



ACTUARIAL STANDARDS BOARD

• EXPOSURE DRAFT •

**Proposed
Actuarial Standard
of Practice**

Property/Casualty Ratemaking

**Comment Deadline:
January 31, 2015**

**Developed by the
Ratemaking Task Force of the
Casualty Committee of the
Actuarial Standards Board**

**Approved for Exposure by the
Actuarial Standards Board
September 2014**

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September 2014

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Property/Casualty Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Actuarial Standard of Practice (ASOP), *Property/Casualty Ratemaking*

This document contains the exposure draft of a proposed ASOP, *Property/Casualty Ratemaking*. Please review this exposure draft and give the ASB the benefit of your comments and suggestions. Each written response and each response sent by e-mail to the address below 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.

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

Ratemaking (Exposure Draft)
Actuarial Standards Board
1850 M Street, NW, Suite 300
Washington, DC 20036

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, 2015**

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Background

Ratemaking has been a fundamental part of actuarial practice since the beginning of the profession. Establishing rates based on sound actuarial practice is essential to the integrity of the insurance system and is a key to fulfilling the promise embodied in the insurance contract. The Board of Directors of the Casualty Actuarial Society (CAS) adopted the *Statement of Principles Regarding Property and Casualty Ratemaking* in May 1988 (before the ASB was established). This document featured four fundamental principles of ratemaking and discussed additional considerations. The CAS is revising the *Statement of Principles* and, as a part of that process, requested that the ASB develop an encompassing actuarial standard of practice in the area of property/casualty rate development (ratemaking). In its request to the ASB, the CAS further noted that the *Statement of Principles* contained considerations that might be expanded to become the basis of an ASOP.

In developing the proposed ASOP, the task force sought to develop an encompassing standard of practice. This draft ASOP addresses all of the items formerly in the Considerations section of the *Statement of Principles Regarding Property/Casualty Ratemaking* as well as ratemaking items not currently addressed in existing ASOPs. To provide a complete standard on ratemaking, the draft references existing ASOPs that include relevant considerations.

Request for Comments

The task force suggests that the proposed ASOP be read in conjunction with the draft CAS *Statement of Principles Regarding Property/Casualty Ratemaking*.

The task force appreciates comments on all areas of this proposed ASOP and would like to draw the reader's attention to the following areas in particular:

1. Are there any conflicts between the proposed ASOP and existing practice?
2. Is it sufficiently clear in section 1.2, Scope, that this proposed ASOP will apply to all activities regarding the estimation of future costs for property/casualty insurance, applications of self-insurance, risk-funding or retention mechanisms, or other risk-transfer mechanisms for policies not yet written?
3. Are there any considerations from the current *Statement of Principles Regarding Property/Casualty Ratemaking* that are not sufficiently covered in this proposed ASOP? Are there any other issues not mentioned that need to be addressed in this proposed ASOP?
4. This proposed ASOP references other ASOPs. This does not mean that other ASOPs not specifically mentioned do not apply; it means that the specific ASOPs cited were incorporated to provide a complete set of issues and recommended practice for ratemaking without repeating extensive guidance that already exists in other ASOPs. Is this appropriate and sufficiently clear?

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5. Do you think that this proposed ASOP provides adequate guidance for actuaries performing property/casualty ratemaking services? If not, what changes would you suggest?
6. In section 3.2, Organization of Data, the proposed ASOP refers to several methods for the aggregation of data (Accident Period, Calendar Period, Report Period, and Policy Period). These methods are presumed to be well understood and are not defined. Are these methods sufficiently understood or do you think these methods need to be defined?
7. Section 4, Communications and Disclosures, of this proposed standard does not require disclosures beyond those required by ASOP No. 41. Do you think any additional disclosures are needed?

The ASB voted in September 2014 to approve this exposure draft.

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Rate-making Task Force

Patrick B. Woods, Chairperson
J'ne Byckovski Claudine Modlin
Greg Hayward Christopher Westermeyer

Casualty Committee of the ASB

David J. Otto, Chairperson
Shawna Ackerman Kenneth R. Kasner
Raji Bhagavatula Dale F. Ogden
Larry Haefner Marc B. Pearl

Actuarial Standards Board

Patricia E. Matson, Chairperson
Michael Abroe Thomas D. Levy
Christopher S. Carlson Robert G. Meilander
Maryellen Coggins James J. Murphy
Beth E. Fitzgerald James F. Verlautz

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

PROPERTY/CASUALTY RATEMAKING

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 property/casualty **ratemaking**.
- 1.2 **Scope**—This standard applies to all actuaries when performing professional services with respect to developing, reviewing, or changing property/casualty insurance rates for policies not yet written. This includes the evaluation of future costs for self-insurance, risk-funding or retention mechanisms, or any other risk-transfer mechanism. Such professional services may include expert testimony, regulatory activities, legislative activities, or statements concerning public policy to the extent these activities involve developing, reviewing, or changing property/casualty insurance rates. This standard is limited to the estimation of future costs and does not address other considerations that may affect the price charged to the **policyholder**, such as marketing goals, competition, and legal restrictions.

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.

- 1.3 **Cross References**—When this standard 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 the referenced standard as amended or restated to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work commenced on or after four months following adoption by the Actuarial Standards Board.

Section 2. Definitions

The terms below are defined for use in this standard.

- 2.1 **Composite Rating**—A rating **method** that simplifies the calculation for large, complex entities. Instead of using multiple **exposure bases** to estimate the expected value of future costs, a single composite **exposure base** is used.

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- 2.2 Coverage—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.
- 2.3 Experience Rating—A rate modification technique that involves evaluating the **policyholder's** actual experience relative to the average experience of similarly classified **policyholders** to derive a rate unique to that policyholder's risk.
- 2.4 Exposure Base—The basic unit that measures a policy's exposure to loss.
- 2.5 Method—A systematic procedure for developing, reviewing, or changing rates.
- 2.6 Model—A mathematical or empirical representation of a specified phenomenon.
- 2.7 Policyholder—Individuals or entities that pay a premium for an insurance policy or share in the funding of the costs of self-insurance, risk-funding or retention mechanisms, or any other risk-transfer mechanism for policies not yet written.
- 2.8 Rate—An estimate of the expected value of all future costs associated with an individual risk transfer.
- 2.9 Ratemaking—The process of estimating future costs associated with the transfer of risk in insurance or other risk-transfer mechanisms.
- 2.10 Schedule Rating—A rate modification technique that considers the individual risk characteristics that are expected to affect the **policyholder's** future loss and allocated loss adjustment expense experience but are not yet reflected in the **experience rating** process.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Introduction—The actuary should identify and consider the costs associated with the components that make up the **rate**. Such components should include loss and loss adjustment expenses, operational and administrative expenses, profit and contingency provisions, and the cost of capital.
- 3.2 Organization of Data—The actuary should determine how data will be organized to estimate the various components of the **rate**.

There are several acceptable aggregation **methods**, including aggregating by calendar period, accident period, report period, and policy period. The nature of the insurance **coverage** and the type of **ratemaking** analysis will influence the selection of the data aggregation method. For example, calendar period data is typically collected for financial reporting purposes and is therefore readily available. This type of aggregation may be appropriate to estimate overall **rate** level for some **coverages**, whereas other **coverages** may require accident period data, policy period data, or report period data to reflect the

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type of **coverage** provided or to better address the timing between premium collected and losses reported and paid.

The actuary also should consider the level of granularity of data needed for the type of **ratemaking** analysis being performed. For example, one level of aggregated data may be appropriate to estimate the overall **rate** need, whereas more refined data may be appropriate for designing risk classification systems.

- 3.3 Data Quality—The actuary should refer to ASOP No. 23, *Data Quality*, for guidance in the consideration of the choice and use of data for **ratemaking**.
- 3.4 Methods, Models, and Assumptions—The actuary should select appropriate **methods** and **models** for estimating the expected cost of the components that make up the **rate**. The actuary should use reasonable assumptions (including parameters) appropriate to each **method** and **model**. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends. The actuary should use methods, models, and assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation and are not internally inconsistent.
- 3.5 Exposure Base—The selection and use of an **exposure base** is a key step in the **ratemaking** process. The actuary should take into account various practical requirements in selecting the **exposure base**, such that it is reasonably proportional to the expected loss, as well as objectively measurable and easily verifiable. To the extent these criteria are in conflict, the actuary should use professional judgment to select the **exposure base** most appropriate for the **ratemaking** exercise.

Some complex risks have multiple **exposure bases** for each aspect of **coverage** provided (for example, sales revenue for general liability, property value for commercial property). In undertaking **ratemaking** analyses for these risks, it is often appropriate to designate one **exposure base**, referred to as the composite **exposure base**, to act as a proxy for the more refined **coverage-by-coverage exposure bases**.

- 3.6 Risk Classification System—Risk classification systems are an integral part of the development of **rates**. The actuary should refer to ASOP No. 12, *Risk Classification (for All Practice Areas)*, for guidance in the consideration of the classification plan for **ratemaking**.
- 3.7 Use of Historical Data—The actuary should determine the extent to which historical data are available and applicable for estimating expected future costs.
 - 3.7.1 Use of Historical Exposure and Premium Data—When using historical exposure and premium data to estimate future costs, the actuary should adjust the data to reflect a consistent **rate** and exposure level. This adjustment can be completed either by on-level factors or by means of extension of exposure. In making this adjustment, the actuary should consider the nature of the data collected and the effective dates of the various **rate** changes during the historical period.

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3.7.2 Use of Historical Loss and Loss Adjustment Expenses—The actuary should determine the extent to which historical loss and loss adjustment expenses are available and applicable as a basis for estimating expected future cost. In determining the expected future costs related to loss and loss adjustment expenses, the actuary should consider adjusting historical data using **methods** or **models** that, in the actuary’s professional judgment reflect the potential for future development of loss and loss adjustment expense. In determining the appropriate **methods** or **models**, the actuary should consider the particular data utilized, the **coverage** being evaluated, the historical period and conditions in which the claims occurred, and the underlying claims adjustment process.

The actuary should consider whether, in the actuary’s professional judgment, different **methods** or **models** should be used for different components of the developed loss and loss adjustment expenses. For example, different **coverages** within a line of business may require different **methods**.

3.7.3 Additional Adjustments to Historical Data—The actuary should consider additional adjustments to the historical data needed to reflect the environment expected to exist in the future period when the **rates** will be in effect. These adjustments include, but are not limited to, the following:

- a. judicial, legislative, or regulatory changes;
- b. mix of business changes;
- c. policy contract changes;
- d. claim practice changes;
- e. accounting changes; and
- f. reinsurance changes.

3.8 Expense Provisions—The actuary should refer to ASOP No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*, for guidance in the consideration of the expense provisions for **ratemaking**.

3.9 Trends—To the extent the adjusted historical data in section 3.7 and the expense provisions in section 3.8 do not fully reflect expectations for the future period for which the **rate** is in effect, the actuary should consider use of trend.

The actuary should refer to ASOP No. 13, *Trending Procedures in Property/Casualty Insurance*, for guidance in the selection of trends for estimating future values of costs associated with the components that make up the **rate**.

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- 3.10 Ratemaking for New Coverages or Exposures—If the actuary is estimating the expected future cost for a **coverage** or risk and the historical loss and loss adjustment expenses are either unavailable or not fully representative of the risk, the actuary should consider the following:
- a. historical data from **coverages** or risks that are similar to the new **coverage** or risk;
 - b. external data on the phenomenon or events that are contemplated by the new **coverage** or risk;
 - c. differences between **coverages** or risks with available relevant historical data or external data and the new **coverage** or risk; and
 - d. appropriate adjustments to the available relevant historical or external data to reflect expected differences identified in section 3.10(c). In making these adjustments to historical data, the actuary should also be guided by sections 3.7 and 3.9.
- 3.11 Credibility—The actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance in considering the credibility given to a particular set of data for **ratemaking**.
- 3.12 Modeling—The actuary should refer to [proposed ASOP on modeling,] for guidance in the consideration of **models** used for **ratemaking**. (Note: May need revision depending on final version of proposed modeling ASOP.)
- 3.13 Catastrophe Provisions—The actuary should refer to ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)* [Note: revision pending] and ASOP No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*, for guidance in the consideration of the catastrophe provisions for **ratemaking**.
- 3.14 Reinsurance Provisions—When reinsurance provisions are reflected in ratemaking, the actuary should select appropriate **methods** or **models** for estimating the cost associated with reinsurance arrangements expected to exist during the future period when the **rates** will be in effect.
- 3.15 Profit and Contingency Provisions and the Cost of Capital—The actuary should refer to ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance*, for guidance in the consideration of the profit and contingency provisions and the cost of capital for **ratemaking**.
- 3.16 Additional Funding Sources—In some risk-transfer systems, income may come from other sources, such as assessments to **policyholders** or other parties including insurers, a larger group of insurance purchasers, or taxpayers. The actuary should take into account additional sources of funding and their allocation and timing when establishing **rates**.

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- 3.17 Impact of Individual Risk Rating—Some policyholders have sufficiently credible experience that their historical experience or risk characteristics can be used in whole or in part to derive a **rate** unique to that policyholder, using techniques such as **experience rating** and **schedule rating**. The actuary should reflect the impact of individual risk-rating plans on the overall **rate** level.

Section 4. Communications and Disclosures

- 4.1 Actuarial Communications—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41, *Actuarial Communications*.
- 4.2 Disclosures—The actuary should also include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or **method** was prescribed by applicable law;
 - 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

Ratemaking has been a fundamental part of actuarial practice since the beginning of the profession. Ratemaking principles and standards of practice are important to protect the soundness of the system, permit economic incentives to operate, and thereby encourage widespread availability of coverage.

The Board of Directors of the Casualty Actuarial Society (CAS) adopted the *Statement of Principles Regarding Property and Casualty Ratemaking* in May 1988. The *Statement of Principles* has served as a source of information regarding ratemaking, providing both principles and considerations. Several ASOPs issued by the Actuarial Standards Board also pertain to ratemaking, including the following:

- ASOP No. 12, *Risk Classification (for All Practice Areas)*;
- ASOP No. 13, *Trending Procedures in Property/Casualty Insurance*;
- ASOP No. 23, *Data Quality*;
- ASOP No. 25, *Credibility Procedures*;
- ASOP No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*;
- ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*;
- ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)* (Note: Revision pending);
- ASOP No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*;
- ASOP No. 41, *Actuarial Communications*; and
- ASOP No. XX, *Modeling* (Note: Pending final approval).

In recognition of these ASOPs and in conjunction with the development of this standard, the CAS has issued a draft revision to the *Statement of Principles*, which removes the considerations from the document and focuses on the principles.

Current Practices

Over the years, a multitude of ratemaking methods and models have been designed, put into use, and modified as a result of experience. Materials and publications of the CAS such as the *Syllabus of Basic Education* (formerly the *Syllabus of Examinations*), *Variance*, *Proceedings* (discontinued in 2014), *Foundations of Casualty Actuarial Science*, *Ratemaking and Ratemaking/Product Management Seminar* archives, and others provide discussions of current

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ratemaking practices. While these may provide useful educational guidance to practicing actuaries, none is an actuarial standard.

Each of the 50 states and the District of Columbia has executive departments established to regulate the business of insurance, including insurance rates. Each of the 50 states and the District of Columbia also has statutory and regulatory requirements for property/casualty rates. Contested rate cases have resulted in a large number of judicial and regulatory decisions. Actuarial principles and standards of practice have been very helpful to actuaries, legislators, regulators, and the courts when disputes about rates occur.

Advances in availability of data, technology, tools, techniques, and learnings from other disciplines have resulted in continued evolution of ratemaking methods and models. Innovation and use of new data and technologies will continue.