# Intergenerational Mobility Along Multiple Dimensions: Evidence from Switzerland

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# Motivation

- Relatively large literature on mobility *measures*
  (Deutscher and Mazumder, 2021; Jäntti and Jenkins, 2015)
- But: many possible dimensions of social mobility
  - income
  - wealth
  - education
  - occupation
  - ...
- Mobility may be high in one but low in another dimension

This paper:
consistent measures of intergenerational mobility (IGM)
along these four dimensions in Switzerland

# Data and Sample Definition

**Data: linked register and population survey data**

- Census 2012 (linkage parents-children present in Switzerland)
- Social Security Earnings Records 1981–2016
- Structural Surveys 2010–2018, Census 1990 & 2000
- Wealth and income tax returns 2011–2015 (8 cantons)

**Baseline Sample**

- Children in cohorts 1967-1982
- Match with both parents $\rightarrow$ 667,047 links
- Excluded: children where only 1 parent found in the data

**Coverage**

- Foreign-born children not covered (but 2nd gen immigrants)
- On average, 61% of a cohort is matched (Swiss-born)
- Structural Survey: 28% of linked children from baseline sample

# Variable Definitions

**Income:** earnings + UI + DI

- Child's income: average of 3 years, age 32–34
  - Ranking: within *own* birth cohort
- Parents' income: sum of mother's and father's income, averaged over 6 years (when child is 15–20)
  - Ranking: within *child's* birth cohort (Chetty et al., 2014a,b)

**Wealth:** net worth

- Child's and parents' wealth: average of the years 2011–2015
  - Ranking: always with respect to own birth cohort

**Education:** highest education level

- Construct latent education distribution (Asher et al., 2021; Novosad et al., 2020) example lat. distr. 1 example lat. distr. 2

**Occupation:** Socio-Economic Index Occupation Status (ISEI-08)

- Based on min. education and mean labor earnings (Ganzeboom et al., 1992; Ganzeboom and Treiman, 2010)
- Continuous variable (10–90)
- Mapping of occupation codes (ISCO-08) to ISEI

# Mobility Measure 1: Rank-Rank Slope (RRS)

$$P_{y,t} = \alpha + \beta P_{y,t-1} + \epsilon \tag{1}$$

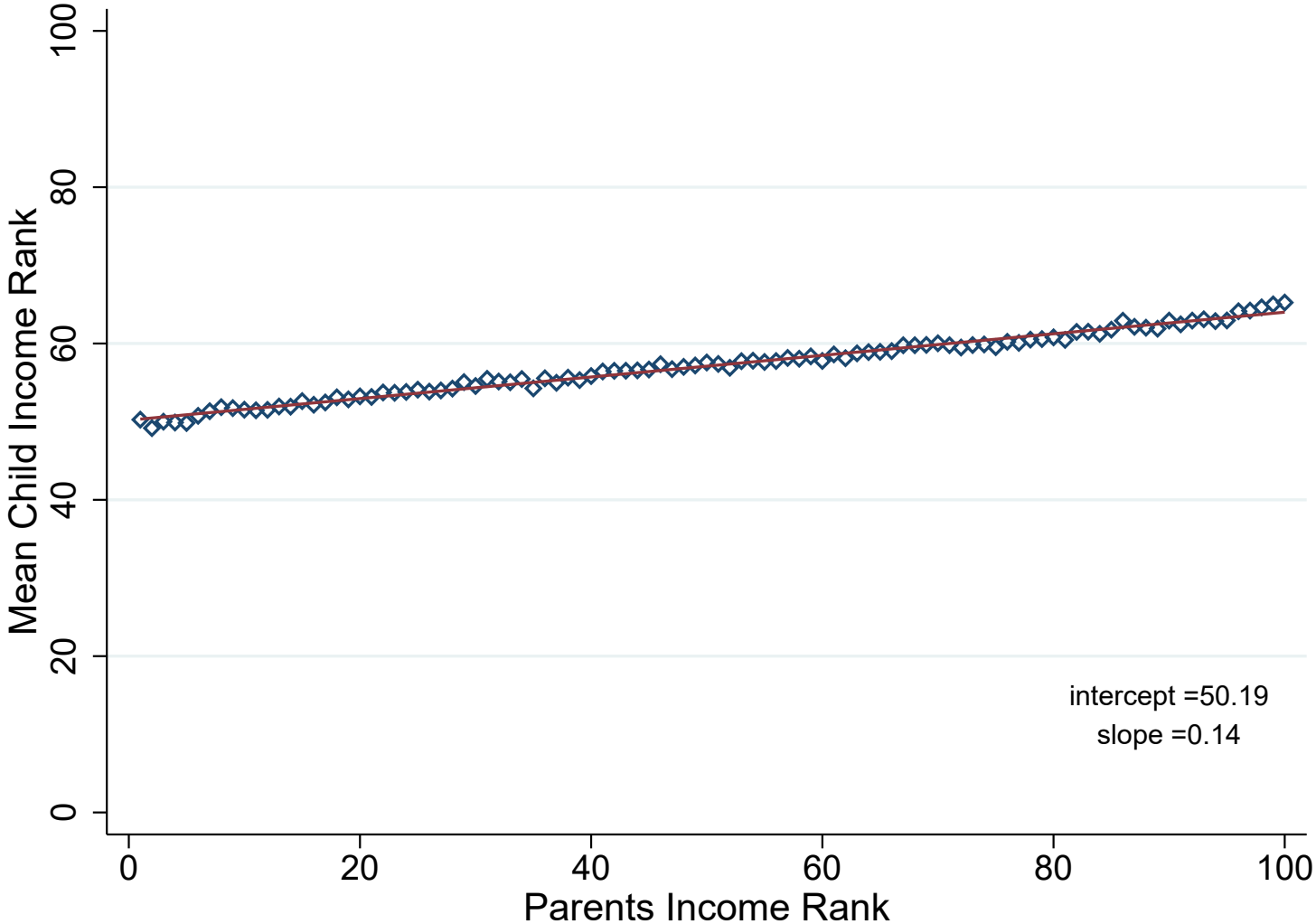
- $P_{y,t}$: child's percentile rank in outcome variable $y$
- $P_{y,t-1}$: parent's percentile rank in outcome variable $y$
- $\beta$ = RRS

- High RRS $\rightarrow$ low intergenerational mobility
- Low RRS $\rightarrow$ high intergenerational mobility

- Isolates IGM from changes in inequality and growth

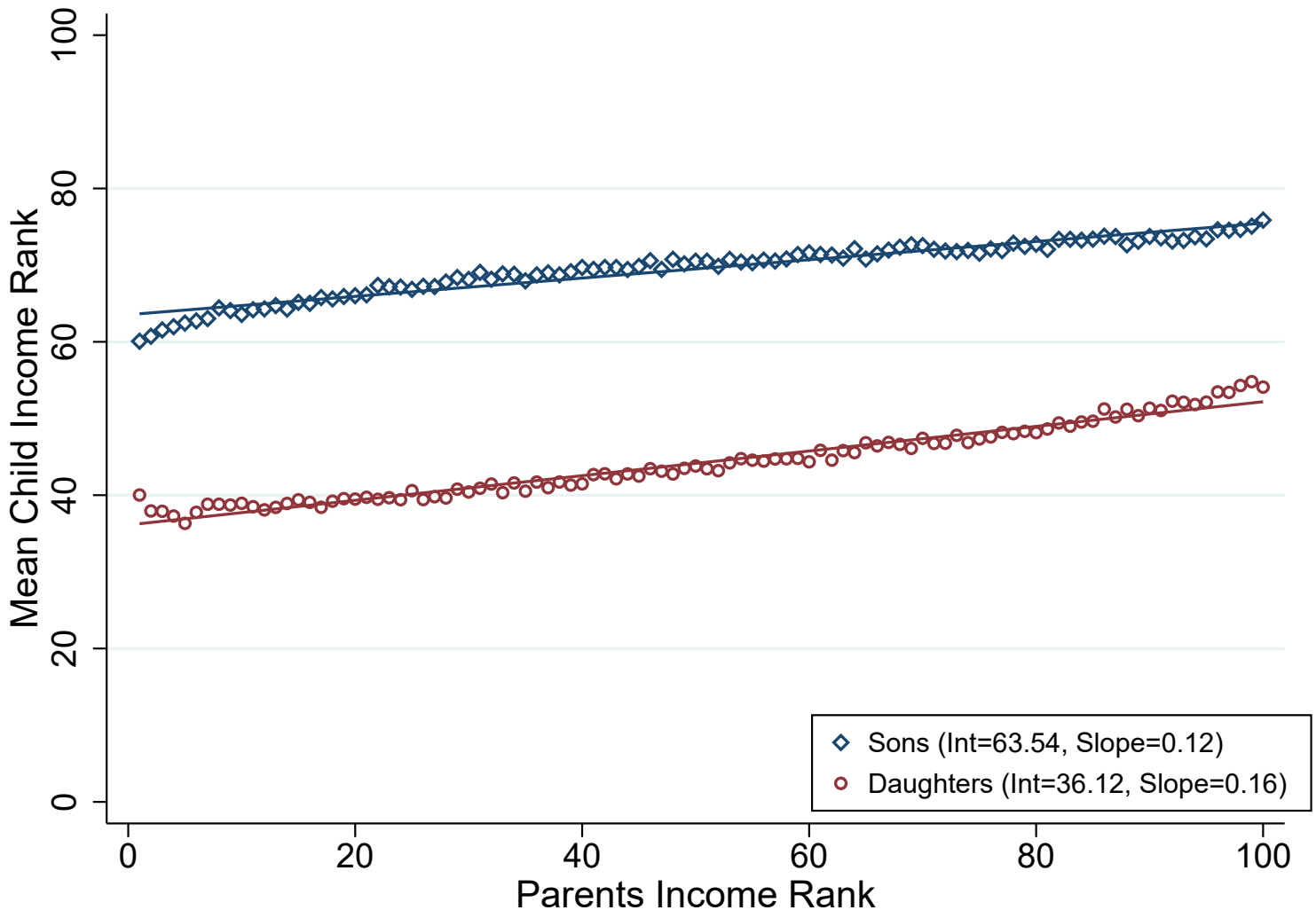
IGE

# Income Mobility: Rank-Rank-Slope

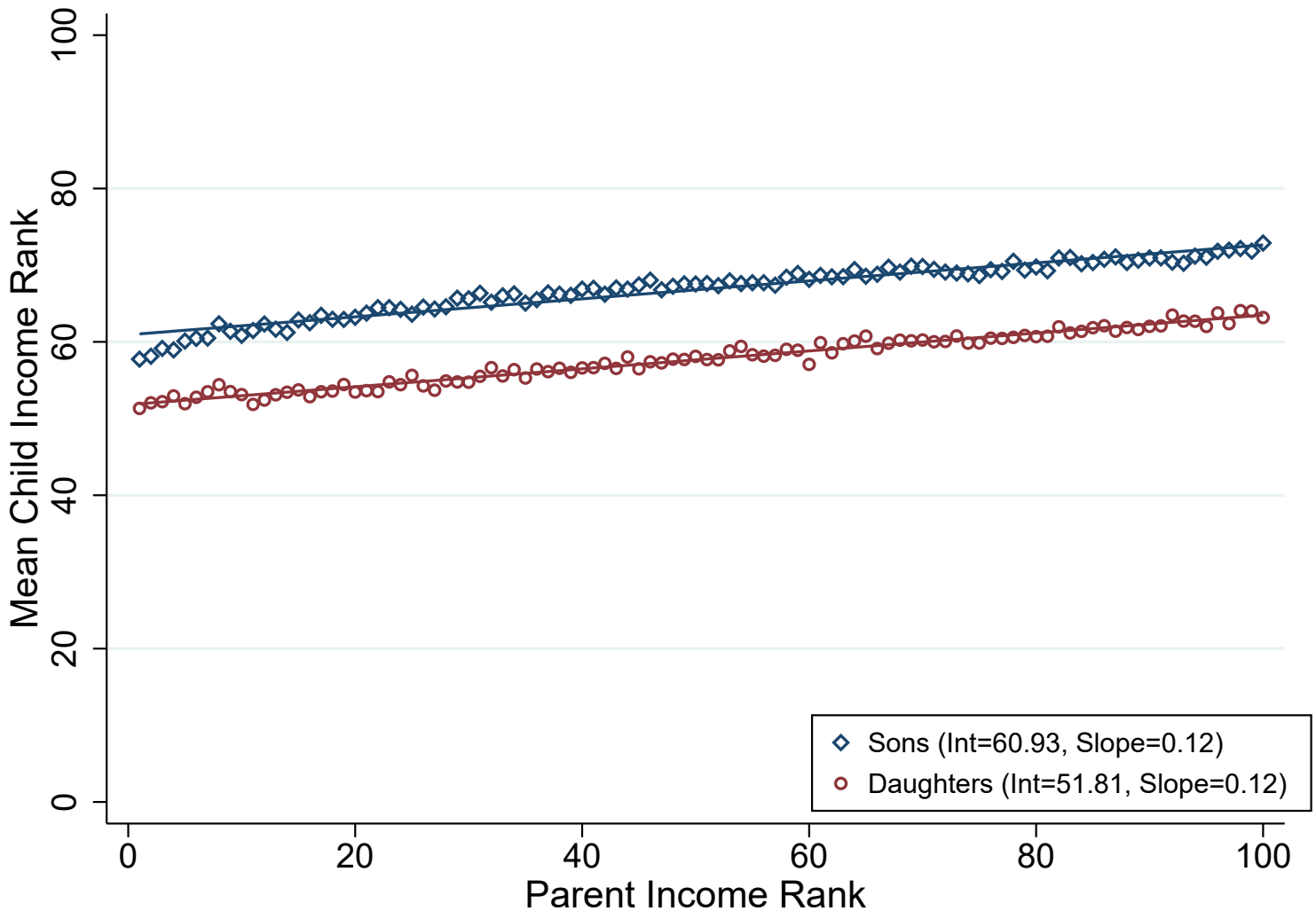



Life Cycle Bias | Attenuation Bias Child | Attenuation Bias Parent

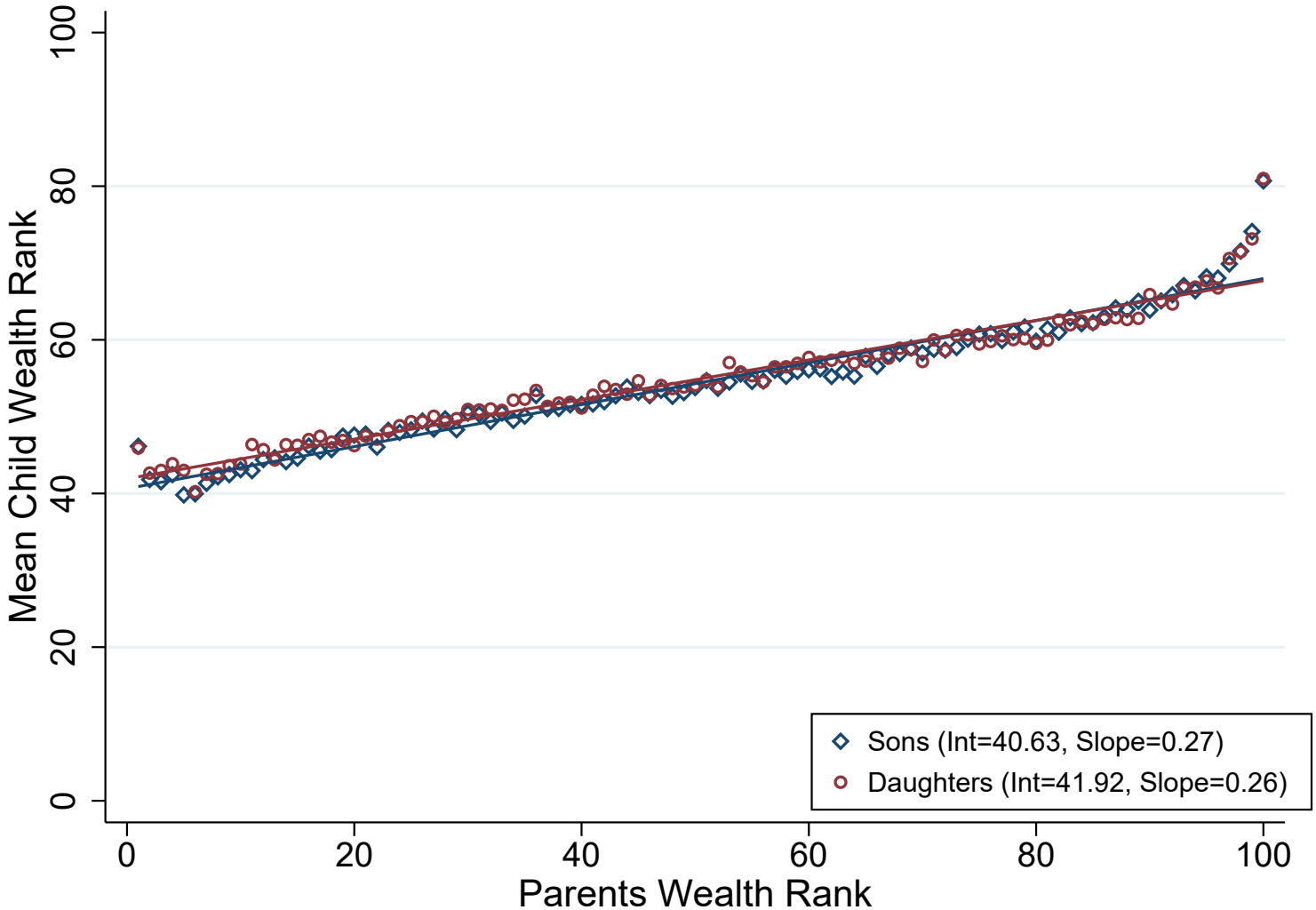
# Income Mobility by Gender



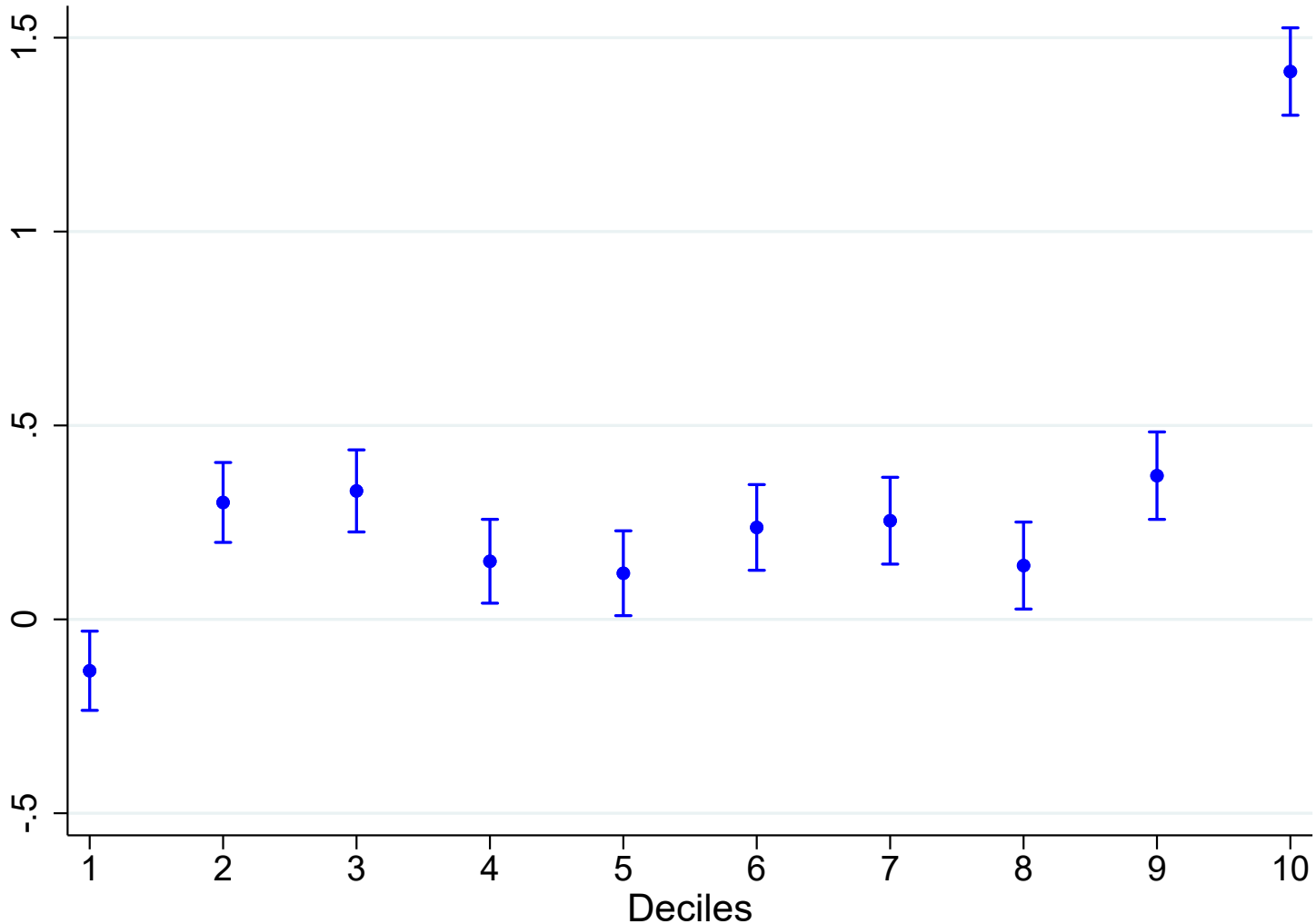
# Income Mobility by Gender and w/o Kids



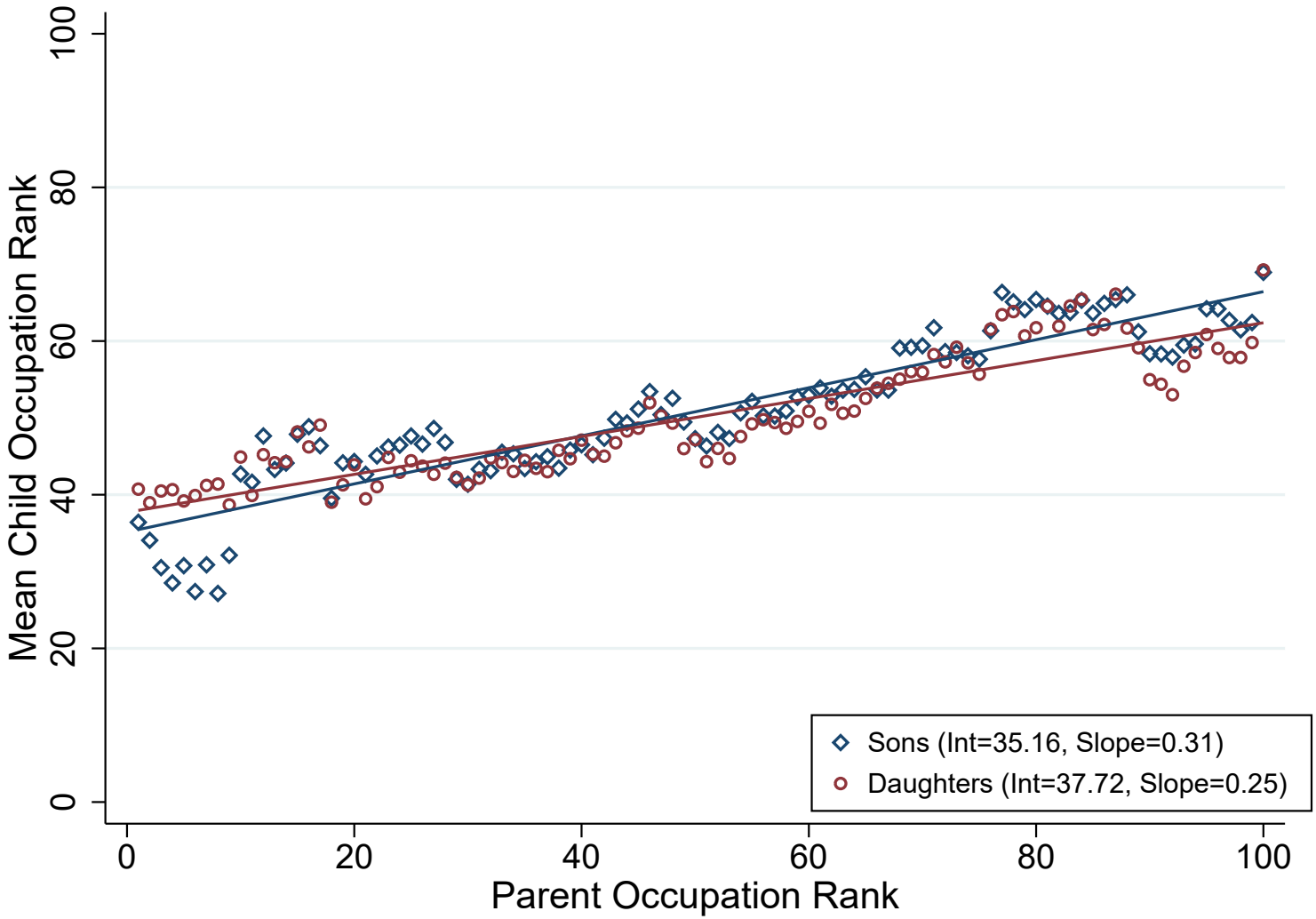
# Wealth Mobility: Rank-Rank-Slope



# Wealth RRS by Decile: Increasing Top Inequality

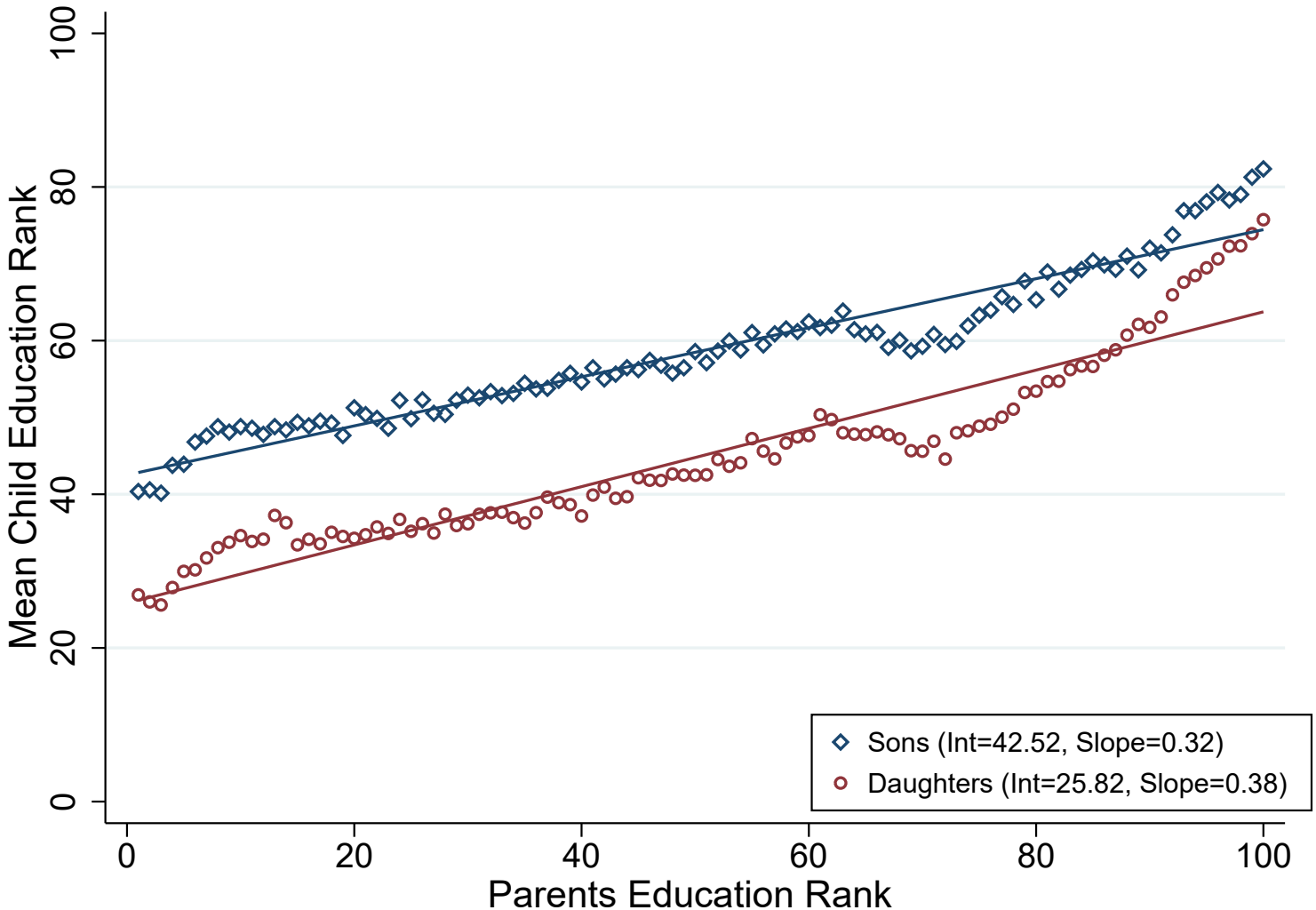


# Occupation Mobility: Rank-Rank-Slope




by child income rank

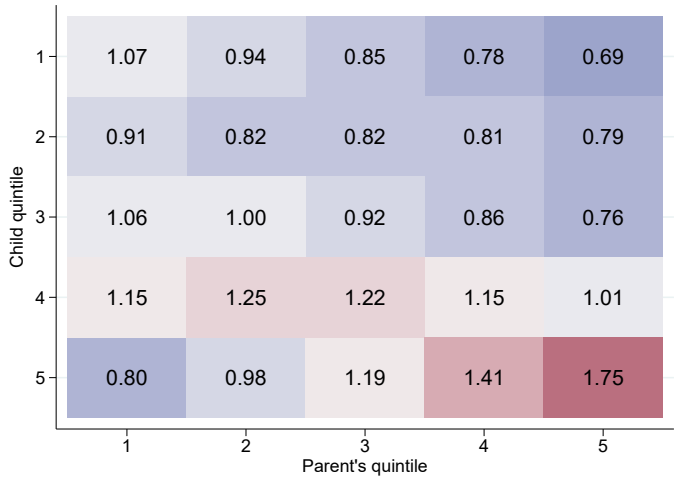
# Education Mobility: Rank-Rank-Slope



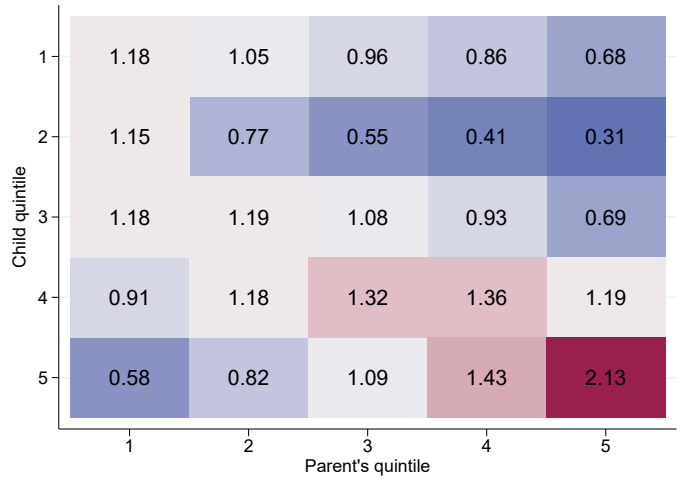
# Normalized Transition Matrices

Normalized by the probabilities that would occur under statistical independence.

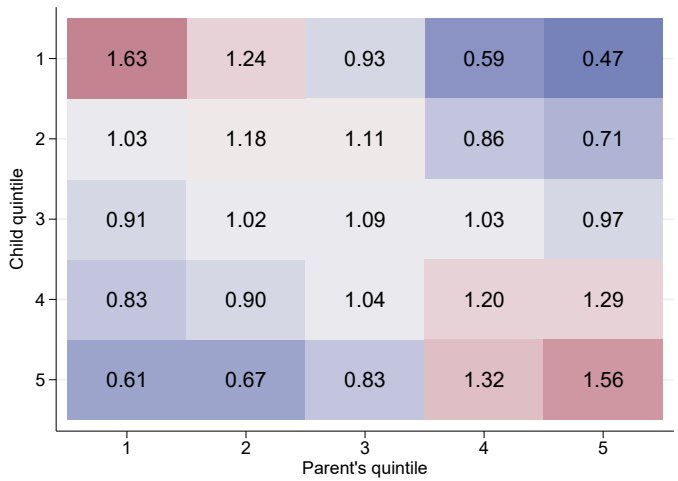
Cells can be interpreted as odds ratios.



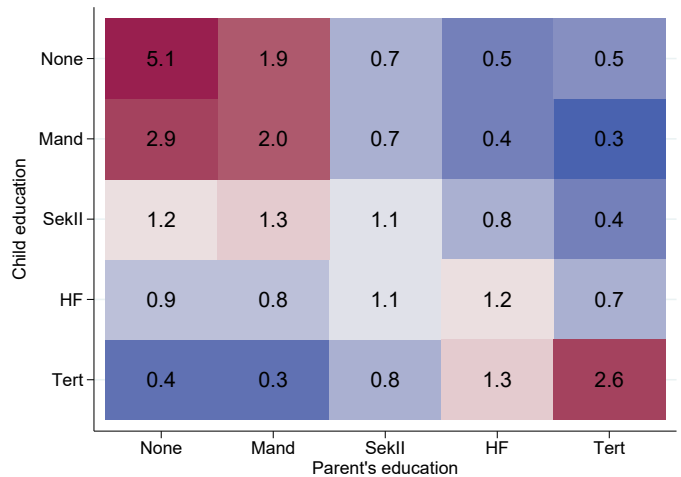

(a) Income




(b) Wealth




(c) Occupation




(d) Education

# Conclusions

Mixed findings for IGM along several dimensions:

- **High** income and wealth mobility
- **Low** education and occupation mobility
- Time trends: mobility decreased in some outcomes
- Some differences by gender
- Small differences by migratory background

Transmission of employment patterns:

- Self-employment lies within the family: 6.5–9.4pp higher probability of being self-employed if parents are self-employed
- Having a working mother increases daughter's probability of working when having small children by 3.5pp

# Thank you!

Comments and questions welcome:
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# References I


Asher, S., P. Novosad, and C. Rafkin (2021): "Intergenerational Mobility in India: New Methods and Estimates Across Time, Space, and Communities," Mimeo.

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Ganzeboom, H. B., P. M. De Graaf, and D. J. Treiman (1992): "A standard international socio-economic index of occupational status," *Social Science Research*, 21, 1–56.

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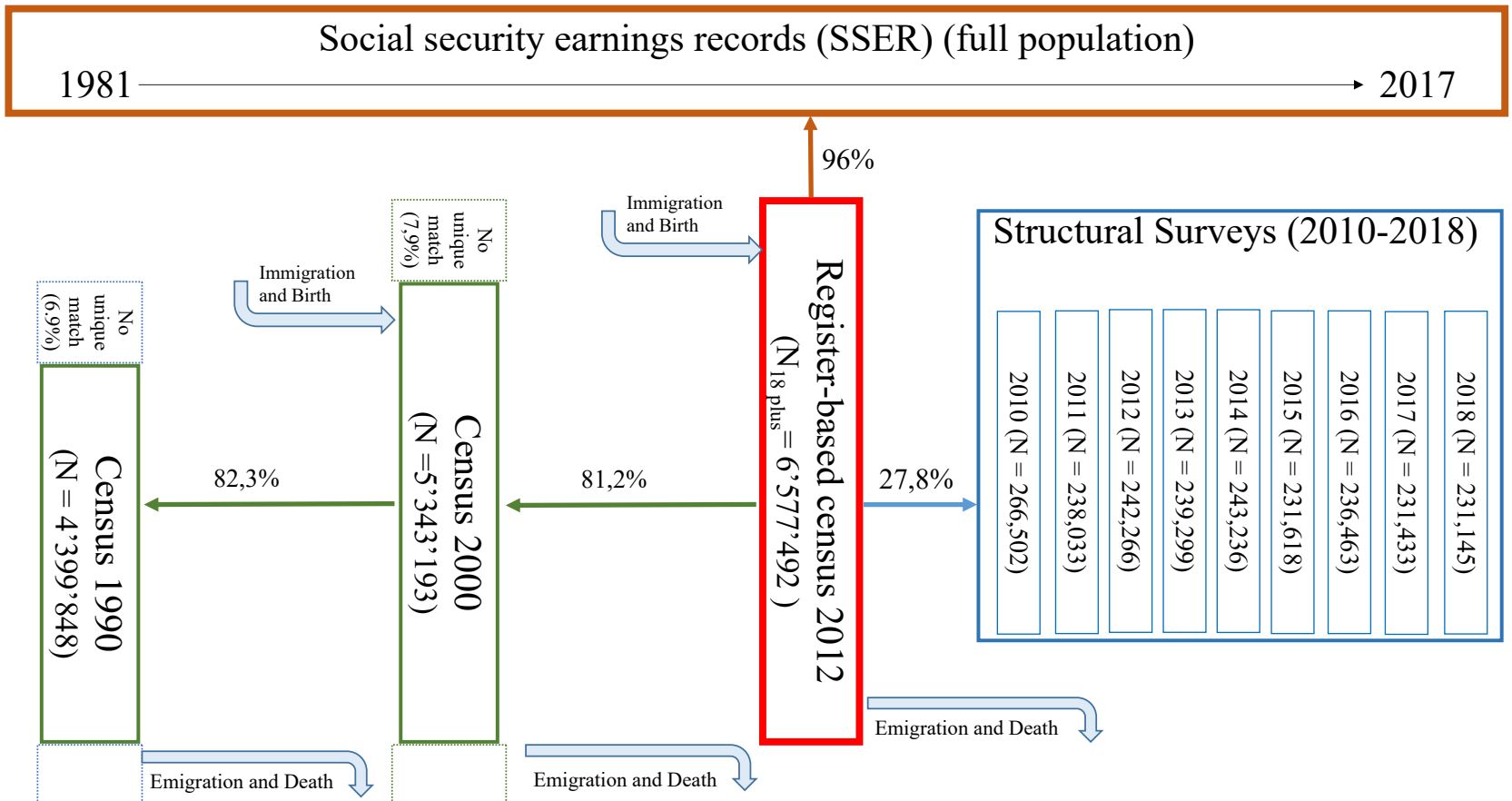
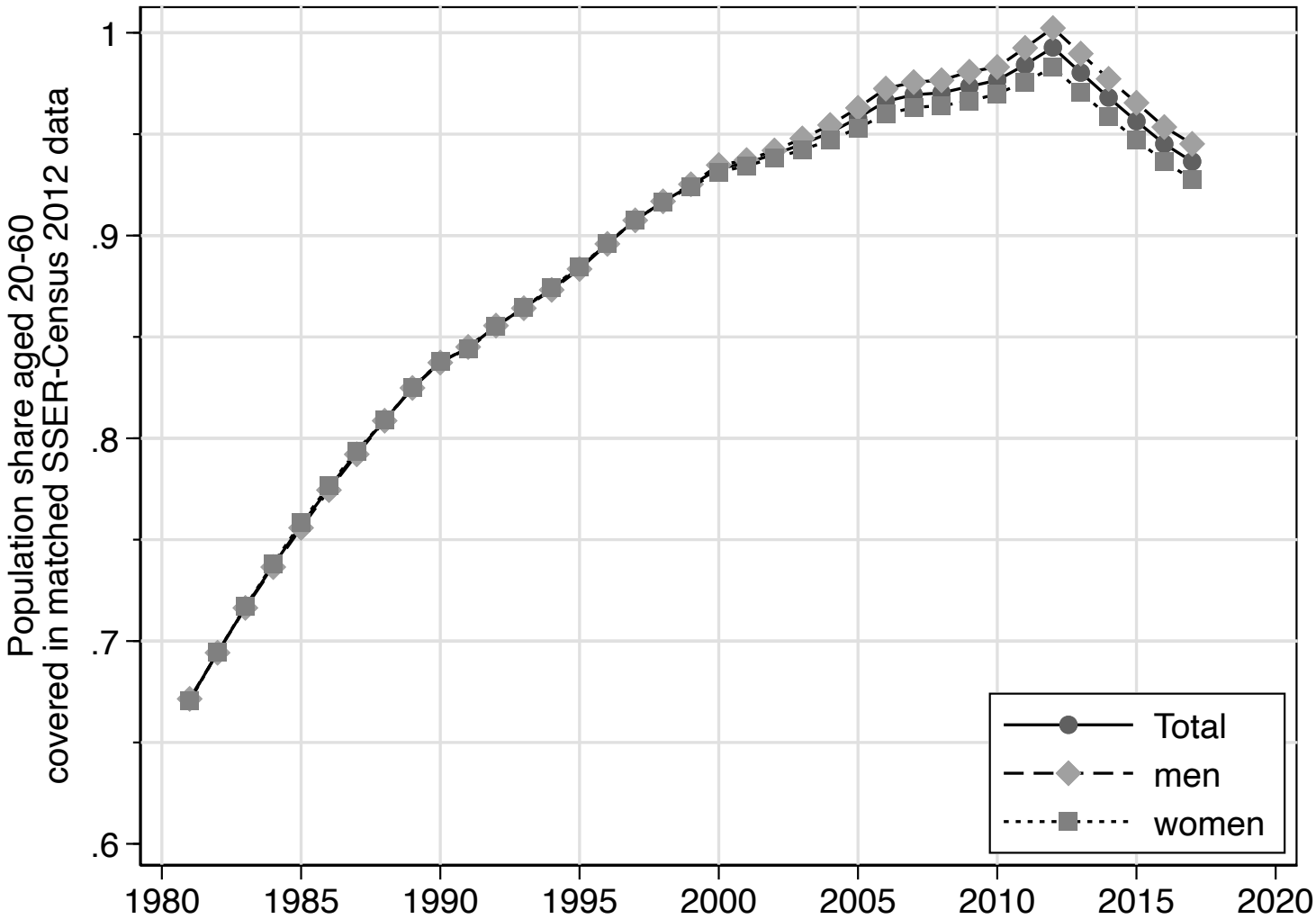
Solon, G. (1999): "Intergenerational Mobility in the Labor Market," in *Handbook of Labor Economics*, Elsevier, vol. 3, 1761–1800.

# Data: Matched SSER-Census-Survey Data



# Population Coverage SSER (20–60)

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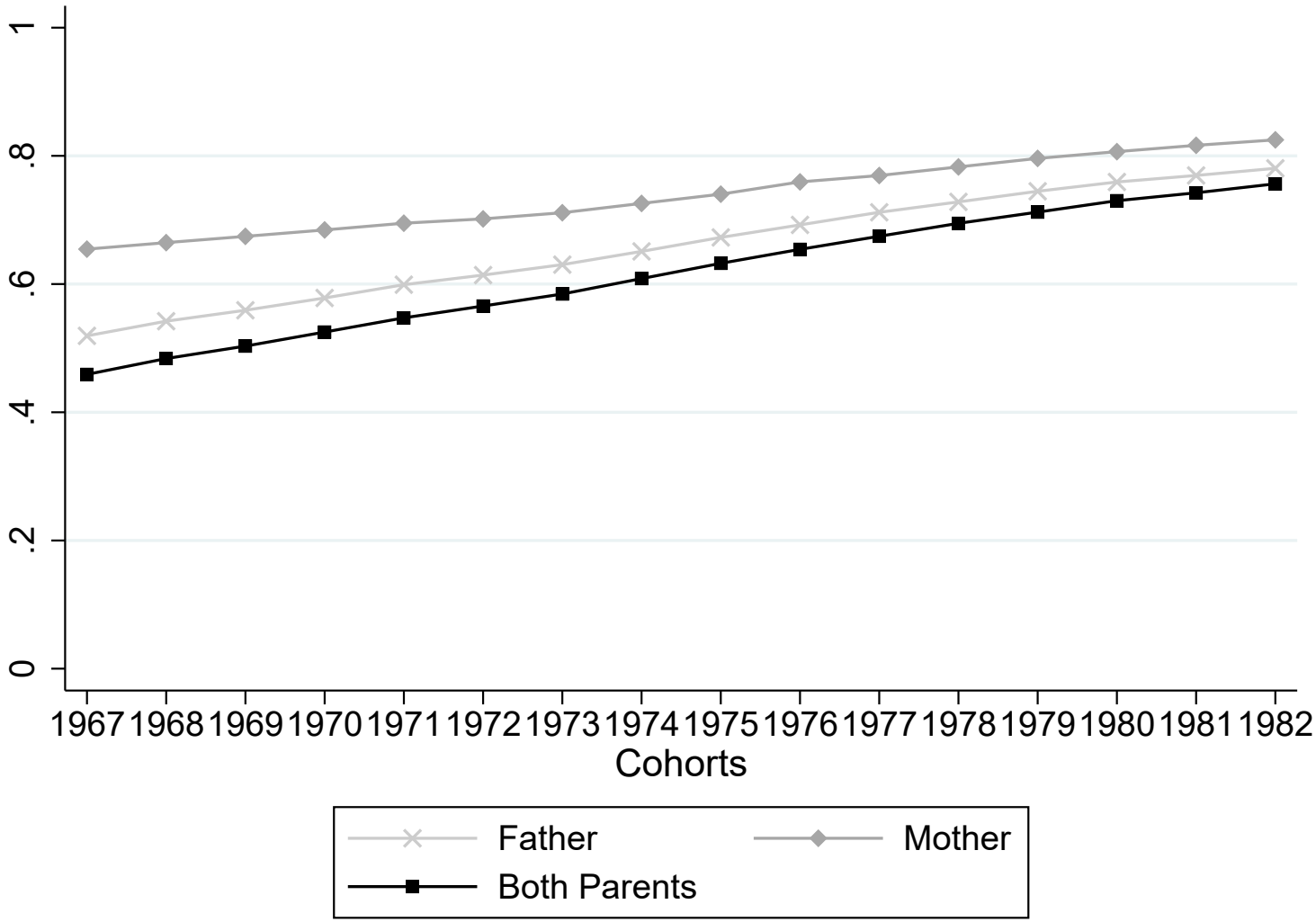
# Cohort Coverage of Matched Children (Swiss-Born)

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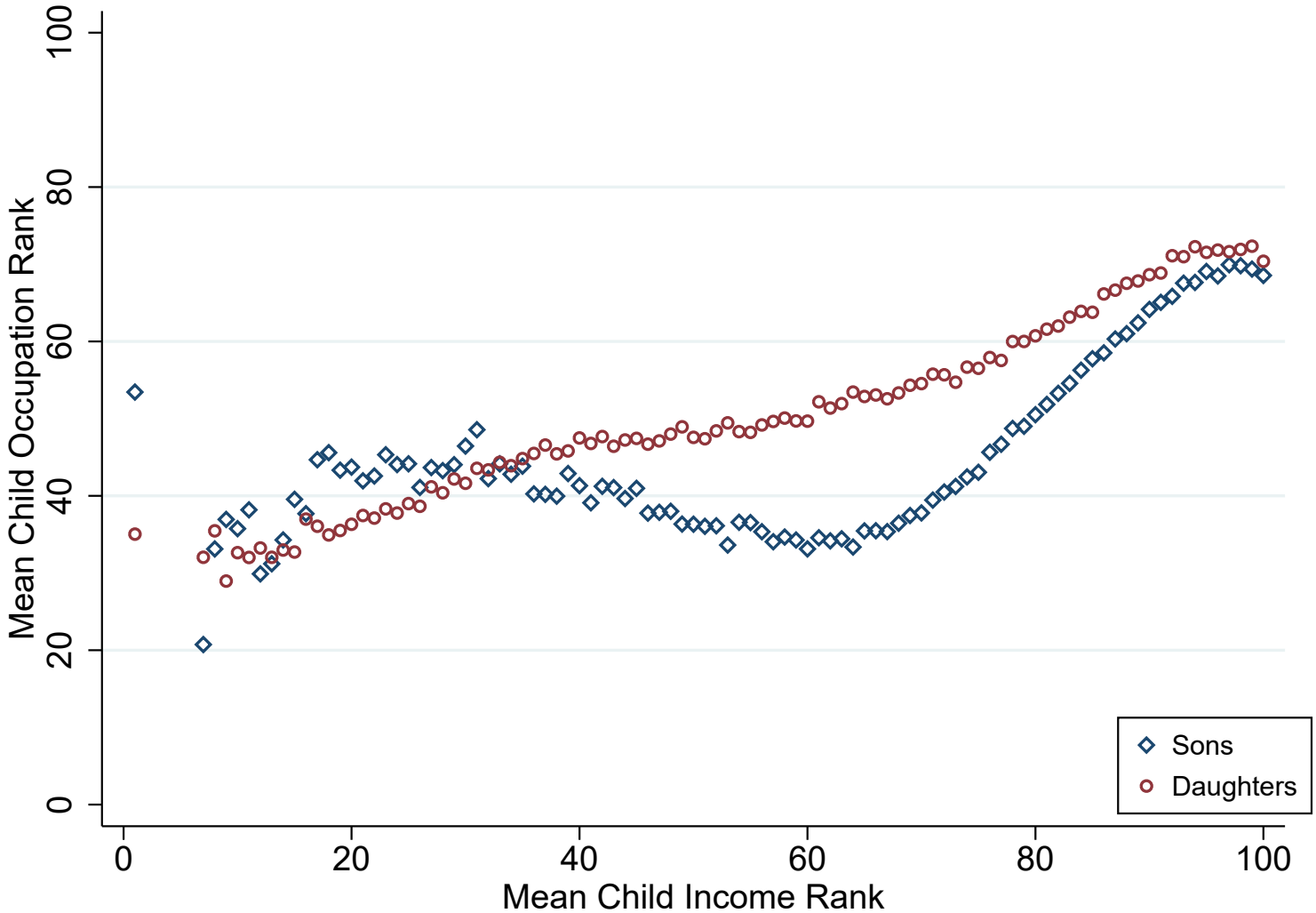
# ISEI and Child Income Rank

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# Summary Statistics

| | (1) **Mean** | (2) **SD** | (3) **P10** | (4) **P90** | (5) **N** |
|---|---|---|---|---|---|
| *Child characteristics* | | | | | |
| Income (in 1000) | 64.04 | 51.42 | 5.66 | 111.46 | 667047 |
| Employed (%) | 93.97 | 23.80 | 100.00 | 100.00 | 667047 |
| Net Worth (in 1000) | 118.11 | 1162.13 | -43.13 | 276.44 | 314905 |
| Tertiary Education (%) | 24.42 | 42.96 | 0.00 | 100.00 | 196594 |
| ISEI | 54.03 | 19.66 | 25.20 | 77.19 | 175817 |
| Female (%) | 48.95 | 49.99 | 0.00 | 100.00 | 667047 |
| Swiss (%) | 99.57 | 6.54 | 100.00 | 100.00 | 667047 |
| Married (%) | 45.73 | 49.82 | 0.00 | 100.00 | 667047 |
| Have Kids (%) | 40.84 | 49.15 | 0.00 | 100.00 | 667047 |
| *Parents' characteristics* | | | | | |
| Income (in 1000) | 126.00 | 118.14 | 56.56 | 198.55 | 667047 |
| Single Earner HH (%) | 34.08 | 47.40 | 0.00 | 100.00 | 645716 |
| Net Worth (in 1000) | 1041.72 | 6906.34 | 14.47 | 1949.70 | 315778 |
| Tertiary Education (%) | 14.30 | 35.01 | 0.00 | 100.00 | 549243 |
| ISEI | 46.93 | 19.52 | 24.07 | 75.25 | 408261 |
| Married (%) | 93.88 | 23.97 | 100.00 | 100.00 | 534878 |
| Foreign-born (%) | 20.61 | 40.45 | 0.00 | 100.00 | 659194 |

# Summary Statistics: Fathers

| | (1) **Mean** | (2) **SD** | (3) **P10** | (4) **P90** | (5) **N** |
|---|---|---|---|---|---|
| Income (in 1000) | 104.72 | 112.65 | 42.72 | 168.50 | 667047 |
| Employed (%) | 98.38 | 12.61 | 100.00 | 100.00 | 667047 |
| Net Worth (in 1000) | 516.37 | 3883.52 | 2.02 | 961.38 | 315778 |
| Tertiary Education (%) | 11.87 | 32.34 | 0.00 | 100.00 | 577712 |
| Index of Occ. Status | 47.34 | 20.94 | 17.79 | 76.24 | 270804 |
| Swiss (%) | 97.27 | 16.29 | 100.00 | 100.00 | 603981 |
| Foreignborn (%) | 12.65 | 33.24 | 0.00 | 100.00 | 633445 |
| Married (%) | 89.21 | 31.02 | 0.00 | 100.00 | 601342 |
| Single (%) | 7.45 | 26.26 | 0.00 | 0.00 | 601342 |
| Share on total HH Income (%) | 83.22 | 140.20 | 58.57 | 100.00 | 645807 |
| Age | 47.26 | 4.95 | 41.50 | 53.50 | 603981 |

# Summary Statistics: Mothers

| | (1) **Mean** | (2) **SD** | (3) **P10** | (4) **P90** | (5) **N** |
|---|---|---|---|---|---|
| Income (in 1000) | 21.29 | 32.83 | 0.00 | 52.93 | 667047 |
| Employed (%) | 79.50 | 40.37 | 0.00 | 100.00 | 667047 |
| Net Worth (in 1000) | 525.35 | 3465.05 | 2.63 | 993.54 | 315778 |
| Tertiary Education (%) | 4.06 | 19.75 | 0.00 | 0.00 | 608444 |
| Index of Occ. Status | 41.81 | 16.37 | 25.04 | 68.70 | 177549 |
| Swiss (%) | 99.43 | 7.55 | 100.00 | 100.00 | 636883 |
| Foreignborn (%) | 13.63 | 34.31 | 0.00 | 100.00 | 648781 |
| Married (%) | 90.54 | 29.27 | 100.00 | 100.00 | 633777 |
| Single (%) | 4.14 | 19.93 | 0.00 | 0.00 | 633777 |
| Share on total HH Income (%) | 17.94 | 35.50 | 0.00 | 41.40 | 645807 |
| Age | 44.53 | 4.47 | 39.50 | 50.50 | 636883 |

# Intergenerational Elasticity of Income (IGE)

$$ln(Y_t) = \alpha + \beta ln(Y_{t-1}) + \epsilon \tag{2}$$

- Popular mobility measure (Solon, 1999)
- Unstable estimates, log-log relationship not linear (Chetty et al., 2014b)

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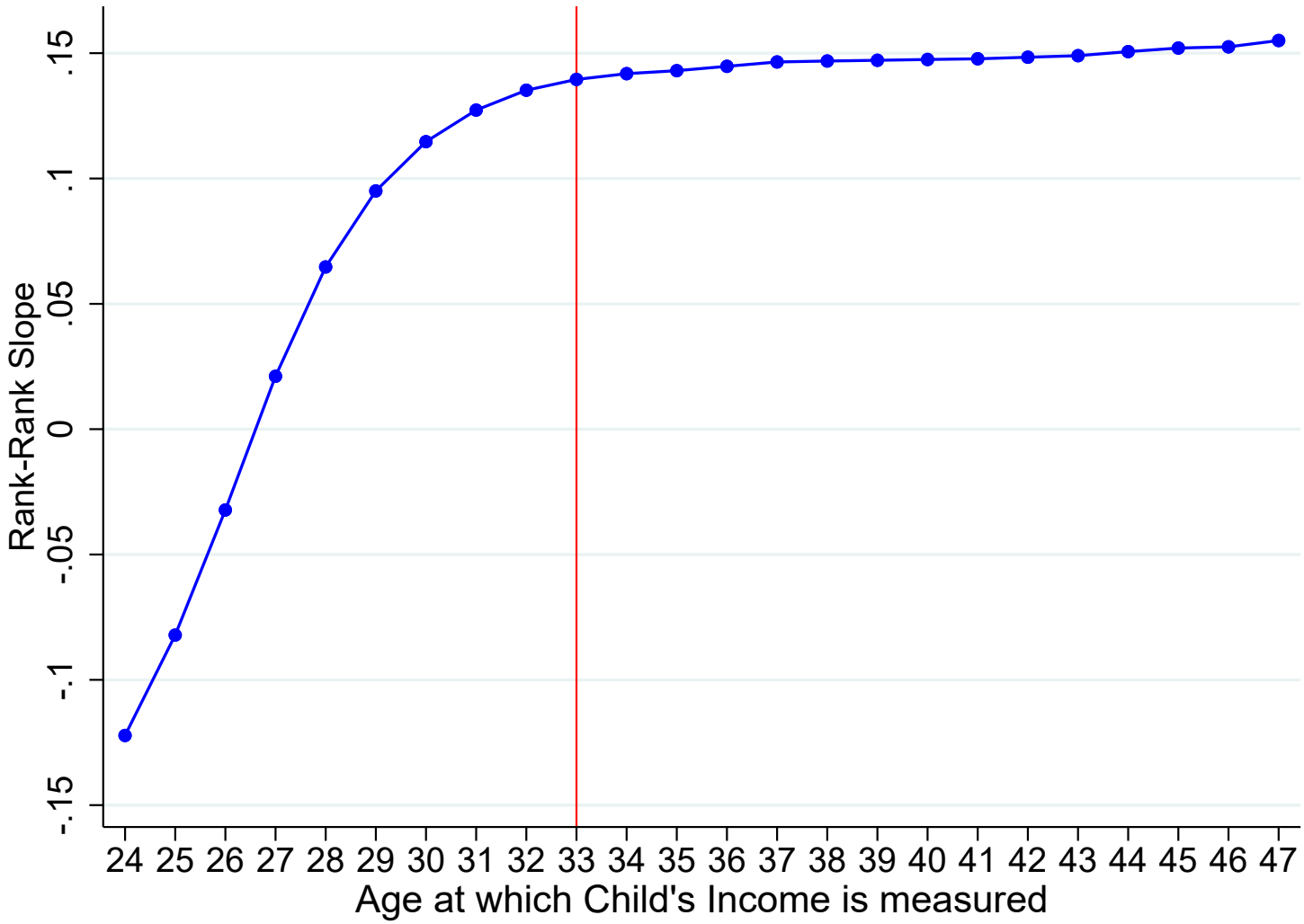
# Life Cycle Bias

Around what age should one center income measuremen?t (3-year average)

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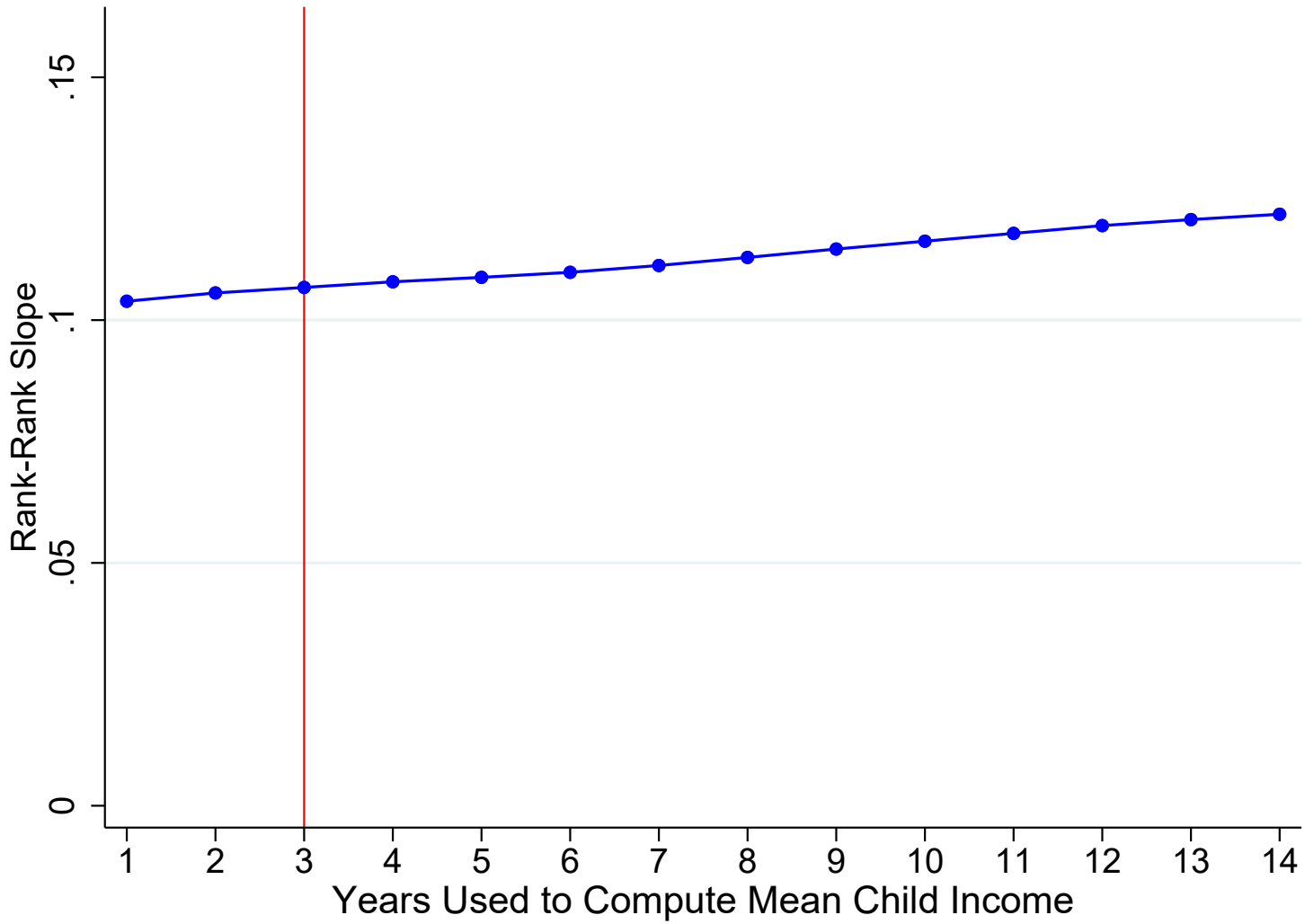
# Attenuation Bias I: Child Income

Are transitory income shocks filtered out?

Attenuation bias leads to upward bias in mobility measures

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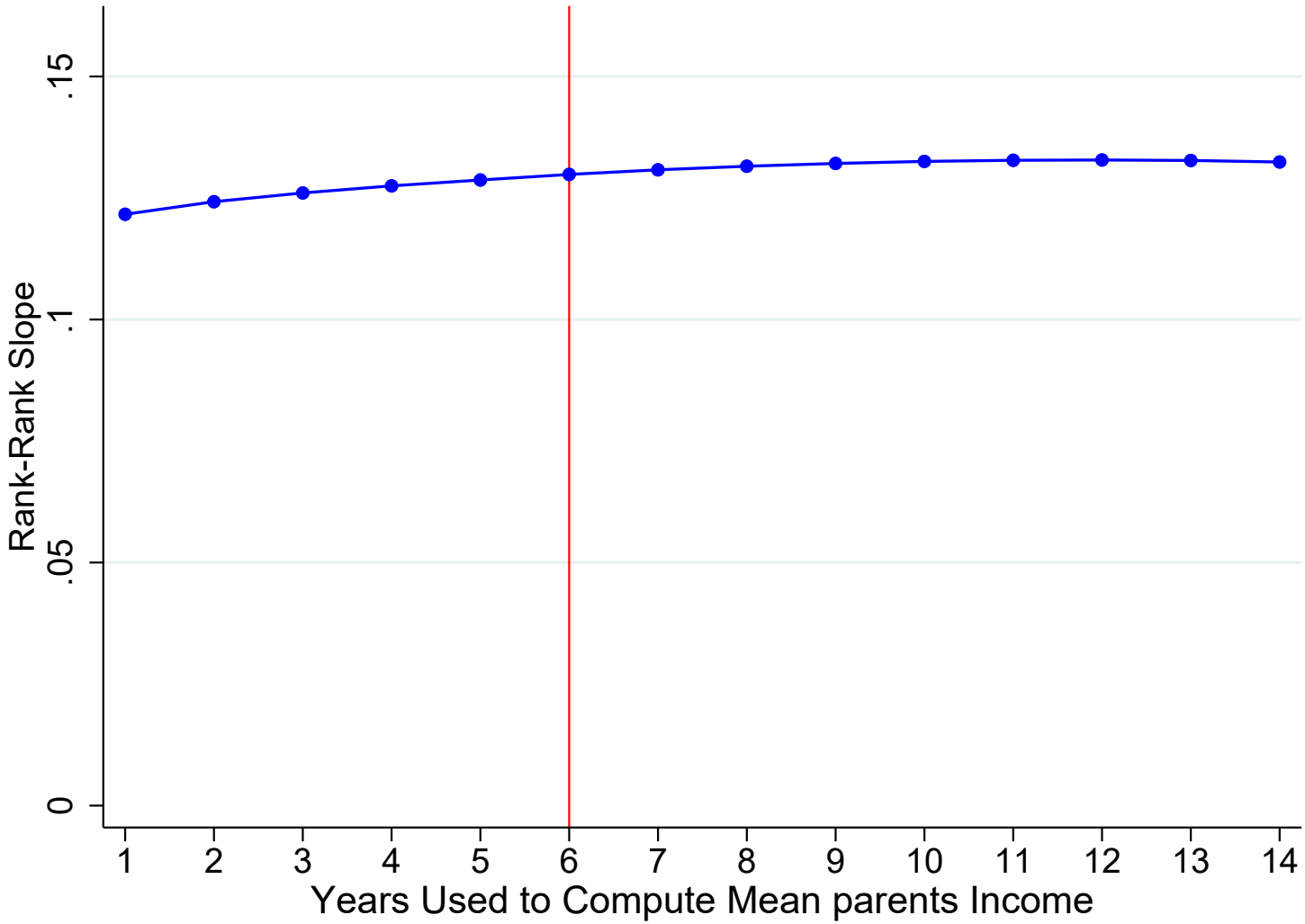
# Attenuation Bias II: Parental Income

Are transitory income shocks filtered out?

Attenuation bias leads to upward bias in mobility measures

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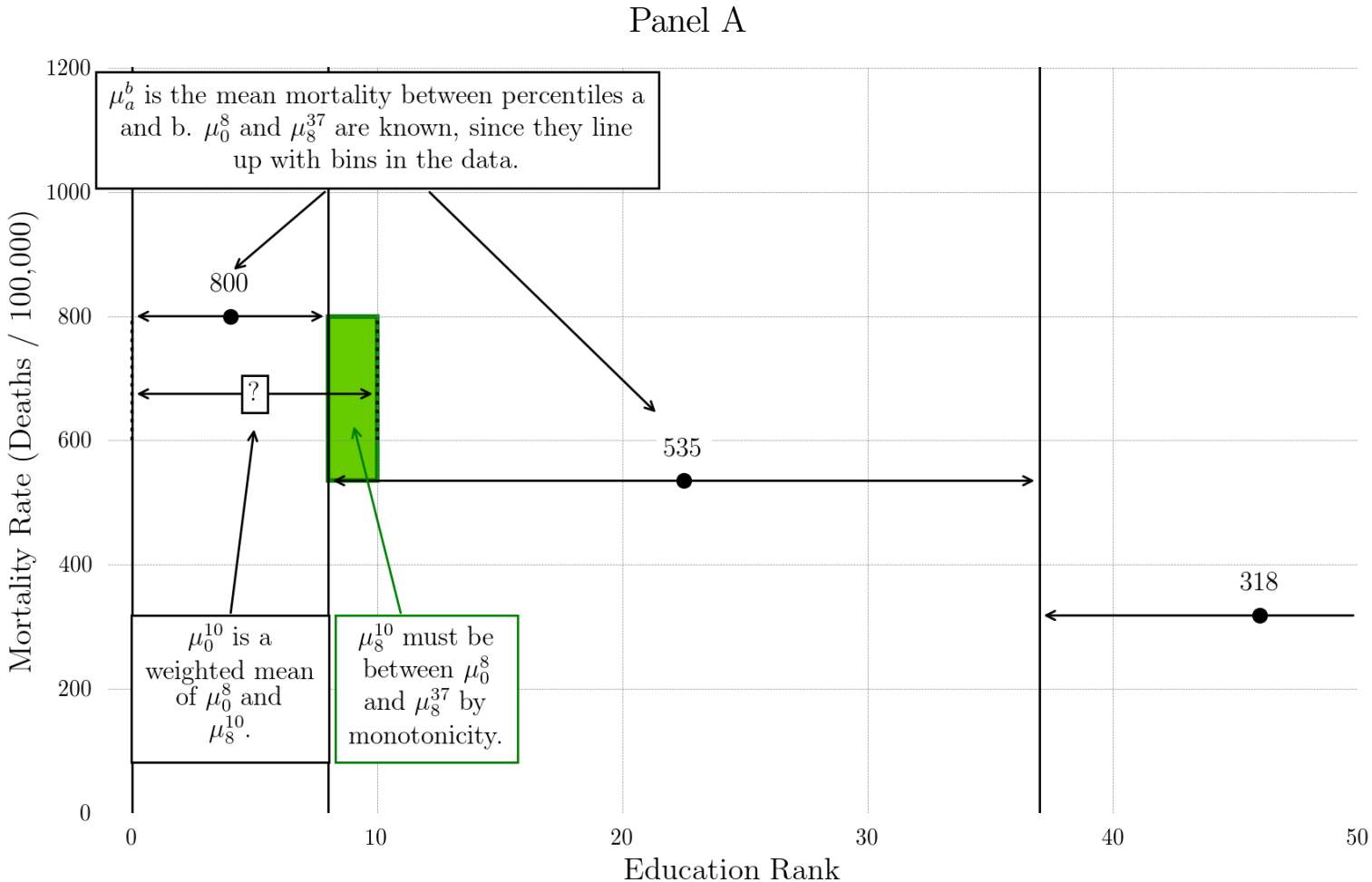
# Constructing a Latent Education Distribution I




Novosad et al. (2020), Figure 2.a)

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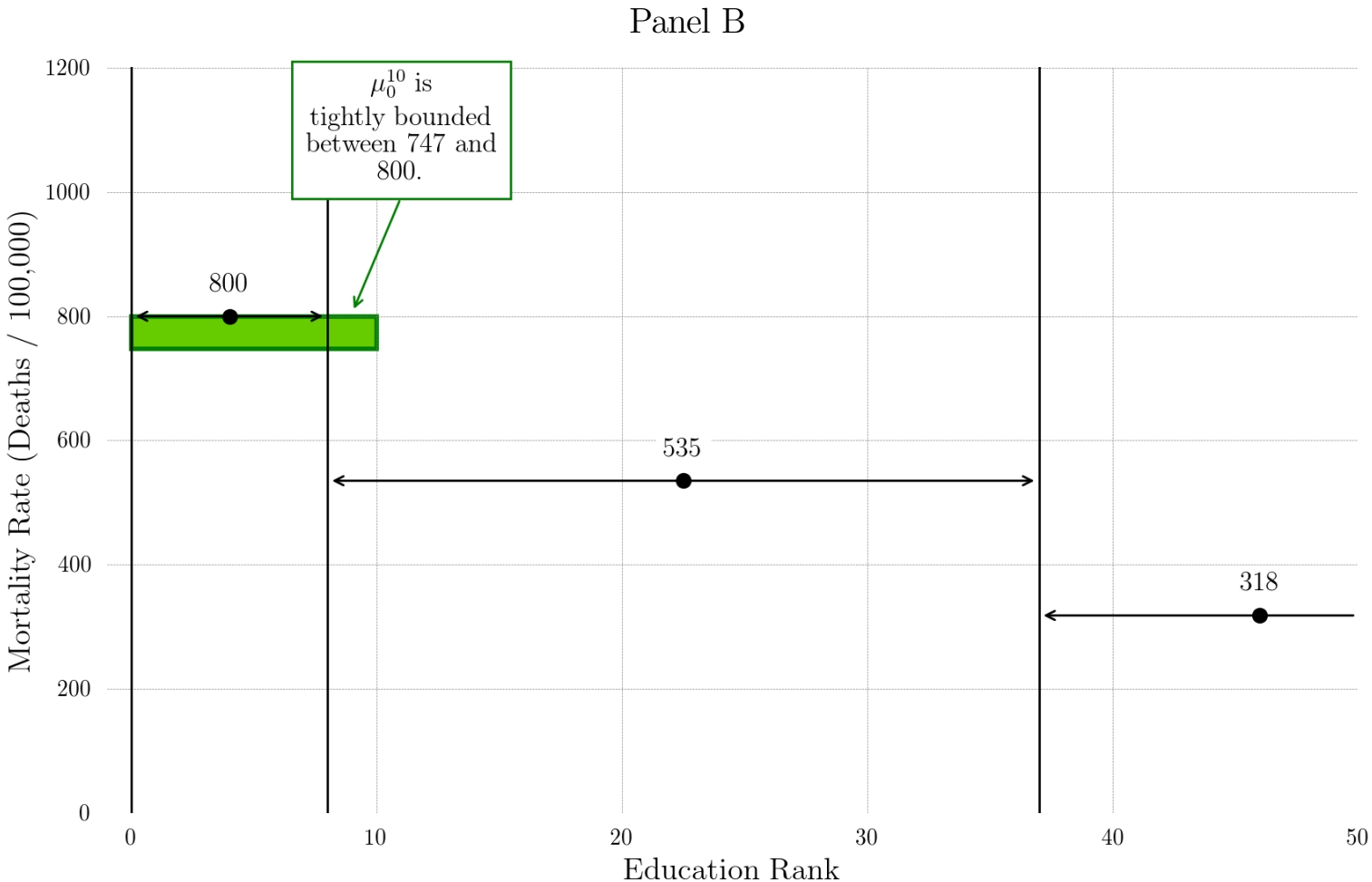
# Constructing a Latent Education Distribution II




Novosad et al. (2020), Figure 2.b)

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