

Update on Life Insured Mortality Improvement Recommendation

Mortality Improvement Life Working Group
of the SOA Mortality and Longevity Oversight Advisory Council

AUGUST | 2024

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Agenda

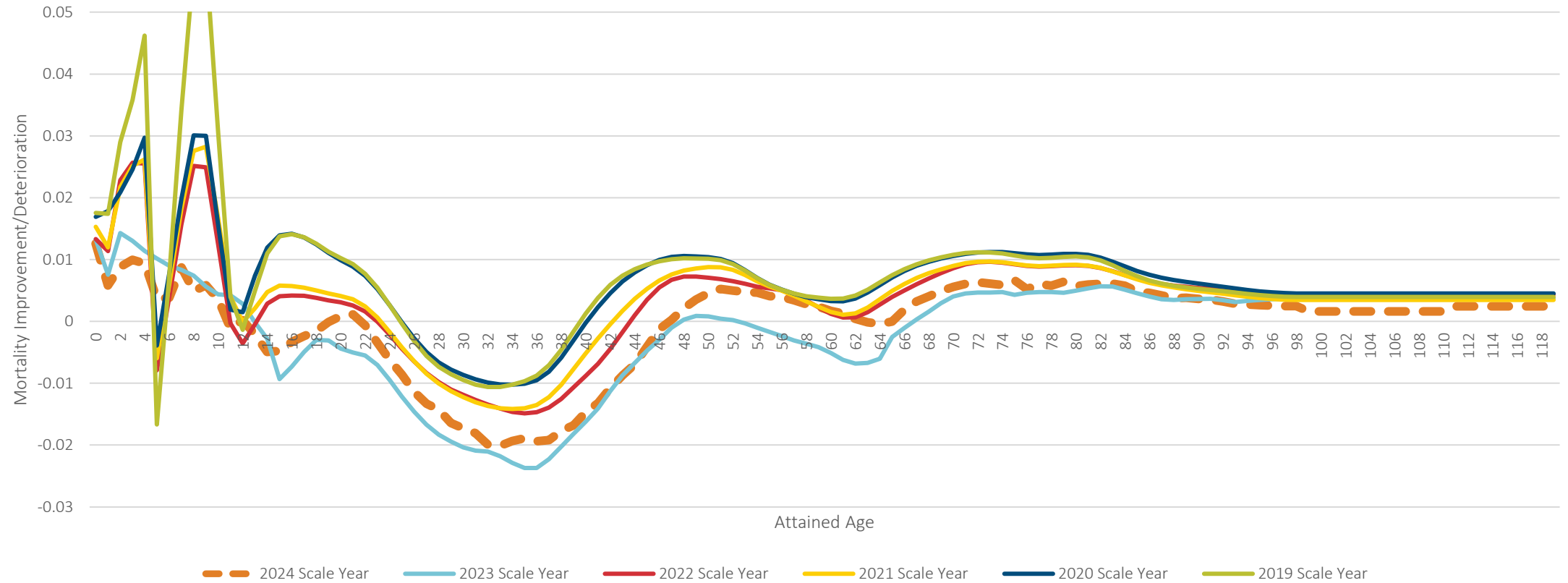
- Historical Mortality Improvement (HMI) 2024 Recommendation
- Future Mortality Improvement (FMI) 2024 Recommendation
- Next Steps
 - Future update on recommended approach for estimating a life insured population MI basis

HMI 2024

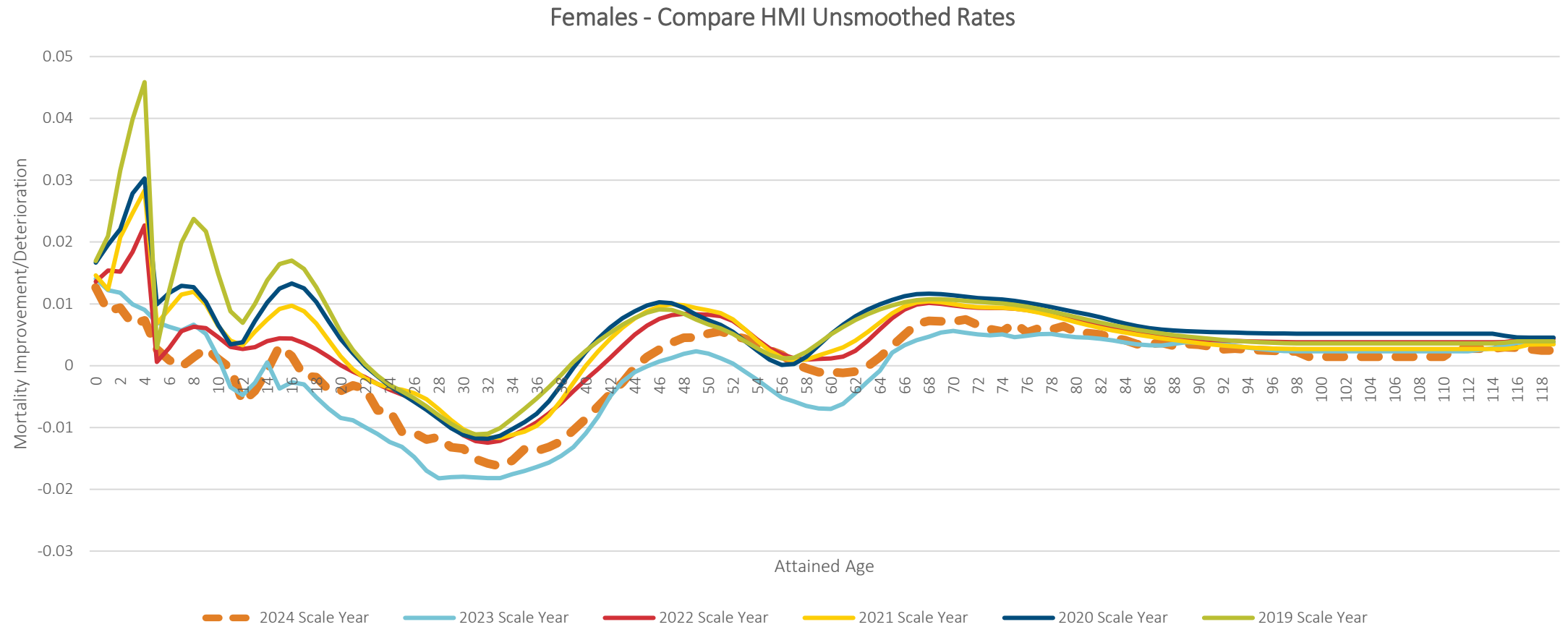
- HMI by attained age and gender
 - General population data - Social Security Administration (SSA)
 - No insured lives adjustment
- HMI unsmoothed scale = average of historical and future components
 - Historical component = 10 years ending in 2022
 - No adjustment made to historical data for COVID impact (moving back to pre COVID standard methodology for 2024)
 - Geometric average – only reflects end points of historical period (2012/2022)
 - Future component = geometric average of SSA Intermediate Projection
 - 20 years – year end 2024-2044
- HMI Smoothed Scale
 - Averaging applied to smooth within age groups
 - 0-20, 30-40, 45-60, 65-84, 90+

2024 HMI Unsmoothed Scale Comparison to Prior Years

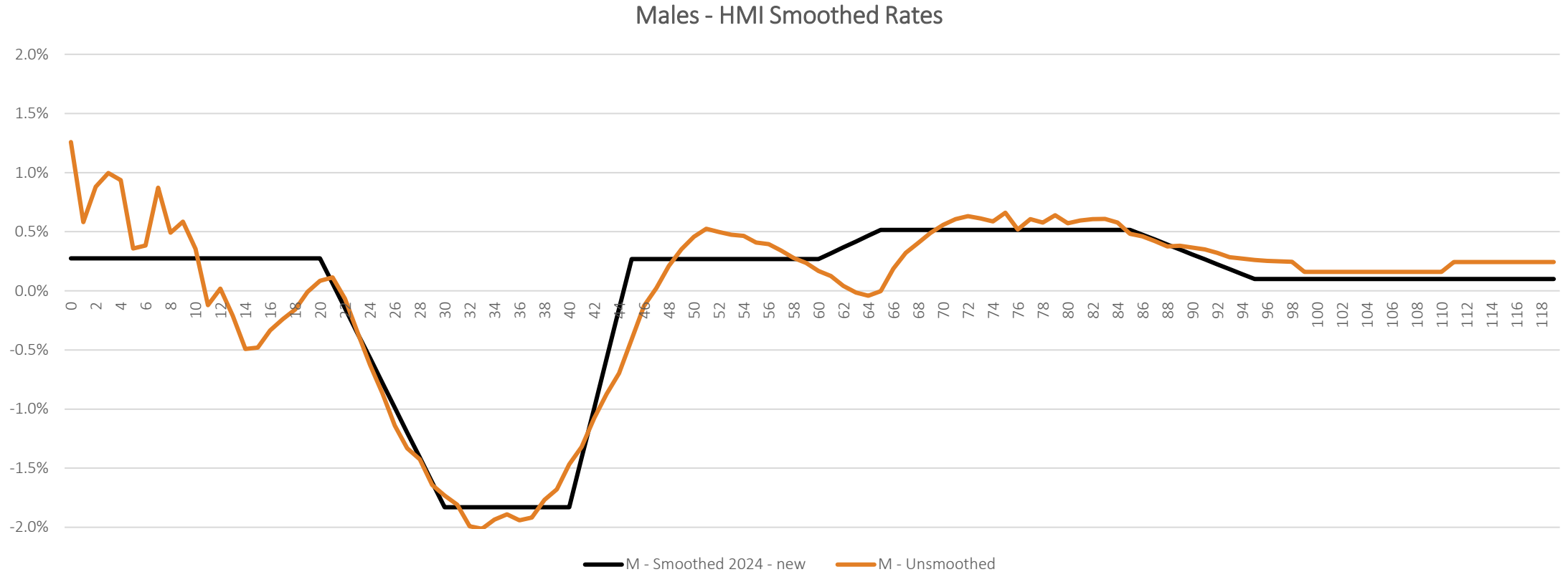
Males - Compare HMI Unsmoothed Rates



2024 HMI Unsmoothed Scale Comparison to Prior Year Published Scales



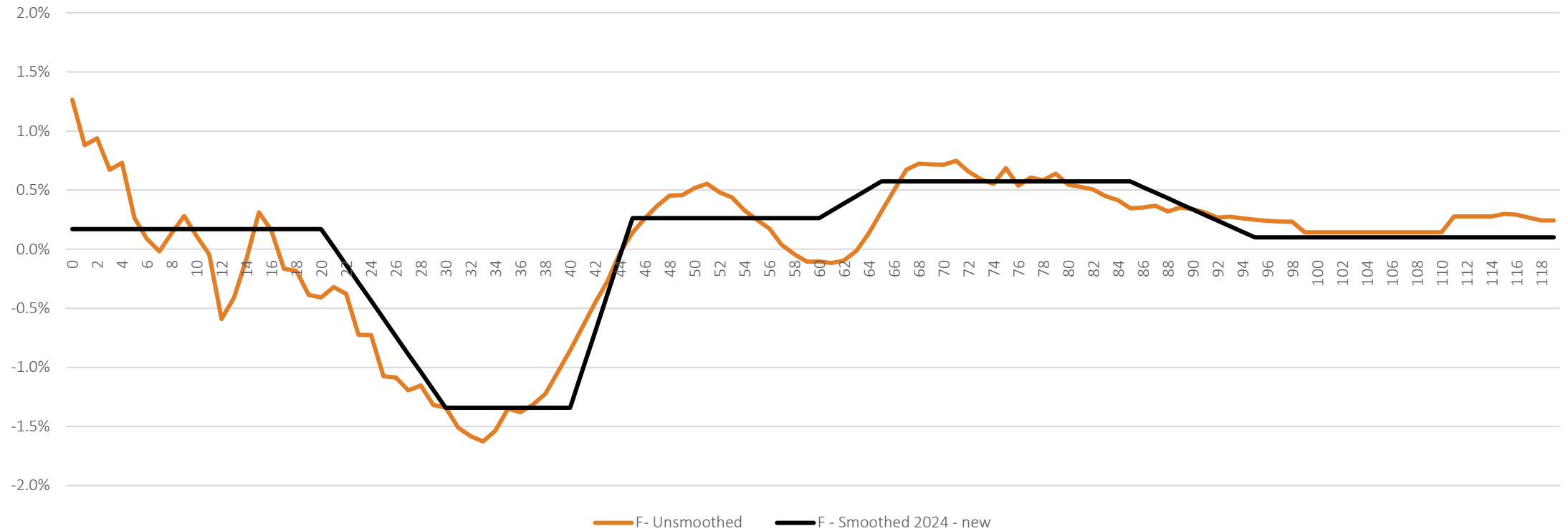
2024 HMI Smoothed Scale



Same age groupings for females and males so there is some constraint in the averaging ranges, accident and opioid impact and dip continues, age 65 dip

2024 HMI Smoothed Scale

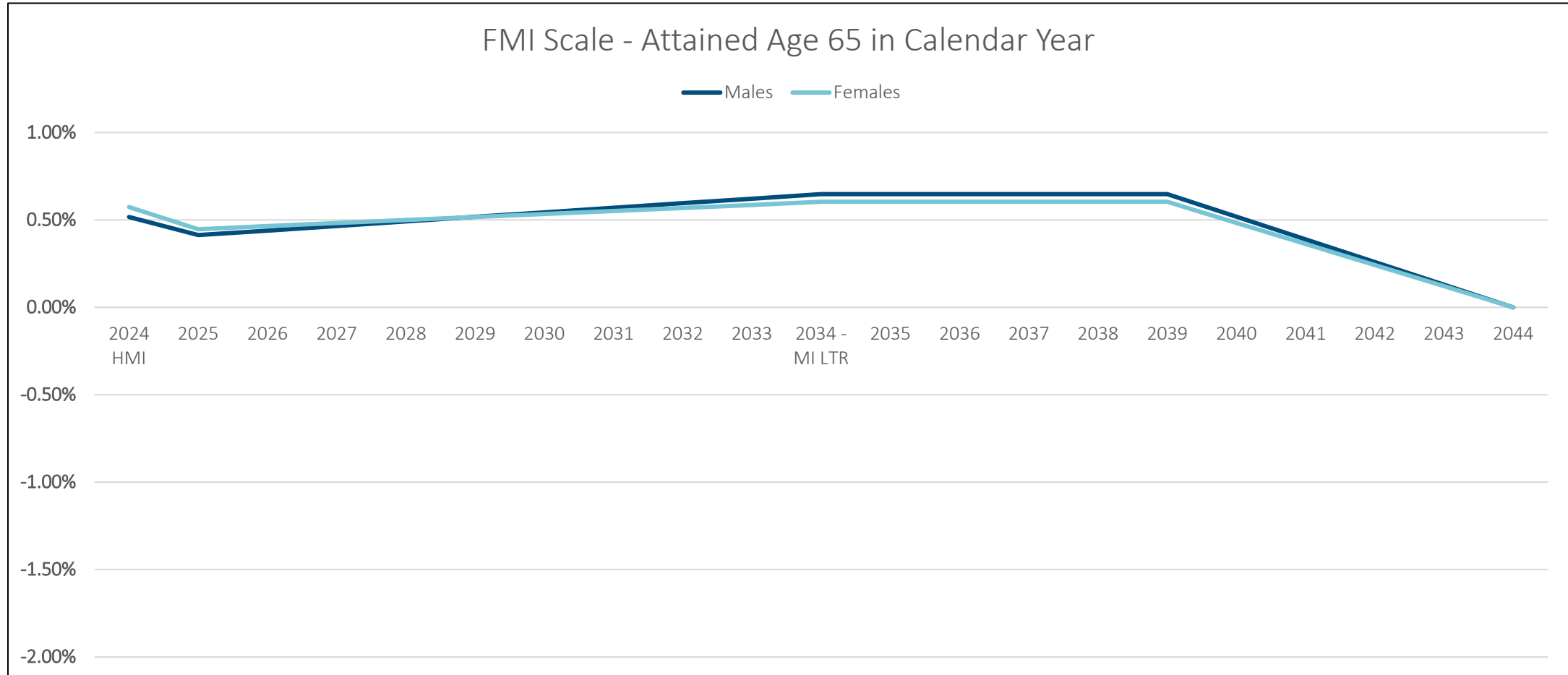
Females HMI Smoothed Rates



FMI 2024

- FMI by attained age and gender
- 20 years of future improvement (MI rates grade to zero at reserve projection year 20)
- For attained ages where HMI for 2024 is positive – apply standard methodology – example is age 65
- Standard Methodology
 - Grade linearly from 2024 HMI Smoothed Scale to long term mortality improvement rate (LTMIR) over the first 10 reserve projection years
 - LTMIR based on Social Security Administration projected mortality improvement between 10 and 15 years from the valuation year
 - Remain level at LTMIR for next 5 reserve projection years
 - Grade linearly to zero FMI for remaining 5 reserve projection years
 - Margin = reduction in base FMI rates of 25%

2024 FMI Scale with Margin – Age 65

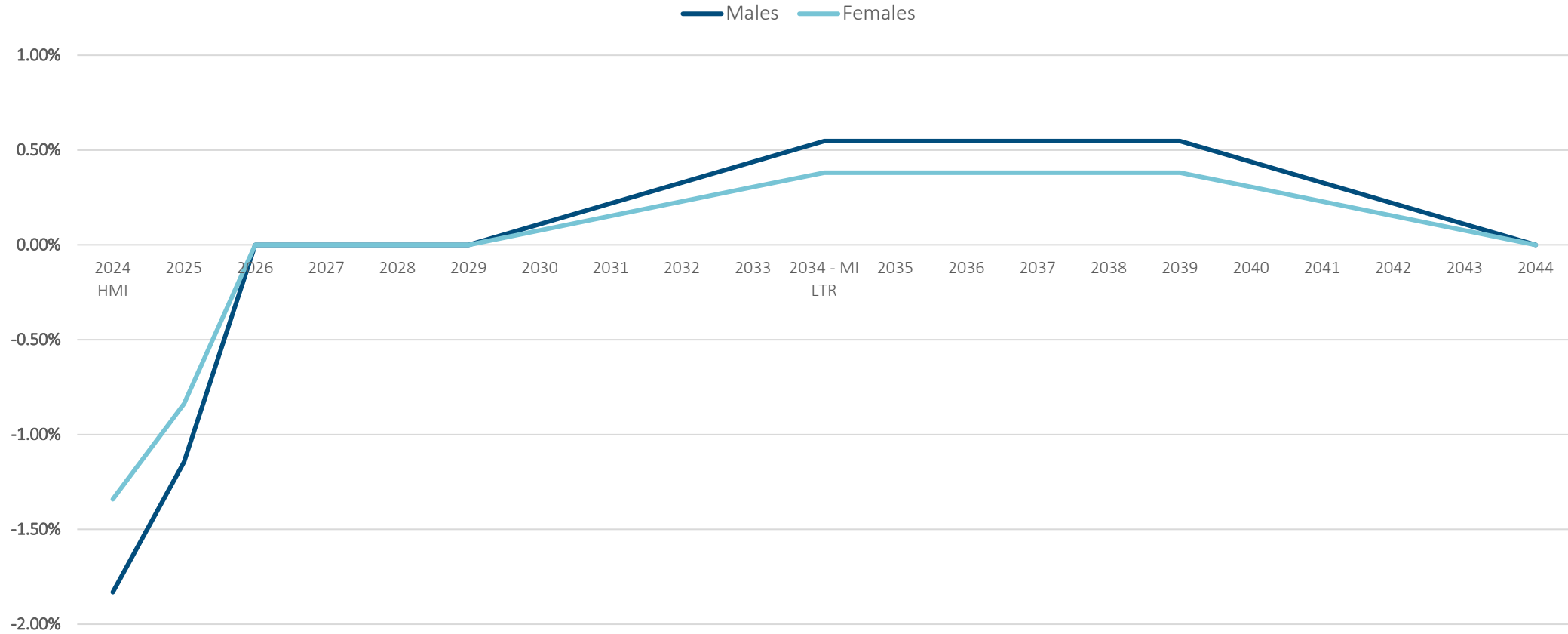


FMI 2024

- For attained ages where HMI for 2024 remains negative (ages 22- 48 for males, 18-44 for females) – apply past methodology of adjusting to positive mortality improvement at LTMIR over time – example is age 35
- For 2024, adjustment to positive mortality improvement used the following approach:
 - Reach zero improvement level at reserve projection year 2026
 - Remain at zero mortality improvement to year 2029
 - Grade to LTMIR at 2034
 - Remain level at LTMIR to 2039
 - Grade linearly to zero improvement at 2044

2024 FMI Scale with Margin – Age 35 – REVISED 8/19/24

FMI Scale - Attained Age 35 in Calendar Year



MI Recommendation – Fully Underwritten Business

- Where we started
 - Assumption that there was too much noise in the industry experience data on insured lives to be used to measure insured MI results
 - Reviewed SOA general population socioeconomic decile work
 - Is there a decile that can be used as a proxy for the life insurance population?
- Initial Considerations
 - Is there a new baseline level of MI post-pandemic?
 - Should the impact of COVID be included/excluded? If excluded, method of exclusion?
 - How much do drug/opioid and smoking status impact the insurance population?
 - Drug/opioid issue (may be more important for key concentration of insured ages)
 - Smoker/nonsmoker differential

MI Recommendation - Fully Underwritten Business Update

- Peer review of MI Analysis Tool & Predictive Models completed
- Continue investigation of patterns in insured versus general population experience generated by MI analysis tool

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