

# INFORMED DECISIONS ON CATASTROPHE RISK

## *Insurance and Behavioral Economics*

### *Improving Decisions in the Most Misunderstood Industry*

Behavioral biases can cause **consumers, insurers, regulators and politicians** to make **poor insurance decisions for low-probability, high-consequence events.**

- People have a tendency to estimate the likelihood and consequences of future disasters by **focusing on recent past experience.**
- Residents in hazard-prone areas **fail to take protective measures** prior to a disaster if its perceived likelihood is below their threshold level of concern.
- People **focus on short time horizons** when comparing the upfront costs of investing in protection with the future expected benefits of reduced losses.
- These behaviors are common for **low-probability, high-consequence events**, but not for insurance purchase decisions for other kinds of losses.

**Consumers:**  
Focus on recent past experience.

- *Example:* Many **homeowners** do not buy flood insurance because they misperceive the risk of damage as being extremely low. They are likely to buy insurance after a flood, and then several years later, cancel their policy.

**Insurers:**  
Correlated losses pose challenges.

- *Example:* Prior to 9/11, **insurers** viewed losses from terrorism as so improbable that the risk was not explicitly mentioned or priced in any standard policy despite the attempted bombing of the World Trade Center in 1993. After 9/11, most insurers refused to offer terrorism insurance rather than calculating a premium reflecting their best estimate of the risk.

**Regulators and politicians:**  
Concerned with re-election as well as fairness and equity.

- *Example:* Insurance **regulators** aided Florida homeowners in hurricane-prone areas by setting up a state insurer – the Citizens Property Insurance Corporation – that offered coverage at prices lower than insurers would have charged at premiums reflecting risk.

We propose these **guiding principles for insurance** to overcome behavioral biases, to make insurance more transparent and equitable, and to encourage investment in protective measures.

- **Principle 1: Premiums reflecting risk.** Insurance premiums should be based on risk to provide proper signals to individuals to purchase insurance, and to encourage them to invest in cost-effective mitigation measures to reduce their vulnerability to catastrophes.
- **Principle 2: Dealing with equity and affordability issues.** Any special treatment given to homeowners *currently residing in hazard-prone areas* (e.g., low-income or inadequately insured homeowners) should come from general public funding and not through insurance premium cross-subsidies.
- **Principle 3: Multi-year insurance.** To encourage investment in protective measures, insurers should design multi-year contracts with premiums that reflect risk. The price of this insurance may be higher than single year coverage, but would provide consumers with price stability. Regulators would have to allow insurers to charge premiums that reflect risk, and allow them to modify contracts if regulatory rules change during the contract period.

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Strategies to alleviate **consumers'** behavioral biases with respect to low-probability, high-consequence events:

- **Provide better information on the role of insurance.** *The best return on an insurance policy is no return at all.*
- **Focus on the consequences of being uninsured.** Describe the financial problems one would face if her home were destroyed by a disaster or if she were hospitalized due to serious illness.
- **Stretch the time horizon to make the event more salient.** If an event such as a flood has a 1 in 100 chance of occurring next year, present the probability as a greater than 1 in 5 chance of it happening in the next 25 years.
- **Offer multi-year flood insurance policies.** Because regulations in many states prevent insurers from setting premiums that reflect risk, multi-year insurance should be initiated under the federally-run National Flood Insurance Program with coverage tied to the property rather than to the current homeowner. When the property is sold, the multi-year insurance contract would be transferred to the new owner.

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Strategies to alleviate **insurers'** behavioral biases with respect to low-probability, high-consequence events:

- **Construct worst-case scenarios** for potential disaster losses so that insurers focus on the consequences of these extreme events in their pricing and coverage decisions.
- **Assign likelihoods** to these worst-case scenarios and specify uncertainties surrounding these and other scenarios in order to determine under what conditions a particular risk is insurable.
- **Consider providing flood insurance coverage in certain markets** using **more accurate flood maps** to determine areas where the private insurance market can provide flood coverage at competitive rates.

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Strategies to alleviate **regulators' and politicians'** concerns with equity and re-election:

- **Design equitable ways to assist low-income consumers** in purchasing insurance, such as a means-tested insurance voucher provided by the federal government or at a state level.
- **Appoint regulators as civil servants** so they don't focus their attention on short-term policies that may increase their chances for re-election.
- **Require regulators to hold hearings and provide full disclosure** before rendering decisions. Regulations should **make transparent** who is expected to benefit and who is likely to pay a greater share as a result of these actions.

## Evaluation of the new flood insurance and health care legislation within the framework of the Guiding Principles for Insurance

With the signing into law of the Biggert-Waters Flood Insurance Reform Act in July 2012 that renews the National Flood Insurance Program (NFIP) for five years, there is an opportunity to encourage those residing in flood-prone areas to take steps to reduce their losses in advance of the next disaster by modifying the program to reflect the guiding principles for insurance. The Affordable Care Act (ACA) legislation taking effect in 2014 in some ways follows the guiding principles and in some ways does not.

### How well does the new legislation align with the guiding principles for insurance?

	<i>Flood Insurance Reform Act of 2012</i>	<i>Affordable Care Act (ACA) (“Obamacare”)</i>
<b>Principle 1: Premiums reflecting risk</b>	YES: The Reform Act phases in risk-based pricing over a period of five years and removes rate subsidies for vacation homes.	NO: The ACA forbids insurance premiums to be based on risk (given age). Low risks cross-subsidize the higher risks by being charged prices that exceed their risk-based premiums. The law does permit premiums to be adjusted to reflect smoking behavior and participation in workplace wellness programs.
<b>Principle 2: Dealing with equity and affordability issues</b>	PARTIALLY: The Reform Act authorizes the Federal Emergency Management Agency and the National Academy of Sciences to examine the use of a means-tested insurance voucher system for homeowners who cannot afford to pay risk-based rates without financial assistance. The legislation does not address the immediate affordability issues for those who will see premium increases this year and next.	YES: The ACA is designed to satisfy equity and affordability considerations, the most important failing of current health insurance markets.
<b>Principle 3: Multi-year insurance</b>	NO: Multi-year insurance should be feasible, since the federal government is the provider of almost all flood insurance policies for homeowners. When the property is sold, then the multi-year flood insurance contract should be transferred to the new owner.	YES: Almost all private individual medical insurance carries a provision guaranteeing renewal in the following year at premiums that are not altered based on any exogenous change in the person’s risk. In other words, there is multi-year protection against reclassification of a person’s risk. This provision is required for all individual insurance under the ACA.

**For more information, see:**

Howard C. Kunreuther and Mark V. Pauly. Addressing the Disconnect. *Best’s Review*, January, 2013.

Howard C. Kunreuther, Mark V. Pauly and Stacey McMorro. *Insurance and Behavioral Economics: Improving Decisions in the Most Misunderstood Industry*. New York: Cambridge University Press, 2013.

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**Issue Brief: Insurance and Behavioral Economics:**  
*Improving Decisions in the Most Misunderstood Industry*

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