



ACTUARIAL STANDARDS BOARD

● EXPOSURE DRAFT ●

**Proposed
Actuarial Standard
of Practice**

Capital Adequacy Assessment for Insurers

**Comment Deadline:
January 31, 2017**

**Developed by the
Enterprise Risk Management Committee
of the
Actuarial Standards Board**

**Approved for Exposure by the
Actuarial Standards Board
September 2016**

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September 2016

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Capital Adequacy Assessment

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Actuarial Standard of Practice (ASOP), *Capital Adequacy Assessment for Insurers*

This document contains the exposure draft of a proposed actuarial standard of practice titled *Capital Adequacy Assessment for Insurers*. Please review this exposure draft and give the ASB the benefit of your comments and suggestions. Each response will be acknowledged, and all responses will receive appropriate consideration by the drafting committee in preparing the final document for approval by the ASB.

The ASB accepts comments by either electronic or conventional mail. The preferred form is e-mail, as it eases the task of grouping comments by section. However, please feel free to use either form. If you wish to use e-mail, please send a message to **comments@actuary.org**. You may include your comments either in the body of the message or as an attachment prepared in any commonly used word processing format. **Please do not password protect any attachments. If the attachment is in the form of a PDF, please do not copy protect the PDF.** Include the phrase “ASB COMMENTS” in the subject line of your message. Please note: Any message not containing this exact phrase in the subject line will be deleted by our system’s spam filter. Also please indicate in the body of the e-mail if your comments are being submitted on your own behalf or on behalf of a company or organization.

If you wish to use conventional mail, please send comments to the following address:

Capital Adequacy Assessment for Insurers
Actuarial Standards Board
1850 M St. NW, Suite 300
Washington, DC 20036-5805

The ASB posts all signed comments received to its website to encourage transparency and dialogue. Unsigned or anonymous comments will not be considered by the ASB nor posted to the website. The comments will not be edited, amended, or truncated in any way. Comments will be posted in the order that they are received. Comments will be removed when final action on a proposed standard is taken. The ASB website is a public website, and all comments will be available to the general public. The ASB disclaims any responsibility for the content of the comments, which are solely the responsibility of those who submit them.

Deadline for receipt of responses in the ASB office: **January 31, 2017**

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Background

When the Actuarial Standards Board's Enterprise Risk Management (ERM) Task Force (now Committee) started work on ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, and ASOP No. 47, *Risk Treatment in Enterprise Risk Management*, it was intended that those standards would, in addition to providing general guidance to actuaries performing ERM work, provide support as building blocks for a standard on actuarial opinions regarding the still-developing own risk and solvency assessment (ORSA) process.

Starting in 2012, insurance regulators began implementing the ORSA process throughout the world. Specifically, the ORSA process is a part of the Insurance Core Principles (ICP) set out by the International Association of Insurance Supervisors (IAIS) and required by most U.S. states. A key feature of ORSA is that it requires a formal assessment of capital adequacy be a part of an insurer's ERM program. However, what is included in a capital adequacy assessment varies significantly across the industry. Given the disparity in current practices, the ASB determined that a separate ASOP covering capital adequacy assessments was needed to supplement ASOPs No. 46 and No. 47.

In addition to satisfying regulatory requirements, risk-taking enterprises will, on occasion, want to assess their capital adequacy. The purpose of this proposed standard is to provide additional guidance specifically to actuaries preparing an assessment of capital adequacy, whether for a specific regulatory requirement or for general management purposes.

The ASB released a discussion draft of this proposed standard in May 2015. This exposure draft reflects many of the comments received on that discussion draft.

Request for Comments

The ASB appreciates comments on all areas of this proposed ASOP and would like to draw the readers' attention to the following areas in particular:

1. Does the exposure draft provide sufficient guidance for an actuary designing, performing, or reviewing a capital adequacy assessment for life, property/casualty, and health insurers?
2. Does this exposure draft give sufficient context for users of the actuarial work product to understand and rely upon actuarial work prepared under this guidance?
3. Does this exposure draft provide enough guidance for actuaries addressing complex insurance organizations such as holding companies with multiple subsidiaries and jurisdictions?
4. Are there areas where the exposure draft is too restrictive or too prescriptive?
5. Are the scope of this standard and the definition of a capital adequacy assessment appropriate to where this standard should apply?

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6. Are the disclosures appropriate?

The ASB reviewed the draft at its September 2016 meeting and approved its exposure.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

**PROPOSED ACTUARIAL STANDARD OF PRACTICE
CAPITAL ADEQUACY ASSESSMENT FOR INSURERS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to a review of the resiliency of an insurer through a **capital adequacy assessment**.
- 1.2 **Scope**—This standard applies to actuaries involved in **capital adequacy assessment** work for life or health insurers, including fraternal benefit societies and health benefit plans, property and casualty insurers, mortgage and title insurers, financial guaranty insurance companies, **complex insurance organizations**, and similar organizations (collectively, referred to as “insurer”).

The scope includes **capital adequacy assessment** work related to the design, performance, or review of a **capital adequacy assessment** whether for an insurer’s internal or external stakeholders (for example, a regulator).

If the actuary departs from the guidance set forth in this ASOP 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.

- 1.3 **Cross References**—When this ASOP refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this ASOP to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work performed on or after [four] months after adoption by the Actuarial Standards Board.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Adverse Capital Event**—A modeled or actual event that either a) causes **capital** to be significantly less than the **risk capital target(s)** or b) causes **capital** to be less than the **risk capital threshold(s)**.
- 2.2 **Capital**—The excess of the value of assets over the value of liabilities, which depends on the valuation basis chosen.

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- 2.3 Capital Adequacy Assessment—An assessment of projected **capital** of the insurer relative to its **risk capital target** or **risk capital threshold**.
- 2.4 Complex Insurance Organization—Affiliated group of individual organizations, primarily consisting of insurers, where the relationships among the organizations is constrained by governance, accounting, tax, foreign exchange, or legal or regulatory restrictions and considerations.
- 2.5 Risk Appetite—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.
- 2.6 Risk Capital Target—The organization’s preferred level of **capital**, which is expressed as a function of a measure of risk. This can result in a single value or a range. An insurer may establish multiple **risk capital targets** based on different risk metrics at any one time.
- 2.7 Risk Capital Threshold—The minimum level of **capital** necessary for an organization to operate effectively as selected by management and expressed as a function of a measure of risk. An insurer may establish multiple **risk capital thresholds** based on different risk metrics at any one time.
- 2.8 Risk Profile—The risks to which an organization is exposed over a specified period of time.
- 2.9 Risk Tolerance—The aggregate risk-taking capacity of an organization.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 General Considerations—In designing, performing, or reviewing a **capital adequacy assessment**, the actuary should reflect the impact of the following:
- a. the insurer’s **risk profile** and **capital**, the business and risk drivers, including the legal, regulatory, and economic environments in which the insurer operates, as well as any past and anticipated changes or trends in those drivers;
 - b. the strategy and plans and the likelihood of their successful execution;
 - c. the timing of projected cash flows for both assets and liabilities, and the timing and intensity of future calls on **capital** and the means and ability to replenish it in a timely manner;
 - d. current resources, liquidity, fungibility, and capabilities plus the effect on capital adequacy of changes, or projected changes, in the **risk profile**;

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- e. correlation of risks and events, diversification benefits, and the uncertainty of the interdependence between risks; and
- f. projections of future economic conditions.

3.2 Additional General Considerations—In designing, performing, or reviewing a **capital adequacy assessment**, the actuary should consider, or may rely on others who have considered, the following:

- a. the insurer's definition of risk, the primary risk metric(s) used in the risk management system of the insurer, the risk identification process, the risks identified by the insurer, relevant management risk reports, and the limitations of the analytical tools and processes that will be used by the insurer to evaluate and quantify each risk;
- b. the insurer's **risk appetite** and **risk tolerance**, as discussed in ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, including any conflicts between the **risk profile** and the **risk appetite** and how the **risk appetite** and **risk profile** is expected to change over time;
- c. inconsistencies between the **capital adequacy assessment** and publicly released reports of, for example, loss and expense reserves, unearned premium reserves, or premium deficiency reserves, and the rationale for any inconsistencies. The actuary should consider the reserve amount(s) publicly reported by the insurer and, if available, any actuarial analysis or reports provided to management related to estimation of reserves;
- d. prior **capital adequacy assessments**; and
- e. management actions in response to **adverse capital events** (see section 3.7).

If the actuary finds any of the above items to be material and relevant to the **capital adequacy assessment**, the actuary should document and disclose them.

3.3 Valuation Bases Underlying a Capital Adequacy Assessment—The actuary should review the selected valuation bases for assets and liabilities to determine whether they are consistent with and appropriate for the intended use of the **capital adequacy assessment**. When doing so, the actuary should 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;

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- d. the unique 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.
- 3.4 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 reflect the following (on a historical, current, and prospective basis, as appropriate):
- a. the valuation bases;
 - b. management’s objectives for **capital** (such as return on equity, insurer stability, acquisition plans, and infrastructure investment) and reasons they could change;
 - c. normal and adverse economic 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; and
 - f. alignment with any existing **risk appetite** and **risk tolerance**.
- 3.5 Additional Considerations Regarding Risk Capital Target or Risk Capital Threshold—The actuary should consider, or may rely on others who have considered, the following:
- a. the approach used to determine the “sufficient” level of **capital** (such as factors, historical averages, and economic capital models), as well as the uncertainty inherent in the approach;
 - b. the relative merits of using a range for the **risk capital target** versus a single number;
 - c. whether the insurer will be able to access additional **capital** if and when needed, including the fungibility and liquidity of sources of **capital** that are internal to a group of insurers;
 - d. the **risk capital targets** and **risk capital thresholds** that are in use by the various members of the group; and
 - e. the relationship of **risk capital targets** and **risk capital thresholds** established by management and external stakeholders (such as rating agencies), as well as regulatory capital requirements, to the current **capital** and risks of the insurer.

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- 3.6 Selecting Scenario Tests and Stress Tests—When an actuary includes scenario tests and stress tests 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, *Risk Treatment in Enterprise Risk Management*. In addition, the actuary should consider the following:
- 3.6.1 Types of Tests—One or more forms of scenario tests or stress tests such as the following:
- a. Reverse—Reverse-engineered test that creates an **adverse capital event**;
 - b. Deterministic—Tests to challenge the insurer in specific ways based on its unique exposures. For example, emerging risks may be considered using deterministic stress tests; and
 - c. Combination—Tests where multiple events that were tested in other scenarios happen simultaneously or sequentially.
- 3.6.2 Level of Adversity—Different levels of adversity such as the following:
- a. periods of normal volatility;
 - b. plausible catastrophic events; and
 - c. extremely unlikely adverse conditions.
- 3.6.3 Sensitivity Testing—The actuary may use sensitivity testing to determine the applicability of the results of the scenario tests and stress tests under changing conditions, including the passage of time.
- 3.7 Incorporating Management Actions—When an actuary incorporates management actions in a **capital adequacy assessment**, the actuary should consider, or may rely on someone who has considered, the following:
- a. effectiveness and applicability of prior management actions, given the time between when such actions were taken and the projection period, for example:
 1. the magnitude of the impact of the prior action compared with the impact needed in the projection;
 2. the differences in risk environment;
 3. differences in the insurer’s enterprise risk management program and **risk profile**;

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4. differences in the legal, contractual, and execution timing requirements; and
 5. differences in the insurer’s financial strength.
- b. feedback from board members or management;
 - c. legal, contractual, and execution timing requirements;
 - d. experience of other insurers and non-insurance firms who took similar actions, if available; and
 - e. expected reactions of regulators and other stakeholders.
- 3.8 Capital Adequacy in Complex Insurance Organizations—The actuary should reflect the impact of the following factors when called upon to assess the capital adequacy of an insurer that is a part of a **complex insurance organization**:
- a. fungibility of **capital** across the **complex insurance organization**;
 - b. different regulatory regimes that might apply to different parts (including non-insurance organizations) of the **complex insurance organization**, including:
 1. cooperation and existence or non-existence of memorandums of understanding between regulators;
 2. differing requirements for **capital**, scenario tests and stress tests, and financial reporting structures;
 3. expected regulatory changes in some countries;
 4. differing amounts of regulatory oversight;
 5. impact of rules, restrictions, and time-lags on fungibility;
 6. differing definitions of “insurance company” and “regulated entity”;
 7. differing valuation bases; and
 8. non-insurance regulatory regimes.
 - c. political risk, variations in taxation, and variations in approach to litigation in various regulatory regimes;
 - d. scheduled and likely ad hoc inter-group transactions;

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- e. risks from the group to each individual organization, for example, reinsurance with aggregates or limits on a multi-company basis; and
 - f. risks from each organization to the group and the degree to which the **complex insurance organization** manages capital adequacy for each individual organization or primarily at the group level.
- 3.9 Additional Considerations Regarding Complex Insurance Organizations—The actuary should consider, or may rely on others who have considered, the following:
- a. level of complexity and extent of information available across all aspects of the **complex insurance organization**;
 - b. levels of autonomy in selecting capital strategies for individual organizations within the **complex insurance organization**; and
 - c. the impact of various ownership interests, including the following:
 - 1. ownership splits, particularly between customers and shareholders;
 - 2. shares listed on multiple stock exchanges; and
 - 3. ownership concentrations.
- 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 ASOP No. 23, *Data Quality*, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*, and ASOP No. 41, *Actuarial Communications*, for guidance. When relying on projections or supporting analysis supplied by others, the actuary should disclose both the fact and the extent of such reliance, and the actuary should refer to ASOP No. 23, deeming such projections or supporting analysis as data covered by ASOP No. 23.

Section 4. Communications and Disclosures

- 4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose of the **capital adequacy assessment** and refer to ASOP Nos. 23, 38, 41, 46, and 47. In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:
- a. material changes in the considerations listed in section 3.1 from a prior report, if any;

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- b. the key current and future business and risk drivers, including the legal, regulatory, and economic environments in which the insurer operates (see section 3.1(a));
 - c. the key elements of business and risk management strategies included in the **capital adequacy assessment** (see section 3.1(b));
 - d. a discussion of projected cash flows, future calls on **capital**, and the means and ability to replenish it (see section 3.1(c));
 - e. the businesses (insurance or non-insurance) that are included or excluded in the assessment, and the current resources, liquidity, fungibility, and capabilities of the insurer (see section 3.1(d));
 - f. the treatment of interdependence and diversification (see section 3.1(e));
 - g. the basis for projections of future economic conditions (see section 3.1(f)); and
 - h. the selected valuation bases for assets and liabilities, and why they are appropriate (see section 3.3).
- 4.2 Additional Disclosures—Consistent with the intended purpose or use, the actuary should make disclosures in addition to those in section 4.1.
- a. If information regarding prior sources and uses of capital was available, the actuary should disclose the extent to which such information was reflected in the **capital adequacy assessment**, including any reasons for deviations from past trends in such sources and uses;
 - b. If the actuary had access to publicly available or internal reports and analyses, the actuary should disclose any material differences between such reports and analyses and the assumptions underlying the **capital adequacy assessment**;
 - c. If the actuary had a role in the design of or reviewed the **risk capital targets** or **risk capital thresholds**, the actuary should disclose his or her role and the rationale underlying the design or the results of his or her review (see sections 3.4 and 3.5).
 - d. If the actuary performed scenario or stress tests as part of the **capital adequacy assessment**, the actuary should describe the tests, including the type and levels of adversity, and summarize the results of the tests (see section 3.6).
 - e. If the **capital adequacy assessment** reflects specific management actions, the actuary should describe the actions, their impact on the **capital adequacy assessment**, and whether the actions could be effectively implemented in a timely manner (see section 3.7).

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- f. If the insurer is a part of a **complex insurance organization**, the actuary should describe the **complex insurance organization** and how the actuary reflected the insurer's role in the **complex insurance organization** in the **capital adequacy assessment** (see sections 3.8 and 3.9).
- 4.3 Deviation from Guidance in the Standard—If the actuary departs from the guidance set forth in this standard, the actuary should include the following, where applicable:
- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Enterprise risk management (ERM) has been the focus of the insurance industry, including insurers, regulators, and rating agencies, for some time. In response to this increased attention to ERM, the Actuarial Standards Board (ASB) created the ERM Task Force (now Committee), which developed ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, and ASOP No. 47, *Risk Treatment in Enterprise Risk Management*. These two ASOPs provide guidance to the actuary for overall ERM work.

Historically, most insurers did not undertake formal assessments of capital adequacy. Instead, they tended to use rules of thumb (for example, premium to surplus ratios) or relied on regulatory rules (for example, risk-based capital ratios) or rating agencies (for example, A. M. Best's Capital Adequacy Ratio). Many companies also relied on stress tests or what-if analyses to assess capital levels. Insurance regulators designed deterministic stress tests that reflected potential experience beyond the range of an insurer's normal operations. Over time, deterministic stress tests were developed for a wide variety of assumptions.

Starting in 2012, insurance regulators began implementing the own risk and solvency assessment (ORSA) process throughout the world. Specifically, the ORSA process is a part of the Insurance Core Principles (ICP) set out by the International Association of Insurance Supervisors (IAIS) and required by most U.S. states. A key feature of ORSA is that it requires a formal assessment of capital adequacy be a part of an insurer's ERM program.

Current Practices

Given the new ORSA requirements and the increasing demands from regulators, rating agencies, and other external stakeholders, insurers are under pressure to perform formal, more sophisticated capital adequacy assessments. These formal capital adequacy assessments typically involve considerations of complex contingencies in determining the impact of adverse experience on the insurer and its capital adequacy, making this a process that will usually involve actuaries in some or all of the assessment process.

Company practice in making these assessments varies significantly. Some companies have created their own stochastic models (or use commercially available software) that simulate underwriting results across all lines of business and geographies, as well as economic conditions and investment results. These models typically incorporate the insurer's strategic plan and may include complicated feedback loops that reflect management's responses, if any, to specific

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situations (for example, underwriting results, a recession, multiple catastrophic events, a pandemic). They may also include predictions of how regulators and rating agencies may react to changes in the financial condition of the insurer. Other models may analyze capital adequacy at very high levels of aggregation and have limited or no feedback loops (i.e., they analyze specific management actions one at a time).

Larger insurers may have whole departments focused on analyzing the global economy. For smaller companies, this work may be tasked to a specific individual or may be outsourced to consultants. In many of these, actuaries and non-actuaries are involved in these analyses and the building of the models.

Rating agencies and regulators are concerned with both individual company and group-wide capital adequacy. Many insurers are part of complex, multi-national organizations (including both insurers and non-insurers) that span many different accounting, financial, and regulatory regimes. The relationships among the members of a group and the differences among these regimes can have a significant impact on capital adequacy and the group's ability to fulfill its promises to its customers. In most countries, ORSA requires groups operating in multiple countries to perform a group-wide assessment of their capital adequacy across all jurisdictions.