Pension Standards of Practice – Today and Tomorrow

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Presenters

- **Thomas D. Levy**, FSA, MAAA, FCIA, AIA, EA, FCA, Actuarial Standards Board member, and ASB liaison to the ASB's Pension Committee;

- **Kathleen A. Riley**, FSA, MAAA, EA, FCA, former Academy VP of Professionalism; and

- **Moderator**: Sheila J. Kalkunte, Academy's assistant general counsel
Disclaimer

The statements and opinions expressed herein are solely those of the panelists and do not constitute official statements or positions of the Academy or its committees or councils or the Actuarial Standards Board.

The Actuarial Standards Board and its Pension Committee are currently considering significant revisions to these and other ASOPs. This presentation generally only deals with the ASOPS as currently approved.
AGENDA

- **ASOP No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations**

- **ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions**

- **ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations**
Actuarial Standard of Practice No. 35

Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations

Revisions Adopted September 2010
The purpose of ASOP 35:

- Guidance in selecting demographic and other noneconomic assumptions for measuring obligations under DB pension plans; and
- Expansion and, in some cases, modification of ASOP No. 4 provisions that relate to selection and use of demographic and other noneconomic assumptions.

Selecting includes giving advice on selecting assumptions.
The scope of ASOP 35:

- Guidance not covered by ASOP No. 27 regarding economic assumptions for pension obligations other than under any defined benefit pension plan that is a social insurance program described in ASOP No. 32 (unless a standard explicitly calls for such standard’s application).
(continued)

- Not applicable where actuary precluded from independent judgment by applicable law, regulation, or other binding authority. For example, does not apply to selection of a current liability mortality assumption under Internal Revenue Code Section 412.

- Revisions effective for valuation dates on and after June 30, 2011.
Definitions:

- Assumption Format – form used or expressed.
- Assumption Universe – possible options that actuary might reasonably use for assumption.
- Demographic Assumptions – demographic and other noneconomic assumptions.
- Measurement Date – determination of pension obligation value date.
- Measurement Period – period subsequent to measurement date during which particular demographic assumption will apply.
Overview

- The actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations.
- The actuary should select reasonable demographic assumptions.
- 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.
- The actuary may present several results to illustrate the effect of alternative reasonable assumptions.
Types of Demographic Assumptions may include:

- Retirement;
- Mortality and mortality improvement;
- Termination of employment;
- Disability and disability recovery;
- Election of optional forms of benefits; and
- Other assumptions such as administrative expenses, etc.
Demographic Assumption Selection Process

- Identify assumption types
  - factors to consider when identifying types of demographic assumptions for a specific measurement include purpose and nature of measurement, plan provisions or benefits, factors affecting timing and value of potential benefit payments, and others).
  - not every contingency must give rise to a separate assumption.

- Define relevant assumption universe
  - consider assumption universe relevant to each type of assumption identified in ASOP No. 35, Section 3.3.1.
  - consider sources such as experience studies or published tables; relevant plan or plan sponsor credible experience; reports of effects of plan design, specific events, economic conditions, etc.; and reports of relevant general trends.
Demographic Assumption Selection Process (continued)

- Consider assumption format
  - consider appropriate format for each demographic assumption. Factors that affect format specifications include the degree to which assumption format may affect results; availability of tables, data, or information; degree to which assumption format has potential to model anticipated plan experience; size of population; and degree to which parameter (such as age, gender, service, etc.) is anticipated to affect experience.
  - may be appropriate for format to include specific assumptions for different segments of covered population.
Demographic Assumption Selection Process (continued)

- Select Specific Assumptions
  - actuary should select each demographic assumption from appropriate assumption universe, considering the materiality of each assumption and consequences of experience deviating significantly from assumption;
  - actuary should consider measurement-specific factors such as purpose and nature of measurement; features of plan design or change in plan design that may influence assumption; appropriate experience from specific plan and other relevant sources; relevant factors known to the actuary that may affect future experience;
  - actuary should not give undue weight to past experience or to experience that is not sufficiently credible.
Demographic Assumption Selection Process (continued)

- Evaluate reasonableness of selected assumptions:
  - actuary should evaluate reasonableness of each material demographic assumption selected.
  - actuary should evaluate based on the fact that the assumption is expected to appropriately model the contingency being measured and the assumption is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

- Each individual demographic assumptions selected by the actuary should satisfy this standard.
Specific Considerations

- Retirement Assumption
  - plan design, where specific incentives may influence when participants retire;
  - design of, and date of anticipated payment from, social insurance programs;
  - availability of other employer-sponsored postretirement benefit programs.

- Termination of Employment Assumptions
  - employer-specific or job-related factors;
  - plan provisions.
Specific Considerations (continued)

- Mortality and Mortality Improvement Assumptions
  - the possible use of different assumptions before and after retirement;
  - use of different assumptions for disabled lives;
  - use of different assumptions for different participant subgroups and beneficiaries.
Specific Considerations (continued)

- For mortality improvement:
  - adjust mortality rates to reflect mortality improvement prior to the measurement date; and
  - include assumption as to expected mortality improvement after the measurement date.
  - Assumption should be disclosed (in accord with ASOP 35, Section 4.1.1) even if the actuary concludes that an assumption of zero future improvement is reasonable as described in ASOP No. 35, Section 3.1.
  - The existence of uncertainty about the occurrence or magnitude of future mortality improvement does not by itself mean that an assumption of zero future improvement is a reasonable assumption.
Specific Considerations (continued)

- Disability and Disability Recovery Assumption
  - the plan’s definition of disability;
  - the potential for recovery.

- Optional Form of Benefit Assumption
  - benefit form and commencement dates available under plan being valued;
  - historical or expected experience of election under the plan and similar plans; and
  - degree to which particular benefit forms may be subsidized.
Other Demographic Assumptions (may include)

- Administrative Expenses Charged to Plan (such as investment advisory, investment management, or insurance advisory services, premiums paid to the PBGC, etc.)
- Household Composition
- Marriage, Divorce, and Remarriage
- Open Group (such as number and characteristics of new entrants)
- Hours of Service
- Transfers and Return to Employment
- Missing or Incomplete Data (the actuary may need to make reasonable assumptions for the missing data elements)
Each demographic assumption selected by the actuary should be consistent with the other assumptions unless the assumption, considered individually, is not material.

When an assumption is prescribed, the actuary is obligated to use it.

At each measurement date, the actuary should consider whether the selected assumptions continue to be reasonable (although the actuary is not required to do a complete assumption study at each measurement date).

Other considerations that may be used when selecting demographic assumptions include materiality, cost effectiveness, combined effect of assumptions, knowledge base, and expert advice.
Disclosures – pension actuarial communications should contain descriptions of assumptions used, changes in assumptions and changes in circumstances.

- Assumptions Used – the actuary should disclose each material assumption used in the measurement with sufficient detail to permit another qualified actuary to assess the level and pattern of the rates. Disclosure of mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision for future mortality improvement. If the actuary assumes zero mortality improvement after the measurement date, the actuary should state that no provision was made for future mortality improvement.

- Changes in Assumptions – the actuary should disclose any material changes in assumptions from those previously used, whether in words or by numerical data as appropriate.

- Changes in Circumstances – the actuary should disclose any significant event of which the actuary is aware that occurred since the measurement date that would have materially changed any of the demographic assumptions selected.
Other Communications

- Prescribed Assumptions – identify and state the source of any prescribed assumptions.
- Required Government Forms – comply with the instructions on the government forms for disclosure rather than the ASOP.
- Deviation from the Guidance in the Standards – follow the disclosures required in ASOP No. 41 (revisions previously exposed by the ASB are under consideration).
ASOP No. 35 Recent Changes

- Primary change in 2010 to ASOP No. 35 was to address concerns regarding assumptions relating to future mortality improvements and its uncertainty and the ability for some practitioners to assume zero future mortality improvements.

- The ASB Pension Committee determined from various resources that, while some argue that the rate of mortality improvement could slow as a result of obesity or other health issues, the scientific consensus is the likely continuation of improvements in mortality.
Thus, the most significant changes to ASOP No. 35 are:

- Inclusion of guidance in Section 3.5.3 with respect to mortality improvement before and after the measurement date.
- Examples of incorporating mortality improvement.
- That the existence of uncertainty about the occurrence or magnitude of future mortality improvement does not by itself mean that an assumption of zero future improvement is reasonable.
- Revised disclosures.
Actuarial Standard of Practice No. 4

Measuring Pension Obligations and Determining Pension Plan costs or Contributions

Revisions Adopted September 2007
Purpose

- Guidance to actuaries performing professional services with respect to measuring pension obligations and determining plan costs or contributions.
- To tie together by reference other ASOPs, including ASOPs Nos. 27, 35, and 44.

To the extent of a conflict between guidance in ASOP No. 4 and Nos. 27, 35, and 44, the guidance in ASOP No. 4 governs.
Scope – this standard applies to actuaries when performing service with respect to:

- Measurement of pension obligations;
- Assignment of the value of plan obligations to time periods;
- Development of a cost allocation procedure used to determine costs for a plan;
- Development of contribution allocation procedure used to determine contributions for a plan;
- Determination as to types and levels of benefits supportable by specified cost or contribution levels; and projection of pension obligations, plan costs or contributions, and other related measurements.

This standard does not apply to actuaries when performing professional services with respect to individual benefit calculations, benefit statement estimates, annuity pricing, nondiscrimination testing, and social insurance programs described in ASOP No. 32.
Overview of Analysis of Issues and Recommended Practices

- Measuring pension obligations and determining plan costs or contributions are processes in which the actuary may be required to make judgments or recommendations on the choice of actuarial assumptions, actuarial cost methods, asset valuation methods, and amortization methods and periods.
- ASOP No. 4 addresses actuarial cost methods and provides guidance for coordinating and integrating elements of an actuarial valuation of a plan.

Prescribed Assumption or Method Selected by Plan Sponsor

- Actuary should evaluate whether a prescribed assumption or method selected by the plan sponsor is reasonable, except as provided in ASOP 4, Section 3.2.2.
- Evaluating Prescribed Assumption or Method:
  - actuary should consider whether the prescribed assumption or method significantly conflicts with what, in the actuary’s professional judgment, would be reasonable for the purpose of the measurement.
General Procedures – when measuring pension obligations and determining plan costs or contributions the actuary should:

- Identify the purpose and nature of the measurement;
- Identify the measurement date;
- Identify plan provisions applicable to the measurement;
- Gather data necessary for the measurement;
- Select actuarial assumptions pertinent to the measurement, if applicable; and
- Select an asset valuation method, if applicable;
General Procedures (continued):

- Consider the interrelationship among procedures, assumptions, and plan provisions;
- Consider the relationship between procedures used for measuring assets and obligations;
- Apply an actuarial cost method to produce a normal cost and actuarial accrued liability, if applicable;
- Apply a procedure to allocate costs or contributions to past and future periods, if applicable; and
- Consider whether the actuarial cost method and amortization method and period are significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, if applicable.
Measuring the Value of Accrued or Vested Benefits

- The actuary may measure the value of accrued or vested benefits as of a measurement date and should consider the following:
  - relevant plan provisions and law;
  - status of plan;
  - contingencies upon which benefit becomes payable;
  - extent to which participants have satisfied relevant eligibility requirements for accrued or vested benefits and extent to which future service or advancement in age may satisfy those requirements;
  - extent to which death, disability, or other ancillary benefits are accrued or vested;
  - whether plan provisions on accrued benefits provide appropriate attribution pattern for measurement; and
  - if the measurement reflects the impact of a special event.
Volatility

- If the scope of the actuary’s assignment includes an analysis of the potential range of future pension obligations, costs, contributions, or funded status, the actuary should consider sources of volatility that, in the actuary’s professional judgment, are significant.

Adjustment of Prior Measurement

- The actuary may adjust the results from a prior measurement in lieu of performing a new detailed measurement if, in the actuary’s professional judgment, such an adjustment would produce an appropriate result for purposes of the measurement.

Approximations and Estimates

- The actuary should use professional judgment to establish a balance between the degree of refinement of methodology and materiality.
Communication Requirements and Disclosures

- Any actuarial communications must comply with ASOP No. 4 (including the items listed in ASOP No. 4, Section 4.1) in addition to the requirements of ASOP Nos. 23, 27, 35, 41, and 44.

- Communications should state the source of any prescribed assumptions or methods and should identify any prescribed assumption or method that significantly conflicts with what would in the actuary’s professional judgment be reasonable, or, any prescribed assumption or method that the actuary is unable to evaluate for reasonableness.

- Deviations should be disclosed as provided in ASOP No. 4, Section 4.3.
Some aspects of ASOP No. 4 that might warrant review include issues regarding funding methods, contribution policy, funded status, projections, terminology, and valuation of certain types of plan provisions.

Proposed changes may require the actuary to explain why each significant assumption was chosen, why cost methods or assumptions were changed, or the reasons for changes to any amortization period or to resets of the actuarial value of assets.

All of the proposed potential changes in this presentation are only the views of the presenter and do not reflect the position of the ASB or what might be contained in an exposure draft of this ASOP.
Actuarial Standard of Practice No. 27
Selection of Economic Assumptions for Measuring Pension Obligations
Revisions Adopted September 2007
Purpose

- Provide guidance to actuaries in selecting economic assumptions;
- Amplify those provisions of ASOP No. 4 that relate to the selection and use of economic assumptions; and
- Provide information to enhance non-actuaries’ understanding of the process by which actuaries select economic assumptions for defined benefit pension plans

Scope

- Applies to the selection of economic assumptions to measure obligations under any defined benefit pension plan that is not a social insurance program.
General Considerations

- Identify components, if any, of each assumption and evaluate relevant data.
- Develop a best-estimate range
  - The “best-estimate range” is defined as the narrowest range within which the actuary reasonably anticipates that the actual results, compounded over the measurement period, are more likely than not to fall.
  - Not required to identify the explicit best-estimate range as long as the actuary is satisfied the selected point would fall within it.
- Further evaluate measurement-specific factors and select a specific point within the best-estimate range.
Considerations in Setting Economic Assumptions

- Each individual assumption selected by the actuary should satisfy the standard.
- With respect to any particular measurement, each economic assumption selected by the actuary should be consistent with the others unless the assumption, considered individually, is not material.
- The combined effect of all nonprescribed assumptions should be reasonable.
- More than one reasonable assumption may exist for measuring the same contingency. The actuary can select one, or may show the results using several reasonable assumptions.
Interest Rate Assumption

- Includes both:
  - investment return assumption—expected return on plan’s investments, and
  - discount rate assumption—expected returns on a hypothetical asset portfolio.

- Review appropriate investment data:
  - Current yields on fixed income securities
  - Forecasts of inflation and of total returns on asset classes
  - Historical data including risk-free returns, inflation, and real return or risk premium for asset classes
  - Historical plan performance
Interest Rate Assumptions (continued)

- Consider standard deviations, correlations or other statistical data
  - Consider using stochastic simulation models

- Develop best-estimate return range (25th to 75th percentiles)—examples of two acceptable methods:
  - Building Block Method
  - Cash Flow Matching Method

- May develop multiple rates
  - Select and ultimate rates
  - Obligations covered by current assets versus other unfunded obligations
Building Block Method

- Develop best-estimate range of real returns for each class
- Compute weighted average real return range for the plan based on asset mix
- Add expected inflation to the range for the plan
  - But not generally appropriate to simply add the low endpoints and high endpoints—creates an overly broad range
  - Consider using a stochastic model to reflect correlations
Cash Flow Matching Method

- Project plan’s expected benefit and expense disbursements by year
- Identify a highly diversified portfolio of noncallable, high-quality corporate or U.S. government bonds with interest and principal payments approximately matching the plan disbursements
- Compute the bond portfolio’s internal rate of return
- Establish a risk adjustment range for the plan reflecting:
  - Uncertainties in expected disbursements
  - Expected returns on future contributions
  - Reinvestment rates
  - Mismatches between disbursements and bond portfolio payments
  - Expected investments in equities or other asset classes
Measurement-Specific Factors in Setting Interest Rate Assumption

- Purpose of the measurement
- Investment policy
- Reinvestment risk
- Investment volatility
- Investment manager performance
- Investment expenses
- Cash flow timing
- Benefit volatility
- Expected plan termination
- Tax status of funding vehicle
Other Economic Assumptions

- Cost of Living
  - Formula related to CPI
  - Long term vs. short term
- Example
  - Assuming CPI: 2.5%
  - Plan Design: COLA is granted as CPI less 3%
  - If assumption is only 2.5% each year, no COLA will ever be assumed
  - Solution: stochastic modeling may reveal an average annual increase of 0.7%; use that as your assumption.
- Conversion Rates
  - Select and ultimate
- Cash Balance Accumulations
  - Look at historical and expected returns
  - Test various rate levels
- Plan Expenses
Other Considerations

- Materiality – actuary needs to establish a balance between refined methodology and materiality
- Cost Effectiveness – actuary needs to establish a balance between refined methodology and cost effectiveness.
- Knowledge Base – economic assumptions selected to measure pension obligations should reflect the actuary’s knowledge base as of the measurement date.
- Advice of Experts
Potential changes include guidance regarding the assessment, disclosure, and management of risk.

Potential proposed changes include elimination of the current best-estimate range concept because the change was too wide in practice and the Pension Committee considers the reasonability standard in ASOP No. 35 to be preferable.

Potential changes include breaking the link between investment return and the discount rate assumption.

Potential changes include disclosure of the rationale for selection of significant assumptions or changes in those assumptions.

All of the proposed potential changes in this presentation are only the views of the presenter and do not reflect the position of the ASB or what might be contained in an exposure draft of this ASOP.
Questions?