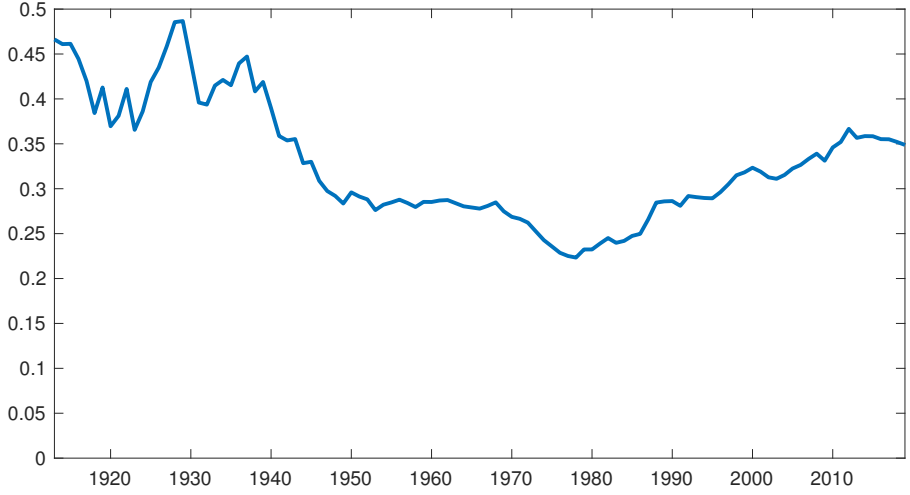
Social Security and Trends in Wealth Inequality

Sylvain Catherine
Wharton

Max Miller
Harvard

Natasha Sarin
Yale

Motivation – Top 1% wealth share



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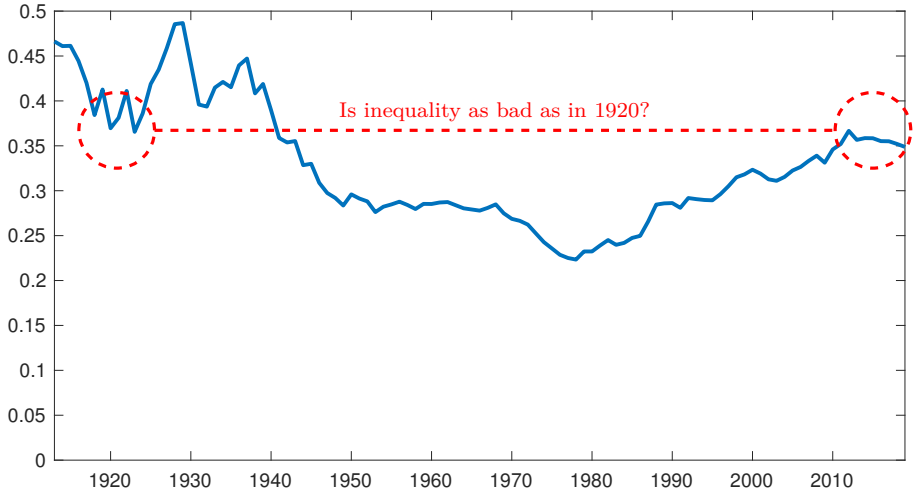

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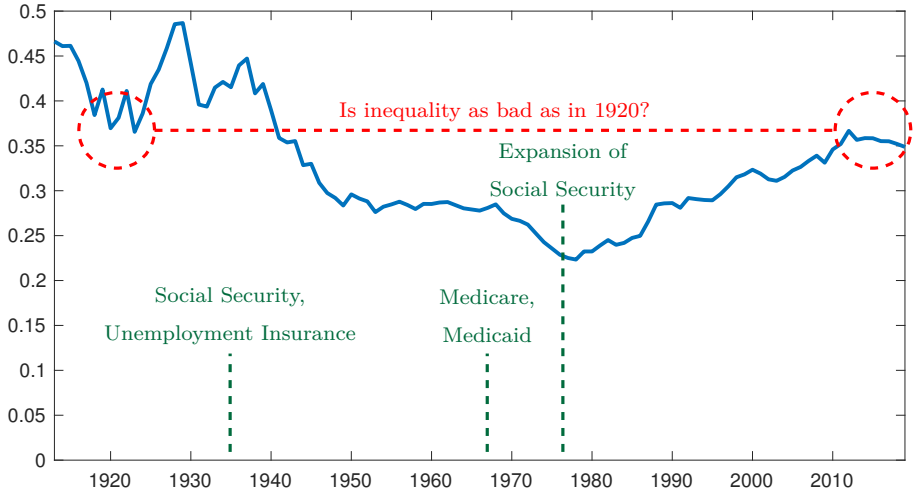

This Paper

- **Compute aggregate Social Security wealth**
  - Present value of future benefits, net of future taxes
  - Based on Survey of Consumer Finances (SCF) for retirees
  - Using Monte Carlo simulations for working households

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  - Based on Survey of Consumer Finances (SCF) for retirees
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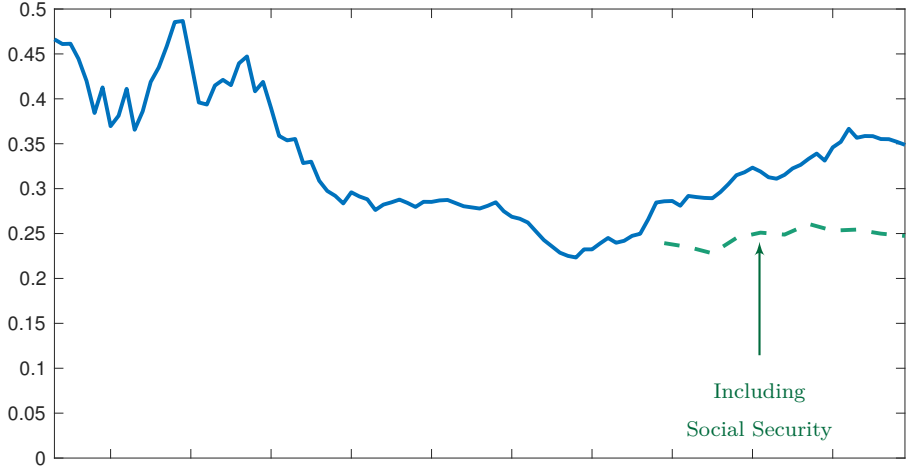
- **Distribute Social Security wealth between bottom 90% and top 10% or top 1%**
- **Recompute the evolution of top wealth shares between 1989-2019**

Key finding – Top 1% wealth share



Methodology

How does Social Security work?

- **Taxes**
  - 12.4% payroll tax: 10.6% to old-age program
    (1.8% to disability insurance)
  - Up to cap (2019 $132,900)

High earners contribute a smaller share of their earnings

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- **Benefits**
  1. Adjust past taxable earnings for inflation and real wage growth
  2. Take average of the best 35 years (AIYE)
  3. Apply benefit formula:
     - 90% of AIYE below first bend point (2019: $11,112)
     - 32% between first and second (2019: $66,996)
     - 15% above the second

High earners get a lower replacement rate on their contributions

Defining Social Security wealth

- **Accrued Social Security wealth** S_{it}

$$\mathrm{S}_{it} = \frac{\sum_{s=t-a}^{t} \mathrm{T}_{is}}{\sum_{s=t-a}^{T} \mathbb{E}[\mathrm{T}_{is}]} \sum_{s=t+1}^{T} \frac{\mathbb{E}\left[\mathrm{B}_{is}\right]}{(1+r_{ts})^{s-t}}$$

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- **For retirees**

$$\text{Social Security Wealth}_{it} = \sum_{s=t}^{T} \left(\prod_{k=t}^{s-1} (1 - m_{itk}) \right) \frac{\text{Benefits}_{it}}{(1+r_{t,s})^{s-t}} \frac{\mathbb{E}[\text{CPI}_s]}{\text{CPI}_t}$$

  - Benefits are observed in the data

Social Security wealth of workers

- **For each SCF survey year, we simulate simulate earnings trajectories for millions of workers and apply taxes and benefit formulas**

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- **Simulating past and future earnings trajectories:**
  - Stochastic component: rich process estimated in Guvenen et al. (2021), which matches moments from the cross-section and dynamics of earnings
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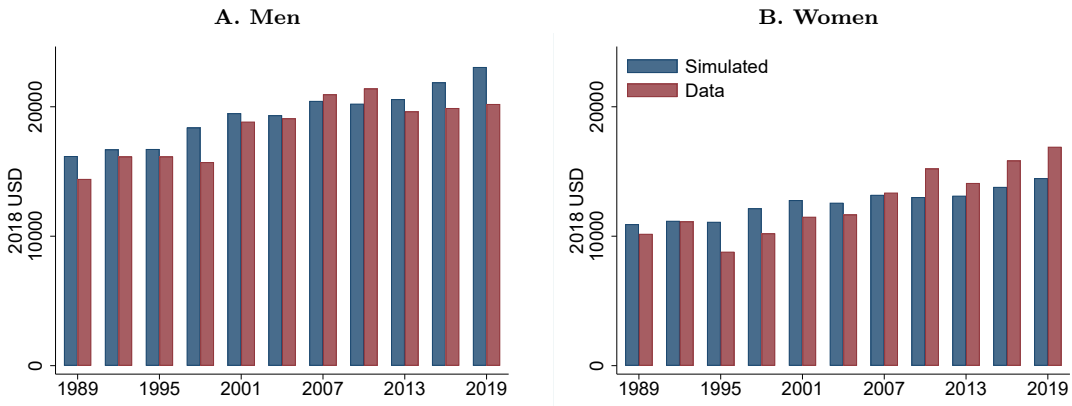
- **For each simulated path, we discount future benefits and future taxes**
  Two discount rates:
  1 Risk-free valuation: real government yield curve
  2 Risk-adjusted valuation: additional premium for macroeconomic risk

Baseline calibration & link to the data

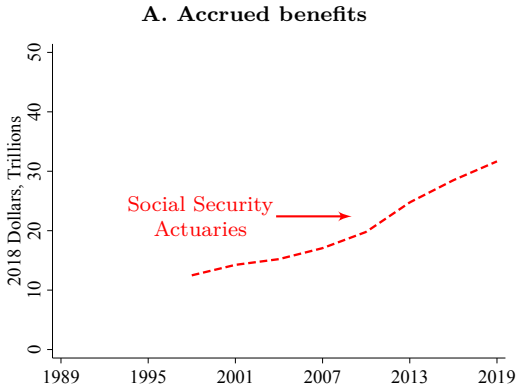
- **Social Security parameters**
  - We assume that parameters of Social Security formula scale up with the wage index
    - e.g. Earnings cap, bend points
  - Consistent with the last 40 years
- **Macroeconomic assumptions**
  - **Discount rates**: average nominal market yield curves (Fed Board)
  - **Inflation projections**: historical SSA Annual Report
  - **Real growth rate of wages**: historical SSA Annual Report
- **Merging simulated and real data**:
  - Each worker in the SCF is matched with a simulated worker of the same age, gender, wage income and year.
  - We aggregate using SCF survey weight

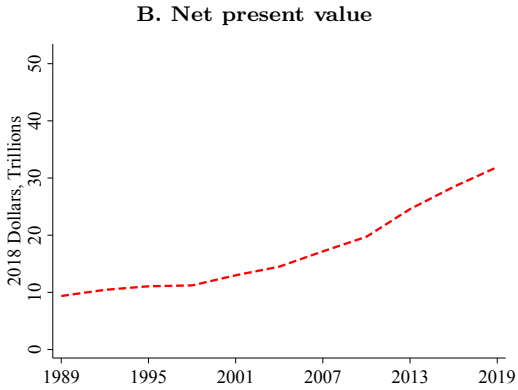
Validation of methodology

Validation – Simulated vs actual full-retirement-age benefits



Validation – Aggregate Social Security wealth





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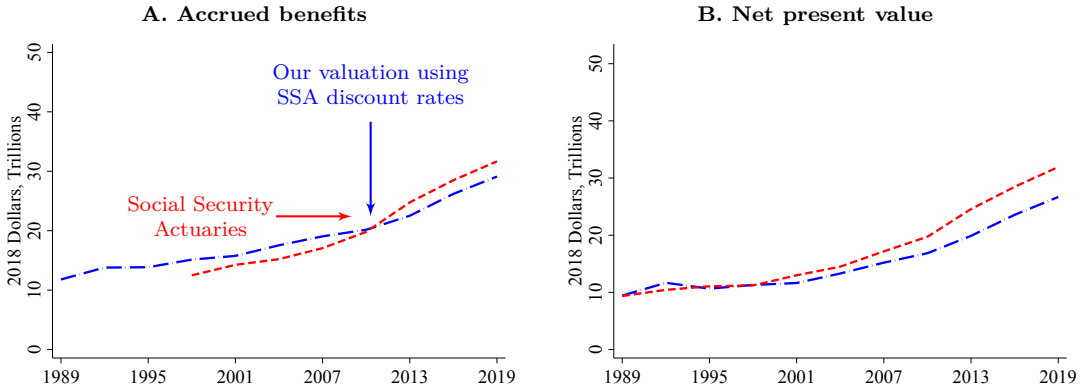
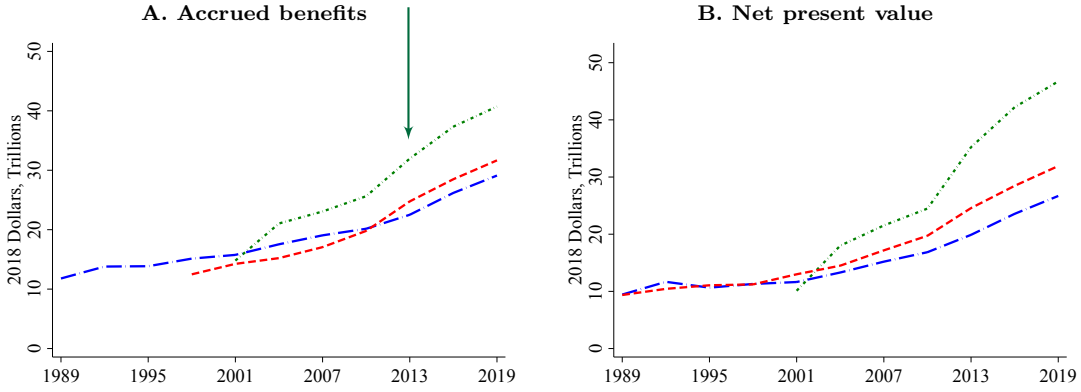


Validation – Aggregate Social Security wealth

Our valuation using real yield curve
(Treasury Inflation Protected Securities)



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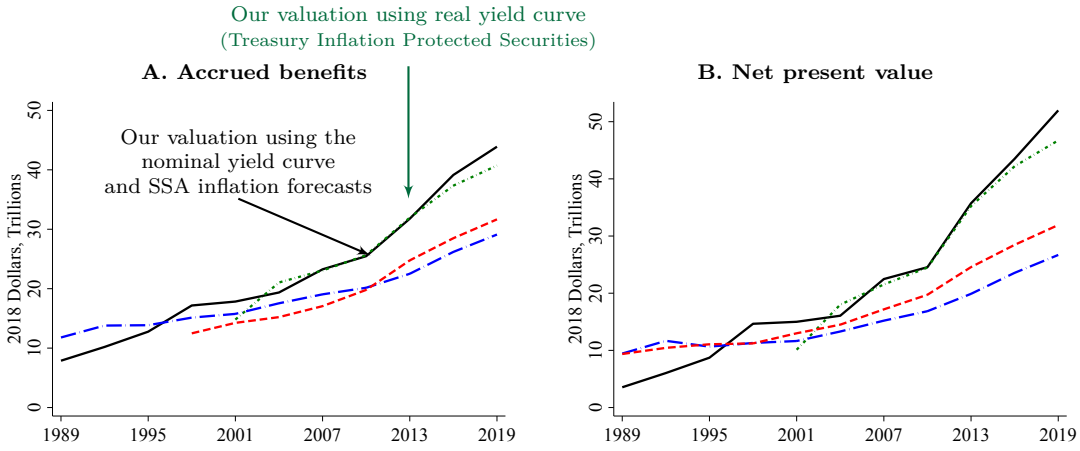
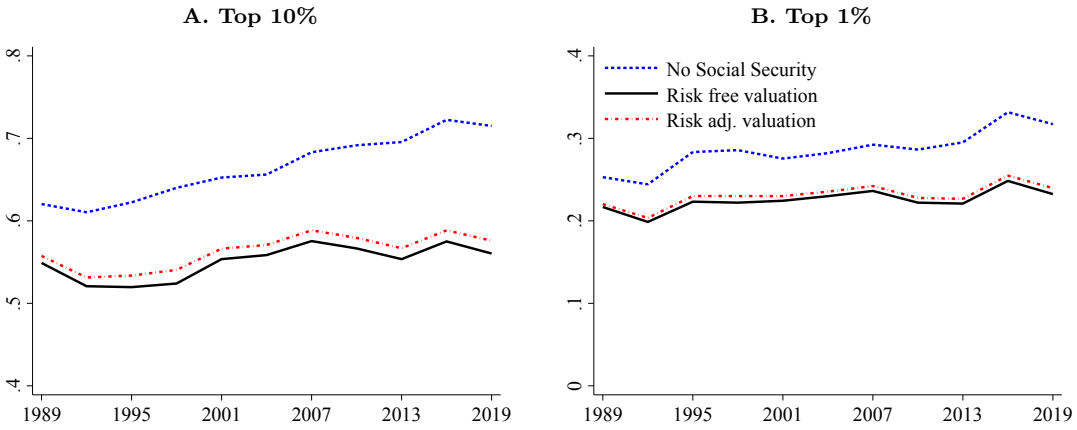
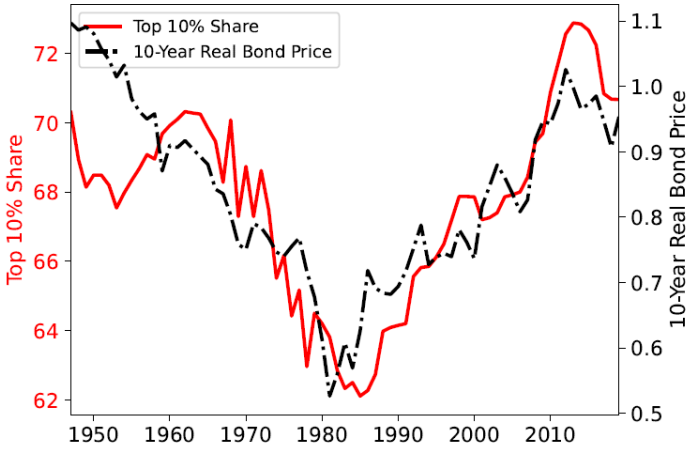


Results – Top wealth shares with Social Security



Role of interest rates

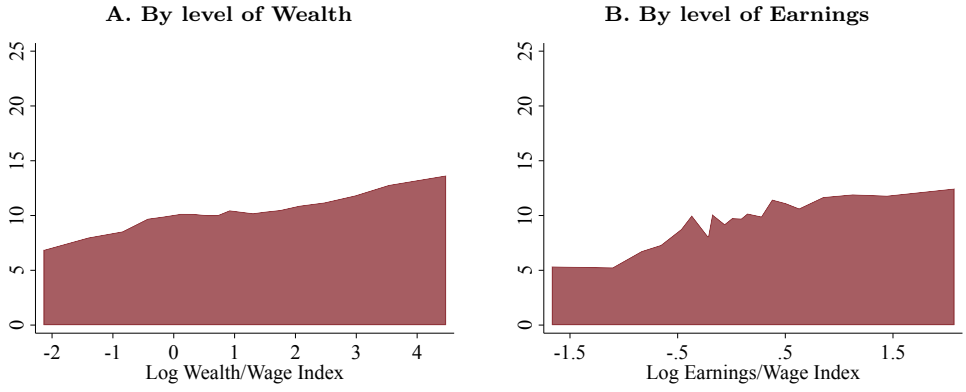
Wealth inequality tracks real interest rates fluctuations...



Source: Greenwald, Leombroni, Lustig and Nieuwerburgh (2021)

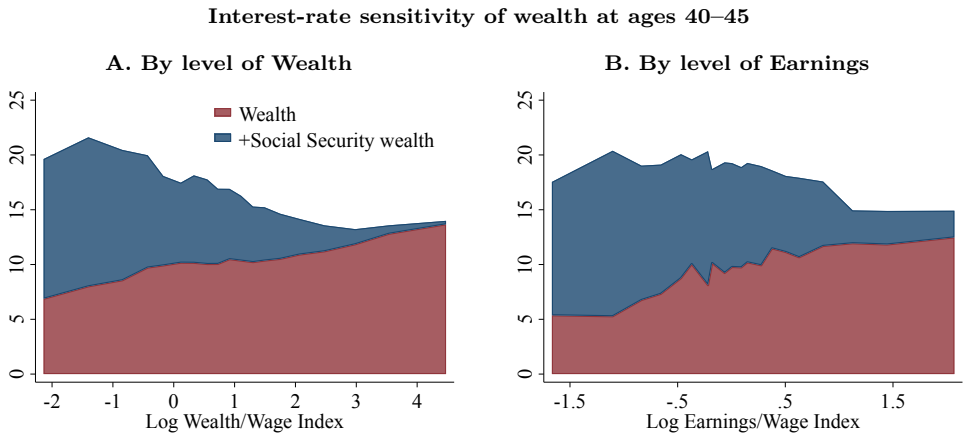
... because wealthier households invest more in long-term assets...

Interest-rate sensitivity of wealth at ages 40–45



Source: Catherine, Miller, Paron and Sarin (2022)

... unless you count Social Security as an asset



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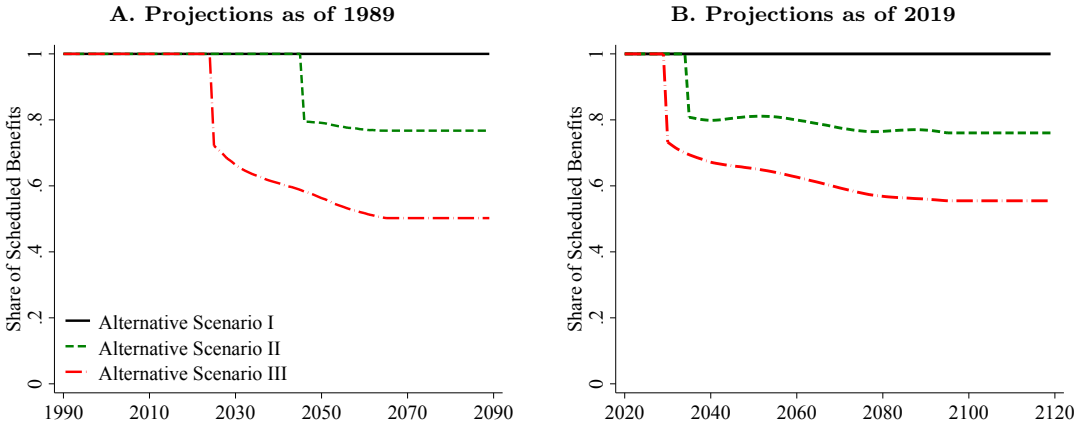
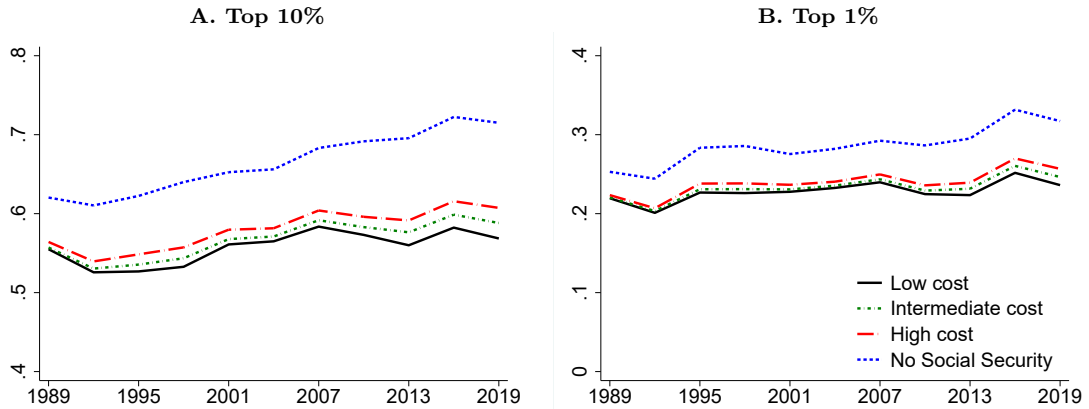
Robustness

- Funding gap
- Life expectancy inequality
- Adjusting previous studies

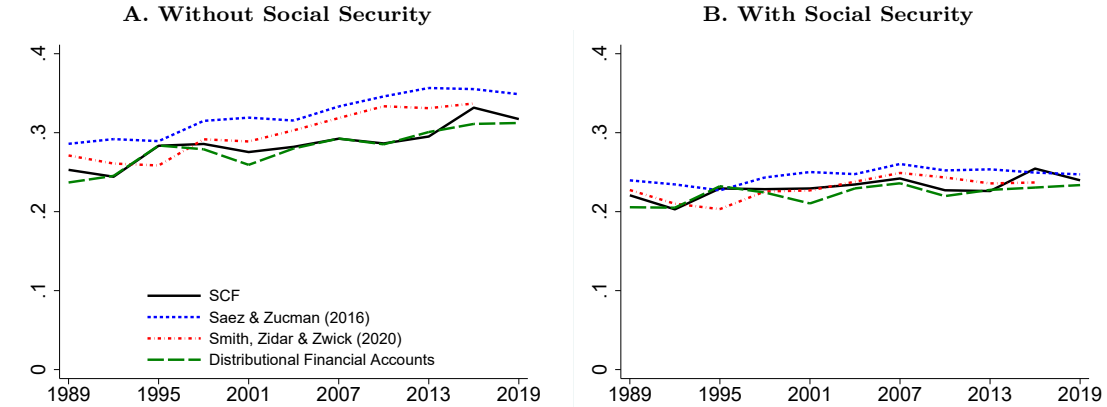
Funding gap – Payable Benefits under SSA projections



Funding gap – Top shares (payable benefits only, risk-adjusted valuation)

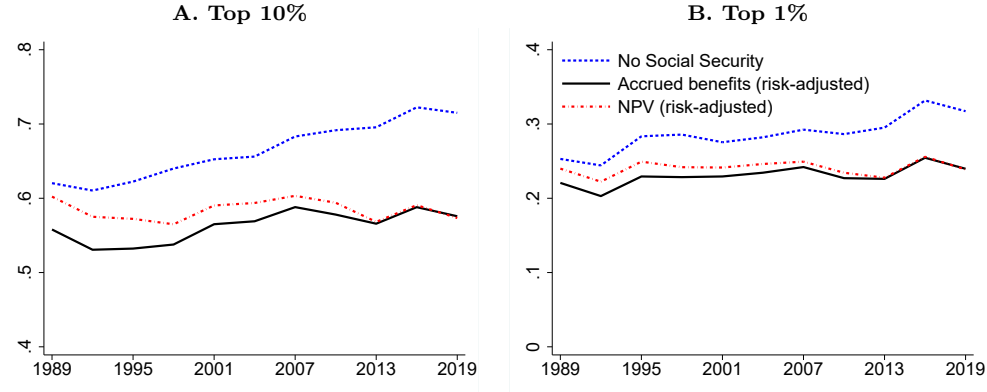


Adjusting other studies – Top 1% wealth shares



Net present value concept

- We now defined Social Security wealth as the present value of expected benefits net of future contributions (including the employer's share).



Conclusion

- Saez and Zucman (2016) argue that Social Security should not be taken into account because it would call for the inclusion of other programs that reduce private savings and it would "not be clear where to stop"

- We argue that narrowly defined marketable wealth is not the right place to stop
  - Social Security is 49% of the wealth of the bottom 90%
  - Social programs can make marketable wealth inequality look worse
  - Current wealth inequality measures cannot be used for policy evaluation

- Top wealth shares have not increased since 1989 when Social Security wealth is taken into account