Casualty – You're Doing It Wrong! – Portfolio Steering & Pricing Considerations

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Presented by Dana Embree – Allianz Global Corporate & Specialty

Individual Account Support

Supplement to Loss Rating Process

* Frequency losses are accounted for already
* Large infrequent losses are also accounted for already
* Casualty catastrophes are not typically accounted for directly
* Casualty catastrophe is likely not correlated with frequency losses

Individual Account Support

Potential estimation periods of interest for casualty catastrophe expected losses:

* Current policy year
* Prior policy years (with current policy year)
* Future policy years (with current and prior policy years) if account is retained

There is likely correlation across policy periods

Individual Account Support

Impact of Latency on Individual Account Analysis

- Casualty catastrophe losses exhibit extraordinary latency
- Discounting of expected losses has a substantial impact
- Discount rate is highly uncertain given the long time horizon
- While certain to be extensive, there is also considerable uncertainty in the magnitude of the latency
- Companies may have internal challenges with improbable latent events
  - Acceptance from executive management
  - Dealing with tomorrow's problems today

Individual Account Support

Probable Maximum Loss

* Probability of a substantial loss is likely to be low at the individual account level
* PML garners more attention at the portfolio level
* Should individual account pricing reflect marginal impact of the account on the organization's capital requirement?

Individual Account Support

Attachment Point Strategy

- Calculate expected loss for various attachment point options
- Estimate market price for attachment point options
- Optimal placement decision considers:
  - Expected loss ratio (minimize subject to restraints)
  - Impact on premium volume (and total return)
  - Impact on capital requirement (and return on equity)

Individual Account Support

Policy Limit Strategy

* Enters into optimization decision with attachment point
* Increase exposure where market overestimates risk from a given chemical/process/etc.
* Can be used to restrict exposures of greatest concern

Individual Account Support

Coverage Considerations

* Restrictions or exclusions (only when absolutely necessary)
* Sub-limits for certain types of loss of greatest concern
* Policy trigger can be used to control exposure

Portfolio Management

Expected Loss Ratio & Portfolio Optimization

- Sum expected loss and expected premium across all accounts
- What is the impact of loss ratio optimization?
- Should return on equity be optimized instead by considering loss ratio and capital requirement?
- Or should total return be optimized considering loss ratio, capital requirement, and premium volume?
- Or should one variable be optimized (ROE) subject to constraints on other variables (nominal loss ratio and premium volume)?

Portfolio Management

Impact of Latency on Portfolio Analysis

* It is critical to discount expected losses in portfolio steering decisions
* Does discounting affect capital requirement, either internal or regulatory?
* Would including uncertainty in latency affect capital requirement, either internal or regulatory?

Portfolio Management

Industry Mix Considerations in Portfolio Steering

* Some industries are heavily exposed to potential casualty catastrophe loss from certain chemicals/processes/etc.
* Can aggregation to a certain type of casualty catastrophe exposure be controlled through driving industry mix?
* Consider cross industry clash from upstream/downstream relationships
* Should constraints on industry mix enter into portfolio optimization process?

Enterprise Risk Management and Reserving

* Integrate casualty catastrophe modeling with ERM & Reserving
* Existing tail link ratios may currently be intended to capture some of the casualty catastrophe exposure – try to avoid overlap
* Calendar year impacts can come from multiple policy years at once
* Casualty catastrophe is likely uncorrelated with catastrophe losses from Property lines – benefit from diversification
* Consider internal restrictions on PML and impacts that would result from a low probability, extreme loss year on capital adequacy ratios

Summary

* Value from casualty catastrophe modeling is perceived in individual account analysis as well as portfolio steering
* Benefits in the areas of ERM and reserving as well
* Presents an opportunity to optimize pricing and profitability
* Revolutionary step to enhance solvency in the insurance industry