



ENT-4: Incorporating Cat Model Data into Economic Capital Models

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Agenda

- Multi-Year Reinsurance Forecasts
- Partial-Year Catastrophe Loss Forecasts



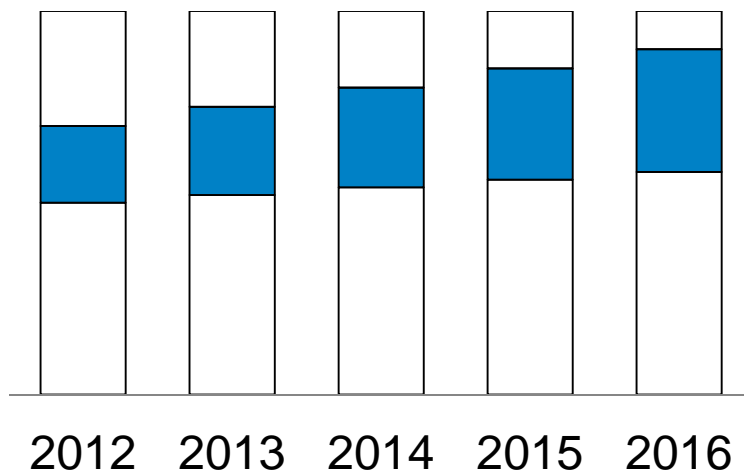
MULTI-YEAR REINSURANCE FORECASTS



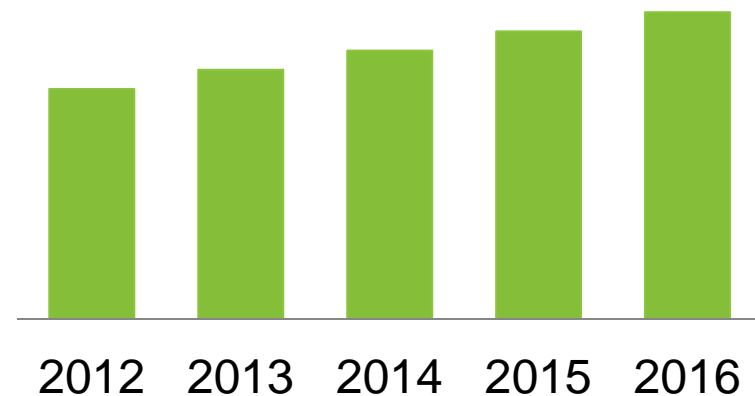
Multi-Year Reinsurance Coverage and Premium Forecasts Must Be Made for Planning Purposes

- Reinsurance coverage requirements and cost can be estimated using current cat loss data and exposure growth forecasts

Coverage



Reinsurance Cost



Multi-Year Reinsurance Coverage and Premium Forecasts Have Some Important Limitations

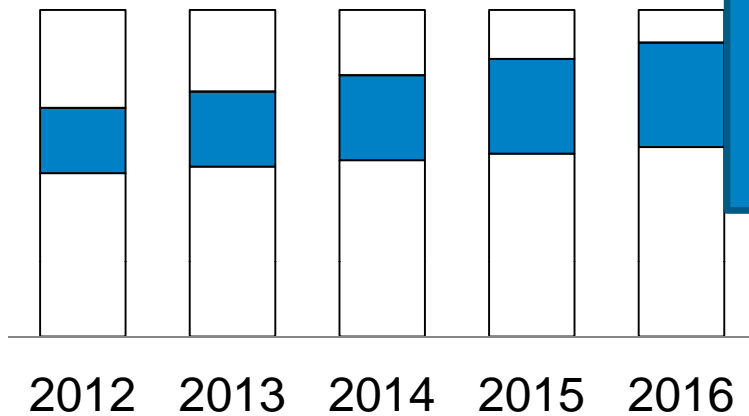
- They don't account for market conditions which can have an enormous impact
 - Large industry losses can pull capacity out of the traditional reinsurance markets causing hard market conditions
 - Increased interest rates can pull capacity out of the insurance-linked securities market
- Economic Capital Models can incorporate these factors into forecasts of coverage and premium
 - Other impacts from market shocks can be identified and evaluated
 - Contingency plans and mitigation efforts can be developed

Multi-Year Reinsurance Coverage and Premium Forecasts Incorporate Market Shocks

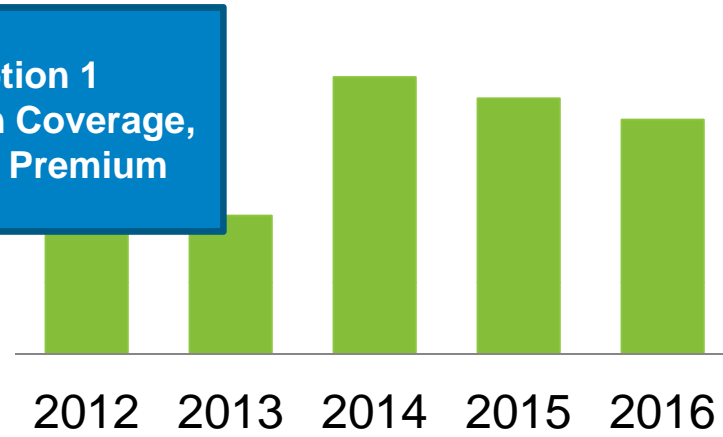
- \$150B industry loss in 2013
- Significant amounts of capacity wiped out in the reinsurance markets
- Prices on remaining capacity increases dramatically
- Options include
 - Adjust coverage forecast
 - Adjust premium forecast
 - Tighten underwriting guidelines
 - Reduce coverage (deductibles, windpools, etc.)

Multi-Year Reinsurance Coverage and Premium Forecasts Adjusting Forecasts after Market Shocks

Coverage

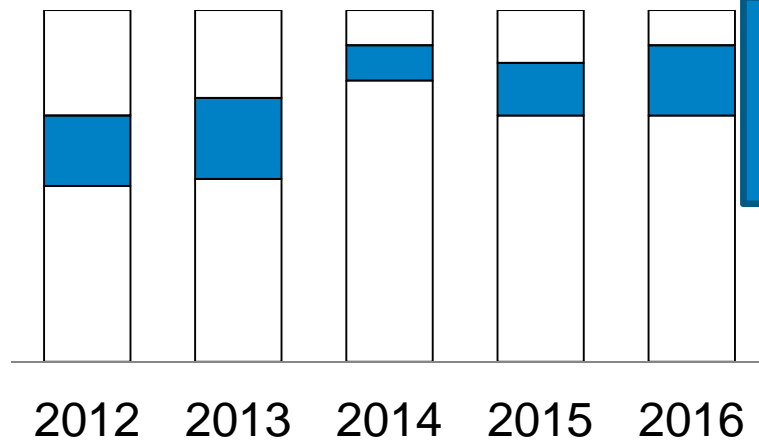


Reinsurance Cost

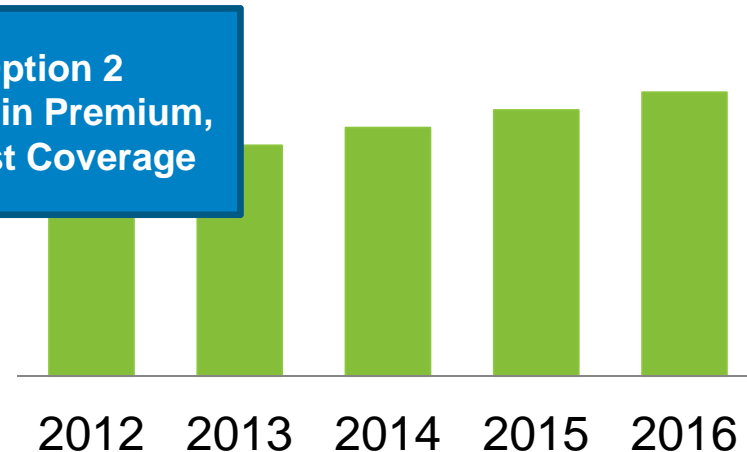


Option 1
Maintain Coverage,
Adjust Premium

Coverage



Reinsurance Cost



Option 2
Maintain Premium,
Adjust Coverage



PARTIAL-YEAR CATASTROPHE LOSS FORECASTS

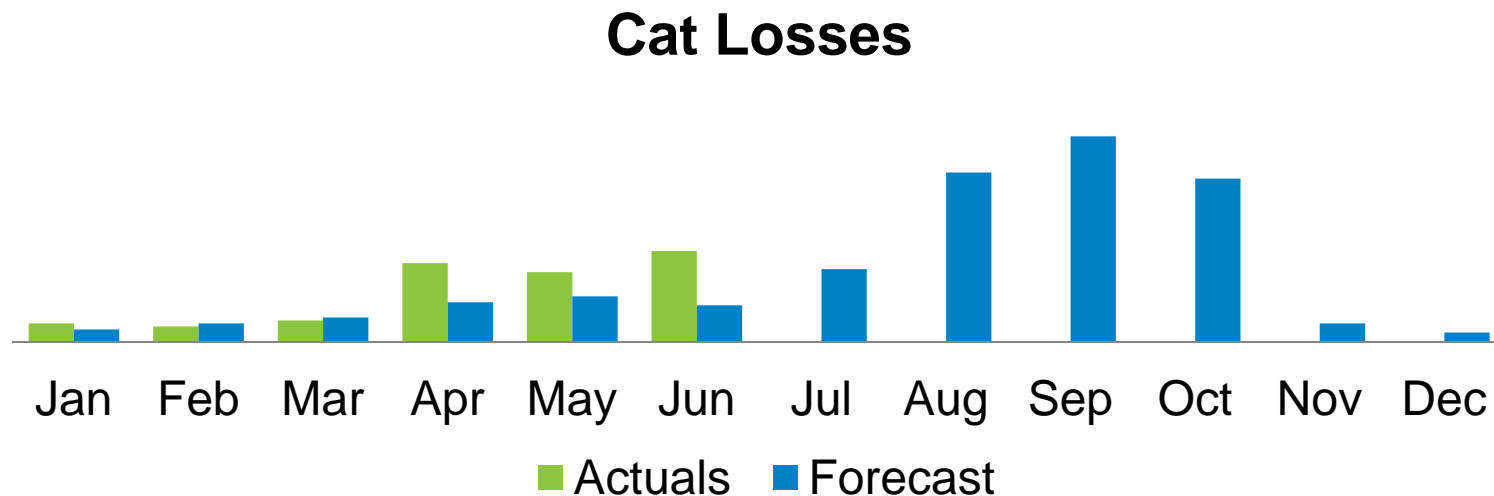


Partial-Year Catastrophe Loss Forecasts

- PML, TVaR, and AAL are typically considered on an annual basis
- Dates associated with catastrophe events can allow for blending of actual and modeled losses
- Can be used to develop new distributions or adjust full-year forecasts

Partial-Year Catastrophe Loss Forecasts Can Be Used to Update Full-Year Forecasts

- Active tornado season has eaten away much of the annual catastrophe load
- New Full-Year Forecast cat load can be easily determined



Partial-Year Catastrophe Loss Forecasts Can Also Be Used to Update PML/TVaR Curves

- As the peak risk season passes by without a major event, PML/TVaR can be re-evaluated
- Short-term economic capital can be adjusted
- This can allow capital to be shifted to other less risky products or can allow for adjusted investment strategies

There are clearly risks associated with this. However, incorporating cat model data into economic capital models gives you the opportunity to evaluate these and many additional possibilities.