ACTUARIAL STANDARDS BOARD

Actuarial Standard
of Practice
No. 19

Actuarial Appraisals

Developed by the
Actuarial Appraisals Task Force of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
October 1991

(Doc. No. 034)

T A B L E O F C O N T E N T S

January 1992

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board, and Other Persons Interested in Actuarial Appraisals

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 19: *Actuarial Appraisals*

Enclosed is the final version of this standard, adopted by the ASB on October 10, 1991. The standard was twice exposed to the profession, and a total of sixty-two comment letters, many of them lengthy, were received. Both exposure drafts, and the final version, were developed by the ASB's Actuarial Appraisal Task Force, which was formed in May 1989 to prepare a standard in this area. The task force's mission was defined as follows:

> To develop a standard of practice for actuarial appraisals which provides consistency between life insurance and casualty insurance situations. The standard should provide guidance to developers and users of such actuarial reports, leaving room for variations in those items that differ between life and casualty work. Thus, this standard will deal with those issues that are universal to appraisals of insurers and other related organizations.

The task force recognized its responsibilities to provide consistent guidance to life and casualty actuaries working in the identified subject areas, as well as to maintain a high level of credibility for such actuaries when they work in the areas of actuarial appraisals and mergers/acquisitions (M&A).

The task force members include life and casualty actuarial practitioners in actuarial, accounting, intermediary and insurance firms, as well as two investment bankers with substantial insurance M&A experience.

In its initial meetings, the task force addressed a number of critical issues, including:

1. How should the standard deal with the evolving research, technology, and literature in many areas (e.g., stochastic processes)?

2. How should the standard reflect (appropriate) variations in perspectives on value?

3. What is the appropriate basis for earnings in an actuarial appraisal?

4. How should the actuary deal with the cost of capital, varying buyer perspectives, and different client needs?

5. Is there such a thing as one intrinsic value for an insurance company?

6. How should the actuary deal with oral (vs. written) communications?

Actuarial appraisal assignments are completed for a wide range of users with varying objectives and needs. The standard needs to reflect these realities in order to be of maximum value to our practitioners and the industries we serve. Users include management groups, buyers, sellers, advisors, intermediaries, investment bankers, investors, analysts, regulators, and the Internal Revenue Service.

The actuary developing an actuarial appraisal should be aware of and follow this standard. Since many users will not be aware of this standard, the actuary is responsible for making clear the nature and range of intended use of the actuarial appraisal to anyone who is exposed to the work. For example, an actuarial study which, from its form or conclusions, might be reasonably construed by a user as an actuarial appraisal, but is not, should contain an admonition clearly pointing out this fact. A more complex situation might be illustrated by a study completed by a pricing actuary or a valuation actuary which could, in certain cases, appear to be an actuarial appraisal although it was never intended to be considered as such.

Often, this work must be done under extreme time pressure and in the absence of complete data. In order to frame properly the project approach and documentation, the practicing actuary needs to address carefully the following questions:

1. What is the context of the assignment?

2. What are the needs, areas of expertise, and expectations of the user?

3. Are there users of the report beyond the client?

4. How much will the user rely on the work product of the actuary?

5. Will the actuary be functioning as an advocate?

6. How much time was provided to complete the assignment?

7. How much access to data was provided?

8. What assumptions are appropriate?

9. What methods are appropriate?

Comments on the First Exposure Draft

The first draft of the standard was exposed for review in a document dated April 1990, with a comment deadline of September 1, 1990. Thirty-eight letters of comment were received. After reviewing these, the task force identified five primary areas where suggestions were made:

1. Improving the applicability of the standard to the property and casualty (P/C) business. The responses identified a number of differences in perspective and approach between life and P/C appraisals. The task force's objective was to have the appraisal standard apply to both life and P/C insurance. Hence, a subgroup of the task force, headed by P/C actuaries, reviewed and revised significant portions of the text.

2. Clarifying the appropriate earnings bases to be used in actuarial appraisals. The task force tightened the language related to earnings basis, reconfirming that statutory accounting is the appropriate basis for developing an actuarial appraisal.

3. Tightening and clarifying recommended practices for valuations of existing business in tax liquidations. There was a difference in viewpoint as to how the requirements of tax accounting should be reflected in the determination of value. The subsection on Tax Liquidations (5.10) was modified to allow for this difference. However, it was stated that the valuation of existing business for tax purposes "is an actuarial appraisal and would embody the same methodologies and assumptions prescribed in this standard." Note that the actuarial appraisal is an important element in estimating fair market value in tax appraisal and other situations.

4. Clarifying the application of the standard to health insurance, reinsurance, and other specialty lines of business. Several modifications were made to the original draft as a result of suggestions received. An example was the development of the new subsection 5.6.3 (Premium Changes).

5. Improving the style and structure of the standard generally. Substantial editing was done to tighten the language and structure of the original exposure draft.

All suggestions were considered carefully and many were directly reflected in the second exposure draft. The task force believed the revised document was substantially improved as a result. At the same time, the changes made warranted a second exposure.

At the direction of the ASB, the second draft was exposed in January 1991 with a comment deadline of April 30. Twenty-four letters of comment were received.

Comments on the Second Exposure Draft, and Task Force Responses

The task force has summarized below what it considered significant issues and questions contained in the comment letters. The task force's responses appear in **boldface**.

Need for the Standard

Several respondents objected to the promulgation of the standard: there was no demonstrated need for it, there were no real situations where the standard would improve the importance, credibility, or correctness of actuarial appraisals. And one reader pointed out that failing to consider an element required by the standard could expose an actuary to criticism. **The evidence leading to the creation of an actuarial appraisal task force by the Actuarial Standards Board suggested that there is a need for a standard in this area. The members of the task force, and the exposure draft commentators, represent a broad cross section of those who perform and use actuarial appraisals; the great majority of these demonstrated a belief that there is a clear need for the standard. On the last point raised, the task force agrees that an actuary failing to consider an element required by the standard could be subject to criticism, or even discipline.**

Name of the Work Product

One respondent suggested substituting the term "actuarial valuation" for "actuarial appraisal." **Within the insurance and actuarial communities, the concept of actuarial appraisal connotes the development of the underlying economic value.**

Discounting Rate

It was suggested that actuaries should give clients more advice and information on the discounting rate, especially the reason for the choice of rate, how the rate relates to underlying investment and reinvestment assumptions, how it relates to risk, and so on. **The task force believes that subsections 2.7, 5.2.2, and 6.1.10 provide sufficient guidance for minimum standards on the choice and disclosure of discounting rates.**

Cash Flows or GAAP Earnings vs. Statutory Earnings

Several respondents repeated earlier suggestions for permitting or requiring earnings on bases other than statutory earnings, e.g., GAAP earnings, cash flows distributable to shareholders, or other alternatives. **The task force considered these alternatives in a number of its earlier discussions, and reviewed its thinking in the light of the latest comments. It again concluded that statutory earnings are the appropriate minimum standard. Subsection 5.2.1 of the standard details the reasoning behind this choice. The actuary is free to apply a more stringent standard as circumstances dictate.**

Market Dynamics

One respondent suggested that appraisals should use assumptions that reflect the dynamics of the markets served by the company. **The task force strengthened the wording in the standard on this issue (see subsection 5.6).**

Adjusted Net Worth

The adjusted net worth represents a stream of earnings just like the value of existing or future business. Hence it will have different values at different discounting rates, unlike what is often displayed in actuarial appraisal reports. **The task force's response is that the actuary should disclose the basis used to value adjusted net worth and any provision for cost of capital (see subsection 6.1.9). Depending on the circumstances surrounding the appraisal, the actuary *may* value adjusted net worth as a discounted stream of future earnings, using either the assumed rate of investment return or a risk-adjusted rate of return. The actuarial report should make clear the meaning of each number presented.**

"Laundry Lists"

The comment was made that "laundry lists" such as the lists in subsections 5.6.10 and 6.1.1 through 6.1.9 are unnecessary in standards. **Subsection 5.6.10 was deleted from the text in recognition of this comment, but the list is reproduced here with the understanding that the actuary should consider items such as the following in selecting assumptions:**

a. **policyholder dividends**
b. **asset securitization programs**
c. **premium-collection patterns on short-term contracts**
d. **potential future premiums on retrospectively rated contracts**
e. **claim payment patterns**
f. **market value of nonadmitted assets or the emergence of nonadmitted assets into earnings**
g. **the cost of involuntary insurance programs such as those applicable to workers compensation and automobile insurance**
h. **the future emergence of environmental liability costs for casualty insurers, epidemic-related claims for life and health insurers, and other special claims situations**
i. **foreign-currency exchange issues**
j. **guarantee fund obligations**
k. **projected future earnings on riders**
l. **the implications of assessable policies or possible restrictions on the amount of profits arising from participating policies which can inure to the benefit of shareholders of mixed companies**
m. **the effect of policy loan utilization**
n. **other nonrequired liabilities of an actuarial nature, such as post-retirement health care benefits and unfunded pension obligations**

With regard to subsections 6.1.1 through 6.1.9, the task force believed it desirable to specify within the standard certain key items that should be included in an actuarial appraisal report, since many users of such reports are not actuaries and it is important to communicate all the information called for in subsections 6.1.1–6.1.9 to these users. Also, many actuaries have limited experience in performing actuarial appraisals, and the same information would be useful to them. The task force believes that many reports produced do not contain all the information called for in these paragraphs.

Stochastic Analysis

Two respondents took exception to an apparent suggestion in subsection 5.6 that stochastic analysis is needed in many areas, pointing out that this is only one of a number of tools an actuary could use; also, little guidance was provided as to when to use it. **The task force believes that traditional deterministic processes are inadequate in some areas and that the practitioner should apply stochastic analysis when it is deemed material to the appraisal.**

Events after the Appraisal Date

A writer suggested that the actuary should comment on material events that have (or have not) happened after the appraisal date and before the issuance of the report. **Because of the detailed analysis inherent in actuarial appraisals, determining what is material might require extensive work. Much as in the appraisal of a house or a car, it is difficult to establish standards for what may have happened after one has “seen” the entity.**

Treatment of Assets

Several reviewers expressed concern that the proposed standard did not deal adequately with assets. In particular, issues raised were: should all marketable assets be revalued to market, should default costs be required to be addressed by the actuary, and should future increases in the mandatory securities valuation reserve (MSVR) be deducted from projected statutory earnings? **The task force revised subsection 5.6.1 to call for consideration of the financial effect of asset defaults in projecting investment rates of return. Adjustment of marketable assets to a market valuation basis was not deemed necessary in the standard, which contemplates a statutory projection—usually in a going-concern context. Once default costs have been considered, the adjustment of assets to market in conjunction with a concurrent selection of appropriate market rates of return should produce values consistent with statutory-basis projections. The task force believed that future increases in MSVR need not be deducted from projected statutory earnings, since MSVR is being treated as allocated surplus in the context of this standard.**

Made-to-Order Results?

One reader expressed the view that the third paragraph of subsection 5.2 perpetuates the concept that the actuary will supply any answer that the client or primary user desires. **The task force believed that it is crucial to recognize that circumstances, needs, and perspectives do vary. However, recognition of this does not constitute a license to supply “any answer.” The**

actuary is required by several explicit provisions of the standard to comment on the reasonableness of the assumptions used.

Written Reports

One reader asked if there can be an actuarial appraisal without a written report. **The task force intended that a written report would be preferable for most actuarial appraisals. An actuarial appraisal might be concluded with an oral report, but if so, the task force intended that the oral report would include all the applicable elements of section 6 of the standard. Otherwise, disclosure of deviation from the standard must be made under the terms of subsection 6.4**.

Actuarial Appraisals of Other Financial Institutions

The suggestion was made that financial institutions other than insurance companies should not be precluded from the standard. **The task force meant the standard to apply only to insurance and insurance-like situations and not to the broader universe of financial institutions.**

"Cookbook Approach"

Several commentators said the standard calls for "a cookbook approach," which should always be avoided. **The standard has been revisited to eliminate some elements that some considered to be of this nature.**

"More Detailed Requirements Are Needed"

A commentator wanted the standard to contain more detailed requirements on model building and validation. **The task force believed it was necessary to strike a balance between the inclusion of sufficiently explicit descriptions of what should be considered in performing an actuarial appraisal, and the avoidance of discussions not sufficiently general to be applicable to all situations. Some commentators viewed the standard as overly explicit. Probably no one approach will be totally satisfactory to all. The task force believes that the standard in its final form strikes a reasonable balance.**

Opinion and Report

A commentator said that what distinguishes an actuarial opinion from an actuarial report should be addressed before the adoption of this standard. **The task force changed the wording in subsection 6.1 so that an *actuarial opinion* is no longer defined as different from an *actuarial report*.**

Specific Stream of Earnings

A reviewer asked, should the reader infer that any valuation which does not project a specific stream of statutory distributable earnings and then produce a value by discounting that stream at a specific, risk-adjusted discounting rate, is not covered by the standard? **The task force responded that the standard is meant to apply to calculations involving either an explicit or implicit approach of projecting statutory earnings and then discounting. In addition, much of the standard may have relevance for other assignments that are not specifically covered by the standard.**

New-Business Capacity

A reader asked why should the appraisal of new-business production capacity be limited to business reasonably attributable to the company structure as it existed on the appraisal date. **The task force responded by changing the wording in subsection 5.6.9 to allow the flexibility to use varying assumptions regarding new-business production, as long as the relationship of the new-business assumptions to the company's structure as of the appraisal date is disclosed.**

Different Rate of Discounting

A commentator said the standard should provide for a different rate of discounting, depending on the nature of future obligations and cash flows. **The task force responded that the standard already accomplishes this.**

IRC Section 338 Appraisals

Some respondents expressed the view that the standard permitted the use of either statutory earnings or tax-basis earnings for purposes of appraisals done in connection with Section 338 of the Internal Revenue Code (IRC). One respondent said the standard was too vague in regard to the proper earnings basis; it did not offer sufficient guidance. One alternative suggested was that the standard exclude appraisals done in connection with IRC Section 338 from the definition of an actuarial appraisal. **The task force concluded that an appraisal done in connection with a Section 338 election was an actuarial appraisal which should be under the purview of the standard, because such an appraisal embodies many of the same methods and assumptions used in the valuation of an insurance company. The task force has purposely not mandated a specific methodology to compute the tax benefits attributable to an IRC Section 338 election. Rather, the language adopted indicates that statutory and tax-basis items may**

differ, and leeway is allowed in the choice of methodologies to reflect that in the actuarial appraisal.

Appraised Value and Sale Price

A reviewer suggested adding a new paragraph saying that "an actuarial appraisal done for purposes of purchasing or selling a business should include a statement that the calculated value(s) should not be considered the sole determinant of sale price." **The task force believes that the standard already addresses this point in subsection 5.2, where it is said that the actuarial appraisal value "does not necessarily define an appropriate sale price."**

Client's Assumptions

A reviewer commented that when actuaries are requested to use a set of assumptions by a client, such assumptions should be disclosed and evaluated. **The task force recognized this point in modifying the wording of subsection 6.1.**

Confidentiality of Information

A reviewer suggested adding a statement cautioning the actuary to use utmost discretion and be guided by the highest standards of professional integrity in handling confidential or proprietary information gathered in the course of an appraisal. **The task force noted that Precept 10 of the AAA Code of Professional Conduct (effective January 1, 1992) covered this issue.**

The revised version from the second exposure was adopted by the ASB at its October 1991 meeting, effective for appraisal reports dated on or after January 10, 1992.

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ACTUARIAL STANDARD OF PRACTICE NO. 19

ACTUARIAL APPRAISALS

PREAMBLE

Section 1. Purpose, Scope, and Effective Date

1.1 Purpose—This actuarial standard of practice sets out the considerations that bear on the actuary's professional work in performing actuarial appraisals. The standard prescribes appropriate procedures for performing actuarial appraisals and for documenting assumptions and methodologies in an actuarial report.

1.2 Scope—Actuarial appraisals are developed for use in many areas, including (but not limited to) facilitating the financial management of an insurance company; estimating the value in the acquisition or sale of an insurance company, insurance marketing organization, or block of insurance contracts, and determining the value of insurance companies, insurance marketing organizations, or blocks of insurance contracts for tax purposes. This standard applies to appraisals that are performed on entire insurance companies, on segments of insurance companies (for example, the group insurance line of business), or on existing or potential future blocks of insurance contracts (or both).

Elements of the actuarial appraisal generally involve actuarial assumptions about the future growth and experience of the evaluated business; making financial projections of future cash flows, earnings, taxes, assets, and liabilities, and selecting risk-adjusted rates of return for computing the present value of these projected quantities. In the actuarial appraisal of an insurance company, the reported capital and surplus of the company will be evaluated as a part of this process. Each of these elements is discussed in this standard.

An actuarial study should indicate its nature and intended use. Where an actuarial study could reasonably be construed, on the basis of its form or conclusions, to be an actuarial appraisal but it is not, a clear statement and explanation of this fact should be provided.

1.3 Effective Date—This standard is effective January 10, 1992 for actuarial appraisal reports dated on or after that date.

Section 2. Definitions

2.1 Actuarial Appraisal—An assessment of value based on projections of expected future earnings, discounted to present value at appropriate risk-adjusted rates of return. For the purposes of this standard, an *actuarial appraisal* is further defined as an assessment of value of an insurance company, a segment of an insurance company, or a block of insurance contracts ("the evaluated business").

2.2 Actuarial Appraisal Calculations—Any derivation of value or range of values based on projections of anticipated future quantities associated with the evaluated business, discounted to present value at appropriate risk-adjusted rates of return.

2.3 Actuarial Appraisal Report—A document which sets forth the procedures, methods, data, and assumptions used in actuarial appraisal calculations, as well as the results of these actuarial appraisal calculations.

2.4 Actuarial Appraisal Value—A value or range of values derived from actuarial appraisal calculations.

2.5 Appraisal Date—The date as of which actuarial appraisal calculations are derived.

2.6 Existing Business—Policies in force on the appraisal date, including any remaining obligations and risks that relate to coverage provided previously (e.g., the runoff of claim liabilities).

2.7 Risk-Adjusted Rate of Return—An expected or target annual return to the investor that includes a risk-free return that compensates the investor for the use of the funds (recognizing anticipated inflation so as to maintain the real value of those funds), plus a risk premium above the risk-free rate that compensates the investor for the risk that actual returns will deviate from expected. The size of the risk premium varies with the degree of risk associated with the returns.

Section 3. Background and Historical Issues

Actuaries perform actuarial appraisal calculations for a number of purposes and for a variety of users, including sellers, buyers, management, or regulators. It is important that these users understand the work the actuary has done, the limitations of that work, and any reliance the actuary may have placed on others.

The key element in an actuarial appraisal is the projection of the future stream of earnings attributable to the evaluated business. This includes the runoff of claim liabilities. This stream of earnings is projected using actuarial assumptions relating to such items as claims, expenses, and investment return. The projections may be done for existing and new business separately, or in combination. The projected earnings are then discounted at appropriate risk-adjusted rate(s) of return to derive value.

Section 4. Current Practices and Alternatives

An actuarial appraisal has become recognized in the business community as a critical element in placing an overall value on an insurance-related business or in establishing separate values for components of a company for tax or other purposes. In part because of the expected continued high level of mergers and acquisitions, actuarial appraisals will continue to be important and visible.

As practice has evolved, some methodologies have become fairly well accepted, and some differences have emerged. There is less literature available and more variation in practice for property/casualty and other short-term insurance contracts than for whole life and other long-term insurance contracts. In addition to differences in methodology, practices have varied as to the data employed in the calculations and the choice of actuarial assumptions. A standard of practice is needed for reconciling these differences and defining the range of acceptable practice.

In performing an actuarial appraisal calculation, an actuary has a myriad of assumptions and data sources from which to choose in developing financial projections and ultimately deriving a value or range of values for the business. In actual practice, appraisal values are sometimes based on extensive analysis of confidential or proprietary information, from which thorough testing of key assumptions can be performed. In other instances, appraisals are based on more limited analysis or data because of materiality considerations or time limitations, or because internal company data are unavailable and only publicly available information can be used.

Differences in approach may have an impact on the proper interpretation of the actuary’s opinion as to appraisal values. This suggests that formal requirements for disclosure are desirable.

STANDARD OF PRACTICE

Section 5. Analysis of Issues and Recommended Practices

5.1 Consideration of Code of Conduct and Qualification Standards—In performing actuarial appraisals, actuaries hold themselves out to be experts in the process of actuarial appraisal work as well as experts in the lines of business being appraised. The actuary should be familiar with or review the Code of Professional Conduct and the Qualification Standards of the American Academy of Actuaries as to these separate considerations.

5.2 Basic Concepts—Actuarial appraisal calculations may be performed, and appraisal values derived, for isolated segments of an insurance company's business or for the insurance company's entire book of business. Similarly, calculations may be performed on existing business only, or on new business only, or on both taken together.

The value of an insurance company or related organization is often estimated by an actuarial appraisal of its existing business and future business capacity, with consideration of the capital and surplus of the entity.

It should be recognized that such an actuarial appraisal value is a measure of the value of the business to a particular user (e.g., prospective buyer, prospective management, or regulator), under a specified set of assumptions. Since circumstances, needs, and perspectives vary from one user to another, the assumptions and the resulting values will also vary among the users. The assumptions used in the appraisal should be consistent with the circumstances of the user who makes decisions based on the appraisal, so that the measure of value will be relevant to that user. While this measure of value includes an examination of the earnings potential of the company, it does not necessarily define an appropriate sale price.

A characterization of the assumptions, both individually and collectively, as to their level of reasonableness in the particular context should be disclosed in the actuarial report.

5.2.1 Distributable Earnings—For insurance companies, statutory earnings form the basis for determining distributable earnings, since the availability of dividends to owners is constrained by the amount of accumulated earnings and minimum capital and surplus requirements, both of which must be determined on a statutory accounting basis. Distributable earnings consist of statutory earnings, adjusted as appropriate to allow for the retention of a portion thereof or the release of a portion of prior accumulated earnings therein, in recognition of minimum capital and surplus levels necessary to support existing business.

Economic value generally is determined as the present value of future cash flows. Statutory accounting determines the earnings available to the owner. Hence, while future earnings calculated according to generally accepted accounting principles (GAAP) will often be of interest to the user of an actuarial appraisal, as may other patterns of earnings, the discounted present-value calculations contemplated within the definition of actuarial appraisal in this standard should be developed in consideration of statutory earnings, rather than some other basis. Special considerations for tax appraisal purposes are discussed in subsection 5.10 of this standard. The actuary's report should include a discussion of factors, such as capital needs (whether perceived by the actuary or imposed by an external entity such as a regulator), that may cause the earnings available for shareholder or policyholder distribution to be different from statutory earnings.

5.2.2 Risk-Adjusted Rates of Return—The rates used for discounting future earnings should reasonably reflect risks inherent in the realization of such earnings, and should be representative of the returns desired by the buyer, seller, or owner of the enterprise. Since risks vary by product line and between inforce and new business, it is natural that risk-adjusted rates of return might vary similarly. Also, in the selection of risk-adjusted rates of return, the actuary should consider the actuarial methods and assumptions used.

5.3 Estimated Value of Insurance Company—Based on actuarial appraisal calculations, the value of an insurance company is often, but not necessarily, divided into the following three components as of the appraisal date:

a. Adjusted net worth

b. Appraisal value of existing business

c. Appraisal value of future business capacity

The items included in each of these categories may vary on the basis of the type of business being appraised, the needs of the user, and other circumstances. For example, the value of loss reserve deficiencies may be determined as a part of adjusted net worth or as a part of the value of existing business. The actuary should describe the items included in each component.

5.3.1 Adjusted Net Worth—This component normally includes the following:

a. Statutory capital and surplus

b. Any statutory liabilities that, in essence, represent allocations of surplus (e.g., mandatory securities valuation reserves, statutory portions of casualty Schedule P reserves)

c. Any statutory nonadmitted assets that have realizable value

d. Reduction for surplus items that represent obligations to others

e. Adjustment to reflect the difference between market value and book value of those assets which are in support of all or a portion of adjusted net worth

5.3.2 Value of Existing Business—This component equals the present value of future earnings attributable to business in force on the appraisal date, including any remaining effects of coverage previously provided.

5.3.3 Value of Future Business Capacity—This component equals the present value of future earnings attributable to business issued or acquired after the appraisal date and attributable to the existing new-business capacity of the enterprise. Future renewals of existing contracts may also be included in this component. In certain cases, this component could be measured on the basis of the market value of the company's charters and licenses and other components of goodwill.

5.4 Capital Needs—Part or perhaps even all of capital and surplus on the appraisal date, as well as some portion of future after-tax earnings on existing and new business, may need to be retained within the company, and future capital contributions may be needed to support the risks on existing and new business. The actuary should disclose the manner in which capital needs were considered, and may include an estimate of the cost of such capital.

5.5 Allocation of Assets—The assets of the company on the appraisal date should be allocated to existing business and to adjusted net worth. Consideration should be given to the allocation of assets by type, quality, and duration to the various segments of existing business and adjusted net worth. Appropriate recognition should be given to the difference between statutory accounting value and market value of the assets, either in terms of the assumed rate of investment return or changes to adjusted net worth. The use of a market-value adjustment for assets allocated to the adjusted net worth can serve as an alternative (in whole or in part) to discounting projected statutory earnings on adjusted net worth, and may appropriately differ from the treatment of assets allocated to existing business. In any event, the valuation of assets on the basis of market, statutory, or other basis should be consistent with the assumed earnings rate for those assets.

5.6 Assumptions—Assumptions regarding future experience should be reasonable, and, to the extent possible, should take into account the actual historical and current experience of the company, adjusted to reflect known changes in the environment and identifiable trends. Experience studies should be reviewed, and the results should be disclosed. If experience studies are not available, they should be developed where appropriate and practical. In some instances, data may not be available or may be insufficient to provide a credible basis on which to develop assumptions. Consequently, it may be necessary to rely more on judgment, taking into consideration the company's pricing and/or reserving assumptions and the experience of other companies with comparable products, markets, and operating procedures. Key assumptions and their sources should be disclosed.

Certain assumptions may require input or expertise which the actuary does not have. In setting assumptions, the actuary should obtain any necessary input from persons possessing the relevant knowledge or expertise, and should give due weight to their input. Such special knowledge areas may include asset default rates, investment new-money rates, marketing, expense control, property/casualty underwriting and claim operations, reinsurance availability, and tax laws.

It is important to recognize that the assumptions will be used to project future results, and should therefore be selected with due regard for the future context or expected future operating environment of the company. Thus, they may or may not be consistent with past experience.

Also, in many areas, such as evaluating interest-sensitive and variable life insurance and annuity products, deterministic approaches may be inadequate for properly evaluating and projecting financial results. The actuary needs to examine each assumption critically in this regard, and apply stochastic analysis where the tools exist and where stochastic analysis is deemed material to the appraisal.

The assumptions used in an actuarial appraisal need to be specific to the type of entity being appraised—e.g., property/casualty or life/health—as well as the kinds of products underwritten and markets being served by the entity. Therefore, the actuary needs to be familiar with all products that contribute materially to the value of the business subject to the actuarial appraisal. Furthermore, the actuary should recognize that issues common to all appraisals may require different treatment when applied to short-term contract business (property/casualty, group insurance, etc.) compared to long-term contract business (whole life insurance, annuities, etc.).

The remainder of this subsection covers certain key assumption areas. The list of assumptions discussed is not all-inclusive; the actuary should consider any item that could have a material effect on results.

5.6.1 Rates of Investment Return and Assets—The level of detail required for this item varies by product type.

For products in which the investment component is significant (e.g., whole life and annuities), the analysis should include consideration of the asset maturities and cash flows from current invested assets and insurance operations, new-money investment-yield assumptions, a variety of future rate-of-return scenarios, and risk level associated with changes in future rates of return.

For products in which the investment component is less significant (e.g., casualty, group health), the analysis may be limited to a review of current rates of return and a consideration of reasonable rates of return in the future.

The actuary may wish to perform projections under a number of future rate-of-investment-return scenarios and determine values based on an analysis of the results obtained. To the extent this approach is taken, the risk related to changes in future rates of investment return will have been taken into account in projecting earnings.

The actuary should also consider asset quality as it relates to the risk of delayed collectibility, default, or other financial nonperformance.

5.6.2 Lapsation or Nonrenewal of Insurance Contracts—These assumptions are most important on long-term contract business, such as whole life and annuity business, and on direct-response business where the insurer has a significant investment in developing the existing business.

When this item is significant, the effect of lapsation or nonrenewal activity, premium change, and premium suspension on flexible-premium products should be considered in the evaluation of historical experience and the development of the actuary's assumptions as to future anticipated experience. In addition, the actuary should consider the potential for unusually high rates of lapsation or non-renewal resulting from a proposed merger or acquisition transaction, and make appropriate provision for it.

5.6.3 Premium Changes—In dealing with business where premium is subject to change after the origination of the contract, consideration should be given to regulatory limitations, time of implementation of future changes, effects of antiselection on expected claims and persistency, and the effect that historical premium changes might have had on prior company experience.

5.6.4 Expected Claims—In developing expected future claim levels, the actuary should consider the experience of the appraised entity, the experience of other comparable entities, and the potential for future changes, favorable or adverse. Future changes to consider include underwriting cycles, mortality trends, tort reform, etc. The actuary should consider the ability of the entity to adjust rates in response to future conditions.

5.6.5 Expenses—These assumptions are generally analyzed in greater detail for long-term contract business than for short-term contract business. For all types of products, the selected expenses, including commissions and investment expenses, should be reasonable in light of the projected circumstances.

A detailed analysis of the type typically applied to some life insurance products should include consideration of whether the current levels of expenses may exceed those which would be developed by the application of unit expense factors deemed reasonable for long-term projection purposes. Such excess expenses might, for example, be attributable to nonrecurring expenses or production, administrative, or overhead capacity in excess of that required for the volume of insurance written and in force. Certain of these excess expenses might be diminished as a result of increases in existing business, economies of scale, and expense-reduction programs. The amount of such excess expenses and the actuary's treatment of them should be disclosed.

5.6.6 Inflation—Inflation should be considered. The inflation assumption that is explicit or implicit in the choice of claim and expense assumptions should be consistent with the new-money investment rate(s) of return selected by the actuary.

5.6.7 Reinsurance—Provision for the cost of reinsurance should be made if it is deemed material. Particular care should be taken in analyzing and reflecting the effect on value of financial reinsurance transactions entered into for surplus relief or other capital and earnings purposes. Some reinsurance transactions may be more appropriately reflected in adjusted net worth.

5.6.8 New Business Production—The assumptions regarding new business production should be selected with consideration of history and anticipated future conditions. The actuary should disclose the relationship of the new-business production assumptions to the company's structure as it existed at the appraisal date.

The actuary may wish to provide a range of new-business production scenarios.

5.7 Federal Income Tax—In any consideration of future income taxes, it should be recognized that the taxation of insurance companies is not only complex but also subject to change.

The most meaningful estimate of the effect of federal income taxes on appraisal values is made when the amount of federal income tax has been calculated on a year-by-year basis for the company as a whole.

The actuary should consider all of the major items affecting the calculation of taxable income. It is recognized, however, that the tax status of a potential purchaser may be unknown at the point of calculation.

5.8 Modeling and Model Validation—The detail of the model of future earnings should be appropriate for the situation. For short-term policies, the model might relate to the company as a whole or to particular lines of business. For long-term contract business, more detailed models are often useful. In such cases, separate models might be developed for each line of business, separately for risks underwritten prior to the appraisal date and for new business.

As a general rule, separate models should be developed for each line of business, separately for risks underwritten prior to the appraisal date and for new business. Even within a line of business, it is frequently desirable to construct submodels by type of business or market, or by significant contract design differences—e.g., by state—to facilitate the validation of assumptions, to evaluate the reasonableness of the results developed, and to improve the work product.

Any model used in a projection should reproduce the premiums, volumes of insurance, and statutory statement reserves of the risks underwritten prior to the appraisal date within close tolerances in the aggregate. The “fit” comparison of premiums, volumes, and reserves normally would be examined on a line-by-line basis or even a plan-by-plan basis and, where necessary, adjustments made to the modeling parameters to produce the proper representation.

The validity of the model and the experience assumptions used in developing the projections should be tested against actual experience immediately prior to the appraisal date and against any available plan information for time periods immediately following the appraisal date.

5.9 Sensitivity Analysis—The actuarial assumptions chosen to value existing and new business normally are chosen to be reasonable for a particular scenario. The sensitivity of appraisal values to a particular risk is assessed by testing different assumptions regarding future experience. Testing of different assumptions regarding future experience is usually designed to cover circumstances that seem plausible, but it cannot cover every conceivable circumstance. Sensitivity testing is particularly recommended when assumptions have been based on very limited data, when deviations from expected values may be very large, or when an assumption is deemed particularly critical.

5.10 Tax Liquidations—Section 338(h)(10) of the Internal Revenue Code essentially allows an election to treat the acquisition of stock of an insurance company as the acquisition of the company’s assets, including an asset attributable to the value of existing business. In many instances, the actuary is asked to determine a value of the existing business for this purpose. Such a determination is an actuarial appraisal and would embody the same methodologies and assumptions as prescribed in this standard, although recognizing that tax-basis assets, liabilities, and earnings may differ from statutory.

Section 6. Communications and Disclosures

6.1 Actuarial Appraisal Report—An actuarial appraisal report should be prepared which summarizes and places in context the actuary’s conclusions from the appraisal calculations that have been performed. The report should include, at a minimum, the following items:

6.1.1 Scope of Assignment—Reference should be made to a letter of engagement, if used. The report should discuss the depth of the assignment, and any limitations imposed by the user, the time available, or the availability of data. The scope of the assignment should be consistent with the intended use of the report, as discussed in the following paragraph.

6.1.2 Intended Use—There should be a clear description of the intended purpose of the report, and if necessary, a statement of how or why it might be inappropriate for purposes other than the one for which it was intended. This description should be consistent with the scope of the work done. It should contain any limitations on distribution of, or reference to, the report.

6.1.3 Reliances—The report should identify the information, documents, and data used for which no independent verification was undertaken by the actuary.

6.1.4 Limitations—The report should identify limitations attaching to the values developed, and their applicability to specific situations, as the result of items or lines of business excluded, lack of reliable data, recent or pending changes in operations, time constraints, or other considerations.

6.1.5 Description of the Entity Being Valued—There should be a description of the corporate organizational structure, stating which of the companies are the subject of the actuarial appraisal and delineating any material intercompany financial relationships. There should be a discussion of each subject company, its marketing, lines of business, and products. The appraisal date should be clearly disclosed.

6.1.6 Actuarial Appraisal Value—The report should state the value or range of values obtained from the actuary's appraisal calculations. This may be a point estimate, a range, or a table of alternative values.

The report should also include a description of the extent and depth of testing that underlie the calculations, including a description of sensitivity tests that have been made.

6.1.7 Methodology—For each component of value, the report should contain a description of the techniques employed and the methodology used.

6.1.8 Validation—For each line of business that was valued, there should be a description of the validation techniques and results.

6.1.9 Cost of Capital—The actuary should disclose the basis used to value adjusted net worth, and what provision, if any, is made for the cost of capital.

6.1.10 Assumptions—If any assumption was selected by someone other than the actuary, the actuary should disclose that fact and the source of the assumption. The actuary should characterize the assumptions, both individually and collectively, as to their level of reasonableness in the particular context and whether they:

i. are consistent with past experience, or

ii. are not consistent with past experience, but are attainable under reasonable, specified conditions.

The risk-adjusted rates of return should similarly be characterized as to their level of reasonableness.

Assumptions used should be set forth in detail. Each material assumption should be described as to the basis for its determination. Discussions should include the following:

a. Where assumptions are based on company or other experience studies, the report should describe the studies in enough detail to allow the user to evaluate their appropriateness.

b. Where assumptions are based on judgment or industry experience, the actuary should discuss any relevant factors that led to the choice of assumptions.

c. Where assumptions differ from recent experience because of trends, known changes in the environment, or anticipated changes in the operations of the company, the actuary should discuss the trends or anticipated changes that led to the assumptions used.

d. Where assumptions were set using input or expertise from outside sources, the report should disclose the sources of such information and the reasons for reliance on it.

e. Where the actuary has knowledge of factors that may have a material bearing on one or more of the assumptions, the actuary should disclose such factors and the results of sensitivity tests that have been made.

6.1.11 <u>Federal Income Taxes</u>—The report should disclose the extent to which taxes have been considered, and on what basis. If federal income taxes are not directly provided for, the actuary should state the need for the user to consider them and include information to assist the user in estimating the effect of federal income taxes.

6.2 <u>Disclosure If Not an Actuarial Appraisal</u>—An actuarial study should clearly indicate its nature and intended use. Where an actuarial study could reasonably be construed, on the basis of its form or conclusions, to be an actuarial appraisal, but it is not, a clear statement and explanation of this fact should be provided.

6.3 <u>Other Disclosures Prescribed in This Standard</u>—The following subsections of section 5 of this standard prescribe additional disclosures concerning the subjects listed:

5.2 Basic Concepts: reasonableness of assumptions

5.2.1 Distributable Earnings: factors that could affect earnings

5.3 Estimated Value of Insurance Company: components of value

5.4 Capital Needs: how considered

5.6 Assumptions: assumptions and sources

5.6.5 Expenses: amount and treatment of excess expenses

5.6.8 New Business Production: relationship of assumptions to existing company structure

6.4 Deviation from Standard—An actuary who uses a procedure which differs from this standard must include, in any actuarial communication disclosing the result of the procedure, an appropriate and explicit statement with respect to the nature, rationale, and effect of the use of such a procedure.