

Discussion of the Proposed ASOP  
*Estimating Future Costs for  
Prospective Property/Casualty  
Risk Transfer and Risk Funding*

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# Existing ASOPs related to Estimating Future Cost

ASOP No. 13, *Trending Procedures in P/C Insurance;*

ASOP No. 25, *Credibility Procedures;*

ASOP No. 29, *Expense Provisions in P/C Insurance  
Ratemaking;*

ASOP No. 30, *Treatment of Profit and Contingency  
Provisions and the Cost of Capital in P/C  
Insurance Ratemaking;*

ASOP No. 38, *Using Models Outside the Actuary's  
Area of Expertise (Property and Casualty)*

ASOP No. 39, *Treatment of Catastrophe Losses in  
P/C Insurance Ratemaking;*

# Existing ASOPs related to Estimating Future Cost

*ASOP No. 12, Risk Classification (for All Practice Areas);*

*ASOP No. 23, Data Quality;*

*ASOP No. 25, Credibility Procedures;*

*ASOP No. 41, Actuarial Communications;*

*ASOP No. XX, Modeling (Pending).*

# Third Exposure Draft Actuarial Standard Of Practice in this Area of Practice

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

## 1.2 Scope (Paragraph 1)

This standard applies to actuaries when performing actuarial services with respect to developing or reviewing future cost estimates (often known as actuarial indications) for prospective property/casualty risk transfer and risk funding. For example, this standard applies when actuaries are developing future cost estimates underlying product prices, estimating funding requirements for self-insured programs and captives, and developing reinsurance contract prices.

## 1.2 Scope (Paragraph 2)

As estimates are often made for separate elements of the cost of risk transfer and risk funding (for example, loss and loss adjustment expenses, operational and administrative expenses, and the cost of capital) and subsequently summed to a total cost estimate, this standard applies to the separate elements as well as the total..

## 1.2 Scope (Paragraph 2)

If the actuary's role relates to any of the elements of the future cost estimate, the guidance in this standard applies only to the actuarial services related to those elements. If the actuary's actuarial services involve reviewing future cost estimates developed by another party, the actuary should use the guidance in section 3 as is practicable.



## 1.2 Scope (Paragraph 2)

This standard also applies to developing or reviewing the future cost estimates by class within a risk classification system.

## 1.2 Scope (Paragraph 3)

Actuarial services involved in developing or reviewing estimates of future costs may include actuarial communications, expert testimony, regulatory activities, legislative activities, or statements concerning public policy to the extent these activities involve providing an opinion on property/casualty future cost estimates.

## 1.2 Scope (Paragraph 4)

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.

# Section 2. Definitions

## Section 2. Definitions

2.1 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.

2.2 Exposure Base—The basic unit that is used to measure the future risk-transfer cost.

## Section 2. Definitions

2.4 Method—A systematic procedure for developing, reviewing, or changing **rates** or elements thereof.

2.5 Model—A mathematical or empirical representation of a specified phenomenon.

2.5 Risk Funding A mechanism for the assessment, management, and financing of exposure to loss.

## Section 2. Definitions

2.6 Risk Transfer - A risk management and control strategy that involves the contractual shifting of financial exposure to loss from one party to another. Examples of risk transfer are seen in the purchase of insurance, reinsurance, loss portfolio transfers, or any other mechanism by which a specified exposure to loss is shifted from one party to another party.

# Section 3. Analysis of Issues and Recommended Practices



## 3.1 Future Cost Estimate

The actuary should determine the elements that are appropriate to include in the future cost estimate. Such elements may include, but are not limited to, loss and loss adjustment expenses, operational and administrative expenses, and the cost of capital.

## 3.2 Intended Measure

The actuary should determine the intended measure based on the intent or purpose of the future cost estimate. This intent will be affected by the desires or needs of the principal, legal requirements, and the regulatory environments in which the future cost estimate will be used.

## 3.2 Intended Measure

Examples of intended measures include, but are not limited to, the mean, the mean plus risk margin, a range of reasonable outcomes, or a specified percentile of the distribution of possible outcomes. For example, a common intended measure is the mean. There are instances in which other measures may be appropriate based upon the intent or purpose of the estimate.

The actuary should disclose the intended measure used in accordance with section 4.2.

## 3.3 Organization of Data

If appropriate data is available, the actuary should determine how data will be organized to develop or review the future cost estimate or any element of the future cost estimate.

## 3.3 Organization of Data

For each element, the actuary should select the data aggregation that is appropriate for the type of analysis being performed. Examples of data aggregation may include, but are not limited to, aggregating by accident period, calendar period, policy period, and report period. The nature of the insurance coverage, the element of the future cost being estimated, and the type of analysis being conducted will influence the selection of the data aggregation.

## 3.3 Organization of Data (Continued)

The actuary also should consider the level of granularity of data needed for the type of analysis being performed. For example, one level of aggregated data may be appropriate for estimating the overall future cost, whereas more refined data may be appropriate for estimating future costs by class within a risk classification system.

## 3.4 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 estimating future costs.

## 3.5 Methods, Models, and Assumptions

The actuary should select appropriate methods or models consistent with the intended measure for estimating the future costs or each element of the future cost.



## 3.5 Methods, Models, and Assumptions

The actuary should use reasonable assumptions (including parameters) appropriate to each method or model. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends.

## 3.5 Methods, Models, and Assumptions

The actuary should use methods or models, along with reasonable assumptions, that, in the actuary's professional judgment, have no known significant bias relative to the intended measure. When using models, the actuary should refer to *ASOP No. 38, Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*

## 3.6 Exposure Base

If selecting a new exposure base or changing an existing exposure base, the actuary should take into account various practical requirements. For example, the exposure base should bear a strong relationship to the risk-transfer cost or risk-funding cost, as well as be objectively measurable and easily verifiable. To the extent these criteria are in conflict, the actuary should use professional judgment to select an appropriate exposure base

## 3.6 Exposure Base (continued)

Some risk-transfer and risk-funding plans may have multiple exposure bases, with different exposure bases applying to different aspects of coverage provided (for example, sales revenue for general liability, amount of insurance for commercial property). In undertaking analyses for these plans, it may be 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.

## 3.7 Risk Classification System

Risk classification systems are an integral part of the development of future cost estimates for prospective property/casualty risk transfer and risk funding. The actuary should refer to *ASOP No. 12, Risk Classification (for All Practice Areas)*, for guidance in the design, review, or change of the classification plan.

## 3.8 Use of Historical Data

The actuary should determine the extent to which historical data are available and applicable for estimating future costs. For example, the data should be consistent with insurance policy provisions or risk-management provisions of the applicable self-insurance, risk-funding or retention mechanisms, or any other risk-transfer mechanism.

## 3.8.1 Use of Historical Exposure and Premium Data

If the actuary is using historical exposure and premium data, the actuary should consider adjusting the data to reflect a consistent exposure and rate level, if applicable. These considerations include adjusting historical data to a common exposure level and adjusting premium data for historical changes in how premium charges are calculated, including both changes to manual rates and the impact of any individual risk rating plans.

## 3.8.2 Use of Historical Loss and Loss Adjustment Expenses

The actuary should also consider the coverage being evaluated, the type of analysis (such as overall future cost level analysis or risk classification analysis), the historical period and conditions in which the claims occurred, and the underlying claim adjustment and reserving process.



## 3.8.2 Use of Historical Loss and Loss Adjustment Expenses (Continued)

The actuary should consider whether the analysis of loss adjustment expense data requires different methods, models, or assumptions than the analysis of loss data. Additionally, different coverages within a line of business may require different methods, models, or assumptions.

### 3.8.3 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 period for which the future costs are being estimated.

## 3.8.3 Additional Adjustments to Historical Data (continued)

These adjustments may 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 or reserving changes;
- e. operational changes;
- f. accounting changes; and
- g. reinsurance changes.

## 3.8.4 Trends

The actuary should consider past and prospective changes in claim costs, claim frequencies, exposures, and premiums. 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 elements that make up the future cost estimate.

## 3.9 Expenses

The actuary should refer to ASOP No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*, and ASOP No. 13 for guidance in estimating future expenses.

## 3.10 New Coverages or Exposures

If the actuary is estimating the future cost for a **coverage** or exposure and the historical loss and loss adjustment expenses are either unavailable, limited, or not fully representative of the **coverage** or exposure, the actuary should consider the following:

## 3.10 New Coverages or Exposures

- a. data from coverages or exposures that are similar to the new coverage or exposure;
- b. data on the phenomenon or events that are contemplated by the new coverage or exposure;
- c. differences between coverages or exposures with available relevant data and the new coverage or exposure; and
- d. appropriate adjustments to the available relevant data to reflect expected differences identified in section 3.10(c).

## 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 and the selection of the relevant experience used to supplement the data, which is often referred to as the complement of credibility.



## 3.12 Modeling

The actuary should refer to any ASOP on modeling that is adopted by the ASB for guidance in the consideration of models used for estimating future costs.

*(Note: May need revision depending on final version of proposed modeling ASOP.)*

## 3.13 Treatment of Catastrophes

The actuary should refer to ASOP No. 38 [Note: revision pending] and ASOP No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*, for guidance in the consideration of catastrophes.

## 3.14 Treatment of Unusual Events

The actuary should refer to ASOP No. 23 and ASOP No. 39 for guidance in the consideration of other unusual events, such as large individual losses.

## 3.15 Reinsurance

When reinsurance is reflected in future cost estimates, the actuary should select appropriate methods or models, along with reasonable assumptions, for estimating the cost associated with reinsurance arrangements expected to exist during the period for which the future costs are being estimated. If the cost of reinsurance is treated as an expense, the actuary should refer to ASOP No. 29 for additional guidance.

## 3.16 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 Ratemaking*, for guidance in the consideration of the profit and contingency provisions and the cost of capital.

## 3.17 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 consider additional sources of funding and their allocation and timing when estimating future costs.

# Section 4. Communications and Disclosures

## 4.1 Actuarial Communications

When issuing actuarial communications under this standard, the actuary should refer to ASOP Nos. 12, 13, 23, 25, 29, 30, 38, 39, and 41, *Actuarial Communications*.



# 4.1 Actuarial Communications

In addition, the actuary should disclose the following in an appropriate actuarial communication:

- a. the elements included in the future cost estimates (see section 3.1);
- b. the intended measure used in developing or reviewing the future cost estimates (see section 3.2);
- c. the methods or models used in developing or reviewing the future cost estimates (see section 3.5);  
and
- d. the assumptions used in developing or reviewing the future cost estimates (see section 3.5).

## 4.2 Disclosures

The actuary should also include the following, as applicable, in an actuarial communication:

- a. if appropriate data is available for the analysis, the actuary should disclose the data organization used for each element (see section 3.3);
- b. if the actuary selects a new exposure base or changes an existing exposure base, the actuary should disclose the new or revised exposure base (see section 3.6);
- c. if the actuary uses historical data, the actuary should disclose any adjustments made to the historical data (see section 3.8);

## 4.2 Disclosures

The actuary should also include the following, as applicable, in an actuarial communication:

- d. if the actuary estimates future costs for a coverage or exposure with unavailable, limited, or not fully representative historical data, the actuary should disclose the data used and any appropriate adjustments made to the data (see section 3.10);
- e. when reinsurance is reflected in future cost estimates, the actuary should disclose the methods or models, along with the assumptions, used in estimating the costs of reinsurance (see section 3.15);
- f. if the actuary considers additional sources of funding, the actuary should disclose how the funding was reflected in estimating the future cost (see section 3.17);

## 4.2 Disclosures

The actuary should also include the following, as applicable, in an actuarial communication:

- g. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law;
- h. 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
- i. 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.

# Draft ASOP Comment Period

Comments accepted through April 30, 2017

[comments@actuary.org](mailto:comments@actuary.org)

Estimating Future Costs  
Actuarial Standards Board  
1850 M Street, NW, Suite 300  
Washington, DC 20036

# Questions Posed

- 1. Does the proposed ASOP provide sufficient and appropriate guidance to actuaries estimating future costs for prospective property/casualty risk transfer and risk funding?*

# Questions Posed

- 2. The proposed ASOP has added reference to “intended measure” for the estimation of all future costs to eliminate any implication that the only appropriate estimate of all future costs was an expected value without any consideration of potential variability. Is it clear what is meant by “intended measure”?*

# Questions Posed

- 3. Are the definitions of “risk transfer” and “risk funding” in the proposed ASOP complete from the perspective of all activities in which an actuary is involved when estimating future costs for prospective property/casualty risk transfer and risk funding?*



# Questions Posed

- 4. Is it clear that this proposed ASOP provides guidance only for the estimation of future costs for prospective property/casualty risk transfer and risk funding? Is it clear that the scope does not include items such as the balancing and interaction of potentially competing objectives related to regulation, business objectives, and actuarial cost estimates?*

# Questions Posed

- 5. When the role of the actuary is reviewing the estimate of future costs developed by another actuary, is the guidance provided in the proposed ASOP sufficient and clear?*

# Questions Posed

- 6. Is the level of disclosure required in the proposed ASOP sufficient and appropriate? If the response is no, what are the issues?*

***Thank You !***