Seminar on Reinsurance

June 5–6, 2023

Westin Philadelphia
Philadelphia, PA
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Intro / 2022 year in review
Hurricane Ian Impact on 2023 Property Cat Market

Modeled v PCS v Actual – why doesn’t it track?

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**Hurricane Ian Modeled Loss Estimates**

- **$53bn-$74bn**
- **$42bn-$57bn**
- **$31bn-$53bn**
- **$30bn-$63bn**
- **$63bn**

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**Major Insured Loss events**

<table>
<thead>
<tr>
<th>Event</th>
<th>USD billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katrina (2005)</td>
<td>97</td>
</tr>
<tr>
<td>COVID-19 (2020)</td>
<td>69</td>
</tr>
<tr>
<td>Ian (2022)</td>
<td>54</td>
</tr>
<tr>
<td>Tohoku EQ (2011)</td>
<td>46</td>
</tr>
<tr>
<td>WTC (2001)</td>
<td>39</td>
</tr>
<tr>
<td>Ida (2021)</td>
<td>39</td>
</tr>
<tr>
<td>Sandy (2012)</td>
<td>38</td>
</tr>
<tr>
<td>Harvey (2017)</td>
<td>36</td>
</tr>
<tr>
<td>Irma (2017)</td>
<td>35</td>
</tr>
<tr>
<td>Maria (2017)</td>
<td>35</td>
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</tbody>
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Note: Losses are inflation-adjusted to 2022 price levels; Covid-19 losses is the average of industry estimates.

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Whether a disruptor or final contributor to market stresses, this event shifted the Property Cat market.
Secondary Perils

Increased frequency of billion dollar US SCS events

United States Billion-Dollar Disaster Events 1980-2022 (CPI-Adjusted)

- Severe Storm Count
- Severe Storm Cost
- Costs 95% CI
- 5-Year Avg Costs

Total costs for the last five years ($113 billion) is nearly one-third of the $383 billion SCS disaster cost total of the last 43 years (1980-2022)

Five year average

$23B
Supply & Demand

- Reduced reinsurance market (GAAP) equity
- Increased demand due to inflation and exposure growth

Global Reinsurer Capital ($ billions)

Sources: Company financial statements / Aon’s Reinsurance Solutions / Aon Securities, LLC

Aon Property Cost Index Annual Inflation
For Residential, Non-Residential, and All Construction

Source: U.S. Bureau of Labor Statistics and Aon Analytics
Reframing the narrative

<table>
<thead>
<tr>
<th>Prior</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprecedented</td>
<td>New Normal</td>
</tr>
<tr>
<td>Pandemic</td>
<td>Post-Pandemic</td>
</tr>
<tr>
<td>Market in Flux</td>
<td>Settling In</td>
</tr>
<tr>
<td>Climate Change</td>
<td>Model Adjustments</td>
</tr>
<tr>
<td>Inflation</td>
<td>ITV Methodology</td>
</tr>
<tr>
<td>Unresponsiveness</td>
<td>Placement Timelines</td>
</tr>
</tbody>
</table>
State of the US Market
US losses & pricing

- Winter storm
- Wildland Fire
- Tropical Cyclone
- SCS
- All Other

Guy Carpenter US Property Catastrophe Rate on Line Index—2000 to 2023

Source: Guy Carpenter
Catastrophe pricing indices

- The Guy Carpenter ROL index is a measure of the change in dollars paid for coverage year on year on a consistent program base. The index reflects the pricing impact of a growing (or shrinking) exposure base, evolving methods of measuring risk and changes in buying habits, as well as changes in market conditions. Unlike risk-adjusted measurements, the index is not dependent on the model or method used to measure the amount of perceived risk in a program, which can vary widely.

- This graph depicts +31.3% increase in ROL at 1/1/23

- What is missing?
  - Across the board retention increases
  - Growth in limits purchased due to inflation (at new minimum rate on line)
  - Changes in perils covered
  - Changes in loss costs
Catastrophe underwriting

- Experience Matters
  - Frequency
  - Severity
  - On-Level (size, mix)
  - Credibility

- Client Approach
  - ITV – where on the spectrum (inflation guard to complete re-valuation)
  - Deductibles
  - Rating Freedom
  - Alignment of Rating and Coverage with Exposure
  - Accumulation Management
  - Risk Selection

- Region and Peril

- Coverage

- Exclusions
Today’s reality

- Property Dynamics vs Overall Market
  - Settling In, More Orderly
- Supply vs Demand
  - Somewhat more affordable retro available (ILW, ILS)
  - Appetite more clearly understood
- Ongoing Inflation
- Higher Reinsurer Margin/Return Requirements
- Coverage actions taken
Managing Model Change Impact
Model Release Timeline (2021 – 2023)

Verisk (AIR) Touchstone v9
- New Financial Module Preview
- Terrorism
- Japan Typhoon and Earthquake

RMS RiskLink v21
- North Atlantic Hurricane

Verisk (AIR) Touchstone v10
- US Severe Thunderstorm

RMS RiskLink v22
- US/Canada Winterstorm
- China Earthquake
- Central/South America EQ
- South Korea/Taiwan Typhoon

CoreLogic RQE v22
- US Earthquake

CoreLogic RQE v22.1
- Canada EQ
- US Wildfire

Verisk (AIR) Touchstone 10.5
- New Financial Module Release
  (Technical Preview – will not support risk transfer)

RMS RiskLink v23
- North Atlantic Hurricane

CoreLogic RQE v23
- US Hurricane
- EuroWind/Storm Surge
- EuroQuake

*North America updates shown in blue
Retro / ILS

Alternative Capital Deployment (Limit in $ billions)

Source: Aon Securities, LLC
Climate Physical Risk

Areas of Focus for the Insurance Industry

- Research, education, training
- Adequacy of current cat models
- Future climate assessment in cat models
- Physical risk scores
- Adaptation and mitigation
- Incorporating climate analytics into regulatory disclosures
Bold predictions