

# Future Mortality Improvement Scale Development (VM-20) LATF Update #1

SOA  
Research  
INSTITUTE



AMERICAN ACADEMY of ACTUARIES

*Objective. Independent. Effective.™*

Mortality Improvements Life Work Group (MILWG), the Academy's Life Experience Committee and the SOA's Preferred Mortality Project Oversight Group ("Joint Committee")

© 2022 American Academy of Actuaries. All rights reserved.  
© 2022 Society of Actuaries. All rights reserved.  
May not be reproduced without express permission.

Life Actuarial Task Force (LATF) Meeting—May 2022

# Agenda

- Items to be addressed in the 2022 scale recommendation
- COVID-19 approach
- Update on scale development timeline
- Next steps/discussion



# Items to be addressed in 2022 scale recommendation

Develop HMI (historical mortality improvement) and FMI (future mortality improvement) scales for use in 2022 valuation year.

The 2022 scales will address the following:

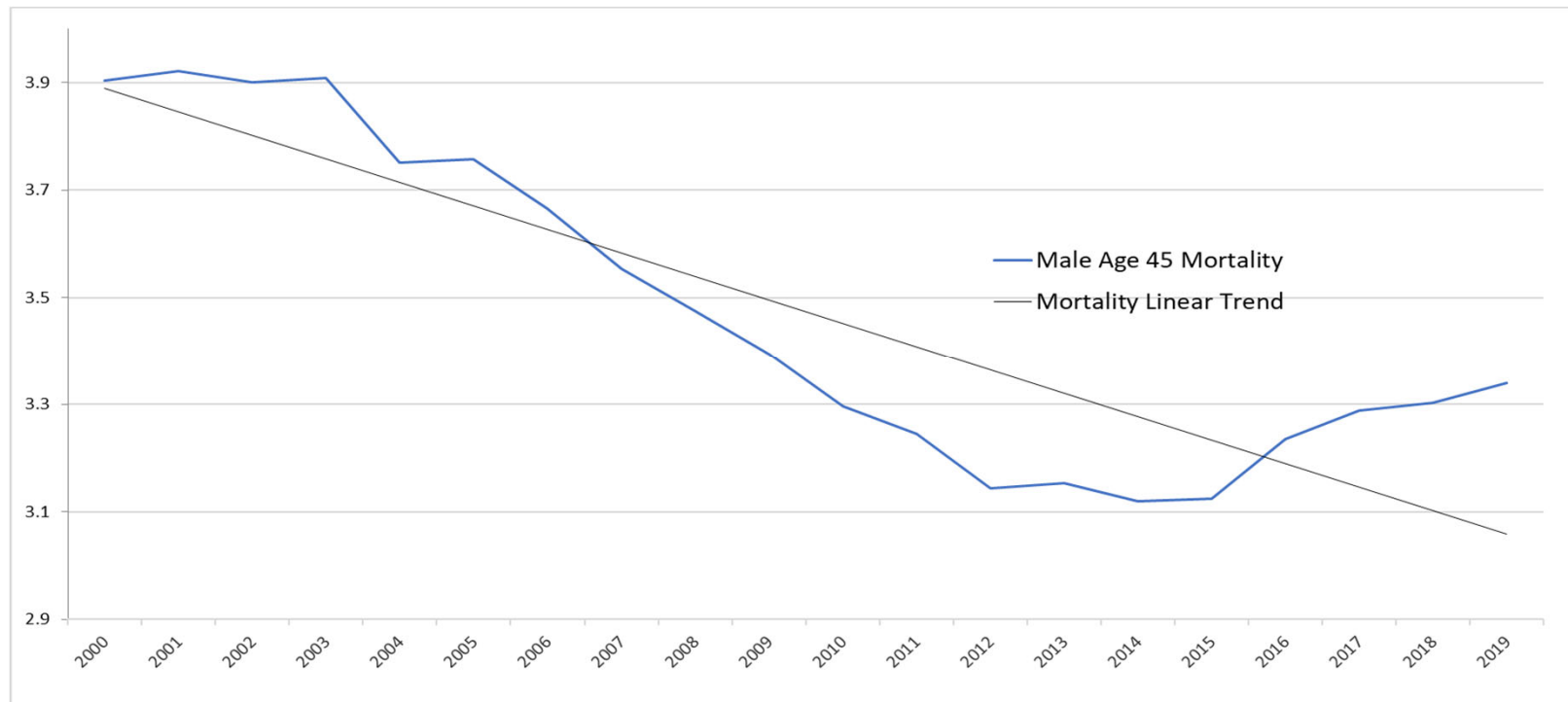
- ▣ Reflecting COVID-19 impacts
- ▣ Margin development
- ▣ Modification to smoothing method

# Approach to COVID-19 impact

- Quantification of COVID-19 impact
  - Data sources
  - Short- vs. medium- vs. longer-term impacts
  - Return to previously projected mortality level over time or residual excess mortality
  - Insured vs. general population considerations
  - Direct adjustment to MI rates or reflected in additional margins
- Implicit margins in MI scale development
  - Data source—general population data unadjusted for insured population differences (largest source of margin)
    - Starting MI level (HMI)
    - Long-term rate (FMI)
  - Limit on FMI assumption (20 years)

# Approach to COVID-19 impact

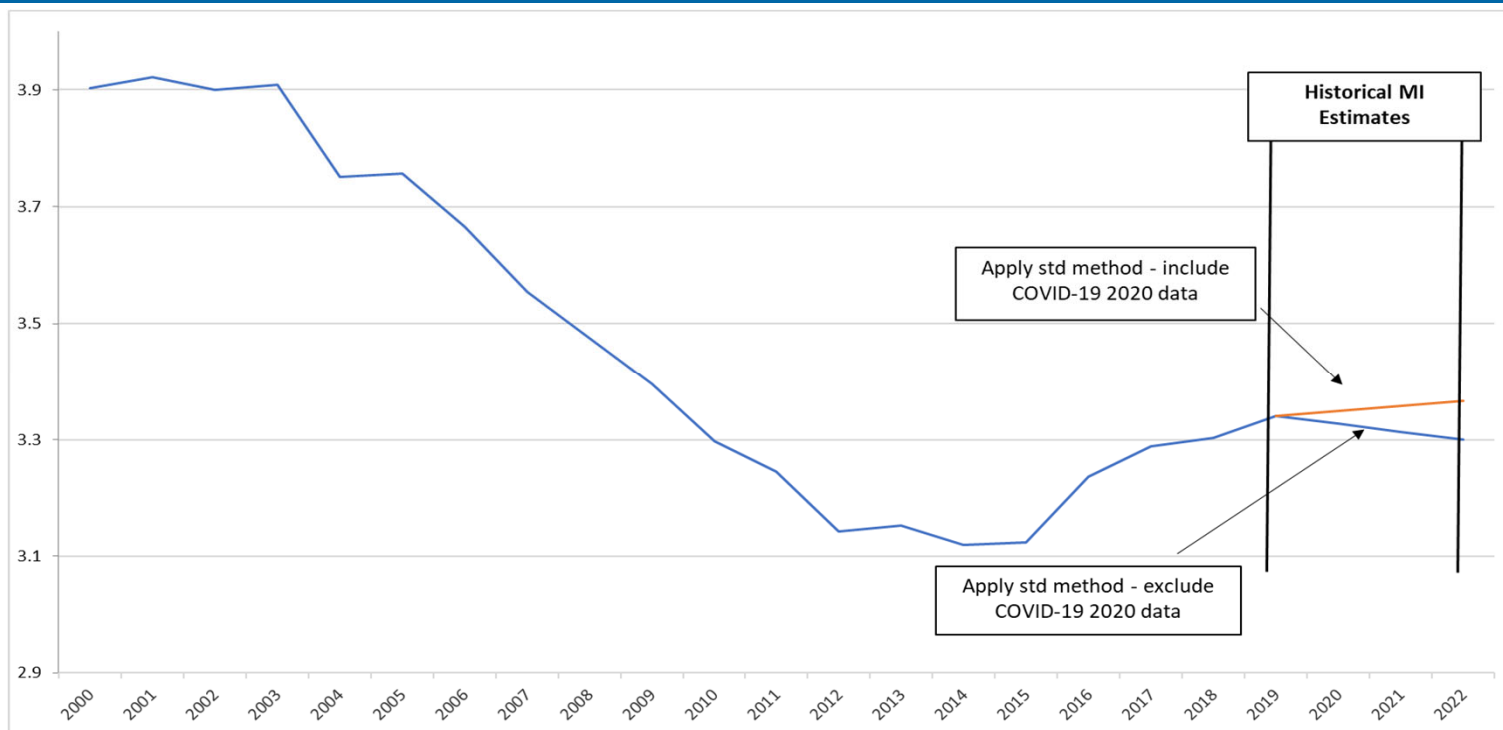
Example: Male Age 45—Social Security Administration (SSA) Mortality Rates—Pre-COVID-19



# Approach to COVID-19 impact

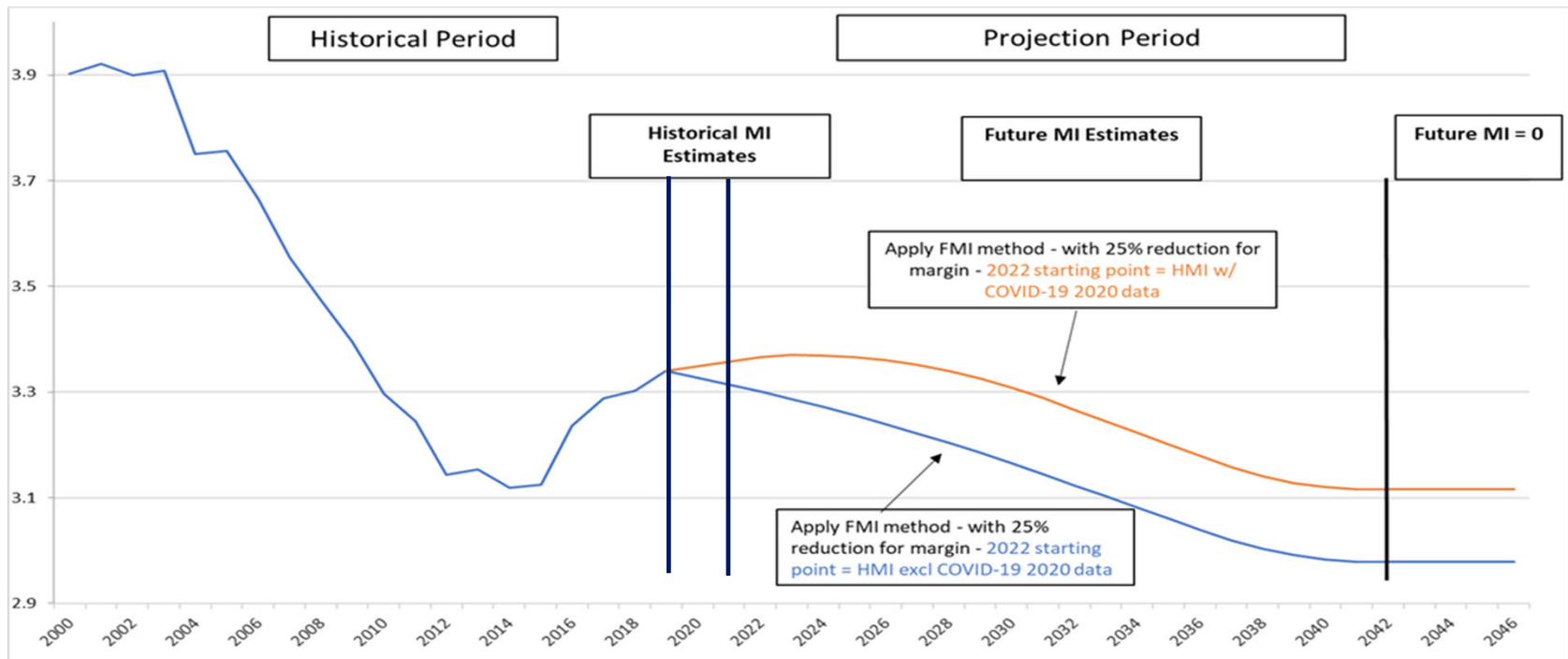
Example: Male Age 45—SSA Mortality Rates

w/ HMI estimates both including and excluding 2020 COVID-19 impact in data



# Approach to COVID-19 impact

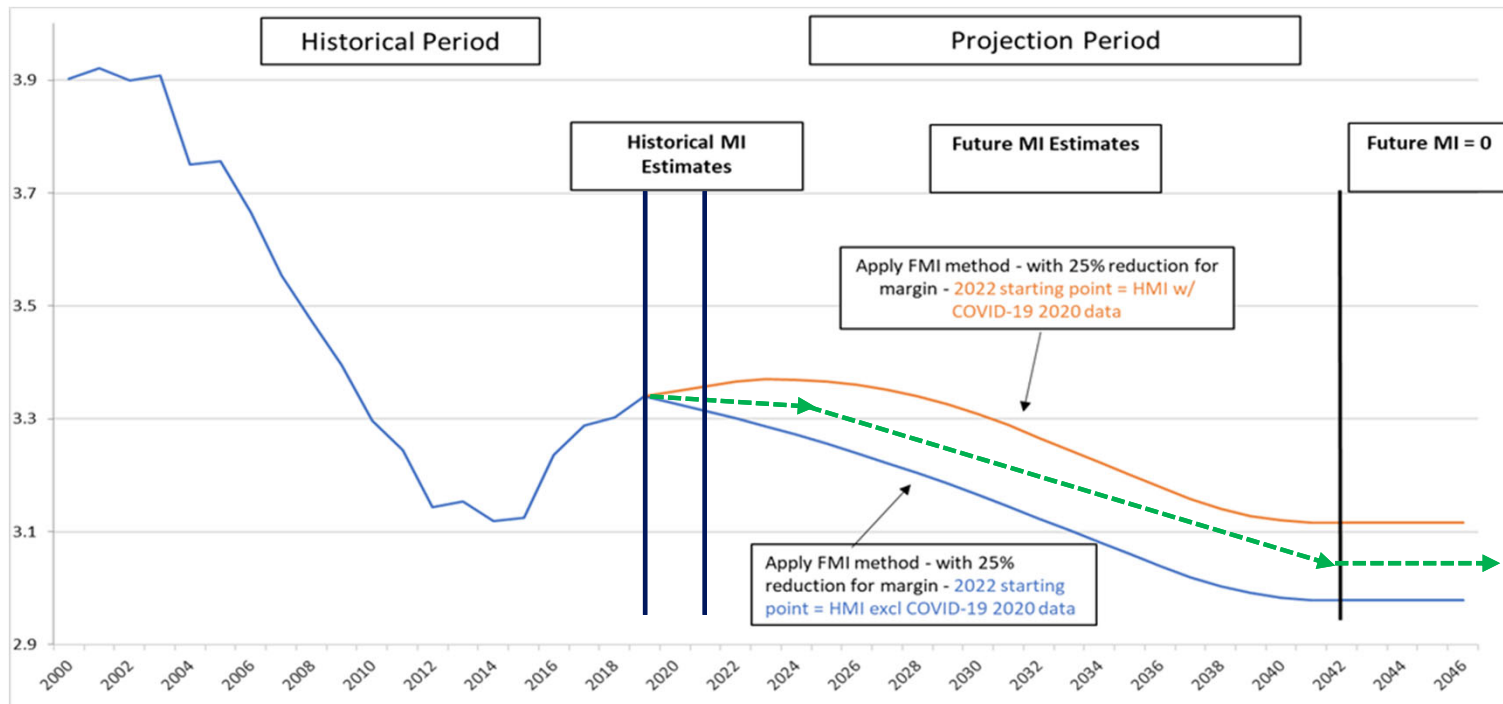
Example: Male Age 45—SSA Mortality Rates  
w/ HMI estimates and FMI estimates



# Approach to COVID-19 impact

Example: Male Age 45—SSA Mortality Rates

w/ HMI estimates and FMI estimates and **Expected Recommendation**





# COVID-19 Impact—Modeling Scenarios

Historical MI—Scenarios being assessed	Description
1. 10-year historical average ending in 2020	including full deterioration for 2020 (most conservative)
2. 10-year historical average ending in 2019	exclude COVID-19 shock impact in 2020 (most optimistic)
3. 9-year historical average ending in 2019	exclude COVID-19 shock impact in 2020 (alternate)
4. 10-y <span style="border: 1px solid orange; padding: 2px;">CH [2]10</span> average ending in 2020 (assuming no improvement from 2019 to 2020)	muted impact of 2020 (intermediate)
Future MI—Scenarios being assessed	Description
1. Basic FMI scale = Use grading to LT average based on SSA Alt 2 (recommended method)	Loaded MI scale = Basic plus explicit margin for uncertainty around the future trend (= 25% reduction of Basic FMI rates in all years)
2. Basic FMI scale = Use grading to LT average based on SSA Alt 2 (recommended method)	Loaded MI scale = Basic plus explicit margin for uncertainty in future trend (= 25% reduction of Basic FMI rates in all years) <i>and an additional explicit margin for uncertainty around the COVID-19 medium-/long-term impacts that grades off over time.</i>  Additional COVID-19 explicit margin—options for model testing: 1. 50% margin grades to normal margin of 25% over 5 years. 2. Decrease mortality improvement by 1% in year 1 grading linearly down to 0% in year 5.

**Slide 9**

---

**CH [2]10**

**added hyphens**

Craig Hanna, 5/11/2022

# 2022 MI scale development timeline (VM-20)

Updated May 2022

Milestones	Target Date
1. Receive 2020 data from the Centers for Medicare and Medicaid Services (CMS). SOA creates preliminary mortality estimates for 2020.	2/28/2022 (completed)
2. Define options for reflecting COVID-19 impact on HMI and FMI scale recommendations including margin.	4/28/2022 (completed)
3. Assess reserve impact of COVID-19 adjustment recommendation—run National Association of Insurance Commissioners (NAIC) model office under several scenarios.	6/1/2022 (in progress)
4. Determine smoothing method for FMI and HMI scales.	6/1/2022
5. Finalize recommendation for reflecting COVID-19 based on NAIC model office results.	7/1/2022
6. Present to LATF for exposure. <i>Assumes 60-day exposure period.</i>	7/15/2022
7. Receive SSA mortality estimates for 2020 from SOA (final SOA estimates).	8/15/2022
8. Receive SSA Trustees Report—Intermediate Projections for 2022.	8/15/2022
10. Respond to exposure comments obtain LATF approval of 2022 HMI and FMI.	9/15/2022
11. Publish 2022 HMI and FMI scales on SOA website.	9/30/2022



© 2022 Society of Actuaries. All rights reserved.  
May not be reproduced without express permission.



AMERICAN ACADEMY of ACTUARIES

*Objective. Independent. Effective.™*

© 2022 American Academy of Actuaries. All rights reserved.  
May not be reproduced without express permission.

# Questions?



## Contact Information

Marianne Purushotham, FSA,  
MAAA  
Corporate Vice President, Research Data Services  
LLGlobal  
[mpurushotham@limra.com](mailto:mpurushotham@limra.com)

Amanda Barry-Moilanen  
Life Policy Analyst  
American Academy of Actuaries  
[barrymoilanen@CH \[2\]9y.org](mailto:barrymoilanen@CH[2]9y.org)

SOA  
Research  
INSTITUTE



AMERICAN ACADEMY of ACTUARIES

*Objective. Independent. Effective.™*

**Slide 12**

---

**CH [2]9**

filled in Amanda's info  
Craig Hanna, 5/10/2022