In It Together? Inequality and the Joint Distribution of Income and Wealth

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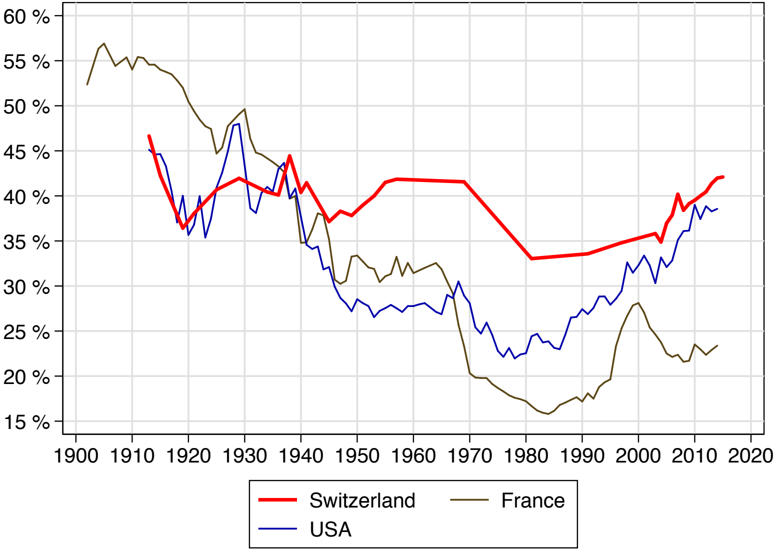
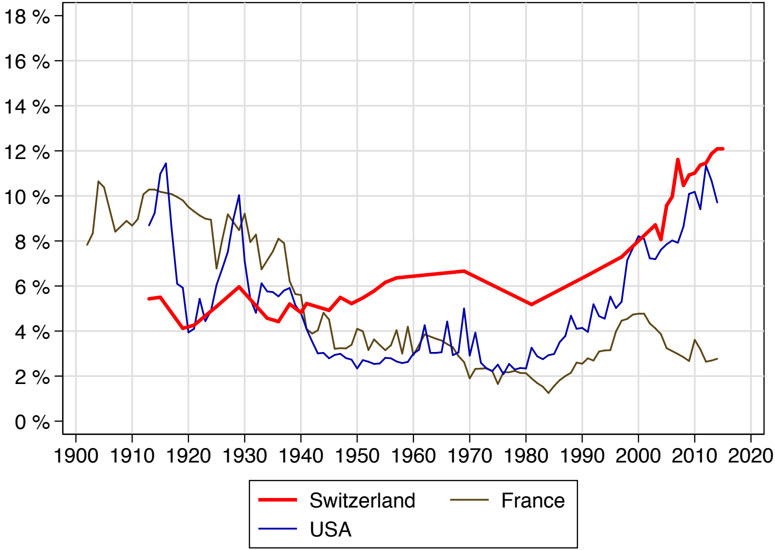
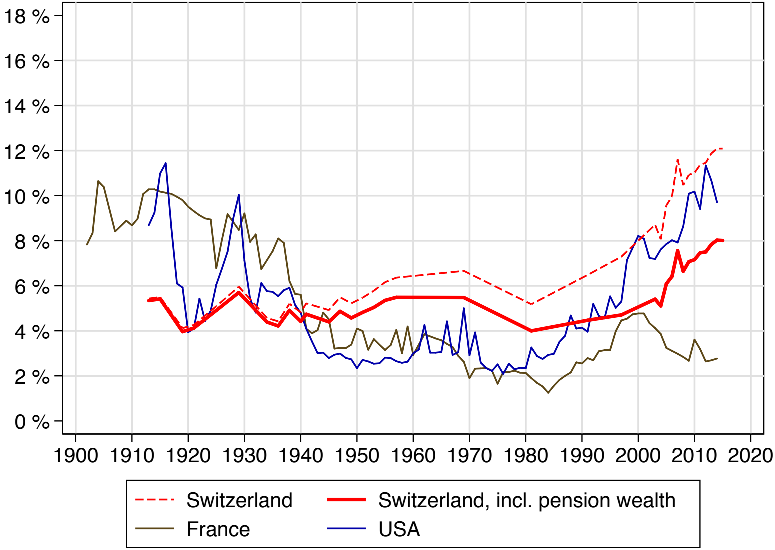
Top 1% Wealth Shares in International Comparison



Top 0.01% Wealth Shares in International Comparison



Top 0.01% Wealth Shares in International Comparison



Research Questions

- What is the importance of different wealth components?
- What is the joint distribution of income and wealth?
- What is the ratio of wealth (debt) to income?
- How large is wealth mobility?
- Who gets inheritances and inter-vivos-gifts?

Motivation

- Distribution of wealth understudied compared to income
- Wealth highly concentrated
- Wealth at the focus of tax policy:
  - US: wealth tax proposals (Warren, Sanders)
  - US: lower estate tax exemptions (Sanders)
  - CH: 99% initiative
  - CH: national inheritance tax initiative (2015)
  - OECD (2018): The Role and Design of Net Wealth Taxes
- Sensitivity of wealth to taxation
- Wealth and pension policy:
  - How rich are the elderly?
  - Who saves voluntarily for retirement?

Literature

Wealth Inequality

- Kopczuk and Saez (2004), Saez and Zucman (2016), Föllmi and Martínez (2017), Piketty et al. (2019)

Joint Distribution

- Jäntti et al. (2015), Jäntti et al. (2008), Sierminska et al. (2007), Gallusser and Krapf (2019)

Wealth-Income Ratio

- Piketty and Zucman (2014), Piketty (2014), Kumar (2019)

Heterogeneous Returns

- Fagereng et al. (2016), Cao and Luo (2017)

Outline

Data: Cantonal Income and Wealth Tax Data

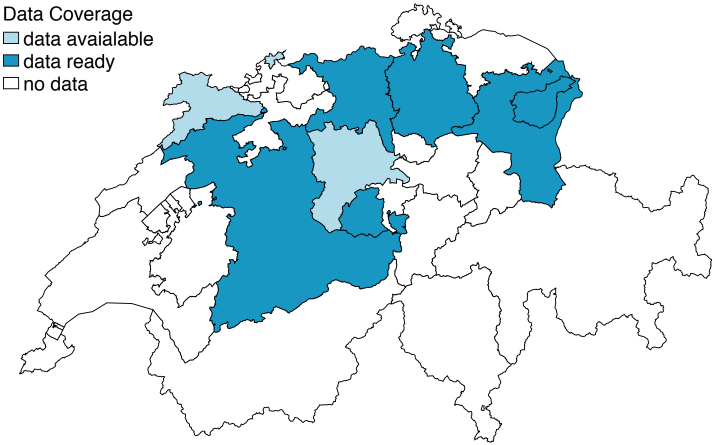
Institutional background:

- Federal country with strong tax autonomy at cantonal level
- Federal income tax
- Cantonal income and wealth tax
  (and some inheritance taxes for non-family heirs)
- Cantons administer cantonal + federal tax collection

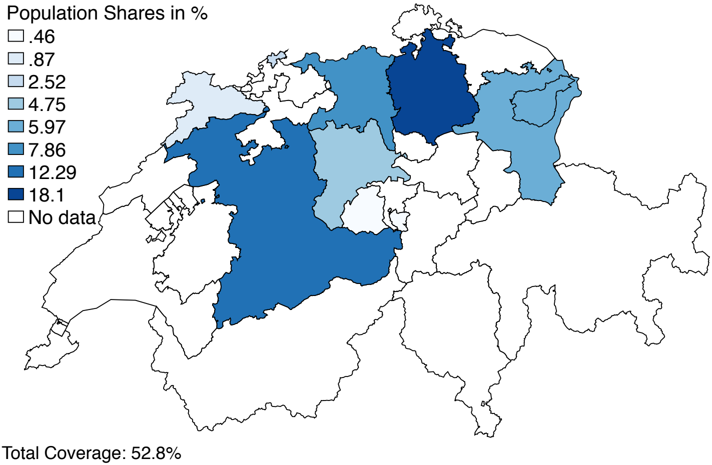
For this project:

- Individual tax register data from currently 5 German-speaking Swiss cantons:
  AG, OW, BE, SG, ZH (LU, BS, JU to be added)
- Varying years over the period 2001-2016

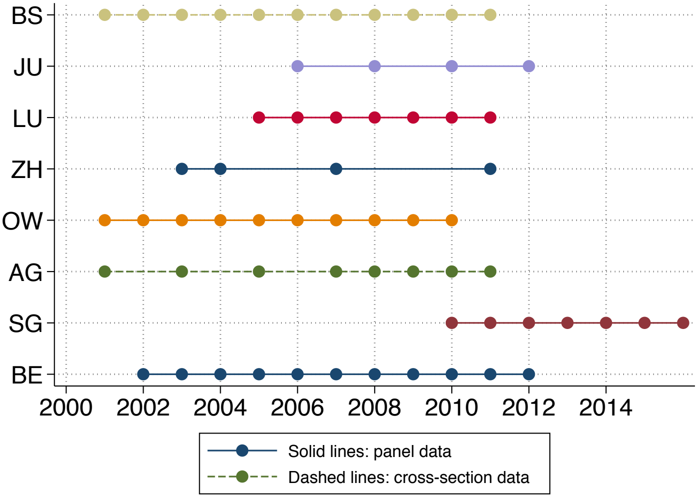
Data: Regional Coverage



Data: Population Coverage



Data: Time Periods Covered



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

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

Data: Variables II

Sum of different wealth components:

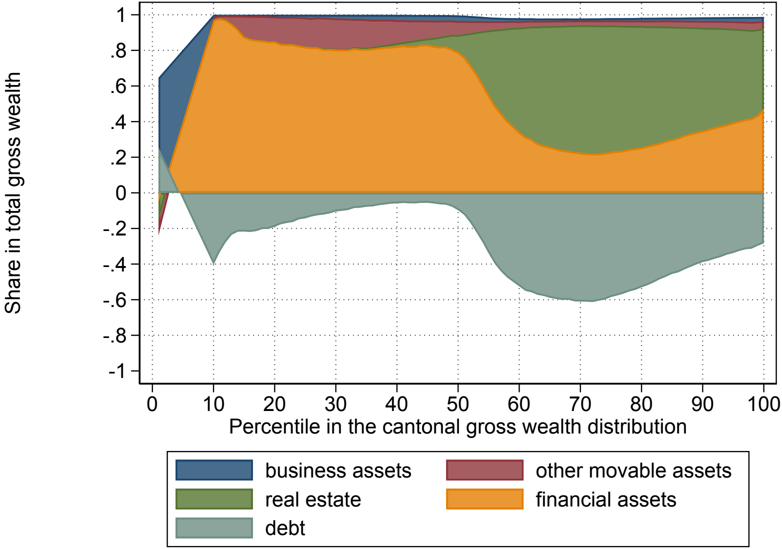
- financial assets
- business assets
- movable assets (cars, art, ...)
- real estate
- debt
- in Bern (BE): inheritances and inter vivos gifts

Demographics:

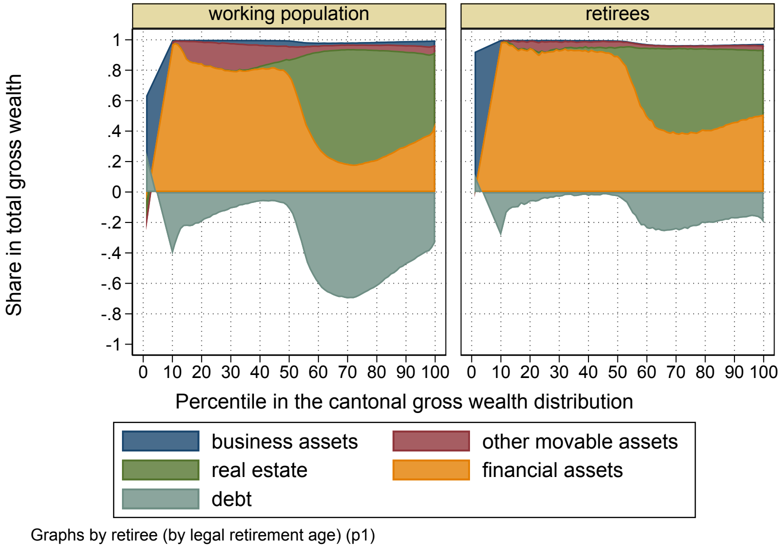
- Gender, age, single/married, # of children
- Income attributable to main taxpayer or spouse
- Wealth held in common

Outline

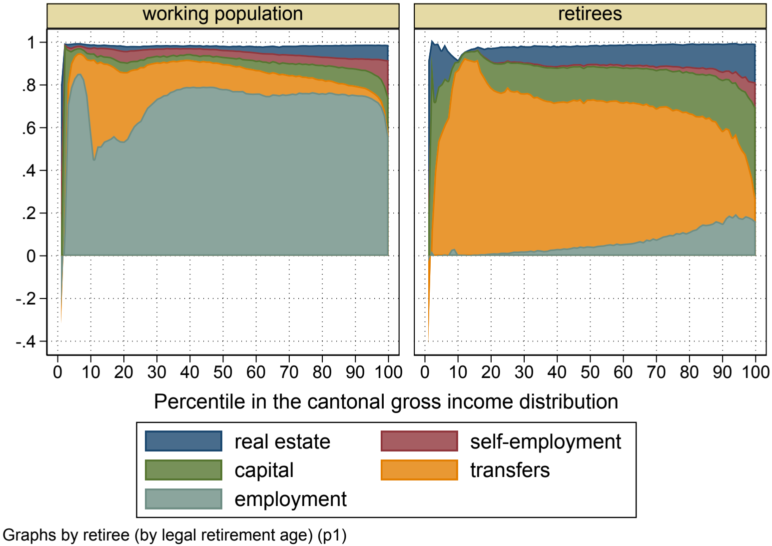
Wealth Composition



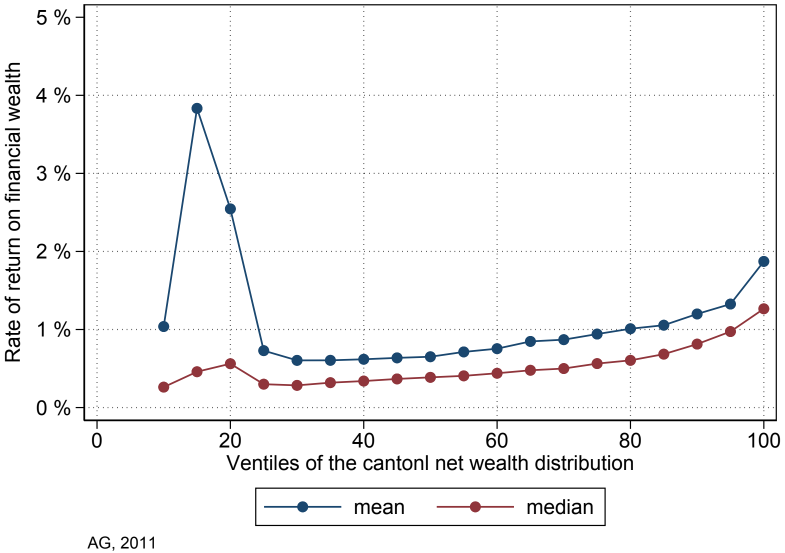
Wealth Composition: Retirees vs. Non-Retirees



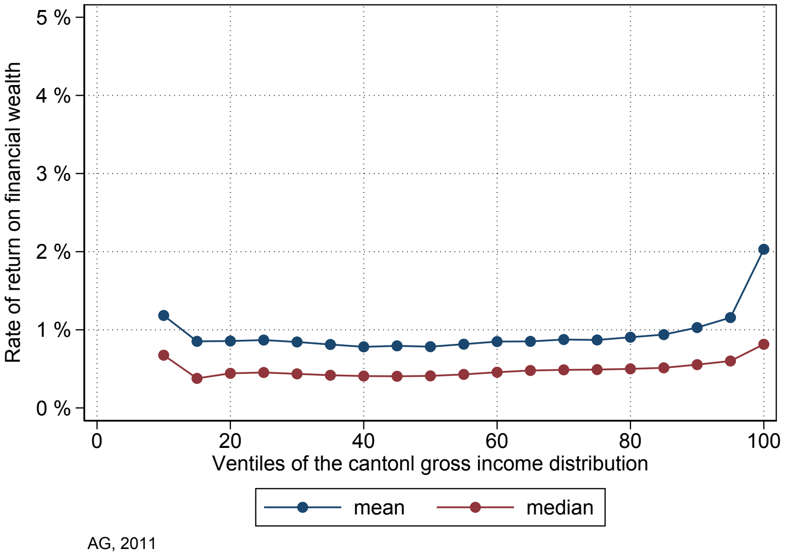
Income Composition: Retirees vs. Non-Retirees



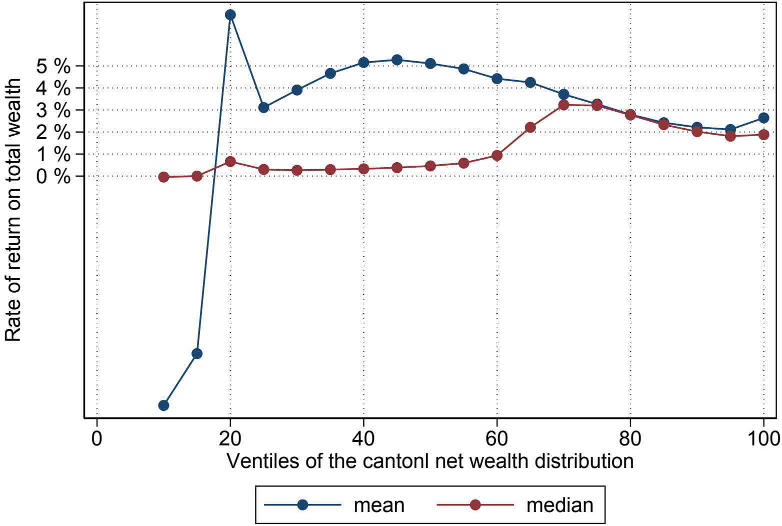
Rates of Return to Financial Wealth by Wealth Ventile



Rates of Return to Financial Wealth by Income Ventile

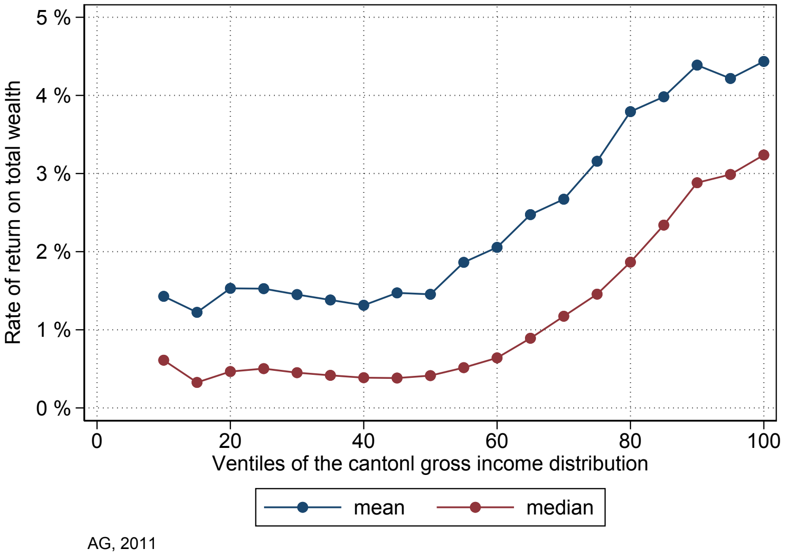


Rates of Return to Total Wealth by Wealth Ventile

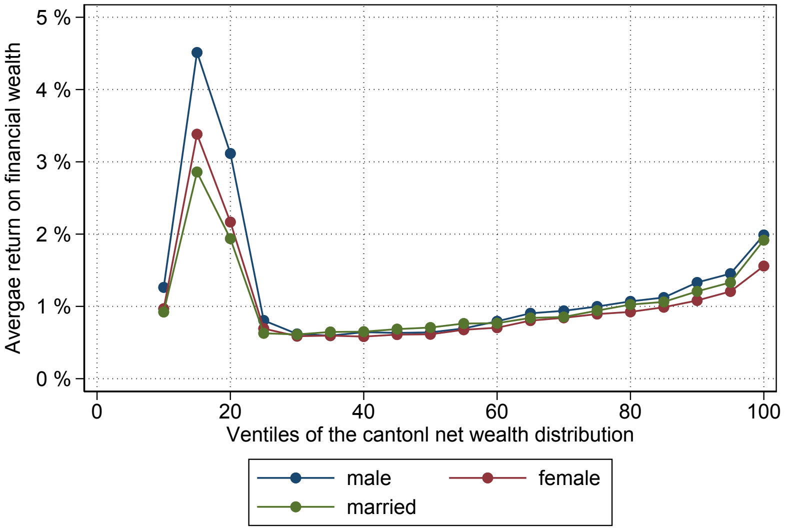


AG, 2011

Rates of Return to Total Wealth by Income Ventile

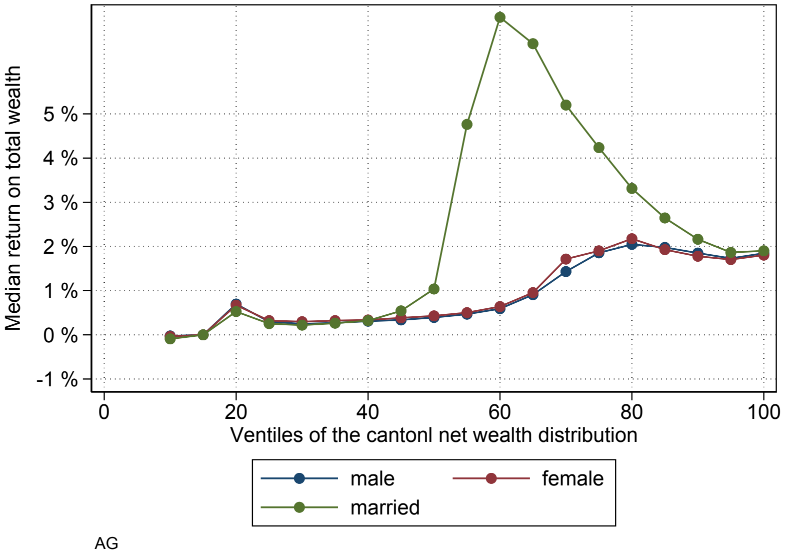


Gender Differences in Return to Financial Wealth

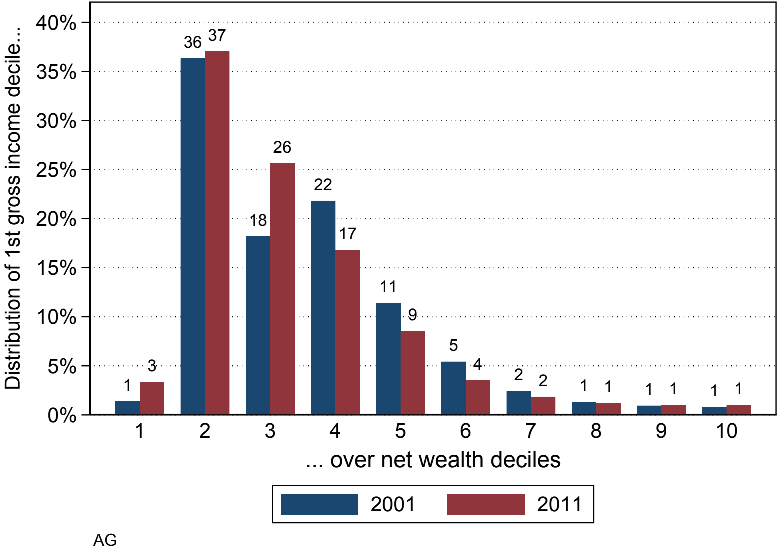


AG

Gender Differences in Return to Total Wealth

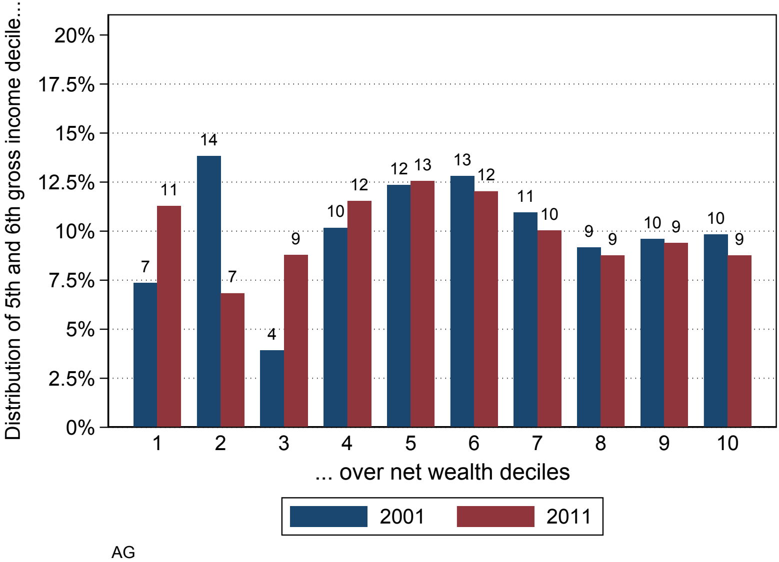


Joint Distribution: Bottom 10%



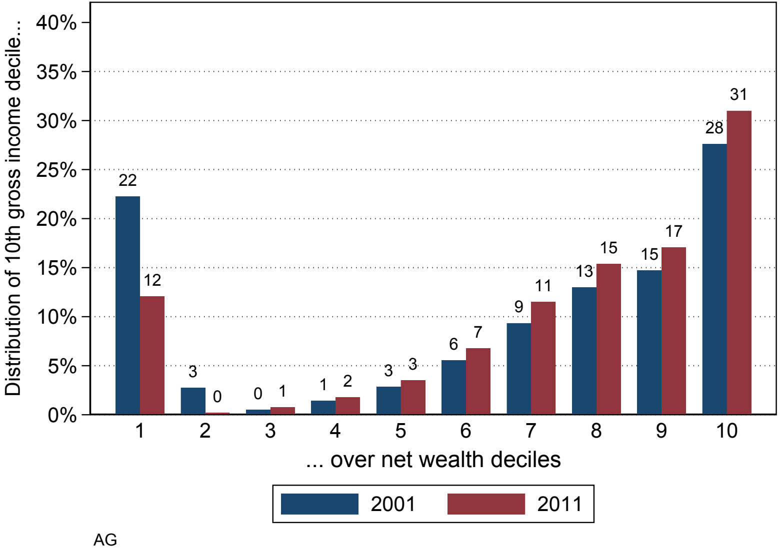
histogram

Joint Distribution: Middle 20%

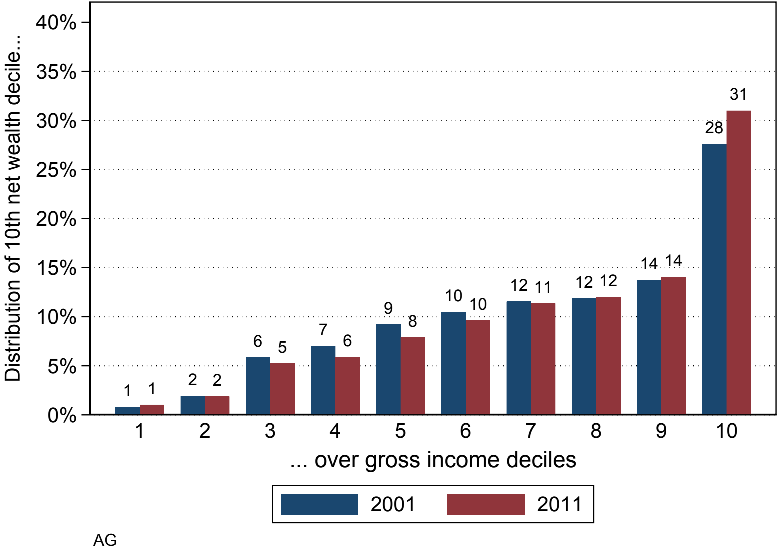


histogram

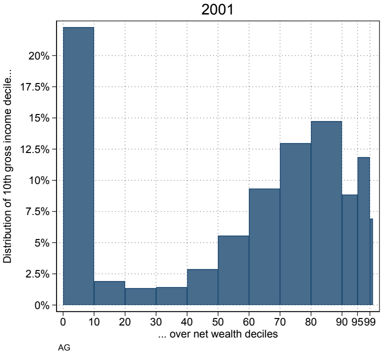
Joint Distribution: Top 10%

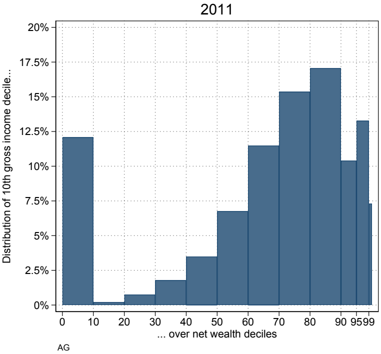


Joint Distribution: Top 10% Wealthiest



Joint Distribution: Top 10%





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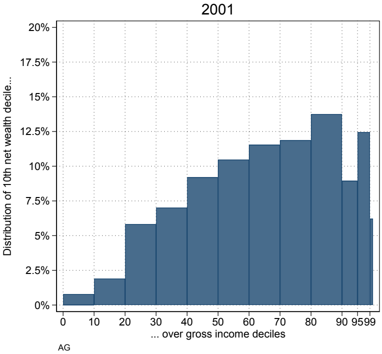
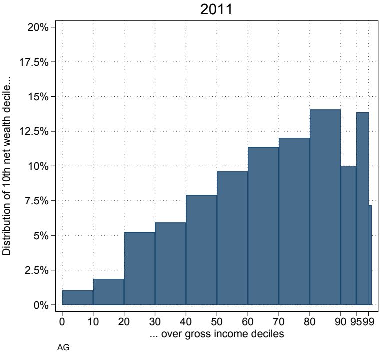
Joint Distribution: Top 10% Wealthiest





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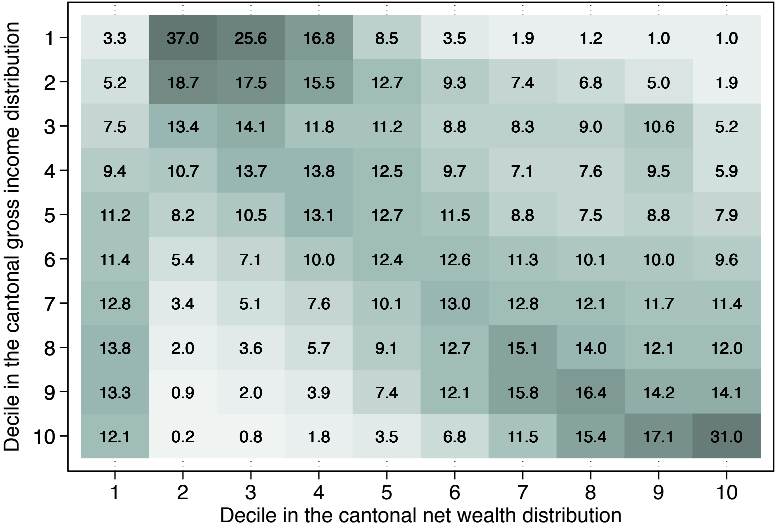
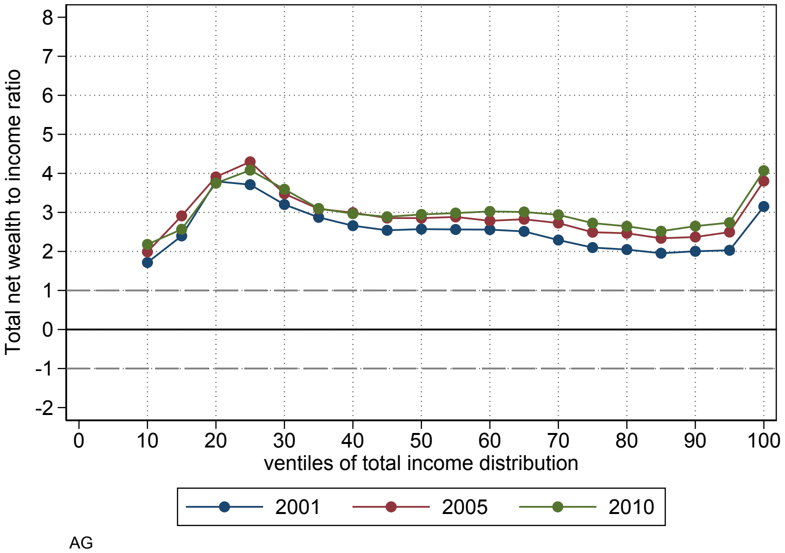
Joint Distribution Matrix

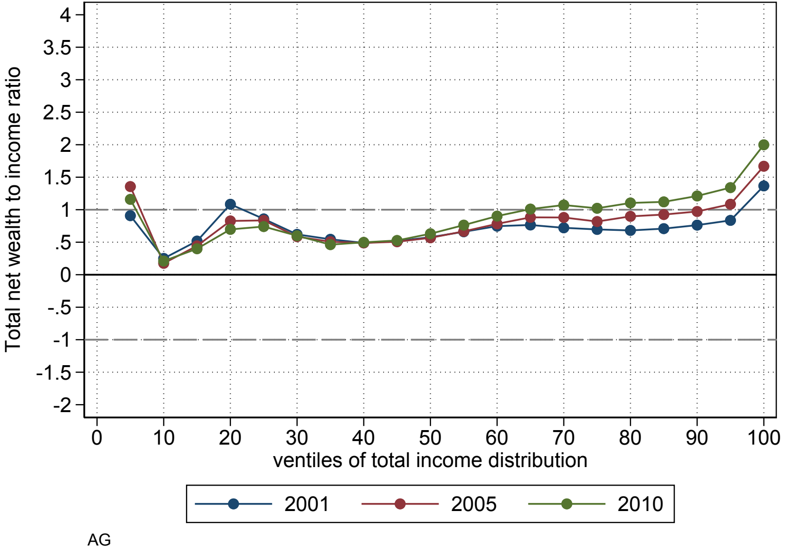


AG, 2011

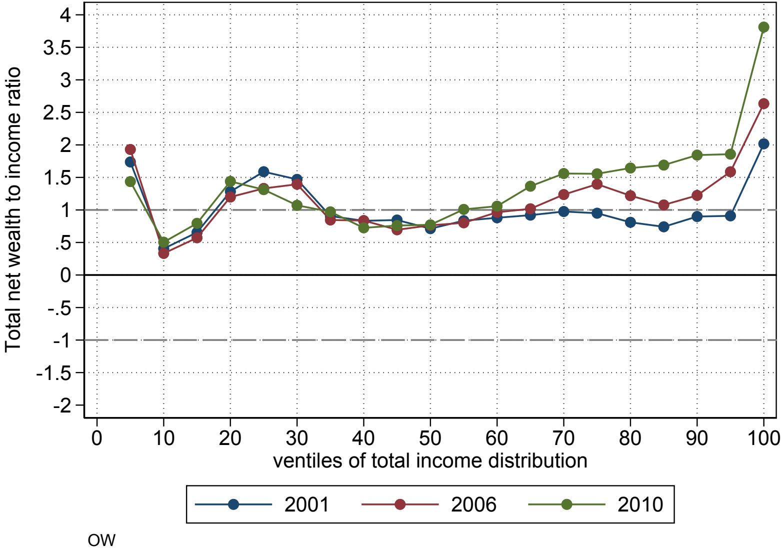
Wealth-Income Ratio - Mean



Wealth-Income Ratio - Median

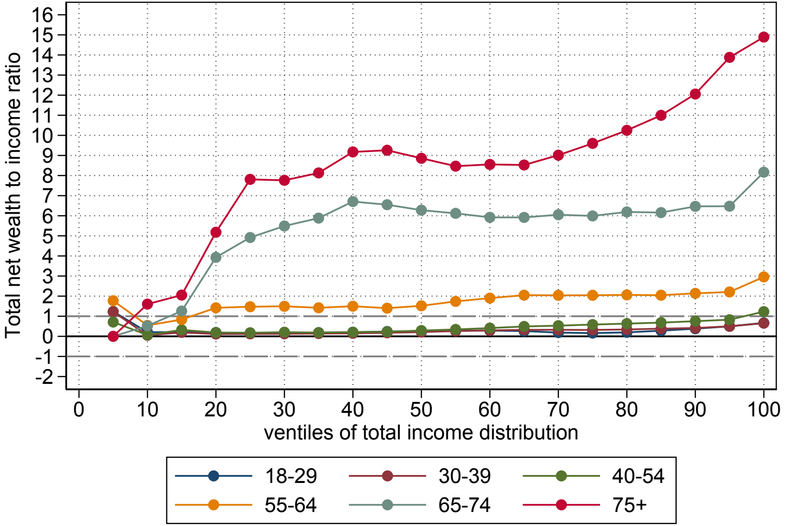


Wealth-Income Ratio - Median OW



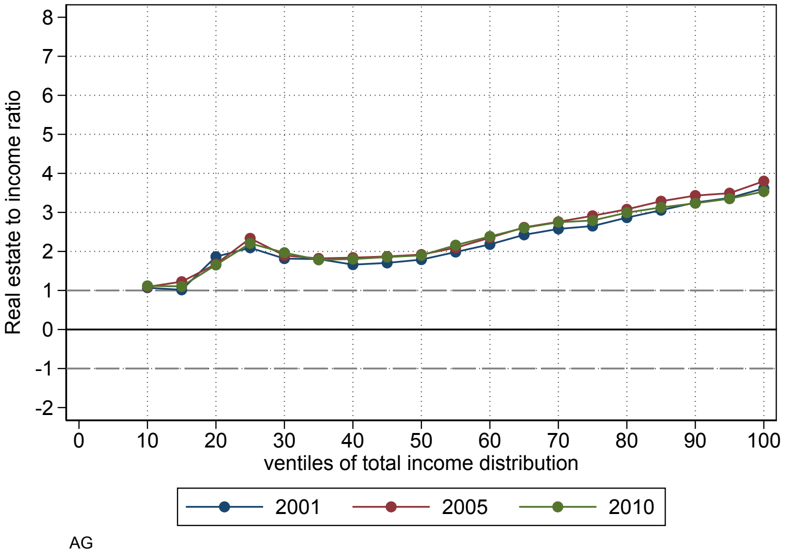
▸ mean

Wealth-Income Ratio - Median by Age Group

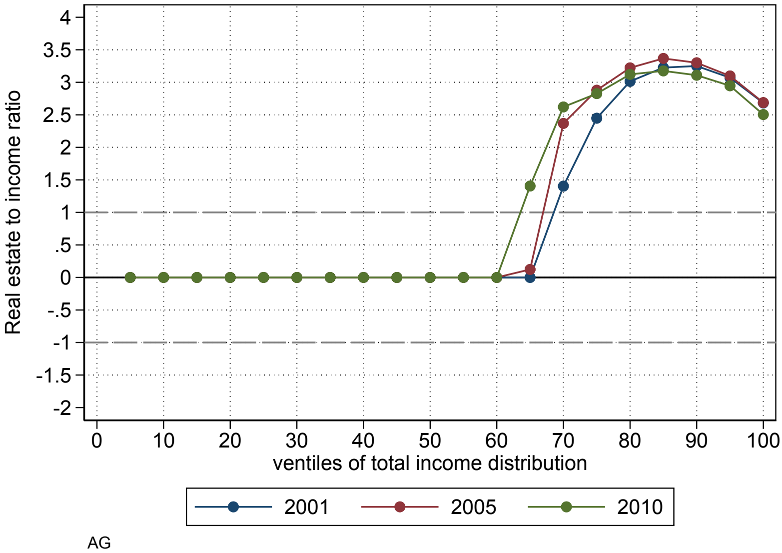


AG

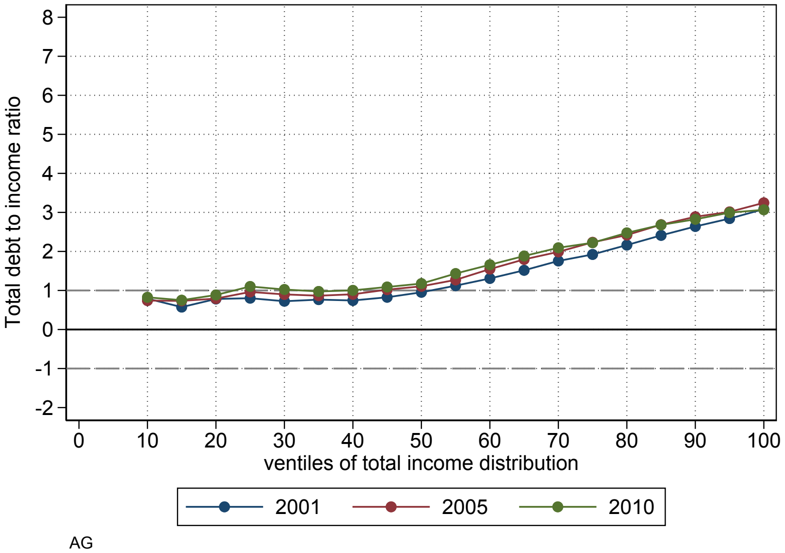
Real Estate-Income Ratio - Mean



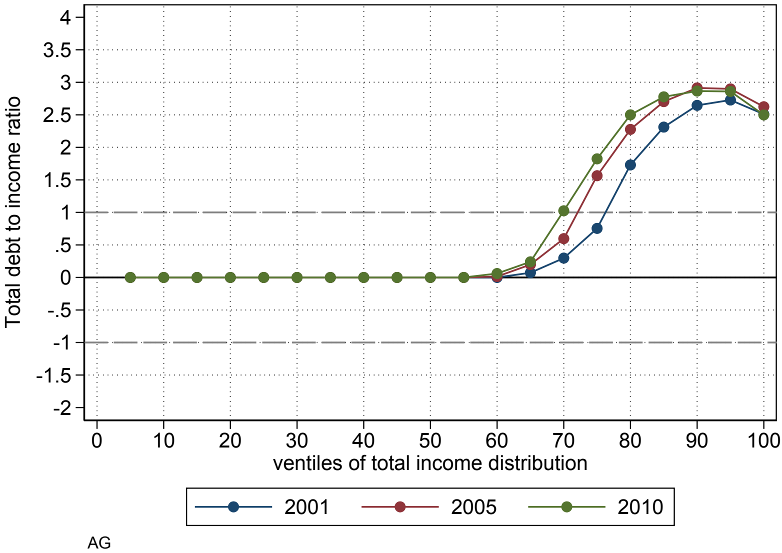
Real Estate-Income Ratio - Median



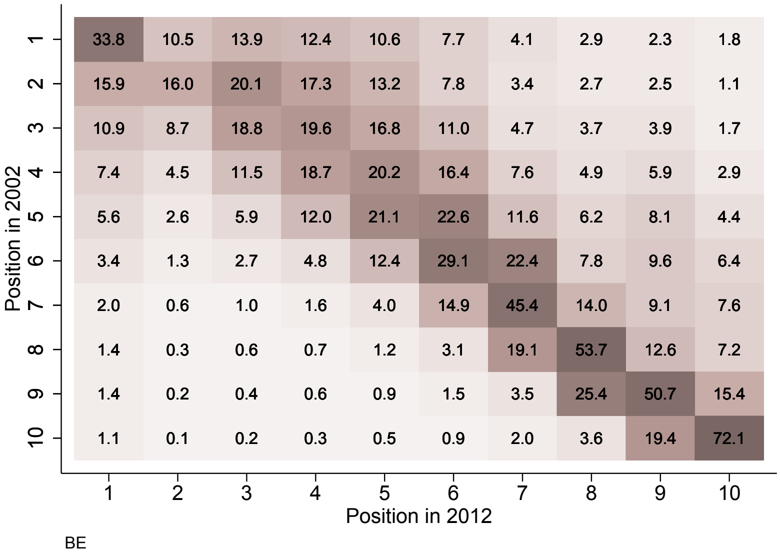
Debt-Income Ratio - Mean



Debt-Income Ratio - Median



Wealth Mobility

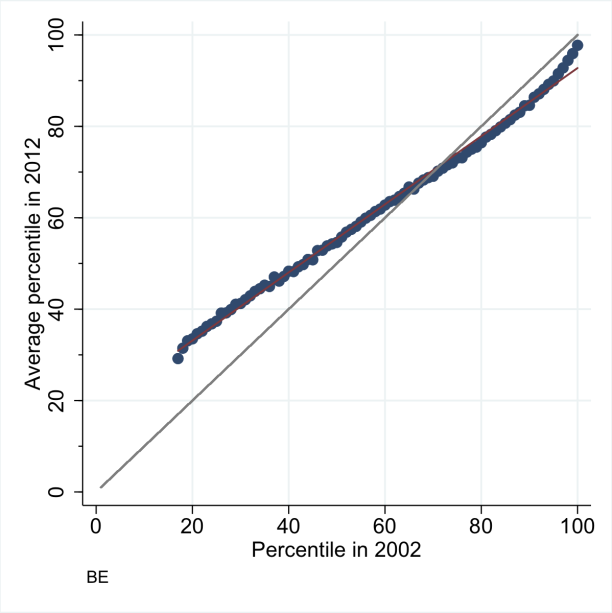


Income Mobility

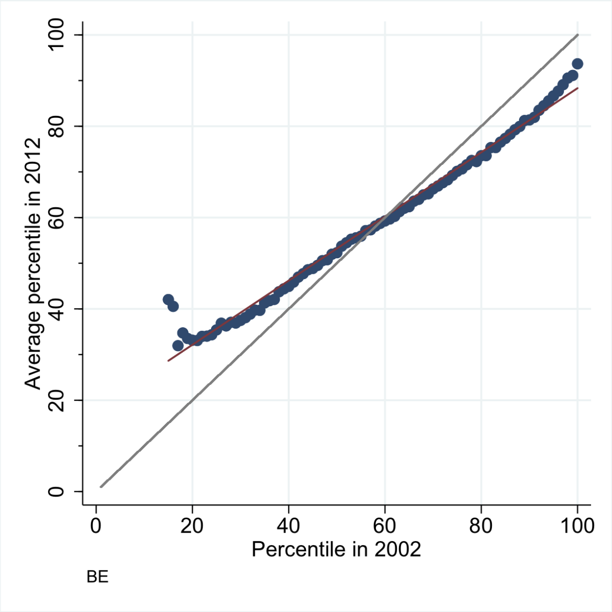
Position in 2002 \ Position in 2012	1	2	3	4	5	6	7	8	9	10
1	24.1	11.4	9.7	10.3	12.3	12.0	7.8	5.3	4.2	3.0
2	7.1	22.6	13.6	9.5	11.7	13.3	9.5	6.4	4.3	2.1
3	5.0	9.6	43.2	12.9	7.7	7.0	5.7	4.2	3.0	1.7
4	4.9	4.7	17.0	32.4	13.8	9.8	7.0	4.9	3.6	1.9
5	4.2	2.6	8.6	17.1	23.1	16.6	11.8	7.7	5.6	2.7
6	3.1	1.8	4.9	9.5	14.3	23.6	18.6	11.9	8.2	4.0
7	2.5	1.1	3.0	6.0	8.7	15.5	26.8	18.9	11.6	5.8
8	2.0	0.8	1.8	3.4	5.0	8.9	17.9	29.1	21.6	9.5
9	1.6	0.6	0.9	1.9	3.0	4.8	9.8	20.5	34.9	22.0
10	1.3	0.3	0.7	1.0	1.3	2.0	4.0	8.1	20.2	61.0

BE

Wealth Mobility



Income Mobility



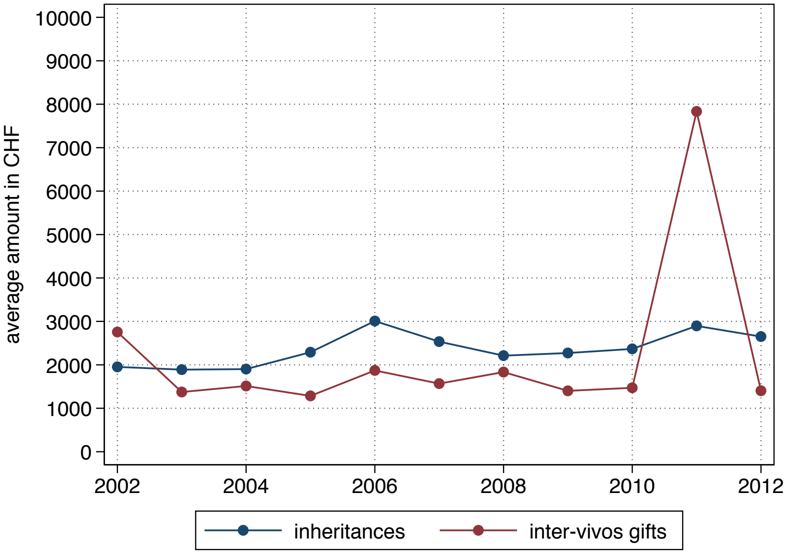
Responses to Taxation: The Inheritance Tax Threat

- In June 2011, the Social Democratic Party (SP) formally decided to launch a popular initiative to introduce a national inheritance tax on family heirs and spouses
- Only 4 cantons still had inheritance tax (AI, SO, NE, VD)

- Proposed exemption level: 2 mio CHF
- Proposed tax rate: 20%
- Affected inheritances each year (estimate): 2%
- Would affect inheritances and inter-vivos gifts from January 1 2011 onward *if* accepted

- March 2013: Required signatures deposed
- June 2015: Proposal rejected by 71% in popular vote

Huge Increase in Average Inter-Vivos Gifts



Δgifts received $= 3.7$ $\quad$ Δgifts made $= 4.2$ $\quad$ Δinheritances $= 0.3$

DiD: Average Amount Transmitted

average amount (CHF)

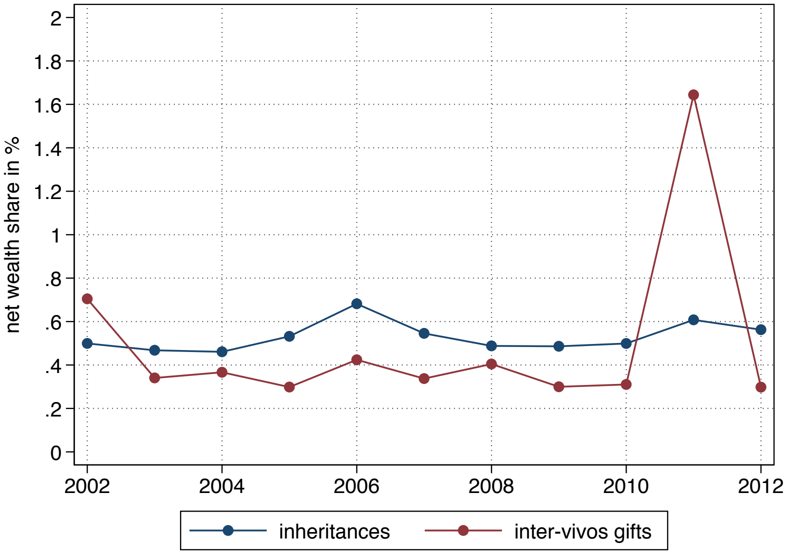
Source	SS	df	MS
Model	35231095.4	3	11743698.5
Residual	2833745.12	18	157430.285
Total	38064840.5	21	1812611.45

Number of obs	=	22
F(3, 18)	=	74.60
Prob > F	=	0.0000
R-squared	=	0.9256
Adj R-squared	=	0.9131
Root MSE	=	396.77

avg_	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
time	588.2502	416.141	1.41	0.175	-286.0295	1462.53
treat	-660.23	177.4431	-3.72	0.002	-1033.024	-287.4358
did	5597.995	588.5122	9.51	0.000	4361.577	6834.414
_cons	2307.866	125.4712	18.39	0.000	2044.261	2571.471

change: 2.838335515793462
implied elasticity: 14.19167757896731

Huge Increase in Wealth Transmitted as Gifts



DiD: Wealth Share Transmitted

wealth share (%)

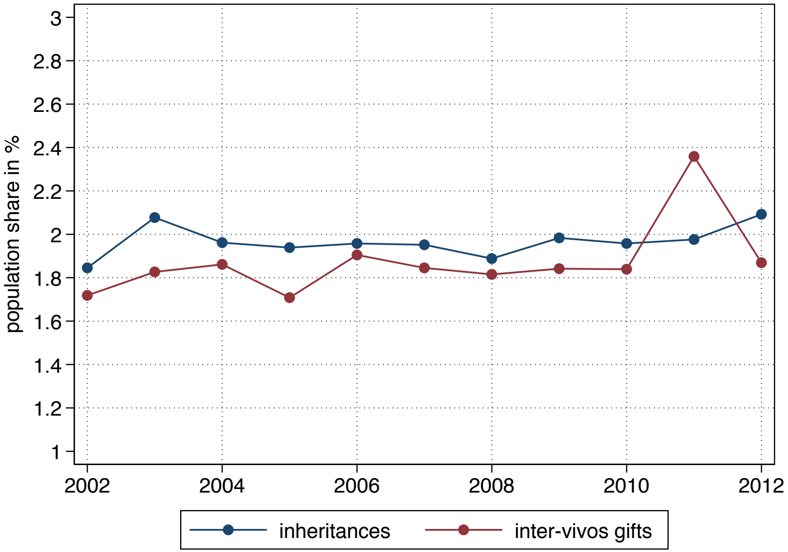
Source	SS	df	MS
Model	1.47007944	3	.490026481
Residual	.174142982	18	.00967461
Total	1.64422242	21	.078296306

Number of obs	=	22
F(3, 18)	=	50.65
Prob > F	=	0.0000
R-squared	=	0.8941
Adj R-squared	=	0.8764
Root MSE	=	.09836

share_	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
time	.0855114	.1031604	0.83	0.418	-.1312206	.3022434
treat	-.1438891	.0439877	-3.27	0.004	-.236304	-.0514743
did	1.180058	.1458909	8.09	0.000	.8735527	1.486563
_cons	.5222262	.031104	16.79	0.000	.4568791	.5875734

change: 2.607805060979006
implied elasticity: 13.03902530489503

Increase in Number of Gift Recipients



Δgifts received $= 0.35$ Δgifts made $= 0.32$ Δinheritances $= 0.05$

DiD: Number of Recipients

nr. of tax units

Source	SS	df	MS
Model	13528220.2	3	4509406.73
Residual	6109268.4	18	339403.8
Total	19637488.6	21	935118.504

Number of obs	=	22
F(3, 18)	=	13.29
Prob > F	=	0.0001
R-squared	=	0.6889
Adj R-squared	=	0.6370
Root MSE	=	582.58

c_	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
time	467.6	611.019	0.77	0.454	-816.1032	1751.303
treat	-825.4	260.5394	-3.17	0.005	-1372.773	-278.0271
did	3122.4	864.1113	3.61	0.002	1306.969	4937.831
_cons	11393.4	184.2292	61.84	0.000	11006.35	11780.45

change: .2873242028741008

implied elasticity: 1.436621014370504

Conclusion

- Substantial differences in wealth and income composition by income and age groups
- Heterogeneous rates of return to wealth
- Strong associations between income and wealth
- Wealth-income ratios high for elderly, low for everyone else
- Wealth mobility (s)low
- Strong responses to a possible threat to tax large inheritances

Outlook

Further analysis

- Saving behavior: contributions toward tax-exempt retirement accounts (pillar 2 and 3a)
- Annual saving rate
- Heterogeneity analysis
  - age
  - gender
  - large cities / urban / rural areas

Data:

- Create data sets at individual level instead of tax units
- Analysis for all cantons together, 2010

Thank you.

Comments and questions welcome:
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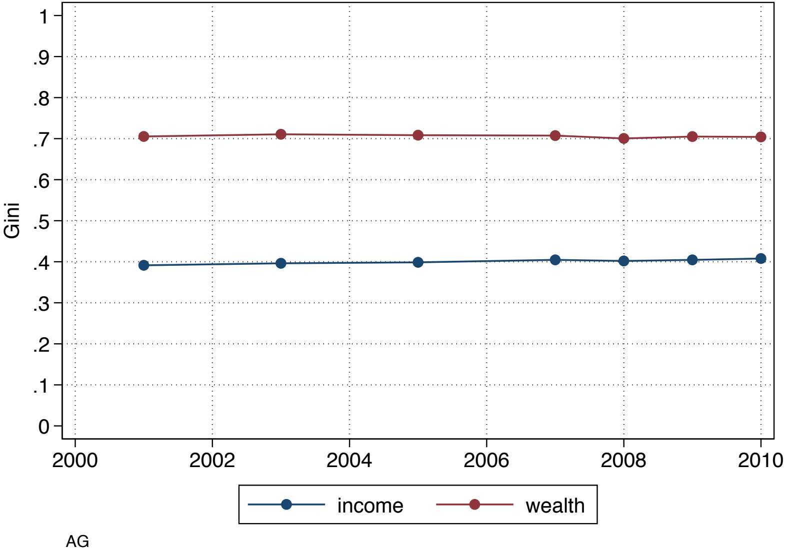
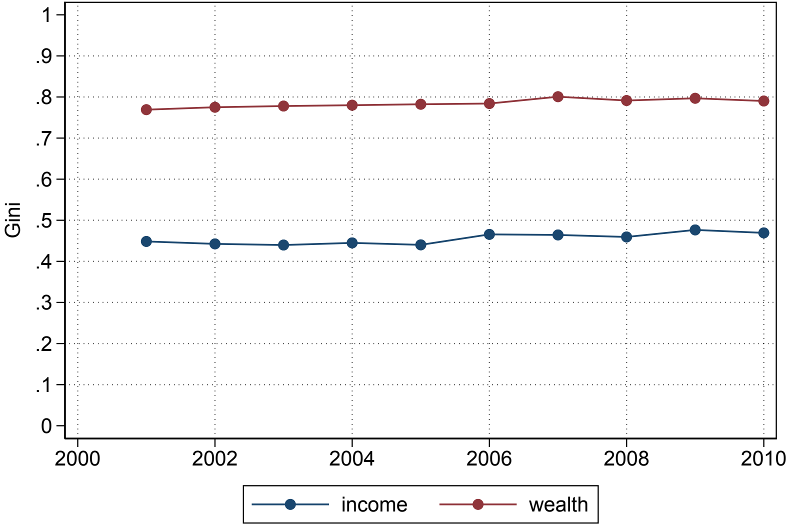
Appendix

Gini Index



back

Gini Index OW



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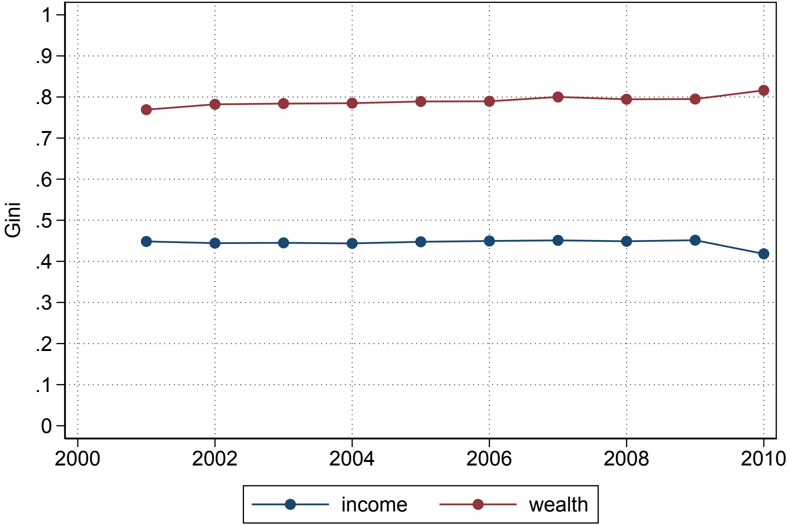
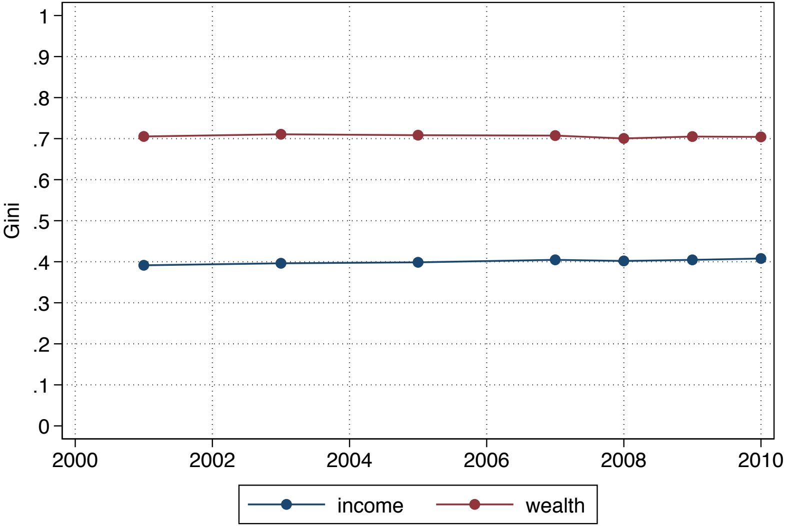
Gini Index SG



SG

back

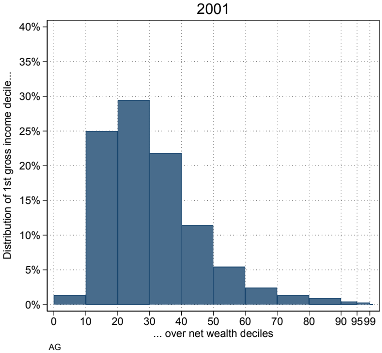
Gini Index BE

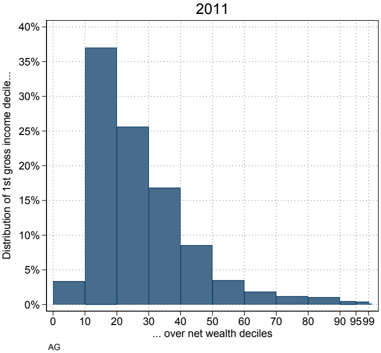


AG

back

Joint Distribution: Bottom 10%

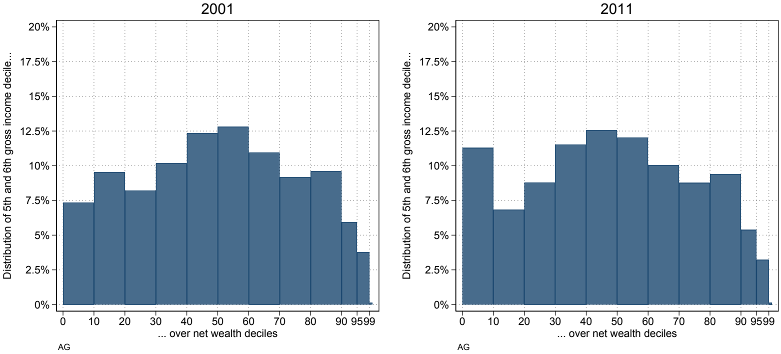




AG

back

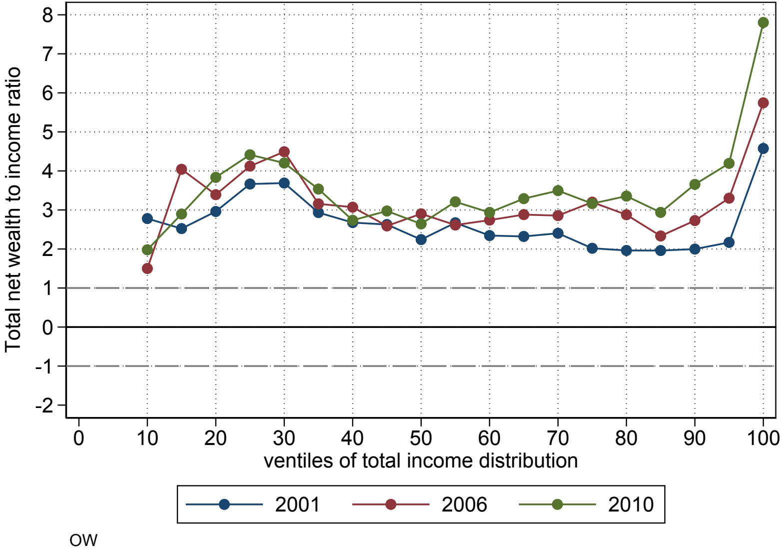
Joint Distribution: Middle 20%



AG

back

Wealth-Income Ratio - Mean OW



back

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