

Life Expectancy Isn't Always Fair

Enrolled Actuaries Meeting General Session 3

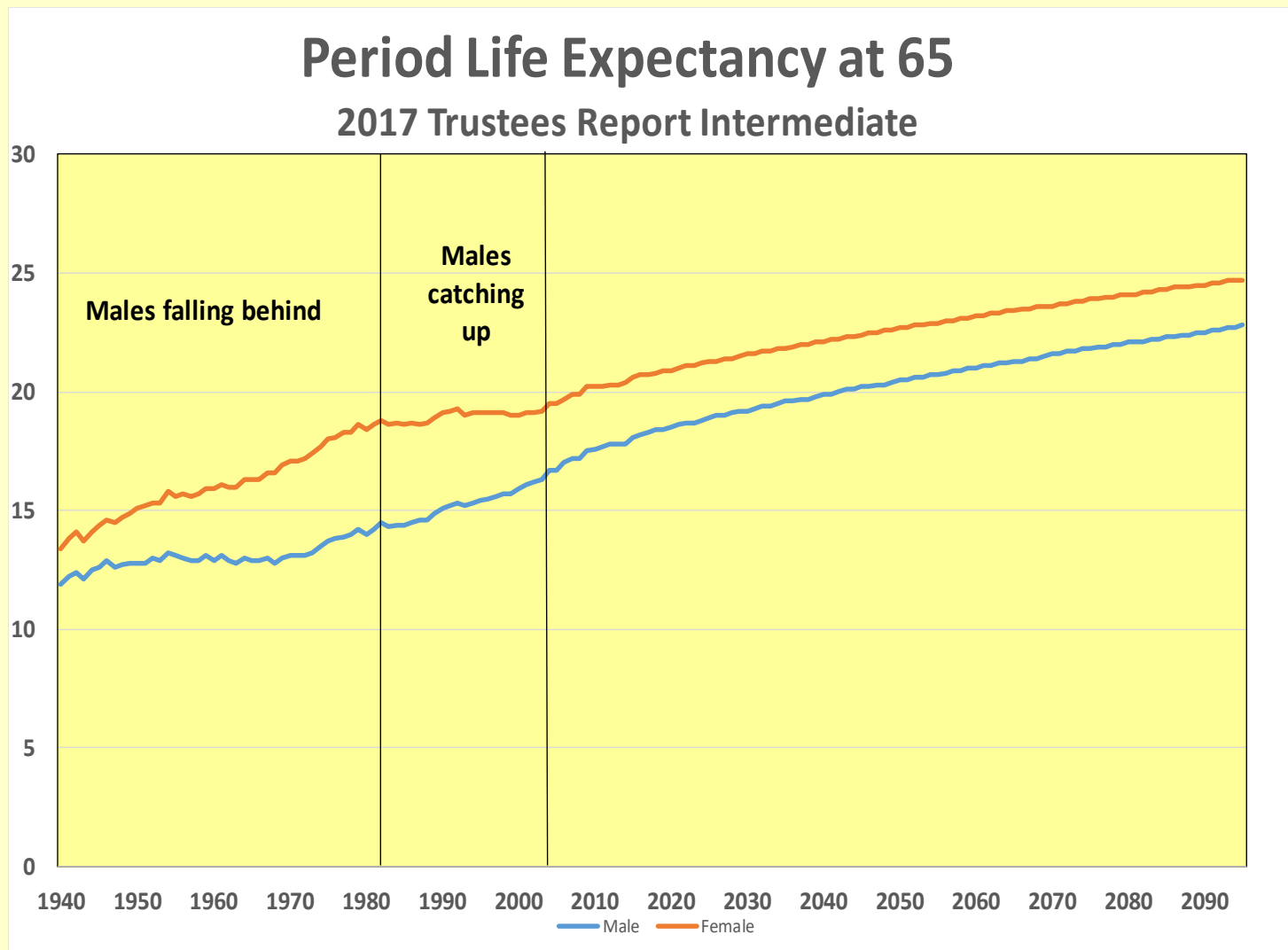
Steve Goss

**Office of the Chief Actuary
Social Security Administration**

April 11, 2018

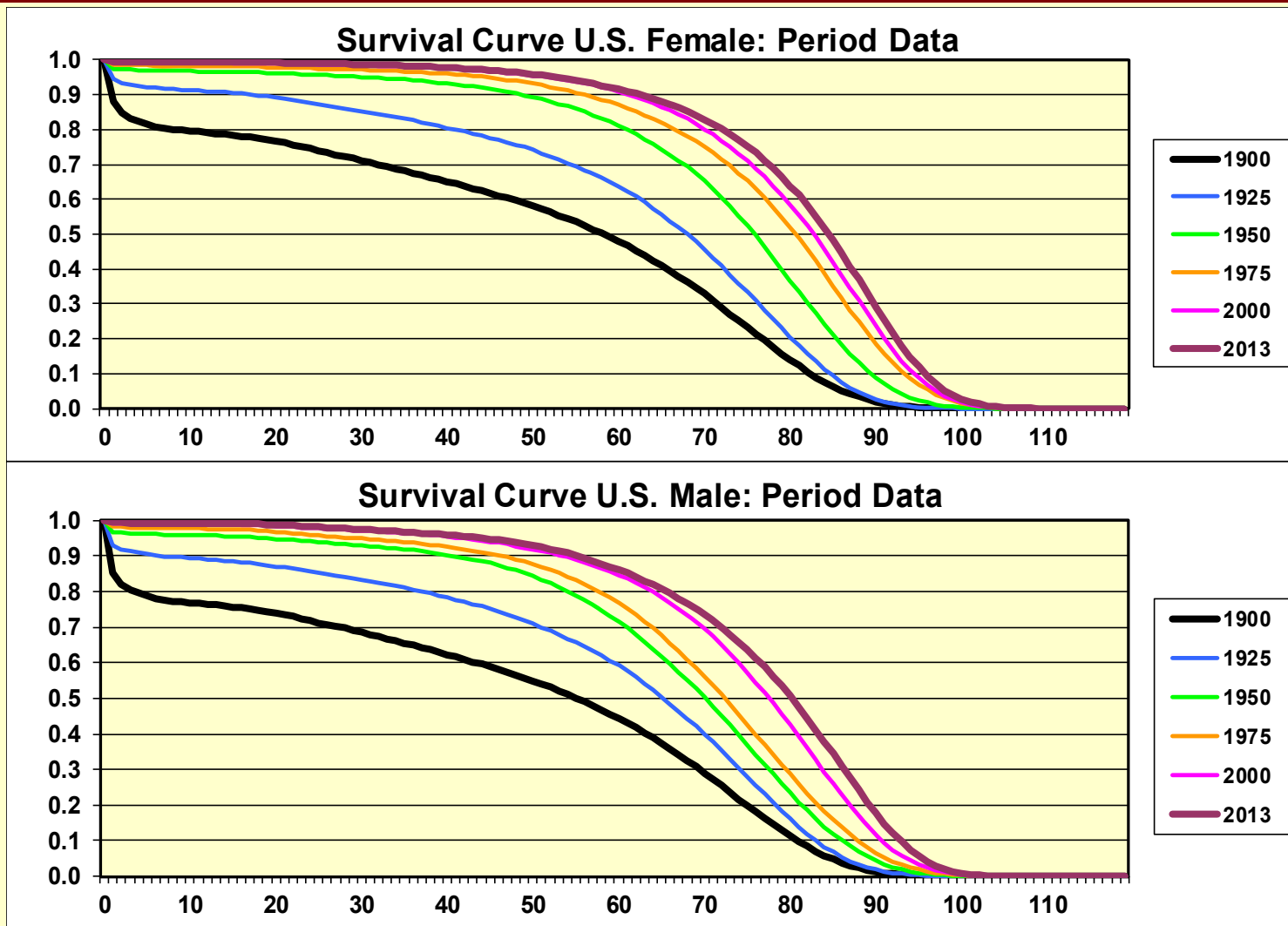
Life Expectancy, Gains Have Varied by Gender

But life expectancy is a potentially misleading statistic



Survival Curves Tell a More Complete Story

We are living longer, but there are limits, and progress is slowing

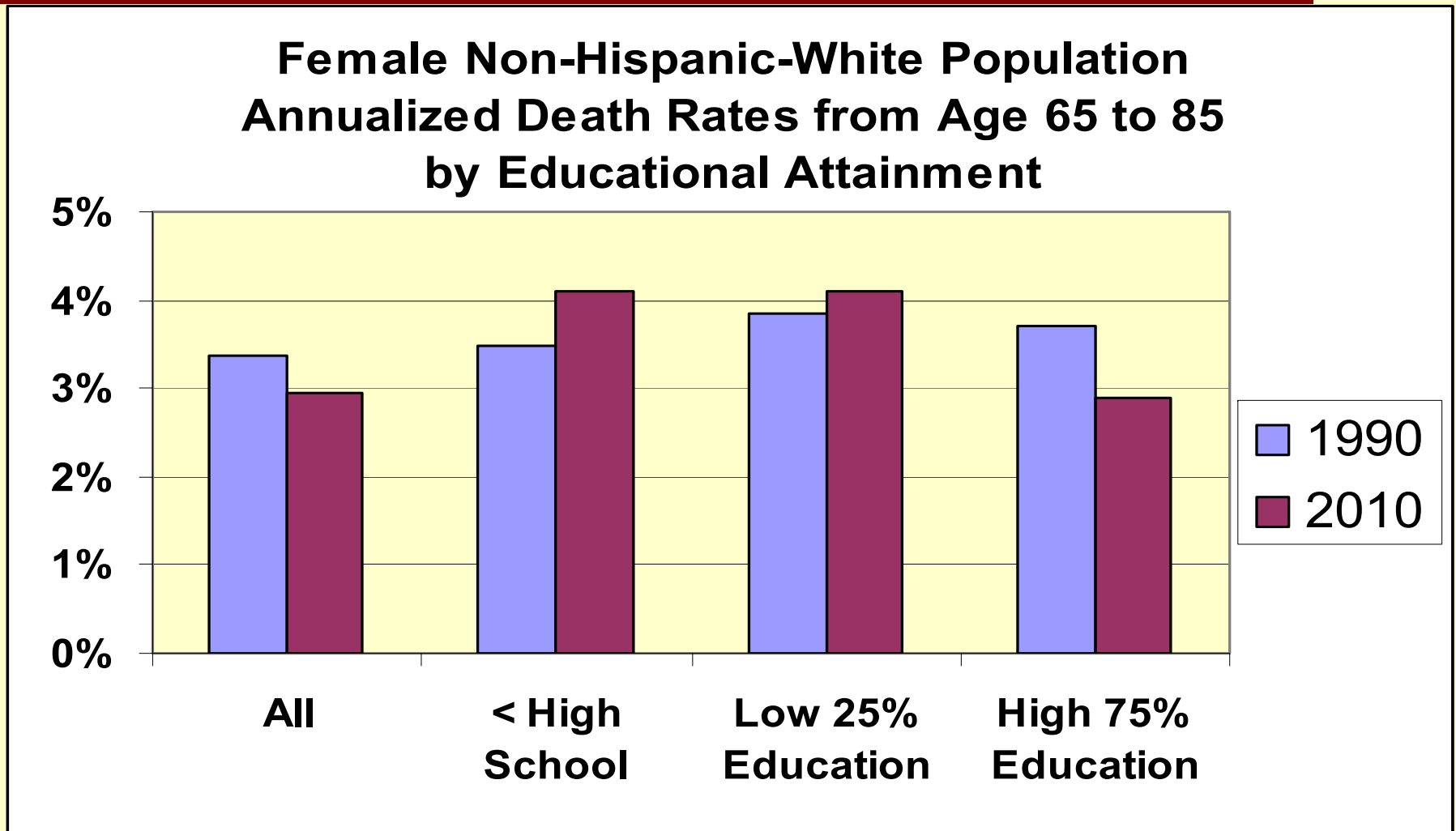


Variation by Education and Earnings Level

- ◆ Distribution has been changing for each
 - So best to look at Percentiles
- ◆ Death rates, and change in death rates
 - Allow for comparison of actual experience
- ◆ Education and earnings level correlated
 - Both reflect relative advantages
 - Nature and nurture

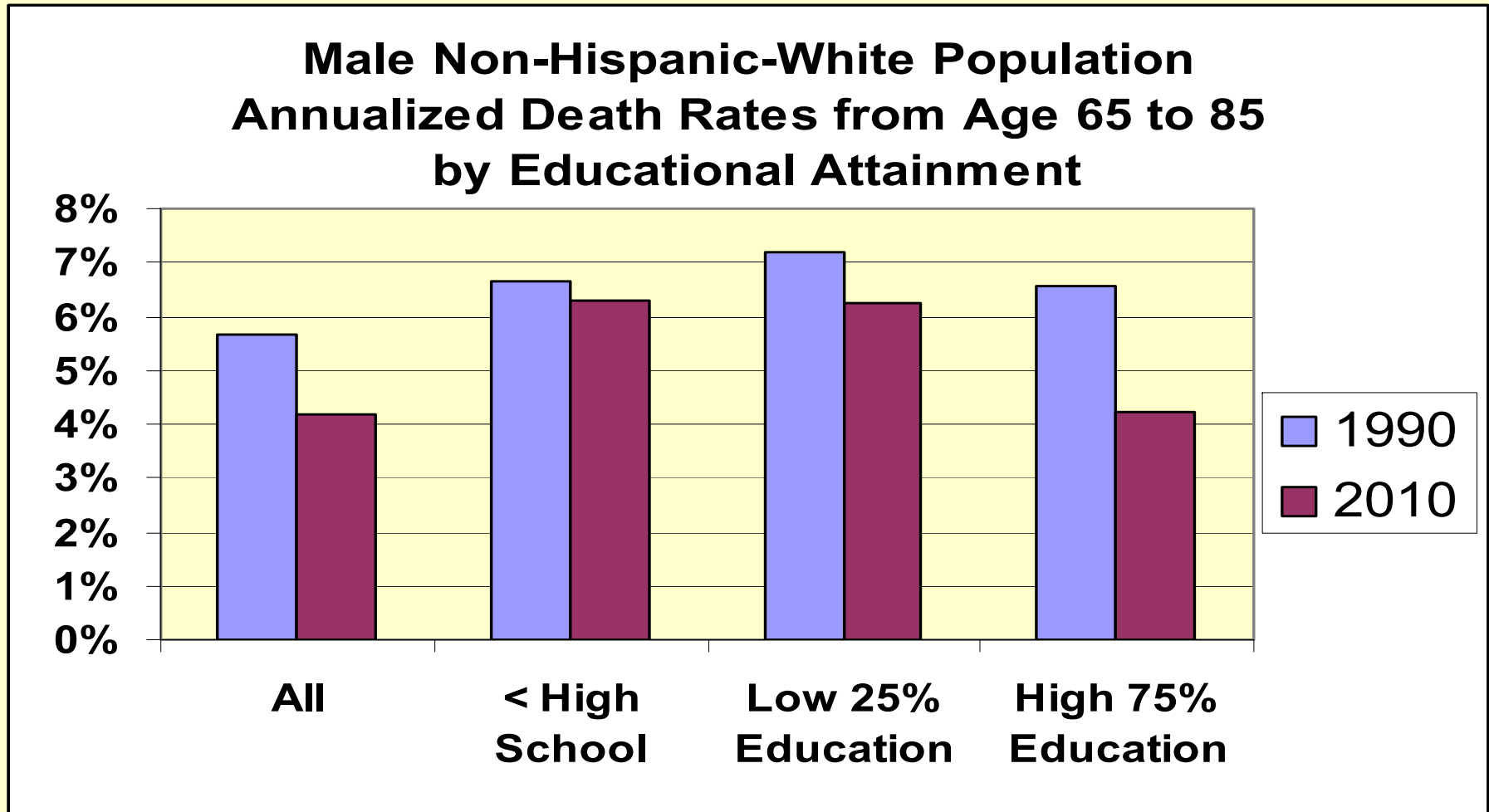
Female Death Rates by Education Level at 65-85

John Bound et al.(2014)



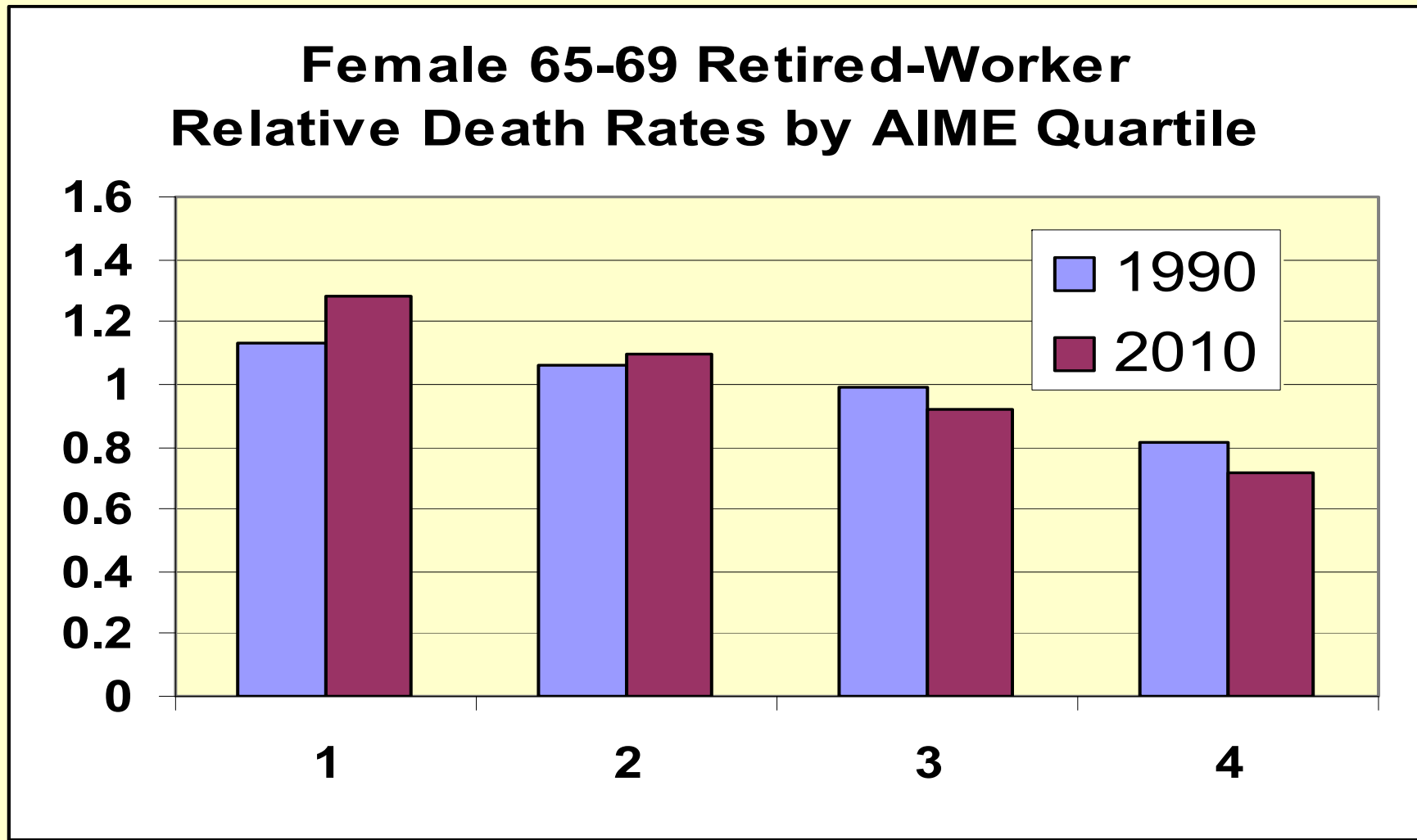
Male Death Rates by Education Level at 65-85

John Bound et al. (2014)



Death Rates Vary by Career Earnings Ranking

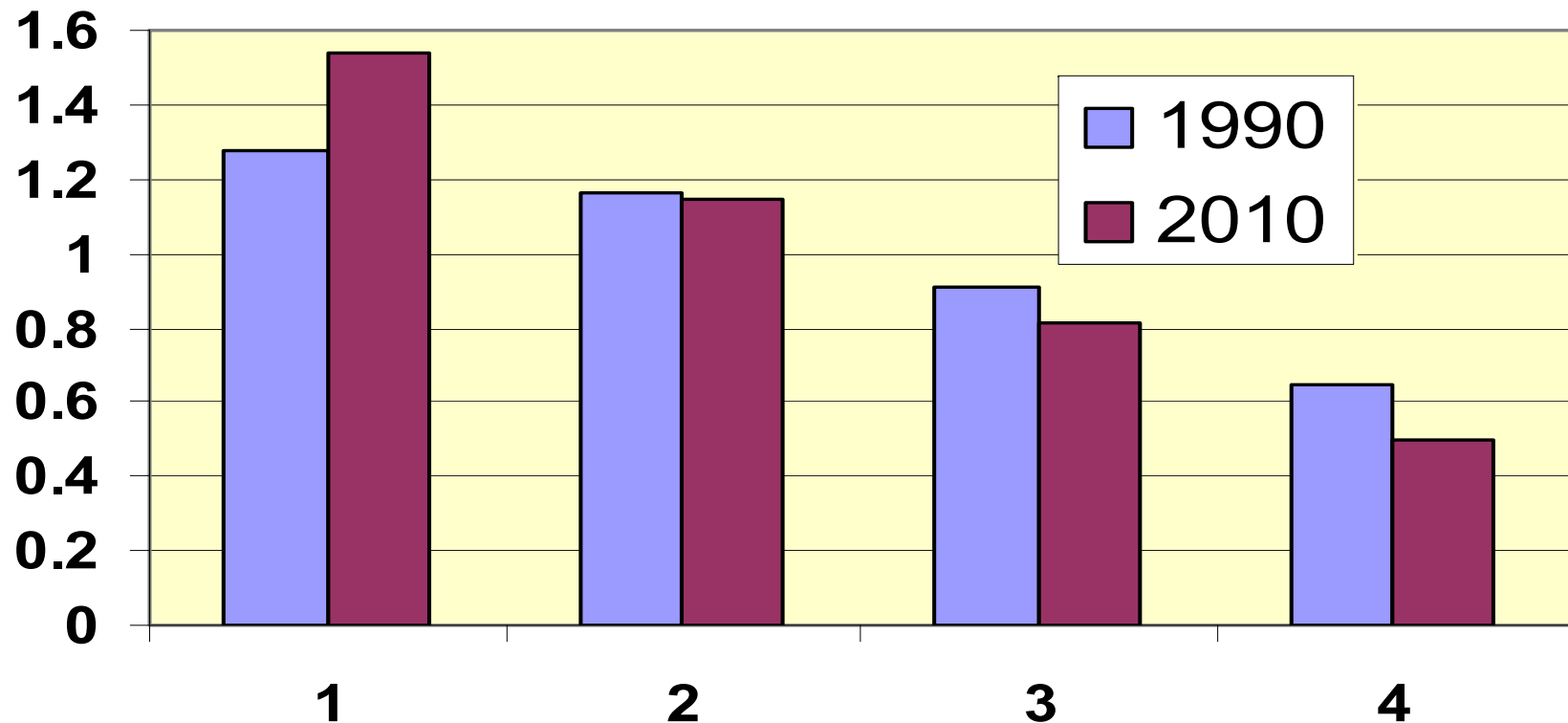
Difference has increased for females (2014)



Death Rates Vary by Career Earnings Ranking

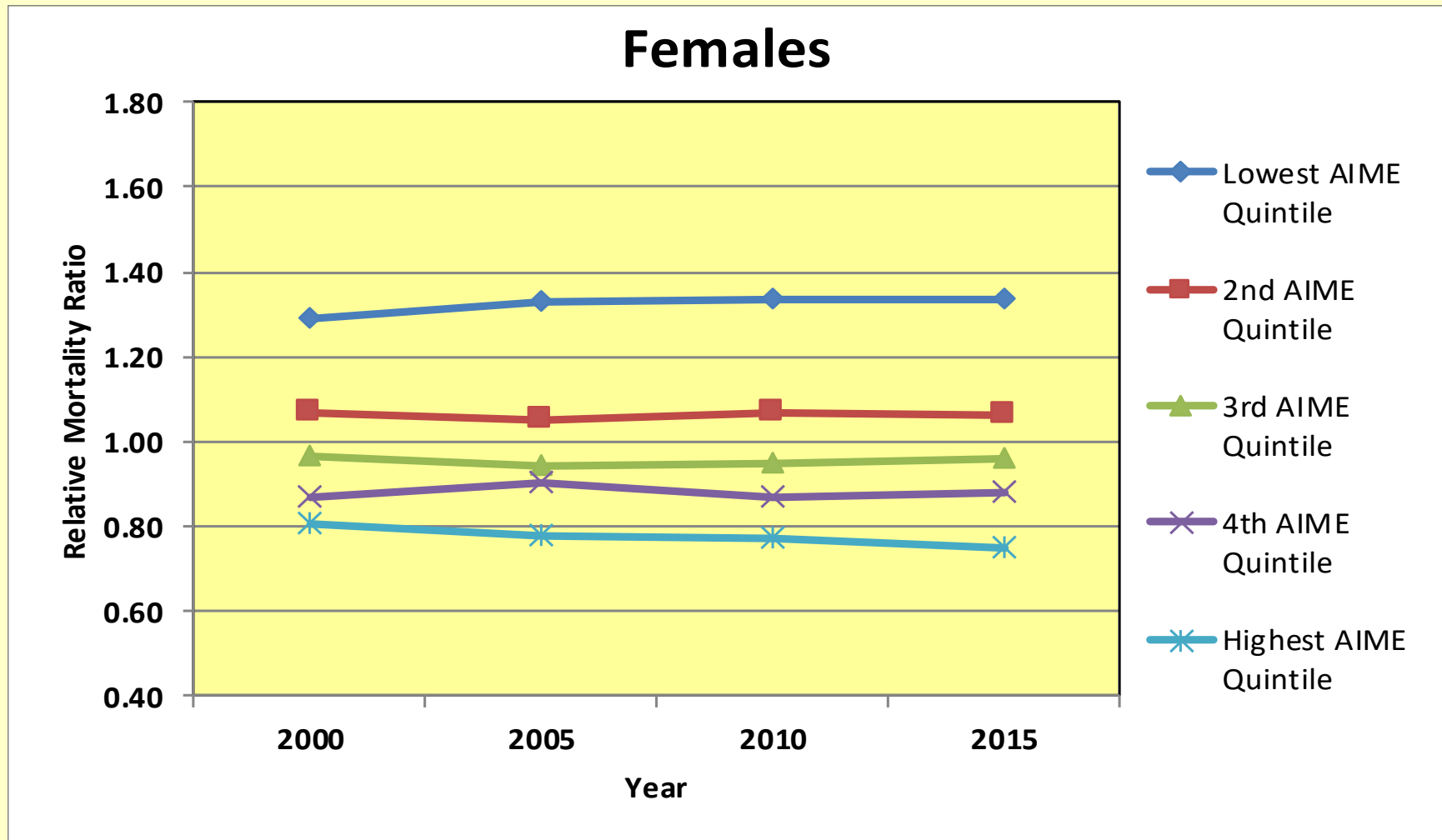
Difference has increased for males too (2014)

**Male 65-69 Retired-Worker
Relative Death Rates by AIME Quartile**



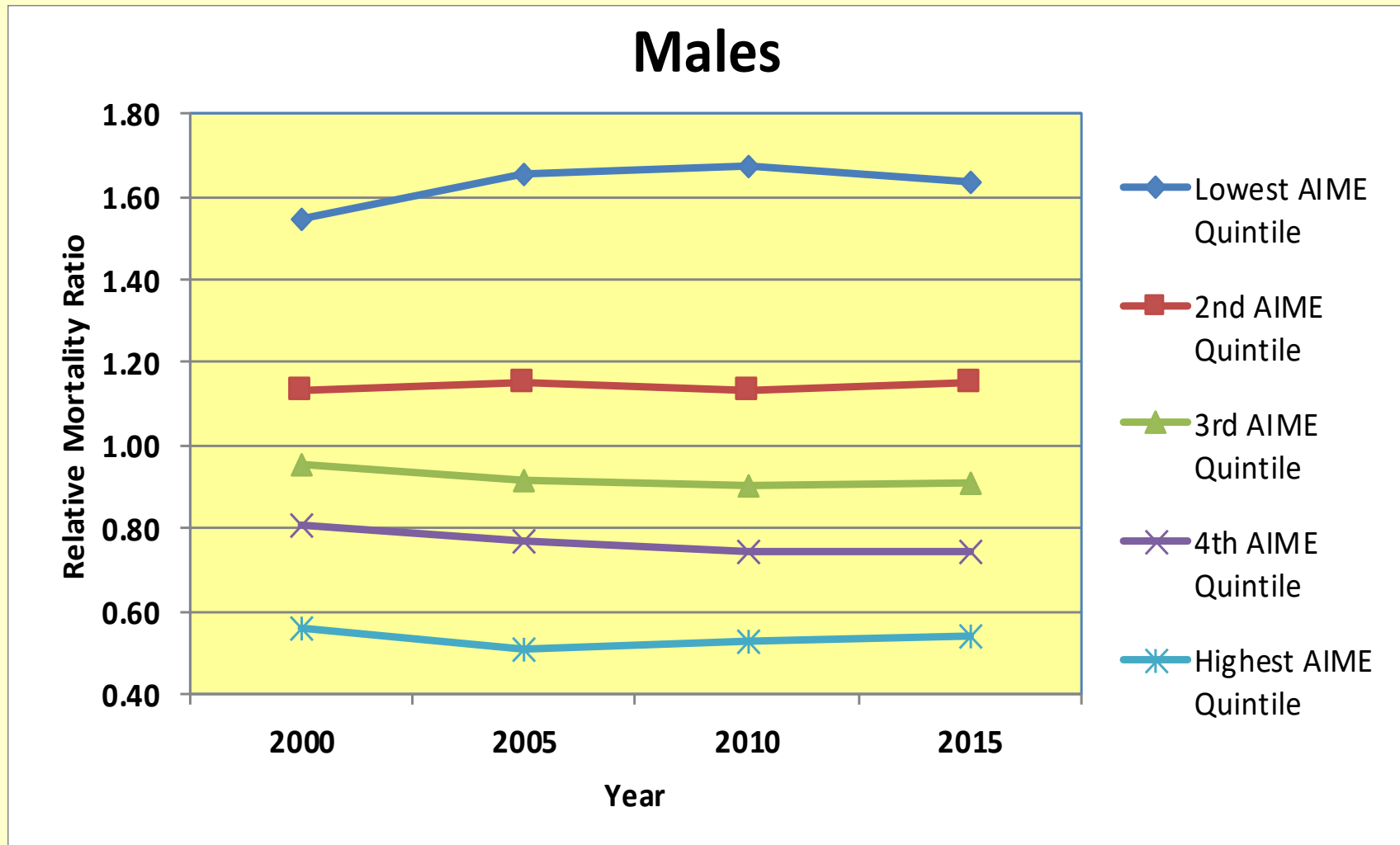
Relative Death Rates for Age 65-9 Social Security Retirees

Differential has been expanding slowly for females (Bosley 2018)



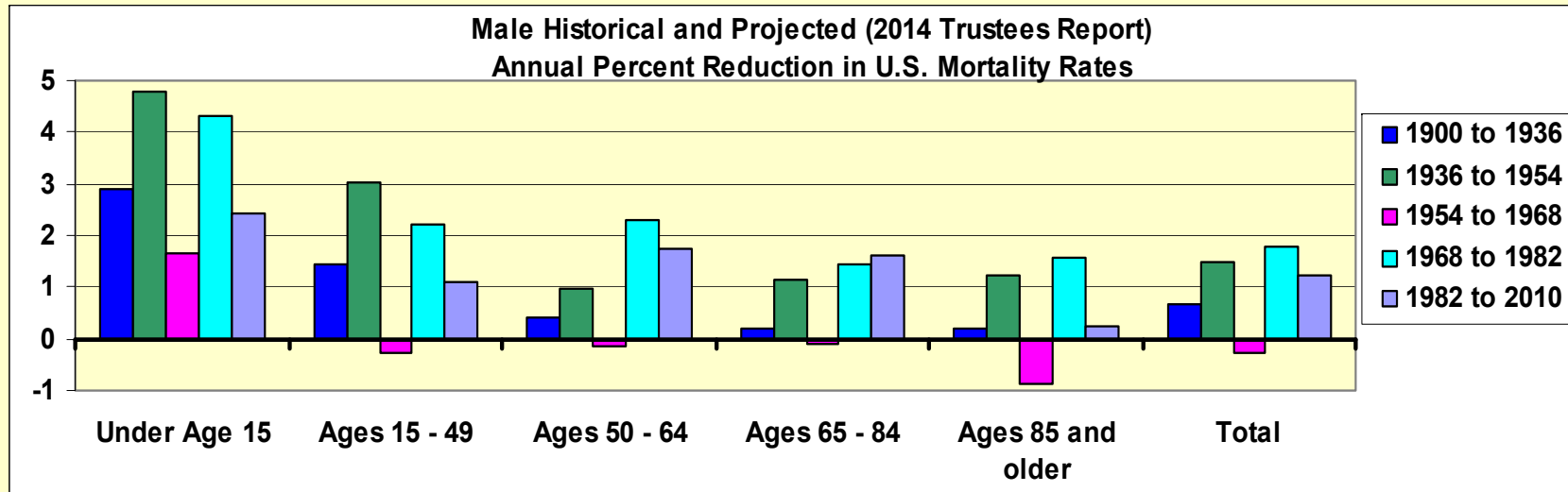
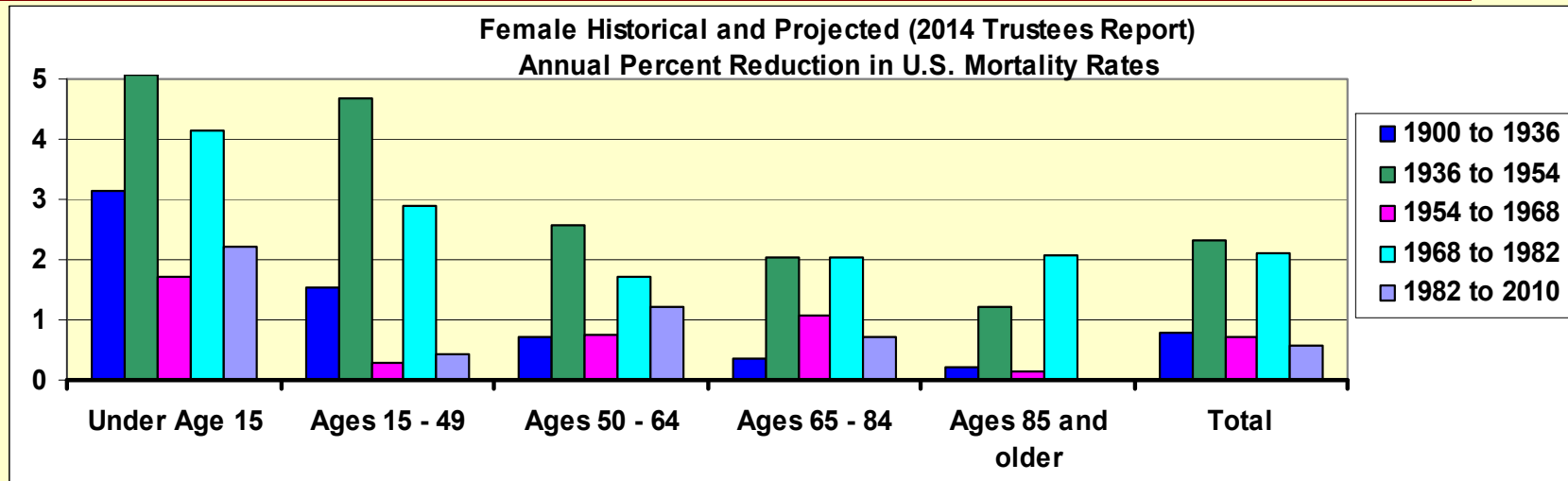
Relative Death Rates for Age 65-9 Social Security Retirees

Expansion may be reversing for males?? (Bosley 2018)



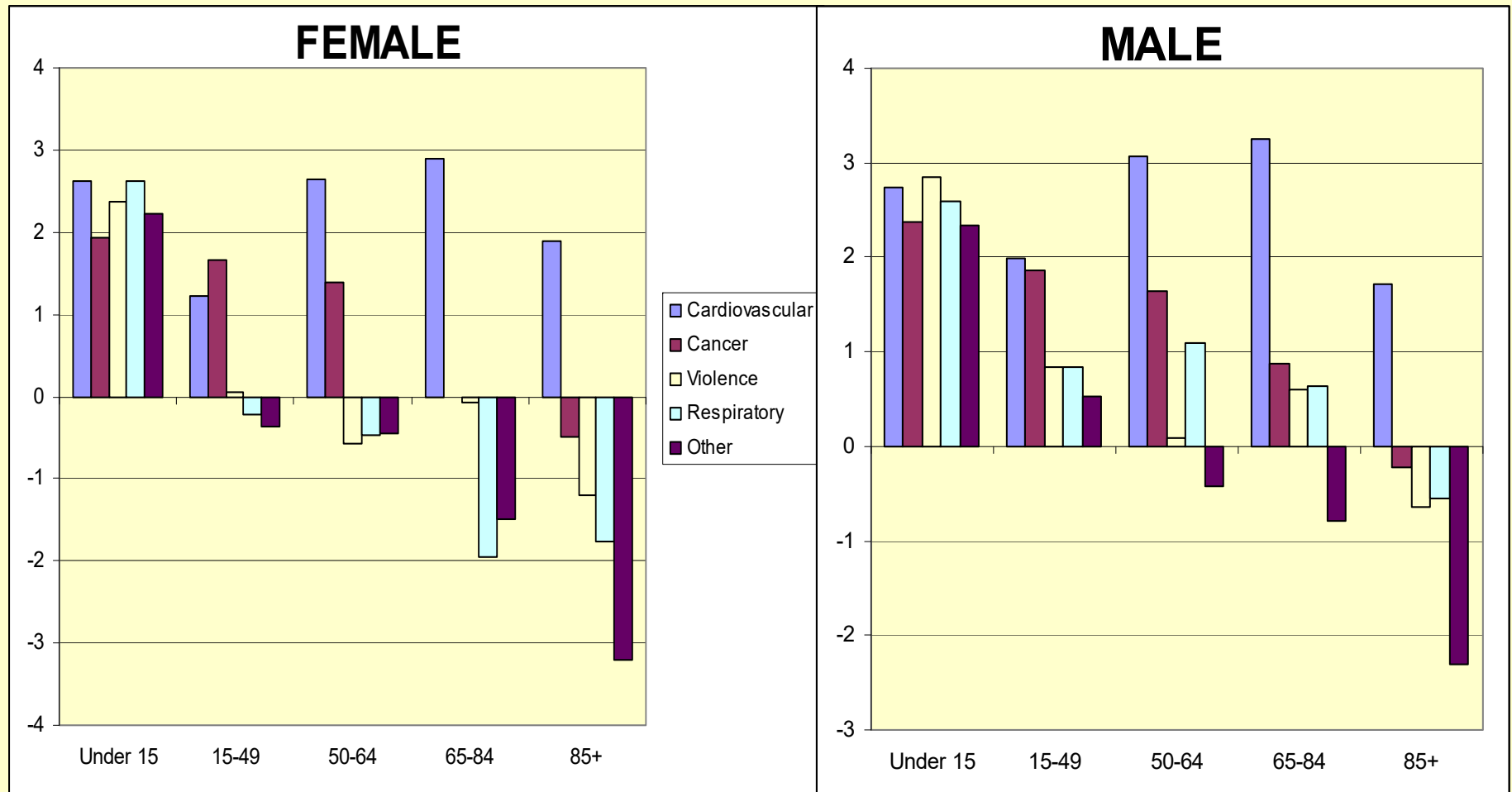
Mortality Decline *Varies* Over Time

Conditions: Antibiotics/economy 1936-54; Medicare/Medicaid 1968-82



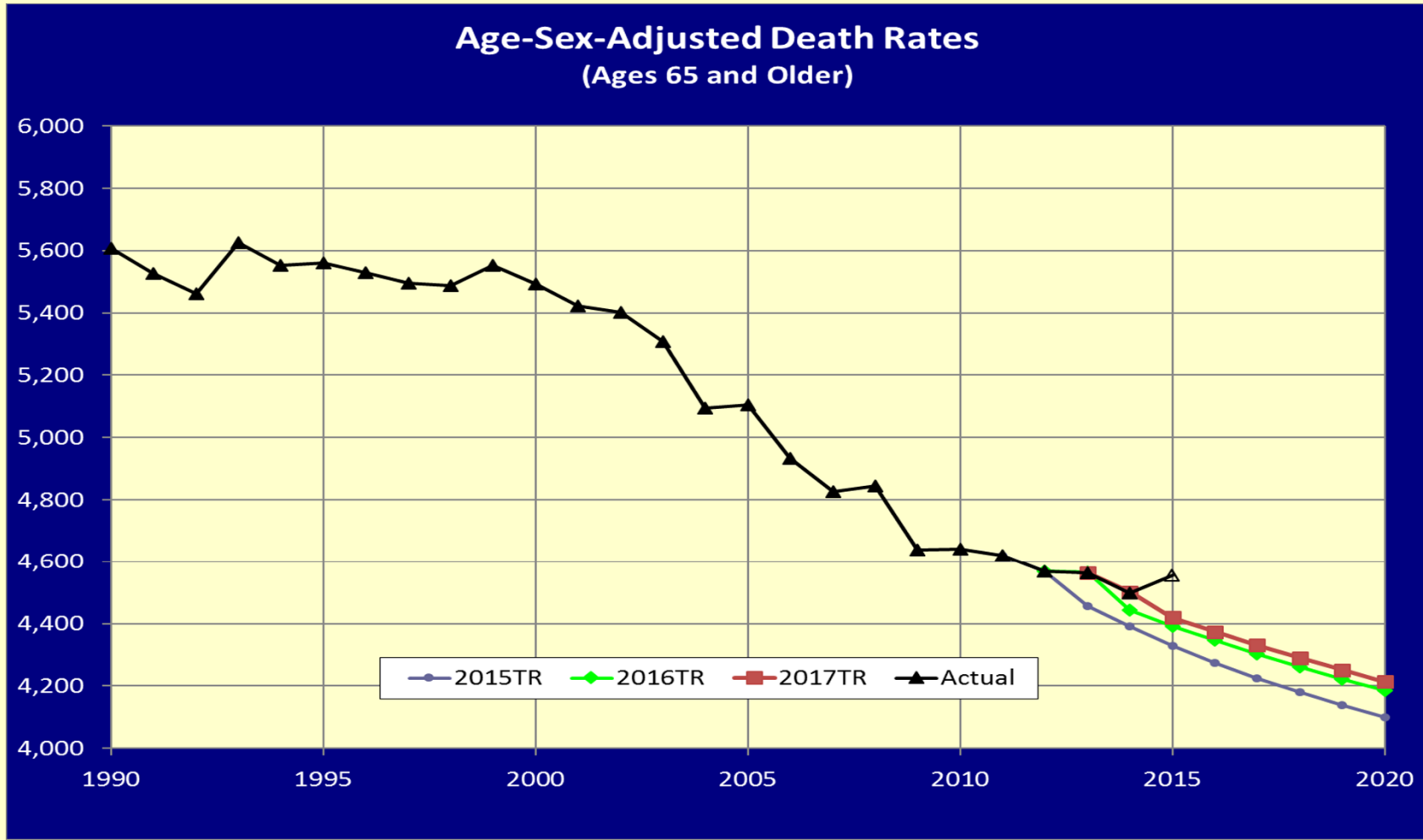
Mortality Decline by *Cause of Death*:

Rate of change from 1979 to 2013



Mortality Experience: Ages 65 and Older

Reductions since 2009 continue to fall short of expectations



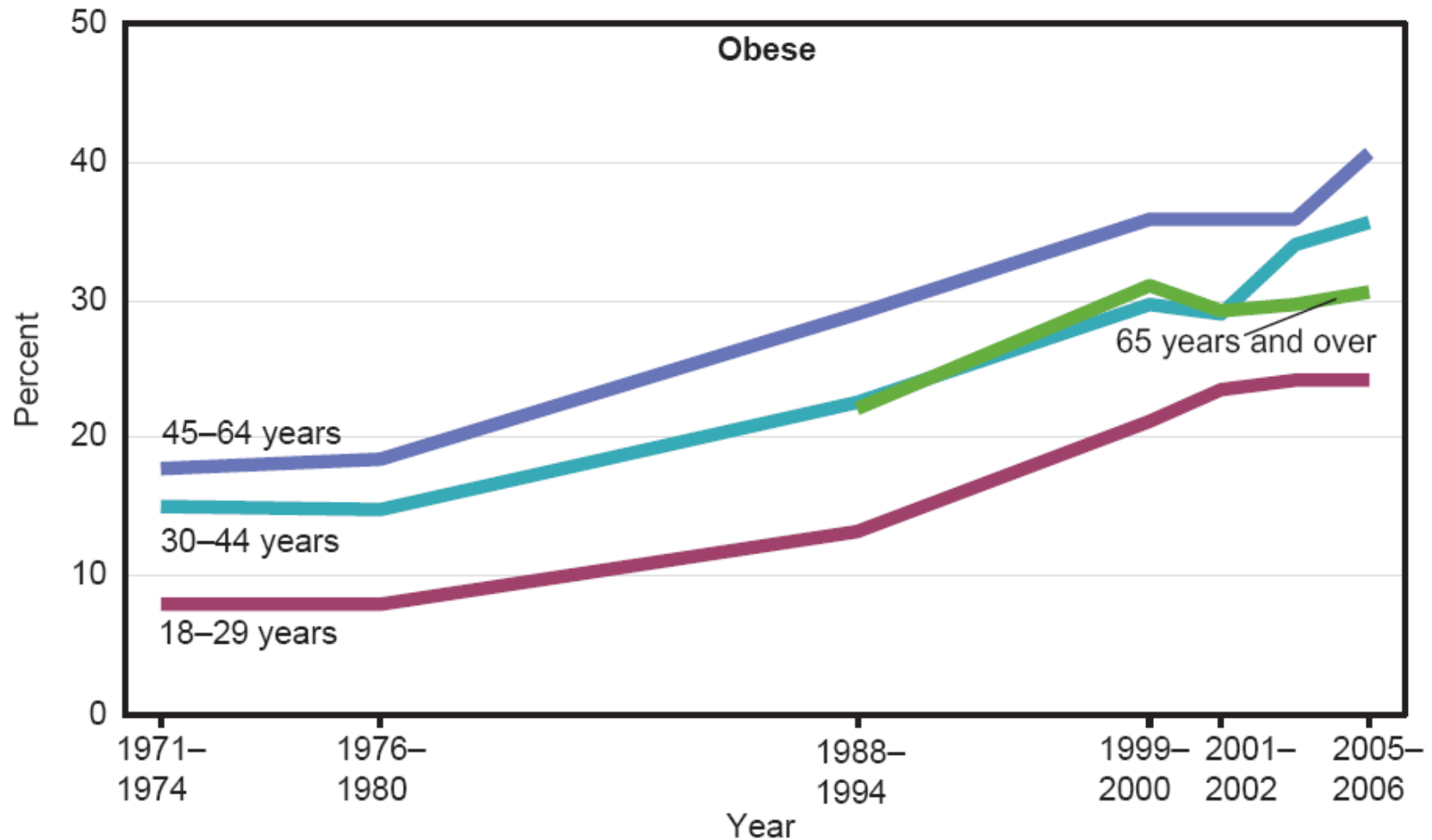
Factors Affecting Future Change

- ◆ Smoking - still some effect for females who started and stopped later than men
- ◆ Obesity - major factor yet to be fully explored
- ◆ Health spending and access - will this be even, or differ greatly by earnings level?

Trends in Obesity: US 1971-2006

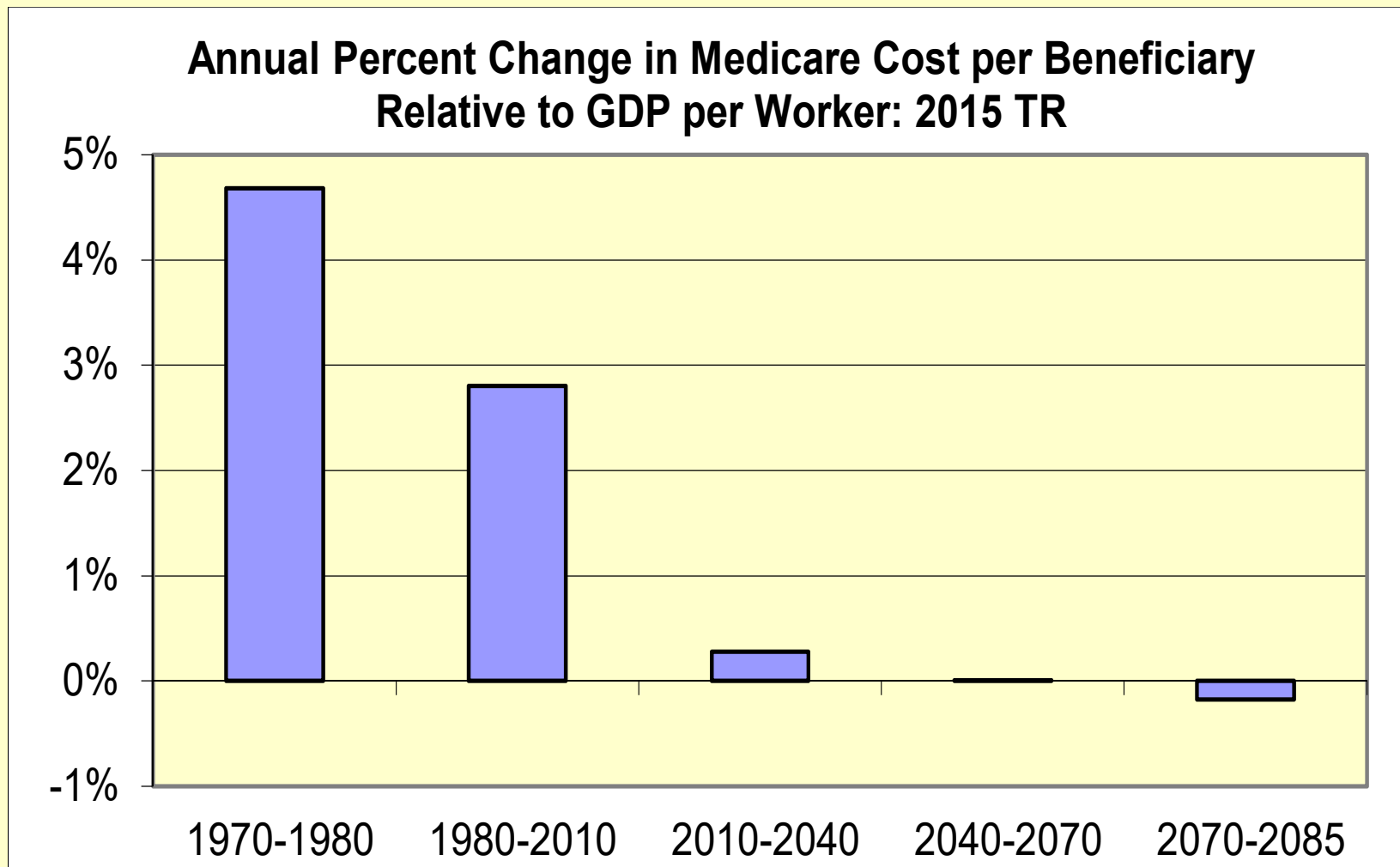
Sam Preston 2010—must consider cumulative effects

Increasing duration of obesity for aged in future



Health Spending Cannot Continue to Rise at Historical Rates

Note Trustees' deceleration



For More Information...

<http://www.ssa.gov/oact/>

- ◆ Documentation of Trustees Report data & assumptions
https://www.ssa.gov/oact/TR/2017/2017_Long-Range_Demographic_Assumptions.pdf
- ◆ Historical and projected mortality rates
<https://www.ssa.gov/oact/HistEst/DeathHome.html>
- ◆ Actuarial Studies and Notes
<https://www.ssa.gov/oact/NOTES/actstud.html>