

# QUANTIFYING RISK EXPOSURES FOR ORSA REPORTS

Enterprise Risk Management (ERM) and  
Own Risk and Solvency Assessment (ORSA) Committee

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AMERICAN ACADEMY of ACTUARIES

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# American Academy of Actuaries

- The American Academy of Actuaries is an 19,000+ member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.



# ERM/ORSA Committee

- The ERM/ORSA Committee represents the Academy in Enterprise Risk Management (ERM) and Own Risk and Solvency Assessment (ORSA) matters at the National Association of Insurance Commissioners (NAIC), the International Association of Insurance Supervisors (IAIS), the International Actuarial Association (IAA), and other interested stakeholders. The committee includes actuaries from the property/casualty, life, and health practice areas and is part of the Academy's Risk Management and Financial Reporting Council.



# Past ERM/ORSA Committee Activities

- Produce position papers and develop ideas for research on ERM and ORSA related matters.
  - Published the *[ORSA and the Regulator](#)* policy paper, which provides regulatory actuaries who are reviewing ORSA reports with background information regarding the ERM process and what information might be included in an ORSA report (February 2016)
- Present webcasts for members of the actuarial community on a variety of topics, including to provide further understanding of recent committee work products.
- Assist the NAIC in various areas such as changes to ORSA implementation and risk analysis.
- Submit comments to various exposures by the Actuarial Standards Board (ASB), the NAIC, and the IAA.



# Introduction

- *Quantifying Risk Exposures for Own Risk and Solvency Assessment Reports*
  - Practice Note released July 2016 by the ERM/ORSA Committee's Risk Exposures Subgroup
- This practice note provides:
  - Actuaries and regulators with information on the approaches used to quantify risk exposures that may be included in Section 2 of an Own Risk and Solvency Assessment (ORSA) report.



# Academy's Guidelines for Developing Practice Notes

- A reminder that a practice note:
  - Is not a promulgation of the Actuarial Standards Board (ASB)
  - Is not an ASOP or an interpretation of an ASOP
  - Is not binding on any actuary
  - Is not a definitive statement as to what constitutes acceptable practice in the area under discussion
  - Does not advocate a particular approach, but only describes it
  - May be rendered irrelevant or obsolete by events occurring subsequent to publication of the practice note



# ORSA Background

- The first comprehensive regulatory report on analysis of risk exposures and the associated impacts on an insurer, including prospective solvency
- Provides insight into how an insurer mitigates key risks
- Creates basis for effective regulatory dialogue including:
  - What risks does an insurance group as a whole retain?
  - Does a group have enough capital to cover those risks?
  - What are the risks to which a group is exposed? How does a group manage the risks? How does a group decide which risks to retain?
  - What does the ORSA report demonstrate about a company's effectiveness in managing risk?





# Q1. What risk categories are commonly considered in the ORSA report? What risks are quantified versus not quantified?

- Typical risk categories include:
  - ▣ Credit
  - ▣ Market
  - ▣ Liquidity
  - ▣ Underwriting
  - ▣ Operational (including strategic, reputational, and regulatory risk)
- Some risks may be easier to quantify due to existing models
- Application of expert judgment for risk ranking may be helpful for risks that are not easily quantifiable



## Q1. What risk categories are commonly considered in the ORSA report? What risks are quantified versus not quantified? (cont.)

- In general, there is an expectation that all material risks would be included
- Many risk types are hard to quantify, such as strategic risks, many operational risks, and some insurance risks such as policyholder behavior and mortality improvement (from a life perspective)
- Qualitative can be as effective as quantitative in understanding the importance of a risk or risk driver for those that are a challenge to quantify



## Q2. How often is a formal enterprise risk identification or assessment process performed? What may cause monitoring frequency to change?

- This can vary quite a bit from company to company (e.g., annual, quarterly, or ad hoc may be used)
- Some companies may use informal processes, in particular if they are smaller and management tends to see more of the risks directly
- In a rapidly changing business or risk environment, more frequent analysis may be needed
- Emerging risks may require more frequent monitoring



### Q3. How do companies quantify risk? What are the limitations of those efforts/methods? How does the approach differ between types of risk (catastrophe, operational, etc.)?

- Quantification of exposures may be based on historical company data or external data
  - Quantification often involves stress testing
- Risks may be broken down further for purposes of quantification.
  - For example, mortality is often split into volatility risk, catastrophe risk, and trend risk
- A common challenge is prioritizing risks when a mix of measures is used
- Multiple risk categories often come into play when quantifying exposure to risk
- Analysis of risk is often an educational exercise for a company



## Q4. What are companies using stress testing for?

- In addition to quantifying risk exposures, stress testing identifies areas of opportunity to improve a company's financial strength and relationship with stakeholders
- Stress testing provides a company direction in which to focus its risk mitigation activities
- Stress testing is often used to assess solvency under extreme scenarios
- It may be important to consider movement in multiple risk areas in a single scenario
- Stress testing can be helpful in identifying contingency plans for a company



## Q5. How do companies determine stress scenarios for purposes of risk quantification? Are the stress scenarios calibrated to the same degree of severity?

- Methods of determining stress scenarios include:
  - ▣ Statistical analysis of historical data
  - ▣ Selection of specific historical events
  - ▣ Stochastic modeling
  - ▣ Application of judgment
  - ▣ Scenarios focused on specific risks
  - ▣ Specific scenarios requested by the regulator
- To prioritize risk exposures, calibration of stresses to similar thresholds is useful



## Q6. How is inherent versus residual risk addressed, and how can management action be integrated into the risk quantification process?

- Some companies quantify risks on both an inherent and residual basis, but some focus quantification on residual risk only
- Management action is typically based on demonstrated history. Actions that seem obvious may be hard to actually put in place quickly
- Defining “inherent risk” raises the question of how much of the risk mitigation process to remove from its quantification
- The difference in residual risk relative to inherent risk is only as good as the effectiveness of controls/mitigations



## Q7. How are more challenging risks, such as emerging risks, being addressed?

- Expert research and analysis, whether or not in the insurance industry, can be leveraged in assessing risk
- Often have to rely on expert judgment to assess emerging risks
- Helpful to consider the possibilities of what could happen, then assess possible responses by a company





## Q8. How do companies deal with risk interactions (across risk types, product lines, legal entities, etc.) in the risk assessment process?

- Direct modeling of interactions can be challenging
- In stressed scenarios, it may be important to consider risk interactions that differ from a stable environment
- Collaboration across specialties is valuable in understanding interactions



# Summary

- Many insurers are already using robust approaches to quantify risk exposures
- For those that are not, ORSA is providing a push to enhance risk quantification
- Stress testing, leveraging existing models such as those for pricing and financial analysis, is a common approach for risks (e.g., market and insurance risks)
- Some hard-to-quantify risks, such as operational and strategic, will continue to rely on judgment-based methods for prioritization



# QUESTIONS?



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