Measuring Inequality in Wealth and Income - Evidence from Swiss Tax Data

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AK Young Economist Conference, Vienna

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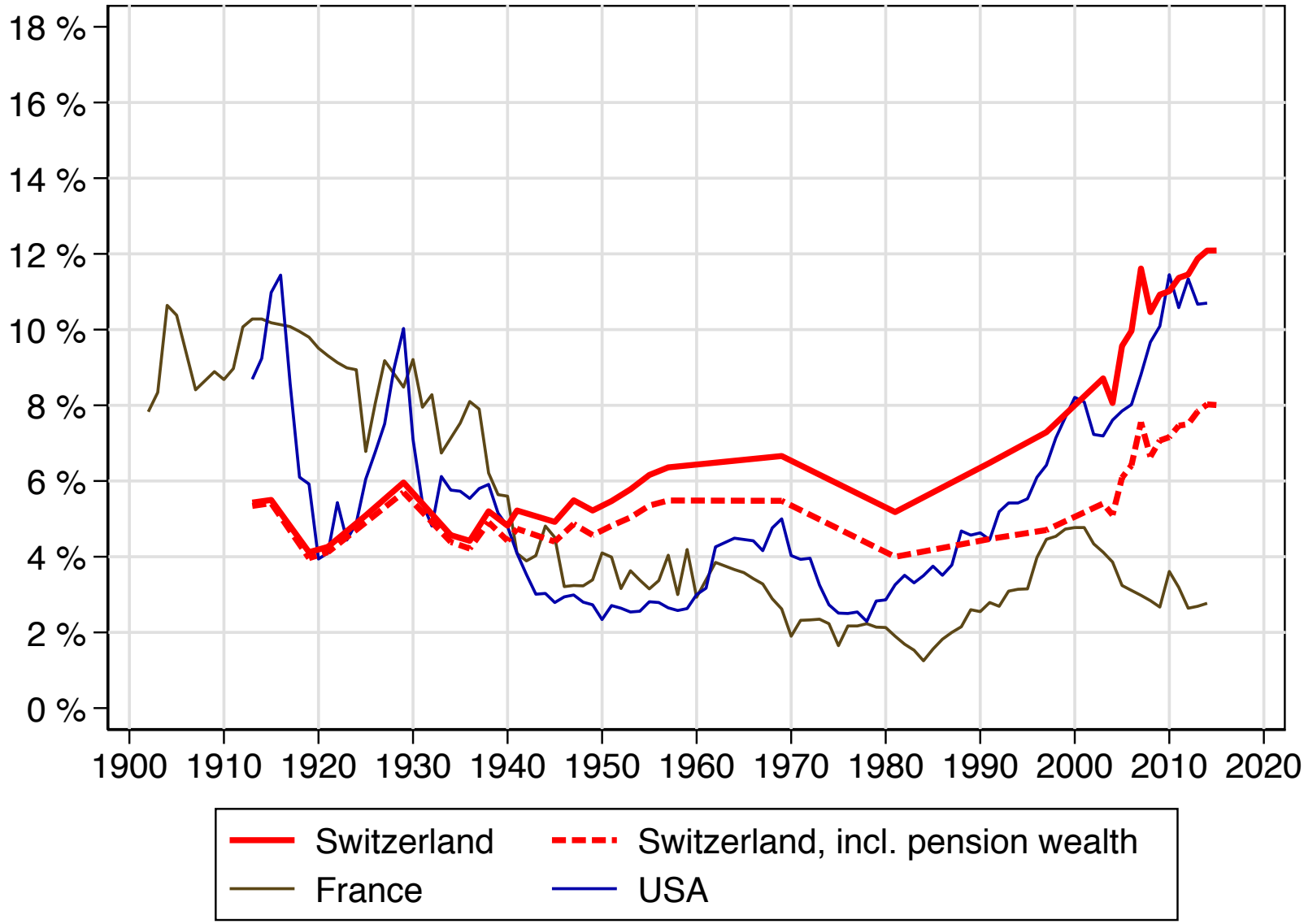
Top 0.01% Wealth Shares in International Comparison



Source: `www.wid.world`; Piketty (2014), Föllmi and Martínez (2017)

Why so much emphasis on measurement?

In academia:

- Measuring distribution has a long tradition in inequality research (Pareto, 1896; Kuznets, 1953, 1955; Atkinson et al., 1970, and many more)

- More recent contributions:
  - Long-run evolution (Piketty, 2001; Piketty and Saez, 2003; Atkinson and Piketty, 2007; Atkinson et al., 2010; Föllmi and Martínez, 2017)
  - Estimate top wealth shares in the U.S. (Kopczuk and Saez, 2004; Fagereng et al., 2016)
  - Wealth income ratios (Piketty and Zucman, 2014; Piketty, 2014)
  - Capture the entire population and economy, e.g., DINA (Garbinti et al., 2018; Alvaredo et al., 2017)

In practice:

- Policies depend on and affect the distribution

Knowing the distribution is crucial for optimal policy

- Pension policy:
  - How rich are the elderly in terms of income and wealth?
- Wealth tax policies:
  - OECD (2018): The Role and Design of Net Wealth Taxes
  - US: wealth tax proposals (Warren, Sanders)
  - CH: national inheritance tax initiative (2015)
  - CH: higher tax on capital incomes (99% initiative)
  - Sensitivity of wealth to taxation
    (Brülhart and Parchet, 2014; Brülhart et al., 2019)

The tax system helps measuring income and wealth

Aggregated Data

- Income / Wealth tax statistics
  - Can approximate distribution very well
  - + Very long-run series (entire centuries)
  - + Top very well covered

Individual Data

- Individual tax records
  - + Detailed income and wealth measures
  - + Joint distribution income / wealth
  - − Few individual characteristics
- Survey data
  - + Individual characteristics
  - − Top not well covered

→ *Access to admin data key: advance research + improve policies!*

What's there to measure? (or: the paper)

- Wealth inequality
  - Understudied compared to income
  - Wealth highly concentrated
- Composition matters
  - Changes in wealth components influence inequality differently
- Joint distribution of income and wealth important
  - have those with low income also little wealth?
- Mobility and opportunities
  - Life-cycle dynamics
  - Intergenerational: who will receive large inheritances?

Outline

Outline

Data: Cantonal Income and Wealth Tax Data

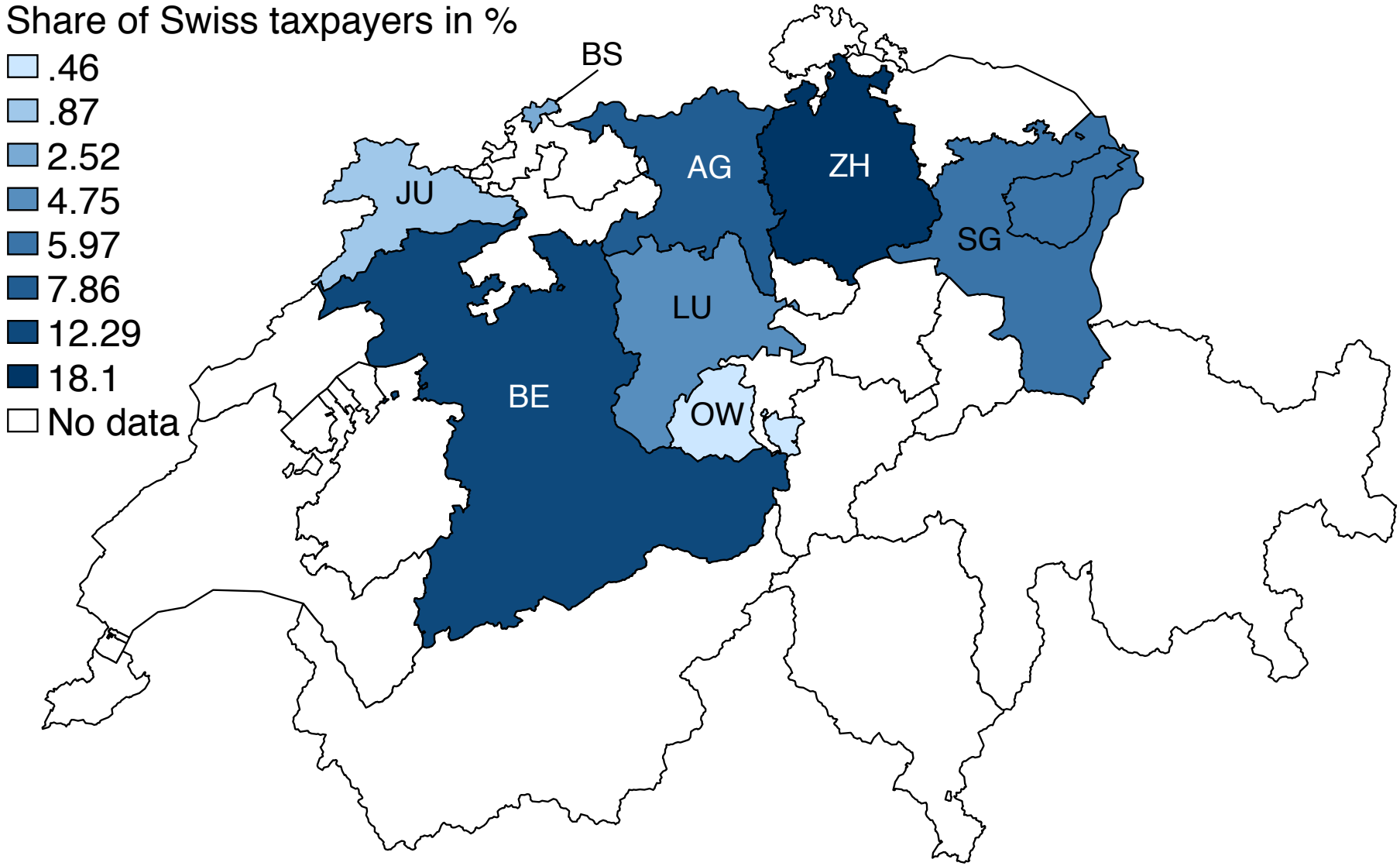
Institutional background:

- Federal country with strong tax autonomy at cantonal level
- Federal income tax
- Cantonal income and wealth tax
- Residence-based taxation
- Cantons collect cantonal + federal tax

Data:

- Individual tax register data from 8 cantons:
  ZH, BE, LU, BS, SG, AG, OW, JU
- 53% of the total population of taxpayers
- Varying years 2001-2016 – but only 2010 for all cantons!
- Unit of analysis: individual
  $\rightarrow$ income / wealth of married couples split equally

Data: Cantonal Income and Wealth Tax Data (2010)



Total coverage: 52.8%

▸ variables I ▸ variables II

Summary Statistics Income and Wealth Distribution (2010)

Percentile group	Gross income (in 1000 CHF)				Net wealth (in 1000 CHF)			
	Threshold	Mean	Median	Share %	Threshold	Mean	Median	Share %
P0-P20		13	15	4.4		-35	-1	-3.0
P20-P30	27	31	31	5.2	0	2	2	0.1
P30-P40	35	39	39	6.5	5	11	10	0.5
P40-P50	42	46	46	7.7	17	27	26	1.1
P50-P60	49	52	52	8.8	38	54	53	2.3
P60-P70	56	60	60	10.0	73	99	98	4.2
P70-P80	64	69	69	11.6	131	176	174	7.5
P80-P90	75	85	84	14.2	231	324	315	13.8
P90-P95	97	109	108	9.2	454	587	574	12.5
P95-P99	126	163	153	11.0	776	1251	1124	21.4
P99-P99.5	252	292	289	2.5	2427	3060	2983	6.5
P99.5-P99.9	348	485	448	3.3	4030	6557	5838	11.2
P99.9-P99.99	821	1338	1109	2.0	12798	23436	19531	9.0
P99.99-P100	3566	21935	5979	3.7	64728	300250	109234	12.8

Note: Summary statistics based on individual data, where wealth and income are split equally among married adults. Pooled tax data including the cantons BE, LU, OW, BS, AG, SG, JU in the year 2010 and ZH (2011).

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Outline

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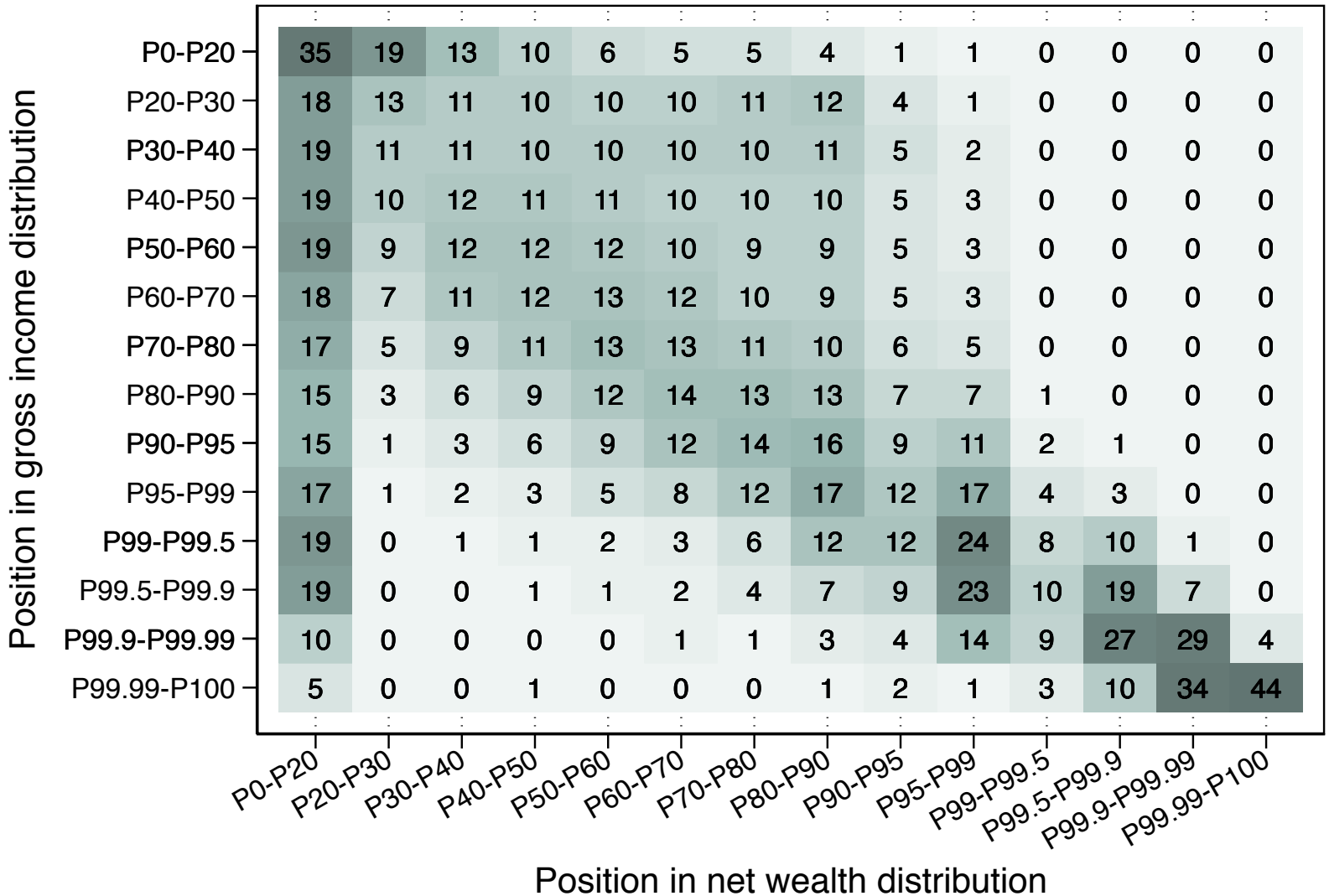
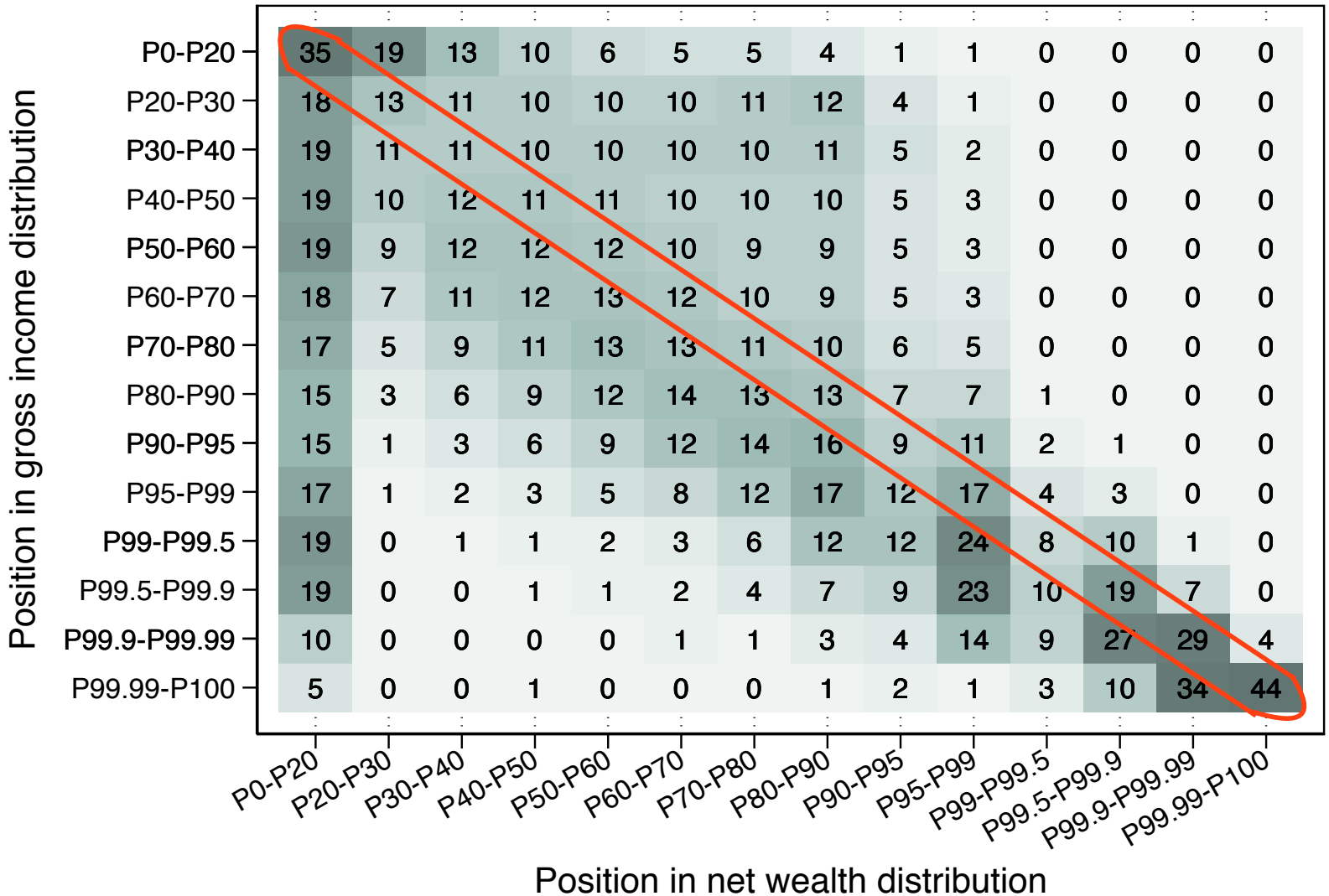
Joint Distribution Matrix (2010)



Relative row frequencies.

Joint Distribution Matrix (2010)



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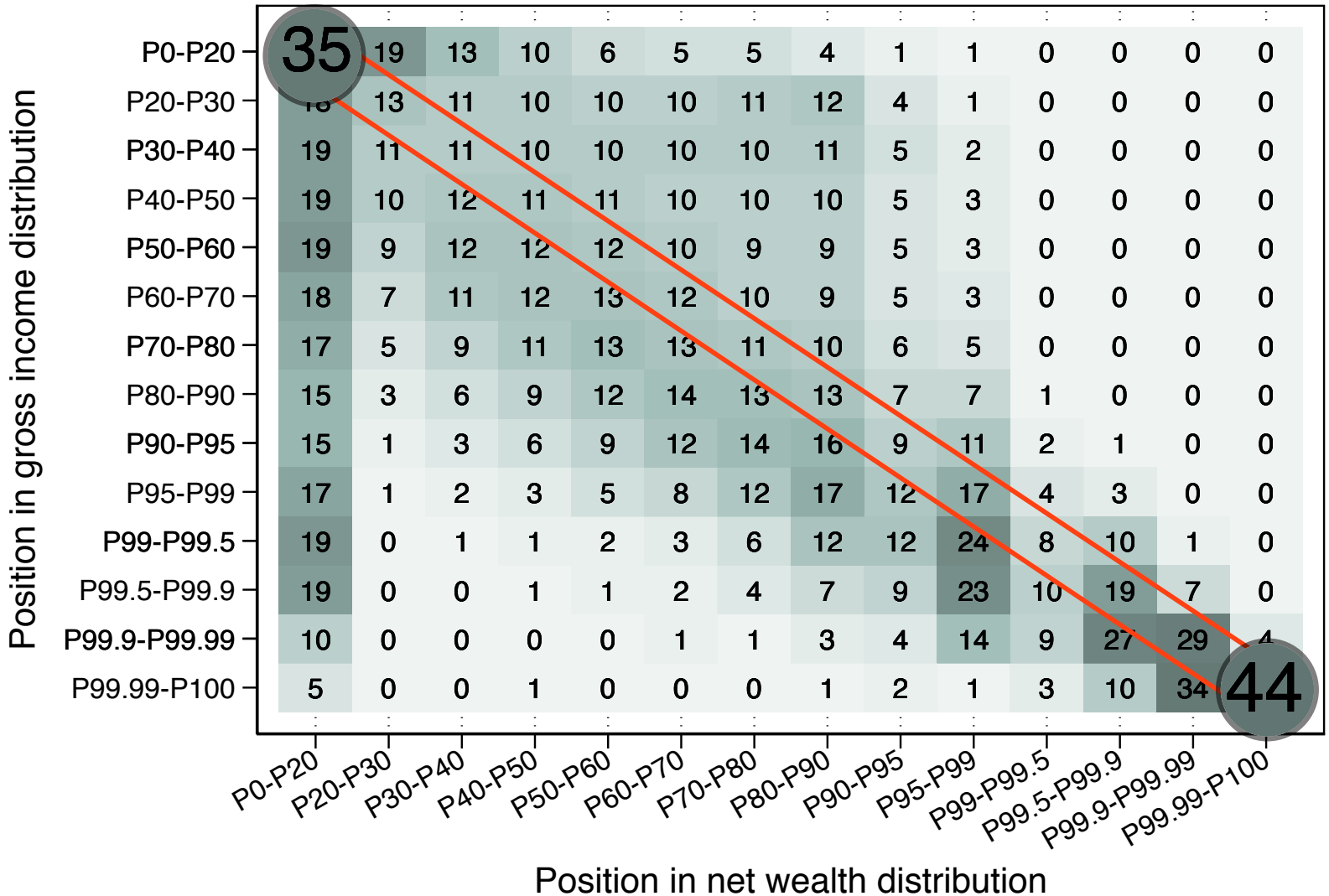

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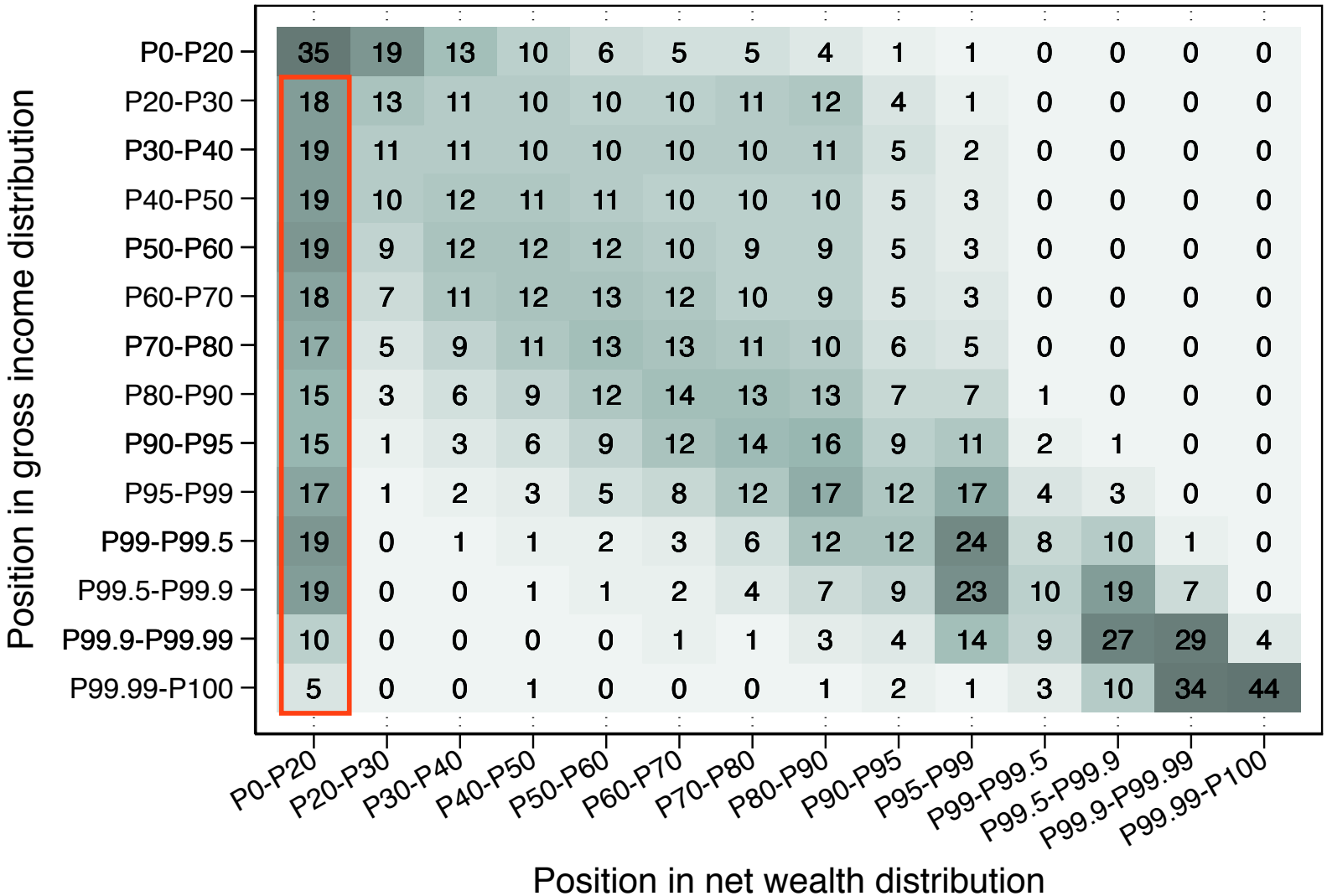
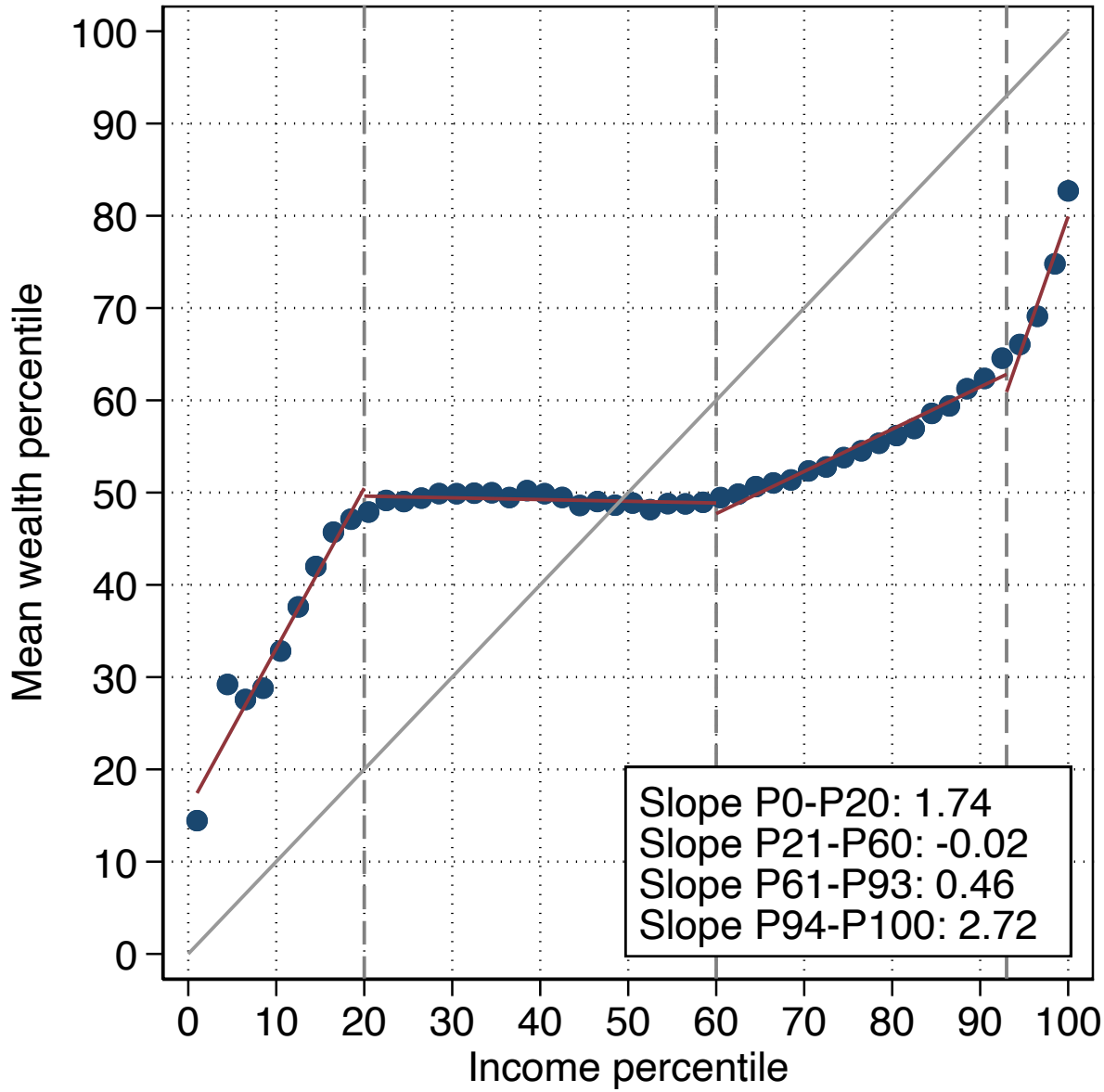


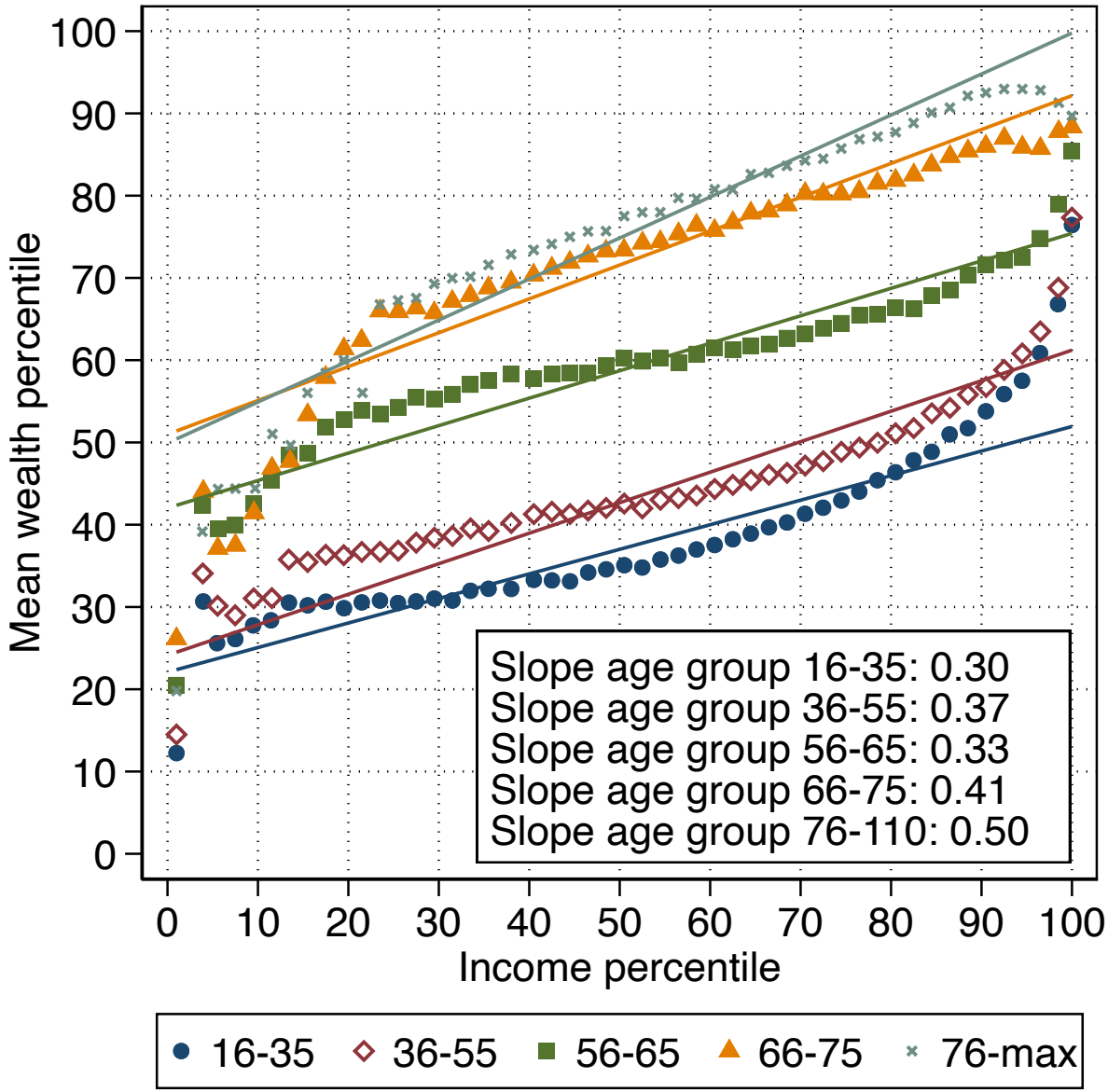
Relative row frequencies.

Mean Wealth Rank by Income Rank (2010)



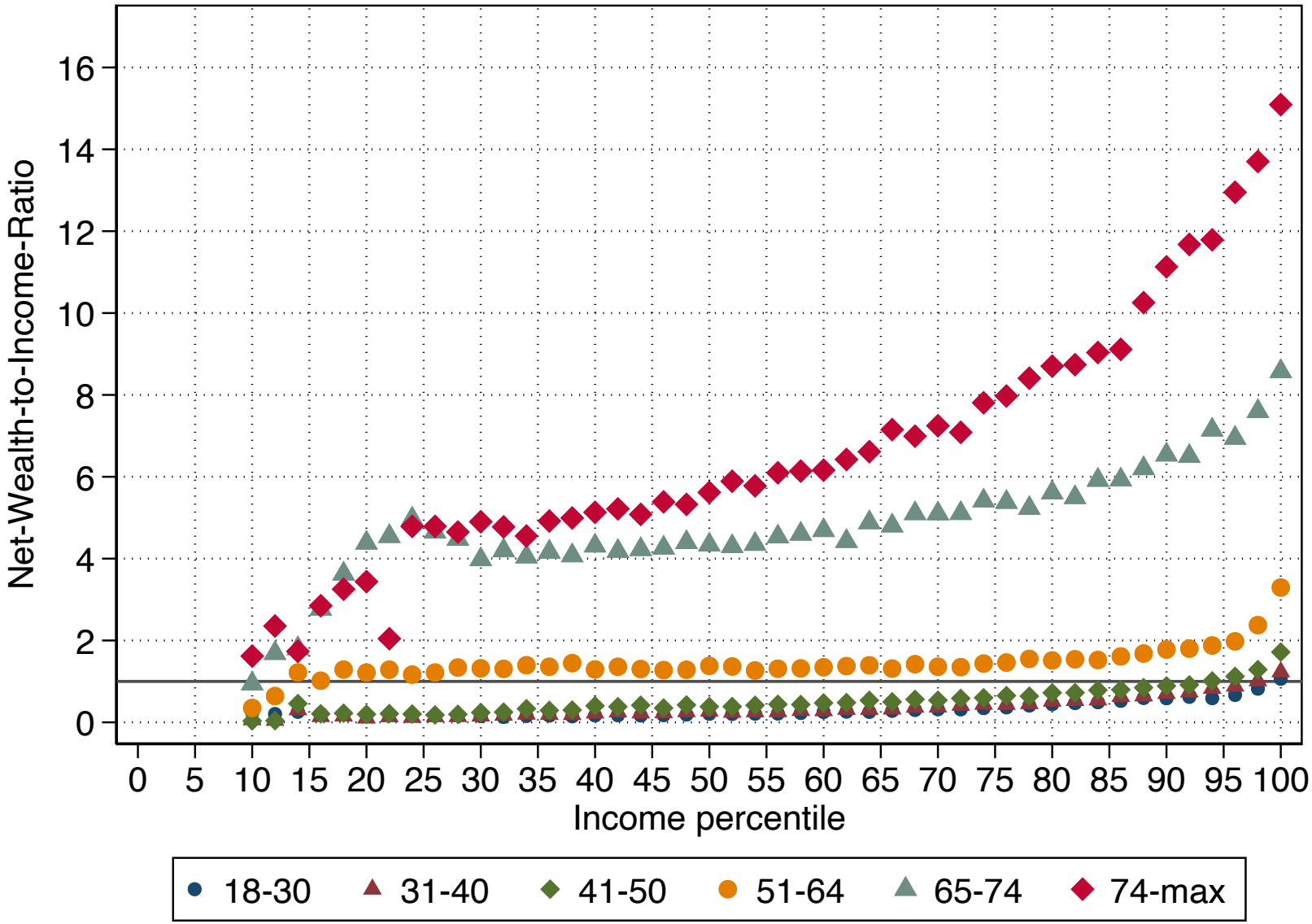
Note: Binned scatter plot by 2-percentile bins with RD's.

Joint Distribution for Different Age Groups (2010)



▸ avg. age by percentile

Wealth-to-Income Ratios by Age Group (Median, 2010)

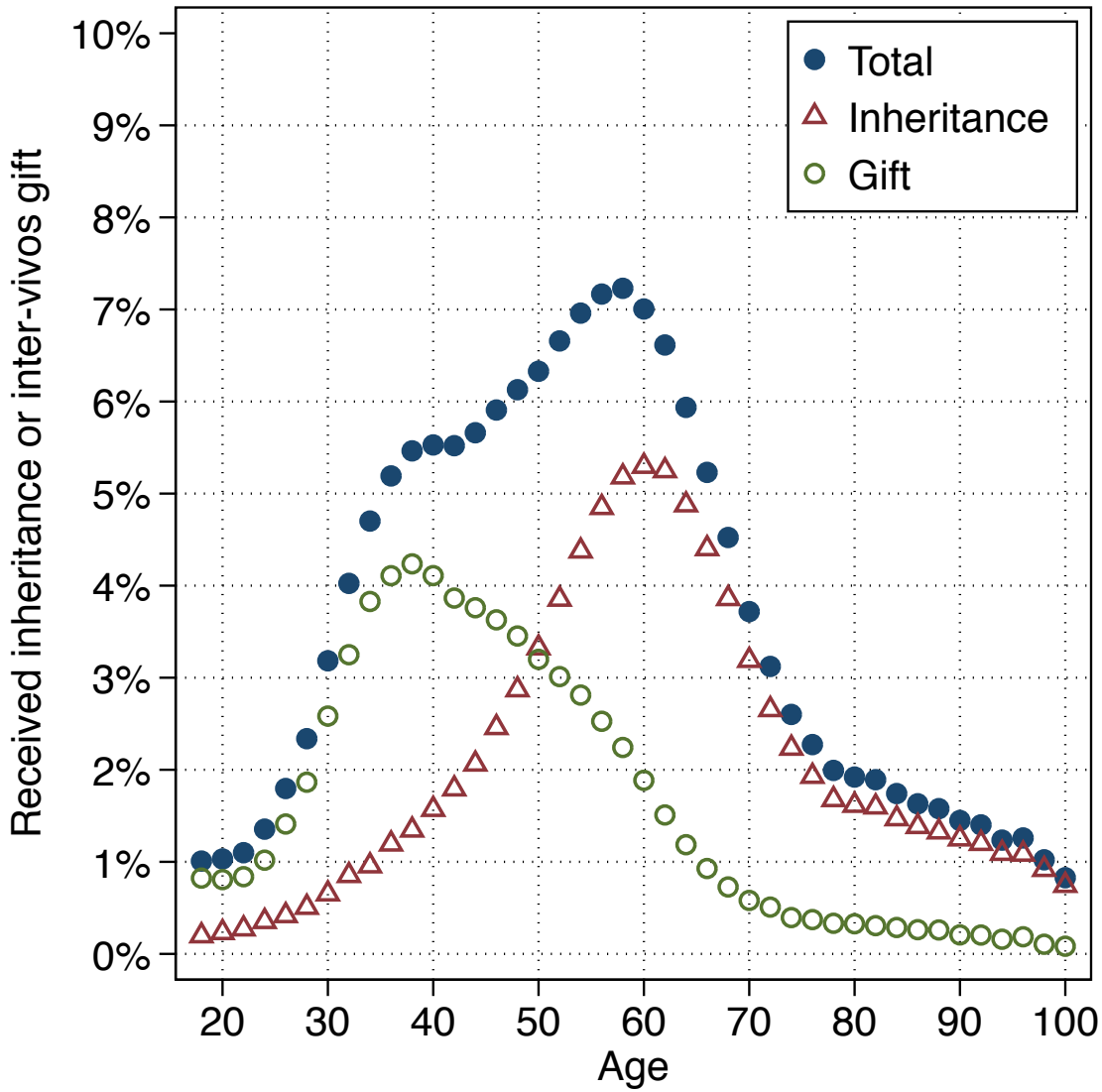


▸ mean ▸ OW 2001-2010 ▸ housing ▸ debt

Outline

Likelihood of Inheritances and Gifts by Age

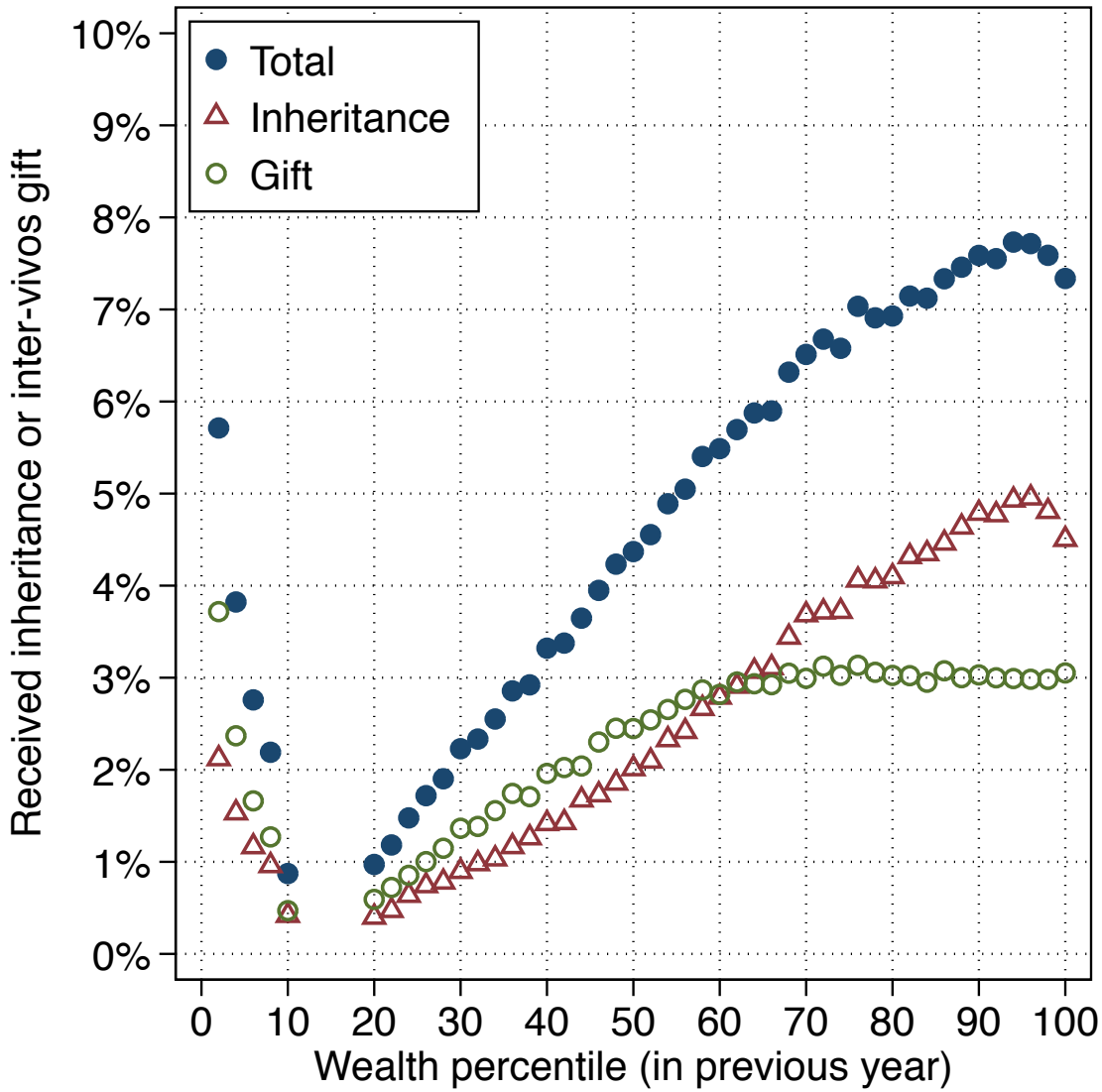
(BE, 2002-2012 pooled)



▸ Avg. amount

Likelihood of Inheritances and Gifts by Wealth Percentile

(BE, 2002-2012 pooled)



▸ Avg. amount

Conclusions: Distribution and Composition

- Substantial differences in wealth (and income) composition along the distribution
- Strong association between income and wealth, especially at the tails
- Strong, positive age-wealth nexus
- Wealth-income ratios
  - rise with income
  - very high for retirees, low for people below age 50

Conclusions: Mobility

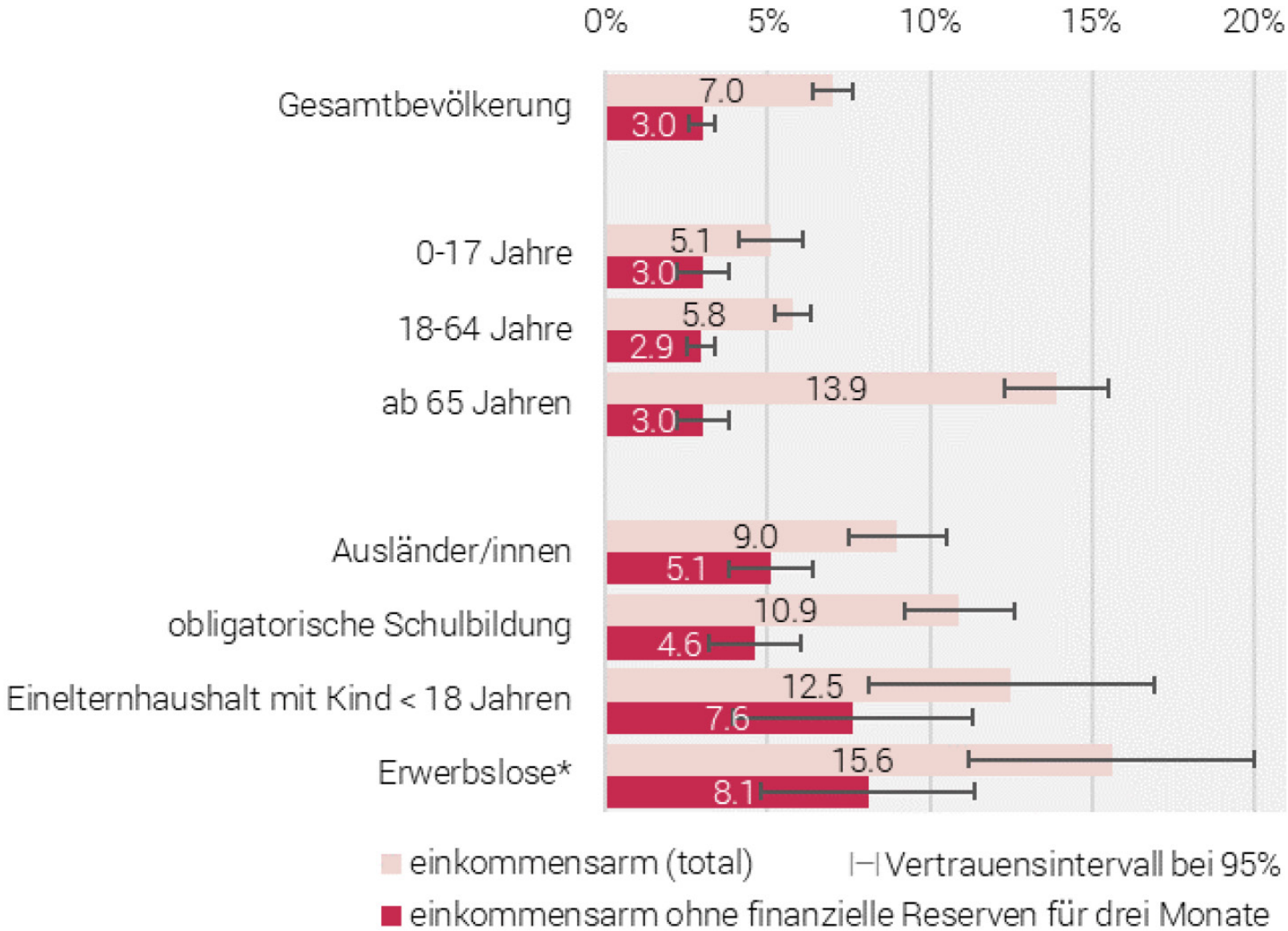
- Climbing the wealth distribution is harder than climbing income distribution
- Intra-generational wealth mobility (s)low
- Inheritances increase intra-generational mobility
- Inheritances more likely...
  - ... around retirement age
  - ... for wealthier individuals
- $\rightarrow$ Inter-generational link in wealth transmission seems strong

Thank you.

Comments and questions welcome:
martinez@kof.ethz.ch

Appendix

Example: Poverty Rates Incl./Excl. Wealth



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* Diese Werte beruhen auf geringen Fallzahlen und sind mit Vorsicht zu interpretieren.

Data: Variables I

Total income sum from different sources:

- employment
- self-employment
- financial assets
- real estate (incl. imputed rent)
- public pension (pillar 1)
- occupational pension (pillar 2) + private pensions (pillar 3)
- UI benefits, DI benefits
- family and child allowances
- alimony and transfers from other households

Deductions

- contributions retirement savings plans
- political party donations / memberships
- charity donations

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Data: Variables II

Sum of different wealth components:

- financial assets
- business assets
- movable assets (cars, art, ...)
- real estate
- debt
- in Bern (BE): inheritances and inter vivos gifts

Demographics:

- Gender, age, single/married, # of children
- Income attributable to main taxpayer or spouse
- Wealth held in common

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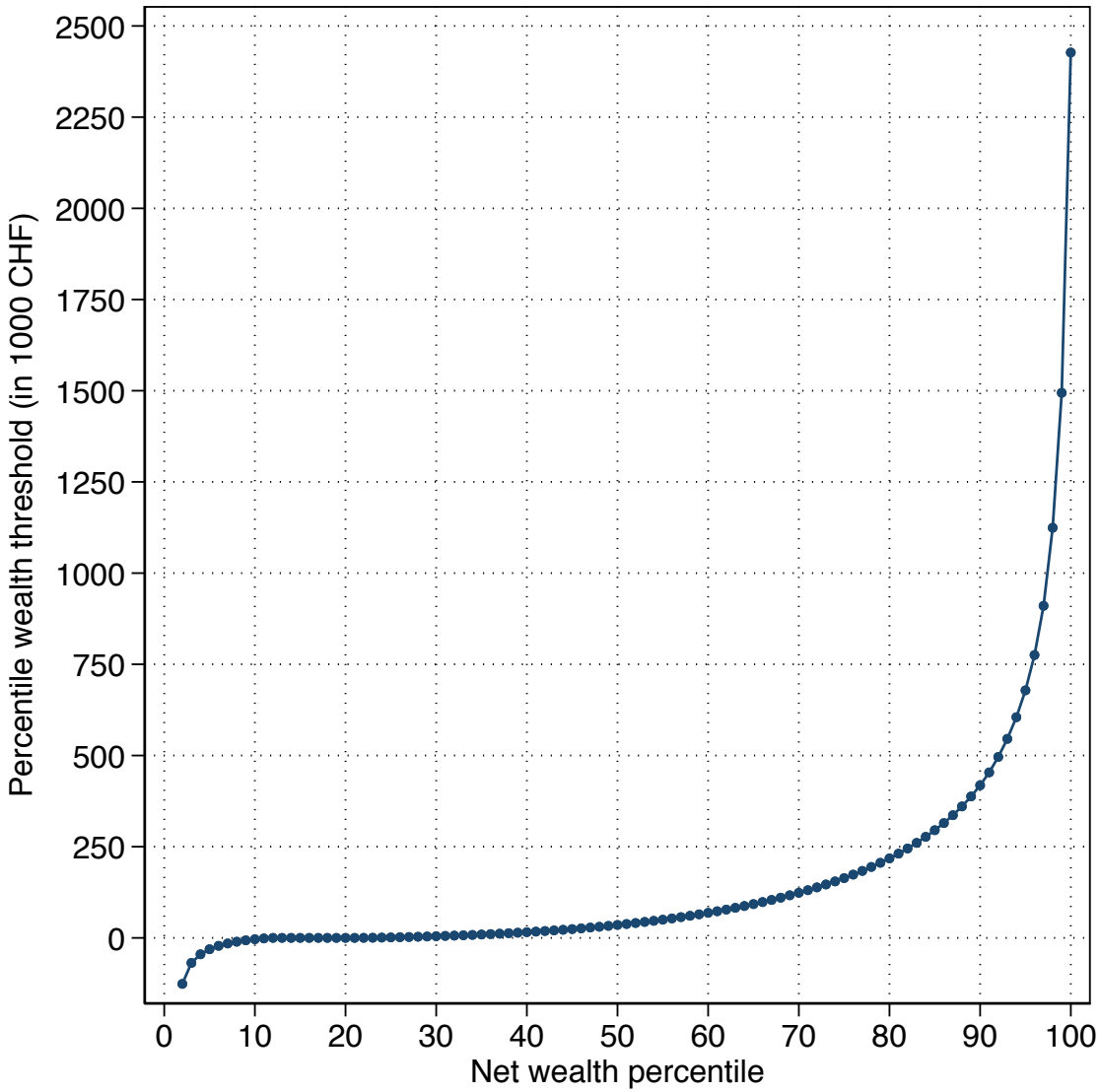
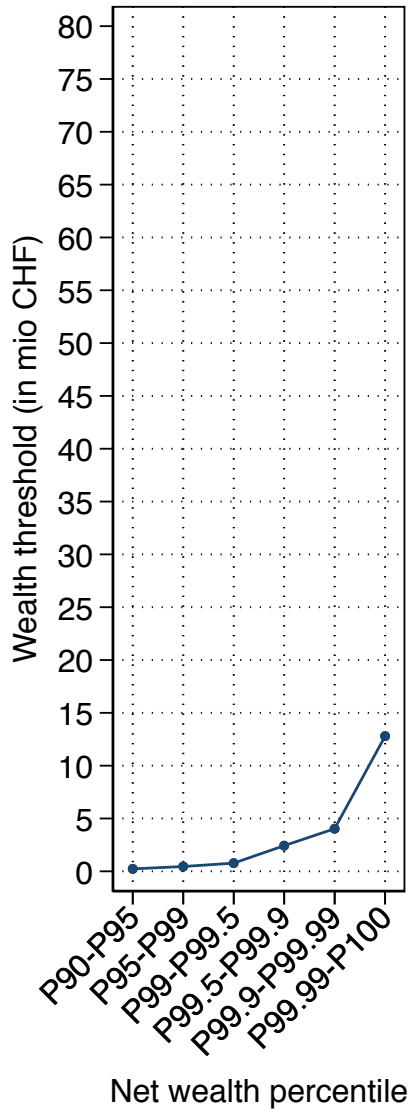
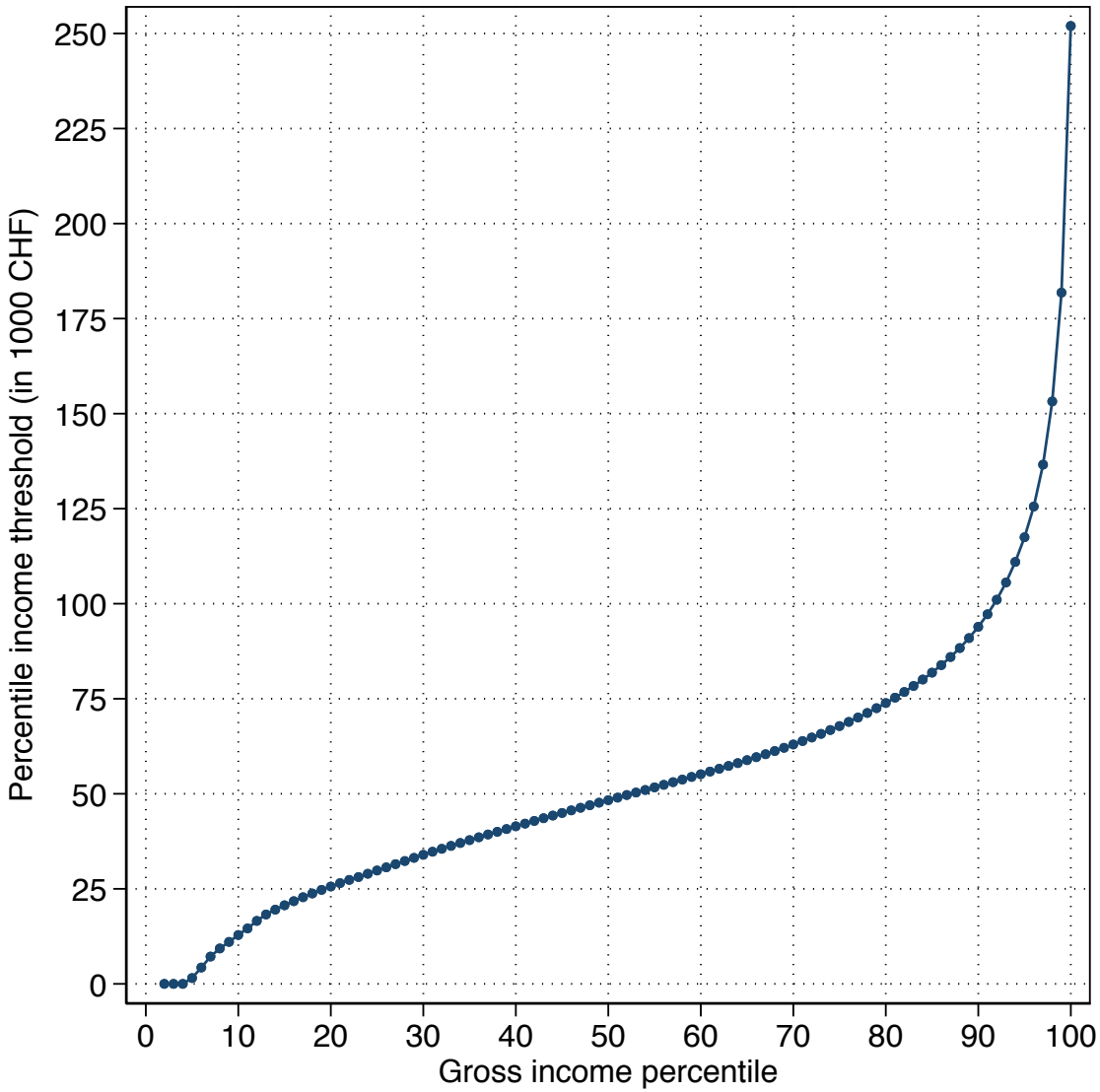
Wealth Percentile Thresholds

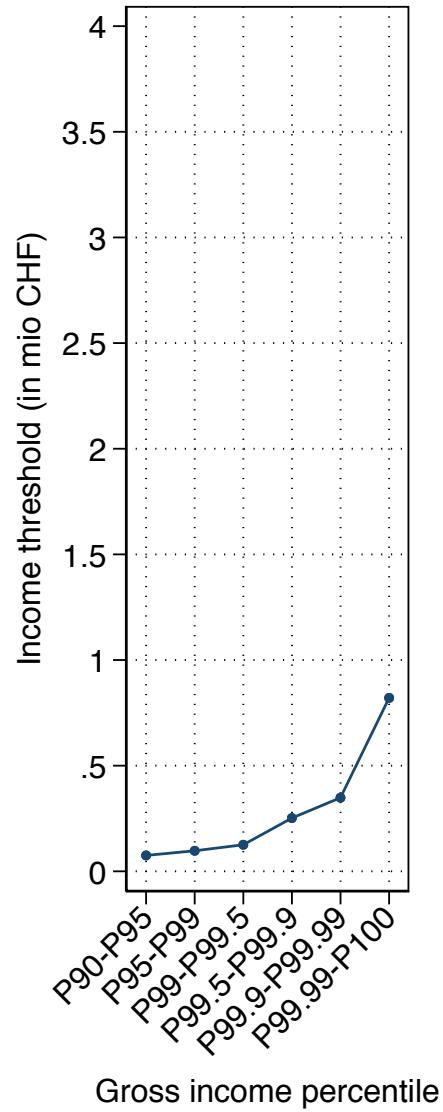




▸ Summary Table

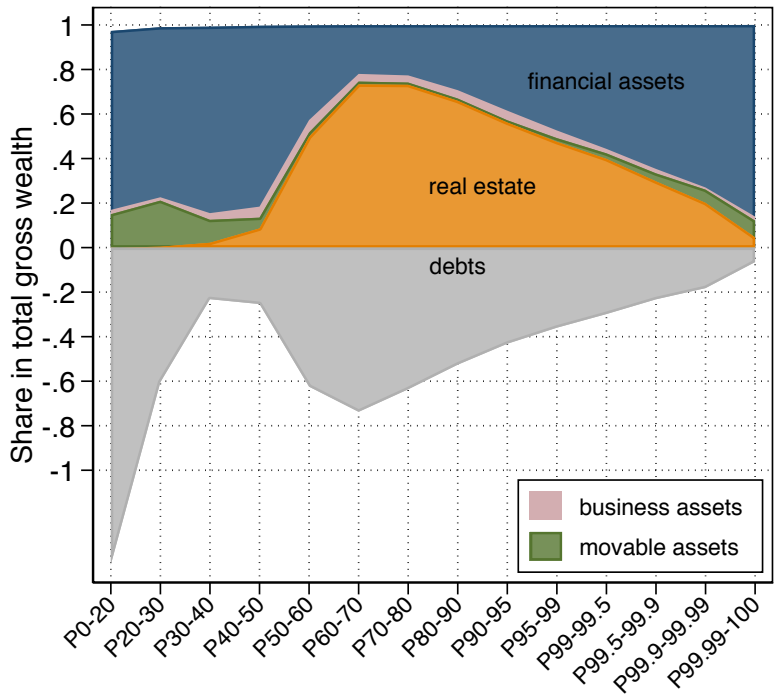
Income Percentile Thresholds



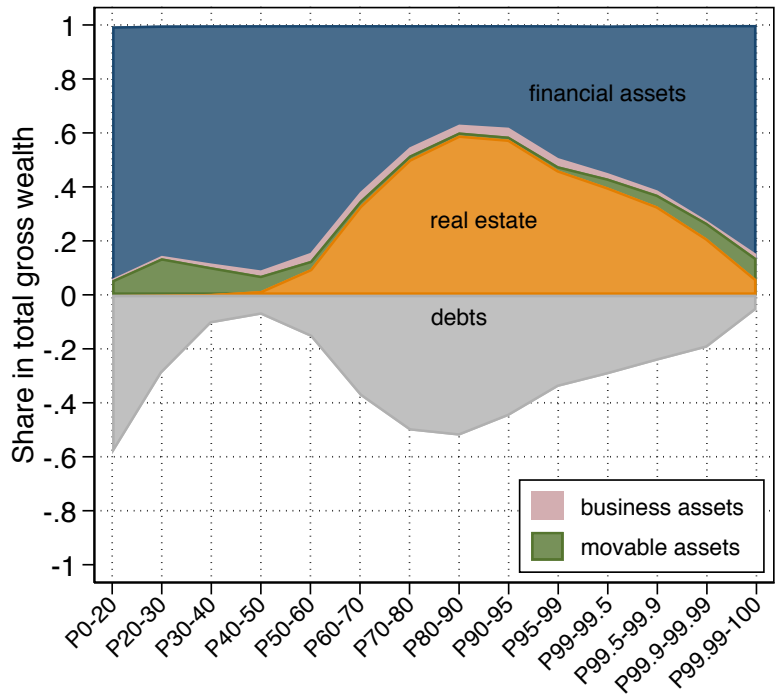


▸ Summary Table

Wealth Composition: Married vs. Singles



individuals, 2010 - ZH, BE, LU, OW, SG, BS, JU



individuals, 2010 - ZH, BE, LU, OW, SG, BS, JU

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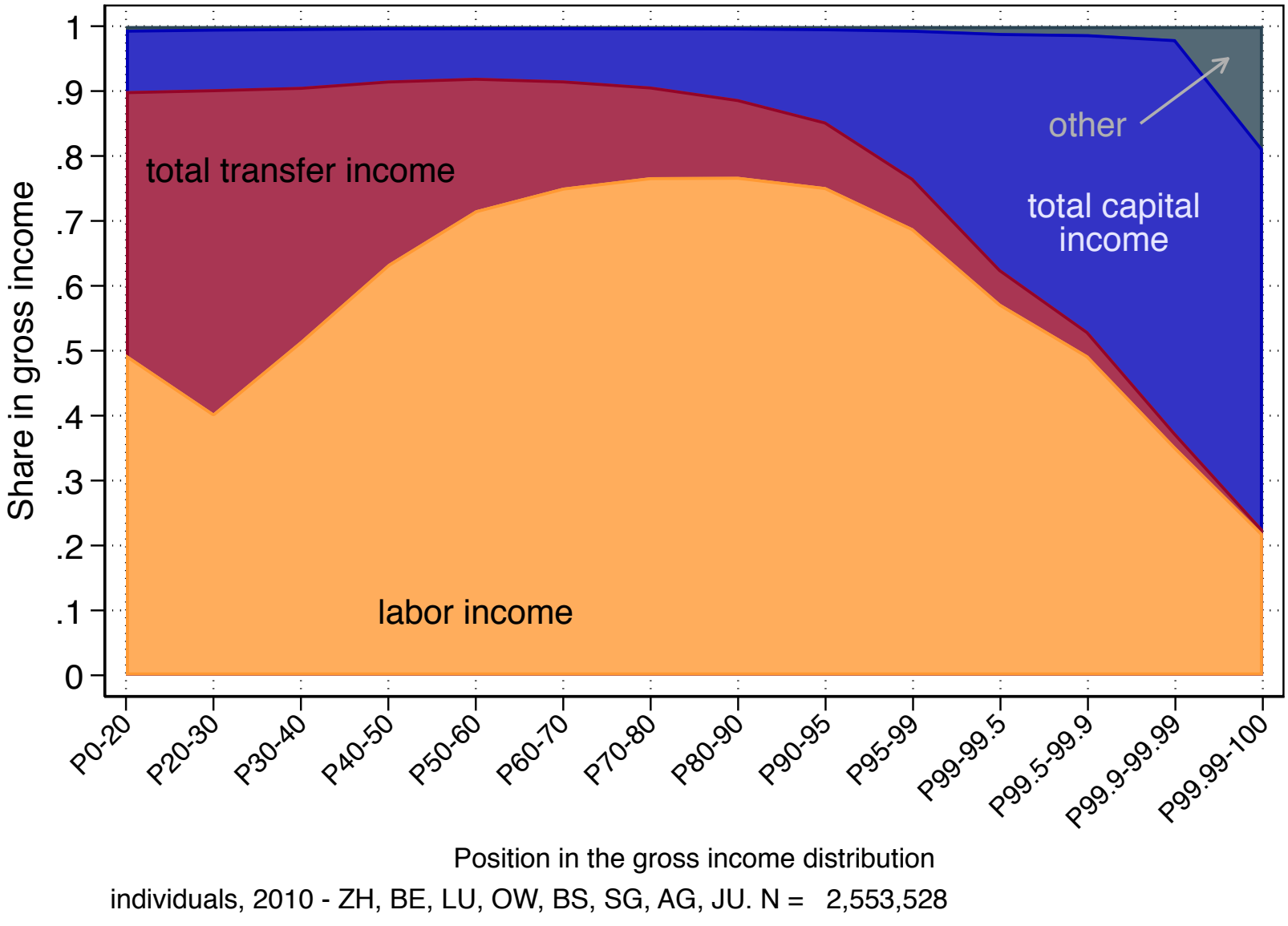
Income Composition



individuals, 2010 - ZH, BE, LU, OW, BS, SG, AG, JU. N = 2,553,528

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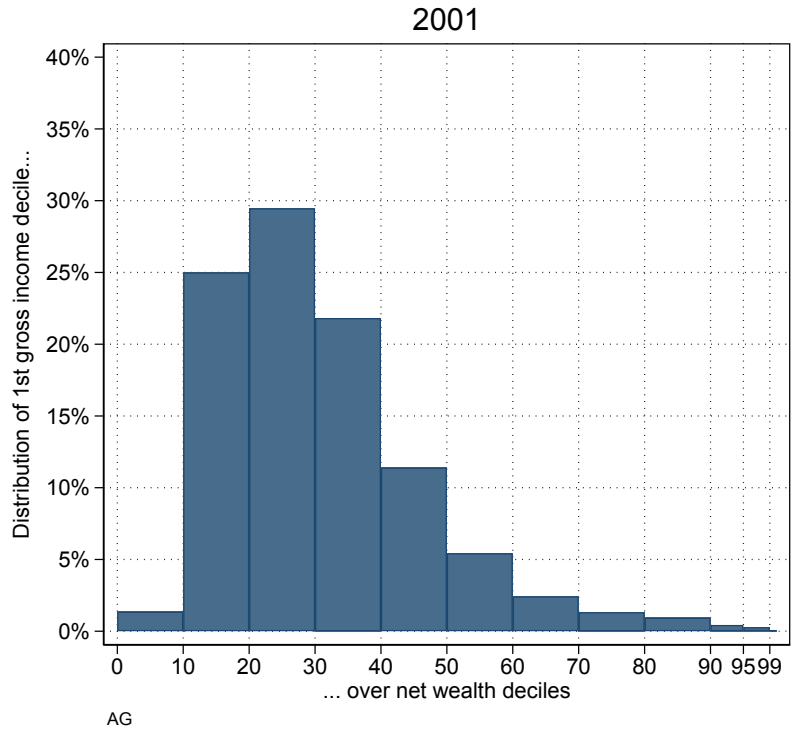
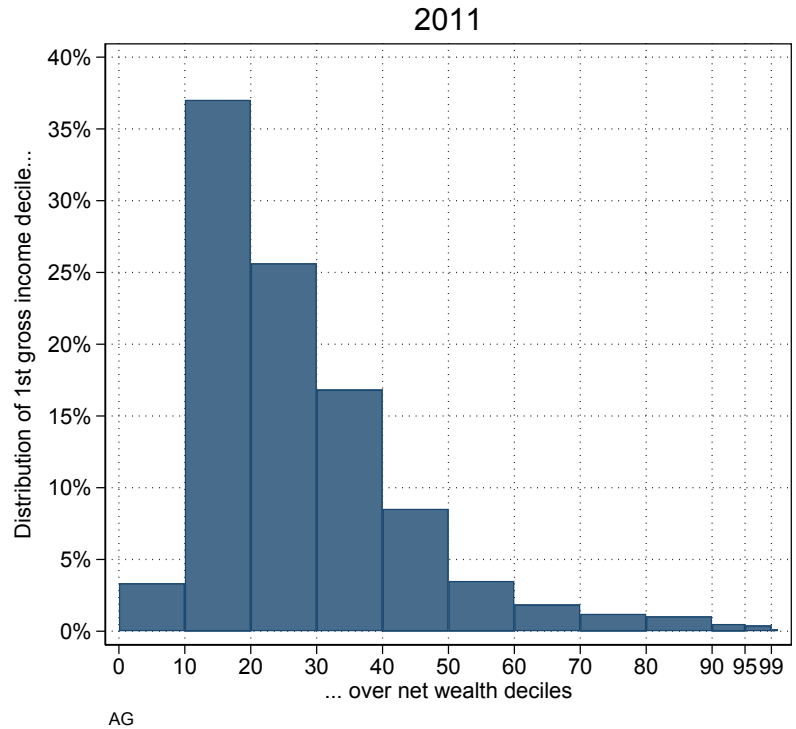
Joint Distribution: Bottom 10%





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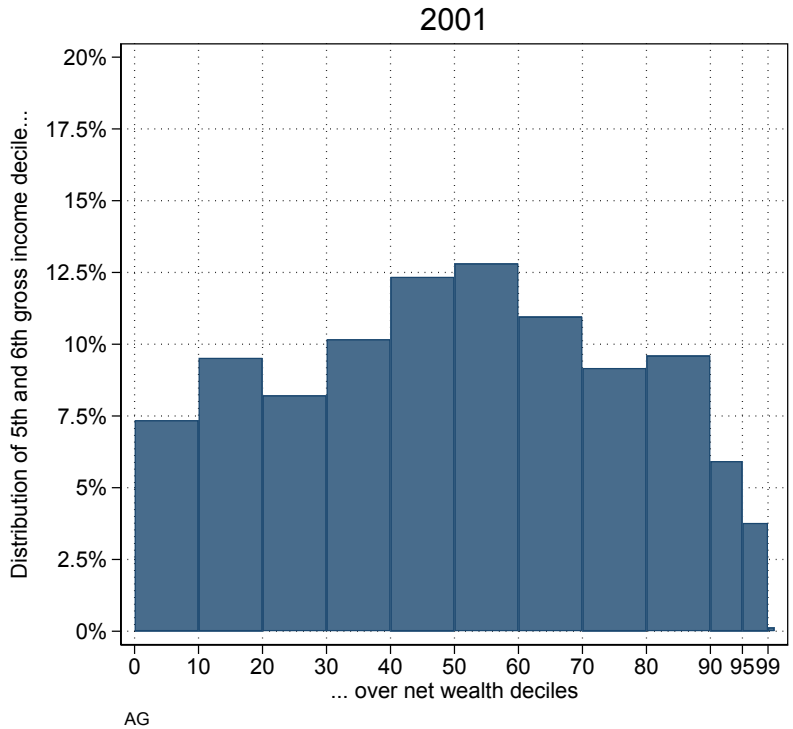
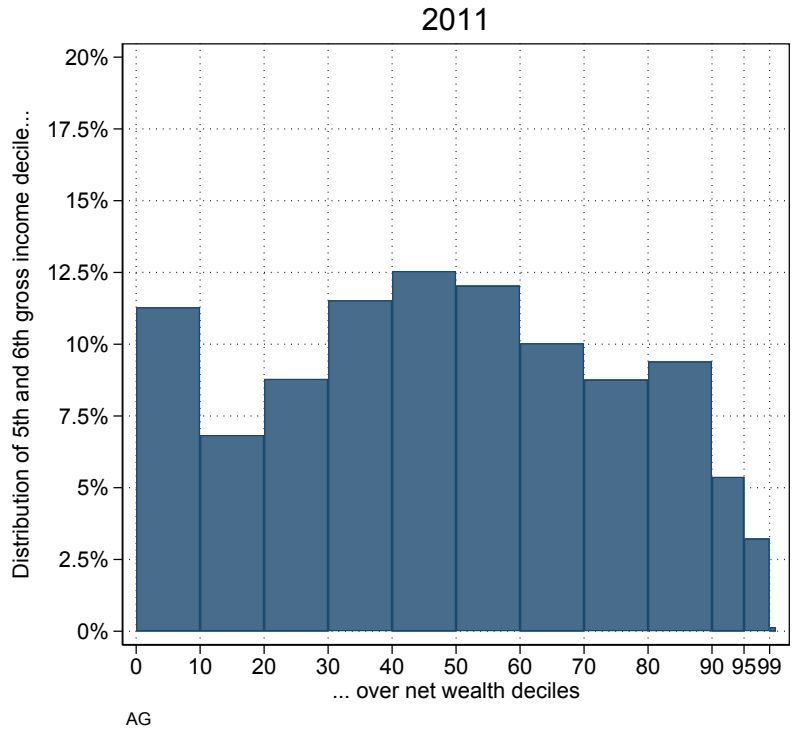
Joint Distribution: Middle 20%





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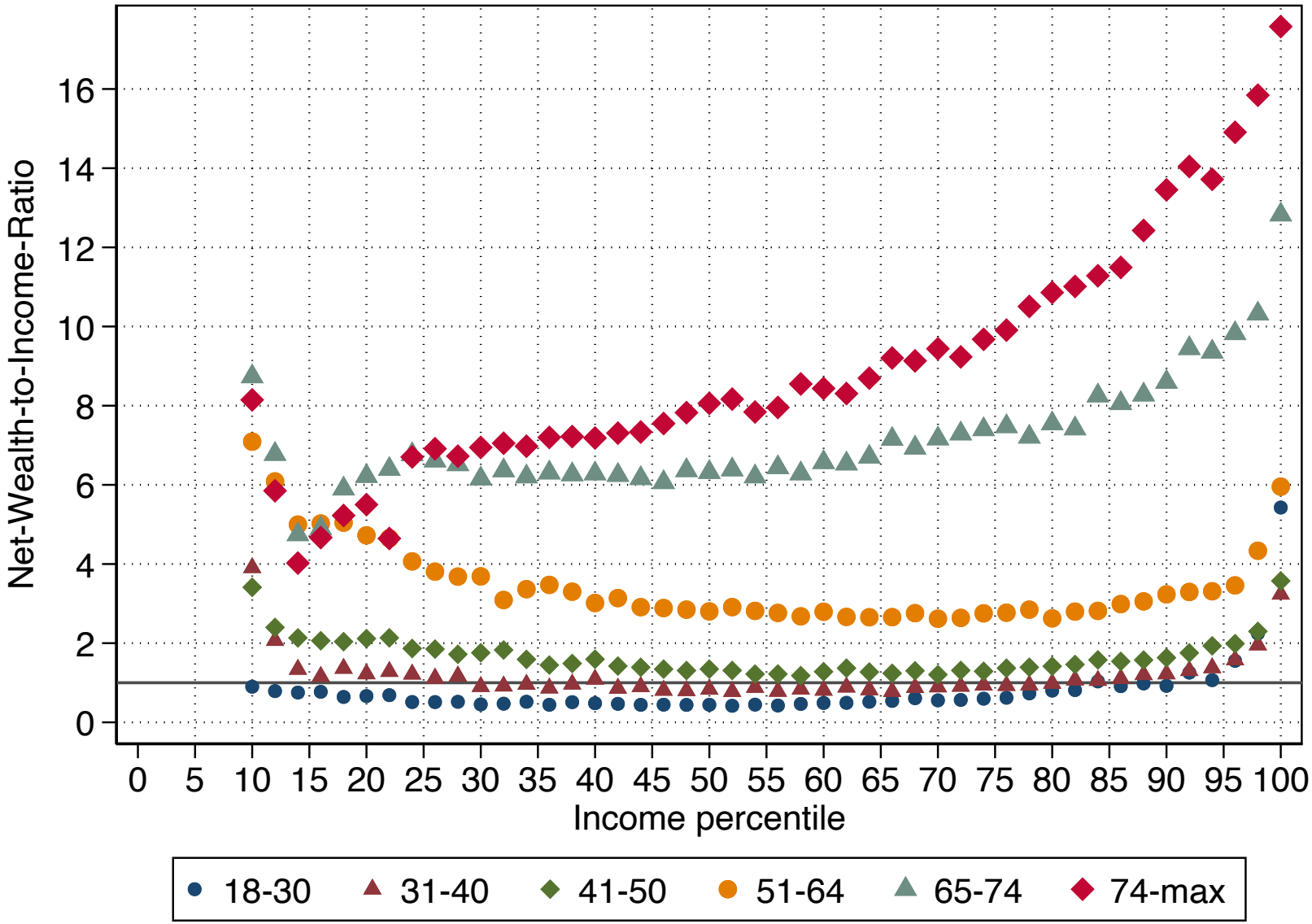
Wealth-to-Income Ratios by Age Group (Mean, 2010)



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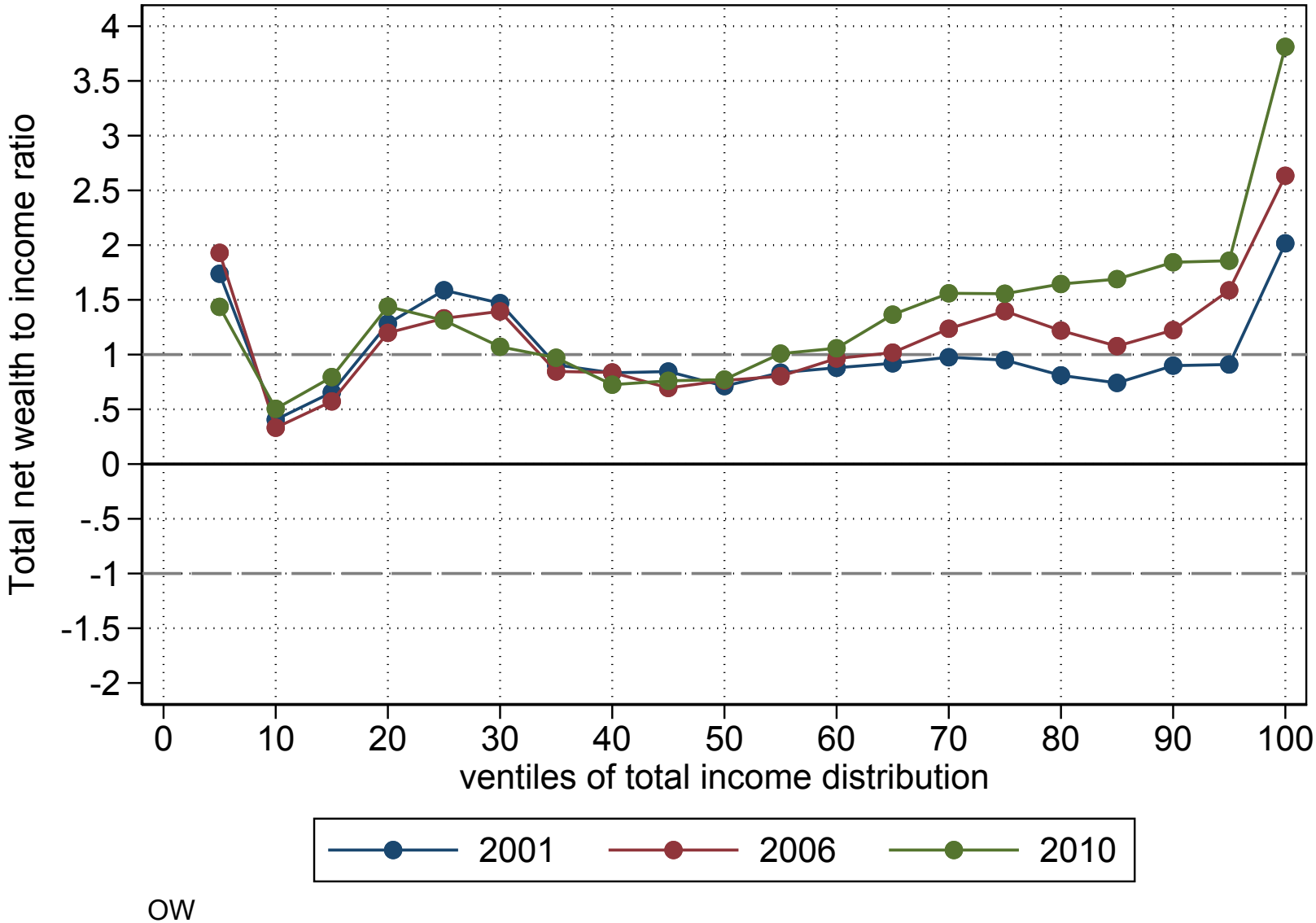
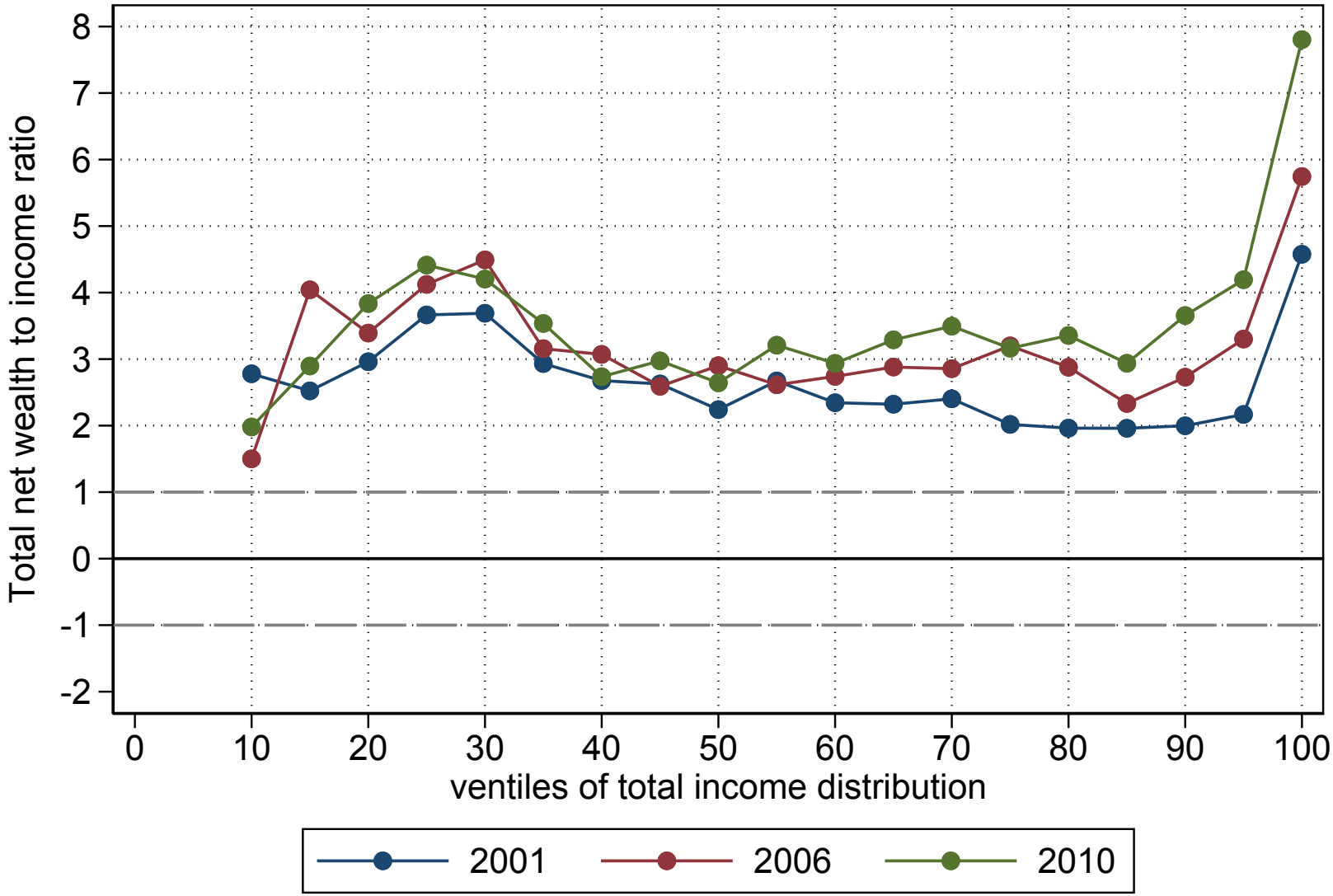
Wealth-Income Ratio over Time (Median, OW)



OW

▸ mean ▸ back

Wealth-Income Ratio - Mean OW



OW

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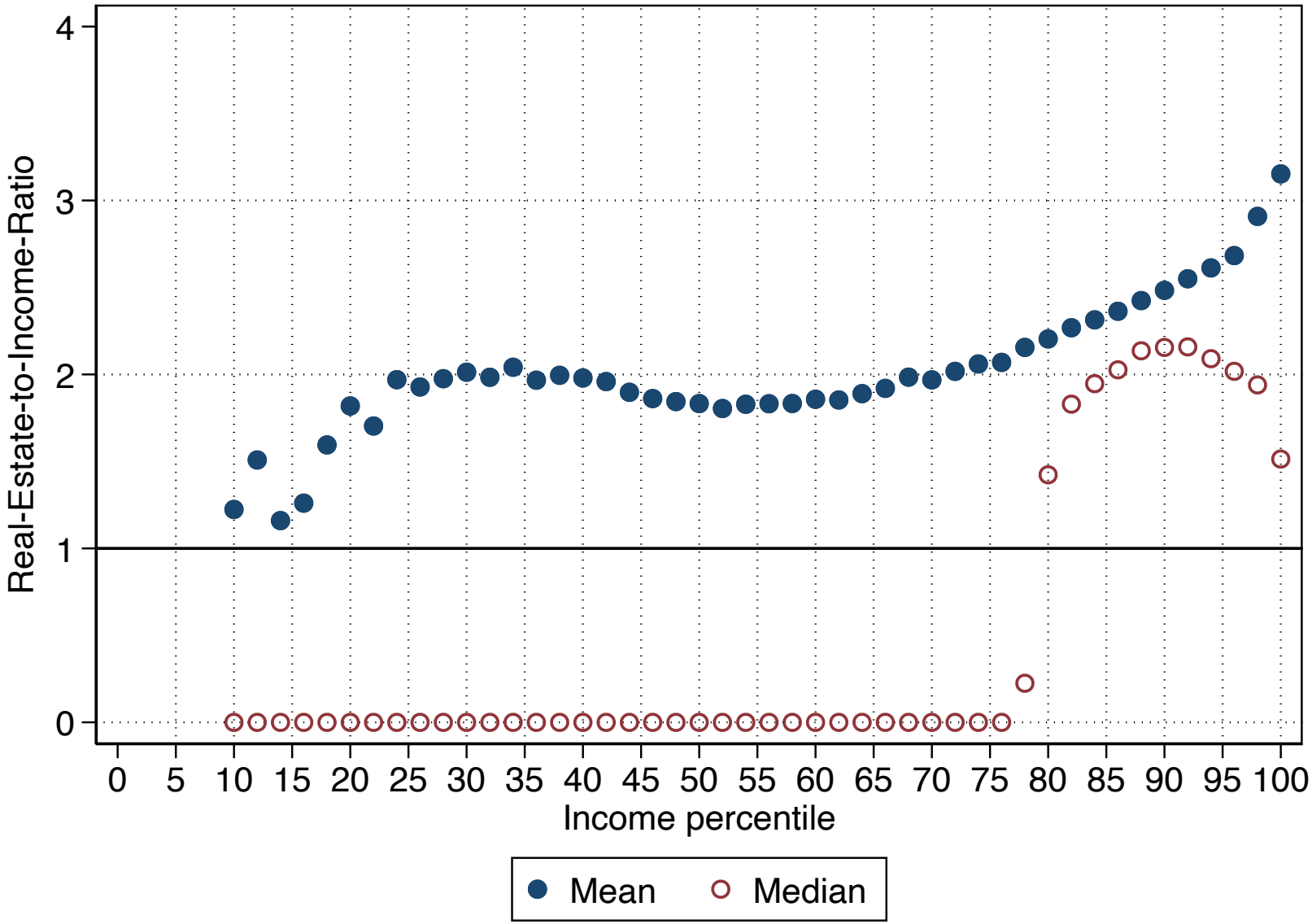
Real-Estate-to-Income Ratios (2010)



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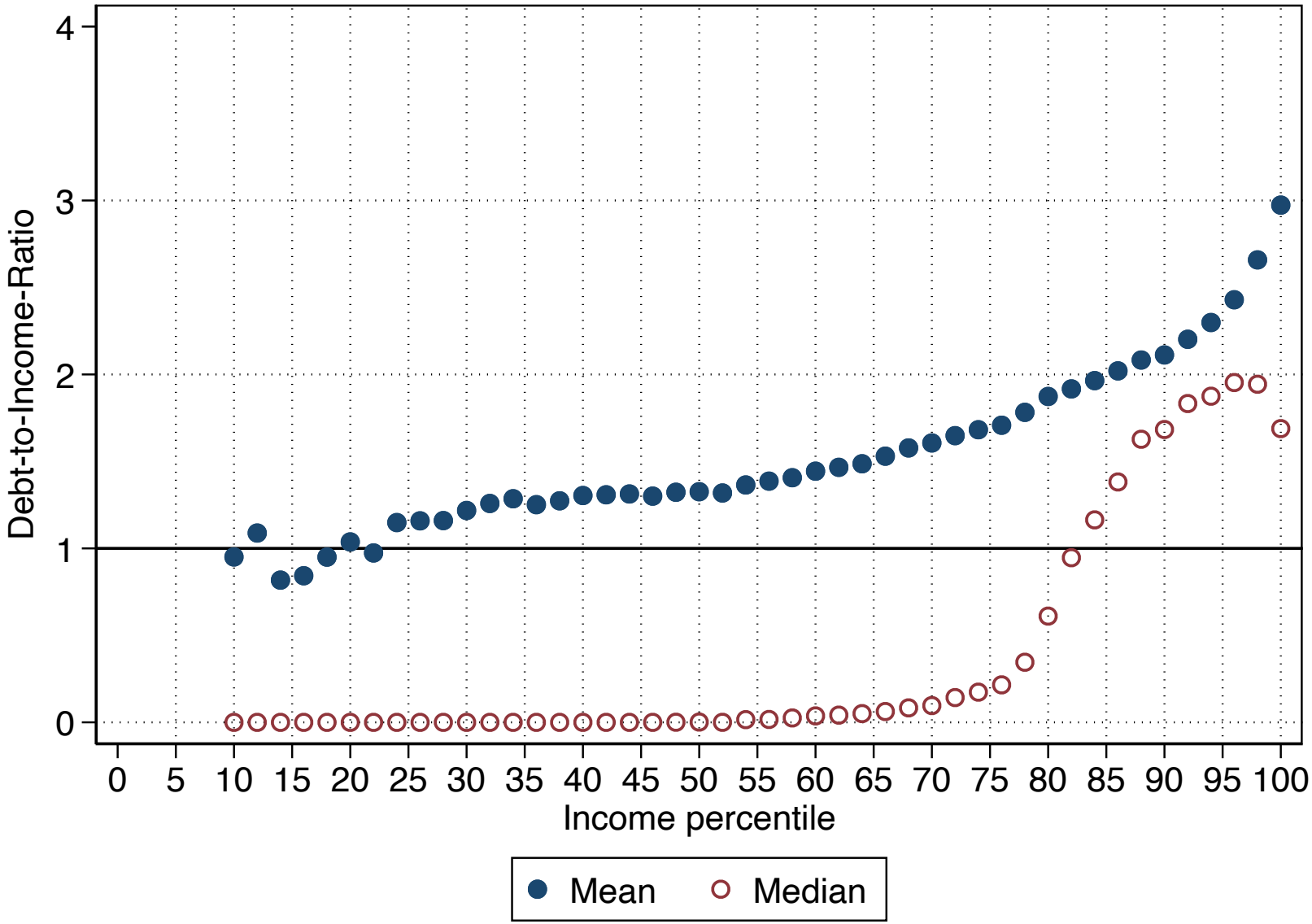
Debt-to-Income Ratios (2010)



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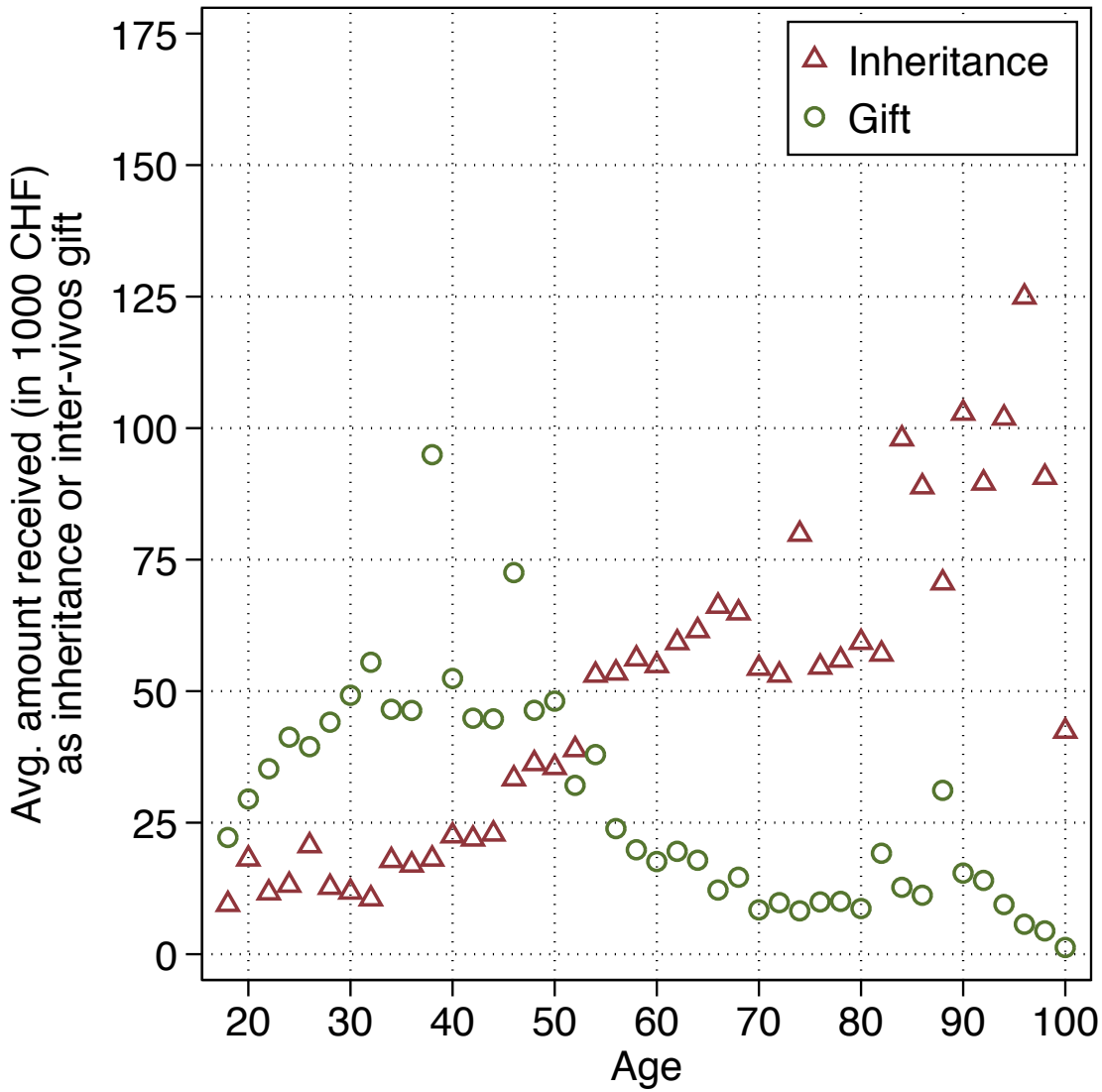
Average Inheritances by Age



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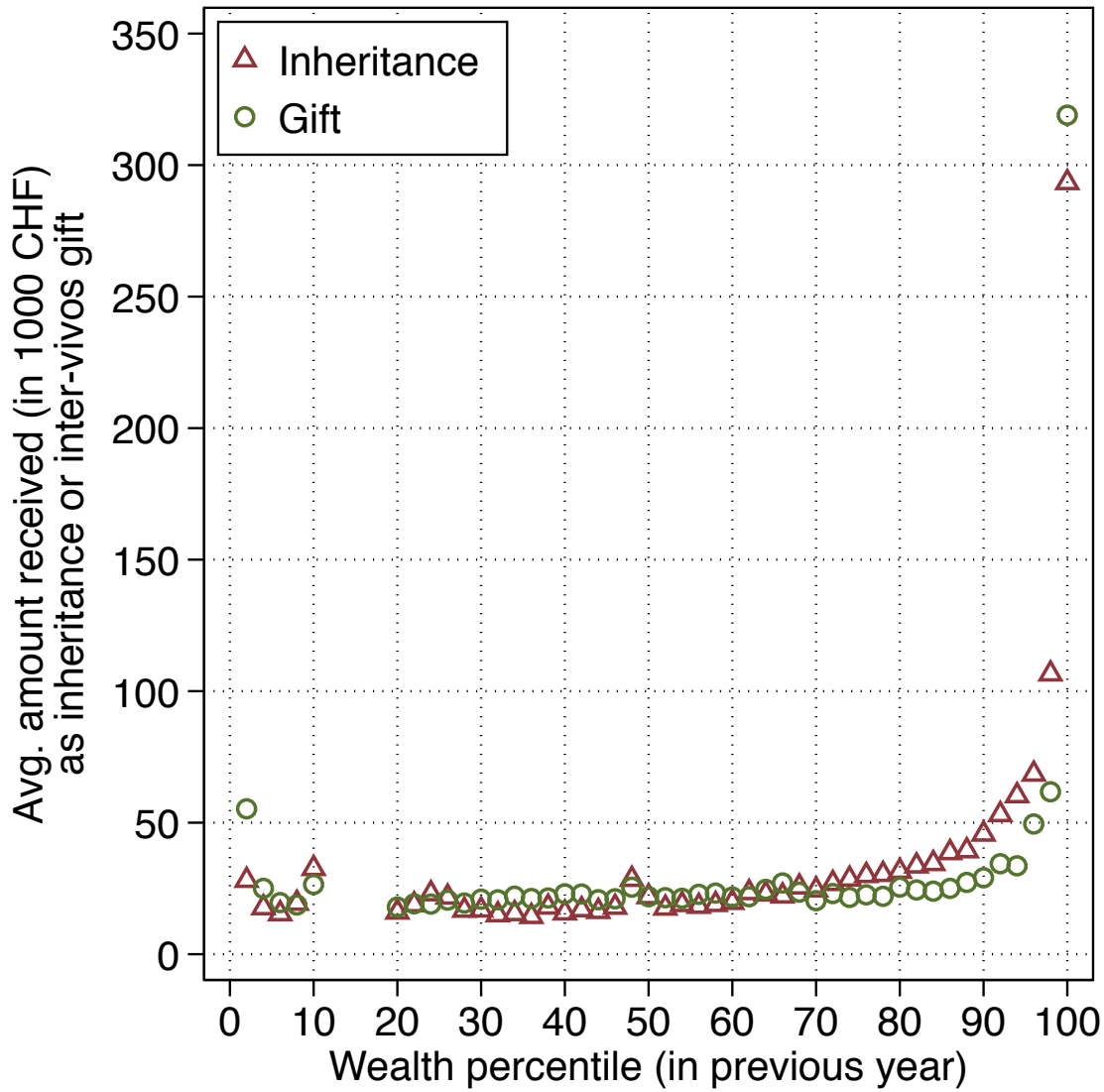
Average Inheritances by Wealth Percentile



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