

Mortality Improvements Life Working Group (MILWG): 2023 HMI and FMI Scale Update



Academy Mortality Improvements Life Work Group (MILWG)
SOA Mortality and Longevity Oversight Advisory Council (MLOAC)

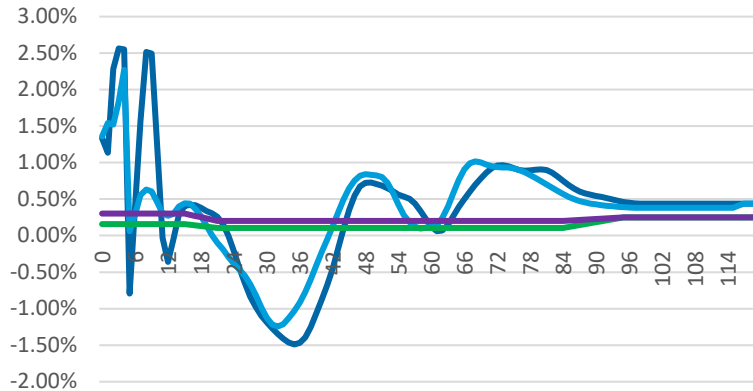
Revisit Smoothing Process

Review Smoothing Approach

	Current Method	Recommendation
1. Ages 0-15 (juvenile)	Use adult average (18-84) x 1.5	Use 0-20 average
2. Ages 16-20	Linear interpolation from juvenile rate to adult rate at age 21	Use 0-20 average
3. Ages 21-84	Use Adult Average 18-84	Break into more detailed age groups: 0-20 25-40 45-60 65-85 Linear interpolation between groups.
4. Ages 85-94	Linear interpolation from adult rate to .0025 per year ultimate level at age 95	Linear interpolation from 65-85 average to .001 per year ultimate level at age 95 (use .001 due to COVID considerations)
5. Ages 95 and later	Use constant .0025 (used .001 for 2022 due to COVID impact considerations)	Use constant .001 due to COVID considerations

Comparison of Smoothing Approaches

Smoothing—OLD

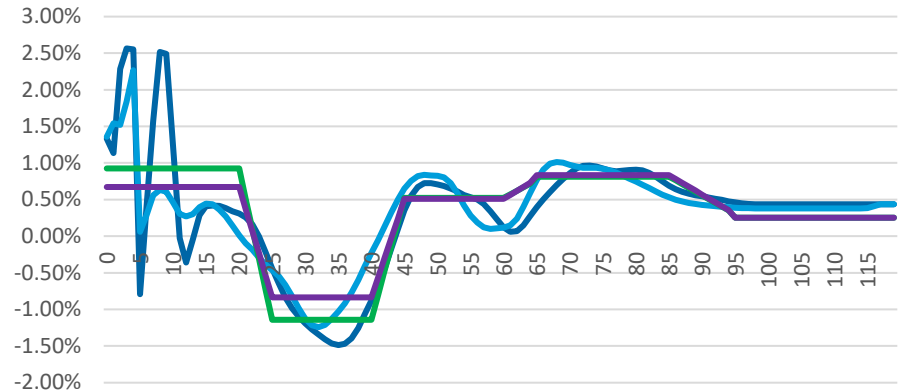


— M - Unsmoothed — F - unsmoothed
— M - smoothed old — F - smoothed - old



2023 Recommended HMI scale

Smoothing—NEW



— M - Unsmoothed — F - unsmoothed
— M - smoothed new — F - smoothed new



COVID-19 Impact—2023 Approach



COVID-19 Impact

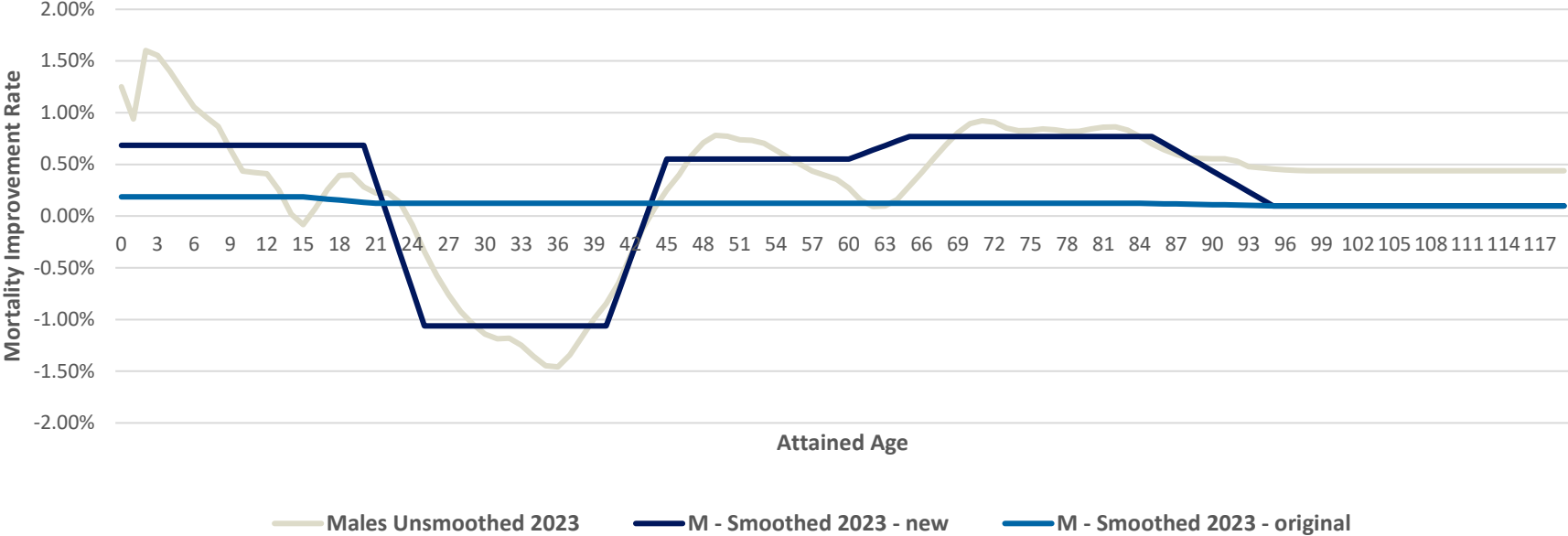
COVID-19 impact considerations

- Ensuring COVID-19 impact is considered
- Some companies with high credibility will use their best estimate mortality (including implied historical improvement) for long periods before grading to industry
 - Creates potential disconnect between HMI and the recommended industry FMI scale

Recommendation: COVID impact will be included in the first few years of the FMI scale for 2023 (similar to approach for 2022 scale work)

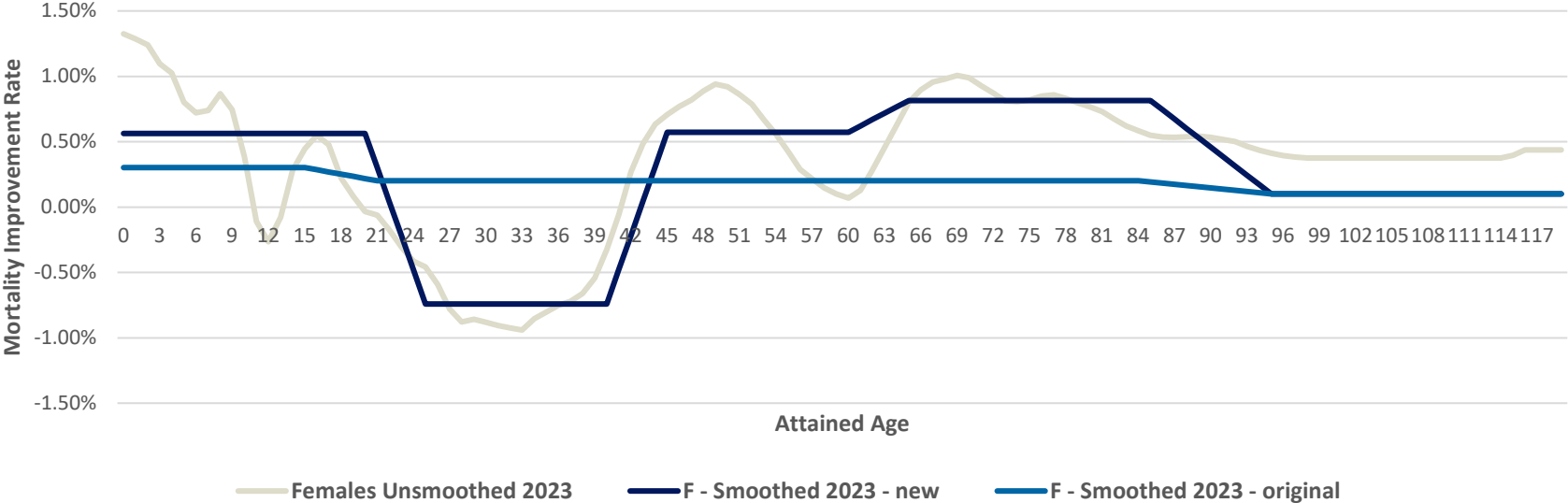
HMI 2023 Recommendation

Male, Mortality Improvement Rates



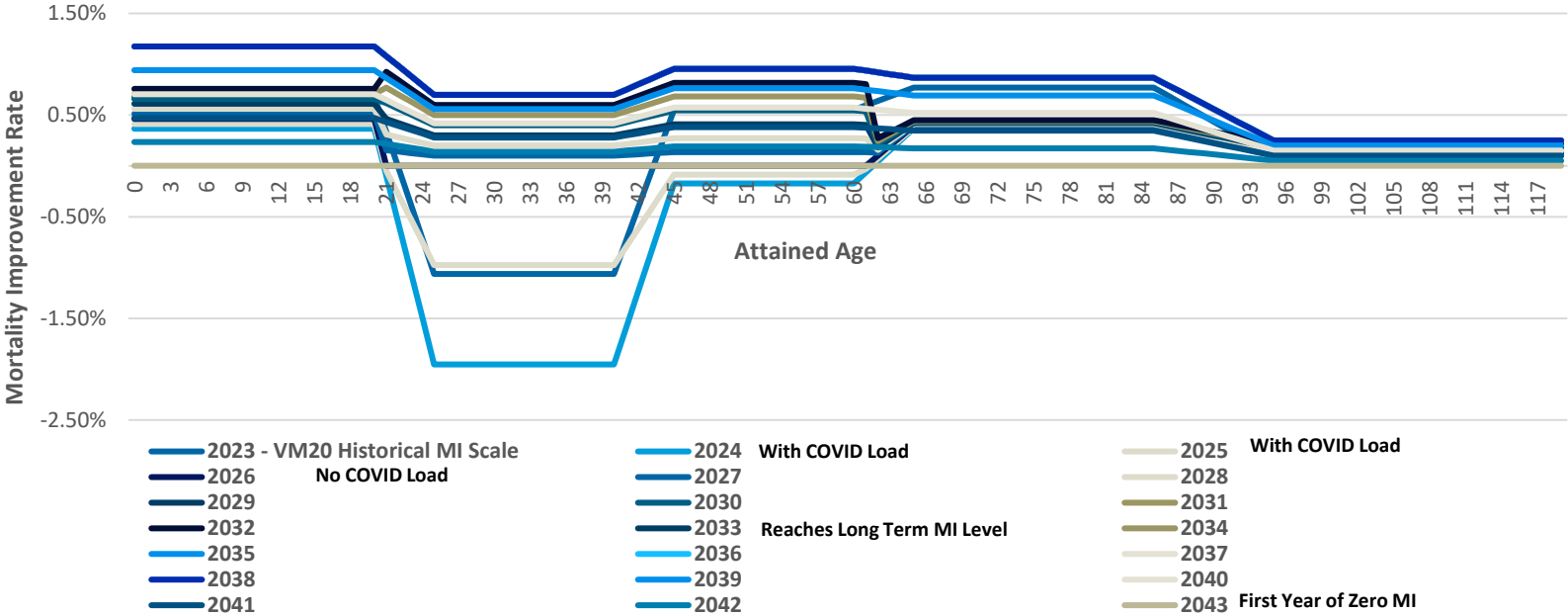
HMI 2023 Recommendation

Female, Mortality Improvement Rates

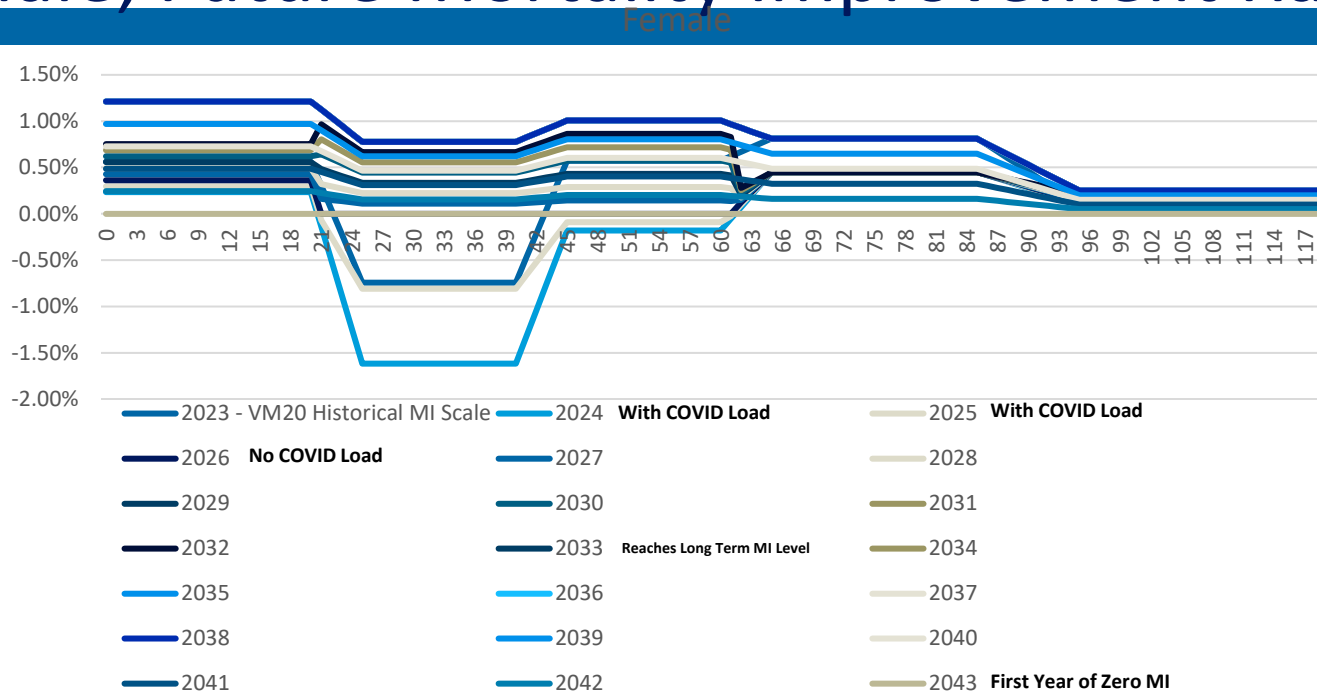


FMI 2023 Recommendation—Basic Scale

Male, Future Mortality Improvement Rates



FMI 2023 Recommendation—Basic Scale Female, Future Mortality Improvement Rates



Questions?

Contact Information

Marianne Purushotham, FSA, MAAA
Corporate Vice President, Research Data Services
LLGlobal
mpurushotham@limra.com

Amanda Barry-Moilanen
Life Policy Analyst
American Academy of Actuaries
barrymoilanen@actuary.org



Life MI Subgroup Members

Marianne Purushotham, FSA, MAAA (Chair)

Cynthia Edwalds, FSA, MAAA

Sam Gutterman, FSA, MAAA

Tim Hoxha, FSA, MAAA

Mary Simmons, FSA, MAAA

Jean-Marc Fix, FSA, MAAA

Larry Stern, FSA, MAAA

Mark Rosa, FSA, MAAA

Cynthia MacDonald, FSA, MAAA

Members available to provide supplementary information and explanation as needed.

