ACTUARIAL STANDARDS BOARD

• SECOND EXPOSURE DRAFT •

Proposed
Actuarial Standard
of Practice

Pricing of Life Insurance and Annuity Products

Comment Deadline:
October 31, 2017

Developed by the
Life Insurance and Annuity Pricing Task Force
of the Life Committee of the
Actuarial Standards Board

Approved for Exposure by the
Actuarial Standards Board
June 2017

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SECOND EXPOSURE DRAFT—JUNE 2017

June 2017

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Pricing of Life Insurance and Annuity Products

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Actuarial Standard of Practice (ASOP)

This document contains the second exposure draft of a proposed actuarial standard of practice, *Pricing of Life Insurance and Annuity Products*. Please review this exposure draft and give the ASB the benefit of your comments and suggestions. Each response will be acknowledged, and all responses will receive appropriate consideration by the drafting committee in preparing the final document for approval by the ASB.

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

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

Pricing of Life Insurance and Annuity Products Second Exposure Draft
Actuarial Standards Board
1850 M St., Suite 300
Washington, DC 20036-5805

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

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

SECOND EXPOSURE DRAFT—JUNE 2017

Background

The ASB periodically reviews the completeness of ASOPs for all practice areas and asked the Life Committee to consider whether an ASOP addressing life insurance and annuity pricing principles would be appropriate. Casualty and Health areas have guidance on ratemaking. In October 2014, the ASB Life Committee distributed a Request for Comments regarding an ASOP focused on life insurance and annuity pricing. Sixteen comment letters were received. Most of the comments supported the drafting of such an ASOP.

The pricing of products is one of the most important functions actuaries perform. Therefore, the ASB Life Committee believes that the profession would be well served by an ASOP providing guidance regarding life insurance and annuity product pricing. The ASB agreed and approved the creation of an exposure draft.

In March 2016, the ASB approved an exposure draft of this proposed ASOP. Seventeen comment letters were received and considered in making changes that are reflected in this second exposure draft.

The ASB thanks all those who made comments on the first exposure draft.

Key Changes

Key changes from the first exposure draft in response to the comment letters include the following:

1. Section 1.2, Scope, was redrafted to more clearly define what actuarial services are in scope.

2. The phrase "goals of the actuary's principal" was changed to "criteria of the actuary's principal" to more accurately reflect the intent of the drafters. The phrase "criteria of the actuary's principal" was added to several places within the standard to improve clarity.

3. Internal rate of return was given equal consideration among the various profitability measures listed in section 3.2.1, Profitability Metrics, and not singled out as a preferred profitability metric.

4. Guidance was added to the section titled Assumption Margins. The guidance was also moved from the section on cost of risk (now section 3.5, Risk Evaluation) to section 3.4, Pricing Assumptions.

5. Wording was added to the section on stochastic analysis (now section 3.5.3) to clarify that stochastic analysis is not a requirement.

6. Section 3.6, Pricing Controls, was changed to Governance and Controls and redrafted to more effectively capture the intended guidance.

Request for Comments

The ASB would appreciate comments on the draft ASOP and would draw the reader's attention to the following areas in particular:

1. Is it clear what actuarial services are covered in section 1.2, Scope? If not, please give an example of an actuarial service or a product whose exclusion is unclear and how to clarify.

2. Throughout the ASOP, there are references to "the criteria of the actuary's principal." Are the examples in section 3.1.1, Criteria of the Actuary's Principal, adequate to apply the guidance included in the draft ASOP?

3. Is the guidance in section 3.6, Governance and Controls, clear?

The ASB voted in June 2017 to approve this exposure draft.

<u>SECOND EXPOSURE DRAFT—JUNE 2017</u>

PROPOSED ACTUARIAL STANDARD OF PRACTICE

PRICING OF LIFE INSURANCE AND ANNUITY PRODUCTS

STANDARD OF PRACTICE

<u>Section 1. Purpose, Scope, Cross References, and Effective Date</u>

1.1 <u>Purpose</u>**—**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, including riders. For this ASOP, the term "product" includes "riders."

1.2 <u>Scope</u>**—**This standard applies to actuaries when performing actuarial services with respect to the **pricing** of life insurance and annuity products when a product is initially developed or when charges or benefits are changed for future sales. This standard does not apply to any changes made on inforce policies. Such resetting of nonguaranteed elements, including dividends, on products in force is outside the scope of this ASOP and is addressed in ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, and No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*. The actuary should also refer to ASOP No. 2 or 15 when determining nonguaranteed elements or dividends when a product is initially developed or when charges or benefits are changed for future sales.

In the context of this ASOP, actuarial services include evaluating the product's profitability and underlying risks and advising on the product's rates and benefits. Actuarial services may also include advising on the design of the product. Although the actuary needs to be mindful of all considerations that may affect the ultimate price of the product, the standard addresses only issues related to actuarial services, and therefore does not address other issues that may be important to the pricing exercise, such as marketing, sales, and competition, or compliance with federal antitrust laws.

The standard applies to actuaries when performing actuarial services related to life insurance and annuity products written on individual policy forms. The standard also applies to group master contracts with individual certificates that are priced in a similar manner to products written on individual life and annuity policy forms. Examples of products that are not priced in a similar manner to products written on individual life and annuity policy forms and therefore not in scope include the following:

a. traditional group term life; and

b. investment products that do not have an annuitization component, such as certain types of funds included in a retirement product.

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 benefits, 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 4.2.

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.

Section 2. Definitions

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

2.1 Modeling Cell—Policies or contracts that are treated in a model as being completely alike with regard to, for example, demographic characteristics, policyholder behavior assumptions, policy provisions, and underwriting class.

2.2 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, policy fees, and target interest rate spreads. Examples of benefits include death benefits, surrender benefits, dividends, and income benefits.

2.3 Profitability Analysis—An evaluation of a product’s expected financial results using a set of assumptions, a specified model, and specified **profitability metric(s)**.

2.4 Profitability Metric—A measurement used to assess a product’s expected level of financial results.

2.5 Risk Capital—Amounts to absorb potential unexpected losses resulting from severe events.

2.6 Sensitivity Analysis—Analysis performed by changing an assumption or set of assumptions and comparing the results to those resulting from the baseline assumption(s).

2.7 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 Initial Pricing Considerations—When preparing for the pricing exercise, the actuary should take into account the criteria of the actuary's principal and the relevant characteristics of the product.

3.1.1 Criteria of the Actuary's Principal—Criteria of the actuary's principal include, but are not limited to, the following:

a. selection of **profitability metrics**, which often are stated at an aggregate product level over the expected life of the product, as well as at the **modeling cell** level.

b. targets for **profitability metrics**, including any special circumstances, such as targets for shorter periods of time or situations where profits are expected to be followed by losses; and

c. risk management policies that are relevant to product **pricing**; for example, the level of risk contained in the product being priced.

3.1.2 Relevant Characteristics of the Product—Relevant characteristics of the product include, but are not limited to, the following:

a. the intended design objective of the product;

b. the intended market, sales goals, and the competitive alternatives to the product;

c. how the product will be sold, for example, underwriting, distribution, and marketing;

d. how the product will be administered, including any limitations in administrative and valuation systems that could impact product design or operational risks;

e. applicable law (statutes, regulations, and other legally binding authority); and

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

3.2 Selecting Profitability Metrics—The actuary should select **profitability metrics** in a manner consistent with the criteria of the actuary's principal and the underlying design and risks of the product.

3.2.1 Profitability Metrics—The actuary should consider using more than one **profitability metric** when evaluating the expected profitability. Examples of **profitability metrics** include, but are not limited to, the following:

a. the expected return on initial invested capital, often referred to as the internal rate of return;

b. the average of expected future periodic returns on capital, often referred to as average return on equity;

c. a measure of profitability expressed as a percentage of premium, often referred to as profit margin;

d. the present value of expected future profits as a percentage of the present value of expected assets, often referred to as return on assets;

e. the present value of expected future profits, often referred to as the value of new business; and

f. the time period when a measure of cumulative profits turns positive, often referred to as break-even year.

3.2.2 Considerations When Selecting Profitability Metrics—When selecting **profitability metrics**, the actuary should consider the following:

a. the expected pattern of profits over time (for example, the pattern of gains and losses, however measured);

b. the significance of the product's underlying risks (for example, how capital intensive the product is); and

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

3.3 Developing the Model—The actuary should develop the model to support **pricing** in a manner consistent with the criteria of the actuary's principal. The actuary should develop a model that accommodates the design of the product and the selected **profitability metrics**, and reasonably simulates the future financial impact of the product.

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

a. Time Horizon—the degree to which the model extends over a sufficient time period such that the profitability results and underlying risks of the product are adequately captured;

b. Granularity—the degree to which (1) the number of **modeling cells** represent the expected profitability and risk evaluation of future sales, and (2) assumptions vary by **modeling cell** or time interval. For example, the actuary should be able to evaluate the range of profitability across different **modeling cells** in order to understand the degree to which the **profitability metrics** could vary based on achieving a different sales mix than anticipated;

c. Dynamic Assumptions—the degree to which the model can accommodate how certain assumptions may vary based on external factors through policyholder behavior and other items described in section 3.4.4(d);

d. Asset Returns—the degree to which the model incorporates asset returns consistent with how returns are expected to be recognized and allocated to the product;

e. Economic Scenarios—the degree to which the model uses, if appropriate, market consistent or real world economic scenarios that represent an appropriate range of future asset returns;

f. Accounting and Actuarial Bases—the degree to which the model uses accounting and actuarial bases relied upon by management to evaluate the product's profitability and underlying risks;

g. Risk Capital Framework—the degree to which the model uses a **risk capital** framework that is expected to be used in practice;

h. Taxes—the degree to which the model uses a tax structure that is expected to apply, given the product, the tax position of the company, and the company's tax allocation practices;

i. Risk Quantification—the degree to which the model uses an appropriate method to quantify risks as described in section 3.5;

j. Risk Mitigation—the degree to which the model appropriately uses risk mitigation strategies that are expected to be used to support the product, such as reinsurance, hedging, dividends, or nonguaranteed elements;

k. Model Validation—the degree to which the model is sufficiently transparent to support validation as described in section 3.6; and

l. Such other items as the actuary determines are significant to the model.

3.4 <u>Pricing Assumptions</u>—The actuary should use professional judgment to set assumptions that reflect expected future experience, based on the following considerations.

3.4.1 <u>Historical Experience Used When Setting Assumptions</u>—The actuary should use professional judgment to ensure that relevant historical experience is reflected when setting assumptions.

3.4.1.1 Assumptions Based on Relevant and Credible Data—The actuary should use assumptions based on relevant and credible data, such as company experience, industry experience, and other relevant experience, which may be modified to reflect the circumstances being modeled. When modifying such experience, the actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance.

3.4.1.2 Assumptions Based on Historical Experience—When using historical experience, the actuary should consider whether there are reasons to expect that future experience will differ from past experience.

3.4.1.3 Assumptions When There Is No Relevant Historical Experience—In some instances, no relevant historical experience is available to the actuary. In this situation, the actuary should use professional judgment, considering available sources of data, when setting the assumption.

3.4.2 Assumption Margins—The actuary should consider the appropriateness of including a margin for uncertainty in the assumptions. When setting any margin, the actuary should consider the following:

a. the degree to which there is uncertainty around the assumptions due to lack of relevant, credible company or industry experience data to support the assumptions, such as when a new product is being introduced to the marketplace;

b. whether the degree of uncertainty may vary over different periods of time within the time horizon of the model; and

c. whether the level of margins individually for each assumption and in aggregate for all assumptions is appropriate.

3.4.3 Consistency of Assumptions—The actuary should use assumptions that are internally consistent with other components of the model, consistent with current and anticipated company practices, and, where appropriate, consistent with assumptions used for other assignments within the entity.

3.4.4 Product Design and Assumption Setting—When setting assumptions, the actuary should consider the product design, as well as the following:

a. sales mix assumptions that reflect the anticipated distribution of sales across **modeling cells**;

b. investment assumptions and economic market assumptions that reflect real world or market consistent theory, where appropriate, and that include assumptions for reinvestment, asset default, and investment expenses;

c. mortality and morbidity assumptions that incorporate the effects of selection and classification of future applicants, where appropriate, the impact of expected trends on future assumptions, and the impact of policy or rider characteristics, such as conversion and level premium periods on term coverage;

d. for experience that is elective in nature, such as the policyholder's ability to pay or not pay premiums, to receive certain types of benefits, or to terminate the contract, assumptions that consider the causal variables impacting the policyholder's choice, such as policyholder characteristics (for example, age) and policy or rider characteristics (for example, size of policy), as well as the value of guaranteed benefits driven by external factors (for example, the current interest rate environment and underlying market performance);

e. expense assumptions that reflect anticipated future trends in expenses (for example inflation or expense efficiencies). The actuary should consider the appropriateness of the basis (for example, fully allocated, marginal) when developing expense assumptions;

f. discount rate(s) that are suitable for the selected **profitability metric**, where applicable; and

g. the principal's capacity and intent with regard to inforce management strategies, including dividends and nonguaranteed elements.

The actuary should consider the extent to which certain of these assumptions may also be influenced by the distribution channel through which the product will be sold.

The actuary should consider incorporating the views of experts when setting assumptions in areas outside the actuary's area of expertise. However, the setting of assumptions should reflect the actuary's professional judgment.

3.4.5 Capital Market Assumptions—If performing **stochastic analysis**, the actuary should take into account the design of the product when determining whether to use market consistent assumptions or real world assumptions. When analyzing a benefit that can be replicated using liquid capital market instruments, the actuary should consider comparing the cost of the benefit using market consistent assumptions to the price of a comparable investment guarantee observed in capital markets to assure that it aligns with the profitability goals and risk management policy of the actuary's principal.

3.4.6 Documentation of Assumptions, Their Rationale, and Data Modifications—The actuary should document the assumptions, the rationale behind the assumptions, and any modifications made to data sources. If margins are included in assumptions, the actuary should document the approach used and, where practicable, the margin component of each assumption. The actuary should consider making disclosures of documentation of material assumptions, as appropriate.

3.5 Risk Evaluation—The actuary should evaluate the impact on **profitability metrics** from deviations in assumptions when performing a **profitability analysis**.

3.5.1 Cost of Capital—The actuary should consider incorporating the cost of capital into the **profitability analysis**. Examples of approaches that the actuary can use include, but are not limited to, incorporating **risk capital** or setting **profitablity metrics** that are consistent with the underlying risks of the product.

3.5.2 Sensitivity Analysis—The actuary should use **sensitivity analysis** to evaluate the impact on profitability from future experience being different than assumed and should consider performing more analysis for assumptions that have a significant impact on the **profitability analysis** than for assumptions that have less impact.

3.5.3 Stochastic Analysis—The actuary should consider whether **stochastic analysis** should be used to evaluate the distribution of potential **profitability metrics** from variations in key assumptions. In particular, the actuary should consider performing **stochastic analysis** for products that are expected to exhibit sensitivity to the level of interest rates or equity returns.

The actuary may consider other risk evaluation techniques as appropriate. The actuary should 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.

3.6 Governance and Controls—The actuary should use, or, if appropriate, rely on others to use, reasonable governance and controls over the actuarial services provided as part of **pricing**. Examples of governance and controls include, but are not limited to, the following:

a. effective oversight of methods and assumptions used in the pricing exercise;

b. preservation and protection of the model from unintentional or untested changes;

c. separation of duties;

d. validation of the appropriate use of the inputs in model calculations;

e. validation that values from the models are consistent with independent calculations of such values from outside the model;

f. validation that the model reasonably simulates the product’s expected impact on the company's future financial and risk position; and

g. review of assumptions and other aspects of the model by a knowledgeable person who conducts the review in an objective way.

The actuary should consider documenting the governance and controls used as part of **pricing**.

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 Actuarial Communications—When issuing any actuarial communication relating to this ASOP, the actuary should refer to ASOP No. 41. The actuary should consider the needs of the intended user in communicating the actuarial findings in any actuarial report. In addition, in any actuarial report concerning **pricing**, the actuary should disclose the following, if practical and relevant:

a. product description including design features and the market to which it will be sold;

b. results of the **profitability analysis**, including the range of results over **modeling cells**;

c. the **profitability metrics** used to evaluate expected profitability and how these metrics are consistent with the criteria of the actuary's principal as described in section 3.2 of this standard;

d. the considerations used to develop the model as described in section 3.3 of this standard;

e. material pricing assumptions and the manner in which the actuary established these assumptions to reflect expected future experience, adjusted to include any margin, as described in section 3.4 of this standard; and

f. results of risk evaluation as described in section 3.5 of this standard, including the manner in which the actuary has evaluated the product's underlying risks and how those underlying risks will be managed.

4.2 Additional Disclosures—The actuary should also include the following disclosures, 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 (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

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

Background

The pricing of life insurance and annuity products is a complex process and requires management to make decisions based on a variety of inputs that often include analyses of profitability and risk performed by actuaries. The roles performed by actuaries when pricing are significant and varied. They can range from technical analysis of profitability to the development of marketing strategies for a proposed product. While the final decisions on product design, price, and marketing are the responsibility of management, information necessary for making those decisions is most often provided by actuaries. Management must balance business growth, profitability, and other strategic goals when setting the parameters for a proposed new product. Actuaries are typically asked to evaluate the profitability and risk inherent in those parameters. In this relationship, management relies on actuarial analyses to make decisions that impact the ability of the insurance company to meet its goals in the future.

Several ASOPs currently address various aspects of the pricing of life insurance and annuity products. Examples include the following:

- ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*;
- ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*;
- ASOP No. 12, *Risk Classification (for All Practice Areas)*; and
- ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*.

This draft ASOP, when and if adopted by the ASB as a final standard, supplements the guidance provided by existing ASOPs and provides guidance to actuaries providing actuarial services related to the pricing of life insurance and annuity products.

Most life insurance and annuity products provide multi-year guarantees in the form of a fixed premium, guaranteed benefits, or limits on the ability of the company to change future premiums, fees, or benefits. In these situations, the company must commit to the price before the product is sold and may have to honor that commitment for a lifetime. It is critical that the actuarial analyses supporting that commitment meet accepted standards.

Current Practices

Supporting the pricing of life insurance and annuity products typically requires developing a model to apply expected future experience to measure the risks inherent in the product design and the likely future profit. Setting the assumptions for future experience is typically the role of the actuary, although at times either regulation (for example, unisex legislation) or management will mandate the use of a certain assumption.

Developments in consumer preferences and medical science will continue to affect policyholder behavior, future mortality rates, and product profitability. Other examples of existing trends that are expected to affect life insurance and annuity product pricing include the following:

- Principle-based approaches to determining statutory accounting requirements will provide more flexibility and responsibility for actuaries in establishing the assumptions and methods that are used in that context.

- Vendors and other third parties are playing increasingly important roles in the traditional pricing and product distribution functions.

- Risks and opportunities are created by new distribution models, disruptive market entrants, and technology.

Appendix 2

Comments on the First Exposure Draft and Responses

The first exposure draft of this proposed ASOP, *Pricing of Life Insurance and Annuity Products*, was issued in March 2016 with a comment deadline of August 31, 2016. Seventeen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Life Insurance and Annuity Pricing Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term "reviewers" in appendix 2 includes the Life Insurance and Annuity Pricing Task Force, the Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the first exposure draft.

TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: Does the draft ASOP provide appropriate guidance to the actuary when providing actuarial services related to the pricing of life insurance and annuity products?	
Comment	Most commentators answered "yes," but several thought the guidance could be improved.
Response	The reviewers moved specific comments to the sections they believe most appropriate, and addressed the comments there.
Question 2: Given the range of roles actuaries may have in the pricing of life insurance and annuity products, is the scope of the draft ASOP appropriate?	
Comment	About half of the commentators who answered this question believed the scope was appropriate. The other half had a variety of comments.
Response	The reviewers moved specific comments to the sections they believe most appropriate, and addressed the comments there.
Question 3: Does the draft ASOP address the range of products and pricing methodologies used in the industry?	
Comment	Commentators generally agreed that the draft ASOP addressed the range of products and pricing methodologies used in the industry, but some had specific comments about profitability metrics, combination products, assumptions, and stochastic analysis.
Response	The reviewers moved specific comments to the sections they believe most appropriate, and addressed the comments there.

Question 4: Are the disclosures required in section 4 appropriate?	
Comment	About half of the commentators who answered this question believed the disclosures were appropriate. The other half had a variety of comments.
Response	The reviewers moved specific comments to the sections they believe most appropriate, and addressed the comments there.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator questioned if the phrase, referring to products and riders, “that will be sold in the future” was necessary.
Response	The reviewers believe that an appropriate phrase is necessary and clarified the language by replacing “that will be sold in the future” with “when a product is initially developed or when charges or benefits are changed for future sales.”
Comment	One commentator stated that inforce pricing seemed to be excluded from the scope of this ASOP and that it should be included. The commentator also mentioned that inforce pricing might already be addressed by ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, and ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*; if so, it would be beneficial to explicitly indicate that somewhere in this section.
Response	The reviewers clarified the guidance by adding the following reference in section 1.2: “[s]uch resetting of nonguaranteed elements, including dividends, on products in force is outside the scope of this ASOP, and is addressed in ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, and No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*.”
Comment	Several commentators noted that product design services were included in the scope of the ASOP, but that no guidance was provided on product design. A few commentators suggested removing product design from the scope on the grounds that it is a distinct actuarial service.
Response	The reviewers believe that advising on the design is often, but not always, part of the pricing exercise as a component of an iterative feedback loop between design and price determination that is commonly used. Thus, the reviewers changed the language to indicate that advising on design “may” be part of the pricing exercise.
Comment	One commentator suggested that it would be helpful to provide a reason why this ASOP does not apply to work subject to ASOP No. 24, *Compliance with NAIC Life Insurance Illustrations Model Regulation*.
Response	The reviewers note that the actuarial services that fall under ASOP No. 24 are different and therefore are considered out of scope of this draft ASOP.
Comment	Several commentators requested clarification on the products included in the scope of the ASOP. Commentators raised questions regarding group pension plans, guaranteed investment contracts, and products sold internationally. Two commentators suggested that all group policy forms be included, not only those with individual certificates. Commentators also requested guidance regarding combination products.
Response	The reviewers clarified the scope by giving examples of the types of products and riders that are not included. For products sold internationally, the reviewers note that the Code of Professional Conduct addresses the applicability of standards with regard to where the actuarial services are rendered.

Comment Response	One commentator stated that excluding considerations that affect the ultimate price charged (such as marketing goals and competition) from the scope of the ASOP appeared to be in conflict with section 3.1, which encourages the actuary to consider taking into account the intended market and the competitive alternatives to the product. The commentator recommended modifying the scope to not exclude these considerations. The reviewers agree that the relationship between scope and 3.1 was not clear and modified the language.
Comment Response	Two commentators stated that the ASOP was overly broad (by applying to a wide variety of products) and overly vague. The reviewers believe that the ASOP is meant to provide principle-based guidance without being overly prescriptive and made no change in response to these comments.
SECTION 2. DEFINITIONS	
Comment Response	Several commentators suggested that the ASOP include additional definitions, such as for “assumptions,” “risk,” and “cost of risk.” The reviewers considered defining each of these proposed terms but did not add definitions for several reasons. “Assumptions” are discussed within the standard, and the reviewers believe its meaning is well understood. The reviewers eliminated the phrase “cost of risk” throughout the document and changed the title of section 3.5 to “Risk Evaluation.” The reviewers clarified the language in section 3.5 to specify risk as “deviations in assumptions.”
Section 2.2, Model Point (now section 2.1, Modeling Cell)	
Comment Response	Two commentators suggested that the term “model point” be replaced with “pricing cell.” The reviewers replaced “model point” with “modeling cell” for consistency with other actuarial literature.
Comment Response	One commentator said that the term “of policies” in the model point definition should be removed to make the description more generic. The reviewers agree and revised the definition of modeling cells, making it broadly applicable.
Section 2.3, Pricing (now section 2.2)	
Comment Response	One commentator suggested that dividends and nonguaranteed elements be mentioned in the definition of pricing. The reviewers made no change in the definition of pricing, but did clarify how ASOP Nos. 2 and 15 apply within the scope of this ASOP.
Comment Response	One commentator suggested that risk evaluation be included in the definition of pricing. Since risk evaluation is addressed in section 3.5 and is a part of the ASOP, the reviewers do not believe that the definition of pricing needs to include risk evaluation. Therefore, the reviewers made no change.
Comment Response	One reviewer suggested that underwriting class be specifically mentioned as part of the modeling cells and model structure. The reviewers agree and made the appropriate change to the definition of “modeling cell.” The reviewers also substituted “model” for “model framework” throughout the document.
Comment Response	Several commentators suggested that the process of determining credited rates and/or target spreads be included in the definition of pricing. The reviewers noted the comment and made changes to the definition of “pricing.”

Comment Response	One commentator requested clarification about whether riders and ancillary benefits are included in the definition of pricing, especially if priced on a stand-alone basis. The reviewers added clarification by including "riders" in the term "products" in section 1.1.
Comment Response	One commentator suggested that the term "pricing" ought to have a more substantive description of the pricing process than merely the relatively short definition included. The reviewers believe the definition is appropriate and made no change in response to this comment.
Section 2.4, Profitability Analysis (now section 2.3)	
Comment Response	In the definitions of profitability analysis and profitability metric, one commentator suggested that the broader term "results" replace the word "return." The reviewers agree and made the suggested change.
Comment Response	One commentator suggested that a reference to profitability metrics be made. The reviewers agree and made the suggested change.
Section 2.5, Profitability Metric (now section 2.4)	
Comment Response	Two commentators suggested that profitability metric not be limited to financial return. The reviewers agree and changed the term "returns" to "results."
Section 2.7, Sensitivity Analysis (now section 2.6)	
Comment Response	One commentator suggested changing "original assumption(s)" to "baseline assumption(s)," since the original assumptions may not be part of a sensitivity analysis. The reviewers agree and made the suggested change.
Section 2.8, Stochastic Analysis (now section 2.7)	
Comment Response	One commentator suggested that "equally probable" be used to describe the potential outcomes used in stochastic analysis. The reviewers believe that prescribing stochastic modeling techniques is beyond the scope of this standard, and did not make the suggested change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment Response	One commentator recommended highlighting the primacy of estimating the amount and timing of contract cash flows. The reviewers believe that performing professional services involving the analysis of cash flows is adequately addressed in ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, as well as in professional literature. Cash flows form the basis of all the profitability metrics included in section 3.2.1. Therefore, the reviewers made no change.
Section 3.1, Considerations for the Actuary Prior to Beginning the Pricing Exercise (now Initial Pricing Considerations)	
Comment Response	Several commentators suggested revising this section so that it is not misinterpreted as all-inclusive. Other commentators suggested changes to clarify the language. The reviewers agree and modified the language to improve clarity and added language to indicate that the list is not all-inclusive.

Comment Response	One commentator recommended replacing the phrase "intended design" with "initial design," or perhaps removing it altogether, suggesting it is not part of the pricing function. The reviewers clarified the intent by changing "intended design" to "intended design objective."
Comment Response	Two commentators objected to the title of this section and recommended replacing it with "Initial" or "General" "Pricing Considerations." The reviewers agree and changed the title to "Initial Pricing Considerations."
Comment Response	One commentator suggested that the actuary's role includes re-design (as part of the iterative nature of pricing) and that this section should include reassessment of considerations and assumptions. The reviewers, in section 1.2, clarified that actuarial services associated with pricing may include advising on the design of the product. The guidance provided throughout section 3.4 applies during the entire pricing process. Therefore, the reviewers made no change.
Comment Response	One commentator recommended broadening the considerations to include actuarial and accounting laws, guidelines, and regulations. The reviewers agree and added a parenthetical to the phrase "applicable law" to improve clarity.
Section 3.2, Selecting Profitability Metrics	
Comment Response	Several commentators expressed concern that the standard does not adequately address profitability variation by modeling cell. The reviewers agree with these comments, but made changes in other sections to address the concern. The reviewers added guidance related to cell level results to section 3.1 (now 3.1.1[a]), 3.3(b), and a new section 4.1(b).
Comment Response	Two commentators recommended including a discussion of the choice of discount rates used for certain profit metrics. The reviewers agree but believe this is more appropriately addressed under assumption setting and added guidance in section 3.4.3 (now 3.4.4).
Comment Response	One commentator suggested revising this section to clarify that the profitability metric is selected by the principal and not the actuary. The reviewers disagree that this is always the case and note that revised section 3.2 now states that "the actuary should select profitability metrics in a manner consistent with the criteria of the actuary's principal and the underlying design and risks of the product."
Comment Response	Two commentators stated that the language referring to choice of metrics in sections 3.2 and 3.2.1 is contradictory. The reviewers agree and modified the language to clarify the intent and remove this contradiction.
Comment Response	Two commentators said that "how to choose a profit target" was not addressed. The reviewers believe the addition of section 3.1.1, Criteria of the Actuary's Principal, partially addresses the commentator's concern, but that, as the guidance is principle-based, including additional detail is not appropriate.

Section 3.2.1, Profitability Metrics	
Comment	Many commentators objected to presenting internal rate of return (IRR) as a primary or most prominent profitability metric. Many of these commentators provided instances where IRR was inappropriate or other measures may be more appropriate.
Response	The reviewers agree that the IRR should not be given a more prominent position among the various profitability measures and moved it into the list with all of the other metrics.
Comment	Two commentators questioned the usefulness of calculating profit metrics over periods shorter than the model's full time horizon.
Response	The reviewers added clarifying language in section 3.1.1 to address profitability targets over shorter periods of time as an example of possible criteria of the actuary's principal.
Comment	Two commentators recommended adding "return on assets" to the list of profit metrics.
Response	The reviewers agree and made the change.
Comment	One commentator suggested a discussion of an appropriate length for the "time horizon" was needed.
Response	The reviewers modified language in sections 3.1, 3.2, and 3.3 and believe time horizon is now adequately addressed.
Comment	Two commentators suggested that the following terms be defined: average return on equity; profit margin; embedded value; and time horizon.
Response	In response to another commentator's suggestion, "embedded value" was changed to "value of new business." Since these terms are commonly understood by actuaries, the reviewers made no other changes.
Section 3.2.2, Considerations When Selecting Profitability Metrics	
Comment	One commentator suggested the section would be improved by adding the accounting framework as a consideration.
Response	The reviewers believe that the accounting framework is embedded within the choice of profitability metrics that are consistent with the criteria of the actuary's principal and made no change.
Comment	Two commentators suggested including additional wording to better explain the considerations listed.
Response	The reviewers agree and added examples for the "expected pattern of profits over time" and the "significance of the product's underlying risks."
Comment	One commentator suggested listing the strengths and weaknesses of the various profitability metrics.
Response	The reviewers believe that the guidance is principle-based and, therefore, including such detail is not appropriate. Therefore, the reviewers made no change.
Comment	One commentator suggested adding "the profitability metrics that are important to the principal" be added to the list.
Response	The reviewers believe that the modified language in section 3.2 addresses the commentator's concern.
Comment	Several commentators suggested adding considerations such as "consistency among other product lines" and "embedded options."
Response	The reviewers note that the list is not meant to be exhaustive, as indicated by item (c) "any other considerations that the actuary determines are relevant," and therefore made no change.

Section 3.3, Developing the Model Framework (now Developing the Model)	
Comment Response	One commentator suggested adding a reference to ASOP No. 7. The reviewers believe that referring to ASOP No. 7 in the body of the ASOP is not necessary. The background section of the appendix lists ASOPs that address aspects of pricing life insurance and annuity products, including ASOP No. 7. Therefore, the reviewers made no change.
Comment Response	One commentator suggested adding "and the degree to which the model is appropriate for the pricing exercise and capable of supporting all aspects of the pricing exercise" after "profitability metrics." The reviewers believe that since the intended purpose of the model to support pricing is stated in the first sentence of this section, no further definition is required. Therefore, the reviewers made no change.
Comment Response	One commentator recommended additional language to suggest model framework flexibility to handle future innovation and change. The reviewers believe that this ASOP is focused on pricing policies at issue and that future model flexibility is beyond the scope of this ASOP. Therefore, the reviewers made no change.
Comment Response	One commentator stated that the impact on the company's financials and risk profile is part of the forecasting and enterprise risk management process and is not done during pricing on a standalone product basis. The reviewers believe that modified language in this section provides appropriate guidance.
Comment Response	One commentator suggested adding an item for management actions with additional disclosure about its dynamism and effect. The reviewers believe that management and company practices are now adequately reflected in the language added in 3.3 "… in a manner consistent with the criteria of the actuary's principal." The reviewers also believe the dynamism and effect of management actions are addressed in sections 3.4.4(g) and 4.1(e).
Section 3.3(a), Time Horizon	
Comment Response	One commentator suggested changing "risk and returns" to "risks and results." The reviewers agree and made the change.
Section 3.3(b), Model Points (now combined with section 3.3[c] and titled Granularity)	
Comment Response	One commentator suggested changing "model points" to "pricing cells." The reviewers changed "model points" to "modeling cells" to be more consistent with industry usage and made changes to the definition in section 2.1.
Section 3.3(c), Granularity of Assumptions (now section 3.3[b], Granularity)	
Comment Response	One commentator questioned whether this section appropriately incorporates modeling considerations such as state variations, transaction frequency (e.g., withdrawals, rebalancing, interest crediting), and indicative vs. comprehensive modeling. The reviewers believe the guidance is principle-based and, therefore, can include a wide variety of modeling considerations. Therefore, the reviewers made no change.
Section 3.3(d), Asset Returns	
Comment Response	One commentator said that the principal may require that the pricing asset returns be considered in a particular manner that is different from how they are ultimately allocated. The reviewers believe that disclosures required in section 4.1(d) address this, and made no change.

Comment Response	One commentator questioned whether derivatives are included. The reviewers note that "hedging" is included in the section on Risk Mitigation (now section 3.3[j]), and therefore, made no change.
Section 3.3(e), Accounting Bases (now section 3.3[f])	
Comment Response	Several commentators sought clarification of accounting bases. The reviewers made the following changes to this section: (1) added "actuarial bases"; and (2) changed "expected to be used in practice" to "relied upon by management to evaluate the product's profitability and underlying risks."
Section 3.3(g), Taxes (now section 3.3[h])	
Comment Response	One commentator sought clarification of taxes. The reviewers believe the language is sufficiently clear, and therefore, made no change.
Section 3.3(i), Risk Mitigation (now section 3.3[j])	
Comment Response	One commentator asked if the effect of risk mitigation should be documented. The reviewers note that considerations used to develop the model as described in section 3.3 should be disclosed, as noted in section 4.1(d).
Section 3.3(j), Model Validation (now section 3.3[k])	
Comment Response	One commentator sought clarification of to whom the model was "sufficiently transparent." The reviewers clarified the language by changing it to "the degree to which the model is sufficiently transparent to support validation as described in section 3.6."
Comment Response	One commentator suggested retitling the section "Pricing Controls" and changing the reference of "validation" to "pricing controls as described in section 3.6." The reviewers do not believe the section should be retitled and retained the term "validation" instead of "pricing controls." The reviewers took note of the comment and added a reference to section 3.6.
Section 3.3 (Suggested additions)	
Comment Response	One commentator suggested adding sections for Economic Scenarios, Policyholder Behavior, and Reserving Bases. The reviewers agree and added sections for dynamic assumptions and economic scenarios, and added "actuarial bases" to section 3.3(f) on accounting bases.
Comment Response	One commentator suggested adding a section on reserve methodology, including mention of additional voluntary reserves. The reviewers modified the language in section 3.3(f) to say "and actuarial bases relied upon by management to evaluate the product's profitability and underlying risks."

Section 3.4, Pricing Assumptions	
Comment Response	One commentator said that it was unclear whether the language in 3.4 implied that margins should be considered in setting pricing assumptions. The reviewers agree and modified the language.
Comment Response	One commentator suggested adding a sentence to clarify that assumptions should be revisited if product design changes. The reviewers believe the existing language provides sufficiently clear guidance and therefore did not make the suggested change.
Comment Response	Two commentators suggested adding a sentence to clarify that the actuary should use assumptions that are reasonable. The reviewers believe the existing language provides sufficiently clear guidance and therefore did not make the suggested change.
Comment Response	One commentator suggested that additional conservatism be used when setting assumptions for which the entire industry does not have sufficient experience. The reviewers agree and addressed the concern of this commentator in new section 3.4.2(a).
Section 3.4.1, Consistency of Assumptions (now section 3.4.3)	
Comment Response	Two commentators suggested that it would be helpful to clarify what is intended by “internally consistent.” The reviewers agree and revised the language to say, “The actuary should use assumptions that are internally consistent with other components of the model, consistent with current and anticipated company practices, and, where appropriate, consistent with assumptions used for other assignments within the entity.”
Section 3.4.2, Experience Reflected When Setting Assumptions (now section 3.4.1, Historical Experience Used When Setting Assumptions)	
Comment Response	Two commentators suggested that further clarification would be helpful in instances where company experience is not relevant and credible. The reviewers agree and modified the language in section 3.4.2(a) (now section 3.4.1.3).
Comment Response	One commentator expressed concern that the proposed ASOP implies that the pricing actuary must be the one performing the experience studies and suggested the language be clarified to allow the pricing actuary to rely on a separate experience studies actuary. The reviewers clarified the section by changing the language to “use assumptions based on relevant and credible data.”
Comment Response	One commentator suggested adding an example to section 3.4.2(b) (now section 3.4.1.2) to illustrate how future experience could differ from past experience, for example, why policyholders may exhibit more economically efficient behavior in the future. The reviewers believe that the suggested example was too specific for an ASOP and did not incorporate the suggested change.

Section 3.4.3, Assumption Setting (now section 3.4.4, Product Design and Assumption Setting)	
Comment Response	One commentator suggested expanding the list of considerations to include morbidity, sales mix (demographics), utilization rates, premium payment patterns, and cost of capital. The reviewers made several changes to address the concerns of this commentator. (1) Morbidity was added to section 3.4.3(b) (now section 3.4.4[c]); (2) sales mix was added as section 3.4.4(a); (3) the concept of utilization rates and premium persistency are addressed in section 3.4.3(c) (now section 3.4.4[d]). The reviewers believe cost of capital is adequately addressed in section 3.5.
Comment Response	Several commentators suggested adding language to address the impact of policyholder optionality and external forces on pricing assumptions. The reviewers agree and expanded section 3.4.3(c) (now section 3.4.4[d]) to provide additional clarity around the impact of policyholder optionality on assumptions.
Comment Response	One commentator suggested adding a section to cover assumptions on future reserves, in accordance with principle-based reserves (PBR). The reviewers believe specific guidance on setting PBR assumptions is outside the scope of this ASOP and that the general guidance given in section 3.3(e) (now section 3.3[f]) is sufficient. Therefore, the reviewers made no change.
Comment Response	One commentator suggested adding language to clarify that the list of assumptions reflected in section 3.4.3 (now section 3.4.4) is not exhaustive. The reviewers partially agree and clarified the language to say “the actuary should consider the product design, as well as the following. . .”
Comment Response	Several commentators suggested expanding the guidance on expense assumptions to cover both the choice of fully allocated or marginal, as well as allow for the possibility of declining expenses over time due to expense efficiencies. The reviewers agree and modified the language.
Comment Response	One commentator suggested adding reinsurance to this section. The reviewers believe that reinsurance is addressed in section 3.3(i) (now section 3.3[j]), Risk Mitigation, and made no change.
Comment Response	One commentator suggested adding guidance on underwriting. The reviewers believe that underwriting is covered by the phrase “the effects of selection and classification of future applicants,” and therefore made no change.
Comment Response	One commentator suggested adding guidance on the types of subject matter experts that a pricing actuary may want to consult (for example, illustration actuary, valuation actuary). The reviewers believe it is not necessary to specify which subject matter experts should be consulted, as the required expertise may reside in many different places depending on the organization. Therefore, the reviewers made no change.
Section 3.4.3(a) (now section 3.4.4[b])	
Comment Response	One commentator suggested adding the words “that consider the expected timing of asset and liability cash flows.” The reviewers believe the guidance is sufficiently clear and did not make this change.

Comment Response	One commentator suggested adding the phrase "that reflect real world or market consistent theory, where appropriate" to the section on investment assumptions. The reviewers agree and added the suggested language.
Comment Response	One commentator suggested adding language to cover prepayments, borrowing cost, and liquidity. The reviewers believe the suggested changes are too detailed for this ASOP, and therefore made no change.
Section 3.4.3(b) (now section 3.4.4[c])	
Comment Response	Two commentators suggested modifying this section to better accommodate all products (e.g., mortality classification is usually not relevant for annuity products, certain features of term products can have a material impact on mortality). The reviewers agree and added (1) the word "morbidity"; (2) "where appropriate" after "incorporate the effects of selection and classification of future applicants"; and (3) "and the impact of policy or rider characteristics, such as conversion and level premium periods on term coverage."
Section 3.4.3(c) (now section 3.4.4[d])	
Comment Response	One commentator suggested adding agent or agency as a factor. The reviewers agree and added a sentence at the end of section 3.4.4 to address this.
Section 3.4.3(e) (now section 3.4.4[g])	
Comment Response	One commentator suggested including dividends as an example of an inforce management strategy. The reviewers agree and made the suggested change.
Comment Response	One commentator suggested removing the phrase "when setting assumptions" because it is redundant. The reviewers agree and made the suggested change.
Comment Response	One commentator suggested removing the language to consider the principal's capacity and intent, as it puts the pricing actuary in a difficult position. The reviewers believe the guidance is important to include as it supports reflecting expectations over the modeling time horizon, and therefore made no change.
Section 3.4.4, Capital Market Assumptions (now section 3.4.5)	
Comment Response	Several commentators suggested that the existing language implied that stochastic analysis and/or market consistent embedded value calculations were required and that such analyses would not always be necessary. The reviewers clarified the language by adding "if performing stochastic analysis."
Comment Response	One commentator suggested that the section on capital market assumptions could be deleted if language were added to the bullet point on investment assumptions in the prior section and that the guidance provided was too prescriptive. The reviewers believe that guidance provided is appropriate and therefore did not make the suggested changes.
Comment Response	Several commentators suggested that the selection of capital market assumptions should factor in the objectives of the actuary's principal. The reviewers agree and added such language to the last sentence of the section.

Comment Response	One commentator recommended having the Capital Markets section be part of the considerations in Developing the Model Framework (section 3.3) or an element of Assumption Setting (section 3.4.3). The reviewers did not move the placement of the Capital Markets section, but added a reference to market consistent and real world economic scenarios in new section 3.3(e), Economic Scenarios.
Comment Response	One commentator stated that market consistent assumptions should be derived from observable market prices of financial instruments if available. The reviewers believe that the modified guidance provided is sufficient for a pricing ASOP.
Comment Response	One commentator suggested asking the pricing actuary to consider the illiquidity of the insurance liability and the fact that an insurance liability is not "risk free" because it is subject to the claims-paying ability of the insurer. The reviewers believe this type of guidance lies outside the scope of an ASOP on pricing. Therefore, the reviewers made no change.
Section 3.5, Cost of Risk (now Risk Evaluation)	
Comment Response	One commentator suggested changing the term "cost of risk" to "cost of deviations from assumptions." The reviewers noted this and other comments, revised the language in the document to eliminate the phrase "cost of risk," and changed the title of this section to "Risk Evaluation."
Comment Response	Two commentators recommended defining or clarifying the definition of risk and "cost of risk." The reviewers eliminated the phrase "cost of risk" throughout the document and changed the title of this section to "Risk Evaluation." The reviewers clarified the language to specify risk as "deviations in assumptions."
Comment Response	One commenter believed the approaches listed for evaluating risk should leave open the possibility of other techniques. The reviewers agree and added appropriate language.
Comment Response	One commentator suggested incorporating the risk of changes in other factors, such as accounting basis, into the risk evaluation. The reviewers believe that the revised language does not preclude the actuary from considering the risk of changes in other factors such as accounting bases into the risk evaluation. Therefore, the reviewers did not make this change.
Comment Response	One commentator suggested that the standard would be enhanced by adding more detail around the risks to be included in the profitability analysis. The reviewers believe that the guidance is principle-based and, therefore, including such detail would not be appropriate.
Comment Response	One commentator suggested referencing reinsurance as an example of risk mitigation strategies. The reviewers made no change, because reinsurance was listed as an example of a risk mitigation strategy in section 3.3(i) (now section 3.3[j]).
Comment Response	Two commentators recommended having two sections, one on how the actuary would recognize or evaluate risks and another on how to fund or incorporate those risks in the pricing exercise. The reviewers considered the comment, moved "assumption margins" to new section 3.4.2, changed the name of "Risk Capital" to "Cost of Capital," and kept "cost of capital" in section 3.5 (now Risk Evaluation).
Section 3.5.1, Assumption Margins (now section 3.4.2)	

Comment Response	One commentator suggested clarifying the phrase "correlated assumptions." The reviewers deleted the phrase "correlated assumptions" because they believe the revised guidance is sufficient.
Comment Response	One commentator said that the guidance for assumption margins implies that margins are needed in pricing despite "should consider." The reviewers modified the section addressing assumptions margins to reflect this and other comments.
Section 3.5.2, Risk Capital (now section 3.5.1, Cost of Capital)	
Comment Response	One commentator noted that another possibility for incorporating the cost of capital into the profitability analysis is to use a higher hurdle rate for riskier products. The reviewers agree and modified the language as follows: "Examples of approaches that the actuary can use include, but are not limited to, incorporating risk capital or setting profitablity metrics that are consistent with the underlying risks of the product."
Section 3.5.3, Sensitivity Analysis (now section 3.5.2)	
Comment Response	One commentator suggested adding the phrase "and should consider performing more analysis for assumptions that have a significant impact on expected profitability than for assumptions that have less impact." The reviewers agree and modified the language.
Section 3.5.4, Stochastic Analysis (now section 3.5.3)	
Comment Response	One commentator suggested narrowing the scope of this section to reflect that stochastic analysis is generally considered only for specific risks. The reviewers agree and added the sentence, "In particular, the actuary should consider performing stochastic analysis for products that are expected to exhibit sensitivity to the level of interest rates or equity returns."
Section 3.6, Pricing Controls (now Governance and Controls)	
Comment Response	One commentator noted that "sometimes direct writers may rely on pricing done by a reinsurer willing to assume substantially all risk" and asked how this situation fits in with the control section. The reviewers believe that the principles espoused in this section are appropriate when pricing is outsourced and made no change.
Comment Response	One commentator recommended adding reference to the proposed Modeling ASOP, once it is finalized. The reviewers did not reference the proposed Modeling ASOP, since it is not final.
Comment Response	One commentator believed using the term "establish" was too narrow in addressing controls. The reviewers agree and modified the language to read as follows: "The actuary should use, or if appropriate rely on others to use, reasonable governance and controls over the actuarial services provided as part of pricing."
Comment Response	One commentator suggested adding language that ensures the control environment is documented. The reviewers added "The actuary should consider documenting the governance and controls utilized as part of pricing."

Comment	One commentator recommended removing section 3.6, since the Modeling ASOP will eventually apply and actuaries at small companies may have difficulty meeting the standards. The commentator also asked if the ASOP advocated using consultants for a portion of governance responsibilities.
Response	The reviewers did not reference the proposed Modeling ASOP, since it is not final. The reviewers believe the revised guidance on controls is appropriate and retained this section. The reviewers note that the proposed ASOP does not specify how an actuary should comply with this section.
Section 3.6(a), Governance (now section 3.6, Governance and Controls)	
Comment	One commentator noted that meeting the guidance on appropriate separation of duties in 3.6(a)(iii) would be difficult for actuaries working at smaller companies, since there may only be a single actuary performing all of these tasks.
Response	The reviewers clarified the language, noting that the itemized list contains examples of pricing controls and governance practices.
Section 3.6(b), Validation (now section 3.6[d-f])	
Comment	Several commentators noted that it is unclear which practices are referred to by the term “expected practice,” which could be nonguaranteed elements practices, dividend practices, reinsurance practices, coding practices, etc., and also sought clarification of the phrase “fitness of purpose.”
Response	The reviewers redrafted various sections to address the commentators’ concerns.
Comment	One commentator suggested that sensitivity testing be used as an example of a tool used to validate the model.
Response	The reviewers believe that addressing how to validate the model would be too prescriptive and therefore did not make this change.
Section 3.6(c), Peer Review (now section 3.6[g])	
Comment	One commentator suggested the peer reviewer should be a knowledgeable person and one who conducts the review in an objective way.
Response	The reviewers agree and revised the language to reflect this concept.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1 Communication and Disclosure (now section 4.2, Additional Disclosures)	
Comment	One commentator questioned why three sections of ASOP No. 41, *Actuarial Communications*, are singled out in 4.1.
Response	The reviewers note that these sections are standard in ASOPs, and therefore made no change.
4.2, Disclosures Concerning Pricing (now section 4.1, Actuarial Communications)	
Comment	One commentator suggested linking “profitability metrics” and “cost of risk” more closely.
Response	The reviewers agree and modified sections 3.5 and 4.2(d) (now section 4.1[f]) to better describe risk evaluation.
Comment	Several commentators expressed concern that the disclosure language was too broad, given a potentially diverse audience.
Response	The reviewers agree and modified language by including “consider the needs of the intended user.”
Comment	Several commentators requested more detail describing the actuarial report.
Response	The reviewers agree and added more items to disclose in any actuarial report concerning pricing, if practical and relevant.

Comment Response	Several commentators suggested disclosing the amount of risk involved and whether the analysis has revealed any significant risks to the company. The reviewers agree and modified sections 3.5 and 4.2(d) (now section 4.1[f]) to better describe risk evaluation.
Comment Response	One commentator suggested an emphasis on disclosing metrics not traditionally used in pricing. The reviewers believe that the language in 4.1(c) appropriately addresses the issue of disclosing metrics and therefore made no change.
Comment Response	One commentator questioned why an actuary would document how a profitability metric supports a principal's goals. The reviewers believe that the modified language in section 4.1(c) addresses the commentator's concern.