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Distribution of Medicare Taxes and Spending by Lifetime Household Earnings

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Overview of the Study

The study provides new estimates of the distribution of Medicare taxes and spending.

- First, it uses a unique dataset to estimate the relationship between a measure of socioeconomic status (SES) and annual Medicare spending.
 - The new measure of SES is lifetime household earnings.
- Second, it projects the distribution of Medicare taxes and spending for current and future beneficiaries accounting for demographic changes and economic growth using CBO's Long-Term (CBOLT) model.

Background

How Do We Measure the Distribution of Medicare?

- Contributions to Medicare: dedicated Medicare taxes
 - Mostly payroll taxes; a portion of income taxes on Social Security benefits
 - Exclude transfers from general revenues (general revenues consist mostly of receipts from individual income taxes)
- Benefits from Medicare: Medicare spending (net of premiums)
- Measure of progressivity
 - Medicare is progressive if beneficiaries with lower SES have higher lifetime Medicare spending net of dedicated taxes and premiums
 - Measure of SES: lifetime household earnings

Prior Literature

- Three recent studies give conflicting conclusions about the progressivity of Medicare depending on the choice of SES measure.
 - Bhattacharya and Lakdawalla (2006)
 - McClellan and Skinner (2006)
 - Rettenmaier (2012)

- Individual-level measure of SES: Medicare is progressive
 - Education (Bhattacharya and Lakdawalla, 2006; focuses on Part A)
 - Lifetime earnings: the present value of earnings starting in age 40 (Rettenmaier, 2012)

- Aggregate measure of SES: Medicare is neutral
 - Zip-code average income (McClellan and Skinner, 2006)

Contributions of the Study

- Uses an alternative measure of SES: lifetime household earnings
 - Education and zip-code average income could affect individual spending through channels other than individual SES.
 - The measure is similar to Rettenmaier (2012) but with longer earnings history for more recent cohorts of beneficiaries.
- Uses a unique dataset to estimate the relationship between SES and annual Medicare spending
 - Recent cohorts of beneficiaries from the National Health Interview Survey are linked to the Social Security Administration (SSA) and Centers for Medicare and Medicaid Services (CMS) administrative data.
- Projects the distribution of Medicare taxes and spending for current and future beneficiaries using CBOLT

Annual Medicare Spending

Data

- National Health Interview Survey, 1994–2005
 - Linked to SSA and CMS administrative data
 - The sample includes beneficiaries born between 1905 and 1940 who live at least to age 65

- Key variable: Primary Insurance Amount (PIA) at age 65
 - PIA is a measure of individual lifetime earnings from the linked SSA administrative data
 - Six groups of beneficiaries based on PIA at age 65:
 - Missing value for those who never applied for Social Security benefits based on their own work history
 - 5 groups using PIA values that divide a 1% sample of SSA administrative data into 5 groups of equal size (or quintiles)
 - Separate assignment by sex and birth year

Summary Statistics

Percent of Beneficiaries in the Sample

	Men	Women
Time Until Death		
12 months or less	3.4	2.5
13 to 24 months	3.9	3.0
More than 24 months	92.6	94.5
Level of Education		
Less than high school	30.6	31.5
High school	30.7	39.3
Some college	16.8	17.4
BA or above	21.9	11.9
Disabled (Social Security Disability Insurance Recipients)	9.6	6.2
Primary Insurance Amount Missing	4.2	34.7
Medicare Fee-for-Service (FFS) Enrollment	83.0	82.9
Part B Coverage	94.9	97.4
Fraction With Medicare Spending (FFS Sample)	83.7	90.4
Average Medicare Spending (FFS Sample; 2009 Dollars)	6,376	6,169

Estimation Method

- Enrollment decision: likelihood of having Part B coverage
 - $Prob(Coverage_{it}) = \Phi^{-1}(Coverage_{i,t-1}\alpha + X_{it}\gamma + \eta_{it})$
- Spending level: annual spending deflated to 2009 dollars using GDP deflator (FFS sample)
 - $Prob(Spending_{it} > 0) = \Phi^{-1}(1_{x>0}(Spending_{i,t-1})\alpha + Coverage_{it}\lambda + X_{it}\beta + \varepsilon_{it})$
 - $Log(Spending_{it}) = Coverage_{it}\delta + X_{it}\theta + \omega_{it}$
- Separate model by sex and age group
- $\Phi(\cdot)$ is the logit function; $1_{x>0}(\cdot)$ is an indicator function

Average Annual Spending by Primary Insurance Amount in the 2030s

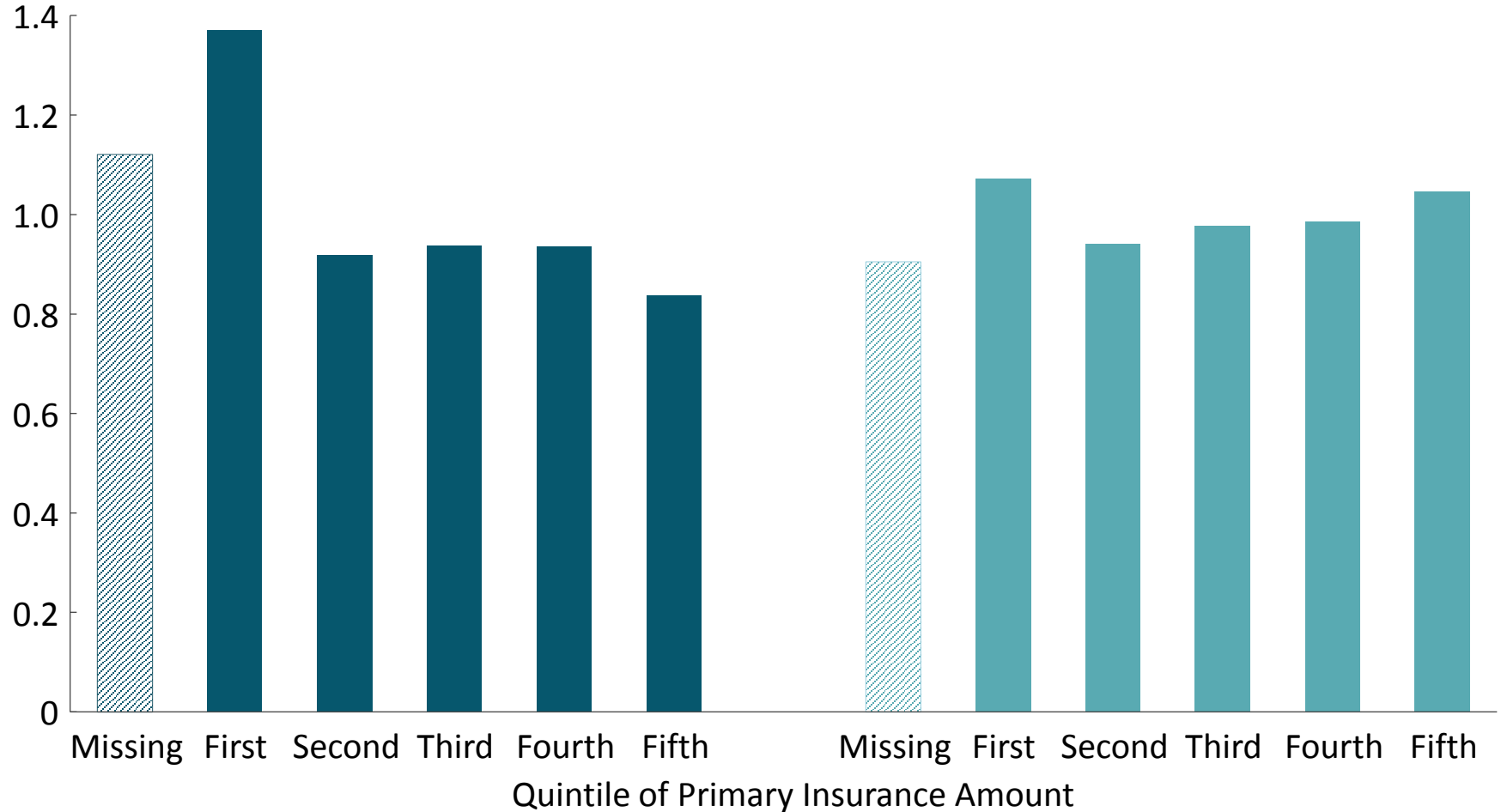
- The relationship between Primary Insurance Amount (PIA) and annual Medicare spending is projected based on:
 - The historical relationship between PIA and annual spending
 - Projected changes in demographics and labor force outcomes
- Men
 - Annual spending is generally high for those in the lowest quintile of PIA, and similar or increasing slightly with PIA for other quintiles.
- Women
 - Annual spending declines monotonically with PIA.

Average Annual Spending by Primary Insurance Amount in the 2030s—Men

Ratio to Average

Ages 65 to 69

Ages 80 to 90

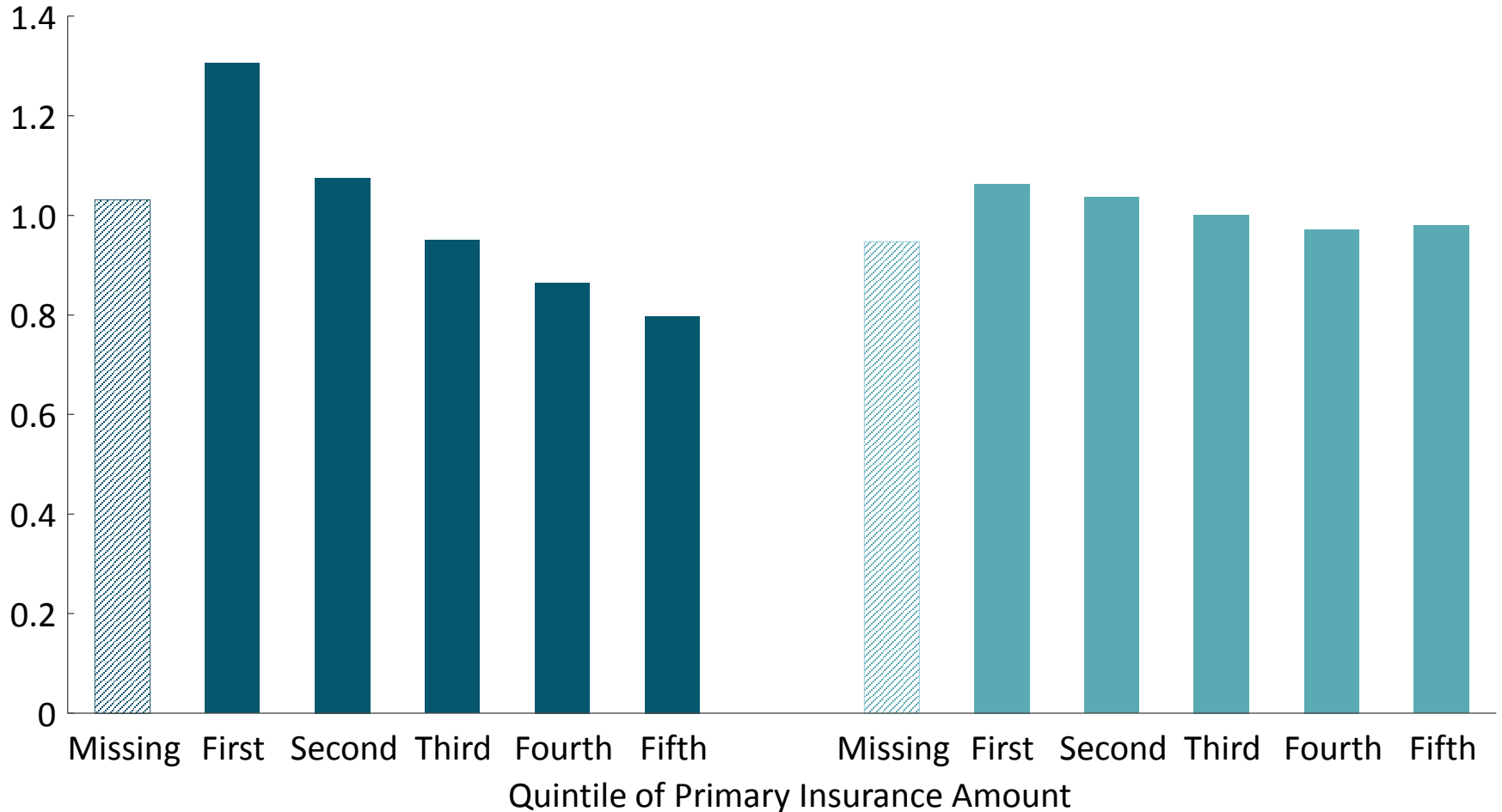


Average Annual Spending by Primary Insurance Amount in the 2030s—Women

Ratio to Average

Ages 65 to 69

Ages 80 to 90



Distribution of Medicare Taxes and Spending

Distribution of Medicare Taxes and Spending for the 1950s Cohort

- Both lifetime spending (net of premiums) and lifetime taxes increase with the quintile of lifetime household earnings.
- Lifetime spending net of taxes and premiums is lowest for those with the highest lifetime household earnings.

Distribution of Medicare Taxes and Spending for the 1950s Cohort

Thousands of 2015 Dollars

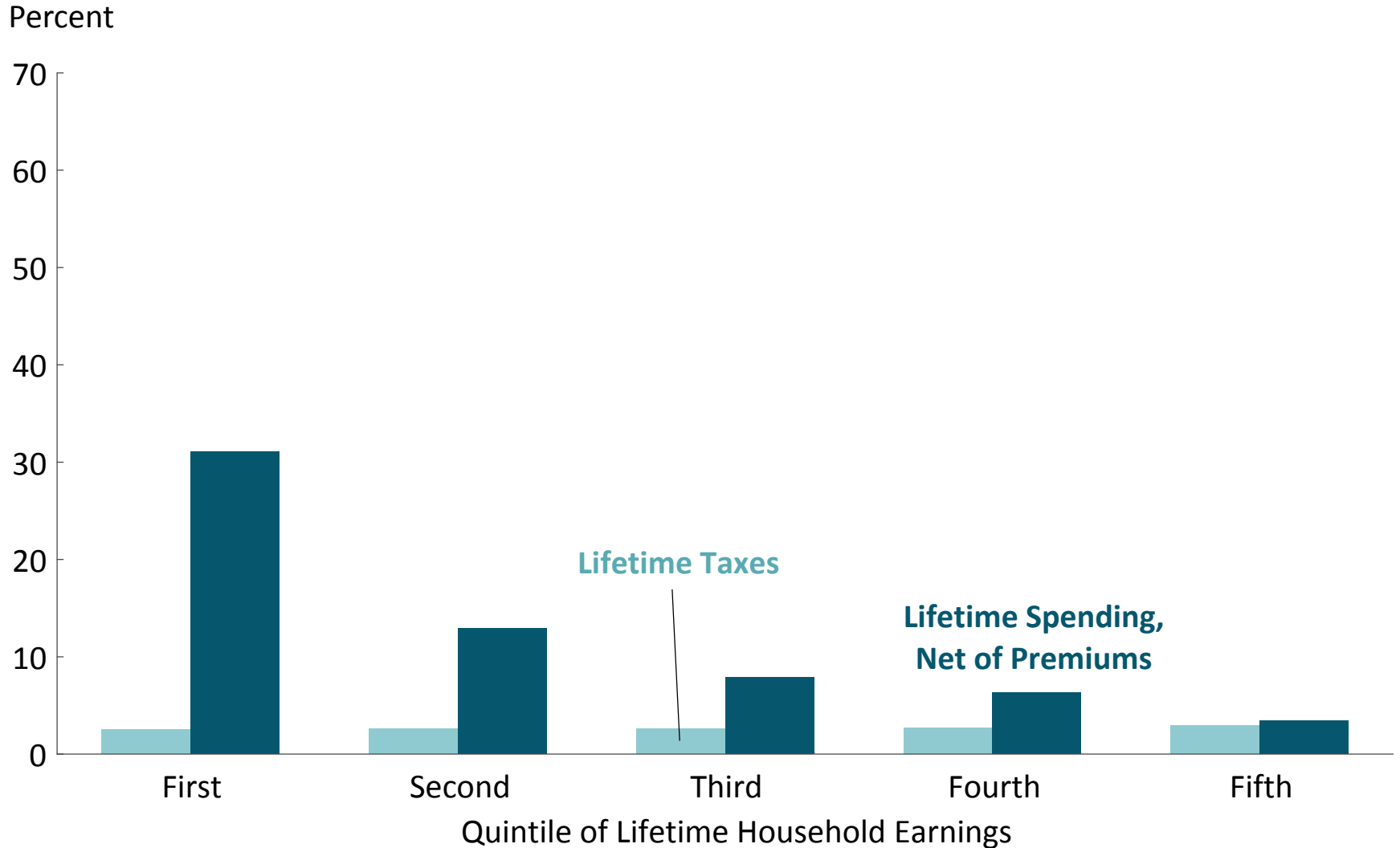
	Quintile of Lifetime Household Earnings		
	1	3	5
		Men	
Lifetime Taxes	10	70	240
Lifetime Spending, Net of Premiums	145	210	285
Lifetime Spending, Net of Taxes and Premiums	135	140	40
		Women	
Lifetime Taxes	10	40	105
Lifetime Spending, Net of Premiums	215	270	285
Lifetime Spending, Net of Taxes and Premiums	210	235	180

Annual amounts are adjusted for inflation to 2015 dollars using the GDP deflator and discounted to age 65 using the effective interest rate on all federal debt.

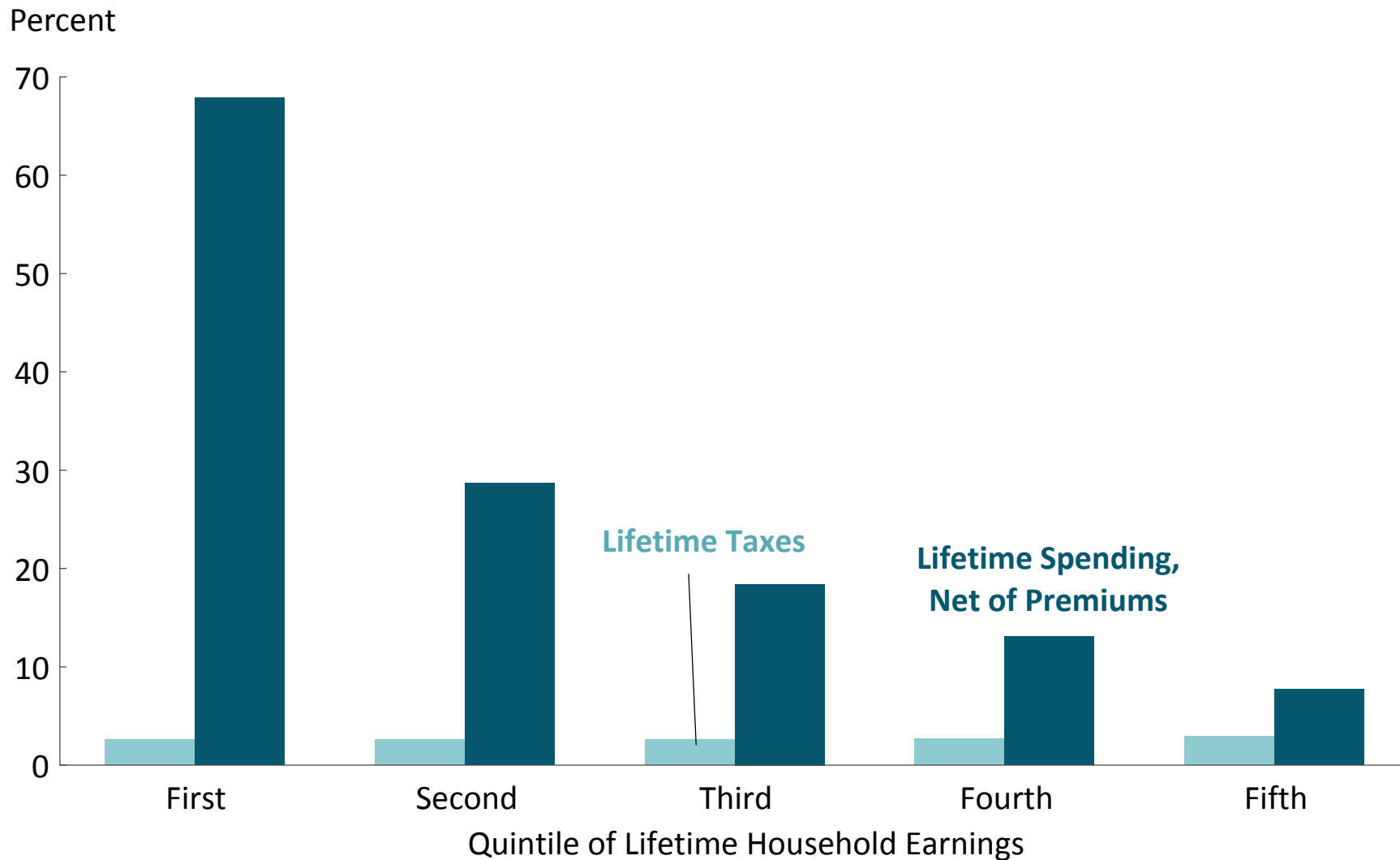
The Role of Difference in Life Expectancy

- Difference in life expectancy explains most of the variation in lifetime spending across quintiles of lifetime household earnings.
- How does the variation in annual spending with respect to the Primary Insurance Amount affect the variation in lifetime spending?
 - Explains very little of the difference in lifetime spending between those in the lowest and highest quintiles of lifetime household earnings
 - For men, increases that difference in lifetime spending by about 20%
 - For women, decreases that difference in lifetime spending by about 15%

Present Value of Lifetime Taxes and Spending as a Share of the Present Value of Lifetime Earnings for the 1950s Cohort—Men



Present Value of Lifetime Taxes and Spending as a Share of the Present Value of Lifetime Earnings for the 1950s Cohort—Women



Progressivity for Different Cohorts

- Lifetime taxes as a share of lifetime earnings are about 3% for all cohorts.
- Lifetime spending as a share of lifetime earnings varies across cohorts.
 - Similar rates of growth are projected in lifetime spending across quintiles of lifetime household earnings.
 - Faster rates of growth are projected in lifetime earnings for those with higher lifetime household earnings.
 - Therefore, the difference in lifetime spending as a share of lifetime earnings across quintiles of lifetime household earnings is projected to be greater for later cohorts.
- Medicare is projected to be more progressive for later cohorts.

Conclusion

- For the 1950s cohort, Medicare is progressive.
 - Lifetime Medicare spending net of taxes and premiums as a share of lifetime earnings is greater for those with lower lifetime household earnings.
- Difference in life expectancy explains most of the progressivity.
- Medicare is more progressive for later cohorts.
 - The projected growth rate of lifetime earnings is greater for those of higher lifetime household earnings.
- Addressing important limitations of this study would probably lead to greater progressivity for Medicare.
 - Examples include transfers from general revenues and the actual out-of-pocket costs of premiums, as well as spending and contributions of beneficiaries under age 65.

References

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- Mark McClellan and Jonathan Skinner (2006), “The Incidence of Medicare,” *Journal of Public Economics*, vol. 90, no. 1, pp. 257–276.
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