

## Overview of Traditional Methods for Incorporating Weather Activity in Rates

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## Agenda

- Weather Activity as Catastrophes
- Traditional Non-Modeled Catastrophe Ratemaking Methods
- Recent Severe Weather Activity
- Alternative Method for Dealing with Weather Activity

# RPM - Severe Weather Workshop



## Weather Activity: “Catastrophes”

- Definition of a “catastrophe” varies from company to company
- However, cats are usually defined as losses arising from:
  - Events that exceed given thresholds
    - ❖ Total loss to the company
    - ❖ Total claims to the company
    - ❖ Total loss to the industry
  - Specific perils
    - ❖ Hurricane or Earthquake, for example



## Why Must an Actuary Adjust for Catastrophes?

- Easy to estimate:



- More difficult; need more data:



## Non-Modeled Catastrophe Loss Ratemaking Methods

Most methods have a similar form:

1. Assume expected catastrophes have a proportional relationship to some base statistic
2. Quantify the specific relationship using many years of data, with or without adjustments
3. Determine the expected future value of the base statistic
4. Use (2) and (3) to determine the expected future catastrophe estimate



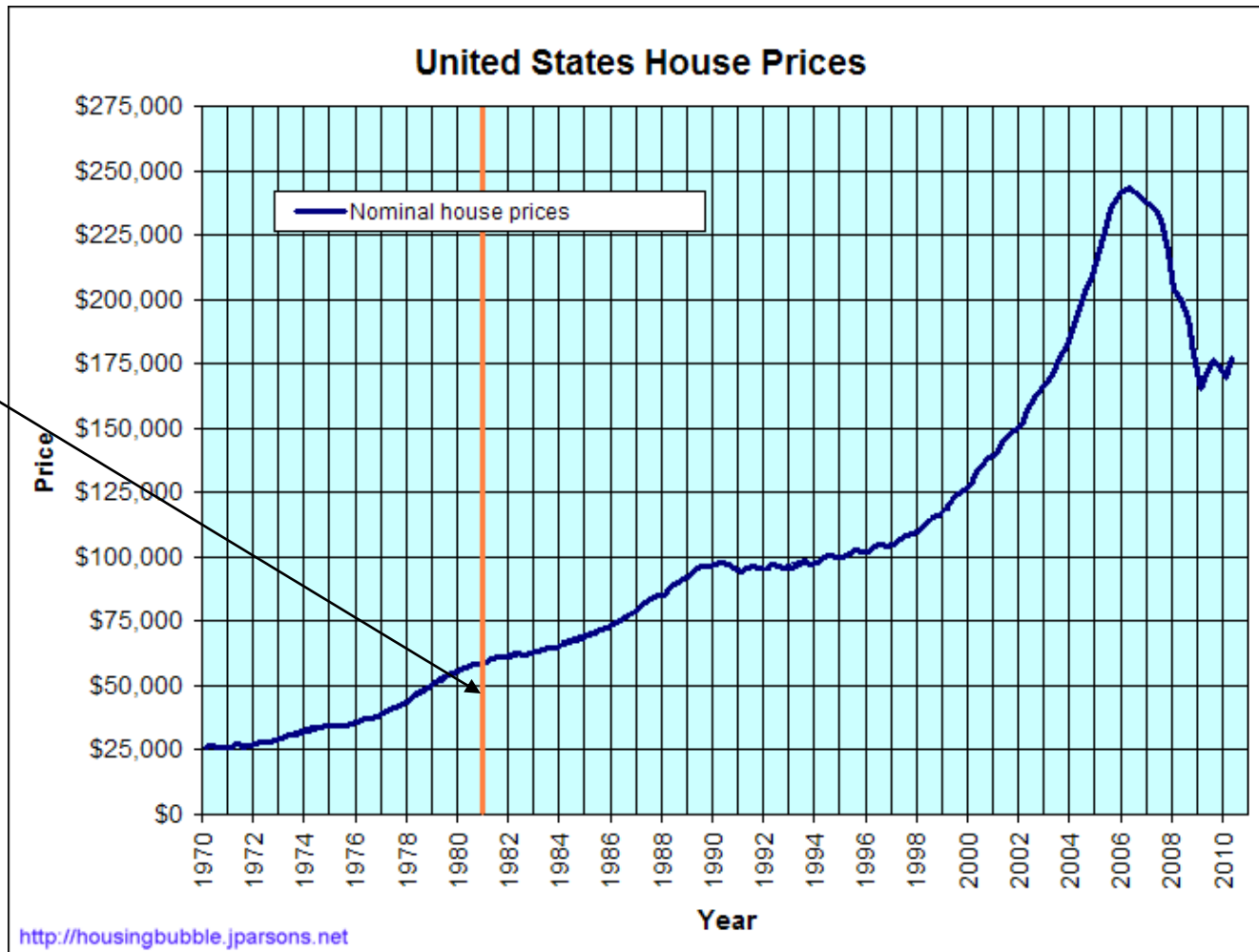
## Non-Modeled Catastrophe Loss Ratemaking Methods

- Generally, an inflation-sensitive base statistic is used to minimize changes in the relationship with expected catastrophes, which are also inflation-sensitive, over time
- Common base statistics include:
  - Amount of Coverage Provided (Amount of Insurance Years - AIYs)
  - Non-Catastrophe Losses
  - Earned Premium





## Catastrophe Threshold



## Recent Severe Weather Activity

- Has put pressure on the profitability of Property lines of business
- In order to understand the drivers of this recent experience, it is necessary to break down the losses:
  - Is a fixed dollar catastrophe threshold an appropriate definition of extreme events?
  - Is the rise in severe weather losses caused by an increase in frequency, severity, or both?

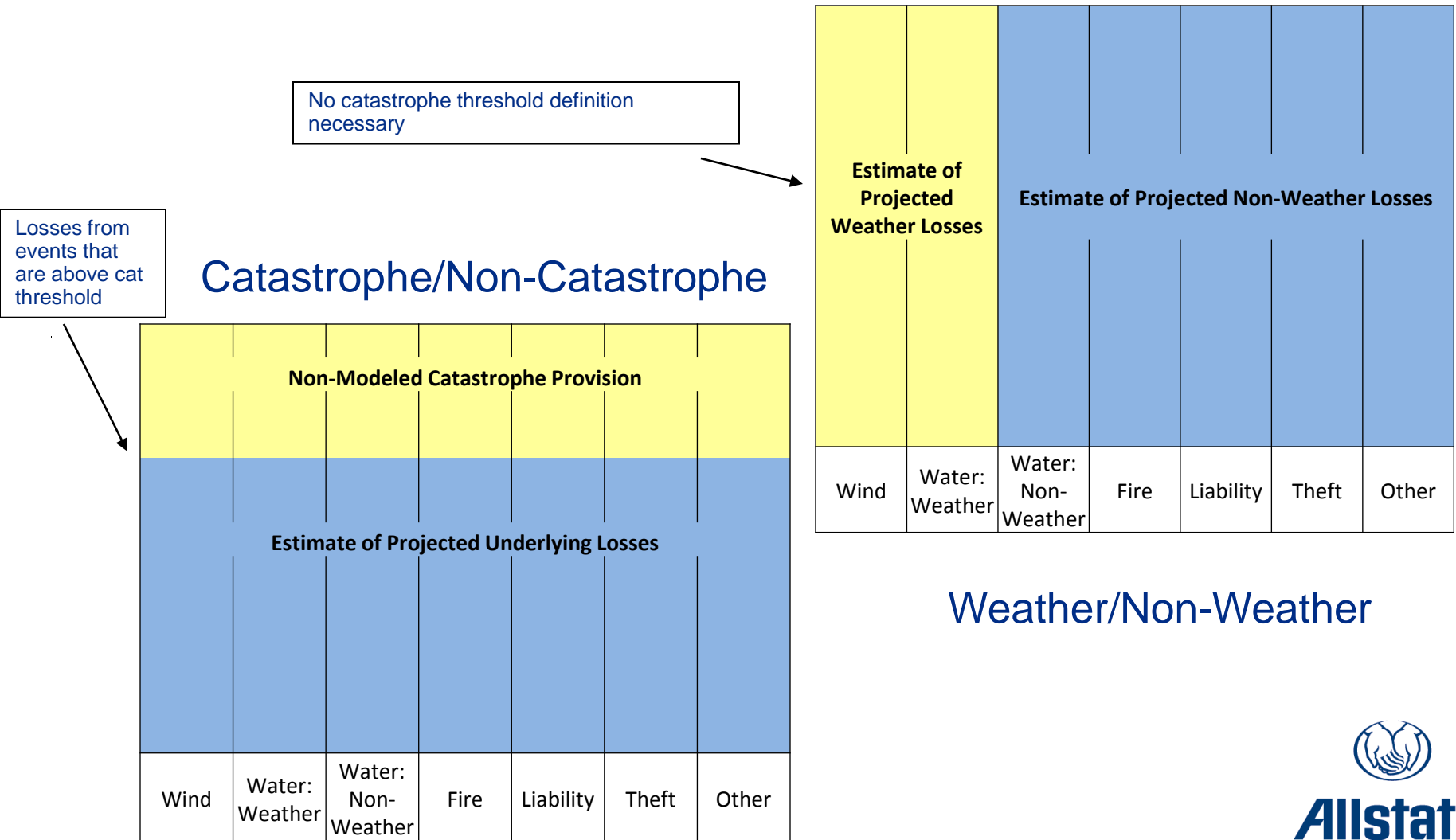


## Alternative Method: “Weather/Non-Weather”

- Underlying data (including catastrophes) broken into Weather/Non-Weather components
  - Long-Term Weather Frequency (Stability)
  - Short-Term Weather Severity (Responsiveness)
- Eliminates need for:
  - Non-modeled catastrophe provision
  - Catastrophe threshold
  - AIY trend



## Indication Method Comparison



## On to the Exhibits.....

# Questions?