA.
- Authorized issuance of bonds to pay losses in excess of program reserves and available amounts in the catastrophe reserve trust fund.
- Under certain circumstances, eliminated prior approval requirement for rate changes.
- Authorized use of surplus to fund catastrophe reserve trust fund and/or procure reinsurance.
- Required homeowners to produce evidence of flood coverage if structure constructed, altered, or remodeled after 9/1/09.

- Coverage limits increased in three states.
  - Louisiana Citizen's limit increased from \$500,000 to \$750,000 from 2005 to 2009.
  - Texas Windstorm Insurance Association's limit increased from \$1.5 million to \$1.7 million from 2005 to 2009.
  - Florida Cat Fund's limit increased from \$15 billion to \$19 billion from 2005 to 2009 (reinsurance).
  
- Coverage limits decreased in one state.
  - North Carolina Insurance Underwriting Association's limit decreased from \$1,000,000 to \$750,000 from 2005 to 2009.

Although the Florida Hurricane Catastrophe Fund and Florida Citizens reported the largest total exposure to insurance claims in the event of a catastrophe, Mississippi, Texas and Florida Citizens showed the largest percentage increase in exposure from 2005 to 2009 with increases of 495 percent, 147 percent, and 146 percent, respectively.

**Figure 1: Total Exposure in Selected State Natural Catastrophe Insurance Programs, 2005 to 2009**

	Dollars in billions		Differences	Percentage change
	2005 program	2009 program		
California Earthquake Authority (Dec. 2009)	\$240.0	281.0	+\$41	+17 %
Florida Citizens Property Insurance Corporation (Dec. 2009)	165.0	406.0	+241	+146
Texas Windstorm Insurance Association (Dec. 2009)	27.5	68.0	+40.5	+147
Louisiana Citizens Property Insurance Corporation (July 2009)	14.9	28.5	+13.6	+91
Mississippi Windstorm Underwriting Association (July 2009)	1.9	11.3	+9.4	+495
Florida Hurricane Catastrophe Fund <sup>a</sup> (June 2009)	1,508	2,162	+654	+43

 2005 program  
 2009 program

Source: GAO analysis.

<sup>a</sup> Florida – CAT fund is a reinsurance fund.

In 2009, gross written premiums among state programs ranged from a high of almost \$2.2 billion for Florida Citizens to a low of \$10 million in New Jersey. Florida Cat Fund and California Earthquake Authority held the second and third highest gross written premiums with \$1.5 billion and \$546 million, respectively.

**Figure 2: Gross Written Premiums for Selected State Natural Catastrophe Insurance Programs, as of 2009**

	Gross premiums written (dollars in millions)	
Florida Citizens Property Insurance Corporation (Dec. 2009)		\$2,181
Florida Hurricane Catastrophe Fund (June 2009)		1,500
California Earthquake Authority (Dec. 2009)		585
Texas Windstorm Insurance Association (Dec. 2009)		380
North Carolina Insurance Underwriting Association (Sept. 2009)		298
Louisiana Citizens Property Insurance Corporation (July 2009)		230
South Carolina Wind and Hail Underwriting Association (Oct. 2009)		100
Mississippi Windstorm Underwriting Association (July 2009)		80
Alabama Insurance Underwriting Association (Oct. 2009)		30
New Jersey Insurance Underwriting Association (Dec. 2009)		10

Source: GAO analysis.

<sup>a</sup> Florida CAT Fund is a reinsurance fund. Therefore, premiums collected may not be directly comparable.

Florida Citizens reported the largest number of policyholders, but Mississippi and Texas experienced the largest increase, with 169 percent and 91 percent respectively from 2005 to 2009.

**Figure 3: Total Policyholder Growth in Selected State Natural Catastrophe Insurance Programs, 2005 to 2009**

	Number of policyholders		Differences	Percentage change
Florida Citizens Property Insurance Corporation (Dec. 2009)		810,017 1,029,214	+219,197	+27.1 %
California Earthquake Authority <sup>a</sup> (Dec. 2009)		751,767 800,930	+49,163	+7
Texas Windstorm Insurance Association (Dec. 2009)		118,413 225,641	+107,228	+91
Louisiana Citizens Property Insurance Corporation (July 2009)		134,169 132,000	-2,169	-2
Mississippi Windstorm Underwriting Association (July 2009)		15,252 41,073	+25,821	+169
Florida Hurricane Catastrophe Fund <sup>a</sup> (June 2009)		205 184	-21	-1

 2005 program  
 2009 program

Source: GAO analysis.

<sup>a</sup> Florida CAT Fund is a reinsurance fund. Therefore, the number of policy holders reflects insurance companies that reinsure through the fund.

- Public policy goals are (1) charging premium rates that fully reflect the risk of loss, (2) encouraging broad participation, (3) encouraging private market to provide natural catastrophe insurance, and (4) encouraging mitigation.
- Support of public policy goals varied across state programs.
- Most of the state programs encourage broad public participation. However, some states would prefer that homeowners purchase insurance from the private market and view state programs as insurers of last resort. For example, Louisiana, Mississippi, and New Jersey discourage participation because they intend to be insurers of last resort. According to Louisiana and New Jersey, they charge premium rates higher than those of private market insurers for those who can obtain private sector coverage.
- Six of the 10 states charged rates that do not fully reflect risk of loss, potentially discouraging private market involvement.
- Seven of the 10 state program officials we interviewed said that they take steps to encourage private market participation.
- Nine of the 10 state programs officials told us that they are addressing or considering mitigation, including providing mitigation credits or attempting to develop a more effective mitigation plan.

### **Alabama Insurance Underwriting Association**

#### **Charge Rates That Fully Reflect the Risk of Loss**

- AIUA uses actuarial methods to develop a rate that generates premiums sufficient for AIUA to purchase reinsurance to cover the probable maximum loss from a 1 in 100 year event.
- According to AIUA officials, program rates tend to be lower than private market rates because the program has no cost of capital for retained risk.

#### **Encourage Broad Public Participation**

- Participation in AIUI is not specifically encouraged. However, to the extent that premium rates are lower than rates charged by the private market, the program could encourage broader public participation.

#### **Encourage Private Market Participation**

- To the extent that premium rates charged by the program are lower than private market rates, it could discourage private market participation because property owners will likely purchase the lower-priced product.

#### **Encourage Mitigation**

- The rating plan includes credits for mitigation characteristics. However, to the extent premium rates are lower than private market rates, it could encourage property owners to forego or reduce mitigation efforts that could lower their premium rates.

## **California Earthquake Authority**

### **Charge Rates That Fully Reflect the Risk of Loss**

- Rates reflect the risk of loss. Premiums vary among 19 rating territories, based on type of building, its age, type of construction, its value, and the number of stories. According to CEA officials, rates are approximately equal to average private market rates for earthquake coverage.

### **Encourage Broad Public Participation**

- Broad participation in CEA is encouraged. Officials noted that after the Northridge earthquake there was an increased number of policies-in-force, which led to a price increase then a decrease in the number of policies-in-force. To date, the U.S. Geological Survey (USGS) and others have financed studies in an attempt to develop individual awareness of earthquakes.
- CEA participated in a "Great California Shakeout" drill, an annual event to promote earthquake insurance and help promote public awareness of earthquakes.
- Effect of efforts to encourage participation could be reduced by charging premium rates equal to those charged by the private market, as the program does not provide a cost advantage over the private market.

### **California Earthquake Authority (cont.)**

#### **Encourage Private Market Participation**

- Officials told us that insurers still participate in providing earthquake insurance by paying a fee to participate in CEA. While CEA does not take specific actions to encourage the private market to write earthquake coverage, to the extent that it charges premium rates equal to those charged by private market insurers, it could encourage their participation.

#### **Encourage Mitigation**

- CEA has as one of its statutory mandates, and has adopted as a key mission, the responsibility to operate a mitigation program.
- At present, CEA is limited to offering a 5 percent discount on premiums for those homeowners who perform certain retrofit steps, as laid out in California law, such as bolting the house frame to the foundation or strapping the water heater to the house frame. CEA has begun a process of determining a sound basis for changing the level of premium discounts according to various steps taken to mitigate or retrofit.
- To the extent the program charges premium rates equal to those charged by private market insurers, it could encourage property owners to undertake mitigation efforts.

## **The Florida Hurricane Catastrophe Fund (Reinsurance)**

### **Charge Rates That Fully Reflect the Risk of Loss**

- The Florida Cat Fund is required by law to charge “actuarially-indicated” premiums, but it is not required to charge a market rate. According to Florida Cat Fund officials, premium reinsurance rates are approximately one fourth to one third the cost of private reinsurance, due in part to its tax-exempt status, low administrative costs, and lack of a profit or risk load.
- Another reason that Florida Cat Fund premiums are low is that a significant part of the coverage provided by it may be paid by long-term debt issued by the Florida Cat Fund after a large hurricane event occurs.
- Legislation passed in 2009 authorizes the Florida Cat Fund to implement a “cash build up” factor that would increase premiums by 5 percent annually over a five-year period.

### **Encourage Broad Public Participation**

- To the extent that the Florida Cat Fund's lower reinsurance rates enable primary insurers or Florida Citizens to write more wind coverage at lower prices, the program could encourage broader public participation.

### **The Florida Hurricane Catastrophe Fund (cont.)**

#### **Encourage Private Market Participation**

- The Florida Cat Fund is intended to provide additional capacity to the Florida insurance market and encourage participating insurers to write more wind coverage policies. All insurers writing an insurance policy that provides wind or hurricane coverage on residential property in Florida are required to contract with the Cat Fund, thus displacing the private reinsurance market to some extent.
- In 2007, the Florida Cat Fund was authorized to offer additional optional coverage in order to provide insurers with reinsurance at a cost below that in the private market. This had the effect of displacing private market reinsurance coverage. The program is now being phased out and rates are being increased so that primary insurers will shift coverage back to private reinsurers.

#### **Encourage Mitigation**

- The Florida Cat Fund provides \$10 million per year for mitigation initiatives. However, Cat Fund officials noted that because it charges below market rates, it can encourage insurance companies to take on more risk. For example, if insurers pass along the savings from reinsurance rates in risk-prone areas homeowners may not be paying premiums that fully reflect the risk of loss and may be more likely to forego mitigation efforts.

### **Florida Citizens Property Insurance**

#### **Charge Rates That Fully Reflect the Risk of Loss**

- Florida Citizens started phasing in rates that more fully reflect the risk of loss on January 1, 2010. Rates will increase at no more than 10 percent for any single policy in any year, excluding coverage changes and surcharges. Florida Citizens desires a 45 percent final rate increase; therefore, it could take 4 to 5 years to reach acceptable rates. Rates had been legislatively frozen at 2006 levels since January 1, 2007.

#### **Encourage Broad Public Participation**

- Florida Citizens does not have a marketing program and does not solicit people to purchase their insurance. However, to the extent that premium rates are lower than private market rates, broader public participation could be encouraged.

#### **Encourage Private Market Participation**

- Florida Citizens has developed statutory guidance for removing risks from their program and placing those risks into the private market. In 2008, more than 385,000 Florida Citizens' policies were placed with 14 private market insurers, who voluntarily agreed to assume these policies and provide insurance coverage to the public. However, some industry participants expressed concern over the viability of some of these insurers because they felt the insurers did not have adequate capital.
- To the extent the program charges premium rates that do not fully reflect the risk of loss, and are therefore below those the private market would charge, it could discourage private market participation.

## Florida Citizens Property Insurance (cont.)

### Encourage Mitigation

- Florida Citizens encourages its policyholders to mitigate their homes to improve their ability to withstand catastrophic damage by providing outreach, education, and mitigation credits.<sup>5</sup>
- Currently, policyholders who mitigate their homes against catastrophic loss are eligible for significant reductions in premiums. Florida Citizens provides \$740 million annually in mitigation credits to more than 450,000 policyholders (\$1,644 on average).
- A February 2010 report by the Florida Commission on Hurricane Loss concluded that the current system for assessing, determining, and applying windstorm mitigation discounts has failed to operate as intended and has added to complaints from residential property insurers that they cannot charge high enough rates to operate profitably.
- To the extent premium rates are lower than private market rates, the program could encourage property owners to forego or reduce mitigation efforts.

<sup>5</sup> Some insurers offer premium reductions or "mitigation credits" to homeowners who perform certain tasks to help their homes to better withstand natural disasters.

### **Louisiana Citizens Property Insurance Corporation**

#### **Charge Rates That Fully Reflect the Risk of Loss**

- LCPIC is required to charge rates that are 10 percent higher than the highest private insurance market rate or 10 percent higher than the actuarially sound rate, which ever of the two is greatest, in each rating territory.

#### **Encourage Broad Public Participation**

- According to LCPIC, it is an insurer of last resort; therefore, it does not take steps to encourage the public to purchase its insurance coverage.
- To the extent the program charges premium rates higher than private market insurers, it could further discourage broad public participation in the program.

**Louisiana Citizens Property Insurance Corporation (cont.)**

**Encourage Private Market Participation**

- LCPIC encourages homeowners to seek insurance policies through the private market by charging higher-than-market rates.
- Through an incentive grant program, LCPIC has provided \$2 million to \$10 million in surplus to private insurers that agreed to assume policies from LCPIC. The total number of policies decreased from 170,000 to 132,000. The total exposure decreased by over \$9 billion and annualized premiums decreased by \$75 million.

**Encourage Mitigation**

- LCPIC started offering premium credits for specific mitigation efforts in 2009.
- To the extent the program charges premium rates higher than the private market, it could encourage property owners to undertake mitigation efforts.

## Mississippi Windstorm Underwriting Association

### Charge Rates That Fully Reflect the Risk of Loss

- MWUA does not charge rates that fully reflect risk the risk of loss but instead it uses government subsidies to reduce the rates it charges. As a result, premium rates are below those of the private market.
- In 2009 the program requested a 300 percent dwelling-rate increase from the state legislature, but received \$50 million from the government to help maintain rates charged to policyholders. The net result was a 90 percent premium rate increase.
- MWUA also requested a 268 percent premium increase for commercial lines, but received a \$30 million subsidy. The net result was a 142 percent premium rate increase for policyholders.

### Encourage Broad Public Participation

- MWUA's current participation rate is approximately 60 percent in areas where MWUA coverage is available, but the program does not specifically encourage public participation.
- To the extent premium rates do not fully reflect the risk of loss, and are therefore lower than rates the private market would charge, the program could encourage broader public participation.

**Mississippi Windstorm Underwriting Association (cont.)**

**Encourage Private Market Participation**

- MWUA encourages homeowners to purchase insurance from the private market. However, to the extent that MWUA's premium rates do not fully reflect the risk of loss, and are therefore lower than what the private market would charge, the program could discourage private market participation.
- Private companies may receive a recoupement fee for assuming MWUA policies.

**Encourage Mitigation**

- Beginning in September 2009, MWUA has been promoting mitigation on its Web site.
- MWUA promotes a "fortified" home program, which is an essential part of their mitigation strategy.
- MWUA also gives significant credits to policyholders who choose to mitigate through new construction projects or retrofitting their homes. The mitigation credit program has been available for 6 months. To date, MWUA has endorsed more than 2,000 policies for building code credits. New construction projects and retrofitted homes may receive up to a 30 percent premium reduction.
- To the extent that premium rates are lower than private market rates, the program could encourage property owners to forego or reduce mitigation efforts.

### **New Jersey Insurance Underwriting Association**

#### **Charge Rates that Fully Reflect the Risk of Loss**

- Through regulation of rates, the New Jersey Department of Insurance assures that premiums fully reflect the risk of loss. According to officials, the program's premium rates are higher than those of private market insurers.

#### **Encourage Broad Public Participation**

- According to officials, the program is intended to be an insurer of last resort, therefore public participation in the program is discouraged.
- To the extent that the program charges rates that are higher than private market insurers, it could further discourage broad public participation in the program.

#### **Encourage Private Market Participation**

- The program is intended to be an insurer of last resort, therefore private market participation is encouraged.
- To the extent that the program charges rates that are higher than private market insurers, it could further encourage private market participation.

**New Jersey Insurance Underwriting Association (cont.)**

**Encourage Mitigation**

- Through ongoing discussions with insurers, as well as with prospective new market entrants, the Department of Insurance also encourages companies to establish acceptance criteria (i.e. criteria used for the decision to accept or reject a potential customer or renew or non-renew an existing customer) that reward mitigation efforts by property owners. For example, it encourages companies to provide rate reductions for roof bracing and storm shutters.
- The state program also offers lower deductibles for certain mitigation efforts.
- To the extent that the program charges rates that are higher than private market insurers, it could further encourage property owners to undertake mitigation efforts.

### **North Carolina Insurance Underwriting Association**

#### **Charge Rates That Fully Reflect the Risk of Loss**

- NCIUA must use rates or loss costs developed by the North Carolina Rate Bureau (NCRB) for personal lines and Insurance Service Office for Commercial Lines.
- Independent studies have found that when the costs of reinsurance are included and expected catastrophe loss potential is modeled, the current personal and commercial wind rates do not fully reflect the risk of loss and are therefore lower than private market rates.

#### **Encourage Broad Public Participation**

- The program does not specifically encourage public participation in the program. However, to the extent that premium rates are lower than rates the private market would charge, the program could encourage broader public participation.

**North Carolina Insurance Underwriting Association (cont.)**

**Encourage Private Market Participation**

- To the extent that the program charges premium rates that do not fully reflect the risk of loss, and are therefore lower than what the private market would charge, it could discourage private market participation.

**Encourage Mitigation**

- Pending legislation would require NCIUA to develop mitigation credits.
- The North Carolina Rate Bureau has been looking at mitigation credits for a number of years but has been unable to implement them.
- To the extent that premium rates are lower than private market rates, the program could encourage property owners to forego or reduce mitigation efforts.

### **South Carolina Wind and Hail Underwriting Association**

#### **Charge Rates That Fully Reflect the Risk of Loss**

- Premium rates do not fully reflect the risk of loss and are therefore lower than private market rates.
- Program officials said that the program has come close to breaking even each year.

#### **Encourage Broad Public Participation**

- The program does not specifically encourage broad public participation. However, to the extent that premium rates are lower than rates the private market would charge, the program could encourage broader public participation.

#### **Encourage Private Market Participation**

- The program does not specifically encourage private market participation. However, to the extent that premium rates are lower than rates the private market would charge, the program could discourage private market participation.

**South Carolina Wind and Hail Underwriting Association (cont.)**

**Encourage Mitigation**

- The program offers mitigation credits, and the state is funding some other efforts designed to help with mitigation efforts.
- To the extent that premium rates are lower than private market rates, the program could encourage property owners to forego or reduce mitigation efforts.

## Texas Windstorm Insurance Association

### Charge Rates That Fully Reflect the Risk of Loss

- Program officials said that premium rates do not fully reflect the risk of loss and would likely need to increase by 20 to 35 percent in order to do so. As a result, premium rates are lower than private market rates.
- Legislative changes in 2009 have adjusted the methodology used to set TWIA premium rates. The changes
  - authorize TWIA to use catastrophe models in determining rates,
  - allow insurers to implement annual premium rate increases of 5 percent or less without prior approval of the Insurance Commissioner,
  - limit rate increases to no more than 10 percent per year unless the new rate is the result of catastrophic losses, and
  - allow rating territories to be adopted.

### Encourage Broad Public Participation

- The program does not specifically encourage broad public participation. However, to the extent that premium rates are lower than rates the private market would charge, the program could encourage broader public participation.

**Texas Windstorm Insurance Association (cont.)**

**Encourage Private Market Participation**

- The 2009 legislation included changes to TWIA's post-funding structure, in part to encourage the private market to provide natural catastrophe insurance.
- Under the former structure, private insurers potentially faced unlimited liability for assessments for TWIA losses with limited ability to recoup the assessments from policyholders.
- The new structure caps losses at \$2.5 billion, which equals the amount of TWIA losses following the 2008 hurricane season.
- How TWIA losses would be funded if a storm caused more than \$2.5 billion in losses for TWIA is not clear.
- To the extent that premium rates do not fully reflect the risk of loss, and are therefore lower than rates the private market would charge, the program could discourage private market participation.

**Encourage Mitigation**

- TWIA offers premium discounts to policyholders who mitigate against wind losses.
- To the extent that premium rates are lower than private market rates, the program could encourage property owners to forego or reduce mitigation efforts.

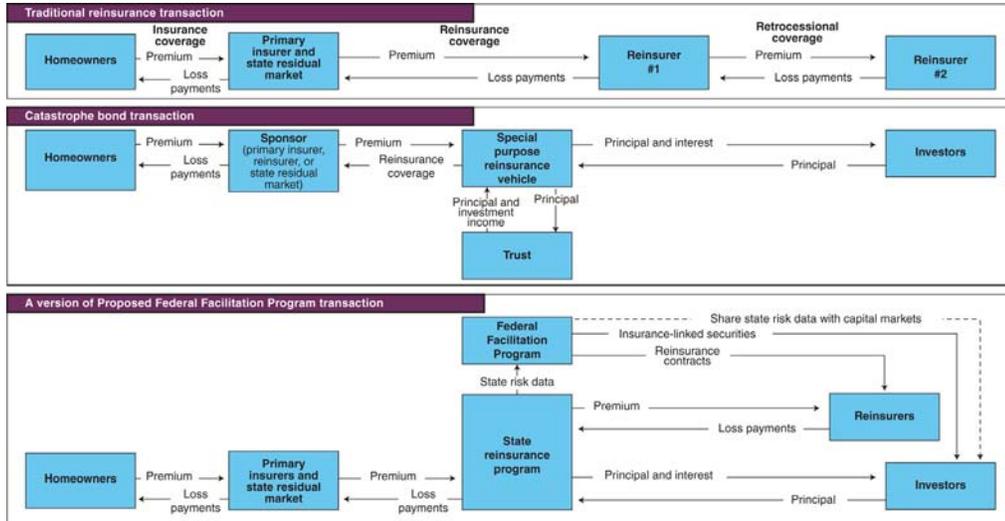
- We identified four proposals, contained in past legislation, that would increase the federal role in natural catastrophe insurance and could affect the reinsurance industry's participation in natural catastrophe insurance markets.
  - Proposal 1: Facilitation of risk transfer
  - Proposal 2: Guarantees of state pre- and post-event bonds
  - Proposal 3: Federal lending facility for qualified state natural catastrophe insurance programs
  - Proposal 4: Federal Reinsurance Program
  
- We found that the proposals involve trade-offs that would have to be balanced. For example, while these proposals could lower premium rates for and increase public participation in state natural catastrophe programs, they could discourage private participation and mitigation efforts and expose taxpayers to the potential cost of a state failure to repay its debt.
- If steps were taken to address certain limitations, then the effect of the proposals might be different. For example, while some proposals could have the effect of discouraging private market participation, it is possible additional steps could be taken to encourage participation.

- The selected proposals address the transfer of risk between primary insurers that have a direct relationship with consumers and the broader reinsurance and capital markets and are intended to address the following challenges:
  - Statutory accounting rules require primary insurers to establish reserves for incurred or known claims, for the cost of “incurred but not reported” claims, for certain other liabilities, and to retain a positive net worth to remain a going concern.
  - For primary insurers and state insurance entities to collect premiums sufficient to pay potentially catastrophic losses, they would need to charge premium rates on properties in high-risk areas that consumers may be unwilling to pay.
  - Primary insurers, and many state insurance entities, seek to limit exposure to large losses by transferring risk to reinsurers and, less often, to the capital markets, through insurance-linked securities (ILS) such as catastrophe bonds.
  - Some state entities do not use reinsurance or capital markets to protect against catastrophic losses because they are structured to post-fund losses using several mechanisms, including assessments on primary insurers, proceeds from general revenue, and bonds.
  - The catastrophe risk can remain concentrated in the state, thereby putting state finances at risk in the event of a major natural catastrophe.
  - The legislative proposals before Congress generally shift natural catastrophe risk from the states to the federal government to varying degrees.

- A federal risk transfer facilitation program is intended to facilitate the transfer of catastrophic property risks from state reinsurance entities to the capital markets.
- The program would facilitate pooling of state risk and provide information to capital market participants about state risk for the purpose of entering reinsurance and insurance-linked securities (ILS) contracts.<sup>6</sup> One version of this process would include the following steps:
  - Homeowners purchase coverage from primary insurer or state residual market entity.
  - Primary insurer or state entity lays off all or a portion of the catastrophe risk to a state reinsurance program. Only Florida currently has such a program.
  - State reinsurance programs would use the federal facilitation program to help coordinate contracts with global reinsurance market or capital market investors for ILS.
  - Reinsurers and investors enter contracts with state reinsurance programs to sell reinsurance or purchase ILS.

<sup>6</sup> Reinsurance is insurance for insurers that enables the insurer to transfer some of its risk to another insurer, called a reinsurer. Insurance-linked securities are capital market instruments that cover insured catastrophe risks. They were developed as an alternative to traditional reinsurance.

• **Figure 4: Traditional, Catastrophe Bond, and Proposed Transaction Types**



Source: GAO.

Note: "Retrocessional coverage" is reinsurance obtained by a reinsurance company when it transfers risk to another reinsurer. A "special purpose reinsurance vehicle" (SPRV) is an entity created by the sponsor of a catastrophe bond to provide reinsurance to the sponsor and offer catastrophe bonds to investors. The SPRV is to hold the funds raised from the catastrophe bond offering in a trust in the form of Treasury securities and other highly rated assets.

- Some state programs do not purchase reinsurance despite availability.
  - Officials from some state programs said that they limit participation in the reinsurance or ILS markets because the coverage they want is not available at a price they are willing or able to pay without significantly increasing premium rates charged to homeowners.
  
- According to reinsurance industry participants, the reinsurance market has sufficient capacity to cover state catastrophe program exposures, but only at premium rates sufficient for the reinsurers' risk of loss.
  - According to these participants, the reinsurance industry has evolved over the past two decades and is better at absorbing shock losses and managing the cost to transfer risk.
  - For instance, they said that in spite of heavy losses in 2005 and 2008, many reinsurers now have excess capacity and may begin stock repurchases.

- ILS retain a relatively small portion of natural catastrophe insurance risk, but that portion is growing.
  - Catastrophe bonds (the most common form of ILS) have contributed about \$25 billion in total capital to insurance markets since the late 1990s.
  - The global financial crisis temporarily slowed the growth of the ILS market.
    - In particular, the bankruptcy of Lehman Brothers exposed problems in how collateral is managed.
    - The market stalled as participants sought new ways to manage the funds pledged as security for the catastrophe bonds.
  - The market started to rebound in February 2009 and by the end of 2009, 19 catastrophe bonds had been issued totaling about \$3.4 billion.
  - As of December 2009, the total amount of catastrophe bonds outstanding was about \$14 billion—about 7 percent of total global catastrophe risk.
- Generally, ILS are used by larger insurers and reinsurers to transfer significant risks that may not find coverage in the traditional reinsurance market.
  - However, one state insurance entity, the North Carolina Insurance Underwriting Association, issued two catastrophe bonds in 2009 and 2010 providing a combined \$505 million in protection.

- ILS face certain limitations, such as basis risk, complexity, and cost, which vary depending on the parties' role in the transaction.
  - Potential sponsors (such as insurers, reinsurers, and state residual programs) are concerned about basis risk, which is the possibility that a sponsor will experience significant losses as a result of a natural catastrophe but that conditions will not necessarily trigger payment from the ILS.
    - Basis risk becomes an issue for a sponsor when the payment through the ILS instrument is triggered by an event other than the sponsor's actual losses. For example, payment on some ILS only occurs if a hurricane or earthquake exceeds a specified magnitude or industry-wide losses exceed a specified amount.
    - The potential exists for an ILS sponsor to incur significant losses when conditions do not occur that would trigger payment on the ILS.

- Potential investors (such as hedge funds and institutional investors) identify data quality and transparency as significant limitations of ILS.
  - For instance, investors may lack data to make an informed risk assessment (such as risk models, exposure data, wind speed data) and/or may lack specific knowledge of the insurance risk involved and understanding of complex models.
  - As a result, investors generally prefer triggers based on a natural catastrophe that exceeds a specified magnitude or industry-wide losses that exceed a specified amount because a certain amount of uncertainty about risk is removed.
  - To reconcile the limitations cited by sponsors and investors, the industry is introducing “hybrid triggers” in ILS transactions that incorporate elements of different trigger types (for instance, actual sponsor losses and industry-wide losses).
  
- Another limitation for potential sponsors is the relatively high cost of ILS transactions, including rating agency services, legal advice, risk modeling and analysis, and an arranger fee.

- Whether most states would use a federal facilitation program is unclear, and most states we reviewed do not favor or expressed no opinion about this proposal.
  - Insurance industry experts note that states could pool their risk now but choose not to do so because some states do not want to cross-subsidize the losses of other states.
  - Some state entities do not access the reinsurance or ILS markets now because, in the short term, it is more expensive than accessing the capital markets through revenue bonds.
  - As described above, many state entities are concerned about basis risk on any ILS transaction.
    - Most ILS transactions utilize a trigger based on an event other than the sponsor's actual losses, and many state entities' premium rates remain too low relative to risks.
    - As a result, many state entities could have a shortfall of funds if its losses did not trigger the ILS, and it may not have collected sufficient premiums to cover that shortfall, necessitating either post-funding or another source of capital, thereby defeating the purpose of issuing the ILS.
- The federal risk transfer facilitation program may not encourage the private market to insure natural catastrophe risk.
  - The federal program could replace many of the same functions already performed by private reinsurance brokers.
  - Creation of state reinsurance programs could replace the private reinsurance market in catastrophe-prone states to an extent similar to the Florida Hurricane Catastrophe Fund.
  - The federal program could limit uncertainty by providing access to state risk data but the potential impact of the data on private market participation is unclear.

- The federal program may expose taxpayers to the potential cost of implicit guarantees.
  - If state entities, reinsurers, or ILS investors encounter financial difficulty, the federal government might be expected to intervene even if such intervention is not explicitly provided for in the proposal because of the federal government's significant involvement in the transactions.
  
- It is unclear whether the federal program would be able to give state programs access to capital at reduced or below-market costs. However, to the extent low-cost capital is made available, it could allow state programs to continue to charge premium rates that do not fully reflect risks or even lower premium rates.
  - State program premium rates that do not fully reflect risks may result in greater public participation in state entities rather than private market.
  - Premium rates that do not fully reflect the risk of loss can also limit homeowner motivation to take steps to mitigate potential damages and could discourage participation by private market insurers who could not operate profitably at such low premium rates.

- A federal guarantee of state bonds is intended to provide liquidity and capacity to qualified state insurance entities by making state pre- and post-event bonds more attractive to investors.
- The federal guarantee could help states overcome tight credit markets in a time of crisis after a natural catastrophe.
  - Federal government would guarantee up to a certain dollar amount for bonds issued for specific perils (such as hurricane and earthquake).
  - Guarantee period would be for a limited number of years, likely less than the full term of the bond.
  - Fees charged to state insurance entities for the guarantee would generally equal a small percentage of outstanding indebtedness covered by each guarantee.
  - The state entity would be required to satisfy eligibility requirements.
    - For instance, the state entity reports that expected losses are likely to exceed available cash resources, and debt issued by the state entity could be limited to 80 percent of the state entity's qualifying assets.

- State insurance entities are not always required to accumulate adequate funds or secure pre-event financing to meet their potential obligations and are generally post-funded by several mechanisms, including bonds.
  - Generally, bonds are secured by incoming premium payments, emergency assessments, and investment earnings of the state entity.
  - Some state insurance entities said that they face challenges in selling the bonds for a variety of reasons, including relatively low credit ratings or a tight credit market.
- Some state programs said that participation in the reinsurance markets is expensive and results in high premium rates for policyholders, who may therefore not purchase coverage.
  - These programs would prefer to use the post-funding mechanisms described above, particularly revenue bonds, to meet their potential obligations.
- A federal guarantee would essentially make state insurance entity revenue bonds equivalent to U.S. Treasury bonds in the eyes of investors.
  - Natural catastrophe risk would be transferred from the states to the federal government to some extent.

- A federal guarantee could result in state entities continuing to charge premium rates that do not reflect the full risk of loss or even lowering rates.
  - It could decrease state programs' purchase of reinsurance.
  - State entities would have easier access to capital markets for post-funding. Thus, they would pay less interest on their bonds and could pass along some of this savings in the form of lower premiums.
  - State entities could be encouraged to use post-funding mechanisms for catastrophe risk more frequently, which could increase taxpayers' exposure to the potential costs in the event of state financial difficulties.
  
- While lower premium rates could subsequently encourage broader public participation in state programs, lower rates could also discourage participation by private market insurers, that could not operate profitably at premium rates that do not fully reflect risk.
  
- Lower premium rates could also encourage development in high-risk locations and discourage mitigation efforts because low premium rates generally do not encourage mitigation.

- A federal lending facility is intended to provide qualified state reinsurance programs with access to capital to address natural catastrophe losses when they encounter difficulty obtaining capital in the markets.
- The federal lending facility would exchange state post-funding of catastrophes for federal loans funded by Treasury bonds sold in the capital markets.
  - Loans would be available to a state reinsurance program if it has a capital shortage and is unable to obtain capital in the private market.
  - These liquidity loans would have a relatively short duration (perhaps 5-10 years) and low interest rates (some percentage of the rate for similar issues of Treasury debt).
- Loans would also be available if the state reinsurance program suffered significant insured losses (for instance, losses in excess of 150 percent of aggregate state direct written premiums for property and casualty insurance).
  - These catastrophe loans would have a longer duration (perhaps 10 or more years) and low interest rates (some percentage of the rate for similar issues of Treasury debt).
- The state reinsurance program would not be required to pledge collateral for the loans, and there is no proposed procedure to cover the programs' failure to repay the loans.

- As noted above, insurers need to be able pay losses in any given year, but to collect premiums sufficient to pay potentially catastrophic losses would require prohibitively high premium rates.
  - To address this issue, insurers generally purchase reinsurance or issue ILS, which will help pay potentially catastrophic losses and spread the risk of catastrophic losses in any given year across the private market.
  - Some state insurance entities do not always purchase reinsurance or issue ILS to meet their potential obligations and are generally post-funded by several mechanisms, including revenue bonds.
  
- Given its size, and its taxing and borrowing authority, the federal government would have an advantage over state insurance entities in bearing the timing risk associated with disasters.<sup>7</sup>
  - A catastrophic loss would represent a larger portion of a given state's resources than the federal government.
  - The federal government generally has greater ability to borrow funds more quickly than do state governments.

<sup>7</sup> "Timing risk" is the possibility that events will occur before insurers have collected enough premiums to cover them.

- A federal lending facility could encourage state entities to continue charging premium rates that do not fully reflect the risk of loss, or even lower premium rates, because the state entities could decrease or eliminate reinsurance purchases, and a lending facility could provide financial support in case of a deficit.
  - Lower premium rates could subsequently encourage broad participation in state programs but discourage mitigation efforts and private market participation.
- Federal government would assume the risk that it would have to loan potentially large sums to the larger state entities in the event of a major natural catastrophe, exposing taxpayers to the potential costs of a state failing to repay its debt.

- A federal reinsurance program would create federally backed reinsurance policies for state insurance entities.
- A federal reinsurance program is intended to serve as a backstop for state entities to increase the amount of insurance and reinsurance coverage available to states, expand the availability of catastrophe coverage, and possibly improve its affordability.
  - States would create reinsurance entities and enter into agreements with the federal government, paying premiums for the reinsurance that would be used to support the reinsurance fund.
  - The price of federal reinsurance coverage would be set at a price intended to cover the reasonably anticipated cost of all claims, all expenses, and possible reinsurance purchases by the federal program.
  - Federal reinsurance contracts would provide payments to state entities for storms of a certain magnitude (for example, 1-in-200 years) up to some predetermined level of payments (for example, \$200 billion).
    - Within that range, the contract would provide payment covering a certain percentage of the state entity's insured losses (for example, 90 percent).
    - The range of coverage applies for all events in the calendar year and not separately to each individual event.
- The federal reinsurance program would be prohibited from displacing or competing with the private insurance or reinsurance markets or capital market.

- To the extent the program would be required to charge premium rates that fully reflect the risk assumed by the program and did not displace or compete with the private insurance or reinsurance markets or capital market, federal reinsurance could limit use of taxpayer dollars.
- However, charging a reinsurance premium that does not fully reflect risk would expose the federal fund and the government to potentially significant unfunded contingent insurance risk.
  - Federal reinsurance would compete with and likely displace private reinsurance, despite explicit language prohibiting it, if the government offered coverage at levels that were well within private market capacity and set premium rates below what the private sector would charge for comparable risk.
  - In addition, federal reinsurance premiums that do not fully reflect risk could inadvertently encourage further development and population growth in areas with high natural catastrophe risk.
- The existence of federal reinsurance might affect market discipline, leading private insurers and state insurance entities to loosen underwriting guidelines and insure properties that would not have been insurable without the availability of (low-cost) federal reinsurance.
  - Such a change could be costly for the reinsuring federal facility.

- We have examined insurance practices in Australia, Canada, France, Germany, Japan, New Zealand, and Switzerland, which we selected based on our previous work (see GAO-09-188R).
- We found that while selected countries face natural catastrophe risks similar to those of the United States, the extent of natural catastrophe risk differs, leading each country to create unique methods of insuring risks.
- We also found that most methods used by the selected countries to insure against catastrophic risk did not appear directly transferable to the United States. However, a federal role in providing reinsurance for or sharing the costs of such risk, which is used in some other countries, is an option we have analyzed previously, noting that it presents both potential advantages and disadvantages.

- In some countries, the government may participate in the insuring of catastrophe risks, while in others the private market alone insures such risks.
  
- Countries use various tools to reduce financial losses prior to a natural catastrophe, including
  - encouraging mitigation,
  - encouraging the public to purchase insurance, and
  - coordinating with the private market to provide insurance.

• **Figure 5: Exposure to Types of Catastrophe Events and Presence of Government and Private Market Participation in Selected Countries**

	Type of natural catastrophe							Government and private market participation	
	Bush wildland fires	Cyclones	Earthquakes	Floods	Landslides	Tornadoes	Other	Government	Private market
Australia	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure		●
Canada	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure		●
France	No risk exposure	No risk exposure	●	●					
Germany	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure		●
Japan	No risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	●	●
New Zealand	No risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	●	●
Switzerland	Risk exposure	No risk exposure	●	●					
United States	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	Risk exposure	●	●

No risk exposure  
 Risk exposure

Source: GAO.

There have been no significant program changes in the selected countries since our last report (2008).

- **Australia:** If a homeowner has a mortgage on their home, they must purchase natural catastrophe insurance from 1 of approximately 140 private insurance companies.
- **Canada:** The private market provides household insurance for insurable catastrophe risks such as fire, lightening, storms, tornadoes, and hail. Coverage is not usually provided for flood, or weight or pressure of snow or ice. Earthquake coverage can be purchased as an extension of the standard household policy.
- **France:** By law, Catastrophes Naturelles (CATNAT) coverage is a mandatory extension of property insurance policies written by private insurance companies. The government must declare a state of natural disaster for CATNAT coverage to take effect.
- **Germany:** Private insurance companies provide insurance coverage for avalanche, flood, earthquake, landslide, weight of snow, and volcanic eruption. Insurance is provided as an extension of natural risk insurance.

- **Japan:** Private market insurance companies in Japan provide the public with insurance against windstorm and flood risks, as well as earthquake insurance on dwellings. However, the insurers reinsure all earthquake policies with a government reinsurance program that pays a portion of losses incurred above specified amounts, with that portion increasing as the losses increase.
- **New Zealand:** The New Zealand Earthquake Commission (EQC) is a government agency that runs a natural catastrophe residential insurance program. The EQC provides coverage for damage from earthquake, tsunami, natural landslides, volcanic eruption, hydrothermal activity, and storm, as well as flood in the case of residential properties. By law, EQC holds private market insurance companies responsible for collecting policyholder premiums. However EQC pays all losses. Policyholders may choose to purchase additional coverage in the private market.
- **Switzerland:** In 19 cantons, insurance against fire and damage by natural disasters is offered by cantonal building insurers through a government-run program.<sup>8</sup> In the 7 remaining cantons, private insurers insure buildings against fire and damage by natural forces and are members of the Swiss Natural Perils Pool, a consortium tool used to distribute risks among the insurers.

<sup>8</sup> The 26 cantons of Switzerland make up the member states of the federal state of Switzerland.

- **Australia and Germany:** Private insurance companies perform extensive, risk-based underwriting in order to develop premium rates adequate to cover eventual losses.
- **France:** Policyholders purchase CATNAT coverage for an additional 12 percent above their primary property insurance coverage. Rates have not changed in over 10 years.
- **Japan:** For earthquake coverage, premium rates are based on structure and location of the insured building, including discounts for earthquake-resistance capability.
- **New Zealand:** Fixed rates of \$60 per year for natural catastrophe coverage were set by the government just after World War II and have not been altered since.
- **Switzerland:** Rates are based on universally affordable premiums instead of risk of loss and are uniform within each territory.

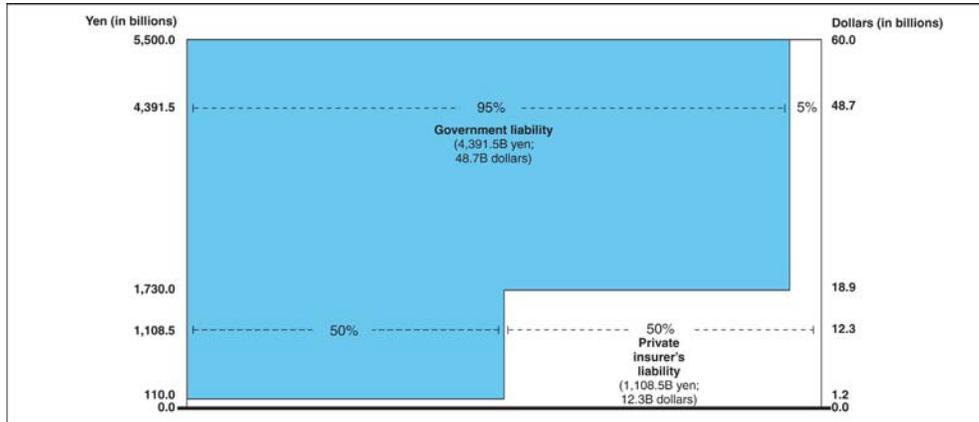
Some Countries Encourage the Public to Purchase Natural Catastrophe Coverage

- **Australia:** The private industry encourages the public to purchase catastrophe insurance through marketing campaigns.
  - Approximately 70 percent of the population is insured due to mandatory purchase requirements if there is a lien on the home.
- **France and New Zealand:** More than 90 percent of the population has natural catastrophe insurance due to mandatory purchase requirements if there is a lien on the home.
- **Japan:** Both the government and GIAJ have conducted public relations campaigns for earthquake insurance on dwellings. Additionally, to limit the cost burden to policyholders, part of earthquake insurance premiums can be deducted from taxable income.
  - Because Japan does not have mandatory purchase requirements, approximately 21 percent of the population is insured.
- **Switzerland:** Almost 100 percent of homes are insured against catastrophe risks due to mandatory purchase requirements.

- Some Countries Coordinate with the Private Market to Provide Natural Catastrophe Insurance
  - **Canada:** The private insurance market and supervisory authorities have coordinated efforts to treat earthquake risks, the country's largest catastrophe risk. The authorities created a tax-free reserve and certain premium provisions to help ensure the financial stability of insurers subsequent to an earthquake.
  - **France:** Through the Caisse Centrale de Reassurance (CCR), the government offers unlimited reinsurance coverage for catastrophe risks to private market insurers. Approximately 80 percent of insurance companies purchase CCR coverage.
  - **New Zealand:** Private insurers are required to collect premiums from policyholders for coverage through the government-run program. The program, in turn, purchases reinsurance in the private market. The government of New Zealand guarantees payment of losses that exceed reinsurance limits.

**Japan:** Private insurers reinsure all the earthquake insurance they write with the Japanese Earthquake Reinsurance Company (JER), which in turn cedes some of this risk to a private reinsurer and back to the primary insurers. The remaining risk retained by JER is guaranteed by the Japanese government.

**Figure 6: Liability Distribution of Japanese Earthquake Insurance (yen to dollar conversion as of March 2010)**



Source: JER.

Mitigation is encouraged in various ways.

- **Australia:** Mitigation is achieved through building regulations.
- **France:** Local governments and communities are responsible for developing and implementing risk-prevention plans that are approved by the central government.
- **Germany:** States and local communities are primarily responsible for implementing natural hazard policies, including mitigation.
- **Japan:** The GIAJ has urged policyholders to mitigate their risks by sponsoring various educational activities. Premium discounts are also given for mitigation efforts.
- **New Zealand:** There is no financial incentive for homeowners to mitigate their property risks; however, New Zealand is considering subsidizing an inspection system.
- **Switzerland:** Cantons are responsible for implementing mitigation policies that they develop in coordination with the federal government and other participants.

- Most international practices cannot be directly applied to the U.S. market; however, state programs such as CEA look to Japan for best practices.
  - Types of catastrophic events vary among different countries; however, Japan and California face similar earthquake risks.
  
- Though many countries are subject to catastrophe risks similar to those of the United States, the extent to which they suffer from a severe event differs significantly.
  - Reinsurers believe that internationally, hurricanes in the United States present the largest exposure to catastrophic losses, followed by earthquakes in the United States, then by windstorms in Europe, and then earthquakes in Japan.

**Figure 7: Previous Catastrophic Event Damages in Selected Countries**

Country	Event	Storm year	Number of deaths	Damage (dollars in billions)	
				Total cost	Insured cost
Japan	Earthquake	●    1995	6,000	\$100.0	\$3.0
United States	Hurricane	●    2005	1,200	75.0	43.6
Germany	Flood	●    2002	21	16.3	2.5
Canada	Ice storm	●    1998	52	6.6	1.6
Switzerland	Flood	●    2005	N/A	2.4	1.9
Australia	Hail storm	●    1999		1.5	
New Zealand	Earthquake	●      1931	261	0	N/A

Source: GAO analysis.

Note: Numbers are not adjusted for inflation.

Provision of reinsurance to private market insurers by the federal government, which is used in several countries, is a practice we reviewed in a previous report (see GAO-08-7), and it has several potential advantages and disadvantages.

- Potential advantages include increasing insurers' willingness to write coverage for natural catastrophe losses, decreasing insurers' motivation to cancel such coverage in affected regions following a disaster, and limiting the need for some types of post-event government payouts.
- Potential disadvantages include displacement of private reinsurers; political and consumer pressure to keep premium rates low so that consumer premiums are kept low, which could expose the federal government to potentially large losses; and reduced market discipline, where insurers loosen underwriting guidelines because of the existence of low-cost federal reinsurance, which could inadvertently encourage development in high-risk areas.

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