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AMERICAN ACADEMY *of* ACTUARIES

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August 24, 2016

Actuarial Standards Board  
1850 M St., Suite 300  
Washington, DC 20036-5805

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

Re: Proposed Actuarial Standard of Practice (ASOP), Pricing of Life Insurance and Annuity Products

To Whom it May Concern:

The Life Products Committee of the American Academy of Actuaries<sup>1</sup> is pleased to provide comments on the proposed Actuarial Standard of Practice (ASOP) that would apply to actuaries when pricing life insurance and annuity products.

We have reviewed the exposure draft and provided comments in the attached redline document.

We hope these comments are helpful. Please contact Amanda Darlington, the Academy's life policy analyst ([darlington@actuary.org](mailto:darlington@actuary.org); 202-223-8196), if you have any questions.

Sincerely,

Laura Hanson, MAAA, ASA  
Chairperson, Life Products Committee  
American Academy of Actuaries

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<sup>1</sup> The American Academy of Actuaries is an 18,500+ member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

**PROPOSED ACTUARIAL STANDARD OF PRACTICE**  
**PRICING OF LIFE INSURANCE AND ANNUITY PRODUCTS**  
**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 actuarial services with respect to the **pricing** of life insurance and annuity products.
- 1.2 Scope—This standard applies to actuaries when performing actuarial services with respect to the **pricing** of life insurance and annuity products, including riders, that will be sold in the future. In this context, actuarial services include advising on the design of the product and its rates and benefits and evaluating the product’s profitability and risks. This standard does not address: (i) other considerations that may affect the ultimate price charged, such as marketing goals and competition; or (ii) the requirements of applicable law, including federal antitrust laws.

The standard applies to life insurance and annuity products written on individual policy forms and group master contracts with individual certificates.

To the extent that the guidance in this standard may conflict with guidance in other ASOPs regarding the **pricing** of specific benefits other than life and annuity, the guidance in the other standard will govern. This standard does not apply to actuaries when performing professional services with respect to illustrations of nonguaranteed charges or benefits subject to ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

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.

- 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 this standard to the extent it is applicable and appropriate.
- 1.4 Effective Date—This standard will be effective for any actuarial services performed on or after four months after adoption by the ASB.

**Comment [A1]:** We note that the ASOP does not provide guidance as to product design services. We recommend deleting this sentence since pricing is defined in section 2.3.

**Comment [A2]:** As written, we are unsure if group pension products, combination products (e.g., life & long term care), contingent deferred annuities, guaranteed investment contracts (GICs), and products sold internationally are intended to be included in the scope of this ASOP.

## Section 2. Definitions

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

- 2.1 Model Framework—The configuration of a model and how the model operates.
- 2.2 Pricing Cell—A cell used in a model to represent a cohort with similar characteristics.
- 2.3 Pricing—The process of setting charges for, and benefits provided by, an insurance policy or annuity contract at issue. Examples of charges include premiums, cost of insurance charges, separate account charges, surrender charges, and policy fees. Examples of benefits include death benefits, surrender benefits, and income benefits.
- 2.4 Profitability Analysis—An evaluation of expected financial results using a set of pricing assumptions, one or more profitability metrics, and a specified model framework.
- 2.5 Profitability Metric—A measurement used to assess a product’s expected level of financial results.
- 2.6 Risk Capital—Amounts to absorb potential unexpected losses resulting from severe events.
- 2.7 Sensitivity Analysis—Analysis performed by changing an assumption or set of assumptions and comparing the results to those resulting from the baseline assumption(s).
- 2.8 Stochastic Analysis—Analysis performed using a model that estimates distributions of potential outcomes by allowing random variation in one or more inputs to the model.

## Section 3. Analysis of Issues and Recommended Practices

- 3.1 Considerations for the Actuary Prior to Beginning the Pricing Exercise—The actuary should take into account relevant characteristics of the product and the market into which it will be sold. Relevant characteristics that the actuary should consider taking into account include the following:
- a. the intended design of the product;
  - b. the intended market and the competitive alternatives to the product;
  - c. how the product will be sold;
  - d. how the product will be administered, including any limitations in administrative and valuation systems that could impact product design or operational risks;

**Comment [A3]:** “Model point” is a term commonly used in property and casualty pricing; “pricing cell” is more commonly used in life and annuity pricing.

**Comment [A4]:** Removing “of policies” makes the description more generic and applicable to group pricing.

**Deleted:** Model Point

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**Comment [A5]:** “Financial return” is a term commonly used by stock companies that may imply a specific type of profitability metric. “Financial results” is a broader term that can apply to a broader range of profitability metrics and is commonly used within both mutual and stock companies.

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**Comment [A6]:** We believe it is important to include reference to profitability metrics in the definition of profitability analysis.

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**Comment [A7]:** We recommend changing “original assumption(s)” to “baseline assumption(s)” since the original assumptions may not be a part of a sensitivity analysis.

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**Comment [A8]:** We believe it is difficult to define exactly when a pricing exercise begins, so we recommend making this title more generic (e.g., “General Pricing Considerations.”)

e. applicable law; and

f. the tax treatment of the product as it applies to both the owner and the company; and

g. any other considerations that the actuary determines are relevant.

**Comment [A9]:** We recommend including reference to regulations, Actuarial Guidelines, and other ASOPs here.

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**Comment [A10]:** We recommend adding an this language to mirror the language in section 3.2.2.c.

**Deleted:** Selecting

**Comment [A11]:** We recommend changing "select to "recommend" since the principal (i.e., not the actuary) may have the ultimate decision-making authority.

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**Comment [A12]:** We recommend deleting this sentence as shown because it is already addressed in 3.2.

**Deleted:** The actuary should consider using more than one **profitability metric** when evaluating the expected profitability

**Deleted:** . The actuary should consider using a **profitability metric** that measures

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**Comment [A13]:** We recommend moving the reference internal rate of return to the list of profitability metrics to give it equal prominence.

**Deleted:** ) when performing **pricing** of life insurance and annuity products. Additional **profitability metrics** the actuary may consider using include the following:

When using a **profitability metric**, the actuary should calculate the **profitability metric** over the time horizon of the pricing model and over shorter periods of time when consistent with the goals of the principal.

**Comment [A14]:** This paragraph seems to raise more questions than it answers. For example, why over shorter but not longer time horizons? We recommend deleting the language, and modifying section 3.2.2 as shown below.

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3.2.2 Considerations in Evaluating Profitability Metrics—When evaluating profitability metrics, the actuary should consider the following:

a. the expected pattern of profits and profitability metrics over various time horizons;

b. the nature of the product's underlying risks; and

c. any other considerations that the actuary determines are relevant.

**Comment [A15]:** We recommend adding reference to ASOP No. 7 in this section.

3.2 Recommending Profitability Metrics—The actuary should recommend one or more appropriate profitability metrics that are consistent with the goals of the actuary's principal.

3.2.1 Profitability Metrics—Profitability metrics the actuary may consider using include the following:

a. the expected return on initial invested capital (for example, internal rate of return);

b. the average of expected future periodic returns on capital (for example, average return on equity);

c. a measure of profitability expressed as a percentage of revenue (for example, profit margin);

d. the present value of expected future profits (for example, embedded value at issue);

e. the time period when a measure of profitability turns positive; and

f. any other appropriate measures.

3.3 Developing the Model Framework—The actuary should develop the **model framework** to support **pricing**. The **model framework** should accommodate the design and benefits of the product and the selected **profitability metrics**, and reasonably simulate the

product’s expected impact on the company’s future financial and risk position.

When developing the **model framework**, the actuary should consider the following:

- a. Time Horizon—the degree to which the model extends over a sufficient time period such that the risks and results of the product are adequately captured;
- b. Pricing Cells—the degree to which the pricing cells are representative of the expected source of future sales;
- c. Granularity of Assumptions—the degree to which the granularity of the assumptions is appropriate to the pricing cells and profitability metrics selected;
- d. [We recommend adding an item called “Economic Scenarios,” which would include both market consistent and real world considerations.]
- e. Asset Returns—the degree to which the model incorporates asset returns in the same manner as such returns are expected to be recognized and allocated to the product;
- f. [We recommend adding an item called “Policyholder Behavior.”];
- g. [We recommend adding an item called “Reserving Bases.”];
- h. Accounting Bases—the degree to which the model uses accounting bases that are expected to be used in practice;
- i. Risk Capital Mechanics—the degree to which the model uses **risk capital** mechanics that are expected to be used in practice;
- j. Taxes—the degree to which the model uses tax mechanics that are expected to apply given the product, the tax position of the company, and the company’s tax allocation practices;
- k. Risk Quantification—the degree to which the **model framework** uses an appropriate method to quantify risks (for example, **sensitivity analysis**, **stochastic analysis**, etc.);
- l. Risk Mitigation—the degree to which risk mitigation strategies, such as reinsurance or hedging, that are expected to be used are appropriately modeled;
- m. Model Validation—the degree to which the **model framework** is sufficiently transparent to support validation; and
- n. Such other items as the actuary determines are significant to the **model framework**.

3.4 Pricing Assumptions—The actuary should use assumptions when performing the **pricing** of a life insurance or annuity product that are based on expected future experience before

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**Comment [A16]:** We are unsure if this section appropriately incorporates modeling considerations such as state variations, transaction frequency (e.g. withdrawals, rebalancing, interest crediting), and indicative vs. comprehensive modeling.

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considering the cost of deviations from assumptions as described in section 3.5.

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3.4.1 Consistency of Assumptions—The actuary should use assumptions that are internally consistent within the **model framework** and consistent with company practices, including any anticipated changes in the company’s practices.

3.4.2 Experience Reflected in Setting Assumptions—The actuary should reflect appropriate experience when setting assumptions.

a. The actuary should determine assumptions using relevant and credible data, which might include company experience and other industry experience, which may be modified to reflect the circumstances being modeled. When modifying and using such experience, the actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance.

**Comment [A17]:** We recommend this revision since company experience might not be “relevant and credible.”

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b. In using experience, the actuary should consider whether there are reasons to expect that future experience will differ from past experience.

c. To the extent professional judgment is used to modify available sources of information, the actuary should document the modifications made.

3.4.3 Assumption Setting—The actuary should set assumptions that reflect expectations over the entire modeling time horizon, and be familiar with the ways that external forces could affect experience under various circumstances. When setting these assumptions, the actuary should consider the following:

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a. investment assumptions and economic market assumptions that reflect real world or risk neutral (market consistent) theory, where appropriate, and that include assumptions for reinvestment, asset default, and investment expenses;

b. mortality assumptions that incorporate the effects of selection and classification of future applicants, the impact of expected trends on future mortality, where appropriate, and the impact of policy or rider characteristics (for example, conversion and level-premium periods on term coverage);

Deleted: and

**Comment [A18]:** Mortality improvement may not be appropriate for all product types.

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c. where appropriate, policy and premium persistency assumptions that may vary by policyholder characteristics (for example, age), policy or rider characteristics (for example, type and size of policy), policyholder behavior, and the effect of external factors (for example, crediting rates available in the marketplace);

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**Comment [A19]:** We recommend specifically referencing policyholder behavior as shown.

d. distribution expense assumptions based on sales by type of producer (for example, broker vs. career agent) and on sales that reflect the effects of agent choice (for example, choice of up-front vs. trail commission) and that reflect personal sales levels (for example, bonus incentives);

**Comment [A20]:** Since distribution expense assumptions can vary by many factors, we recommend calling them out separate from other expense assumptions as shown.

e. other expense assumptions that reflect the effect of future inflation on the expense assumptions; and

- f. the principal’s capacity and intent, when setting assumptions with regard to inforce management strategies, including dividends and other nonguaranteed elements.

3.4.4 The actuary should consider consulting subject matter experts when setting pricing assumptions in areas outside the actuary’s area of expertise.

3.5 Cost of Deviations from Assumptions—The actuary should evaluate the cost of possible deviations from assumptions when performing a **profitability analysis**. The actuary should consider the following approaches to evaluating the cost of possible deviations from assumptions:

3.5.1 Assumption Margins—The actuary should consider the appropriateness of including margins in assumptions. The actuary should consider whether the level of margins individually for each assumption and in aggregate for all assumptions is appropriate. If margins are included in assumptions, the actuary should document the approach used and, where practicable, indicate the margin component of each assumption.

3.5.2 Risk Capital—The actuary should consider the cost of establishing **risk capital** when evaluating the expected profitability of the product. The actuary should consider using a **risk capital** assumption that is consistent with the principal’s assessment of capital necessary to meet company objectives.

3.5.3 Sensitivity Analysis—The actuary should consider using **sensitivity analysis** to evaluate the risk that future experience may be different than an assumption and affect expected profitability. The actuary should consider evaluating correlated assumptions, such as economic and policyholder behavior assumptions, jointly, and should consider performing more analysis for assumptions that have a significant impact on expected profitability than for assumptions that have less impact.

3.5.4 Stochastic Analysis—The actuary should consider using **stochastic analysis** to evaluate the risk that volatility in an assumption affects the expected profitability. When performing stochastic analyses, the actuary should maintain consistency between correlated assumptions (for example, economic and policyholder behavior assumptions).

The actuary should also consider the impact of risk mitigation strategies that are expected to be implemented at the product and company level and the expected effectiveness of those strategies in reducing the cost of deviations from assumptions.

3.6 Pricing Controls—The actuary should establish controls over **pricing** to reasonably protect the reliability of the process and results. The actuary should consider the following:

- a. Governance—the degree to which
  - i. there is effective oversight of methods and assumptions;

**Comment [A21]:** We recommend enhancing section 3.4.3.a. as shown above and deleting the Capital Market Assumptions section.

**Comment [A22]:** The last sentence in the Capital Market Assumptions section is more prescriptive and detailed than the rest of the ASOP. Recommend deleting the sentence (along with the rest of the section).

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¶  
Capital Market Assumptions—The actuary should take into account the design of the product when determining whether to use market consistent assumptions or real world assumptions in performing **stochastic analysis**. When analyzing a benefit that can be replicated using liquid capital market instruments, the actuary should compare the cost of the benefit using market consistent assumptions to the price of a comparable investment guarantee observed in capital markets.

**Comment [A23]:** We feel that “risk” is too broad a term to use for this section since the risks addressed below are specific to deviations from assumptions (except 3.5.1, which we recommend moving to the Assumptions section) and do not include other risks (e.g. the inherent risk transfer in insurance policies).

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**Comment [A24]:** We recommend moving this subsection to the Assumptions section.

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**Comment [A25]:** We recommend adding reference to the Modeling ASOP once it is finalized.

**Comment [A26]:** We believe “establish” is too narrow considering the possible range of scenarios. For example, there may already be sufficient controls to adhere to, so the actuary does not need to establish controls, but should instead adhere to them. Or the actuary may not have authority to establish controls. We recommend revision to allow for these scenarios and others.

**Deleted:** In establishing these controls, the

- ii. the model is preserved and protected from unintentional or untested changes; and
  - iii. there is an appropriate separation of duties.
- b. Validation—the degree to which
- i. the model is tested for fitness of purpose;
  - ii. the model accurately reproduces the expected practices of the company; and
  - iii. the model uses the inputs appropriately.
- c. Peer Review—the degree to which the assumptions and other aspects of the model have been reviewed by an objective, knowledgeable person.
- 3.7 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*, for guidance. When relying on assumptions provided by others, the actuary should refer to ASOP No. 41, *Actuarial Communications*.
- 3.8 Documentation—The actuary should prepare and retain documentation in accordance with ASOP No. 41.

Section 4. Communications and Disclosures

- 4.1 Communication and Disclosure—The actuary should comply with ASOP No. 41 when communicating actuarial opinions and actuarial findings. The actuary should include the following, as applicable, in their actuarial communications:
- 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.
- 4.2 Disclosures Concerning Pricing—The actuary should consider disclosing the following information in any actuarial report concerning pricing:
- a. the **profitability metrics** used to evaluate expected profitability and how these

**Comment [A27]:** We note that ASOP No. 7, ASOP No. 15, and the draft PBR ASOP all have a specific section outlining an actuarial report. We find the detail in those ASOPs to be helpful, and recommend using similar language here.

**Deleted:** disclose

**Comment [A28]:** We believe this is too broad. For example, as written the requirements could be misconstrued to apply to internal working documents such as preliminary pricing reports (i.e. single cell results). Thus, we suggest changing “should disclose” to “should consider disclosing.”

metrics are used to support the goals of the actuary's principal as described in section 3.2 of this standard;

- b. the considerations used to determine the **model framework** as described in section 3.3 of this standard;
- c. the manner in which the actuary has established assumptions based on expected future experience as described in section 3.4 of this standard; and
- d. the manner in which the actuary has evaluated the cost of deviations from assumptions, including any sensitivities run, as described in section 3.5 of this standard.

Comment [A29]: Please note typo in outline.

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