

REPORT PROVIDING AN ASSESSMENT OF THE CURRENT STATE OF THE MARKET FOR NATURAL CATASTROPHE INSURANCE IN THE UNITED STATES

FEDERAL INSURANCE OFFICE, U.S. DEPARTMENT OF THE TREASURY

Completed pursuant to the Biggert-Waters Flood Insurance Reform Act of 2012

SEPTEMBER 2015



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I. INTRODUCTION

Section 100247 of the Biggert-Waters Flood Insurance Reform Act of 2012 (Biggert-Waters Act) calls on the Federal Insurance Office (FIO) to conduct a study and submit to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Financial Services of the House of Representatives a report (Report) providing an assessment of the current state of the market for natural catastrophe insurance in the United States, including an assessment of:

- 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;
- 2) The current ability of States, communities, and individuals to mitigate their natural catastrophe risks, including the affordability and feasibility of such mitigation activities;
- 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;
- 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 post-event assessments and state funding, and the adequacy of rates; and
- 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.¹

To support its study and this Report, FIO consulted extensively with stakeholders, including insurers, consumer advocates, and a broad range of other federal agencies and state insurance regulators, including consulting with state insurance regulators, representatives of the insurance and reinsurance industries, and the National Academy of Sciences. With each individual or group, FIO discussed the aspects of the study for which the individual or group had expertise or interest. In speaking with state regulators, FIO learned about the various state insurance markets and state-based programs to support the availability of natural catastrophe insurance. When speaking with the National Academy of Sciences, FIO learned of the Academy's pending study on the affordability of flood insurance as mentioned in Section (V)(A)(1) of this Report. On April 24, 2013, FIO published a notice in the Federal Register (the FRN)² seeking comment from the National Academy of Sciences, state insurance regulators, consumer organizations, representatives of the insurance and reinsurance industries, policyholders, and the public on the considerations and factors listed in the Biggert-Waters Act. In addition, FIO requested comments on:

- 1) Whether a consensus definition of a "natural catastrophe" should be established and, if so, the terms of the definition;
- 2) The percentage of residential properties in high-risk geographic areas of the United States that are insured for earthquake or flood damage, and the reasons why many such properties lack insurance coverage;
- 3) The role of insurers in providing incentives for risk mitigation efforts;
- 4) Current approaches to insuring natural catastrophe risks in the United States;
- 5) Current and potential future federal, state, and regional partnerships that support private, direct insurance coverage for natural catastrophes;
- 6) The potential for privatization of flood insurance in the United States; and
- 7) Such other information that may be necessary or appropriate for the Report.³

Nearly 50 comments were submitted to FIO in response to the FRN.⁴

1 Pub. L. No. 112-141, 126 Stat. 916, 967-68.

2 Study and Report to Congress on Natural Catastrophes and Insurance, 78 Fed. Reg. 24, 310 (April 24, 2013).

3 78 Fed. Reg. at 24, 311.

4 Comments on the FRN *available at* <http://www.treasury.gov/initiatives/fio/reports-and-notices/Pages/closed.aspx>.

The Report focuses primarily on natural catastrophe risks that may require significant economic resources to restore homes following a natural catastrophe event, and the specific insurance products covering damages caused by natural catastrophes, i.e., homeowner insurance, flood insurance, and earthquake insurance. The current reinsurance market and, in particular, its support for homeowner insurance also is discussed. In addition, the Report addresses the importance of mitigation in reducing the risk of losses arising from natural catastrophes, and the role of the insurance industry in encouraging and incentivizing the mitigation of those risks.

Due to the breadth and complexity of insurance and mitigation in relation to natural catastrophes, the Report, by necessity, addresses the key findings of FIO and offers a high-level overview of these issues. The Report identifies many sources for readers to consult in order to learn more about the many nuanced and technical aspects of insurance to protect against natural catastrophes.

II. EXECUTIVE SUMMARY

A. Natural Catastrophes and Insurance

The Report first provides an brief overview of natural catastrophes and related effects on people, communities, and the insurance industry. The United States is vulnerable to a broad array of natural catastrophes. Between 1953 and 2015, Presidents have issued over 2,200 major disaster declarations that have affected each of the fifty states, the District of Columbia, and the territories. The number of Presidential major disaster declarations has generally increased over time, as have the overall costs and insured losses associated with natural catastrophes.

Natural catastrophes impose significant burdens on people, communities, and property insurers. From an insurance underwriting perspective, these challenges include the accurate understanding and pricing of exposure to the low probability / high cost risk of natural catastrophes. To address these underwriting challenges, property insurers rely on specially-developed catastrophe models to identify how to price policies in different geographic areas.

B. Homeowner Insurance

Homeowner insurance generally covers losses resulting from a wide array of hazards, including some forms of natural catastrophes. Typically, homeowner insurance satisfies mortgage lender requirements for the property to be covered by insurance for losses resulting from fire, wind, and hail. In 2013, 373 insurance groups wrote homeowner insurance in the United States, totaling more than \$8.2 billion in written premium. The Report first provides basic background and discusses homeowner insurance policy forms and premiums. Policy forms set out the details of coverage, including the limits on the amount that an insurer will pay the policyholder. The coverage details included in a policy form, including the amount of the deductible, can have a direct impact on the premiums for the policy. Not surprisingly, premiums are highest in states most at risk for hurricanes and tornadoes.

The Report next assesses the ways that homeowner insurers manage the risk of natural catastrophes. Some insurers reduce risk by decreasing exposure in specific high risk geographic areas or by imposing moratoria on new business or, in some circumstances, by exiting a market completely. Insurers also manage risk through coverage exclusions, such as for losses resulting from earthquakes and floods, and special deductibles for specialized losses like hurricanes. These risk management measures vary by state and between insurers.

In addition, the Report provides an overview of states' residual markets for homeowner insurance, programs that assist in the offering of insurance in high-risk areas. For areas more likely to experience a natural catastrophe, insurers have withdrawn from certain areas resulting in a lack of supply despite consumer demand. Beach Plans and Wind Pools (Wind Pools)—which exist in Alabama, Mississippi, North Carolina, South Carolina, and Texas—are state-mandated private associations of all insurers writing property insurance in a particular state that provide wind-only coverage in specific high risk areas. Additionally, some states have established residual markets to serve as insurer of last resort for homeowners that cannot find multiple peril insurance coverage in the standard market.

C. Flood Insurance

Homeowner and other forms of property insurance typically exclude coverage for losses caused by flooding, resulting in the need for stand-alone flood insurance policies. For that reason, the Report addresses flood insurance separately. Due to the high frequency and damages associated with flooding, many private insurers withdrew decades ago from the flood insurance market. The National Flood Insurance Program (NFIP), an insurance program administered by the Federal Emergency Management Agency (FEMA), was established in 1968 to provided flood insurance coverage in the United States. The NFIP makes flood insurance available to property owners and renters in more than 21,000 participating communities which meet NFIP requirements regarding floodplain management. Most NFIP flood insurance is sold through the Write-Your-Own (WYO) Program, in which participating private insurers write and service NFIP policies while the underwriting risk of the policy is assumed by the federal government.

The Report next discusses affordability and the NFIP. Flood insurance premiums from the NFIP vary based on a number of factors, including flood risk, coverage limits, and deductibles. NFIP premium rates can be discounted to reflect reduced flood risk resulting through a community's participation in the NFIP's Community Rating System

(CRS), a voluntary incentive program that recognizes and encourages activities that exceed the minimum floodplain management. Additionally, subsidized rates are available for certain policyholders, such as those with homes constructed before 1975 or the effective date of a Flood Insurance Rate Map (FIRM).

The Report then addresses current challenges faced by the NFIP. Prior to 2005, premiums collected by the NFIP largely covered losses caused by flooding. However, due to the statutory structure of the NFIP that has promoted the offering of subsidized premiums, NFIP premiums have, by design, never been financially adequate in the aggregate. As a result, as of December 31, 2014, the NFIP has a debt of \$23 billion, which is owed to the U.S. Department of the Treasury (Treasury). The NFIP requires periodic reauthorization by Congress, with the next reauthorization required by September 30, 2017.

The Report also notes the limited private flood insurance market. While the NFIP is the largest writer of flood insurance, some private insurers do offer certain limited flood insurance products. Members of Congress and other policymakers have continued to express interest in the privatization of the NFIP, as well as trying to encourage private reinsurance as a means of reducing the exposure to the federal government to the NFIP's relatively large risk profile.

D. Earthquake Insurance

Earthquake insurance typically covers losses caused by an earthquake and by any aftershocks that occur within 72 hours of the earthquake. The Report addresses earthquake insurance in a separate section because, like flood insurance, it is typically excluded from homeowner insurance and only offered as an endorsement or a stand-alone policy. Deductibles associated with earthquake insurance generally range from two to 25 percent, with higher deductibles in earthquake-prone states. Despite the prospect of catastrophic losses, the take-up rate for earthquake insurance is extremely low across the country.

The Report then discusses approaches taken by some states to promote earthquake insurance. In particular, the Report focuses on the approach taken by California, which in the 1980s enacted a law requiring insurers to affirmatively offer earthquake insurance along with any homeowner insurance policy. Following huge insured losses in 1994, many insurers severely restricted new sales of homeowner insurance or exited the California market. In response, California created the California Earthquake Authority (CEA), a public instrumentality made up of homeowner insurers that write stand-alone earthquake insurance policies for homeowners, renters, and condominium-unit owners. Participating insurers are responsible for selling and adjusting policies for their policyholders and, in return, receive agent commissions and reimbursement of administrative expenses by CEA.

E. Reinsurance

Reinsurance is an important tool used by insurers to manage exposure to natural catastrophe risk. Through reinsurance, insurers writing homeowner insurance, earthquake insurance, and other property insurance are able to diversify risk exposure. The Report addresses the availability and affordability of reinsurance, noting that it is a global industry that is currently capitalized at record levels. In recent years, additional reinsurers, alternative reinsurance solutions, and increased industry capacity have reduced the volatility historically associated with property catastrophe reinsurance pricing.

F. Mitigation

Finally, the Report addresses the issue of mitigation. Like insurance, mitigation serves as part of a broader risk management approach to reduce the cost natural catastrophes impose on homeowners, communities, insurers, and governments. The Report first discusses the benefits of mitigation, which include a reduction in the overall burden of natural catastrophes by reducing the severity of damage to property or business operations as well as the secondary and indirect losses caused by displaced individuals, closed businesses, and diminished communities. The Report then addresses the ways in which insurers use mitigation as a means of loss prevention or reduction and as an underwriting indicator of the security or resilience of an insured property. Federal, state, and local governments also incentivize mitigation. To overcome at least some of the obstacles to homeowner mitigation efforts, such as cost, financial incentives are necessary to promote mitigation efforts. Within the federal government and together with a broad group of stakeholders, FIO continues to support efforts to promote the effective coordination of private and public

sector work relating to mitigation. This work also supports the resilience priorities of President Obama, exemplified by Executive Order 13653, which, among other things, established a State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience, and Executive Order 13690, which established a Federal Flood Risk Management Standard that requires all future federal investments in and affecting floodplains to meet an increased level of resilience.

III. NATURAL CATASTROPHES AND INSURANCE

The Biggert-Waters Act does not define “natural catastrophe” or “natural catastrophe insurance,” and different sectors and experts have developed alternative definitions.⁵ However, the terms “disaster” and “major disaster” are defined in federal regulations. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) defines a major disaster as “any natural catastrophe (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance ... to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.”⁶ Tracking the Stafford Act definition, for the purposes of this Report, FIO uses the term “natural catastrophe” to describe an event caused by one or more natural occurrences (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, flood, or fire) that causes serious disruption of the functioning of a community and involve widespread economic and human losses. Natural catastrophes occur as a result of a community’s exposure to an event that is widespread, as opposed to a localized incident that involves one or only several properties. The impact of a natural catastrophe exceeds the capacity of the affected area to cope and recover within the limits of its own resources. Governments and insurers may provide the resources needed for the affected area to recover and rebuild.

In addition to the enormous toll imposed on people and property, natural catastrophes present operational and financial challenges for property insurers. Following a natural catastrophe, insurers must address a large number of claims, with individuals and communities reasonably expecting the claims resolution process to be efficient and fair in order to finance property repairs or rebuilding, purchase replacements of personal property, and finance the cost of living expenses or business interruption while the damaged property is uninhabitable or unusable.

In addition, natural catastrophes are “fat-tailed” events where “the probability of an event declines slowly relative to its severity,” therefore, “the premium must be much higher than the expected loss because the insurer has to provide a large amount of capital in case of catastrophic events.”⁷ Moreover, a natural catastrophe causes widespread losses with many policyholders simultaneously suffering losses, a circumstance referred to as “correlated losses.” Fat-tails and correlated losses make natural catastrophes “difficult to insure, since they imply a larger risk of insolvency for the insurer.”⁸ The difficulties in predicting and pricing for natural catastrophes were demonstrated in 1994 when, in the aftermath of Hurricane Andrew, nine homeowner insurers became insolvent.⁹

Given the unique characteristics of natural catastrophes, insurers cannot rely on traditional models to estimate risk and set prices; instead, specially-developed catastrophe models are now used to estimate natural catastrophe risk.¹⁰ Through the use of catastrophe models, insurers are able to: (1) identify geographic areas with accumulating cor-

5 The Insurance Services Office (ISO)’s Property Claim Services (PCS) defines catastrophes as events that cause \$25 million or more in direct insured losses to property and affect a significant number of policyholders and insurers. Munich Reinsurance Company (Munich Re) maintains a natural disaster database called NatCatSERVICE. A “great natural catastrophe” in the NatCatSERVICE is recognized when “the affected region’s ability to help themselves is clearly overstretched and supranational or international assistance is required.” The Insurance Information Institute (III) defines the term “catastrophe” in the property insurance industry as a natural or man-made disaster that is unusually severe.

6 42 U.S.C. § 5122.

7 Tristan Nguyen, *Insurability of Catastrophe Risks and Government Participation in Insurance Solutions*, Background Paper prepared for the Global Assessment Report on Disaster Risk Reduction 2013, The United Nations Office for Disaster Risk Reduction, available at <http://www.preventionweb.net/english/hyogo/gar/2013/en/bgdocs/Nguyen,%202012.pdf>.

8 Carolyn Kousky, *Managing the Risk of Natural Catastrophes: The Role and Functioning of State Insurance Programs*, Resources for the Future Discussion Paper 10-30, at 2 (2010).

9 Robert Strauss, *Catastrophe and the Capital Markets*, Wharton Magazine (1998), available at <http://whartonmagazine.com/issues/summer-1998/catastrophe-and-the-capital-markets/>.

10 Patricia Grossi and Howard Kunreuther, *Catastrophe Modeling: A New Approach to Managing Risk*, at 25 (Springer 2005).

related risks; (2) identify geographical regions in which to enter the insurance markets to diversify risks; (3) calculate risk-based premiums for property depending on location; (4) identify policy modifications to lower the risk of loss; and (5) assess overall capital requirements.¹¹ These models help insurers with the essential features of insurance underwriting: the process of choosing what policies to write, for which policyholders, and at what price.

Box 1: Catastrophe Models

The use and advancement of catastrophe models increased following Hurricane Hugo (1989), the Loma Prieta Earthquake (1989), and Hurricane Andrew (1992). Development of these models continues and, as of today, the three main proprietary catastrophe modeling firms, AIR Worldwide, Risk Management Solutions, and EQECAT, develop models that are licensed by insurers, reinsurers, rating agencies, and risk managers.¹² Catastrophe models allow insurers to better answer several key questions: where future natural catastrophes can occur; how large future catastrophic events can be; the expected frequency of events; and the potential damage and insured loss.¹³ Using a stochastic event set and specific information about insured structures and policy provisions, catastrophe models estimate for a given insurer the average annual loss, the probable maximum loss and/or the probability that losses will exceed the acceptable risk level of the insurer. Catastrophe models, therefore, can assist an insurer in addressing the amount of insurance coverage the insurer is willing to offer, the price of coverage, the concentration of coverage in a geographic region, and the need of an insurer to further diffuse risk through reinsurance.

Insurers' use of catastrophe models has been a subject of some debate. Critics have raised concerns about the transparency of catastrophe models while proponents have noted that the use of catastrophe models helps stabilize the availability and the cost of homeowner insurance.¹⁴ States have taken various approaches to the regulatory oversight of catastrophe models. The Florida Commission on Hurricane Loss Projection Methodology (Florida Commission), established in 1995, reviews specific natural catastrophe models and adopts findings regarding the accuracy and reliability of a natural catastrophe model; an insurer must employ and may not modify or adjust the models found by the Florida Commission to be accurate or reliable when determining hurricane loss factors to be used in the rate filings of the insurer.¹⁵ Several state insurance regulators outside of Florida rely on the findings of the Florida Commission when evaluating the use of natural catastrophe models in their own states.¹⁶ The Louisiana Department of Insurance requires an insurer using a catastrophe model to support premium rates to file an extensive interrogatory completed by the modeling company.¹⁷ In Maryland, an insurer must file with the Maryland Insurance Administration a description of the catastrophe model(s) the insurer uses, and arrange to have the vendor(s) explain the model(s) to the Insurance Commissioner as well as to the People's Insurance Counsel.¹⁸ As the science of catastrophe modeling continues to evolve, examination of the public policy regarding the validity of the elements used in catastrophe models and the use of catastrophe models in rating will continue.

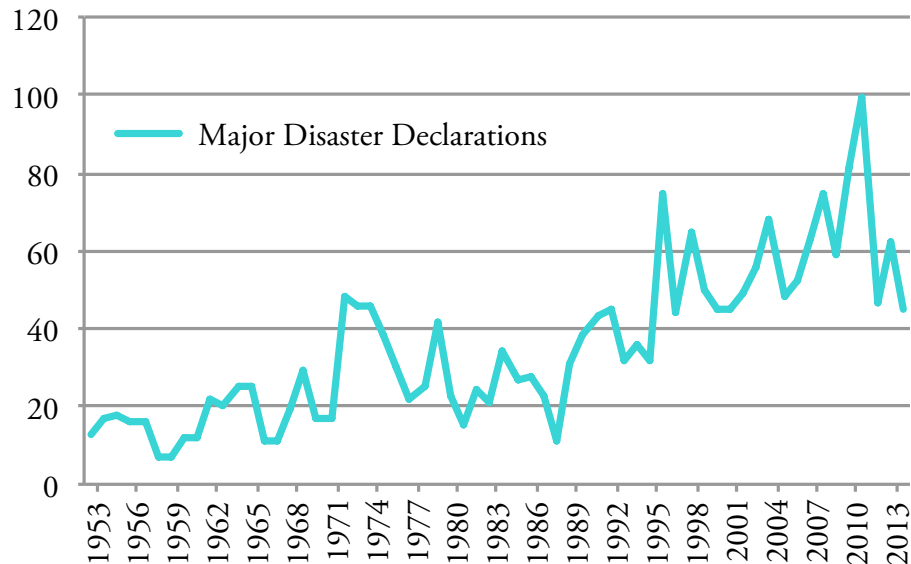
- 11 Lloyd's Market Association, *Catastrophe Modelling: Guidance for Non-Catastrophe Modellers* (June 2013).
- 12 Insurance Information Institute, *Catastrophe Modeling: A Vital Tool in the Risk Management Box* (February 1, 2008).
- 13 Casualty Actuarial Society, *Fundamentals of Catastrophe Modeling: CAS Ratemaking & Product Management Seminar, Catastrophe Modeling Workshop* (March 15, 2010), available at <http://www.casact.org/education/rpm/2010/handouts/cmwa-hess.pdf>.
- 14 See presentations and audio from the National Association of Insurance Commissioner's Public Hearing Regarding Catastrophe Modeling and the Use of Short-Term vs. Longer Term Horizons, available at http://www.naic.org/committees_c_catastrophe.htm.
- 15 Fla. Stat. § 627.0628.
- 16 The NAIC Catastrophe Computer Modeling Handbook (2010) acknowledges that model validation and update findings are largely based on the standards of the Florida Commission.
- 17 Bulletin 2013-04 and associated documents, available at <http://www.lds.louisiana.gov/industry/regulatory-forms/bulletin-2013-04-catastrophe-model-interrogatories>.
- 18 Md. Ins. Code Ann. § 19-211.

A. Natural Hazards in the United States

Every region of the United States is vulnerable to natural catastrophes. The number of major disaster declarations issued under the Stafford Act provides a reasonable estimate of the number of natural catastrophes by year and across all states.

Between 1953 and 2014, Presidents have issued over 2,200 major disaster declarations. All 50 states and the District of Columbia have had major disaster declarations at one or more points during this 61 year period. The number of Presidential major disaster declarations per year has generally increased over time, as seen in Figure 1.

Figure 1: Presidential Major Disaster Declarations by Year, 1953-2014



Source: Federal Emergency Management Agency

The size and geographic diversity of the United States makes it a country subject to a broad array of potential natural catastrophe causes. For the period 1953 to 2014, 10 states accounted for approximately a third of all major disaster declarations: Alabama, Arkansas, California, Florida, Kentucky, Louisiana, Missouri, New York, Oklahoma, and Texas.¹⁹ Natural hazards in these 10 states include severe storms, flooding, hurricanes/tropical storms, tornadoes, wildfires, and earthquakes.

States located in the West have relatively higher risk of earthquake. For the period 1974 to 2003, nearly 60 percent of all earthquakes with a magnitude of 3.5 or greater were in Alaska and 23 percent in California.²⁰ Of the 20 earthquakes with a magnitude of 7.5 or greater in the United States during that period, 12 were in Alaska, four in California, three in Missouri, and one in Hawaii. In fact, 16 states—Alaska, Arkansas, California, Hawaii, Idaho, Illinois, Kentucky, Missouri, Montana, Nevada, Oregon, South Carolina, Tennessee, Utah, Washington, and Wyoming—have a relatively high likelihood of experiencing a damaging earthquake and at some point(s) in history have experienced earthquakes with a magnitude 6 or greater.²¹ Recently updated U.S. National Seismic Hazard Maps show

19 Federal Emergency Management Agency, *Disaster Declarations by Year and Disaster Declarations by State/Tribal Government*, available at <https://www.fema.gov/disasters/grid/year>.

20 U.S. Geological Survey, *Top Earthquake States*, available at http://earthquake.usgs.gov/earthquakes/states/top_states.php.

21 *Id.*

that “42 of the 50 states have a reasonable chance of experiencing damaging ground shaking from an earthquake [with]in 50 years.”²²

States located along the Gulf Coast and the Atlantic Coast are at the greatest risk for hurricanes and tropical storms.²³ Parts of the Southwest and the Pacific Coast are at risk of heavy rains and floods from hurricanes formed off Mexico.²⁴ The average annual normalized damage caused by hurricanes for the period 1900 to 2005 for the lower 48 states was approximately \$10 billion per year.²⁵

Reliable data regarding the impact of natural catastrophes allow for local, state and federal policymakers, insurers, and consumers to make informed judgments about the insurance of natural catastrophe risk. The insurance industry maintains catastrophe databases, tracking the frequency and severity (economic loss) of catastrophes over time (see Box 2.) The data publicly available from these databases corroborate the increased frequency of natural catastrophes also reflected in the number of Presidential major disaster declarations. Figure 2 provides one example of the observed general increase in the number of natural catastrophes. Figure 2 also shows that most natural catastrophes in the United States between 1980 and 2014 were caused by meteorological hazards such as hurricanes/tropical storms and tornadoes.²⁶

22 U.S. Geological Survey, *New Insight on the Nation's Earthquake Hazards*, available at http://www.usgs.gov/blogs/features/usgs_top_story/new-insight-on-the-nations-earthquake-hazards/.

23 FEMA, *America's PrepareAthon: Be Smart, Know Your Hazard*, available at <http://www.community.fema.gov/connect.ti/AmericasPrepareathon/view?objectId=3222032>.

24 Ready.gov, *Hurricanes*, available at <http://www.ready.gov/hurricanes>.

25 Roger A. Pielke Jr., Joel Gratz, Christopher W. Landsea, Douglas Collins, Mark A. Saunders, and Rade Musulin, *Normalized Hurricane Damage in the United States: 1900-2005*, Natural Hazards Review, at 29 (February 2008).

26 Munich Re, *NatCat SERVICE Loss Database for Natural Catastrophes Worldwide* (2014).

Box 2: Examples of Natural Catastrophe Databases

Estimating the future risk of loss from natural catastrophes depends on accurate data about prior natural catastrophe events, including the number of natural catastrophe events, the geographic area(s) affected by each natural catastrophe event, and the amount of economic and insured losses. Insurance analytics firms, catastrophe modelers, and reinsurers are among the entities in the insurance industry that have developed comprehensive natural catastrophe databases that insurers may use to estimate the future risk of loss for natural catastrophes. These databases may differ in part due to the specific definition used to determine if an event qualifies as a natural catastrophe and what is included in the calculation of economic or insured losses.

The Insurance Services Office's Property Claim Services (referred to as PCS), an insurance analytics firm, defines a catastrophe to determine when an event caused by a natural or man-made peril should be included in its catastrophe database. An event is designated as catastrophic if the event causes \$25 million or more in *insured* property losses (excluding loss estimates for flood covered by the NFIP and workers' compensation losses) and affects a significant number of policyholders and insurers.²⁷ Natural perils include hurricanes, tornadoes, winter storms, severe weather, freezing, earthquakes, hail, fire, and volcanic eruptions, while man-made perils include terrorism.

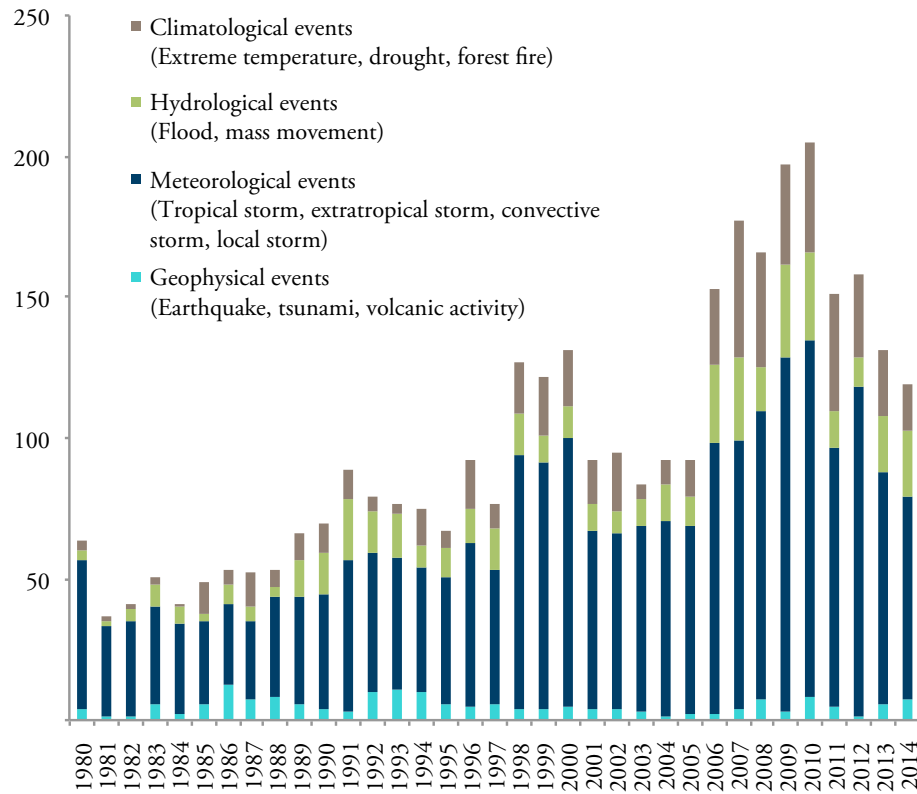
Munich Reinsurance Company, a reinsurer, assigns events caused by a natural peril to one of seven categories ranging from a small scale loss event to a great natural catastrophe.²⁸ The event may be assigned to a category based on overall losses and/or fatalities. Munich Re estimates the amount of economic loss from known insured losses taking into consideration the type of natural hazard, the characteristics of the impacted area such as population density and building quality, and the lines of insurance (including NFIP) affected by losses.²⁹ In its analyses, Munich Re groups natural catastrophes based on the hazard (i.e., geophysical, meteorological, hydrological, or climatological).

27 See Insurance Services Office, *Everything You Need to Know about the PCS Catastrophe Loss Index* (2013); Gary Kerney *Catastrophe Claims*, PCS Verisk Insurance Solutions (June 2013); and Charles E. Boyle, "PCS Shows How Cat Loss Estimates are Made, and Why They're Important," *Insurance Journal* (September 20, 2013).

28 Munich Re, *NatCatSERVICE Loss Database for Natural Catastrophes Worldwide* (2011).

29 Munich Re, *Topics Geo Annual Review: Natural Catastrophes*, at 14-15 (2005).

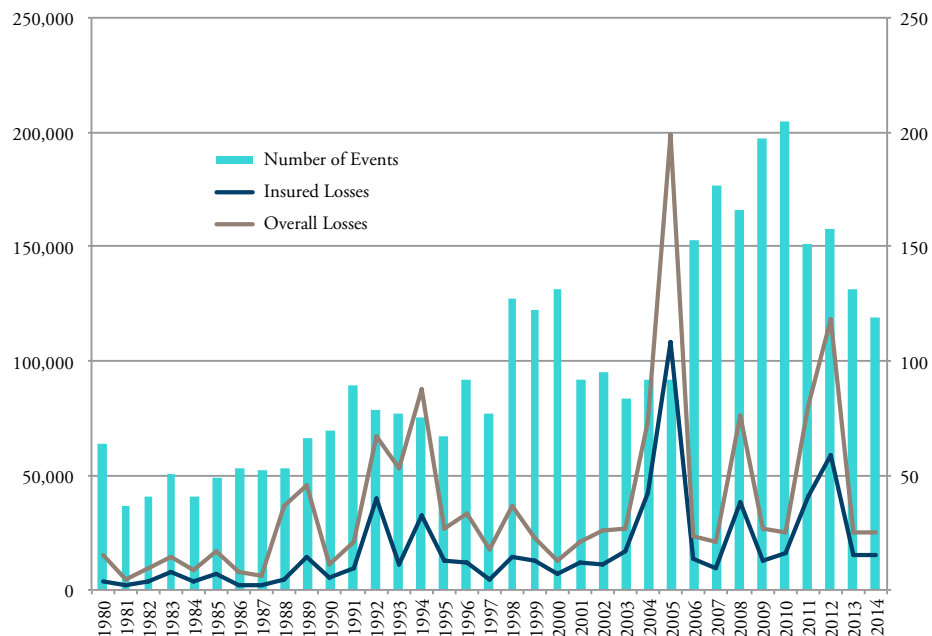
Figure 2: Number of Natural Disasters by Type of Event in the United States (1980-2014)



Source: Munich Reinsurance Company, Geo Risk Research, NatCatSERVICE

Figure 3 shows the total number of natural catastrophes each year between 1980 and 2014 alongside the total amount of overall and insured losses. It illustrates that the number of natural catastrophes bears little relationship to the severity (economic losses) of natural catastrophes. Insured losses are less than total overall losses in any given year. The three years with the highest overall losses were 2005 (Hurricanes Katrina, Rita, and Wilma), 2012 (Superstorm Sandy), and 1994 (Northridge, California earthquake) whereas the three years with the highest overall insured losses were 2005, 2012, and 2004 (Hurricane Charley). As discussed in Sections IV and VI of the Report, homeowners are more likely to purchase insurance to protect against the losses caused by wind from hurricanes, tropical storms, and tornadoes, than against the losses caused by earthquakes.

Figure 3: Total Number of Natural Disasters and Total Losses* from Natural Disasters in the United States from 1980-2014 (in Dollars)



* Dollar losses valued as of 2014 adjusted to inflation based on Country Consumer Price Index.

Source: Munich Reinsurance Company, Geo Risk Research, NatCatSERVICE

Population growth and the rising concentration of population and property in vulnerable, disaster-prone areas are frequently cited as causes for the increasing cost of natural catastrophes. Approximately 40 percent of the U.S. population lives in counties located directly on the Atlantic, Pacific, and Gulf coasts; collectively these areas are expected to experience continued population growth.³⁰ Given the increased population density in coastal areas, “many storms that hit in the earlier part of the 20th century would cause orders of magnitude more damage today” and, based on estimates using current densities, 28 “historical hurricanes” that hit between 1900 and 2008 would each cause more than \$10 billion in insured losses were they to occur today.³¹ For hurricanes, “[a]voiding huge losses will require either a change in the rate of population growth in coastal areas, major improvements in construction standards, or

30 PCI, *Natural Catastrophe Guidebook 2014*, at 29 (2014).

31 M. Karen Clark & Co., *Historical Hurricanes that Would Cause \$10 Billion or More of Insured Losses Today*, at 2 and 5, (August 2012).

other mitigation actions.”³² For example, if the 1906 San Francisco earthquake had occurred in 2008, that natural catastrophe would have caused approximately \$54 billion in economic loss due to building damage;³³ and if a major earthquake similar to the 1811 New Madrid, Missouri earthquake were to occur in 2009 it was estimated to cause losses up to nearly \$300 billion in eight states, with the greatest losses in Tennessee and Missouri.³⁴

B. Property Insurance and Natural Catastrophes

Property insurance consists broadly of two components: primary insurance and reinsurance. Primary insurers offer direct insurance protection to individuals, families, and businesses for property losses including those caused by natural catastrophes, whereas reinsurers offer insurance protection to insurers. Homeowner insurance and commercial property insurance are examples of policies sold by primary insurers intended to protect policyholders from various perils, including in the event of a specified natural catastrophe. Primary insurers offering homeowner insurance have been found to react differently to natural catastrophes than those offering commercial property insurance.

Homeowner insurance, which is purchased by individuals, generally pays for damage caused to the structure of the home, the contents of the home, and other structures on the property by specified perils including wind, fire, and hail. As the primary source of families’ property protection, homeowner insurance is discussed in detail in Section IV of the Report.

Commercial property insurance, which is purchased by businesses, generally pays for damage caused to a building, outdoor signs, furniture and equipment, and inventory by specified perils including wind, fire, and hail.

When compared to insurers offering homeowner insurance, commercial property insurers are less likely to modify the underwriting standards used in a particular area by exiting a market following a severe natural catastrophe. Two factors may account for the observed difference in behavior between insurers offering homeowner and commercial property insurance: (1) greater geographic diversity in the portfolios of commercial property insurers; and (2) differences in regulatory oversight by regulators of personal and commercial policies.³⁵

Regulatory oversight of insurers varies by the type of insurer and the line of insurance. Homeowner or commercial property insurance may be sold by admitted insurers (insurers licensed by the state insurance regulator where the property is located) or non-admitted insurers (insurers licensed only in the state or country of the insurer’s domicile and not where the property is located). Typically, state insurance regulators oversee the insurance policy provisions and premium rates offered by admitted insurers but not by non-admitted insurers. While regulatory oversight varies by state, homeowner insurance policies sold by admitted insurers are more intensely regulated than commercial property insurance. Consequently, admitted commercial property insurers and non-admitted insurers have more freedom to modify underwriting standards and rates, adopt new policy provisions, or exit geographic areas with accumulating correlated risks by choosing not to offer new policies in a geographic area or non-renewing existing policies in a geographic area than admitted insurers offering homeowner insurance.

The ways in which primary insurers manage exposure to the risk of natural catastrophe affects the availability and affordability of property insurance, particularly residential property insurance covering the losses caused by wind, hail, fire, earthquake, and flood. When admitted insurers exit a market by no longer writing new policies or non-renewing existing policies in a geographic area, some states have reacted to tighter insurer underwriting standards by establishing an alternative form of insurance known as a residual market mechanism. As discussed more fully in Sections

32 Roger A. Pielke, Jr., Joel Gratz, Christopher W. Landsen, Douglas Collins, Mark A. Saunders, and Rade Musulin, *Normalized Hurricane Damage in the United States: 1900-2005*, Natural Hazards Review, at 38 (February 2008).

33 B. Rowshandel, M. Reichle, C. Wills, T. Cao, M. Petersen, D. Branum, and J. Davis, *Estimation of Future Earthquake Losses in California*, California Geological Survey, at 2 (2008), available at <ftp://ftp.consrv.ca.gov/pub/dmg/rgmp/CA-Loss-Paper.pdf>.

34 Amr S. Elnashai, Theresa Jefferson, Frank Fiedrich, Lisa Johanna Cleveland, and Timothy Gress, *Impact of New Madrid Seismic Zone Earthquakes on the Central U.S.A., Volume 1*, MAE Center Report No. 09-03, at vi (October 2009).

35 Patricia Born and Barbara Klimaszewski-Blettner, *Should I Stay or Should I Go? The Impact of Natural Disasters and Regulation on U.S. Property Insurers’ Supply Decisions*, The Journal of Risk and Insurance, Vol. 80, No. 1, 1-36 (2013).

IV and VI of the Report, residual markets may compete with admitted and non-admitted insurers or complement the insurance market for natural catastrophes by allowing admitted insurers to exit certain geographic areas from time to time in order to avoid the risk from natural catastrophes.

The second broad component of property insurance is reinsurance, commonly described as “insurance for insurance companies.” Under a reinsurance contract, a reinsurer agrees to indemnify an insurer for all or part of the losses that may be incurred on one or more underlying insurance policies. Reinsurance helps support the availability and affordability of property insurance in the United States and is discussed in detail in Section VII of the Report. The availability and affordability of reinsurance affects the extent to which primary insurers write insurance covering losses caused by natural catastrophes. As explained in FIO’s December 2014 report on *The Breadth and Scope of the Global Reinsurance Market and the Critical Role such Market Plays in Supporting Insurance in the United States*, primary insurers diversify risk by transferring a significant percentage of natural catastrophe risk to the reinsurance market.³⁶ While, at times, reinsurance may become less available and more expensive following natural catastrophes such as what happened after Hurricane Andrew, reinsurance has remained available and affordable in recent years even following natural catastrophes such as Superstorm Sandy.

36 Missouri Department of Insurance, Financial Institutions and Professional Registration, *Final Report of the Missouri Earthquake Insurance Task Force*, at 17 (December 19, 2008); Sebastian von Dahlen and Goetz von Peter, *Natural Catastrophes and Global Reinsurance—Exploring the Linkages*, BIS Quarterly Review, at 29 (December 2012), available at http://www.bis.org/publ/qtrpdf/r_qt1212e.pdf.

IV. HOMEOWNER INSURANCE

Homeowner insurance is a term that is commonly used but often misunderstood. A homeowner insurance policy is a contract through which, in exchange for the payment of a premium, an insurer agrees to indemnify an insured against damage to the covered property that arises out of the perils covered in the policy. A homeowner insurance policy is a multiple peril policy, meaning the policy covers losses caused by more than one hazard. In addition to protection against damage to the covered property, such policies also typically provide protection against liability claims for injuries and damages the homeowner might cause to third parties.³⁷

Modern homeowner insurance policies are the legacy of single line fire policies first offered in the early 1900s.³⁸ These early homeowner insurance policies covered damage only in the event of fire.³⁹ If damage occurred by any peril other than fire, a homeowner with this type of policy needed to obtain recovery from another property protection mechanism. A homeowner would purchase separate policies for theft, windstorm, and liability in order to have the kind of comprehensive coverage available today. Changes to state insurance laws in 1949 authorized insurers to offer multiple peril homeowner policies. In 1950, the Insurance Company of North America filed the first multiple peril homeowner insurance policy in the United States with the Pennsylvania Insurance Department.⁴⁰ The coverage provided by the first multiple peril homeowner insurance policies were described as “Fire, Extended Coverage, Theft, Personal Liability, and Medical Payments.”⁴¹ The sale of multiple peril homeowner insurance policies grew rapidly between 1950 and 1960, increasing from \$30,000 in written premium in 1950 to over \$760 million in 1960.⁴² In 2014, written premium for homeowner insurance policies in the country surpassed \$8.6 billion.⁴³

Typically, a mortgage lender requires the borrower to obtain residential property insurance to protect the lender’s interest against losses caused by fire, wind, and hail.⁴⁴ Homeowner insurance policies generally satisfy the lender’s requirements. Statistics on multiple peril homeowner insurance are available; however, statistics for other types of homeowner insurance are combined with similar types of commercial insurance policies and, therefore, more difficult to compile and analyze. For purposes of this Report, the primary focus is the market for multiple peril homeowner insurance policies.

Homeowner insurance coverage includes losses caused by wildfire, tornadoes, and hurricanes/tropical storms. While homeowner insurance is available across the United States, pricing in areas at risk for hurricanes/tropical storms has experienced market volatility. As discussed below, in some states, market volatility has not resulted in an availability problem, with homeowner insurance available through the admitted or non-admitted insurance market; in other states, states have established residual market mechanisms to ensure the availability of homeowner insurance.

A. Homeowner Insurance Policy Forms

Generally, an insurer is required to obtain approval from the state insurance regulator for all of the homeowner insurance policy forms that the insurer intends to use in that state. Insurers may have multiple versions of its homeowner policy forms on file with a state’s insurance regulator that may be used in the state. An insurer can develop its own homeowner insurance policy forms or choose to adopt and use forms developed by an insurance advisory organization. One such advisory organization is the Insurance Services Office (ISO) which develops standardized homeowner

37 A multiple peril policy provides a range of coverages under one policy and is normally cheaper than if all coverages under the policy had been purchased separately.

38 As its name suggests, a single line policy provides insurance coverage for a single peril.

39 Frederic J. Hunt, Jr, *Homeowners—The First Decade*, Proceedings of the Casualty Actuarial Society, at 12 (May 1962), available at <https://www.casact.org/pubs/proceed/proceed62/62012.pdf>.

40 *Id.* at 14.

41 *Id.*

42 *Id.* at 33.

43 SNL.

44 For the insurance requirements for loans sold to Fannie Mae, see Fannie Mae, *Fannie Mae Single Family 2012 Servicing Guide*, available at <https://www.fanniemae.com/content/guide/svc031412.pdf>.

insurance policy forms that insurers may adopt and use in each state. Insurers generally adopt and use forms from an advisory organization because the forms contain standardized and widely-accepted insurance terms and conditions. An insurer that develops proprietary forms uses language, terms, and conditions specific to the insurer, although the insurer typically offers homeowner policies with coverages and exclusions similar to those in the ISO forms.

Seven main types of homeowner policy forms are available from ISO. The policies offer various combinations of coverages and exclusions, as described in Figure 4. While most types of ISO homeowner policy forms are offered throughout the United States, the HO-3 Special Form is the most commonly purchased type of homeowner policy, accounting for 81.9 percent of all owner-occupied exposures countrywide in 2012.⁴⁵

Homeowner insurance coverages and exclusions vary by type of policy purchased. One way that a homeowner may enhance the coverage in a homeowner insurance policy is by purchasing an endorsement. For example, while all owner-occupied homeowner insurance policy forms provide coverage for loss to personal property, most policy forms include coverage limits for certain kinds of property. The ISO HO-3 Special Form includes a limit of \$1,500 for loss by theft of jewelry.⁴⁶ Many insurers will allow a homeowner to increase coverage for theft of jewelry above the limit available in the standard policy if the homeowner purchases a scheduled personal property endorsement. Endorsements are purchased for a premium that is separate and in addition to the homeowner insurance policy premium.

Limits on the amount that an insurer will pay for loss or damage in the event of a covered loss can vary by insurer and the method of loss calculation selected by a homeowner. A homeowner insurance policy generally refers to two different methods for calculating how much an insurer may pay for a loss: actual cash value (ACV) and replacement cost value (RCV). ACV is the value of the real property or dwelling, less depreciation. RCV is the cost to replace personal property or to rebuild a dwelling to the same condition it was in before the loss. In many cases, ACV will pay for a loss, but may not pay enough to fully replace the property or repair the damage. Some homeowner insurance policies provide for ACV for covered personal property and RCV for the covered dwelling,⁴⁷ while other homeowner insurance policies provide for ACV for all covered losses. Many insurers sell a personal property replacement cost endorsement, for an additional premium.

Deductibles, a means for risk-sharing between the insurer and homeowner, have been a fundamental part of homeowner insurance policies since the first multiple peril homeowner insurance policies were issued in 1950.⁴⁸ The amount of the liability of an insurer for a claim is reduced by the amount of the applicable deductible, which is borne by the insured. Traditionally, deductibles have been set at a dollar amount selected by the homeowner and specified on the declarations page of the homeowner policy. Today, some insurers offer or require deductible amounts that are a percentage of the coverage limits under the policy. In general, the higher the deductible, the less a homeowner will pay in premium for the coverage. In order to limit exposure to losses, homeowner insurance policies may include a specific hurricane, named storm, or windstorm and hail deductible. These are percentage deductibles based on the insured value of the home; the deductibles generally range from one percent to five percent and also vary by state. Hurricane deductibles are discussed more fully in section (IV)C.

⁴⁵ National Association of Insurance Commissioners, *Dwelling Fire, Homeowners Owner Occupied, and Homeowners Tenant and Condominium/Cooperative Unit Owner's Insurance: Data for 2012* (January 2015).

⁴⁶ ISO Form Number HO 00 03 05 11, added January 2010.

⁴⁷ *Id.*

⁴⁸ Frederic J. Hunt, Jr., *Homeowners—The First Decade*, Proceedings of the Casualty Actuarial Society, at 20 (May 1962).

Figure 4: Homeowner Policy Coverages

Peril	Type of Policy						
	DW Dwelling Fire	H0-1 Basic Form	H0-2 Broad Form	H0-3 Special Form	H0-4 Tenants Form	H0-5 Comprehensive Form	H0-6 Unit-Owners Form
Fire or lightning	• •	• •	• •	• •	•	• •	•
Windstorm or hail	• •	• •	• •	• •	•	• •	•
Explosion	• •	• •	• •	• •	•	• •	•
Riot or civil commotion	• •	• •	• •	• •	•	• •	•
Damage caused by aircraft	• •	• •	• •	• •	•	• •	•
Damage caused by vehicles	• •	• •	• •	• •	•	• •	•
Smoke	• •	• •	• •	• •	•	• •	•
Vandalism	• •	• •	• •	• •	•	• •	•
Theft		• •	• •	• •	•	• •	•
Falling objects			• •	• •	•	• •	•
Weight of ice, snow, or sleet			• •	• •	•	• •	•
Accidental discharge or over- flow of water or steam			• •	• •	•	• •	•
Sudden and accidental tearing apart, cracking, burning, or bulging of a steam or hot water heating system, an air condition or automatic fire protective sprinkler system, or an appliance for heating water			• •	• •	•	• •	•
Freezing			• •	• •	•	• •	•
Sudden and accidental damage from artificially generated electrical current			• •	• •	•	• •	•
Volcanic eruption			• •	• •	•	• •	•
All perils <i>except</i> flood, earthquake, war, nuclear accident, intentional loss, collapse, mold, wear and tear, seepage, settling, and other perils specifically <i>excluded</i>				•		• •	

• Coverage for the Dwelling • Coverage for Personal Property/Contents

B. Homeowner Insurance Premiums

Homeowner insurance premiums vary depending on the location, characteristics of the property to be insured, and the deductibles, as well as coverage terms. The states traditionally most at risk for hurricanes and tornadoes (Florida, Louisiana, Mississippi, Oklahoma, and Texas) had the highest average homeowner insurance premiums in 2014.⁴⁹ Across the country, the overall increase in average homeowner insurance premiums was higher in 2011 (7.6 percent) than in 2010 (3.3 percent), partly in response to higher natural catastrophe losses in 2011.⁵⁰ An increase in homeowner insurance premiums, particularly in states where insurers already charged relatively higher premiums, may make it more difficult for some homeowners to afford homeowner insurance.

C. Impact of Natural Catastrophes on Homeowner Insurance

Homeowner insurers manage exposures to natural catastrophe risks in a variety of ways. One strategy used by insurers is to decrease exposure to risk of loss in areas that are subject to natural catastrophes. Insurers decrease exposure to the risk of loss by imposing moratoria on any new business in certain geographic markets or by exiting a market completely. For example, in 2009, one insurer ceased writing new business in Florida and in the same year non-renewed 11,000 homeowner insurance policies in five coastal counties located in Texas. In 2011, another insurer announced that it was exiting the Florida market due to the risk of natural catastrophes. The ease with which insurers can enter and exit a market varies by state. For example, some states require notice regarding an insurer's withdrawal to be given to the state insurance regulator 180 days prior to the withdrawal.⁵¹

Insurers also respond to increased risk in the homeowner insurance market through coverage exclusions and special deductibles. For example, most homeowner insurance policies exclude losses associated with earthquakes and flooding. In addition, although included in homeowner insurance policy provisions since the 1990s, concurrent causation clauses have been the subject of much debate following both Hurricane Katrina and Superstorm Sandy. At times, a covered peril (such as wind) may combine with an excluded peril (such as earth movement) to cause damage to a home; this is referred to as concurrent causation. Unless prohibited by state law, an insurer typically includes anti-concurrent causation clauses in homeowner insurance policies to limit the insurer's liability for losses caused by excluded perils.⁵²

Insurers began to implement hurricane deductibles in coastal states in the mid-1990s after Florida's 1992 Hurricane Andrew demonstrated to insurers that losses from hurricanes could be much higher than previously anticipated.⁵³ A hurricane deductible is specified as a percentage of the total coverage limit for the hurricane. Hurricane deductibles may also provide an incentive to homeowners to mitigate against hurricane damages. Generally, hurricane deductibles may only, by virtue of state law, be invoked by the insurer if the National Weather Service declares a tropical storm, hurricane watch or warning, or defines a hurricane's intensity.⁵⁴ Today, 19 states and the District of Columbia regulate hurricane deductibles in some manner, specifying the conditions under which a hurricane deductible may be triggered under homeowner insurance policies in that state. The state-based regulatory system allows for homeowner insurance forms to include conditions that trigger a hurricane deductible in one state, but which may not necessarily do so in a neighboring state for the same storm.

49 ValuePenguin, *Average Cost of Homeowners Insurance* (2014), available at <http://www.valuepenguin.com/average-cost-of-homeowners-insurance>.

50 Insurance Information Institute, *Why Are Homeowners Insurance Rates Rising?* (June 7, 2012), available at <http://www.iii.org/article/why-are-homeowners-insurance-rates-rising>; Insurance Information Institute, *Homeowners and Renters Insurance*, available at <http://www.iii.org/fact-statistic/homeowners-and-renters-insurance>.

51 See Md. Code Ann. Ins. § 27-606.

52 Insurers may not include anti-concurrent causation clauses in policies issued in California, North Dakota, Washington, and West Virginia.

53 Insurance Information Institute, *Hurricane and Windstorm Deductibles* (November 2014), available at <http://www.iii.org/issue-update/hurricane-and-windstorm-deductibles>.

54 *Id.*

Actions by insurers to reduce exposure to risk have resulted in homeowner insurance policy coverages and exclusions that vary considerably from state-to-state and between insurers. For the average homeowner, provisions of insurance policies may be difficult to understand, or time may not allow for close examination of all policy provisions. As a result, homeowners may not always fully understand or appreciate the scope of coverage exclusions.

Box 3: Insurance Claims Adjusters

Once a policyholder notifies the insurer of a loss, the insurer assigns one or more insurance claims adjuster(s) to assist with processing the claim.⁵⁵ The insurance claim adjuster inspects the property to determine the extent of the damage which may be covered under the policy. In 34 states and the District of Columbia, insurance claims adjusters must be licensed by the applicable insurance regulator, and those licensing requirements vary.

Some states recognize reciprocity of an insurance claim adjuster's license in the insurance adjuster's home state while others do not. Following a natural catastrophe, insurers may need to quickly increase the number of insurance claims adjusters licensed and authorized to operate in a state in order to handle the claim volume and the need to deliver resources promptly. In some states, the licensing requirements may pose practical difficulties to timely deploy additional insurance claims adjusters. Recognizing this, in 2013 the New York Superintendent of the Department of Financial Services notified insurers that "[t]he Superintendent might implement an expedited process for issuing temporary independent and public adjuster licenses for adjusters in good standing from other states" to "help ensure an adequate supply of qualified adjusters to affected areas promptly when large number of losses would create a spike in demand for adjusters."⁵⁶ Other states (for example, Mississippi, Rhode Island, and Utah) have established emergency insurance claims adjuster licenses while others (for example, Alabama, Louisiana, and South Carolina) waive the licensure requirement for emergency adjusters.⁵⁷

Natural catastrophes often reveal the challenges of resolving a high volume of property claims in a concentrated area. Adjusters are the nexus between an insurer and a homeowner; therefore, they should be held to appropriate standards of conduct. For this reason, measures to increase the number of adjusters eligible to work in an area devastated by a natural catastrophe remains a topic of increasing interest.⁵⁸

D. Homeowner Insurance Market

The United States has a robust and growing homeowner insurance market, although – as discussed in Section IV.C – availability is a concern in certain geographic regions. In 2013, 373 insurance groups, many with more than one company, wrote homeowner insurance in the United States.⁵⁹ Nationally, the top five insurers by premium volume of homeowner multiple peril insurance in 2014 were State Farm (19.9 percent), Allstate (8.9 percent), Liberty Mutual (6.6 percent), Farmers (5.9 percent), and USAA (5.4 percent). Figure 5 shows the direct premium written (total premium received by an insurer during a calendar year) and direct losses paid (total amount paid for claims during

55 See, e.g., Oklahoma Insurance Department, *After the Disaster: plan. prepare. prevent.*, available at http://www.ok.gov/oid/documents/080414_AD-brochure.pdf.

56 New York Department of Financial Services, *Insurance Circular Letter No. 8* (October 28, 2013), available at http://www.dfs.ny.gov/insurance/circltr/2013/cl2013_08.htm.

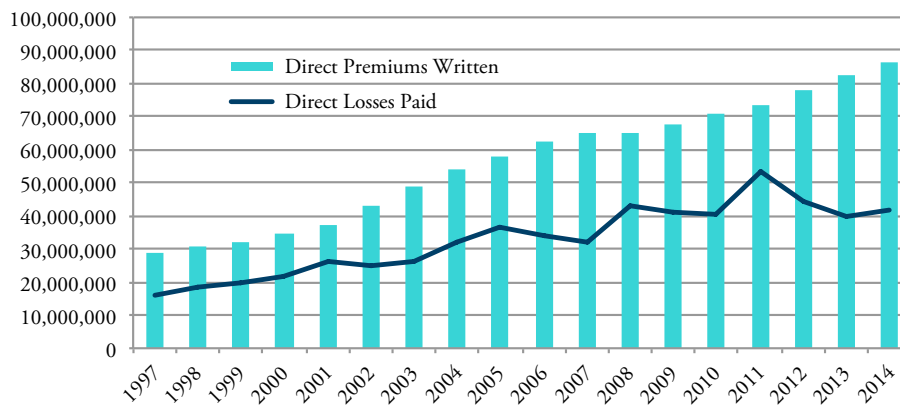
57 State by state insurance claims adjuster licensing requirements, based on a 2014 state survey, are available from AdjusterPro™, available at <http://www.adjusterpro.com/insurance-adjuster-career/states/index.html>.

58 See Claims Licensing Advancement for Interstate Matters Act, H.R. 2998, 114th Congress.

59 Kelleen Arquette, Towers Watson, *U.S. Homeowners Market: Casualty Actuarial Society Spring Meeting* (May 2013), available at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB4QFjAA&url=https%3A%2F%2Fcas.confex.com%2Fcas%2Fspring13%2Fwebprogram%2FHandout%2FPaper2214%2FCAS%2520Spring%2520Meeting%25202013%2520-%2520Homeowners%2520Profitability%2520-%2520Kelleen%2520Arquette.pdf&ei=g0MkVYruArWasQSy5YGgDQ&usq=AFQjCNGk1Q76QIucxOB9si_tuhXylwEqZg.

a calendar year) for all U.S. insurers that provided homeowner multiple peril insurance from 1997 through 2014. Although direct premium written increased steadily over this period, direct losses paid varied year-to-year. The years with the largest direct losses incurred correspond to years with major hurricanes: Hurricane Katrina in 2005; Hurricane Ike in 2008; and Hurricane Irene in 2011.

Figure 5: Homeowner Multiple Peril Direct Premium Written and Direct Losses Paid (In Dollars)



Source: SNL Financial

E. Residual Market

As noted earlier, strategies taken by insurers to manage exposures to natural catastrophe risk can affect the availability of property insurance. To address the issue of availability, five coastal states have created programs to sell insurance covering damage caused by high winds in the highest-risk areas. These are known as Beach Plans or Wind Pools (Wind Pools).⁶⁰ Wind Pools typically provide wind-only coverage in specific coastal territories of a state that may be defined by zip code, county, or other geographic indicator. Florida and Louisiana have established residual markets offering homeowner multiple peril insurance that would also cover damage caused by high winds.

1. Wind Pools

Wind Pools are state-mandated private associations of all insurers writing property insurance in a particular state. Wind Pools may assess insurers to cover losses that exceed premiums and other funds. Insurers in North Carolina, Alabama, and Mississippi “can lower their assessments by writing more policies in coastal counties.”⁶¹

Of the more than 660,000 Wind Pool insurance policies sold in 2013, close to 90 percent were sold in Mississippi, North Carolina, and Texas.⁶² Texas accounted for 44 percent of the total direct written premium for all Wind Pools, with \$472 million.⁶³ With just over \$1 billion in direct written premium in 2013, the market size of Wind Pools is relatively small. However, the number of Wind Pool policies issued has steadily increased from just over 340,000 policies issued in 2008 to over 660,000 policies issued in 2013.⁶⁴ The exposure of Wind Pools to loss has

60 Currently, five states have established Wind Pools: Alabama, Mississippi, North Carolina, South Carolina, and Texas.

61 Carolyn Kousky, *Managing the Risk of Natural Catastrophes: The Role and Functioning of State Insurance Programs*, Resources for the Future Discussion Paper 10-30, at 20 (2010).

62 Property Insurance Plans Services Office, Inc. referred to herein as PIPSO.

63 *Id.*

64 *Id.*

also increased over the last ten years, growing from \$30 billion in 2004 to \$193 billion in 2013, an increase of 543 percent.⁶⁵

Following Hurricane Celia in 1970, the Texas Windstorm Insurance Association (TWIA) was created in 1971. TWIA provides coverage for wind and hail perils when an insurer excludes such coverage from a homeowner or commercial property policy issued in coastal areas.⁶⁶ The TWIA is a pool of all property and casualty insurers authorized to provide coverage in Texas and, as an insurer of last resort, offers coverage generally less extensive and more expensive than coverage offered by private insurers. By statute, the Texas Commissioner of Insurance is required to develop incentive programs to encourage insurers to voluntarily write wind and hail coverage. Together with the Board of Directors of TWIA, the Texas Commissioner of Insurance is working to depopulate TWIA – that is to decrease the number of policyholders with active policies issued by TWIA and move policyholders from TWIA to the private market for homeowner insurance.⁶⁷

To promote sound construction and mitigation practices, an owner of a property located in a coastal county served by TWIA must have the property inspected when undertaking certain construction projects such as building new structures, re-roofing, additions, repairs, or alterations. The inspection must be completed by the Texas Commissioner of Insurance in order for the property owner to obtain or maintain TWIA coverage, and if a property does not meet the appropriate building code, the policyholder must pay a 15 percent surcharge on the insurance premium.⁶⁸

In general, TWIA must file proposed rates with the Texas Department of Insurance each year. Texas law limits insurance rate average increases for TWIA to not more than 10 percent each year unless the Texas Commissioner of Insurance determines that a higher increase is necessary due to catastrophic events.⁶⁹ If rates are filed at least 30 days in advance, and the rate change is 5 percent or less than the current rate, or if the individual class rate change is less than 10 percent of the current rate, the rate changes do not need the Commissioner's prior approval.⁷⁰

In the event losses occur, a number of funding mechanisms are available to TWIA to fund the payment of claims following a natural catastrophe event. TWIA must deposit excess revenue in the Texas Catastrophe Reserve Trust Fund (Catastrophe Reserve Fund). When reserves in the Catastrophe Reserve Fund are exhausted, up to \$1 billion each in Class 1 and Class 2 public securities and up to \$500 million in Class 3 public securities are used to fund losses. Class 1 public securities are paid by TWIA premiums; Class 2 public securities are 70 percent paid by non-refundable premium surcharges to coastal property and casualty policyholders and 30 percent paid by member insurer assessments; and Class 3 public securities are paid by insurer assessments.

TWIA submits an annual statutory financial report which, as of December 31, 2014, shows that TWIA reported \$1.1 billion in net admitted assets, \$1.1 billion in liabilities, and that it did not have a surplus.⁷¹ TWIA reported approximately \$367 million of earned premium, incurred losses and loss adjustment expense of negative \$13.9 million, and \$109 million of operating expenses – resulting in an underwriting gain of \$272 million during the twelve months ending December 31, 2014.⁷² TWIA estimates \$3.25 billion would be needed to fund 98 percent of all modeled natural catastrophe events. For 2014, TWIA expected to have a shortfall of approximately \$1.2 billion

65 *Id.*

66 *See generally*, Texas Windstorm Insurance Association Website, available at <http://www.twia.org>.

67 Texas Windstorm Insurance Association, *Biennial Report to the 84th Legislature*, at 13 (December 30, 2014), available at http://twia.org/Portals/0/Documents/TWIA_Biennial_Report_84th_Texas_Legislature.pdf.

68 Carolyn Kousky, *Managing the Risk of Natural Catastrophes: The Role and Functioning of State Insurance Programs*, Resources for the Future Discussion Paper 10-30, at 10 (2010).

69 Texas Ins. Code Ann. § 2210.359.

70 *Id.*

71 Texas Windstorm Insurance Association, *Statutory Financial Statements and Supplemental Information Years Ended December 31, 2014 and 2013*, available at <https://www.twia.org/about-us/financials>.

72 Texas Ins. Cod Ann. § 2210.352.

in funding if the \$3.25 billion threshold were met. TWIA has \$217 million in the Catastrophe Reserve Fund, \$1 billion in Class B Public Securities, \$500 million in Class 3 Public Securities, and \$1.45 million in reinsurance.⁷³

In 2008, Hurricane Ike, the fourth costliest hurricane in the United States, made landfall in Texas, causing insured losses totaling \$9.8 billion in that state, exclusive of flood losses.⁷⁴ For damages caused by Hurricane Ike, TWIA received more than 93,000 claims resulting in losses and loss adjustment expenses of approximately \$2.6 billion.⁷⁵ Given TWIA's estimated shortfall, if a windstorm of a magnitude similar to Hurricane Ike were to affect Texas in the near future, it is likely that additional assessments on policyholders in the state would be needed to cover all claims.

Box 4: Fair Access to Insurance Requirements (FAIR) Plans

Before 1968, some states sought to address the problem of availability of insurance in urban areas through Urban Area Plans.⁷⁶ Generally speaking, Urban Area Plans assisted insurers in determining whether to extend coverage to a property owner by providing for the inspection of a property to be insured and preparation of a report on the condition of the property.⁷⁷ The purpose of the inspection was to distinguish between properly maintained properties and those with hazards that reduced insurability.⁷⁸ While the Urban Area Plans addressed some of the insurance needs of those living in the thirteen states in which the insurers were operating, President Lyndon Johnson's 1967 National Advisory Panel on Insurance in Riot-Affected Areas⁷⁹ sought to address the insurance crisis in cities across the country by recommending the establishment of state-regulated FAIR Plans,⁸⁰ envisioned to be substantial expansions of Urban Area Plans.⁸¹ In another example of the role of the federal government in the insurance sector, the Urban Property Insurance Protection and Reinsurance Act of 1968 established the framework for FAIR Plans for the states.⁸² FAIR Plans provide insurance to any property owner denied insurance by admitted homeowner insurers.

As of 2014, 32 states and the District of Columbia have FAIR Plans. In most cases, insurers writing homeowner insurance in the state are assessed to cover losses incurred by the plan exceeding premiums and investment income. Some FAIR Plans provide coverage only for losses caused by fire, while approximately 50 percent provide coverage more typical of a standard homeowner insurance policy. FAIR Plans premiums

73 Texas Windstorm Insurance Association, *2014 Annual Report Card*, at 21 (May 30, 2014), available at http://www.twia.org/Portals/0/Documents/2014_TWIA_Annual_Report_Card_CAT_Plan.pdf.

74 Insurance Information Institute, *Texas Hurricane Insurance: Fact File*, available at <http://www.iii.org/article/texas-hurricane-insurance-fact-file>.

75 Texas Department of Insurance, *Texas Windstorm Insurance Association Overview*, available at <http://www.tdi.texas.gov/alert/whatsnew/2015/twia-overview.html>.

76 On December 1, 1967, Urban Area Plans were in effect, formally or informally, in thirteen states: California, Delaware, Illinois, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, and Wisconsin. Some plans covered only a specified city or area; others applied statewide. See The President's National Advisory Panel on Insurance in Riot-Affected Areas, *Meeting the Insurance Crisis of Our Cities*, at 56 (January 1968).

77 Inspections of properties were conducted by the local rating (inspection) bureau. *Id.*

78 *Id.*

79 On July 27, 1967, President Johnson appointed the National Advisory Commission on Civil Disorders (Advisory Commission) to investigate the origins of civil disorders across the nation and to make recommendations for measures to prevent or contain them in the future. Deciding that a separate and expert group could deal more expeditiously with the insurance problems of urban core residents and business owners, the Advisory Commission, after consulting with the President, appointed the National Advisory Panel on Insurance in Riot-Affected Areas on August 10, 1967. The Advisory Panel was asked by the Advisory Commission to seek answers to questions raised by the difficulties and high costs of obtaining insurance in areas where riots occurred or might be a threat. The recent disorders had served to highlight problems of availability of insurance that had long existed as a corollary to urban blight. *Id.* at ii.

80 *Id.* at 87.

81 *Id.*

82 Housing and Urban Development Act of 1968, Pub. L. 90-448, 82 Stat. 476.

are generally higher than those of private insurers, and applicants must demonstrate they have been denied coverage in the standard market. FAIR Plans may turn down applicants for specified reasons such as vacant property, poor physical condition, or a structure not having been built in accordance with building codes.⁸³ With breadth of coverage and geographic reach, some FAIR Plans promote access to homeowner insurance to property owners located in areas more prone to natural catastrophes, such as coastal properties in Massachusetts. The market share of FAIR Plans rose from approximately 3 percent in 2004 and reached a peak of approximately 6 percent in 2007.⁸⁴ Since 2007, the market share of FAIR plans has stabilized, which likely indicates a competitive homeowner insurance market.

2. Florida Citizens Property Insurance Corporation

Florida has borne the brunt of several of the most devastating hurricanes in U.S. history. Following Hurricane Andrew and subsequent hurricanes, some insurers exited Florida's homeowner insurance market.⁸⁵ Florida addressed the decrease in availability of homeowner insurance by establishing publicly supported insurance programs. The Florida Citizens Property Insurance Corporation (Florida Citizens), a not-for-profit, tax exempt, government entity, began operations in Florida in August 2002 with the mission to provide insurance to residential and commercial property owners otherwise unable to obtain coverage.⁸⁶ In 2007, Florida enacted legislation rolling back Florida Citizens' rates and freezing rates going forward. In 2009, legislation was passed to limit annual premium increases to any policy issued by Florida Citizens to 10 percent.⁸⁷ Florida Citizens is the largest insurer offering homeowner multiple peril insurance in the state, with 9.1 percent of the market in 2014, down from 19.9 percent, 19.5 percent, and 14.5 percent, respectively, for 2011, 2012, and 2013, and also down from 10.3 percent of the market a decade ago in 2004.

According to Florida Citizens, a catastrophic event could exhaust Florida Citizens' reserves and capital resources and leave it without sufficient funds to pay all claims.⁸⁸ State law requires that Florida Citizens charge assessments until any deficits are eliminated. Assessments are charged in three tiers: (1) policyholders of Florida Citizens may be assessed a one-time assessment up to 45 percent of the premium; (2) policyholders of both admitted and non-admitted insurers may be assessed up to two percent of the remaining shortfall; and (3) an emergency assessment of one or more years on all insurers' policyholders, including Florida Citizens, up to 30 percent of premium until the deficit is eliminated.⁸⁹ However, "[t]he 2004 and 2005 hurricanes led the state legislature to appropriate \$715 million to lower the necessary assessments, and the rest of the deficit will be paid off over 10 years using emergency assessments."⁹⁰

Like TWIA, Florida Citizens is required to help return its policyholders to the private market or to depopulate its program when possible. Insurers accepting Florida Citizens policyholders agree to offer the same or better coverage

83 American Insurance Association, *What are 'Residual Markets' for Property Insurance?*, available at <http://www.aiadc.org/AIAdotNET/docHandler.aspx?DocID=295953>; PIPSO, Inc., *2013 Compendium of Property Insurance Plans* (2013).

84 PIPSO, *2013 Compendium of Property Insurance Plans* (2013).

85 See Michael Adams, *State Farm wants to Increase Homeowners Business in Florida...a Bit*, Insurance Journal (March 6, 2014); Anna Maria Andriotis, *Home Insurance Goes Through the Roof*, Market Watch The Wall Street Journal (March 9, 2012).

86 Florida Citizens Property Insurance Corporation, *Our Mission*, available at <https://www.citizensfla.com/about/generalinfo.cfm>.

87 *Id.*

88 Florida Citizens Property Insurance Corporation, available at <http://citizensfla.com>.

89 *Id.*

90 Carolyn Kousky, *Managing the Risk of Natural Catastrophes: The Role and Functioning of State Insurance Programs*, Resources for the Future Discussion Paper 10-30, at 8 (2010).

than the policyholder had with Florida Citizens at the same or lower cost.⁹¹ Between 2003 and 2013, the effort to depopulate resulted in a reduction of approximately 2 million policies and \$529 billion in exposure.⁹² In 2013, the Florida Commissioner of Insurance Regulation approved the removal of 908,000 policies and an additional 1.1 million policies in 2014. Approximately 35 percent of those approved for removal accepted a policy with a private insurer. Of the 1.1 million policies approved for removal from Florida Citizens in 2014, over 416,000 policies were transferred to other insurers.⁹³ For 2015, the Florida Commissioner of Insurance Regulation has approved the removal of more than 632,000 policies from Florida Citizens as of May 2015 with approximately 111,000 policies thus far transferred to the private insurance market.⁹⁴ The ongoing depopulation process is expected to bring Florida Citizens policy count down to 2005 levels.⁹⁵ The interest shown by private insurers in writing additional property insurance policies has been attributed to a number of factors, including that premiums charged by Florida Citizens have reached levels adequately reflecting the risk of loss to the property, as well as the stabilization of reinsurance costs.⁹⁶

In its December 31, 2014, financial reports, Florida Citizens reported net admitted assets of \$14.3 billion, \$6.8 billion of liabilities, and \$7.5 billion of surplus. Additionally, it reported approximately \$1.5 billion in earned premium, \$640 million of incurred losses and loss adjustment expenses, and \$374 million in operating expenses – resulting in an underwriting gain of approximately \$363 million for the twelve months ending December 31, 2014. Florida is a state at high risk of experiencing natural catastrophes; seven of the ten most costly hurricanes in United States history have made landfall in the state.⁹⁷ Between 2004 and 2005, six of the costliest hurricanes in the United States affected the state, resulting in \$2.7 billion and \$3.7 billion, respectively, in loss and loss adjustment expenses for Florida Citizens. Recent efforts by Florida Citizens to depopulate have put the insurer in such a position that were Florida to again experience two successive years of hurricanes of a magnitude similar to the 2004 and 2005 hurricane seasons it would likely not have to charge further assessments. However, in 2014, Florida Citizens' total exposures were \$201 billion, which leaves the insurer at considerable risk of not being able to meet its obligations.⁹⁸

The position of the Florida Hurricane Catastrophe Fund (Cat Fund), the state-run reinsurance fund that provides reimbursement to insurers for a portion of catastrophic hurricane losses, was strengthened in April 2015 when the Governor of Florida and the 3-member Florida Cabinet authorized the purchase of up to \$2.2 billion of additional protection. This authority allows the Cat Fund to purchase up to \$1 billion of reinsurance and to raise an additional \$1.2 billion from the issuance of bonds, thereby shifting Cat Fund risks away from the state to the private sector.⁹⁹

3. Louisiana Citizens Property Insurance Corporation

Similar to Florida, Louisiana established a residual market to address availability concerns in coastal communities. The Louisiana Citizens Property Insurance Corporation (Louisiana Citizens) began operations in 2004 and provides

91 Florida Office of Insurance Regulation, *Florida Insurance Commissioner McCarty Amends Citizens' Take-Out Procedures and Requires Policyholder Notification of Offers from Private Insurance Companies* (March 12, 2008), available at <http://www.flor.com/PressReleases/viewmediarelease.aspx?id=1644>.

92 Florida Citizens Property Insurance Corporation, *Depopulation/Policy Takeout Information*, available at <https://www.citizensfla.com/about/depopinfor.cfm?type=stats&show=pdf&link=/shared/depop/documents/ExposureRemoved2003-2014.pdf>.

93 Florida Office of Insurance Regulation Press Release, *Office Approves Removal of up to 79,397 Policies from Citizens* (February 10, 2015).

94 Florida Office of Insurance Regulation Press Release, *Office Approves Removal of up to 30,050 Policies from Citizens* (May 7, 2015).

95 SNL, *Upcoming Citizens Takeouts Highlight Perceived Attractiveness of Florida Market* (November 11, 2014).

96 *Id.*

97 Insurance Information Institute, *Florida Hurricane Insurance: Fact File*, available at <http://www.iii.org/article/florida-hurricane-insurance-fact-file>.

98 Florida Citizens Property Insurance Corporation, *Policies In-Force Report* (Report Run January 15, 2015).

99 S. Bousquet, *Florida Cabinet approves buying \$2.2 billion more in catastrophe insurance*, Tampa Bay Times (April 14, 2015).

insurance for property owners unable to purchase coverage from the voluntary market. Louisiana Citizens operates two programs, the Louisiana Insurance Underwriting Plan, which is a Wind Pool, and the Louisiana Joint Reinsurance Plan, which is a FAIR Plan, both of which offer residential and commercial policies. Louisiana's Wind Pool provides coverage in the area of the state most vulnerable to hurricanes while the FAIR Plan provides coverage to the rest of the state.¹⁰⁰ Louisiana Citizens was the tenth-largest insurer writing homeowner multiple peril insurance in Louisiana in 2014 with 1.8 percent of the market.

To support its role as an insurer of last resort, Louisiana Citizens charges rates in excess of those charged by the private market.¹⁰¹ Specifically, Louisiana Citizens rates must be actuarially justified and must exceed by at least 10 percent the highest average rate for the 10 insurers with the greatest total direct written premium in the state.¹⁰² In addition, Louisiana Citizens' rates include the premium tax amount imposed on other insurers, which is retained by Louisiana Citizens as a state contribution.¹⁰³

If premiums, investments, and reinsurance do not cover losses, Louisiana Citizens has the authority to assess insurers in an amount of up to 10 percent of industry premium for the assessable lines of business.¹⁰⁴ Insurers may recoup any assessment amount from policyholders over the course of the next year. Assessments paid by policyholders may be claimed as a credit against Louisiana state income taxes.¹⁰⁵ If more funds are necessary to cover the deficit, Louisiana Citizens may issue revenue assessment bonds in the capital markets.¹⁰⁶ Louisiana Citizens would then declare an emergency assessment each year to provide debt service on the bonds until the bonds are retired.

Due to the catastrophic nature of the 2005 hurricane season, Louisiana Citizens issued \$978 million in revenue assessment bonds to cover the deficit.¹⁰⁷ An emergency assessment to repay the bonds began in 2007 and will continue until 2025.¹⁰⁸ If collections on the assessment exceed bond requirements, the excess may be used to reduce future assessment percentages or may be used to retire the bonds before maturity.¹⁰⁹

Similar to TWIA and Florida Citizens, Louisiana Citizens is required to depopulate on an annual basis, and in 2013 it removed approximately 14,000 policies through this process.¹¹⁰ Further depopulation efforts in 2014 resulted in the transfer of over 10,000 to the private insurance market.¹¹¹ Louisiana provides financial incentives to insurers writing policies for policyholders previously covered by Louisiana Citizens.¹¹² This initiative proved successful as the market share of Louisiana Citizens decreased from approximately 7 percent in 2005 to 1.8 percent in 2014.¹¹³

100 Louisiana Citizens Property Insurance Corporation, *Plan of Operation*, at 12, available at <http://www.lacitizens.com/pdfs/LCPICPlanofOperation.pdf>.

101 La. Rev. Stat. Ann. § 22:2303.

102 *Id.*

103 Louisiana Citizens Property Insurance Corporation, *Plan of Operation*, at 15 (December 2, 2003), available at <http://www.lacitizens.com/Pdfs/LCPICPlanofOperation.pdf>.

104 Louisiana Citizens Property Insurance Corporation, *Assessment Information Center Overview*, available at http://www.lacitizens.com/Static_Content/LA%20Citizens%20Assessment%20Information%20Center/Overview.mht.

105 *Id.*

106 La. Rev. Stat. Ann. § 22:2307 (G).

107 Louisiana Citizens Property Insurance Corporation, *Louisiana Citizens' Assessment Information Center: 2006 Bond Issuance Information*, available at http://www.lacitizens.com/LA_Citizens_Assessment_Information_Center.aspx.

108 *Id.*

109 Louisiana Citizens Property Insurance Corporation, *Louisiana Citizens' Assessment Information Center Overview*, available at http://www.lacitizens.com/LA_Citizens_Assessment_Information_Center.aspx.

110 SNL, *Interest Said to Emerge in Texas Windstorm Depopulation* (July 14, 2014).

111 Louisiana Department of Insurance Official Press Release, *Deadline to Claim Expiring Citizens Rebate Approaching*, December 4, 2014.

112 *Id.*

113 SNL.

Louisiana Citizens' financial reports, as of December 31, 2014, show a reported \$1 billion in net admitted assets, \$1 billion in total liabilities, and a negative \$23 million in surplus. Louisiana Citizens reported approximately \$115 million of earned premium, \$117 million of incurred losses and loss adjustment expense, and \$27 million of operating expenses – resulting in an underwriting loss of \$29 million – during the twelve months ending December 31, 2014.

In 2001, the Louisiana legislature created the Louisiana Property and Casualty Insurance Commission (LPCIC) to review and examine the availability and affordability of property and casualty insurance. Each year, the LPCIC completes a report on the availability and affordability of automobile, homeowner, and workers' compensation insurance in the state. In its 2012-2013 report, the LPCIC concluded that while homeowner insurance premiums in the state are high, "Louisiana has avoided overreliance on Louisiana Citizens and continues to attract new insurers and successfully depopulate Louisiana Citizens."¹¹⁴ In its 2013-2014 report, the LPCIC noted that because Louisiana has the second highest average homeowner insurance premium rates in the country, high homeowner insurance rates present challenges to current residents and those contemplating a move to Louisiana.¹¹⁵ The LPCIC further noted that the continued depopulation of Louisiana Citizens is a sign of an improving market.¹¹⁶ The 2014-2015 report noted that during a public meeting, the Louisiana Commissioner of Insurance described the property insurance market in the state as "more robust and competitive now than it was before [Hurricane] Katrina."¹¹⁷ In fact, the size of Louisiana's residual market fell steadily from 6.4 percent to 2.3 percent, one indication of a competitive private homeowner insurance market in the state.¹¹⁸

114 Louisiana Department of Insurance, *Louisiana Property and Casualty Insurance Commission Annual Report 2012-2013*, at 7, available at <http://www.ldi.louisiana.gov/docs/default-source/documents/propertycasualty/lpcic/Documents/annualreport12-13.pdf?sfvrsn=7>.

115 Louisiana Department of Insurance, *Louisiana Property and Casualty Insurance Commission Annual Report 2013-2014*, at 2, available at <http://www.ldi.louisiana.gov/docs/default-source/documents/propertycasualty/lpcic/Documents/annualreport12-13.pdf?sfvrsn=7>.

116 *Id.*

117 Louisiana Department of Insurance, *Louisiana Property and Casualty Insurance Commission Annual Report 2014-2015*, at 6, available at <http://www.ldi.louisiana.gov/docs/default-source/documents/propertycasualty/lpcic/Documents/lpcic-annual-report-2014-15.pdf?sfvrsn=0>.

118 SNL.

V. FLOOD INSURANCE

Flooding, as the most common, destructive, and costly form of natural catastrophe in the United States, presents significant insurance challenges.¹¹⁹ Between 1980 and 2013, floods caused more than \$260 billion in damage in the United States.¹²⁰ Losses caused by flooding are generally excluded from homeowner insurance policies. Consequently, most consumers seeking to purchase insurance for flood risk must purchase a standalone insurance policy. Until the Great Mississippi Flood of 1927, private insurers largely covered flood losses. However, following a number of devastating events and company failures, the number of insurers offering private flood insurance declined due to the frequent and catastrophic nature of flooding as well as the difficulty in modeling the risk. Without access to flood insurance, the “primary recourse for flood victims was government disaster assistance.”¹²¹ In response, Congress created the NFIP in 1968. The NFIP is administered by FEMA in the Department of Homeland Security and is the largest source of flood insurance for property owners. Flood insurance coverage that is separate from the NFIP is available in certain geographic areas; however, only a small number of private insurers offer this coverage. As discussed below, while the NFIP has made flood insurance available to millions of Americans, it has faced significant financial challenges in recent years due to large losses incurred following Hurricanes Katrina and Irene, and Superstorm Sandy.

A. National Flood Insurance Program

In response to the shrinking market for private flood insurance, Congress passed and President Johnson signed the National Flood Insurance Act of 1968 (1968 Act),¹²² which created the NFIP. Through the NFIP, the federal government made flood insurance available to individuals who lived in communities that voluntarily adopted and enforced certain floodplain management regulations such as appropriate building and development codes. However, as of 1972 when Tropical Storm Agnes made landfall, “only a few thousand communities participated in the NFIP and only 95,000 policies were in force.” At the time, Tropical Storm Agnes “cost the Nation more in disaster assistance than any previous disaster.”¹²³

In recognition that “providing subsidized flood insurance for existing buildings was not a sufficient incentive for communities to voluntarily join the NFIP nor for individuals to purchase flood insurance,”¹²⁴ Congress passed the Flood Disaster Protection Act of 1973 (1973 Act).¹²⁵ Among other reforms to the NFIP, the 1973 Act prohibited regulated lending institutions from making, increasing, or renewing “any loan secured by improved real estate or a mobile home located or to be located in an area that has been identified by the Secretary [of Housing and Urban Development] as an area having special flood hazards and in which flood insurance has been made available under the National Flood Insurance Act of 1968, unless the building or mobile home and any personal property securing such loan is covered for the term of the loan by flood insurance.”¹²⁶ This provision is commonly referred to as the Mandatory Purchase Requirement and remains in effect today. The Mandatory Purchase Requirement can be satisfied with

119 Federal Emergency Management Agency, *What to Know, What to Do*, available at https://www.floodsmart.gov/floodsmart/pdfs/What_to_Know_What_to_Do.pdf.

120 Council on Environmental Quality, *FACT SHEET: Taking Action to Protect Communities and Reduce the Cost of Future Flood Disasters* (January 30, 2015), available at http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/January_30_2015.

121 Lloyd Dixon, Noreen Clancy, Seth A. Seabury, and Adrian Overton, *The National Flood Insurance Program’s Market Penetration Rate: Estimates and Policy Implications*, RAND Corporation prepared under subcontract to the American Institutes for Research as part of the Evaluation of the National Flood Insurance Program, at xii (February 2006).

122 Pub. L. No. 90-448, Title XIII (1968), *see also* 42 U.S.C § 4011.

123 Federal Emergency Management Agency, *National Flood Insurance Program—Program Description* (2002), available at http://www.fema.gov/media-library-data/20130726-1447-20490-2156/nfipdescrip_1_.pdf, at 3.

124 *Id.*

125 Pub. L. No. 93-234, 87 Stat. 975.

126 Until 1979, before being transferred to the newly created FEMA, the NFIP was administrated by the Department of Housing and Urban Development. *See Executive Order 12127 § 1-104* (1979), available at <http://www.archives.gov/federal-register/codification/executive-order/12127.html>, *also see* 42 U.S.C § 4012a(b).

either a flood insurance policy through the NFIP or a qualifying policy through a private insurer.¹²⁷ The 1973 Act also prohibited “Federal agencies from providing financial assistance for acquisition or construction of buildings and certain disaster assistance in the floodplains in any community that did not participate in the NFIP by July 1, 1975, or within [one] year of being identified as flood-prone.”¹²⁸

The NFIP makes flood insurance available to property owners located in more than 21,000 participating communities throughout the United States. In order to participate in the NFIP, a community must complete an application and agree to “adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard areas.”¹²⁹ FEMA identifies and maps flood-prone areas in participating communities. If a community does not elect to participate in the NFIP, a resident may not purchase a flood insurance policy through the NFIP. With the exception of nonparticipating communities, a building owner or homeowner may not generally be denied the option to purchase flood insurance from the NFIP.

Pursuant to the 1968 Act, the NFIP requires periodic reauthorization by the U.S. Congress. The NFIP was most recently reauthorized until September 30, 2017 by the Biggert-Waters Act.¹³⁰ As of December 31, 2014, approximately 5.3 million NFIP policies were in effect, providing approximately \$1.3 trillion of coverage.¹³¹ In addition, as of December 31, 2014, the NFIP owed \$23 billion to the U.S. Department of the Treasury (Treasury).¹³²

The NFIP offers flood-related insurance coverage for residential, multifamily, and non-residential properties, as well as for renters. The NFIP has three policy forms: (1) the Standard Flood Insurance Policy Dwelling Form (Dwelling Form), which is used to insure one to four family residential buildings and single family dwelling units in a condominium building; (2) the General Property Form, which is used to insure five or more family residential buildings and non-residential buildings; and (3) the Residential Condominium Building Association Policy Form, which is used to insure residential condominium association buildings.¹³³ All three of these policy forms cover damage directly caused by a flood.

The NFIP defines a flood as “general and temporary conditions of partial or complete inundation of two or more acres of normally dry land area or of two or more properties ... from:

- Overflow of inland or tidal waters;
- Unusual and rapid accumulation or runoff of surface waters from any source;
- Mudflow; or
- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.”¹³⁴

127 *Id.*

128 Federal Emergency Management Agency, *National Flood Insurance Program—Program Description*, (2002), at 3.

129 Federal Emergency Management Agency, *Answers to Questions About the NFIP*, FEMA F-084, at 1 (March 2011), available at http://www.fema.gov/media-library-data/20130726-1438-20490-0889/f084_atq_11aug11.txt.

130 42 U.S.C § 4026.

131 Federal Emergency Management Agency, *Monthly Policy Statistics as of 11/30/2014*, available at <http://bsa.nfipstat.fema.gov/reports/1011.htm>.

132 Information obtained from U.S. Department of the Treasury Office of Government Financial Policy.

133 Federal Emergency Management Agency, *National Flood Insurance Program Summary of Coverage*, FEMA F-679, at 1 (November 2012), available at http://www.fema.gov/media-library-data/20130726-1620-20490-4648/f_679_summaryofcoverage_11_2012.pdf. See also, Federal Emergency Management Agency, *National Flood Insurance Program Summary of Coverage for Commercial Property*, at 1 (July 2013), available at https://www.floodsmart.gov/floodsmart/pdfs/NFIP_Summary_of_Coverage.pdf.

134 Federal Emergency Management Agency, *National Flood Insurance Program Summary of Coverage*, FEMA F-679 at 1 (November 2012), available at http://www.fema.gov/media-library-data/20130726-1620-20490-4648/f_679_summaryofcoverage_11_2012.pdf.

The Dwelling Form provides coverage for the building property and/or personal property contents of the building. Under the Dwelling Form, the maximum coverage for the building property is \$250,000. Flood losses to the building property may be valued on the basis of replacement cost value (RCV) if the building is a single-family dwelling, the policyholder lives in the building at least 80 percent of the year, and the building coverage is at least 80 percent of the full replacement cost of the building or the maximum available for property under the NFIP. If flood losses do not meet these requirements, the building property is valued on the basis of actual cash value (ACV).

Coverage for building property includes: the building structure and foundation, the electrical and plumbing system, central air conditioning equipment, furnaces, water heaters, refrigerators, stoves, permanently installed carpets, permanently installed paneling, wallboard, bookcases, cabinets, window blinds, detached garages, and debris removal. Some coverage for building property below the lowest elevated floor is also included -- such as foundation walls, central air conditioners, drywall for walls and ceilings, nonflammable insulation, electrical outlets, fuel tanks, furnaces, hot water heaters, heat pumps, and sump pumps.¹³⁵

¹³⁵ *Id.*

Box 5: Flood Insurance Rate Mapping

The 1968 Act authorized the Administrator¹³⁶ of the National Flood Insurance Program to “(1) identify and publish information with respect to all flood plain areas, including coastal areas located in the United States, which have special flood hazards..., and (2) establish flood-risk zones in all such areas and make estimates with respect to the rates of probable flood-caused loss for the various flood-risk zones for each of these areas.”¹³⁷ Flood maps are used to establish flood insurance rates, develop regulations for land-use planning and building codes, and for flood preparation for communities at risk.

Today, FEMA is responsible for creating and updating Flood Insurance Rate Maps (FIRMs) for participating communities throughout the United States. FIRMs are used to inform communities and policyholders of the local flood risk, assist in floodplain management, identify areas where Mandatory Purchase Requirements are applicable, and determine the cost of flood insurance. FEMA creates and updates FIRMs by watersheds, identifying Special Flood Hazard Areas (SFHA) consisting of different flood-risk zones based on individual risk characteristics, all of which have a 1 percent¹³⁸ or greater chance of flooding in any given year. Mapping activities for watersheds are prioritized based on a number of factors including population. As a result, many rural and tribal communities have experienced delays in mapping, or have out-of-date FIRMs that do not reflect the most current and accurate risk.

To increase the accuracy of FIRMs, and to ensure public awareness of flood risk, FEMA works in a collaborative process with local communities and residents; including allowing communities to review, appeal, and adopt FIRMs prior to maps taking effect. Following the adoption of new or updated FIRMs, communities and individuals continue to be able to revise FIRMs through Letters of Map Revisions or Letters of Map Amendment. Between 2003 and 2008, “FEMA engaged in a large-scale effort to collect new flood data in unmapped areas, update existing data, and digitize flood maps.”¹³⁹ FIRMs in populated areas are generally up-to-date; however, in many unpopulated areas the FIRMs have not been updated.¹⁴⁰

Maps must be “continually maintained and updated to reflect natural and development-related changes.”¹⁴¹ While the science and technology to improve flood mapping for rivers and inland waterways is well established, coastal flood models continue to evolve.¹⁴² The Biggert-Waters Act established a new Technical Mapping Advisory Council, made up of 20 members, including the Administrator of FEMA and senior officials from across the federal government, to review and provide the Administrator of FEMA with recommendations on matters related to the national flood mapping program, including how to improve, in a cost-effective manner, the accuracy of FIRMs and mapping standards and guidelines.¹⁴³

136 While the 1968 Act authorized the Federal Insurance Administrator, today this responsibility has been transferred to the Administrator of the Federal Emergency Management Agency. See Executive Office of the President, *Executive Order 12127* § 1-104 (1979), available at <http://www.archives.gov/federal-register/codification/executive-order/12127.html>.

137 42 U.S.C. § 4101(a).

138 SFHA represent areas that have a 1 percent or higher chance of flooding in any given year, however during the span of a 30-year mortgage, a property in the SFHA has a 26 percent chance of being flooded at least once. See Federal Emergency Management Administration, *Managing Floodplain Development Through The National Flood Insurance Program*, at 80 (2007), available at http://www.fema.gov/pdf/floodplain/is_9_complete.pdf.

139 The National Academies, *Mapping the Zone: Improving Flood Map Accuracy*, at 1 (2009), available at http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/improving_flood_maps_final.pdf.

140 Theodor Meyer, *Why So Many Flood Maps Are Still Out of Date*, *ProPublica* (July 8, 2013), available at <http://www.propublica.org/article/why-so-many-flood-maps-are-still-out-of-date>.

141 The National Academies, *Mapping the Zone: Improving Flood Map Accuracy*, at 2 (2009).

142 *Id.* at 3.

143 42 U.S.C. § 4101a.

Consumers may also purchase coverage for the contents of the building up to a maximum amount of \$100,000. Contents coverage includes items such as clothing, furniture, curtains, portable and window air conditioners, clothes washers and dryers, and food freezers. Contents are always valued on the basis of ACV.¹⁴⁴

A separate deductible applies to building property and contents. NFIP policyholders may prefer a higher deductible to decrease flood insurance premiums; however, policyholders must consider whether they have the ability to pay the deductible in addition to losses above the coverage limits.

Through the NFIP's Write-Your-Own (WYO) Program, participating private insurers write and service NFIP policies in the name of the issuing insurer; however, the full risk of the policy is assumed by the federal government through the NFIP. Under the WYO Program, private insurers "underwrite policies and process claims while the federal government retains responsibility for underwriting losses."¹⁴⁵ In exchange for this service, the WYO Program insurers receive commissions, operating expense allowances, and incentive bonuses. All NFIP policyholders, irrespective of the WYO Program insurer issuing and servicing the policy, receive the same coverage at a price governed by NFIP rules and regulations. In addition to the WYO Program, the NFIP also sells flood insurance to some consumers through agents licensed with the NFIP Direct program.¹⁴⁶

1. Affordability

Flood insurance premiums from the NFIP vary based on a number of factors, including: flood risk as identified on Flood Insurance Rate Maps (FIRMs), coverage limits, deductibles, time of original building construction, and the community's participation in the Community Rating System (CRS) Program. The annual premium for residences located in a low to moderate flood risk area can be as low as \$129 per year.¹⁴⁷ The NFIP does not provide a table for premiums for residences located in high flood risk areas; however, one source suggests annual premiums for residences in high flood risk areas can range from \$750 to several thousands of dollars for \$100,000 of coverage.¹⁴⁸

The location of the NFIP-insured property is among the most important underwriting factors affecting the premium charged. Other important underwriting factors include the specific policy limits as well as the date of construction. Homes constructed after December 31, 1974, or on or after the effective date of the initial FIRM for the community in which the property is located, are considered post-FIRM construction. Homes constructed prior to December 31, 1974, or before the effective date of the initial FIRM for the community in which the property is located, are considered pre-FIRM construction and are eligible for subsidized rates. Certain NFIP policyholders with post-FIRM construction may qualify for rates calculated in accordance with so-called "grandfather rules," which allow policyholders to pay flood insurance premiums based on previously identified risk factors and are available for buildings that complied with the FIRM in effect at the time of construction and for continuously insured policyholders that would otherwise receive a higher premium rate following a map revision.¹⁴⁹

In order to strengthen the NFIP's financial position and increase the ability to fund future claims, the Biggert-Waters Act reformed the NFIP to eliminate over time the subsidized rates for both pre-FIRM properties and grandfathered policies. However, before these reforms could be implemented, Congress passed the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA),¹⁵⁰ which delayed and in some cases eliminated many of the rate reforms under the Biggert-Waters Act.

¹⁴⁴ *Id.*

¹⁴⁵ Federal Emergency Management Agency, *Answers to Questions About the NFIP*, FEMA F-084, at 3 (March 2011), available at http://www.fema.gov/media-library-data/20130726-1438-20490-0889/f084_atq_11aug11.txt.

¹⁴⁶ Federal Emergency Management Agency, *NFIP Flood Insurance Manual Effective October 1, 2014*, available at <https://www.fema.gov/media-library/assets/documents/97901>.

¹⁴⁷ Federal Emergency Management Agency, *Policy Rates*, available at https://www.floodsmart.gov/floodsmart/pages/residential_coverage/policy_rates.jsp.

¹⁴⁸ Greene National Flood Brokerage Website, available at <http://www.nationalfloodinsurance.com/NFIP/premium.htm>.

¹⁴⁹ *Id.*

¹⁵⁰ Pub L. No. 113-89, 128 Stat. 1020 (2014).

The Biggert-Waters Act, as amended by HFIAA, also authorized the National Research Council of the National Academy of Science to study the affordability of NFIP premiums.¹⁵¹ In March of 2015, the National Research Council released the first of two reports, entitled *Affordability of National Flood Insurance Program Premiums: Report 1* (Affordability Report), as part of the required study on affordability.¹⁵² The Affordability Report notes the importance of establishing a clear and measurable definition of “affordability.” In order to design a program to provide more targeted assistance to certain NFIP policyholders, the NFIP must be able to identify which policyholders should receive assistance, how assistance is provided, and how much assistance a policyholder should receive. Additionally, the Affordability Report lays out a number of options for delivering assistance to enhance flood insurance affordability. These options include: increasing the availability of mitigation efforts through loans and means-tested grants; promoting higher deductibles; and implementing a voucher program to administer direct payments to cost-burdened policyholders.

The National Research Council is scheduled to release a second report in the fall of 2015 which will propose analytical procedures FEMA may use to conduct an analysis of various policy options. Following the release of the second report, FEMA is required to submit to Congress an affordability framework to “address, via programmatic and regulatory changes, the issues of affordability of flood insurance sold under the [NFIP], including issues identified in the affordability study required [to be completed by the National Academy of Sciences].”¹⁵³

151 The National Academies, *Project Information: Affordability of NFIP Premiums*, available at <https://www8.nationalacademies.org/cp/projectview.aspx?key=49584>.

152 National Academy of Science, *Affordability of National Flood Insurance Program Premiums: Report 1*, available at <http://www.nap.edu/catalog/21709/affordability-of-national-flood-insurance-program-premiums-report-1>.

153 Pub L. No. 113-89 § 9(a), 128 Stat. 1024 (2014).

Box 6: Community Rating System Program

The NFIP's CRS is a program implemented since 1990 by FEMA to recognize, encourage, and incentivize communities that voluntarily participate in floodplain management activities that exceed the minimum requirements under the NFIP to "reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the NFIP, and foster comprehensive floodplain management."¹⁵⁴

Communities that elect to participate in the CRS are placed into a Class, from 9 to 1,¹⁵⁵ based on the points awarded for engaging in any of 19 creditable activities within four categories (public information activities, mapping and regulations, flood damage reduction activities and warning and response).¹⁵⁶ Based on the Class in which a community is placed and the risk classification of property in the community, policyholders within that community are entitled to a discount on flood insurance premiums of up to 45 percent.

As of December 31, 2014, 1,510 communities participated in the CRS.¹⁵⁷ Roseville, California is the only community currently in Class 1, entitling its residents to as much as a 45 percent discount on flood insurance premiums.¹⁵⁸ Three additional communities (Tulsa, Oklahoma; King County, Washington; and Pierce County, Washington) have been rated as Class 2 communities, entitling residents to as much as a 40 percent discount on flood insurance premiums.¹⁵⁹

2. Flood Insurance Market

As of December 31, 2014, the NFIP had 5,268,278 residential and non-residential flood insurance policies in force for a combined exposure of approximately \$1.27 trillion.¹⁶⁰ These policies are spread across the United States, with policies in all 50 states, the District of Columbia and the five U.S. territories. Figure 6 shows the distribution of NFIP policies (and the amount of insurance in-force) by state. While NFIP policies have been written in every state, a significant concentration (approximately 60 percent of total in-force policies) is located in states along the Gulf of Mexico: Alabama, Florida, Louisiana, Mississippi, and Texas.¹⁶¹

154 Federal Emergency Management Agency, *National Flood Insurance Program Community Rating System Coordinator's Manual*, at 9 (2013), available at http://www.fema.gov/media-library-data/1406897194816-fc66ac50a3af94634751342cb35666cd/FIA-15_NFIP-Coordinators-Manual_2014.pdf.

155 Federal Emergency Management Agency, *Community Rating System Fact Sheet*, at 1 (March 2014), available at http://www.fema.gov/media-library-data/1395661546460-d6859e8d080fba06b34a6f1a4d0abdba/NFIP_CRS_March%202014%20508.pdf.

156 Federal Emergency Management Agency, *National Flood Insurance Program Community Rating System Coordinator's Manual*, at 12, available at http://www.fema.gov/media-library-data/1406897194816-fc66ac50a3af94634751342cb35666cd/FIA-15_NFIP-Coordinators-Manual_2014.pdf.

157 Information obtained from Federal Emergency Management Agency and includes communities participating in the program that are not eligible for discounts due to their failure to achieve the points needed to be categorized as class 9 or higher.

158 Federal Emergency Management Agency, *Community Rating System Fact Sheet*, at 1 (March 2014), available at http://www.fema.gov/media-library-data/1395661546460-d6859e8d080fba06b34a6f1a4d0abdba/NFIP_CRS_March%202014%20508.pdf.

159 *Id.*

160 Federal Emergency Management Agency, *Monthly Policy Statistics as of 11/30/2014*, available at <http://bsa.nfipstat.fema.gov/reports/1011.htm>.

161 *Id.*

Figure 6: NFIP Policies and Insurance In-Force in Dollars (as of December 31, 2014)

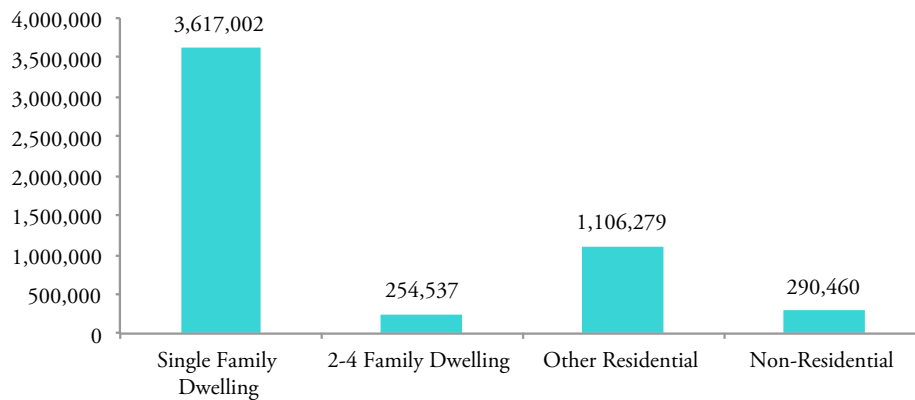
State	Policies In-Force	Insurance In-Force	State	Policies In-Force	Insurance In-Force
Alabama	56,393	12,595,263,100	Montana	6,114	1,203,598,700
Alaska	3,014	752,518,800	N Mariana Islands	7	1,401,000
American Samoa	1	7,700	Nebraska	11,919	2,074,393,900
Arizona	36,289	8,551,207,100	Nevada	13,318	3,340,129,500
Arkansas	19,981	3,202,596,900	New Hampshire	9,039	1,940,481,100
California	234,308	63,502,264,000	New Jersey	237,358	57,663,467,400
Colorado	23,644	5,849,271,700	New Mexico	15,247	2,956,961,700
Connecticut	41,854	10,475,303,000	New York	188,872	50,694,407,200
Delaware	25,035	6,703,573,000	North Carolina	135,511	32,647,826,600
District of Columbia	2,435	464,473,300	North Dakota	12,278	3,160,768,100
Florida	1,947,504	467,726,078,700	Ohio	40,038	6,888,441,800
Georgia	92,745	23,370,401,000	Oklahoma	16,522	3,146,855,200
Guam	236	46,481,400	Oregon	32,021	7,532,764,800
Hawaii	60,656	13,214,888,400	Pennsylvania	69,262	13,509,949,800
Idaho	6,569	1,511,985,300	Puerto Rico	13,609	1,872,737,700
Illinois	47,105	8,910,870,100	Rhode Island	15,496	4,042,557,100
Indiana	27,976	5,081,702,900	South Carolina	190,470	51,522,875,500
Iowa	15,641	2,887,885,400	South Dakota	5,249	1,150,158,100
Kansas	12,100	2,075,760,600	Tennessee	31,276	7,258,687,800
Kentucky	23,484	3,685,898,400	Texas	600,610	157,322,649,200
Louisiana	472,542	113,775,025,600	Utah	4,243	1,026,071,700
Maine	9,178	2,081,430,900	Vermont	4,315	920,090,200
Maryland	72,285	16,372,584,800	Virgin Islands	1,712	321,173,200
Massachusetts	59,151	15,671,731,300	Virginia	112,156	28,040,186,000
Michigan	24,623	4,365,408,500	Washington	42,610	10,173,181,900
Minnesota	11,990	2,632,706,200	West Virginia	19,435	2,634,582,300
Mississippi	70,635	16,220,933,000	Wisconsin	15,383	2,820,381,600
Missouri	24,531	4,312,734,400	Wyoming	2,303	531,674,400
Total Policies In-Force:		5,268,278	Total Insurance In-Force:		\$1,272,439,439,000

Source: FEMA Monthly Policy Statistics as of 12/31/2014

The NFIP offers coverage for single-family residences, multi-family residential properties, and non-residential properties. As shown in Figure 7, approximately 69 percent of all NFIP policies provide coverage for single family residences. Large multi-family properties (more than 4 families) accounted for 21 percent of NFIP policies, with non-residential policies and smaller multifamily properties (2 - 4 families) approximately splitting the remaining 10 percent of NFIP policies.¹⁶²

162 Federal Emergency Management Agency, *National Flood Insurance Program Write Your Own System Report Description as of 11/30/2014*, available at <http://bsa.nfipstat.fema.gov/reports/w2rpcnta.htm>.

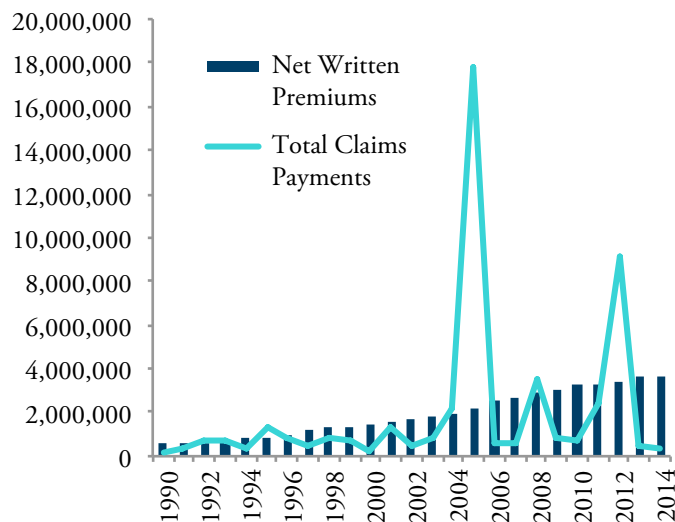
Figure 7: Number of Policies In-Force by Occupancy Type (as of December 31, 2014)



Source: NFIP Write Your Own System Report Description as of 12/31/2014

Nationally, the top five WYO insurers in 2014 were Wright National Flood Insurance Company (20.4 percent), Assurant, Inc. (12.6 percent), Allstate Corporation (10.2 percent), Hartford Financial Services (9.7 percent), and Nationwide Mutual Group (8.2 percent). Figure 8 shows the amount of total written premiums and total payments by the NFIP over the period 1990 to 2014. Total written premiums grew continuously over this period. The years with the largest payments for flood claims correspond to the years with major hurricanes or tropical storms: 2005 (Hurricane Katrina), 2008 (Hurricane Ike), and 2012 (Superstorm Sandy).

Figure 8: NFIP Net Written Premiums (\$000) and Total Claims Payments (\$000)



Source: FEMA

3. Challenges to the NFIP

a. Solvency

Due to the large losses from Hurricane Katrina in 2005, Hurricane Irene in 2011, and Superstorm Sandy in 2012, the NFIP has relied heavily on the authority to borrow from the Treasury, as authorized by the 1968 Act. Prior to 2004, the NFIP's borrowing authority was limited to \$1.5 billion. Following the large losses resulting from the severe weather events since Hurricane Katrina, Congress has increased the NFIP's borrowing authority to ensure that the NFIP is able to pay claims. As of December 31, 2014, the NFIP's borrowing authority was \$30.425 billion.¹⁶³ Based on funds provided by Treasury to the NFIP, as of December 31, 2014, the NFIP owed the Treasury \$23 billion.¹⁶⁴ Congress and the NFIP are exploring ways to maintain affordability and availability of flood insurance.

b. Superstorm Sandy

Following Superstorm Sandy, some NFIP policyholders, in addition to disputing the cost of repairs for flood damage (see Box 3), disputed the denial of coverage for flood claims, the basis of which were engineering reports establishing that perils other than flood were the cause of flood damage.¹⁶⁵ In November 2014, "allegations of altered [engineering] reports prompted a federal judge overseeing more than 1,000 hurricane related lawsuits in the New York City area to order all drafts of the engineering reports be turned over, saying he believed such revisions could be 'wide-spread.'"¹⁶⁶ In response to "allegations of questionable engineering practices," FEMA agreed to assist "policyholders to reach settlement and resolution of flood claims currently in litigation."¹⁶⁷

c. Congressional Action

In order for the NFIP to continue offering flood insurance, Congress needs to periodically reauthorize the 1968 Act. Currently, the NFIP is operating under a 5-year reauthorization that will expire on September 30, 2017.¹⁶⁸ Prior to the passage of the Biggert-Waters Act, the NFIP operated from 2008 to 2012 through a series of short-term extensions.

On multiple occasions, Congress failed to reauthorize the NFIP before one of the short-term extensions expired, causing the NFIP to lapse temporarily.¹⁶⁹ During these lapses in the NFIP, banks, credit unions, and other federally insured lenders were unable to originate or refinance loans for properties located in the SFHA. As a result, each day of a lapse in the NFIP was estimated to either delay or cancel 1,332 home sale closings.¹⁷⁰

4. Private Flood Insurance

While the NFIP is the largest provider of flood insurance in the United States, some private insurers do offer primary and excess insurance coverage for flood-related damage that is separate from the WYO Program. Primary flood insurance coverage provides policy terms similar to the NFIP. Excess flood insurance coverage, typically offered by non-admitted insurers, provides policy coverage above the limits specified in the policyholder's primary flood insurance policy.

¹⁶³ 42 U.S.C. § 4016(a).

¹⁶⁴ Information obtained from U.S. Department of the Treasury Office of Government Financial Policy.

¹⁶⁵ Chen, David, *Hurricane Sandy Victims Say Damage Reports Were Altered*, New York Times (February 16, 2015).

¹⁶⁶ *Id.*

¹⁶⁷ Federal Emergency Management Agency, *Hurricane Sandy NFIP Claims*, available at <https://www.fema.gov/hurricane-sandy-nfip-claims>.

¹⁶⁸ 42 U.S.C. § 4026.

¹⁶⁹ In 2010, the NFIP lapsed three times, for a total of 49 days: (1) on March 1, 2010; (2) from March 29, 2010 to April 14, 2010; and (3) from June 1, 2010 to July 1, 2010. See amendments to 42 U.S.C. § 4026.

¹⁷⁰ Selma Hepp, National Association of Realtors, *Lapses of the National Flood Insurance Program Jeopardize Home Sales*, Economist's Outlook Blog, available at <http://economistsoutlook.blogs.realtor.org/2011/08/08/lapses-of-the-national-flood-insurance-program-jeopardize-home-sales/>.

The indebtedness to Treasury of the NFIP has increased the interest of policymakers in the privatization of the NFIP and increased interest by participants in the private flood insurance market.¹⁷¹ Historically, insurers have been reluctant to enter the private flood insurance market due to the potential for large correlated losses which, in combination, increase the likelihood that losses will exceed premiums in years with major floods. Recently however, insurers have offered to increase the private flood insurance market if the insurers can charge risk-based prices for flood insurance without competition from the NFIP's subsidized rates.¹⁷² While some insurers do believe that the private flood insurance market could expand, most believe that the federal government will need to continue to play a role in making flood insurance available and affordable.

In addition to the interest in expanding the primary private flood insurance market, Congress has also identified private reinsurance as a mechanism to limit the federal taxpayer exposure presented by the risk profile of the NFIP. With the objective of shifting risk away from the federal government and to the private sector, the Biggert-Waters Act authorized the NFIP to "secure reinsurance of coverage provided by the flood insurance program from the private market at rates and on terms determined by the Administrator to be reasonable and appropriate, in an amount sufficient to maintain the ability of the program to pay claims."¹⁷³ FEMA continues to explore this possibility.

171 Public Law 112-141, § 100232(a), 126 Stat. 953 (2012).

172 See generally Government Accountability Office, *Flood Insurance: Strategies for Increasing Private Sector Involvement* (January 2014), available at <http://gao.gov/assets/670/660309.pdf>; Deloitte Center for Financial Services, *The potential for flood insurance privatization in the U.S.: Could carriers keep their heads above water?* (2014), available at <http://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-fsi-the-potential-for-flood-insurance-privatization-in-the-us-040114.pdf>.

173 42 U.S.C. § 4055(a)(2).

VI. EARTHQUAKE INSURANCE

Throughout the United States, earthquake insurance is not “generally required by mortgage lenders as a loan condition, and lenders rarely require earthquake insurance.”¹⁷⁴ While earthquake insurance is generally available, the Utah Insurance Department notes “few [insurers] actively market the coverage.”¹⁷⁵ Relatively few homeowners have purchased earthquake insurance, and the percentage of homeowners with earthquake insurance has been declining since 2012.¹⁷⁶ The low take-up rate may be explained by the cost and the coverage limitations for earthquake insurance, homeowners’ perception of earthquake risk, and, unlike flood insurance, the voluntary nature of this coverage.

A. Overview of Earthquake Insurance

Insurers began offering earthquake insurance with a five percent deductible as an independent product in 1916. Few policies were written, however, which was explained by consumer perception at the time that most earthquake-related damage would be caused by fire.¹⁷⁷ Today, earthquake insurance may be purchased as an endorsement to a property insurance policy (if available) or as a separate policy. In general, earthquake insurance “provides protection from the shaking and cracking that can destroy buildings and personal possessions”¹⁷⁸ caused by a natural earthquake, pays for living expenses if the policyholder cannot live in the home while the home is being repaired, and pays for the cost of removing debris.¹⁷⁹ Earthquake insurance does not cover losses caused by fire or water as a result of burst gas or water pipes resulting from an earthquake, as these losses are covered under other provisions of a typical homeowner insurance policy.¹⁸⁰ Earthquake insurance typically covers losses caused by the earthquake and by any aftershocks that occur within 72 hours of the earthquake.¹⁸¹ Insurers may impose a waiting period of 10 to 30 days before earthquake insurance coverage becomes effective for a new applicant,¹⁸² and insurers typically will institute a short-term moratorium on the sale of new earthquake insurance policies or endorsements in the locality of a recent earthquake.¹⁸³ Except in Pennsylvania, earthquake insurance policies typically exclude damage caused by man-made earthquakes, which may include earthquakes triggered by hydraulic fracturing and waste-water injection wells. In April 2015, then Acting Insurance Commissioner Teresa Miller of the Pennsylvania Insurance Department issued a bulletin directing insurers issuing homeowner insurance policies with earthquake endorsements that exclude coverage for earthquakes triggered by human activity to not enforce the exclusions.¹⁸⁴

174 California State Senate Committee on Insurance Informational Hearing, *Catastrophic Risk in California: Are Homeowners and Communities Prepared?*, at 8 (May 14, 2014), available at <http://sins.senate.ca.gov/sites/sins.senate.ca.gov/files/14.05-14.Background.Catastrophic%20Risks%20in%20California.PDF>.

175 Utah Insurance Department, *Earthquake Insurance in Utah*, available at <https://insurance.utah.gov/auto-home/home/earthquake.php>.

176 Insurance Information Institute, *Earthquakes: Risk and Insurance Loss* (August 2014), available at <http://www.iii.org/issue-update/earthquakes-risk-and-insurance-issues>.

177 Federal Emergency Management Agency, *Earthquake Insurance: A Public Policy Dilemma*, at 2 (1985), available at http://www.fema.gov/media-library-data/20130726-1600-20490-8046/fema_68.pdf.

178 Insurance Information Institute, *Earthquakes: Risk and Insurance Loss*, (August 2014), available at <http://www.iii.org/issue-update/earthquakes-risk-and-insurance-issues>.

179 National Association of Insurance Commissioners, *A Consumer’s Guide to Earthquake Insurance*, at 3 (2011), available at http://www.naic.org/documents/consumer_guide_earthquake.pdf.

180 *Id.*

181 *Id.*

182 Utah Insurance Department, *Earthquake Insurance in Utah*, available at <https://insurance.utah.gov/auto-home/home/earthquake.php>.

183 Oregon Insurance Division, *Earthquake Insurance*, available at <http://www.oregon.gov/DCBS/insurance/gethelp/homeowner/Pages/earthquake.aspx>.

184 Pennsylvania Insurance Department, 45 Pa.B. 1916 (April 11, 2015).

Earthquake insurance typically has a deductible ranging from two percent to 25 percent of the coverage limits,¹⁸⁵ which generally applies to coverage for both the home and for personal property.¹⁸⁶ A deductible does not usually apply to coverage for additional living expenses.¹⁸⁷ In high-risk states, insurers may require a deductible of at least 10 percent.¹⁸⁸ The largest writer of earthquake insurance, the California Earthquake Authority (CEA), has a standard 15 percent deductible.¹⁸⁹

Figure 9 shows the low take-up rate for the voluntary purchase of earthquake insurance in the United States.¹⁹⁰ One study found that homeowners who do not purchase earthquake insurance “perceive the risk to be sufficiently low such that they are not worried about the consequences.”¹⁹¹ After an earthquake, homeowners perceive the risk of an earthquake more acutely, and take-up rates increase. This phenomenon was evident, for example, after the 1971 San Fernando Valley, California earthquake, which stimulated a dramatic increase in the purchase of earthquake insurance.¹⁹²

Figure 9: Percentage of American Homeowners with Earthquake Insurance, 2014

Region	Percentage
Mid-West	7%
Northeast	2%
South	6%
West	10%
All Regions	7%

Source: Insurance Information Institute

Anecdotal evidence suggests that cost, high deductibles, and a low perception of risk account for the low take-up rate for earthquake insurance even in areas with the greatest risk of a catastrophic earthquake event. A 2008 report on earthquake insurance in Missouri, “the third largest market for earthquake insurance coverage in the United States, after the states of California and Washington,”¹⁹³ noted that the annual premium for a \$150,000 home is \$175.50 and the typical deductible ranges from 20 to 25 percent. In California, earthquake insurance premiums range from \$800 to \$5,000 per year and, for a home with the median sale price of \$400,000 and the standard CEA deductible

185 Insurance Information Institute, *Earthquakes: Risk and Insurance Loss*, (August 2014), available at <http://www.iii.org/issue-update/earthquakes-risk-and-insurance-issues>; Washington State Office of the Insurance Commissioner, *Earthquake Insurance*, available at <http://www.insurance.wa.gov/your-insurance/home-insurance/earthquake/>.

186 *Id.* See also National Association of Insurance Commissioners, *A Consumer’s Guide to Earthquake Insurance*, at 5 (2011), available at http://www.naic.org/documents/consumer_guide_earthquake.pdf.

187 Oregon Insurance Division, *Earthquake Insurance*, available at <http://www.oregon.gov/DCBS/insurance/gethelp/homeowner/Pages/earthquake.aspx>.

188 Insurance Information Institute, *Earthquakes: Risk and Insurance Loss*, (August 2014), available at <http://www.iii.org/issue-update/earthquakes-risk-and-insurance-issues>.

189 California Earthquake Authority, *CEA Financial Update to U.S. Treasury Federal Insurance Office*, at 21 (February 2013).

190 Insurance Information Institute, *Earthquakes: Risk and Insurance Loss*, (August 2014), available at <http://www.iii.org/issue-update/earthquakes-risk-and-insurance-issues>.

191 Howard Kunreuther, *Mitigating Disaster Losses through Insurance*, *Journal of Risk and Uncertainty*, 12:171-187, at 176 (1996).

192 *Id.*; Federal Emergency Management Agency, *Earthquake Insurance: A Public Policy Dilemma*, at 3 (May 1985), available at http://www.fema.gov/media-library-data/20130726-1600-20490-8046/fema_68.pdf.

193 Missouri Department of Insurance, Financial Institutions and Professional Registration, *Final Report of the Missouri Earthquake Insurance Task Force*, at 13 (December 19, 2008), available at <https://insurance.mo.gov/Contribute%20Documents/EQReport12-19-08.pdf>.

of 15 percent, the homeowner would be required to bear the first \$60,000 in repairs.¹⁹⁴ For some homeowners, the aforementioned premiums may seem affordable; for others, “the cost of premiums and deductible only seems justified in the worst-case scenario.”¹⁹⁵

Nationally, the 2014 top five writers of earthquake insurance for homeowners and businesses were the CEA (21.7 percent), Zurich Insurance Group (8.3 percent), State Farm Mutual Automobile Insurance (8.2 percent), Travelers Companies, Inc. (4.9 percent), and American International Group (4.8 percent).¹⁹⁶ Figure 10 shows the direct premiums written for earthquake insurance nationally for the period 1997 to 2014.

Of the nine largest writers of homeowner insurance, eight offer earthquake insurance. Of these eight, not all offer earthquake insurance in every state or in all areas of a given state. For example, two of the largest writers of homeowner insurance nationally do not offer earthquake insurance in Missouri; another insurer offers earthquake insurance in Missouri but not in Southeast Missouri; and one of the largest providers of homeowner insurance nationally does not offer earthquake insurance in Washington.¹⁹⁷ In California, six of the nine largest writers of homeowner insurance nationally offer earthquake insurance through the CEA.¹⁹⁸

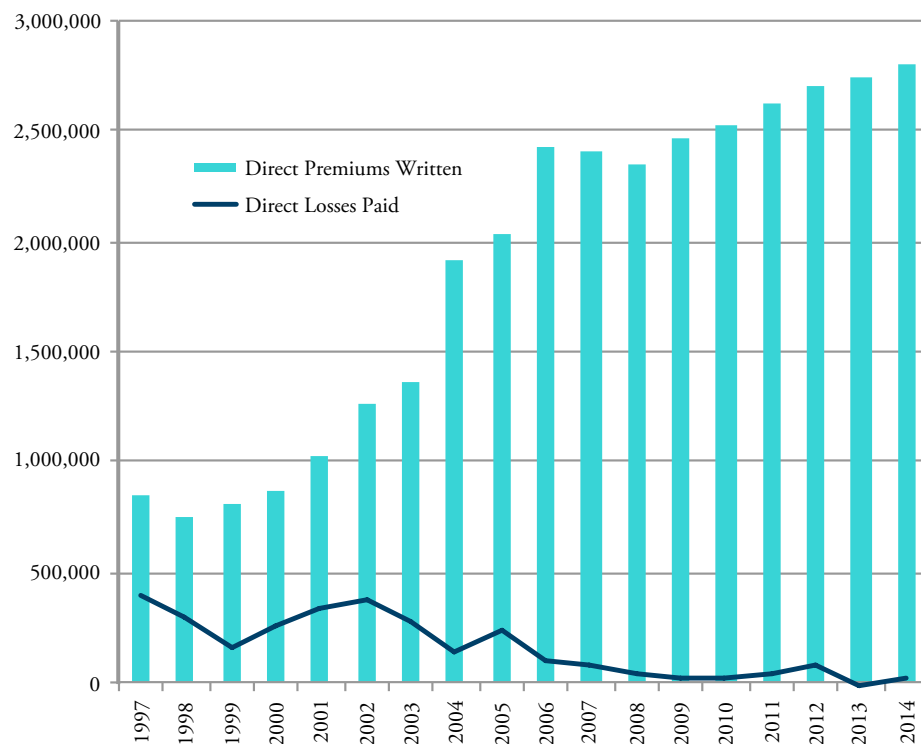
194 Andrew Balnkstein, *Why do so Few California Homeowners have Earthquake Insurance?*, NBC News (October 17, 2014), available at <http://www.nbcnews.com/news/investigations/why-do-so-few-california-homeowners-have-earthquake-insurance-n227711>.

195 *Id.*

196 SNL.

197 Missouri Department of Insurance, *Earthquake Insurance*, available at <http://insurance.mo.gov/consumers/home/EQTable.php>; Washington State Office of the Insurance Commissioner, *Authorized Earthquake Insurance Companies*, available at <http://www.insurance.wa.gov/your-insurance/home-insurance/earthquake/earthquake-insurance-companies/>.

198 California Earthquake Authority, *Participating Insurance Companies*, available at <http://www.earthquakeauthority.com/index.aspx?id=53>.

Figure 10: Earthquake Insurance Direct Premiums Written (\$000) and Direct Losses Paid (In Dollars)

Source: SNL Financial

B. State Approaches to Promote Earthquake Insurance

States most at risk for earthquakes have taken a variety of steps to encourage insurers to offer earthquake insurance. Arkansas and California have enacted legislation designed to ensure the availability of earthquake insurance. Three states—Kentucky, Illinois, and Missouri—have promulgated laws or taken regulatory action to improve awareness of the availability of earthquake insurance. In four states – Illinois, Indiana, Kentucky and Ohio – the FAIR Plan (see Box 4) offers earthquake insurance.

With respect to earthquake insurance, California illustrates the ongoing tension between affordability and accessibility. A California Supreme Court decision in the 1980s that, according to one analyst, “could have opened up homeowners policies to earthquake-caused losses”¹⁹⁹ led insurers to seek legislative relief culminating in the enactment of a law requiring insurers to affirmatively offer earthquake insurance for homes at the time of initial purchase or renewal of a homeowner insurance policy and clarifying that homeowner insurance excludes earthquake damage.²⁰⁰ Between 1985 and 1989, the number of California homeowners with earthquake insurance increased from 7 percent to 20 percent; the increase in the take-up rate for earthquake insurance occurred even though the deductible increased from 5 percent to 10 percent.²⁰¹

The insured losses from the Northridge earthquake far exceeded insurers’ estimation of the impact of a major earthquake: “[i]nsurers anticipated perhaps \$3 billion in claims from an earthquake like that, but wound up paying out

199 Daniel P. Marshall, III, *The Creation of the California Earthquake Authority*, at 3 (November 15, 2002).

200 Section 2 of Chapter 916, Statutes of California, 1984, and Cal. Ins. Code §10081.

201 *Californians Question Cost of Quake Coverage*, Knight-Ridder Financial (November 2, 1989), available at http://www.joc.com/californians-question-cost-quake-coverage_19891102.html.

more than \$15 billion for claims on homes and businesses.”²⁰² Farmers Insurance Group “said it paid out three times as much for Northridge as it had collected in earthquake premiums for 30 years.”²⁰³ In 1994, 20th Century Insurance reported a “shocking \$340 million first-quarter loss brought on by more than 41,000 earthquake claims” and exited the earthquake and homeowner insurance markets.²⁰⁴ Unable to manage risk by limiting the issuance of new earthquake insurance policies or non-renewing earthquake insurance without scaling back homeowner insurance policies, by 1995-1996 “some 93 percent of the homeowners market had severely restricted the sale of new policies or had stopped writing.”²⁰⁵

202 Joseph B. Treaster, *Why Insurers Shrink from Earthquake Risk*, New York Times (November 21, 1999), available at <http://partners.nytimes.com/library/financial/sunday/112199personal-earthquake.html>.

203 *Id.*

204 Thomas Mulligan, *20th Century Insurance to End Quake Policies: The Decision, made after company was hit by \$600 million in claims, affects 240,000 customers*, Los Angeles Times (June 10, 1994).

205 Daniel P. Marshall, III, *The Creation of the California Earthquake Authority*, at 5 (November 15, 2002).

Box 7: State Approaches to Promote Availability of Earthquake Insurance (except California)

Due to the proximity to the New Madrid Seismic Zone, states in the middle of the country have tailored local approaches to earthquake insurance. For example, Arkansas enacted legislation in 1999 designed to ensure the availability of earthquake insurance. The legislation recognized the risk of a major earthquake in Arkansas with a potential for unavailability of residential earthquake insurance that could be addressed through a market assistance program and, if an insurer does not participate in the market assistance program, a publicly-run insurer, the Arkansas Earthquake Authority.²⁰⁶ Insurers writing homeowner, farm owner, and fire and allied lines are required to notify policyholders who do not have residential earthquake insurance of the availability of earthquake insurance through the market assistance program, or, in the event an insurer does not participate in the market assistance program, the Arkansas Earthquake Authority.²⁰⁷ The Arkansas Insurance Department reviews the status of the earthquake insurance market.²⁰⁸ The market assistance program remains operational and thus the Arkansas Earthquake Authority has not been authorized to issue earthquake insurance policies.

The Kentucky Department of Insurance directed homeowner insurers to “have an endorsement for earthquake insurance available if requested” and specified the maximum deductible for three regions: 20 percent for the counties in the far west; 15 percent for counties in the near west; and 10 percent in the eastern counties.²⁰⁹ Moreover, the Kentucky Department of Insurance prohibits the imposition of a moratorium on the issuance of earthquake insurance policies following a minor earthquake, i.e., a seismic event less than 4.0 on the Richter scale.²¹⁰

Both Illinois and Missouri require homeowner insurers to notify applicants regarding the availability of earthquake insurance for residential property located in the New Madrid Seismic Zone.²¹¹

The FAIR Plans in Illinois, Indiana, Kentucky, and Ohio offer earthquake insurance.²¹² Illinois’s FAIR Plan, for example, offers earthquake insurance only upon request as an endorsement to the dwelling property and homeowner policy with a standard 5 percent deductible.²¹³

In order to stabilize the California homeowner insurance market, the legislature enacted a number of measures in 1995. First, it authorized the sale of a “mini-policy” providing coverage limited to the dwelling with not more than a 15 percent deductible, contents coverage of no less than \$5,000, and \$1,500 in additional living expenses.²¹⁴ Second, it authorized the establishment of the CEA – a publicly run, privately financed earthquake insurer discussed in further detail in Section VI.C, below.

206 Arkansas 82nd Regular Session, Act 1343, House Bill 1835 (1999).

207 *Id.*

208 Arkansas Insurance Department, *Bulletin No. 5-2007: Earthquake Coverage Market Analysis Revised Reporting Form* (November 16, 2007), available at <http://insurance.arkansas.gov/legal/Bulletins/5-2007.pdf>.

209 Kentucky Department of Insurance, *Bulletin 98-2: Personal Lines Property Insurance for Earthquake Damage* (March 13, 1998), available at <http://insurance.ky.gov/Documents/bul9802.pdf>.

210 *Id.*

211 215 Ill. Comp. Stat. 5/143.21c.; Mo. Rev. Stat. § 379.975

212 *Id.*; Missouri Department of Insurance, Financial Institutions and Professional Registration, *Final Report of the Missouri Earthquake Insurance Task Force*, at 21 (December 19, 2008).

213 Illinois FAIR Plan, *Consumer FAQs*, available at <https://www.illinoisfairplan.com/about/faq#earthquake>.

214 1995 Regular Session, Chapter 939 (California Assembly Bill No. 1366).

C. California Earthquake Authority

According to California law, the California Department of Insurance regulates the CEA as a private insurer that has the authority to issue policies once the Insurance Commissioner certified the following: that insurers representing 70 percent of the market committed to participate in the CEA; that the CEA had secured reinsurance in an amount equal to at least 200 percent of the capital contributions committed by insurers electing to participate in the CEA; and that the Internal Revenue Service ruled the CEA to be tax-exempt.²¹⁵ Any homeowner insurer electing to participate in the CEA satisfies California's statutory requirement to offer earthquake insurance.²¹⁶ The CEA began writing earthquake insurance for homeowners, renters, and condominium-unit owners in 1996, and today California has a robust homeowner insurance market.²¹⁷

The CEA may only offer earthquake insurance in the state of California.²¹⁸ The CEA is a public instrumentality of the State of California governed by a board consisting of the Governor, the Treasurer, and the Insurance Commissioner; the Speaker of the Assembly and the Chairperson of the Senate Committee on Rules serve as non-voting, ex-officio board members.²¹⁹ The CEA is exempt from federal income tax²²⁰ and the state premium tax,²²¹ and its funds may not be used to meet the general obligations of the state unless the CEA has been terminated.²²² In addition, the CEA's policies are not protected by the California Insurance Guaranty Association, and thus the CEA is not subject to guaranty fund assessment.²²³ CEA's federal tax exemption allows it to hold premiums in a catastrophic insurance reserve, a feature not available to other private insurers.²²⁴

Homeowner insurers may join the CEA by making an initial capital contribution in an amount equal to \$1 billion multiplied by the insurer's market share.²²⁵ Each participating insurer is responsible for selling policies to the participating insurer's homeowner insurance policyholders and adjusting claims after an earthquake and, in return, is paid for agent commissions and administrative expenses by CEA.²²⁶ Participating insurers may be assessed, in the aggregate, up to \$1.78 billion if the CEA needs additional funds to pay claims following a major earthquake.²²⁷ According to the CEA, 21 insurers participated in 2015.²²⁸

215 Official California Legislative Information, *Conference Report Committee Analysis AB 2086 1995*, available at http://www.leginfo.ca.gov/pub/95-96/bill/asm/ab_2051-2100/ab_2086_cfa_960707_214004_sen_floor.html.

216 California Insurance Code §10089.41.

217 California Department of Insurance, *Residential Property Insurance Report*, available at <http://www.insurance.ca.gov/0400-news/0200-studies-reports/0250-homeowners-study/>.

218 Cal. Ins. Code §10089.6.

219 Cal. Ins. Code §§10089.7, 10089.21.

220 California State Senate Committee on Insurance Informational Hearing, *Catastrophic Risk in California: Are Homeowners and Communities Prepared*, at 4 (May 14, 2014), available at <http://sins.senate.ca.gov/sites/sins.senate.ca.gov/files/14.05-14.Background.Catastrophic%20Risks%20in%20California.PDF>.

221 Cal. Ins. Code §10089.44.

222 *Id.*

223 Cal. Ins. Code §10089.34.

224 *Id.*; California State Senate Committee on Insurance Informational Hearing, *Catastrophic Risk in California: Are Homeowners and Communities Prepared*, at 7 (May 14, 2014), available at <http://sins.senate.ca.gov/sites/sins.senate.ca.gov/files/14.05-14.Background.Catastrophic%20Risks%20in%20California.PDF>.

225 Cal. Ins. Code §10089.15.

226 *Id.*; California State Senate Committee on Insurance Informational Hearing, *Catastrophic Risk in California: Are Homeowners and Communities Prepared*, at 4 (May 14, 2014), available at <http://sins.senate.ca.gov/sites/sins.senate.ca.gov/files/14.05-14.Background.Catastrophic%20Risks%20in%20California.PDF>.

227 Cal. Ins. Code §10089.31.

228 California Earthquake Authority, *Participating Insurers*, available at www.earthquakeauthority.com/insurancepolicies/Pages/participatinginsurers.aspx.

The earthquake insurance policies offered by the CEA have a standard 15 percent deductible with policy limits based on the underlying limits of the homeowner insurance policy; for an additional premium, a homeowner may lower the policy deductible to 10 percent.²²⁹ Homeowners may elect to purchase an earthquake insurance policy without coverage for personal property or loss of use.²³⁰ Only residential properties “located within 20 miles of the fault or on poor soil condition” are considered susceptible to losses above a 15 percent deductible threshold.²³¹ Premium rates must be actuarially sound and “established based on the best available scientific information for assessing the risk of earthquake frequency, severity, and loss.”²³² The CEA is required to provide a 5 percent discount for homes that have been retrofitted to withstand earthquake shake damage.²³³

As of December 31, 2013, the CEA had \$9.9 billion in claims-paying capacity.²³⁴ Sources of funds to pay claims include CEA’s available capital derived from participating insurer capital contributions, premiums, and investments; its 2006 Revenue Bond; reinsurance; and post-event assessments on participating insurers.²³⁵ In 2013, the CEA had 841,836 earthquake insurance policies and approximately \$569 billion in written premium, representing approximately 76 percent of all residential earthquake insurance policies in California and 63 percent of all written premium for California residential earthquake insurance.²³⁶

The percentage of California residential property insurance policies with earthquake insurance has declined steadily since 1997, as seen in Figure 11. Between 1997 and 2011, the average premium for earthquake insurance increased. To address the affordability of CEA’s earthquake insurance, legislation was introduced in Congress in 2013 to create a federal guarantee of limited borrowing for the CEA.²³⁷

229 California Earthquake Authority, *Financial Statements*, at 3 (December 31, 2013 and 2012), available at <http://www.earthquakeauthority.com/whoware/financialstrength/SiteAssets/Pages/FinancialStatements/2013%20GASB%20Audited%20Financial%20Statements.pdf>.

230 *Id.* at 5.

231 *Id.*

232 Cal. Ins. Code §10089.40.

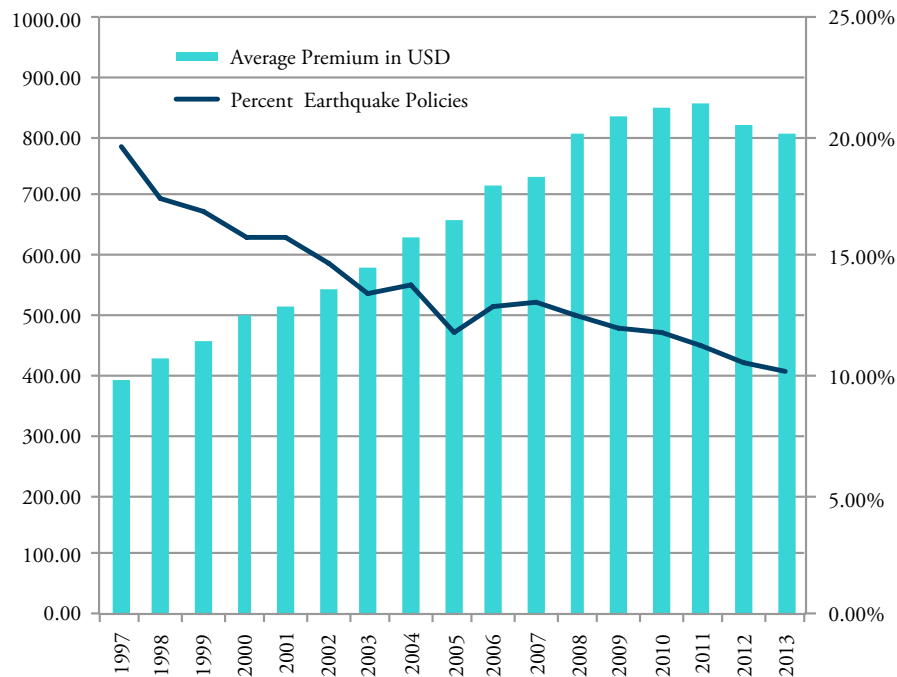
233 *Id.*

234 California Earthquake Authority, *Financial Statements*, at 3 (December 31, 2013 and 2012) available at <http://www.earthquakeauthority.com/whoware/financialstrength/SiteAssets/Pages/FinancialStatements/2013%20GASB%20Audited%20Financial%20Statements.pdf>.

235 California Earthquake Authority, *CEA Financial Update to U.S. Treasury Federal Insurance Office* (February 2013).

236 Calculated based on data in the California Department of Insurance, *Earthquake Premium and Policy Count Data Call: Summary of 2013 Residential and Commercial Market Totals*, available at <http://www.insurance.ca.gov/0400-news/0200-studies-reports/0300-earthquake-study/upload/EQEXP2013.pdf>.

237 United States Congress, *Summary of S.1813—Earthquake Insurance Affordability Act of 2013*, available at <https://www.congress.gov/bill/113th-congress/senate-bill/1813>; Office of Senator Dianne Feinstein, *Feinstein, Boxer Push for Hearing on Earthquake Insurance Affordability Act*, (September 11, 2014), available at <http://www.feinstein.senate.gov/public/index.cfm/press-releases?ID=5b063ec4-043d-40c8-954d-c293825febb7>.

Figure 11: Average Premium Earthquake Insurance Policy in Dollars and Percent Residential Insurance Market with Earthquake Insurance, California 1997-2013

Source: California Residential and Earthquake Insurance Coverage Study

While the CEA has stabilized the California homeowner insurance market and helps to ensure the availability of earthquake insurance, if lenders were to require borrowers to purchase earthquake insurance as a condition for obtaining a loan, as is true for flood insurance, California could face an availability crisis. While not presently a concern, CEA's authorizing statute states that if the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation require earthquake insurance for residential structures as a condition of receiving a loan, the CEA must cease writing new earthquake insurance policies 180 days after the effective date of the requirement²³⁸ "because introducing mandatory residential earthquake insurance in California would exceed the current financial capacity and capabilities of the CEA."²³⁹

D. Reinsurance

Reinsurance helps support the availability and affordability of natural catastrophe insurance in the United States. Without reinsurance, insurers likely would have difficulty offering some lines of insurance in catastrophe-prone areas due to concerns about loss concentration from a single event. While the price of reinsurance may influence primary insurance rates, a dollar-for-dollar relationship between prices for the two sectors does not exist because multiple factors can contribute to insurance and reinsurance rates.

Reinsurance is a commercial agreement whereby one insurer (the reinsurer) indemnifies another insurer (the "cedent") for all or a part of the losses under policies of insurance issued by the cedent. Among other reasons, cedents purchase reinsurance to protect against a large accumulation of losses from natural catastrophes. Typically, cedents purchase reinsurance for natural catastrophes from one or more reinsurers through "per occurrence" excess of loss

²³⁸ California Insurance Code §10089.59.

²³⁹ *Id.*; California State Senate Committee on Insurance Informational Hearing, *Catastrophic Risk in California: Are Homeowners and Communities Prepared*, at 8 (May 14, 2014), available at <http://sins.senate.ca.gov/sites/sins.senate.ca.gov/files/14.05-14.Background.Catastrophic%20Risks%20in%20California.PDF>.

contracts, or contracts by which the reinsurer becomes obligated only after the primary insurer pays losses of an agreed upon amount. Recently, alternative risk transfer solutions have developed that allow cedents to access capital market participants through non-traditional reinsurance mechanisms. The emergence of these new sources of risk-transfer capacity has improved the availability and affordability of property catastrophe reinsurance.

For a more detailed discussion on the reinsurance sector, see FIO's report on the *Breadth and Scope of the Global Reinsurance Market and the Critical Role Such Market Plays in Supporting Insurance in the United States*.²⁴⁰

1. Availability of Reinsurance

Reinsurance is a global industry; many participants operate on a cross-border basis, which serves to diversify geographic exposure to risk. Four large reinsurance groups – Munich Re, Swiss Re, Hannover Re, and the Lloyd's market – account for more than \$70 billion in global gross written annual premium, while the next 46 largest reinsurers combined write \$86 billion.²⁴¹ Global reinsurance capitalization is currently at record levels.

During the 1990s and 2000s, the growth of the Bermuda reinsurance market played a prominent role in supporting the continued availability of reinsurance following major U.S. natural catastrophes. Through the formation of new companies established in successive “waves,” the reinsurance market replenished capital that was depleted due to catastrophes. For example, in 1992 and 1993, following Hurricane Andrew, eight new reinsurers were formed in Bermuda, with approximately \$4 billion in combined capital.²⁴² Another Bermuda growth spurt occurred following the September 11 terrorist attacks, when at least 10 new reinsurers were established, with combined capital of approximately \$8.9 billion.²⁴³ A third wave of Bermuda reinsurers occurred in response to Hurricanes Katrina, Rita, and Wilma in 2005, when investors infused the Bermuda reinsurance market with \$8 billion in equity capital supporting eleven new reinsurers.²⁴⁴ With 15 of the 40 largest reinsurance groups currently domiciled in Bermuda, the island continues to have a leading role in the property catastrophe reinsurance market supporting U.S. insurers.²⁴⁵

In the 2000s, alternative means for cedents to protect against losses from catastrophes increased in popularity. During a time when equity markets and other reinsurers were infusing capital into new unaffiliated and affiliated reinsurance companies, insurers were also looking to alternative reinsurance instruments, such as catastrophe bonds (cat bonds), as an additional avenue for risk capacity and diversification. This trend continues. Recently, managers of hedge funds, pension funds, and other equity funds (collectively referred to herein as “capital markets”) have increasingly looked to the reinsurance market as a means of diversifying portfolios, capitalizing on cyclical trends in reinsurance pricing, and improving investment yield.

Although expansion into other market segments is now occurring, alternative reinsurance solutions have primarily been geared toward property catastrophe risks, which offer a relatively short time horizon to maturity, allowing investors to participate in contracts of a few years or less and evaluate returns soon after contract expiration. Property catastrophe models have evolved in sophistication so that capital markets are able to assess the levels of assumed natural disaster risk with improved reliability.

240 Unless otherwise noted, this section is primarily based on FIO's report, *The Breadth and Scope of the Global Reinsurance Market and the Critical Role Such Market Plays in Supporting Insurance in the United States* (2014), available at <http://www.treasury.gov/initiatives/fio/reports-and-notice/Documents/FIO%20-%20Reinsurance%20Report.pdf>.

241 A.M. Best, Global Reinsurance—Segment Review (September 2014).

242 J. David Cummins, *The Bermuda Insurance Market: An Economic Analysis*, at 6 (May 6, 2008).

243 *Id.* at 8.

244 *Id.*

245 Standard & Poor's Rating Services, *Global Reinsurance Highlights 2014*, at 76 (October 2014), available at https://media.ratings.standardandpoors.com/documents/GRH_2014_Final.pdf. Recently, several consolidations among Bermuda reinsurers have been announced.

The growth in new reinsurers and alternative reinsurance instruments over the past two decades has contributed to greater availability of natural catastrophe reinsurance. For example, whereas the total amount of cat bonds²⁴⁶ issued in 1998 was \$874 million, reinsurance brokerage firm Guy Carpenter & Company estimates a total of \$8 billion in cat bonds issued as of year-end 2014.²⁴⁷ Aon Benfield, another reinsurance brokerage firm, reports that total global reinsurance capital in 2014 reached a new peak of approximately \$575 billion, a figure that includes \$64 billion in alternative capital.

2. Affordability of Reinsurance

In recent years, additional reinsurers, alternative reinsurance solutions, and increased industry capacity have reduced the volatility historically associated with property catastrophe reinsurance pricing. Property catastrophe reinsurance pricing, which may be compared based on the ratio of premium to limit (i.e., “rate-on-line”), varies on a year-over-year basis. Historically, spikes in pricing of property catastrophe reinsurance have been most pronounced in years following significant natural catastrophes. For example, reinsurance pricing increased by approximately 100 percent on a year-over-year basis twice in the United States during the past 14 years, following Hurricane Andrew in 1992, and again following the 2005 hurricane season.

Comparable pricing spikes have not occurred in the U.S. property catastrophe reinsurance market since that time. Indeed, the record level of reinsurance capitalization recently has softened reinsurance prices. Following Superstorm Sandy in 2012, which was the third most costly U.S. natural catastrophe,²⁴⁸ reinsurance renewal prices did not experience a dramatic increase similar to those following the 1992 and 2005 storms. Increases in reinsurance capital, along with other factors, have continued to place downward pressure on reinsurance pricing. As reported in January 2014, the year-over-year U.S. catastrophe reinsurance premiums declined by 15 percent. The trend continued with respect to reinsurance renewals throughout 2014. Guy Carpenter reports that reinsurance prices at January 1, 2015, continued to fall across all geographies and lines of business.²⁴⁹

Despite the current availability and affordability of property catastrophe reinsurance, questions remain about the long-term pricing and capacity of this market. The downward pressures on reinsurance pricing, and other factors, have prompted the major rating agencies to announce negative outlooks for the reinsurance industry. The long-term commitment of alternative capital sources has not yet been tested. Lastly, several recent high-profile consolidations involving prominent reinsurers in early 2015 illustrate continued evolution of the reinsurance market.

246 A cat bond is a structured debt instrument that transfers risk from a sponsor (i.e., an insurer) to investors (i.e., the capital markets) under terms and conditions similar to a reinsurance contract. See, A.M. Best Methodology, *Rating Natural Catastrophe Bonds*, at 1 (August 2012).

247 Guy Carpenter, *Chart: Q1 Cat Bond Issuance Reaches Historic Volume* (June 24, 2015), available at <http://www.gccapitalideas.com/2015/06/24/chart-first-quarter-issuance-reaches-historic-volume/>.

248 Insurance Information Institute, *Hurricane Sandy Fact File* (October 2014), available at <http://www.iii.org/article/hurricane-sandy-fact-file-october-2014>.

249 Press Release, Guy Carpenter & Co., *January 1, 2015 Renewals See Lower Pricing and Broader Coverage for Clients, Reports Guy Carpenter* (January 7, 2015).

VII. MITIGATION

Natural catastrophes impose a toll on people and property. Although insurance serves to transfer a portion of natural catastrophe risk from one party to another party, risk transfer does not, in itself, reduce the overall cost of a natural catastrophe. It is the reduction of risk, or mitigation, which decreases damage and losses. For example, a 2007 study of Florida homeowners after Hurricane Charley discovered that homes meeting wind-resistant construction standards instituted after Hurricane Andrew reported nearly 60 percent fewer insurance claims and 40 percent less damage than homes built before those standards were enacted.²⁵⁰ Similarly, a hail-loss study covering more than 300,000 homes in 115 zip codes found that homes with impact-resistant roofs had 40 percent fewer insurance claims and a 55 percent reduction in losses.²⁵¹ For this reason, both the public sector and the insurance industry view risk mitigation as “the starting point for managing the impact of natural catastrophes,”²⁵² and as a means to lessen the burdens of natural catastrophes on individuals, insurers, and government. Although mitigation cannot eliminate natural catastrophes, it can help make property owners and communities more resilient to damage and less susceptible to losses resulting from natural catastrophes.

Mitigation includes all actions “to reduce loss of life and property by lessening the impact of disasters.”²⁵³ Mitigation begins with identifying and understanding the risks in a given area and then taking individual or community-wide steps, such as elevating or moving buildings prone to flooding or establishing and enforcing building codes, to reduce those risks. Mitigation has the support of federal, state, and local governments because it provides significant economic benefits to society.²⁵⁴ The insurance industry also encourages mitigation measures as a way to benefit both policyholders and insurers. Nevertheless, individuals often fail to take steps to make homes more resilient to natural hazards because of an underestimation of the risk and concerns about related mitigation costs.²⁵⁵

Supporting efforts to improve mitigation and resilience is a priority of President Obama. In 2013, President Obama issued Executive Order 13653, which ordered federal agencies to “promote: (1) engaged and strong partnerships and information sharing at all levels of government; (2) risk-informed decisionmaking and the tools to facilitate it; (3) adaptive learning, in which experiences serve as opportunities to inform and adjust future actions; and (4) preparedness planning.”²⁵⁶ The Executive Order also established a State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience to inform federal efforts on these issues.²⁵⁷ In 2015, President Obama issued Executive

250 Cassandra R. Cole, David A. Macpherson, Kathleen A. McCullough, The Catastrophic Storm Risk Management Center, *A Comparison of Hurricane Loss Models*, at 6 (April 2010).

251 Institute of Building and Home Safety, *Commercial Roofs—The Importance of Roofs to Loss Reduction*, available at https://www.disastersafety.org/commercial_maintenance/commercial-roofs-the-importance-of-roofs-to-loss-reduction/.

252 Sean McGovern, Comment of Lloyd’s, at 2 (June 24, 2013), available at <http://www.regulations.gov/#!documentDetail;D=TREAS-DO-2013-0001-0018>.

253 Federal Emergency Management Agency, What is Mitigation?, available at <http://www.fema.gov/what-mitigation>. See also 44 CFR § 201.2 (defining “hazard mitigation” as “sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards”).

254 Henry Green, Comment of National Institute of Building Sciences, at 2 (June 24, 2013); see also Multihazard Mitigation Council, *NATURAL HAZARD MITIGATION SAVES: An Independent Study to Assess the Future Savings from Mitigation Activities*, National Institute of Building Sciences (2005).

255 Howard Kunreuther, “Disaster Mitigation and Insurance: Learning from Katrina,” *Annals, AAPSS*, 604, at 209 (March 2006), available at <http://opim.wharton.upenn.edu/risk/downloads/06-05-HK.pdf>.

256 Executive Office of the President, Executive Order — Preparing the United States for the Impacts of Climate Change (November 1, 2013), available at <https://www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change>.

257 *Id.*

Order 13690, which established a Federal Flood Risk Management Standard. This standard requires all future federal investments in and affecting floodplains to meet an increased level of resilience.²⁵⁸

A. Benefits of Mitigation

Mitigation results in fewer losses, safer and more resilient communities, fewer public funds spent on disaster recovery, and more affordable insurance.²⁵⁹ Accordingly, mitigation provides significant economic benefits for the nation as a whole. A 2005 study by the National Institute of Building Science's Multihazard Mitigation Council found that "a dollar spent on hazard mitigation provides the nation about \$4 in future benefits."²⁶⁰ These benefits include reduced property damage to buildings and infrastructure, reduced direct and indirect business interruption loss, reduced environmental damage, reduced injuries and loss of life, and reduced costs of emergency response.²⁶¹ From the federal government's perspective, "the Federal Treasury can redirect an average of \$3.65 for each dollar spent on mitigation from disaster relief costs and tax losses avoided."²⁶² The Department of Homeland Security's 2014 National Preparedness Report states that "[n]ationwide, mitigation efforts reduced the cost of natural disasters by an estimated \$3.2 billion in fiscal year 2013, exceeding Federal targets by over 30 percent."²⁶³

For similar reasons, mitigation activities are beneficial to the insurance industry. Actions that increase policyholder resilience to natural hazards "have the potential to reduce the damage that natural catastrophes inflict on people, property, and communities and, in turn, reduce both insured losses and the cost of insurance."²⁶⁴ Some approaches used by insurers to support mitigation are discussed below.

B. Mitigation and Insurance

The insurance industry values mitigation as a means of loss prevention or reduction and as an underwriting indicator of the security or resilience of an insured property. The insurance industry seeks to inform homeowners as to available mitigation measures and, through price signals and financial incentives, to encourage policyholders to invest in these measures. However, the ability of insurers to influence policyholder behavior in this way is limited due to the cost of mitigation measures and the inability of most homeowners to assess effectively the risk of natural catastrophes.

1. Identifying Mitigation Activities

The insurance industry invests significant funds in the Insurance Institute of Business & Home Safety (IBHS), which identifies mitigation measures that strengthen homes and business structures against natural catastrophes such as flood, hail, hurricane, wildfire, and earthquake,²⁶⁵ much as the National Highway Traffic Safety Administration does

258 Executive Office of the President, Executive Order — Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (January 30, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and->.

259 United Nations Environment Programme Finance Initiative, Principles for Sustainable Insurance, *Harnessing the full potential of the insurance industry in disaster risk management* (2015), available at http://www.unepfi.org/fileadmin/documents/insurance_industry_disaster_risk_management.pdf.

260 Henry Green, Comment of National Institute of Building Sciences, at 2 (June 24, 2013); see also Multihazard Mitigation Council, *NATURAL HAZARD MITIGATION SAVES: An Independent Study to Assess the Future Savings from Mitigation Activities*, National Institute of Building Sciences (2005).

261 Multihazard Mitigation Council, *NATURAL HAZARD MITIGATION SAVES: An Independent Study to Assess the Future Savings from Mitigation Activities*, National Institute of Building Sciences, at 2 (2005).

262 Federal Emergency Management Agency, *Mitigation's Value to Society* (2010), available at <http://www.dhses.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>.

263 Department of Homeland Security, *National Preparedness Report*, at 37 (March 30, 2014).

264 Sean McGovern, Comment of Lloyd's, at 2 (June 24, 2013), available at <http://www.regulations.gov/#!documentDetail;D=TREAS-DO-2013-0001-0018>.

265 Insurance Institute for Business & Home Safety, *About IBHS & Disastersafety.org*, available at <https://www.disastersafety.org/about/>.

for automobiles.²⁶⁶ A research facility in South Carolina “allows IBHS to demonstrate the effectiveness, affordability and financial value of stronger building codes and better-built structures; identify effective solutions to building vulnerabilities; strengthen the relationship between theoretical and real building performance; and validate and improve current scientific bases for designing and installing building products and systems.”²⁶⁷ Through its website (www.disastersafety.org), IBHS makes mitigation recommendations available to property owners. Generally, IBHS focuses on affordable options, such as mitigating wildfire risk by clearing combustible materials from buildings,²⁶⁸ or mitigating against high winds by using 8d ring shank nails instead of 6d common nails and staples to provide stronger support for a roof.²⁶⁹ These recommendations are consistent with information provided by FEMA and others.²⁷⁰ Although some mitigation measures, such as clearing brush from the area around a house, are affordable, other measures, such as elevating homes to avoid flood damage, may be cost prohibitive for many homeowners.²⁷¹

2. Incentivizing Mitigation

As noted in Section IV of this Report, an evaluation of natural catastrophes and weather-driven risks is a basic part of the underwriting process for property insurance.²⁷² The assessment of mitigation measures taken by a homeowner is an ordinary function of this underwriting process, one that varies from in-person inspections to high-level modeling. For example, insurers for Colorado homeowners sometimes perform onsite inspections of wildfire risks to identify mitigation steps “to help save [] homes and keep them insurable.”²⁷³ On the other end of the spectrum, mitigation

266 National Highway Traffic Safety Administration, *About NHTSA*, available at <http://www.nhtsa.gov/About> (“NHTSA was established by the Highway Safety Act of 1970 and is dedicated to achieving the highest standards of excellence in motor vehicle and highway safety. It works daily to help prevent crashes and their attendant costs, both human and financial.”).

267 Insurance Institute for Business & Home Safety, *About IBHS & Disastersafety.org*, available at <https://www.disastersafety.org/about/>.

268 “Defensible space is the natural and landscaped area around a home or other structure that has been modified to reduce fire hazard. Defensible space gives your home a fighting chance against an approaching wildfire. Creating defensible space also reduces the chance of a structure fire spreading to the surrounding forest and other homes.” Colorado State Forest Service, *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones*, available at http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf.

269 Insurance Institute of Business & Home Safety, *IBHS Issues Re-Roofing Guidance for Shingle Roofs in Hurricane-Prone Areas*, available at <http://disastersafety.org/ibhs-news-releases/ibhs-issues-re-roofing-guidance-for-shingle-roofs-in-hurricane-prone-areas-3/>.

270 Federal Emergency Management Agency, *Mitigation Ideas* (January 2013); Colorado State Forest Service, *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones*, available at http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf; Earthquake Country Alliance, available at <http://earthquakecountry.org/step1/>.

271 Axis Builders, *Cost to Raise a House in NJ*, available at <http://www.njhouseraising.com/index.php/cost-to-raise-your-home>; LBI House Raising, *Frequently Asked Questions*, available at <http://lbihouseraising.com/faqs/> (“The cost for the average house raising package is approximately \$45k-\$50K.”). See also Elizabeth Harris, *Going Up A Few Feet, and Hoping to Avoid a Storm’s Path*, New York Times (April 14, 2013) (“Government officials and industry professionals estimate it most often costs from \$10,000 to \$100,000, and perhaps even more, to lift a house, depending on its size, weight and how it was built. That range does not include the cost of a new foundation, a new set of stairs or any other expenses that might be encountered down that rabbit hole.”).

272 Elise Farnham, International Risk Management Institute, *The Underwriting Submission—Homeowners Insurance* (March 2009), available at <http://www.irmi.com/expert/articles/2009/farnham03-personal-insurance.aspx> (“When analyzing the location of the premises, the underwriter will evaluate the surrounding environment and placement of the risk. Multiple massive storms in the Midwest have caused underwriters to look beyond the obvious coastal hurricane zones to consider more carefully other weather-driven risks of loss: tornadoes, ice storms, and high winds, to name a few.”).

273 State of Colorado, *Wildfire & Insurance*, available at <http://cdn.colorado.gov/cs/Satellite?blobcol=urldata&blobheadername1=Content-Disposition&blobheadername2=Content-Type&blobheadervalue1=inline%3B+filename%3D%22Wildfires+%26+Insurance.pdf%22&blobheadervalue2=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251815248829&ssbinary=true>.

measures are analyzed in catastrophe modeling,²⁷⁴ which (as explained in Box 1) insurers use to predict the size, frequency, and severity of natural catastrophes and make decisions regarding (i) the concentration of insurance risk and (ii) the pricing of insurance in a geographic area. In these models, the presence of mitigation measures like hurricane shutters and wind-rated roof shingles are used as variables in assessing modeled loss costs.²⁷⁵

Box 8: Government Role in Mitigation²⁷⁶

Both federal and state governments provide financial incentives to encourage mitigation against natural hazards. For example, FEMA offers grants through different programs, including the NFIP and the Stafford Act, to assist individuals in mitigating risks associated with flooding. These grants can be used to elevate existing homes that are below the baseflood elevation, and also can be used to allow local governments to purchase homes that are at the greatest risk of flooding and to preserve open space for natural flood mitigation. In FY 2014, FEMA provided over \$115 million in flood mitigation-related funds, impacting approximately 539 properties and resulting in an estimated \$230 million in reduced claims payments.²⁷⁷ FEMA also provided \$1.6 billion through the Hazard Mitigation Grant Program in fiscal years 2012 and 2013,²⁷⁸ which provides funding “to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.”²⁷⁹ Other funding is available for individuals and state and local governments from the U.S. Department of Housing and Urban Development²⁸⁰ and the Small Business Administration.²⁸¹ The U.S. Government Accountability Office has concluded that “the demand for mitigation funds currently exceeds appropriated amounts.”²⁸²

In addition, the federal government is committed to encouraging risk mitigation for its own programs and structures. On January 30, 2015, in support of the Climate Action Plan, President Obama signed Executive Order 13690, which established the Federal Flood Risk Management Standard – “a flexible framework to increase resilience against flooding and help preserve the natural values of floodplains [by ensuring] that agencies expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.”²⁸³ In 2013, President Obama established the State, Local, and Tribal Leaders

274 Cassandra R. Cole, David A. Macpherson, Kathleen A. McCullough, The Catastrophic Storm Risk Management Center, *A Comparison of Hurricane Loss Models*, at 8 (April 2010).

275 *Id.* at 17.

276 For additional information on federal and state efforts to incentivize mitigation, see Department of Homeland Security, *National Preparedness Report* (March 30, 2014); Center for American Progress, *Disastrous Spending: Federal Disaster-Relief Expenditures Rise Amid More Extreme Weather* (April 2013); Congressional Research Service, *Congressional Primer on Responding to Major Disasters and Emergencies* (April 30, 2014); Mathew Babcock, Columbia Law School Center for Climate Change Law, *State Hazard Mitigation Plans & Climate Change: Rating the States* (November 2013); Ellen Vaughn and Jim Turner, Environmental and Energy Study Institute, *The Value and Impact of Building Codes* (September 30, 2013); and Insurance Institute for Business & Home Safety, *Rating the States: An Assessment of Residential Building Code and Enforcement Systems for Life Safety and Property Protection in Hurricane-Prone Regions* (January 2012).

277 Federal Emergency Management Agency, *National Flood Insurance Program Report to Congress* (2014).

278 Department of Homeland Security, *2014 National Preparedness Report*, at 44 (March 30, 2014), available at http://www.fema.gov/media-library-data/1409688068371-d71247cab52a55de78305a4462d0e1a/2014%20NPR_FINAL_082914_508v11.pdf.

279 Federal Emergency Management Agency, *Hazard Mitigation Grant Program*, available at <https://www.fema.gov/hazard-mitigation-grant-program>.

280 HUD, *Community Development Block Grant Program—CDBG*, available at http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs.

281 Small Business Administration, *Disaster Loan Program*, available at <https://www.sba.gov/content/disaster-loan-program>.

282 General Accountability Office, *Overview of GAO's Past Work on the National Flood Insurance Program*, at 6 (April 9, 2014).

283 Executive Office of the President, *Executive Order 13690: Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* (January 30, 2015).

Task Force on Climate Preparedness and Resilience to inform federal efforts on these issues.²⁸⁴ In addition, the Mitigation Framework Leadership Group, “an interagency and intergovernmental body that facilitates information exchange and coordinates policy implementation,” will continue to coordinate federal, state, local and tribal efforts relating to mitigation.²⁸⁵

To become eligible for federal disaster mitigation funding from FEMA, states must have a State Hazard Mitigation Plan,²⁸⁶ which is designed to limit the costs of hazard events, including natural catastrophes, through state-wide plans that coordinate pre-disaster mitigation activities.²⁸⁷ Local jurisdictions must also maintain hazard mitigation plans to qualify to receive federal disaster mitigation funding from FEMA. States and localities also support mitigation measures through, for example, sustainable land use policies and the passage and enforcement of up-to-date building codes. Such measures result in safer, more resilient communities, and are part of the overall risk picture assessed by insurers during underwriting and rate-setting.

Certain state and local governments also provide financial incentives through grant programs and tax incentives to support mitigation measures. For example, South Carolina established the South Carolina Safe Home Program for homes with an assessed or insured dwelling value of \$300,000 or less to provide up to \$5,000 for roof, exterior doors, and exterior window retrofits to mitigate hurricane losses, with a dollar-for-dollar match requirement that is waived for homes valued at \$150,000 or less that are owned by low-income homeowners.²⁸⁸ South Carolina also offers two types of income tax credits for fortification measures or retrofits increasing structural resistance to hurricane, winds, and floods.²⁸⁹ Other states that provide financial incentives for mitigation measures include Alabama,²⁹⁰ Colorado,²⁹¹ Florida,²⁹² and Louisiana.²⁹³ Certain localities in Alabama also provide incentives through building permit rebates.²⁹⁴ Each of these examples illustrate the recognition by state and local governments that effective mitigation measures can reduce damage to people and property, and decrease the cost of recovery and reconstruction.

284 Executive Office of the President, *Executive Order 13653: Preparing the United States for the Impacts of Climate Change* (November 1, 2013).

285 Department of Homeland Security, *Mitigation Federal Interagency Operational Plan*, at 22-23 (July 2014). The Director of the Federal Insurance Office sits on the Mitigation Framework Leadership Group.

286 42 U.S.C. § 5165, et seq.

287 Mathew Babcock, Columbia Law School Center for Climate Change Law, *State Hazard Mitigation Plans & Climate Change: Rating the States*, (November 2013).

288 South Carolina Department of Insurance, *Omnibus Coastal Property Insurance Reform Act of 2007 Presentation*, at 15 (2013), available at http://www.naic.org/documents/committees_c_catastrophe_2013_south_carolina_presentation.pdf.

289 South Carolina Department of Insurance, *State Income Tax Credits for Fortification Measure*, available at <http://www.doi.sc.gov/593/State-Income-Tax-Credit-for-Fortificatio>.

290 Ala. Code § 40-18-15.5 (2012).

291 Office of Governor John Hickenlooper, *Gov. Hickenlooper announces grants for wildfire mitigation* (August 15, 2013), available at <http://www.colorado.gov/cs/Satellite/GovHickenlooper/CBON/1251645176385>; Colorado Department of Revenue, Taxpayer Service Division, *Income 65: Wildfire Mitigation Measures Subtraction*, (December 2013), available at <http://www.coloradorli.com/wp-content/uploads/2013/11/CO-Dept-of-Rev-FYI-Wildfire-Mitigation-Measures.pdf>.

292 Florida Division of Emergency Management, *Residential Construction Mitigation Program*, available at <http://www.floridadisaster.org/Mitigation/RCMP/index.htm>.

293 Louisiana Department of Insurance, *Residential Property Storm Mitigation Incentives*, available at <http://www.lds.louisiana.gov/docs/default-source/documents/publicaffairs/consumerpublications/storm-mitigation-incentives.pdf?sfvrsn=8>.

294 City of Orange Beach, Alabama, Ordinance No. 2012-1145 (2012), available at http://www.cityoforangebeach.com/pages_2011/pdfs/ordinances/2012/2012-1145_Building_Codes_2012_Adopted.pdf.

The underwriting process results in risk-based homeowner insurance premiums, which “provide signals to individuals as to the hazards they face.”²⁹⁵ High deductibles for properties at risk to natural catastrophes also “provide[] a financial incentive for the policyholder to implement cost effective risk mitigation measures in order to keep losses as low as possible below the full deductible amount.”²⁹⁶ Through these signals (i.e., higher premiums and deductibles), insurers inform homeowners of the cost of risks, including natural catastrophe risk. Homeowners may respond to these signals and reduce insurance-related costs, by engaging in mitigation.

Insurers further encourage mitigation through financial incentives, although these incentives are largely mandated by state law. Alabama, Mississippi, and Louisiana mandate premium discounts for homes meeting IBHS home construction and retrofit standards and programs (known as FORTIFIED standards).²⁹⁷ Similarly, the North Carolina Rate Bureau’s 2010 rate filing included FORTIFIED wind mitigation incentives.²⁹⁸ Other states mandate premium discounts for hurricane mitigation measures that are not specifically tied to FORTIFIED standards, including Florida,²⁹⁹ Maryland,³⁰⁰ New York,³⁰¹ Rhode Island,³⁰² and South Carolina.³⁰³ Residual markets provide similar financial incentives, which can help defray the increased costs of the insurance available through these markets. The Georgia Underwriting Association provides credits for wind coverage if a home was constructed to FORTIFIED standards,³⁰⁴ and the Alabama Insurance Underwriting Association offers premium discounts for property owners who meet FORTIFIED standards or otherwise engage in wind mitigation.³⁰⁵

Communities may also act to reduce insurance costs for homeowners by engaging in community-wide mitigation, such as the passage and enforcement of up-to-date building codes. Community-wide mitigation projects are easier for underwriters to assess and, therefore, such actions can result in “adjusted insurance premiums” on a wide scale.³⁰⁶ For example, ISO, which creates standardized rating programs and insurance forms that are approved by state regulators and may be adopted by insurers, gathers and assesses information on risk mitigation activities such as storm shut-

295 Howard Kunreuther and Erwann Michel-Kerjan, *Managing Catastrophic Risks through Redesigned Insurance: Challenges and Opportunities*, at 17 (July 30, 2012), available at http://opim.wharton.upenn.edu/risk/library/J2013Kunreuther+Michel-Kerjan_Managing-Cat-Risks-through-Redesigned-Insurance.pdf.

296 Lloyd’s, *Managing the Escalating Risks of Natural Catastrophes in the United States*, at 16-17 (2011).

297 Insurance Institute of Business & Home Safety, *Frequently Asked Questions: Fortified Home*, available at <https://www.disastersafety.org/fortified/fortified-home-frequently-asked-questions-2/>.

298 Insurance Institute of Business & Home Safety, *Fortified Home™: Hurricane Financial Incentives*, available at http://www.disastersafety.org/wp-content/uploads/FORTIFIED-Home-Incentives_IBHS.pdf.

299 Florida Office of Insurance Regulation, *Premium Discounts for Hurricane Loss Mitigation*, available at <http://www.florir.com/Sections/PandC/HurricaneLossMitigation.aspx>.

300 Maryland Insurance Administration, *Bulletin 09-08* (April 2009), available at <http://www.mdinsurance.state.md.us/sa/docs/documents/insurer/bulletins/bulletinpc09-08-windstorm.pdf>.

301 *Id.*

302 Insurance Information Institute, *Hurricane and Windstorm Deductibles* (November 2014), available at <http://www.iii.org/issue-update/hurricane-and-windstorm-deductibles>.

303 South Carolina Department of Insurance, *Omnibus Coastal Property Insurance Reform Act of 2007 Presentation*, at 15 (2013), available at http://www.naic.org/documents/committees_c_catastrophe_2013_south_carolina_presentation.pdf.

304 Insurance Institute of Business & Home Safety, *Fortified Home™: Hurricane Financial Incentives*, available at http://www.disastersafety.org/wp-content/uploads/FORTIFIED-Home-Incentives_IBHS.pdf.

305 Alabama Insurance Underwriting Association, *About the Alabama Insurance Underwriting Association*, available at <https://aiua.org/pages/about>.

306 Sean McGovern, Comment of Lloyd’s, at 2 (June 24, 2013), available at <http://www.regulations.gov/#!documentDetail;D=TREAS-DO-2013-0001-0018>.

ters and seismic retrofitting in creating its Building Code Effectiveness Grading Schedule (BCEGS).³⁰⁷ The BCEGS sets classifications that, if adopted by insurers, provide communities with reductions in insurance rates.³⁰⁸

These signals and incentives are intended to “encourage [individuals] to engage in cost-effective mitigation measures to reduce their vulnerability to catastrophes.”³⁰⁹ However, many “residents in hazard-prone areas do not undertake loss prevention measures voluntarily.”³¹⁰ This reluctance has several sources. Although IBHS has noted that “effective mitigation against a variety of natural hazards is both affordable and cost-effective,” others have acknowledged that “incentives in the form of insurance savings cannot fully reimburse all mitigation efforts,”³¹¹ leaving financial burdens on policyholders. The combination of upfront costs associated with mitigation and family budget constraints provides a simple explanation of “why individuals fail to mitigate in the face of transparent risk.”³¹² Further, policyholder concerns about home resale value relative to the cost of mitigation also influence the decision not to invest in mitigation measures.³¹³ In addition, research suggests that homeowners in areas prone to natural catastrophes, particularly natural catastrophes caused by hurricanes or tropical storms and earthquakes, underestimate the probability of a disaster occurring and estimate the potential benefits of mitigation investments only over a short-time horizon of one to two years.³¹⁴

Many believe that private and public sector efforts to encourage and incentivize mitigation should be collaborative to more efficiently encourage homeowners to undertake mitigation measures, resulting in long-term savings for themselves, the insurance industry, and the nation as a whole.³¹⁵ To this end, President Obama’s Climate Action Plan includes a commitment to engagement between the federal government and the insurance industry “to explore best practices for private and public insurers to manage their own processes and investments to account for climate change risks and incentivize policyholders to take steps to reduce their own exposures to these risks.”³¹⁶ Following a roundtable discussion between senior Administration officials and industry executives in June 2014, representatives of the insurance industry released a joint statement expressing support for, among other things, “resilience and prevent property loss mitigation” and the goal of “[s]upporting and utilizing research and targeted incentives (such as

307 Insurance Services Office, *How Do Building Code Effectiveness Classifications Affect Insurance Pricing?*, available at <http://www.isomitigation.com/bcegs/0000/bcegs0004.html#q4>.

308 Insurance Services Office, *What Determines a Municipality’s Code Effectiveness Classification?*, available at <http://www.isomitigation.com/bcegs/0000/bcegs0003.html#q4>.

309 Howard Kunreuther and Erwann Michel-Kerjan, *Managing Catastrophic Risks through Redesigned Insurance: Challenges and Opportunities*, at 17 (July 30, 2012), available at http://opim.wharton.upenn.edu/risk/library/J2013Kunreuther+Michel-Kerjan_Managing-Cat-Risks-through-Redesigned-Insurance.pdf.

310 Howard Kunreuther, *Disaster Mitigation and Insurance: Learning from Katrina*, Annals, AAPSS, 604, at 209 (March 2006), available at <http://opim.wharton.upenn.edu/risk/downloads/06-05-HK.pdf>.

311 Lauren Pachman, Comment of American Academy of Actuaries (June 24, 2013), available at <http://www.regulations.gov/#!documentDetail;D=TREAS-DO-2013-0001-0045>.

312 Howard Kunreuther and Erwann Michel-Kerjan, *Managing Catastrophic Risks through Redesigned Insurance: Challenges and Opportunities*, at 17 (July 30, 2012), available at http://opim.wharton.upenn.edu/risk/library/J2013Kunreuther+Michel-Kerjan_Managing-Cat-Risks-through-Redesigned-Insurance.pdf; see also Sean McGovern, Comment of Lloyd’s, at 2 (June 24, 2013), available at <http://www.regulations.gov/#!documentDetail;D=TREAS-DO-2013-0001-0018> (noting that “individuals may be limited by the large, upfront expense of mitigation”).

313 Howard Kunreuther, *Disaster Mitigation and Insurance: Learning from Katrina*, Annals, AAPSS, 604, at 209 (March 2006), available at <http://opim.wharton.upenn.edu/risk/downloads/06-05-HK.pdf>.

314 Howard Kunreuther and Erwann Michel-Kerjan, *Managing Catastrophic Risks through Redesigned Insurance: Challenges and Opportunities*, at 17 (July 30, 2012), available at http://opim.wharton.upenn.edu/risk/library/J2013Kunreuther+Michel-Kerjan_Managing-Cat-Risks-through-Redesigned-Insurance.pdf.

315 See, e.g., Lloyd’s, *Managing the Escalating Risks of Natural Catastrophes in the United States*, at 8 (2011); Lauren Pachman, Comment of American Academy of Actuaries (June 24, 2013); Alan Manness, Comment of State Farm, at 2 (June 24, 2013); Debra Ballen, Comment of IBHS, at 6 (June 24, 2013); Chris Hackett, Comment of Property Casualty Insurers Association of America (June 24, 2013).

316 Executive Office of the President, *The President’s Climate Action Plan*, at 13-14 (June 2013).

tax credits, loans, or grants) to promote effective loss mitigation, in order to reduce current and future risk to people, property, natural features, ecosystems, and critical infrastructure.³¹⁷ FIO continues to support efforts within the federal government and with a broad group of stakeholders to promote the effective coordination of private and public sector work relating to mitigation.

317 Joint Statement of American Insurance Association, Insurance Institute for Business & Home Safety, National Association of Mutual Insurance Companies, Property Casualty Insurers Association of America, and Reinsurance Association of America (September 23, 2014), *available at* <https://www.disastersafety.org/news/joint-statement-september-23-2014/>.

VIII. CONCLUSION

In light of the complexity of insurance and mitigation in relation to natural catastrophes, this Report provides high-level overview of the issues. Every region of the United States is vulnerable to natural catastrophes. In general, the number of natural catastrophe events per year and the associated economic losses are increasing and, as a result, attention to natural catastrophe insurance programs has increased as well.

Current approaches to providing natural catastrophe insurance protection to different sectors of the population of the United States include homeowner insurance, flood insurance, and earthquake insurance. Without these insurance products, repairs that must be made to a property due to damage from a natural catastrophe must be paid for by the property owner – either alone or, in some cases, with government assistance. Encouraging homeowners to purchase appropriate insurance coverage and maintaining market conditions conducive to private insurance for natural catastrophes enhances the role of private capital in post-event recovery and reconstruction. In addition, by providing funds to help rebuild communities, insurance can reduce the impact of natural catastrophes by increasing participation by private industry in the protection of collateral pledged for mortgage and business loans.

Consumer demand – or lack of demand – for natural catastrophe insurance may be partly explained by perceptions of natural catastrophe risk and partly by mortgage loan requirements. Generally, mortgage lenders require borrowers to maintain hazard insurance which may be satisfied by a standard homeowner insurance policy. Mortgage lenders require certain residential properties to maintain flood insurance, but this does not apply to residential properties located outside the geographic areas at greatest risk for flooding as identified in the latest FIRM. Mortgage lenders do not require earthquake insurance in any state or the District of Columbia.

The availability of insurance for natural catastrophe perils in the United States is related to the costs that natural catastrophes present to insurers and how insurers manage that risk. One way insurers manage natural catastrophe risk is to limit risk exposure through reinsurance. In the past, primary insurers writing homeowner or earthquake insurance have encountered difficulty in the ability to purchase reinsurance for natural catastrophes. Currently, capitalization in the reinsurance market is at record high levels. Reinsurance availability helps insurers write more homeowner insurance and earthquake insurance throughout the United States.

Insurers also manage natural catastrophe risk by increasing premiums and by applying more restrictive underwriting standards, both of which affect the affordability and can limit the availability of new homeowner insurance policies in geographic areas with correlated losses. In response, most states along the Atlantic, Gulf, and West coasts established residual markets for homeowner insurance. Generally, if the premiums charged in the residual market do not cover losses, an assessment may be levied on insurers writing in the state, thereby shifting the financing of some of the insured losses to all policyholders in the state. Florida, Louisiana, and Texas each has adopted depopulation policies to move homeowners out of the state's Wind Pool, and into homeowner insurance offered by private insurers.

Insurers may manage certain natural catastrophe risks by completely avoiding certain areas or risks, thus affecting the availability of insurance in some high-risk areas. For example, most homeowner insurance policies exclude coverage for flood and few insurers offer a flood endorsement or standalone flood policy. The NFIP, established in 1968 to make flood insurance available, historically collected premiums sufficient to cover flood losses. This changed with Hurricane Katrina, however, as the unprecedented flood losses resulting from that storm exceeded all NFIP funds.

The actions of policymakers may affect the availability of insurance in different ways. For example, when California enacted laws requiring insurers writing homeowner insurance to offer earthquake insurance, thereby restricting insurers' ability to manage earthquake exposure, some insurers stopped writing new homeowner insurance policies in that state.

Ultimately, insurance transfers natural catastrophe risk from one party to another, but cannot eliminate or reduce that risk. Homeowners, businesses, insurers, and local, state, and federal governments all have an interest in mitigation to reduce the damage caused by natural catastrophes. Insurers have an important role to play in helping homeowners understand the risk of living in certain geographic areas and how to diminish that risk through specific mitigation activities.

As President Obama has explained: “We’re going to need to get prepared. [We must] protect critical sectors of our economy and prepare the United States for the impacts of climate change that we cannot avoid. States and cities across the country are already taking it upon themselves to get ready... And we’ll partner with communities seeking help to prepare for droughts and floods, reduce the risk of wildfires, protect the dunes and wetlands that pull double duty as green space and as natural storm barriers.”³¹⁸

318 White House Office of the Press Secretary, Fact Sheet: Executive Order on Climate Preparedness (November 1, 2013), *available at* <https://www.whitehouse.gov/the-press-office/2013/11/01/fact-sheet-executive-order-climate-preparedness>.

IX. GLOSSARY

<i>1968 Act</i>	National Flood Insurance Act of 1968
<i>1973 Act</i>	Flood Disaster Protection Act of 1973
<i>ACV</i>	Actual Cash Value
<i>Affordability Report</i>	Affordability of National Flood Insurance Program Premiums: Report 1
<i>Biggert Waters Act</i>	The Biggert-Waters Flood Insurance Reform Act of 2012
<i>Catastrophe Reserve Fund</i>	Texas Catastrophe Reserve Trust Fund
<i>Cat bonds</i>	Catastrophe Bonds
<i>CEA</i>	California Earthquake Authority
<i>CRS</i>	Community Rating System
<i>Dwelling Form</i>	Standard Flood Insurance Policy Dwelling Form
<i>FAIR Plans</i>	Fair Access to Insurance Requirements Plans
<i>FEMA</i>	Federal Emergency Management Agency
<i>FIO</i>	Federal Insurance Office
<i>FIRMs</i>	Flood Insurance Rate Maps
<i>Florida Citizens</i>	Florida Citizens Property Insurance Corporation
<i>Florida Commission</i>	Florida Commission on Hurricane Loss Projection Methodology
<i>FORTIFIED standards</i>	IBHS home construction and retrofit standards and programs
<i>FRN</i>	Treasury Federal Register Notice, April 24, 2013
<i>HFIAA</i>	Homeowner Flood Insurance Affordability Act of 2014
<i>IBHS</i>	Insurance Institute of Business & Home Safety
<i>ISO</i>	Insurance Services Office
<i>Louisiana Citizens</i>	Louisiana Citizens Property Insurance Corporation
<i>LPCIC</i>	Louisiana Property and Casualty Insurance Commission
<i>Munich Re</i>	Munich Reinsurance Company
<i>NFIP</i>	National Flood Insurance Program
<i>PCS</i>	ISO Property Claim Service
<i>The Report</i>	FIO Report on the state of the U.S. market for natural catastrophe insurance
<i>RCV</i>	Replacement Cost Value
<i>SFHA</i>	Special Flood Hazard Areas
<i>Stafford Act</i>	Robert T. Stafford Disaster Relief and Emergency Assistance Act
<i>Treasury</i>	U.S. Department of the Treasury
<i>TWIA</i>	Texas Windstorm Insurance Association
<i>UNISDR</i>	United Nations International Strategy for Disaster Reduction
<i>Wind Pools</i>	Beach Plans or Wind Pools
<i>WYO Program</i>	Write-Your-Own Program

