

# **Social Security Actuaries' Use of Vital Records**

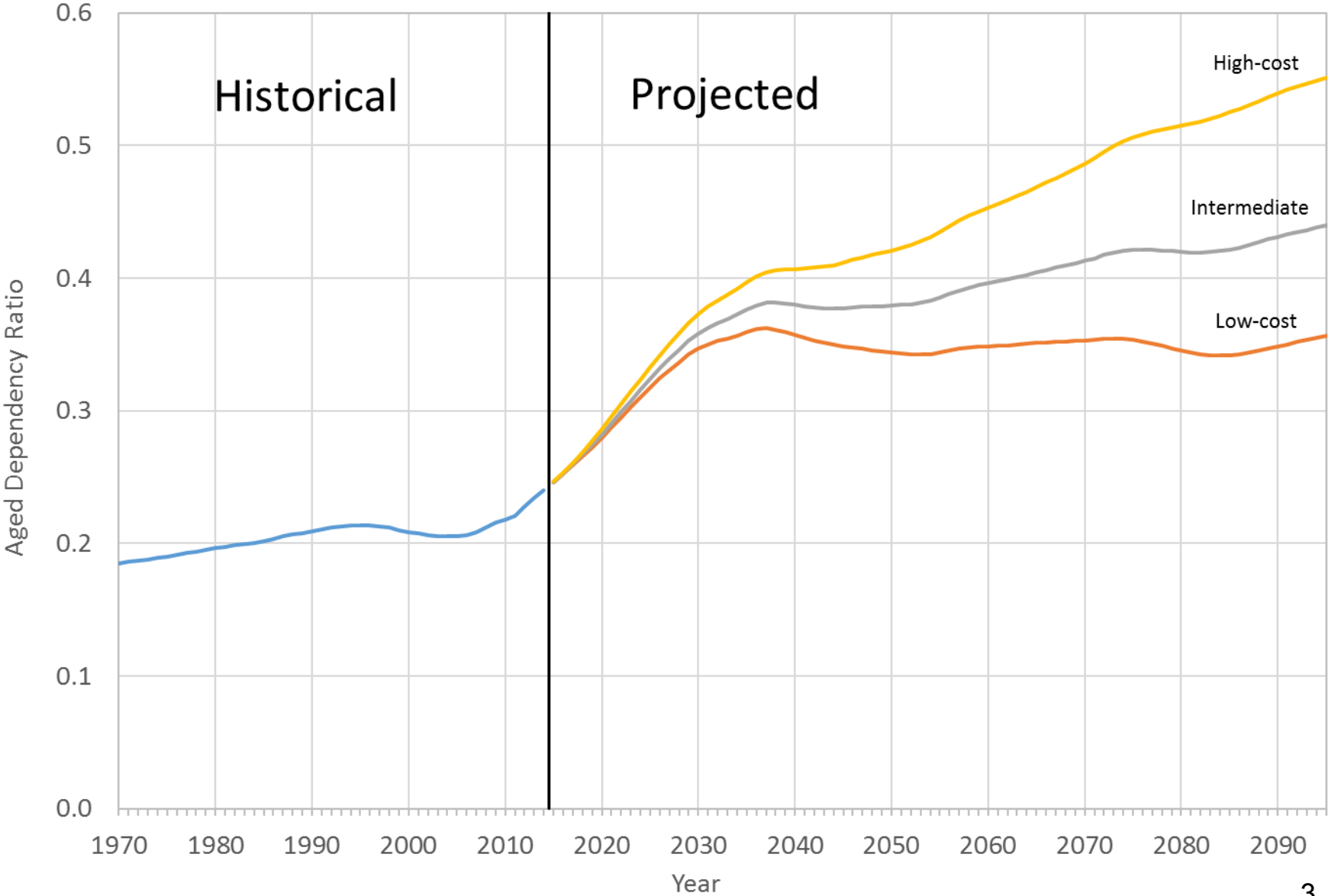
Testimony for NCVHS Hearing on Next Generation Vital Statistics  
Panel 2. Current Status of Vital Records: Federal Perspective

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Office of the Chief Actuary, Social Security Administration  
September 11, 2017

# Vital Statistics (Events)

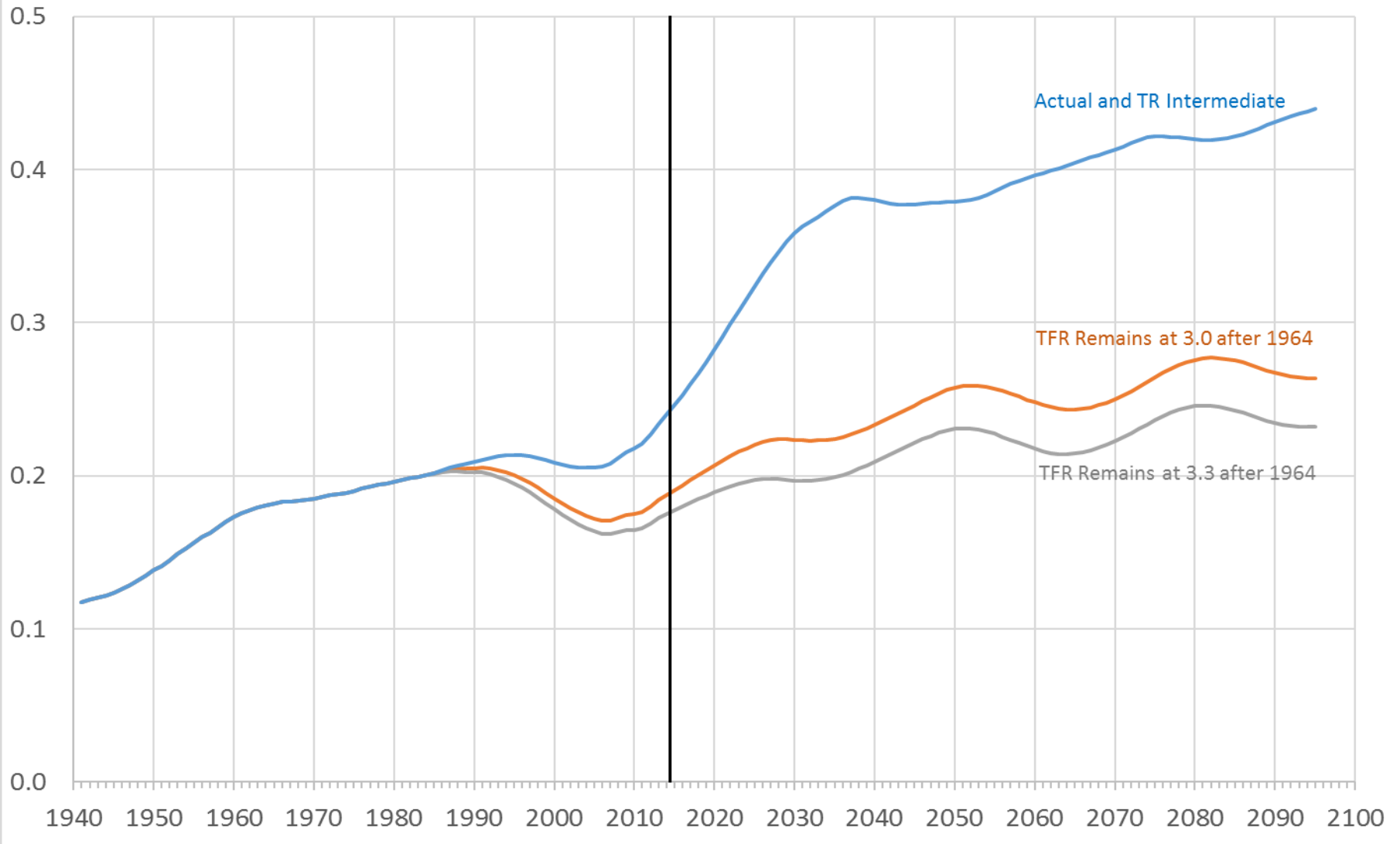
- Levels and trends determine the size and composition of the future population
  - Our projections for Social Security, Medicare, SSI, Medicaid, plus OMB long-term projections
- Future costs and revenues flow directly or indirectly from population dynamics
  - Average earnings and benefits rise similarly
  - So changes in population distribution (by age, sex, etc) determine cost relative to financing sources
    - For entitlements and all economic units

Aged Dependency Ratios, 2017 Trustees Report  
Population 65+ / (20 to 64)

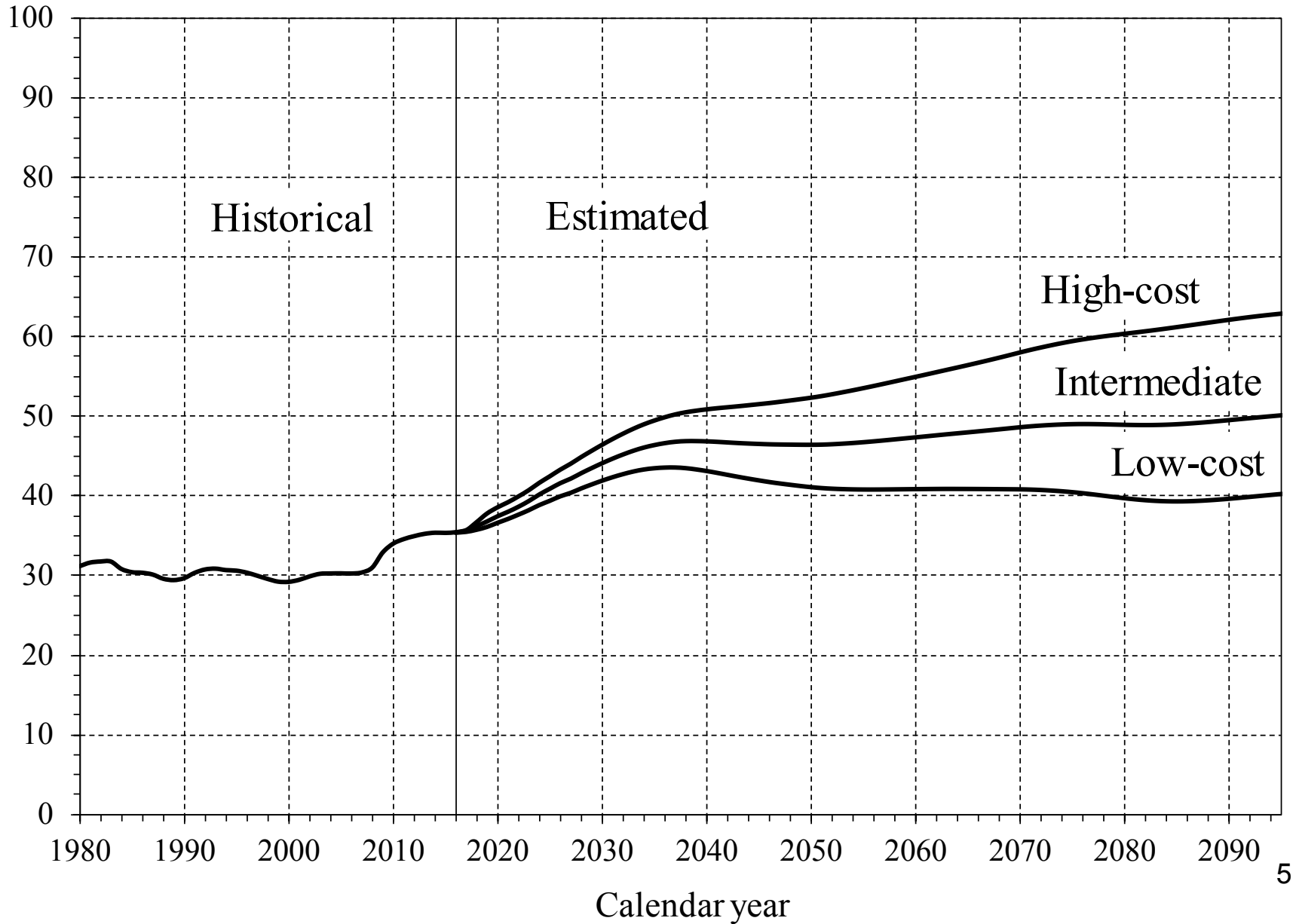


# Aged Dependency Ratios, 2017 Trustees Report

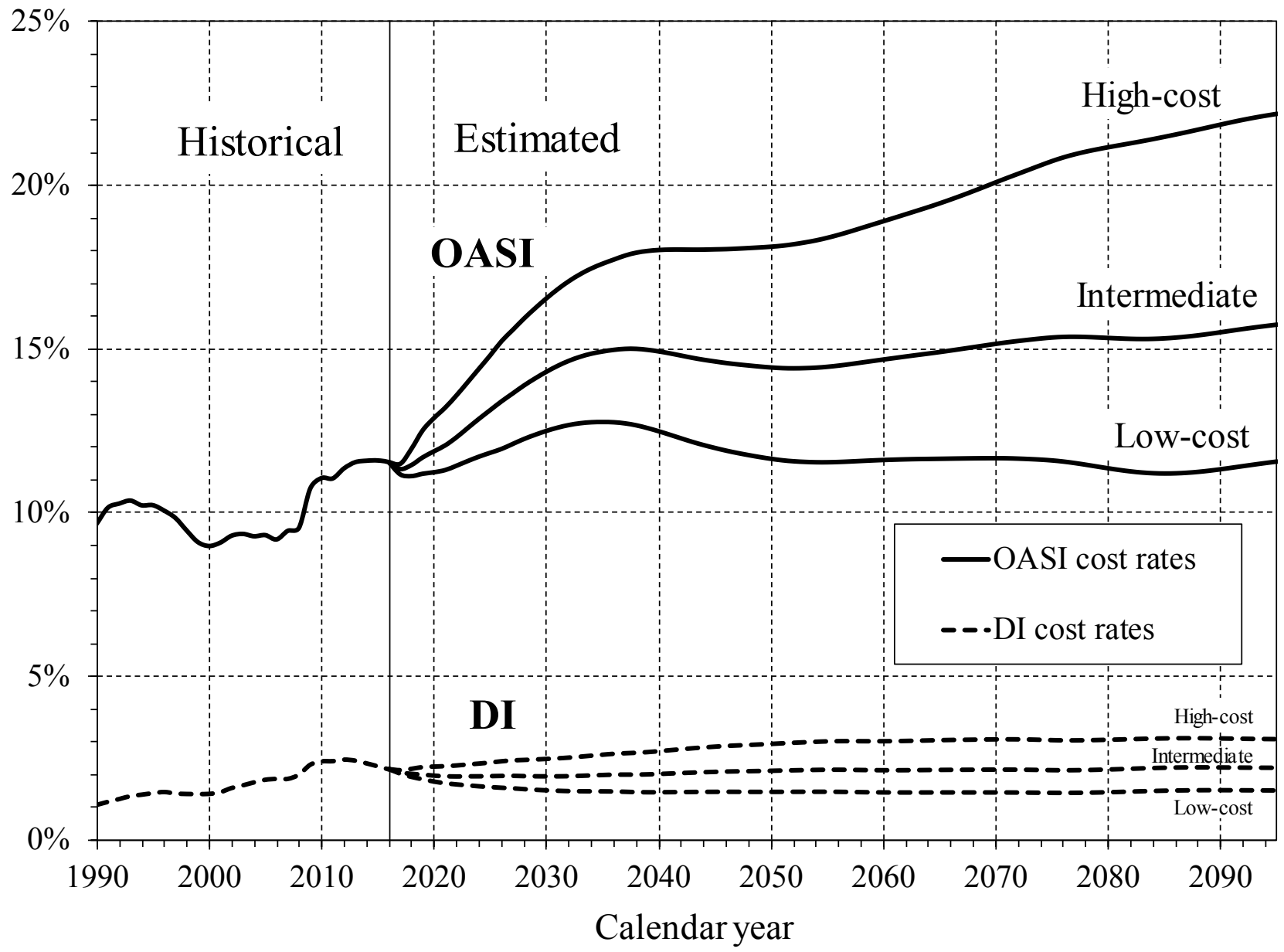
## Population 65+ / (20 to 64)



# Social Security Beneficiaries per 100 Workers, 2017 TR



# Social Security Cost as Percent of Taxable Payroll, 2017 TR



# Vital Events that Matter

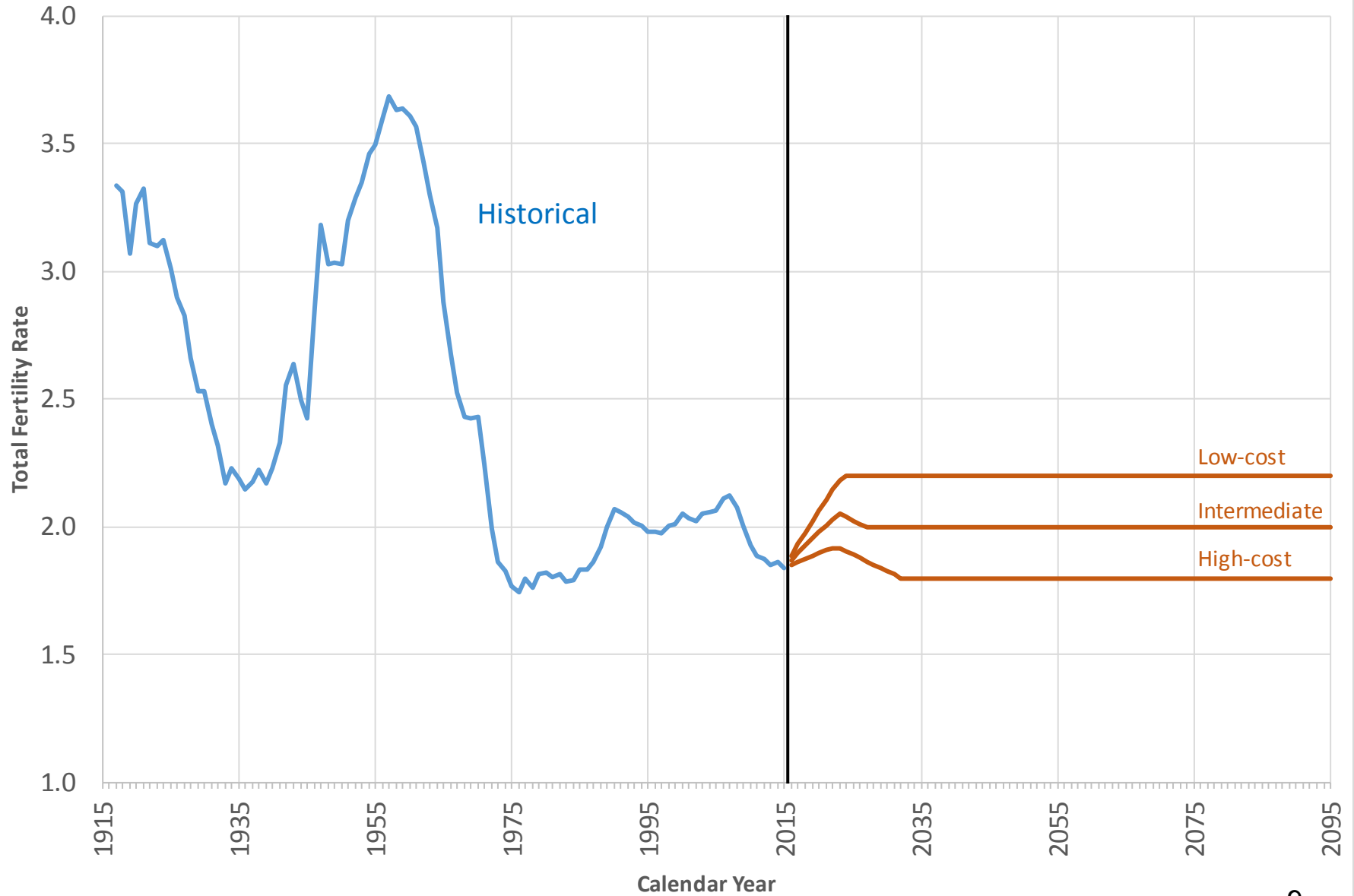
- 1) Births
- 2) Deaths
- 3) Marriage and Divorce
- 4) Immigration and Emigration
- 5) Disability

# 1) Births

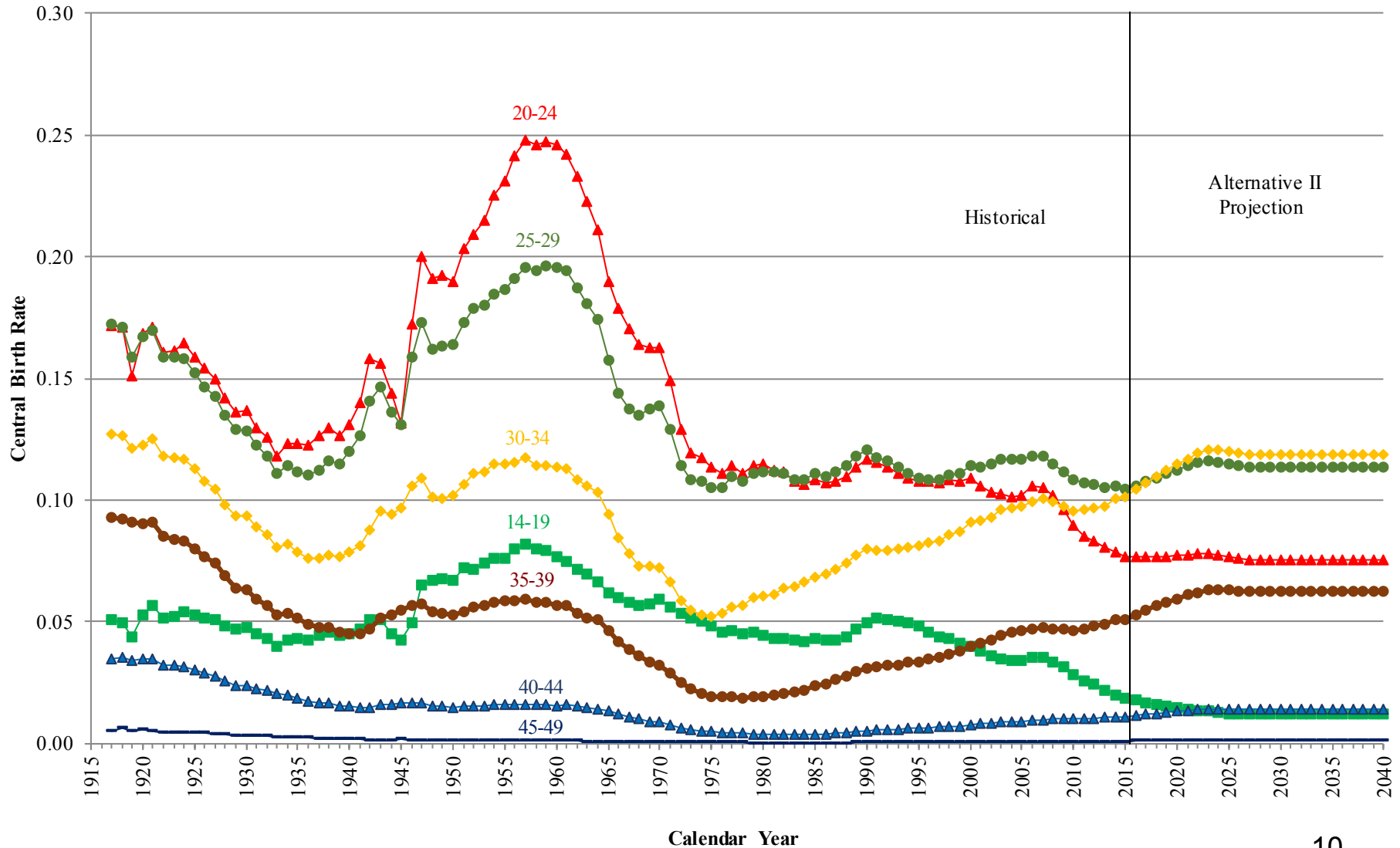
- Compute age-specific birth rates
  - Births from NCHS by age of mother
    - Reported by 50 States plus DC
  - Numbers of women from Census Bureau
    - Estimated for 50 States plus DC



# Historical and Projected Total Fertility Rates, 2017 TR



# U.S. Birth Rates for Five-Year Age Groups: Historical and Intermediate Alternative, 2017 TR



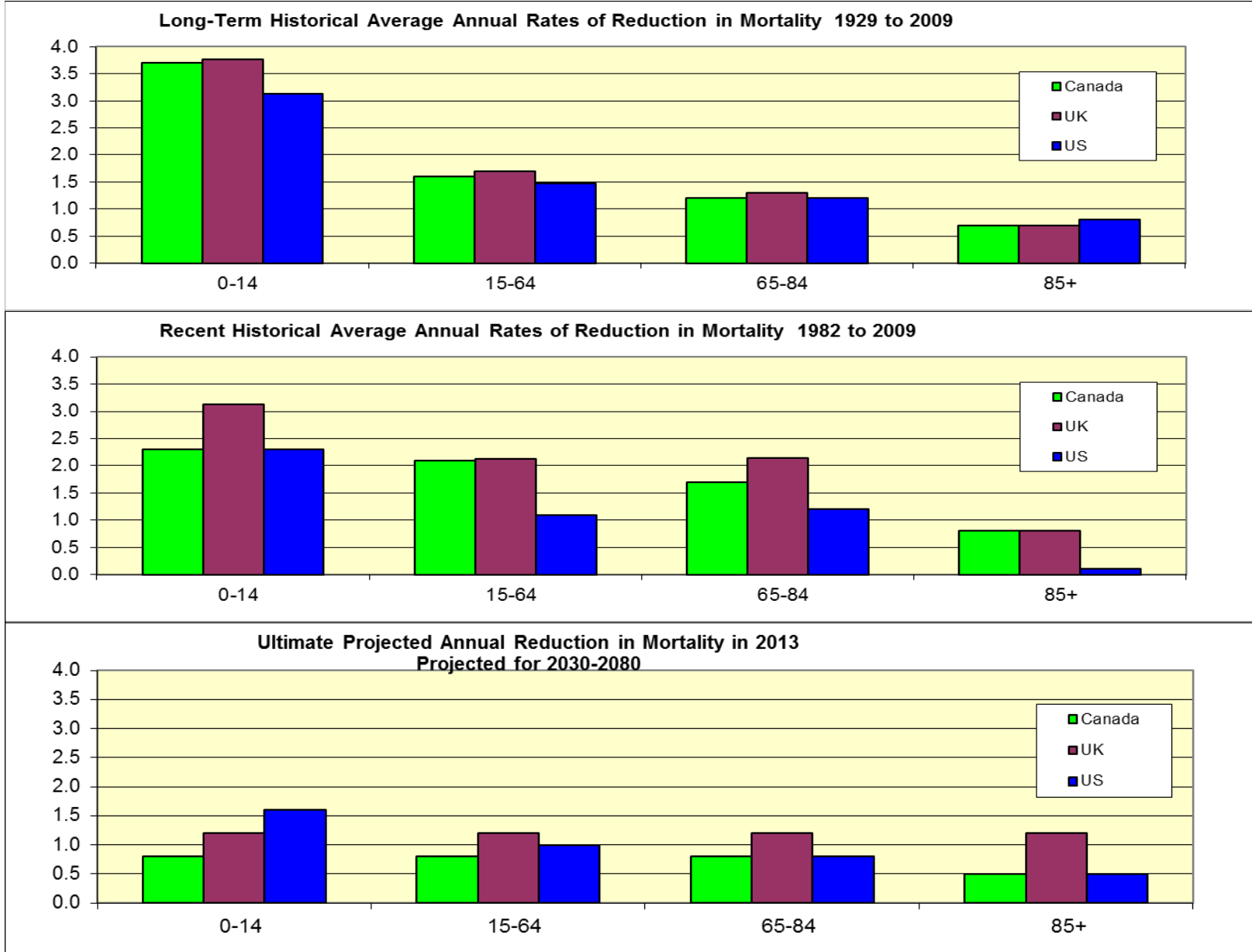
## 2) Deaths (Mortality)

- Data under age 65
  - NCHS deaths by cause for 50 States and DC
  - Census population for 50 States and DC
  - Relative underreporting issues
- Data age 65 and over
  - Medicare deaths and enrollments (limited to OASDI beneficiaries)
  - Consistent deaths and exposures
  - Minimized age misstatement
  - ***NCHS distribution by cause of death***

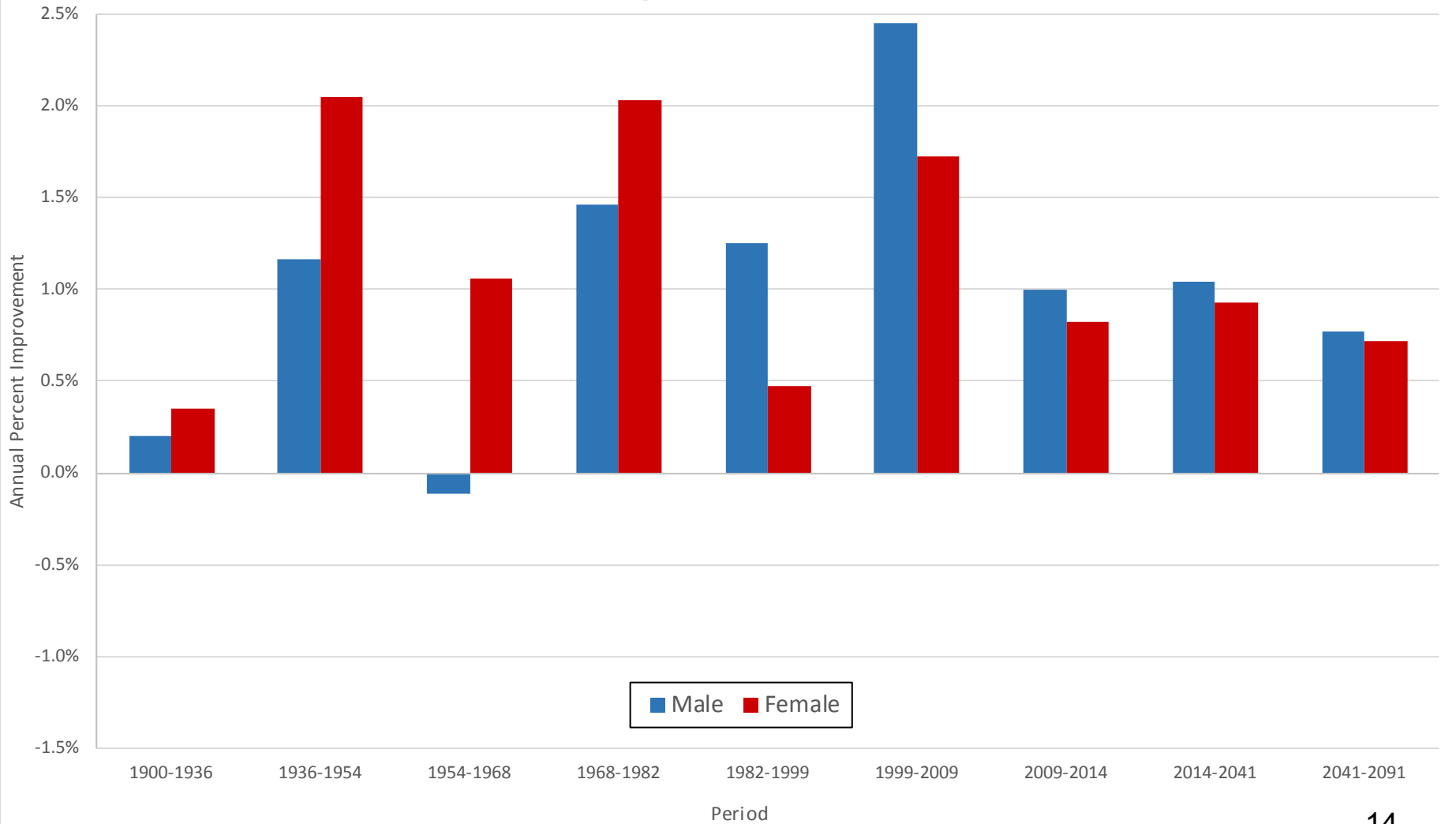
# Projection of Mortality

- Assumed rates of decline by age-group, sex, and cause—closely monitor rates by age and sex
- Assume generally slower decline than past
- But for 85+ faster decline than in recent years
- Reduced “age gradient” for future mortality decline
- Very gradual deceleration is effected for all ages through use of different ultimate rates of decline by cause

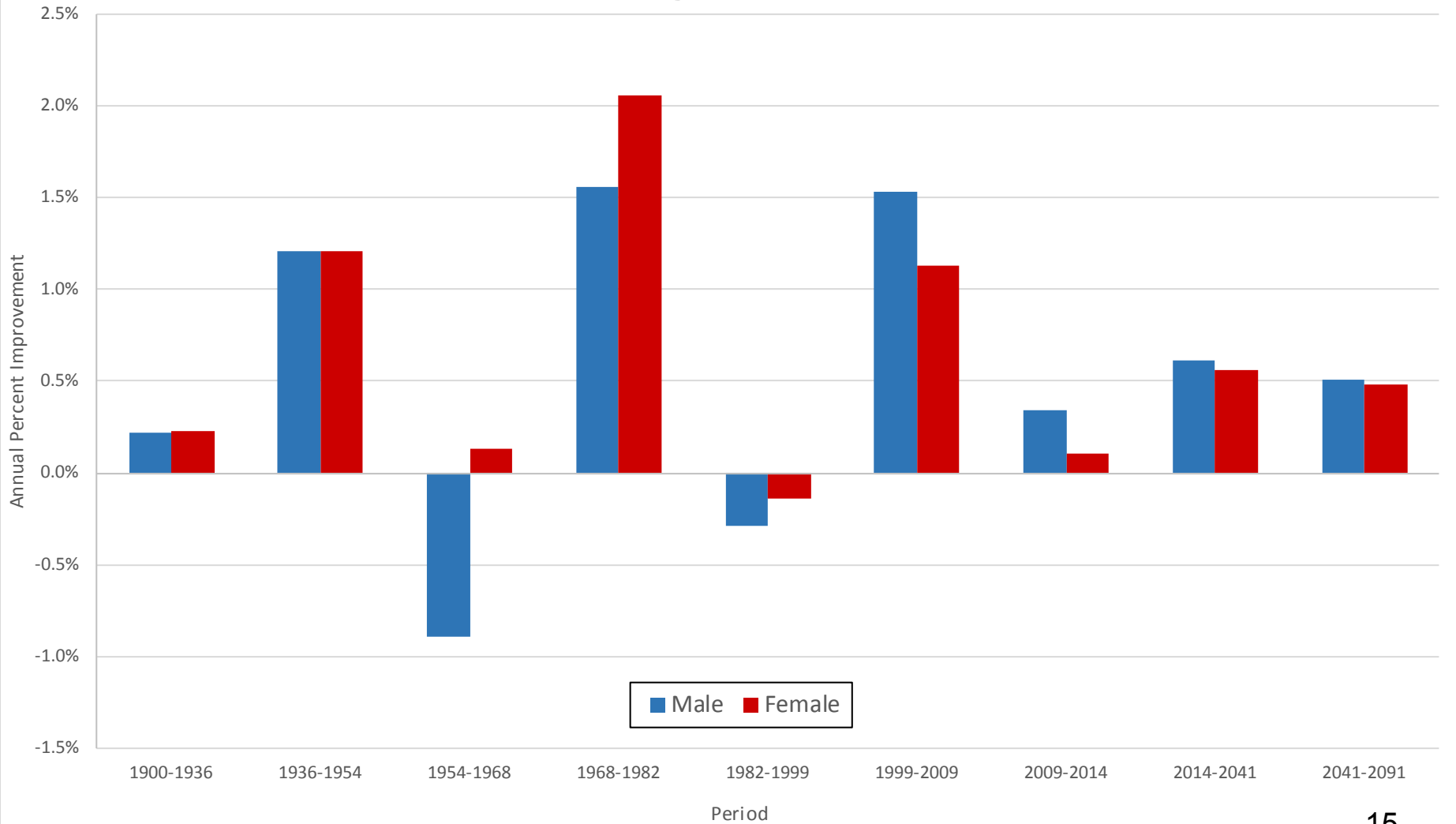
# Declining Age Gradient and Rate of Decline



# Historical and Intermediate Projections of Annual Percentage Reductions in Death Rates, 2017 TR: Ages 65 - 84



# Historical and Intermediate Projections of Annual Percentage Reductions in Death Rates, 2017 TR: Ages 85+

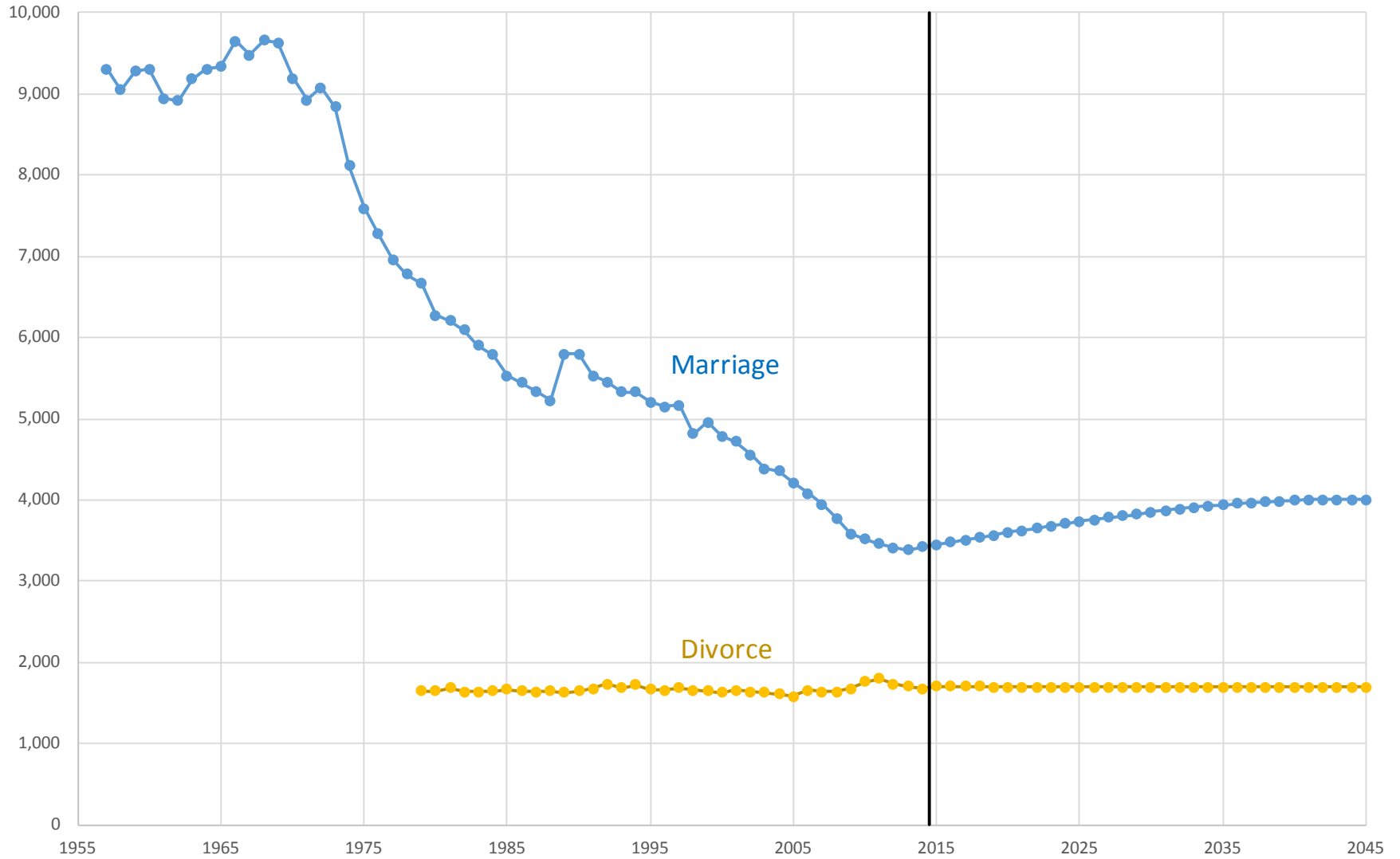


# 3) Marriage and Divorce

- Critical to benefits (and employment)
- NCHS
  - Age distribution through 1988, provisional through 1995, and totals through 2014
- ACS
  - Age distribution for marriages, beginning in 2008
- Data from various states
  - Age distribution for divorces, for some recent years



# Age-Sex Adjusted Marriage and Divorce Rates Historical and Projected, 2017 TR



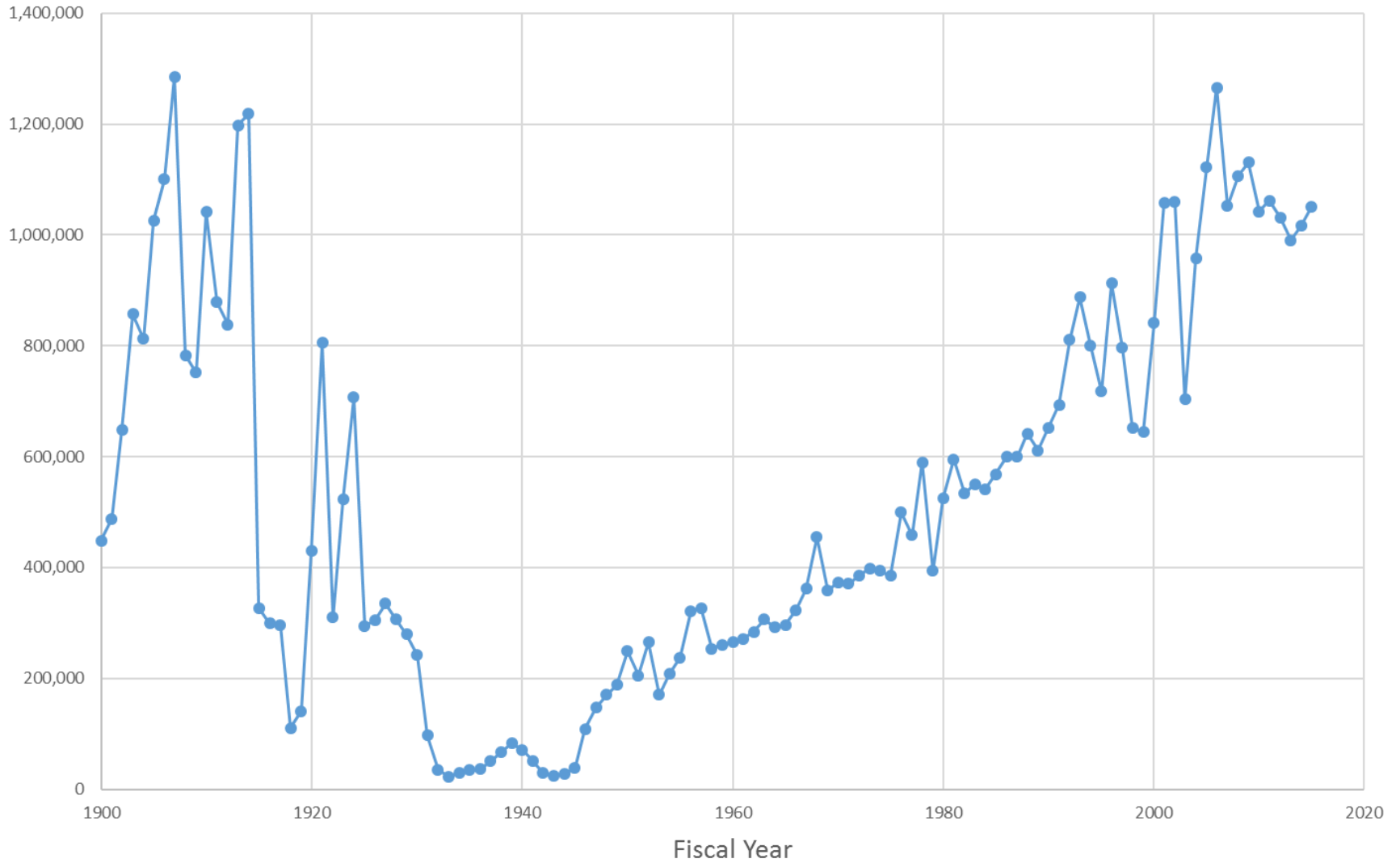
# 4) Immigration / Emigration

- Legal immigration (LPR)
  - New arrivals and adjustments of status
- Legal emigration
  - Leaving Social Security coverage area
- Other immigration (other than LPR)
  - Undocumented and temporary legal
- Other emigration
  - Leaving area and adjusting to LPR

# Legal Immigration/Emigration

- **Immigration** – Data: Dept. of Homeland Security (DHS) by age and sex (average last 10 fiscal years of data)
  - Most categories numerically limited
  - Immediate relatives of citizens NOT limited
  - Roughly 40%-45% adjustments of status in recent years
  - We assume current law—slightly above 1 million per year
- **Emigration** – Historical estimates from Census Bureau
  - Have varied from 20-30% the level of immigration
  - We assume 25% the level of immigration
  - Adjust age distribution—decrease level at older ages
    - Individuals leaving the Social Security area who have attained insured status can still receive benefits, and so are deemed not to have emigrated

# Legal Immigration, Fiscal Years 1900 - 2015

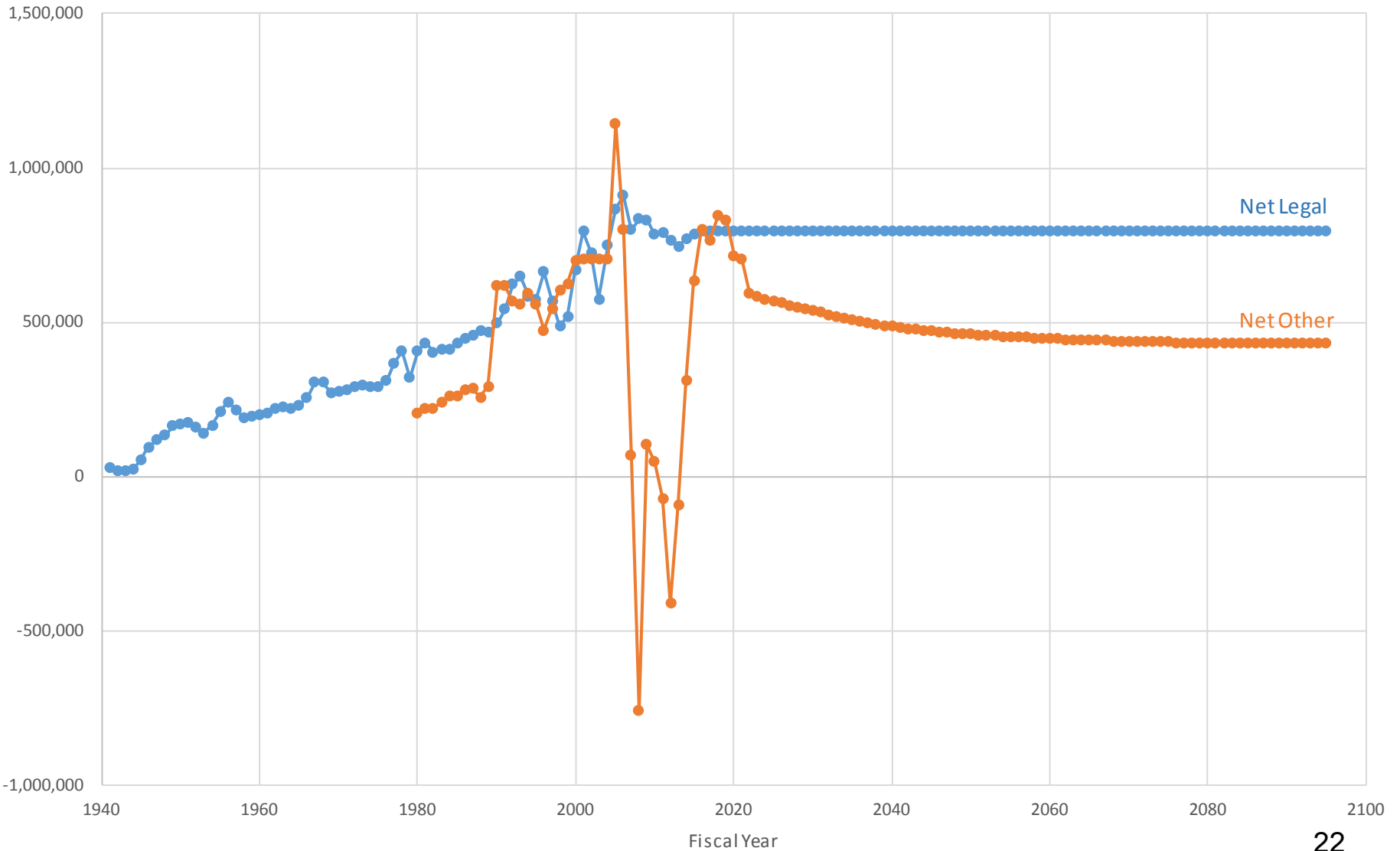


Note: Excludes persons who attained LPR status under the special one-time provisions of the Immigration Reform and Control Act of 1986 (IRCA)

# Other Immigration/Emigration

- Other population (*other than legal permanent resident*):
  - DHS estimates of total stock for January 2005 through January 2012
  - We develop estimates of **flows** that fit these stock data
- Other immigrant population divided into 3 categories:
  - Never authorized
  - Nonimmigrants (e.g., temp. workers and students)
  - Overstayers
- Assume 1,350,000 annual immigration
  - Net other declines from about 800,000 to about 430,000 by 2090.....as stock of other population increases
    - Emigration projected as a rate of other stock

# Historical and Intermediate Projections of Net Annual Legal and Other-than-Legal Immigration, 2017 TR



# 5) Disability

- Based on SSA administrative data
  - Incidence (entitlements and awards)
  - Medical terminations
  - Work terminations
  - Deaths—higher than general population
    - But decline with duration

# For More Information...

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

- ◆ Annual Trustees Reports  
<https://www.ssa.gov/oact/TR/index.html>
- ◆ Documentation of Trustees Report data & assumptions  
[https://www.ssa.gov/oact/TR/2017/2017\\_Long-Range\\_Demographic\\_Assumptions.pdf](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 Notes on population flows and characteristics  
<https://www.ssa.gov/oact/NOTES/actnote.html>