

How will the new RP-2014 mortality tables affect my DB plan strategy?

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ISSUE:

The Society of Actuaries (SOA) recently released new mortality tables for pension plans that will in most cases significantly increase pension liabilities. How will this change affect the strategies defined benefit (DB) plan sponsors have adopted or are considering?

RESPONSE:

Updating to the new mortality tables will raise the assumed lifetime of plan participants, which will in turn increase a DB plan's total expected benefit payments and lengthen the plan's time horizon. Sponsors should be aware that this change will likely have the following knock-on effects:

- Higher contribution requirements
- Lower balance sheet funded status
- Pricier lump-sum payouts
- Higher PBGC variable rate premiums

While the timing for adoption of these new rates isn't yet known, DB plan sponsors should be aware that this change is coming, and consequently plan to assess their current funding, investment and risk transfer strategies. For example, some plan sponsors will choose to accelerate contributions in the near future in anticipation of the coming increase in liabilities. Others may choose to recast their de-risking glide paths to reflect the new value of liabilities. For sponsors contemplating lump sum cash-outs, the timing of the mortality update could be a critical factor in their costs.

While these new mortality rates will appear as a one-time "shock" to funded status, they really just bring liabilities into line with the actuary's best estimate. Put another way, whether the actuary recognizes this increase now or in the future, the plan sponsor will eventually need to pay out the same annuity amounts – the new mortality tables just help the actuary pin a more accurate current price tag to it.

Background

Mortality assumptions are a critical component of DB liabilities and a key factor in determining the expected length of time for annuity payments. Except with very large companies that develop their own tables, all DB plans use industry mortality tables. Currently, the most common pension table series is the RP-2000, a set of mortality rates published by the SOA in the year 2000.¹ While the RP-2000 tables are more robust than any previous tables created, they are based on data collected more than 20 years ago. Recognizing the need for a refresh, in 2009 the SOA started the process of creating updated mortality tables for pension plans.² In 2012, the SOA published updated mortality improvement scales (Scale BB), and then finally released the RP-2014 tables and MP-2014 improvement scales in February 2014.

The Pension Protection Act of 2006 (PPA) gives the IRS authority to prescribe mortality rates used in the calculation of funding liabilities.³ Currently, actuaries must use the RP-2000 table, adjusted for expected mortality improvements.⁴ PPA requires a review of the mandated mortality tables for appropriateness at least every 10 years. Consequently, the new RP-2014 tables are likely to be considered for funding liabilities in the near future.⁵

In contrast to PPA, DB accounting standards do not dictate mortality assumptions, which means sponsors ultimately decide which assumptions they use for financial statement reporting.⁶ That said, service professionals such as actuaries and auditors who are deeply involved in the assumption-setting process have an obligation to recommend assumptions that will reflect the “best estimate” of liabilities. Since the RP-2014 tables are the most up-to-date pension-related mortality tables currently available, it is likely that actuaries and auditors will recommend them during the next assumption-setting process.

Timing

At the time of this writing, the SOA has released only an exposure draft report on the new mortality tables and improvement factors. Formal adoption of these tables is unlikely to occur until after the SOA issues the final report. The IRS has not publicly indicated when it will review funding mortality assumptions, but we are reasonably confident that such review will not result in updated rates during 2014 or 2015. The IRS has already released mortality tables for those valuation years based on the older, RP-2000 mortality assumptions. We can see the new RP-2014 tables in use as early as 2016 for both funding requirements and lump-sum conversions.⁷

For accounting purposes, adoption of the new mortality tables will be at the discretion of the plan sponsor. Some sponsors may have already started using the interim Scale BB improvement factors released by the SOA in 2012 (which served as a stepping-stone between RP-2000 Scale AA and RP-2014 Scale MP-2014). Most actuarial firms will be equipped to update to the new mortality tables as soon as the sponsors request it, and many will begin recommending the new tables in the next year or two.

Major auditing firms are aware of the new tables, and may choose to take a firm position on the timing of adopting these tables after the SOA finalizes its report (likely later in 2014). However, they may choose to wait until after the IRS formally adopts the tables. When the auditing firms take a stronger position, sponsors will likely feel the most pressure to adopt.⁸

Impact

Liabilities will almost certainly increase for most types of DB plans as a result of this update, regardless of the prior tables used. The overall increase in liability will vary by plan, based on the following factors:

- **Gender distribution** – Newer tables will tend to have greater impact on female-dominated plans.
- **Age distribution** – Broad expectations for this factor are more challenging to quantify, but very mature plans with mostly older retirees will see the largest increase.
- **Previous mortality tables** – These will vary widely, as sponsors have many mortality table options (for accounting purposes), each with a different associated liability value. In general, the older the previous table, the higher the expected liability increase.

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- **Updated mortality tables** – Again, the sponsor has many options for updating, including adjustments for plan-specific factors and table mechanics. See the appendix for details.
- **Type of plan** – Some plans provide benefits that are neither payable as annuities nor sensitive to mortality changes. Liabilities associated with cash-balance lump sums, for example, will likely see lesser increases from updated mortality.⁹

Some plans will see overall increases of just 3% to 4% of liabilities, while others could see increases as high as 7% to 8%. The plan’s actuary is in the best position to calculate the exact impact, once the table is determined. The SOA released some guidance on the relative impact in its exposure draft.¹⁰

Investment strategy

Improved mortality means annuities are paid longer, and thus the liability duration will most likely increase after this change. We estimate that for a typical annuity-paying plan using the mandated funding mortality table for 2014, the liability duration could increase by about 0.75 to 1.00, depending on the same factors listed above.¹¹ Meaning, liabilities will become even more sensitive to interest rate movements. For those plans managing LDI portfolios, longer duration could necessitate an adjustment in the recommended LDI mix to maintain the same liability hedge, particularly since funded status will fall.

Many DB plan sponsors have adopted liability responsive asset allocation (LRAA) strategies whereby allocations to liability-hedging fixed income increase as funded status improves. Funded status for this purpose is usually based on accounting liabilities. Sponsors can expect to see some drop in funded status once new mortality assumptions are applied, and this change may warrant a reevaluation of a plan’s position on the LRAA glide path.

For example, assume that a plan is 92% funded, but that after the mortality assumption change the funded status is 86%. This change was not driven by any market-related factors (such as rate changes or asset returns). It was more analogous to an actuarial “true-up.” When the underlying components used to develop a strategy change materially, it is prudent to review the strategy’s mechanics.

In particular, the ultimate target on the glide path may need revisiting, which could lead to a realignment of the entire schedule. For example, if the sponsor had built in a 10% to 15% cushion above fully funded as the end game (i.e., 110% to 115% funded on a PBO basis), a 5% to 10% cushion could be all that is needed to cover future actuarial losses, annuity purchase premiums, etc. Meaning, the entire LRAA schedule could shift down by the same magnitude as the funded status change.

Tables 1 and 2 below, with current funded status highlighted, show how the LRAA schedule could change and result in no needed changes to current asset allocation.

Table 1: Prior LRAA schedule

| STEP | FUNDED STATUS | % FIXED INCOME |
|------|---------------|----------------|
| 1 | 75% | 40% |
| 2 | 80% | 45% |
| 3 | 85% | 50% |
| 4 | 90% | 55% |
| 5 | 95% | 60% |
| 6 | 100% | 65% |
| 7 | 105% | 70% |
| 8 | 110% | 75% |
| 9 | 115% | 80% |

Table 2: Updated LRAA schedule

| STEP | FUNDED STATUS | % FIXED INCOME |
|------|---------------|----------------|
| 1 | 70% | 40% |
| 2 | 75% | 45% |
| 3 | 80% | 50% |
| 4 | 85% | 55% |
| 5 | 90% | 60% |
| 6 | 95% | 65% |
| 7 | 100% | 70% |
| 8 | 105% | 75% |
| 9 | 110% | 80% |

Hypothetical analysis provided for illustrative purposes only.

As shown above, although funded status decreased due to realignment of the LRAA schedule, the plan is still within the recommended 55% fixed income mix.

Liabilities will become even more sensitive to interest rate movements.

Sponsors can expect to see some drop in funded status once new mortality assumptions are applied.

Funding strategy

Depending on the exact table the IRS chooses, sponsors can expect to see an increase in funding liabilities, and thus increased required contributions, PBGC premiums, and lower AFTAP/FTAP¹² measures. The lower funding percentages could lead to benefit restrictions, quarterly contribution requirements or even at-risk status, depending on their status before the change. Rather than waiting for these changes to happen, sponsors can take steps now to recognize the impact and plan ahead to reduce the chances of having to make large contributions when this change does occur.

As we discussed after the passage of MAP-21¹³, paying just the minimum required contribution is often an inadequate funding strategy, and it can lead to significant contribution volatility. While the timing of adoption of the new mortality table is not known with certainty, sponsors should establish a funding policy that plans to make more than just the minimum required contribution. This should help make contributions more predictable and level over time.

Risk transfer strategy

The IRS maintains standards for converting annuity benefits into lump sums.¹⁴ The assumed mortality is the same as that used for funding requirements (similar to interest rate assumptions).¹⁵ Therefore, as soon as the IRS formally adopts the new mortality tables for DB plan funding purposes, the lump-sum mortality basis will almost certainly change as well.

In short, lump sums will be more expensive once the new mortality tables take effect. Sponsors can take advantage by paying out lump sums before the new mortality rates become effective. This would mean cashing out participants in either 2014 or 2015 if lump sums are converted from annuities by use of standard IRC 417(e) assumptions.¹⁶

Regarding the effect on annuity purchases, the mortality assumptions of insurance companies will not change based on this update (they use their own mortality tables), but the relative impact on the premium (the amount paid above the PBO) will shift, since the PBO changes. Instead of the oft-quoted 10% to 15% premium above PBO to purchase group annuities, we may see premiums of 5% to 10%. Of course, the ultimate cost of an annuity purchase is not based solely on mortality rates. Other factors, such as administrative cost, profit margins, market timing, etc. must be considered.¹⁷

Final thoughts and considerations

Whether sponsors choose to adopt the new tables this year or later, it is prudent to know about the impact the new assumptions will have. Updating the mortality table is a relatively simple exercise for most actuaries to perform, and their doing so will prevent sponsors from being caught off guard when the change occurs.

While sponsors cannot fully control the impact and timing of this change, they can plan for it now and recognize that adopting the new tables should provide a more accurate reflection of the value of the plan. In the end, this leads to fewer surprises and better strategic decisions.

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Appendix

Mortality table mechanics

The RP-2014 mortality tables are a collection of tables that differ by gender, employment status, job type or income status. The MP-2014 factors assign mortality improvement (how assumed mortality changes over time). For accounting liabilities, a sponsor can choose the table that best meets the demographics of the plan (participants). The key differentiating factors with these mortality tables are:

- **Gender** – Females have longer life expectancies than males. This is why female-dominated DB plans will have higher liabilities than male-dominated DB plans (assuming all else is equal).
- **Current retirement status** – Non-annuitants (i.e., current employees) have longer life expectancies than annuitants (i.e., retirees) of the same age. Disabled retirees have shorter expected lifetimes than any healthy plan participants.
- **Type 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. This category is new with the RP-2014 tables. Options are available for “top quartile” and “bottom quartile,” based on income.

For funding purposes, DB plans use a mortality table that is split between non-annuitants and annuitants, but that has no collar adjustment. Lump sums are based on a unisex (50% male/50% female) table that combines the annuitant and non-annuitant rates.

Another important but more arcane distinction is that between “static” versus “generational” tables. A static table applies the same assumed mortality rates for all participants, indefinitely, into the future. Meaning, a 70-year-old in 2024 would have the same life expectancy as a 70-year-old in 2014. Since mortality rates are generally assumed to decrease over time (as expected longevity keeps increasing), we would expect the chance of death for a retiree who will be 70 years old in 2024 to be less than for a retiree who is 70 years old in 2014, and a generational table addresses this concern.

Rather than using a static, single-column table based on age, a generational table takes into account two dimensions – age and year. The SOA has clearly recommended adopting generational tables. The two simple examples below illustrate the difference between these two table types.

Table 3: Static mortality table

| AGE | DEATH RATE |
|-----|------------|
| 70 | 0.0139 |
| 71 | 0.0154 |
| 72 | 0.0170 |
| 73 | 0.0189 |
| 74 | 0.0209 |
| 75 | 0.0232 |

Table 4: Generational mortality table

| AGE | 2014 | 2015 | 2016 |
|-----|--------|--------|--------|
| 70 | 0.0139 | 0.0136 | 0.0134 |
| 71 | 0.0154 | 0.0151 | 0.0148 |
| 72 | 0.0170 | 0.0167 | 0.0164 |
| 73 | 0.0189 | 0.0185 | 0.0181 |
| 74 | 0.0209 | 0.0205 | 0.0201 |
| 75 | 0.0232 | 0.0227 | 0.0222 |

As shown in Table 4, mortality rates (probability of death during year) decrease over time, leading to higher liabilities when compared to a static table. The choice between the two versions is not absolute. An actuary can project mortality tables to a future year by using the mortality improvement tables to come closer to what the generational table would produce. The IRS currently uses this method to produce mortality assumptions for funding liability purposes. These tables are routinely updated annually (leading to a small actuarial loss). Generational tables require no annual update as all anticipated benefit improvements are included.

For many years, the most-used benefit improvement scale was Scale AA. In 2012, the SOA released Scale BB, to serve as an interim improvement until the final RP-2014 mortality tables and MP-2014 improvement scales were released. The Scale BB factors are used in tandem with the RP-2000 tables and certainly increase liabilities, but not to the same extent as the newest tables and improvement factors.

¹ In practice, these rates are adjusted regularly by pension actuaries to account for expected mortality improvement (i.e., people living longer than they did in the past)

² Society of Actuaries, "RP-2014 Mortality Tables (Exposure Draft)", February 2014.

³ IRC 430(h)(3). The exception is for very large plans with sufficient plan data to create their own customized mortality tables.

⁴ Tables for funding purposes are sex-distinct. RP-2000 includes tables specific to blue-collar and white-collar workers and split between non-annuitants and annuitants. Plans with fewer than 500 participants can use tables where annuitant and non-annuitant rates are combined. Very large plans that can generate sufficient mortality experience data can create their own tables. For funding purposes, the RP-2000 table is projected 15 years beyond the valuation date for non-annuitants, and 7 years beyond the valuation date for annuitants, using mortality improvement Scale AA.

⁵ Society of Actuaries, "RP-2014 Mortality Tables (Exposure Draft)", February 2014.

⁶ In fact, mortality assumptions do not need to be disclosed in financial statements.

⁷ IRS Notice 2013-49.

⁸ See Deloitte, "Financial Reporting Considerations Related to Pension and Other Postretirement Benefits," November 23, 2013, and PwC, "The quarter close: A look at this quarter's financial reporting issues," December 12, 2012.

⁹ Cash balance benefits are not typically dependent on mortality assumptions, as the benefit is defined as a lump sum that increases each year with pay and interest credits. However, if the cash balance amount is converted to an annuity, there will probably be a mortality effect.

¹⁰ Society of Actuaries, "RP-2014 Mortality Tables (Exposure Draft)", February 2014.

¹¹ Assumes initial mortality table is combined the RP-2000 table projected 15 years for non-annuitants and 7 years for annuitants, using Scale AA. Updated mortality table is generational, with combined non-annuitant and annuitant rates between ages 50 and 70. Discount rate = 5%. Both male and female tables were analyzed.

¹² AFTAP = Adjusted Funding Target Attainment Percentage; FTAP = Funding Target Attainment Percentage.

¹³ "MAP-21" stands for the Moving Ahead for Progress in the 21st Century Act. See Owens, Justin, "DB plan funding after MAP-21," published October 2012 by Russell Investments.

¹⁴ Lump sums can be determined on other mortality or interest rate assumptions, but they must be at least as large as the lump sum determined using mandated assumptions.

¹⁵ The mortality assumptions for lump sums differ from liability assumptions in that rates are unisex (50% male/50% female).

¹⁶ Note, however, that this could lead to lower lump sums for the participants.

¹⁷ For a more thorough discussion of risk transfer, see Owens, Justin, "Risk transfer options for defined benefit plan sponsors," published May 2013 by Russell Investments.

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