The State of Climate Science and Insurance Modeling

Identifying Risk, Certainty and Insurance Implications

Prepared by Aon
Public Sector

Presentation to Center for Law, Energy & the Environment

Recent Losses

United States

May 2018

Date	Event	Location	Deaths	Structures/Claims	Economic Loss (USD)
04/30-05/03	Severe Weather	Plains, Midwest	0	100,000+	950+ million
05/03-06/07	Volcano	Hawaii	0	Hundreds+	Millions
05/12-05/16	Severe Weather	Rockies, Plains, Midwest, Northeast	5	115,000+	1.4+ billion
05/13-05/15	Flooding	Florida	0	Hundreds	Millions
05/19-05/20	Severe Weather	Plains, Midwest	0	Thousands	100+ million
05/26-06/01	Severe Weather	Rockies, Plains, Midwest, Mid-Atlantic	1	Thousands	100s of Millions
05/27-05/28	Flooding	Maryland	1	Thousands	10s of Millions+
05/27-05/30	STS Alberto	Southeast, Midwest	5	Thousands	Millions+

Source: Aon Impact Forecasting

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Recent Losses

California

2018 Year to Date

Date	Event	Location	Deaths	Structures/Claims	Economic Loss (USD)
01/08-01/09	Flooding	California	21	6,500+	850+ million
03/21-03/22	Flooding	California	0	Hundreds	Millions

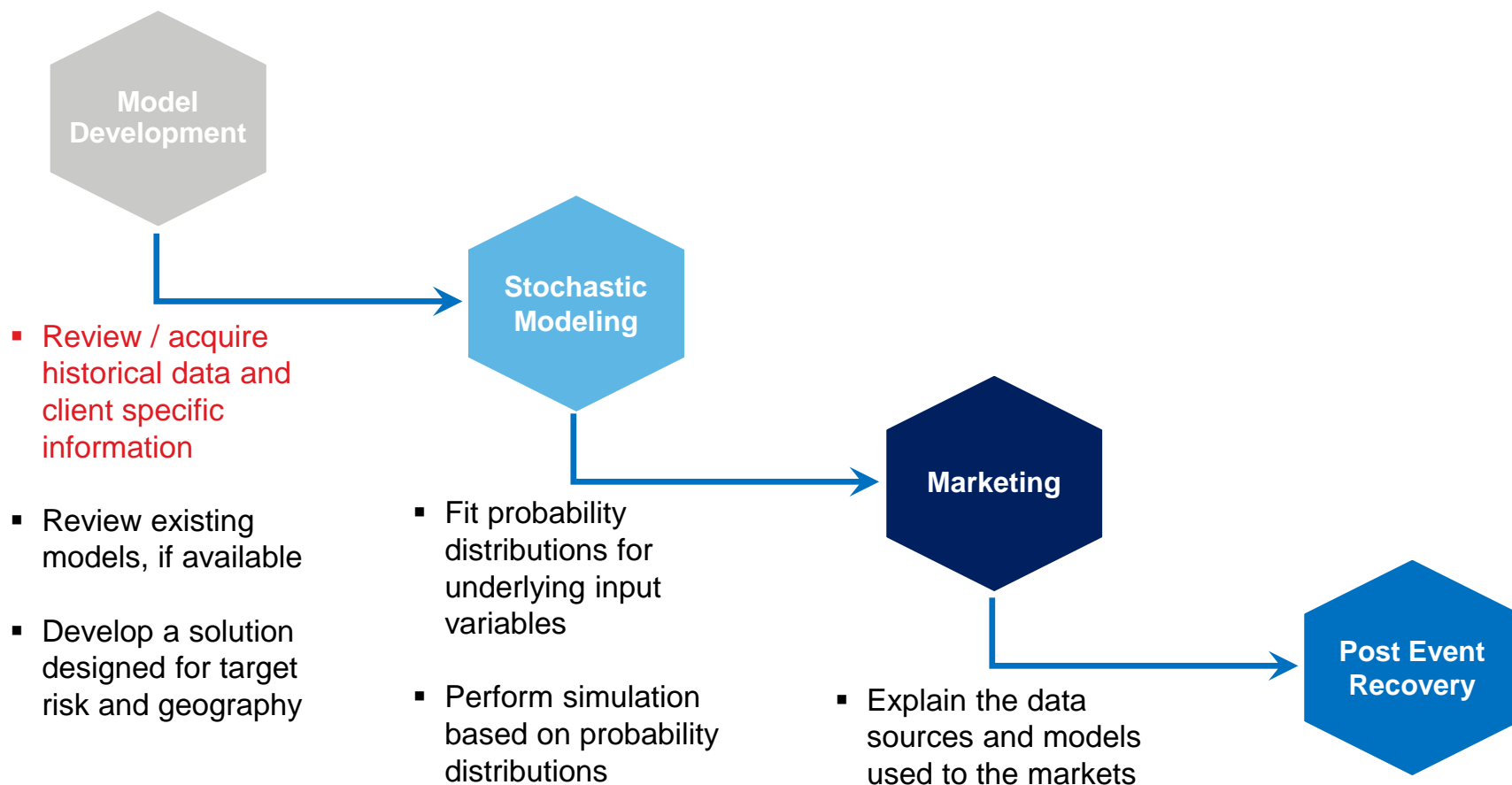Source: Aon Impact Forecasting

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Record Issuances of Cat Bonds

Catastrophe Bond Issuances by Quarter
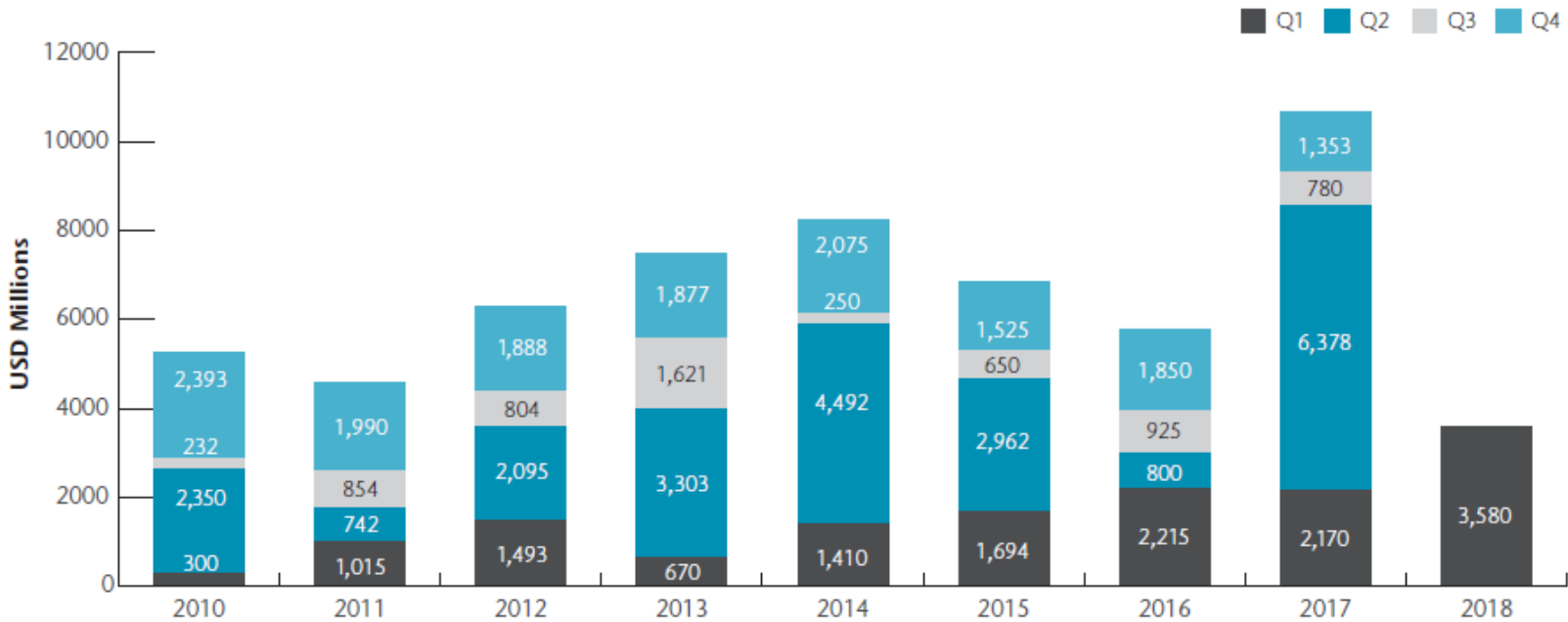
Source: Aon Securities

Role of Risk Modeling in Risk Transfer Solutions

Model Development

Stochastic Modeling

Marketing

Post Event Recovery

- Review / acquire historical data and client specific information

- Review existing models, if available

- Develop a solution designed for target risk and geography

- Fit probability distributions for underlying input variables

- Perform simulation based on probability distributions

- Explain the data sources and models used to the markets

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Data Collection

- Claims vs losses
- Real time information
- New technologies

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Data Quality

- Values
- Level of Detail
- Consistency of inputs

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New Solutions

- More sophisticated approach to risk management
  - Criticality
  - Infrastructure Networks
  - Capital Expenditures
  - Policy Decisions

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