

Insurance and Behavioral Economics:
Improving Decisions in the Most Misunderstood Industry
(with Mark Pauly and Stacey McMorrow)

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Center for Insurance Policy and Research
CIPR SUMMIT: Flood Insurance Reform
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What is Great and Not-So-Great about Insurance

An insurance market can be a highly efficient and effective device for cushioning the consequences of large losses.

It can also encourage risk mitigation through premium reductions.

Behavioral economics raises some problems and challenges for buyers, sellers, and policymakers particularly for low-probability, high-consequence (LP-HC) events.

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Curbing Our Enthusiasm and Channeling Our Anxiety

Some insurance markets work well

- Term life insurance
- Auto collision insurance
- Homeowners' insurance

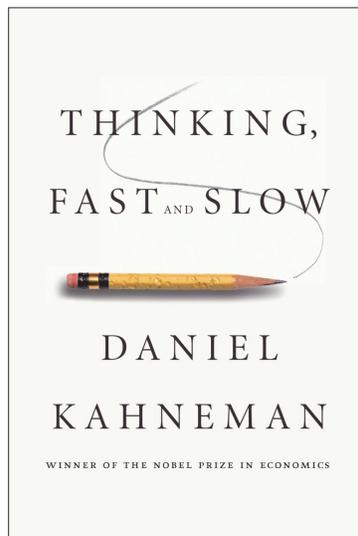
But LP-HC events puzzle consumers, insurers and politicians/regulators.

- Consumers: Very limited personal experience with events
- Insurers: Correlated losses pose challenges
- Politicians/Regulators: Concerned with re-election, as well as fairness and equity

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Framework for Analysis for Dealing with LP-HC Events

Based on Daniel Kahneman, *Thinking, Fast and Slow*

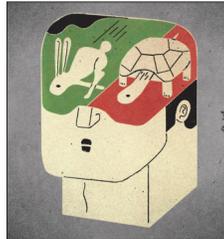


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Framework for Analysis for Dealing with Extreme Events (Converting System 1 to System 2 Behavior)

System 1 operates automatically and quickly with little or no effort

- Individuals use simple associations including emotional reactions
- Highlight importance of recent past experience
- Basis for systematic judgmental biases and simplified decision rules



System 2 allocates attention to effortful and intentional mental activities

- Individuals undertake trade-offs implicit in benefit-cost analysis
- Recognizes relevant interconnectedness and need for coordination
- Focuses on long-term strategies for coping with extreme events



Biases and Heuristics Triggered by System 1 Behavior

Availability Bias – Estimating likelihood of a disaster by its salience

Threshold Models – Failure to take protective measures if perceived likelihood of disaster is below threshold level of concern

Imperfect Information – Misperceives the likelihood of event occurring and its consequences.

Myopic Behavior – Focus on short-time horizons in comparing upfront costs of protection with expected benefits from loss reduction



Consumer Behavior: Flood Insurance

The Lowland family did not purchase flood insurance or invest in protective measures when they moved into their home 10 years ago because they misperceived the risk of damage to be extremely low.

After the 2008 floods, they purchased flood coverage but have not experienced any losses since that time.

Last year they cancelled their policy considering it to be a poor investment.

The bank holding their mortgage has not followed up on the flood insurance requirement.

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Consumer Behavior Triggered by System 1 Flood Insurance

Responses by the Lowland family **prior** to the 2008 floods:

- ***Imperfect information:*** Lowland family misperceives flood risk
- ***Threshold model:*** Flood risk is below their level of concern
- ***Myopic behavior:*** Failure to consider long-term benefits of flood protection

Responses by the Lowland family **after** the 2008 floods:

- ***Availability bias:*** Lowland family focuses on damage from floods
- ***Myopic behavior:*** Flood insurance is a poor investment
- ***Imperfect information:*** Failure to adhere to flood insurance requirement

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Lack of Interest in Protection Against Disasters: Cancellation of Flood Insurance Even When Required

Many homeowners cancel their flood policy if they have not experienced a flood for several years.

Reason: Flood insurance was not a good investment.

Data: Of 1,549 victims of a flood in August 1998 in northern Vermont, FEMA found 84% of residents in SFHAs did *not* have flood insurance, 45% of whom were required to purchase it (Tobin and Calfee, 2005).

Dynamic Analysis of Flood Insurance Tenure

New Business Year	2001	2002	2003	2004	2005	2006	2007	2008
Housing Units	841,000	876,000	1,186,000	986,000	849,000	1,299,000	974,000	894,000
1 year	73%	67%	77%	78%	76%	73%	74%	73%
2 years	49%	52%	65%	65%	63%	59%	58%	
3 years	39%	44%	57%	55%	53%	48%		
4 years	33%	38%	50%	48%	44%			
5 years	29%	33%	44%	38%				
6 years	25%	30%	33%					
7 years	22%	26%						
8 years	20%							

Note: our analysis of the American Community Survey reveals that the median length of residence was about 6 years over this period.

Aiding Consumers to Undertake Good System 2 Thinking

Provide better information on the role of insurance

- The best return on an insurance policy is no return at all

Use availability bias to focus on consequences

- Highlight financial problems if home were destroyed and family is uninsured

Overcome threshold model by stretching time horizon

Example: Likelihood of 100 year flood

- Next year: 1 in 100
- 25 years: greater than 1 in 5 chance of experiencing at least 1 flood during this period

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Insurer Behavior: Terrorism Insurance

Prior to 9/11, insurers did not charge anything for terrorism coverage despite the attempted bombing of the World Trade Center in 1993, the 1995 Oklahoma City bombing and terrorist attacks throughout the world.

After 9/11, most insurers refused to offer terrorism insurance. or if they did provide coverage they charged extremely high premiums.

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Insurer Behavior Triggered by System 1 Terrorism Insurance

Responses by insurers

- **Threshold Behavior:** Prior to 9/11 insurers treated likelihood of a terrorist attack in the U.S. as below their threshold level of concern so ignored potential consequences.
- **Availability Bias:** After 9/11 insurers focused on enormous potential claim payments from another terrorist attack. As a result they felt terrorism was an uninsurable risk.
- **Imperfect Information:** Insurers failed to take into account the likelihood of a future terrorist attack when determining premiums they would have to charge for coverage, and how much firms would be willing to pay for protection.

Example: 6 months after 9/11 a brokerage firm negotiated an insurance policy where an industrial company paid \$900,000 for \$9 million in coverage for damage to their building next year from a terrorist attack.

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Aiding Insurers to Undertake System 2 Thinking

Overcome threshold model

- Construct worst-case scenarios before a disaster
- Assign likelihoods to worst case scenarios after a disaster to show that risk is insurable

Provide multi-year insurance along with annual policies

- Provides rate stability to insureds
- Diversifies risk over time and reduces variance in losses
(σ^2 decreases as a function of $1/n$)
- Reduces marketing costs

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Regulators'/Politicians Behavior: Forming Citizens Property Insurance Corporation in Florida

In 2007, Florida formed the Citizens Property Insurance Corporation that provided homeowners in hurricane-prone areas with highly subsidized insurance policies. If Florida had experienced a severe hurricane in the next few years, Citizens would have been insolvent. Who would bail it out should such a storm occur?

Responses by Politicians/Regulators

- **Threshold Behavior:** Severe hurricane is below threshold level of concern of public

- **Myopic Behavior:** Focus on short-term benefits of economic development without focusing on long-term consequences of a severe hurricane to the affected area and financial stability of the state

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**Example: The Rebuilding of Pass Christian, MS
after Hurricane Camille**

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Richelieu Apartments,
Pass Christian, Mississippi,
August 1969



Richelieu Apartments once stood here but were wiped away by Hurricane Camille in 1969 with most residents dying. The Pass Christian Shopping Center was constructed in the same location and was destroyed by Hurricane Katrina in 2005. Would you build here?

Guiding Principles for Insurance

Principle 1: Premiums reflecting risk

Insurance premiums should be based on risk in order to provide signals to individuals as to the hazards they face and to encourage them to engage in cost-effective mitigation measures to reduce their vulnerability to catastrophes. Risk-based premiums should also reflect the cost of capital that insurers need to integrate into their pricing to assure adequate return to their investors.

Principle 2: Dealing with equity and affordability issues

Any special treatment given to homeowners currently residing in hazard-prone areas (e.g., low-income uninsured or inadequately insured homeowners) should come from general public funding and not through insurance premium subsidies.

Principle 3: Multi-year insurance

To overcome myopia and encourage investment in preventive or protective measures, insurers should design multi-year contracts with premiums reflecting risk. Insurance vouchers should deal with issues of equity and affordability.

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Insurance Vouchers: Existing Programs as Models

Food Stamp Program

Mission: Vouchers to purchase food based on annual income and family size

Low Income Home Energy Assistance Program

Mission: Assist low-income households in meeting immediate energy needs

Universal Service Fund

Mission: Provide discounts to low-income individuals in rural areas so rates for telecommunications services are comparable to urban areas

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Aiding Regulators to Undertake System 2 Thinking

Provide a rationale for risk-based premiums (Principle 1) coupled with means-based insurance vouchers for those requiring special treatment (Principle 2)

Have regulators provide data to justify why those in coastal areas should be given special treatment.

Have insurance required for everyone located in hazard-prone areas as is done with automobile insurance for bodily injury and property damage.

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Proposed Strategy for Flood Insurance

Multi-year flood insurance contracts through the National Flood Insurance Program (NFIP)
(5-, 10-, 20-years insurance coverage)

Long-term home improvement loans for mitigating one's property

**Insurance and loans are tied to the property,
not to the individual**



Applying the Three Principles to Flood Insurance

Rates would reflect risk (*Principle 1*)
(FEMA needs to design better maps)

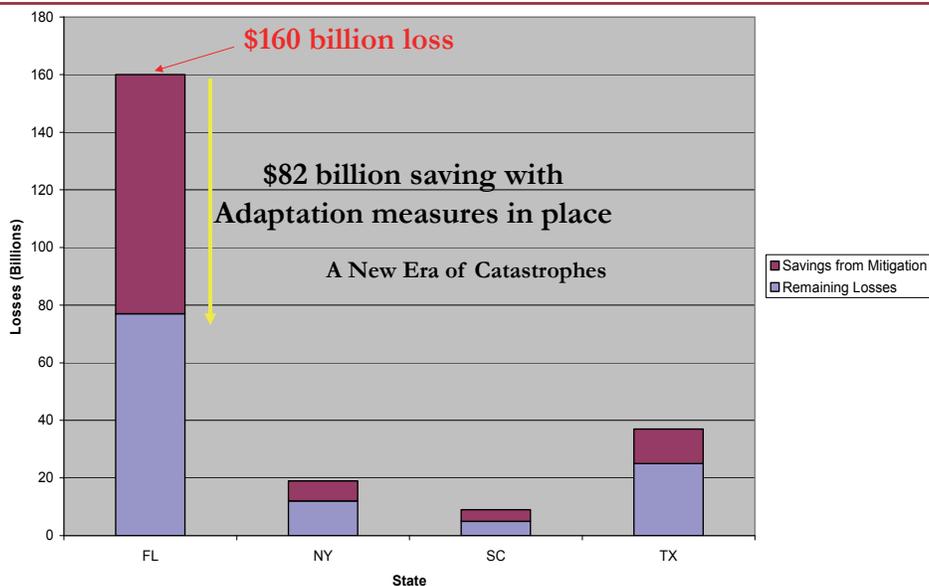
Insurance vouchers for those needing special treatment (*Principle 2*)
(Only for those currently residing in flood-prone areas)

Homeowners would have knowledge that their premiums are stable
over time (*Principle 3*)

Congress renewed NFIP for 5 years in July 2012
Authorized studies by the Federal Emergency Management Agency
and the National Academy of Sciences to examine ways to
incorporate risk-based premiums coupled with means-tested
insurance vouchers

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Applying the Three Principles to Flood Insurance



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Encouraging Adaptation Measures: An Example

Characteristic of Adaptation Measures: Upfront cost/long-term benefits

Cost of Mitigation: \$1,500 to strengthen roof of house

Nature of Disaster:

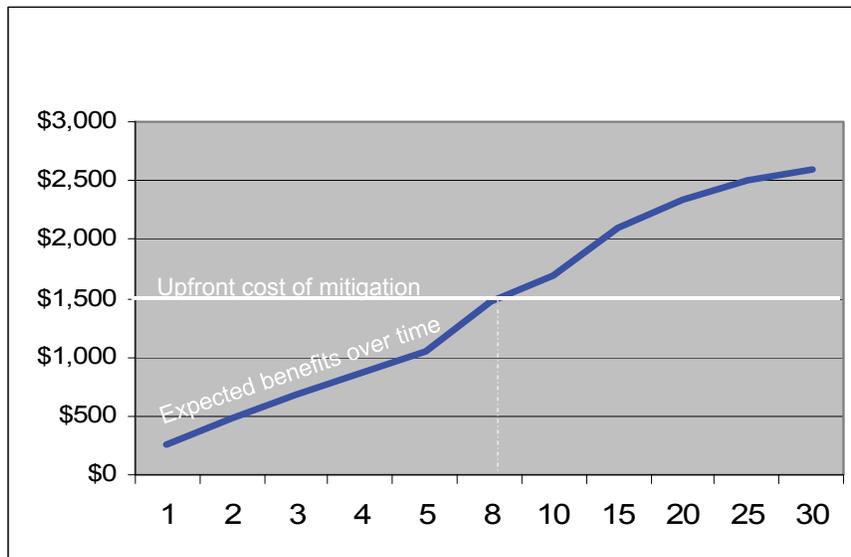
- 1/100 chance of disaster
- Reduction in loss (\$27,500)

Expected Annual Benefits: \$275 ($1/100 * \$27,500$)

Annual Discount Rate of 10%

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Expected Benefit-Cost Analysis of Mitigation (Annual Discount Rate 10%)



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Rationale for Multi-Year Flood Insurance Encouraging Mitigation with Multi-Year Loans

Illustrative Example

Cost of partial roof mitigation: \$1,500

Expected annual benefit of partial roof mitigation:
\$275 $(1/100 * \$27,500)$

Annual payments from 20 year \$1,500 loan at
10% annual interest rate: \$145

Reduction in annual insurance payment: \$275

Reduction in annual payments due to mitigation:
 $\$275 - \$145 = \$130$



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Linking Multi-Year Home Improvement Loans with Multi-Year Flood Insurance

Everyone is a Winner:

Homeowner:

Lower total annual payments

Insurer:

Reduction in catastrophe losses and
lower reinsurance costs

Financial institution:

More secure investment due to lower losses
from disaster

General taxpayer:

Less disaster assistance



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Conclusions

Insurance markets can do a lot in the face of serious risks.

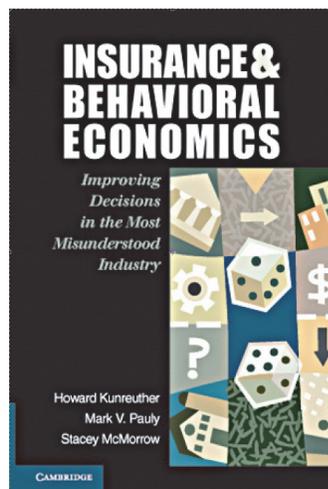
They can help to spread risk of unavoidable disasters and offer incentives to mitigate risk. But they cannot work miracles, especially in LP-HC settings.

Regulators can encourage System 2 rather than System 1 thinking if they are wise and far-sighted and/or incentivized to do so.

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

Coming soon....



Part I: Contrasting Ideal and Real Worlds of Insurance

Chapter One: Purposes of this Book
Chapter Two: An Introduction to Insurance in Practice and Theory
Chapter Three: Anomalies and Rumors of Anomalies
Chapter Four: Behavior Consistent with Benchmark Models

Part II: Understanding Consumer and Insurer Behavior

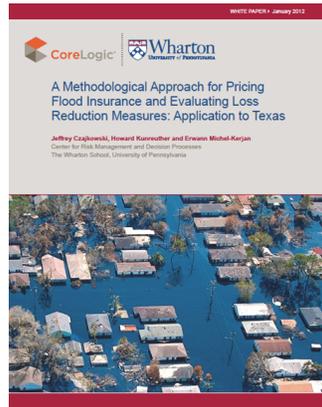
Chapter Five: Real World Complications
Chapter Six: Why People Do or Do Not Demand Insurance
Chapter Seven: Demand Anomalies
Chapter Eight: Descriptive Models of Insurance Supply
Chapter Nine: Anomalies on the Supply Side

Part III: The Future of Insurance

Chapter Ten: Design Principles for Insurance
Chapter Eleven: Strategies for Dealing with Insurance-Related Anomalies
Chapter Twelve: Innovations in Insurance Markets through Multi-Year Contracts
Chapter Thirteen: Publicly-Provided Social Insurance
Chapter Fourteen: A Framework for Prescriptive Recommendations

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Wharton Risk Management and Decision Processes Center (Jeffrey Czajkowski, Howard Kunreuther, Erwann Michel-Kerjan)



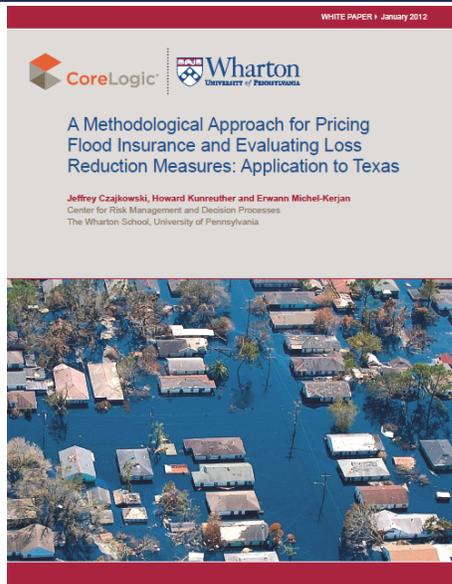
CIPR Summit: Flood Insurance Reform
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Biggert-Waters Flood Insurance Reform and Modernization Act of 2012

Some key aspects of the bill (from our perspective):

- Premium adjustment over 5 years to reflect current risk of flood
- Consideration of the inclusion of catastrophic loss years in determining chargeable premium rates
- Study to assess a broad range of options, methods, and strategies for privatizing the NFIP
- Study on affordability and the use of insurance vouchers
- Possible use of reinsurance and alternative risk transfer instruments

What Might Private Flood Insurance Rates in the U.S. Look Like?



Joint Wharton Risk Center Research Report with CoreLogic and Swiss Re - issued in January 2012

(incorporated comments from a number of outside reviewers including members of the Association of State Floodplain Managers, FEMA, and Resources for the Future)

Summary of Research Study Key Points

NFIP Call for Reform – An Increased Role of the Private Market

- ❑ What will flood insurance premiums that reflect risk look like?
- ❑ How might these risk-based premiums be affected by mitigation?

Generation of premiums reflecting risk and assessing their impact

- ❑ CoreLogic and Swiss Re flood catastrophe models used to generate an unloaded premium that reflects flood risk down to the single-family residence level in two TX counties
- ❑ Similarly classified FEMA flood zones in different geographical areas can have significantly different flood exposure
- ❑ Generated risk-based premiums and unloaded NFIP premiums differ – one is sometimes higher and sometimes lower than the other
- ❑ Where the NFIP premium is higher, a relatively substantial private insurer's loading factor must be applied for private insurers to charge more than the NFIP

Evaluating the effectiveness of flood mitigation

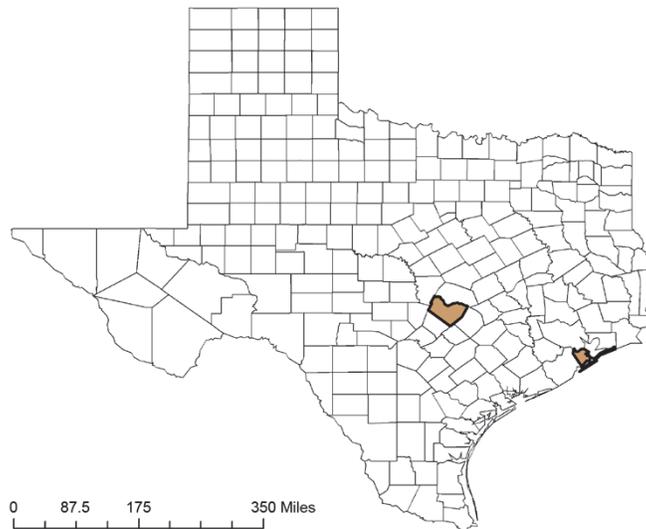
- ❑ Percentage reductions in flood risk due to traditional mitigation efforts are significant
- ❑ Benefit-cost analysis reveal that mitigation measures cannot be justified solely on economic grounds

Outline of Talk

- 1) Texas Case Study Catastrophe Model Results
- 2) vs. NFIP Premiums
- 3) Flood Mitigation and Economic Efficiency
- 4) Defining privatization

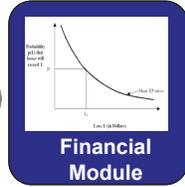
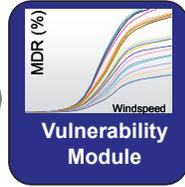
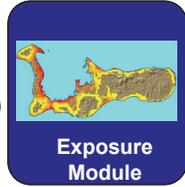
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1) Modeling Catastrophic Risks – Texas Case Study



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Application of CoreLogic and Swiss Re Flood Catastrophe Models to Texas



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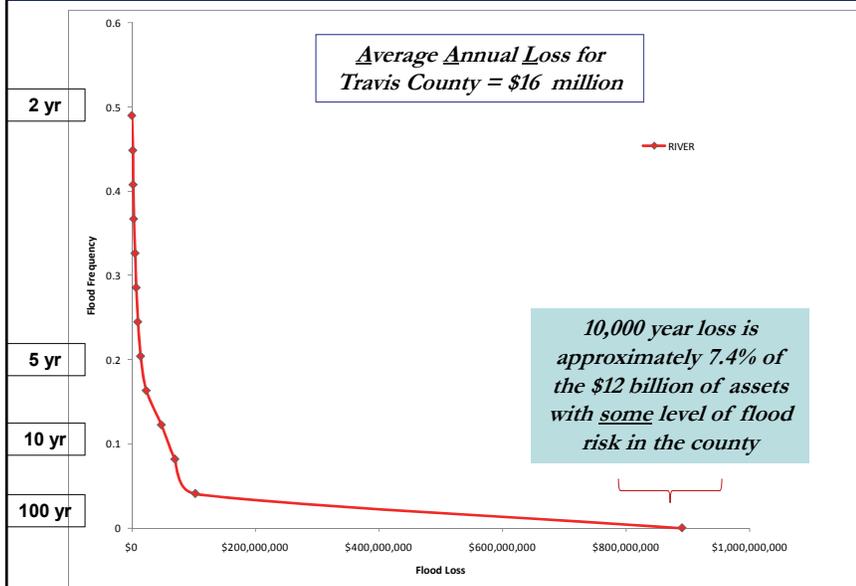
- A method to characterize the hazard in some probabilistic manner
- The exposure at risk – in other words, the structures that may be damaged
- Estimating the loss levels given a certain magnitude of hazard
- Creation of loss estimates that have a certain probability of exceedance

- *River and Surge hazards modeled*
- *Single-family residences in two TX counties – Travis and Galveston*
- *CoreLogic/Swiss Re proprietary*
- *Generation of EP curves and corresponding AAL by county, flood zone, individual home*

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Travis County EP Curve and Worst-Case Scenario



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Some Terminology

1) *Generalized* existing FEMA flood zones:

- ❑ **A** - areas with a 1% annual chance of flooding (100-year flood)
- ❑ **X500/B** - area of **moderate** flood hazard, usually the area between the limits of the 100-year and 500-year floods
- ❑ **X/C** - area of **minimal** flood hazard, usually depicted on FIRMs as above the 500-year flood level
- ❑ **V** - coastal areas with a 1% or greater chance of flooding and an *additional hazard associated with storm waves*.

2) **Risk-Based Premium** is the Average Annual Loss (AAL) accounting for exposure value

$$= [\text{Derived AAL} / \text{Exposure value}] * \$1000$$

Detailed Risk-Based Premium Results

Similarly classified FEMA flood zones in different geographical areas can have significantly different flood exposure

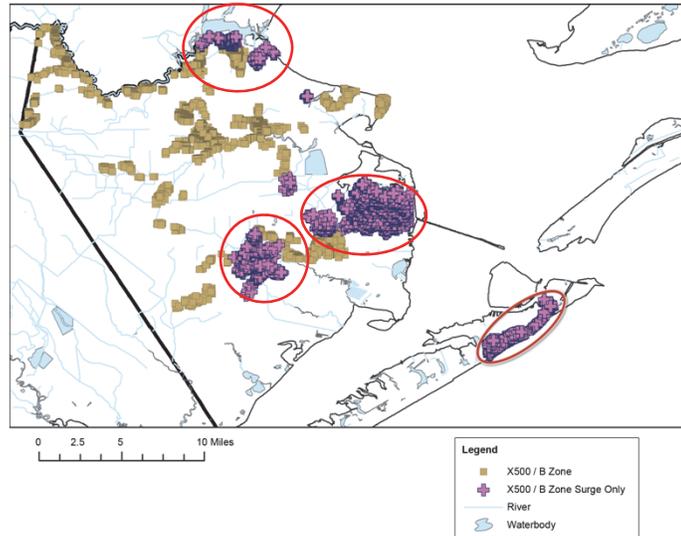
Risk-Based Premiums

<u>FEMA Flood Zone</u>	<u>Travis County</u>	<u>Galveston County</u>
A	\$5.51	\$6.31
X500/B	\$1.69	\$4.21
X/C	\$0.07	\$1.64
V	N/A	\$6.60

- ❑ *Substantial variation* in pure premiums between coastal and inland locations within zones of *similar risk classification*
- ❑ Although premiums in riskier flood zones are higher, there is *substantial variation of the range of flood risk* for a given coastal or inland county
- ❑ FEMA characterizes only an *average flood risk* in a given zone without indicating the variance across properties - *which exists* across all zones (not shown above)

In coastal counties, storm surge risk is not limited to the designated storm wave hazard in the V & Coastal A zones

For example, Galveston County **X500** residences subject to storm surge risk only



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Texas Catastrophe Model Results' Key Take-Aways

- 1) These findings indicate the necessity of undertaking a *microanalysis* of the exposure of residents to riverine flood and storm surge from a *probabilistic perspective* if one wants to determine the pure premium associated with a given home.
- 2) One cannot simply aggregate risks per flood zones; there is a lot of heterogeneity in a given flood zone depending upon the particular geographical area

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2) Unloaded Study Premiums vs. Unloaded NFIP Premiums – Travis County

On average, the NFIP is not always under-pricing the private market premium – e.g., Travis X500 zone (shown below) or the Galveston V zone (not shown)

FEMA Flood Zone	Travis County Study AAL Data			2009 NFIP Unloaded Premium Data*		
	# of Single-Family Residences	Mean Total AAL per home	Mean AAL Cost per \$1,000	# of Single-Family Residences	Adjusted (67%) Average NFIP Premium	Adjusted Average Loss Cost per \$1,000
A	6,790	\$ 1,508	\$ 5.51	3,726	\$ 512	\$ 3.47
X500 / B	5,010	\$ 461	\$ 1.69	48	\$ 462	\$ 3.19
X / C	214,607	\$ 18	\$ 0.07	3,949	\$ 239	\$ 1.13
Travis County Total	226,407	\$ 73	\$ 0.27	7,723	\$ 372	\$ 2.30

*NFIP data is for matched ZIP codes which are not necessarily restricted to Travis County.

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Loaded Study Premiums vs. Loaded NFIP Premiums – Travis County

Where the NFIP premium is higher, a **200%** private insurer's loading factor must be applied for private insurers to charge more than the NFIP

FEMA Flood Zone	NFIP	Study AAL				
	Average Premium Loss Cost per \$1,000	Unloaded Mean AAL Cost per \$1,000	$\lambda = 0.5$	$\lambda = 1$	$\lambda = 2$	$\lambda = 3$
A	\$ 5.18	\$ 5.51	\$ 8.26	\$ 11.02	\$ 16.53	\$ 22.03
X500 / B	\$ 4.76	\$ 1.69	\$ 2.54	\$ 3.38	\$ 5.07	\$ 6.76
X / C	\$ 1.68	\$ 0.07	\$ 0.11	\$ 0.14	\$ 0.21	\$ 0.28
Travis County Total	\$ 3.39	\$ 0.27	\$ 0.40	\$ 0.54	\$ 0.81	\$ 1.08

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Comparison to NFIP Premiums Implications

1) Underpricing and Overpricing of Risk:

Travis County:

- Not charging enough in the high risk A zone
- Constraining take-up rates in the moderate and low risk zones via overpricing
- Seemingly fostering adverse selection and fiscal insolvency

Galveston County:

- Charging too much in the high risk V zone
- Encouraging take-up rates in the A, X500 and X zones by underpricing the risk of storm-surge
- Important financial balance implications – e.g., Hurricane Ike 20,000 claims totaling \$1.3 billion, potentially 85% of which were outside the V zone

2) Importance of the Loading Factor:

- To the extent that a private insurer has a lower loading factor, our results indicate that there are targets of opportunity for that insurer to actively sell flood insurance today.
- More private market participation should increase take-up rates and assure more individuals are effectively covered against floods.

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3) Flood Mitigation and Economic Efficiency

- Elevation** is one mitigation aspect analyzed where each home was elevated by:

- 2 feet
- 4 feet
- 8 feet

- Key elevation findings for samples of equally valued homes:

- *Percentage reductions* in AAL due to mitigation are significant
- On average, the dollar value savings associated with the percentage AAL reductions are not enough to economically cover the expenses of traditional mitigation (elevation) to *existing construction*.
- However, some targeted outcomes can be shown to achieve desired economic efficiency results

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Elevation Benefit-Cost Results Example

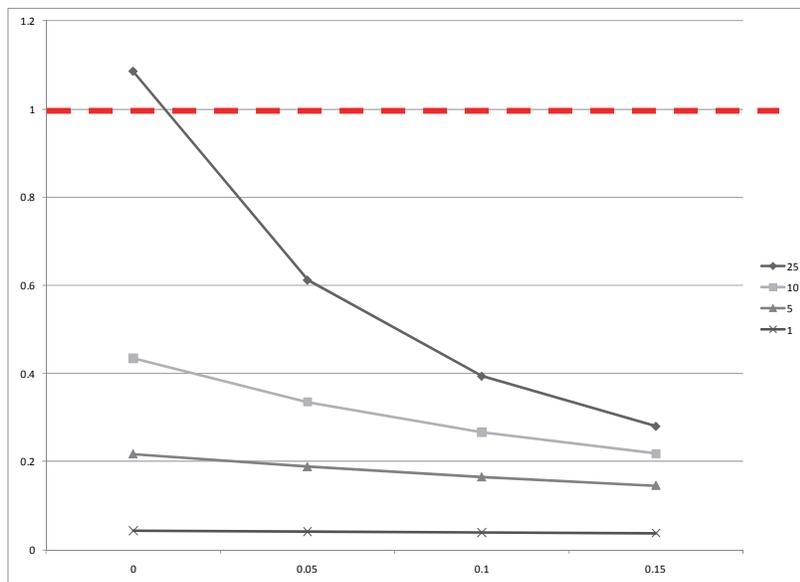
- ❑ Travis County X500 zone
- ❑ 2,000 square foot wood frame homes with a crawl space
- ❑ Building Value = \$175,000
- ❑ 8 feet of elevation
- ❑ Average premium percentage reduction = 95%



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Illustrative BCA for best-case scenario – Travis X500 Zone Wood Frame Home



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Other Privatization Issues to Address:

- The ability of insurers to charge rates reflecting risk predicated on probabilistic modeling in a highly regulated market
- Special treatment for those who cannot afford risk-based premiums
- A strategy for transitioning existing NFIP policies into the private market
- The management of high-risk repetitive loss locations
- Data sharing
- Accurate mapping
- The possible correlation or diversification of flood risk with wind exposure from hurricanes or other risks in an insurer's portfolio

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Thank You – Questions?

*For more information on the
Wharton Risk Management & Decision Processes Center*

<http://www.wharton.upenn.edu/riskcenter/>



Consumer Perspectives: Flood Insurance Reform

CIPR Summit: August 14, 2012

Sonja Larkin-Thorne & Peter Kochenburger
NAIC Consumer Representatives



Peter Kochenburger
University of CT. School of Law

Flood Insurance Reform & Modernization: FIRM
Signed into law July 6, 2013

Many Positives

- Updating Flood Mapping
- Addressing Actuarial Soundness
- More focus on Mitigation
- *But* – Education? Homeowners, Agents, Insurers, Lenders & Government



FIRM: Numerous Studies

- Requires 15+ reports by the GAO, FEMA Administrator, National Academy of Sciences and the Federal Insurance Office
- Studying risk, privatization, reinsurance, additional coverages, affordability and participation, evaluating NFIP contractors, NFIP claim-paying ability, etc.
- Consumer and Producer participation only required in *one* of these reports (the FIO). These perspectives and expertise essential
- How other nations address these common problems



Policy Forms & Disclosures

Sec 100234: "*all conditions, exclusions and other limitations pertaining to coverage ... in plain English, in boldface type and in a font [2X the size of the other text]*"

Good to address Disclosure Requirements, but:
In the 19 page FEMA Dwelling Form, well over half the policy would be in boldface and 2X type.



Consumer Testing

Two Examples:

Essential to Creating Meaningful Disclosure Forms

- 1) PPACA Disclosures – modeled for NAIC, sponsored by Consumers Union and other Consumer groups
- 2) New Mortgage Disclosure Form

<http://www.consumerfinance.gov/knowbeforeyouowe/#timelines>

Recall fall 2011 National Meeting Presentation by Professor Patricia A. McCoy, formerly Assistant Director for Mortgage Markets, Consumer Financial Protection Bureau



The Coverages Provided are Essential

- Many Insurers reducing coverage for water damage
- Need for the *possibility* of full coverage for water-related damages (as accidents)
- Careful integration with “standard” HO policy forms
- FIRMS’ “Alternative Loss Allocation System for Indeterminate Claims” (section 100253) an interesting start to addressing the Flood – Windstorm coverage issues



And, the Language Matters

Anti-Concurrent Causation Exclusion:

"We do not insure for loss caused directly or indirectly by any of the following [water damage, etc.]. Such loss is excluded regardless of any other cause or event contributing concurrently or in any sequence to the loss."

- Comprehensible? – inconsistent applications
- Fair?
- Flood/Windstorm Policy?



Sonja Larkin-Thorne NAIC Consumer Representative





Taking the Politics Out

- Since 2008 the Program has been extended 18 times and in 2010, it expired four different times and coverage couldn't be purchased for about 53 days
- Flooding is not just a coastal problem, but a national one, 10 percent of the houses in the Midwest are in floodplains
- 25% of all flood claims occur in the low-to-moderated risk areas
- 5.5 Million Policyholders – and many more who should have a flood coverage and DON'T



Privatization is Not the Answer

- NFIP created in 1968 because there was no affordable or available private market
- Rate and underwriting stability essential to maintaining and increasing policyholder participation
- The NFIP is essential to the financial stability for home and business owners, local communities and state government.



Financial Stability is Critical

- Long term program stability is critical to American taxpayer, states, communities and policyholders
- Biggert-Waters has taken steps in the right direction, yet the future is still questionable
- We need to empower state and local government to address the "mitigation" mess. Should we continue to allow rebuilding of repeat flood losses?
- State and local governments can take land for other purposes, why not to stop costing American taxpayers excess losses in the NFIP program?
- We need a Guaranty Fund type program to assist in repaying existing debt. Surcharges would be based on dwelling type, single family, multi family, business, etc.



Example: Connecticut

- Small State, densely population 3.5 million people
- Every municipality in Connecticut currently has some flood exposure
- 40,978 NFIP policies in force
- Number of claims since 1978 = 20,858
Dollars paid since 1978 = \$232,950,353



Education is Essential

- Flood is a national issue
- NFIP participation important not only to existing policyholders, but also U.S. taxpayers (moral hazard and costs in federal post-disaster efforts)
- The bank is broke, property owners need to understand bailouts are over. States and local government must invest and partner with NFIP to educate residents
- Local government mails property tax bills annually, lenders send monthly mortgage statements why not mandate NFIP inserts.
- Fund the educational outreach programs

**Patty Templeton-Jones
Chief Operating Officer
Fidelity National Insurance Services**

Center for Insurance Policy and Research
CIPR SUMMIT: Flood Insurance Reform
Washington, DC
August 14, 2012

Talking Points

As any single line flood insurer, with vested interest and primary focus on any change made by the NFIP, we clearly know that the Biggert-Waters reform Bill

- has serious effect on the future of our business
- Without increased rates, the health of the NFIP, real estate and the economy as a whole are at risk.
- With increased rates we place additional financial burden on consumers.

Challenges in the flood reform bill will greatly involve

1. Communicating the details to the public:

- Property owners will not understand the large increases in their flood insurance premiums (discuss differences with real insurance rate increases)
 - Because of the technical basis of the rating:
 - Flood zones don't relate to what they remember about floods in their area
 - Because grandfathering seems FAIR in the mind of the consumer
 - Insured's will assume the "evil insurance company" is responsible.
 - The companies have asked FEMA to develop an insert to put into the renewal Bill to help explain the new premiums.
 - Because being told to pay more (to purchase an Elevation Certificate) to determine risk based premium rates and much higher premiums seems like a scam

NOTE:

As a single line flood writer, these challenges will not impact other lines of business for us (unlike multi line writes; reputational issues). The flip side of that is a single line insurer's reputation with consumers is totally affected by their view of the flood program.

2. Elimination of subsidy: with a
 - 25% increase-- very substantial
 - Pre-FIRM risks
 - non-primary residence
 - Severe Repetitive Loss,
 - Grandfathering when map changes –
 - fully actuarially rated
 - 20% each year (Pre-FIRM & Post-FIRM),
 - Actuarial rating requires an Elevation Certificate
 - Additional cost to the property owner
 - High impact to Pre-FIRM and Post FIRM bldgs.in SFHA
3. Allow Premium Installment payments (seems) – An understandable accommodation due to higher premium costs:
 - Not currently a part of the flood program
 - Will need additional time to develop methods
 - Non-traditional cancellation process for flood insurance makes this challenging
 - Currently insured's can pay via credit card (not feasible for all)
 - Bill also addresses by adding mandatory escrow which would allow time to pay and not incur interest or fees
4. Overall continued education for the product that is not and does not respond as a traditional property policy.
 - The program continues to evolve and therefore becomes even more complex to everyone (insured's agents and companies)
 - FEMA has begun reaching out to Departments of Insurance to help them with questions they may receive concerning flood insurance and the Biggert/Waters Bill.

Raising the cap on premium increases means, without a doubt, affordability will be the next hurdle.

- Affordability will be an issue with so many faces...property owners, FEMA administrators, politicians, flood plain managers, actuaries, map makers, lenders, possibly reinsurance companies and, of course, local, state and federal officials.
- Is there enough flexibility in the current legislation to develop opportunities to create affordability for the consumer?
- Or will affordability be the next limiting issue for further NFIP reform?

Finding new ways to set the rates in the future will be imperative.....

- I pose that identifying the method to set those rates would look very different for any private insurer than it would for the NFIP.

- identifying a method of rate setting
 - NFIP based rates on average annual administrative costs and cash flow on very broadly defined flood zones.
 - Result: The “full-risk” NFIP premiums will remain too low as the goal was to cover losses relative to the historical average loss per year.
 - A huge event above the historical average will continue to generate deficits.this is where Katrina caused the massive debt the NFIP is attempting to repay.
 - Private insurance would include reinsurance costs, catastrophe loads and amounts to build up and maintain a surplus to cover large events
 - Private insurers must charge premiums that include a margin of profit and a reserve for losses

Strong floodplain management directives must be the firm basis of any and all flood insurance programs, whether federal or private,

- the only hope of minimizing flood disasters in the future.

The following challenges must be overcome as they would be a deal-breaker to any form of privatization

- Flood zone map update schedules must be continuous
 - Political posturing (power struggles) cannot continue to prevent map adoption
- Flood mitigation practices should be standardized
- Building codes strengthened

There must be a way to balance

- actuarially charged rates and
- affordability and
- strong floodplain management....

And, no doubt, it will involve all sides; private and public to resolve, understand and move forward. I look forward to watching the progress we can make in the next five years.

Center for Insurance Policy and Research Summit: Flood Insurance Reform

August 14, 2012

Stuart B. Mathewson, MAAA, FCAS
Chair, Flood Subcommittee
Co-chair, Extreme Events Committee



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Background—Actuarial Rates

- Basic principle—an actuarial rate should reflect the hazard of the insured risk.
- Casualty Actuarial Society (CAS) Statement of Principles Regarding Property and Casualty Insurance Ratemaking
- Actuarial Standards Board (ASB)—Actuarial Standard of Practice No. 12—Risk Classification



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CAS Statement of Principles Regarding Property and Casualty Insurance Ratemaking

- “Principle 1: A rate is an estimate of the expected value of future costs.”
- “Principle 2: A rate provides for all costs associated with the transfer of risk.”
- “Principle 3: A rate provides for the costs associated with an individual risk transfer.”
- “Principle 4: A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.”



ASOP No. 12—Risk Classification

- “A relationship between a risk characteristic and an expected outcome, such as cost, is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic.”



Actuarial Perspective on Flood Insurance Reform Act of 2012

- Premium rate structure reforms
 - The Flood Insurance Subcommittee support efforts to create more adequate rates by reducing subsidies for selected properties.
- Premium adjustment
 - To be consistent with actuarial principles, premiums should accurately reflect the hazard in the rates, as reflected in updated maps.
- Minimum deductibles
 - Increasing minimum deductibles helps to mitigate the losses to the program.



Actuarial Perspective on Flood Insurance Reform Act of 2012

- Considerations in determining chargeable premium rates
 - We support using actuarial principles in determining rates. However, including catastrophe years in determination of “average historical loss year” may actually violate those principles.
- Reserve fund/repaying flood insurance debt
 - In theory, setting the reserve fund is a good idea. But if the debt is to be paid off first, this may not be practical.
 - There could be a need for significantly more premium.
- Reinsurance initiative
 - While private reinsurance could be a significant help in stabilizing the program, at current rates, there may not be enough NFIP premium to purchase a significant amount of reinsurance.



Wharton Paper:
A Methodological Approach for Pricing Flood Insurance and
Evaluating Loss Reduction Measures: Application to Texas

- Areas of agreement
 - It might be beneficial to have a private market to complement the NFIP.
 - There are certainly significant differences in the expected losses for areas that have similar NFIP rates. Private insurers develop considerably more detailed classification systems to better match hazard and rates.
 - See discussion of risk classification in Academy Public Policy Monograph, [*The National Flood Insurance Program: Past, Present... and Future?*](#)



Wharton Paper:
A Methodological Approach for Pricing Flood Insurance and
Evaluating Loss Reduction Measures: Application to Texas

- Questions and Concerns
 - As noted in the paper, private insurers require much higher loadings. Given that, are there enough areas in which:
 - private insurers could charge lower premiums, and
 - homeowners would purchase it?
 - The U.S. insurance market is robust; insurers will offer products to fulfill consumers' needs. Given that, why have companies not developed programs to take advantage of this?



Recommendations

- Program needs wider participation.
 - Better publicity?
 - Better agent training?
 - Better differentiated rates?
- Address the NFIP debt.
- Continue toward more adequate rates.



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