

Statement of Principles Regarding  
 Property & Casualty Insurance  
 Ratemaking Discussion Draft  
 and  
 Property/Casualty Ratemaking  
 Actuarial Standard of Practice  
 Exposure Draft  
**Shawna Ackerman**  
**Chris Carlson**  
**March 10<sup>th</sup>, 2015**

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**Antitrust Notice**

- The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.
- Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.
- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.

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**Disclaimer**

Comments provided during this session are those of the presenters and do not necessarily reflect the positions of the Casualty Actuarial Society (CAS), the American Academy of Actuaries (AAA) or the Actuarial Standards Board (ASB)

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Proposed Statement of Principles  
Casualty Actuarial Society

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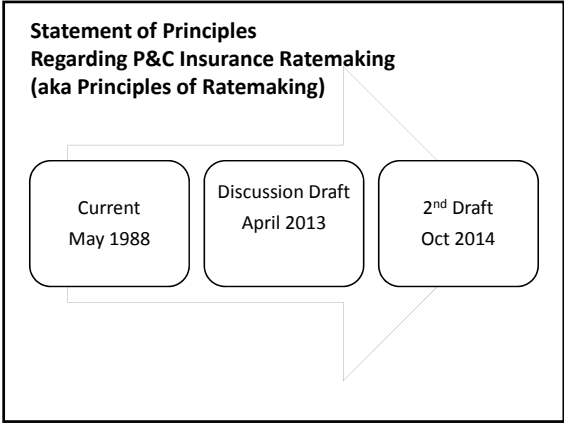
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**Principles Regarding P&C Insurance Ratemaking Changes to Introduction Section**

**Proposed**

Moved from Introduction Section to Conclusion Section

“The principles contained in this Statement provide the foundation for the development of actuarial procedures and standards of practice. It is important that proper actuarial procedures be employed to derive rates that protect the insurance system’s financial soundness and promote equity and availability for insurance consumers.”

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**Principles Regarding P&C Insurance Ratemaking  
Changes to Definitions - Ratemaking**

**Current**

- Ratemaking is the process of establishing rates used in insurance or other risk transfer mechanisms. This process involves a number of considerations including marketing goals, competition and legal restrictions to the extent they affect the estimation of future costs associated with the transfer of risk.

**Proposed**

- Ratemaking is the process of estimating the future costs associated with the transfer of risk in insurance or other risk transfer mechanisms.

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**Principles Regarding P&C Insurance Ratemaking  
Changes to Definitions – Loss and LAE**

**Current**

- Incurred losses are the cost of claims insured.
- Allocated loss adjustment expenses are claims settlement costs directly assignable to specific claims.
- Unallocated loss adjustment expenses are all costs associated with the claim settlement function not directly assignable to specific claims.

**Proposed**

- Claims are demands for payment under the coverage provided by a plan, program or contract.
- Losses are the costs of claims that are subject to coverage.
- Loss adjustment expenses are the costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined the claim is invalid. It is also known as claim adjustment expense.

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**Principles Regarding P&C Insurance Ratemaking  
Changes to Definitions – Underwriting Profit**

**Current**

- The underwriting profit and contingency provisions are the amounts that, when considered with net investment and other income, provide an appropriate total after-tax return.

**Proposed**

- The underwriting profit and contingency provisions are the amounts that, when considered with net investment and other income, provide an appropriate total after-tax return on capital. The underwriting profit includes a charge for the risk of random variation of expected costs while the contingency provision includes a charge for any systematic variation of the estimated costs from the expected costs.

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**Principles Regarding P&C Insurance Ratemaking  
Changes to Definition – Alternative Risk Transfer**

**Current**

- N/A

**Proposed**

- Alternative Risk Transfer is the use of techniques other than traditional insurance and reinsurance to provide risk bearing entities with coverage or protection, including entities such as self insurance, captives, risk retention groups, Takaful, etc.

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**Principles Regarding P&C Insurance Ratemaking  
Changes the Principle Statements**

**1**

- Little change

**2**

- Little change

**3**

- Added "A properly defined classification plan enables the development of actuarially sound rates" to the introduction to Principle 3.

**4**

- Removed the introduction to Principle 4 "Ratemaking produces cost estimates that are actuarially sound if the estimation is based on Principles 1, 2, and 3. Such rates comply with four criteria commonly used by actuaries: reasonable, not excessive, not inadequate, and not unfairly discriminatory."

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**Principles Regarding P&C Insurance Ratemaking  
Changes to Considerations Section**

**Proposed**

Removed Part III Considerations

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**Principles Regarding P&C Insurance Ratemaking Changes Conclusion**

**Current**

- The actuary, by applying the ratemaking principles in this Statement, will derive an estimation of the future costs associated with the transfer of risk. Other business considerations are also a part of ratemaking. By interacting with professionals from various fields including underwriting, marketing, law, claims, and finance, the actuary has a key role in the ratemaking process.

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**Principles Regarding P&C Insurance Ratemaking Changes Conclusion**

**Proposed**

- Adds "This Statement provides principles applicable to the determination and review of property and casualty insurance rates."
- Includes from Introduction Section "The Principles contained in this Statement provide the foundation for the development of actuarial procedures and standards of practice. It is important that the Principles be employed to derive rates that protect the insurance system's financial soundness and promote equity and availability for insurance consumers."

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**Proposed Actuarial Standard Of Practice**  
**Actuarial Standards Board**

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**Proposed Actuarial Standard of Practice (ASOP) –  
Property/Casualty Ratemaking  
Background**

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.

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**Proposed ASOP – Property/Casualty Ratemaking  
Request for Comments (1-4)**

- Are there any conflicts between the proposed ASOP and existing practice?
- 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?
- 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?
- 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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**Proposed ASOP – Property/Casualty Ratemaking  
Request for Comments (5-7)**

- Do you think that this proposed ASOP provides adequate guidance for actuaries performing property/casualty ratemaking services? If not, what changes would you suggest?
- 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?
- 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?

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**Section 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...
- Comments received:
  - What about retrospective rating plans? Retrospectively-rated policies?

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**ASOP Property / Casualty Ratemaking**

Statement of Principles - Considerations	Actuarial Standards of Practice
Exposure Unit	
Data	
Organization of Data	
Homogeneity	
Credibility	ASOP No. 25, <i>Credibility Procedures</i>
Loss Development	
Trends	ASOP No. 13, <i>Trending Procedures in Property/Casualty Insurance</i>
Catastrophes	ASOP No. 38, <i>Using Models Outside the Actuary's Area of Expertise (Property and Casualty)</i> ASOP No. 39, <i>Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking</i>

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**ASOP Property / Casualty Ratemaking**

Statement of Principles	Actuarial Standards of Practice
Policy Provisions	
Mix of Business	
Reinsurance	
Operational Changes	
Other Influences	
Classification Plans	ASOP No. 12, <i>Risk Classification</i>
Individual Risk Rating	
Risk	ASOP No. 30, <i>Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance</i>
Investment and Other Income	ASOP No. 30, <i>Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance</i>
Actuarial Judgment	Throughout

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### ASOP Property / Casualty Ratemaking

Exposure Unit	Exposure Base (2.4, 3.5)
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The determination of an appropriate exposure unit or premium basis is essential. It is desirable that the exposure unit vary with the hazard and be practical and verifiable.

2.4 Exposure Base—The basic unit that measures a policy's exposure to loss.

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**.

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### ASOP Property / Casualty Ratemaking

Data	Data Quality (3.3) Use of Historical Data (3.7)
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Historical premium, exposure, loss and expense experience is usually the starting point of ratemaking. This experience is relevant if it provides a basis for developing a reasonable indication of the future. Other relevant data may supplement historical experience. These other data may be external to the company or to the insurance industry and may indicate the general direction of trends in insurance claim costs, claim frequencies, expenses and premiums.

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**.

3.7 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  
3.7.2 Use of Historical Loss and Loss Adjustment Expenses

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### ASOP Property / Casualty Ratemaking

Organization of Data	Organization of Data (3.2)
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There are several acceptable methods of organizing data including calendar year, accident year, report year and policy year. Each presents certain advantages and disadvantages; but, if handled properly, each may be used to produce rates. Data availability, clarity, simplicity, and the nature of the insurance coverage affect the choice.

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

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**ASOP Property / Casualty Ratemaking**

Homogeneity	Organization of Data (3.2)
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Ratemaking accuracy often is improved by subdividing experience into groups exhibiting similar characteristics. For a heterogeneous product, consideration should be given to segregating the experience into more homogeneous groupings. Additionally, subdividing or combining the data so as to minimize the distorting effects of operational or procedural changes should be fully explored.

**3.2 Organization of Data** —...

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.

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**ASOP Property / Casualty Ratemaking**

Credibility	Credibility (3.11)
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Credibility is a measure of the predictive value that the actuary attaches to a particular body of data. Credibility is increased by making groupings more homogeneous or by increasing the size of the group analyzed. A group should be large enough to be statistically reliable. Obtaining homogeneous groupings requires refinement and partitioning of the data. There is a point at which partitioning divides data into groups too small to provide credible patterns. Each situation requires balancing homogeneity and the volume of data.

**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**.

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**ASOP Property / Casualty Ratemaking**

Loss Development	Use of Historical Loss and Loss Adjustment Expenses (3.7.2)
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When incurred losses and loss adjustment expenses are estimated, the development of each should be considered. The determination of the expected loss development is subject to the principles set forth in the Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves.

**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.

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**ASOP Property / Casualty Ratemaking**

Trends	Trends (3.9)
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Consideration should be given to past and prospective changes in claim costs, claim frequencies, exposures, expenses and premiums.

**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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**ASOP Property / Casualty Ratemaking**

Catastrophes	Catastrophe Provisions (3.13)
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Consideration should be given to the impact of catastrophes on the experience and procedures should be developed to include an allowance for the catastrophe exposure in the rate.

**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**.

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**ASOP Property / Casualty Ratemaking**

Policy Provisions	Coverage (2.2) Additional Adjustments to Historical Data (3.7.3.c)
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Consideration should be given to the effect of salvage and subrogation, coinsurance, coverage limits, deductibles, coordination of benefits, second injury fund recoveries and other policy provisions.

**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.

**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:  
...c. policy contract changes;...

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**ASOP Property / Casualty Ratemaking**

Mix of Business	Additional Adjustments to Historical Data (3.7.3.b)
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Consideration should be given to distributional changes in deductibles, coverage limitations or type of risks that may affect the frequency or severity of claims.

3.7.3 Additional Adjustments to Historical Data—...  
 b. mix of business changes;...

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**ASOP Property / Casualty Ratemaking**

Reinsurance	Reinsurance Provisions (3.14) Additional Adjustments to Historical Data (3.7.3.f)
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Consideration should be given to the effect of reinsurance arrangements.

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.

3.7.3 Additional Adjustments to Historical Data—...  
 f. reinsurance changes.

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**ASOP Property / Casualty Ratemaking**

Operational Changes	Additional Adjustments to Historical Data (3.7.3.d, 3.7.3.e)
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Consideration should be given to operational changes such as changes in the underwriting process, claim handling, case reserving and marketing practices that affect the continuity of the experience.

3.7.3 Additional Adjustments to Historical Data—...  
 d. claim practice changes;  
 e. accounting changes

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### ASOP Property / Casualty Ratemaking

Other Influences	Additional Adjustments to Historical Data (3.7.3.a)
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The impact of external influences on the expected future experience should be considered. Considerations include the judicial environment, regulatory and legislative changes, guaranty funds, economic variable, and residual market mechanisms including subsidies of residual market rate deficiencies

3.7.3 Additional Adjustments to Historical Data—...

a. judicial, legislative, or regulatory changes;

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### ASOP Property / Casualty Ratemaking

Classification Plans	Risk Classification System (3.6)
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A properly defined classification plan enables the development of actuarially sound rates.

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**.

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### ASOP Property / Casualty Ratemaking

Individual Risk Rating	Impact of Individual Risk Rating (3.17, 2.3, 2.10)
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When an individual risk's experience is sufficiently credible, the premium for that risk should be modified to reflect the individual experience. Consideration should be given to the impact of individual risk rating plans on the overall experience.

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.

Definitions

2.3 Experience Rating

2.10 Schedule Rating

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**ASOP Property / Casualty Ratemaking**

Risk	Profit and Contingency Provisions and the Cost of Capital (3.15)
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The rate should include a charge for the risk of random variation from the expected costs. This risk charge should be reflected in the determination of the appropriate total return consistent with the cost of capital and, therefore, influences the underwriting profit provision. The rate should also include a charge for any systematic variation of the estimated costs from the expected costs. This charge should be reflected in the determination of the contingency provision.

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.

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**ASOP Property / Casualty Ratemaking**

Investment and Other Income	CAS SOP Definitions and by reference to ASOP 30
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The contribution of net investment and other income should be considered.

CAS SOP Definitions —The *underwriting profit and contingency provisions* are the amounts that, when considered with net investment and other income, provide an appropriate total after-tax return on capital.

Investment income is addressed in ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance* (3.5.)

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**ASOP Property / Casualty Ratemaking**

Actuarial Judgment	Throughout
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Informed actuarial judgments can be used effectively in ratemaking. Such judgments may be applied throughout the ratemaking process and should be documented and available for disclosure.

3.4 Methods, Models, and Assumptions ...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 ...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.

3.7.2 Use of Historical 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.

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**ASOP Property / Casualty Ratemaking**

Statement of Principles - Considerations	Actuarial Standards of Practice
Exposure Unit	Exposure Base (2.4, 3.5)
Data	Data Quality (3.3) Use of Historical Data (3.7)
Organization of Data	Organization of Data (3.2)
Homogeneity	Organization of Data (3.2)
Credibility	ASOP No. 25, <i>Credibility Procedures</i> Credibility (3.11)
Loss Development	Use of Historical Loss and Loss Adjustment Expenses (3.7.2)
Trends	ASOP No. 13, <i>Trending Procedures in Property/Casualty Insurance.</i> Trends (3.9)

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**ASOP Property / Casualty Ratemaking**

Statement of Principles	Actuarial Standards of Practice
Catastrophes	ASOP No. 38 ASOP No. 39 Catastrophe Provisions (3.13)
Policy Provisions	Coverage (2.2) Additional Adjustments to Historical Data (3.7.3)
Mix of Business	Additional Adjustments to Historical Data (3.7.3.b)
Reinsurance	Reinsurance Provisions (3.14)
Operational Changes	Additional Adjustments to Historical Data (3.7.3.d, 3.7.3.e)
Other Influences	Additional Adjustments to Historical Data (3.7.3.a)

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**ASOP Property / Casualty Ratemaking**

Statement of Principles	Actuarial Standards of Practice
Classification Plans	ASOP No. 12, <i>Risk Classification</i> Risk Classification System (3.6)
Individual Risk Rating	Impact of Individual Risk Rating (3.17, 2.3, 2.10)
Risk	ASOP No. 30, <i>Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance</i> Profit and Contingency Provisions and the Cost of Capital (3.15)
Investment and Other Income	ASOP No. 30, <i>Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance</i> CAS SOP Definitions and by reference to ASOP 30
Actuarial Judgment	Throughout

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**Additional Guidance - Ratemaking for New Coverages or Exposures (3.10)**

- Considerations
  - a. similar historical data
  - b. external data on the phenomena or events
  - c. differences between a and b
  - d. appropriate adjustments to reflect the expected differences between a and b

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**Polling Questions**

- Does the ASOP provide sufficient guidance for establishing rates for personal lines insurance products?
  - If no, give an example of a consideration, process or product that is not addressed
- Does the ASOP provide sufficient guidance for establishing rates for commercial lines insurance products?
  - If no, give an example of a consideration, process or product that is not addressed
- Does the ASOP provide sufficient guidance for alternative risk transfer mechanisms (e.g., cost allocation)?
  - If no, give an example of a consideration, process or mechanism that is not addressed

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