Practical (Re)Insurance Company Utilization of Multi-line Clash Scenarios

Integrating multi-line stress scenarios in capital model development, underwriting control, and portfolio management

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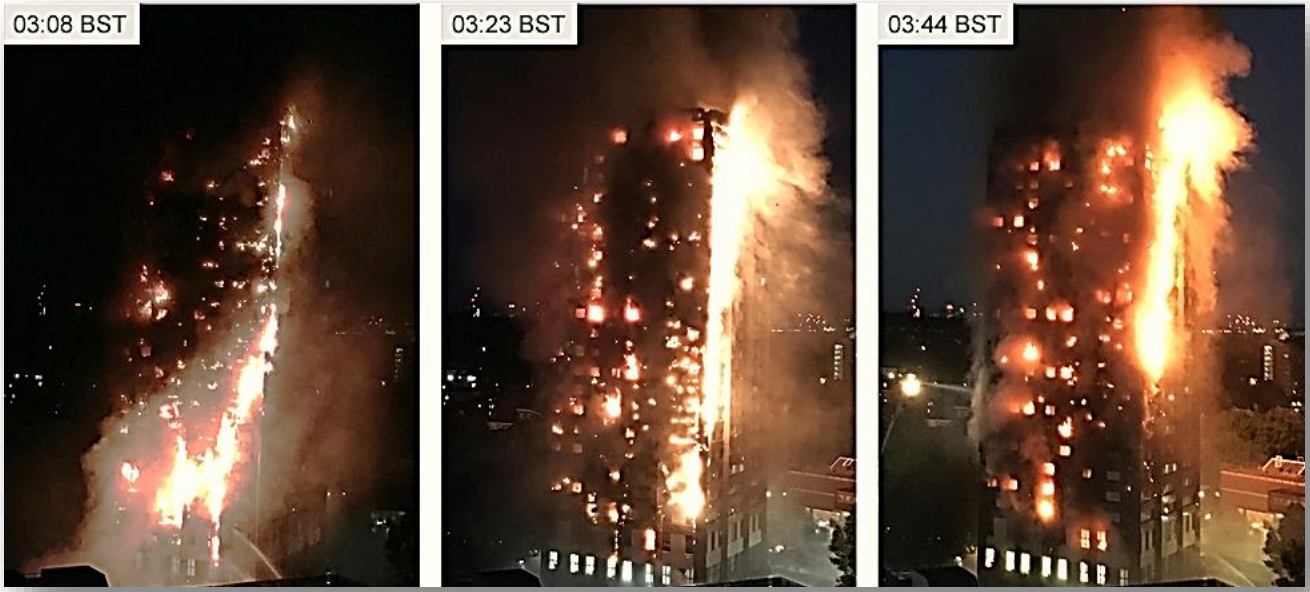
Case Study: Grenfell Fire



Lines of Business Exposed

- Property
  - Building Owner
- Casualty (Bodily Injury / Property Damage)
  - Building Owners
  - Product Manufacturers (cladding and components)
- Professional Liability
  - Architects and Engineers
  - Contractors

Broader Liability Implications

- Cladding and Insulation manufacturers
  - Inspections / removing cladding
  - Relocation and business interruption
- A&E Professionals
  - A&Es who oversaw faulty materials / building design
- Non-Cladding related construction claims
  - Potential for additional construction liability claims for faulty design discovered during inspection of cladding / insulation of other buildings

Major Clash Scenario Themes

- **Casualty Litigation** – Opioids
- **Liability Regimes** – Class action and third party funding
- **Competitive Business Environments** – Chinese drywall; Mortgage crisis
- **Technology** – Internet of things / systemic cyber
- **Geopolitical** – Arabic country instability
- **Societal** – European migrant crisis

- Major clash scenario themes can focus on ***systemic risks that spread across many insureds*** within an industry, or ***large single events that expose many lines of business***.

- Large single events, e.g. Grenfell, are not always considered ***drivers of capital need*** in the same way as systemic events, but they have a ***significant impact on earnings.***

How should these scenarios be managed?

Underwriting Controls

Use of clash aggregation management tools (scenario development and modelling) allow for effective risk management in providing underwriting rules and guidance.

- Clash scenarios can be used as a proactive measure to address potential "blind spots" before they occur through:
  - Underwriting controls
  - Improved information to management on the risk
  - Providing a means of quantifying and managing aggregation concerns of the business via modeling & portfolio management

- Actual clash scenarios can also be used retroactively (measures taken as a result of Deepwater Horizon)
  - Reduce max limits on businesses that expose us to offshore drilling aggregation
  - Single "point of contact" to manage upstream energy aggregation of limits (max gross accumulation between casualty and marine operations)
  - Reinforce joint venture clause UW strategies

Capital Model Development

Capital models should accurately reflect all risks if they are to be used in risk management and decision making processes

<u>No</u> Use of Clash Aggregation Techniques

- Risk distributions may not accurately reflect correlations in the tail
- No method to determine what clash or casualty 'perils' are drivers of capital need
- Inaccurate picture of business unit profitability and capital allocation
- Reinsurance strategy is limited by (lack of) internal analyses

Use of Clash Aggregation Techniques

- Risk distributions highlight lines of business exposed in extreme clash scenarios
- Clear story to management on the clash scenarios that drive capital need
- Better capital management and allocation to businesses, leading to improved understanding or risk adjusted returns
- Capital model can be used as an effective tool to drive reinsurance strategy

Portfolio Management

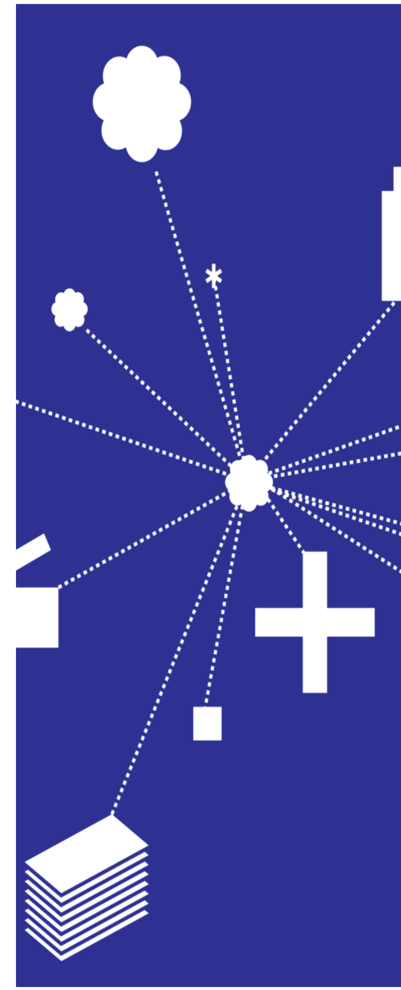
The goal of portfolio management should be to optimize a portfolio's risk / reward ratios in accordance to management's risk appetite. Incorporating scenarios and event modelling can assist in optimization.

<u>No</u> Use of Clash Aggregation Techniques

- Lacking the complete picture of clash and casualty risk
- Suboptimal portfolio management both at:
  - The corporate level
  - Individual business portfolio level
- No method to manage aggregate event exposures

Use of Clash Aggregation Techniques

- Able to accurately calculate risk / reward ratios
- Optimized and balanced portfolios
- Achieve management's risk tolerance and risk appetite goals; understand full spectrum and magnitude of potential risk scenarios



Opportunities and Challenges

Opportunities

- There is an opportunity for the industry to improve its quantification of Clash and Casualty risk, which will improve risk management in the way NatCat models have:
  - Improved deployment UW capacity and strategy
  - Increase accuracy in quantification of capital needs
  - More efficient portfolio management and optimization

Challenges

- Industry consensus
  - What scenarios are most relevant?
  - Consistent and accurate quantification of risk
- Executive management and board education
  - Demonstrating to management the ability to quantify the risk
- Underwriter buy-in
  - Need to show underwriters the benefit of Clash or Casualty catastrophe models in improving underwriting strategy and profitability
- Can we really understand the correlations between insureds and products?
  - Particularly in casualty clash scenarios

QUESTIONS?