Why Does the Full Retirement Age Affect Retirement and Claiming So Much?

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Motivation

- Retirement programs are among the largest social insurance programs
- Full pension at the full retirement age (FRA)
- Many countries are raising FRA to address insolvency

This paper

- Raising FRA can affect behavior through two channels:
  - Financial incentive: cutting pensions
  - Shifting of reference point
- Exploit a pension reform for women in Switzerland
  - FRA is the default claiming age
  - Reform that changes default and financial incentives
- How does FRA increase affect claiming and retirement?

Background on Switzerland

Pension wealth

1. Old Age and Survivors Insurance (OASI)
   - Contribution history and average earnings over the lifetime
   - Net replacement rate around 30%
2. Occupational Pension Plans
   - Fully-funded, defined contribution system
   - Net replacement rate around 40%
   - Fragmented, unrelated to OASI
3. Tax-deferred individual savings accounts

Claiming and retirement in OASI

- Claiming
  - FRA is 62 years for women, and 65 years for men
  - Early claiming not possible
  - Late claiming possible but rare
  - No earnings test, but income tax
- Retirement (=stop working)
  - Mandatory retirement at FRA, in some sectors
  - Firing restrictions lower after FRA

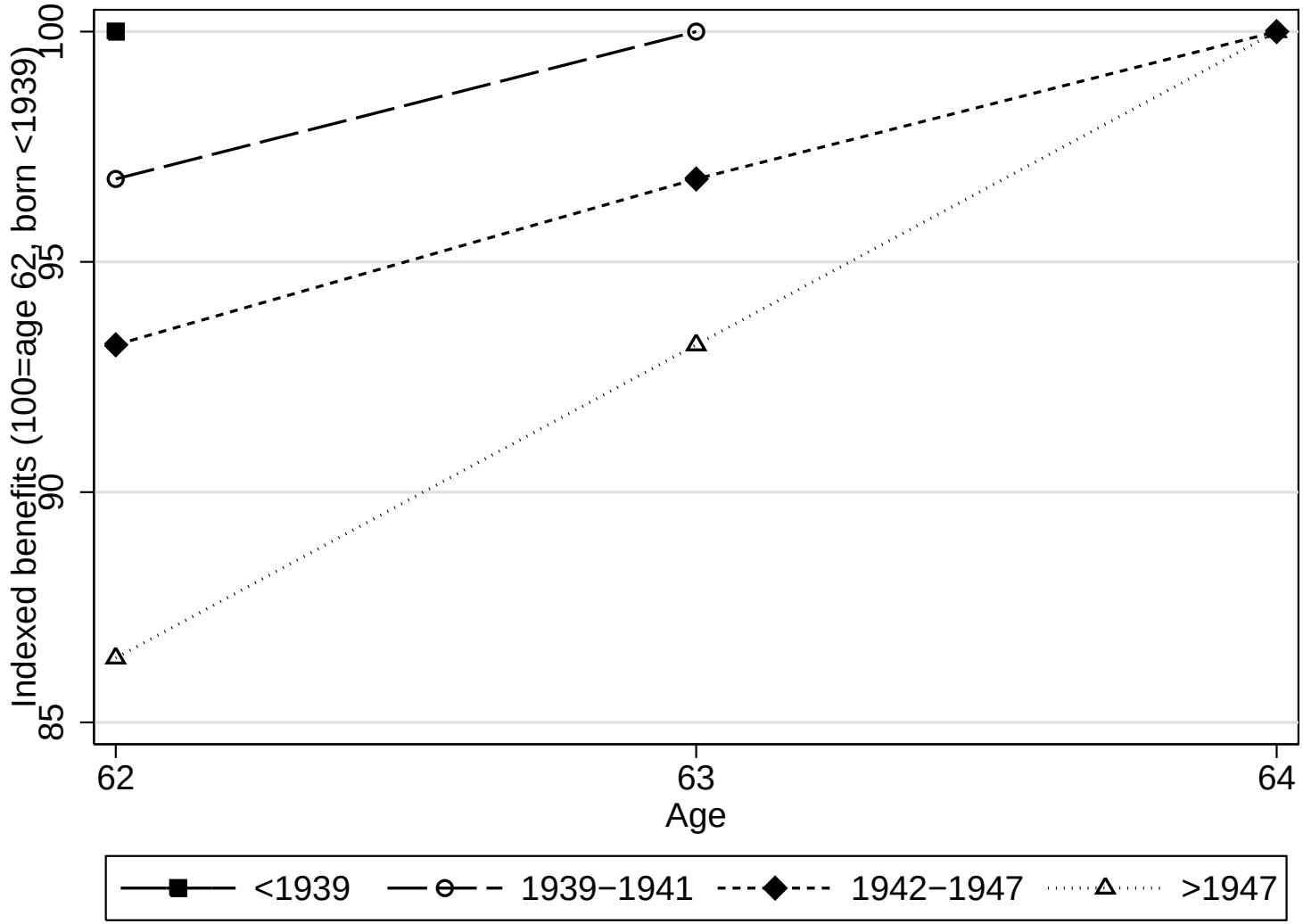
The peculiar 1997 reform for women

- Reduced pension in two steps:

1. Increase FRA but only small pension cut if claim early
   - FRA to 63: cut by 3.4% if claim at 62 and born 1939-1941
   - FRA to 64: cut by 3.4% per year early if born 1942 or after
2. Large pension cut if claim before FRA but no change in FRA
   - pension cut by 6.8% per year early if born 1948 or after

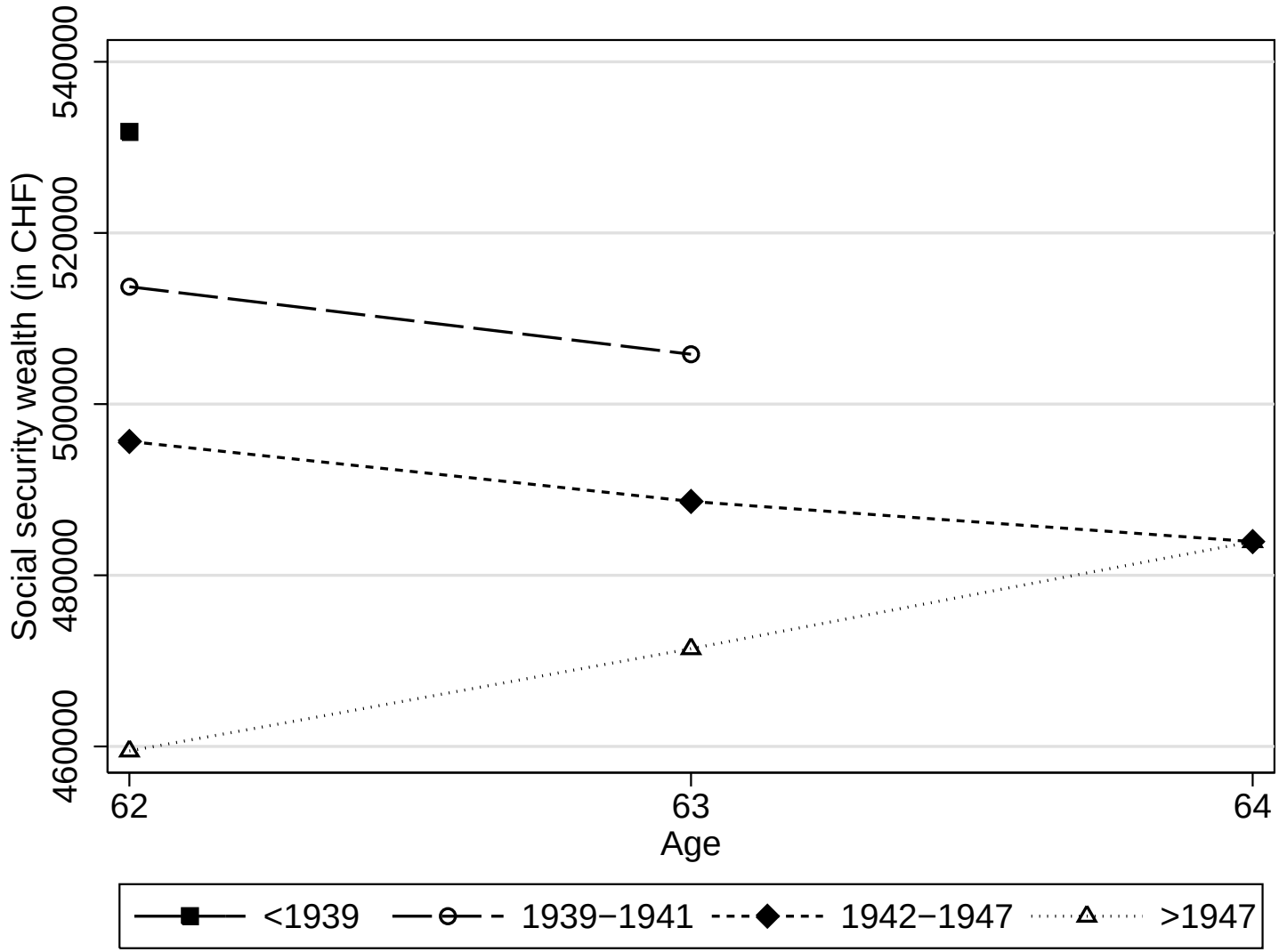
- How to claim?
  - FRA is default claiming age
  - Inform agency before early claiming age

Pension levels



Note: Figure reports the fraction of the full pension available to a women claiming an old age pension at the ages specified in the figure.

Social security wealth



Note: Social security wealth is the present discounted value of social security payments, discounted with the average mortality rate and an interest rate of 2.5%.

Data and outcomes

- Social security and tax register data
  - Universe of women born between 1935-1948, and their spouse
  - OASI and DI claims, unemployment, and earnings
  - Info on assets from tax returns (one canton)
- Outcome: Age profiles
  - Age profile of pension receipt (OASI or DI receipt)
  - Age profile of employment (individual has earnings)
- Outcome: Transition ages
  - Claiming age: when individual starts claiming OASI or DI
  - Retirement age: when individual stops working

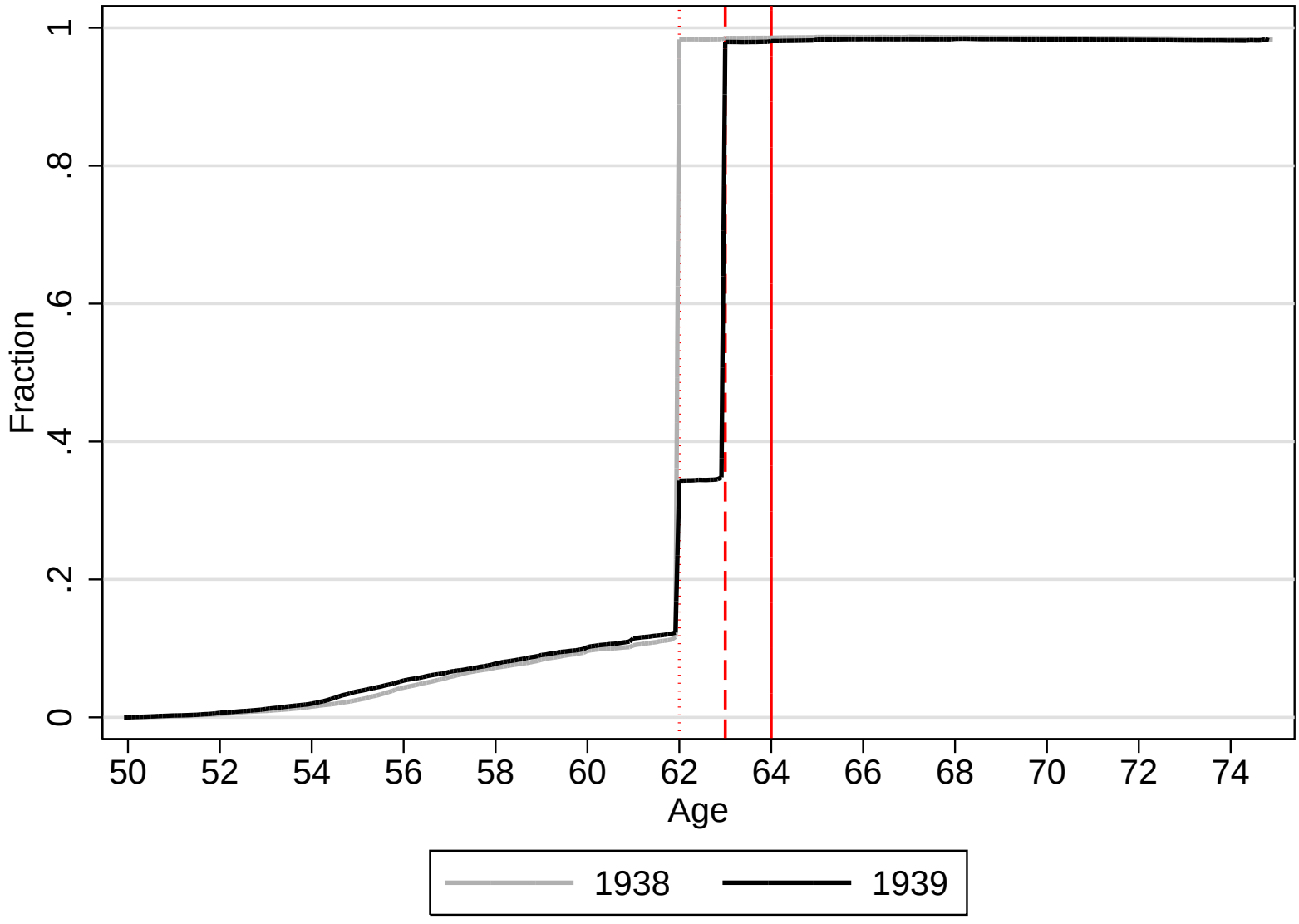
Small cut by raising FRA to 63

(FRA 63)

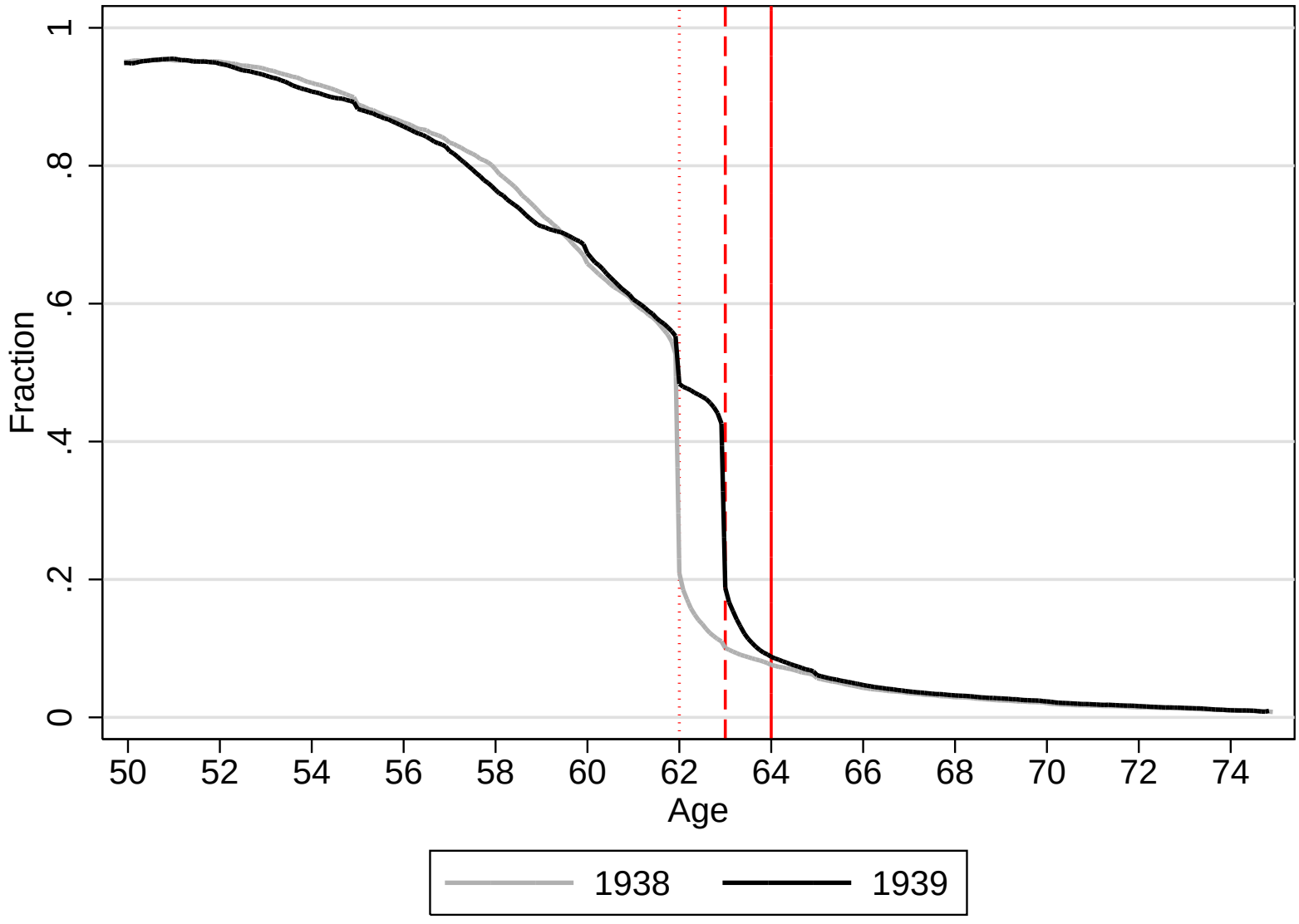
What should happen?

- Claiming
  - Because actuarially unfair on average $\Rightarrow$ claim early
  - Liquidity constrained $\Rightarrow$ claim early
  - Default age increased $\Rightarrow$ delay claiming if passive
- Retirement
  - Negative wealth shock $\Rightarrow$ work longer

FRA 63: Claiming

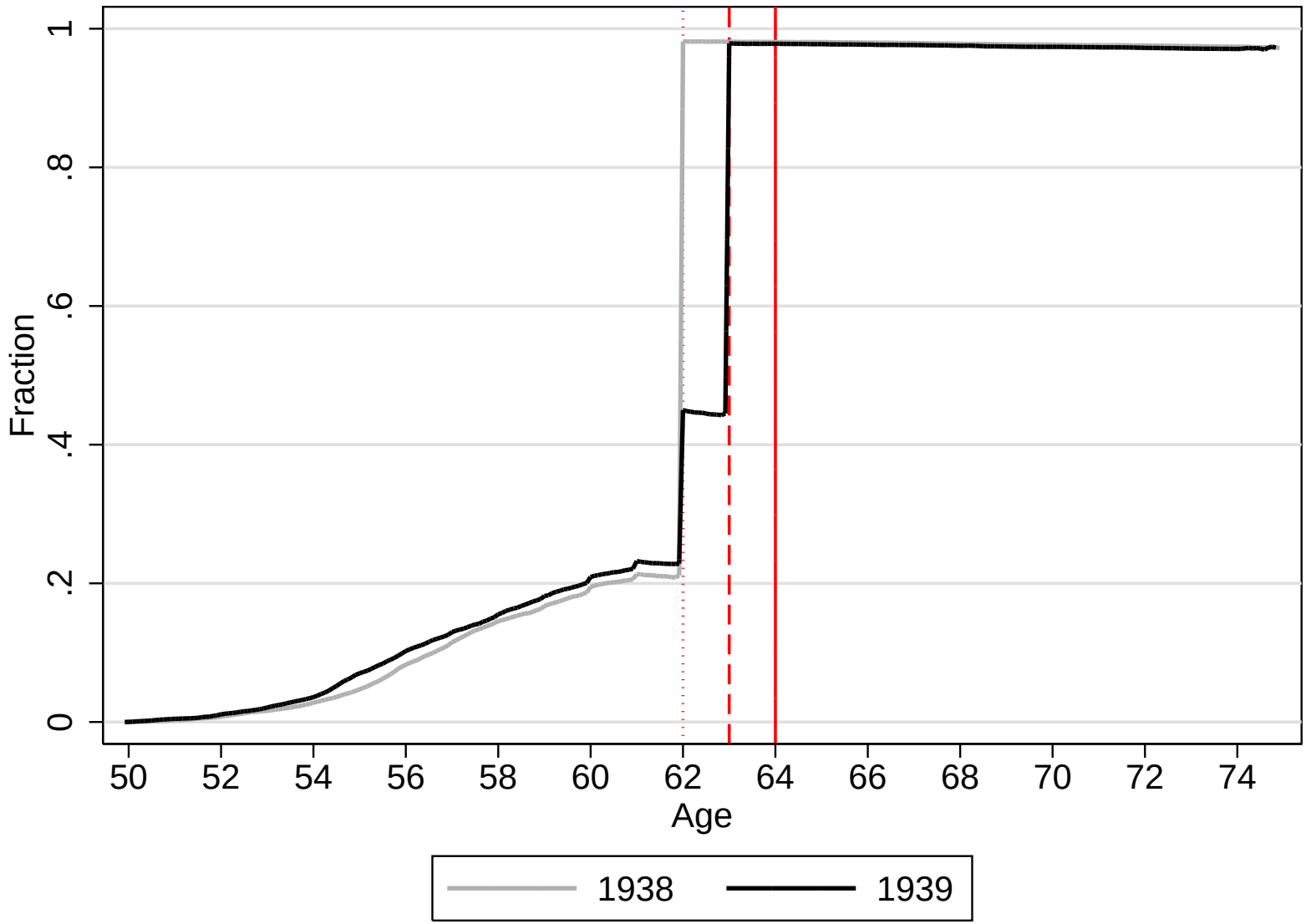


FRA 63: Employment



Did not work at 61

Did not work at 61: Claiming



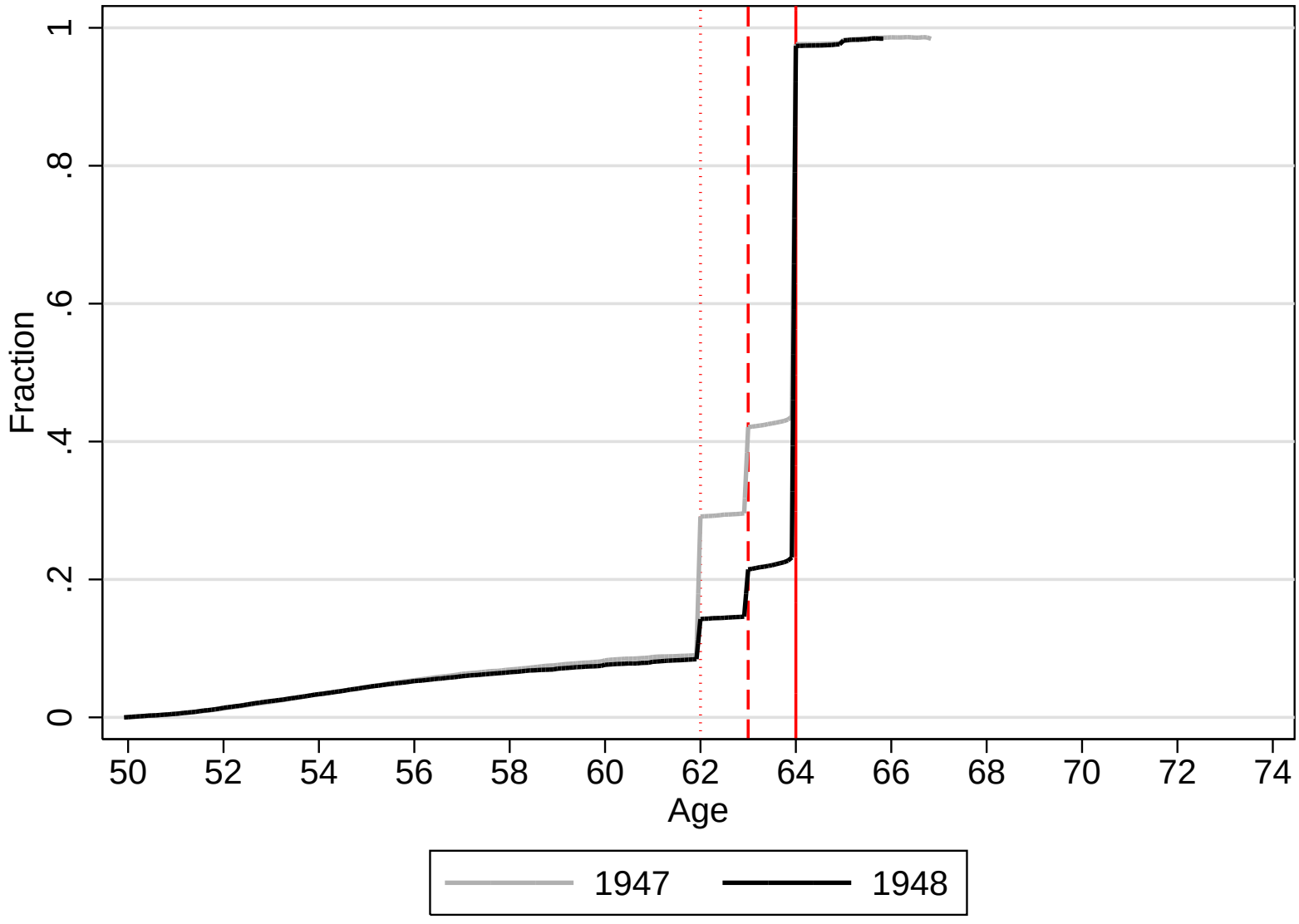
Notes: Figure shows proportion of women who claim DI/OASI benefits, and did not work at 61.

Large cut if claim before FRA (RAF)

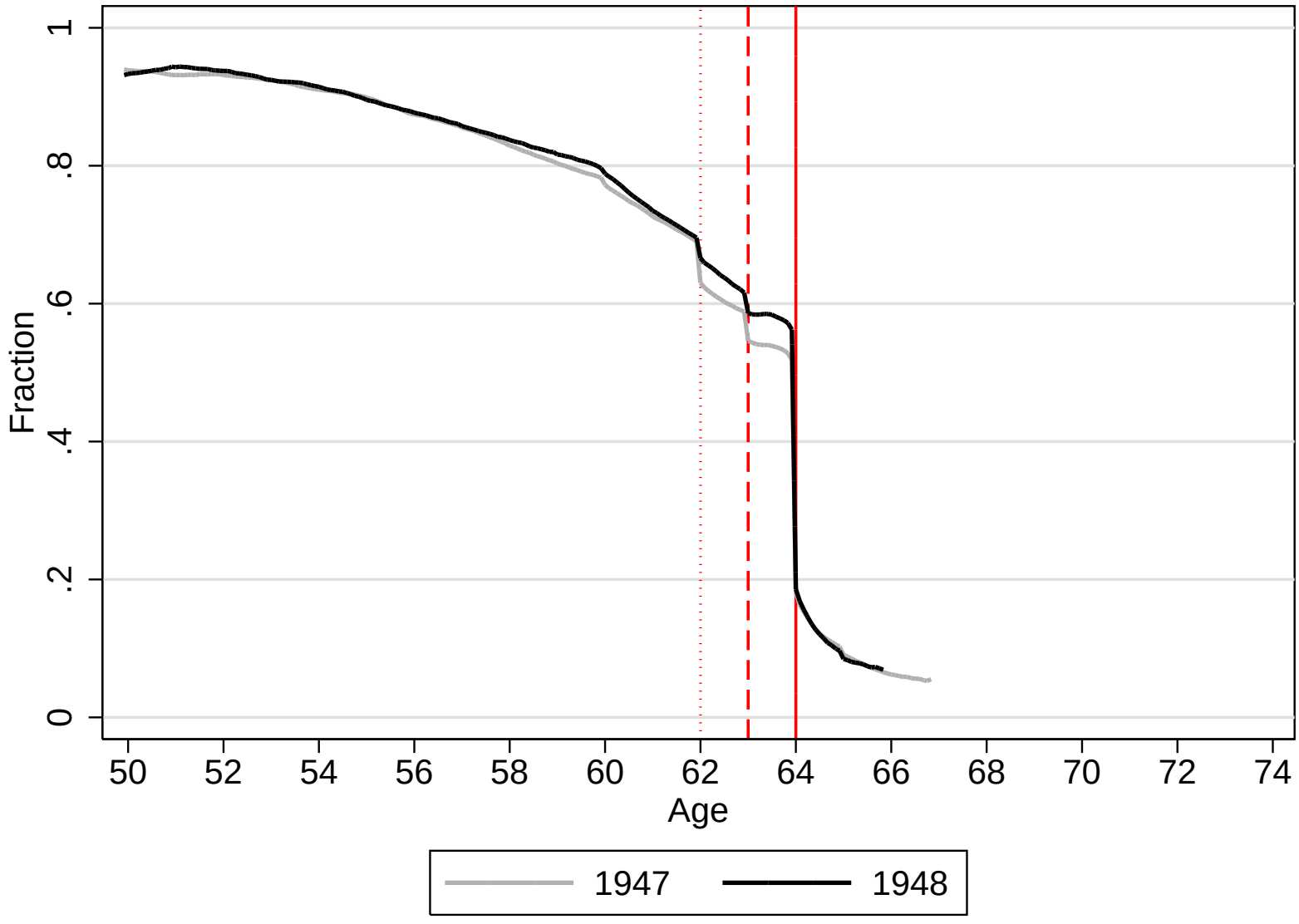
What should happen?

- Claiming
  - Early claiming more expensive $\Rightarrow$ claim late
  - If liquidity constrained $\Rightarrow$ claim early
  - No change in default $\Rightarrow$ no effect
- Retirement
  - Can undo wealth shock if delay claiming $\Rightarrow$ no effect

RAF: Claiming



RAF: Employment

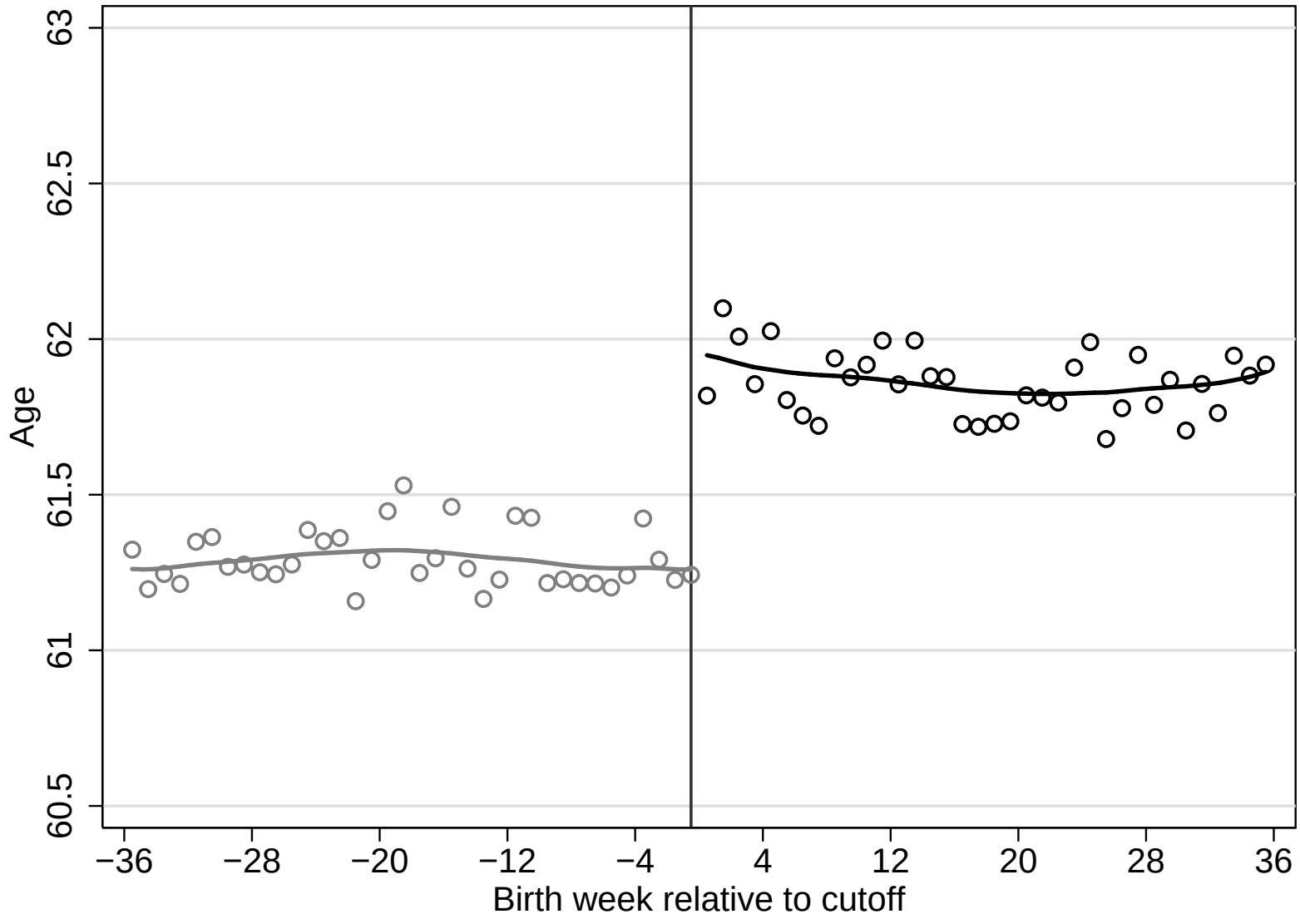


RDD Policy Effects

Birth date regression discontinuity design

- Main idea
  - Exploit discontinuities in FRA 63/FRA 64/RAF by birth date
  - Treatment groups: women born in 1939/1942/1948
  - Control groups: women born in 1938/1941/1947
  - Perform analysis by week of birth
- Validity checks
  - Density smooth?: ✓
  - Covariates balanced?: ✓

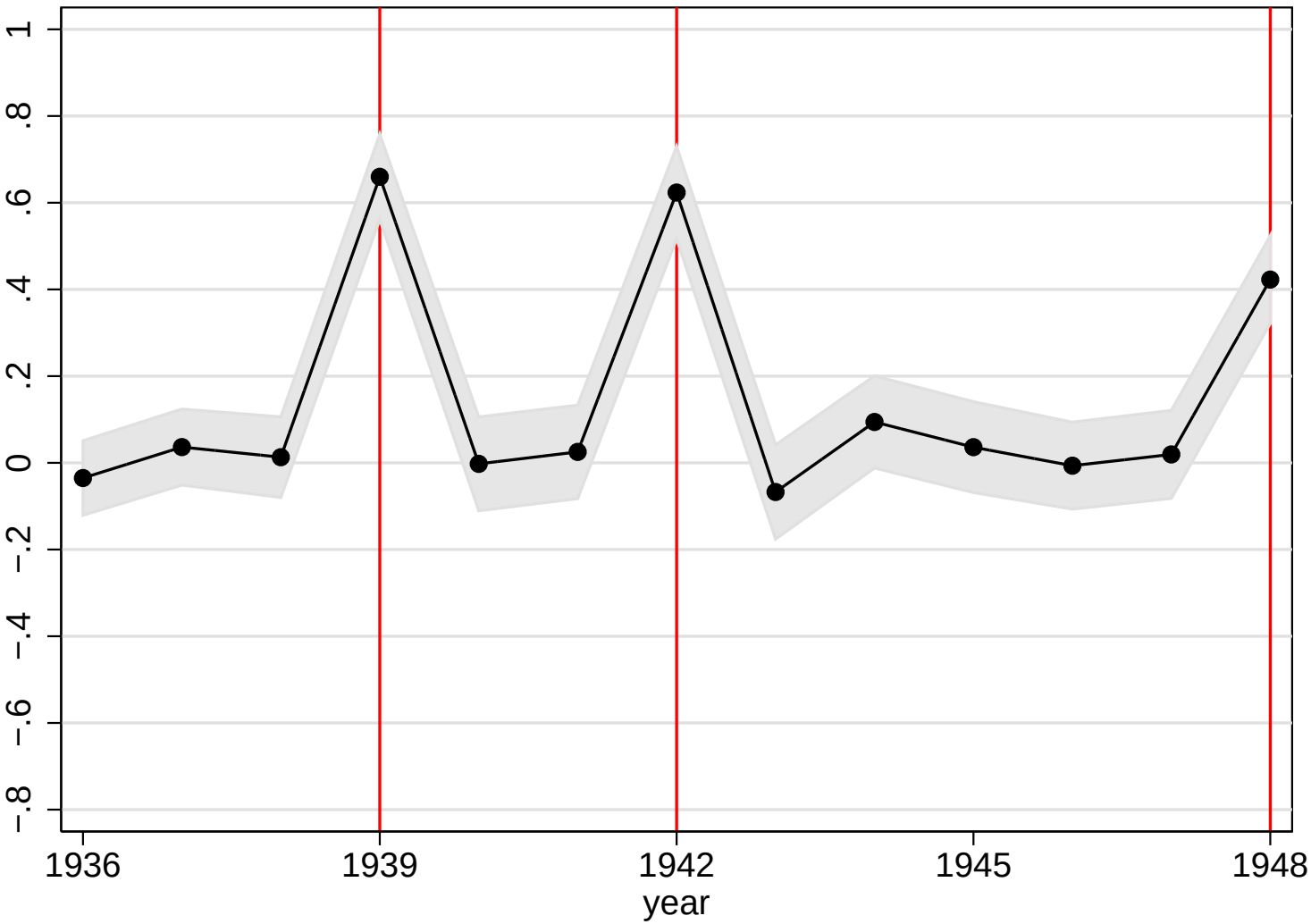
FRA 63: Effect on women's claiming age



Main estimates

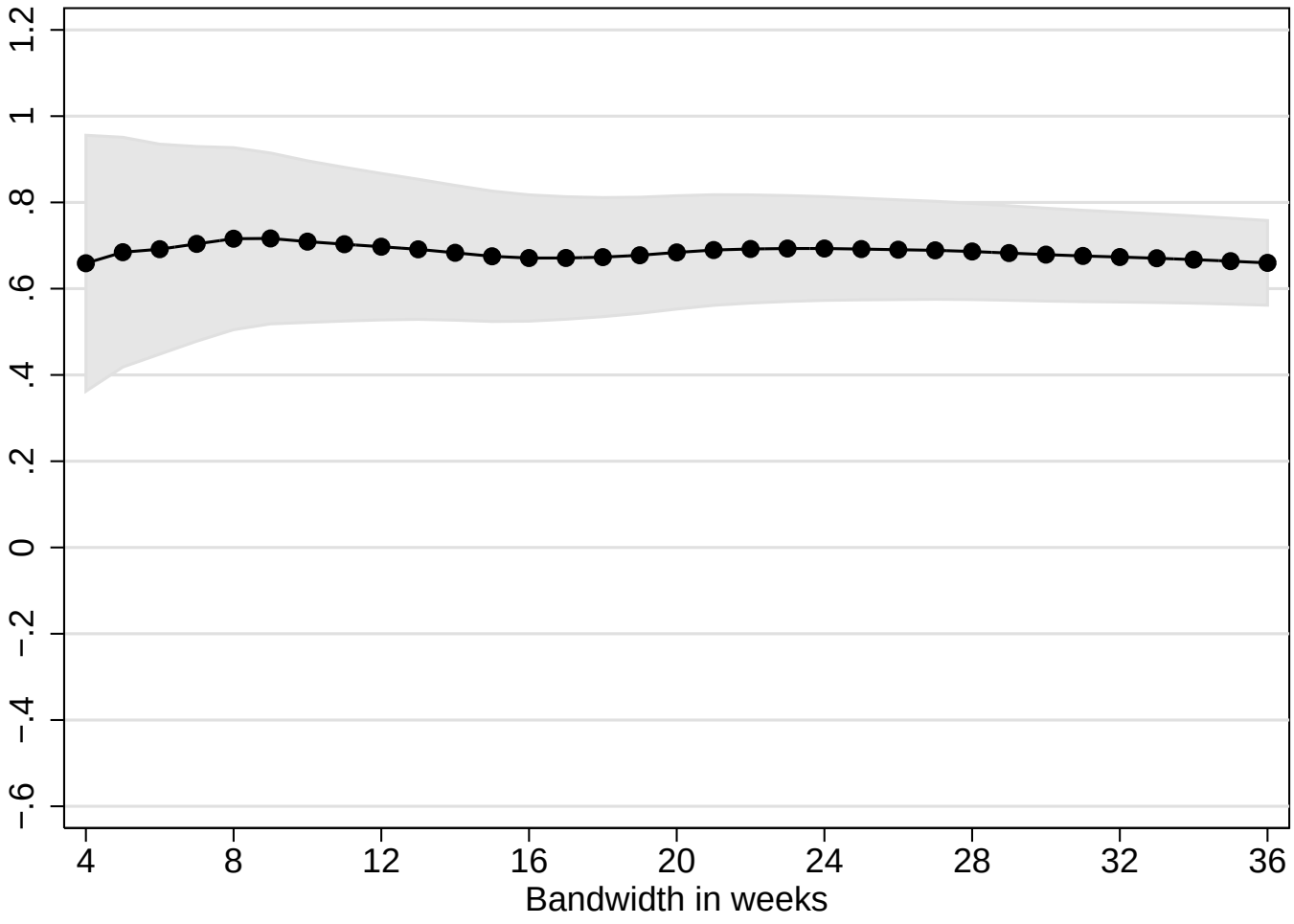
	FRA63	FRA64	RAF
Claiming age (years)	0.697***	0.692***	0.383***
	(0.087)	(0.096)	(0.09)
Retirement age (years)	0.623***	0.446***	-0.003
	(0.136)	(0.132)	(0.12)

Claiming: Estimates at true and placebo cutoffs



Notes: Figure shows the RDD estimates we get at the true cutoffs, identified by the vertical line, and Placebo cohort cutoffs, along with 95% confidence intervals. Source: Own calculations, based on SSSD.

Claiming: Sensitivity to Bandwidth



Notes: Calonico, Cattaneo, and Titinuik (2015)'s approach indicates an optimal bandwidth of 12 weeks.

Source: Own calculations, based on SSSD.

By earnings, household, sector, health

	Retirement			Claiming		
	FRA63	FRA64	RAF	FRA63	FRA64	RAF
All	0.623***	0.446***	-0.003	0.697***	0.692***	0.383***
Low earn.	0.719***	0.471**	-0.202	0.658***	0.898***	0.406***
High earn.	0.538***	0.441**	0.194	0.737***	0.432***	0.351**
Single	0.583***	0.245	0.048	0.503***	0.641***	0.359**
Married	0.653***	0.592***	-0.035	0.802***	0.731***	0.391***
Private	0.582***	0.424***	-0.054	0.696***	0.636***	0.389***
Public	0.952***	0.349	0.162	0.683***	0.996***	0.351
Dies<=13	0.494	-0.097	-0.127	0.261	0.437	-0.102
Dies>13	0.649***	0.534***	-0.022	0.77***	0.757***	0.38***

Making Sense of the Patterns

Patterns we find

- Not just incentives
- But we know that
  - People are passive with respect to pension decisions (Chetty et al. 2014)
  - FRA is a default claiming age
- How to disentangle default and financial incentives?

Dynamic life-cycle model - setup

- At each age individual decides whether to claim pension, whether to retire, and how much to consume
- Allow for two types of individuals:
  - Active (share π): claim based on preferences/constraints
  - Passive $(1-\pi)$: claim at FRA
- Finite mixture setting

Identification Challenge

- People can
  - work and not claim (1)
  - work and claim (2)
  - not work and claim (3)
  - (not work and not claim, 4, residual)
- Behavior at age 64, cohort 4, exposed to RAF, FRA is 64, is

$$
\begin{aligned}
Q^4_{64}(1|\mathbf{x}) &= \pi P^4_{64}(1|\mathbf{x},1) + (1-\pi) P^4_{64}(1|\mathbf{x},0) \\
Q^4_{64}(2|\mathbf{x}) &= \pi P^4_{64}(2|\mathbf{x},1) + (1-\pi) P^4_{64}(2|\mathbf{x},0) \\
Q^4_{64}(3|\mathbf{x}) &= \pi P^4_{64}(3|\mathbf{x},1) + (1-\pi) P^4_{64}(3|\mathbf{x},0)
\end{aligned}
$$

- Three observations, seven unknown parameters

Information on Behavior

- We know that passive individuals claim at 64 for sure

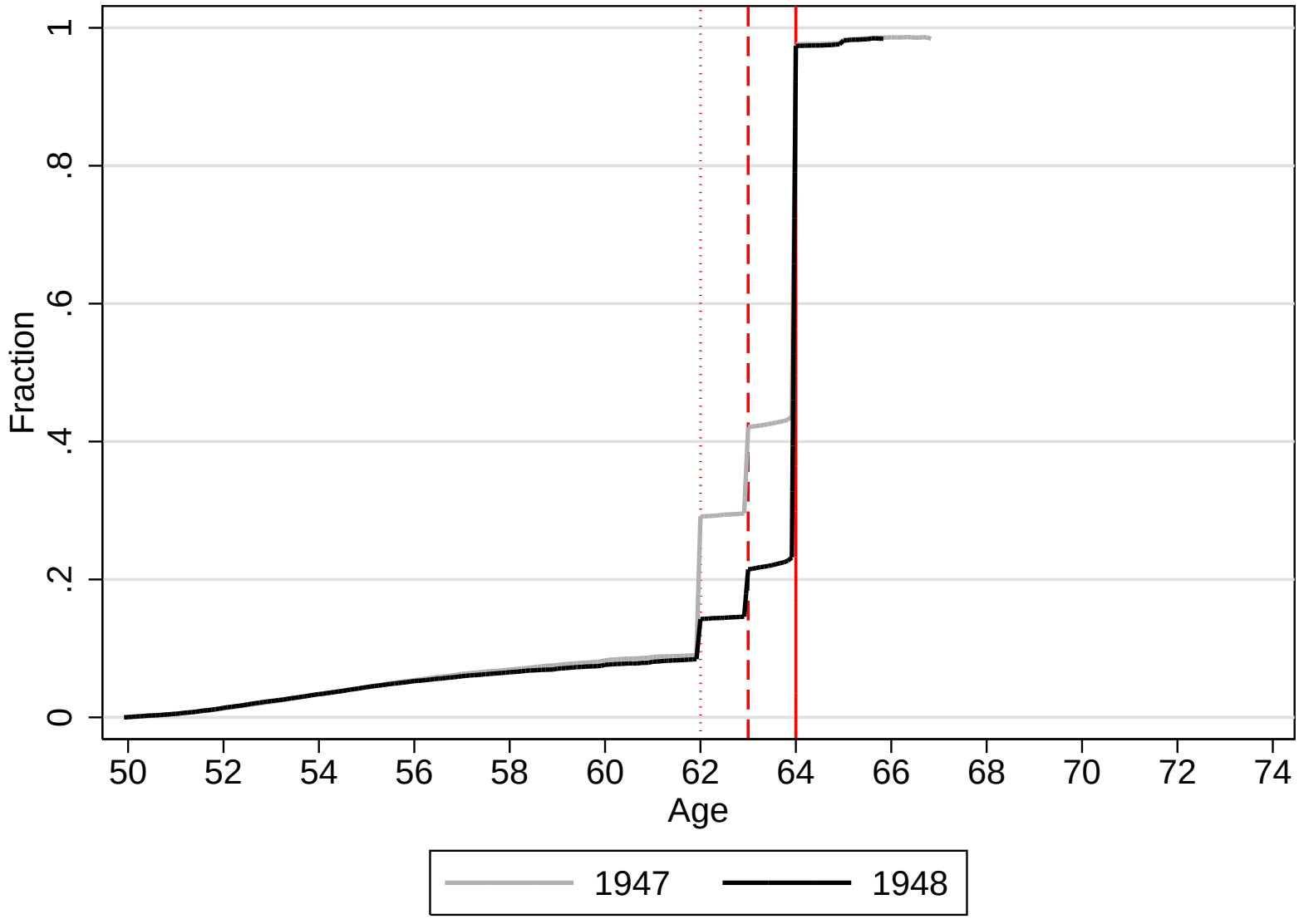
$$\begin{aligned} P_{64}^{4}(1|\mathbf{x},0) &= 0 \\ P_{64}^{4}(2|\mathbf{x},0)+P_{64}^{4}(3|\mathbf{x},0) &= 1 \end{aligned}$$

- Using this information, we have five unknowns

$$\begin{aligned} Q_{64}^{4}(1|\mathbf{x}) &= \pi P_{64}^{4}(1|\mathbf{x},1) \\ Q_{64}^{4}(2|\mathbf{x}) &= \pi P_{64}^{4}(2|\mathbf{x},1)+(1-\pi)\left(1-P_{64}^{4}(3|\mathbf{x},0)\right) \\ Q_{64}^{4}(3|\mathbf{x}) &= \pi P_{64}^{4}(3|\mathbf{x},1)+(1-\pi)P_{64}^{4}(3|\mathbf{x},0) \end{aligned}$$

- Also, reaction to incentive only due to active individuals

Identification of π



Dynamic life-cycle model - estimation

1. Likelihood function depends on parameters (π, θ)
2. Pick a π_0 and estimate θ_0
3. Estimate policy effects $\Gamma(\pi^0, \theta^0)$ in simulated data
4. Fit policy effect Γ_{RD} in real data

$$(\pi^*, \theta^*) = \arg\min_{\pi,\theta} ||\Gamma_{RD} - \Gamma(\pi, \theta)||$$

Preliminary Structural Estimates

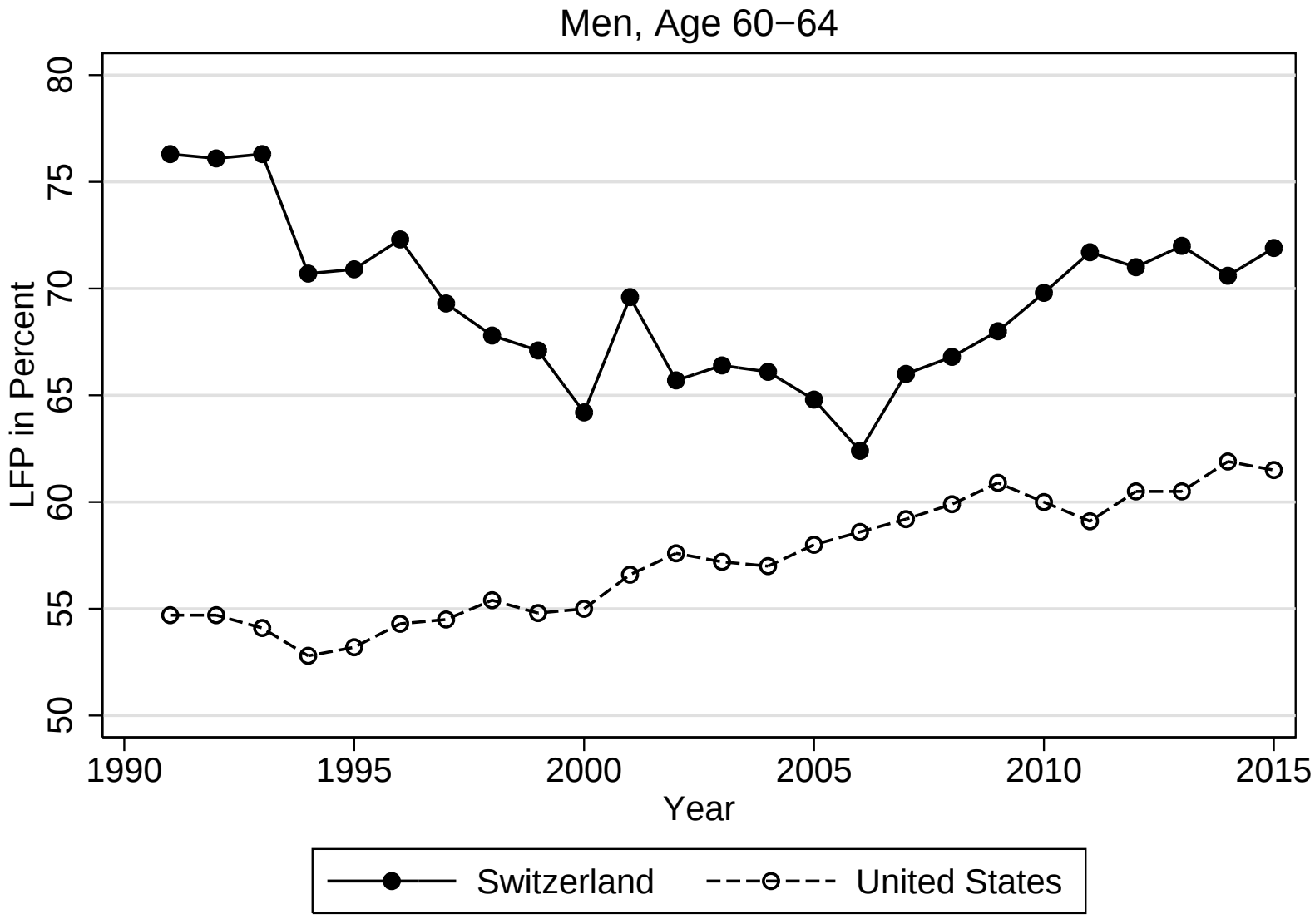
Parameter	Estimate
Share active decision makers (π)	0.699
Consumption utility curvature (γ)	-3×10^{-4}
Utility of bequest (θ_B)	0.052
Disutility of work (δ_0)	-0.604
Additional disutility of work if sick (δ_1)	-0.598

Conclusions

- Exploit peculiar pension reform in Switzerland
- Reform affects behavior through two channels:
  - Financial incentives
  - Default claiming age with passive agents
- FRA increases are stronger, and incentive weaker, with passive agents than without
- Peculiar reforms costly for passive agents

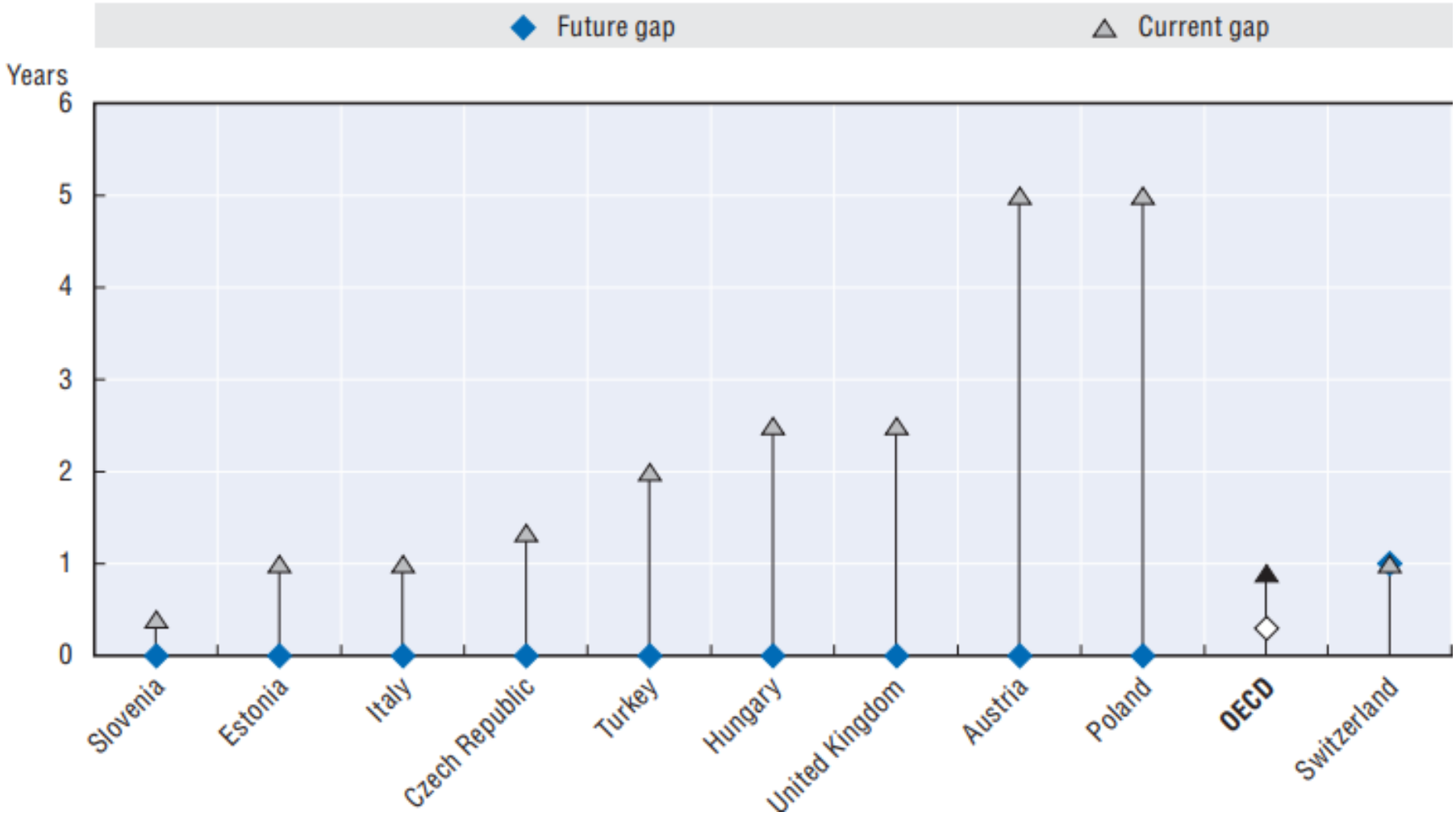
Thank You

Labor force participation in Switzerland and the U.S.



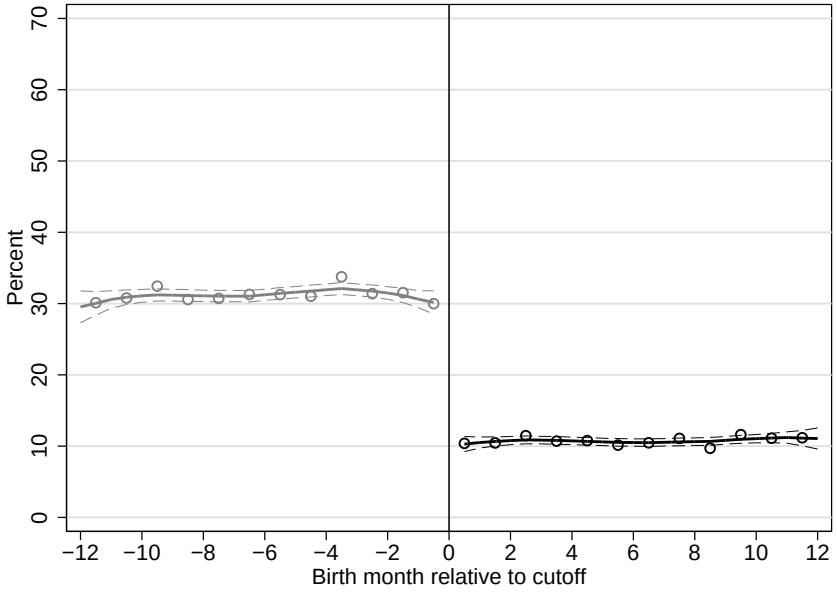
Labor force participation in Switzerland and the U.S.

Shrinking gap between women and men's FRA

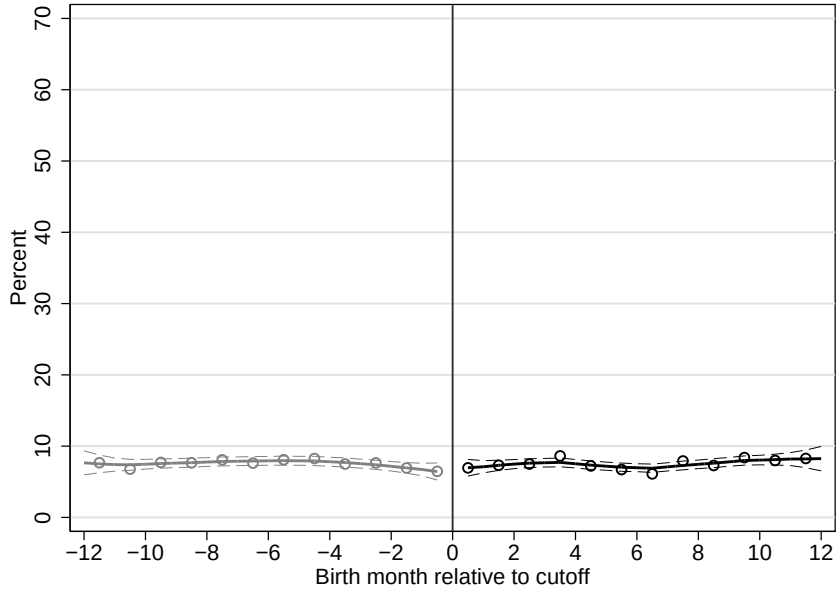


Source: OECD (2015).

2005 Abolition of Supplementary Pension for Wife



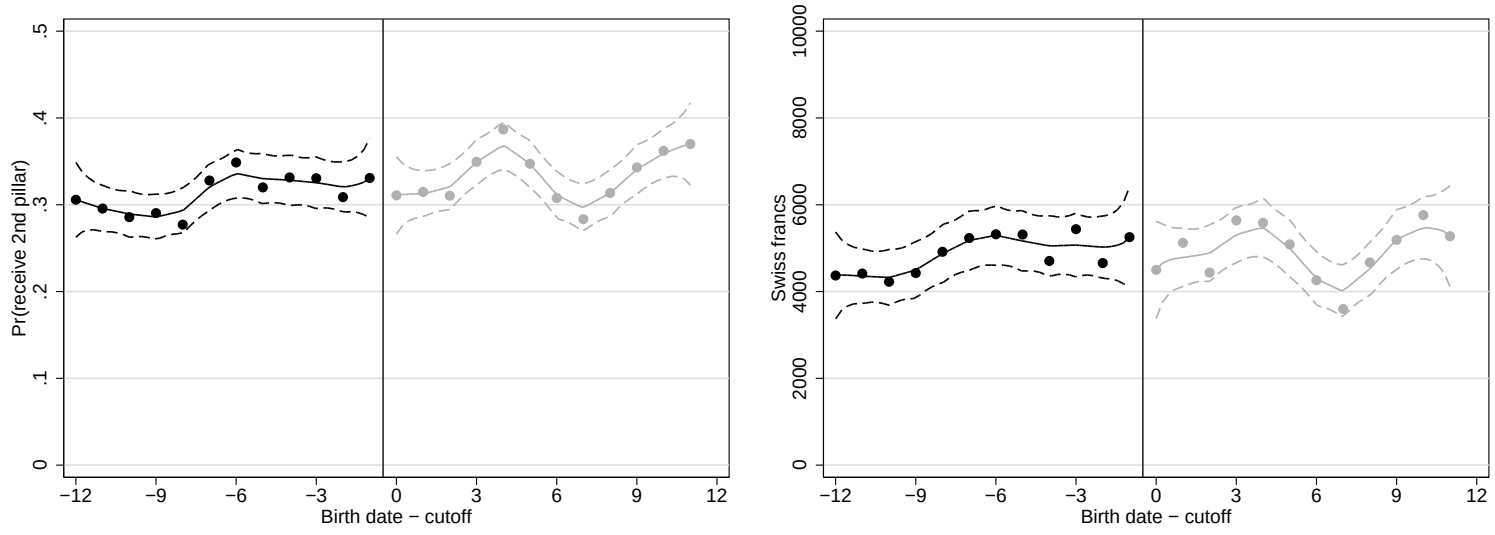
(a) Full sample (1941/1942)



(b) Single/young husband (1941/1942)

Notes: Figure shows percent of women born in different months who receive a supplementary pension

Occupational Pensions, FRA63



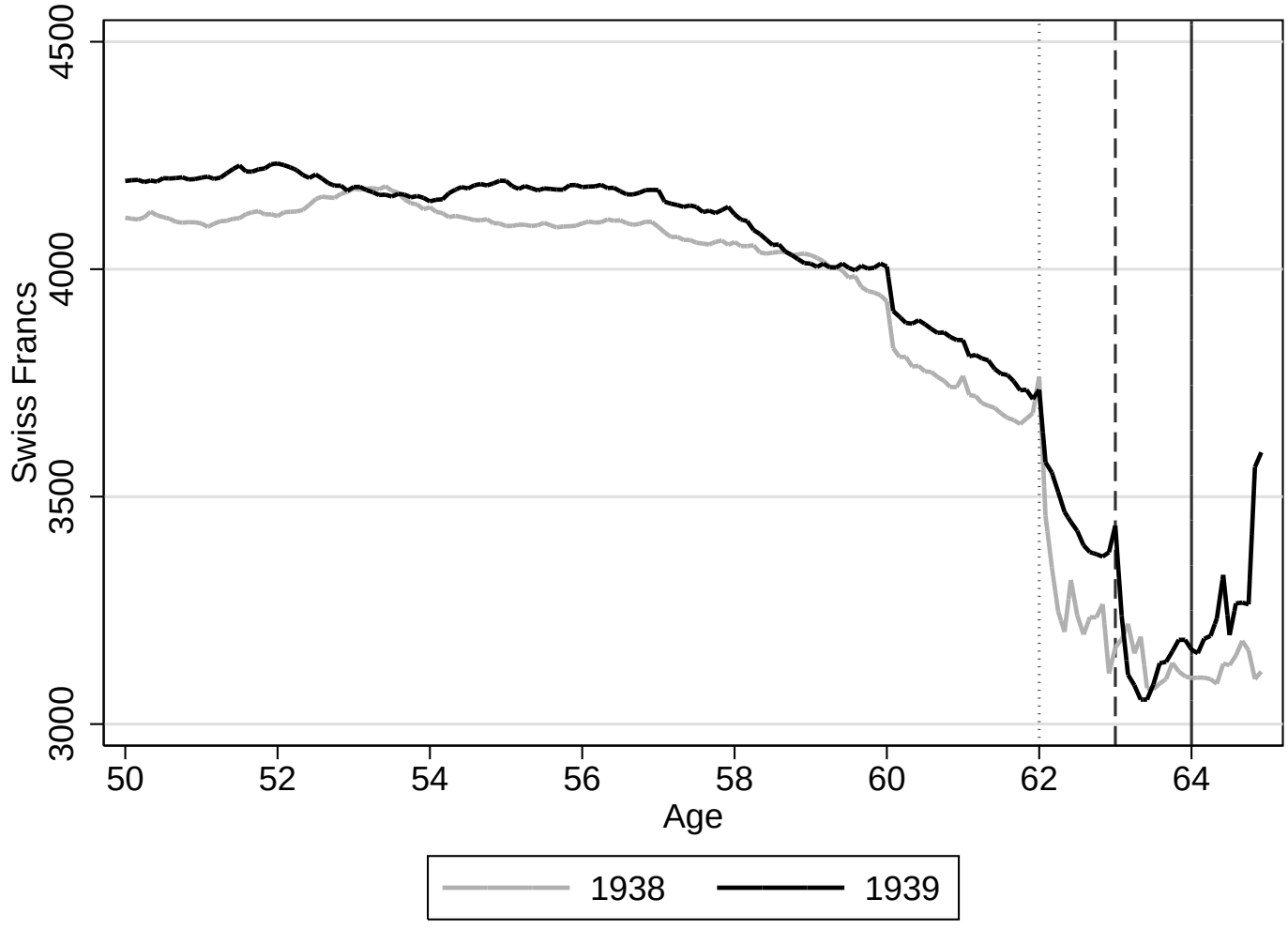
(a) Receipt of Pension (b) Pension Amount (CHF)

Notes: This figure reports receipt of an occupational pension benefit (a) and its level (b) for women born just before (dark line) and just after (light line) the January 1, 1939 cutoff for raising the FRA from 62 to 63 years.

Source: Own calculations, based on tax records.

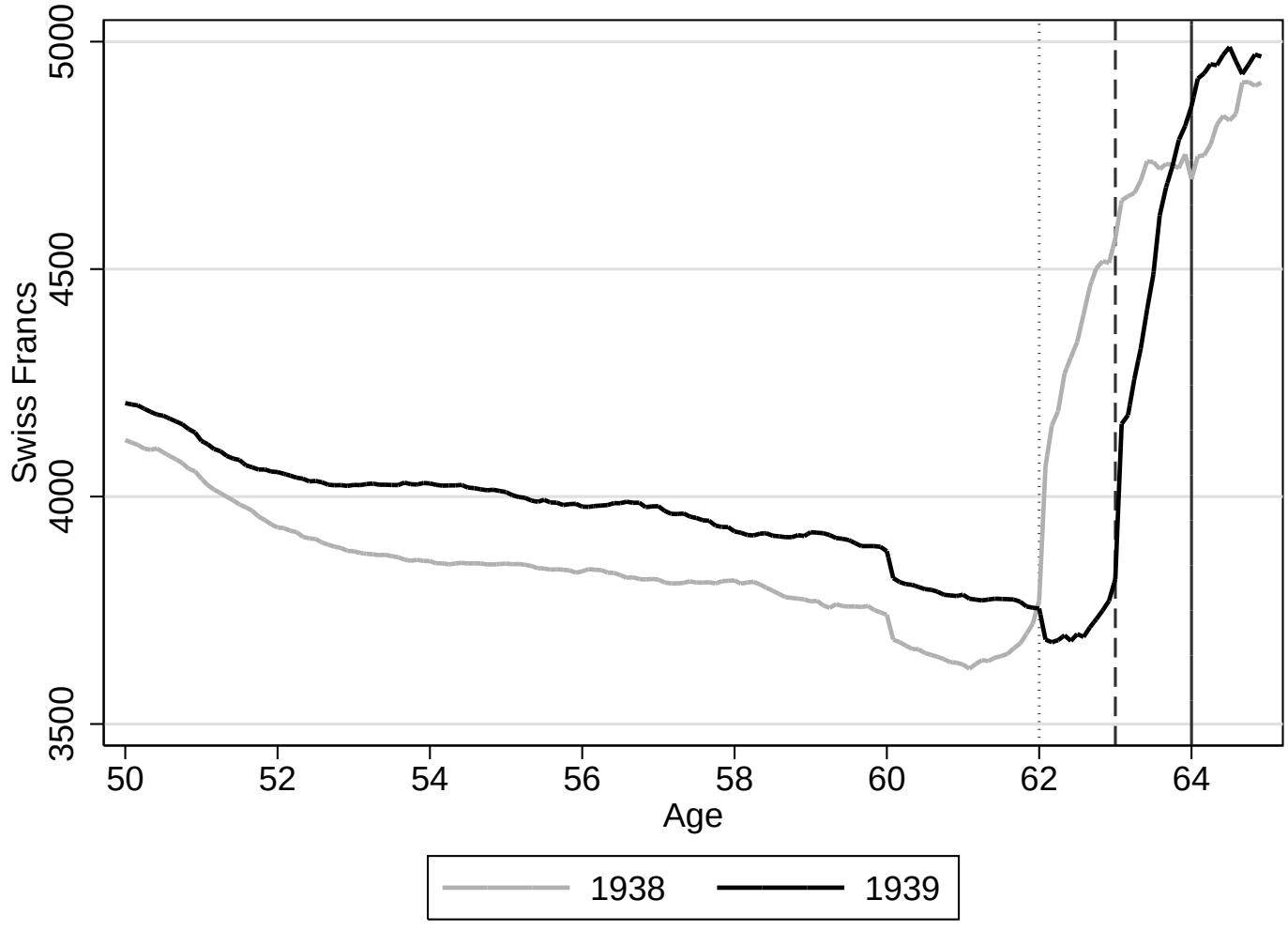
Intensive Margin Adjustments

Current Earnings, Workers



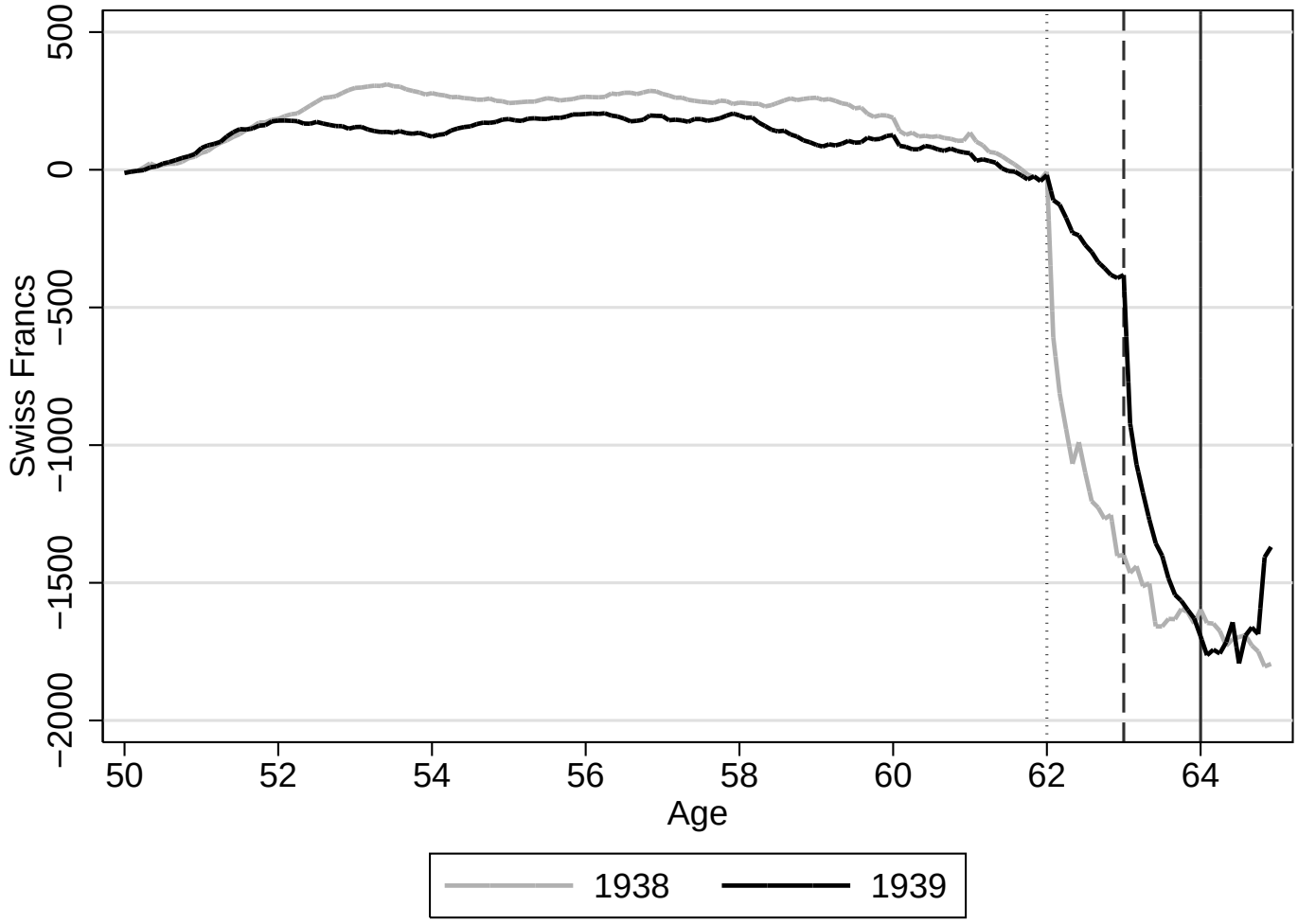
Notes: Figure shows the average monthly wage of those currently working. Source: Own calculations, based on SSSD.

Potential Earnings, Workers



Notes: Figure shows the average wage earned at age 50 of those currently working. Source: Own calculations, based on SSSD.

Current - Potential Earnings, Workers



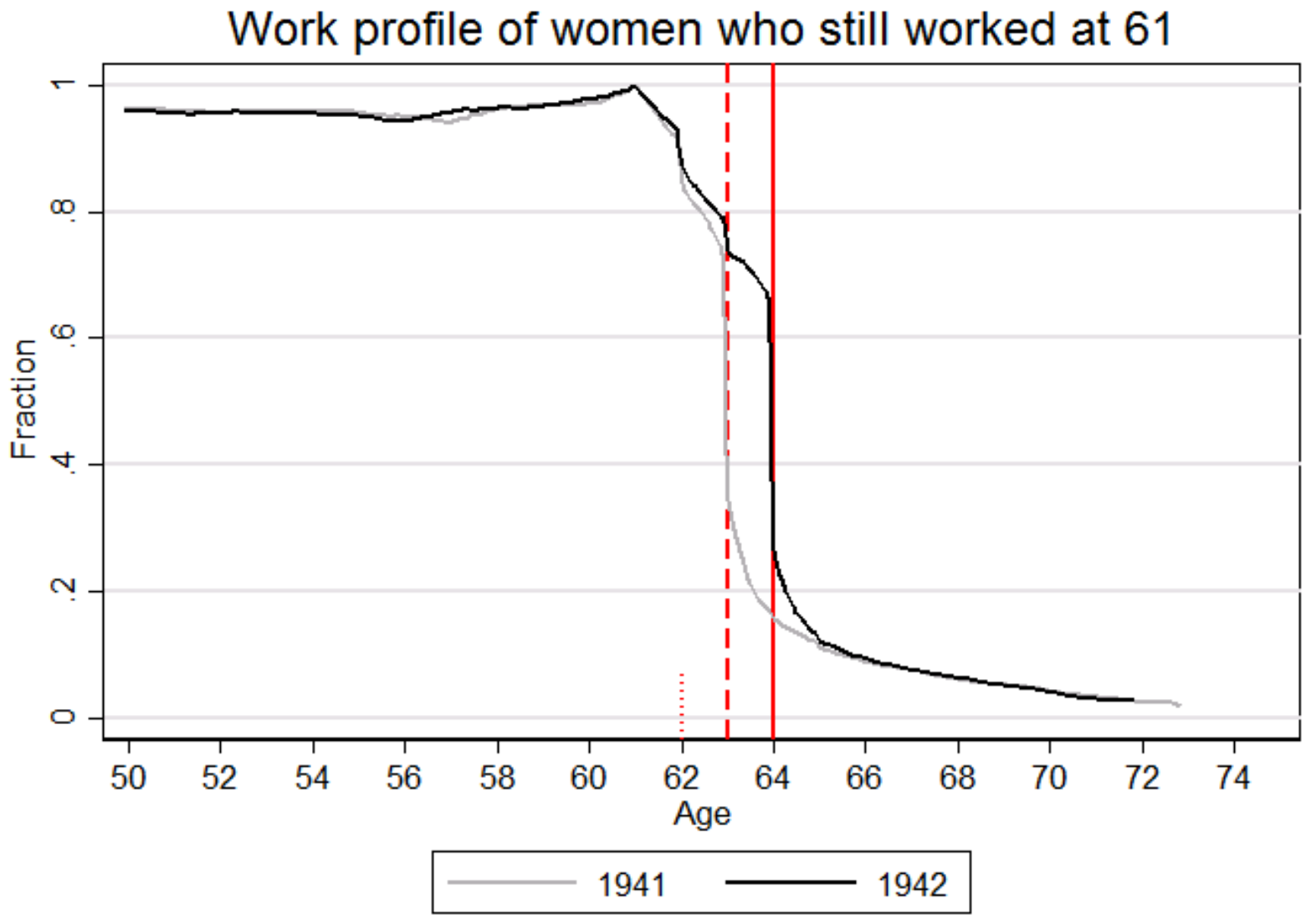
Notes: Figure shows current wage minus wage at 50 of those currently working. We show effects for FRA64, the increase in FRA from 62 to 63 years. Source: Own calculations, based on SSSD.

Did not work at 61

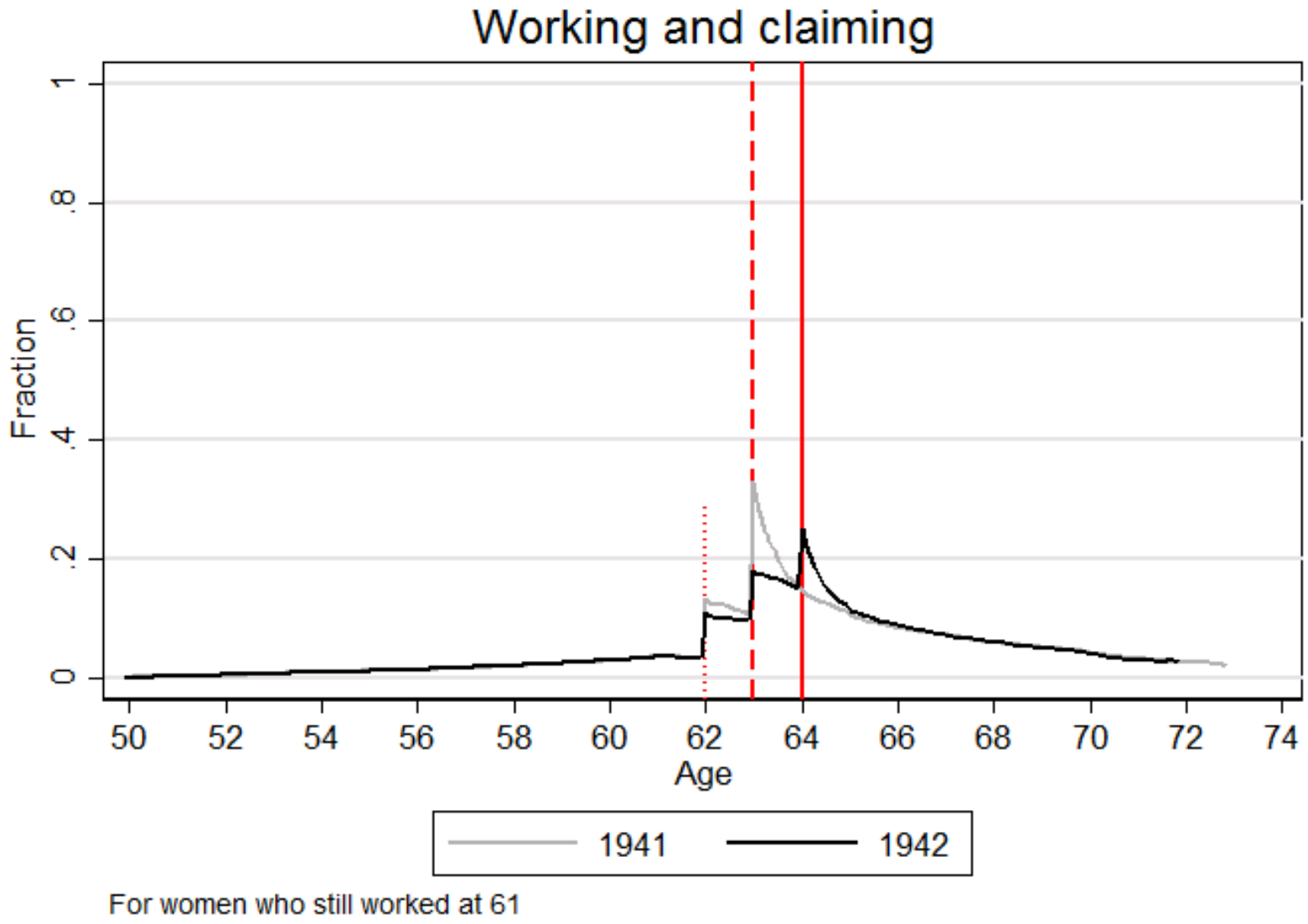
Notes: Figure shows proportion of women who claim DI/OASI benefits, and did not work at 61.

Worked at 61

Notes: Figure shows proportion of women who work and claim DI/OASI benefits.



Notes: Figure shows proportion of women who claim DI/OASI benefits, and worked when 61.



Notes: Figure shows proportion of women who work and claim of those who worked when 61.

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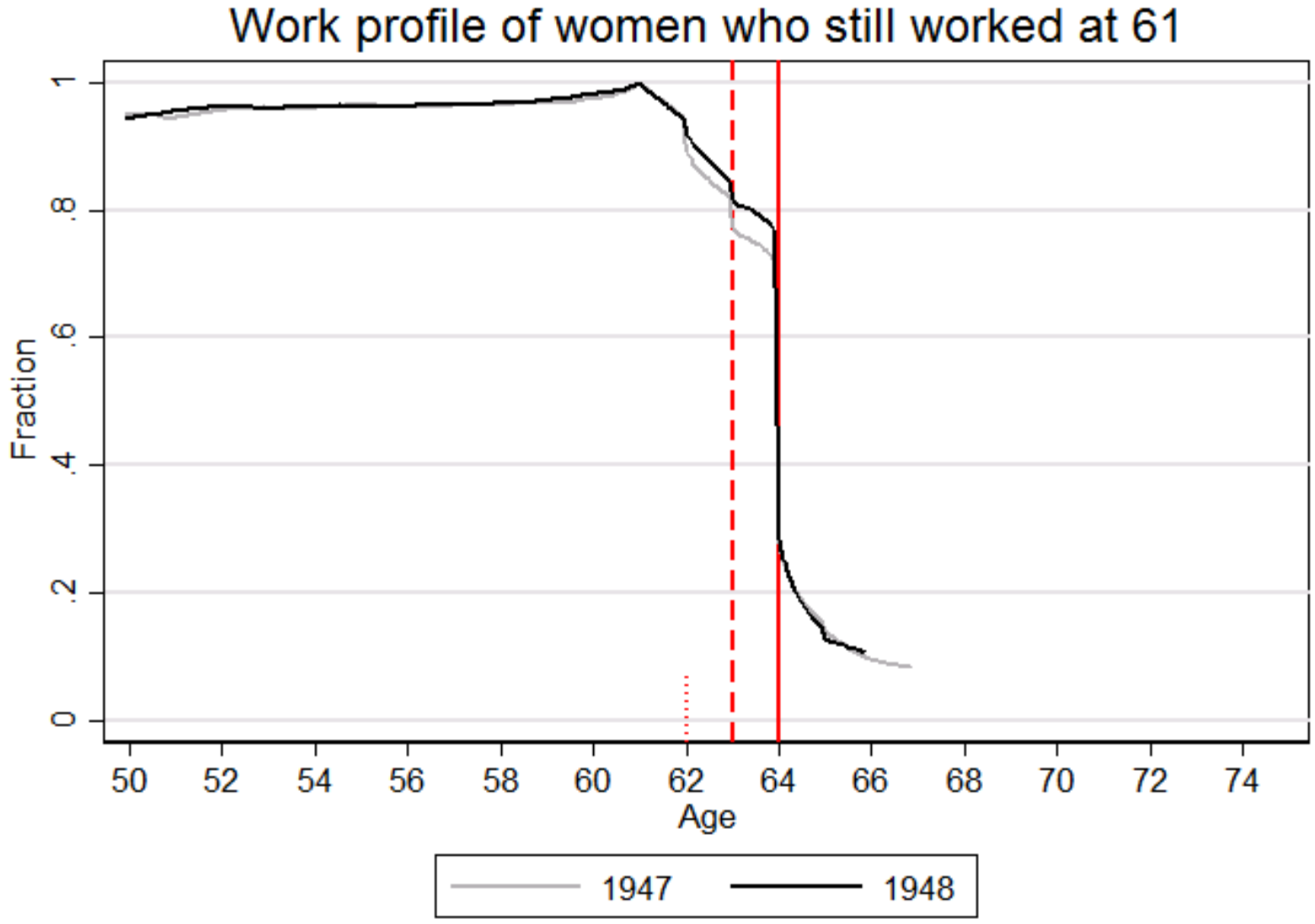

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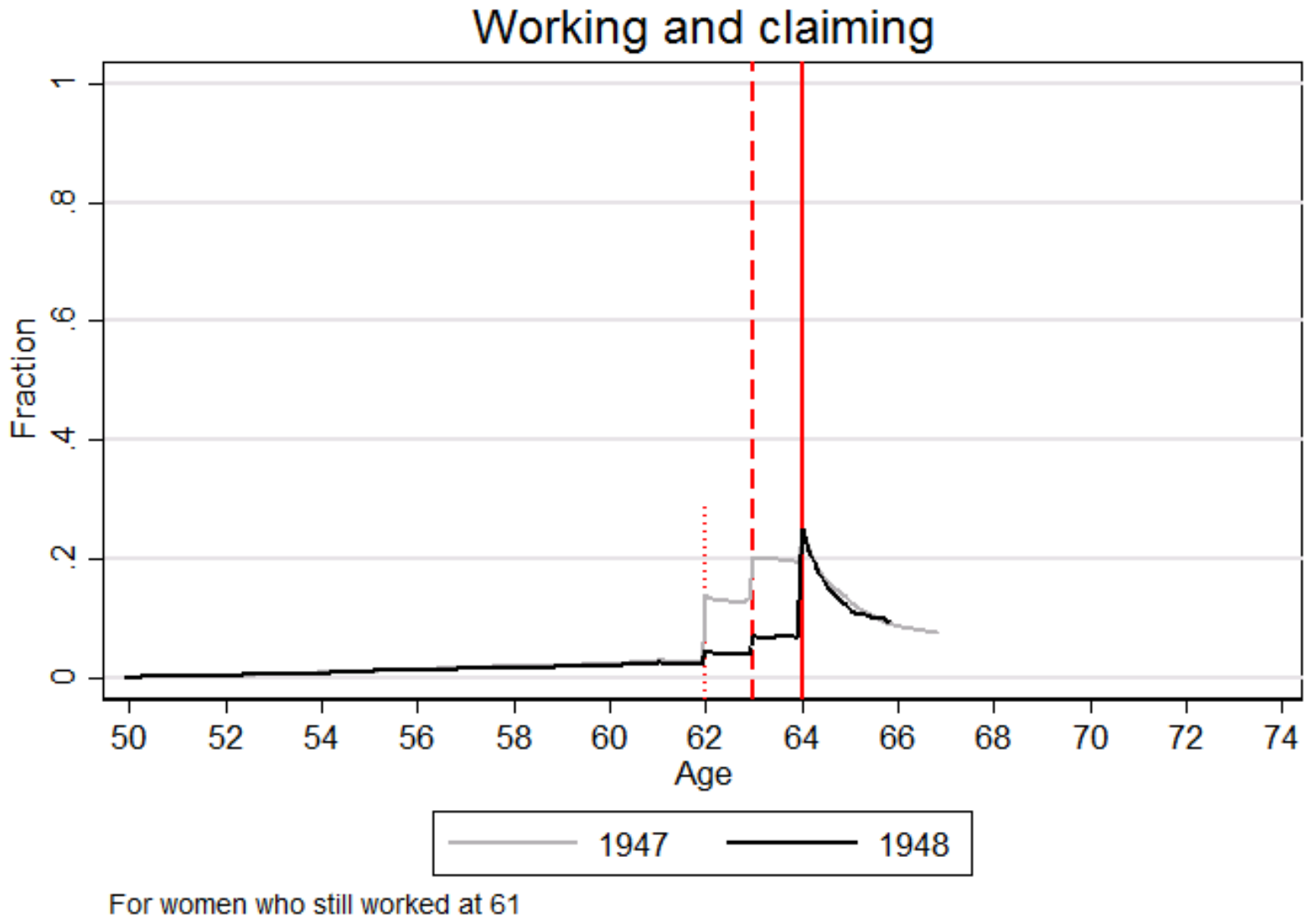


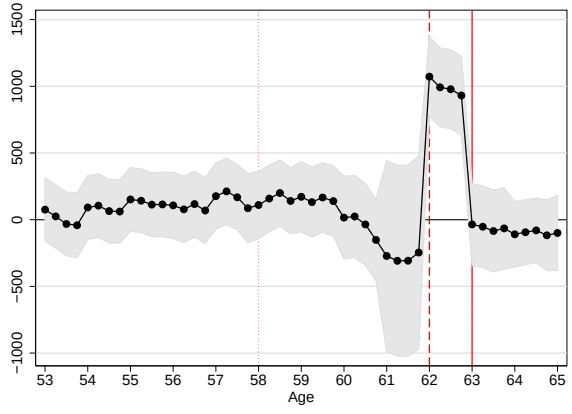
Notes: Figure shows proportion of women who work and claim DI/OASI benefits.

	FRA 63	FRA 64	RAF
	linear	linear	linear
	(1)	(3)	(5)
Delay Exit & Claim	0.359***	0.042**	0.087***
	(0.013)	(0.017)	(0.015)
Delay Exit, Not Claim	-0.078***	-0.01	-0.063***
	(0.012)	(0.01)	(0.008)
Delay Claim, Not Exit	0.278***	0.01	0.046***
	(0.012)	(0.015)	(0.014)
Obs	7885	9106	11104

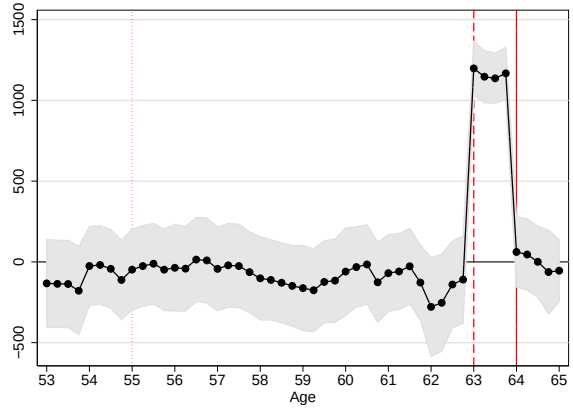
Notes: Delay Exit means women delays labor market exit beyond age 62. Delay Claim means women delays claiming pension beyond age 62. Delay Exit, not claim means women delays labor market exit beyond the ERA, but claims at the ERA. Delay Claim, Not Exit means women delays claiming of pension beyond age 62, but leaves the labor market at 62. 62 is the early retirement age.

	FRA63	FRA64	RAF
	linear	linear	linear
	(1)	(3)	(5)
A. Single or Age Balanced			
Exit age (years)	0.337*	0.398**	0.087
	(0.187)	(0.178)	(0.16)
Claiming age (years)	0.632***	0.582***	0.445***
	(0.135)	(0.141)	(0.131)
Obs	7968	9220	11372
B. Husband's response			
Exit age (years)	-0.115	0.021	0.095
	(0.165)	(0.159)	(0.153)
Claiming age (years)	-0.038	-0.086	-0.087
	(0.11)	(0.11)	(0.132)
Obs	7,885	9,106	11,104

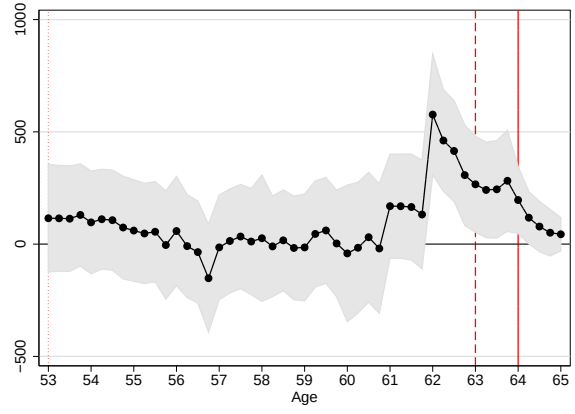
Earnings



(c) FRA 63

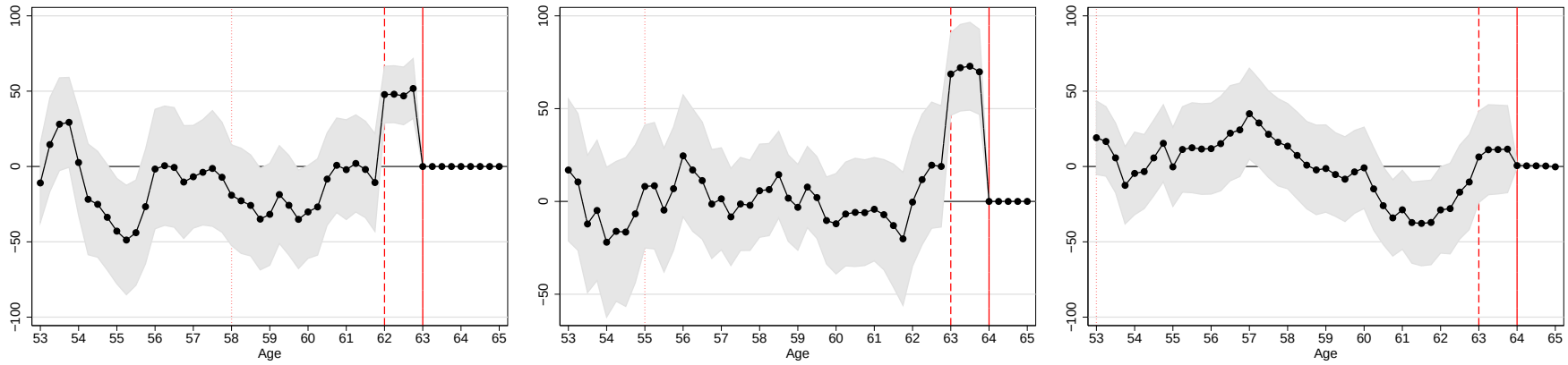


(d) FRA 64



(e) RAF

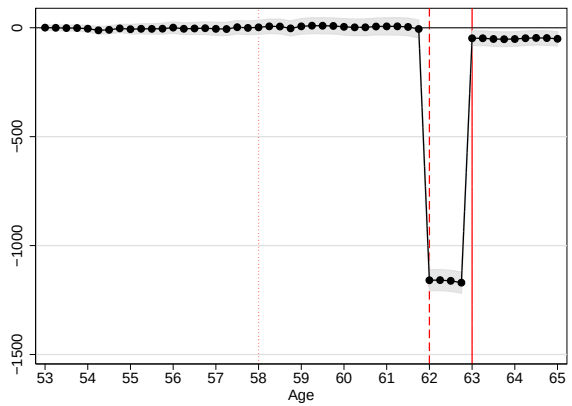
Unemployment Benefits



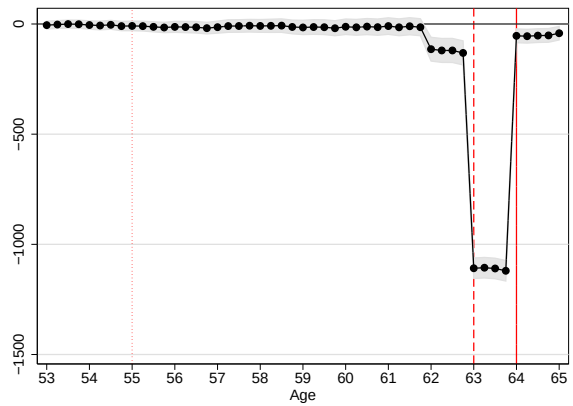
(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

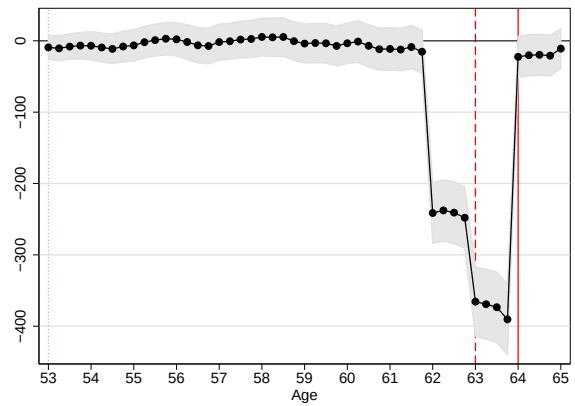
Disability & Retirement Benefits



(d) FRA 63



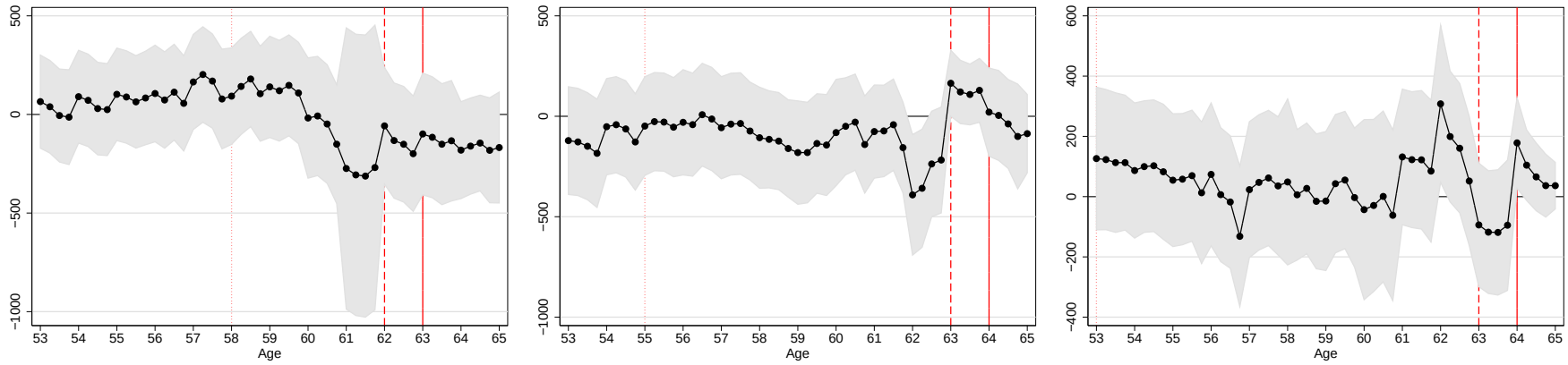
(e) FRA 64



(f) RAF

Source: Own calculations, based on SSSD.

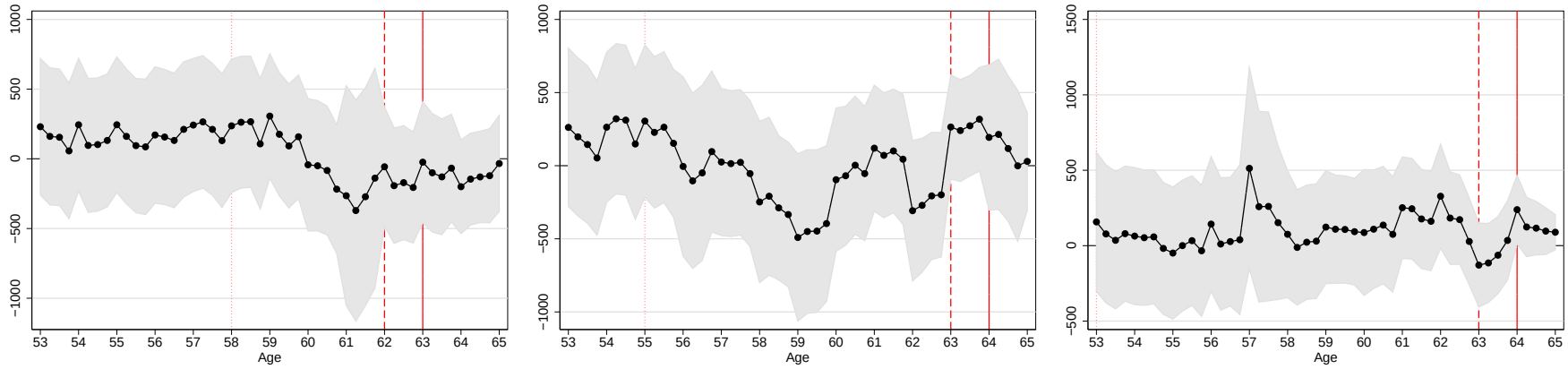
Women's Income



(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

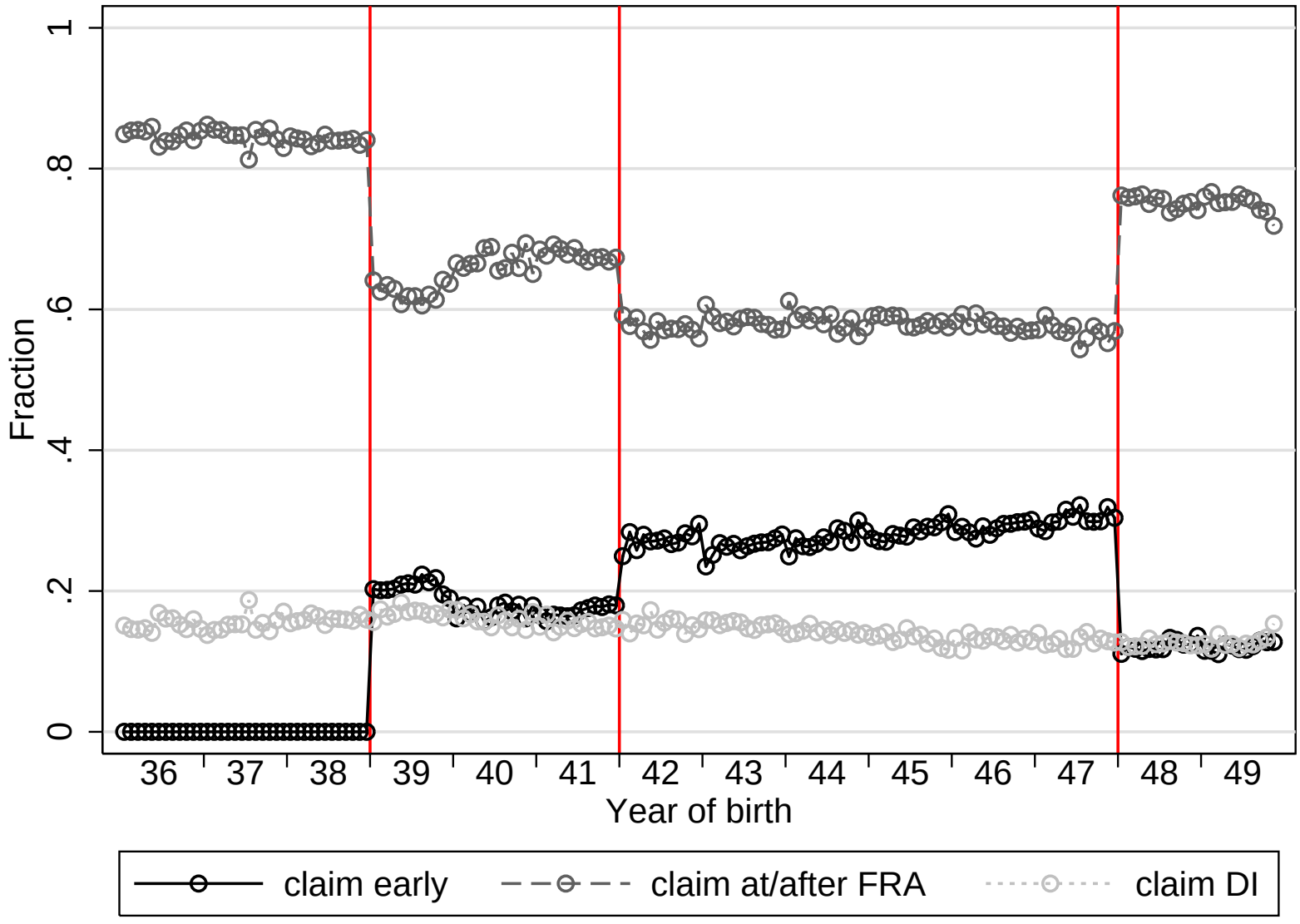
Household Income



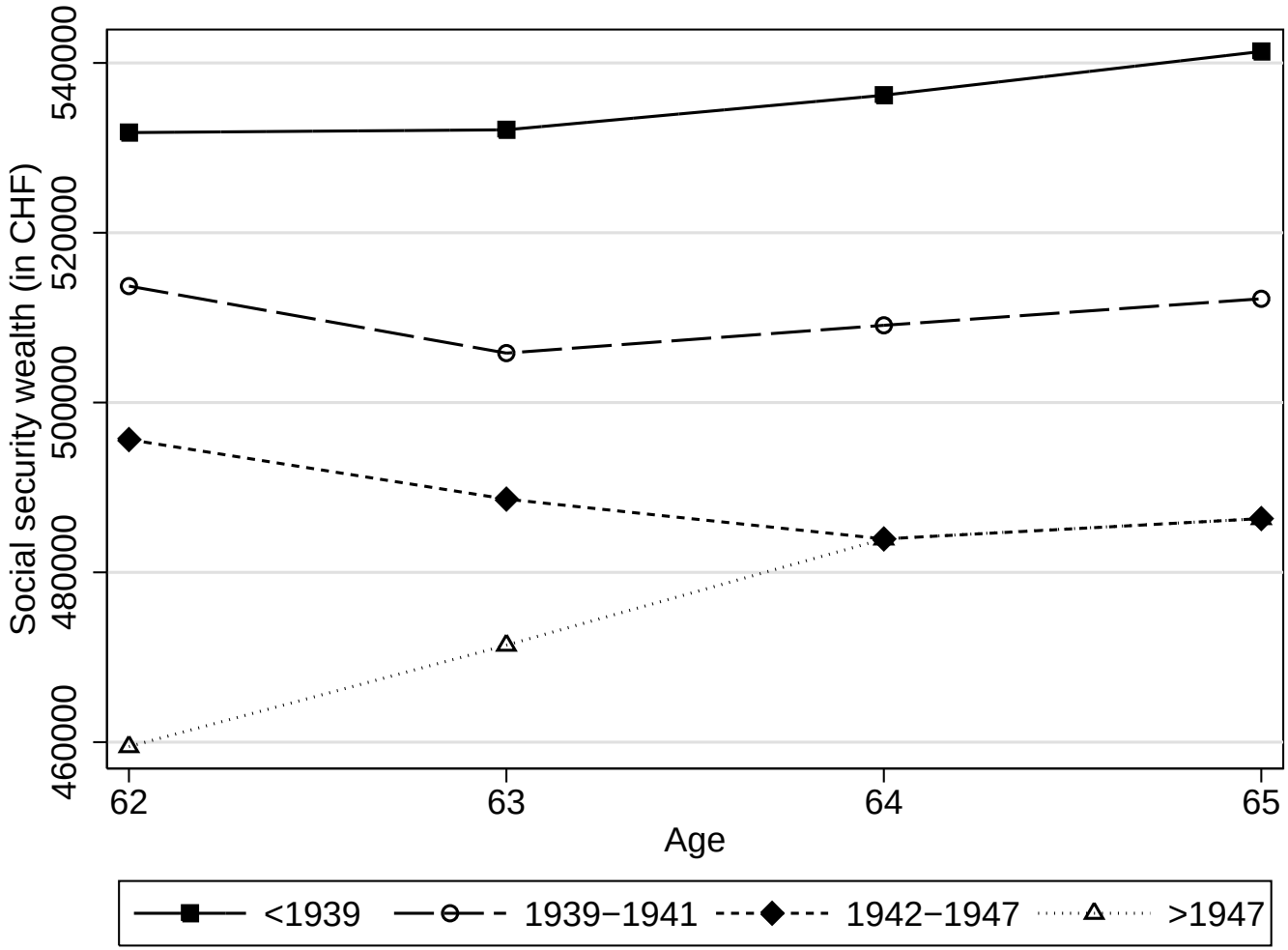
(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

Does Early Claiming Change Over Time?



Social Security Wealth



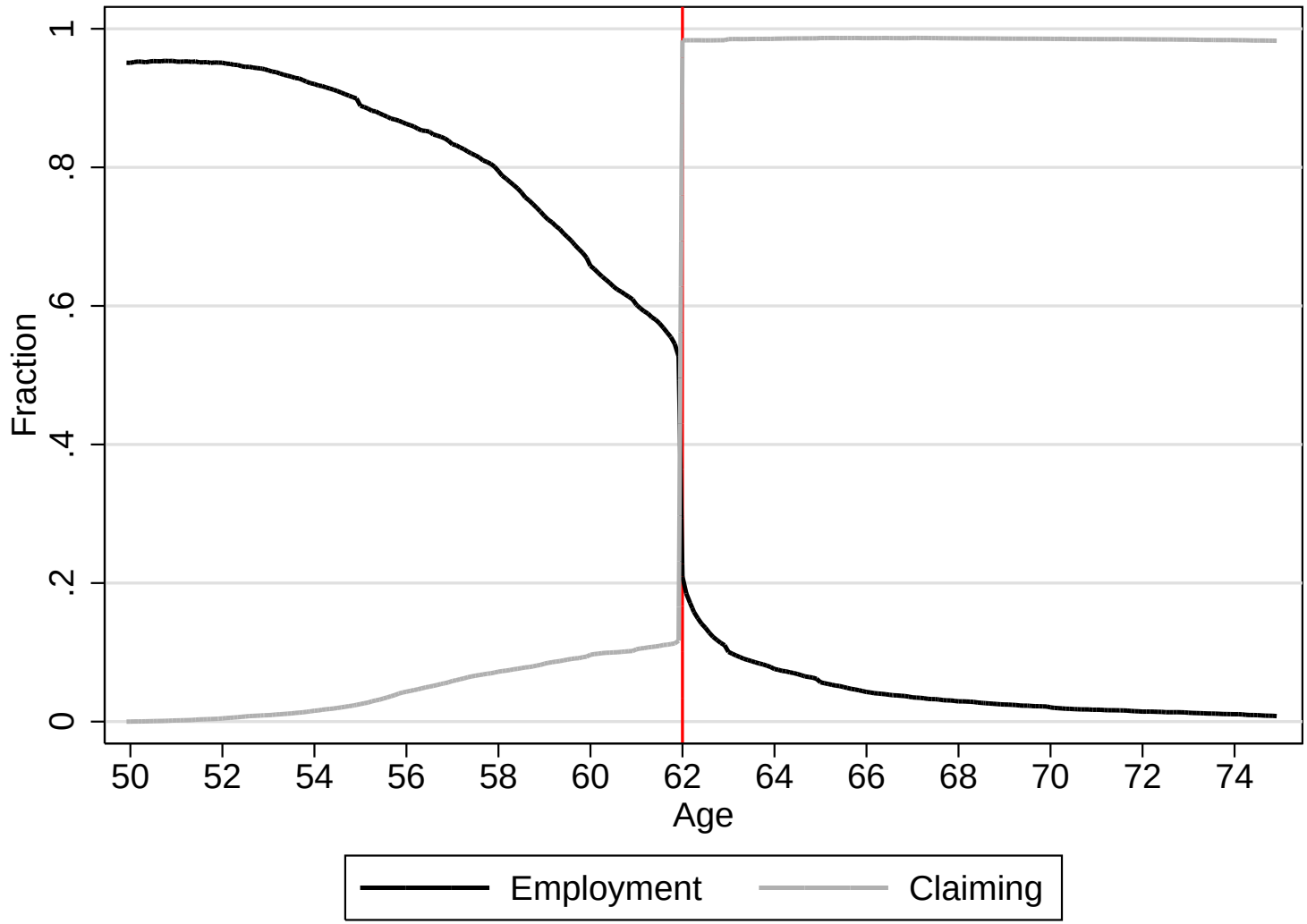
Note: Figure reports the social security wealth of women in the age cohorts affected by the 1997 reform.

Social security wealth is the age 62 value of future social security payments, discounted with the average

Summary Statistics

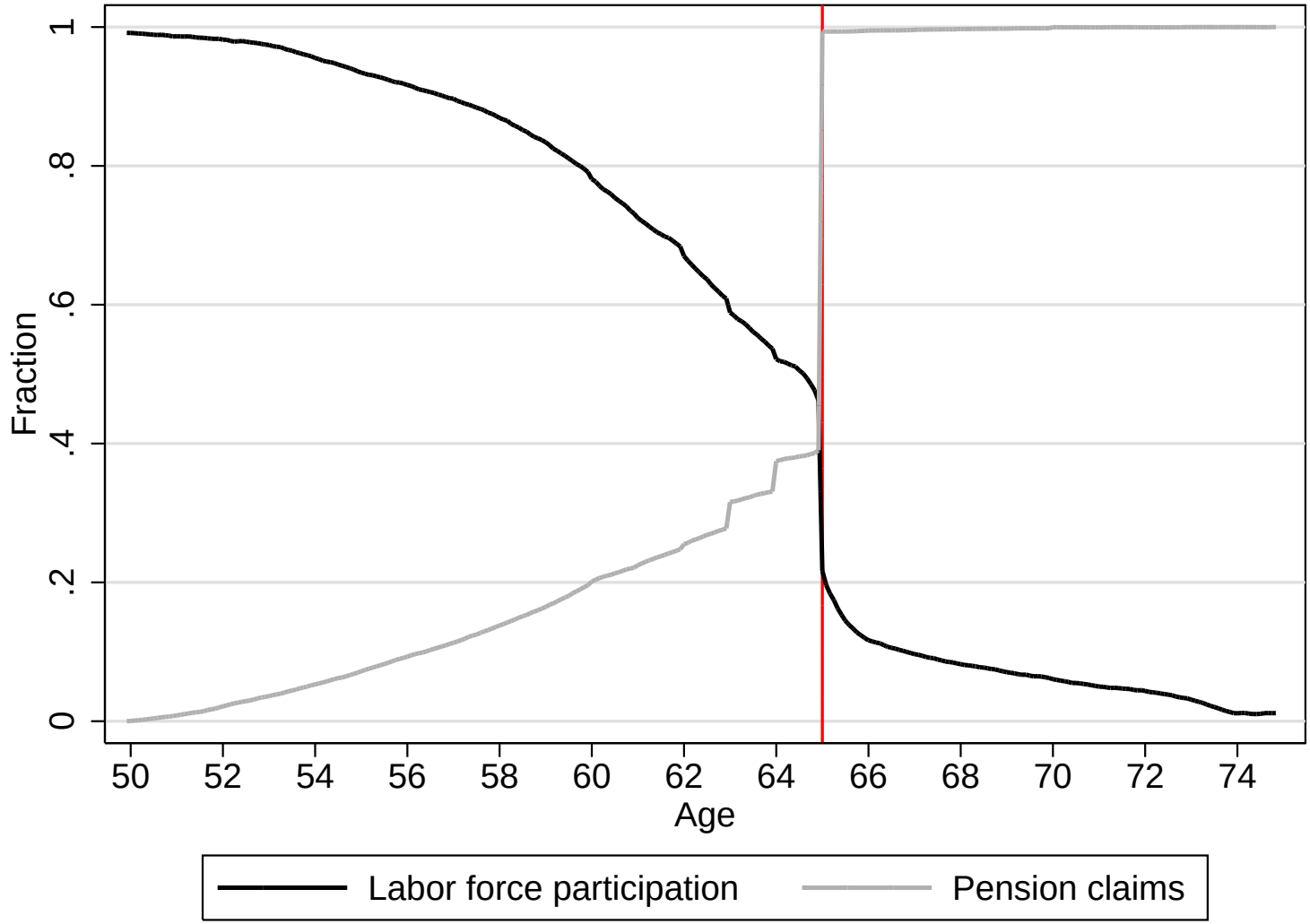
	FRA 63 (1)	FRA 64 (2)	RAF (3)
A. Outcome variables			
Exit Age (years)	60.2 (3.8)	60.9 (3.9)	61.5 (3.9)
Claiming Age (years)	61.4 (2.5)	62.1 (2.8)	62.7 (2.9)
Mortality, Pr(die by 2013) (%)	13.5 (34.2)	9.9 (29.9)	6.1 (23.9)
SS benefits (CHF per year)	18,998 (7,044)	19,432 (6,755)	19,261 (6,909)
SS wealth (CHF)	447,007 (165,483)	449,919 (155,705)	442,152 (157,838)
B. Characteristics			
% married	45 (49.8)	49.5 (50)	56.4 (49.6)
Age wife - age husband (years)	-3 (5.9)	-2.8 (5.78)	-2.6 (5.41)
% foreign	22 (41.1)	18.1 (38.5)	17.6 (38.1)
Average earnings (CHF per year)	50,952 (31,856)	52,474 (31,358)	53,409 (29,790)
% supplemental pension spouse	30.6 (46.1)	20.7 (40.5)	7.9 (27)
Supplemental pension (CHF per year)	7,274 (1,607)	7,282 (1,592)	6,695 (1,873)
Earnings at age 50 (CHF per year)	3,472 (3,514)	3,754 (4,262)	3,786 (4,488)
No. observations	58,932	67,015	80,663

Pre-Reform Life-Cycle Profiles: WOMEN



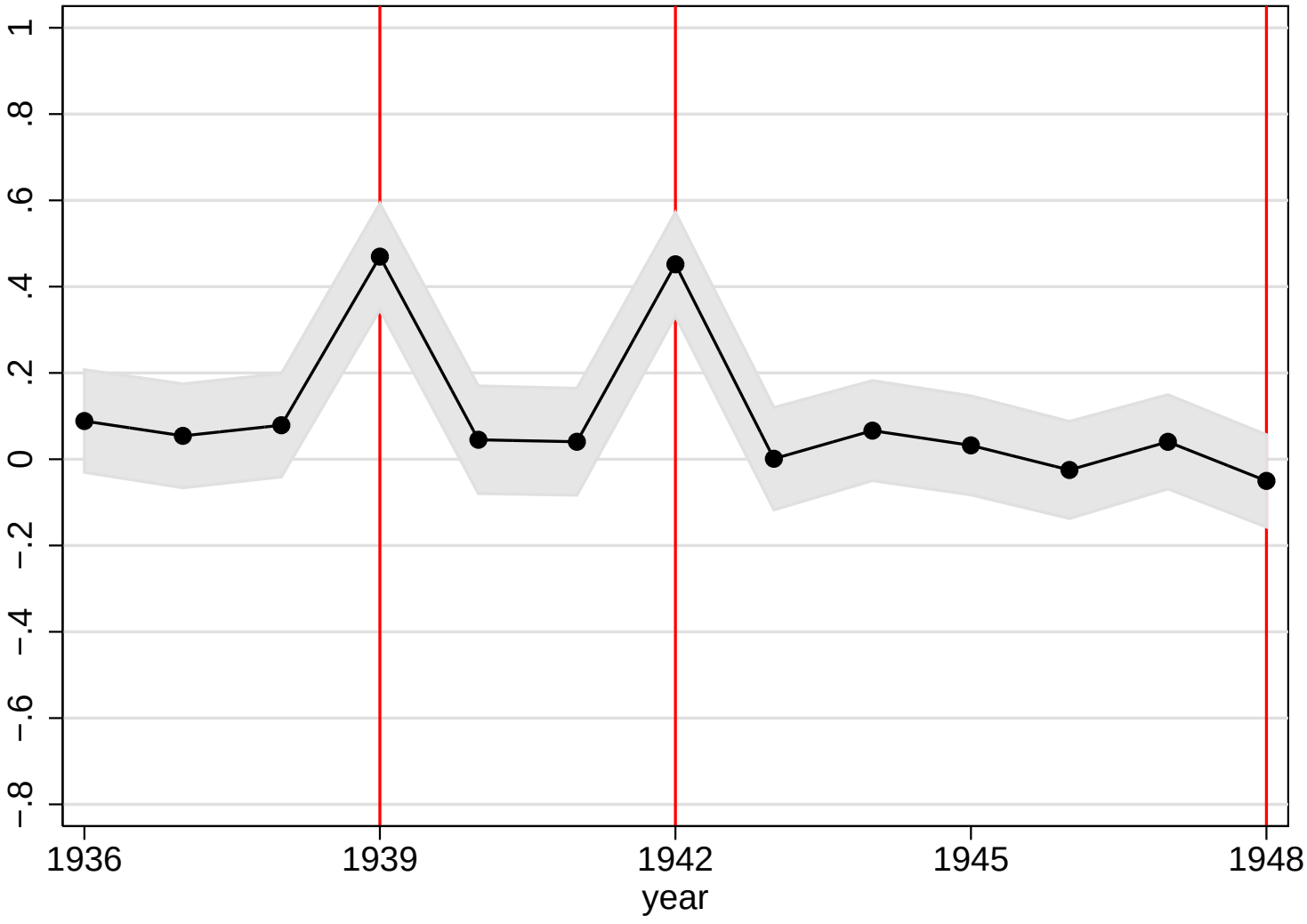
Notes: Women born in 1938. Pension claims refer to disability or social security claims.

Pre-Reform Life-Cycle Profiles: MEN



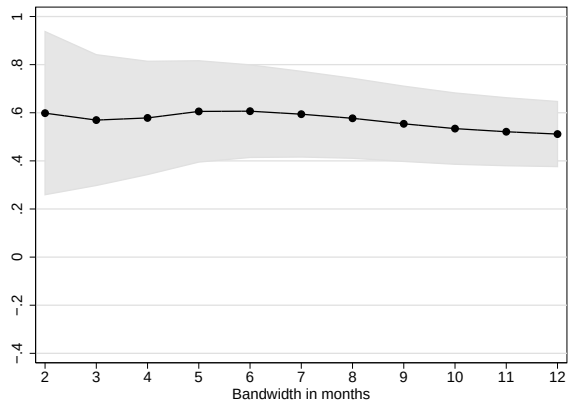
Notes: Men born in 1938. Pension claims refer to disability or social security claims.

RDD Estimates at True and Placebo Cutoffs

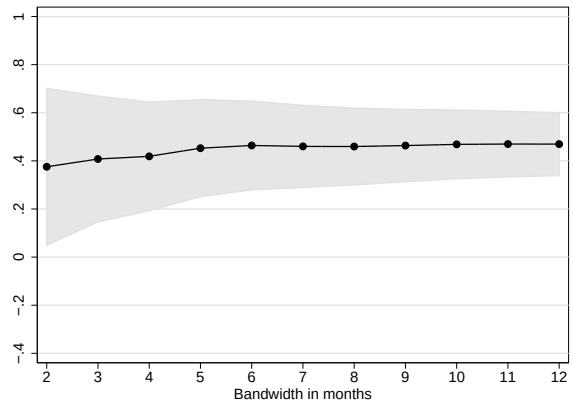


Notes: Figure shows the RDD estimates we get at the true cutoffs, identified by the vertical line, and Placebo cohort cutoffs, along with 95% confidence intervals. Source: Own calculations, based on SSSD.

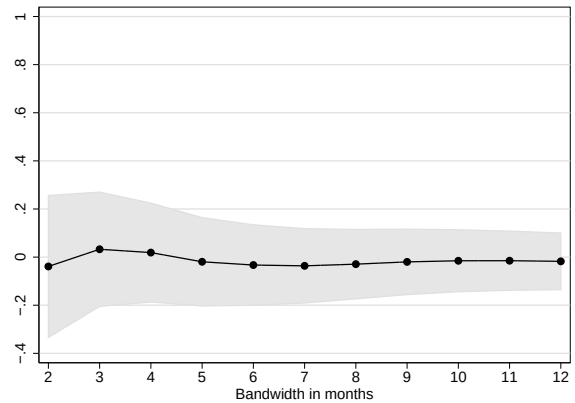
Labor Force Exit: Increasing the Bandwidth



(d) FRA 63



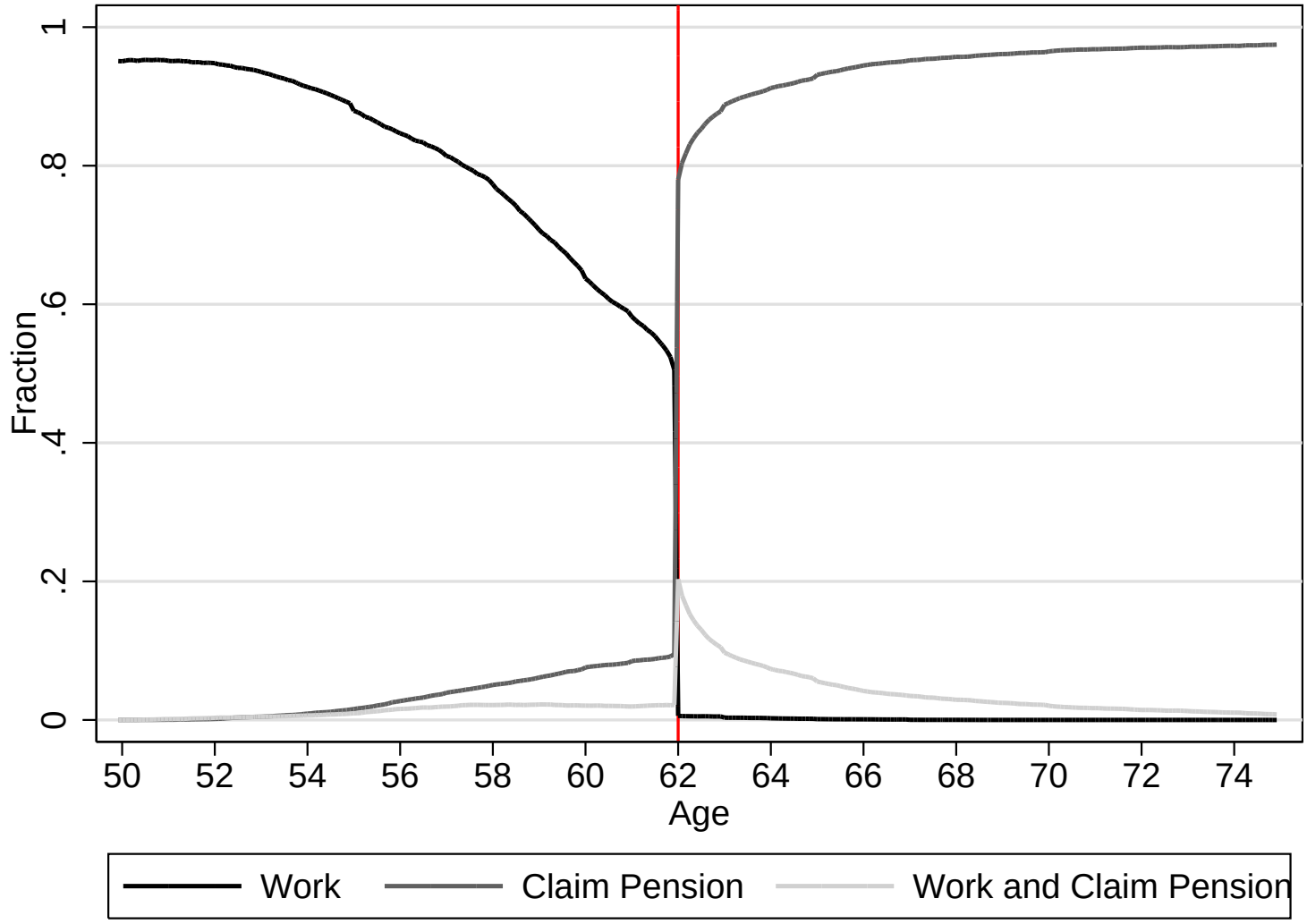
(e) FRA 64



(f) RAF

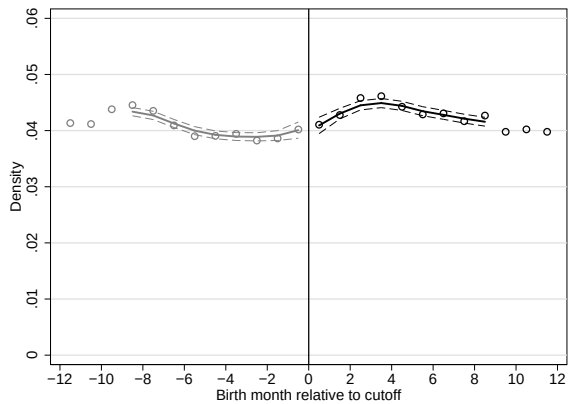
Notes: Calonico, Cattaneo, and Titinuik (2015)'s approach indicates an optimal bandwidth of 3 months.

Source: Own calculations, based on SSSD.

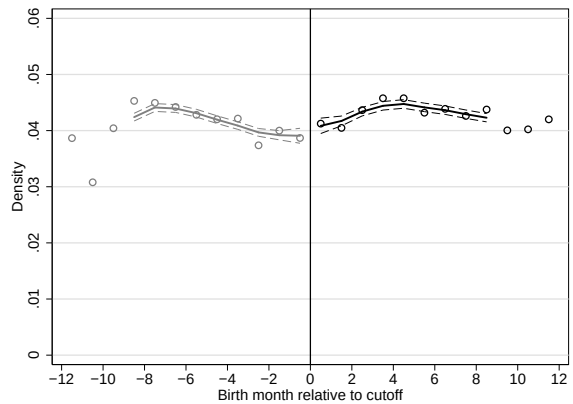


Notes: Figure shows proportion of women who work without claiming, claim without working, or work and claim social security benefits for the last cohort not affected by the reform, born 1938.

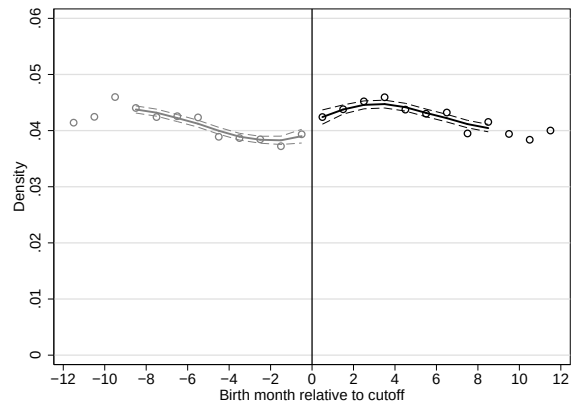
Density of Cohort Size (Forcing Variable)



(g) FRA 63



(h) FRA 64



(i) RAF

Notes: Figure shows the density of the number of women in the cohorts we use in the RDD estimates. McCrary test indicates no significant difference for FRA63 (-0.021, s.e. 0.037) and FRA64 (0.041, s.e. 0.035), and a significant increase (10% level) for RAF (0.053, s.e. 0.032). Source: Own calculations, based on SSSD.

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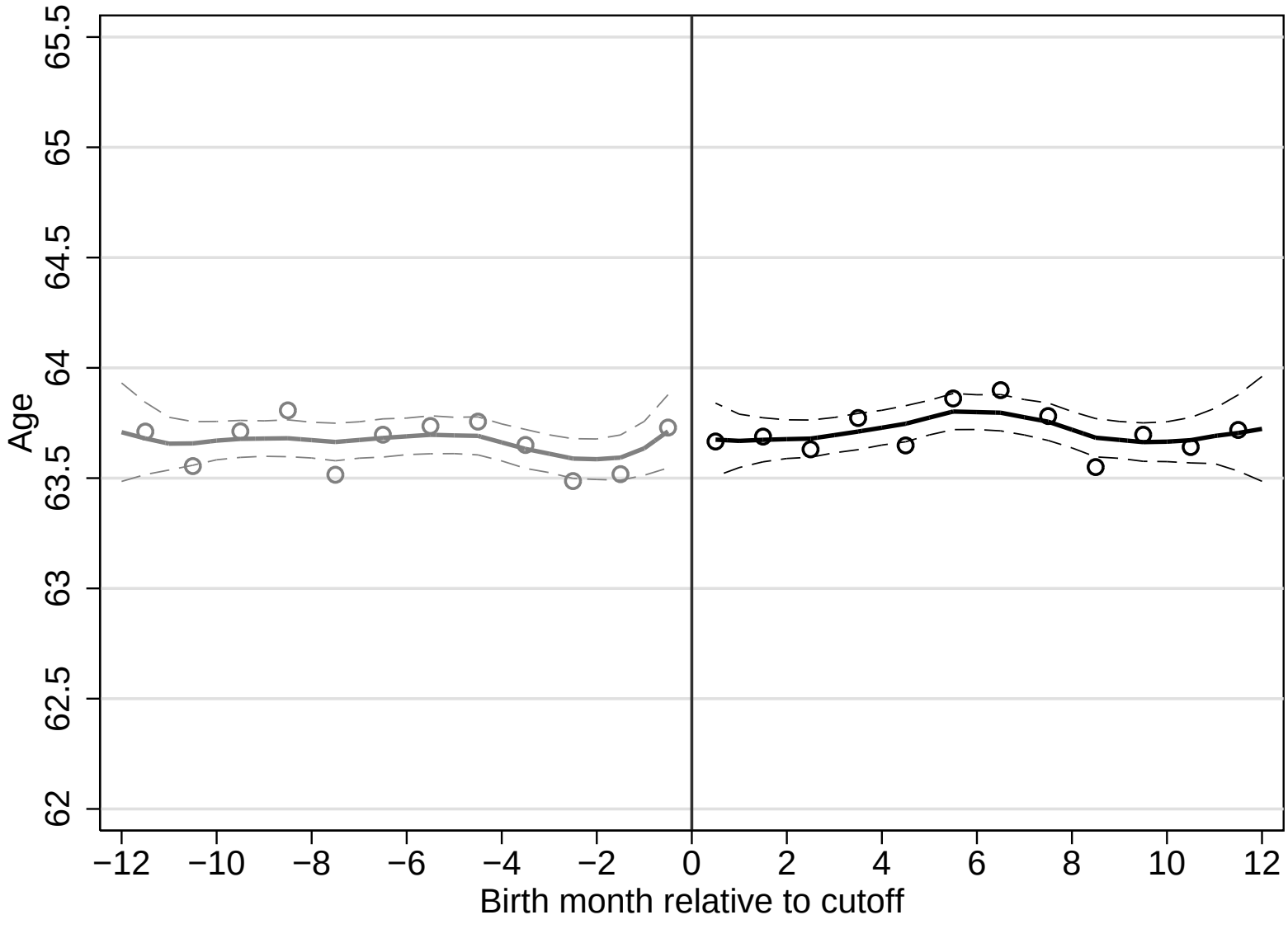
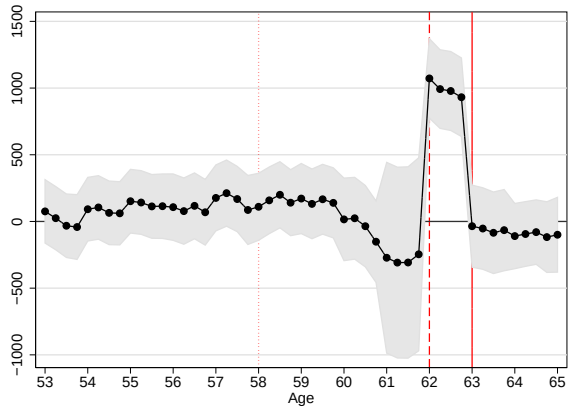
FRA 63: Effects on Spouse's Exit Age

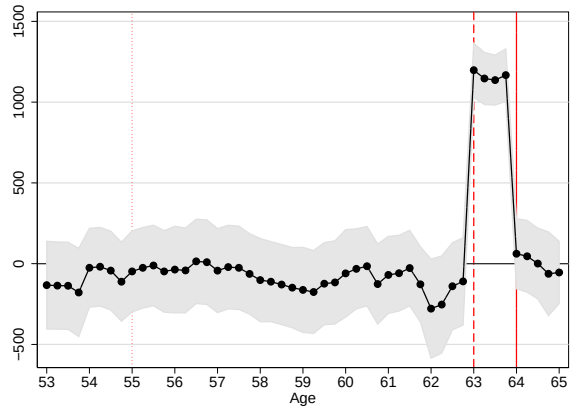


8. Effects on Income

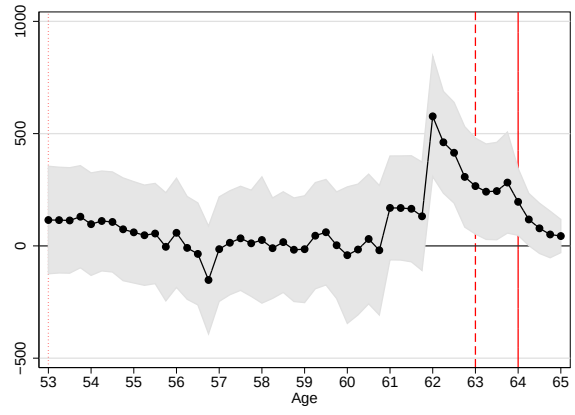
RDD Effects on Earnings



(j) FRA 63



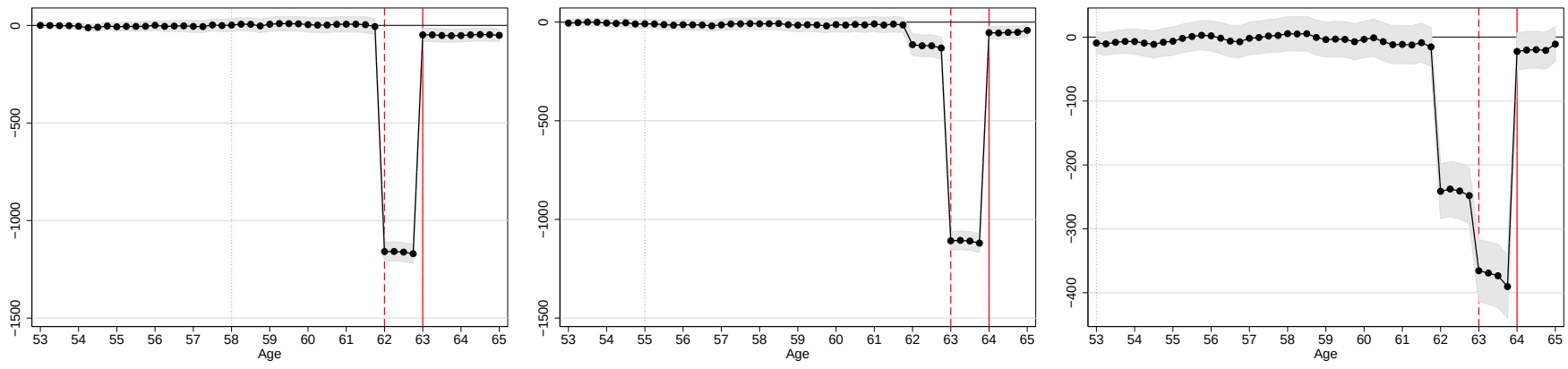
(k) FRA 64



(l) RAF

Source: Own calculations, based on SSSD.

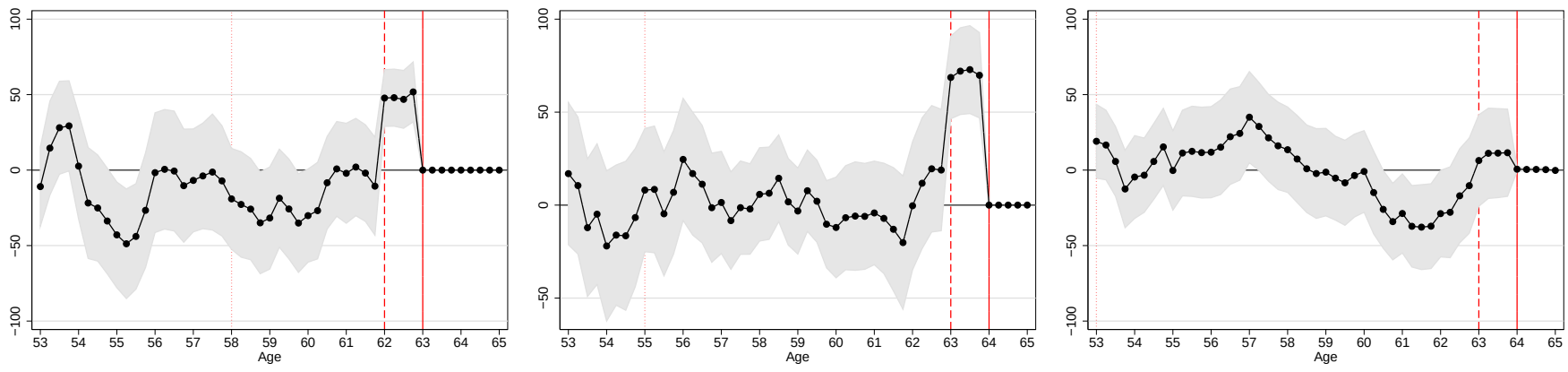
RDD Effects on Disability & Retirement Benefits



(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

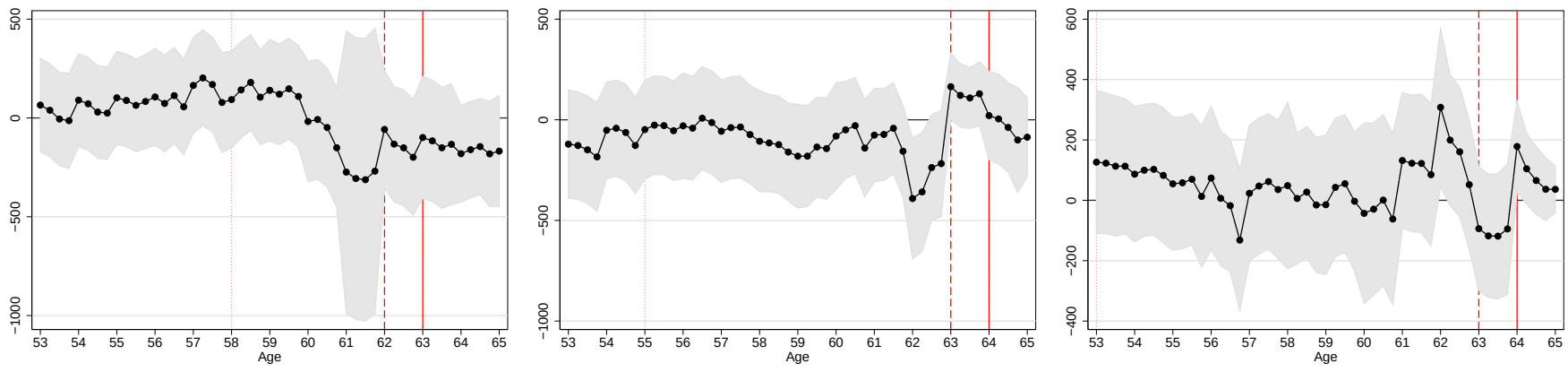
RDD Effects on Unemployment Benefits



(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

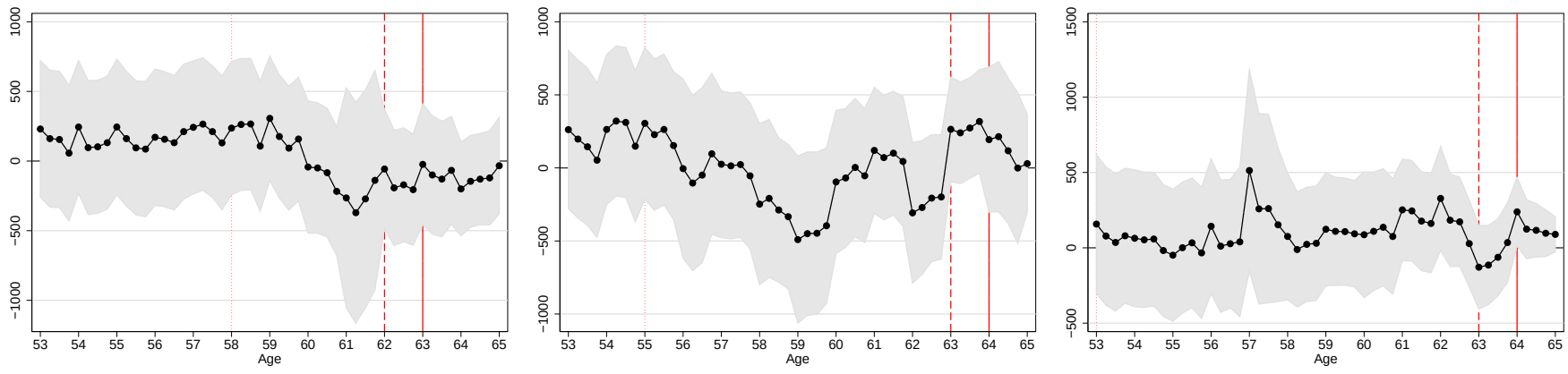
RDD Effects on Women's Total Income



(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.

RDD Effects on Total Household Income



(a) FRA 63 (b) FRA 64 (c) RAF

Source: Own calculations, based on SSSD.