



Risk/Reward Decision- Making Strategy- Considering ERM Standards of Practice

CAS Spring Meeting
Boston MA
May 9 ,2023



Enterprise Risk Management Definition Revisited



*“The discipline by which an organization in any industry assesses, controls, **exploits**, finances and monitors risk from all sources for the purpose of increasing the organization’s short- and long-term value to its stakeholders”* - Casualty Actuarial Society



Key Message - ERM is intended to address not only risk, but also opportunity



Definition of Risk



“The Potential of future losses or shortfalls from expectations due to deviation of actual results from expected results”

- Actuarial Standards of Practice (ASOP #46)

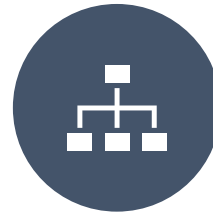
There is a Source of Risk, a Consequence of Risk, and a Control or Strategy to treat either the source and/or the consequence.



Enterprise Risk Management Controls



Diversification



Loss Controlling



Risk Trading



Risk Steering



Enterprise Risk Management – Capital Management Guiding Principles and Goals



Capital Adequacy

to have sufficient economic capital for ongoing operations in the interest of gaining the necessary confidence in the marketplace, from policyholders, investors, regulatory supervisors, and rating agencies.

Capital Productivity

to yield a rate of return deemed a reasonable and acceptable reward given risk appetite by the providers of economic capital in the interest of the creation of value

Capital Protection

to align strategic objectives and 3-5 year business plans to be consistent with risk appetite and risk tolerance



Professional Guidance: ASOP

46

1.1 Purpose

This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk evaluation systems, including designing, developing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope

This standard focuses on five aspects of risk evaluation: risk evaluation models, economic capital, stress testing, emerging risks, and other risk evaluations.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.



Professional Guidance: ASOP

47

1.1 Purpose

This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk treatment within a risk management system, including designing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope

This standard focuses on four aspects of risk treatment: determining risk tolerance, choosing risk appetites, setting risk limits, and performing risk mitigation activities.



Professional Guidance ASOP 55

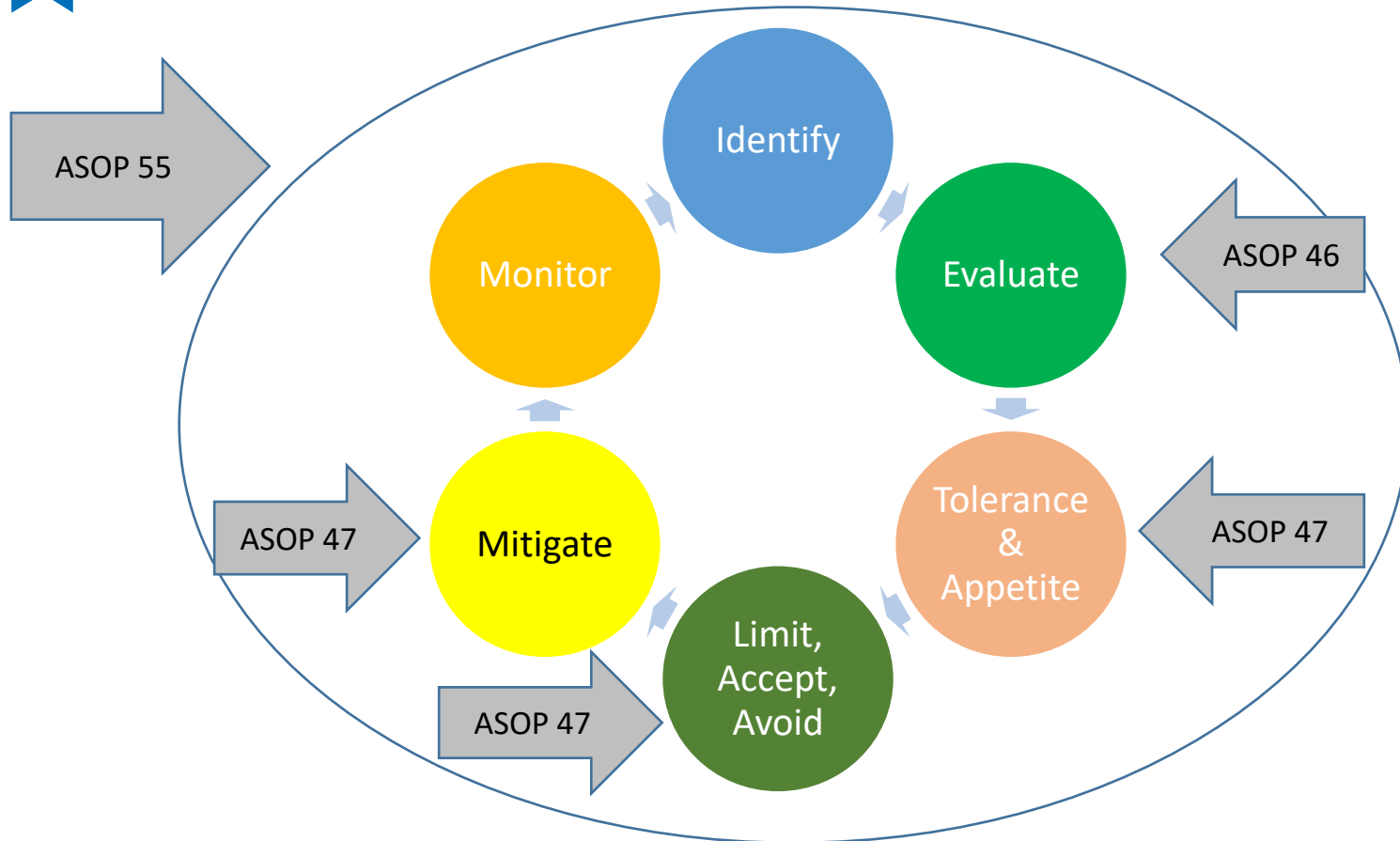
ASOP 55: CAPITAL ADEQUACY ASSESSMENT

1.1 Purpose—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing professional services with respect to an evaluation of the resiliency of an insurer through a capital adequacy assessment.

1.2 Scope- This Standard applies to actuaries designing, performing, or reviewing a capital adequacy assessment.



Enterprise Risk Cycle





Kahoot Questions





Case Studies

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Case Study 1

You are the appointed actuary for the company as well as the chief risk officer. You are putting up a prudent risk margin on indicated reserves in following with both your role as chief risk officer and appointed actuary. Company has agreed with your reserve margin. Company management, of which you are part of, has asked that you allocate your reserve margin to older years (i.e. prior to the last three accident years) as the company bonus plan considers the most recent three accident years in its determination of the company's profit bonus plan for management. You have been asked that you can put in the risk load as any way you see fit, but just allocate to prior years. It does not change the bottom line, the calendar year result, the balance sheet, and the capital position of the company. It is argued to you that it is irrelevant as to which accident years it is allocated to. Things even over time. You end up agreeing to the plan. Thoughts?



Case Study 2

You are the appointed actuary and chief risk officer for the company. You are putting up a prudent risk margin on indicated reserves. According to the Company's internal economic capital model, you assess that the company is well capitalized. The rating agency capital model is assessing less of a capital need than that indicated in your capital model. The rating agency has provided you high marks on your ERM program in deliberating its overall rating for the company for a potential upgrade, and has asked that you share results of your economic capital model. Management has asked and suggested that you sharpen your assumptions in the Company's capital model so that it would convey more consistency with the rating agency model (lower capital need) in the interest of not causing any yellow flags under the rating renewal process. Management is arguing that there are a lot of uncertain parametrization in your model. You should be able to adjust accordingly. No? You assess that in your revising some of the parametrization, the required capital results can result in closer figures to the rating agency model. It will not affect company strategy, nor risk assessment. You reluctantly agree this will cause no harm. The re-parametrization is reasonable even though you like your original parametrization. You agree to the task to re-parametrize for rating agency disclosure purposes. Thoughts?



Case Study 3

The management of your company has decided on a reinsurance structure that implies a risk retention that falls outside the Company's risk appetite statement. The decision is based on a cost cutting move to manage the cost of reinsurance placement. Management is disagreeing with your assessment of exposure to costs which would be otherwise covered by the reinsurance that has been displaced by the decision. What is your next action?



Case Study 4

You have built your economic capital model for use, among other reasons, to help you perform your “ORSA”. You have tested your correlation assumptions across the various risks parameterized in your economic capital model.

You have concluded that your indicated capital requirement using an average correlation factor of .4 will provide evidence that your company is well capitalized. Your personal assumptions, reflecting a .5 average correlations factor deems that you are under capitalized. The correlations were assumed with your best judgement, but understand that it is subject to material parameter risk. Management has asked you to assume the .4 to support the Company’s objective . What do you do?



Case Study 5: Capital Model Review

- You have been recently assigned to manage the capital modelling unit.
- You are expected to review results, assumptions and inputs to the model, provide feedback on the modelling approaches (e.g., stochastic, sensitivity, stress), and provide both verbal and written reports to management. You were in pricing and only used capital modeling in pricing in the past.
- The model being used was developed in-house by an actuary that passed away three years ago.
- Assumptions and scenarios used in the model are developed based on prior assumptions and scenarios, interviews the prior manager had with management, and documented risk appetites and risk tolerances from the Chief Risk Officer's report to the Board.
- You have attended a few seminars internally and a couple conference sessions describing ERM and capital modelling.
- You are comfortable with the theoretical underpinnings of the models but not well versed on how the model results are used in the organization.
- The models make extensive use of programming language and you have limited-to-no experience in programming and coding.



Case Study Questions

1. What are potential problems that might arise and how would you handle those problems, given your role and those of the modeling team members?
2. You are not proficient in the programming language used. What additional requirements does this create in order for you to be able to review work?
3. Are you able to validate the models without knowing the “guts”?
4. Can you place reliance on the other members of the team’s work, and how do you establish if they are “experts”?
5. Who on the team can and should be involved in issuing opinions on the work or should you engage outside experts to validate the model?
6. You are relying only on summaries of model technicalities and results for your review. What risks does this present? How do you get comfortable with the results?
7. What were your responsibilities as a pricing actuary in incorporating the results of this type of analysis?





Closing Comments

Kahoot Questions





Recommendations- Prudent ERM Framework (not covered in the ASOPS)

1. Risk Managers Must Question the Answers



Recommendations

1. Modeling and Management Must *consider the Behavioral Decisions* of people.
2. Risk Managers Must Question the Answers

Recommendations

1. Do Not Assume we Can Get Rid of the Risk Tomorrow for the same Price as Today
2. Modeling and Management Must consider the Behavioral Decisions of people.
3. Risk Managers Must Question the Answers



Recommendations

1. Nobody should have the authority to make decisions without accountability.
2. Do Not Assume we Can Get Rid of the Risk Tomorrow for the same Price as Today
3. Modeling and Management Must consider the Behavioral Decisions of people.
4. Risk Managers Must Question the Answers

Recommendations

1. Incentive compensation requires appropriate alignment with desired performance
2. Nobody should have the authority to make decisions without accountability.
3. Do Not Assume we Can Get Rid of the Risk Tomorrow for the same Price as Today
4. Modeling and Management Must consider the Behavioral Decisions of people.
5. Risk Managers Must Question the Answers





Appendix



The ERM ASOPs

ASOP 46

ASOP 47

ASOP 55

Risk valuation in
Enterprise Risk

ASOP 46

1.1 Purpose

This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk evaluation systems, including designing, developing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope

This standard focuses on five aspects of risk evaluation: risk evaluation models, economic capital, stress testing, emerging risks, and other risk evaluations.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

Professional Guidance: ASOP 46



According to ASOP 46, what is defined as "Action that reduces the frequency or severity of a risk"

- A. Risk Metric
- B. Risk Profile
- C. Risk Tolerance
- D. Risk Mitigation



2 Definitions

1. Economic Capital
2. Emerging Risk
3. Enterprise Risk Management
4. ERM Control Cycle
5. Organization
6. Risk
7. Risk Appetite
8. Risk Evaluation System
9. Risk Limit
10. Risk Management System
11. Risk Metric
- 12. Risk Mitigation**
13. Risk Profile
14. Risk Tolerance
15. Scenario Test
16. Stress test

Professional Guidance: ASOP 46



Now that you have a risk universe for capital modeling, how do you **evaluate** the materiality of the risks?

- A. Assume all risks are at an unacceptable level for your company
- B. Check against the company's full risk universe to check for overlap
- C. Self-quarantine and claim your internet is down
- D. Check back with Management and business unit heads to get their views of materiality of the risks



3.1 Risk Evaluation

In performing services related to risk evaluation, the actuary should consider, or may rely on others who have considered, the following:

- a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment – (flexibility, nature of risk, current and long-term risk, strategic goals, stakeholder interest, regulatory risk criteria, risk interaction, fungibility of capital, risk compared to competitors)
- b. information about the organization’s own risk management system, (tolerance, appetite, ERM control cycle, knowledge and experience of board regarding risk, execution of control cycle)
- c. the relationship between the organization’s financial strength, risk profile, and risk environment as identified in (a) above, and the organization’s risk management system as identified in (b) above;
- d. the intended purpose and uses of the actuarial work product

Professional Guidance: ASOP 46



3.2 Considerations Related to Risk Evaluation Models

In developing, reviewing, or maintaining models used in risk evaluation, the actuary should consider, or may rely on others who have considered, the following:

- a. whether the models are fit for the purpose
 - Reproducible and adoptable, sophistication, usability, reliability, statistical limitations, quality of the data, methodologies for verification, dependencies, cash flow, and discounting
- b. whether the model assumptions are appropriate
 - Assumptions are supportable
 - Assumptions are regularly revisited
 - Assumptions reflect anticipated management actions

Professional Guidance: ASOP 46



3.3 Economic Capital Model

Within ERM programs, actuaries are often called upon for assistance in determining the economic capital of the organization.

3.3.1. Considerations Relating to an Economic Capital Model the actuary should consider the following:

- a. the appropriateness of the selected time frame
- b. the degree to which the economic capital model reflects the significant risks of the organization
- c. the appropriateness of the method used to model each risk

**Professional
Guidance:
ASOP 46**



Which of the following is NOT an example of a Method for an Economic Capital Model mentioned in ASOP 46

- A. Stress Test
- B. Binary Models
- C. Stochastic Models
- D. References to Standards



3.3 Economic Capital Model

3.3.2. Accounting Framework: The actuary's references to and reliance on accounting frameworks in an economic capital model

3.3.3. Methods In determining economic capital, the actuary should select a method or combination of methods where the input(s) to the method(s) and the results of the method(s) are consistent with the tasks and considerations

- a. **Stress Test**
- b. **Stochastic Models**
- c. **References to Standards**

Professional Guidance: ASOP 46



3.3 Economic Capital Model

3.3.4. Assumptions The actuary should use professional judgment in the selection of assumptions.... the actuary should consider the following...

- a. Historical data
- b. Prices in marketplace
- c. Opinions of other experts
- d. Distribution fit
- e. Ability to fit extreme values
- f. Sensitivity to assumption changes
- g. Internal consistency of assumptions
- h. Consistency of application assumptions

Professional Guidance: ASOP 46



3.3 Economic Capital Model

3.3.5. Validation ...The actuary should devise appropriate tests of the distribution of outcomes calculated by the model ... and the sensitivity of those distributions to changes in the assumptions and parameters. The actuary should also perform validation tests to determine whether the model results are reasonably consistent

**Professional
Guidance:
ASOP 46**



For stress test - The actuary needs to determine how realistic the hypothetical situations are

- A. True
- B. False



3.4 Stress and Scenario Testing

3.4.1. Considerations Relating to Stress and Scenario Tests The actuary should consider the following:

- a. Similar or different degrees of adversity
- b. Business plan in extreme events
- c. Single or series of events with catastrophic results
- d. Actions and reactions from stakeholders and markets may differ
- e. Whether assumed interdependencies are appropriate
- f. Non-quantifiable risk and possible financial impacts
- g. Test may be hypothetical, **the Actuary does NOT need to validate the degree of realism**

Professional Guidance: ASOP 46



3.4 Stress and Scenario Testing

3.4.2. Methods- Approaches that may be used for stress and scenario testing include the following

- a. Models of Single Subsystems of the Organization
- b. Fully Integrated and Automated Forecasting Model

3.4.3. Assumptions- the actuary should form a perspective regarding the ways that the defined stress impacts upon various elements of the organization, including consideration of the following

- a. Effect on other assumptions
- b. Management Response
- c. Regulatory Reactions
- d. Risk Mitigation
- e. Time Element

Professional Guidance: ASOP 46



3.4 Stress and Scenario Testing

3.4.4. Constructing Scenarios-

- a. The actuary should consider whether the scenarios need to be developed with consideration of the many different elements of the broad environment that might change from the baseline simultaneous with the main event under consideration.
- b. In addition, the actuary should consider the other effects upon the organization as described in items (a) through (e) of section 3.4.3

3.4.5 – Disclosure – refer to section 4.1.2

Professional Guidance: ASOP 46



3.5 Emerging Risk -the actuary should consider the following:

- a. the potential impact of emerging risks across various time horizons; and
- b. the potential secondary effects from an organization's assumed actions ...

3.6 Other Risk Evaluations

3.7 Specific Circumstances

3.8 Reliance on information or data from others

3.9 Documentation – refer to Section 4 and ASOP 41

Professional Guidance: ASOP 46



4 Documentation

- Section 4.1 gives guidance on disclosures for Economic Capital Models, Stress Test, Emerging Risk, Changes in Systems, Assumptions, Risk Included, Model Validation
- Section 4.2 requires documentation of deviations from the standard based on ASOP 41 sections 4.2 – 4.4

Professional Guidance: ASOP 46



Risk Treatment
in Enterprise
Risk
Management

ASOP 47

You have the risks and their materiality.
What is the best way to learn the
Company view of acceptable risk and the
reasoning behind the levels?

- A. Read Board Committee meeting minutes for approvals of risk tolerance and appetite
- B. Read the CRO report and talk to the CRO to learn what was recommended and assume it was approved
- C. Search the Board Committee meeting minutes for related challenges and discussions
- D. Assume they are correct and move on



1.1 Purpose

This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk treatment within a risk management system, including designing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope

This standard focuses on four aspects of risk treatment: determining risk tolerance, choosing risk appetites, setting risk limits, and performing risk mitigation activities.

Professional Guidance: ASOP 47



The threshold used to monitor the actual risk exposure of a specific unit or units

- A. Risk Appetitive
- B. Risk Limit
- C. Risk Mitigation
- D. Risky Business



Definitions

1. Basis Risk
2. Counterparty Risk
3. Enterprise Risk Management
4. ERM Control Cycle
5. Organization
6. Risk
7. Risk Appetite
- 8. Risk Limit**
9. Risk Management System
10. Risk Mitigation
11. Risk Profile
12. Risk Tolerance
13. Risk Treatment

Professional Guidance: ASOP 47



3.1 Risk Treatment

In performing services related to risk treatment, the actuary should consider, or may rely on others who have considered, the following:

- a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment
- b. information about the organization's own risk management system;
- c. the relationship between the organization's financial strength, risk profile, and risk environment as identified in (a) above, and the organization's risk management system as identified in (b) above;
- d. the intended purpose and uses of the actuarial work product

Professional Guidance: ASOP 47



3.2 Using models in Risk Treatment

An actuary may use models to provide support for risk treatment decisions, for example, the setting of specific risk tolerance or the selection of a risk mitigation strategy.... Such models are usually risk evaluation models and, as such, the actuary designing or implementing models for risk treatment purposes should refer to ASOP No. 46...

**Professional
Guidance:
ASOP 47**



When reviewing parameters, consider the degree of _____ of the risks of the organization

- A. Magnitude
- B. Concentration
- C. Correlation
- D. Separation



3.3 Organizational Risk Parameters of Risk Tolerance, Risk Appetite, and Risk Limits.

In performing services related to these parameters ...the actuary should consider...the following:

- a. The financial and non-financial benefits associated with each planned, risk-taking activity and the aggregation of those activities
- b. The degree of **concentration** of the risks of the organization
- c. The opportunities available to mitigate breaches of risk limits and risk tolerance...
- d. Regulatory or accounting constraints...
- e. The relationships between the risk tolerance, risk appetite, and risk limits...
- f. The historical volatility of the organization's results in context of its current risk profile

Professional Guidance: ASOP 47



What is the most important risk mitigation control for the model?

- A. Independent third-party validation
- B. Validation by the risk team
- C. Testing outputs against prior runs or other models
- D. Sensitivity testing



3.4 Risk Mitigation

In performing services related to risk mitigation, the actuary should consider...the following:

- a. information relating to qualitative aspects of the organization....
 1. Resilience of the organization under duress caused by common fluctuations ..as well as from extreme adverse events
 2. operational capabilities of the organization needed to implement the risk mitigation strategy; and
 3. The potential risk to an organization's reputation as a result of the risk mitigation strategy

Professional Guidance: ASOP 47



The actuary should review the variability of outcomes _____ risk mitigation

- A. Before
- B. During
- C. After
- D. Before and After



3.4 Risk Mitigation

- b. information relating to the cost of, potential effectiveness of, and constraints upon risk mitigation activities...
 1. The availability of risk mitigation instruments
 2. The counterparty credit risk
 3. The nature and degree of the basis risk
 4. The degree of confidence that the risk mitigation process can be maintained and repeated
 5. The availability of data on current and future risk positions
 6. The variability of outcomes **after** mitigation
 7. The accounting treatment of gross and net positions
 8. regulatory constraints on risk mitigation
 9. the granularity of the modeling needed to capture effect

Professional Guidance: ASOP 47



3.5 Reliance on information or data from others – refer to ASOP 23 and 41

3.6 Documentation – refer to Section 4 and ASOP 41

4 Documentation

- Section 4.1 gives guidance on disclosures for Risk Treatment; Model Limitations; Risk Tolerance, Appetite, and Limits; Risk Mitigation; Changes in Process, and Assumptions
- Section 4.2 requires documentation of deviations from the standard based on ASOP 41 sections 4.2 – 4.4

Professional Guidance: ASOP 47



What is the best way to test that controls are effective and whether the model assumptions should be changed to reflect their shortcomings

- A. Ask Internal Audit to test the risks and controls
- B. Ask the external auditor to evaluate the effectiveness of the risks and controls
- C. Perform a self-evaluation of if the controls are effective in reducing the identified risks
- D. Ask the CRO if they have evaluated the risks and controls and what conclusions they drew



Capital Adequacy
Assessment

ASOP 55

ASOP 55 applies to actuaries when ____, performing, or reviewing a capital adequacy assessment

- A. Reading
- B. Designing
- C. Programming
- D. Manipulating



1.1 Purpose

This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing professional services with respect to an evaluation of the resiliency of an insurer through a capital adequacy assessment.

1.2 Scope

This standard to actuaries designing, performing, or reviewing a capital adequacy assessment.

Professional Guidance: ASOP 55



The level of aggregate risk that an organization chooses to take in pursuit of its objectives is called

- A. Risk Capital Target
- B. Risk Profile
- C. Risk Appetite
- D. Valuation Basis



2 Definitions

1. Adverse Capital Event
2. Capital
3. Capital Adequacy Assessment
4. Group
5. **Risk Appetite**
6. Risk Capital Target
7. Risk Capital Threshold
8. Risk Profile
9. Risk Tolerance
10. Valuation Basis

Professional Guidance: ASOP 55



3.1 General Considerations

the actuary should take into account the following

- a. risk profile and capital
- b. business and risk drivers
- c. plans and strategies, including likelihood of successful execution
- d. timing and variability of projected liability and asset related cash flows
- e. timing and intensity of future calls on capital and the ability to replenish capital
- f. existing and accessible resources, including affiliates. Examples include capital, data, computing power, and human resources

Professional Guidance: ASOP 55



3.1 General Considerations

the actuary should take into account the following

- g. the effect on capital adequacy of changes in the risk profile
- h. correlation of risks and events, concentration, diversification, and interdependence of risk
- i. future economic conditions
- j. parameter uncertainty
- k. the methodology used to assess the adequacy of capital with the scope of the actuary's assignment.

Professional Guidance: ASOP 55



3.2 Additional General Considerations the actuary should consider the following

- a. the insurer's definition of risk...
- b. the insurer's risk appetite and risk tolerance, including any conflicts between the risk profile and the risk appetite
- c. inconsistencies between the capital adequacy assessment and information contained in publicly released reports
- d. prior capital adequacy assessments
- f. management actions, including whether they can be executed in a timely manner

Professional Guidance: ASOP 55



When looking at a group, the actuary should consider the following EXCEPT

- A. Intra-group transactions
- B. Access to capital from the entities in the group
- C. The organizational structure of the group
- D. The degree to which the group manages capital adequacy



3.2 Additional General Considerations

the actuary should consider the following

- e. if the insurer is part of a group, or the assessment is of a group
 1. **access to capital** from the entities in the group;
 2. **intra-group transactions**
 3. transfers of risks from the group to each individual entity
 4. transfers of risks from each entity to the group and **the degree to which the group manages capital adequacy** for each individual entity or primarily at the group level

Professional Guidance: ASOP 55



3.3 Valuation Bases Underlying a Capital Adequacy Assessment

When designing or reviewing a capital adequacy assessment, the actuary should review the selected valuation bases for assets and liabilities to determine whether they are consistent whether they are appropriate, consider the following:

- A. criteria used by management for making risk and other financial decisions
- B. any differences between the selected valuation bases and any mandated valuation bases;
- C. the time horizon(s) considered by management in decision-making;
- D. the characteristics and implications of the selected valuation bases; and
- E. any restrictions on assets or capital that are not otherwise reflected in the valuation bases.

Professional Guidance: ASOP 55



3.4 Risk Capital Target or Risk Capital

When the actuary assists in the design of or the review of the appropriateness or applicability of risk capital target(s) or risk capital threshold(s), the actuary should take into account the following

- a. the valuation bases
- b. the principal's objectives for capital and reasons they could change
- c. normal and adverse environments
- d. the time horizon over which the capital is assessed
- e. the methods used to aggregate results, including diversification benefits and the uncertainty of the interdependence among the risks
- f. alignment with any existing risk appetite and risk tolerance.

Professional Guidance: ASOP 55



3.5 Additional Considerations Regarding Risk Capital Target or Risk Capital Threshold

When the actuary assists in the design of or the review of the appropriateness or applicability of risk capital target(s) or risk capital threshold(s), the actuary should consider the following:

- a. the approach used to determine the “sufficient” level of capital
- b. the relative merits of using a range for the risk capital targets versus a single number
- c. whether the insurer will be able to access additional capital within the group when the insurer is part of a group
- d. the risk capital targets or risk capital thresholds that are in use within the group
- e. the relationship of risk capital targets or risk capital thresholds established by management to the current capital and risks of the insurer.

**Professional
Guidance:
ASOP 55**



3.6 Scenario Tests and Stress

When scenario tests and stress tests are included in a capital adequacy assessment, the actuary should follow applicable guidance for scenario testing and stress testing in ASOP No. 46 and ASOP No. 47. In addition, the actuary should consider the following:

- 3.6.1 Types of Tests—Deterministic, Stochastic, Combination, Reverse
- 3.6.2 Level of Adversity - periods of normal volatility, plausible adverse conditions, and tail events
- 3.6.3 Sensitivity Testing—The actuary may use sensitivity testing as part of a capital adequacy assessment.

Professional Guidance: ASOP 55



3.7 Incorporating Management Actions

When management actions are incorporated into a capital adequacy assessment, the actuary should consider the following:

- a. effectiveness and applicability of prior management actions, given changes between when such actions were taken and the projection period
- b. feedback from board members or management
- c. legal, regulatory, and execution timing requirements
- d. experience, if available, of other insurers and non-insurance entities who took similar actions
- e. expected reactions of regulators and other stakeholders.

**Professional
Guidance:
ASOP 55**



When companies operate in more than one regulatory regime, look at variations in _____ Intra-group transactions:

- A. Capital Requirements
- B. Regulatory Oversight
- C. Taxation
- D. All of the above



3.8 Insurers That Operate under More Than One Regulatory Regime

When the actuary is designing, performing, or reviewing a capital adequacy assessment of an insurer that individually or as part of a group operates under more than one regulatory regime, the actuary should take into account the following factors:

- a. different regulatory regimes that might apply to different parts of the insurer or different entities of the group, including:
 1. cooperation and existence or non-existence of memorandums of understanding between regulators
 2. differing **requirements for capital**, scenario and stress tests, and financial reporting structures
 3. expected regulatory changes
 4. differing amounts of **regulatory oversight**
 5. impact of rules, restrictions, and time-lags on capital availability
 6. differing definitions of “insurance company” and “regulated entity”
 7. differing valuation bases
- b. variations in **taxation** and approaches to litigation

Professional Guidance: ASOP 55



3.9 Additional Considerations Regarding Insurers That Are Part of a Group

When the actuary is designing, performing, or reviewing a capital adequacy assessment of an insurer that is part of a group, or the assessment is of a group, the actuary should consider the following, if applicable:

- a. level of complexity and extent of information available across all entities in the group
- b. levels of autonomy in selecting capital strategies for individual entities within the group
- c. the impact of varying ownership interests, including the following:
 - 1. ownership splits, particularly between customers and shareholders
 - 2. shares listed on multiple stock exchanges
 - 3. ownership concentrations.

Professional Guidance: ASOP 55



3.10 Reliance on Data or Other Information Supplied by Others

When relying on data or other information supplied by others, the actuary should refer to the following ASOPs for guidance: ASOP No. 23, Data Quality; ASOP No. 41, Actuarial Communications; and ASOP No. 38, Using Models Outside the Actuary's Area of Expertise (Property and Casualty).

When relying on projections or supporting analysis supplied by others, the actuary should disclose the fact and the extent of such reliance.

**Professional
Guidance:
ASOP 55**



3.11 Documentation

The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. When preparing such documentation, the actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary. ...

In addition, the actuary should refer to ASOP No. 41, section 3.8, for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Professional Guidance: ASOP 55



4.1 Required Disclosures in an Actuarial Report

When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 23, 41, 46, 47, and, if applicable, 38. In addition, the actuary should disclose the following in such actuarial reports, if applicable:

- a. the businesses.. that are included or excluded .. in the assessment;
- b. the key current and future business and risk drivers... in which the insurer operates
- c. the key elements of business and risk management plans and strategies included...
- d. timing and variability of projected liability-related and asset-related cash flows
- e. future calls on capital, and the insurer's means and ability to replenish capital
- f. correlation of risks and events, concentration of exposures, diversification benefits, and the uncertainty of the interdependence between risks
- g. projections of future economic conditions
- h. the selected valuation bases for assets and liabilities

Professional Guidance: ASOP 55



4.2 Additional Disclosures in an Actuarial Report

The actuary should include the following disclosures, when applicable, in an actuarial report:

- a. the extent to which information regarding prior sources of capital was reflected in the capital adequacy assessment
- b. how the insurer's risk management practices or processes, or the insurer's risk profile, risk appetite, or risk tolerance were reflected
- c. any material differences between a prior capital adequacy assessment or relevant publicly available or internal reports and analyses
- d. whether the actuary has considered any capital adequacy assessments performed at the group level and how that information has been used
- e. a description of specific management actions, their impact on the capital adequacy assessment, and whether the actions could be effectively implemented in a timely manner

Professional Guidance: ASOP 55



4.2 Additional Disclosures in an Actuarial Report

The actuary should include the following disclosures, when applicable, in an actuarial report:

- f. ...if the actuary had a role in the design of or reviewed the risk capital targets or risk capital thresholds
- g. a summary of the tests
- h. a description of how operating under more than one regulatory regime is reflected in the capital adequacy assessment
- i. if any material assumption or method was prescribed by applicable law (41 4.2);
- j. reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary (41 4.3)
- k. the actuary has otherwise deviated materially from the guidance of this ASOP (41 4.4).

Professional Guidance: ASOP 55

