Wealth Inequality in the United States since 1913

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US Income inequality has increased sharply since the 1970s.

Mixed existing evidence on wealth inequality changes.

⇒ Is inequality increase driven solely by labor income?

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

**Key result:** Wealth inequality has surged but phenomenon is concentrated mostly within the top .1% (=wealth above $20m).
Back to the roaring 1920s

Top 0.1% wealth share in the U.S., 1913-2012
No increase in wealth shares below top 0.1% so far

Top wealth shares: decomposing the top 1%

- Top 0.01%
- Top 0.1%-0.01%
- Top 0.5%-0.1%
- Top 1%-0.5%
Outline of the talk

1) The capitalization method
2) The distribution of wealth
3) Robustness and comparison with existing estimates
4) Decomposing wealth accumulation: income and saving rates
I- The capitalization method
To obtain wealth, we divide capital income by the rate of return

**How the capitalization technique works:**

Start from each capital income component reported on individual tax returns

Compute *aggregate* rate of return for each asset class (using Flow of Funds and aggregate tax data)

Multiply each individual capital income component by $\frac{1}{\text{rate of return of corresponding asset class}}$

Simple idea, but lot of care needed in reconciling tax with Flow of Funds data

**Key assumption:** uniform return within asset class

⇒ Need detailed income components to obtain reliable results
Aggregate income and wealth

**Aggregate wealth**

\[ W = \text{Total assets minus liabilities of households at market value} \]

Excludes durables, unfunded DB pensions, non-profits


**Aggregate income**

NIPA since 1929, Kuznets (1941) and King (1930) before 1929

**Family unit**

Top 1\% = Top 1\% of all family units [as in Piketty and Saez]
A U-shaped wealth-income ratio

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

- Housing (net of mortgages)
- Sole proprietorships & partnerships
- Currency, deposits and bonds
- Equities
- Pensions
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-

Various additional IRS published 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, holding companies...
Pre-1962 capitalization based on top income composition

Source: Piketty and Saez, 2003 updated to 2012

- Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.
How we deal with non-taxable income

Pensions

Published IRS data on market-value of IRAs (≈ 30% of pension wealth)

Imputations for other forms of pension wealth (based on wages & pension distributions)

Owner-occupied housing

Property tax paid

Mortgage interest paid

Only matters for top 10% but irrelevant for top 1% and above, because pensions and housing very small there
How we deal with avoidance and evasion

**Tax avoidance:**
Systematic reconciliation exercise with national accounts to identify potential gaps in tax data

E.g., trust income → imputations on the basis of distributions (Retained trust inc. \(\approx 2\%\) of household capital income)

**Tax evasion:**
Third-party reporting means all dividends and interest earned through domestic banks well declared

Offshore wealth: If anything increases the trend in rising wealth top wealth shares by about 2-3 points [in progress]
Is the return constant within asset class?

**Two potential issues:**

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

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

⇓

**Two checks show that return within asset class is flat and has remained flat**
Check 1: No evidence that the wealthy have higher returns within asset class

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)
Capitalization method can be checked with joint income and wealth micro-data:

1) **SCF Data:** provides individual micro-data for both wealth and (tax return) income component by component since 1989

2) **Foundation Data:** publicly available IRS micro-data with information on both market value wealth and income

We apply same rates of returns & capitalization technique as for individual tax returns

⇓

By capitalizing income we are able to reproduce the correct wealth distribution
Capitalization method works for the SCF

Capitalized SCF income vs. SCF wealth

Top 10%

Top 1%

Top .1%

Direct Wealth

Capitalized Income

Top Wealth Shares

Top Wealth Shares

Years: 1988 to 2010
Capitalization works for foundations

Top foundations wealth shares: observed (from balance sheet data) vs. estimated (by capitalizing income)

% of foundation net wealth

1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009

Top 1% (observed)

Top 1% (estimated by capitalizing income)

Top 0.1% (estimated by capitalizing income)

Top 0.1% (observed)
II- The US Wealth Distribution, 1913-2012
Wealth inequality is making a comeback

Main long-run trends in the distribution of wealth:

Long run U-shaped evolution for the very rich
(top 0.1%: $>20 million today)

Long run L-shaped evolution for the rich
(top 1% to 0.1%: between $4 million and 20 million today)

Long-run ∩-shaped for the middle-class
(top 50% to 90%: less than $500K today)

(Memo: Bottom 50% always owns $\approx 0$ net wealth)
Wealth has always been very concentrated
The top 10% is climbing back

Top 10% wealth in the U.S., 1917-2012
Top 1% has gained more than top 10%
The middle rich are losing ground

Top 10-1% wealth share in the U.S., 1917-2012
Top 1% surge is due to the top 0.1%

Top 0.1% wealth share in the U.S., 1913-2012
Almost no recovery for the merely rich

Top 1-0.1% wealth share in the U.S., 1913-2012
Top 0.01% share: $\times 4$ in last 35 years

Composition of the top 0.01% wealth share, 1913-2012

- Equities
- Fixed income claims
- Other
The rise and fall of middle-class wealth
Wealth is getting older, but at the very top remains younger than in the ’60s–’70s.
III- Robustness and comparison with existing estimates
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.

Top 0.1% wealth share, robustness checks

- 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
Forbes 400 rich list: large increase in wealth concentration consistent with our estimates

Surveys: SCF shows increase in top 10% but much less in top 1% or top .1%

SCF fails to capture surge in capital income concentration since 1989 ⇒ SCF under-estimates top wealth shares surges

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

Estate tax multiplier method fails to take into account widening mortality differential by wealth class

Our capitalization analysis can help re-design SCF weights and estate multiplier weights
Our estimate for top 0.01% is consistent with Forbes rankings.
Our top 10% wealth share is consistent with SCF.
Estate tax returns fail to capture rising top wealth shares

Top 1% Wealth Shares: Comparing Estimates

- Capitalized Incomes (Saez-Zucman)
- Estates (Kopczuk-Saez and IRS)
- SCF (Kennickell)
SCF fails to capture rising top capital income share

Top .1% K Income Share in SCF and Tax Data

Top .1% K income SCF
Top .1% K income
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 price effect on assets in year $t$

We define synthetic savings rate for fractile $p$ (e.g., top 1%) so that

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

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

⇒ 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 rise with wealth except in the 1930s. The rich save more as a fraction of their income, except in the 1930s when there was large dis-saving through corporations. NB: The average private saving rate has been 9.8% over 1913-2013.
The bottom 90% massively dis-saved in the decade preceding the crisis.
Slight decrease in income share of bottom 90% wealth holders

Share of Income and Wealth of Bottom 90% Wealth Holders

Long-run: Wealth Share = Income Share * relative savings rate
Sharp increase in income share of top 1% wealth holders

Share of Income and Wealth of Top 1% Wealth Holders

Long-run: Wealth Share = Income Share*relative savings rate
### Rates of growth, saving and return by wealth group

<table>
<thead>
<tr>
<th></th>
<th>Real growth rate of wealth per family</th>
<th>Real growth rate of income per family</th>
<th>Private saving rate (personal + retained earnings)</th>
<th>Real rate of capital gains</th>
<th>Total pre-tax rate of return</th>
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<tbody>
<tr>
<td><strong>1917-1929</strong></td>
<td></td>
<td></td>
<td>s = S/Y</td>
<td>q</td>
<td>r + q</td>
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<td>All</td>
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<td>0.5%</td>
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<td>Bottom 90%</td>
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<td>Top 10%</td>
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<tr>
<td>Top 1%</td>
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<td>24%</td>
<td>1.6%</td>
<td>10.6%</td>
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<td><strong>1929-1986</strong></td>
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<td><strong>1986-2012</strong></td>
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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]

⇒ Decline in bottom 90% wealth share, and expected to continue

⇒ Need to encourage savings / discourage debt to reverse trend

[=forced long-term savings + borrow against yourself]

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

⇒ Large increase in top wealth shares, and expected to continue

⇒ Progressive taxation (income, wealth, inheritance) can reduce top incomes and savings rates of top wealth holders
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 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

Limited additional administrative data collection effort could have high value:

401(k) accounts 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)

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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
What tax data miss

From reported to total capital income, 1920-2010

- Dividends, interest, rents & profits reported on tax returns
- Imputed rents
- Retained earnings
- Income paid to pensions & insurance
- Corporate income tax
- Non-filers & evasion
- Non-filers & evasion

% of factor-price national income

0% 5% 10% 15% 20% 25% 30% 35%

Most trusts generate income taxable at the individual level.