



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 35**

**Selection of Demographic and
Other Noneconomic Assumptions
for Measuring Pension Obligations**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 1999**

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December 1999

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 35

This booklet contains the final version of Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*.

This standard expands upon and, in some areas, modifies ASOP No. 4, *Measuring Pension Obligations*. It also provides an alternative way to comply with the disclosure of exceptions requirement in ASOP No. 2, *Recommendations for Actuarial Communications Related to Statements of Financial Accounting Standards Nos. 87 and 88*, insofar as it pertains to demographic or other noneconomic assumptions.

Background

Pension Plan Recommendations A, B, and C were adopted and amended by the American Academy of Actuaries (AAA) during the period 1976 to 1983. In 1988, *Recommendations for Measuring Pension Obligations* was promulgated as an ASOP by the Interim Actuarial Standards Board and the Board of Directors of the AAA. In 1990, that standard was republished by the ASB and designated ASOP No. 4, *Recommendations for Measuring Pension Obligations*. In October 1993, ASOP No. 4 was reformatted and published in the uniform format adopted by the ASB with a title change—*Measuring Pension Obligations*.

ASOP No. 4 contains general recommendations for selecting economic and noneconomic assumptions, the actuarial cost method, and the asset valuation method—all key elements in the valuation of pension obligations. The passage of various rules, regulations, and legislation has made it clear that more detailed guidance is needed in these areas.

It is anticipated that this detailed guidance will be provided through up to four separate actuarial standards of practice for measuring pension obligations. This standard deals exclusively with the selection of demographic and other noneconomic assumptions. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, deals with selection of economic assumptions. Other standards may cover the determination of the actuarial value of plan assets and the selection of actuarial cost methods.

When these standards have been completed, it is the intention of the Pension Committee to rewrite ASOP No. 4 as an umbrella standard. It will tie these standards together and address overall considerations in the selection of assumptions and methods for measuring pension obligations.

Exposure Draft

An exposure draft of a proposed actuarial standard of practice, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, was issued in January 1999 with a comment deadline of May 1, 1999. The product of over eighteen months of discussion and drafting by the Pension Committee of the ASB, it was the first attempt by the actuarial profession's standards-setting body to provide specific guidance on this aspect of measuring pension obligations. Where possible, the Pension Committee tried to follow the principles for assumption selection as provided in ASOP No. 27.

The Pension Committee carefully considered the thirteen comment letters received. The key changes made to the final standard in response to these comment letters are as follows:

1. The effective date was changed to apply to measurement dates occurring after September 15, 2001. This means that 2001 year-end financial disclosures prepared under *Statement of Financial Accounting Standards No. 87* for plan sponsors with calendar fiscal years will need to comply with this standard. If a measurement dated after September 15, 2001 is based on a roll-forward of an earlier measurement, then the earlier measurement will need to comply with this standard.
2. The requirement that a demographic assumption *accurately* model the contingency under consideration was changed. The final standard requires that a demographic assumption *appropriately* model the contingency under consideration.
3. Appendix 2, Illustration of Concepts Presented in This Standard, was removed.

In addition, a number of clarifying changes were made to the text, including changes to better accommodate concerns regarding small plans. Please see appendix 2 for a detailed discussion of the comments received and the Pension Committee's response.

The Pension Committee would like to express its gratitude to everyone who took the time to comment on the exposure draft; these comments were very helpful in developing the standard.

The ASB voted in December 1999 to adopt the final standard.

Pension Committee of the ASB

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ACTUARIAL STANDARD OF PRACTICE NO. 35

SELECTION OF DEMOGRAPHIC AND OTHER NONECONOMIC ASSUMPTIONS FOR MEASURING PENSION OBLIGATIONS

STANDARD OF PRACTICE

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

- 1.1 Purpose—This standard does the following:
- a. provides guidance to actuaries in selecting (including giving advice on selecting) demographic and other noneconomic assumptions for measuring obligations under defined benefit pension plans; and
 - b. expands upon and, in some areas, modifies those provisions of Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations*, that relate to the selection and use of demographic and other noneconomic assumptions.
- 1.2 Scope—This standard applies to actuaries when they are selecting demographic and all other assumptions not covered by ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, to measure obligations under any defined benefit pension plan that is not a social insurance program as described in ASOP No. 32, *Social Insurance* (unless an actuarial standard of practice on social insurance explicitly calls for application of this standard). Measurements of defined benefit pension plan obligations include calculations that assign plan costs to time periods, actuarial present value calculations, and estimates of the magnitude of future plan obligations. Measurements of pension obligations do not generally include individual benefit calculations or individual benefit statement estimates.

Throughout this standard, any reference to *selecting* demographic and other noneconomic assumptions also includes *giving advice on selecting* demographic and other noneconomic assumptions.

To the extent that the guidance in this standard may conflict with ASOP No. 4, this standard will govern. Furthermore, compliance with section 4.2 of this standard is deemed to fully satisfy the disclosure of exceptions requirements of ASOP No. 2, *Recommendations for Actuarial Communications Related to Statements of Financial Accounting Standards Nos. 87 and 88*, and of Actuarial Compliance Guideline No. 2, *For Statement of Financial Accounting Standards No. 88*, insofar as they pertain to prescribed demographic and other noneconomic assumptions.

When applicable law, regulation, or other binding authority conflicts with this standard, complying with such law, regulation, or other binding authority shall not be deemed a deviation from this standard.

This standard does not apply to the selection of an assumption where the actuary is precluded from exercising independent judgment by an applicable law, regulation, or other binding authority (i.e., when a specific assumption is mandated or when only a specified range of assumptions is deemed to be acceptable). For example, this standard does not apply to the selection of a current liability mortality assumption under Internal Revenue Code (IRC) section 412, because the mortality assumption is governed by the IRC and regulations.

- 1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 Effective Date—This standard will be effective for any measurement of obligations with a measurement date occurring after September 15, 2001.

Section 2. Definitions

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

- 2.1 Assumption Format—The form in which a particular demographic assumption will be used or expressed. In some cases, the assumption will take the form of a table where the probability of the occurrence of a given event depends on parameters such as gender, age, service, or calendar year. In other cases, the assumption may be a point estimate, implying 100% probability of occurrence of a given event at the stated point. An example of a point estimate assumption is an assumption that 100% of the population will retire at age 62. The assumption format may include different tables or point estimates for different segments of the covered population.
- 2.2 Assumption Universe—For each demographic assumption, a universe consisting of the possible options that the actuary might reasonably use for the specific assumption. For example, an assumption universe for a mortality assumption might reasonably include relevant published or proprietary mortality tables and possible adjustments, such as projections of mortality improvement. For some pension plans, an assumption universe for a specific assumption might reasonably include a table or factors developed specifically for that plan.

- 2.3 Demographic Assumptions—Demographic and all other noneconomic assumptions (i.e., those assumptions not covered in ASOP No. 27), unless explicitly stated otherwise.
- 2.4 Measurement Date—The date as of which the value of the pension obligation is determined (sometimes referred to as the *valuation date*).
- 2.5 Measurement Period—The period subsequent to the measurement date during which a particular demographic assumption will apply in a given measurement.
- 2.6 Prescribed Assumption—A specific assumption that is mandated or that is selected from a specified range or set of assumptions that is deemed to be acceptable by law, regulation, or other binding authority.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Overview—The actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period. For any given measurement, the actuary may be able to identify two or more reasonable assumptions for the same contingency. In some instances, the actuary may present several results to illustrate the effect of alternative reasonable assumptions.
- 3.2 Types of Demographic Assumptions—The types of demographic assumptions used to measure pension obligations may include, but are not necessarily limited to, the following:
 - a. retirement;
 - b. mortality;
 - c. termination of employment;
 - d. disability and disability recovery;
 - e. election of optional forms of benefits; and
 - f. other assumptions, such as administrative expenses; household composition; marriage, divorce, and remarriage; open group assumptions; transfers; hours worked; and assumptions regarding missing or incomplete data.

3.3 Demographic Assumption Selection Process—The actuary should follow the general process for selecting demographic assumptions, as discussed below. It is not necessary that the actuary follow this complete process at each measurement date for each assumption if, in the actuary’s professional judgment, previously selected assumptions continue to be reasonable (see section 3.9).

3.3.1 Identify the Types of Assumptions—The actuary should consider the following factors when identifying which types of demographic assumptions to use for a specific measurement:

- a. the purpose and nature of the measurement;
- b. the plan provisions or benefits and factors that will affect the timing and value of any potential benefit payments;
- c. the characteristics of the obligation to be measured (such as measurement period, pattern of plan payments over time, open or closed group, volatility);
- d. the contingencies that give rise to benefits or result in loss of benefits;
- e. the materiality of each assumption; and
- f. the characteristics of the covered group.

It is not necessary that every contingency should give rise to a separate assumption. For example, for a plan that is expected to provide benefits of equal value to employees who voluntarily terminate employment, become disabled, retire, or die, the actuary may use an assumption that reflects some or all of the above contingencies in combination rather than selecting a separate assumption for each.

3.3.2 Consider the Relevant Assumption Universe—The actuary should consider the assumption universe relevant to each type of assumption identified in section 3.3.1. This may include tables or factors particular to the given plan as well as general tables, factors, and modifications to the tables that are available to actuaries. Sources of information relevant to many demographic assumptions include the following:

- a. experience studies or published tables based on experience under uninsured plans and annuity contracts, or based on any other populations considered representative of the group at hand;
- b. relevant plan or plan sponsor experience, to the extent that it is credible, which may include analyses of gains or losses by source;

- c. studies or reports of the effects of plan design, specific events (for example, shutdown), economic conditions, or sponsor characteristics on the demographic assumption under consideration; and
- d. studies or reports of general trends relevant to the type of demographic assumption in question (for example, mortality improvement in the United States).

3.3.3 Consider the Assumption Format—The actuary should consider the appropriate format for each demographic assumption. Factors that affect format specification include the following:

- a. the degree to which the assumption format may affect the results;
- b. the availability of tables, data, or information relevant to the assumption being selected;
- c. the degree to which the assumption format has the potential to model anticipated plan experience;
- d. the size of the covered population; and
- e. the degree to which a parameter (such as gender, age, service, or calendar year) is anticipated to affect experience.

In many situations it is appropriate for the format to include assumptions for different segments of the covered population. For example, it may be appropriate to have different mortality tables for males and females or different turnover tables for salaried and hourly employees.

3.3.4 Select the Specific Assumptions—The actuary should select each demographic assumption from the appropriate assumption universe. In all cases, the actuary should consider the materiality of each assumption selected and the consequences of experience deviating significantly from the selected assumption. The actuary should consider measurement-specific factors when selecting assumptions. Examples of such factors are the following:

- a. the purpose and nature of the measurement; for example, a cash flow projection may require more refined assumptions than a liability measure;
- b. any features of the plan design or change in the plan design that may influence the assumption; for example, the introduction of an early retirement subsidy could influence the plan's incidence of retirement; under these circumstances, in order to measure the incremental cost

associated with this change, the retirement assumption for the proposed plan provision may differ from the retirement assumption for the current provision;

- c. appropriate experience from the specific plan and other relevant sources; and
- d. relevant factors known to the actuary that may affect future experience, such as the economic conditions of the area or industry, availability of alternative employment, or the human resources policy or practices of the employer.

Specific experience of the covered group or other groups with similar characteristics may be useful in forming a judgment about future expectations. However, the actuary should not give undue weight to past experience or to experience that is not sufficiently credible. For example, if recent rates of termination and retirement were largely attributable to a one-time work force reduction, it may be unreasonable to assume that such rates will continue over the measurement period.

3.3.5 Evaluate Reasonableness of the Selected Assumptions—The actuary should evaluate the reasonableness of each material demographic assumption selected. Unless facts and circumstances clearly warrant otherwise, the actuary should base this evaluation on the following criteria:

- a. The assumption is expected to appropriately model the contingency being measured. For example, a reasonable retirement assumption for a plan with a large number of retirements expected to occur at different ages should generally be a set of decrements at a variety of ages instead of at a single age. On the other hand, in a plan with a small number of expected retirements, it may not be possible to model experience any better using rates that vary by age than by using a single age. As a second example, for a plan where a significant portion of the liability is attributable to a single individual, a single retirement age may be appropriate.
- b. The assumption is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

3.4 Individual Assumptions—Each individual demographic assumption selected by the actuary should satisfy this standard.

3.5 Specific Considerations—When performing the assumption selection process described in section 3.3, the actuary should be aware of specific considerations that may apply to the selection of individual assumptions, as discussed below.

- 3.5.1 Retirement Assumption—The actuary should consider factors such as the following:
- a. the plan design, where specific incentives may influence when participants retire;
 - b. the design of, and date of anticipated payment from, social insurance programs (for example, Social Security or Medicare); and
 - c. the availability of other employer-sponsored postretirement benefit programs (for example, postretirement health coverage or savings plan).
- 3.5.2 Termination of Employment Assumptions—The actuary should consider factors such as the following:
- a. employer-specific or job-related factors such as occupation, employment policies, work environment, unionization, hazardous conditions, and location of employment; and
 - b. plan provisions, such as early retirement benefits, vesting schedule, or payout options.
- 3.5.3 Mortality Assumption—The actuary should consider factors such as the following:
- a. the possible use of different mortality assumptions before and after retirement (for example, in some small plan cases a reasonable model for mortality may be to assume no mortality before retirement);
 - b. the likelihood and extent of mortality improvement in the future;
 - c. the use of a different mortality assumption for disabled lives, which in turn may depend on the plan's definition of disability and how it is administered; and
 - d. the use of different mortality tables for different participant subgroups and beneficiaries.
- 3.5.4 Disability and Disability Recovery Assumption—The actuary should consider factors such as the following:
- a. the plan's definition of disability (for example, whether or not the disabled person is eligible for Social Security benefits); and

- b. the potential for recovery. For example, if the plan requires continued disability monitoring and if the plan's definition of disability is very liberal, an assumption for rates of recovery may be appropriate. Alternatively, the probability of recovery may be reflected by assuming a lower incidence of disability than the actuary might otherwise assume.

3.5.5 Optional Form of Benefit Assumption—The actuary should consider factors such as the following:

- a. the benefit forms and benefit commencement dates available under the plan being valued;
- b. the historical or expected experience of elections under the plan being valued and similar plans; and
- c. the degree to which particular benefit forms may be subsidized.

3.6 Other Demographic Assumptions—The actuary should follow the general selection process outlined in section 3.3 when selecting other assumptions relevant to the measurement. Such assumptions may include the following:

3.6.1 Administrative Expenses Charged to the Plan—The actuary should consider expenses such as investment advisory, investment management, or insurance advisory services, to the extent that the costs of these services are not reflected in the investment return assumption; premiums paid to the Pension Benefit Guaranty Corporation (PBGC); accounting and auditing services; actuarial services; plan administration services; legal services; and trustee services. Formats for this assumption may include a dollar amount, a specific percentage of assets, a specific (and explicitly disclosed) reduction in the investment return assumption, or a percentage of benefit obligation or normal cost.

3.6.2 Household Composition—If household composition affects the payment of benefits, the amount of benefits, or other demographic assumptions, the actuary should make assumptions for household composition and for the demographic characteristics of the household members in the measurement. For example, some plans provide annuity death benefits to surviving children under a stated age. In that case, an assumption as to the number and ages of the potential beneficiaries may be needed.

3.6.3 Marriage, Divorce, and Remarriage—The actuary should consider whether marriage, divorce, or remarriage affects the payment of benefits, the amount or type of benefits, or the continuation of benefit payments. If such an assumption is selected, it may also be necessary to make an assumption regarding beneficiary ages.

- 3.6.4 Open Group—Certain assumptions, such as the number and characteristics of new entrants, are applicable in open-group measurements.
- 3.6.5 Hours of Service—Assumptions for hours of service are generally plan- or industry-specific. Separate assumptions may also be needed for such purposes as benefit accrual and total employer plan contributions.
- 3.6.6 Transfers and Return to Employment—The assumptions for transfers or return to employment are generally plan- or industry-specific. Transfers and return to employment may be one-time events, or may be continual if employees are required or permitted to move between groups that are covered by the same or different plans.
- 3.6.7 Missing or Incomplete Data—At times, the actuary may find that the data provided are incomplete due to missing elements such as birth dates or hire dates. Provided that the actuary has determined, in accordance with ASOP No. 23, *Data Quality*, that the overall data are of sufficient quality to complete the assignment, the actuary may need to make reasonable assumptions for the missing data elements. In making such assumptions, the actuary should consider the relevant data actually supplied. For example, it may be appropriate to assume a missing birth date is equal to the average birth date for other participants who have complete data and who have the same service credits as the participant whose date of birth is missing.
- 3.7 Consistency Among Demographic Assumptions Selected by the Actuary—With respect to any particular measurement, each demographic assumption selected by the actuary should be consistent with the other assumptions selected by the actuary unless the assumption, considered individually, is not material (see section 3.10.1). For example, if an employer’s business is in decline and the effect of that decline is reflected in the turnover assumption, it should also be reflected in the retirement assumption.
- 3.8 Prescribed Assumptions—When an assumption is prescribed, the actuary is obligated to use it. Examples of prescribed demographic assumptions include the required mortality assumption for determining the present value of vested benefits for PBGC variable-rate premiums and for current liability; and demographic assumptions selected by the plan sponsor for purposes of compliance with *Statement of Financial Accounting Standards No. 87, Employers’ Accounting for Pensions*. As indicated in section 1.2, Scope, this standard does not apply to the selection of prescribed demographic assumptions, although it does apply to the advice that the actuary gives to the party responsible for selecting the prescribed assumptions.

All nonprescribed demographic assumptions should satisfy this standard. Selection of a demographic assumption that does not satisfy this standard in order to offset the effect of one or more prescribed assumptions is a deviation from the standard to which the disclosure requirements of section 4.5 apply.

- 3.9 Reviewing Assumptions—At each measurement date the actuary should consider whether the selected assumptions continue to be reasonable. The actuary is not required to do a complete assumption study at each measurement date. However, if the actuary determines that one or more of the previously selected assumptions are no longer reasonable, the actuary should follow the general process described in section 3.3 and select reasonable new assumptions as appropriate.
- 3.10 Other Considerations—The following issues may also be considered when selecting demographic assumptions:
- 3.10.1 Materiality—The actuary should establish an appropriate balance between refined methodology and materiality. The actuary is not required to use a particular type of demographic assumption or to select a highly refined demographic assumption when it is not expected to affect results materially. For example, the actuary is not required to use termination rates that vary by both age and service when the actuary does not expect them to produce materially different results from rates that vary by age or service alone.
- 3.10.2 Cost Effectiveness—The actuary should also establish an appropriate balance between refined methodology and cost effectiveness. Although all material demographic assumptions should be reflected, highly refined methodology is not required when it is not expected to affect results materially.
- 3.10.3 Combined Effect of Assumptions—The combined effect of all nonprescribed assumptions selected by the actuary (both demographic assumptions selected in accordance with this standard and economic assumptions selected in accordance with ASOP No. 27) should be reasonable. For example, the actuary may have decided not to make any assumption with regard to four different types of future events, each of which alone is immaterial. However, the effect of omitting assumptions for all four types of future events may be a material understatement or overstatement of the measurement results. In these circumstances, the assumptions should be revised.
- 3.10.4 Knowledge Base—The demographic assumptions selected should reflect the actuary’s knowledge as of the measurement date. However, the actuary may learn of an event occurring after the measurement date (for example, plan termination or death of the principal owner), that would have changed the actuary’s selection of a demographic assumption. If appropriate, the actuary may reflect this change as of the measurement date.
- 3.10.5 Advice of Experts—Demographic data and analyses are available from a variety of sources, including representatives of the plan sponsor and administrator, demographers, economists, accountants, and other professionals. When the actuary is responsible for selecting demographic assumptions within the scope of

this standard, external expert advice may be considered, but the selection should still reflect the actuary's professional judgment.

Section 4. Communications and Disclosures

- 4.1 Disclosures—Pension actuarial communications should contain descriptions of the following:
 - 4.1.1 Assumptions Used—Each material assumption used in the measurement. Sufficient detail should be shown to permit another qualified actuary to assess the level and pattern of the rates (for example, by supplying the name of a published decrement table or by showing turnover rates at every fifth age for an unpublished age-based table).
 - 4.1.2 Changes in Assumptions—Any material changes in the assumptions from those previously used for the same type of measurement. The general effects of any such changes should be disclosed in words or by numerical data, as appropriate.
 - 4.1.3 Changes in Circumstances—Any significant event of which the actuary is aware that has occurred since the measurement date that would have materially changed any of the demographic assumptions selected. The likely effect of any such change should also be described.
- 4.2 Prescribed Assumptions—The actuary's communication should identify and state the source of any prescribed assumptions.
- 4.3 Required Government Forms—The disclosure requirements in sections 4.1 and 4.2 do not apply to government forms. Instead, the actuary should comply with the instructions for such forms.
- 4.4 Prescribed Statement of Actuarial Opinion—This ASOP does not require a prescribed statement of actuarial opinion (PSAO) as described in the *Qualification Standards for Prescribed Statements of Actuarial Opinion* promulgated by the American Academy of Actuaries. However, it is possible that a communication that is subject to this standard may be a PSAO.
- 4.5 Deviation from Standard—An actuary must be prepared to justify the use of any procedures that depart materially from those set forth in this standard and must include, in any actuarial communication disclosing the results of the procedures, an appropriate statement with respect to the nature, rationale, and effect of such departures.

Appendix 1

Background and Current Practices

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

Background

Actuaries have historically used various practices for selecting the demographic and other noneconomic assumptions they use to measure pension obligations. For example, some actuaries looked to surveys of assumptions used by other actuaries, some relied on detailed research by experts, some used experience studies, and other actuaries used a combination of these practices.

Before computer technology was widely available, actuaries commonly used simplified demographic assumptions that were not necessarily individually reasonable, but that in aggregate produced results the actuary believed to be reasonable. As technological developments made the use of individually reasonable assumptions feasible, many actuaries began selecting economic and demographic assumptions that were individually reasonable. This trend was accelerated by amendments to the Internal Revenue Code effective for plan years beginning after 1987. These amendments require actuaries to determine the minimum required contribution for a qualified pension plan (other than a multi-employer plan) using either individually reasonable assumptions or assumptions that reached the same total contribution determination as would have been reached had each assumption been individually reasonable.

Current Practices

Many actuaries change demographic assumptions infrequently when measuring obligations of ongoing pension plans. Other actuaries assess emerging experience and reevaluate the assumptions as of each measurement date and change demographic assumptions more frequently.

For some purposes, such as funding public employee pension plans, complying with financial accounting rules, or adhering to other requirements, the actuary may advise the plan sponsor about the selection of demographic assumptions. But these assumptions—particularly the mortality assumption or the retirement age assumption—may be prescribed by others. In some of these cases, it is possible that actuaries may have adjusted other assumptions to compensate for the effect of the prescribed assumption.

In preparing calculations for purposes other than ongoing plan valuations, actuaries often use demographic assumptions that are different from those used for the ongoing plan valuation.

Appendix 2

Comments on the Exposure Draft and Committee Responses

The exposure draft of a proposed actuarial standard of practice, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, was issued in January 1999, with a comment deadline of May 1, 1999. The ASB received thirteen comment letters on the exposure draft. Several letters reflected general satisfaction with the approach that the committee had taken with respect to the proposed standard. As for those commentators who voiced concerns or recommendations, the Pension Committee first resolved the key conceptual issues, and then addressed comments aimed at clarifying the text. This appendix contains the conclusions reached by the committee upon its review of the comment letters. Summaries of the issues raised in the comment letters are in roman type and committee responses are in **boldface**.

General Comments

Some commentators thought the name for the standard was too long and cumbersome, and should be shortened so as to refer just to noneconomic assumptions. **The committee discussed this suggestion and concluded that since this standard deals primarily with demographic assumptions, and since this term is commonly recognized within the industry, it would be a mistake to delete *demographic* from the title. The title was left unchanged.**

One commentator suggested that the standard try to retain the *best-estimate range* introduced in ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, instead of introducing the new concept of *assumption universe*. **The committee discussed this point extensively, and concluded that the concept of *assumption universe* was more appropriate for demographic assumptions.**

One commentator believed that the standard relied too heavily on past experience and general studies and too little on the professional judgment of the actuary. **The committee believes that the standard is about the exercise of actuarial judgment. Section 3.1, Overview, has been expanded to emphasize both the critical role of the actuary's professional judgment and the role of future expectations (as well as past experience) in shaping this judgment. Furthermore, in section 3.3.2, Consider the Relevant Assumption Universe, the credibility of experience has been emphasized. These themes are further expressed in the last paragraph of section 3.3.4, Select the Specific Assumptions.**

One commentator believed that the standard focused on large plans rather than small plans. **The committee, comprised of both large and small plan actuaries, believes it has reflected the needs of diverse practices.**

One commentator commented that the actuary should have the ability to adjust an assumption to a level deemed to provide adequate consideration to ensuring adequacy of assets to meet liabilities when they come due. **The committee believes that this practice is already sanctioned in the standard by allowing the actuary to select the specific assumption based on the purpose and nature of the measurement, as well as on the consequences of experience deviating from the selected assumption.**

One commentator believed that the standard should recognize the concept of *reasonable in the aggregate* as allowed under ERISA rather than requiring each individual assumption to satisfy the standard per section 3.4, Individual Assumptions. **The committee believes that it is not sufficient to require that assumptions be reasonable in the aggregate and opted for the higher standard, as it did with ASOP No. 27.**

One commentator believed that it would be useful to explicitly state that it may be appropriate to have multiple assumptions for a single contingency. **The committee agreed and added new language to sections 2.1 and 3.3.3 to clarify that the assumption format may include different assumptions for different segments of the covered population.**

Section 1. Purpose, Scope, and Effective Date (now titled *Purpose, Scope, Cross References, and Effective Date*)

Section 1.1, Purpose—One commentator wanted the purpose expanded to state that the standard was partially prepared to help nonactuaries understand the assumption selection process. **ASOPs are drafted primarily for the guidance of actuaries. While this standard may also serve to enhance the understanding of nonactuaries, that is not the primary purpose of the standard.**

Section 1.2, Scope—One commentator thought that the standard should be expanded to include the selection of demographic assumptions for nonpension benefit plans, such as postretirement medical plans. **While the committee hopes that the principles presented in the standard may be helpful in the selection of demographic assumptions for other plans, this standard is applicable only to defined benefit pension plans, unless it is specifically referred to in other standards dealing with other types of plans.**

One commentator believed that it should be explicitly stated that the standard applies to all innovations in defined benefit plans including the newer designs (such as account-based plans). **The committee believes that the current language, which clearly states that the standard applies to defined benefit plans (which include the newer designs), is sufficient.**

Section 1.3, Effective Date (now section 1.4)—Several commentators requested a delay in the effective date of the standard. **The committee agrees with these commentators, and understands that computer reprogramming and other adjustments may take time to implement. Accordingly, the standard's effective date was changed to apply to measurement dates occurring after September 15, 2001. Readers should note, however,**

that if a measurement after September 15, 2001 is based on a roll-forward of an earlier measurement, then the earlier measurement would need to comply with this standard. Earlier application of the standard is encouraged but not required.

Section 2. Definitions

Section 2.1, Assumption Format—One commentator was uncomfortable with the term *assumption format*. **The committee believes that the term *assumption format* best describes the intended concept and made no change.**

Another commentator suggested listing additional parameters that may drive an assumption. **The committee notes that the list of parameters is not intended to be all-inclusive and that parameters may apply singly or in combination.**

Section 2.3, Demographic Assumptions—Some commentators objected to the use of the term *demographic assumptions* to cover both demographic and other noneconomic assumptions. **The committee believes that the ability to use the single term *demographic assumptions* throughout the text justifies the somewhat unconventional definition.**

Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Overview—Several commentators were concerned about the exposure draft’s requirement that the demographic assumption *accurately* model the contingency under consideration. **The committee agrees with these concerns and has modified the language in the standard to replace *accurately* with *appropriately*.**

One commentator wanted the scope of the standard expanded to clarify that the selection process was plan-specific, and actuaries using the same assumptions for several plans should be careful to ensure that each plan complies with the standard. **The committee agreed and added text stating that assumptions should be selected “in light of the particular characteristics of the defined benefit plan that is the subject of the measurement.”**

Section 3.2, Types of Demographic Assumptions—Several commentators had suggestions for other demographic assumptions to add to the list in section 3.2. **The committee points out that the list of assumptions was not intended to be exhaustive. However, because of the importance of the subject, the committee specifically added section 3.6.7, Missing or Incomplete Data.**

Two commentators were concerned about listing benefit security as a factor in assumption selection. **The committee removed benefit security as a listed relevant factor in assumption selection. However, the committee notes that the purpose and nature of the measurement remain relevant factors, and that for some purposes it may be appropriate to include a degree of benefit security.**

Section 3.3.2, Consider the Relevant Assumption Universe—Two commentators wanted section 3.3.2 clarified to take into account the size of the group needed to produce credible experience. **The committee agreed and added “to the extent that it is credible” in section 3.3.2(b) and addressed plan size in section 3.3.5, Evaluate Reasonableness of the Selected Assumptions.**

Section 3.3.3, Identify the Assumption Format (now titled *Consider the Assumption Format*)—One commentator suggested that the need to identify the format of the assumption does not have to occur prior to the actual assumption selection. **The committee recognizes that the assumption selection process will require an evaluation to be made of the selected assumption’s reasonableness and might require the selection process to be repeated if the initial selected assumption and format are not reasonable. The committee modified section 3.3.3 to clarify that the assumption format needs to be considered, but not necessarily selected, prior to the selection of the specific assumption being analyzed.**

Several comment letters indicated confusion over the assumption format and the use of different assumptions for different segments of the covered population (such as different mortality tables for males and females or different turnover tables for hourly and salaried employees.) **The committee added text to sections 2.1 and 3.3.3 to clarify that the assumptions format may include different assumptions for different segments of the covered population.**

Section 3.3.5, Evaluate Reasonableness of the Selected Assumptions—Some commentators were concerned about the exposure draft’s preference for decrement tables over point estimates. **The committee modified section 3.3.5(a) to clarify this issue and to provide additional examples of when point estimates are acceptable.**

One commentator was concerned that the requirement that the assumption selected “is not anticipated to produce significant cumulative actuarial gains and losses over the measurement period” was a departure from current actuarial practice. It was the commentator’s belief that most actuaries choose assumptions based on what they believe will be reasonable in the near future and continue these assumptions to the end of the measurement period. The commentator pointed to the mortality assumption in particular as an assumption that most actuaries do not anticipate future mortality improvements in setting the mortality assumption. **The committee discussed this point extensively. The committee decided to retain this requirement of section 3.3.5. As stated in section 3.1, Overview, future events are uncertain and an actuary should use professional judgment to estimate future outcomes based on past experience and future expectations.**

Section 3.5, Specific Considerations—Several commentators offered suggestions for the specific considerations listed in section 3.5 and section 3.6. **For the most part, the committee agreed with the suggestions and either modified the wording in section 3.5 or considered the comment to be already covered, albeit in different fashion, by the existing language. The list of factors for each assumption was not intended to be exhaustive, but was intended to provide a certain basic level of guidance. The fact that a given factor was listed for consideration is not meant to imply that the actuary should meticulously document the**

impact of the listed factor, nor was it meant to exclude any other factor from being considered as part of the assumption selection process.

Section 3.5.1, Retirement Assumption—Some commentators expressed concern about the need to consider “employees’ general financial ability to retire” in selecting a retirement assumption. **The ASB deleted section 3.5.1(d).**

Section 3.6, Other Demographic Assumptions—Some commentators suggested that the standard specifically address when assumptions relating to events such as plant shutdowns, layoffs, or return to service are appropriate. **The committee agreed that specific reference to an assumption relating to potential return to service should be covered. But the committee believes that it is not appropriate to address possible plant shutdowns or layoffs in this standard. The ASB had considered a proposed standard relating to plant shutdown benefits several years ago and has not yet established a standard in this area.**

Section 3.6.1, Administrative Expenses Charged to the Plan—One commentator wanted the standard to explicitly allow for the inclusion of administrative expenses as an offset to the investment return assumption. **The committee agreed and modified the text to permit this approach, provided that the reduction in the investment return assumption is explicitly disclosed.**

Sections 3.6.2, Household Composition and 3.6.3, Marriage, Divorce, and Remarriage—Some commentators raised questions concerning these assumptions. **In response to these requests, the committee added an example illustrating when an assumption regarding household composition might be needed.**

Another commentator commented on the importance of the marriage and remarriage assumptions in measuring postretirement health care benefit obligations. **Since this standard does not cover such benefits, the committee believed that there was no need to add such a discussion.**

Section 3.6.6, Transfers (now titled *Transfers and Return to Employment*)—Two commentators questioned including the probability of transfer and the effect of transfers on prior service or benefits as an assumption. **The committee believes that in some situations such an assumption can be important in developing an appropriate measurement of obligations under defined benefit plans and hence has retained this section.**

Section 3.8, Prescribed Assumptions—Several commentators noted that they agreed with the committee’s view that nonprescribed assumptions should not be adjusted to offset prescribed assumptions.

Section 3.10, Other Considerations—Some commentators were concerned that materiality and cost-effectiveness might be used as justification for selecting assumptions that might not otherwise satisfy this standard. **The committee believes that materiality and cost-effectiveness are important criteria, but that they cannot be used as justification for selecting**

unreasonable assumptions. As in all aspects of assumption selection, actuaries need to use professional judgment with respect to materiality and cost-effectiveness, and to take these factors into consideration only when truly appropriate.

One commentator requested that plan size be explicitly included in the list of other considerations in selecting assumptions. **The committee chose not to include plan size explicitly in this section, but notes that size is specifically mentioned in section 3.3.3, Specify the Assumption Format. Furthermore, the committee reworked section 3.3.5, Evaluate Reasonableness of the Selected Assumptions, to explicitly note “in a plan with a small number of expected retirements, it may not be possible to model experience any better using rates that vary by age than by using a single age” as an example of when the size of the participant group may have an effect on the selection of assumptions.**

Section 3.10.1, Materiality—One commentator requested that the standard be more explicit in defining what constitutes a material effect on the results. **The committee believes that the current wording is appropriate and that a more precise discussion might cause confusion regarding the intent to have actuaries balance refined methodology and materiality.**

Section 3.10.2, Cost Effectiveness—One commentator objected to including such a statement in this standard. **The committee believes that this is an issue that merits treatment in the standard and hence has decided to retain this section.**

Another commentator questioned why use of general research was limited to some instances. **After discussion, the committee agreed and deleted the language in question.**

Section 3.10.3, Combined Effect of Assumptions—Several commentators indicated agreement with this section, although one requested that it be clarified to reference the combined effect of nonprescribed assumptions only. **The committee agreed with this change and made an appropriate modification.**

Section 3.10.4, Knowledge Base—There was both criticism and support for this section from the commentators. **After discussion, the committee chose to continue to allow the actuary the option of reflecting events occurring after the measurement date if the actuary deems reflecting these events to be appropriate. The retention of this option is not to be taken as a requirement that the actuary must consider post-measurement date knowledge.**

Section 4. Communications and Disclosures

Section 4.1.1, Demographic Assumptions—One commentator noted that citing the name of a published table may be more useful than providing a table of sample factors. **The committee agreed that supplying the name of a published table is generally sufficient, and modified the text accordingly.**

Section 4.2, Prescribed Assumptions—One commentator was concerned that additional language would be required for disclosure on government forms. **The committee agreed with the commentator and provided for this exception in a new section 4.3, Required Government Forms.**

Appendix 2. Illustrations of Concepts Presented in This Standard

Many commentators found the illustrations more confusing than helpful. **The committee agreed and removed this appendix.**