

Efficiency vs. Equality

- lessons from the Norwegian pension reform

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The Norwegian pension system and reform

...in 1 minute

- Pension payments is a combination of several components
 - Public pension
 - Early retirement program
 - Occupational pensions
- The reform in 2011, of relevance for this presentation

	Private sector with ER program		Private sector without ER program	
	Before reform	After reform	Before reform	After reform
Earliest access age	62 (ER)	62 (ER + public)	67	62
Work incentives	Weak Earnings test from ER program	Strong Removal of earnings test	Strong	Unchanged (actuarial fair reduction in EAA)

Pre-reform ER pension:
Conditional on not working



Not work Not work Not work Not work Work

Work

Work

Work

Work

Work

Post-reform ER pension:
Unconditional on employment



Not work Not work Not work Not work Work Work Work Work Work Work

The Norwegian pension system and reform

...in 1 minute

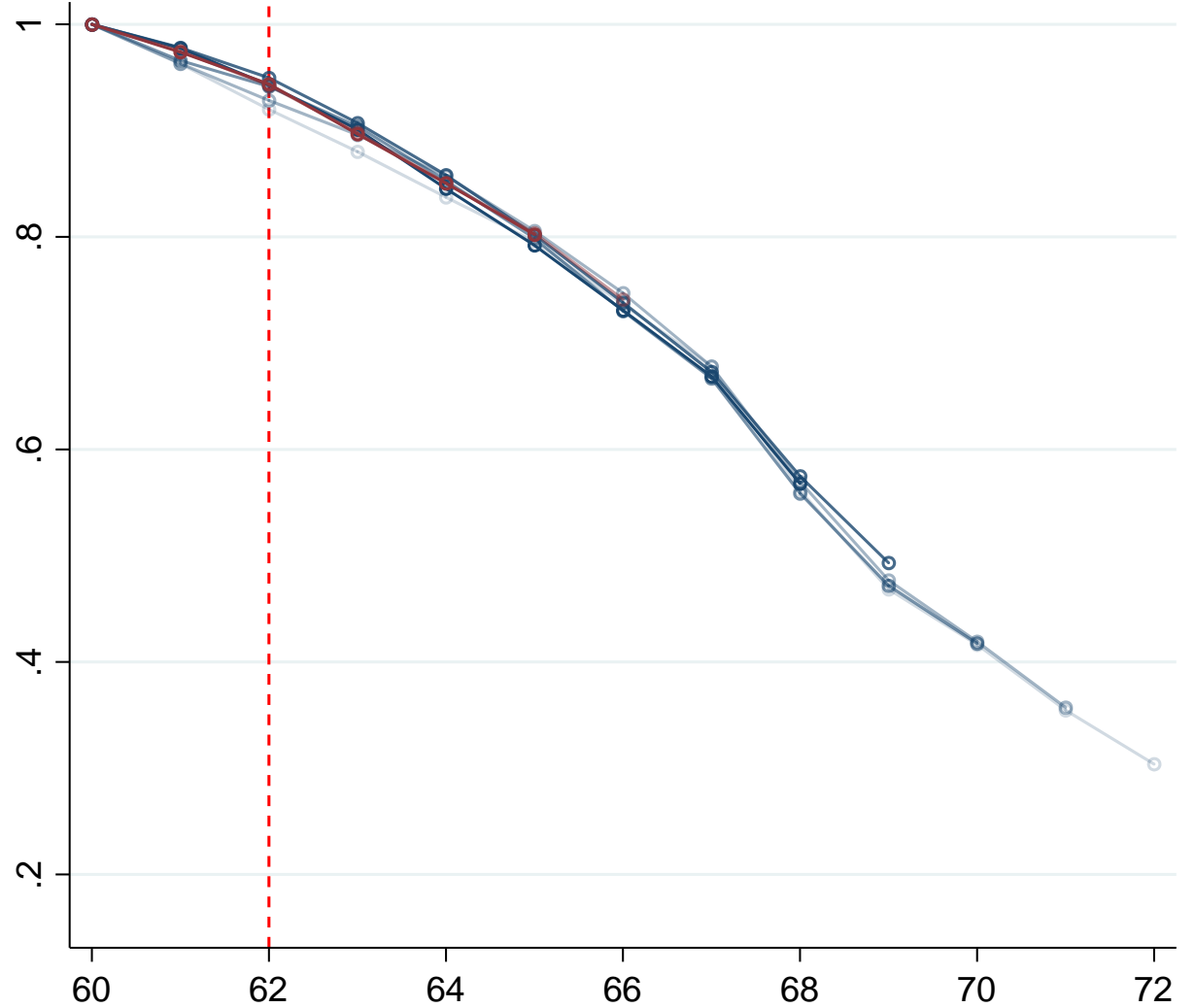
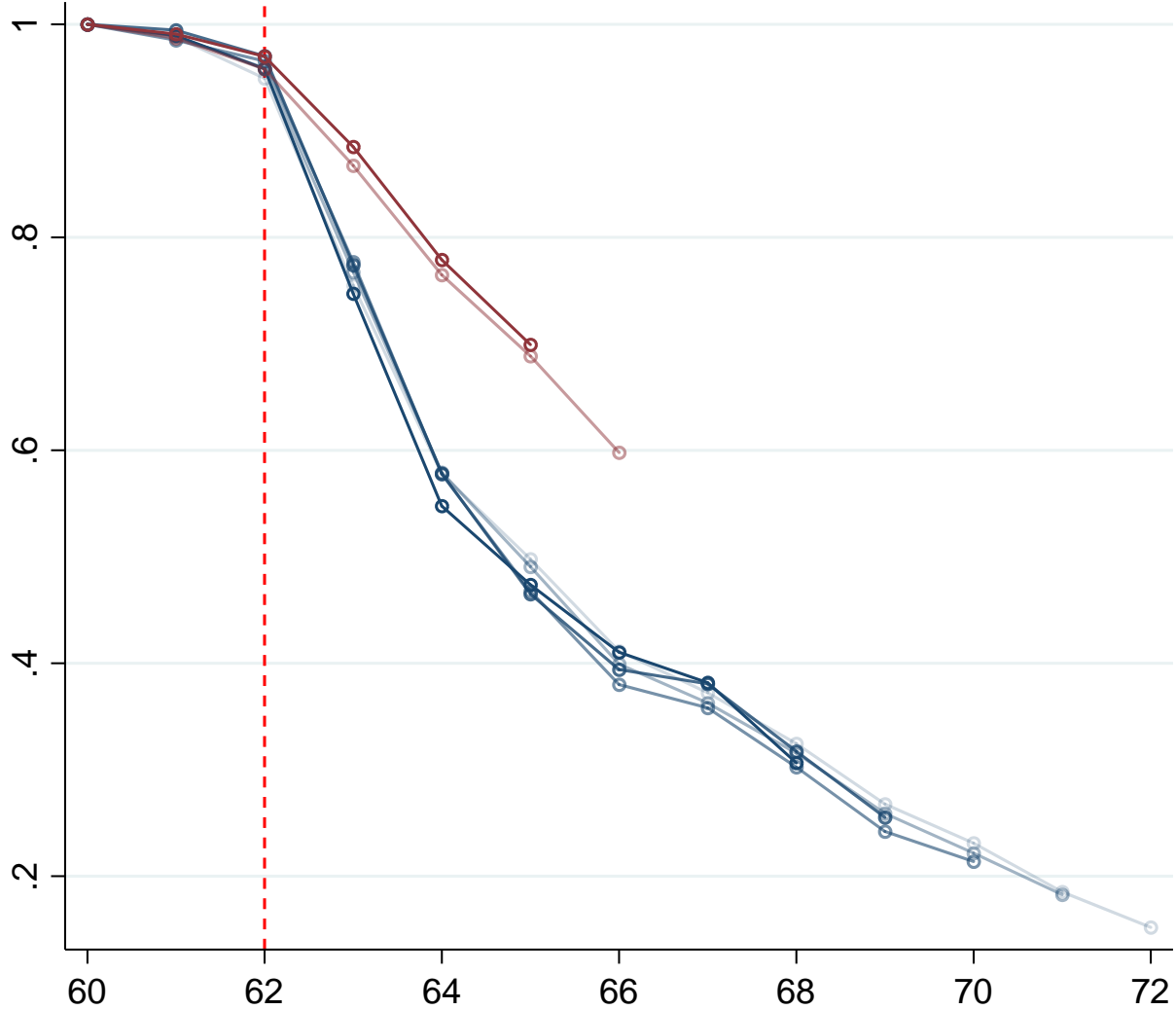
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Data

- Administrative data, no attrition, high quality
- All Norwegians employed at age 60 (earnings > 10.000 euro)
- Cohorts: 1943-50
- Income history from 1967 and onwards
- Use earlier cohorts for predictions out of sample
- Use information regarding
 - Labour income
 - Pension entitlements
 - Occupational codes
 - Sickness absence history
 - DI participation

Employment rate

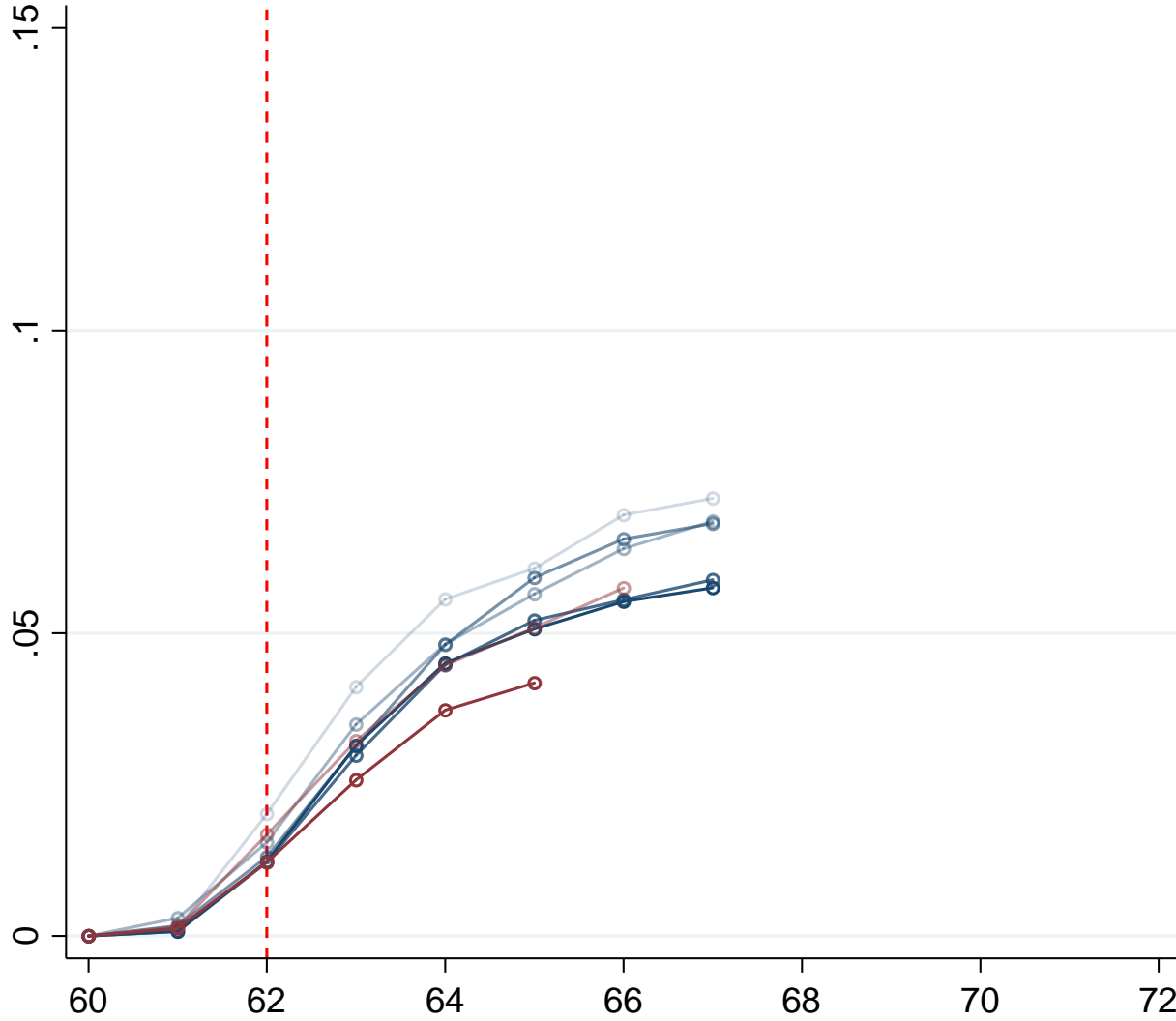


Cohorts:

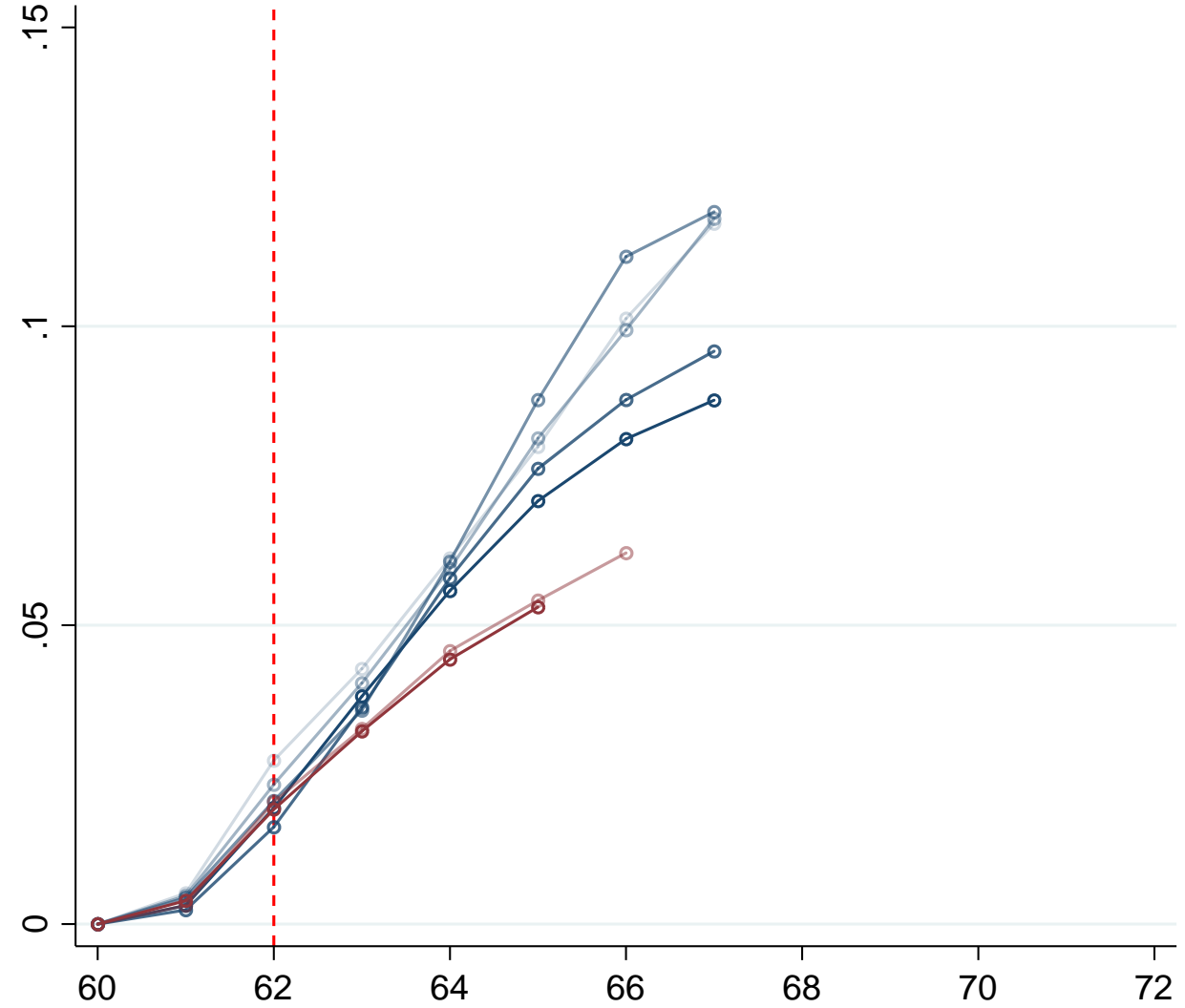


Retired with disability pension

Private sector AFP



No AFP



Cohorts:



Who responded?

- Stronger incentives had substantial effects
 - Hernæs et al. (2016): Aggregate elasticities: Age 63: 25-30%, age 64: 37-45%
- The incentive approach has winners and losers
 - «Always takers»: Those who worked anyhow simply got a bonus
 - Age 64: approx 60%
 - «Never takers»: Those who can't or won't work anyhow simply got much less
 - Age 64: approx 20%
 - «Compliers»: Those who did not work before, but do it now
 - Age 64: approx 20%

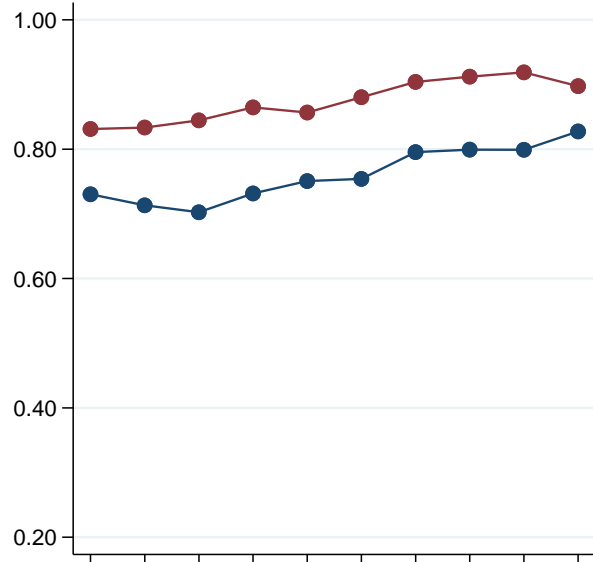
Responses after life-time income (21-60)

- Divide workers into income deciles after the sum of labor income from age 21 to 60
- Strongly correlated with a number of other SES indicators
 - ISEI: Job-specific social class
 - Job-specific labor market exit rates
 - Expected life-length (occupation based)
 - Sickness absence history (occupation based as well as individually based)
 - Education
- Study reform responses within each of these groups

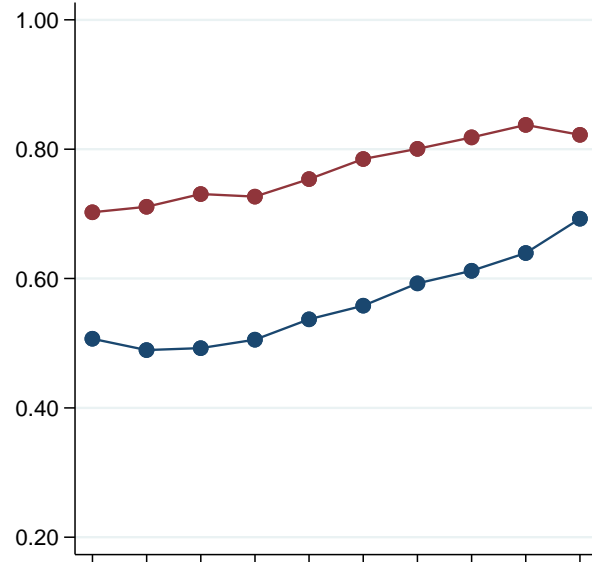
Employment rate at ages 63-66 (Private sector AFP)

By work-life income deciles (age 21-60)

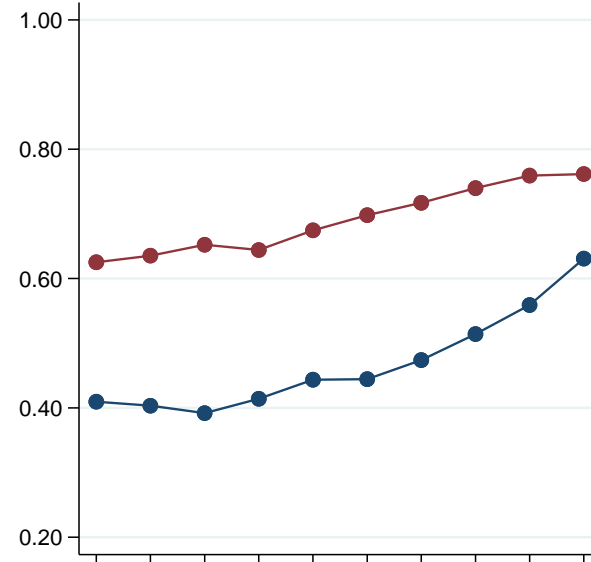
Employment rate at age 63



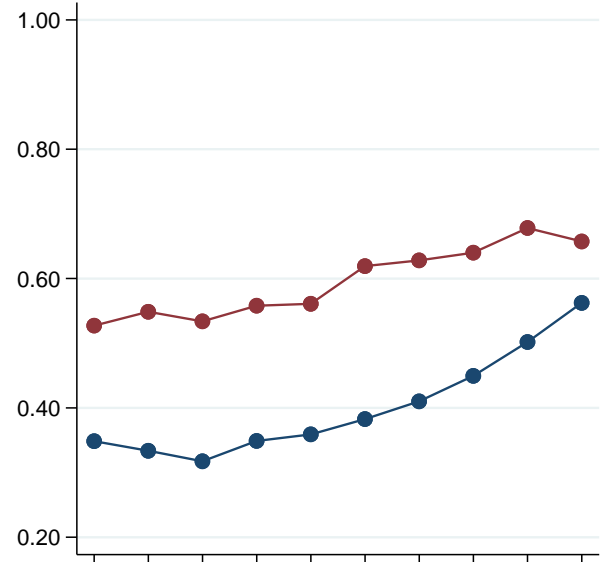
Employment rate at age 64



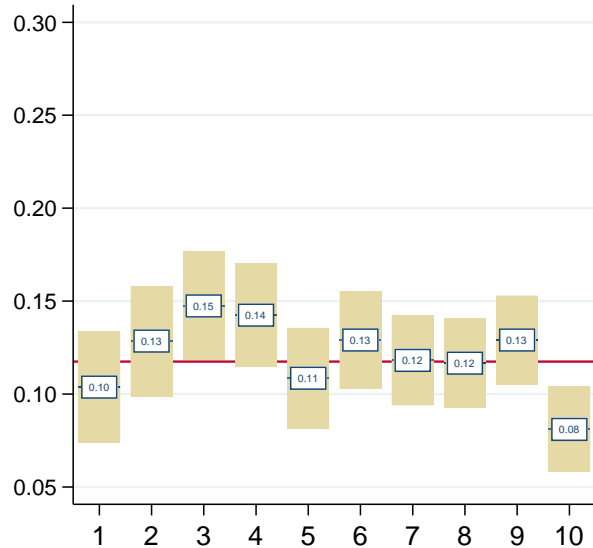
Employment rate at age 65



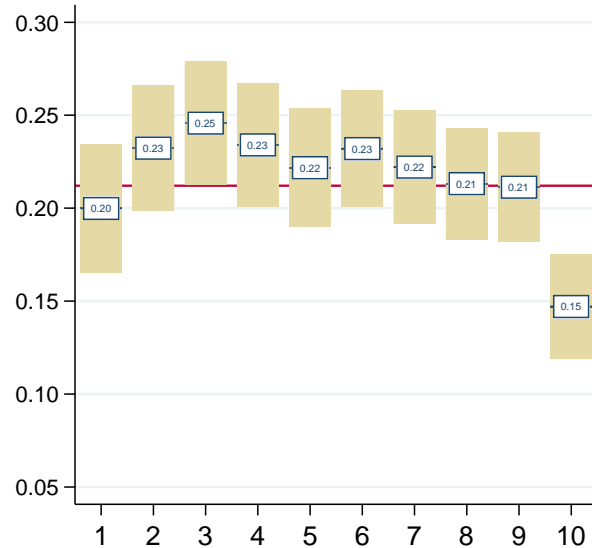
Employment rate at age 66



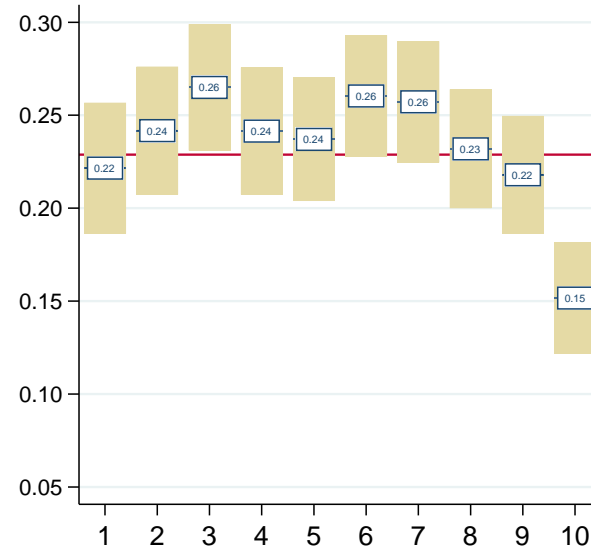
Reform effect



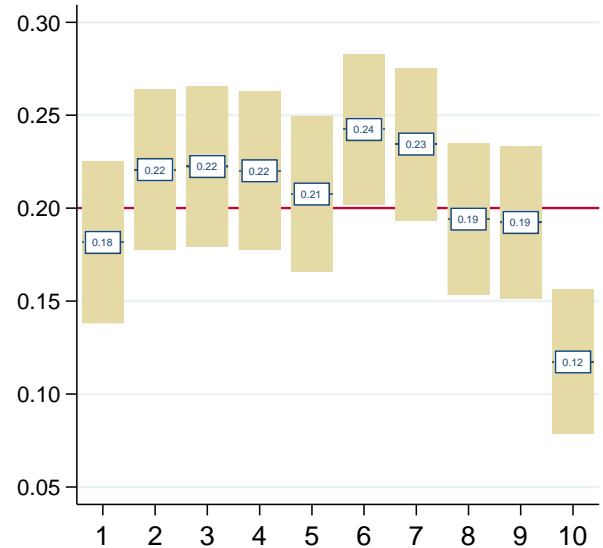
Reform effect



Reform effect



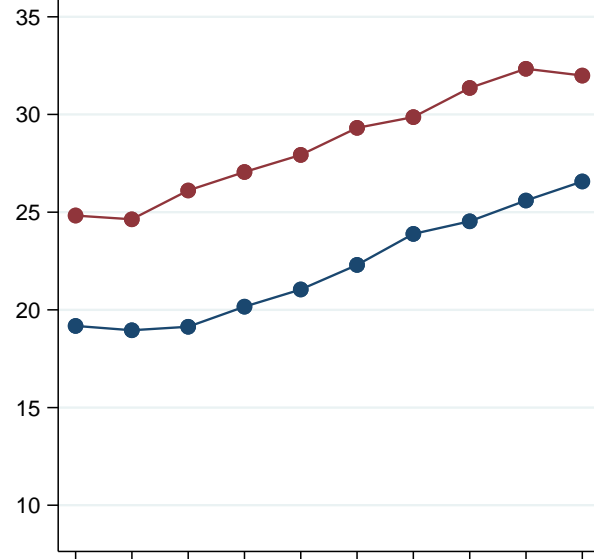
Reform effect



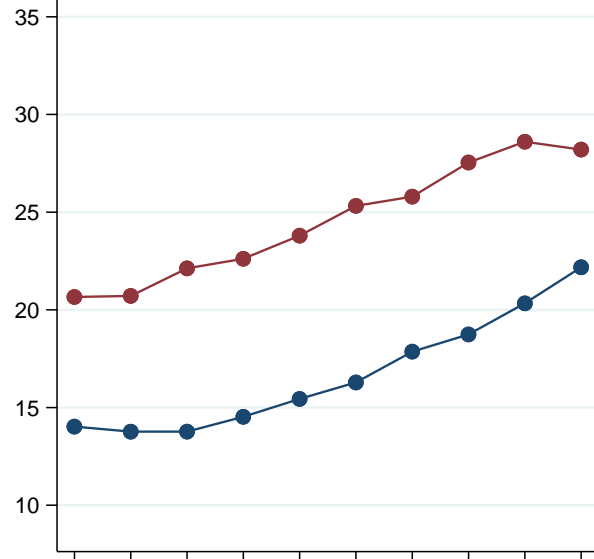
Weekly hours worked at ages 63-66 (Private sector AFP)

By work-life income deciles (age 21-60)

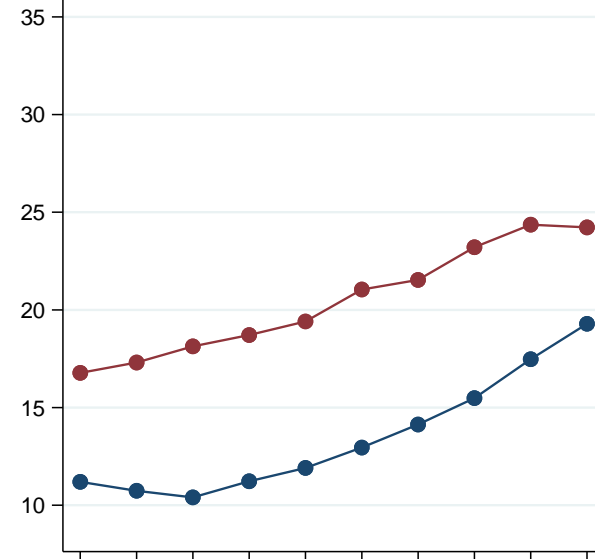
Hours worked at age 63



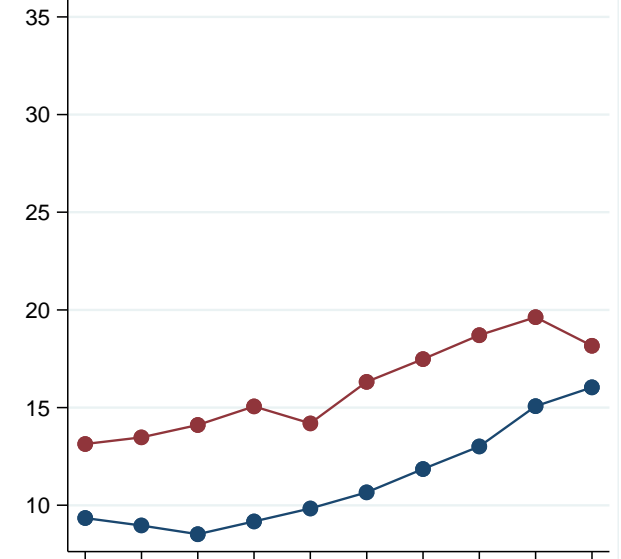
Hours worked at age 64



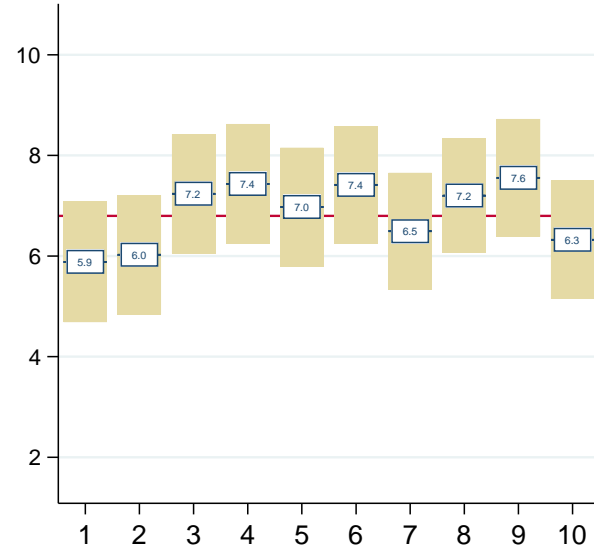
Hours worked at age 65



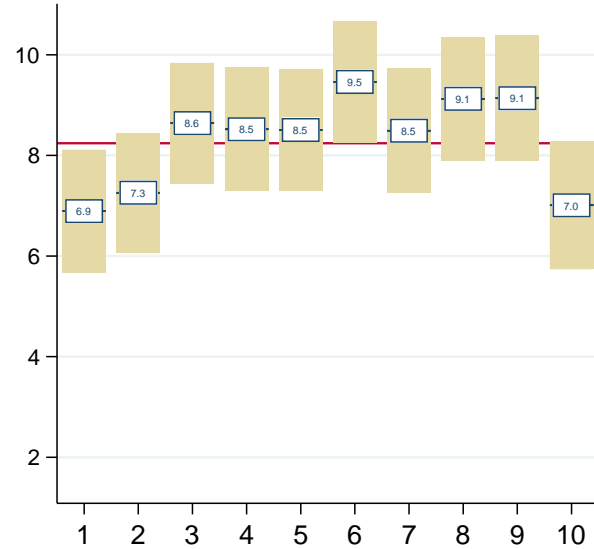
Hours worked at age 66



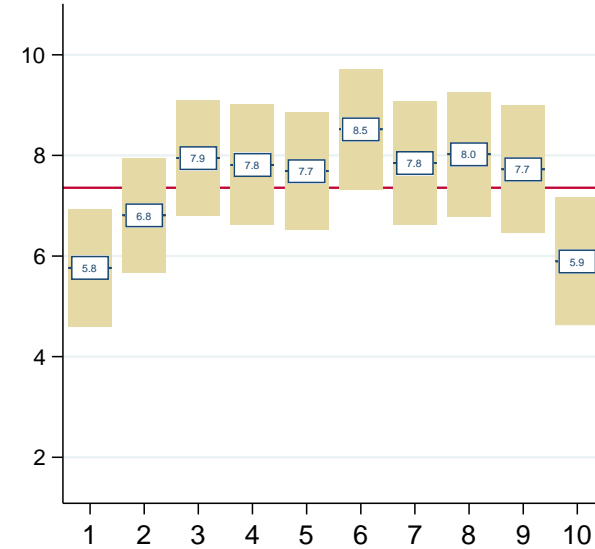
Reform effect



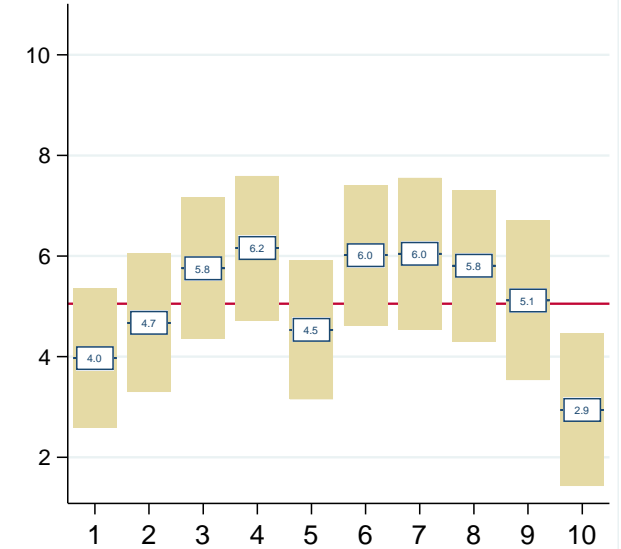
Reform effect



Reform effect

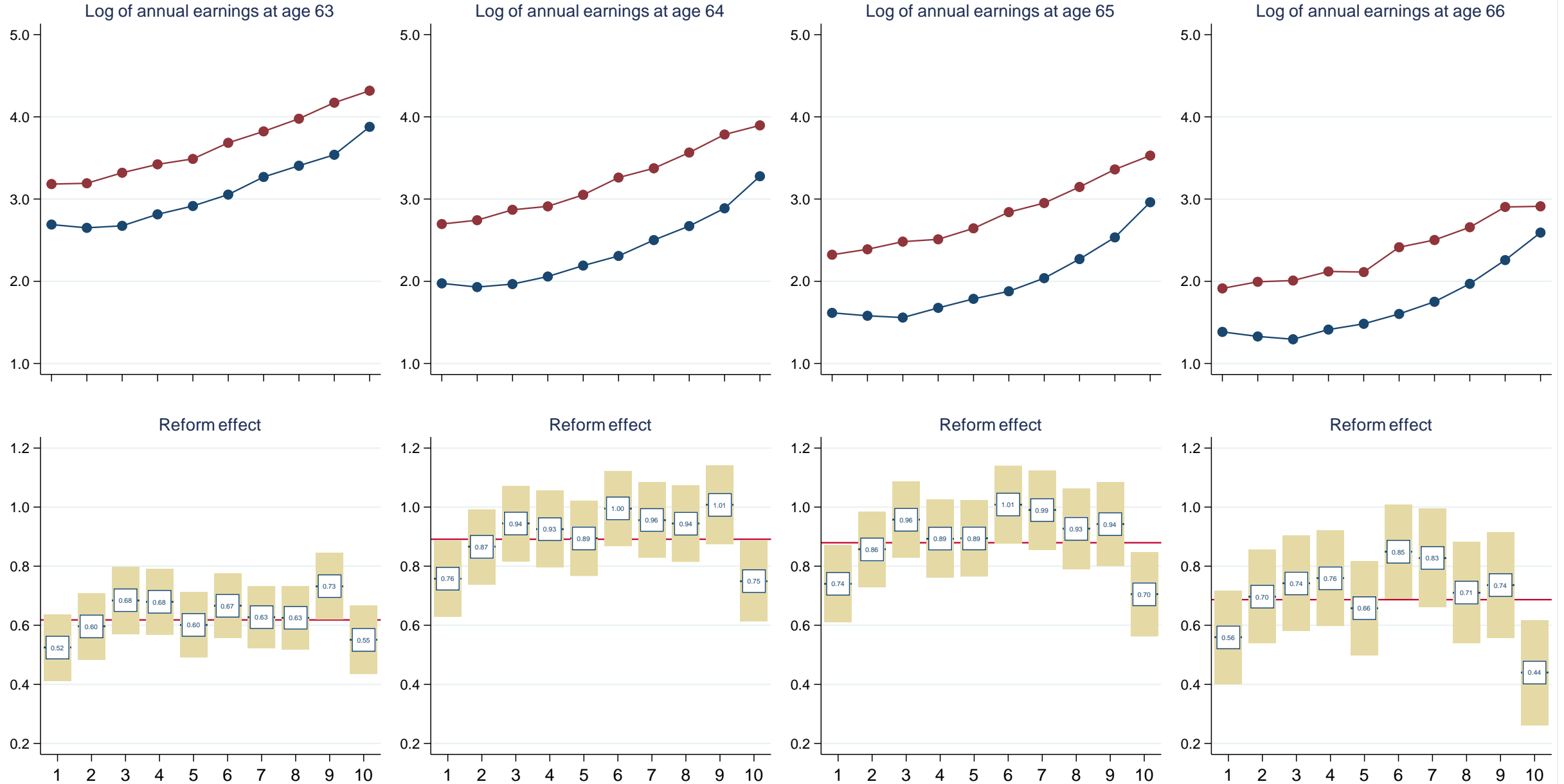


Reform effect



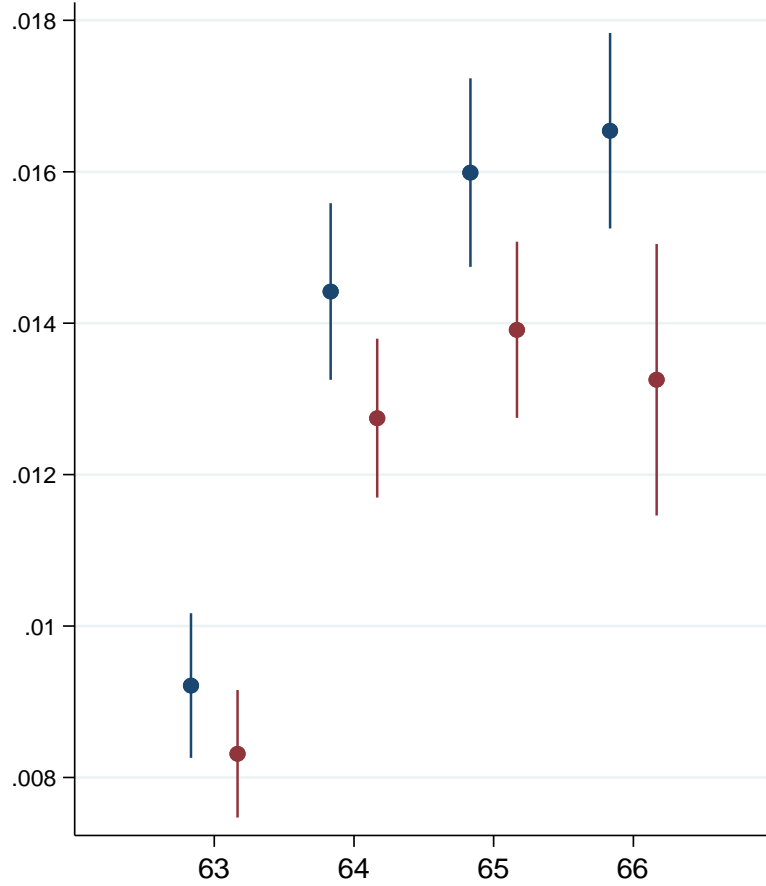
Annual earnings at ages 63-66, logs (Private sector AFP)

By work-life income deciles (age 21-60)

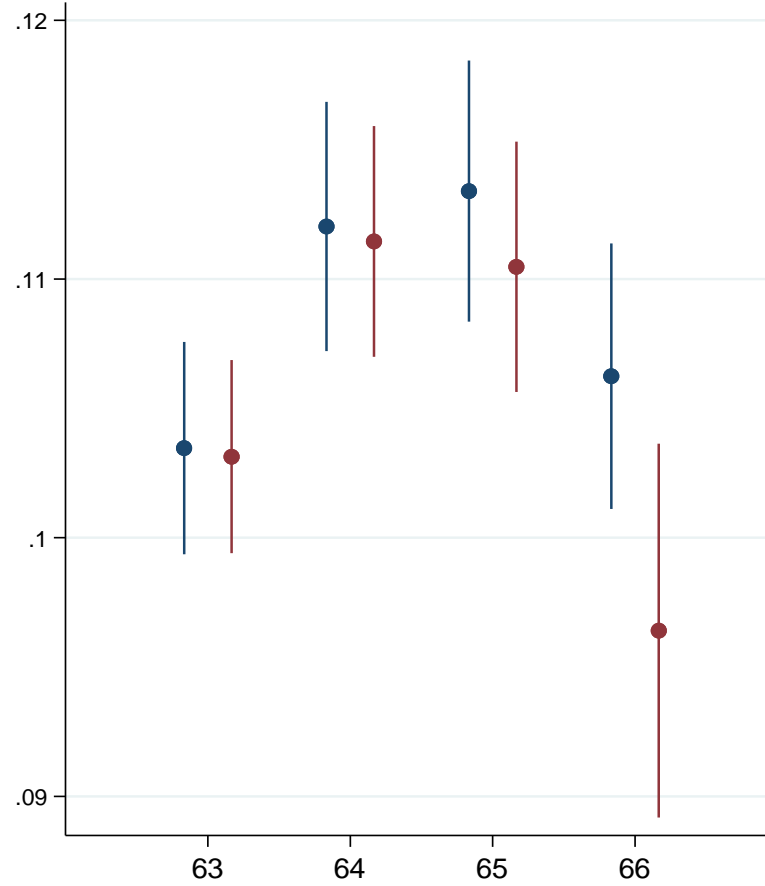


Income gradient in outcomes before and after reform (Private AFP)

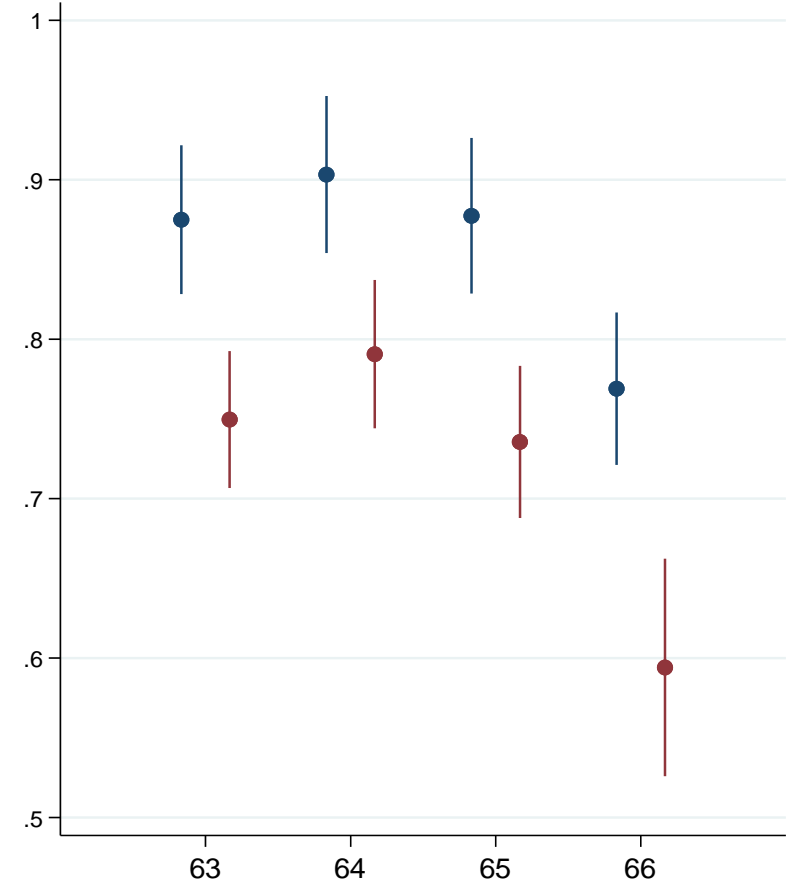
Employment



Earnings (logs)



Weekly work hours

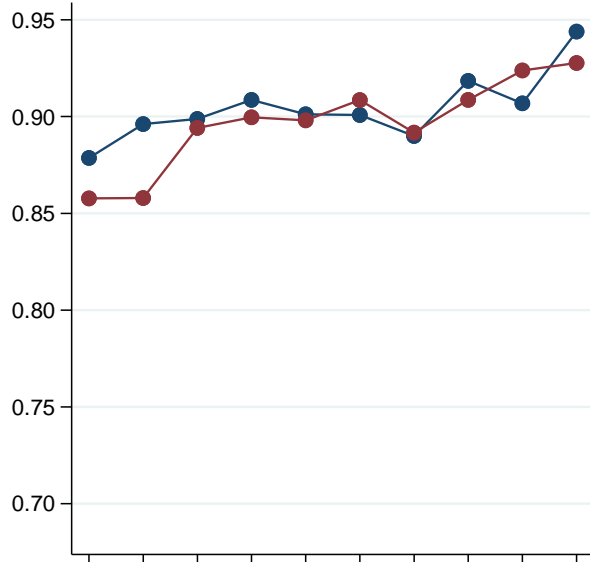


● Pre-reform cohorts (1946-47) ● Post-reform cohorts (1949-50)

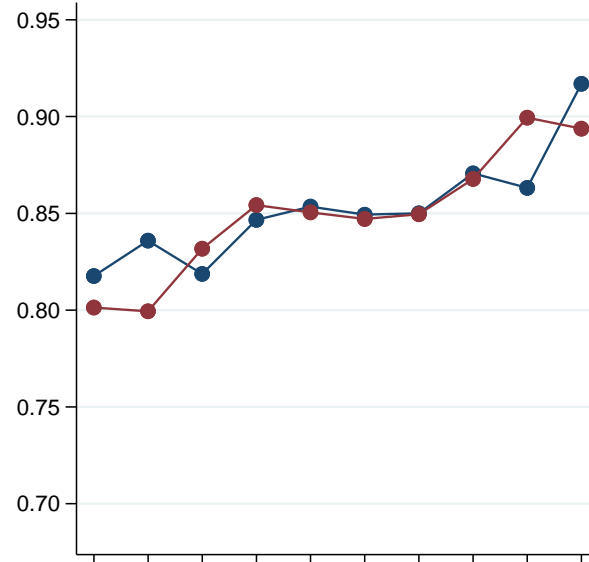
Employment rate at ages 63-66 (No AFP)

By work-life income deciles (age 21-60)

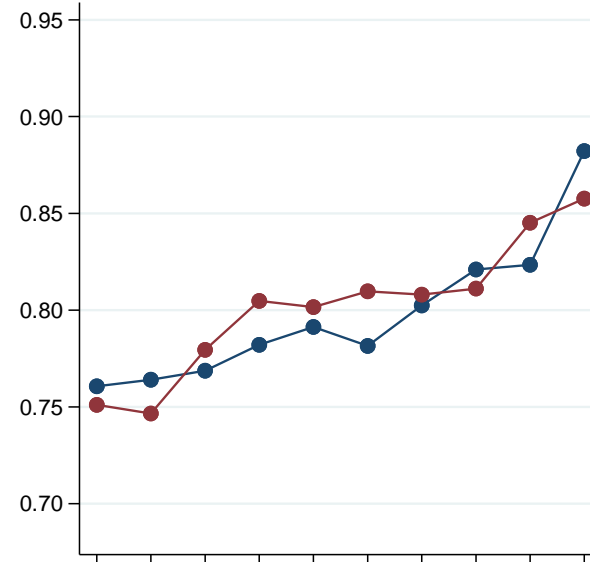
Employment rate at age 63



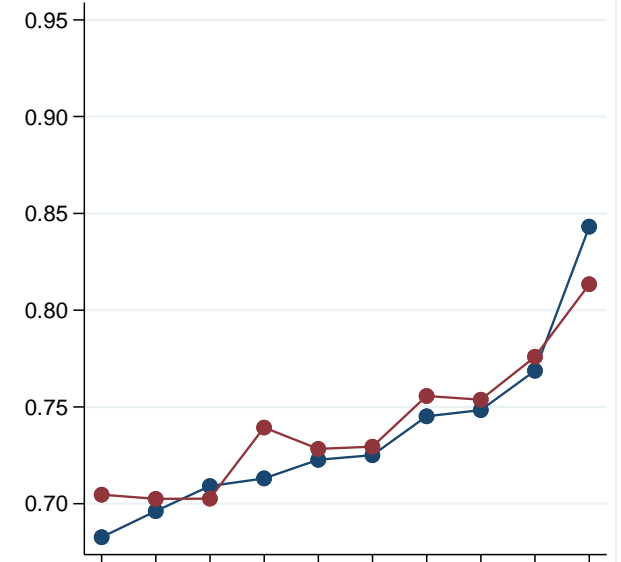
Employment rate at age 64



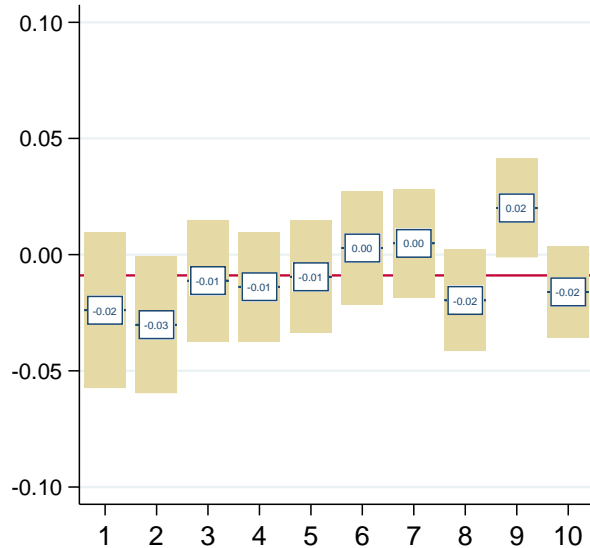
Employment rate at age 65



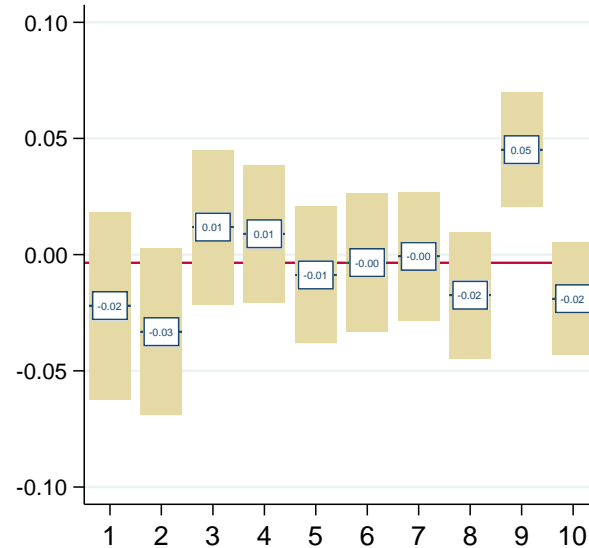
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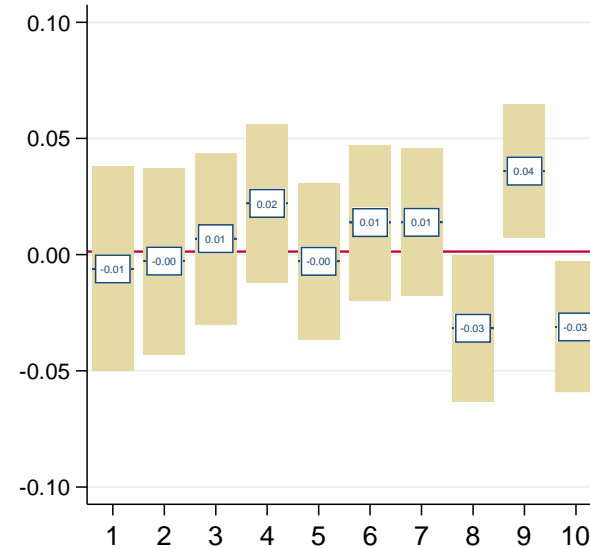
Reform effect



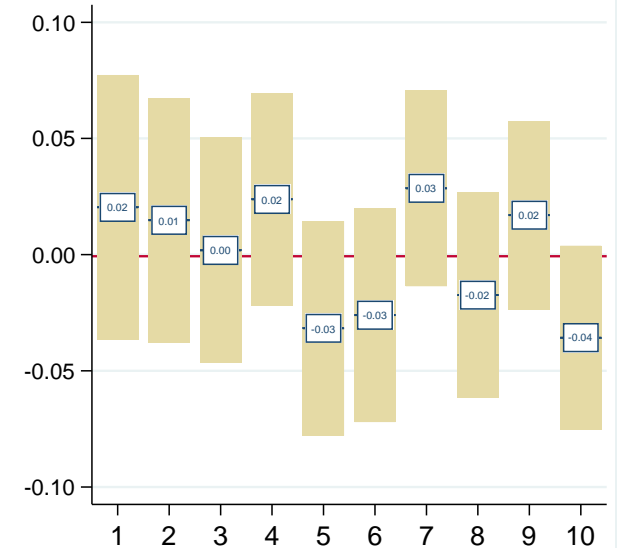
Reform effect



Reform effect



Reform effect



A brief detour...

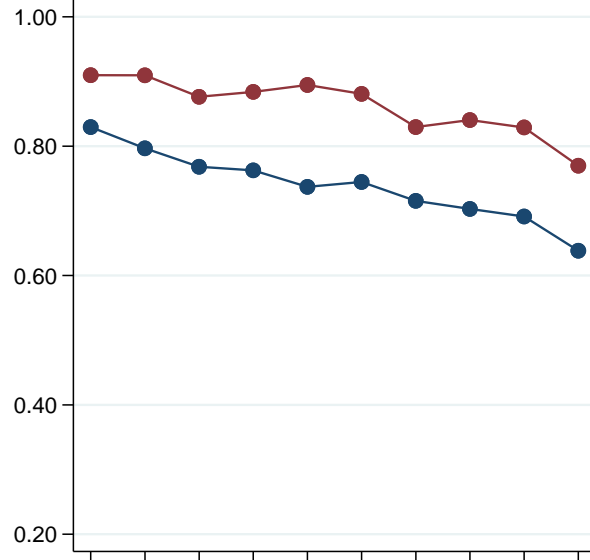
Alternative approach: Sickness leave history

- Divide the sample in deciles after sickness benefit history preceding 15 years (age 45-60)
- Repeat the exercise

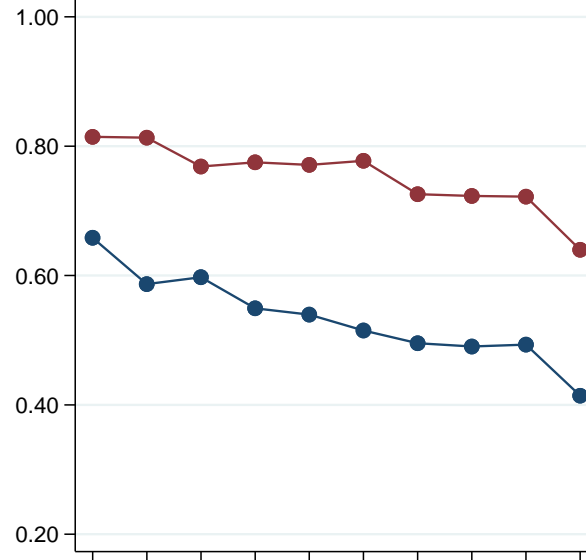
Employment rate at ages 63-66 (Private sector AFP)

By sickness leave deciles

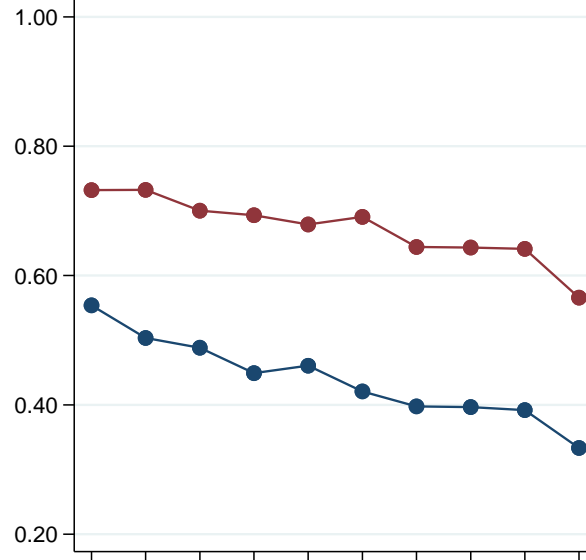
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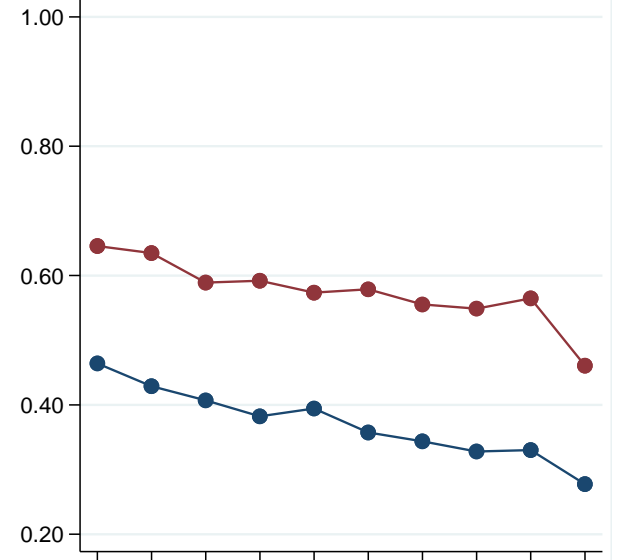
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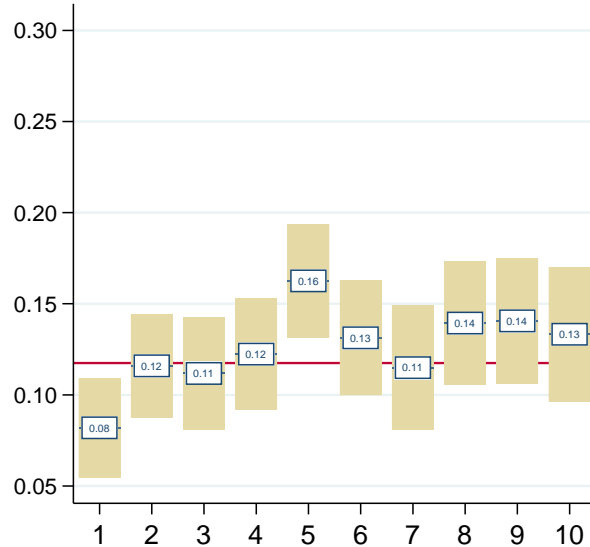
Employment rate at age 65



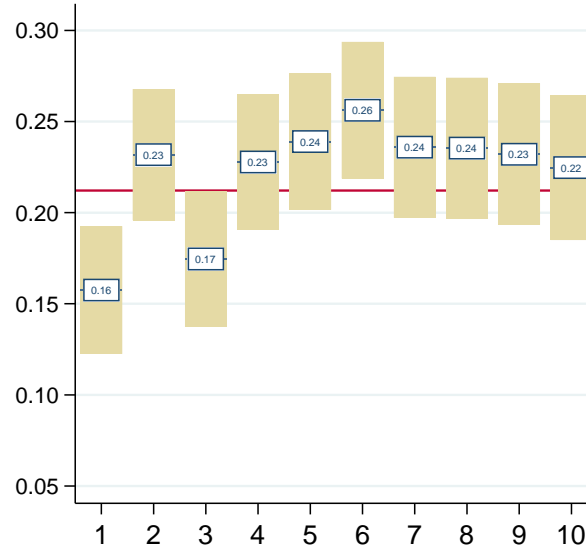
Employment rate at age 66



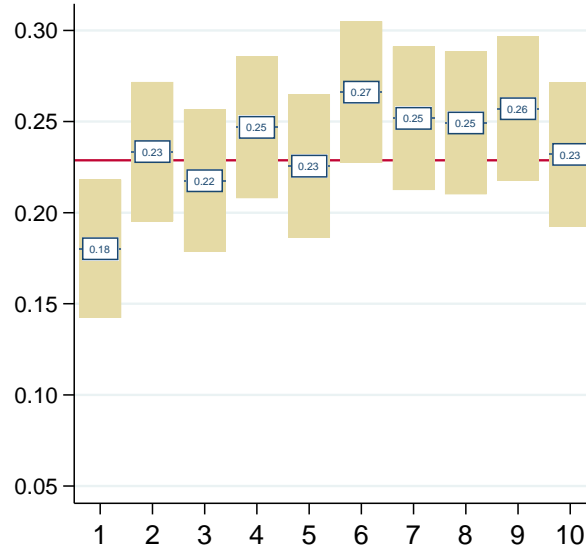
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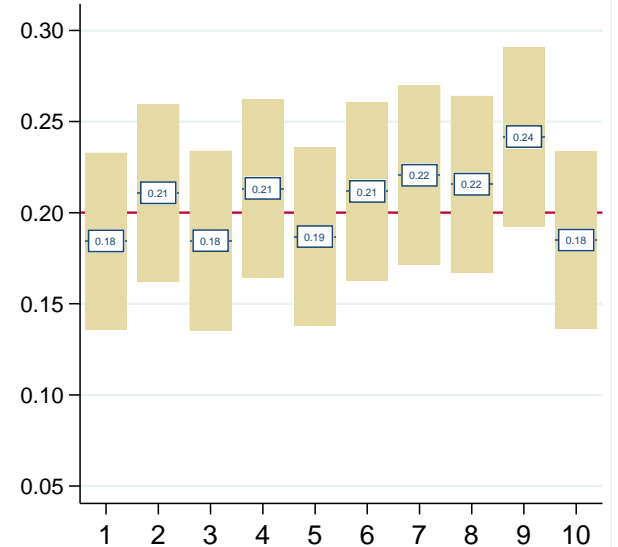
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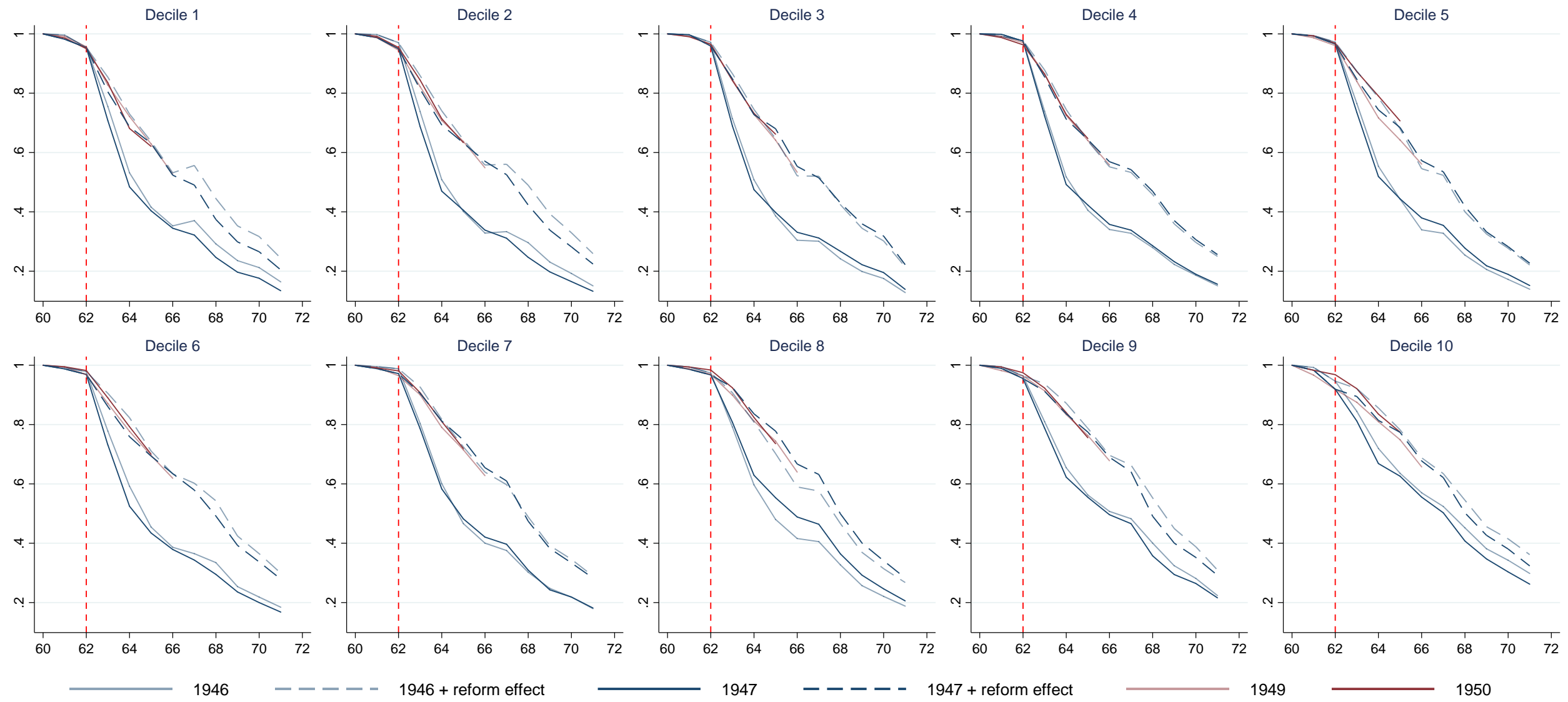
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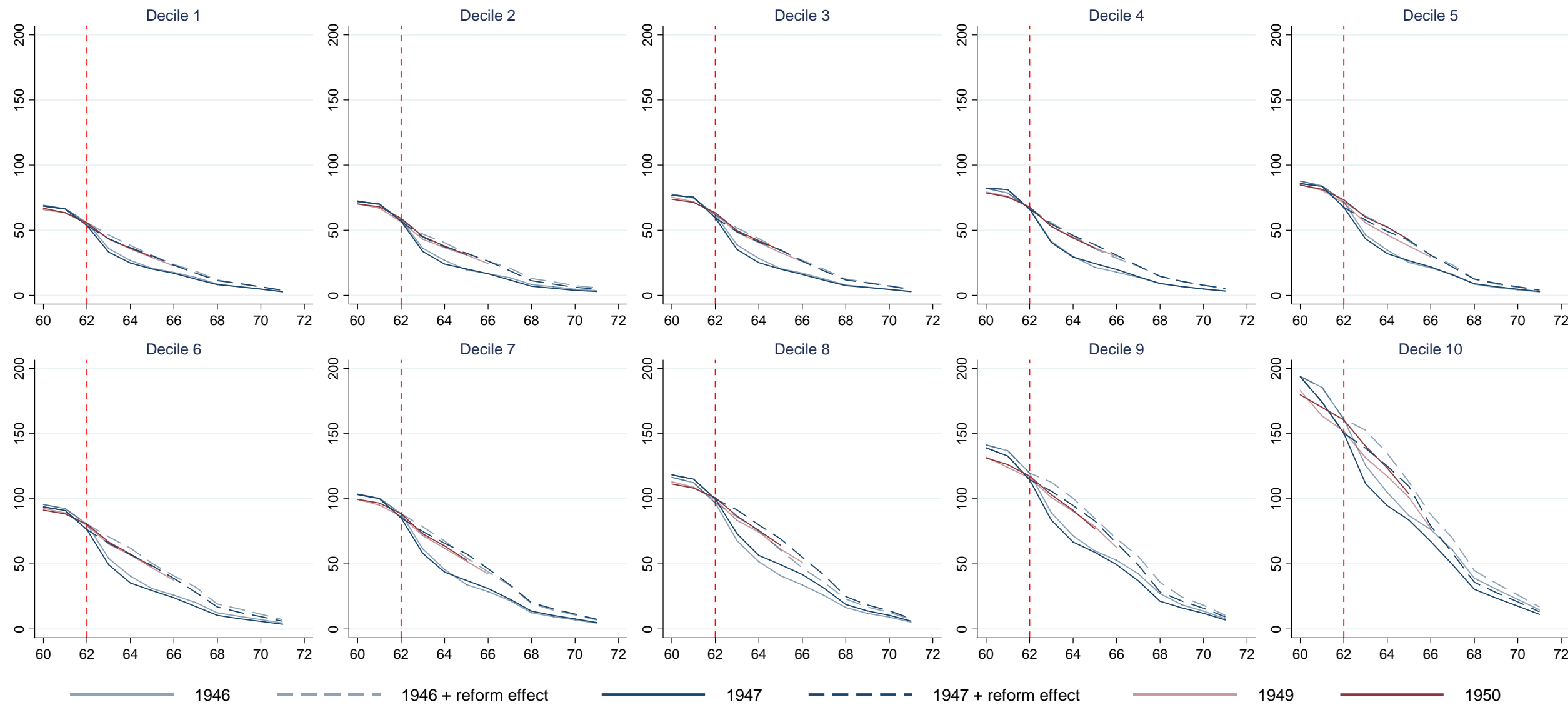
Distributional consequences

- Return to deciles based on life-time income
- Reform effects are estimated up to age 66
- Predict earnings and employment for higher ages, assuming..
 - Retirement hazard, by age/decile, follows earlier cohorts after age 66
 - Earnings changes with age, by age/decile, follow earlier cohorts after age 66

Employment rate - Private AFP



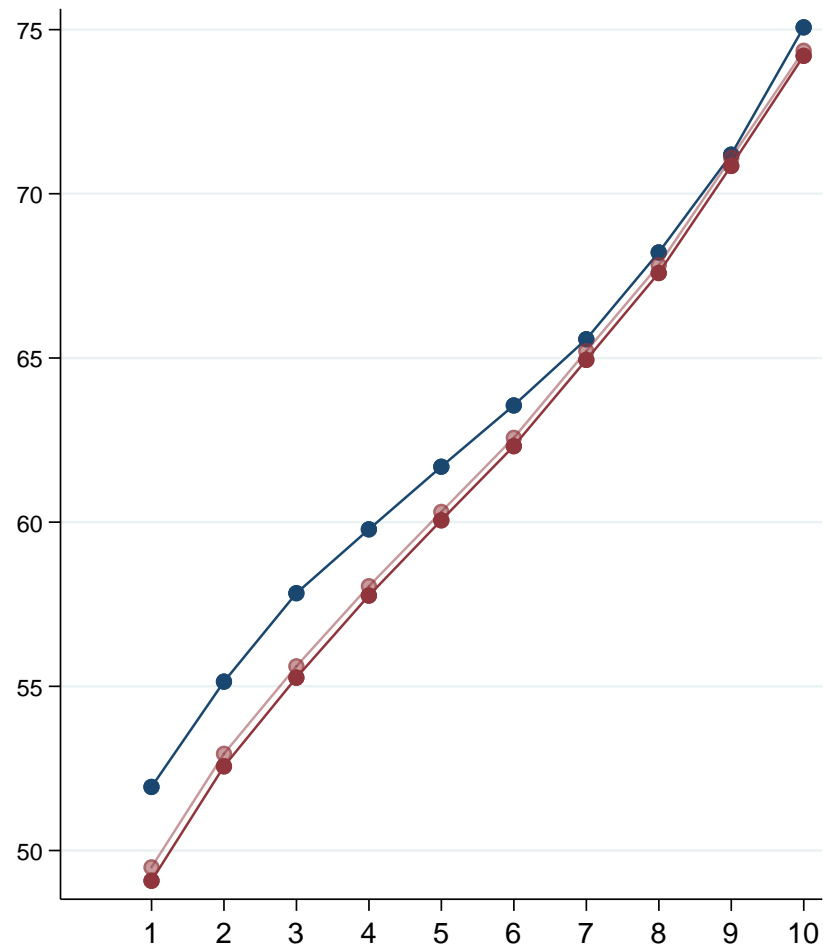
Average earnings (USD 1,000) - Private AFP



Distributional consequences

- Reform effects are estimated up to age 66
- Predict earnings and employment for higher ages, assuming..
 - Retirement hazard, by age/decile, follows earlier cohorts after age 66
 - Earnings changes with age, by age/decile, follow earlier cohorts after age 66
- Construct three income-series from age 60 and onwards...
 - Actual rules, for the 1946/47 cohort. ER program from age 62, public pension from age 67
 - New rules: Transformed ER program, public pension from age 62, longevity adjustment*
 - *Annual pension downward adjusted to keep accumulated pensions from age 67 to expected lifelength constant across cohorts
 - New rules + reform effect: Add the reform response within each decile

Pension income



Actual rules

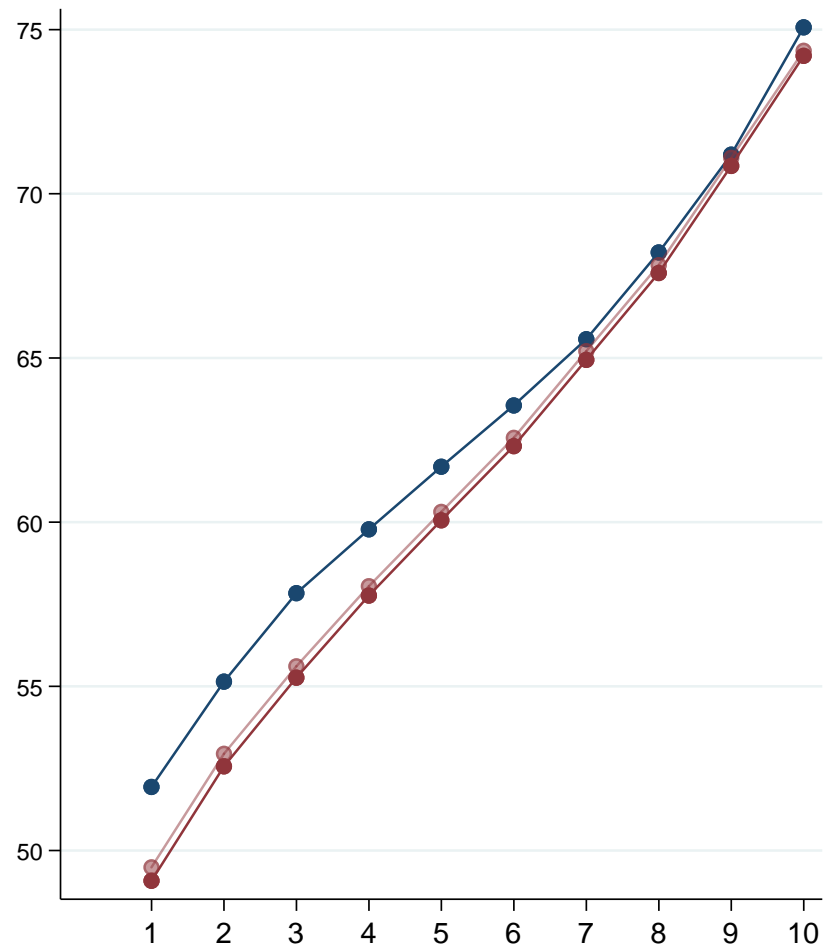


New rules



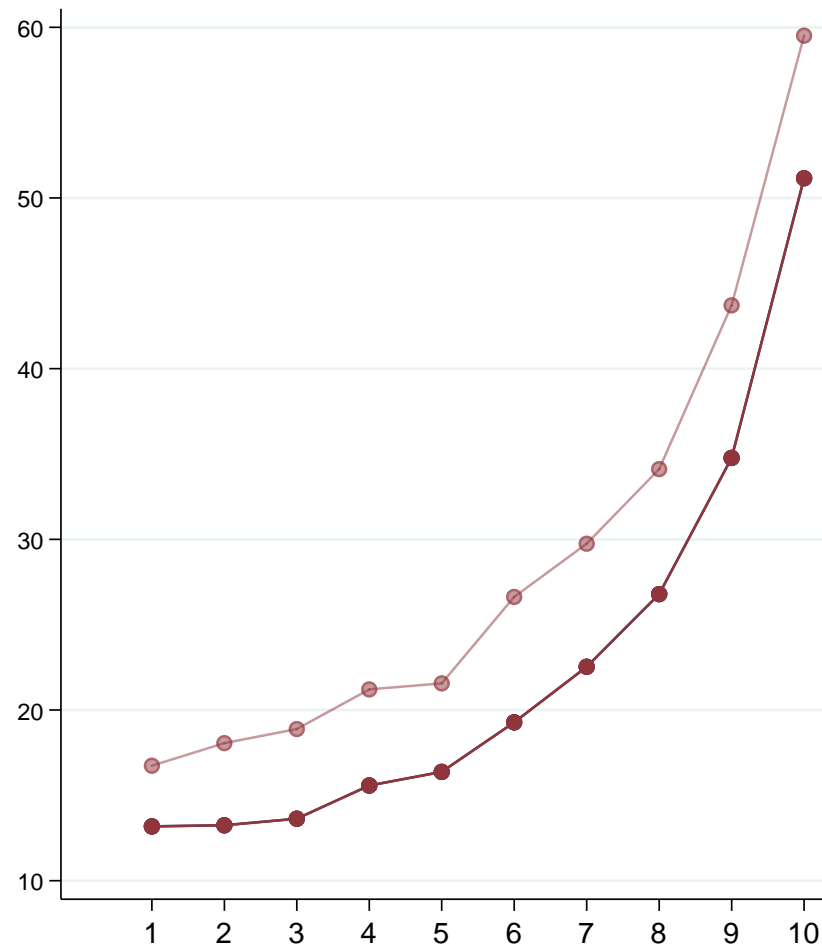
New rules + reform effect

Pension income



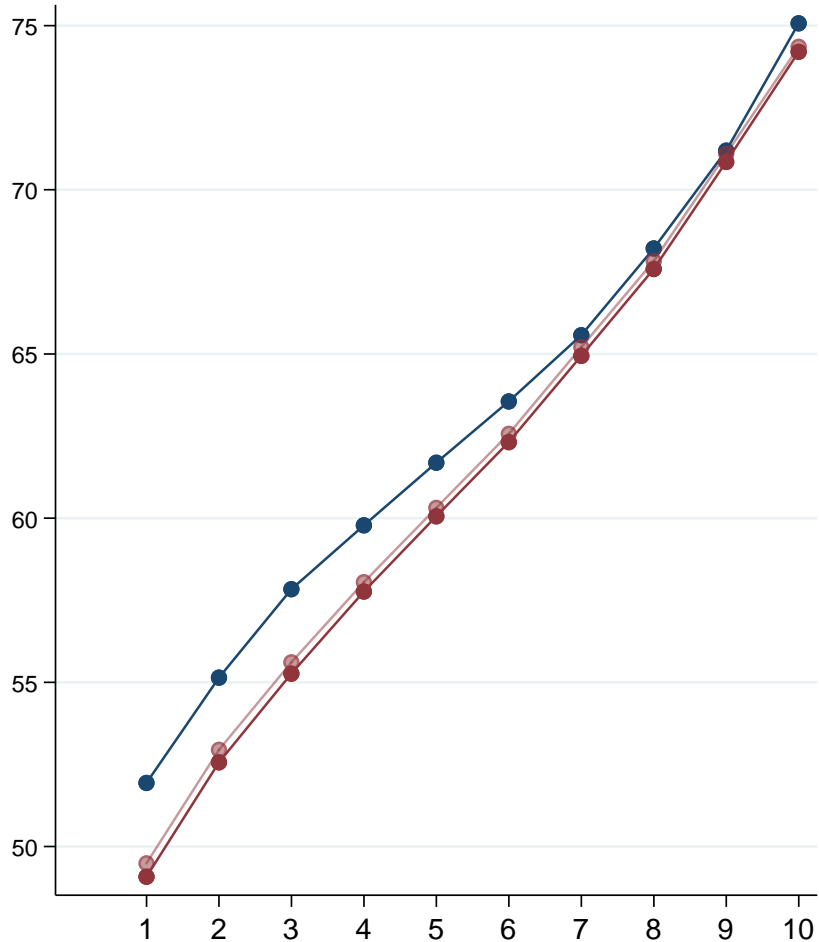
Lifetime income (Private AFP)

Labour income



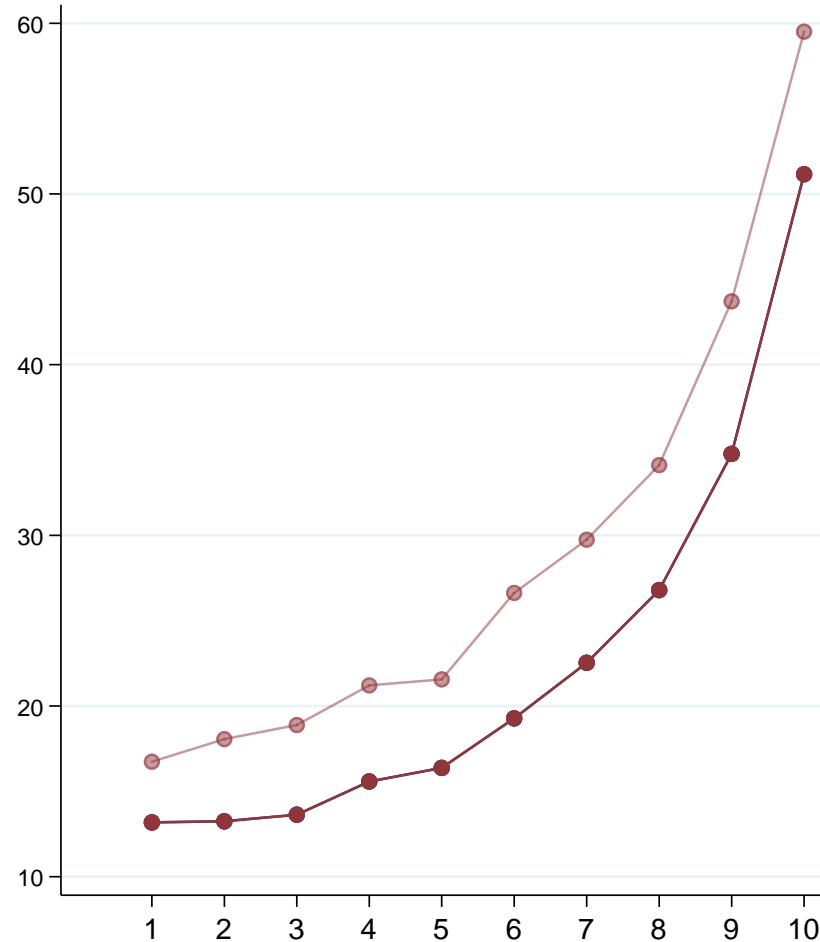
—●— Actual rules —●— New rules —●— New rules + reform effect

Pension income

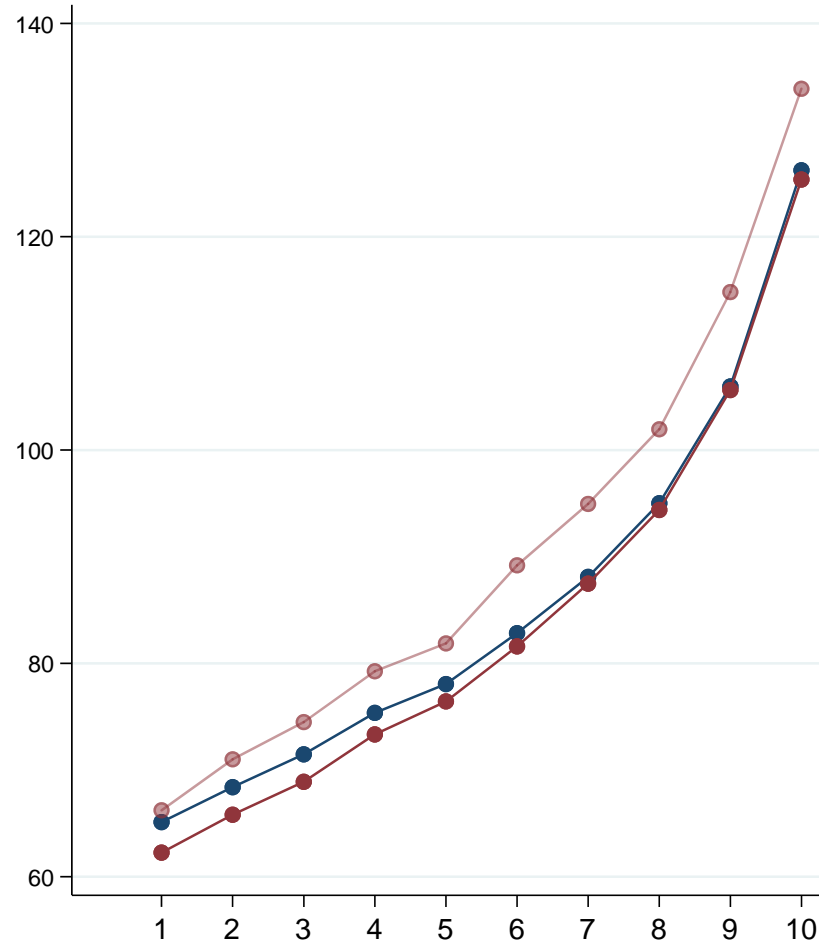


Lifetime income (Private AFP)

Labour income



Total income

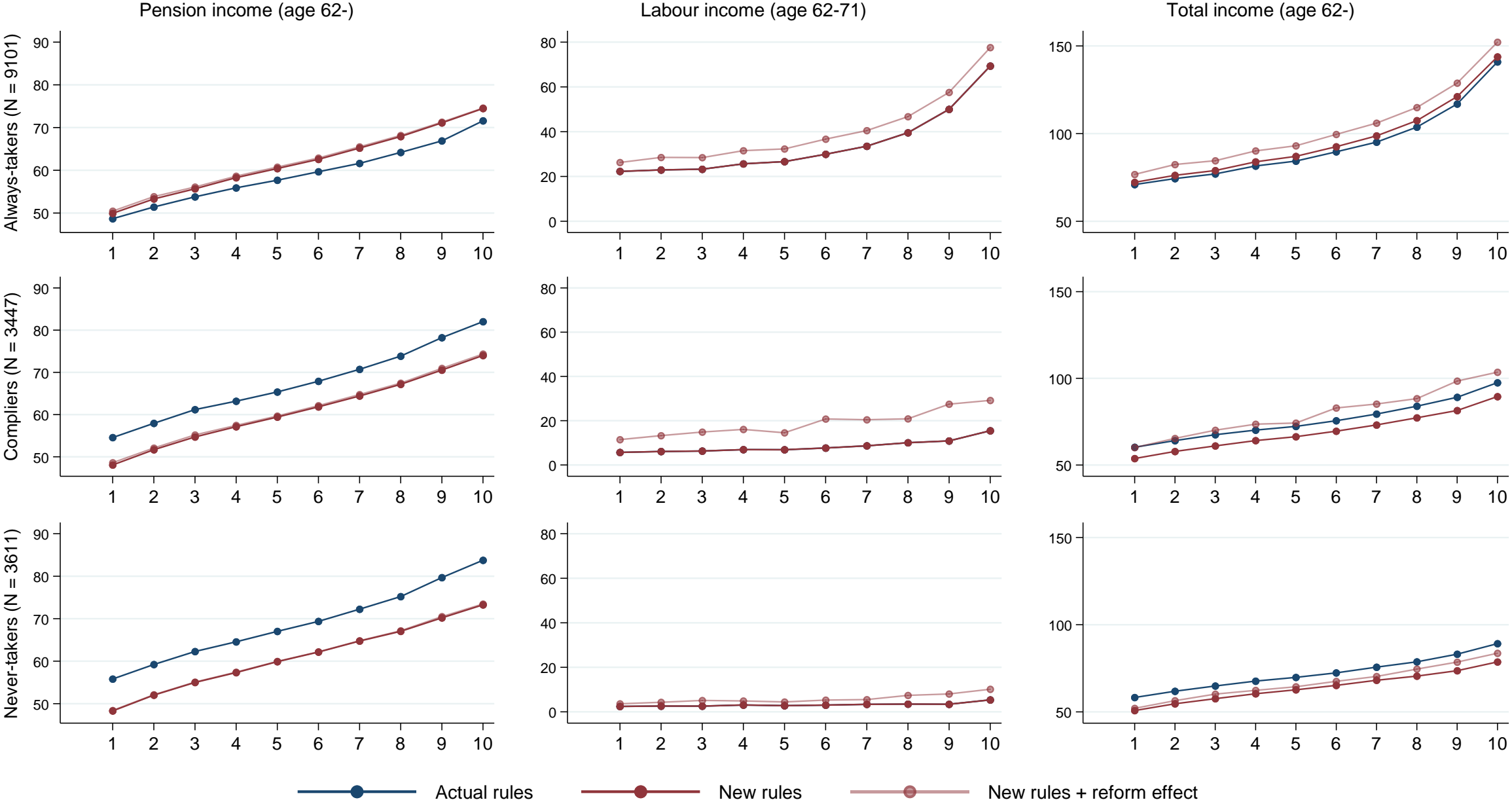


—●— Actual rules —●— New rules —●— New rules + reform effect

Winners and losers

- **Alwaystakers:** Got the reformed ER pension as a bonus
- **Nevertakers:** Lost substantially as the new unconditional ER pension is much lower than the old conditional
- **Compliers:** Replaced ER pension with labor income
- Try to separate these groups using a statistical model for prediction.

Lifetime income after 62 by complier status at age 64 (Private AFP)



Summary

- Norwegian pension reform (2011) allows us to test two distinct policy options
 - Stronger work incentives for seniors
 - Massive impact on employment
 - Increased liquidity by reducing EAA in an actuarial fair system
 - No impact on employment but reduced inflow to DI
- Reform responses surprisingly homogeneous
 - In all 10 income deciles, the extra labor income outweighs the loss from the change in ER benefits
- Still winners and losers
 - Winners 60%, losers 20%
 - Compliers 20%