

# Reassessing Trends in U.S. Top Income Shares: The Role of Population and Productivity Growth

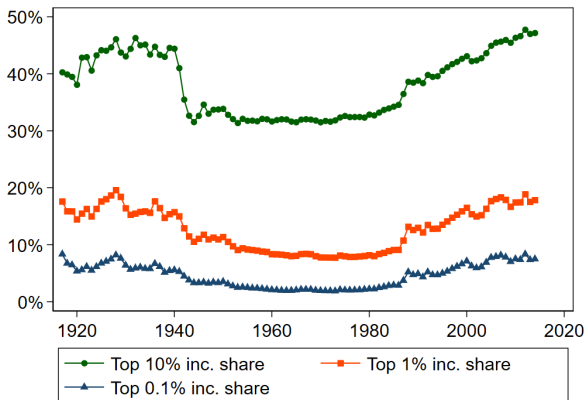
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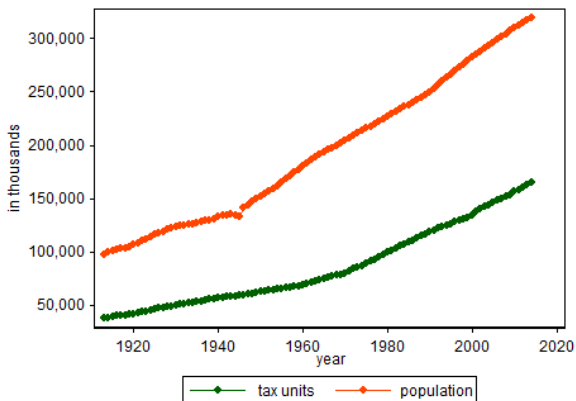
\*\*Paris School of Economics & IFN, Stockholm

**WID conference, 2017-12-15**

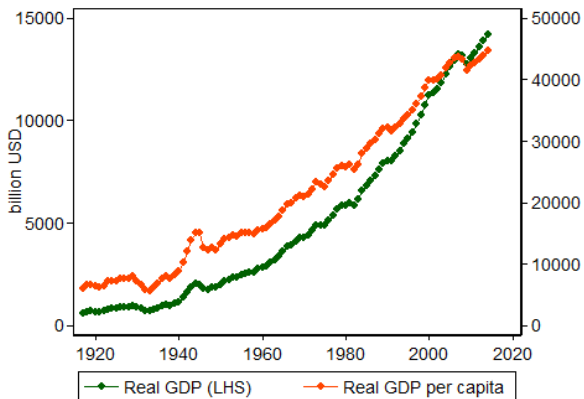
# Development of top income shares



# Population growth



# Economic growth



# Measurement of top inequality

- Piketty & Saez popularized **top income shares** to measure inequality
    - TIS capture share of total income for **fixed fraction of the population**
  - This approach does not explicitly account for:
    - Population growth (US population tripled between 1917-2014)
    - Absolute changes – only relative measure. But: Growing TIS may be driven by rich becoming richer, or by poor becoming poorer or both
- ⇒ We **re-investigate long run trends in top income inequality** in the US, accounting for population and (differential) economic growth

## Related Literature

- Our analysis contributes to several strands of the inequality literature:
    - US inequality trends (e.g. Piketty and Saez, 2003)
    - Long run trends in top income shares (e.g. Piketty, 2001; Atkinson and Piketty, 2007, 2010; Leigh, 2009)
    - Inequality and population growth (e.g. Blau and Kahn, 2015)
    - Different measurement approaches for top shares:  
e.g. adding unrealized capital gains (Armour, Burkhauser and Larrimore, 2013), using a national accounts-equivalent measure (Piketty, Saez and Zucman, 2016)
- ⇒ Our analysis keeps the income concept unchanged and **focuses on different statistical measures** of top shares (and their composition)

# Decomposition methods

- 1 **Construct counterfactual top income shares** accounting for population and/or productivity growth
  - Income shares above fixed real top thresholds (1917, 1980 and 2014)
  - Growth adjustment: GDP-deflated income thresholds
  - Population size adjustment: Constant number of top tax units
- 2 **Decompose top 1 percent income share  $S_1$**  into contributions of population, overall income and top income growth
  - $S_i = \frac{\bar{Y}_i N_i}{\bar{Y} N} \Leftrightarrow \Delta \ln S_i = \Delta \ln \bar{Y}_i + \Delta \ln N_i - \Delta \ln \bar{Y} - \Delta \ln N$
- 3 **Decompose counterfactual top income shares** into the contributions of wage, capital, and entrepreneurial income

# Decomposition – approach 1 detailed

- We compute top income shares (TIS) for four different top groups:
  - A) *Baseline* as in Piketty/Saez: Fixed pop share, variable group size.
  - B) *TIS for those earning above CPI-deflated threshold*: both variable.
  - C) *TIS for those earning above GDP-deflated threshold*: both variable.
  - D) *Constant number of top earners*: Variable pop share, fixed group size.
- Difference between B & C captures to what extent top incomes have grown faster than the overall economy
- D isolates effect of rising incomes above (fixed) income thresholds



# Data

- World Wealth and Income Database (c.f. Piketty and Saez, 2003) based on individual tax statistics from the Statistics of Income (SOI) in the Internal Revenue Service (IRS)
  - Top income shares (top 10% and above)
  - Real income thresholds
  - Population and number of tax units
- Real economic growth
- Some additional SOI data (income shares below P90)
- Interpolation assuming Pareto distribution

# Different measures for the top 1 percent

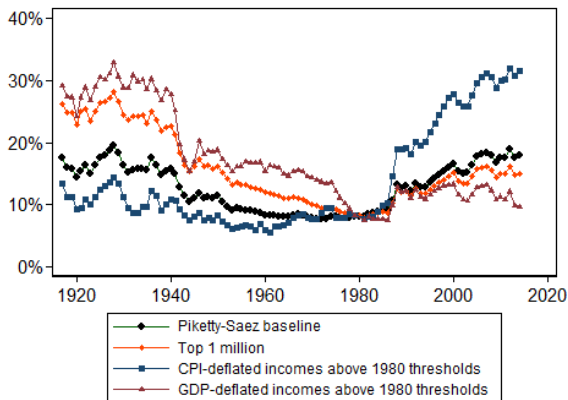


Figure: Income shares

# Different measures for the top 1 percent

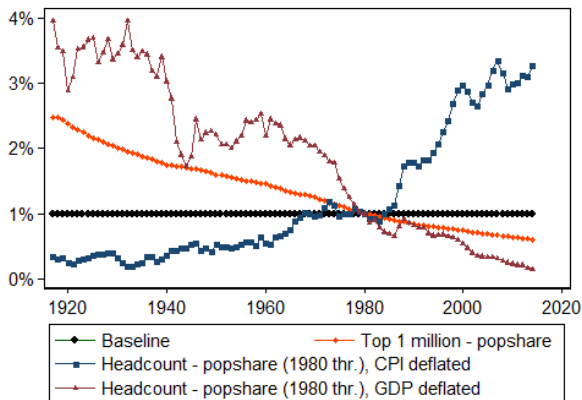


Figure: Population shares

# Income shares above real thresholds

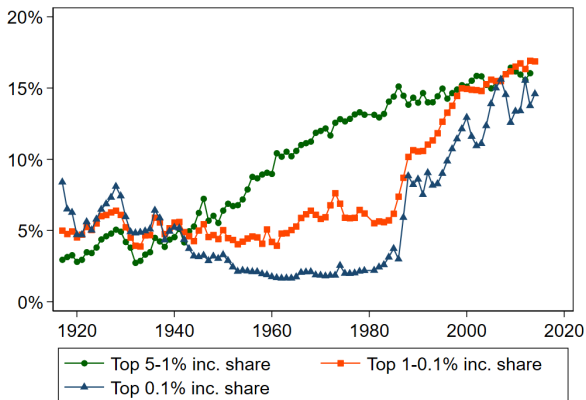


Figure: Income shares above CPI-deflated 1980 thresholds

# Income shares above growth-adjusted thresholds

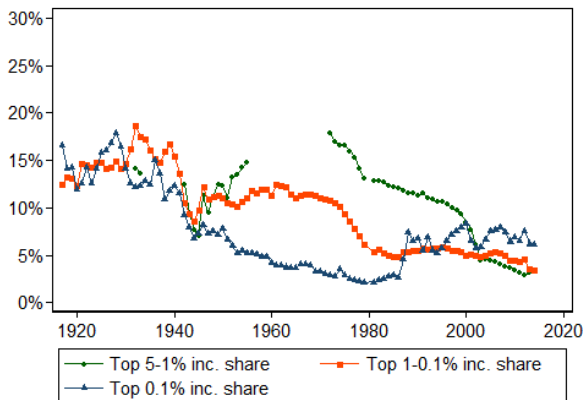


Figure: Income shares above GDP-deflated 1980 thresholds

# Accounting for population growth: Fixed number of tax units

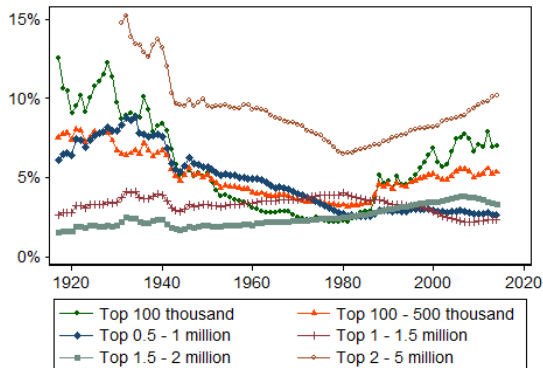


Figure: Income shares of fixed numbers of top tax units

# Distributional national accounts measure: Fixed number of tax units

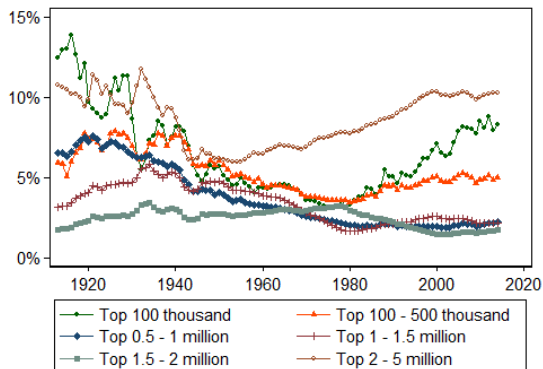


Figure: Income shares of fixed numbers of top tax units

# Decomposition of the top 1 percent income share

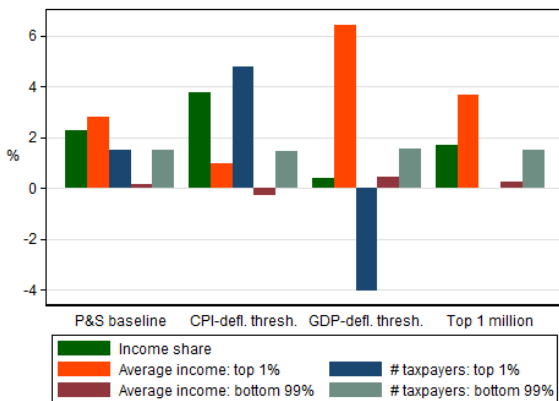


Figure: Top 1 percent log decomposition: 1980-2014



# Decomposition of the top 1 percent income share

Annual growth in income and population shares								
Period	Baseline (P&S)		CPI-deflated top thresholds		GDP-deflated top thresholds		Top 1 million	
	Income	Pop.	Income	Pop.	Income	Pop.	Income	Pop.
1917-1929	2.4	0	3.4	3.1	1.7	-0.5	1.4	-1.6
1929-1950	-2.1	0	-1.8	3.0	-1.9	-1.3	-2.3	-1.1
1950-1980	-0.7	0	1.0	2.9	-2.0	-2.1	-1.8	-1.5
1980-2000	4.4	0	7.5	6.2	4.6	-1.8	4.0	-1.5
2000-2014	0.4	0	0.6	0.5	-1.3	-8.4	0.0	-1.5

**Table:** Average annual growth rates of different top 1 percent measures

# Income source decomposition: Fixed number of tax units

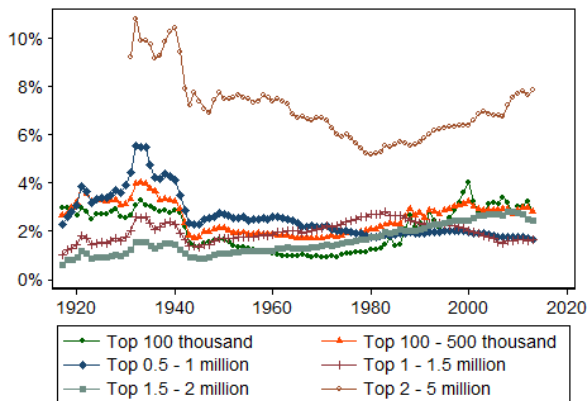


Figure: Wage income: Income shares of fixed numbers of top tax units

# Income source decomposition: Fixed number of tax units

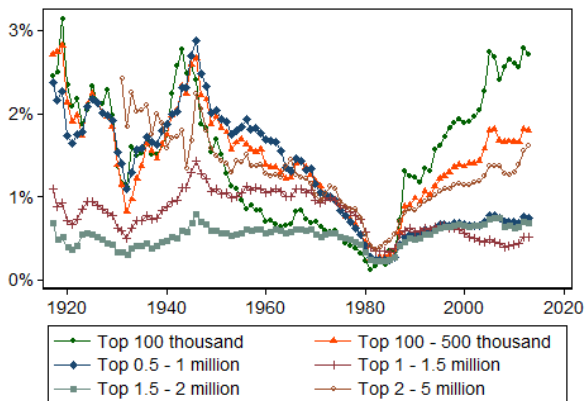


Figure: Entrepreneurial income: Income shares of fixed numbers of top tax units

# Income source decomposition: Fixed number of tax units

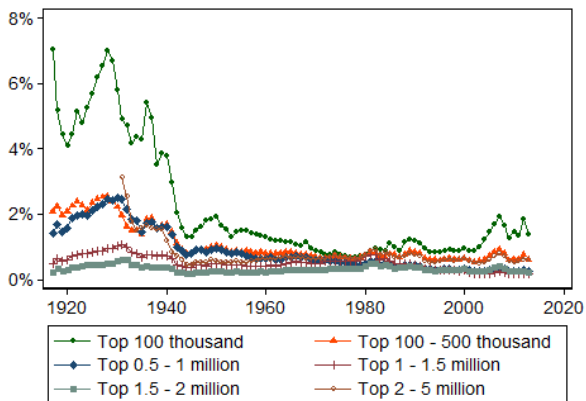


Figure: Capital income: Income shares of fixed numbers of top tax units

# Summary & Outlook

- We re-assess top income shares by accounting for population and economic growth
- Results broadly in line with Piketty and Saez, with some notable divergences
- With alternative methods: more strongly diverging developments between top income brackets, not always yielding a U-shaped development
- Income earners at the very top and in the upper middle class experience the most gains
- In contrast: income shares of earners just below the very top remain rather constant for some measures

Thank you for your attention!

Comments? Questions?

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