



ACTUARIAL STANDARDS BOARD

Actuarial Standard of Practice No. 30

Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking

**Developed by the
Task Force on Rate of Return of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
July 1997**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 148)

TABLE OF CONTENTS

Transmittal Memorandum

iv

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date	1
1.1 Purpose	1
1.2 Scope	1
1.3 Cross References	1
1.4 Effective Date	1
Section 2. Definitions	1
2.1 Capital	2
2.2 Contingency Provision	2
2.3 Cost of Capital	2
2.4 Insurance Cash Flows	2
2.5 Insurance Risk	2
2.6 Investment Income	2
2.7 Investment Income from Insurance Operations	2
2.8 Investment Risk	2
2.9 Leverage	2
2.10 Operating Profit	2
2.11 Rate	2
2.12 Total Return	2
2.13 Underwriting Expenses	2
2.14 Underwriting Profit	3
2.15 Underwriting Profit Provision	3
Section 3. Analysis of Issues and Recommended Practices	3
3.1 Estimating the Cost of Capital and the Underwriting Profit Provision	3
3.2 Basis for Cost of Capital Estimates	3
3.3 Estimates of Future Costs	3
3.4 Parameters of the Risk Transfer	3
3.5 Investment Income	3
3.6 Income Taxes	4
3.7 Contingency Provision	4
3.8 Use of Different Bases	5
3.9 Accounting Rules for Comparing the Cost of Capital	5
Section 4. Communications and Disclosures	5
4.1 Conflict with Law or Regulation	5
4.2 Documentation	5
4.3 Disclosures	5

APPENDIXES

Appendix 1—Background and Current Practices	6
Background	6
Historical Procedures	6
Historical Issues	6
Role of Capital	6
Role of the Underwriting Profit Provision	6
Role of the Contingency Provision	6
Current Practices	7
Estimating the Cost of Capital	7
Relating the Cost of Capital to the Underwriting Profit Provision	7
Developing and Evaluating a Contingency Provision	9
Appendix 2—Comments on the 1996 Second Exposure Draft and Task Force Responses	10

August 1997

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 30

This booklet contains the final version of Actuarial Standard of Practice (ASOP) No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*.

First and Second Exposure Drafts

The first draft of this standard was exposed for review in October 1994, with a comment deadline of March 15, 1995. Thirty-one comment letters were received. The second draft of this standard was exposed for review in August 1996, with a comment deadline of December 2, 1996. Ten comment letters were received on the second exposure draft. (For a copy of either exposure draft, please contact the ASB office.) The Task Force on Rate of Return of the ASB's Casualty Committee reviewed and carefully considered all comments received on both exposure drafts. As was the case after the first exposure, the task force revised the second exposure draft after participating in many conference calls and listening to comments made during question-and-answer sessions held at various Casualty Actuarial Society (CAS) meetings.

Substantive Issues

Following the first exposure draft, the task force received a number of comment letters regarding the discussion of rates versus prices. Although several changes were made in the second exposure draft to more clearly indicate that the proposed standard intended only to address the evaluation of costs (i.e., rates), some of the commentators' letters on the second exposure draft still expressed confusion on this point. In response, the task force further revised several sections to make clear that the standard does not address considerations such as marketing goals, competition, and legal restrictions that may affect price.

In addition to the "rates versus prices" issue, several commentators questioned whether the cost of capital is truly equivalent for stock, mutual, and other insurance organizations. After extensive discussion, the task force changed the language of the standard to focus the practitioner on assessing the cost of capital as an opportunity cost and to recognize that all risk transfers have an opportunity cost. The task force also combined section 3.8 with section 3.2 to indicate that the cost of capital may differ for various capital providers due to their differing risk characteristics,

and that such differences play a role in assessing the cost of capital for a specific capital provider. (For a detailed discussion of the comments and the task force's responses to such, please see appendix 2 of this standard.)

The task force is grateful to the many individuals who contributed written comments or participated in the numerous discussions of the proposed standard at CAS meetings. The task force believes that the final standard benefitted significantly from this professional debate.

The ASB voted in July 1997 to adopt the final standard.

Task Force on Rate of Return of the Casualty Committee

Mark Whitman, Chairperson

David Appel	Claus S. Metzner
Robert A. Bailey	Michael J. Miller
Robert P. Butsic	Richard G. Woll
Steven G. Lehmann	

Casualty Committee of the ASB

Michael A. LaMonica, Chairperson

Christopher S. Carlson	Karen F. Terry
Douglas J. Collins	Margaret W. Tiller
Anne Kelly	William J. VonSeggern
Steven G. Lehmann	Mark Whitman
Robert S. Miccolis	

Actuarial Standards Board

Richard S. Robertson, Chairperson

Phillip N. Ben-Zvi	Roland E. King
Harper L. Garrett Jr.	Daniel J. McCarthy
David G. Hartman	Alan J. Stonewall
Frank S. Irish	James R. Swenson

ACTUARIAL STANDARD OF PRACTICE NO. 30

TREATMENT OF PROFIT AND CONTINGENCY PROVISIONS AND THE COST OF CAPITAL IN PROPERTY/CASUALTY INSURANCE RATEMAKING

STANDARD OF PRACTICE

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

- 1.1 Purpose—According to the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* (hereafter the *Statement of Principles*) of the Casualty Actuarial Society, insurance rates should provide for the cost of capital through underwriting profit and contingency provisions. This standard of practice provides guidance to actuaries in estimating the cost of capital and evaluating underwriting profit and contingency provisions.
- 1.2 Scope—This standard of practice applies to all property/casualty insurance coverages. This standard also applies to property/casualty risk financing systems, such as self-insurance, that provide similar coverages. References in the standard to *risk transfer* should be interpreted to include risk financing systems that provide for risk retention in lieu of risk transfer. Further, as is true of the *Statement of Principles*, this standard is limited to defining a *rate* as the estimation of future *costs* and does not address other considerations that may affect a *price*, such as marketing goals, competition, and legal restrictions.
- If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 Effective Date—This standard will be effective with respect to work performed after December 1, 1997.

Section 2. Definitions

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

- 2.1 Capital—The funds intended to assure payment of obligations from insurance contracts, over and above those funds backing the liabilities.
- 2.2 Contingency Provision—A provision for the expected differences, if any, between the estimated costs and the average actual costs, that cannot be eliminated by changes in other components of the ratemaking process.
- 2.3 Cost of Capital—The rate of return that capital could be expected to earn in alternative investments of equivalent risk; also known as *opportunity cost*.
- 2.4 Insurance Cash Flows—Funds from premiums and miscellaneous (non-investment) income from insurance operations, and payments for losses, expenses, and policyholder dividends. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.5 Insurance Risk—The extent to which the level or timing of actual insurance cash flows is likely to differ from expected insurance cash flows.
- 2.6 Investment Income—Proceeds (other than the return of principal) derived from the investment of assets, minus investment expenses. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.7 Investment Income from Insurance Operations—The income associated with the investment of insurance cash flows. (This is sometimes referred to as *investment income on policyholder-supplied funds*.)
- 2.8 Investment Risk—The extent to which the level or timing of actual investment proceeds is likely to differ from what is expected.
- 2.9 Leverage—A measure of the relative amount of risk to which capital is exposed, typically expressed as the ratio of an exposure measure (such as premium or liabilities) to the capital amount.
- 2.10 Operating Profit—The sum of underwriting profit, miscellaneous (non-investment) income from insurance operations, and investment income from insurance operations. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.11 Rate—An estimate of the expected value of future costs.
- 2.12 Total Return—The sum of operating profit and investment income on capital, usually after income taxes, often expressed in percentage terms.
- 2.13 Underwriting Expenses—All expenses except losses, loss adjustment expenses, investment expenses, policyholder dividends, and income taxes.

- 2.14 Underwriting Profit—Premiums less losses, loss adjustment expenses, underwriting expenses, and policyholder dividends.
- 2.15 Underwriting Profit Provision—The provision for underwriting profit in the actuarially developed rate, typically expressed as a percentage of the rate.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Estimating the Cost of Capital and the Underwriting Profit Provision—Property/casualty insurance rates should provide for all expected costs, including an appropriate cost of capital associated with the specific risk transfer. This cost of capital can be provided for by estimating that cost and translating it into an underwriting profit provision, after taking leverage and investment income into account. Alternatively, the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital. The actuary may use any appropriate method, as long as such method is consistent with the considerations in this standard.

For historical and practical reasons, this standard separately discusses the underwriting profit provision, investment income from insurance operations, and investment income on capital. The actuary should keep in mind that evaluation of whether the cost of capital is appropriately recognized does not necessarily require these distinctions.

- 3.2 Basis for Cost of Capital Estimates—In estimating the cost of capital, the actuary should consider the relationship between risk and return. The methods used for estimating the cost of capital should reflect the risks involved in the risk transfer under consideration. These risks may include insurance, investment, inflation, and regulatory risks, as well as diversification, debt structure, leverage, reinsurance, market structure, and other appropriate aspects of the social, economic, and legal environments.

Thus, the cost of capital is likely to vary from one insurer to another. The actuary should recognize that the capital which is needed to support any risk transfer has an opportunity cost regardless of the source of capital or the structure of the insurer.

- 3.3 Estimates of Future Costs—Since all components of a rate should be estimates of future costs relating to the risk transfer during the prospective period of time to which the rate applies, capital costs, investment income, income taxes, cash flows, and leverage factors used in calculating the profit provision should all be based on expected future values.
- 3.4 Parameters of the Risk Transfer —The actuary should recognize that the cost of capital associated with an individual risk transfer may vary, based on the specific parameters of the transfer. To the extent that deductibles, dividend or return of premium plans, reinsurance, etc., affect the risk of the insurer, the cost of capital and the amount of capital needed to support the transaction may be affected.

- 3.5 Investment Income—There are two elements of investment income that the actuary

should consider: investment income from insurance operations and investment income on capital.

The actuary should assess the investment risk, since the amount and cost of capital should reflect investment risk as well as the risk associated with the insurance cash flows. Investment risk addresses the cost of default, reinvestment risk, and other investment uncertainties. Such risks can result in a significantly different yield than the stated yield rate.

Any of several general approaches may be used by the actuary to estimate investment income, as long as the assumptions are reasonable and appropriate. The investment yield rates used should be appropriate for the cash flow patterns associated with the coverages under consideration. If historical balance sheet and cash flow data are used to project investment income, the data should be adjusted to represent future investment income from the associated coverages.

The actuary may use any of a number of methods for recognizing investment income from insurance operations. Two such approaches are as follows:

- a. Methods that estimate investment income based on projected insurance cash flows. The insurance cash flows are projected for each future period, and the expected investment yield rate appropriate for each future period is applied to the insurance cash flow for that period. The investment yield rates should be appropriate for the cash flow patterns associated with the coverages under consideration.
- b. Methods that apply an expected investment yield rate to assets representing the liabilities for losses, loss adjustment expenses, and unearned premium net of agents' balances and prepaid expenses. If historic liability-to-premium relationships are used, they should be adjusted to reflect expected future relationships between liabilities and premiums. The actuary should also consider, for example, the effects of growth, changes in expected loss or expense patterns, and the effect of the delayed receipt of investment income. The investment yield rate selected should represent the expected investment yield for the insurer during the period the rates are expected to be in effect.

3.6 Income Taxes—To the extent income taxes are not included in the expense provision, the actuary should use provisions for expected income taxes that are consistent with the earnings expected from the insurance transaction being evaluated.

3.7 Contingency Provision—The actuary should include a contingency provision if the assumptions used in the ratemaking process produce cost estimates that are not expected to equal average actual costs, and if this difference cannot be eliminated by changes in other components of the ratemaking process.

While the estimated costs are intended to equal the average actual costs over time, differences between the estimated and actual costs of the risk transfer are to be expected in any given year. If a difference persists, the difference should be reflected in the ratemaking calculations as a contingency provision. The contingency provision is not intended to measure the variability of results and, as such, is not expected to be earned as profit.

- 3.8 Use of Different Bases—The cost of capital can be expressed as a percentage of capital, a percentage of assets, a percentage of premium, or other appropriate base. The actuary may choose any such appropriate base. Actuaries may use different bases, which can be converted from one to another. Regardless of which base is used to reflect the cost of capital, the actuary should clearly identify the base used and should document the relevant assumptions.
- 3.9 Accounting Rules for Comparing the Cost of Capital—The accounting rules employed within any model should be internally consistent. When comparing one industry with another, the actuary should make any necessary adjustments so that costs of capital of industries with different accounting methods can be properly compared.

Section 4. Communications and Disclosures

- 4.1 Conflict with Law or Regulation—If a law or regulation conflicts with the provisions of this standard, the actuary should develop a rate in accordance with the law or regulation, and disclose any material difference between the rate so developed and the actuarially determined rate to the client or employer.
- 4.2 Documentation—The actuary should be guided by the provisions of ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*.
- 4.3 Disclosures—The actuary should include the following, as applicable, in an actuarial communication:
- a. in addition to the disclosure covered in section 4.1, the disclosure in ASOP No. 41, *Actuarial Communications*, 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, but is not part of the standard of practice.

Background

Historical Procedures—Until the 1970s, it was common practice to include in rate calculations a standard underwriting profit and contingency provision of 2.5% for workers compensation insurance and 5% for other property/casualty lines of insurance (6% for some property lines). These provisions did not explicitly reflect investment income, since there was general agreement at the time that these standard provisions implicitly reflected investment income and insurance risk in a reasonable fashion. However, economic and structural changes in the insurance industry over time began to lead to the explicit recognition of investment income in calculating insurance rates.

Historical Issues—A number of issues have historically accompanied the development and evaluation of the underwriting profit and contingency provisions: (1) how to measure risk and reflect it in the underwriting profit provision, (2) how or whether to measure any systematic variation from expected costs and reflect it in the contingency provision, (3) which accounting rules should be used to measure insurance returns and to compare them with returns in other industries, (4) how or whether to allocate investment income and capital, and (5) how to relate underwriting profit provisions in rates to the cost of capital.

Role of Capital—Capital plays several roles in an insurance transaction, including providing the initial investment in physical plant and equipment and providing working capital. However, the primary role is to assure payment of obligations from insurance contracts, over and above those funds backing the liabilities.

Capital has a value and its use entails a cost. The cost is the expected return the capital could earn in alternative investments of equivalent risk. Judicial decisions dealing with the cost of capital and profit provisions (see, e.g., *Federal Power Commission v. Hope Natural Gas*, 320 U.S. 591 (1944)) provide background and definitions for the determination of the cost of capital in a regulatory setting.

Role of the Underwriting Profit Provision—The underwriting profit provision, together with all other cost and revenue components as defined in section 2.12, provides the risk taker with an expected total return to cover the cost of capital.

Role of the Contingency Provision—A common assumption underlying property/casualty insurance ratemaking is that the expected costs included in the rate calculations will equal the actual costs over the long run. If not, and the expected difference cannot be explicitly attributed

to a specific component of the rate (and thereby eliminated), then this difference is incorporated in the ratemaking process by including a contingency provision.

Current Practices

A method commonly used to develop or test the underwriting profit provision in insurance rates is to estimate the cost of capital and translate that cost into an underwriting profit provision. Some methods currently used to estimate the cost of capital, and financial models to relate that cost to the underwriting profit provision, are described below.

Underwriting profit provisions can also be developed using models that do not directly relate the cost of capital to the underwriting profit provision. Some of these models are also described below.

Inclusion of a particular model in this appendix should not be interpreted as an endorsement, but rather a recognition that such a model is used. Some applications of these models may not be consistent with section 3 of this standard.

Estimating the Cost of Capital—Several techniques are used to estimate the cost of capital. These include, but are not limited to, the following:

1. **Comparable Earnings Model**—The comparable earnings model is used to analyze historical returns on equity for entities or industries of comparable risk. The cost of capital is related to the average rate of return over a historical period.
2. **Discounted Cash Flow Model**—One form of the discounted cash flow (DCF) model, the dividend discount model, is used to analyze the current prices and dividend levels of publicly traded securities that pay dividends. The cost of capital is calculated as the sum of the expected first-year dividend yield plus the expected annual growth rate in dividends.
3. **Risk Premium Model**—The risk premium model is used to analyze the spread in returns for investments of different risk. The cost of capital is estimated as the sum of the expected return on a reference investment plus a margin to reflect relative risk. One widely used form of risk premium analysis is known as the capital asset pricing model (CAPM), in which the reference security is a risk free Treasury security, and the risk margin is determined using a measure of risk known as *beta*, defined as the covariance of an investment's return with returns in capital markets as a whole.

Relating the Cost of Capital to the Underwriting Profit Provision—This section describes various models currently used regarding the relation of the cost of capital to the underwriting profit provision.

1. Models that directly develop an underwriting profit provision are as follows:

- a. Net Present Value Model—The net present value (NPV) model is used to discount the estimated net cash flow to the capital provider at a rate equal to the cost of capital. For the purpose of these calculations, *net cash flow* is defined as the residual amounts of cash that flow to and from the equity account, after all policy obligations are met. The net cash flow reflects the timing of each of the individual cash flows, including the commitment and release of capital in support of the insurance transaction. The internal rate of return (IRR) model, a specific application of the general NPV model, uses an iteration technique to calculate the rate(s) of return that will set the net present value of a risk transfer's cash inflows and outflows equal to zero.
 - b. Other Discounting Models—Other discounting models can be used to estimate the present value of the individual cash flows from the insurance transaction. The present value of the premium and miscellaneous (non-investment) income, before profit, is set equal to the present value of the associated losses, expenses, policyholder dividends, and income taxes. The present values are estimated using appropriate prospective investment yield rates. A margin can be added to the present value of the premium so that the margin plus the expected investment income on capital generate a post-tax return that, when divided by the required capital, equals the cost of capital.
 - c. Total Financial Needs Model—Total financial needs models are used to develop the underwriting profit provision such that the sum of underwriting profit, miscellaneous (non-investment) income, investment income from insurance operations, and investment income on capital, after income taxes, will equal the cost of capital. Each of these components is explicitly quantified.
2. Models that do not directly relate the cost of capital to the underwriting profit provision are as follows:
- a. State X Model—The State X model (originally appearing in some Insurance Services Office, Inc. rate filings as the *State X method*) is used to estimate the investment income from insurance operations. The method does not, in itself, allow for development of the total return or of a profit provision; it is used merely to develop one component of the total rate of return—the estimated investment income from insurance operations.
 - b. Risk Adjusted Net Present Value Model—The risk adjusted net present value (RANPV) model is used to estimate the risk adjusted present value of the insurance cash flows. Each of the flows is analyzed for its specific risk, and the otherwise attainable prospective investment yield rate is adjusted by the risk component prior to calculating the present value. Using the RANPV model, one calculates the premium directly, so that the risk adjusted present value of the premium and miscellaneous (non-investment) income equals the risk adjusted present value of the losses, expenses, policyholder dividends, and associated in-

come taxes. The expected underwriting profit in the premium can be derived from the RANPV model by summing all components using their undiscounted values.

- c. Growth Requirement Model—The growth requirement model is used to set the level of retained earnings based on the expected future growth rate of the entity or industry.
- d. Additional Models—Other models that do not directly relate the cost of capital to the underwriting profit provision include options pricing models, arbitrage pricing models, models based on ruin theory, models based on utility theory, and shareholder value models.

Developing and Evaluating a Contingency Provision—Contingency provisions have been developed in practice using methods that measure differences between expected and actual costs.

Appendix 2

Comments on the 1996 Second Exposure Draft and Task Force Responses

The second draft of this standard was exposed for review in August 1996, with a comment deadline of December 2, 1996. Ten comment letters were received and reviewed carefully by the Task Force on Rate of Return of the ASB's Casualty Committee. Summarized below are the significant issues and questions contained in the comment letters, printed in lightface. The task force's responses appear in **boldface**.

General Observations

Of the ten comment letters received on the second exposure draft, most of the comments were favorable. Even those commentators who provided suggestions for changes seemed pleased with the overall direction the task force took in developing the second exposure draft. Samples of such satisfaction were found in comments such as follows: "I think this is an example of the type of standards that the profession should be developing," "[t]his draft represents an overall improvement over the initial exposure draft," and "the [task force] has taken great pains in carefully defining many critical concepts that our standards omit today." Most of the suggestions for revising text were to further clarify concepts already present within the second exposure draft.

However, it was also evident from the comments that some confusion still exists surrounding the "rate versus price" issue. For example, one commentator believes that the standard should not limit actuarial practice in setting profit margins that are either explicit or implicit in actual prices in the marketplace. The commentator further raises potential legal issues were the actuarial profession to engage in limiting actuarial practice in this area. **The task force agrees with the commentator that the standard does not apply to final (market) prices— the standard is entirely focused on the evaluation of costs. In fact, the task force has consistently and consciously focused on costs (not on prices) in its deliberations in consideration of the legal environment and has obtained competent legal advice as appropriate.**

The commentator also questions whether a consensus on acceptable actuarial practice currently exists in this area. **The task force believes such consensus exists and is embodied in the standard. The current syllabus upon which actuarial examinations are based is one indicator that a consensus exists. The extensive presentations and discussions of the proposed standard at Casualty Actuarial Society (CAS) meetings and seminars is another indication that such a consensus exists.**

Section 1. Purpose, Scope, and Effective Date

Section 1.1, Purpose—One commentator thought that the use of the phrase *include the cost of capital* in the first sentence of this section implied that the *Statement of Principles Regarding*

Property and Casualty Insurance Ratemaking of the CAS requires that an explicit provision for the cost of capital be included in rates. **The task force revised the text by replacing *include* with *provide for* to more closely match its understanding of the *Statement of Principles*.**

Section 1.2, Scope—**The task force revised this section to more clearly distinguish between *rate* and *price*. In addition, the task force added language to clarify that the standard applies to property/casualty risk financing systems, such as self-insurance.**

Section 2. Definitions

Section 2.2, Contingency Provision—One commentator suggested clarifying the language in this section to note that, in addition to quantification, a contingency provision might be provided for in other ways. **The task force reworded the section, making it more consistent with section 3.7.** Another commentator questioned the definition's lack of consideration of the potential variance in results. **The task force did not expand the definition, since it believes that the profit provision more appropriately should reflect variance in results.**

Section 2.3, Cost of Capital—Two commentators suggested changes. One suggested inclusion of specific components in the definition; the second suggested that *cost of capital* be defined as the *cost of capital desired by the capital provider*. **The task force did not modify the definition, as section 3.2 references a number of influences on the cost of capital. The task force did, however, revise section 3.2 by including additional explanatory language and believes these revisions to section 3.2 address the concerns raised by the second commentator.**

Section 2.4, Insurance Cash Flows—One commentator suggested changing the title of this section to Net Insurance Cash Flows, while another suggested referencing the treatment of taxes directly rather than indirectly. **The task force modified the language to clarify that miscellaneous (non-investment) income is from insurance operations. The revised section 2.4 also presents the components of insurance cash flow as items in a list to avoid the appearance of a calculation and directly references the treatment of income taxes.**

Section 2.6, Investment Income—Two commentators suggested clarifying the language with respect to the treatment of income taxes. **The task force adopted the suggestions and also adopted consistent language in sections 2.4 and 2.10.**

Section 2.8, Investment Risk—Two commentators pointed out an inconsistency in the usage of the terms *proceeds* and *income* in other definitions. **The task force clarified the text by using the term *proceeds* consistently.**

Section 2.10, Operating Profit, and Section 2.13, Underwriting Profit (now sections 2.10, Operating Profit; 2.13, Underwriting Expenses; and 2.14, Underwriting Profit)—Three commentators questioned the usage of the terms included (or excluded) in these definitions. There also appeared to be some confusion as to which expense items were included in the term *expenses*. **After careful review and discussion of the comments, the task force made changes in these definitions and added a new section (2.13, Underwriting Expenses). The intent of**

the commentators was incorporated in the three definitions, and the task force believes the revisions achieve the clarity and consistency suggested. These definitions are consistent with the categories used in the underwriting and investment exhibit statement of income in the National Association of Insurers Commissioners (NAIC) annual statement blank for property and casualty insurers. Specifically, the definition of *underwriting profit* is consistent with the definition of *net underwriting gain (or loss)* from the NAIC statement blank.

Section 2.12, Total Return—One commentator suggested that the definition include some examples of commonly used bases of total return. **The task force did not make any changes, since it believes the definition is clear as stated.**

Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Estimating the Cost of Capital and the Underwriting Profit Provision—One commentator wanted to change the beginning of the third sentence of this section from *Similarly* to *Alternatively*. **The task force made the change.**

Section 3.2, Basis for Cost of Capital Estimates—One commentator suggested that in the second sentence, the phrase *business activity* be changed to *risk transfer*. **The task force made this change.** Another commentator suggested adding *currency* to the list of risks included and noted that the list could be construed as “limiting or as a checklist of specific requirements.” **The task force disagrees. Since the types of risk to consider are many and diverse, the task force believes that it is necessary to provide a reasonable set of examples. The language of the standard (i.e., *These risks may include*) clearly indicates that the list is not exhaustive.**

Another commentator suggested that the reference to the *Hope Natural Gas* case be placed in the background section, i.e., in appendix 1. **The task force agrees and moved the reference accordingly (see the section titled, Role of Capital).**

Note as well that a new paragraph was added to section 3.2 (see the discussion below regarding comments received on section 3.8).

Section 3.3, Estimates of Future Costs—Several commentators disagreed that capital costs should be based upon expected future values, since the cost is dependent on the risk or variability to which it is exposed. **The task force agrees that risk or variability is an element of capital costs. Risk or variability is appropriately considered in deriving the expected value; therefore, no change in the language used is necessary.**

Section 3.4, Risk Sharing (now titled Parameters of the Risk Transfer)—One commentator suggested that the title of this section should be changed, noting that insurance is a risk transfer device, and not a risk sharing device. This commentator also suggested alternative wording to clarify the roles of the two main parties to the insurance transaction: the insured and the insurer. **The task force agrees with the commentator and rewrote the section to indicate that the cost of capital may vary with the specific parameters of the risk transfer.**

Another commentator noted that deductibles, limits, etc., affect the *structure* of the risk transfer rather than the parties involved. **The task force agrees that these factors affect the structure of the risk transfer and believes that the revised language addresses this concern.**

Section 3.5, Investment Income—One commentator suggested a revised second sentence in paragraph two as follows: *Investment risk includes the estimated cost of default and reinvestment risk on the assets associated with the proposed transaction, since such costs can result in a significantly different yield than the stated yield rate.* **The task force agrees with the commentator and changed the text to be substantially similar to the suggested revision.**

This commentator also suggested revising paragraph (b) to add *retention of business* as a subject for the actuary's consideration. **The task force agrees that retention of business may be a consideration, but the standard is not intended to provide an exhaustive list of considerations. The phrase *for example* was added to clarify that the section does not provide a complete list.**

Section 3.6, Income Taxes—One commentator suggested adding the following sentence: *The income tax position of the risk assuming entity, such as tax loss carry forwards, and alternative minimum taxes, may also be relevant to accepting or rejecting the proposed risk transfer.* **The task force disagrees with this suggestion, because it believes this suggestion addresses considerations that are not relevant to the cash flows for the risks being transferred. Therefore, no change was made.**

Section 3.7, Contingency Provision—One commentator suggested adding a sentence which would state that the actuary need not explicitly identify the contingency provision separate from the profit provision, and that the contingency provision is not intended as a risk margin for catastrophic events. **The task force believes the definition of *contingency provision* makes it clear that it is *not* a risk margin for catastrophic events. The task force disagrees that a contingency provision can implicitly be combined with a profit provision, because the two provisions are distinctly different, both subject to explicit determination.**

Another commentator suggested that the use and meaning of a contingency provision was unclear and needed to be clarified in the standard. **The task force believes that, with the clarifying changes made to the second paragraph of this section, the standard adequately explains the use of the contingency provision as a correction factor when the ratemaking process has produced in the past, and is expected to produce in the future, cost estimates not equal to average actual costs.**

Section 3.8, Structure of Insurer—This section of the second exposure draft addressed the structure of the insurer, such as stock, mutual, etc. Several commentators expressed concern that the requirements of the capital providers should be taken into account when considering the cost of the insurance product, and that non-stock organizations might have different requirements than stock companies. One commentator specifically suggested making a greater distinction between the cost of capital and the desired return on capital. **The task force rewrote the text of this section to place greater emphasis on the economic concept of *opportunity cost*, which**

refers specifically to the value of capital in its next best alternative use. Under this definition, the proper cost of capital is the return that the capital could earn in an alternative investment of equivalent risk. The task force does not believe that this differs depending on the ownership structure (i.e., stock, mutual, or other) of the insurer per se. However, as discussed in section 3.4, the actuary's estimate of the cost of capital should reflect characteristics of the risk transfer that may arise due to ownership structure (such as, for example, the availability of policyholder dividends). Note, in addition, that the text of this section was moved to section 3.2 in order to enhance clarity.

One commentator who questioned section 3.8 also wished to add to the standard a new section, which would read as follows:

Several of the models used for estimating the underwriting profit provision also permit the actuary to rank potential risk transfer undertakings. An actuary should be prepared to rank the risk versus the reward (the total return, from underwriting and from investment income) for various scenarios involving the allocation of capital towards a certain line of insurance or a specific product.

The commentator's rationale for this suggestion is that “the actuary of the future may often be called upon to estimate not only the reward (the total return from allocating capital towards a certain line of insurance or a specific product), and not only the associated risk, but also to rank several risk/reward scenarios for a client or employer.” **The task force agrees that an actuary can be asked to estimate and rank various risk/reward scenarios for a client or an employer. However, the task force thinks that while this is implicit in the role an actuary plays, the matter is beyond the scope of the standard.**

Appendix 1—Background and Current Practices

Role of the Underwriting Profit Provision—One commentator found the references to *all other cost and revenue components* too vague. **The task force agrees that the reference is not precise, but the next clause of the sentence refers to *total [rate of] return*, which is precisely defined in section 2.12. Hence, no change was made.**

Estimating the Cost of Capital—One commentator suggested adding a parenthetical phrase, (*generally a risk free investment*), to the description of the risk premium model (in the second sentence of item (3), after the phrase, *reference investment*). **The task force disagrees with this change. In the typical (perhaps the most common) implementation of the risk premium method, the reference security is a long-term utility bond, which is not risk free. Thus, the second sentence was left unchanged. However, the task force did modify the next sentence as follows: *One widely used form of risk premium analysis is known as the capital asset pricing model (CAPM), in which the reference security is a risk free Treasury security, and the risk margin is determined....* This correctly identifies that in the CAPM variant of risk premium analysis, the reference security is risk free.**

Relating the Cost of Capital to the Underwriting Profit Provision—One commentator expressed concern about the use of the singular *rate* in the last sentence of the section that discusses the net present value model, and another suggested alternative wording for clarity, in the definition of the IRR model. **The task force changed *rate* to *rate(s)*, and adopted the proposed wording to note that the IRR calculates the rate(s) of return by setting the net present value of a risk transfer's cash inflows and outflows equal to zero.**

The task force thanks everyone who took the time and made the effort to write comment letters. The input was helpful in developing the final standard.