



VM-20 Historical and Future Mortality Improvement: NAIC Model Office Results and Considerations

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September 14, 2023

NAIC NATIONAL ASSOCIATION OF
INSURANCE COMMISSIONERS

NAIC Model Office

ULSG

Universal Life with Secondary Guarantees (ULSG) model—long-duration product, larger potential for reserve reduction

- Model office and assumptions same as used in the yearly renewable term (YRT) representative model analysis
- Lifetime shadow account secondary guarantee
- No reinsurance in the model

Component	Values
Issue ages	Decennial issue ages 30 – 70
Gender	Male Female
Risk classes	Preferred non-tobacco Standard non-tobacco Standard tobacco
Face bands	Low (\$250,000) High (\$1,000,000)

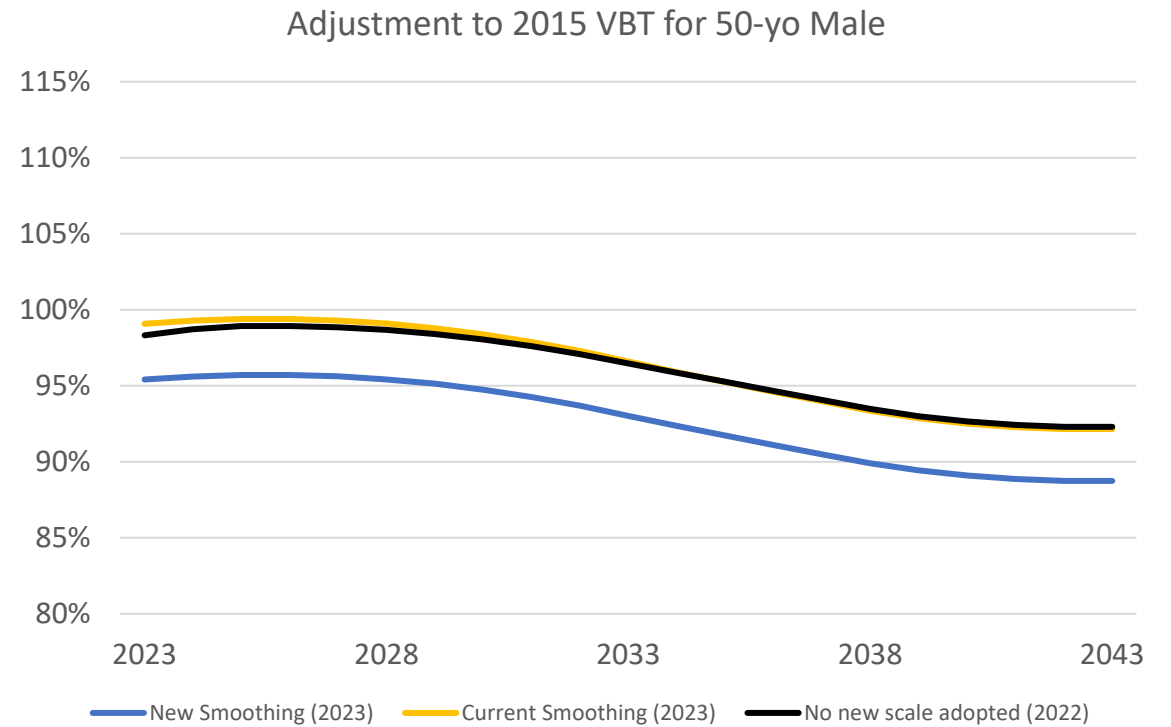
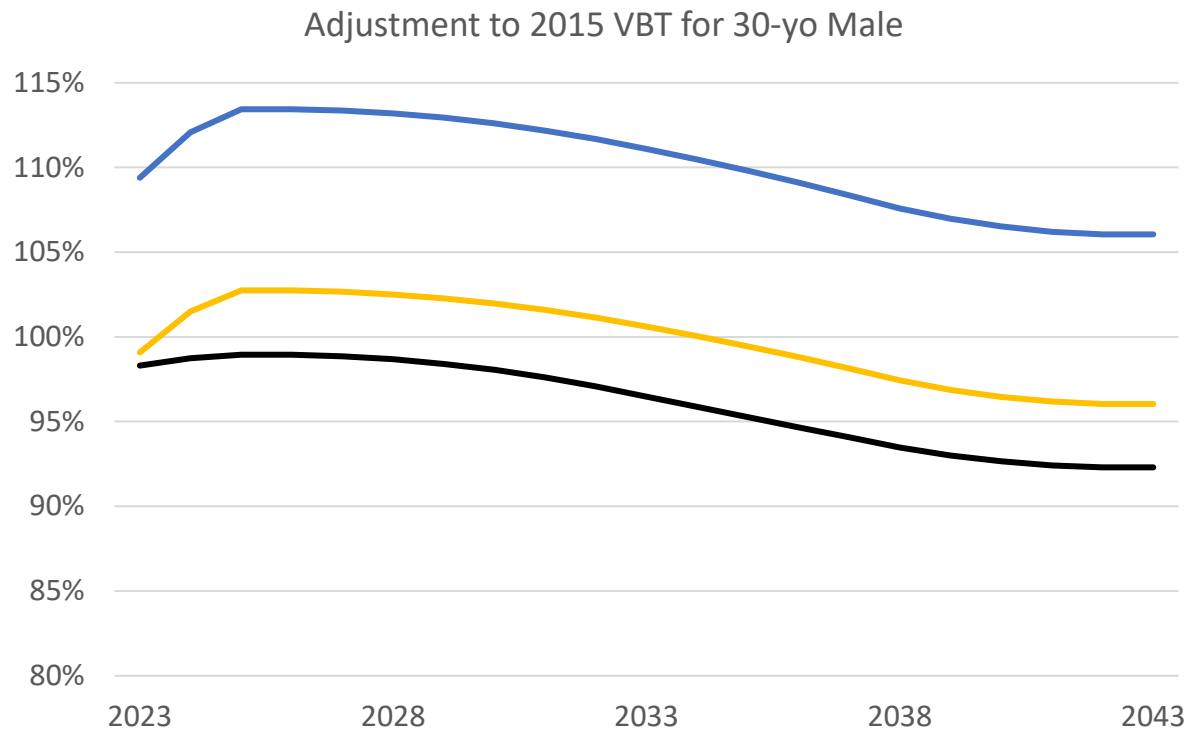
Term

Term Life Insurance Product with 10- and 20-year level premium periods

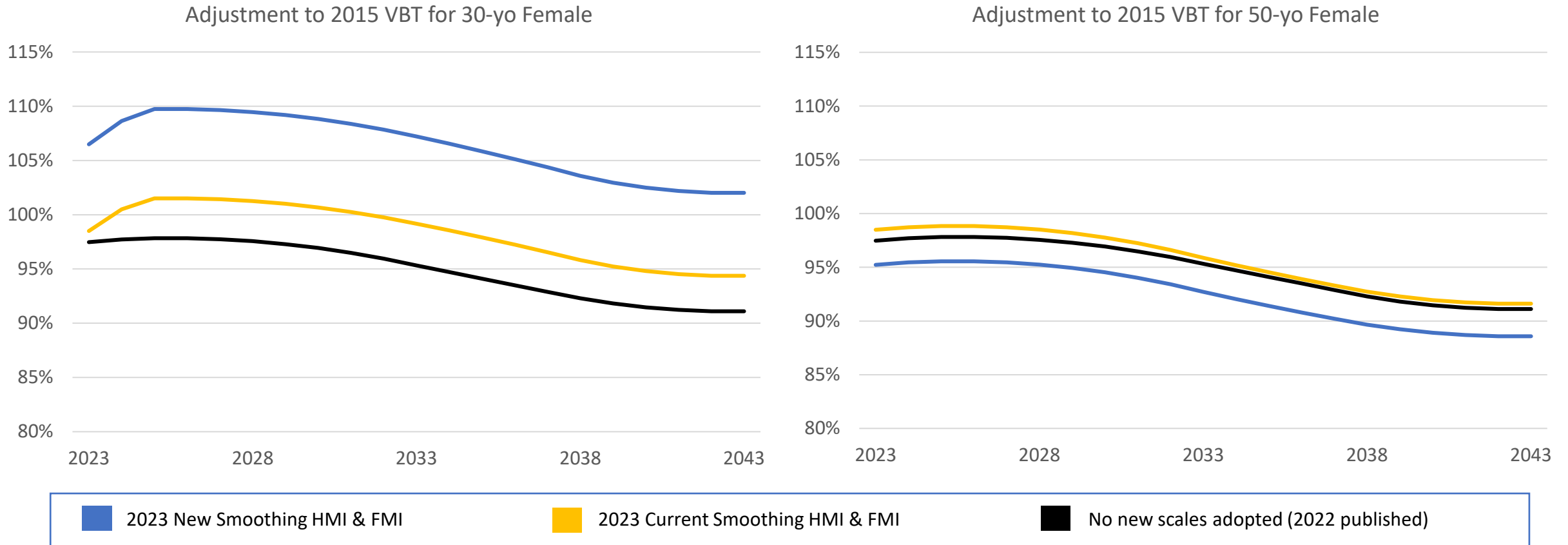
- Model office and assumptions same as used in the YRT representative model analysis
- Mature at age 95
- 100% shock lapse at end of level term period

Component	Values
Issue ages	Decennial issue ages 20 – 60
Gender	Male Female
Risk classes	Preferred non-tobacco Standard non-tobacco Standard tobacco
Face bands	Low (\$250,000) High (\$1,000,000)
Term lengths	10 year 20 year

Male Mortality Adjustment Comparison 30-year-old vs 50-year-old issued in 2023



Female Mortality Adjustment Comparison 30-year-old vs 50-year-old issued in 2023

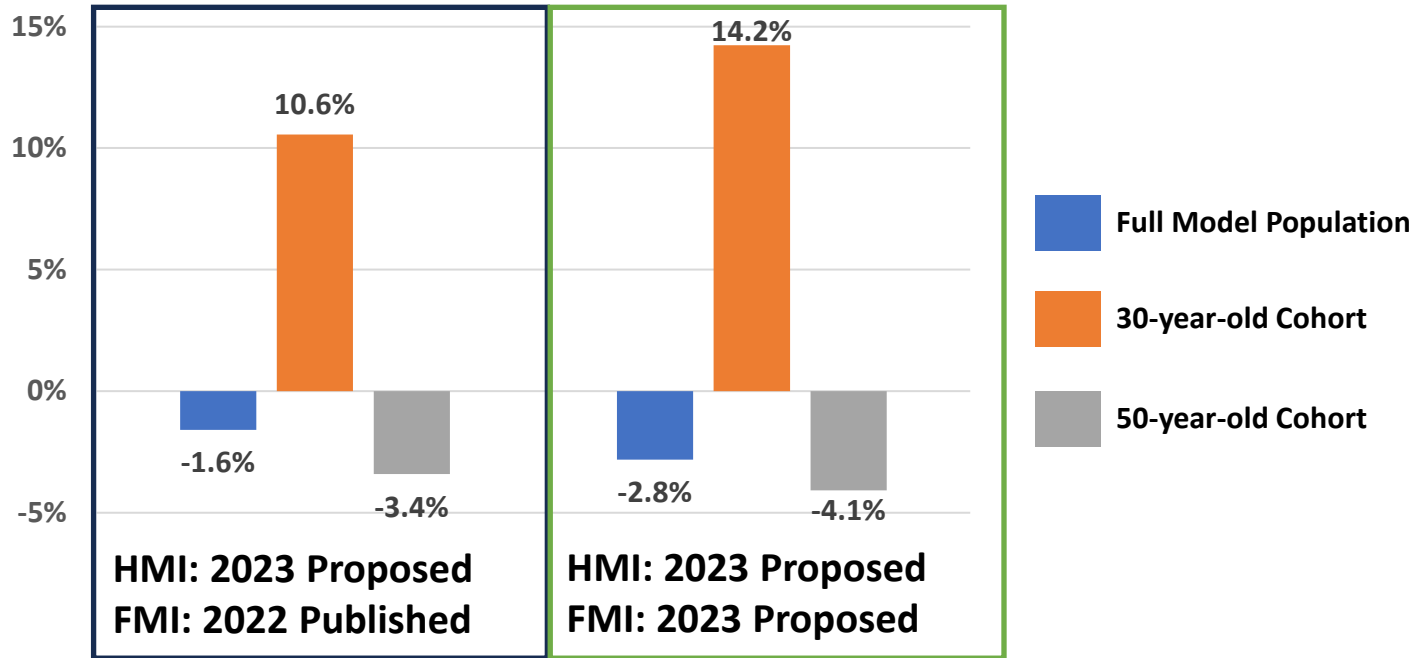


NAIC Model Office Considerations

- Model office has an equal weight of each issue age, risk class, gender, face amount which may not be representative of the industry.
- For Year-end 2023, the scalar applied to the model office is: $(1-HMI)^{8.5}$ (6/2015 to 12/2023)
 - The proposed HMI has deterioration for the proposed smoothing method for ages 25-40: **1.09** for a 30-year-old male
 - The proposed HMI has slight improvement to mortality for ages 45-60: **0.95** for a 50-year-old male
- We apply the HMI factors to both industry and company mortality in the model office, though companies that have highly credible data may not use the HMI to adjust the company mortality.
- GOES Field Test Participation:
 - Term: About half the GOES Field Test Participants for VM-20 had negative Term DR
 - ULSG: All baseline DR was positive

ULSG Model Office Results

Percentage Change in VM-20 Deterministic Reserves (DR) Compared to Baseline

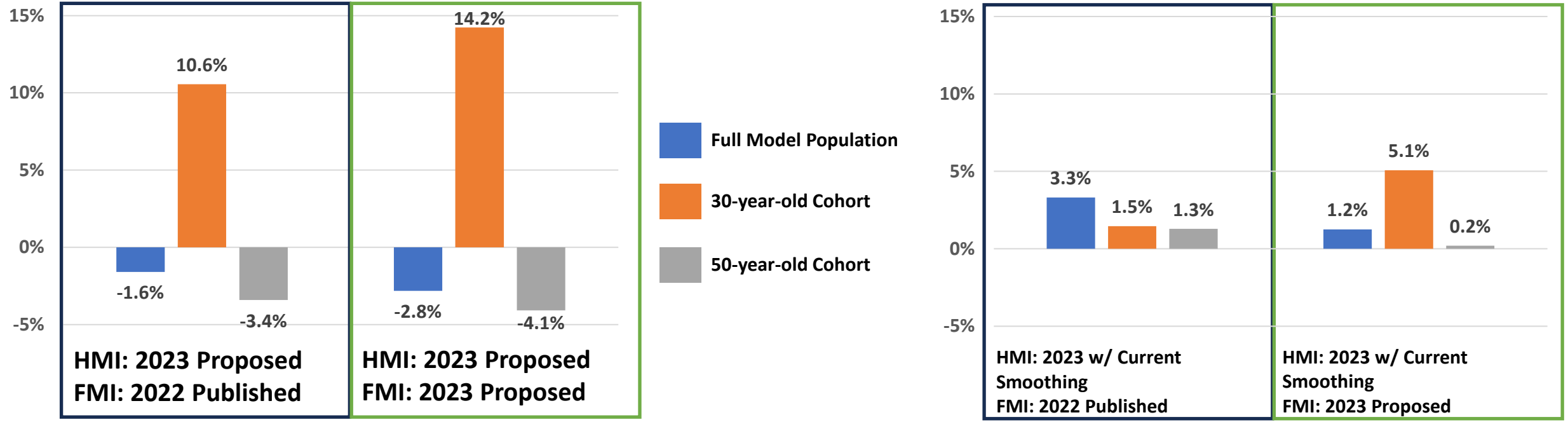


- The VM-20 DR was determined for a Baseline run using the 2022 Published HMI and FMI rates, which was then compared to a run using the 2023 Proposed HMI with the 2022 Published FMI and another using both the 2023 Proposed HMI and FMI rates.
- For each of these runs, separate results were determined for the full model population, a cohort of 30-year-olds, and a cohort of 50-year-olds to isolate the distinct impacts of the attained-age varying HMI and FMI rates.

While the overall impact of the proposed 2023 HMI and FMI rates is muted in the model office results with the full population, the impact can vary when looking at distinct age cohorts. However, much of the impact in the NAIC model office is coming from the HMI rates, which may not be representative of companies using their company mortality experience in much of the early durations of the reserve calculation.

ULSG Model Office Results – Impact of Change in Smoothing Methodology

Percentage Change in VM-20 Deterministic Reserves (DR) Compared to Baseline



The proposed smoothing methodology allowed for more differentiated **mortality improvement rates** across attained ages, resulting in mortality deterioration for younger attained ages and mortality improvement for older attained ages. On the other hand, applying the current smoothing methodology to the latest experience data results in a small level of mortality improvement across all attained ages. **Applying the current smoothing methodology for the HMI rates used in the model office resulted in more consistent and relatively smaller increases across the different attained ages.**