"Implementation of a Catastrophe Risk Charge in P&C Risk-Based Capital"

Presented by:

Alan Seeley, FCAS, MAAA

Chief Actuary, New Mexico Insurance Department

alan.seeley@state.nm.us

Current Ingredients in P&C RBC

- R0 – Asset Risk – Subsidiary Insurance Companies

- R1 – Asset Risk – Fixed Income

- R2 – Asset Risk – Equity

- R3 – Credit Risk

- R4 – Underwriting Risk – Reserves

- R5 – Underwriting Risk - Premiums

New Ingredients for Cat Risk

- R6 – Catastrophe Risk – Earthquake

- R7 – Catastrophe Risk - Hurricane

Inclusion in RBC Covariance Formula

Current Covariance Formula:

$R0 + SQRT (R1^2 + R2^2 + R3^2 + R4^2 + R5^2)$

New Covariance Formula:

$R0 + SQRT (R1^2 + R2^2 + R3^2 + R4^2 + R5^2$ $+ R6^2 + R7^2$$)$

How Cat Risk Charges Will Be Determined

- ✓ Each cat risk charge equals worst year's modeled loss in 100 years, net of reinsurance

- ✓ Plus a 10% surcharge on the ceded portion of the modeled losses, for risk of uncollectible reinsurance in a catastrophe

- ✓ Insurer must use one or more of the models from RMS, AIR or EQECAT

- ✓ To avoid double-counting of cat losses, existing Underwriting Premium Risk Charge (R5) will be revised to exclude hurricane and earthquake risks

Use of Models

- ➤ RMS, AIR, EQECAT only
  - – An insurer can use the results of one model or a combination of two or three models
  - – "Homemade" models not yet allowed

- ➤ Model must produce gross, net and ceded losses

- ➤ VaR, not TVaR

- ➤ Use test
  - – Model inputs and parameters must be same used by insurer for internal risk management

Surcharge for Reinsurance Credit Risk

- 10% of modeled ceded loss

- Added to R6 and R7, not to R3

- Mirrors the existing 10% reinsurance credit risk charge in R3

Removing Cat Risk from Premium Risk Charges

- Requires identifying and removing historical cat losses from industry and company loss ratios used in R5

- Insurers will be required to collect and report their cat losses by Annual Statement line, by accident year, and by U.S. vs. non-U.S.

- List of U.S. cat events to be determined by PCS and non-U.S. cat events by SIGMA and NATCAT

- U.S. and non-U.S. cat loss data submissions will be reviewed separately by NAIC

- Resulting data will be used to "de-cat" R5 industry loss ratios

Effect on Regulatory Exams

❖ Examiners will audit use of company's cat model for data accuracy and completeness and for use in internal risk management

❖ NAIC "Financial Examiners' Handbook" to be expanded to include guidance for auditing cat models

Cat Items to Be Included in RBC Reports

❑ Modeled cat losses for alternative "worst years", such as 1-in-250 years

❑ Attestation that model use is similar for RBC and for internal risk management

❑ Discussion of key modeling assumptions and their rationale

❑ Discussion of steps taken to ensure completeness and accuracy of model data

Yet To Do

➢ Develop "de-catted" industry factors for R5

➢ Determine exemption criteria for insurers with minimal cat exposure

➢ Consider revising 10% reinsurance credit risk charge

➢ Consider regulatory options regarding RBC submissions where cat risk charges are inadequately supported

Target Implementation Dates

- ## 2012
  - Insurers to begin reporting their historical cat losses and modeled cat losses in their RBC reports

- ## 2013 and subsequent
  - NAIC will analyze reported data for anomalies and for impact on RBC
  - Make revisions where needed

- ## 2015 or 2016
  - Full implementation

Topics for Future Consideration

✓ Inclusion of tornados and other types of cats

✓ Use of proprietary cat models

✓ Consider whether to reduce cat risk charge for collateralization or for issuance of cat bonds

✓ Inclusion of cat risk charges (e.g. pandemics) in Health RBC