

# DIFFERENTIAL MORTALITY and AVERAGE BENEFIT PROJECTIONS

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October 1, 2010



## Differential mortality by lifetime earnings

- Work done by others in SSA.
- Work in progress in our office.
- How this is captured in POLISIM.
- How this is captured in our main model.



## Differential mortality by lifetime earnings: recent SSA paper (Office of Policy)

### *Trends in Mortality Differentials and Life Expectancy for Male Social Security–Covered Workers, by Average Relative Earnings* by Hilary Waldron, Oct, 2007

- Birth cohorts 1912-1941.
- Deaths 1972-2001 (ages 60-89).
- For male covered workers born in 1912 who survived to age 60, those in the top half of the earnings distribution would be expected to live 1.2 years more than those in the bottom.



## Current projects in progress in the Office of the Chief Actuary

***Using a sample of beneficiaries on the rolls to determine mortality rates by PIA level.***

- By sex, birth year, by age of entitlement, and PIA groupings.
- Worker beneficiaries, both disabled and retired.



## Differential mortality by lifetime earnings: treatment in POLISIM

- For those under 25: POLISIM equations do not consider earnings.
- For those 25-40: POLISIM equations use the average indexed earnings for the prior 5 years.
- For those under 41-61: POLISIM equations average indexed earnings for the prior 10 years.
- For those over 61: POLISIM equations use the average indexed earnings for ages 46 through 62.



## Main Model Method for Projecting Average Benefits after Entitlement

- On first thought, after filing for benefits, aggregate average benefit levels would increase only with COLAs
- This is not true!! Why not? 2 main reasons
  - Effect of mortality by earnings level
  - Earnings after entitlement



## Effect of mortality by earnings levels

- Mortality rates for those with higher lifetime earnings are lower
  - Access to better health care
  - Improved living conditions
  - Other factors



## Earnings after benefit entitlement

- Those who work after receiving benefits may get increases in their PIA
  - Benefit recalculation occurs for highest 35 years of indexed earnings
  - Additional year of earnings may be in highest 35
  - Earnings before age 60 are indexed to age 60 (for retired workers)



# Development of post-entitlement factors

- Use of post-entitlement factors
  - In addition to COLA changes
  - Applied every year after initial entitlement year
  - Developed based on historical MBR data comparisons of average benefit levels in adjacent years of those currently receiving benefits both years
  - By duration from initial entitlement, sex, and type of beneficiary

## Ultimate post-entitlement factors

- Ultimate post-entitlement factors for 2010TR at highest durations (12+ for retired workers / 9+ for disabled workers):

	Male	Female
Retired workers	0.20%	0.17%
Conversions from disabled workers	0.39%	0.37%
Disabled workers <=50	0.37%	0.31%
Disabled workers over 50	0.18%	0.21%