Historical Mortality Improvement Recommendation (VM-20)
2021 Scale Update

Mortality Improvements Life Work Group (MILWG) of the Academy Life Experience Committee and SOA Preferred Mortality Project Oversight Group ("Joint Committee")
Agenda

- Review standard methodology used for Historical Mortality Improvement (HMI) scale development each year
- Review results of application of the methodology for 2021
- Recommendation for HMI scale for use with 2021 valuation under VM20
HMI Standard Methodology

### Historical Component
- Most recent HMI data—last 10 years
- Source: Social Security Administration (SSA)
- Historical data only available through the end of the year that is 2 years prior to the current valuation year

### Forward-Looking Component
- Most recent SSA Alt 2 forecast of future improvements over longer period (20 years)
- Alt 2 = intermediate projection from most recent SSA Trustees Report release

### Estimated HMI Scale
- Average of historical data and forecasted components
- With smoothing process applied
Historical Component:
10-Year Historical Average Annual Improvement

Male 10 Yr Historical Averages—SSA Data

Scale Year / Data Years:
2021 / 2009-2019
2020 / 2008-2018
2018 / 2006-2016
Historical Component:
10-Year Historical Average Annual Improvement

Female 10 Yr Historical Averages—SSA Data

Scale Year / Data Years:
2021 / 2009-2019
2020 / 2008-2018
2018 / 2006-2016
Unsmoothed Preliminary—Male
Comparison by Scale Year

Males - Compare Unsmoothed Rates

Attained Age

Mortality Improvement Rates

-3%
-2%
-1%
0%
1%
2%
3%

15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105

2021 Scale Year
2020 Scale Year
2019 Scale Year
2018 Scale Year
Unsmoothed Preliminary—Female Comparison by Scale Year

Females - Compare Unsmoothed Rates
Smoothed Preliminary—Male
Comparison by Scale Year

Males—Compare Smoothed Rates

Mortality Improvement Rates

Attained Age

M - 2021  M - 2020  M - 2019  M - 2018
Smoothed Preliminary—Female
Comparison by Scale Year

Females—Compare Smoothed Rates

Mortality Improvement Rates

Attained Age

0.0% 0.5% 1.0% 1.5% 2.0% 2.5% 3.0%
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115

F - 2021  F - 2020  F - 2019  F - 2018
Recommendation for Application of HMI Scale for 2021

Recommendation

- Use standard methodology for the published HMI scale for 2021
- Decrease the HMI scale for males for 2021 based on the application of the standard methodology
- Keep the HMI scale for females at 2020 level with no change for 2021 based non-materiality of change
- Recommend individual companies reflect their expectations around COVID-19 impacts for short-term mortality levels as part of a temporary mortality adjustment

Impact on the 12/31/21 Valuation

- Bring up to valuation date (standard Valuation Basic Table (VBT))
- Note: Companies start with different base mortality levels
  - Possibly higher mortality for the near term to reflect COVID-19
  - HMI scale would not attempt to adjust for COVID-19 as the exposure and the handling of deaths in the underlying company data will vary
Questions?
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