



June 24, 2013

Submitted electronically via Federal eRulemaking Portal: <http://www.regulations.gov>

Michael T. McRaith
Director, Federal Insurance Office
Attention: Study on Natural Catastrophes and Insurance
Room 1319 MT
Department of the Treasury
1500 Pennsylvania Avenue NW.
Washington, DC 20220

Re: Study on Natural Catastrophes and Insurance

Dear Director McRaith:

On behalf of the American Academy of Actuaries¹ Casualty Practice Council's Extreme Events Committee, I appreciate the opportunity to provide input to the Federal Insurance Office (FIO) for the purpose of conducting its study of natural catastrophes and the current state of the market for natural catastrophe insurance in the United States, as required by the Biggert-Waters Flood Insurance Reform Act of 2012.

- 1. The current condition of, as well as the outlook for, the availability and affordability of insurance for natural catastrophe perils in all regions of the United States, including whether a consensus definition of a "natural catastrophe" should be established and, if so, the terms of that definition;**

Academy Committee response:

When participating in a market, insurers determine whether they have a reasonable expectation of an adequate return on the capital exposed to catastrophe risks. In areas of the country with the greatest natural catastrophe risk exposure, the amount of capital required to ensure payment of claims and replacement of capital necessary to remain in business following an event is typically beyond the capacity of the private insurance market. In these cases, it has been necessary to

¹ The American Academy of Actuaries is a 17,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

engage additional sources of capital, including federal and state governments, insureds, securities markets, and the public, along with insurers and reinsurers.

Rate Adequacy

To participate in a market, insurers make a determination that there is a reasonable expectation that they can charge an adequate rate, defined by actuarial principles² as a rate that will cover the expected losses to be paid. They also determine whether their rates will provide a reasonable return for their cost of capital. The main challenge for U.S. insurers in funding major catastrophe losses is the enormous amount of capital required to ensure payment of claims and the replacement of that capital after it is depleted. An event that gives rise to \$100 billion or more in insured losses is certainly plausible among natural disasters like hurricanes and earthquakes. This level of capital cannot be accumulated quickly from annual premiums. Because exposing that much capital to loss entails a high degree of risk, capital markets require a significantly higher return to justify their investment.

The following are critical components of effective regulatory and/or statutory structures governing rate adequacy for catastrophe risks:

- **Use of catastrophe models** in ratemaking needs to be allowed. These models are the best source of information on projected losses. Actual historical data are often too sparse to adequately estimate losses, so historical loss information must be augmented using information provided by models. Statutory/regulatory allowance of models is necessary to achieve a reasonable loss and cost of capital component in rates. It is also important to recognize the place that the proprietary concerns of modeling companies holds for them to retain an incentive to further refine/enhance their models.
- **Accounting for the cost of capital** is essential to obtain an adequate return. Many state laws and regulations do not explicitly address this, or else they explicitly prohibit an appropriate cost of capital on retained risk exposure. In addition, because of the low frequency of catastrophe events, regulated rates often are held below the true costs of the underlying capital required to cover the uncertainty, the volatility, and the risk of impairment or ruin due to the possibility of high losses. The cost-of-capital component is highly significant in high catastrophe areas. Failure to reflect the proper costs of capital, which, in turn, reflect market-clearing prices for capital replacement, ensures that insurance capital will be deployed elsewhere, ultimately increasing the size of the residual market.

Accounting for reinsurance costs and other risk transfer funding in rates is essential. Reinsurance is a critical risk transfer tool for insurers with coverages in catastrophe-prone areas. Insurers contractually transfer a portion of their risk to a reinsurer, and, in turn, reinsurers diversify the risk by offering reinsurance products covering many distinct geographic areas and types of business. Given the volatility of the catastrophe risk

² See CAS Statement of Principles Regarding Property and Casualty Insurance Ratemaking: <http://www.casact.org/professionalism/standards/princip/sppcrate.pdf>.

exposure and the large amount of capital consumed, the cost of capital is typically reflected in catastrophe rates.

Increased Private Market Involvement

The more companies that participate in a market, the broader the market's capital base and the more widely available coverage can be, as insurers deploy diverse business models. The risk of ruin is "subadditive"; widely shared among many insurers, a given level of catastrophe risk permits lower total capital requirements than the same level of risk concentrated among a few insurers and perhaps an oversized residual market. Therefore, efforts to increase private market involvement may lead to greater overall insurance availability. Some examples of incentives to increase private market involvement are:

- **Premium Tax Credits** would allow states to directly encourage more insurance company involvement in the catastrophe market. While this could be marginally helpful, the potential amount of premium tax credit would likely not be large enough on its own to encourage companies to market their policies to coastal areas.
- **Higher Deductibles** can allow insurers to share the costs of losses with insureds, broadening the capital base available to fund losses and allowing insurers to offer coverage to a broader portion of the market. Premium credits that are actuarially commensurate with a higher deductible could make coverage more affordable, though consumers must be educated that they are choosing to retain more risk. This also encourages property owners to take more personal responsibility to implement recommended steps to mitigate property damage to reduce their ultimate costs.
- **Residual Market Buyout Strategies** may incentivize new and existing carriers to enter a market and depopulate residual markets. "Depopulation" programs are only effective when the insurers are carefully vetted for solvency, and reinsurance plans are permitted to charge long-term actuarially adequate rates. Such programs are most successful when insurers aggressively educate consumers about their options and are permitted some flexibility in forms, rates, and coverage to ensure they can remain attractive relative to the residual market.
- **Minimize Insurers' Uncertainty** by allowing them to use policy coverage language that provides the flexibility they need to successfully manage and price their catastrophe risk. Matching price to risk is essential to the financial solvency of the insurer, and, if policy coverage is made uncertain by regulators or courts, particularly retroactively, that uncertainty could manifest itself in the form of higher prices. Delays and obstacles to quickly adopting needed policy changes are equally disruptive.

Consensus Definition of "Natural Catastrophe":

For internal reporting purposes, an insurer might define an event as a natural catastrophe if it exceeds a certain dollar threshold of loss. For example, Property Claims Services, a unit of Insurance Services Office, Inc. (ISO), defines catastrophes in the U.S., Puerto Rico, and the U.S.

Virgin Islands as events that cause \$25 million or more in direct insured losses to property and affect a significant number of policyholders and insurers.³

The term “natural catastrophe” is typically defined, if at all, by example—earthquakes, hurricanes, floods, etc. Outside a specific context, the Extreme Events Committee does not find it essential to establish a consensus definition of the term. Such a definition could be used in a wide variety of contexts: to monitor an insurance company’s experience; to set a threshold for the provision of federal assistance; or to collect data on the catastrophe insurance-related activities of insurers, banks, etc., among many other purposes. The context of a consensus definition would be essential to an evaluation of its usefulness; a definition that might be suitable in one context might be wholly inappropriate in another.

- 2. The current ability of States, communities, and individuals to mitigate their natural catastrophe risks, including the affordability and feasibility of such mitigation activities;**
 - a. The current and potential future effects of land use policies and building codes on the costs of natural catastrophes in the United States;**

Academy Committee response:

Damage prevention begins with proper land use planning (i.e., not building in harm’s way), along with strong, well-enforced building codes, so that what is built can better withstand catastrophic events. Improving land use planning and strengthening building codes are long-range solutions. Additional efforts to mitigate natural catastrophe damage to the current building stock are needed now.

Current building stock mitigation efforts should include education. The public must understand the need for and benefits of mitigation before individuals will willingly undertake it. Educational materials on mitigation currently exist for most natural catastrophe perils, but, because much of it has been developed by insurers, some may view it as biased. The public is generally more likely to act on mitigation information if it is disseminated by objective third parties. This could create the potential for an ideal area of partnership among regulators, insurers, and advocacy groups.

In addition, financial incentives can reduce the payback period (the number of years it takes for savings to offset the cost). Depending on the jurisdiction, effective incentives may include state income tax credits, direct grants, low-interest loans, or assessments attached to property deeds and identifying the property as improved. Financially sound insurance premium credits are part of the solution, but alone, such credits will not generally create sufficiently short payback periods to aggressively incentivize homeowners to undertake retrofits. Financial incentives must be evaluated for how well they reduce the payback period for incurring mitigation costs. In addition, many property owners evaluate the payback period relative to how long they anticipate owning their property.

³ See <http://www.iso.com/Products/Property-Claim-Services/PCS-Catastrophe-Serial-Numbers.html>.

b. The percentage of residential properties that are insured for earthquake or flood damage in high-risk geographic areas of the United States, and the reasons why many such properties lack insurance coverage;

Academy Committee response:

According to the California Department of Insurance, approximately 11 percent of homeowners in California carry earthquake insurance. The low take-up rate for earthquake insurance in California may be due primarily to the high price and high deductible; the typical deductible for residential earthquake insurance in California is 15 percent, and the average annual premium in 2011 was \$858, as compared to an average residential (fire policy) premium of \$752.⁴

Another important factor is the fact that, unlike coastal hurricane coverage, government-sponsored mortgage backers like Fannie Mae and Freddie Mac do not require earthquake hazard insurance.

Yet another factor is the psychology of risk; disasters are relatively infrequent occurrences, even in peak zones, so homeowners incorrectly underestimate their probability of disaster loss over the period of their expected occupancy. For example, the probability of a one-in-100-year catastrophe over the term of a 30-year mortgage is approximately one-in-four.

According to a RAND Corporation study conducted for the Federal Emergency Management Agency (FEMA), about half the homeowners within Special Flood Hazard Areas (SFHAs), otherwise known as “100-year flood zones,” have flood insurance.⁵ However, only about one percent of those outside SFHAs have flood insurance. The low take-up rate in flood insurance seems to be the result of high premiums within SFHAs and underestimation of the hazard outside the areas; again, homeowners doubt that the benefit is worth the cost.⁶

c. The role of insurers in providing incentives for risk mitigation efforts;

Academy Committee response:

The principal lever that insurers use to encourage mitigation is the awarding of premium credits. These credits should reflect the extent to which expected losses are reduced by the presence of mitigation enhancements. Given the low frequency of catastrophic losses to an individual building, the premium savings alone generally does not lead to a payback period short enough to substantially improve take-up rates.

⁴See http://www.insurance.ca.gov/0400-news/0200-studies-reports/0300-earthquake-study/upload/EQ2011_Summary_Revised2.pdf.

⁵ See http://www.rand.org/pubs/research_briefs/RB9176/index1.html.

⁶ See http://actuary.org/files/publications/AcademyFloodInsurance_Monograph_110715.pdf.

3. The current state of catastrophic insurance and reinsurance markets and the current approaches in providing insurance protection to different sectors of the population of the United States;

Academy Committee response:

The NAPCO LLC Spring 2013 State of the Market report (herein referred to as the NAPCO report) addresses commercial insurance and reinsurance.⁷ According to that report, the current state of the catastrophe market for U.S. risks remains fairly competitive, even after the 2011 global losses and the 2012 U.S. losses caused by Superstorm Sandy. In the U.S., the catastrophe insurance market includes the perils of hurricane, severe thunderstorm (including tornado, hail, and straight-line high wind), earthquakes, wildfires, and drought. The NAPCO report states that, although the market did not shift “sharply ... in response to Sandy,” the storm may have temporarily delayed a downward shift in pricing levels. The NAPCO report indicates that “[catastrophe insurance] price increases were higher for those ... with heavier losses” and for those located in the Northeast.

Current approaches to providing catastrophe risk protection by insurers have combined market forces, client relationships, and technical approaches, along with increasingly widespread use of catastrophe models. Analytical tools continue to evolve to make use of more data from a variety of geographic regions, incorporate more perils, and account for lessons learned from recent loss events.

As the NAPCO report states, entering 2013, the catastrophe insurance industry had ample capacity and stable pricing. For example, in early 2013, policies that had insured losses as a result of Superstorm Sandy saw price increases of up to 10 percent, while policies with no loss activity saw price decreases in the mid-single digits. This was very different from the post-Hurricane Katrina market of 2006, in which risks with Katrina-related loss experience saw price increases in excess of 50 percent, according to the 2007 Wharton report *Managing Large-Scale Risks in a New Era of Catastrophes*.⁸ As 2013 has progressed to date, the NAPCO report states, additional capacity was deployed to catastrophe-exposed areas, and prices to insure non-Northeast exposures decreased nearly 10 percent.

As catastrophe loss experience in the Northeast had been relatively benign for decades prior to Sandy, many commercial insurers and reinsurers had become less aggressive about the potential loss exposure and had not priced or underwritten as rigorously as they had in Florida and other Southeast areas at high risk for catastrophe losses. After a few “near misses” (namely Earl in 2010), and having now experienced the significant losses caused by Sandy in 2012, some insurers are considering revising terms and conditions for properties in Northeast coastal areas, according to the NAPCO report. For example:

⁷ See <http://www.napcollc.com/articles/NAPCOInsuranceInsights-TheStateOfTheMarket-2013-April.pdf>.

⁸ See http://opim.wharton.upenn.edu/risk/library/Report_on_Phase_I.pdf.

- “Some insurers have increased their windstorm deductibles for [policies covering some areas of] the Northeast from \$10,000 to as much as \$100,000,” and some are considering eliminating hurricane deductibles in favor of named windstorm deductibles;
- Some insurers are considering imposing “named windstorm deductibles for coastal areas of the Northeast,” where allowed by statute and regulation (some states regulate storm deductibles). These deductibles would be set as a percentage of the asset values at risk in a loss, typically one percent to five percent, depending on the location of the risk;
- Some “insurers have expanded their definitions of ‘Tier 1’ counties,” in which windstorm risk is high. “Before Sandy, Tier 1 counties included coastal areas from Chesapeake, Virginia, to Texas.” Since Sandy, one insurer has expanded its Tier 1 definition to include “from Virginia up to Maine, and others are considering whether to make the same change”;
- Insurers are also contemplating adding a more significant catastrophe surcharge or a “catastrophe load” for policies in the Northeast, similar to charges currently in place in the Southeast; and

Catastrophe models continue to play “an increasingly important role in insurance pricing,” according to the NAPCO report. “The industry has relied on models for earthquake and windstorms for some time, but new models for other catastrophe risks are in development.” Additionally, since Hurricane Katrina, rating agencies⁹ have included a significant risk charge for catastrophe exposures in their capital adequacy models. As global regulators and regulated insurers are adopting economic capital models, they are increasingly focused on the catastrophe risk charge and the cost of the associated capital.¹⁰ This has been the case particularly in Bermuda, where it has been the considered view that the reinsurance market has been aggressive in its analytics and pricing for capital utilization, but best practices are beginning to work their way into the primary pricing function.

Catastrophe models continue to incorporate advanced scientific information, industry loss and exposure data, and lessons learned from recent events. To illustrate:

- Catastrophe-modeling firms are expected to validate their models in the coming months in response to Superstorm Sandy, as they do following any major event;
- Also according to the NAPCO report, catastrophe-modeling firms aspire to enhance models for risks like flood, wildfires, and tornadoes. New models may offer a better understanding of these risks and the potential for associated losses. While that heightened understanding could result in higher prices for some consumers, credible new models also encourage price stability in the market.

⁹ Nationally Recognized Statistical Rating Organization (NRSRO)

¹⁰ See http://opim.wharton.upenn.edu/risk/partners/3_RatingStandards-CatRisks.pdf.

4. The current financial condition of State residual markets and catastrophe funds in high-risk regions, including the likelihood of insolvency following a natural catastrophe, the concentration of risks within such funds, the reliance on postevent assessments and State funding, and the adequacy of rates;

Academy Committee response:

Due to the potential variability in magnitude of catastrophic losses, it is virtually impossible to finance all potential losses in any single time period using traditional property insurance. This leaves two extreme choices: pre-fund all potential losses or use post-loss funding when significant losses occur, along with a practical spectrum of options that combine pre- and post-loss funding. Currently, only states have the power to issue public debt to finance hurricane losses. Additionally, some state insurers have used insurance-linked securities or catastrophe risk bonds (cat bonds) to reduce the financial impact of a single major event. Due to its geography, loss exposure, and long history of elevating property insurance issues in its public policymaking, the Florida market precisely illustrates many of the aspects of these residual markets.

Like some other catastrophe-prone states, Florida finances a significant portion of its catastrophic risk exposure through post-loss assessments; these assessments are levied on most property-casualty insurance policyholders. (Other states, like South Carolina, pre-fund nearly all plausible windstorm and earthquake loss scenarios via reinsurance.) The three primary insurance entities in Florida with the power to levy post-loss assessments are state-sponsored insurance or quasi-insurance entities like Citizens Property Insurance Corporation (Citizens), the Florida Hurricane Catastrophe Fund (FHCF), and the Florida Insurance Guaranty Association (FIGA).

Citizens is the state's residual market property insurer. Homeowners have the choice of purchasing coverage from a private insurer or from Citizens, which, thanks to recently-enacted S.B. 1770,¹¹ will now compete to some degree with private insurers on price. While trying to achieve actuarially sound premium rates, Citizens cannot increase rates by more than 10 percent for any single policyholder in a given year. Given its current rate restrictions and deficiencies, it may be many years before all Citizens policyholder premium rates are actuarially justified.

Citizens uses a combination of accumulated premiums and surplus, traditional reinsurance, insurance-linked securities, FHCF reinsurance, and post-event debt secured by assessments (some of which apply to nearly all property/casualty insurers, not only homeowners' insurers) to finance its probable maximum losses, as explained in greater detail below.

Citizens has three accounts: the Personal Lines Account (PLA), Commercial Lines Account (CLA), and the Coastal Account.¹² The Coastal Account has a separate financial identity from the PLA and CLA accounts, and the calculation of deficits and resulting assessments are determined independently for each of the three accounts.¹³ According to *BusinessWire*,

¹¹ See <http://laws.flrules.org/2013/60>.

¹² See <https://www.citizensfla.com/about/CitizensAssessments.cfm>.

¹³ See <http://www.businesswire.com/news/home/20130531005947/en/Fitch-Affirms-Citizens-Property-Insurance-Corp.s-FL>.

depending on the type of assessment, the current assessment base for Citizens includes all property and casualty lines except the medical professional liability, accident and health, and workers' compensation lines. When Citizens incurs a certain level of projected financial deficit in any of its three accounts, it has statutory authority, pursuant to Section 627.351(6)(b)2.a.,¹⁴ to levy up to three different types of assessments,¹⁵ which are described below:

1. ***Citizens Policyholder Surcharge.*** The first type of assessment is the Citizens Policyholders Surcharge, which is levied on Citizens' policyholders and can be applied to each of Citizens' three accounts. To the extent that the imposition of this surcharge does not eliminate the deficit, Citizens Regular Assessments and/or Emergency Assessments may then be levied.
2. ***Citizens Regular Assessment.*** The second type of Citizens assessment is the Citizens Regular Assessment. Regular Assessments are levied on private, Florida-licensed property and casualty insurance companies and on insureds who buy relevant types of policies from surplus lines insurers. The admitted insurers are permitted to recoup the assessment amount by passing the cost on to their policyholders. Concerned about the effect that these assessments could have on thinly capitalized insurers, in 2012, Florida enacted amendments to FL Statute 627.351. The amendments render the PLA and CLA accounts ineligible for regular assessments and reduces the maximum regular assessment in the Coastal Account from six percent to two percent per account.¹⁶
3. ***Citizens Emergency Assessment.*** The third type of Citizens assessment is the Citizens Emergency Assessment. Citizens levies Emergency Assessments on a broad swath of property and casualty insurance policyholders of private and surplus lines companies and on its own policyholders. Citizens may only levy Emergency Assessments once the maximum Policyholder Surcharge and Regular Assessments are imposed and found to be insufficient to cover the deficit, in which case an Emergency Assessment of up to 10 percent of premium or 10 percent of the deficit, whichever is greater, may be levied. Emergency Assessments are collected when policies subject to assessment are renewed or when new eligible policies are issued. Among their other effects, the Statute 627.351 amendments shifted some of the assessments that would have been collected as "Regular Assessments" to the category of "Emergency Assessments."

Created in 1993 in the aftermath of Hurricane Andrew, the **FHCF** is a state-run entity created to stabilize Florida's residential property insurance market.¹⁷ All insurers selling homeowners insurance in Florida are required to purchase the mandatory catastrophe loss reimbursement coverage offered by the FHCF. The FHCF mandate applies to Citizens and private insurers alike and is structured much like annual aggregate hurricane-only excess-of-loss reinsurance. Retention level per storm and annual reimbursement amounts are determined by a formula as the "applicable FHCF Retention Multiple" of each insurer's annual FHCF premium for the contract

¹⁴ See http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0600-0699/0627/Sections/0627.351.html.

¹⁵ See <https://www.citizensfla.com/about/CitizensAssessments.cfm>.

¹⁶ See http://laws.flrules.org/files/Ch_2012-080.pdf.

¹⁷ See <http://www.sbafla.com/fhcf/AbouttheFHCF/tabid/278/Default.aspx>.

year in which the relevant hurricane occurred. Annual premiums are determined by a rating plan applied at the individual company level.¹⁸ (The risk associated with policies in-force as of June 30 of each applicable year determines participants' FHCF reimbursement premium.) The FHCF is mandated by statute to charge "actuarially indicated" premium rates.¹⁹ However, its rates are not actuarially sound to the extent that actuarially sound rates are generally expected to be sufficient to effectuate the arms-length transfer of risk. The FHCF's risk load is set at a flat percentage by law and is far below market-clearing levels. As a result, FHCF rates are substantially lower today than private market reinsurance rates.

FIGA is a state entity created to settle the claims of insolvent private insurers in Florida.²⁰ It has the authority to assess nearly all Florida property/casualty insurers in the event of insolvencies related to catastrophic storms.²¹

Currently, both Citizens and the FHCF have emergency assessments in place (estimated to end around 2017²² and 2016,²³ respectively) to pay for post-event deficits stemming from the 2004 and 2005 hurricane seasons.

Florida is one of several states with residual market mechanisms in place to address the costs of insuring natural catastrophe perils. Another such mechanism is the Texas Windstorm Insurance Association (TWIA). The TWIA is the insurer of last resort for 266,000 homeowners and businesses.²⁴ The TWIA relies on premiums and assessments placed on Texas insurance companies because of the high risk of catastrophic losses.²⁵ Following Hurricane Ike in 2008, some have questioned whether TWIA will be able to provide sufficient coverage when another hurricane strikes,²⁶ as it has no pre-set funding mechanism for much of its probable maximum loss.²⁷

To help reduce the financial impact of major catastrophe events, some state funds have begun to rely on alternative forms of risk financing like cat bonds. Cat bonds are insurance-linked securities that transfer a specific risk like that of hurricane or earthquake losses from a sponsor to investors. Investors lose their entire principal in the event of a catastrophe that meets the terms set forth in the bond; consequently, interest rates on these bonds are much higher than on other

¹⁸ See <http://fhcf.paragonbenfield.com/pdf/13faq.pdf>.

¹⁹ Florida Rule 19-8.028 defines "actuarially indicated" premium rates as "[p]remiums which are derived according to or consistent with accepted actuarial standards of practice. Actuarially Indicated means an amount determined according to principles of actuarial science to be adequate, but not excessive, in the aggregate, to pay current and future obligations and expenses of the Fund, and determined according to principles of actuarial science to reflect each insurer's relative exposure to hurricane losses." See <http://www.sbafla.com/fhcf/LinkClick.aspx?fileticket=TwTtAQ3Ntfs%3D&tabid=1305&mid=3529>.

²⁰ See <http://www.figafacts.com/>.

²¹ See <http://www.figafacts.com/media/files/2012AssessmentPacket.pdf>.

²² See <https://www.citizensfla.com/shared/notices/2005HRAEMRG/faqs4comp.pdf>.

²³ See <http://www.floir.com/siteDocuments/GEARFAQs.pdf>.

²⁴ See <http://www.khou.com/news/local/Texas-windstorm-insurance-decision-delayed--199953431.html>.

²⁵ See <http://abclocal.go.com/ktrk/story?section=news/state&id=9039828>.

²⁶ See <http://www.nbcdfw.com/news/local/Board-Determines-Fate-of-Windstorm-Insurance-Group-199845151.html>.

²⁷ See http://sciencepolicy.colorado.edu/admin/publication_files/2013.17.pdf.

types of bonds. Increasingly, state-run entities have sponsored the issuance of cat bonds to manage risk.

Through issuer Everglades Re, Florida Citizens sponsored 750 million dollars' worth of two-year cat bonds in 2012 and an additional 250 million dollars' worth of three-year cat bonds in 2013.²⁸ Louisiana Citizens Property Insurance Corporation, another state property insurer of last resort, sponsored a series of three-year cat bonds worth \$100 million through the Cayman Islands special-purpose insurer Pelican Re.²⁹ These bonds provide indemnity coverage, meaning recovery will be triggered by actual losses rather than meteorological determinations or industry-wide losses.

5. The current role of the Federal Government and State and local governments in providing incentives for feasible risk mitigation efforts and the cost of providing post-natural catastrophe aid in the absence of insurance;

Academy Committee response:

A report published in September 2012 by the U.S. Government Accountability Office (GAO), *Federal Disaster Assistance: Improved Criteria Needed to Assess a Jurisdiction's Capability to Respond and Recover on Its Own* (Report #GAO-12-838)³⁰ provides a detailed assessment of the governmental role in post-catastrophe aid over the past decade or so. State and federal governments' financial role after a natural catastrophe is governed largely by the Stafford Act, through which the federal government provides disaster assistance to state and local governments. According to the GAO report, from Fiscal Year (FY) 2004 through FY 2011, the federal government allocated \$90 billion for disaster aid. Additionally, during that period, FEMA received 629 disaster declaration requests and approved 539 of them.

Mitigation efforts are an important aspect of any disaster risk management and insurance reform/policy initiative. However, incentives in the form of insurance savings cannot fully reimburse all mitigation efforts, and incentive programs should not be implemented with that expectation. Insurance premium reductions alone cannot be an effective incentive for individuals or governments to undertake mitigation efforts. Pre-event funding by federal and state governments, through tax credits, grants for retrofitting, or other programs that reward mitigation efforts can result in significant benefits through reduced post-catastrophe expenditures by federal and state governments.

²⁸ See <https://www.citizensfla.com/shared/press/articles/107/03.29.2013.pdf>.

²⁹ See http://www.artemis.bm/deal_directory/pelican-re-ltd-series-20121/.

³⁰ See <http://gao.gov/assets/650/648177.txt>.

6. Current approaches to insuring natural catastrophe risks in the United States;

a. Current and potential future Federal, State, and regional partnerships that support private, direct insurance coverage;

Academy Committee response:

Two existing partnerships between the public and private sectors are the National Flood Insurance Program (NFIP) and the California Earthquake Authority (CEA). The NFIP is congressionally authorized but is largely administered by private companies known as Write-Your-Own (WYO) companies, which deal directly with the vast majority of NFIP policyholders.

In 1996, the California legislature established the CEA as a publicly managed, largely privately funded entity. Companies that sell residential property insurance in California can choose to offer their own privately funded earthquake insurance product, or they can become a participating insurance company of the CEA. Only participating insurance companies can offer CEA earthquake-insurance policies.

A potential new partnership might be a federal reinsurance program that would provide private companies with catastrophe protection for extreme events, priced at an actuarially indicated rate. This could reduce the uncertainty of writing natural catastrophe insurance coverage and thus might encourage involved companies to enter or reenter the market.

b. The potential privatization of flood insurance in the United States; and,

Academy Committee response:

The Biggert-Waters Flood Insurance Reform Act of 2012 requires several studies be done concerning the possible privatization of flood insurance in the U.S. Challenges posed by privatization could include:

- Only those with an obvious flood hazard will opt to buy the insurance;
- The cost to insure only those with an obvious flood hazard would be prohibitive if lower-risk consumers could not be convinced to join the insurance pool;
- Even with a larger group of insurers and insureds, private insurers require a premium load to account for the cost of capital. Depending on the region and rating plan, actuarially sound rates could be so high that they discourage the broad participation necessary to ensure the financial soundness of the program.

On the other hand, some problems at the granular level, like claims adjusting for combined wind and water claims, the difficulties of dealing with multiple policies on the same property, and insurer disincentives for broad data collection that might assist in evaluating hazard risks, could be ameliorated in a privatized program that harmonizes the administration of wind and flood coverage for consumers. In addition, the aggregate cost of capital required to fund the combined risk of wind and flood could, at least in theory, be reduced if private insurers handled both risks

simultaneously and recalibrated and re-optimized their portfolios to share the risk with their competitors in the market.

7. Such other information that may be necessary or appropriate for the Report.

Academy Committee response:

We have nothing further to add at this time.

We hope these comments help the FIO in its study of natural catastrophes and the current state of the market for natural catastrophe insurance in the United States. We would be pleased to discuss these issues further and/or answer any questions you have related to this letter. If you have any questions about our comments, please contact Lauren Pachman, the Academy's casualty policy analyst, at Pachman@actuary.org or (202) 223-8196.

Sincerely,

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