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).
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.
Surge in top wealth shares concentrated in top 0.1%
Outline of the talk

I. The capitalization method

II. The distribution of wealth

III. Robustness and comparison with existing estimates

IV. 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 1/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

% of national income

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, trusts, etc.
Concentration of reported capital income has increased dramatically.

The top 0.1% taxable capital income share

- Including capital gains
- Excluding capital gains
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
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 income ≈ 2% of household capital income)

**Tax evasion:**

Third-party reporting means all dividends and interest earned through domestic banks are reported

Offshore wealth: If anything increases the trend in rising wealth top wealth shares by about 2 points
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)
Check 2: The capitalization method works for SCF and foundations

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 returns

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

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.
The figure compares top foundation wealth shares obtained by using balance sheet wealth data as reported to the IRS and obtained by capitalizing IRS-reported income. Source: Appendix Tables C11 and C13.
II- The US Wealth Distribution, 1913-2012
Wealth in 2012 is very concentrated

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

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

Notes: This table reports on the distribution of household in the United States in 2012 as obtained by capitalizing income tax returns. The unit is the family (either a single person aged 20 or above or a married couple, in both cases with children dependents if any). Fractiles are defined relative to the total number of families in the population. Source: Appendix Table B1.
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 $650K today)

(Memo: Bottom 50% always owns ≈ 0 net wealth)
Wealth has always been concentrated

The figure depicts the share of total household wealth owned by the top 10%, obtained by capitalizing income tax returns versus in the Survey of Consumer Finances. The unit of analysis is the family. Source: Appendix Tables B1 and C4.
Top 1% has gained more than top 10%
Top 1% surge is due to the top 0.1%
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

Composition of the bottom 90% wealth share

- **Housing (net of mortgages)**
- **Equities & fixed claims (net of non-mortgage debt)**
- **Business assets**
- **Pensions**

% of total household wealth

0% 5% 10% 15% 20% 25% 30% 35% 40%

Wealth is getting older, but at the very top remains younger than in the ’60s–’70s.
Share of income and labor income of top wealth holders has grown a lot.

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- 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.

Figure B27: Top 0.1% wealth share, all methods

- 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
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%
SCF excludes Forbes 400 and under-estimates capital income concentration increases since 1989

**Estate tax multiplier**: No increase in top 1% wealth share since 1980s (Kopczuk-Saez 2004, SOI studies)
Estate tax multiplier method fails to take into account widening mortality differential by wealth class

⇓

Our capitalization analysis can help SCF weights and estate multiplier weights
Our estimate for top 0.01% is consistent with Forbes rankings

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 tax returns fail to capture rising top wealth shares

The figure depicts the top 0.1% wealth share obtained by capitalizing income, by using the Survey of Consumer Finances (SCF baseline and adjusted), and by using estate tax data (Kopczuk and Saez, 2004). Source: Appendix C4 and C4b.
SCF does not fully capture rising top capital income share

The figure compares the top 0.1% capital income shares estimated with the SCF data vs. the income tax data. Capital income includes realized capital gains, dividends, interest, net rents, and business profits. Source: Appendix Table C2.
The figure depicts the relative mortality rate by age and wealth group for men in 1999-2008. E.g., male top 1% wealth holders aged 30-49 mortality rate is 40% of males aged 30-49 population wide. Kopczuk-Saez is based on the mortality of white college goers relative to population in the 1980s. The graph shows that mortality decreases with wealth (even within the top 10%) and that the wealth mortality advantage decreases with age. Source: Appendix Table C7.
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.
IV- Decomposing Wealth Accumulation: Saving Rates and Income Shares of Top Wealth Holders
Top 1% vs. bottom 90% wealth growth

Real average wealth of bottom 90% and top 1% families

- Top 1% (left y-axis)
- Bottom 90% (right y-axis)

Real values are obtained by using the GDP deflator, 2010 dollars. Source: Appendix Tables B3.
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

⇒ **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.
The bottom 90% massively dis-saved in the decade preceding the crisis.
Bottom 90% wealth share decline due to
(a) savings collapse, (b) income share fall

Since the 1980s the share of total household wealth owned by families in the bottom 90% of the wealth distribution has fallen proportionally more than the share of total pre-tax national income earned by these families. Source: Appendix Tables B1, B25 and B33c.
### Table 2: 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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</thead>
<tbody>
<tr>
<td></td>
<td>$g_{wf}$</td>
<td>$g_{yf}$</td>
<td>$s = S/Y$</td>
<td>$q$</td>
<td>$r + q$</td>
</tr>
<tr>
<td>1917-1929</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>All</td>
<td>1.8%</td>
<td>0.5%</td>
<td>10%</td>
<td>0.9%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Bottom 90%</td>
<td>-0.4%</td>
<td>0.0%</td>
<td>1%</td>
<td>0.2%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Top 10%</td>
<td>2.3%</td>
<td>1.2%</td>
<td>23%</td>
<td>1.0%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Top 1%</td>
<td>3.6%</td>
<td>1.4%</td>
<td>28%</td>
<td>1.5%</td>
<td>10.5%</td>
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<tr>
<td>1929-1986</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>1.5%</td>
<td>2.0%</td>
<td>12%</td>
<td>-0.6%</td>
<td>6.6%</td>
</tr>
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<td>Bottom 90%</td>
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<td>6%</td>
<td>-0.2%</td>
<td>6.2%</td>
</tr>
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<td>Top 10%</td>
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<td>1.4%</td>
<td>24%</td>
<td>-0.9%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Top 1%</td>
<td>0.3%</td>
<td>0.5%</td>
<td>24%</td>
<td>-1.1%</td>
<td>7.2%</td>
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<tr>
<td>1986-2012</td>
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<td></td>
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<tr>
<td>All</td>
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<td>1.3%</td>
<td>9%</td>
<td>0.9%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Bottom 90%</td>
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<td>0.7%</td>
<td>0%</td>
<td>1.3%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Top 10%</td>
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<td>2.3%</td>
<td>22%</td>
<td>0.7%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Top 1%</td>
<td>3.9%</td>
<td>3.4%</td>
<td>36%</td>
<td>0.9%</td>
<td>7.9%</td>
</tr>
</tbody>
</table>
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

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

⇒ Short-run: Large increase in top wealth shares, and expected to continue

⇒ Long-run: Self-made wealth could become inherited wealth and lead to the “patrimony society” of Piketty (2014)
Policies to Reduce Wealth Inequality

**Top 1%:** Progressive taxation (income, wealth, inheritance) is a proven historical tool to reduce income/wealth concentration

Progressive income and wealth tax reduce income and savings incentives at the top

Estate taxation can prevent self-made wealth from becoming inherited wealth

**Bottom 90%:** Collapse in savings due to surge in debt [due to present bias for consumption? stagnating incomes? financial de-regulation?]

⇒ Middle class income support + financial regulation

⇒ Need to encourage savings / discourage debt [= nudged savings + borrow against yourself?]
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)

⇒ 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)

Total return = pure yield + asset price effect
What tax data miss

From reported to total capital income, 1920-2010

% of factor-price national income

- Didivends, interest, rents & profits reported on tax returns
- Corporate income tax
- Income paid to pensions & insurance
- Imputed rents
- Non-filers & unreported sole prop. profits
- Retained earnings
- Non-filers & unreported sole prop. profits
Most trusts generate income taxable at the individual level.
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% incomes (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).
Off-Shore Tax evasion, if anything, has probably increased since the 1970s.

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.
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

- Realized return
- Unrealized capital gains