TABLE OF CONTENTS

I. INTRODUCTION: THERE IS NO NAT CAT SANTA CLAUS, BUT APCIA HAS REAL SOLUTIONS 4

II. SPECIFIC NAT CAT NEEDS/ISSUES AND POTENTIAL APCIA SOLUTIONS 7
• Reduced Loss Exposures
• Low-Income Affordability
• Inadequate Take-Up for Mandated Insurance
• Price Volatility
• Funding for State Insurance Losses
• Depopulated State Funds
• Alternative Risk Transfers
• Increased Consumer Options
• Contract Certainty

III. APPROACHES PROPOSED BY OTHERS 17
• Reduced Loss Exposures
• Low-Income Affordability
• Price Volatility
• Funding for State Insurance Losses
• Depopulated State Funds
• Coverage Gaps
• Increased Competition

IV. EXPLORING THE COASTAL POPULATION AND NATURAL CATASTROPHES 27
1. The U.S. Coastal Population: Facts and Figures
• A Snapshot of Today’s Coastal Population
• The Projected Coastal Population in 2020
• Coastal Housing and Income
• The Value of Coastal Properties

2. Natural Catastrophes: Facts and Figures 30
• Major Natural Catastrophes Impacting the U.S.
• Recent Major Catastrophes in the U.S.
• Earthquakes
• Billion-Dollar Weather/Climate Disasters in the U.S.
• Economic Losses from Natural Catastrophes in the U.S. Continue to Rise
• Hurricane Season Predictions

CONTINUE TABLE OF CONTENTS
TABLE OF CONTENTS continued

V. THE EVOLVING LANDSCAPE OF THE NAT CAT INSURANCE MARKET

1. The Impact of the Changing Coast 35
   • Insured Property Values Continue to Grow
   • Growing Coastal Populations Mean Greater Demand for Insurance
   • Insured Catastrophe Losses Have Increased Sharply

2. How Insurers are Responding to Growing Losses 38

VI. REAL SOLUTIONS FOR AVAILABLE AND AFFORDABLE HOMEOWNERS INSURANCE

1. Solutions for Available and Affordable Insurance 40
   • Recommendations for Loss Mitigation
   • Additional Recommendations to Lower Costs

2. Availability and Affordability of Insurance are Sometimes Reduced by Government Actions 43
   • State Catastrophe Programs

APPENDIX 1. INSURER INNOVATIONS TO MITIGATE RISK OF LOSS

1. Windstorm (Hurricane) Deductibles 47
2. Anti-Concurrent Causation Clauses 48
3. Alternative Risk Transfer Mechanisms 49
   • Suppliers of Capital
   • The Need for Alternative Risk Transfer Mechanisms

APPENDIX 2. CAUGHT IN THE MIDDLE: CONFLICTING PRESSURES IN THE NAT CAT MARKETPLACE 52
TABLE OF CONTENTS continued

APPENDIX 3. FUNDAMENTALS OF HOMEOWNERS INSURANCE
1. The Homeowners Insurance Policy  53
2. The Need for Risk Assessment and Risk-Based Pricing  53
3. The Ratemaking Process  54
   • The Basics of Ratemaking
   • Policy Limits Should Reflect Rebuilding Costs, Not Market Value
   • Advancements in Catastrophe (CAT) Modeling

APPENDIX 4. THE NATIONAL FLOOD INSURANCE PROGRAM
1. Overview  56
2. Concerns About the NFIP  57
3. Unintended Consequences of Biggert Waters Result in Passage of 58
   The Homeowner Flood Insurance Affordability Act

APPENDIX 5. GLOSSARY, ACRONYMS AND ADDITIONAL RESOURCES
1. Glossary  59
2. Acronyms  65
3. Additional Resources  66

APCIA is composed of nearly 1,000 member companies, representing the broadest cross section of insurers of any national trade association. APCIA members write more than $195 billion in annual premium, 35 percent of the nation’s property casualty insurance. Member companies write 42 percent of the U.S. automobile insurance market, 28 percent of the homeowners market, 33 percent of the commercial property and liability market and 35 percent of the private workers compensation market.
INTRODUCTION

THERE IS NO NAT CAT SANTA CLAUS, BUT APCIA HAS REAL SOLUTIONS

The coastal homeowners insurance market continues to evolve rapidly, with new related policy issues emerging. Coverage for natural catastrophes is not only a challenge for insurers, but it is also a challenge for states and the federal government. The APCIA Natural Catastrophe Guidebook provides policymakers with more recent, straightforward information and data about the natural catastrophe market as well as constructive solutions and approaches to improving the nat cat marketplace. The latest information includes an overview of the recent extension of the National Flood Insurance Program (NFIP), state catastrophe programs, the importance of risk assessment and catastrophe modeling in ratemaking, and APCIA’s “Caught in the Middle” initiative intended to increase coverage availability and affordability for consumers.

Although everyone wants widely available and low cost homeowners insurance, there is no “one-size-fits-all” solution that can make natural catastrophe coverage in coastal regions or other disaster prone areas magically “available and affordable.” Risk has a cost, which is why coastal homes are costly to insure. No insurance reform can change that fact. Promises and grand proposals to fix the catastrophe insurance problem typically just attempt to shift risk costs to other insurance consumers or taxpayers.

There is no “Nat Cat Santa Claus” who can bring cheap insurance to all high-risk areas! However, there are some practical and effective solutions that regulators and lawmakers can implement now to minimize the economic and market impact of insuring against potentially severe losses in high-risk areas and to ease burdens on those who can least afford to bear them.

Availability. There is no inherent insurance availability problem. After Hurricane Katrina, the insurance and reinsurance markets raised more than $21 billion in additional capital within six months, and there are now more than 1,800 insurance companies in the U.S. competing for property insurance business. Underwriting capacity is available at a cost to meet the needs of coastal homeowners.

Experience has shown that price controls, limits on capital movement, regulatory inflexibility and burdensome requirements on private insurers undermine the market in catastrophe-prone areas. To attract investors toward allocating capital to insurance in coastal regions, regulators must foster a healthy environment.

Affordability. No political protest or legislative or regulatory initiative can change the laws of economics – the higher the risk, the higher the cost. Affordability is in the eye of the beholder, but it is important to keep it in its proper perspective. While homeowners insurance in coastal areas is more expensive, it is manageable for all but very low-income consumers.

continued
Even in Miami-Dade County, the average annual cost of a homeowners insurance policy ($5,121 for 2013)\(^1\) is considerably less than the average amounts spent by a family on food ($7,176), transportation ($7,284), and health care ($16,440) each year.\(^2\)

Although policymakers are understandably tempted to suppress rates artificially to please constituents, economic theory suggests that rate suppression tends to make less coverage available, reduce the quality of insurer products and produces significant cross-subsidies that mask the true cost of the risk.\(^3\) These consequences hurt everyone.

**Solutions.** To achieve a meaningful consensus on natural catastrophe insurance, policymakers must identify approaches that address real world needs while avoiding politically tempting approaches that deny the laws of economics. For example, because affordability is a particular concern for some lower-income individuals or fixed-income seniors, government subsidies can be more narrowly targeted to provide assistance where it is needed most. Price volatility might be another specific concern, which can be partly tempered through changes in the tax codes. Mitigation can be encouraged through a carrot-and-stick regulatory approach. Private sector competition can be increased by depopulating state funds through tightening requirements and granting regulatory incentives for take-outs. So, while there is no Nat Cat Santa Claus, there are promising private solutions that could be quickly implemented at the present time.

**Guidebook.** The chapters and appendixes are presented as follows:

- Chapter II – Specific nat cat needs and APCIA's proposed targeted solutions by which legislators and regulators can significantly improve the marketplace.
- Chapter III – Other nat cat approaches that have been proposed, many of which have some appealing elements but also some critical flaws.
- Chapter IV – Overview of the state of the coastal population and natural catastrophes impacting the U.S.
- Chapter V – The evolving landscape of the nat cat insurance market, affected by the changing coast, and insurers’ response to decreasing their own risk exposure to ensure sufficient funds are available to pay future claims.
- Chapter VI – Real solutions aimed at loss mitigation to improve insurance availability and affordability for consumers and certain government actions that can exacerbate the problem.

---

1. Florida Office of Insurance Regulation, CHOICES Homeowners Rate Comparison System; the average cost of $5,153 (based on 28 insurers) reflects a masonry home built in 2005, with a current replacement value of $300,000, a $500 non-hurricane deductible, a 2 percent hurricane deductible, no claims in the past three years, and minimum premium discounts for limited wind mitigation features and no hip roof.
3. Harrington, Scott E., University of South Carolina, “Public Policy and Property-Liability Insurance.”
• Appendix 1 – Insurer Innovations to Mitigate the Risk of Loss: tools such as hurricane deductibles, anti-concurrent causation clauses and alternatives to risk transfer mechanisms designed to help insurers better manage their exposure to loss.

• Appendix 2 – Caught in the Middle: the conflicting pressures felt by insurers, catastrophe modelers, rating agencies, reinsurers, regulators, and even consumers that have been brought on by increased natural disasters.

• Appendix 3 – Fundamentals of Homeowners Insurance: an overview of the homeowners insurance policy, the need for risk-based pricing and the basics of ratemaking.

• Appendix 4 – The National Flood Insurance Program: its purpose and framework and the unintended consequences of recent changes to the program.

• Appendix 5 – Glossary, acronyms and additional resources related to the nat cat marketplace.

APCIA hopes you find APCIA Natural Catastrophe Guidebook instructive and useful in decision making and communications. For more information, please visit our Nat Cat website at www.pciaa.net/NatCat or contact APCIA staff at 847-297-7800.
CHAPTER II
SPECIFIC NAT CAT NEEDS/ISSUES AND POTENTIAL APCIA SOLUTIONS

NEED/ISSUE
REDUCED LOSS EXPOSURES
Lowering loss costs from natural disasters reduces the amount of insurance capital required to provide coverage. This is particularly pertinent to FL and other coastal states where exposures are relatively high compared to the amount of capital attracted by the rates insurers are allowed to charge.

POTENTIAL SOLUTION
Mitigation

EXPLANATION
Gets all residences compliant with current building codes.

ANALYSIS
• Reduces the required industry surplus for a 1-500 year event in FL, for example, from 44.4% to 15.1% (according to Wharton).
• The Midwest floods in 2007 and 2008 and the September 2009 Atlanta floods were all 1-500 year floods, according to the U.S. Geological Survey.
• Katrina was a 1-100 year event.

POTENTIAL SOLUTION
Free-market pricing for non-mitigation compliant buildings

EXPLANATION
Homeowners must certify that buildings are compliant with mitigation standards upon sale. Noncompliant buildings would not have rate-regulated insurance.

ANALYSIS
• Creates more pricing freedom for properties that are not mitigation-compliant.
• Creates incentives for mitigation.

POTENTIAL SOLUTION
Federal assistance for state cat programs

EXPLANATION
Federal loans and grants would be given to qualifying state mitigation programs.

ANALYSIS
• Creates incentives for the adoption of risk-based building codes and other loss mitigation initiatives.

continued
POTENTIAL SOLUTION
Condition federal assistance on having insurance (mitigation of federal exposure)

EXPLANATION
Requires the purchase of flood protection and a homeowners policy in order to obtain federal grants or low-interest loans.

ANALYSIS
• Covers a broader segment of population.
• Lowers federal funds following the next event in the same area.
• Ensures that property will be repaired following another loss.

POTENTIAL SOLUTION
Allow federal and/or state tax deductions for costs associated with retrofitting

EXPLANATION
Homeowner or property owners would receive tax deductions for specific costs related to retrofitting existing properties.

ANALYSIS
• Provides incentive for mitigation.
• Reduces exposure to the loss of existing housing stock and pre-building code dwellings.
• Helps to offset costs for property owners.
• This is a similar solution to the Federal program offered to improve home energy efficiency.

POTENTIAL SOLUTION
Eliminate state sales tax on mitigation materials

EXPLANATION
Eliminates state sales tax for a period of time for building materials used to mitigate losses.

ANALYSIS
• Reduces costs for consumers.
• Can be advertised by state/local news media leading to broader knowledge of its availability.
• Increases sales by building supply companies of protective products.
POTENTIAL SOLUTION
Create code-plus standards

EXPLANATION
Creates standards that exceed adopted building codes that may be adopted voluntarily by property owners in exchange for premium credits, reduced deductibles or other incentives.

ANALYSIS
• Encourages stronger building stock and retrofitting.
• Reduces exposure to loss.

POTENTIAL SOLUTION
Provide or enhance public education on mitigation

EXPLANATION
Provides educational materials and outreach on the advantages and cost effectiveness of strengthening homes in hazard-prone areas.

ANALYSIS
• Encourages loss reduction measures based on the overall safety rather than solely on premium reduction (reduces any concerns that the end result does not justify the cost).
• Provides information on inexpensive, yet effective, mitigation steps as well as on more large-scale measures.

POTENTIAL SOLUTION
Create or improve home inspection programs

EXPLANATION
Provides free home inspections for mitigation compliance and retrofitting recommendations in coastal areas.

ANALYSIS
• Encourages loss reduction based on individual properties and could be tied to low-interest or no-interest loans or grants (for low-income homeowners) to address mitigation improvements.
POTENTIAL SOLUTION
Develop and enforce sound land use policies

EXPLANATION
Establishes limitations on unchecked growth in high-risk areas and encourages responsible environmental and risk planning.

ANALYSIS
• Assures that new development in high risk areas is financially sustainable in the event of a large-scale loss.
• Ensures that new development does not create new or exacerbate existing risk of catastrophic loss.
• Reduces potential for additional burden on residual market plans.

NEED/ISSUE
LOW-INCOME AFFORDABILITY
Rather than create broad subsidies, government assistance can be narrowly targeted to low-income families. This avoids cross-subsidies from taxpayers to wealthy homeowners in high-risk areas.

POTENTIAL SOLUTION
Higher deductibles

EXPLANATION
Consumers can keep premiums low and insurers can reduce exposure through higher deductibles. High deductibles can be paired with tax-deferred/exempt savings to help the consumer prepare to pay the deductible in the event of loss.

ANALYSIS
• Lower, more stable premiums.

POTENTIAL SOLUTION
Homeowners catastrophe savings accounts

EXPLANATION
Similar to Health Savings Accounts (HSAs). Allows tax-deferred/exempt savings to cover nat cat deductibles and mitigation expenses.

ANALYSIS
• Encourages purchase of insurance.
• Encourages mitigation.
**POTENTIAL SOLUTION**

**Tax credits**

**EXPLANATION**

Provides tax credits to homeowners to offset cost of premiums.

**ANALYSIS**

- Encourages purchase of insurance.

**NEED/ISSUE**

**INADEQUATE TAKE-UP FOR MANDATED INSURANCE**

Only 12-15% of CA consumers buy earthquake insurance.

FL policyholders represent 40% of all National Flood Insurance Program policies – yet fewer than 25% of FL homeowners buy flood insurance.

**POTENTIAL SOLUTION**

**Government premium subsidies for low-income families**

**EXPLANATION**

State or federal government provides premium subsidies to low-income or even middle-income policyholders.

**ANALYSIS**

- Would increase take-up rates.
- Could reduce disaster recovery costs which the government will inevitably pay when uninsured losses occur.

**NEED/ISSUE**

**PRICE VOLATILITY**

Consumers object to sudden rate spikes (sudden increases may cause more political problems than absolute costs).

**POTENTIAL SOLUTION**

**Coastal Zones**

**EXPLANATION**

Net profits or losses from hurricane exposure after a period of years would be redistributed or surcharged to homeowners.

**ANALYSIS**

- Spreads risk more broadly so there would be potentially lower premiums for policyholders.
- Leads to more stable premiums over time.

*continued*
POTENTIAL SOLUTION
Product choice

EXPLANATION
Allows consumers to buy down certain mandated coverage to reduce overall premiums [e.g., actual cash value (“ACV”), higher deductibles, etc.].

ANALYSIS
• Allows for premium savings by eliminating unneeded coverage options.

NEED/ISSUE
FUNDING FOR STATE INSURANCE LOSSES

POTENTIAL SOLUTION
National Catastrophe Risk Consortium

EXPLANATION
Creates a federal-state risk consortium to jointly purchase and coordinate risk transfer for the states, such as reinsurance, cat bonds, and pooling arrangements.

ANALYSIS
• Facilitates transfer and spreading of risk from state programs into the private markets.
• Centralized data would provide catastrophe information.

POTENTIAL SOLUTION
Tax-deferred reserves that government can borrow

EXPLANATION
Insurers collect a tax-free premium surcharge, with proceeds going into a reserve fund to cover cat losses only. Any remaining reserves are available to loan to the states to assist with their liquidity in funding reinsurance costs [this is modeled on a similar provision in the 2007 House-passed TRIA (Terrorism Risk Insurance Act) bill].

ANALYSIS
• Allows private insurers to be better reserved to cover cat losses.
• Creates a potential source of liquidity assistance for state reinsurance funds.
• Insurers can invest dollars more effectively than the government.
• Prevents the government from raiding reserve funds.
NEED/ISSUE
DEPOPULATED STATE FUNDS
Most state residual markets are underpriced and overexposed, resulting in often rapid growth. States need to reduce their funds’ exposures and attract new private insurance capital to take over the residual market customers.

POTENTIAL SOLUTION
Increase residual market rates

EXPLANATION
Increases in residual market rates to a percentage above privately available insurance would quickly depopulate most funds and reverse private sector displacement.

ANALYSIS
• Increases state program surplus.
• Increases state fund solvency.

POTENTIAL SOLUTION
Tighten residual market eligibility requirements

EXPLANATION
Limits eligibility, particularly for subsidized rates. Assures that the residual market remain non-competitive with the private market.

ANALYSIS
• Increases state program surplus.
• Increases state fund solvency.

POTENTIAL SOLUTION
Temporarily reduce assessment exposure for take-outs

EXPLANATION
Many insurers are reluctant to assume residual market policies in part because of their exposure to assessments. This exposure could be temporarily reduced for a period of time for take-out policies.

ANALYSIS
• Reduces the costs of assuming residual market business.

continued
POTENTIAL SOLUTION
Attract private capital to the state via regulatory incentives

EXPLANATION
Provides temporary rate deregulation / assessment relief for well-capitalized / diversified companies writing additional coastal business, especially for new developments or homeowners.

ANALYSIS
• Helps to scale back residual market overpopulation and reduce its displacement of the private market.
• Reduces taxpayer exposure if a major event causes residual market insolvency.

POTENTIAL SOLUTION
Create take-out incentives

EXPLANATION
Provides surplus matching grants and reduced premium taxes for assuming high-risk policies.

ANALYSIS
• Reduces state residual market populations.
• Provides consumer choice.
• Encourages competition.

POTENTIAL SOLUTION
Enterprise zones

EXPLANATION
Allows open/flex-rating in high risk areas to encourage competition.

ANALYSIS
• Insurers can react to significant events and marketplace.
NEED/ISSUE
ALTERNATIVE RISK TRANSFERS

POTENTIAL SOLUTION
Cat bonds

EXPLANATION
Bonds sold by insurers provide securitization for catastrophe risks. Bondholders are paid a basis point premium over the standard market and risk either some finite amount or all of the investment for a period of time. There is usually a size ($ amount) and type-of-peril (e.g., EQ) trigger.

ANALYSIS
• Provides immediate access to capital at a time when most need it.
• Pre-establishes market terms and conditions.
• Provides a source of capacity when the reinsurance market is limited.

POTENTIAL SOLUTION
Surplus lines/ reinsurance reform

Risk Retention Act

EXPLANATION
Reducing regulatory inefficiencies in the surplus lines and reinsurance markets can alleviate pressure in the admitted primary market. Risk retention groups can provide additional alternatives for the commercial marketplace.

ANALYSIS
• Provides more options for consumers/ businesses.

NEED/ISSUE
INCREASED CONSUMER OPTIONS

POTENTIAL SOLUTION
Underwriting freedom

EXPLANATION
Increases the flexibility to reduce exposures and use risk-based pricing and underwriting. Allows and encourages higher deductibles.

ANALYSIS
• Allowing flexibility in risk selection and use of risk-based pricing helps insurers better manage risks.
• Higher deductibles would significantly increase premium affordability for consumers.

continued
NEED/ISSUE

**CONTRACT CERTAINTY**

**POTENTIAL SOLUTION**

Nationwide acceptance of standard forms

Risk Retention Act

**EXPLANATION**

Full policy terms are known and understood before the policy is bound (e.g., wind vs. water).

**ANALYSIS**

- Reduces the prospect of future litigation.
CHAPTER III
APPROACHES PROPOSED BY OTHERS

NEED/ISSUE
REDUCED LOSS EXPOSURES
Lowering loss costs from natural disasters reduces the amount of insurance capital required to provide coverage. This is particularly pertinent to FL, where exposures are relatively high compared to the amount of capital attracted by the rates insurers are allowed to charge.

POTENTIAL SOLUTION
Mitigation

EXPLANATION
Gets all residences compliant with current building codes.

PRO
• Reduces the required industry surplus for a 1-500 year event in FL, for example, from 44.4% to 15.1% (according to Wharton).

CON
• Mitigation is up-front and expensive.
• Consumers will not do it on their own.
• Retrofitting is even more expensive.

POTENTIAL SOLUTION
Condition mortgage lending on mitigation

EXPLANATION
Mortgage loans to new owners cannot be made without a prior or subsequent certification that the property meets mitigation standards.

PRO
• Forces mitigation compliance as homes turn over.

CON
• Makes non-compliant homes more expensive to sell.
• Insurance industry should not be perceived as proposing requirements on other industries.
POTENTIAL SOLUTION
Reduce property transfer taxes for mitigation expenditures

EXPLANATION
Individuals would receive credits to reduce their property taxes based on their mitigation expenditures.

PRO
• Reduces losses through mitigation.

CON
• Local government cost.
• The need may not be well perceived at the local level.

POTENTIAL SOLUTION
Long-term insurance policies to encourage mitigation

EXPLANATION
Ties long-term insurance discount to meeting mitigation standards.

PRO
• Reduces mitigation costs for consumers over a period of time when tied to premium credits.

CON
• Insurer and consumer may not want long-term liability or relationship.
• Fluctuations in reinsurance pricing may lead to pricing difficulties.

POTENTIAL SOLUTION
Allow access to 401(k) for mitigation costs

EXPLANATION
Provides homeowners with access to their 401(k) funds without interest or penalties.

PRO
• Reduces exposure to loss of existing housing stock and pre-building code dwellings.
• Helps to offset short-term costs for property owners while investing in long-term assets.

CON
• Borrowing without penalty may lead to a long-term financial shortfall.
POTENTIAL SOLUTION
Create or improve home inspection programs

EXPLANATION
Provides free home inspections for mitigation compliance and retrofitting recommendations in coastal areas.

PRO
• Encourages loss reduction based on individual properties and could be tied to low-interest or no-interest loans or grants (for low-income homeowners) to address mitigation improvements.

CON
• Costs to state or industry.
• Standardization of training of inspectors, and those responsible for inspections.
• Possible mandated premium credits.

NEEDS/ISSUES
LOW-INCOME AFFORDABILITY
Rather than create broad subsidies, government assistance can be narrowly targeted to low-income families. This avoids cross-subsidies from taxpayers to wealthy homeowners in high-risk areas.

HOUSE RICH/CASH POOR
(usually seniors)

POTENTIAL SOLUTION
Vouchers

EXPLANATION
Insurance “food stamps” – vouchers for low-income homeowners to buy insurance.

PRO
• Subsidizes premiums only for those in need.
• Encourages more insurance with no insurer costs.

CON
• Significant annual taxpayer costs.
• Expensive administration.

continued
POTENTIAL SOLUTION
Cross-subsidy vouchers

EXPLANATION
Policies in a state would be surcharged to pay for low-income vouchers.

PRO
• Achieves government-desired social engineering in a transparent manner.

CON
• Political opposition by those paying the surcharges.

POTENTIAL SOLUTION
Tax credits

EXPLANATION
Provides tax credits to homeowners to offset the cost of premiums.

PRO
• Encourages purchase of insurance.

CON
• Effectiveness could be limited if the credit is capped too low.

• Cost to state or federal government, particularly if costs are realized as earned income credits rather than deductions.

POTENTIAL SOLUTION
Reverse mortgage credits

EXPLANATION
The government provides an insurance voucher in return for a priority securitized interest in the property when transferred.

PRO
• Enables low-income individuals to use their home equity to pay increased insurance premiums.

CON
• Administration costs for the government.

• May erode homeowner equity.
NEED/ISSUE

PRICE VOLATILITY
Consumers object to sudden rate spikes (sudden increases may cause more political problems than absolute costs).

POTENTIAL SOLUTION
Loss Hedging/Smoothing

EXPLANATION
Requires collection of a surcharge in non-event years used to “smooth out” rates for premiums after events (similar to private use of hedging on commodities prices).

PRO
• Forces increased rates in soft cycles to subsidize premiums in hard cycles.

CON
• Political opposition to initial surcharges.

POTENTIAL SOLUTION
Federal backstop

EXPLANATION
Federal reinsurance of high-level catastrophe risks (with appropriate triggers such as losses above expected amounts for a 1-100 year event).

PRO
• Government does not have to hold capital for high-end risks and can thus reinsure them more cheaply.
• Continues growth/development and insurance of properties.

CON
• Shifts risk to taxpayers.
• Competes with private (re)insurance.
• Subsidizes coastal homeowners.
• Scope of coverage under a backstop gets expanded to gain political support beyond FL.

continued
**POTENTIAL SOLUTION**  
State insurance cat funds

**EXPLANATION**  
Creates “temporary” state insurance companies to smooth hard markets following major events.

**PRO**  
• Pools resources for specific risks; the insurance industry writes the balance of coverage.
• Reduces cost of reinsurance for insurers writing in the state.
• Encourages private insurers to enter the market.

**CON**  
• Premiums politically controlled.
• Taxpayers may be assessed for shortfalls.
• Political pressure to grow state funds.
• Displaces private markets.
• Encourages over-development and insurers writing more business.

**POTENTIAL SOLUTION**  
State reinsurance cat funds

**EXPLANATION**  
State reinsurance would backstop primary companies for mega-catastrophes.

**PRO**  
• Enhances availability of private capital.
• All purchase from same “reinsurer.”
• Lower pricing.
• Some state/citizen responsibility/capacity.

**CON**  
• Assessment cross-subsidies; capacity issues, and/or government control.
• May reduce the global spread of risk.
POTENTIAL SOLUTION
Coastal zones

EXPLANATION
Net profits or losses from hurricane exposure after a period of years would be redistributed or surcharged to homeowners.

PRO
• Spreads risk more broadly and potentially lowers premiums for policyholders.
• Leads to more stable premiums over time.

CON
• Establishment of definitions/geographic areas becomes the focus; some areas could subsidize others.
• Adds federal layer of regulation.

POTENTIAL SOLUTION
Product choice

EXPLANATION
Allows consumers to buy down certain mandated coverage to reduce overall premiums [e.g., actual cash value (“ACV”), higher deductibles, etc.], especially following rate spikes.

PRO
• Allows for premium savings by eliminating unneeded coverage options.

CON
• Potential E&O exposures and litigation where coverage does not fully cover losses.
• Pressure on insurers to offer cafeteria-style policies.

NEED/ISSUE
FUNDING FOR STATE INSURANCE LOSSES

POTENTIAL SOLUTION
Bond guarantees

EXPLANATION
Establishes a federal debt guarantee program for qualifying state programs, thereby making it easier for state programs to obtain post-loss catastrophe loss financing.

PRO
• Federal government (for the moment) has an AAA credit rating and lower cost of capital.
• No up-front costs for the program until guarantee is issued.

continued
CON
• States might default.
• Capital might be temporarily scarce.
• Federal help is backing up deficient state funds.
• Shifts risks to federal taxpayers.
• Only addresses high end exposures.

POTENTIAL SOLUTION
Liquidity loans

EXPLANATION
Establishes a program to provide liquidity and catastrophic loans for qualified state and regional reinsurance programs.

PRO
• Stabilizes the marketplace.
• Funds paid back with interest.
• Liquidity loans to state programs at two pre-established levels. Payback over period of years – cash flow.
• Pre-establishes triggers and funding levels.

CON
• States might default.
• “Loans” will be quickly forgiven.
• Federal help backs up deficient state funds.

POTENTIAL SOLUTION
Use or Loan funds from state’s general revenue or “Rainy Day” account

EXPLANATION
Sets aside or legislates a certain amount of general state funds to be used for reinsurance purchases or to offset premium surcharges.

PRO
• Lowers overall costs for consumers.
• Can be used for other purposes if not needed.

CON
• Funds are not available for other state needs.
• Funds may not be available when needed.
• Negative public backlash if funding is perceived as a bailout of private losses.
NEED/ISSUE
DEPOPULATED STATE FUNDS

POTENTIAL SOLUTION
Enterprise zones

EXPLANATION
Allows open/flex-rating where insurance is deemed “unavailable.”

PRO
• Insurers can react to significant events and marketplace.

CON
• Cross-state zones may require a layer of federal regulation.

NEED/ISSUE
COVERAGE GAPS

POTENTIAL SOLUTION
“All-perils” policy premium included in property taxes

EXPLANATION
Consumer property taxes would include the cost of coverage for an “all-perils” policy. The consumer would then be responsible for an initial large deductible, with a layer of state coverage and a federal reinsurance backstop. States would auction their coverage portion to private insurers.

PRO
• Tax-deductibility of premium (as a tax expense).
• Eliminates the wind vs. water issue.
• Consumer would still have a private insurer.
• State bears the second level of risk.
• Federal government bears the final level of risk.

CON
• Increased property taxes are less affordable.
• Increased tax defaults.
• Insurers cannot underwrite.
• Reinsurance must be purchased from state “qualified” companies.
• High deductible for consumers.
• Federal reinsurance shifts risk to taxpayers, competes with private (re)insurance, and subsidizes homeowners.

continued
**NEED/ISSUE**

**INCREASED COMPETITION**

**POTENTIAL SOLUTION**  
Reduce capital requirements and fees for coastal start-up insurers

**EXPLANATION**  
Provides lower start-up capital requirements or provides matching state funds for startups writing in coastal areas.

**PRO**  
- Creates more competitive options for consumers.

**CON**  
- High risk of insolvency from new insurers with inadequate diversity and surplus.  
- State revenue loss.
CHAPTER IV
EXPLORING THE COASTAL POPULATION
AND NATURAL CATASTROPHES

1. THE U.S. COASTAL POPULATION: FACTS AND FIGURES

A Snapshot of Today’s Coastal Population

- According to 2010 Census data, 123.3 million people – nearly 40 percent of the U.S. population – live in counties directly on the shoreline; these Coastal Shoreline Counties that bear the most direct effects of coastal hazards make up less than 10 percent of the total U.S. land area (excluding Alaska).4

- Coastal areas are restricted by the limited amount of land, which results in increasing population density. Of the 25 most densely populated U.S. counties, 23 are along a coast.
  The average population density of the Coastal Shoreline Counties (excluding Alaska) is 446 persons per square mile – more than six times greater than the density of corresponding inland counties. The national average density (excluding Alaska) is 105 persons per square mile.5

- Florida has the second largest aggregate population living by the water in 2010. At 14.5 million, the inhabitants along this state’s coastline account for 77 percent of its entire population. Florida has seen the largest percentage increase in residents along the coast, climbing 165 percent since 1970. In terms of the incremental growth along the water, Florida’s increase is more than 9 million, second only to California’s increase of 9.8 million people.6

<table>
<thead>
<tr>
<th>Top 10 States with Coastal Shoreline Counties (CSC) 1970 to 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE</td>
</tr>
<tr>
<td>Florida</td>
</tr>
<tr>
<td>Alaska</td>
</tr>
<tr>
<td>Texas</td>
</tr>
<tr>
<td>New Hampshire</td>
</tr>
<tr>
<td>Washington</td>
</tr>
<tr>
<td>Virginia</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>Georgia</td>
</tr>
<tr>
<td>Hawaii</td>
</tr>
<tr>
<td>California</td>
</tr>
</tbody>
</table>

Since 1970, the Gulf Coast Regional population has grown by 11 million people or 109 percent, and the Southeast Coastal Regional population has grown by about 8.8 million or 128 percent.7

The Mid-Atlantic and New England coastal states cannot be ignored either, especially in light of periodic nor’easters and Hurricane Irene and Superstorm Sandy (2011 and 2012, respectively). From 1970 to 2010, the number of inhabitants in the aggregated Coastal Shoreline Counties of these two regions combined rose 18.1 percent.8

Over the last 40 years, the number of people living by the shores of Alaska, California, Hawaii, Oregon and Washington has grown 25 percentage points more rapidly than that of the opposite coast (67.8% – Pacific Coast vs. 42.2% – Gulf/Atlantic Coast).9

The Projected Coastal Population in 202010

From 2010 to 2020, the population of U.S. Coastal Shoreline Counties is expected to increase by an additional 10 million people, or 8 percent. In terms of population density, these coastal counties are projected to have 37 persons per square mile – compared to 11 persons per square mile in the entire country – by 2020.

The counties in the Gulf Coast and Southeast Regions with the largest projected growth from 2010 to 2020 are: St. Bernard Parish LA (79%); Walton FL (44%); Fort Bend TX (43%); Santa Rosa FL (41%); and Wakulla FL (38%).

In contrast to the 15.4 percent population growth projected in the Gulf Coast and Southeast Regions, respective growth rates of 6.3 percent and 9.4 percent are expected in the Mid-Atlantic and New England regions combined and the Pacific Coast (from 2010 to 2020).

South Carolina is projected to have the largest percent increase in its Coastal Shoreline County population from 2010 to 2020. Of the 10 states with the fastest projected coastal population change, six are located in the Mid-Atlantic or Gulf Coast region: South Carolina (23%); Georgia (19%); Virginia (18%); Florida and Texas (16% each); and Alabama (11%). The remaining four states are: Hawaii (16%); Washington (15%); Alaska and New Hampshire (13% each).

---

7 NOAA and Gulf of Mexico Alliance, The Gulf of Mexico at a Glance: A Second Glance, June 2011, and NOAA, The Southeast Coastal Region. The Gulf Coast Region comprises 141 coastal watershed counties in AL, FL, LA, MS and TX, and the Southeast Coastal Region comprises 103 coastal watershed counties in NC, SC and GA, and along FL’s Atlantic Coast.
9 Ibid.
10 Ibid.
Coastal Housing and Income

- In 2010, there were 49.4 million housing units in Coastal Shoreline Counties, or 39 percent of the U.S. total housing supply. Since 2000, the number of total housing units in coastal counties has increased 8 percent.\(^\text{11}\)

- Seasonal homes located in Coastal Shoreline Counties made up 42 percent of all seasonal homes in the U.S. in 2010. Florida leads the nation in terms of total seasonal housing units in Coastal Shoreline Counties, followed by Michigan, New York, New Jersey and California.\(^\text{12}\)

- Between 2000 and 2010, there were 1,355 building permits issued per day in Coastal Shoreline Counties. As of Dec. 31, 2013, approximately 232,800 building permits were issued for new single- and multi-family home construction in the Gulf Coast Region, making up 28 percent of the nation's coastal county building permits.\(^\text{13}\)

- Most high-income households live in high-population counties, especially along the coasts. Nearly half (47%) of the U.S. households making over $100,000 a year live in Coastal Shoreline Counties – eight percentage points higher than the share of comparable households (39%) throughout the entire country.\(^\text{14}\)

The Value of Coastal Properties\(^\text{15}\)

- Today's total insured value of coastal residential and commercial properties in the U.S. is $10.64 trillion, about 20 percent greater than the 2007 value. New York has now taken over the number one spot, surpassing Florida. The five states with the highest estimated insured coastal property values in 2012 are New York ($2.92 trillion), Florida ($2.86 trillion), Texas ($1.18 trillion), Massachusetts ($849.6 billion) and New Jersey ($713.9 billion).

- In 2012, the five states with the highest proportion of estimated insured coastal property value (compared to insured property values statewide) are Florida (79%), Connecticut (65%), New York (62%), Maine (58%), and Massachusetts (54%). These percentages are either the same or very similar to what they were five years ago.

\(^{11}\) Ibid.
\(^{12}\) Ibid.
\(^{15}\) AIR Worldwide, *The Coastline at Risk: 2013 Update to the Estimated Insured Value of U.S. Coastal Properties*; AIR's total insured value is the estimated cost to replace structures and contents, including additional living expenses and business interruption coverage, for residential and commercial properties in a state that is insured or can be insured.
2. NATURAL CATASTROPHES: FACTS AND FIGURES

By definition, a natural catastrophe or disaster is a force of nature that affects the environment and results in financial, environmental and/or human losses. Examples of natural catastrophes include but are not limited to hurricanes, tornadoes, flooding, wildfires, earthquakes, volcanic eruption, and landslides. On a worldwide basis during 2011-2012, there were 800 natural catastrophic loss events per year, totaling an average annual (insured and uninsured) loss of $165 billion.\(^\text{16}\)

Major Natural Catastrophes Impacting the U.S.

Costing roughly $150 billion (2013 dollars), Hurricane Katrina is the most expensive natural disaster in U.S. history. The 10 most costly natural disasters between 1980 and 2012 impacted most regions of the country, causing more than $495 billion in damage and 19,990 deaths. Six of these events are wind driven, while two involve drought/heat wave and one involves flooding.\(^\text{17}\)

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DATE</th>
<th>UNINSURED, 2013 DOLLARS</th>
<th>FATALITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HURRICANE KATRINA</td>
<td>Aug. 25-30, 2005</td>
<td>$148.8 billion</td>
<td>1,833</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>Summer 1988</td>
<td>$78.8 billion</td>
<td>7,500</td>
</tr>
<tr>
<td>SUPERSTORM SANDY</td>
<td>Oct. 30-31, 2012</td>
<td>$65.7 billion</td>
<td>159</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>June - Sept. 1980</td>
<td>$56.4 billion</td>
<td>10,000</td>
</tr>
<tr>
<td>HURRICANE ANDREW</td>
<td>Aug. 23-27, 1992</td>
<td>$48.8 billion</td>
<td>61</td>
</tr>
<tr>
<td>MIDWEST FLOODING</td>
<td>Summer 1993</td>
<td>$33.8 billion</td>
<td>48</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>Yearlong 2012</td>
<td>$30.3 billion</td>
<td>123</td>
</tr>
<tr>
<td>HURRICANE IKE</td>
<td>Sept. 12-14, 2008</td>
<td>$29.2 billion</td>
<td>112</td>
</tr>
<tr>
<td>HURRICANE RITA</td>
<td>Sept. 20-24, 2005</td>
<td>$19 billion</td>
<td>119</td>
</tr>
<tr>
<td>HURRICANE WILMA</td>
<td>Oct. 24, 2005</td>
<td>$19 billion</td>
<td>35</td>
</tr>
</tbody>
</table>

Recent Major Catastrophes in the U.S.

- 2012 ranks as the second costliest year for natural disasters since 1980. Superstorm Sandy - the year’s most significant event [$65.7 billion (2013 dollars)] - created extensive damage to critical water and power services primarily across Mid-Atlantic and New England states (MD, DE, CT, MA, RI, and especially NJ and NY). Other states (NC, VA, WV, OH, PA, and NH) were affected as well. The New York Stock Exchange was closed for two consecutive business days and 159 people died (72 direct and 87 indirect).\(^\text{18}\)

---

17 NOAA National Climatic Data Center, “Billion-Dollar Weather Climate/Disasters.”
18 Ibid.
• The U.S. tornado season in 2011 is the deadliest since 1953, with a whopping 1,625 confirmed tornadoes (the 1991-2010 annual average is 1,253). During April 25-27, 2011, the eastern third of the country was ravaged by a series of destructive tornadic activity, most notably in the central and northern Alabama regions. In total, 321 people died and property damage was $10.5 billion (2013 dollars).\(^\text{19}\)

• During the week of Sept. 9, 2013, Colorado experienced a record precipitation of 4”-6” that fell in less than 12 hours, causing unprecedented flooding across 2,000 square miles around the foothills of the Rockies. Roughly 26,000 households and 1,000 businesses were impacted; 1,880 homes were destroyed and thousands more were damaged. Much of the state’s infrastructure (over 200 miles of highways and roads and railroad tracks, dams and bridges) was also damaged. The statewide property damage is estimated to be about $2 billion.\(^\text{20}\)

• The 2012 drought in the U.S. is among the most historic, worst dry spells on record; over 60 percent of the continental U.S. suffered moderate to exceptional dryness, driven by extreme heat (the year’s average temperature was 3.2 degrees F. above the norm). This combined drought/heat wave cost more than $30 billion and is responsible for 123 deaths.\(^\text{21}\)

• Wildfires have become more prominent over time. Seven of the 10 most costly U.S. wildfires have been in California. In 2007, the Witch Creek Complex Fire (by San Diego) resulted in an economic loss of $1.7 billion. The Bastrop County Complex Fire (2011) – the most destructive in Texas history – cost $620 million, and the Waldo Canyon Fire in Colorado Springs, Colorado (2012) that destroyed nearly 350 homes cost $510 million (all dollar amounts are adjusted to 2013).\(^\text{22}\)

### Earthquakes\(^\text{23}\)

Several million earthquakes occur in the world each year; many go undetected because they hit remote areas or are not intense. More than 75 million people across the U.S. live in earthquake-prone regions. Although there have not been any recent major earthquakes in this country, the United States Geological Survey (USGS) estimates a seven to 10 percent chance of a magnitude 7.5-8 quake occurring in the next 50 years.

• Approximately 5,000 quakes can be felt each year in the U.S. Since 1900, earthquakes have occurred in 39 states and have caused damage in all 50 states. The last major quake in the U.S., with a 7.8 magnitude, took place in 2003 in Rat Islands, Alaska. The largest one was on March 28, 1964, when a 9.2 magnitude quake struck Prince William Sound, Alaska.

• Two of the more recent, better known major earthquakes within the 48 states are California’s Northridge Earthquake (1994) and Loma Prieta Earthquake (1989), with respective magnitudes of 6.7 and 7.1 and estimated losses (insured and uninsured) of $39.4 billion and $10.9 billion (2013 dollars). (For an overview of the California Earthquake Authority, see Section VI.2).  

---

19. NOAA National Climatic Data Center, “Billion-Dollar Weather Climate/Disasters” and “Tornadoes.”
23. California Earthquake Authority, U.S. Geological Survey, Insurance Information Institute, Accuweather, Office of the City Administrator of San Francisco, and NOAA.
• Although California has 2,000 known faults and produces an average of 102 earthquakes a day, the nation’s two most powerful seismic zones are located outside the state – the New Madrid Zone in the Central Mississippi River Valley and the Cascadia Subduction Zone, a 600 mile-long region primarily off the Pacific Northwest Coast. The Federal Emergency Management Agency (FEMA) predicts that a major New Madrid quake could displace 7.2 million people and destroy at least 15 major bridges and other infrastructure. A Cascadia Subduction quake could be as large as magnitude 9 and generate a tsunami up to 100 feet high.

Billion-Dollar Catastrophes in the U.S.²⁴

From 1980 to 2013, there have been a total of 153 billion-dollar natural catastrophes in the U.S., costing an estimated $1.1 trillion. These events are getting more pronounced over time; the number of disasters to reach the billion-dollar mark within one year spiked to 14 in 2011, totaling $61.5 billion. In 2012, there were 11 such occurrences, totaling $115.6 billion. (All dollar amounts are adjusted to 2013.)

Over the last three decades (1980-2012), more than a third (34.2%) of these catastrophes have been severe local storms; other frequent billion-dollar events have been tropical cyclones (22.6%), drought/heat waves (11.6%) and non-tropical floods (11.0%). In terms of losses (2013 dollars), tropical cyclones created almost half of the total property damage in the U.S. (46.5%). The remaining loss distribution is as follows: drought/heat waves (23.0%); severe local storms (10.6%); non-tropical floods (8.2%); earthquakes (4.7%); winter storms (2.8%); wildfires (2.2%); and freezes (2.0%).

Billion-Dollar Natural Catastrophe Event in the U.S. 1980-2012

Source: APCIA, based on data from NOAA, Accuweather and San Francisco City Administrator

²⁴ APCIA, based on data from NOAA National Climatic Data Center, “Billion-Dollar Weather Climate/Disasters” and “U.S. Billion-dollar Weather and Climate Disasters: Data Sources, Trends, Accuracy and Biases.” and Office of the City Administrator of San Francisco; 2013 NOAA losses will be released in mid-2014 and are not reflected in the charts.
Economic Losses from Natural Catastrophes in the U.S. Continue to Rise

Decades ago, the risk of loss from natural catastrophes was relatively remote and manageable. However, the more frequent occurrence of severe local storms and tropical cyclones, and their intensity, have elevated this risk.

Based on historical data beginning in 1968, an average hurricane season has 11.8 storms; six of these storms become hurricanes and two become major hurricanes (Category 3 or greater). The most recent active hurricane season was 2005, with 28 named storms, including Hurricane Katrina. Other very active years were 1995, 2010, 2011, and 2012, each with a total of 19 named storms in the Atlantic Basin.25

Economic losses created by hurricanes have soared over time. During the 1950s through the 1980s, average annual total losses were estimated at $1.5 billion per year; in the early 1990s, this amount grew eight-fold to $11.7 billion. From 2002 to 2006, economic losses skyrocketed to an average of about $41.4 billion per year, due primarily to Hurricanes Katrina, Rita and Wilma (a combined total of $186.8 billion, all in 2005) (all amounts are 2013 dollars).

Hurricane-related losses for the latest period, 2008-2012, have now reached about $74.0 billion a year. Occurring during this timeframe were three powerful storms: Hurricane Ike, the most destructive in 2008 ($29.2 billion), Hurricane Irene in 2011 ($10.1 billion) and Superstorm Sandy 2012 ($65.7 billion). Thankfully, no billion-dollar hurricanes took place in 2013.26

Average Annual U.S. Economic Hurricane-Related Losses (in 2013 dollars)

($ Billions)

Source: APCIA, based on data from National Science Board and Aon Benfield

continued

25 NOAA Hurricane Research Division.
Hurricane Season Predictions

It is not surprising that scientists make different forecasts pertaining to hurricanes. For the 2014 season (June 1 to Nov. 30), Global Weather Oscillations, Inc. predicts 2014 will be stronger and more dangerous than last year, with 17 named storms, 8 hurricanes and 3 major hurricanes. British-based TSR’s (Tropical Storm Risk) extended range forecast for Atlantic hurricane activity anticipates near-normal activity.

The National Oceanic and Atmospheric Administration (NOAA) does not make an official seasonal hurricane landfall outlook, but states: “the historical likelihood for multiple U.S. hurricane strikes, and for multiple hurricane strikes...increases sharply for very active (or hyperactive) seasons... However, regardless of the activity predicted..., it only takes one storm hitting an area to cause a disaster. Therefore, residents, businesses, and government agencies of coastal and near-coastal regions are urged to prepare every hurricane season regardless of this, or any other, seasonal outlook.

Predicting where and when hurricanes will strike is related to daily weather patterns, which are not reliably predictable weeks or months in advance. Therefore, it is currently not possible to accurately predict the number or intensity of landfalling hurricanes at these extended ranges, or whether a particular locality will be impacted by a hurricane this season.”

CHAPTER V
THE EVOLVING LANDSCAPE OF THE NAT CAT MARKET

1. THE IMPACT OF THE CHANGING COAST

Insured Property Values Continue to Grow

Despite the recent weakening of the real estate market in many areas, the total insured value of housing in disaster-prone states has continued to grow due to a rebound in new home construction activity and higher construction costs that affect property values. As indicated earlier, NOAA reports an increase of 8 percent in the number of housing units in the Coastal Shoreline Counties since 2000. Over one year (from Feb. 2013 to Feb. 2014), U.S. construction costs and labor rose by 2.4 percent and 2.8 percent, respectively.\(^{28}\)

It bears repeating that the estimated 2012 insured value of residential and commercial properties in coastal counties is approaching $11 trillion; New York and Florida lead the states in coastal values of about $3 trillion each. AIR Worldwide indicates that, overall, 38 percent of the total exposure in Gulf and East Coast states (Maine to Texas) is located in coastal counties, which accounts for nearly 16 percent of the total value of properties in the U.S. The increase in the number and value of exposed properties along the Southeast coast remains the largest factor impacting the hurricane risk of property insurers today.\(^{29}\)

Growing Coastal Populations Mean Greater Demand for Insurance

According to NOAA, if current population trends continue, some 11 million more Americans will be at risk from extreme coastal storms by 2020. Section IV.1 highlighted the significant growth in people moving to Coastal Shoreline Counties. Even those who left the New Orleans area after Hurricane Katrina (2005) are returning; from April 1, 2010 to July 1, 2011, St. Bernard and Orleans Counties were among the nation’s top 10 counties in terms of population growth. New Orleans has now returned to about 80 percent of its pre-storm population. Another area that has rebounded after a hurricane is Homestead, Florida – prior to Andrew (1992), it had 29,431 inhabitants; 20 years later, this number has more than doubled to about 63,190.\(^{30}\)

continued

\(^{28}\) Engineering-News Record, “Construction Cost Index and Building Cost Index;” the changes reflect the average of 20 different cities.


As more people are relocating to the waterfront, the demand for insurance along the coast is growing. From 2006 to 2011, the number of insured housing units from the Carolinas to Texas have increased 13.1 percent – slightly more than the 10.9 percent pace of the rest of the nation.31 One reason for the property development boom is the creation of state-sponsored catastrophe programs and the National Flood Insurance Program (NFIP) that provide insurance coverage for many households in high-risk areas. (For more details on these plans, see Section VI.2 and Appendix 4, respectively.)

Additional insights on insurance demand in coastal areas can be seen by examining the growth of some state plans. As “markets of last resort,” these plans should be depopulating, which has not been the case. According to PIPSO (Property Insurance Plans Service Office), the number of policies issued in the four state Beach and Windstorm Plans for which it collects complete data (AL, MS, SC and TX) grew two-and-half-fold between 2005 and 2012, from about 161,000 to over 403,300. During this same period, the amount of insured property exposure in these states more than tripled from $32.2 billion to $101.4 billion.32

---

**Average Annual U.S. Economic Hurricane-Related Losses (in 2013 dollars)**

Note: Data reflect Alabama, Mississippi, South Carolina and Texas

Source: PIPSO

---

31 National Association of Insurance Commissioners (NAIC), Dwelling Fire, Homeowners Owner-Occupied and Homeowners Tenant and Condominium/Cooperative Unit Owners Insurance.

32 PIPSO Reports, July 2013 (Exhibit D-7).
Insured Catastrophe Losses Have Increased Sharply

On a global basis, the average annual cost of insured claims from natural catastrophes has increased eight-fold since 1970 (up from some $5 billion in the 1970s and 1980s to over $40 billion in 2010). Insured losses in 2012 totaled $70 billion in the U.S. alone – during this year, the U.S. accounted for 69 percent of overall losses and 92 percent of insured losses due to natural catastrophes worldwide.

Section IV.2 of this Guidebook illustrates the dramatic increase in economic losses caused by hurricanes in the U.S. that has significantly impacted people and insurance claim severities and prices. Contributing to the increase in losses are a growing coastal population and density, rising insured property values, and greater insurance penetration in high-risk areas.33

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DATE</th>
<th>INSURED LOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HURRICANE KATRINA</td>
<td>Aug. 2005</td>
<td>$78.2 billion</td>
</tr>
<tr>
<td>SUPERSTORM SANDY</td>
<td>Oct. 2012</td>
<td>$28.0 billion (preliminary)</td>
</tr>
<tr>
<td>HURRICANE ANDREW</td>
<td>Aug. 1992</td>
<td>$25.5 billion</td>
</tr>
<tr>
<td>NORTHRIDGE EARTHQUAKE</td>
<td>Jan. 1994</td>
<td>$24.0 billion</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>Yearlong 2012</td>
<td>$20.0 billion (preliminary)</td>
</tr>
<tr>
<td>HURRICANE IKE</td>
<td>Sept. 2008</td>
<td>$15.8 billion</td>
</tr>
<tr>
<td>HURRICANE WILMA</td>
<td>Oct. 2005</td>
<td>$12.3 billion</td>
</tr>
<tr>
<td>HURRICANE IRENE</td>
<td>Aug. 2011</td>
<td>$11.7 billion</td>
</tr>
<tr>
<td>HURRICANE IVAN</td>
<td>Sept. 2004</td>
<td>$10.4 billion</td>
</tr>
<tr>
<td>HURRICANE CHARLEY</td>
<td>Aug. 2004</td>
<td>$9.1 billion</td>
</tr>
<tr>
<td>HURRICANE HUGO</td>
<td>Sept. 1989</td>
<td>$8.4 billion</td>
</tr>
<tr>
<td>HURRICANE RITA</td>
<td>Sept. 2005</td>
<td>$7.1 billion</td>
</tr>
<tr>
<td>HURRICANE FRANCES</td>
<td>Sept. 2004</td>
<td>$5.8 billion</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>Yearlong 2011</td>
<td>$5.3 billion</td>
</tr>
<tr>
<td>DROUGHT/HEAT WAVE</td>
<td>Summer 2002</td>
<td>$3.6 billion</td>
</tr>
</tbody>
</table>

34 Aon Benfield Annual Global Climate and Catastrophe Report: Impact Forecasting – 2012; Exhibit 113.
2. HOW INSURERS ARE RESPONDING TO GROWING LOSSES

Damages caused by natural catastrophes have led to increasing homeowners losses and loss adjustment expenses (LAE) in the U.S. Over the years, these two components have grown so much that, when combined with underwriting expenses to run the insurance business, the total amount of homeowners losses and LAE has surpassed the premiums paid by policyholders. To illustrate: total countrywide homeowners premiums collected by insurers from 2008 to 2012 have been $359.4 billion. The total losses, LAE and underwriting expenses during this same time has been $364.2 billion. As a whole, the nation’s premiums intended to cover losses and expenses have been insufficient, creating a $4.8 billion deficit.35

U.S. Homeowners Premiums are Unable to Cover Related Losses and Expenses 2008-2012

Source: APCIA, based on industry data compiled by SNL LC

No doubt, the nat cat landscape has changed dramatically in a relatively short amount of time. Many factors, including increased coastal migration and an upswing in construction and labor costs affecting home prices and insured losses, have influenced this change. Further, rising sea levels are expected to create even more vulnerability to households living primarily in Florida, followed by Louisiana, California, New York and New Jersey.36 All of these variables, along with the unpredictability of natural disasters, make it much more difficult for insurers to withstand extraordinary losses caused by damaging storms and other catastrophic events.

35 APCIA, based on industry data compiled by SNL LC.
Consequently, many insurers have had to re-evaluate their property portfolios and change their business strategies. In general, insurers have found it necessary to purchase more reinsurance, raise their rates, reduce their homeowners writings in certain hazard-prone areas, or even stop offering coverage altogether in certain states. To help mitigate their catastrophic loss exposures and ensure they have sufficient funds to pay claims and make customers whole after a disaster, windstorm or “hurricane” deductibles emerged as a valuable tool that allows insurers to write more policies in high-risk areas. Other necessary solutions include anti-concurrent causation clauses (ACC) and alternative risk transfer mechanisms, such as catastrophe (CAT) bonds and reinsurance sidecars. *(For additional details on these innovations, see Appendix 1.)*

Indeed, the nat cat marketplace has evolved in such a way that insurers have felt increasingly “caught in the middle” due to conflicting rate pressures by different entities. Catastrophe (CAT) modelers, rating agencies, and reinsurers have taken actions that create upward pressures in their ongoing risk analyses of insurers, while many regulators continue to exert downward pressures in an attempt to hold down insurers’ prices and make broader coverage available. Market and regulatory changes have also increased pressure on insurers in terms of raising capital. *(A synopsis of the “Caught in the Middle” scenario is described in Appendix 2.)*
CHAPTER VI
REAL SOLUTIONS FOR AVAILABLE AND AFFORDABLE HOMEOWNERS INSURANCE

1. SOLUTIONS FOR AVAILABLE AND AFFORDABLE INSURANCE

In the insurance market, the availability and affordability of coastal property insurance are primarily a function of risk and are determined by the economic laws of supply and demand. During periods of short supply, prices rise; during periods of excess supply, prices decline. Homeowners in some catastrophe-prone regions are understandably concerned about the availability and affordability of insurance. Although insurance continues to be relatively available and affordable in most areas, there are ways to make it even more so, even in high-risk areas.

Natural catastrophes are not just a problem for the insurance industry, but federal, state and local governments must also have a critical part in planning and implementing risk mitigation and adaptation measures. Solutions to improving availability and affordability should consider the quality of insurance policies at reasonable prices, capital adequacy, and market presence. Consideration may be given to shifting costs by means of higher deductibles, providing less coverage for certain risks or shifting exposures to other lines or the government. The cost of capital can be subsidized by lowering premium taxes or taxes on reserves. Regulatory costs might be lowered as well, perhaps through reduced capital requirements or market conduct examination fees. Increasing legal and regulatory certainties may lead to decreased risk uncertainty, thus enabling insurers to offer more available and affordable coverage. Another area to examine is price volatility, which can result if insurers are restricted from developing their rates to fully reflect losses.

Recommendations for Loss Mitigation

Over the years, there has been a growing need for lowering disaster-related costs, helping consumers prepare for catastrophe losses and ensuring the availability and affordability of homeowners coverage. While the frequency or severity of a storm cannot be controlled, individuals can control where and how their homes are built.

Loss mitigation (i.e., actions to reduce disaster losses) should be at the forefront of any coastal property insurance solution. Private and public mitigation programs should include raising public awareness of risks and the availability of mitigation techniques; subsidies to fund mitigation inspection and investments in retrofitting for existing buildings and incentive packages; and special hazard-specific programs to encourage homeowners’ mitigation efforts. The University of
Pennsylvania’s Wharton School of Business cited a finding that cost savings related to a 100-year hurricane range anywhere from 34 percent (in TX) to 61 percent (in FL) if appropriate mitigation steps are taken.37

Mitigation is a sound fiscal and business strategy as it promotes public safety, minimizes property damage, preserves communities and protects vulnerable populations affected by natural disasters. It also protects the environment by reducing post-disaster debris that can overwhelm landfills. There are numerous measures that states may consider to encourage loss reduction, to assist consumers with the ability to control and manage the costs of property insurance, and to encourage companies to compete and invest capital in the states.

States should focus on retrofitting buildings in hazard-prone areas to meet or exceed current mitigation standards. Promoting loss reduction should be an ongoing priority for policymakers and in administering appropriate public agencies at all levels of government. Toward that end, recommendations for loss mitigation include the following:

- Provide or enhance public education on the advantages and cost effectiveness of strengthening homes in hazard-prone areas.

- Create financial assistance and financial incentives for property owners to retrofit their homes. Policymakers may consider waiving or reducing zoning requirements and fees, and subsidies to support mitigation such as the “My Safe Florida Home” program which provides mitigation inspections and provides mitigation grants to low-income homeowners in exposed areas.

- Establish tax incentives. For example, in 2007, South Carolina established a tax credit assuring that low-income individuals will not pay more than 5 percent of their adjusted gross income (AGI) for insurance premiums on primary residences. Any amount over 5 percent of the AGI is considered “excess” premiums and the taxpayer may claim a credit, not to exceed $1,250 for the “excess” premium. If the credit exceeds the tax liability, then any unused credit may be carried forward for five succeeding taxable years.

- Provide vouchers to low-income homeowners and renters to help pay for affordable housing. Further, reverse mortgage credits can be offered to house-rich, cash-poor (e.g., senior citizens) to get cash from their homes without having to sell or borrow against them and make monthly loan repayments.

- Create “code-plus” building code standards (incorporating more damage-resistant features) that can be adopted voluntarily by building owners, adopted in exchange for voluntarily provided benefits by parties benefiting from mitigation, or mandated for building owners in extra high hazard areas.

- Adopt measures to streamline the administration and inspection of new buildings as recommended by the Alliance for Building Regulatory Reform. These measures will lower construction costs and the costs of building codes which promote mitigation.

- Establish public/private partnerships to engage non-profit and business organizations in supporting mitigation activities.

• Establish grant and low-income programs to assist homeowners with the costs of strengthening their homes; develop a low-interest loan program to encourage homeowner investment in retrofitting.

• Create state-sponsored study committees to develop effective land-use policies to ensure that loss prevention becomes a key consideration in future growth and land development. States should implement updated, relevant regulations on land use codes, which can reduce property damage, business interruption loss, non-market environment damage, human loss and costs in emergency response. Comprehensive land use plans should be prepared, with special consideration given to natural disasters in planning and zoning decisions.

• Permit consumers to establish “Catastrophe Savings Accounts.” Allow consumers to establish a tax deductible savings or money market account to pay for insurance deductibles or any self-insured losses from a catastrophic event. Allow consumers to deposit amounts equal to at least two times the amount of their deductible or, for those who self-insure, a pre-determined maximum not to exceed the value of the residence.

• Adopt the International/Urban Wildland Interface Building Code for commercial and residential properties.

Additional Recommendations to Lower Costs

• Encourage private insurers to write in coastal areas by allowing insurers premium tax credits or surplus lines tax credits on the written premium of property that is insured for full coverage (including wind and hail coverage) in designated coastal areas.

• Allow insurers to offer higher deductibles and specific loss settlement options (such as “actual cash value coverage” for roof damage). These, and other similar options, can allow policyholders to reduce insurance premiums while buying only necessary coverage.

• Permit insurers to voluntarily partner with the banking industry and create a cooperative loan program to help with increased deductibles. Policyholders could select a higher windstorm deductible and receive lower insurance premiums. If the deductible results in a burden to policyholders following a loss, they would have the ability to secure a low- or non-interest loan through the insurer/bank program.

• Consider implementing a surplus matching grant program to encourage the investment of new insurance capital into the market. For example, Louisiana copied a successful Florida program – the “Insurance Capital Build-Up Incentive Program” – that provides matching surplus dollars tied to writing requirements in traditionally “high-risk” areas.

• Avoid placing artificial restraints on rates, which tends to stifle or drive out the private market, discourage investment of private capital, and encourage the growth of the residual market. Risk-based rating will help the market by promoting competition, attracting new writers to the market, and allowing insurers to respond quickly to market changes.

continued
• Encourage private market growth by allowing for increased rating flexibility and more open competition. Moving from a prior approval rate filing system to a more modernized rate regulatory program would allow companies to respond more quickly to market forces and enhance competition.

2. AVAILABILITY AND AFFORDABILITY OF INSURANCE ARE SOMETIMES REDUCED BY GOVERNMENT ACTIONS

Government actions affect the supply and cost of insurance. Although catastrophe insurance continues to be relatively available and affordable, an inefficient legal and regulatory environment can make insurance more difficult to obtain and/or more expensive.

In response to coastal nat cat concerns, some state-sponsored insurance programs were formed to provide homeowners coverage to residents in hazard-prone coastal areas who are unable to obtain it elsewhere. Although well intended, government programs are often not adequately funded and result in large deficits after a disaster. Rates charged are usually depressed below the cost of the risk insured, resulting in rate inequities and subsidies that hinder the market's ability to provide necessary price signals and incentives for individuals to mitigate losses themselves. Government programs can also suffer from adverse selection, where homeowners who are most at risk are the ones most likely to buy catastrophe insurance – this scenario often results in unaffordable prices for more consumers.

Other government actions include regulatory attempts to limit the use of hurricane deductibles after a storm or overturn policy provisions – such as anti-concurrent causation clauses (ACC) – so coverage is broadened when claims are filed. Regulators in disaster-prone areas may also impose rating and underwriting restrictions in the form of artificial price ceilings so property owners pay less than what their risks indicate. However, risk-based pricing is the fairest and most efficient way to price insurance risks as it results in equitable prices that in turn ensure the availability of needed coverage for the public. According to the American Academy of Actuaries, while certain government actions affecting risk-based pricing may appear appropriate to respond to public policy issues, they can lead to the insurance market's ultimate failure.38 (Appendix 3 includes a section on the importance of risk-based pricing.)

Further, private capital is displaced when the federal or state governments set up subsidized public insurers that operate on an uneven playing field. For example, public insurers often do not pay taxes, do not have to raise or maintain a surplus, and can transfer their risks and costs to other insurers or the taxpayers at large. In fact, the largest government catastrophe programs have rapidly growing exposures (dwarfing most private insurers) despite their documented rate inadequacy, risk subsidization, and historical debt or undercapitalization.

In rare circumstances, there may be catastrophe exposures surpassing the capabilities of the private market and individual state catastrophe funds. For these exposures, it may be necessary for the federal government to have a role. However, care must be taken to ensure that a federal program is not allowed to compete with the private market. Any federal program must include measures intended to promote freedom for markets to respond to these exposures, including: meaningful

38 American Academy of Actuaries, A Public Policy Monograph on Risk Classification (Nov. 2011).
limitations on the ability of states to control rates artificially; effective loss mitigation measures; freedom to use appropriate underwriting tools or develop and implement new products and forms to address catastrophic risk; and the elimination of other unnecessary restrictions on free markets. Federal programs must also avoid the imposition of subsidies on policyholders of non-property lines of insurance.

**State Catastrophe Programs**

State-sponsored insurance programs were formed to be “markets of last resort” and not compete with other carriers. Some programs – such as Florida’s Citizens Property Insurance Corporation (CPIC) – become so large, however, that losses from storms and other disasters often result in a financial deficit. When a pool operates at a loss, the voluntary market is required by law to support it by means of rate subsidies and assessments. Even taxpayers in some states must help to cover fund deficits. On the other hand, other programs can be beneficial as long as their rates are adequate to cover associated costs and they are self-sustaining. One example of such a program is the California Earthquake Authority, which is a quasi-state agency.

**Florida Citizens Property Insurance Corporation**

Florida’s state-run Citizens Property Insurance Corporation (CPIC) has created a long-term unhealthy and unstable homeowners market. Its annual statutory 10 percent rate cap results in inadequate prices that are not commensurate with the risk assumed; hence, the true economic cost of insurance cannot be met.

Citizens has become overly competitive with Florida’s private insurers and has been the state’s largest homeowners insurer (and the nation’s fourth largest homeowners insurer) since 2006. Its policy count and loss exposure have expanded at a very rapid pace due to increased coastal development and greatly diminished writings by private insurers. In the last decade, Citizens’ total insured property exposures have more than doubled and its policy counts have tripled. After peaking in 2011, the company is now insuring $429.4 billion worth of property and almost 1.6 million policies. Its market share is roughly half of the total housing units in Florida and 19.5 percent of annual residential property premiums written.40

---

39 The majority of homeowners losses are much smaller than natural catastrophes and are covered through normal pricing channels. Since CAT programs do not need to address other perils, fewer states have an interest in government involved programs.

40 *PIPSO Report*, July 2013 (Exhibit B5), and APCIA, based on NAIC data; it is assumed that one housing unit equals one policy.
When Citizens operates at a loss, private insurers are required to support it by means of assessments. Citizens is likely to continue growing in exposures and policies and may not be able to withstand another storm similar to Hurricane Andrew’s intensity. Given its limited reserves, a single major catastrophic event could potentially bankrupt it and threaten all of Florida’s consumers with higher insurance rates, less availability of coverage, and potentially higher taxes.

**California Earthquake Authority**

In contrast to Citizens, the California Earthquake Authority (CEA) is a successfully run quasi-state program that is publicly managed and privately financed. It was established in 1996 to provide catastrophic earthquake insurance to residents of the state. CEA is now the state’s leading earthquake insurer and is also the largest in the U.S. Policies are sold only through 20 participating insurance companies that provide service expertise. With more than 800,000 policies in force, CEA represents about 70 percent of all residential earthquake insurance policies sold in California.

---

Since its inception, CEA has accumulated almost $4.8 billion in capital; CEA has consistently grown its capital through positive retained earnings and currently collects about $570 million in gross premium each year. Its total claims-paying capacity now exceeds $10.2 billion. CEA is financially sound, with nearly $10 billion in claims-paying capacity, from capital, reinsurance, and investments.

The reason for CEA’s financial strength is that by law, its rates must be sufficient to pay covered claims. CEA’s rates do not include any amount for profit nor does it reflect taxes since it does not pay federal income tax; this tax status allows it to maximize the growth of its reserves.
APPENDIX I
INSURER INNOVATIONS TO MITIGATE RISK OF LOSS

1. WINDSTORM (HURRICANE) DEDUCTIBLES

In light of increasing losses from natural catastrophes, hurricane deductibles were introduced in the early 1990s as an important risk management tool and safety measure in homeowners insurance. After Hurricane Andrew (1992), availability problems emerged as insurers reduced their writings in hazard-prone areas. In response to these concerns, hurricane deductibles were developed to enable insurers to write more policies and make coverage more available to consumers in high-risk areas.

In essence, policyholders with hurricane deductibles accept a higher portion of the risk and in return:

- They pay less for homeowners coverage than they would otherwise pay with standard deductibles. Since the first dollars of insurance coverage are the most expensive, hurricane deductibles mean lower premiums.
- They have more incentives to retrofit and strengthen their homes from future catastrophes and reduce their own losses. By having homeowners take more responsibility for their own losses, insurers can pay claims more easily and remain viable in hazard-prone areas.

Unlike the set dollar amount of a standard “all perils” deductible, a hurricane deductible is a relatively high, fixed amount or is based on a percentage (usually 1% to 5%) of the home's insured value. For example, a 2 percent deductible on a home with an insured value of $100,000 would be $2,000.

Currently, 18 states and the District of Columbia allow the use of hurricane deductibles. The storm event or timing that activates a hurricane deductible varies by state. Trigger conditions are clearly stated in the insurance policy. A hurricane deductible is usually triggered when the National Weather Service (NWS) officially names a storm or issues a hurricane or tropical storm watch or warning, or by the intensity of the storm. Its application may remain in effect for 24 to 72 hours after the last warning was issued or the storm has passed.

Hurricane deductibles often receive much attention after a severe hurricane or tropical storm makes landfall in the U.S. In the wake of Hurricane Irene (2011) and Superstorm Sandy (2012), numerous insurance departments issued bulletins advising companies on whether these deductibles may or may not be applied to claims arising from this event. It is important to note that hurricane deductibles are written into the insurance contract with specific trigger conditions. Insurers have already priced and issued policies with the understanding that these deductibles will be applied under the conditions as explicitly stated. If hurricane deductibles are not allowed to be used as intended, then the positive impact they have had in addressing availability issues in coastal areas over the years is eliminated.

42 Note that earthquake policies have been carrying even higher deductibles (e.g., 2% to 20% of the replacement cost of the structure) since the mid-1990s.
43 The 18 states that allow hurricane deductibles are AL, CT, DE, FL, GA, HI, LA, ME, MD, MA, MS, NJ, NY, NC, RI, SC, TX and VA.
44 The NWS classifies tropical storms as an organized system of clouds and thunderstorms with a defined circulation and wind speeds of at least 39 mph. Hurricanes have maximum sustained winds of at least 74 mph and range from Category 1 to 5 on the Saffir/Simpson Hurricane Wind Scale.
2. ANTI-CONCURRENT CAUSATION CLAUSES

Anti-concurrent causation (ACC) clauses provide that a loss is entirely excluded from coverage if it arises from a combination of covered and non-covered perils. Such loss or damage is excluded regardless of any other cause or event that contributes concurrently or in any sequence to the loss.

The language of a policy needs to accurately reflect the coverages purchased, and insurers pay what is owed based on the contract with the policyholder. Hence, ACC provisions support the ability of insurers to clarify coverage based on the premiums paid. By adding ACC clauses to policies, arguments and litigation over the meaning and integrity of exclusions found in the policies can be avoided. They are typically upheld by court rulings and not rendered useless by state laws or public policy.45

ACC clauses are fairly common, for example, in situations involving hurricane damage, where losses occur from both wind and water. The wind damage from a hurricane is usually covered by a standard homeowners insurance policy, but damage caused by flood or rising water is typically excluded from coverage under the same policy. In order to determine the appropriate loss amount based on what is covered, insurers would need to isolate the wind damage from the water damage. As a practical matter, this separation would be difficult if not impossible to do.

Some states have proposed legislation voiding the use of ACC clauses. A change in policy language to ban the ACC clause would abrogate many other provisions of the contract (e.g., not just the water damage exclusion provisions) because it affects all exclusions. It would require insurers to cover perils that are untenable, such as pollution, dishonest acts by the insured, wear and tear, war, electrical interruption, nuclear damage, earthquake, and failure to protect the property at time of loss, to name a few. These exclusions fall into two categories: either uninsurable under any circumstance or insurable under separately purchased coverage, like flood and pollution.

Occasionally, consideration is made to provide an intermediate step that would pay a proportion of the claim if some of the causes of the loss are covered by insurance. Such a proposal is neither feasible nor desirable as it would no doubt be a subject of disagreement between the insurer and the insured.46


3. ALTERNATIVE RISK TRANSFER MECHANISMS

Suppliers of Capital

In today's global equity markets, there is $225 trillion of capital financial assets seeking competitive returns. However, there is limited return on equity for coastal insurance combined in the uncertain and/or restrictive regulatory environment to attract adequate capital investments in the homeowners insurance market.

Insurers are major suppliers of capital, as they invest their premium dollars in various revenue-producing projects and use them to cover any insured claims and operating expenses. Insurers, like most other businesses, must realize adequate earnings, for two fundamental reasons:

(1) They must justify to investors that they are worth the commitment of capital. If suitable earnings cannot be demonstrated, insurers will not be able to retain invested capital, nor will investors make future capital investments in the insurance industry.

(2) Adequate financial reserves are needed to foster an adequate supply of high quality insurance to meet the needs of current and future policyholders.

As mentioned earlier, by restricting capital movement and creating duplicative or unnecessary regulation, some states can drive out private capital and magnify insurance cost increases. Care must be taken to ensure that sufficient capital is available to cover insurance claims and keep coverage available and affordable for the general public.

The Need for Alternative Risk Transfer Mechanisms

The nature of insurance has become increasingly property oriented, driven by catastrophic losses. Given the growing frequency and intensity of hurricanes, insurers have become more prudent in their risk management practices, recognizing the need for alternatives to traditional reinsurance to bolster their financial capacity in order to withstand the increased cost of mega-disasters.

Alternative risk transfer mechanisms emerged in response to the capacity shortage in the homeowners insurance market resulting from catastrophic events. Insurance-linked securities (ILS) were developed as a means to promote pricing stability and transfer risk into the much larger pools of investment capital available in the global capital market transfer. Two of the most common instruments are: (1) catastrophe bonds; and (2) reinsurance sidecars. These tools became especially prominent in the aftermath of Hurricane Katrina as a vehicle for insurers and reinsurers to add risk-bearing capacity and for investors to gain potential profits. Other types of ILS include industry loss warranties and derivatives (see the Glossary at the end of this Guidebook).

continued

Catastrophe (CAT) Bonds

Beginning in the mid-1990s, the transfer of risk to the global capital markets was achieved by issuing a type of insurance-linked security (ILS) known as a catastrophe (CAT) bond. In essence, the insurer or reinsurer sets up a legal structure known as a special purpose vehicle (SPV) that issues a CAT bond. Investors purchase CAT bonds (usually maturing in three to five years) and the proceeds are put into high quality fixed-income assets. The money invested is intended to provide a stable return that covers insurance losses from a qualifying catastrophic event. If no covered event occurs during the risk period, the bonds will be redeemed at 100 percent of face value. In case of a covered event meeting the thresholds set forth in the risk transfer contract, funds will be withdrawn from the collateral account to make an event payment to the sponsor.

The first CAT bond was issued in 1996; because of initial concerns and unfamiliarity with these securities, the market grew relatively slowly during its first decade. CAT bonds are now becoming a more common means of transferring risk – they cover tropical cyclones as well as earthquakes and thunderstorms in the U.S. and other countries, giving investors diversification opportunities.

As of Dec. 31, 2013, the outstanding global CAT bond level reached an all-time record level of $20.3 billion. During this year, approximately 72 percent of the outstanding CAT bonds were exposed to U.S. wind damage, compared with only 45 percent a decade earlier. According to Swiss Re, 2013 saw a record number of 31 CAT bond deals. About $7.5 billion in new securities were issued in 2013, 18.9 percent more than the previous year, and second only to the $8.4 billion issued in 2007.

Global CAT Bond Insurance and Outstanding CAT Bonds
At Year-End

Source: APCIA, based on data from Aon Benfield Securities

---

Analysts believe that 2014 will be at least as positive as 2013 in terms of bond issuances with continued capital inflow. Not only do CAT bonds help to reduce insurers’ risk and volatility in their earnings, but they are a useful diversifying risk tool for investors’ portfolios, offering them potentially high rates of returns. Although CAT bonds are not expected to replace reinsurance, more companies are incorporating these types of transactions into their reinsurance purchasing strategies. Clearly, CAT bonds help round out the global market for catastrophic-risk finance and complement the reinsurance market by providing additional risk-bearing capacity.

**Reinsurance Sidecars**

The reinsurance sidecar is another type of ILS developed to create additional insurance capacity without diluting shareholders’ equity. It is funded by equity and debt financing to help reduce reinsurers’ and insurers’ volatility of earnings. Collateral often comes from hedge funds seeking high returns and diversification of investments – investors assume a reinsurer’s portion or total book of business, usually limited to property catastrophe risks, by consolidating funds and sharing in the risks and profits. Premiums are paid to this “limited purpose reinsurance company” on condition that there will be sufficient funds (from invested capital) to pay claims if they arise. Lower claim costs usually mean higher returns for investors.

A reinsurance sidecar differs from traditional reinsurance in the following ways; a sidecar is: (1) privately financed; (2) set up for a specified period (usually two years or less) for defined and limited risks; (3) usually limited to a single cedant (i.e., the entity ceding business to the sidecar); and (4) not run by an active management group or staff. All aspects of the sidecar transaction, including the form of the contract, the amount of risk assumed and the investment strategy, are negotiated between the investors and the cedant.

In contrast with CAT bonds, which are structured as long-term instruments covering a broad array of perils and geographies, sidecars are tactical instruments of limited duration during a hard market.
CAUGHT IN THE MIDDLE: CONFLICTING PRESSURES IN THE NAT CAT MARKETPLACE

Despite the recent global economic crisis, recession, and numerous natural catastrophes, homeowners insurers have remained strong and solvent. However, they are finding themselves increasingly “caught in the middle” as they face conflicting pressures imposed by catastrophe (CAT) modelers, credit rating agencies (CRAs), reinsurers and regulators. These groups also face related pressures arising from the catastrophe insurance marketplace. Indeed, a web has developed in which many different entities feel caught.

For example, insurers rely on CAT models to assess their risk exposure and help determine their reinsurance needs. Models are also used by CRAs to evaluate insurers and by reinsurers to price and structure reinsurance treaties and insurance-linked securities (ILS) sold to investors to cover insurance losses. Since 2005, however, modeling firms have been the target of significant review and debate due to the volatility of their products and their widespread reliance.

Another example: CRAs’ ratings must be relied on to help regulators, consumers and others make decisions based on the financial strength of insurers and reinsurers. Their ratings on the creditworthiness of mortgage-backed securities contributed to the financial crisis in 2007-2008, which resulted in the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) in July 2010. New rules on credit rating methodologies were created that now increase the regulation of rating organizations and affect the way federal agencies rely on credit ratings.

The financial crisis also created capacity problems for reinsurers that resulted in altering their business models. They are now taking a more holistic approach by implementing an enterprise-wide risk management (ERM) framework, tightening their underwriting standards and revising their pricing strategies to better manage their exposures and obtain additional capacity. These steps in turn have added greater pressure on primary insurers in their underwriting and pricing practices and their ability to manage risks.

State insurance regulators have their own concerns and pressures as well. While more regulators understand the need to integrate CAT models into the regulatory process, they are challenged with keeping pace with the evolutionary changes of models resulting in rate volatility. Further, some regulators have felt a need to suppress rate increases to ease the public’s concerns and some have taken steps to challenge contract provisions after major loss events, adding more pressure on insurers.

Even consumers are entangled in the maze. Since many people do not read their insurance policies, they are not aware of certain coverage exclusions. They feel caught in the middle and struggle, too, as their coverage and rates are affected by actions taken by the different marketplace stakeholders, in particular their insurance carriers.
APPENDIX 3
FUNDAMENTALS OF HOMEOWNERS INSURANCE

1. THE HOMEOWNERS INSURANCE POLICY

A residential property (or homeowners) insurance policy is typically divided into two sections: the first covers the loss of property (house, garage and other structures, as well as household contents, personal belongings and additional living expenses), and the second covers personal liability insurance and medical payments. As many as 10 standardized policy forms are available from insurers; these forms vary as to the extent of insured events (from “named perils” to “all risks”) and what is covered (i.e., dwelling building, contents or both) for owner-occupants, renters and condominium/cooperative owners, and whether liability coverage is included.

Should there be a property insured loss, the two methods generally used for determining the form of payment are: (1) Replacement coverage, which pays for replacing an item (e.g., rebuilding a house) when there is a loss, with materials of like kind and quality. There is typically no deduction for depreciation (i.e., the decrease in value due to age, wear and tear, etc.) provided the property is insured to the proper amount; and (2) Actual cash value, which takes into account the depreciation on any damaged property. The amount paid (replacement cost less depreciation) usually is less than under the replacement cost method.

The homeowners Special Policy Form (HO-3) is the most common homeowners policy in the country. It provides “all risks” coverage (with designated exclusions) on the dwelling building for owner-occupants and named peril coverage for contents. The perils insured against in the property section of this policy are, among other causes of loss: fire and lightning; windstorm and hail; theft; water damage; vandalism and malicious mischief; collapse of building; freezing of plumbing, heating or air conditioning unit; weight of snow, sleet or ice; falling objects; smoke; glass breakage; and riot or civil commotion. Any exclusions, which would be listed in the policy, usually comprise – but are not limited to – flood, earthquake, war, and nuclear explosion. Homeowners usually need to purchase separate flood or earthquake policies if they want to be protected against these types of losses.

2. THE NEED FOR RISK ASSESSMENT AND RISK-BASED PRICING

For insurers to price their products equitably, different traits need to be identified in order to determine those risks that are more likely to incur losses than others. For rating purposes, risk characteristics must commonly exist in a large enough number of exposures to permit the development of statistics that are credible. The principle of the law of large numbers states as the number of occurrences increases, actual results tend to equal expected results and a regular pattern can be observed. Volume alone is not sufficient, however. Risks within the same group must also be reasonably homogeneous to one another.

49 Some insurers also offer an extended replacement cost endorsement or a guaranteed replacement cost policy; a description of these is beyond the scope of Guidebook.
In a competitive market, the use of risk classification systems enhances the accuracy of estimated expected costs so rates are not unfairly discriminatory and comply with statutory requirements. Effective risk classification systems also provide insurers with greater information about their risks so they are able to make coverage more available to those who want it. Refining the system (e.g., by dividing one or more risk classes) further has been observed to reduce the average price of coverage, making insurance more affordable.

Restrictions to risk-based pricing in homeowners insurance tend to deprive people of the benefits of a truly competitive environment. Some consumers may find it necessary to use the involuntary market mechanism (i.e., the FAIR Plan), where coverage selection may be limited. Studies also show that risk-based pricing provides incentives for risk mitigation. If certain government actions lead to price subsidies, there could be little incentive for policyholders to be more responsible in preventing or reducing future losses (e.g., retrofitting homes or installing fire extinguishers or security systems). Such a distortion in incentives would most likely cause insurance costs to rise even more.

### 3. THE RATEMAKING PROCESS

**The Basics of Ratemaking**

Ratemaking involves measuring the probability of the occurrence of accidents or events and the financial impact that may be expected to result from the hazards against which insurance is provided. The greater the probability of occurrence or the financial impact of the event, the greater the price of insurance. To be fair, the price of insurance should be in proportion to the risk being exchanged.

Insurance rates are first and foremost a function of claims and their costs. When setting the amount policyholders pay for insurance, analysts generally look at two elements on the loss component side: (1) the claim frequency, which is the likelihood of a claim occurring; and (2) the claim severity or average loss, which is the average cost per claim (this amount often includes the cost of settling claims, too, also called the loss adjustment expense (LAE)). Both elements together comprise the loss cost, or loss per insured unit, representing by far the most substantial portion of the insurance rate.

In addition to losses and LAEs, underwriting expenses (i.e., commissions, taxes and license fees and other expenses necessary to run the business), an amount for earnings and investment income are considered as well in the rating formula. The premium also takes into consideration the price of reinsurance and re-capitalization costs, if any, along with informed judgment and knowledge of the insurance marketplace and economy.

---

Policy Limits Should Reflect Rebuilding Costs, Not Market Value

Market value is often far below the cost of rebuilding. This inequity demands consideration when determining appropriate insurance amounts. As mentioned in Section V.1, the cost of construction materials and labor continues to increase even when market values drop or slow down. Also often overlooked in the ratemaking formula are the cost of demolition, cost of compliance with new building codes, and escalated cost for transporting building materials.

Advancements in Catastrophe (CAT) Modeling

Insurers use catastrophe modeling to quantify and price the risk. For decades, insurers tended to focus on the past; homeowners insurance policies were priced using historical data to develop an experience base reflecting the most recent situation. After Hurricane Andrew (1992), when insurers and reinsurers suffered severe losses, they increasingly began to use computer-simulated models (introduced in the late 1980s) to help them understand their risks better and estimate the probability and severity of different types of natural catastrophes (and after 9/11, terrorist events) to assist them in pricing their policies. Today, modeling is much more integrated into various aspects of the risk analysis and management process.

With the abundance of new information and data, modelers have largely improved the integrity of CAT models. These powerful, forward-looking tools have greatly evolved over time as greater attempts were made to respond to advances in the scientific understanding of weather patterns and climatic conditions. But access to additional data and improved modeling techniques have led to increased volatility in CAT models and a greater sensitivity to assumptions made. Models also vary among vendors in terms of their structure and data input and output, creating fundamental differences in how they are used by insurers (e.g., a single versus multiple model approach, implementing strategies within versus outside an ERM framework, etc.).

Modelers strongly feel that science should dictate their products and results. Although not well understood, today’s probabilistic CAT models are more dependable in managing risk exposure than earlier versions that used historical data to project long-term future losses. However, an incorrect estimate of just one variable or an incorrect or incomplete assumption can still drastically affect the results of CAT models. Modelers must constantly remind users that even the newer versions are uncertain and are not precise, especially given the inherent uncertainty of catastrophic risks. Models are tools that should be supplemented with other types of analyses.
APPENDIX 4
THE NATIONAL FLOOD INSURANCE PROGRAM

1. OVERVIEW

Occurring in all 50 states, floods are the most common and deadly natural disaster in the nation. They can develop slowly over an extended period of time or very quickly, even without visible signs of rain. Their effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. More people generally die from floods each year than from lightning, tornadoes, hurricanes or earthquakes; most flood-related deaths result from being in vehicles that are swept away by rapidly moving water.

Flooding has unique challenges that make it very difficult and costly to insure in the private market. Flood insurance is provided under automobile comprehensive (i.e., “other than collision”) coverage and many inland marine insurance policies because the covered property is transportable and can be removed from flood-threatened areas. However, most private insurers are reluctant to provide flood coverage for properties in fixed locations in zones that have a high likelihood of flooding.

Property owners in flood zones are more likely to seek insurance coverage while those with little exposure to the flood peril are not. This “adverse selection” by those vulnerable to potentially catastrophic losses results in premium levels that would be too high for most insurance customers to pay – hence, even residents in flood-prone areas have been reluctant to obtain this coverage. An insufficient policyholder base, combined with a lack of data to identify all properties in floodplains and the inability to accurately measure market penetration and future flood losses, creates serious challenges for insurers. In light of these conditions, there is no incentive for insurers to issue flood policies in the private market, especially in high-risk areas.

In an attempt to provide consumers with available and affordable coverage for catastrophic and widespread flood losses, the National Flood Insurance Program (NFIP) was established in 1968 by the U.S. Congress. Managed by the Federal Emergency Management Agency (FEMA), this program provides federally-backed flood insurance to residents and businesses in participating communities through the country. The federal government agrees to make flood insurance available (in exchange for a premium) if NFIP regulations for land use, new construction, and floodplain management are adopted and enforced in Special Flood Hazard Areas (SFHAs). NFIP flood insurance is available only in these areas. The NFIP program also alerts communities to the dangers of flooding and enforces and encourages the mitigation of future flood losses.

Community participation in the NFIP is voluntary, although some states require it as part of their floodplain management program. A community can opt out of the program if it chooses to do so. Participants are usually given a Flood Insurance Rate Map (FIRM), which is an official map of a community on which FEMA has delineated both the applicable special hazard areas and risk premium zones.

51 In most cases, a community is an incorporated city, town, township, borough, or village, or an unincorporated area of a county or parish. However, some states have statutory authorities that vary from this description.
52 Rates vary by NFIP zone, depending on the degree of flood risk; e.g., high-velocity zone V = coastal areas subject to waves of at least three feet in a 100-year flood; non-velocity zone A = all other coastal and inland areas in 100-year floodplains; and zone X = areas outside SFHAs (i.e., 100-year floodplains). Other defined zones exist as well.
Rather than providing flood coverage on their own, insurers can choose to partner with the federal government and become “Write Your Own (WYO)” companies under the National Flood Insurance Program that was set up to cover property losses in defined flood zones. The WYO program began in 1983 as a cooperative undertaking of the insurance industry and FEMA. Under this arrangement, FEMA allows private insurers to administer coverage under their own names to increase participation. WYO insurers write policies and process claims, for which they receive an expense allowance, while the federal government is responsible for all program claims and costs. All WYO companies and their agents are regulated by the states in which they sell flood insurance; coverage is identical among all insurers since it is underwritten by the federal government, and all rates are established by and subject to federally-set NFIP rules and regulations.

2. CONCERNS ABOUT THE NFIP

According to the Congressional Research Service, many people who should have flood insurance do not – only 5.6 million Americans depend on the NFIP to help them recover after flooding. Despite flood insurance being required under certain circumstances, the number of households with coverage have historically been low – the federal government’s exposure to uninsured property losses from flooding remains substantial. Many of the flood maps are outdated and do not provide an accurate picture of the true risk of flood-prone areas (another reason why rates are not actuarially sound).

Perhaps the largest concern is the NFIP’s financial condition that highlights structural weaknesses in how the program has been funded – primarily its rate structure. The flood program is undercapitalized and expenses continue to grow as homeowners rely on the safety of levees and the false belief that disaster aid will cover all or most uninsured losses. Rate subsidies have created a deficit of about $1.3 billion for the program each year.53

The fact that the NFIP can borrow money from the U.S. Treasury means taxpayers may ultimately subsidize the program’s losses at times. The program has been heavily in debt for years and the Oct. 2012 devastation caused by Superstorm Sandy has only made it worse; additional money will need to come from the Treasury to help victims recover from this storm.54 As of July 2013, unprecedented losses arising from Hurricanes Katrina, Rita and Wilma and Superstorm Sandy have caused the NFIP to owe the Treasury about $24 billion.55

53 The $1.3 billion deficit is estimated by the Congressional Budget Office (CBO), although the Government Accountability Office (GAO) suggests the true program subsidy is far higher.
54 On Jan. 4, 2013, the President signed into law H.R. 41 to provide a $9.7 billion increase in the NFIP’s borrowing authority, from $20.725 billion to $30.425 billion, to pay flood claims related to Superstorm Sandy.
3. UNINTENDED CONSEQUENCES OF BIGGERT-WATERS RESULT IN PASSAGE OF THE HOMEOWNER FLOOD INSURANCE AFFORDABILITY ACT

The Biggert-Waters Flood Insurance Reform Act of 2012 extended the NFIP through Sept. 30, 2017. This law was intended to make the NFIP more financially sound by means of significant structural changes that would help increase NFIP premium revenues. Three significant provisions of the Act are: (1) the phasing in of actuarial rates over time, for certain subsidized (pre-FIRM) properties; (2) increasing the annual rate cap from 10 percent to 20 percent; and (3) working to ensure that flood maps are updated and more accurate.

During the fall of 2013, the phase-in provision began to result in dramatically high increases in flood insurance rates, causing severe, unintended hardships for both residential and business customers along the water. In response to these very high rate increases, Congress worked on a solution to address these concerns. What resulted is the passage of “The Homeowner Flood Insurance Affordability Act,” that was signed into law on March 21, 2014. Among the various reforms, annual rate increases are now capped at 15 percent (Biggert-Waters had a 20 percent cap). Further, the top three WYO priorities were included in the final legislation:

1) A minimum 6-month implementation time period for WYO insurers;

2) FEMA/NFIP directly providing refunds to policyholders; and

3) FEMA/NFIP required to involve the WYO insurers throughout the process of implementing this legislation.

56 Pre-FIRM properties are those built before flood maps were issued for such properties or before 1975, whichever is later. Currently insured properties that no longer qualify for Pre-FIRM rates will see their premiums increase 25 percent per year until actuarial rates are achieved.
1. GLOSSARY

Actual Cash Value (“ACV”)
The amount an insurer will pay for damage to property, which takes into account the depreciation; the amount paid is generally the replacement cost minus depreciation.

Adverse Selection
In homeowners insurance, a phenomenon whereby those who live in riskier areas are more likely to buy coverage than those who have less exposure to loss. This typically results in premium levels that would be too high for most insurance customers to pay.

“All Perils” or “All Risks” Policy
An insurance policy that covers all perils or risks except for those specifically excluded. If the policy does not exclude a peril, it is covered. This is the broadest type of insurance policy that can be purchased.

Anti-Concurrent Causation Clause
A provision in a homeowners policy stating that a loss caused by a combination of covered and excluded causes of losses will not be covered.

Beach Plan
A state-sponsored program designed to be a market of last resort for providing property insurance along a state’s coast. The term is often used interchangeably with “wind pool.”

Building Codes
Standards and structural requirements related to the construction, maintenance and occupancy of buildings for the health, safety and welfare of the public.

Catastrophe
As defined by the property casualty insurance industry, a catastrophe has insured property damage losses exceeding $25 million and affects a significant number of policyholders and insurers.
Catastrophe (CAT) Bond
CAT bonds are a type of insurance-linked security typically used by insurers as an alternative to traditional catastrophe reinsurance. They are high-yield debt instruments that are linked to risk and designed to raise capital if a catastrophe of a defined magnitude or specific aggregate insurance loss occurs.

Catastrophe (CAT) Fund
A state-sponsored insurance fund providing insurance and/or reinsurance for natural catastrophe risks.

Catastrophe (CAT) Model
A computer-simulated model to determine probabilities of catastrophic occurrences.

Catastrophe (CAT) Savings Account
A tax-deductible savings account that enables consumers to cover their own coastal losses. These accounts (set up at a state or federally chartered bank) allows individual taxpayers to pay their insurance deductibles or any self-insured losses from defined catastrophic events.

Coastal County
NOAA has recently developed two refined coastal county categories: “coastal watershed county” and “coastal shoreline county.” There are 769 watershed counties in the U.S. whose substantial portion of land area intersects coastal watersheds and represents where changes in land use and water quality impacts can most directly affect coastal ecosystems. There are 452 shoreline counties that are directly adjacent to the open ocean, major estuaries, and the Great Lakes. Coastal shoreline counties are a subset of coastal watershed counties.

Coastal Watershed
A place where water and sediments drain into a large water body such as an ocean or bay.

Deductible
The amount of money from a loss that must be paid by the insured before the insurer becomes responsible for any reimbursement.
Derivatives Transaction

A derivative transaction may be settled based on the performance of an existing catastrophe bond or other type of insurance-linked security. It can be used by clients who desire a capital markets structure, but do not have enough risk to transfer to justify a catastrophe bond issuance.

Exposure

Probability of loss or the amount of potential monetary loss. It can also refer to the people and/or property that could be damaged by a hazard.

FAIR Plan

FAIR (Fair Access to Insurance Requirements) residual market plans offer insurance protection on residential and commercial properties in selected geographical areas.

Flood Insurance Rate Map (FIRM)

The official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

Hazard

An act or phenomenon that has the potential to produce harm or damage to a person or property.

Hurricane Deductible

Also known as a windstorm deductible, it applies when there is wind damage to a home in the state as a result of a named hurricane and comes with a hurricane warning. The amount of the hurricane deductible is usually based on the total insured value of the property.

Insurance

The transfer of the risk of a loss, from one entity to another, in exchange for a fee (the premium). The insured transfers the financial uncertainty of risk to the insurer for a certain cost, a known – relatively small – cost for a possibly devastating loss.

Industry Loss Warranty (ILW)

A type of contract through which one party purchases protection based on the loss to the entire insurance industry arising from a particular event, rather than the buyer’s losses.
Insurance-Linked Security (ILS)

Financial instrument used to transfer catastrophe risk outside the traditional reinsurance capital pool. The return of these securities depends on the occurrence of a specific insurance event. Insurance-linked securities cover both from the life and property casualty sectors.

Joint Underwriting Association (JUA)

A mechanism under which several insurers are appointed as servicing carriers for residual market applicants who cannot obtain insurance in the voluntary market. Servicing carriers are reimbursed for the costs of placing the business and handling claims.

Land Use Policy

A plan to protect the environment while at the same time permitting some commercial use of renewable resources.

Maximum Possible Loss (MPL)

The worst loss that could occur from a single event.

Mitigation

Actions taken to reduce the likelihood and extent of property damage and losses in the event of a catastrophe. The process of reducing the severity of the impact of natural hazards through planning.

Major Hurricane

A hurricane which reaches a sustained low-level wind of at least 111 mph at some point in its lifetime. This constitutes a category 3 or higher on the Saffir/Simpson scale.

“Named Perils” Policy

An insurance policy under which the covered perils are listed. Benefits for a covered loss are paid to the policyholder, but losses arising from unlisted perils are not covered.

Natural Catastrophe (or Disaster)

Natural catastrophes as defined by the insurance industry are events for which insured property damage losses exceed $25 million and affect a significant number of policyholders and insurers.
Peril

The cause of a possible loss, such as fire, windstorm, flooding, or earthquake.

Reinsurance

A form of insurance that insurance companies buy for their own protection. An insurer reduces its possible maximum loss on an individual risk or a collection of risks by “ceding” a portion of its liability to another insurance company (reinsurer) in return for a premium.

Reinsurance Sidecar

Also known simply as a “sidecar,” this is another type of insurance-linked security in which case an insurer or reinsurer will only pay (“cede”) the premiums associated with a book of business if investors place sufficient funds in the vehicle to ensure that insured catastrophic claims are covered.

Replacement Coverage

The amount an insurer will pay for damage to property, typically for rebuilding a house or other property when there is a loss; it takes into account current construction costs.

Residual Market

An insurance market intended to serve individuals or businesses who are unable to find coverage in the voluntary insurance market.

Retrofitting

Making changes to existing buildings to make them stronger and more resistant to windstorm damage.

Risk

Chance of loss with respect to person, liability, or the property of the insured. It is also used to mean the insured.

Risk Assessment

A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods, and the environment on which they depend.
**Saffir/Simpson Scale**

A measurement scale ranging from 1 to 5 of hurricane wind and ocean surge intensity. Number 1 is a weak hurricane; whereas 5 is the most intense hurricane.

**Special Flood Hazard Area (SFHA)**

The SFHA is a high-risk area defined as any land that would be inundated by a flood having a 1 percent chance of occurring in a given year (also referred to as the base flood).

**Surplus Lines**

Insurance not available from a licensed insurer (typically specialty lines of insurance) sold by non-licensed (“nonadmitted”) insurers in accordance with applicable state insurance regulations.

**Take-Out Policy**

An insurance policy sold by an insurer to a policyholder of a state catastrophe insurance fund or residual market plan. The insurer “takes the policyholder out” of the state fund or plan.

**Tropical Cyclone**

A large-scale circular flow occurring within the tropics and subtropics which has its strongest winds at low levels; a tropical cyclone includes hurricanes, tropical storms and other weaker rotating vortices.

**Underwriting Capacity**

The maximum amount of money an insurer or reinsurer is willing to risk in a single loss event on a single risk or in a given period.

**Wind Pool**

See Beach Plan definition.

**Windstorm Deductible**

See Hurricane Deductible definition.

**Write Your Own (WYO) Insurer**

Property casualty insurance companies that participate in the NFIP WYO Program can write and service federal flood insurance policies in their own names.
2. ACRONYMS

CEA: California Earthquake Authority, www.earthquakeauthority.com
EPA: Environmental Protection Agency, www.epa.gov
FAIR: Fair Access to Insurance Requirements
FHCF: Florida Hurricane Catastrophe Fund, www.sbafla.com/fhcf
FIRM: Flood Insurance Rate Map
IBHS: Institute for Business and Home Safety, www.ibhs.org
III: Insurance Information Institute, www.iii.org
JUA: Joint Underwriting Association
NHC: National Hurricane Center, www.nhc.noaa.gov
PCS: Property Claim Services, www4.iso.com/pcs
RMS: Risk Management Solutions, www.rms.org
TRIA: Terrorism Risk Insurance Act
3. ADDITIONAL RESOURCES

AIR Worldwide: www.air-worldwide.com

Center for Disease Control and Prevention/National Institute for Occupational Health and Safety: www.cdc.gov/niosh

Disaster Center: www.disastercenter.com

Federal Alliance for Safe Homes: www.flash.org

Florida Division of Emergency Management: www.floridadisaster.org

Global Weather Oscillations: www.globalweatheroscillations.com

Insurance Services Office: www.iso.com

NatCatUS.org: www.natcatus.org

National Fire Protection Association: www.nfpa.org

National Flood Determination Association: www.nfdafllood.com

Red Cross: www.redcross.org

SmarterSafer.org: www.smartersafer.org

WeatherPredict Consulting, Inc.: www.weatherpredict.com