

# Catastrophe Modeling: Version 2012

June 4, 2012

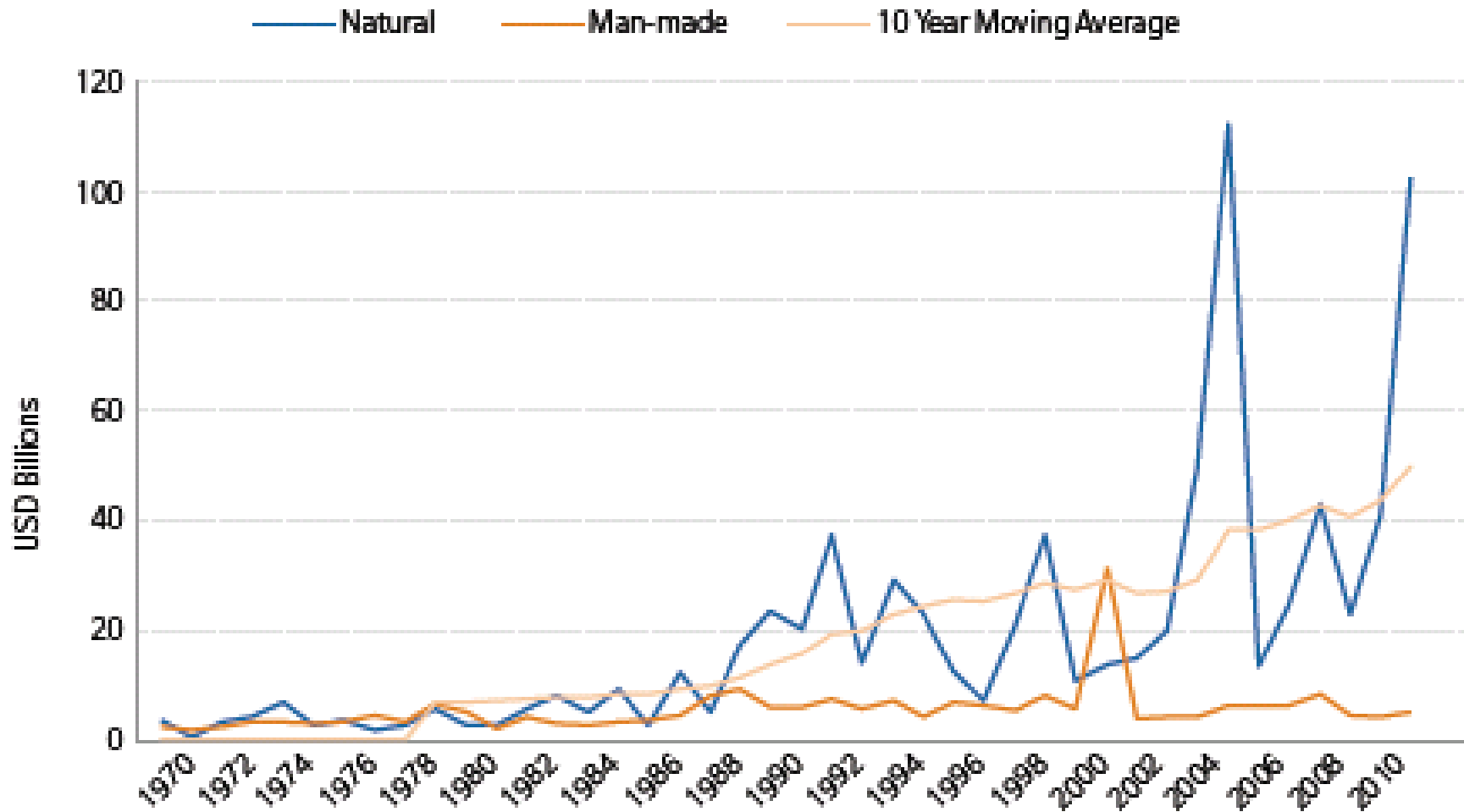
# Primary Carrier Reactions

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- Many uncomfortable with Atlantic hurricane frequency
  - Near term frequency change not well documented or endorsed
  - Using the relatively more stable long term view
  - Some weighting near term and long term views
  - More using long term view for planning and rate making
- Many uncomfortable with RiskLink storm surge leakage assumptions
  - Not using default assumptions
- Uncomfortable with magnitude of model changes
  - Moving to a blended view across models
- Frustration with RMS's 'arrogance' and concerns about future development
- Some companies unable to make wholesale change in model as RMS is deeply embedded in company infrastructure
  - Corporate cat management monitoring and metrics built off of RMS output
  - Underwriters using RiskBrowser to price cat loads

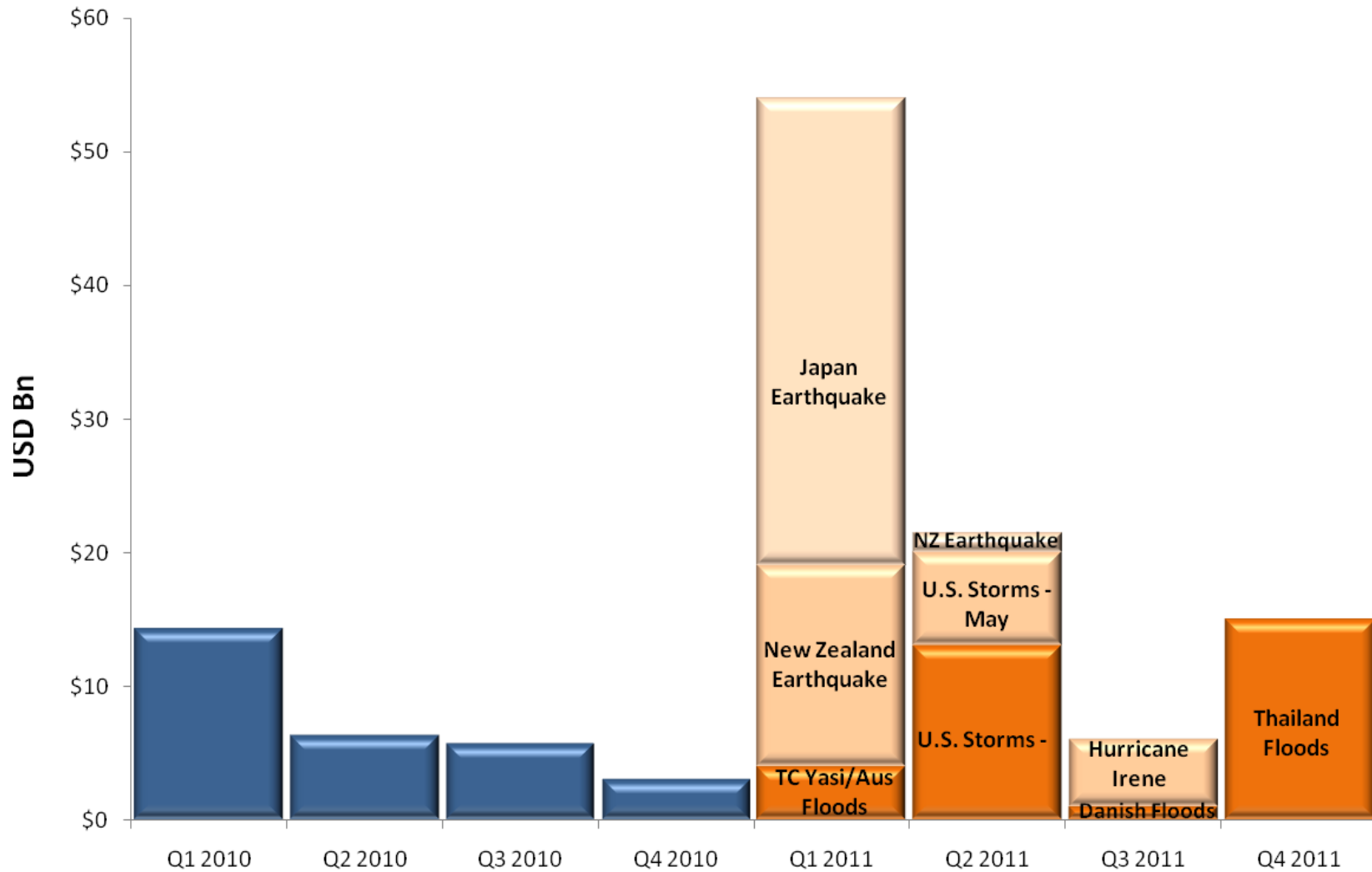
# Market Reaction

# Historic Global Catastrophes Insured Losses



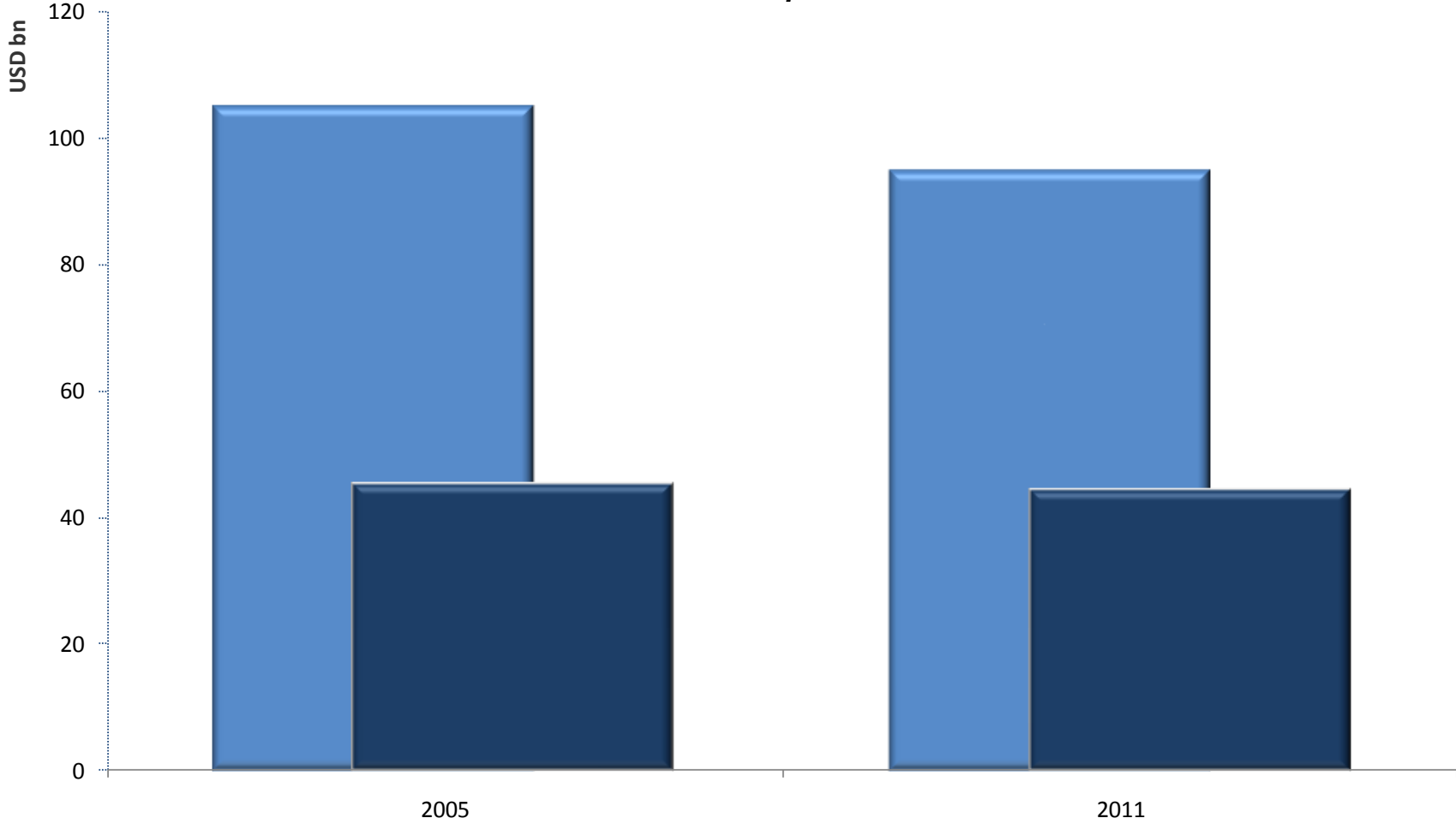
Source: Swiss Re, Guy Carpenter & Company, LLC

# Significant Catastrophic Losses - 2010 to 2011



# Reinsured Proportion of Losses: 2005 and 2011

*Reinsured loss was similar to 2005 but reinsurers were much better capitalized in 2011.*



## 2011 Market Dynamics

- **January to March**
  - Limited impact from AIR version change and anticipated RMS change
  - 2010 trend of decreasing rates continued
  - Pricing decreases of 6% to 10%
- **April to July**
  - **Global Losses**
  - **Model Change**
    - Significant individual company variation
    - RMS change not yet fully integrated into pricing or capacity assessment
  - **Capacity Dynamic**
    - Some increase in demand
    - Reinsurers more carefully allocating capacity
    - No expectation for a capacity shortage
  - **Quoting Behavior**
    - Increasing variability as reinsurers address pricing mechanics and capital assessment
  - **Pricing**
    - Upwards pressure, reinsurers' reported generally +5% to +10%



# 2011 Market Dynamics

- **August to December**

- Full integration in reinsurer's pricing and risk assessment process by 1/1/12 for US Wind
  - Substantial variation in how reinsurers are approaching this
  - Significant number of proprietary adjustments
  - Storm surge and MTR are issues under review by reinsurers
- Pricing at 1/1 is more about willingness to deploy capacity based on market conditions rather than pure v11 impact
- Substantial variation in quoting behavior due to disparate treatment of model factors and individual companies' capital position and deployment strategies

## 2012 Market Dynamics

- Tailoring risk views
  - Using multiple models
  - Develop own internal models
  - Often rely on broker to present the most realistic view of risk
  - Use multiple model output even if multiple models are not licensed
  - Generally not using RMS v11 with 'all switches on' out of the box.
- Less beholden to RMS than primary companies; more apt to blend for pricing than internal aggregate management
- Reinsurers have just recently been going through rating agency meetings, with the need to recognize the impact of v11 in their own numbers

# Model Vendor Reactions

# RMS Competition

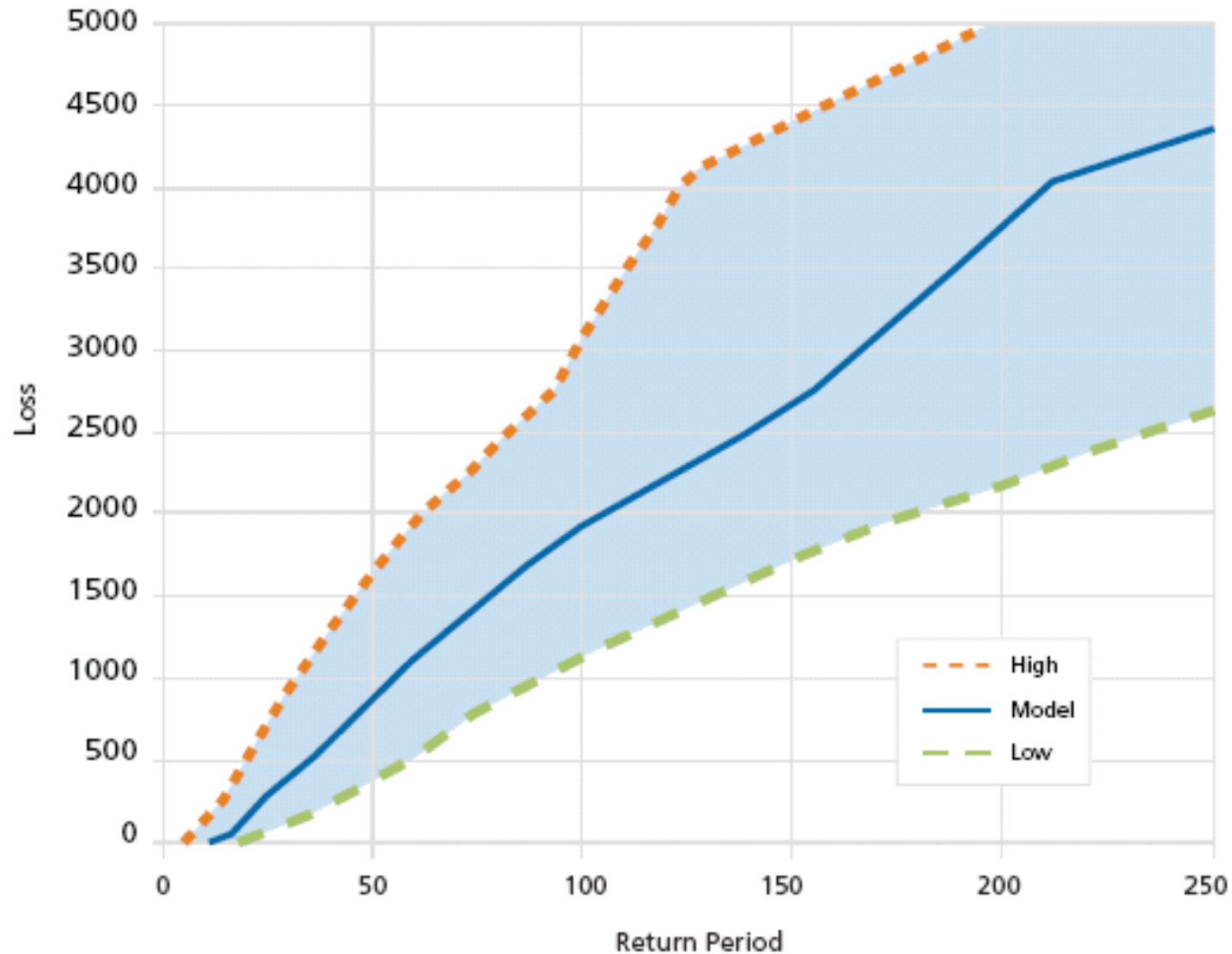
- **Using the disruption from RiskLink v11 to their advantage**
- Ming Lee, CEO AIR Worldwide, *“A robust model... should not require **dramatic updates.**”*
- Ming Lee, CEO AIR Worldwide, *“AIR has long been the leader in providing robust catastrophe modeling solutions that reflect a **consistent view of risk.**”*
- EQECAT, Inc. *“Models should help our clients manage volatility, **not introduce volatility** to their business.”*
- Karen Clark & Company *“. . . the models can be problematic for risk management decision-making when the **loss estimates swing widely** from model to model and update to update . . .”*

## RMS Shifts Corporate Thinking

- Ryan Ogaard, SVP RMS, *“We are hearing that full adoption will take time. We are very engaged with companies as they test the model and raise questions. The majority of these conversations are going well, but given the magnitude of the changes, there are more questions than we’ve seen in other releases and the adoption process is taking longer than usual”*.
- Execute a no surprises approach to how they define, build and release their models
- Equip clients to know their “implied bets”, explore alternative modeling assumptions, and make it easy to do so
- Empower clients to take control of key assumptions and make the models their own

# Industry Reactions

# Catastrophe Models An Imprecise Science



# Catastrophe Models

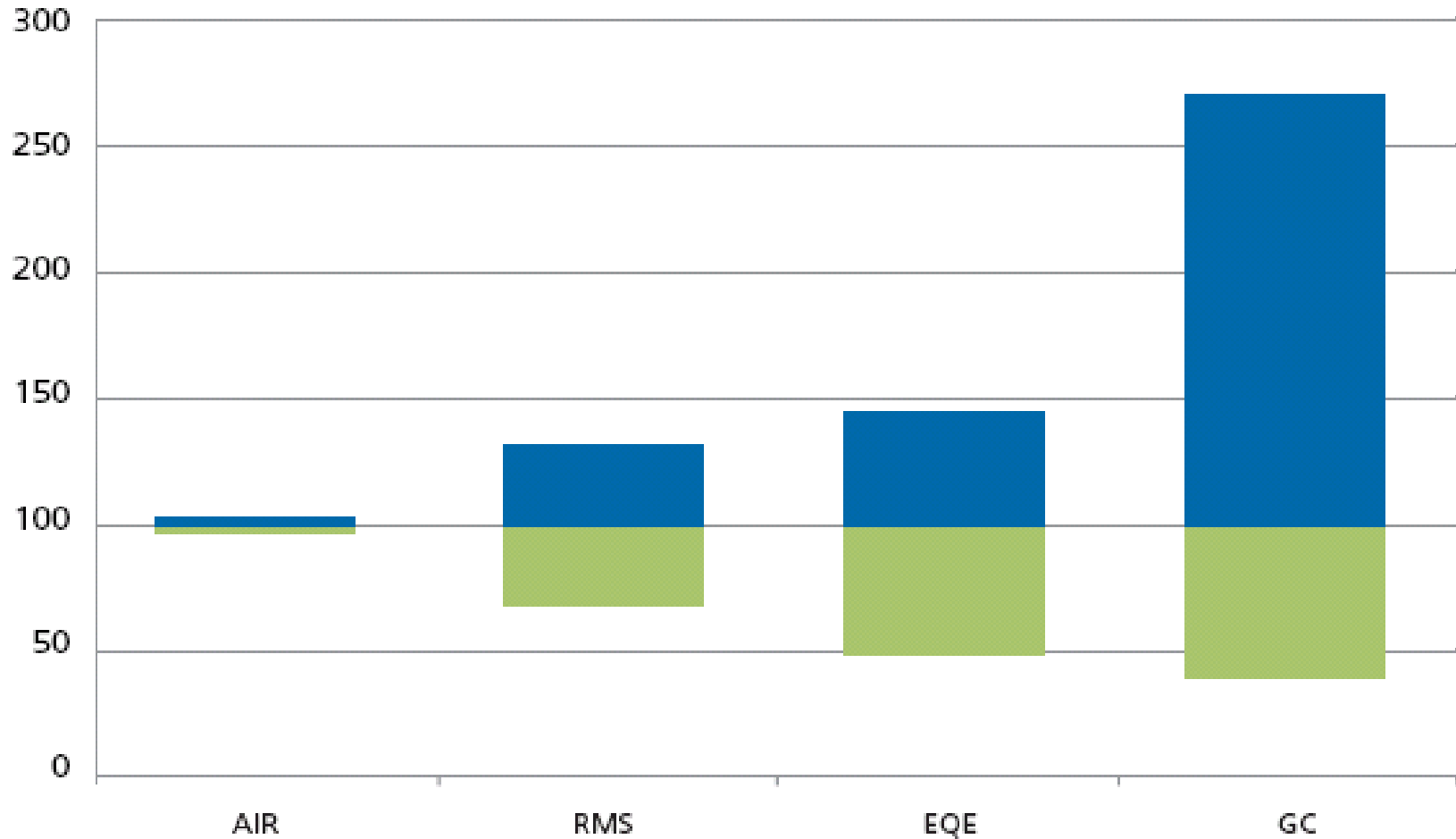
## An Imprecise Science

If the (1999) cat model says:  
**“Your 100 year return period loss is \$1,117,243,572,”**  
what it really means is:  
**“Your 100 year return period loss is about a billion dollars;  
but it could be 500 million dollars or maybe two and  
a half billion dollars... something like that.”**



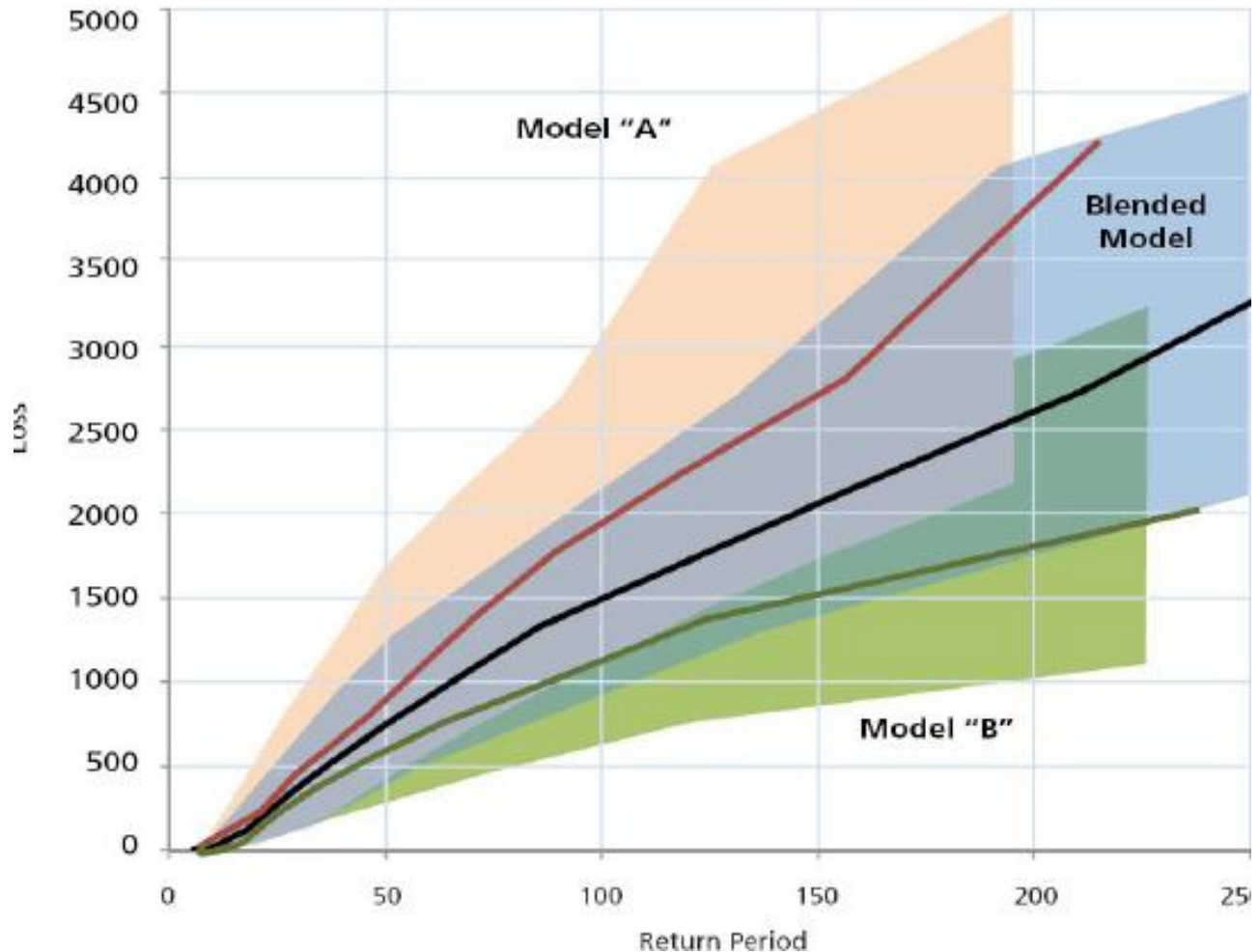
# Catastrophe Models

## An Estimation of Model Uncertainty



# Future Of Catastrophe Risk Analysis Model Customization

- Markets more willing to accept company specific views
- Rating agencies allowing – if not encouraging - a “Corporate View”
- Next Generation Platforms encourage sensitivity testing, transparency and multi model approach



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