Potential Impacts of New Mortality Tables on 2014 Benefit Plan Financial Statements

Executive Summary

On October 27, 2014, a leading authority on actuarial research, the Society of Actuaries (SOA) released a new set of mortality tables and mortality improvement scales that pension and other post-employment benefit plan sponsors will need to consider when measuring benefit costs and obligations of plans that provide benefits based on life expectancy of participants. Compared to previous tables and projection scales, these tables highlight longer life expectancies and faster increases in mortality improvements. Updating to the new tables will increase a defined benefit plan’s obligations and lower balance sheet funding status. The effects will vary by plan; some preliminary estimates range from 3 percent to 10 percent. When the new tables are adopted by the IRS (expected for 2016 plan years), other defined benefit plan impacts could include:

- Higher contribution requirements
- Pricier lump-sum payouts
- Higher Pension Benefit Guaranty Corporation (PBGC) variable rate premiums

Plan sponsors should discuss the implication of the new SOA tables with their auditors and actuaries as soon as possible.

Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1995</td>
<td>• Mortality Improvement Scale AA released</td>
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<td>2000</td>
<td>• SOA published Mortality Tables RP-2000</td>
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<tr>
<td>2006</td>
<td>• Pension Protection Act (PPA) grants IRS authority to prescribe mortality tables used for funding liabilities, with mandatory 10-year updates</td>
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<tr>
<td>2009</td>
<td>• SOA begins work on updating mortality tables</td>
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<tr>
<td>2012</td>
<td>• SOA releases mortality improvement Scale BB and Scale BB-2D as short-term alternatives to Scale AA</td>
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| 2014 | • Feb. – Exposure draft Mortality Tables, RP-2014 and Mortality Improvement Scale MP-2014  
• Oct. – Final tables released |
| 2016 | • Earliest IRS would require use of RP-2014 and MP-2014 tables |
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Mortality Tables & Mortality Improvement Scales

Mortality tables consist of a probability of death by age and are used by actuaries to project benefit payments. Mortality tables generally reflect historic mortality patterns prior to the study period and do not reflect potential improvements in mortality after the study period. It would be inappropriate to use a fixed study table for future actuarial valuations without applying some adjustments for mortality improvements. Mortality improvement is the measure of how mortality rates change over time, e.g., a flat mortality improvement rate assumption of 1 percent means that mortality rates (deaths) during 2013 are expected to be 1 percent lower than 2012 mortality rates for the corresponding ages. Numerous factors influence the rate of mortality improvement:

- Access to primary medical care for the general population (in particular, Medicare and Medicaid)
- Antibiotics and immunizations
- Clean water supply and waste removal
- New diagnostic, surgical and life-sustaining techniques
- The rate of future health spending increases
- Environmental pollutants
- Physical activity, nutrition, obesity and smoking
- The emergence of new forms of disease

The most commonly used mortality improvement scale, Scale AA, was published in 1995. This is considered a one-dimensional scale because a single perpetual improvement rate is applied at each age.

Pension Protection Act of 2006

The Pension Protection Act of 2006 (PPA) was the most comprehensive pension reform legislation since the Employee Retirement Income Security Act of 1974 (ERISA), most notably establishing new minimum funding standards for defined benefit pension plans. It also authorized the IRS to prescribe mortality tables used in the calculation of funding liabilities and minimum lump-sum calculations. (Large plans may petition the IRS to use a plan-specific mortality table.) The PPA requires a review of the mandated mortality tables for appropriateness at least every 10 years.

The IRS currently requires actuaries to use the RP-2000 tables. The mortality assumptions must be updated for mortality improvements since 2000 in one of two ways:

- By use of a “generational” table that calculates different life expectancies based on year of birth
- A “static” table that makes fixed and generally applicable projections of mortality improvements

In either case, the mortality improvements are based on SOA’s Scale AA.

The IRS mandates for 2014 and 2015 already have been issued and retain the existing assumptions in RP-2000 and Scale AA. It is likely the new assumptions will be adopted for 2016 plan years for funding requirements and lump-sum conversions. Once the IRS adopts the mortality tables, funding ratios will drop and minimum required contributions will increase. The PPA permits smoothing the increase over a seven-year amortization period. Some plan consulting firms are predicting the change could encourage sponsoring entities to terminate existing defined benefit plans, which may prompt Congress to step in to provide some relief on funding requirements.

While the IRS dictates the mortality assumption to be used for pension funding, entities have some choice in the assumptions they use for financial accounting purposes. However, almost 80 percent of entities default to the IRS requirements.
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**PBGC Provisions**

The PBGC is a federal corporation created under ERISA. It guarantees payment of basic pension benefits for employees and retirees participating in more than 29,000 private-sector defined benefit pension plans. Operations are financed by insurance premiums paid by companies that sponsor pension plans and by investment returns. The variable rate premium is based on a plan’s unfunded vested benefits, and sponsors of severely underfunded plans require higher employer contributions. The adoption of the new tables will cause funding ratios to drop, which will cause PBGC premiums to increase. In addition, the lower funded status could lead to benefit restrictions, quarterly contribution requirements or even at-risk status. Congress could enact legislation to smooth the effect of adoption of the new tables.

**SOA’s New Mortality Tables**

In accordance with the IRS mandated 10-year review cycle, the SOA began a project to revise U.S. mortality assumptions for pension plans in 2009. Early findings indicated the U.S. mortality improvement since 2000 has differed from that anticipated by Scale AA. The evidence was so overwhelming that in 2012 the SOA released interim improvement rates in Scale BB and Scale BB-2D, which could be used as short-term alternatives to Scale AA until the final tables were ready for release.

**Mortality Improvement Scales, MP-2014**

**Scope**

In conducting its research to develop new mortality improvement scales, the SOA began with the most recent Social Security data set. Because the data set is much broader than the data set used for the new mortality tables, the results are applicable to both public and private pension plans.

**Application & Implications**

The new scales, known as MP-2014, are two-dimensional, with gender-specific mortality expressed as a function of both age and calendar year. The new scales can distinguish between different patterns of mortality improvements over distinct periods or year of birth cohorts. For example, baby boomers have a lower level of mortality improvements than the “silent generation” born between 1925 and 1942. This is a significant improvement over Scale AA and Scale BB, which were one-dimensional.

SOA used a new methodology (RPEC-2014 model) to create MP-2014 that should be easier to refresh and may lead to more frequent updates to U.S. mortality improvement scales. SOA is planning to update these scales at least triennially. The RPEC-2014 model requires input of certain assumptions to generate a two-dimensional table of mortality improvements. Scale MP-2014 reflects a set of assumptions developed by SOA; however, the final report recommends that future mortality improvements be based on the RPEC-2014 model with an appropriately selected assumption set within the “relevant assumption universe.” Significant judgment will be required, as the report does not contain an explicit range of assumptions the SOA would consider reasonable.

**SOA Conclusion**

SOA concludes that Scale MP-2014 represents the current best estimate of future mortality improvements in the U.S., and users who select alternate assumptions should be prepared to justify those assumptions are reasonable and appropriate.

The SOA believes that two-dimensional mortality improvement scales are considerably superior to one-dimensional versions. However, the SOA acknowledged that not all actuaries will have immediate access to software that can handle the new two-dimensional methodology. The final report includes a methodology to construct a one-dimensional scale that can be used to approximate Scale MP-2014.
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The chart below highlights the different mortality improvement rates for one male age group for each of the available scales. The curved lines for MP-2014 and Scale BB-2D reflect their two-dimensional nature.

California Public Employees Retirement Fund (CalPERS), the largest public pension fund in the U.S., is required to conduct regular experience studies to review actual experience in relation to the current actuarial assumptions, and to recommend appropriate changes in actuarial assumptions. As part of its January 2014 review, CalPERS has recommended incorporating a slightly modified version of scale MP-2014 in its actuarial assumptions. The state of California has one of the lowest smoking rates in the nation, and CalPERS’ actuaries adjusted the mortality improvement scale to reflect that covered employees are currently benefiting from this healthy lifestyle choice and that future improvements may be less than the national average as a result.

The New York State & Local Retirement System (NYSLRS) August 2014 experience review also recommended replacing mortality improvement Scale AA with MP-2014 in future valuation assumptions. The report noted that while the various New York plans are large enough to have sufficient data to create a mortality base table, “the data required to develop a quality mortality improvement table is significantly more than NYSLRS can provide.”

Mortality Tables, RP-2014

Scope

In beginning its research on new mortality tables, the SOA solicited data from both public and private plans. Only three large public plans submitted data. The small number of public contributors and statistically significant mortality differences produced for public and private plan data sets led the SOA to exclude the public data. The SOA will initiate a separate study of public plan mortality experience, with the expectation that the study would include separate tables for public safety, teachers and other public entities. The final data set consisted of 10.5 million life years of private pension plan exposure, similar to the amount of data used to develop RP-2000. The SOA concluded that the resultant mortality tables represent the current mortality experience of ongoing private pension plans in the United States.
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Application & Implications

The SOA finalized 14 new mortality base rate tables, “RP-2014,” that indicate the current mortality rate observed in the U.S. population covered by private pension plans. These tables differ by gender, employment status, job type and income status. A sponsor can choose the table that best meets the demographics of plan participants.

- Gender – Females have longer life expectancies than males.
- Current retirement status – Current employees have longer life expectancies than retirees of the same age. Disabled retirees have shorter expected lifetimes than any healthy plan participant.
- Types of labor performed – Blue-collar workers have shorter life expectancies than white-collar workers.
- Income status – Higher-paid workers have longer life expectancies than lower-paid workers (new category for 2014).

The change from the prior mortality assumptions to those in the new report results in longer life expectancies. Updating to the new tables will increase a defined benefit plan’s obligations and lower balance sheet funding status. The effects will vary by plan; the changes will have a more dramatic effect on traditional plans than on lump sum-based plans. A pension plan that defines benefits in the form of a lump sum, e.g., cash balance or pension equity plan, has less exposure to the changes in life expectancy of a plan participant than traditional pension plans that define benefits as annuity payments.

SOA Conclusion

The SOA encourages all pension actuaries in the United States to carefully review this report. The RP-2014 tables represent the most current and complete benchmark of U.S. private pension plan mortality experience, and SOA recommends consideration of their use for the measurement of private pension plan obligations, effective immediately. Despite the exclusion of public plan data in developing the new tables, SOA believes it would not necessarily be inappropriate or inconsistent for actuaries to consider one or more of the RP-2014 tables as suitable mortality benchmarks for any individual public plan.

The SOA believes it would be more meaningful for users to assess the combined effect of adopting RP-2014 and MP-2014, rather than trying to isolate the impact of adopting one without the other. The financial impact of the combined change is expected to vary quite substantially based on the starting mortality assumptions; the impact of switching from a static projection using Scale AA typically will be much more substantial than the impact of switching from a generational projection using Scale BB.
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The tables below show people are living longer. The improved longevity applies to both males and females, but female longevity is increasing more than males.

Actuarial Standards of Practice

As noted above, the IRS dictates the mortality assumptions for pension funding, leaving plan sponsors some flexibility in the assumptions they use for financial accounting purposes. Most plan sponsors rely on their actuarial firms for advice on demographic assumptions, including mortality. The Actuarial Standards Board (ASB) promulgates actuarial standards of practice (ASOPs), which apply to U.S. actuaries. Two ASOPs govern the selection of actuarial assumptions used in valuations of pension plans:

- **ASOP No. 27**: Selection of Economic Assumptions for Measuring Pension Obligations (addresses the selection of demographic assumptions)
- **ASOP No. 35**: Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations

The mortality tables used and adjustments made, e.g., for longevity improvements, should be appropriate for the employee base covered under the plan. These standards require the actuary to consider the likelihood and extent of mortality improvements as a factor in setting the mortality assumptions and must consider the effect of mortality improvement—both prior to and after the measurement date. ASOP No. 35 notes, “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.”
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An individual actuary may rely on professional judgment that a particular pension population could reasonably be expected to have different experience than anticipated by RP-2014 and MP-2014. For plans with a small number of participants or those expected to pay benefit primarily in the form of a lump-sum distribution, the materiality threshold in ASOP No. 35 may indicate the use of MP-2014 and RP-2014 is not warranted.

### Accounting Standards

The guidance on employers’ accounting and disclosure for defined benefit pensions and other post-retirement plans is contained in Accounting Standards Codification (ASC) 715 – Compensation – Retirement Benefits, which incorporates all guidance previously issued under various accounting standards:

- FAS 87 – Employers’ Accounting for Pensions
- FAS 88 – Employers’ Accounting for Settlements and Curtailments of Defined Benefit Pension Plans and for Termination Benefits
- FAS 106 – Employers’ Accounting for Postretirement Benefits Other Than Pensions
- FAS 132 – Employers’ Disclosures about Pensions and Other Postretirement Benefits
- FAS 158 – Employers’ Accounting for Defined Benefit Pension and Other Postretirement Plans

The guidance on plans’ accounting and disclosure for defined benefit pensions and other post-retirement plans is included in ASC 960, Plan Accounting—Defined Benefit Pension Plans; ASC 962, Defined Contribution Pension Plans and ASC 965, Plan Accounting—Health and Welfare Benefit Plans.

### Plan Assumptions – Mortality

U.S. accounting standards do not mandate a particular mortality table, which means sponsors ultimately decide which assumptions they use for financial statement reporting. There are no disclosure requirements for mortality assumptions in the financial statements.

In measuring each plan’s defined benefit obligation and recording the net periodic benefit cost, financial statement preparers should understand, evaluate and reach conclusions about the reasonableness of the underlying assumptions on an ongoing basis. U.S. generally accepted accounting principles (GAAP) require that “each significant assumption used shall reflect the best estimate solely with respect to that individual assumption.” Entities should document management’s understanding of and reasons for using certain assumptions and methods. Management also should document the key assumptions used and reasons why certain assumptions may have changed from the prior reporting period.

### Funded Status

Accounting guidance requires employers to recognize all changes to the funded status of defined post-retirement benefit plans in the statement of financial position when they occur. Therefore, the adoption of the new SOA tables would have an immediate impact on the plan sponsor’s balance sheet. However, the P&L effect of adoption could be recognized in other comprehensive income (OCI) and be amortized into net income over several years.

U.S. GAAP allows for any systematic and rational method of amortization if that method:

- Results in recognition of at least the minimum amortization amount required by the guidance
- Is applied consistently
- Is applied to all gains and losses on both plan assets and projected benefit obligations
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Many plans use a period equal to the average life expectancy of beneficiaries. Since the new tables will increase life expectancies, they will lengthen the period over which the cost of their effects can be amortized. However, if the amount added to OCI is greater than 10 percent of either the projected benefit obligation or market value of plan assets, the excess would be included in net income in the following fiscal year.

Conclusion

Relatively few U.S. retirement plans are large enough to support development of credible mortality tables or mortality improvement scales exclusively on the plan’s own experience. Plan sponsors should discuss these new tables with their auditors and actuaries to develop a strategic plan for updating year-end assumptions. The SOA tables do not have to be adopted in their entirety; actuaries have flexibility to modify the SOA tables based on “reasonable assumptive universes.” Plan sponsors can consider all relevant available data, including plan-specific mortality data, Social Security data or other actuarial studies. Actuaries and accountants have an obligation to recommend assumptions that will reflect the “best estimate” of liabilities. Since the SOA tables are the most up-to-date pension-related information available, they represent the most likely basis for 2014 year-end measurement, even though the new tables have been finalized late in the year. The IRS lag in adoption for minimum funding is not a valid reason not to consider the new SOA data.

Plan sponsors should generally plan to adopt the new tables, appropriately modified, in 2014 financial statements. In any event, sponsors should clearly document the review process and justification for their selected mortality assumptions. The documentation must be sufficient for an auditor to conclude the mortality assumptions represent the best estimate of the benefit plan obligations in order to issue an unqualified opinion.

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