ERM and Reserve Risk

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Casualty Actuarial Society's 2014
Centennial Celebration and Annual Meeting
New York City, NY
November 11, 2014

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Agenda / Background

I. Internal or economic capital models – in addition to regulatory and rating agency views – are being used to quantify risk relative to solvency (or earnings)

II. Enterprise Risk Management has an increasingly important role in (re)insurance companies

III. Prospective multi-year views of capital and enterprise stress testing are part of Own Risk and Solvency Assessment (ORSA)

Background

“In many cases of distress or failure that we have seen over this time, more than one of the following key factors was present, and often they reinforced each other:

- Poor liquidity management;
- Under-pricing and under-reserving;
- A high tolerance for investment risk;
- Management and governance issues;
- Difficulties related to rapid growth and/or expansion into non-core activities; and
- Sovereign-related risks” [1]

Background

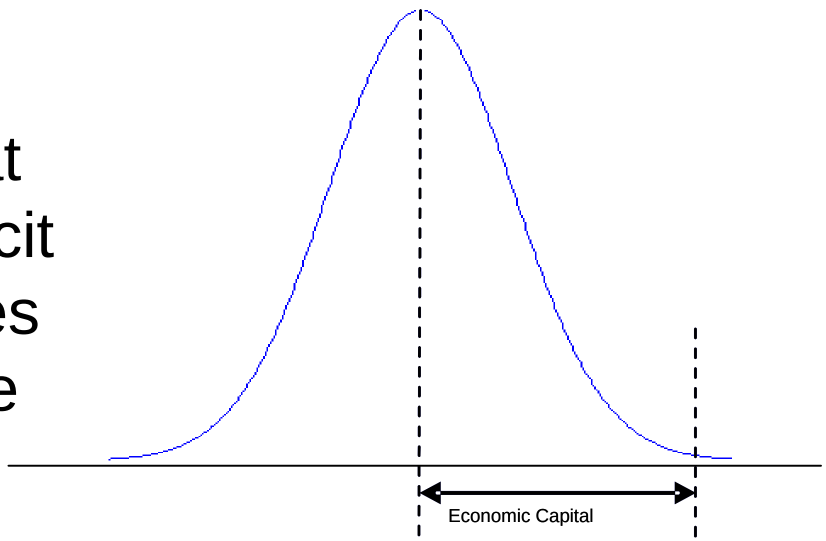
"Based on the results of these analyses, the [Committee] concluded that underreserving, by itself, is not the leading cause of insolvency. This is consistent with current ERM theory, which encourages each company to develop its own ERM culture using an individual assessment of all functional areas and determining how those areas relate to company solvency. Although the FSRM Committee identified deficient loss reserves/inadequate pricing, rapid growth, and alleged fraud as major causes of insolvency, there does not appear to be one primary cause."

– *Property/Casualty Insurance Company Insolvencies, American Academy of Actuaries Property/Casualty Financial Soundness/Risk Management Committee, September 2010*

Economic Capital

- Economic Capital is a risk measure. It is “[t]he amount of capital an organization requires to survive or to meet a business objective for a specified period of time and risk metric, given its risk profile.” (ASB ASOP 46, September 2012)

- It actualizes the embedded value in either GAAP or Stat that exists because of implicit conservatism, and measures risks consistently across the organization



Economic Capital

- Reserve risk is a (key) component of economic capital.
  - There is potential for significant mis-estimation risk regarding assumptions used to estimate reserves e.g. frequency, severity, inflation, exposure, etc. New legislation or judicial rulings can also result in adverse reserve development.
  - Reserve risk for most P&C companies will be one of the largest components of required capital under all ways of assessing it
- "Reserve—An amount recorded in financial statements or accounting systems in order to reflect potential obligations." (ASB ASOP 36, December 2010)

Economic Capital

- Reserve risk is part of the broader category of Insurance Risk which includes Underwriting Risk e.g.
  - Catastrophic risk (hurricanes, earthquakes, terrorist attacks, casualty cats)
  - Large individual losses
  - Soft market cycles that cause weakening in rates, terms & conditions of the policies
  - Assumptions regarding frequency, severity or exposure could be wrong

Economic Capital

Modeling reserve risk:

- Reserving provides a baseline measure of volatility
- Correlation with broader economic drivers needs to be captured as well as adjustments made to reflect the time value of money
- A comparison of outcomes can be made with multiple sources: reserving’s range of reasonable estimates, history, industry benchmarks, stress & scenario testing

Enterprise Risk Management

(ASB ASOP 46)

- Identify risks
- Evaluate them
- Chose appetites
- Set limits
- Accept / avoid / mitigate
- Take action when limits breached
- Monitor and report

CRO Council ERM Framework

Enterprise Risk Management

- Interconnectedness of risks (and its magnitude) is critical to ERM, as evidenced by the events of 2008.
- "One of the most difficult exercises in modeling insurer results is determining the relationships, if any, between risk categories. History may provide some empirical evidence of relationships, but the future is not always best estimated by historical data."

  – *NAIC Own Risk and Solvency Assessment (ORSA) Guidance Manual, March 2014*

Enterprise Risk Management

- Stress & scenario tests are a focused approach towards assessing capital requirements and are key to ERM.
- “Because the risk profile of each insurer is unique, each insurer should utilize assessment techniques (e.g. stress tests, etc.) applicable to its risk profile. U.S. insurance regulators do not believe there is a standard set of stress conditions that each insurer should test.”

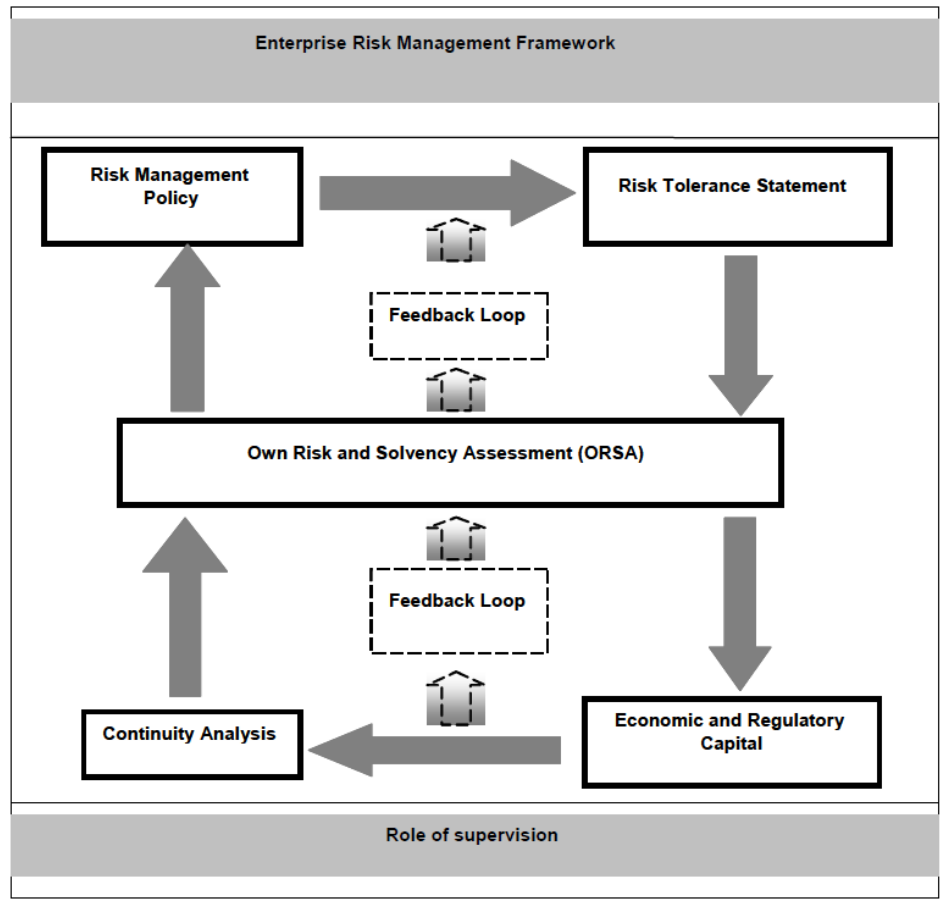
  – NAIC Own Risk and Solvency Assessment (ORSA) Guidance Manual, March 2014

Enterprise Risk Management

- IAIS issues Insurance Core Principles including No. 16 on Enterprise Risk Management (October 2010)

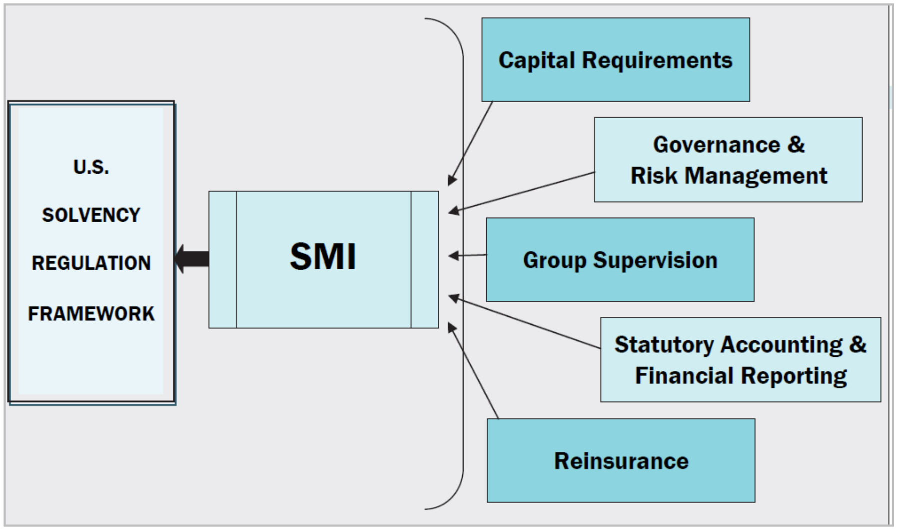
- The Supervisory regime establishes ERM requirements for solvency purposes that require insurers to address all relevant and material risks

Figure 16.1 The IAIS standard ERM framework



Own Risk and Solvency Assessment (ORSA)

- NAIC began a Solvency Modernization Initiative (SMI) in 2008, resulting in the development of a Roadmap as adopted by the NAIC in December 2012
- Five key solvency areas:



Own Risk and Solvency Assessment (ORSA)

- Relative to Risk Management, the Solvency Modernization Initiative resulted in the creation of a model law that requires insurers (1) have a risk management framework, (2) perform an Own Risk and Solvency Assessment (ORSA) and (3) file an ORSA Summary Report to the lead state insurance regulator
- The Risk Management and ORSA Model Act (#505) was adopted in September 2012, pilot testing was conducted, and ‘go live’ takes place in 2015

Own Risk and Solvency Assessment (ORSA)

What does this mean?

- The company conducts its Own Risk & Solvency Assessment annually to assess the adequacy of their risk management framework, and their current and estimated projected future solvency position
- This process and its results at a high level are captured in a Summary Report that is shared with senior management / board of directors as well as regulators

Own Risk and Solvency Assessment (ORSA)

ORSA Summary Report Contents		
I. Description of the insurer's risk management framework	**II. Insurer's assessment of risk exposure**	**III. Group risk capital and prospective solvency assessment**
• Governance & Culture • Risk Identification • Risk Appetite, Tolerance & Limits • Risk Management & Controls • Risk Reporting & Communication	Quantification of each material risk type • Opportunity to leverage internal capital model results • Stress and scenario test results can focus on risk types e.g. reserve risk	Aggregate risk is looked at on a multi-year basis, including • Capital modeling results – internal and external e.g. rating agencies, NAIC • A prospective view of capital metrics under both baseline and stressed conditions

NAIC Own Risk and Solvency Assessment (ORSA) Guidance Manual, March 2014

Own Risk and Solvency Assessment (ORSA)

Reserve risk plays a key role in all of this.

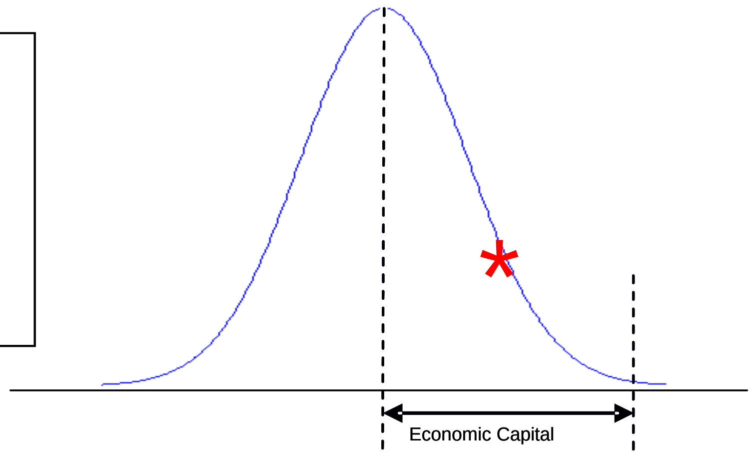
- It needs its own key risk indicators and risk limits as part of an ERM Framework
- There should be consideration of stress and scenario tests specific to reserves
- It is a key component in assessment of the impact of enterprise-wide stress and scenarios on a prospective multi-year basis i.e. the interconnectedness between risks and across time

Own Risk and Solvency Assessment (ORSA)

- How are stress and scenario test results for reserve risk aligned with other volatility assessments?
- What other risks are impacted by a stress that affects reserves? E.g. inflation where investments may simultaneously suffer market losses

"Those who cannot remember the past are condemned to repeat it.

- George Santayana



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Thank you for your attention