

Mortality by Career-Average Earnings Level

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Mortality by Career-Average Earnings Level

1. Research from others has shown higher income levels are associated with lower mortality rates.
2. Higher lifetime earnings are also associated with lower mortality rates. This relationship is important for analyzing and projecting the costs for the Social Security program.
3. Average indexed monthly earnings (AIME) is a useful measure of a person's lifetime earnings.
4. We analyzed the relationship between AIME levels and mortality rates for Social Security retired-worker beneficiaries.

Mortality By Career-Average Earnings Level Study

1. Update of Study 124 released in April 2018. Expanded to include retired-worker beneficiary death rates by sex, age group, and AIME level.
2. Compared the death rates among retired worker-beneficiaries by sex, age group, and lifetime career-average earnings level (AIME) to the annual death rate among retired-worker beneficiaries for that sex and age group.
3. For each sex and age group, we calculated the relative mortality ratios at various AIME levels.

Data and Methods

Data

1. Data Source: Social Security Administration's June 2023 Master Beneficiary Record (MBR) file.
2. Excluded:
 1. Windfall Elimination Provision
 2. Totalization agreements
 3. Old PIA benefit calculations
 4. Previously entitled for a Social Security disability benefit

Average Indexed Monthly Earnings Calculation

1. At age 62, index earnings to reflect the change in general wage levels that occurred during the worker's years of employment.
2. Up to 35 years of earnings needed to compute the average indexed monthly earnings.
3. AIME = Average of the highest 35 years of indexed earnings / 12

AIME Quintiles

We analyzed retired-worker beneficiaries for each age group based on AIME level, splitting them into quintiles at their current age.

Table A.—AIME Quintile Intervals for Men Who Attained Age 65 in 2020

| Male Quintiles | AIME Range | Percentage of Beneficiaries |
|-----------------------|--------------------------|-----------------------------|
| Lowest AIME Quintile | AIME ≤ \$1,840 | 20% |
| 2nd AIME Quintile | \$1,840 < AIME ≤ \$3,294 | 20% |
| 3rd AIME Quintile | \$3,294 < AIME ≤ \$4,679 | 20% |
| 4th AIME Quintile | \$4,679 < AIME ≤ \$6,391 | 20% |
| Highest AIME Quintile | \$6,391 < AIME | 20% |

Table B.—AIME Quintile Intervals for Women Who Attained Age 65 in 2020

| Female Quintiles | AIME Range | Percentage of Beneficiaries |
|-----------------------|--------------------------|-----------------------------|
| Lowest AIME Quintile | AIME ≤ \$1,044 | 20% |
| 2nd AIME Quintile | \$1,044 < AIME ≤ \$1,873 | 20% |
| 3rd AIME Quintile | \$1,873 < AIME ≤ \$2,835 | 20% |
| 4th AIME Quintile | \$2,835 < AIME ≤ \$4,224 | 20% |
| Highest AIME Quintile | \$4,224 < AIME | 20% |

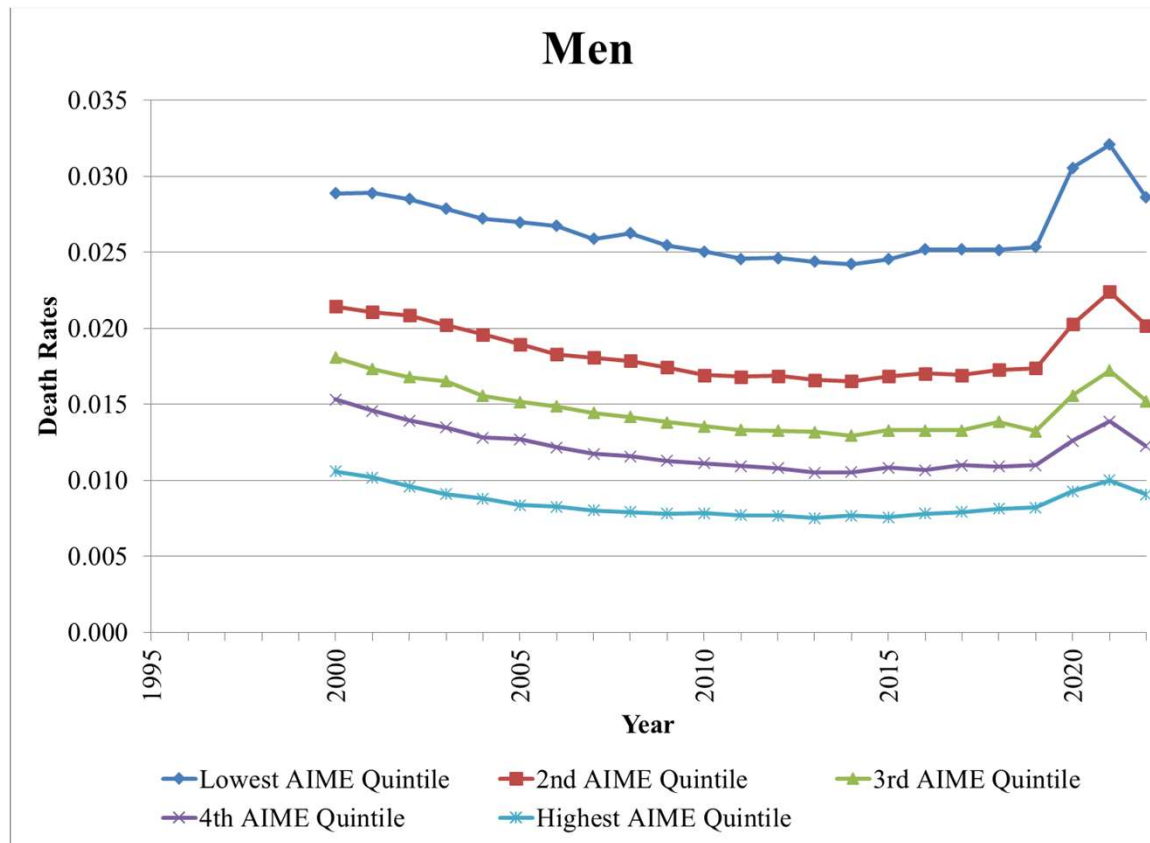
Calculations

1. For each record, we determined:
 - a. Sex and age
 - b. AIME level
 - c. Exposure: Active, Death, Termination Other Than Death
2. Group data by sex, age group, and AIME level, and calculate annual death rates by dividing the number of deaths by the years of exposure.
3. Relative Mortality Ratio – divide the death rates for each AIME level by the death rate for everyone in the sex and age group at all AIME levels.

Death Rates by AIME Quintile

Age Group 65-69 Death Rates

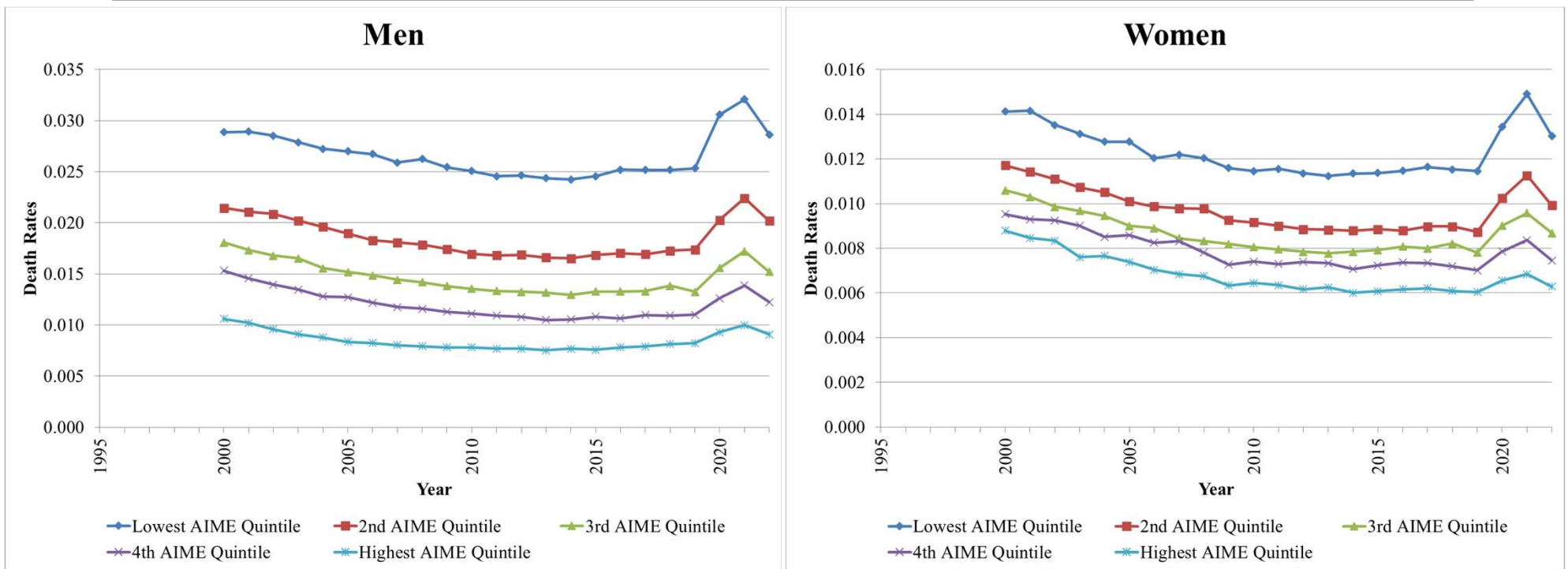
We observed lower death rates for retired-worker beneficiaries with higher-than-average AIME levels, and higher death rates for retired-worker beneficiaries with lower-than-average AIME levels.



Male / Female Comparison

1. For death rates, women generally follow the same relative mortality pattern as men, in that higher earners have lower mortality.
2. Death rates for women are lower than those for men.

Age Group 65-69 Death Rates

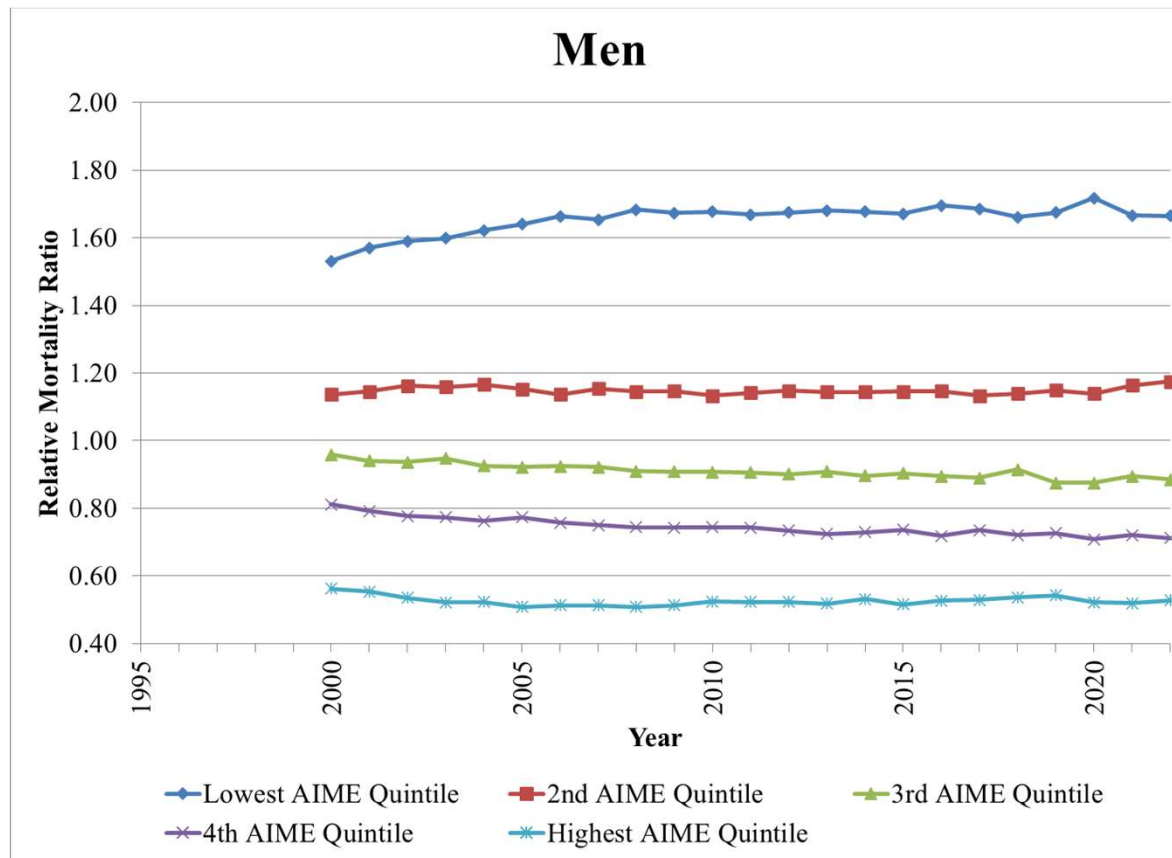


Relative Mortality Ratios by AIME Quintile

Results

1. We observed lower death rates for retired-worker beneficiaries with higher-than-average AIME levels, and higher death rates for retired-worker beneficiaries with lower-than-average AIME levels.
2. At older ages, the differences in death rates across AIME levels diminish.
3. Trends from 1995-2022 show the spread in death rates across the AIME intervals for men has slightly increased.

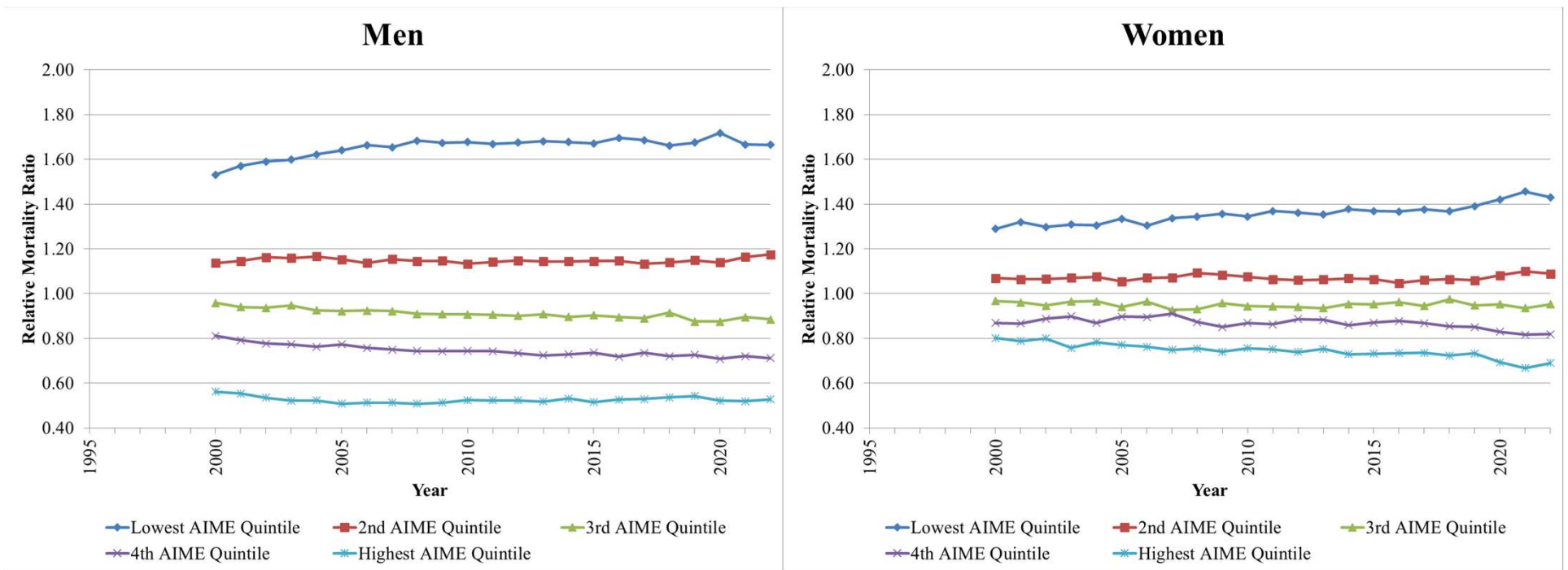
Age Group 65-69 Relative Mortality Ratios



Male / Female Comparison

1. Women generally follow the same relative mortality pattern as men, in that higher earners have lower mortality.
2. Spreads in the female relative mortality ratios among AIME quintiles are smaller than those for males.

Age Group 65-69 Relative Mortality Ratios



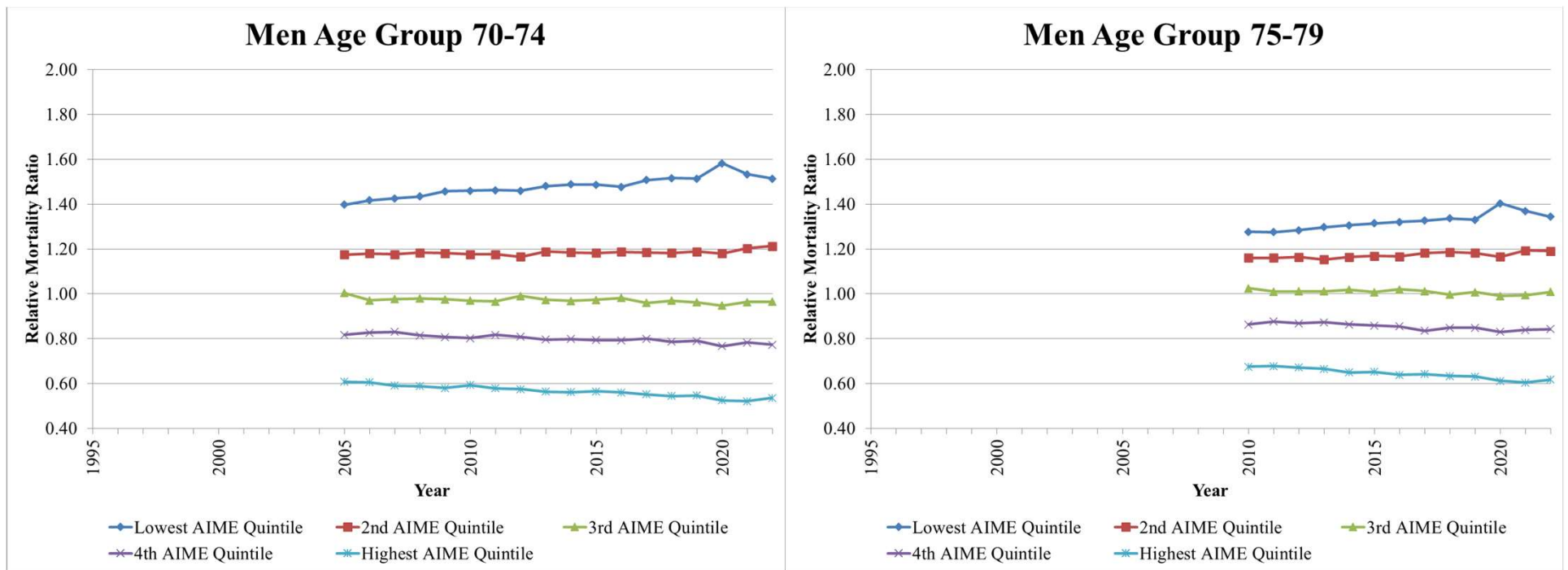
Age Groups

- Spread in relative mortality ratios among the quintiles decreases at older ages.

2020 Relative Mortality Ratios by Age Group for Retired-Worker Beneficiaries

| | Age | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| | <u>62-64</u> | <u>65-69</u> | <u>70-74</u> | <u>75-79</u> | <u>80-84</u> | <u>85-89</u> |
| Male Retired-Worker Beneficiaries by AIME Level: | | | | | | |
| Lowest AIME Quintile | 1.79 | 1.72 | 1.58 | 1.40 | 1.25 | 1.14 |
| Highest AIME Quintile | 0.46 | 0.52 | 0.52 | 0.61 | 0.71 | 0.81 |
| Female Retired-Worker Beneficiaries by AIME Level: | | | | | | |
| Lowest AIME Quintile | 1.62 | 1.42 | 1.29 | 1.15 | 1.08 | 1.04 |
| Highest AIME Quintile | 0.65 | 0.69 | 0.70 | 0.79 | 0.86 | 0.92 |

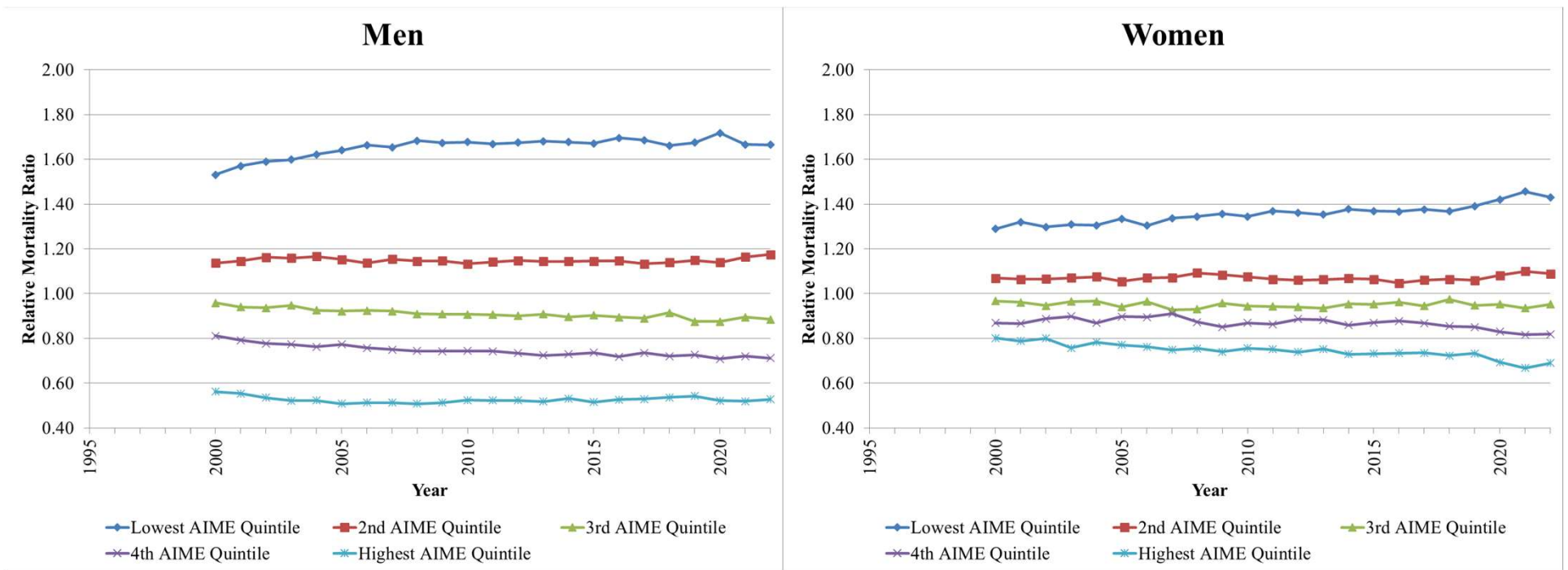
Age Group 70-74 and 75-79 Relative Mortality Ratios



COVID-19 Pandemic

1. The COVID-19 pandemic significantly affected death rates beginning in 2020.
2. In the death rates, we see the increase in death rates beginning in 2020, but generally, the trends in the relative mortality ratios are steady during the pandemic years 2020 – 2022.

Age Group 65-69 Relative Mortality Ratios



Conclusion

1. Higher AIME levels correlate with lower mortality rates, while lower AIME levels correlate with higher mortality rates.
2. The trends from 1995 to 2022 show that the spread in relative mortality ratios among the AIME quintiles are, generally, slowly growing.

Mortality by Career-Average Earnings Level

- Link to the Mortality by Career-Average Earnings Level Study - https://www.ssa.gov/OACT/NOTES/pdf_studies/study129.pdf