

MANAGING EXTREMES

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THE NEXT PHASE IN CATASTROPHE MODELS AND MODELING

Change You Can Count On

October 4, 2012



WHAT MODEL DIFFERENCES TELL US

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- Industry PML
 - Model 1: \$125B
 - Model 2: \$100B
 - Model 3: \$150B
- What This Tells Us About The PML
 - $PML = \$125B + (150B - 100B) = \$175B$
 - Maybe.
- Model differences tell us
 - The true answer is not known
 - The true PML may lie above the observed range of estimates
 - Modeled PMLs will continue to change

THOUGHT EXPERIMENT: MODELS ARE THE SAME

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- Suppose all models yield the same results
 - The answer is “right”
- So the PMLs are known
 - Industry PML = \$125B
 - Industry AAL = \$10B
- So the capital required to support cat risk is what?
- So the right industry cat premium is what?
- So if there is no loss for 20 years what happens?

WHAT TO DO

- Insurers
 - Do not design risk management to fixed return period and/or model
 - The answer will change
 - Blend models in retail pricing work
- Regulators
 - Model uncertainty is a poor excuse to regulate price
 - If anything, model uncertainty justifies higher prices
 - Price regulation lowers insurance capacity and raises prices
- Rating Agencies
 - Determine catastrophe capital after considering several models
 - Choose a benchmark that changes at your own discretion

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