# Wealth Inequality in the United States since 1913

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# Introduction

US Income inequality has increased sharply since the 1970s

Mixed existing evidence on wealth inequality changes

Is wealth inequality high or low? Rising or stable?

We capitalize income tax return data to estimate new annual series of US wealth concentration since 1913

**Key result:** Wealth inequality has surged since 1980s, back to 1920s level

# Outline of the talk
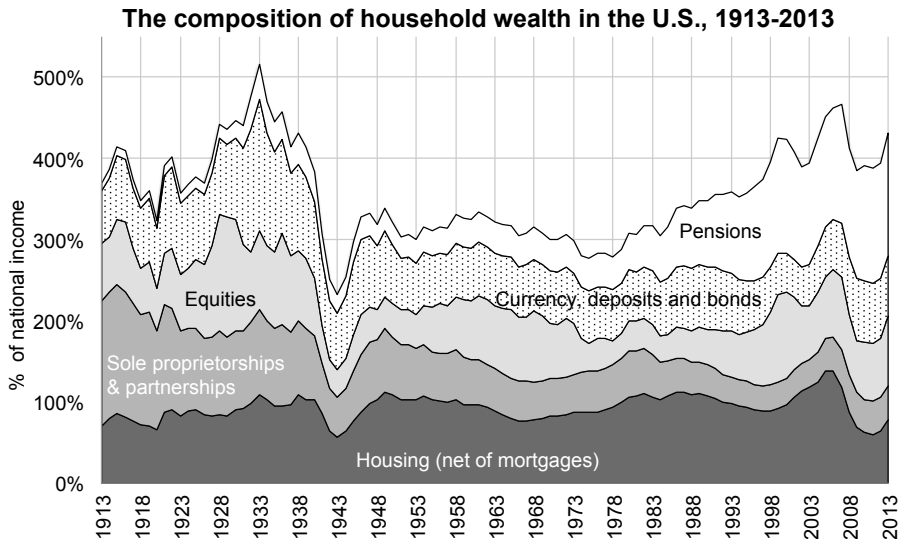
I. The capitalization method

II. The distribution of wealth

III. Comparison with existing estimates

IV. Decomposing wealth accumulation: income and saving rates

# I- The capitalization method

# Goal: distribute the total household wealth in the Flow of Funds



**The composition of household wealth in the U.S., 1913-2013**

# To obtain wealth, we capitalize incomes

**How the capitalization technique works:**

Start from each capital income component in tax returns

Compute aggregate capitalization factor for each asset class

Multiply each individual capital income component by capitalization factor of corresponding asset class

Lot of care needed in reconciling tax with Flow of Funds data

**Key assumption:** uniform capitalization factor within asset class

$\Rightarrow$ Need detailed income components to obtain reliable results

# Distributional data: income tax returns

**Consistent, annual, high quality data since 1913:**

Composition tabulations by size of income 1913-

IRS micro-files with oversampling of the top 1962-

Additional IRS stats (estates, IRAs, trusts, foundations)

**Detailed income categories:**

Dividends, interest ($+$ tax exempt since 1987), rents, unincorporated business profits (S corporations, partnerships, sole prop.), royalties, realized capital gains, etc.

**A lot of income "flows to" individual income tax returns**

Mutual funds, S corporations, partnerships, holdings, trusts, etc.

# Concentration of reported capital income has increased dramatically



**The top 0.1% taxable capital income share**
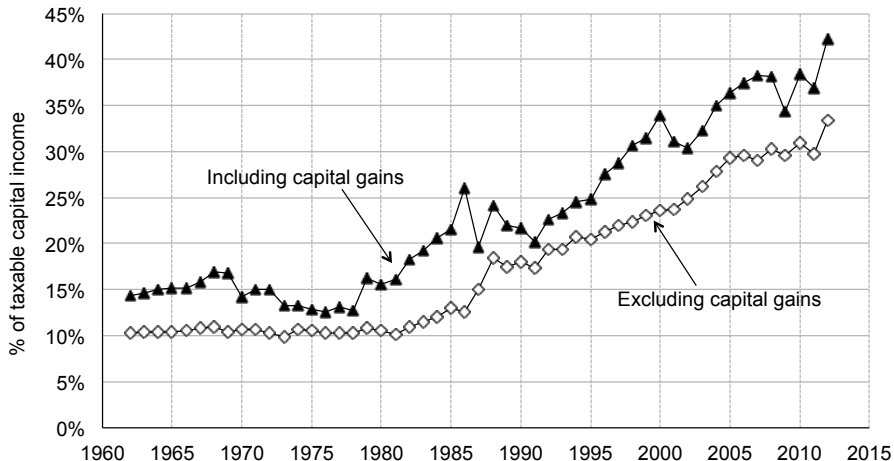
# How we deal with non-taxable components

**Owner-occupied housing**

Home values set proportional to property tax paid

Home mortgages set proportional to mortgage interest paid

We assume (based on SCF) that itemizers have 75% of home wealth and 80% of home mortgages

**Pensions**

Pension wealth set proportional to pension distributions and wages above 50th percentile

Consistent with SCF and with direct information on IRA wealth from IRS (IRAs $\approx$ 30% of pension wealth)

$\Downarrow$

**Only matters for top 10% but irrelevant for top 1% and above,** because pensions and housing very small there

# Is the return constant within asset class?

**Three potential issues:**

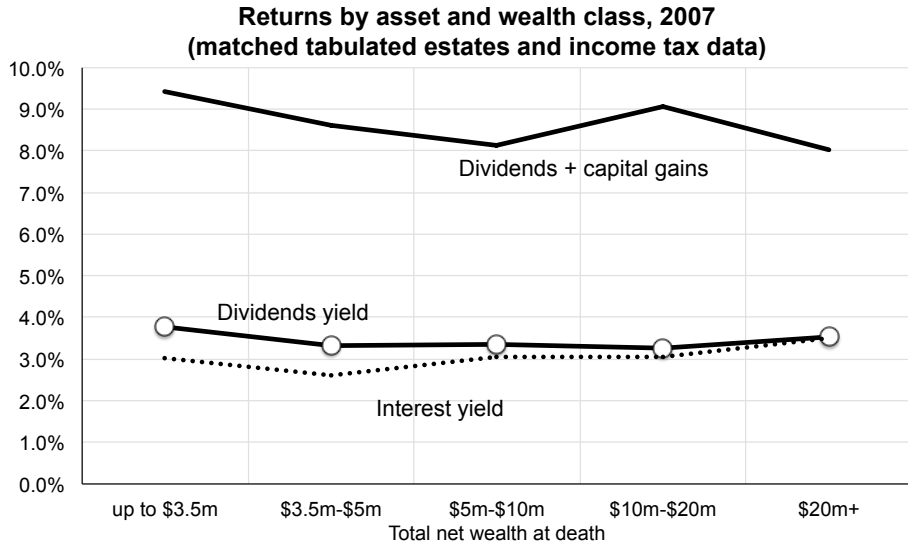Maybe the very rich have higher equity/bond returns (e.g., better at spotting good investment opportunities) $\rightarrow$ level bias

Maybe this differential has increased since the 1970s (e.g., due to financial globalization/innovation) $\rightarrow$ trend bias

Maybe rich people realize particularly low or high returns to avoid taxes

$\Downarrow$

**Three checks show that realized return within asset class is flat and has remained flat**

# Check 1: Flat returns in matched estates-income tax data

**Returns by asset and wealth class, 2007
(matched tabulated estates and income tax data)**



Dividends + capital gains

Dividends yield

Interest yield

Total net wealth at death

up to $3.5m    $3.5m-$5m    $5m-$10m    $10m-$20m    $20m+

# The very rich did collect a lot of dividends in the 1970s



**Dividend yield by wealth class in 1976
(matched micro estate and income tax data)**

Fractiles of the distribution of net wealth at death
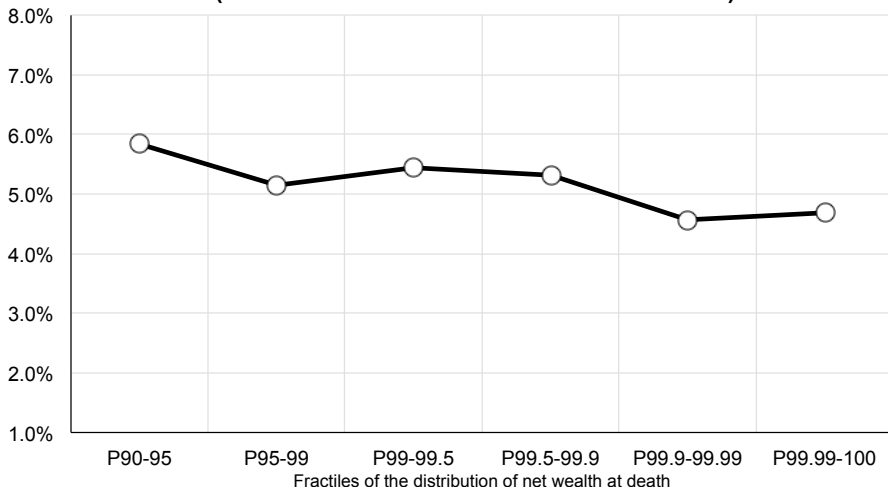
# Check 2: Capitalization method works for foundations



**Top foundations wealth shares: reported wealth vs. capitalized income**
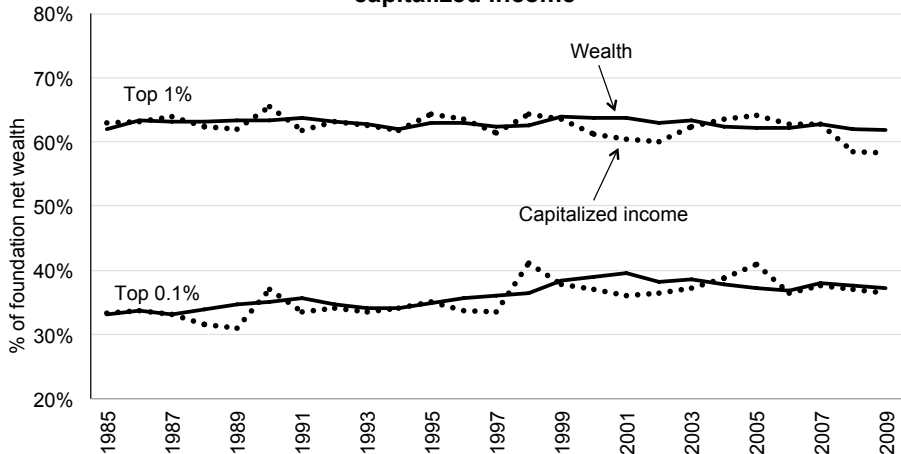
The figure compares top foundation wealth shares obtained by using balance sheet wealth data as reported to the IRS and obained by capitalizing IRS-reported income. Source: Appendix Tables C11 and C13.

# Check 3: Capitalization method works for the SCF



**Top household wealth shares: reported SCF wealth vs. capitalized SCF incomes**
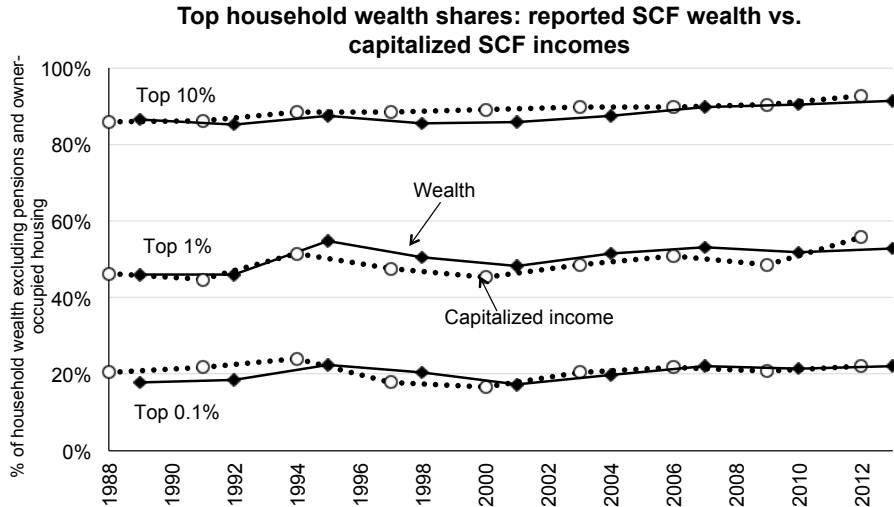
The figure compares direct SCF wealth shares to wealth shares estimated by capitalizing SCF income. Wealth excludes pensions and owner-occupied net housing. Source: Appendix Table C1.

# II- The US Wealth Distribution, 1913-2012

# Wealth today is very concentrated

**Table 1: Thresholds and average wealth in top wealth groups, 2012**

| Wealth group | Number of families | Wealth threshold | Average wealth | Wealth share |
|---|---|---|---|---|
| **A. Top Wealth Groups** | | | | |
| Full Population | 160,700,000 | | $343,000 | 100% |
| Top 10% | 16,070,000 | $660,000 | $2,560,000 | 77.2% |
| Top 1% | 1,607,000 | $3,960,000 | $13,840,000 | 41.8% |
| Top 0.1% | 160,700 | $20,600,000 | $72,800,000 | 22.0% |
| Top .01% | 16,070 | $111,000,000 | $371,000,000 | 11.2% |
| **B. Intermediate Wealth Groups** | | | | |
| Bottom 90% | 144,600,000 | | $84,000 | 22.8% |
| Top 10-1% | 14,463,000 | $660,000 | $1,310,000 | 35.4% |
| Top 1-0.1% | 1,446,300 | $3,960,000 | $7,290,000 | 19.8% |
| Top 0.1-0.01% | 144,600 | $20,600,000 | $39,700,000 | 10.8% |
| Top .01% | 16,070 | $111,000,000 | $371,000,000 | 11.2% |

# Wealth has always been concentrated



**Top 10% wealth share in the United States, 1917-2012**
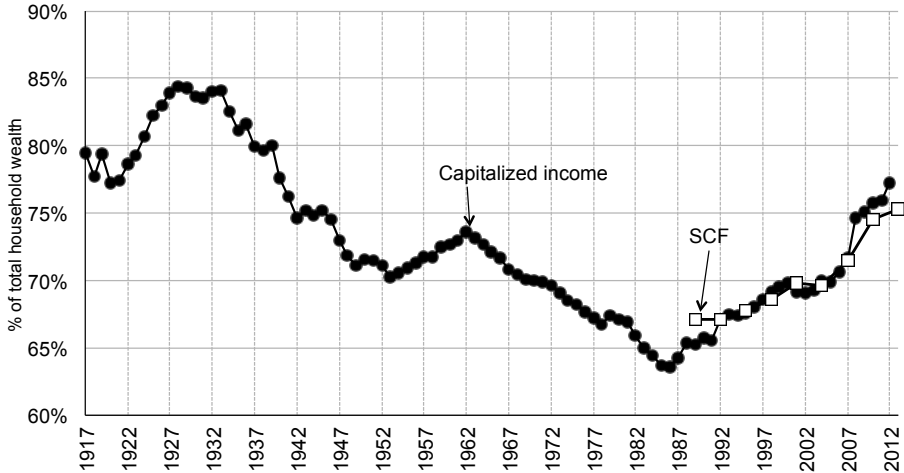
The figure depicts the share of total household wealth owned by the top 10%, obained by capitalizing income tax returns versus in the Survey of Consumer Finances. The unit of analysis is the familly. Source: Appendix Tables B1 and C4.

# The rise of the top 1% wealth share



**Top 0.1% wealth share in the United States, 1913-2012**
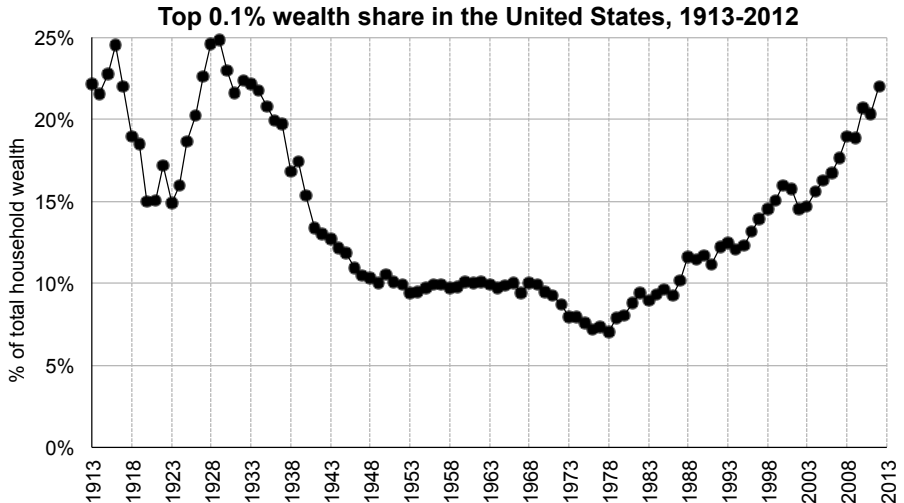
This figure depicts the share of total household wealth held by the 0.1% richest families, as estimated by capitalizing income tax returns. In 2012, the top 0.1% includes about 160,000 families with net wealth above $20.6 million. Source: Appendix Table B1.

# Top 1% has gained more than top 10%



**Top 10-1% and 1% wealth shares, 1913-2012**
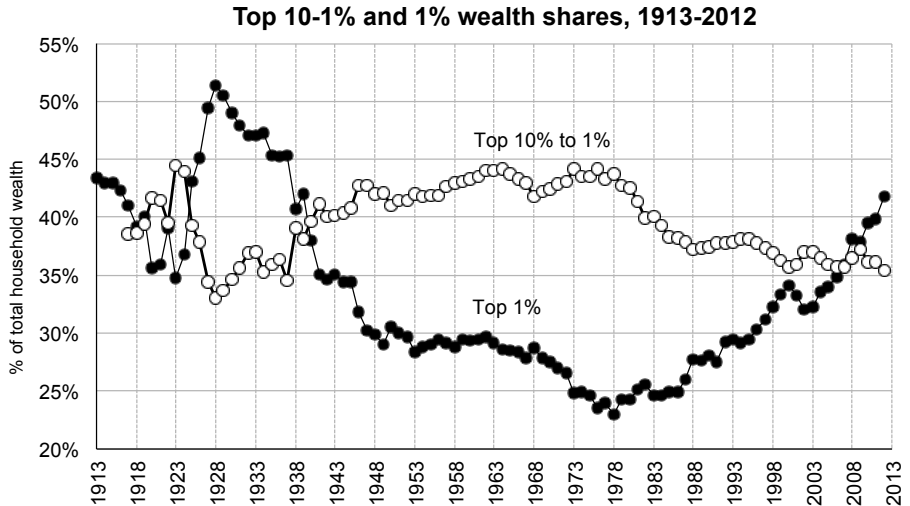
# Top 1% surge is due to the top 0.1%



**Top 1-0.1% and top 0.1% wealth shares, 1913-2012**

Top 1% to 0.1%

Top 0.1%
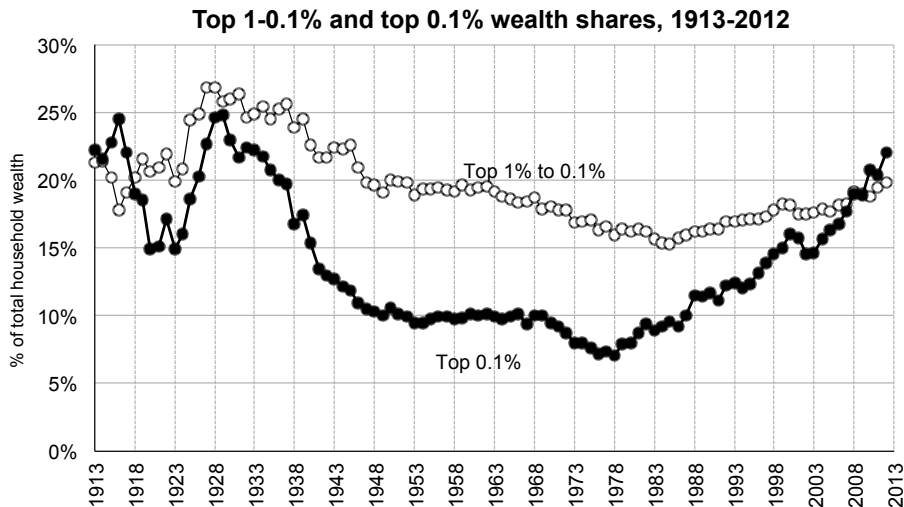
**Composition of the top 0.01% wealth share, 1913-2012**
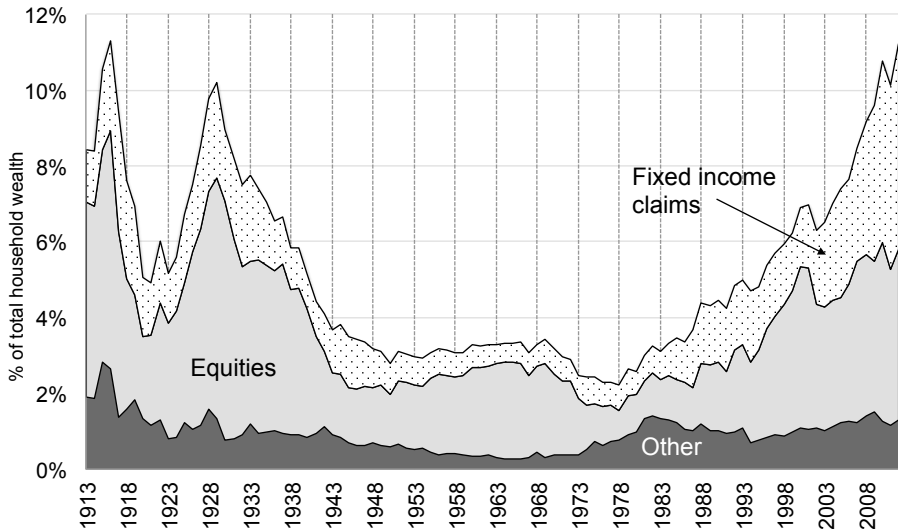
# The rise and fall of middle-class wealth



**Composition of the bottom 90% wealth share**
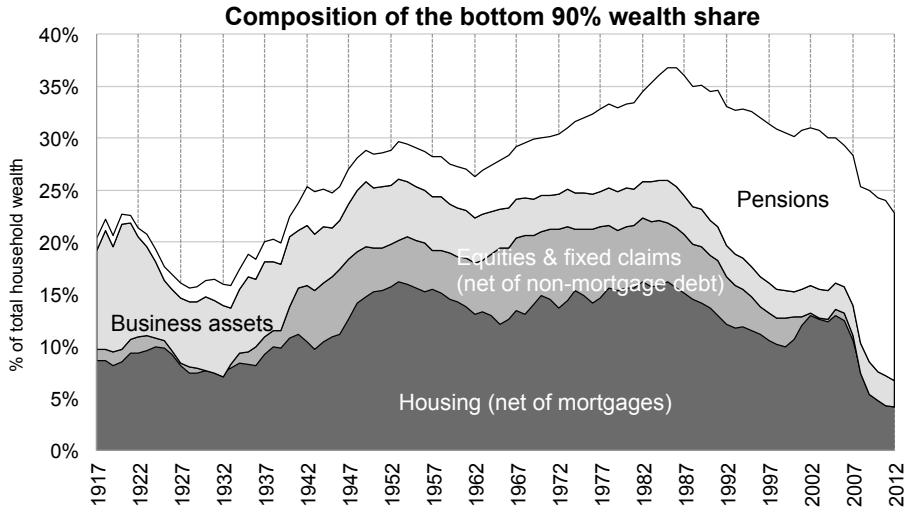
# Top 1% vs. bottom 90% wealth growth



**Real average wealth of bottom 90% and top 1% families**
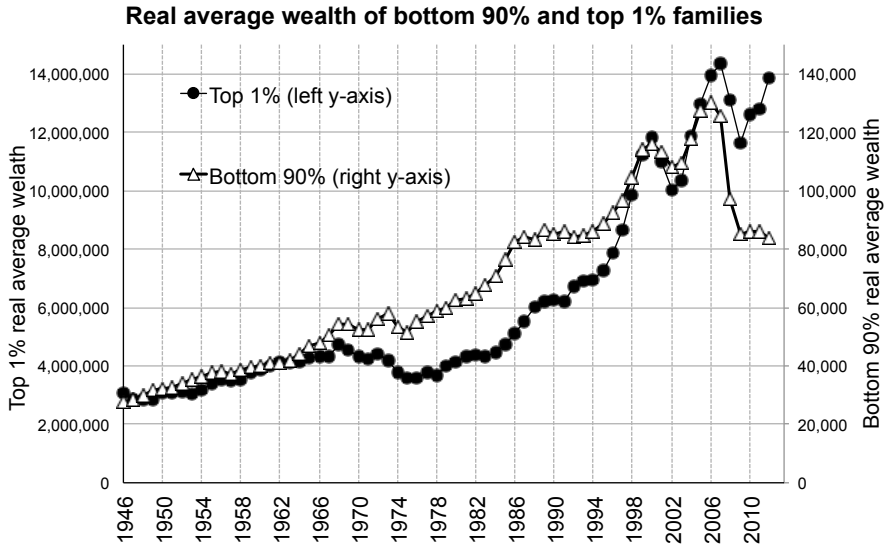
Real values are obtained by using the GDP deflator, 2010 dollars. Source: Appendix Tables B3.

# Wealth is getting older, but at the very top remains younger than in the '60s-'70s



**Share of wealth held by elderly households (65+)**

Top 0.1%

Total population

Bottom 90%

% of each group's total wealth
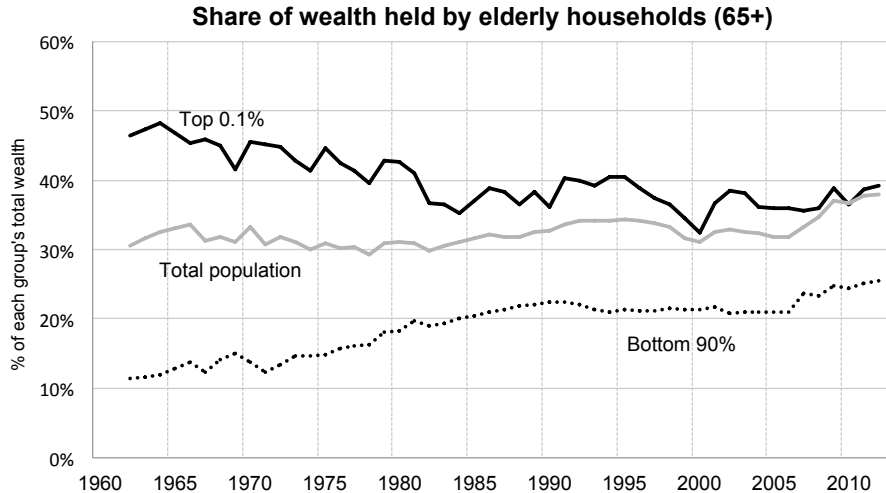
# Share of income and labor income of top wealth holders has grown a lot

**Share of income earned by top 0.1% wealth-holders**
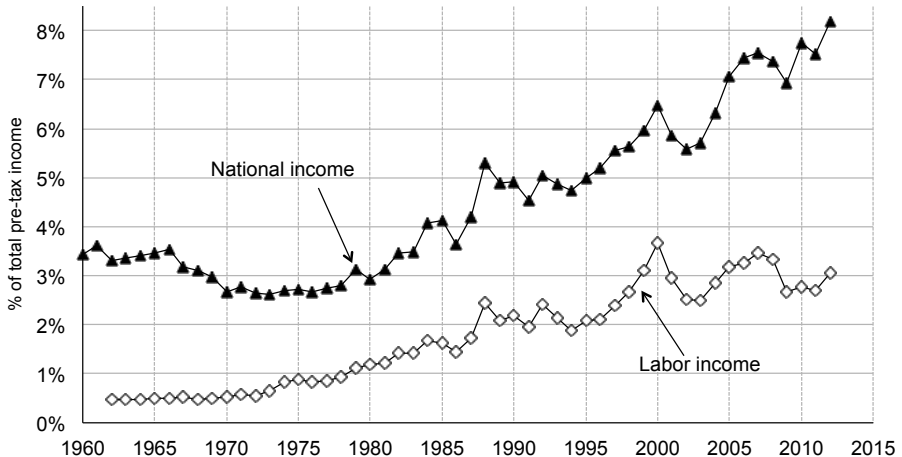


This figure shows the share of total pre-tax national income and pre-tax labor income earned by top 0.1% wealth-holders. Labor income includes employee compensation and the labor component of business income. Source: Appendix Tables B25 and B28.

# III- Comparison with existing estimates

# Link with previous studies using alternative data

**Forbes 400 rich list**: large increase in wealth concentration

**Surveys**: SCF shows increase in top 10% but less in top 1%

**Estate tax multiplier**: No increase in top 1% wealth share since 1980s (Kopczuk-Saez 2004, SOI studies)

# Our estimate for top 0.01% is consistent with Forbes rankings



**Forbes 400 (top .00025%) and top .01% Wealth Shares**

Top 0.00025%, Forbes magazine (left-hand scale)

Top 0.01%, capitalized income (right-hand scale)
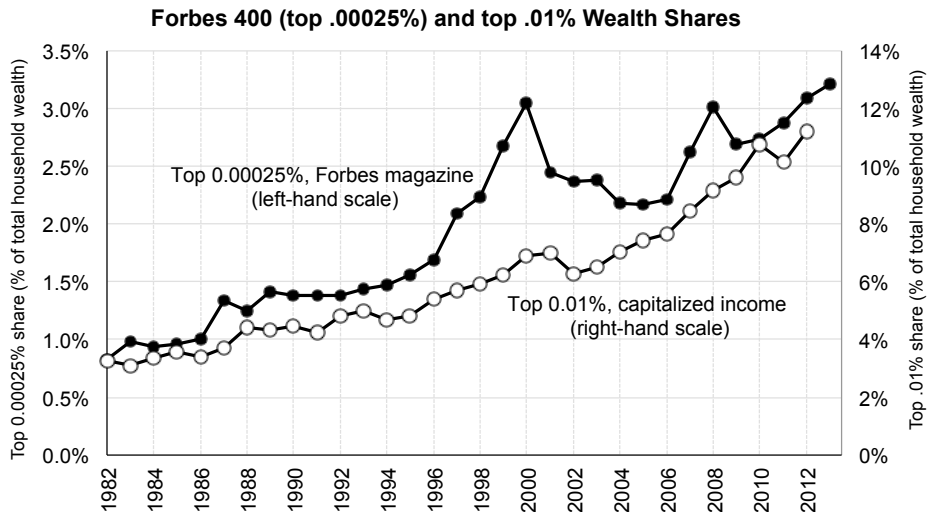
The figure depicts the top .00025% wealth share as estimated from the Forbes 400 list on the left axis. For comparison, the figure reports our top 0.01% wealth share obtained by capitalizing income tax returns (on the right axis). Source: Appendix Table C3.

# Estate multiplier technique does not find rising top wealth shares



**Top 0.1% wealth shares: capitalization vs. estate multiplier**
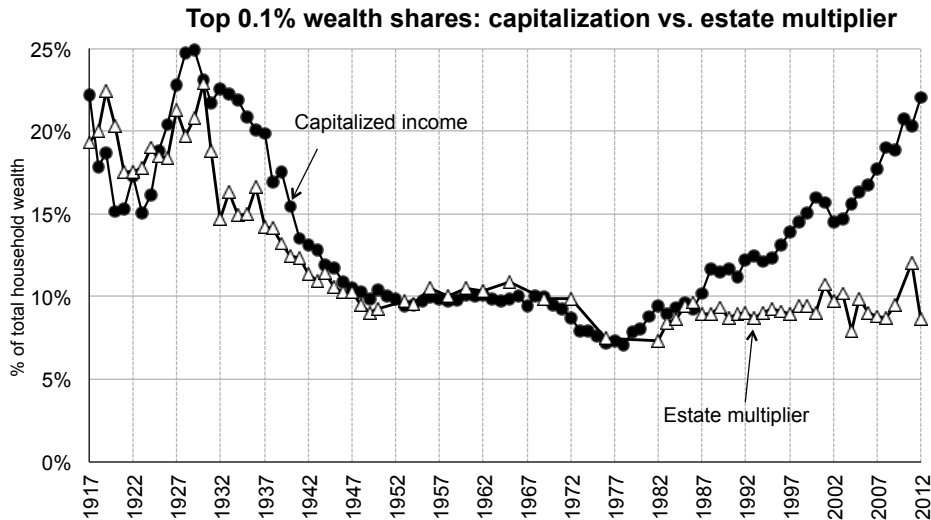
The figure depicts the top 0.1% wealth share obained by capitalizing income and by using estate tax data (Kopczuk and Saez, 2004). Source: Appendix C4 and C4b.

# Estate multiplier fails because weighted decedents sample is not representative
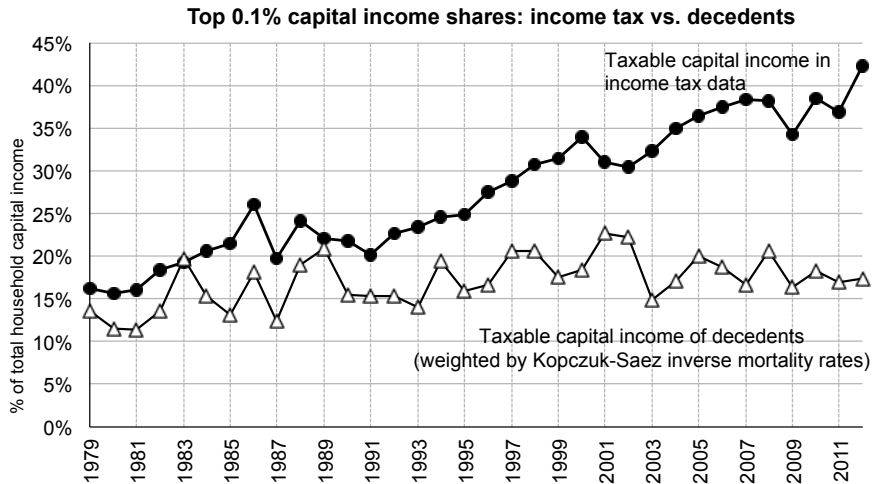


**Top 0.1% capital income shares: income tax vs. decedents**

Taxable capital income in income tax data

Taxable capital income of decedents
(weighted by Kopczuk-Saez inverse mortality rates)

*% of total household capital income*

The figure depicts the top 0.1% taxable capital income share (including realized capital gains) in (i) the SOI income tax data; (ii) the sample of decedents weighted using the Kopczuk-Saez (2004) estate mutiplier weights.

# The mortality differential by wealth group is widening



**Evolution of Mortality Advantage, Men, Aged 65-79**

Legend:
- top 10%
- top 5%
- top 1%
- Kopczuk-Saez

Y-axis: Mortality (relative to full population) — 40%, 60%, 80%, 100%

X-axis: 1979-1984, 1984-1988, 1989-1993, 1994-1998, 1999-2003, 2004-2008
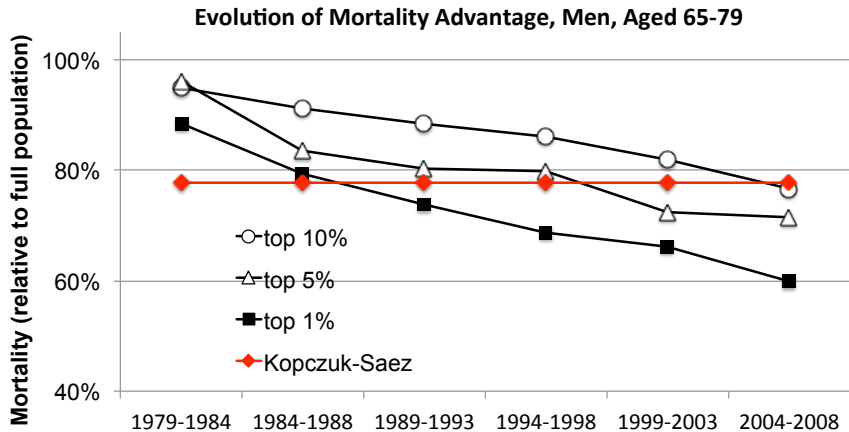
The figure depicts the relative mortality rate for men aged 65-79 by wealth group and period. E.g., male top 1% wealth holders aged 65-79 mortality rate is 90% of males aged 65-79 population wide in 1979-1984. Kopczuk-Saez is based on the mortality of white college goers relative to population in the 1980s. The graph shows that the wealth mortality advantage increases overtime and more so for the top 1% wealthiest. Source: Appendix Figure C7.

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# SCF finds rising top wealth shares, but not as much as we do



**Top 0.1% wealth share: comparison of estimates**

y-axis: % of total household wealth (0% to 25%)

Wealth obtained by capitalizing income

Wealth reported in SCF (adjusted)

Wealth of decedents (weighted by Kopczuk-Saez inverse mortality rates)

x-axis years: 1917, 1922, 1927, 1932, 1937, 1942, 1947, 1952, 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997, 2002, 2007, 2012
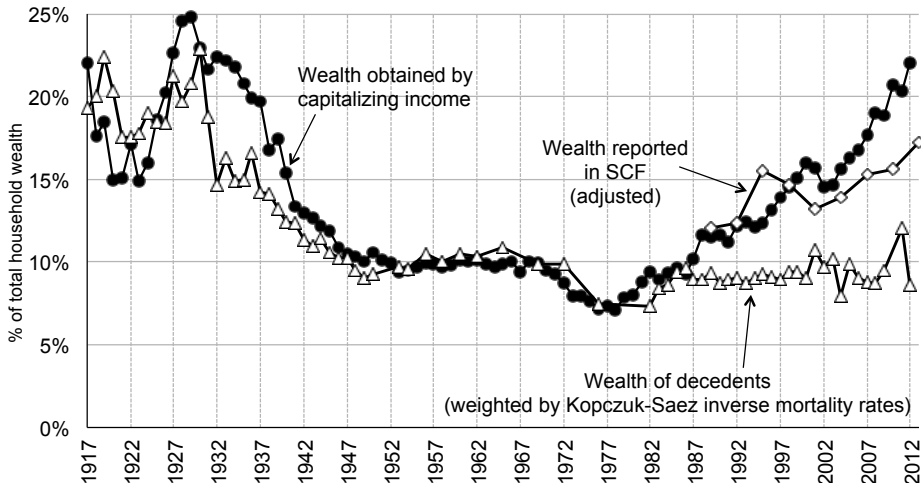
The figure depicts the top 0.1% wealth share obtained by capitalizing income, by using the SCF (adjusted to move to tax-unit level, include Forbes 400, and match Financial Accounts totals), and by using estate tax data. Source: Appendix C4 and C4b.

# SCF does not fully capture rising top capital income share
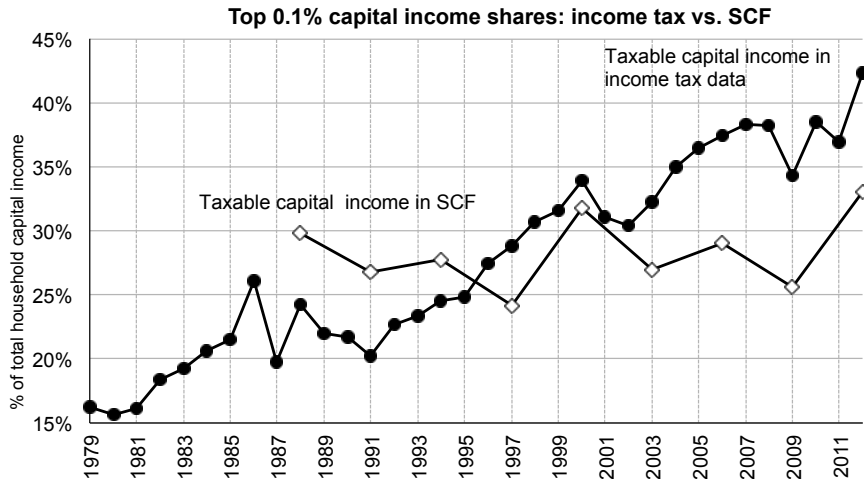


**Top 0.1% capital income shares: income tax vs. SCF**

Taxable capital income in income tax data

Taxable capital income in SCF

*y-axis: % of total household capital income*

The figure depicts the top 0.1% taxable capital income share (including realized capital gains) in (i) the SOI income tax data; (ii) the SCF. For both the SCF and SOI income tax data, fractiles are defined relative to the total number of tax units.

# IV- Decomposing Wealth Accumulation: Saving Rates and Income Shares of Top Wealth Holders

# Wealth distribution Dynamics

Individual $i$ wealth accumulation can always be written:

$$W_{t+1}^i = (1 + q_t^i) \cdot (W_t^i + s_t^i \cdot Y_t^i)$$

where $W_t^i$ is wealth, $Y_t^i$ is income, $s_t^i$ is net savings rate, $1 + q_t^i$ is pure price effect on assets in year $t$

We define **synthetic** savings rate $s_t^p$ for fractile $p$ (e.g., top 1%):

$$W_{t+1}^p = (1 + q_t^p) \cdot (W_t^p + s_t^p \cdot Y_t^p)$$

where $1 + q_t^p$ is price effect for fractile $p$ based on $W_t^p$ composition

$$\Rightarrow \textbf{long-run steady state:} \ sh_W^p = sh_Y^p \cdot \frac{s^p}{s}$$

where $sh_W^p$ is fractile $p$ share of wealth, $sh_Y^p$ is fractile $p$ share of income, and $s^p/s$ is relative savings rate of fractile $p$

# Saving rates typically rise with wealth



Saving rates by wealth class (decennial averages)
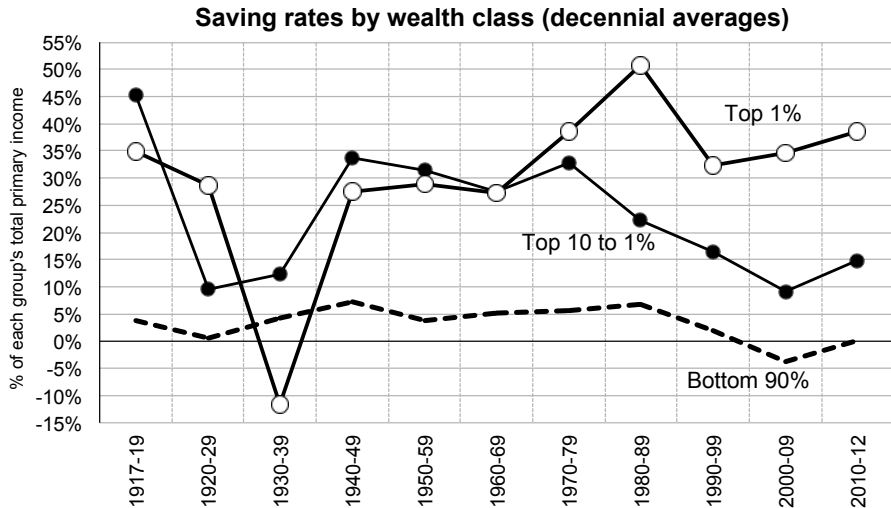
# The bottom 90% massively dis-saved in the decade preceding the crisis



Saving rate of the bottom 90%
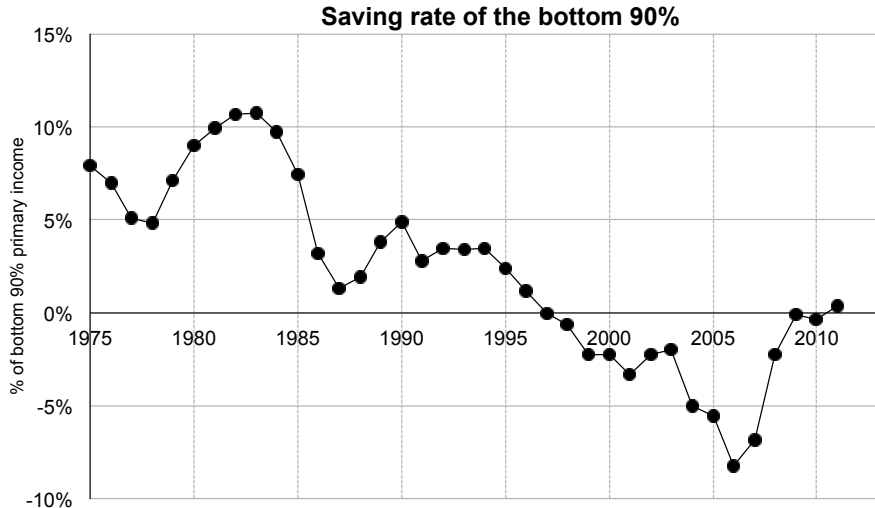
# Effects of Savings and Income Inequality

**Bottom 90%:** Since mid-1980s, plummeting savings rate $s^p$ for bottom 90% relative to aggregate $s$ [due to surge in debt]

$\Rightarrow$ Decline in bottom 90% wealth share, and expected to continue

**Top 1%:** Since mid-1970s, surge in income share held by top wealth holders and solid savings rate $s^p$ (relative to aggregate $s$)

$\Rightarrow$ Short-run: Large increase in top wealth shares, and expected to continue

$\Rightarrow$ Long-run: Self-made wealth could become inherited wealth and lead to the "patrimonial society" of Piketty (2014)

# Conclusion

# A first step toward DINA

We are constructing new, consistent series on the distribution of wealth $W$ and income $Y = Y_K + Y_L$ fully consistent with flow of funds and national accounts

Next step: construct a microfile with individual-level income (pre-tax and post-tax) and wealth consistent with macro flow of funds and national income accounts

$=$ **distributional national accounts (DINA), reconciling macro growth and inequality studies**

# Need for better wealth and savings data

**Using additional data would enable us to refine our estimates:**

E.g., matched property and individual income tax data

**Modest additional administrative data collection effort could have high value:**

401(k) taccounts balance reporting (and not only IRAs)

Mortgage balances on forms 1098

Market value of portfolio securities on forms 1099

Purchases and sales of securities (to measure saving and consumption)

$\Rightarrow$ **Necessary to obtain fully accurate distributional national accounts**

# Supplementary Slides

# Wealth categories definition

**Equities:** corporate equities, including S corporation equities, and money market fund shares (treated as dividend-paying for income tax purposes)

**Fixed claims:** currency, deposits, bonds, and other interest-paying assets, net of non-mortgage debts

**Business assets:** sole proprietorships, farms (land and equipment), partnerships, intellectual property products
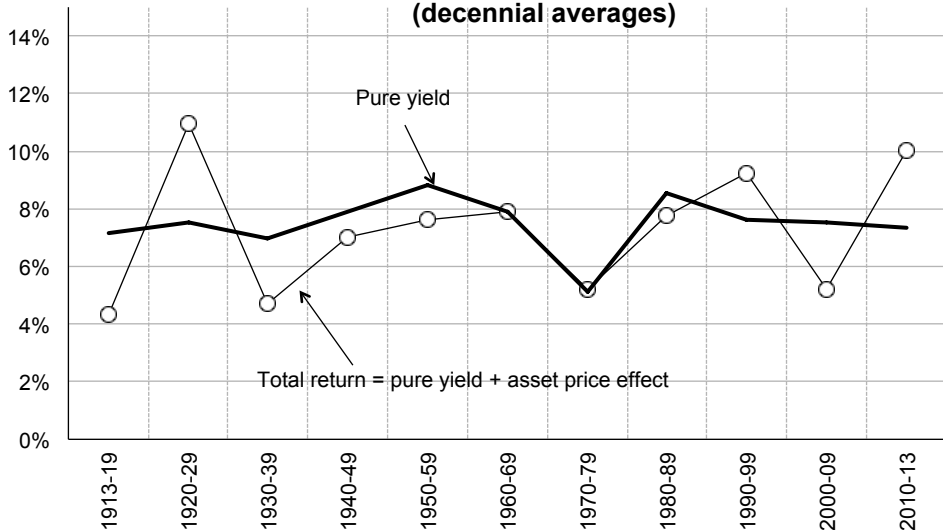
**Housing:** owner- and tenant-occupied housing, net of mortgage debt

**Pensions:** funded pension entitlements, life insurance reserves, IRAs. Excludes social security and unfunded defined benefit pensions

# Rates of returns on wealth around 7%
# No long-run price effects


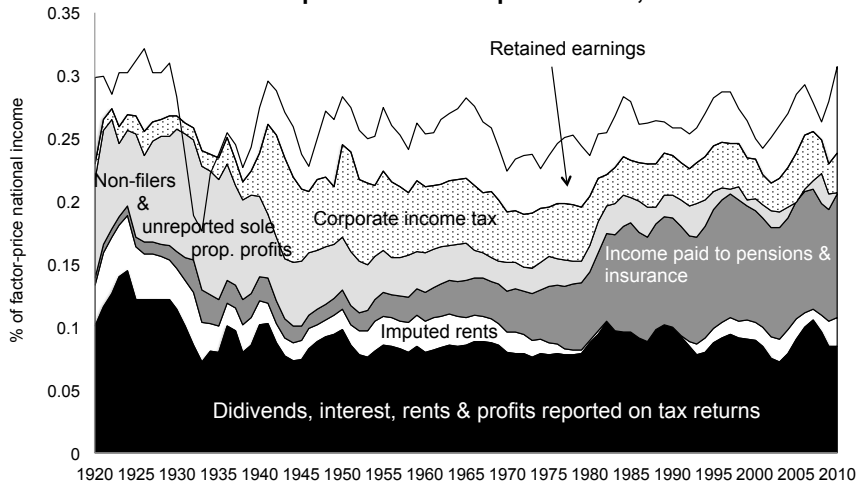
**Figure A8: Yield and total return on U.S. private wealth (decennial averages)**

Pure yield

Total return = pure yield + asset price effect

1913-19, 1920-29, 1930-39, 1940-49, 1950-59, 1960-69, 1970-79, 1980-89, 1990-99, 2000-09, 2010-13

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# What tax data miss



**From reported to total capital income, 1920-2010**

Retained earnings

Non-filers & unreported sole prop. profits

Corporate income tax

Income paid to pensions & insurance

Imputed rents

Didivends, interest, rents & profits reported on tax returns

% of factor-price national income

0.35
0.3
0.25
0.2
0.15
0.1
0.05
0

1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010

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# Most trusts generate income taxable at the individual level



**Wealth held in estates & trusts**

% net household wealth

Total estate & trust wealth

Estate & trust wealth that does not generate distributable income

12%
10%
8%
6%
4%
2%
0%

1952    1962    1972    1982    1992    2002    2012

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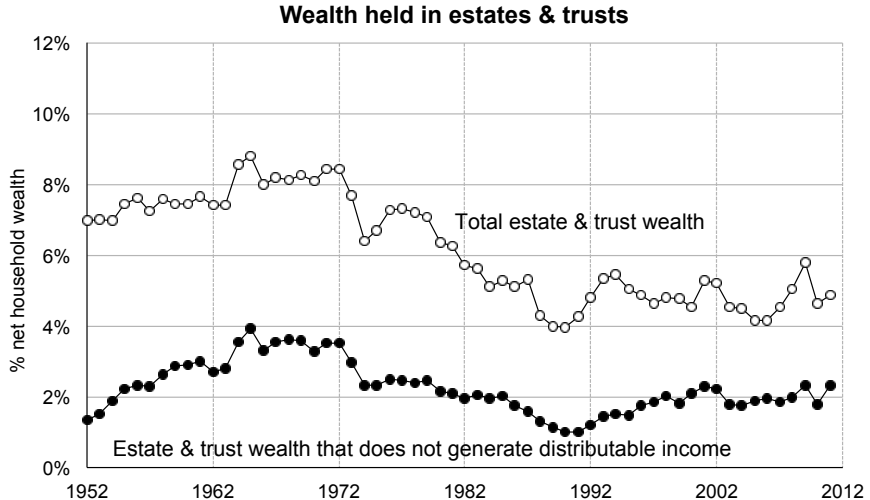
# Charitable giving follows top incomes ⇒ Surge in top incomes is real



**Charitable Giving of Top 1% Incomes, 1962-2012**

- Mean charitable giving of top 1% divided by mean income [left y-axis]
- Top 1% Income Share [right y-axis]
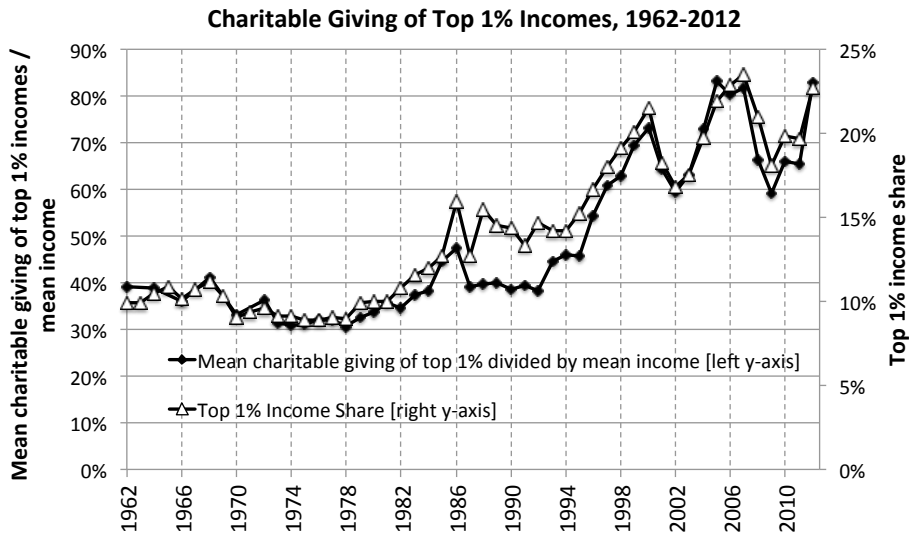
Source: The figure depicts average charitable giving of top 1% inomes (normalized by average income per family) on the left y-axis. For comparison, the figure reports the top 1% income share (on the right y-axis).

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# Off-Shore Tax evasion, if anything, has probably increased since the 1970s

**U.S. equities held by tax haven firms and individuals**
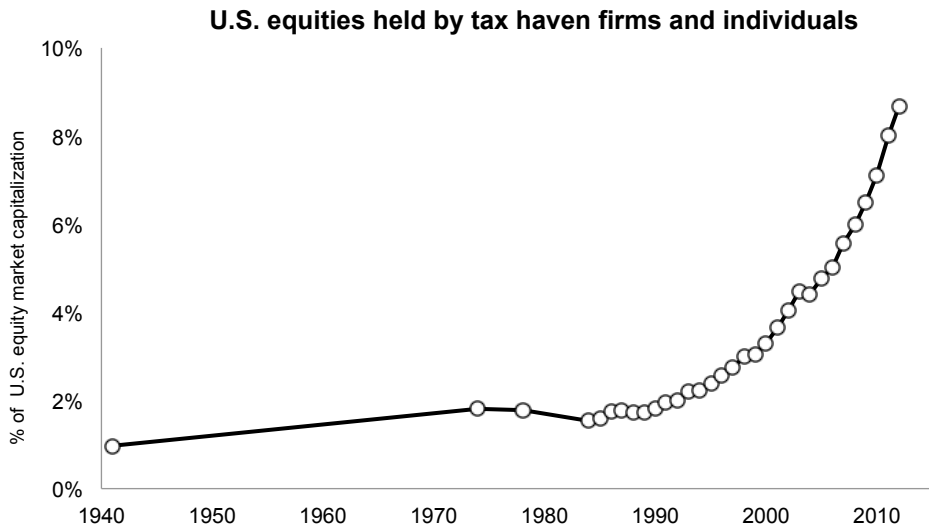


In 2012, 9% of the U.S. listed equity market capitalization was held by tax haven investors (hedge funds in the Caymans, banks in Switzerland, individuals in Monaco, etc.). Source: Zucman (2014) using US Treasury International Capital data.

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# Total returns of foundations grow with wealth but realized returns do not



**Figure C4: Return on foundation wealth, 1990-2010 average
Returns including realized & unrealized gains**
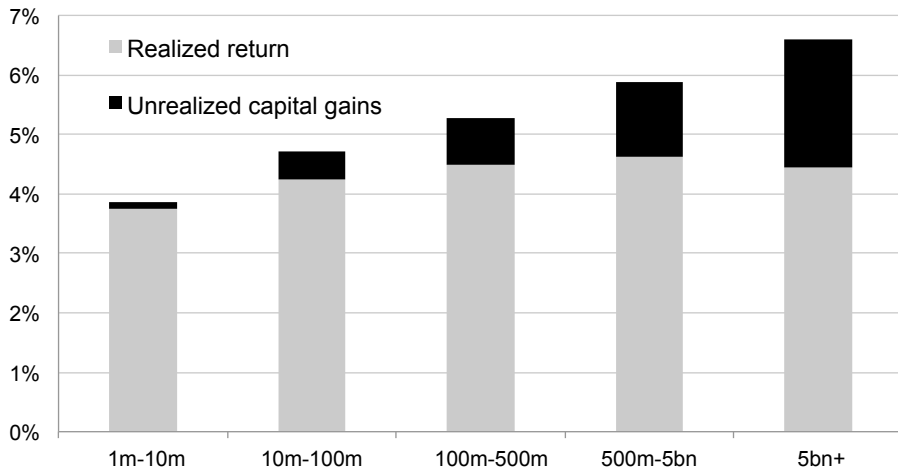
# Findings are robust to different methodological choices

**Robustness checks:**

Different treatment of capital gains

Capitalizing dividends only (Bill Gates world)

Capitalizing dividends plus capital gains (Warren Buffet world)

Capitalizing dividends plus capital gains for shares but not ranking (the best of both worlds)

Allowing for bond yield rising with wealth

Different imputations for pension wealth

⇓

**All show wealth inequalities rising fast at the very top, but not below the top 0.1%**

# Results robust to alternative treatment of pensions, capital gains, bond returns



**Figure B27: Top 0.1% wealth share, all methods**

Legend:
- Top 0.1% Baseline
- Top 0.1% KG capitalized
- Top 0.1% KG not capitalized
- Top 0.1% pensions proportional to pension distributions
- Top 0.1% higher bond return for the rich