The Distribution of US Wealth, Capital Income and Returns since 1913

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Is rising inequality purely a labor income phenomenon?

Income inequality has increased sharply since the 1980s yet surveys show modest increase in wealth concentration

One possible explanation: rising inequality is a pure labor income phenomenon

- Rise in top incomes due to top wage earners/entrepreneurs only

- The working rich may not have had enough time to accumulate

- Or they may have low saving rates, face very high tax rates, give a lot to charities, have low returns on their assets ... preventing them from accumulating large fortunes

$\Rightarrow$ Is this view well-founded? **Our answer is "No"**

We find that capital inequality is also rising, albeit only at the very top so far

Based on new estimates of wealth and capital income distributions, we find:

- Large increase in top 0.1% wealth share since 1980s
(top 0.1% = wealth above $20 million today)

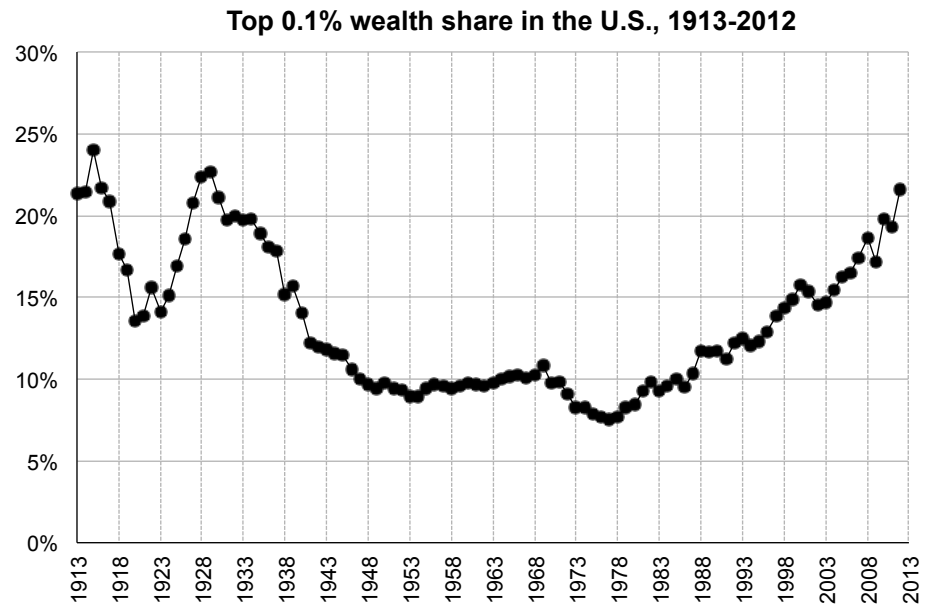
- Even larger proportional increase for top 0.01%
(top 0.01% = wealth above $100 million today)

- Rising top capital income shares

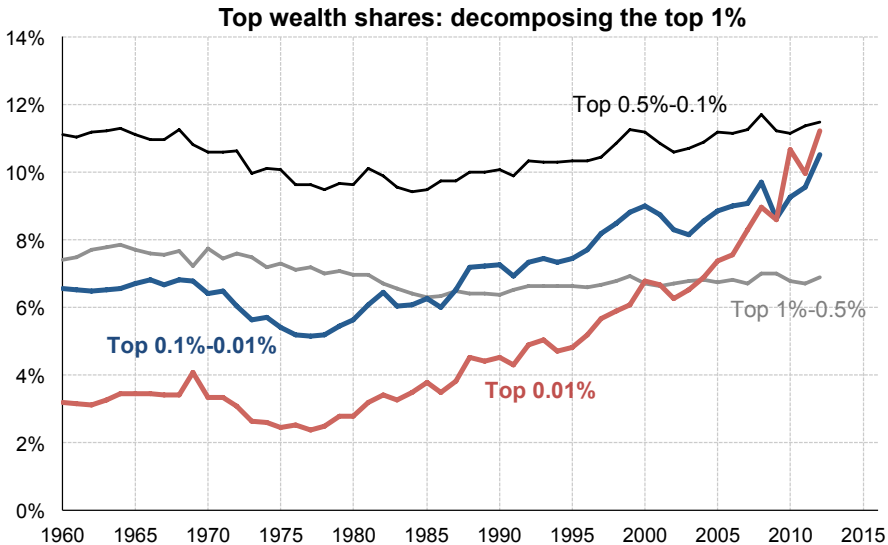
- No increase below the top 0.1%

At very top, US back to early 20th century wealth concentration levels

Back to the roaring 1920s



No increase in wealth inequalities below top 0.1% so far



We develop a new technique to estimate the distribution of wealth

We capitalize income tax returns

Use IRS data on individual dividends, interest, rents...

Compute rates of return by asset class (Flow of Funds / NIPA)

Combine income and rates of return to obtain wealth

The capitalization method works for foundations

For which we observe both income and wealth

We are not the first but we have better data:

King (1927), Stewart (1939), Atkinson & Harrison (1978), Greenwood (1983)

They did not have micro data, or no breakdown by category of income, or only provided estimates for some years in isolation

Other methods obtain conflicting results and face data limitations

Forbes rankings: large increase in wealth concentration, but methodological issues ▸ Forbes

Surveys: SCF shows increase in top 10%, less in top 1% ▸ SCF
Every 3 years, starts in 1980s, difficult to capture very top accurately (2007 SCF: 4,422 itw, of which top 0.01% $\approx$ 100 with response rate of $\approx$ 10% $\Rightarrow$ large s.e.),

Estate tax: No increase in top 1% share since 1980s ▸ Estates
But only 1/1,000 decedents pays tax today, val. discounts, uncertainty on mortality multipliers (pb. for young wealth)

$\Downarrow$

Capitalization method only way to have long run, yearly series covering the full distribution including the very top

A consistent study of income and wealth

Capitalization method forces us to jointly study distrib. of:

Total net household wealth at market value W

Total capital income in the economy Y_K
(memo: national income $Y = Y_K$ + labor income Y_L)

The rate of return on wealth

- Pure yield (with retained earnings) on wealth $r = Y_K/W$

- Total return on wealth $r + q$ = pure yield + real price effects
(q = net realized plus unrealized capital gains)

$\Downarrow$

Well-defined, comprehensive, and coherent income and wealth concepts + micro/macro consistency

Outline of the talk

1) Aggregate wealth, capital income, and rates of returns

2) The capitalization method

3) The distribution of wealth

4) Decomposing wealth accumulation: the distribution of saving rates and rates of return

5) Conclusion

I- Aggregate wealth, capital income, and rates of returns in the U.S. over the last century

Aggregate income and wealth: concepts and data

Wealth

W = Total assets minus liabilities of households at market value

Excludes durables, unfunded DB pensions, non-profits

Flow of Funds since 1945

Before 1945: Goldsmith, Wolff (1989), Kopczuk & Saez (2004): based on same concepts and methods as Flow of Funds

Income

NIPA since 1929

Kuznets (1941) for 1919-1929 and King (1930) before

defs

Capital is back in the U.S.

Key facts about U.S. capital:

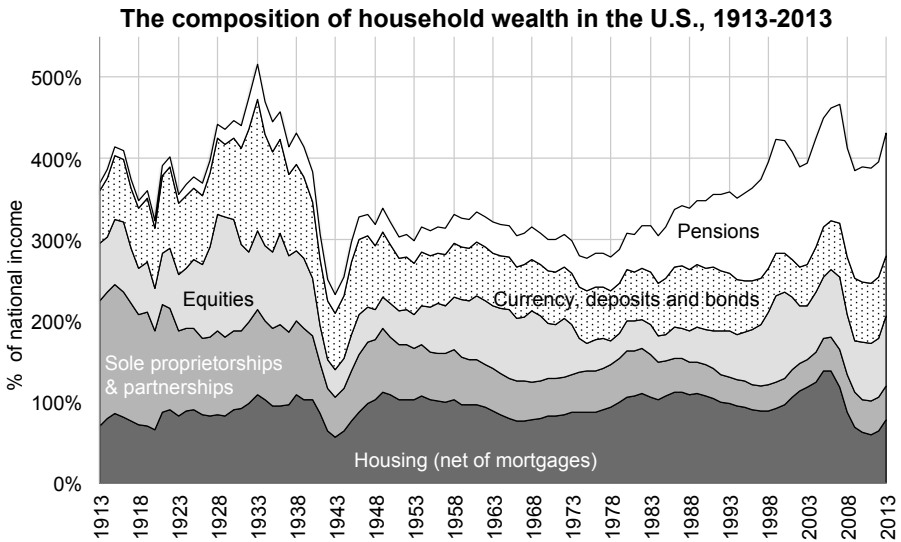
Long-run U-shape pattern in wealth-to-income ratio $\beta = W/Y$
(450% early 20c, $\downarrow$ 300% mid-20c, $\uparrow$ 450% today and rising fast)

Long-run U-shape pattern in the capital share $\alpha = Y_K/Y$
(30% early 20c, $\downarrow$ 25% mid-20c, $\uparrow$ 30% today and rising fast)

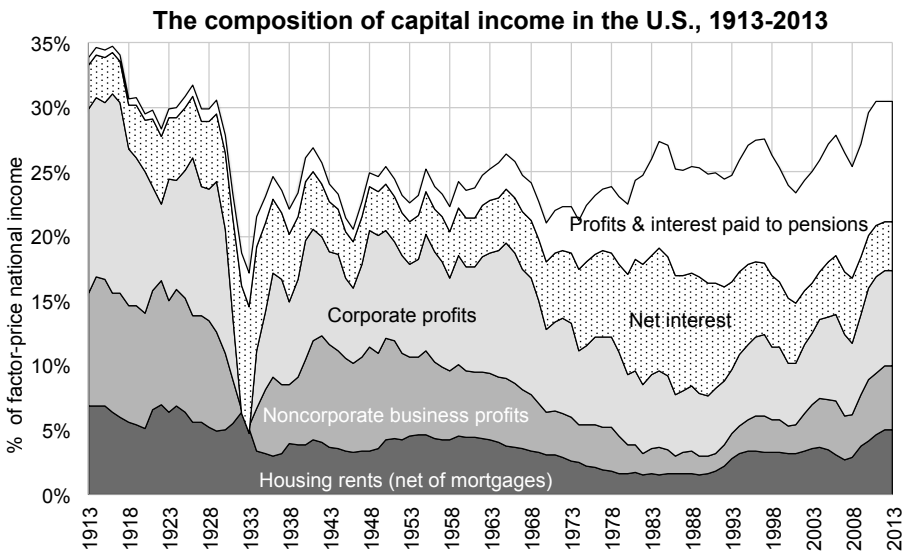
With $\beta = 450\%$ and $\alpha = 30\%$ then yield $r = \alpha/\beta = 6.66\%$
(pre-tax; with tax rate $\tau \approx 33\%$, after tax yield $r(1-\tau) \approx 4.5\%$)

Total return $r + q \approx r$ in the long run
(but huge short run volatility of q and large diff. across assets)

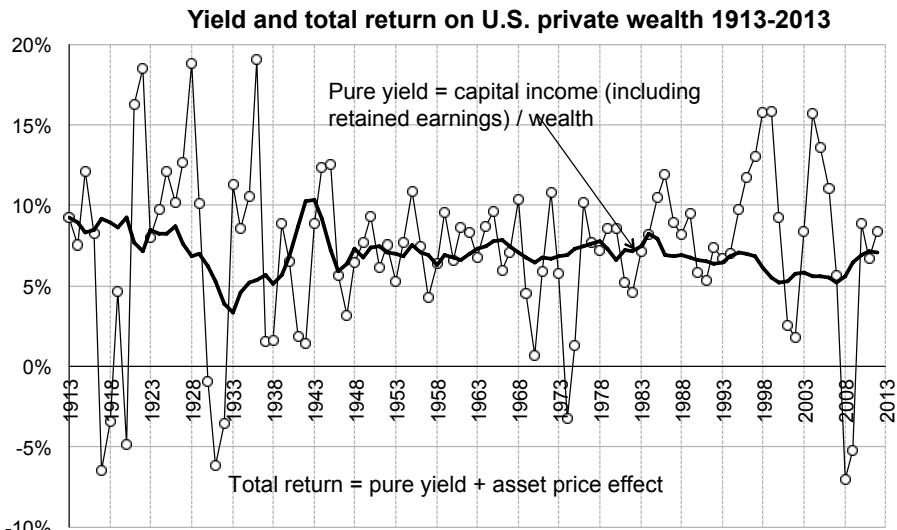
A U-shaped wealth-income ratio



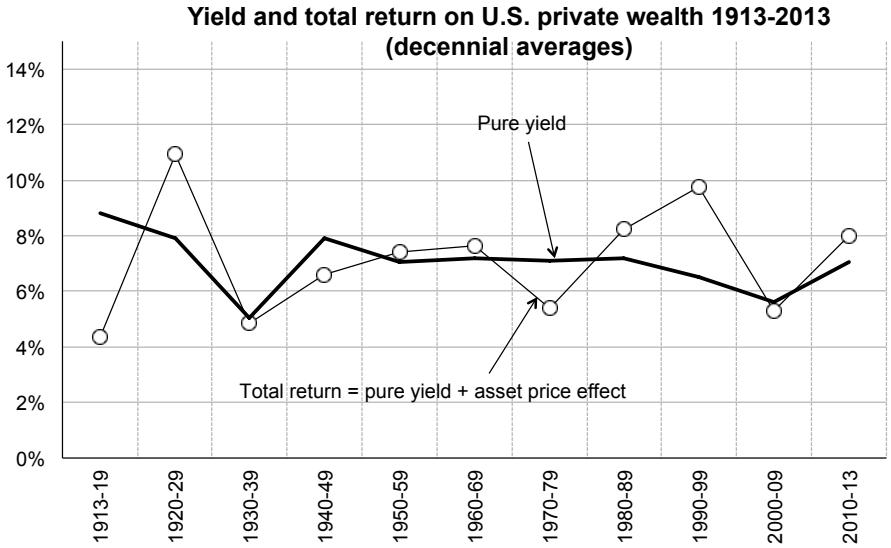
A U-shaped capital income share



Returns volatility is back



In the long run pure price effects tend to wash out



II- The capitalization method

To obtain wealth, we multiply reported capital income by inverse of rate of return

How the capitalization technique works:

Start from capital income reported on individual tax returns

Compute aggregate capitalization factor for each asset class (Flow of Funds)

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

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

Key assumption: constant return within asset class

Need detailed income categories to obtain reliable results

Key data source: 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...

How we deal with non-taxable income

Pensions

Published IRS data on market-value of IRAs ($\approx$ 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

$\Downarrow$

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 exercice with national accounts to identify potential gaps in tax data kinc

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

Tax evasion:

Third-party reporting means all dividends and interest earned through domestic banks well declared

Problem with offshore wealth

If anything increases the trend in rising wealth inequalities

Attempt at quantifying this issue by using time series estimates of offshore wealth in Switzerland [in progress]

Is the return constant within asset class?

Two potential issues:

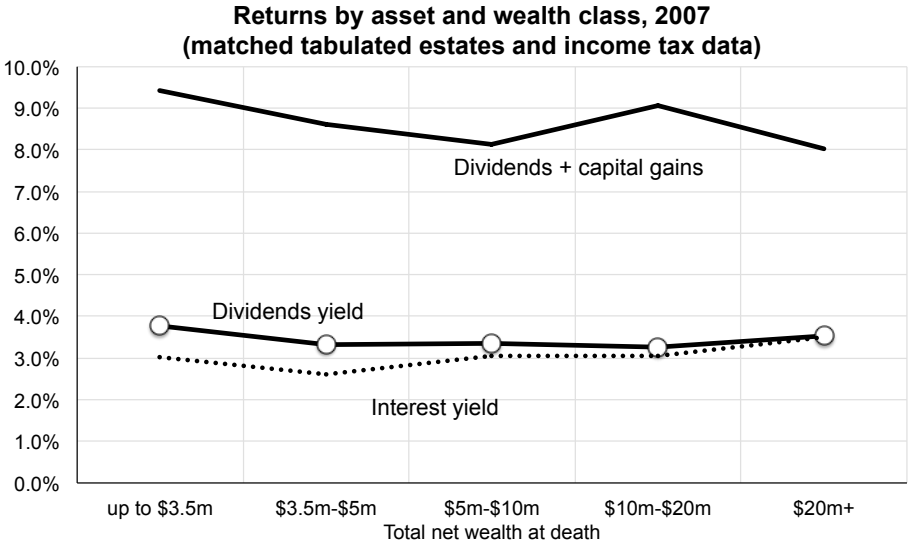
Maybe the very rich have higher equity/bond returns (e.g., better at spotting good investment opportunities) $\rightarrow$ level bias

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

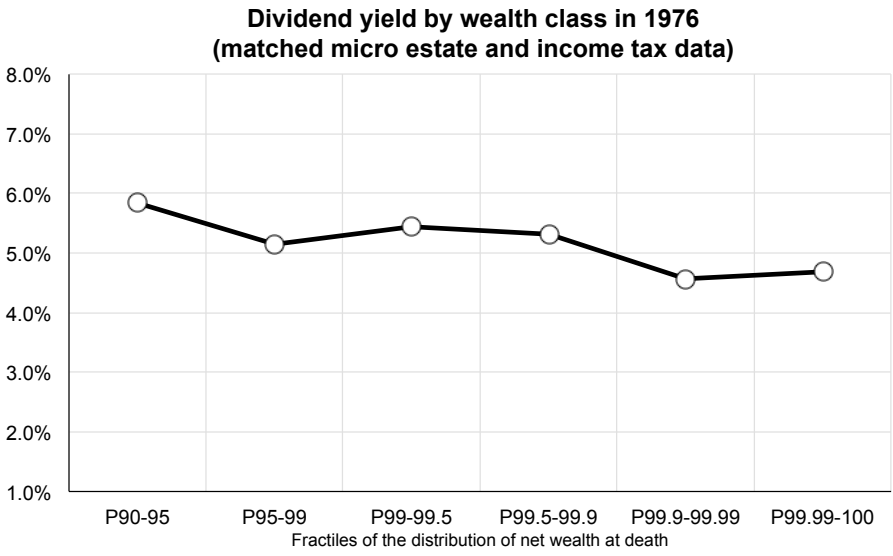
$\Downarrow$

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



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



Check 2: The capitalization method works for foundations

How we check the validity of the capitalization method with foundations data:

Use publicly available, quasi-exhaustive IRS micro-data

Micro-files include information on wealth at market value and income

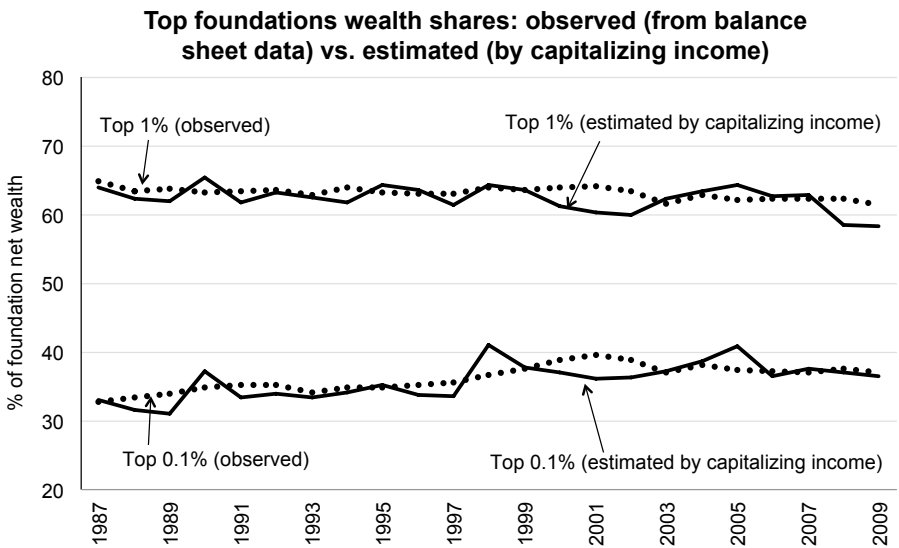
Apply same rates of returns & capitalization technique as for individuals

(Memo: foundation wealth = 0.8% of household wealth mid-1980s, $\nearrow$ 1.2% today)

$\Downarrow$

By capitalizing foundation income we are able to reproduce the correct foundation wealth distribution

The capitalization method works for foundations



III- The US Wealth Distribution, 1913-2012

Wealth inequality is making a comeback

Main long-run trends in the distribution of wealth:

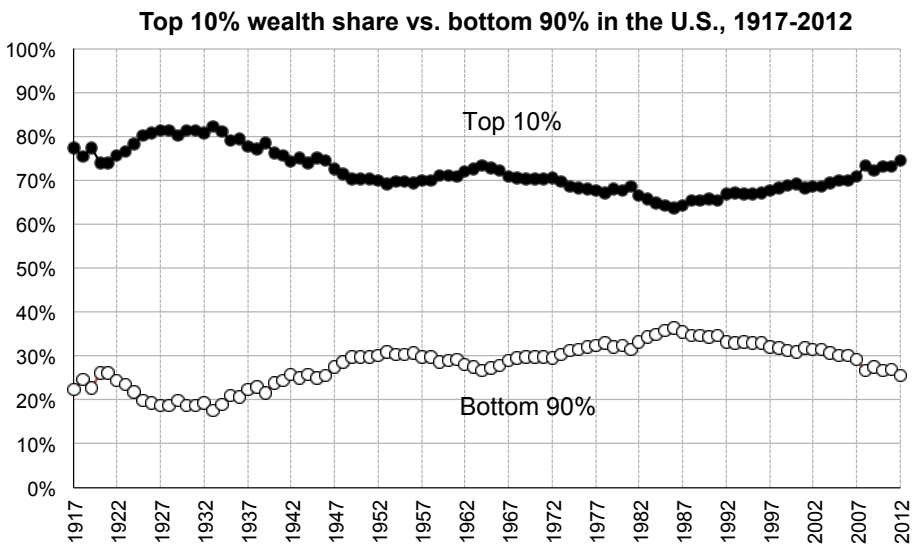
Long run U-shaped evolution for the very rich
(top 0.1%: >$20 million today)

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

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

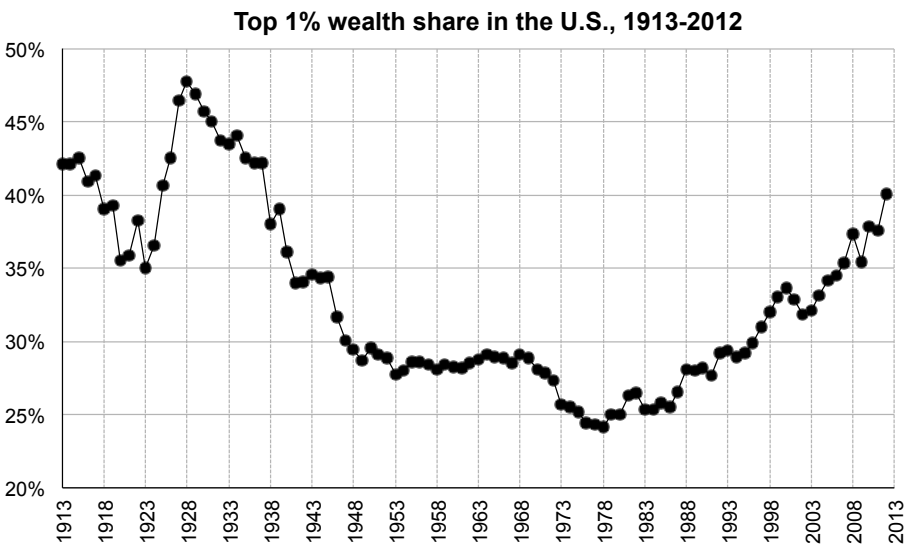
(Memo: Bottom 50% always owns $\approx$ 0 net wealth)

Wealth has always been very concentrated

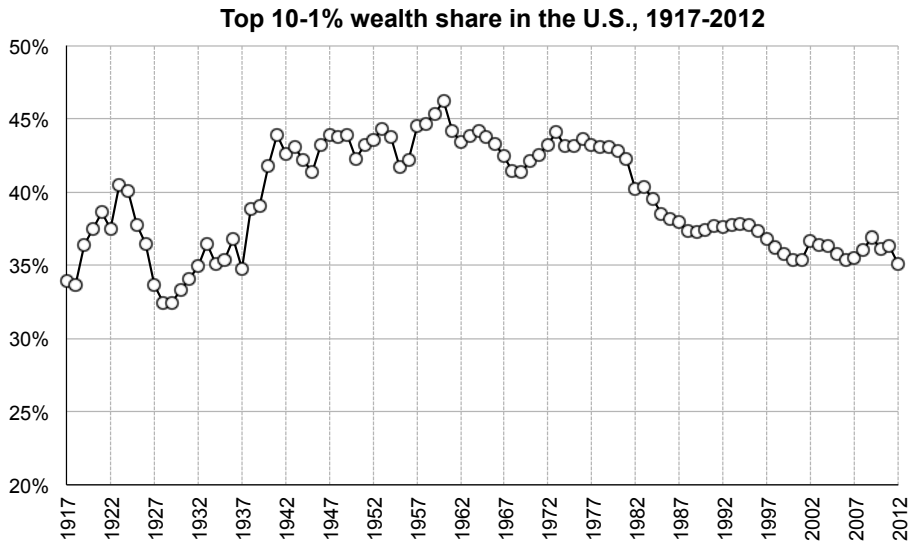


The top 10% is climbing back

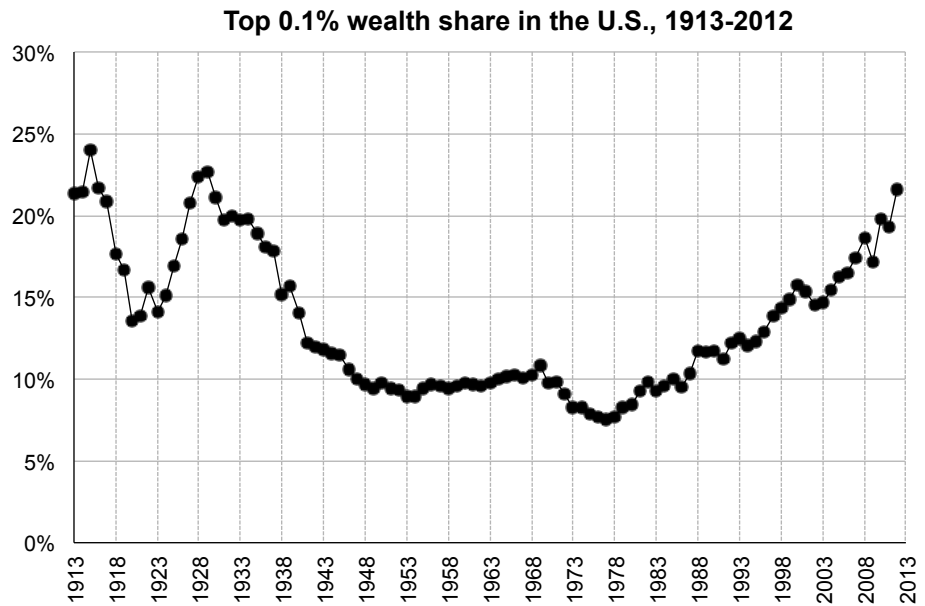
Top 1% has gained more than top 10%



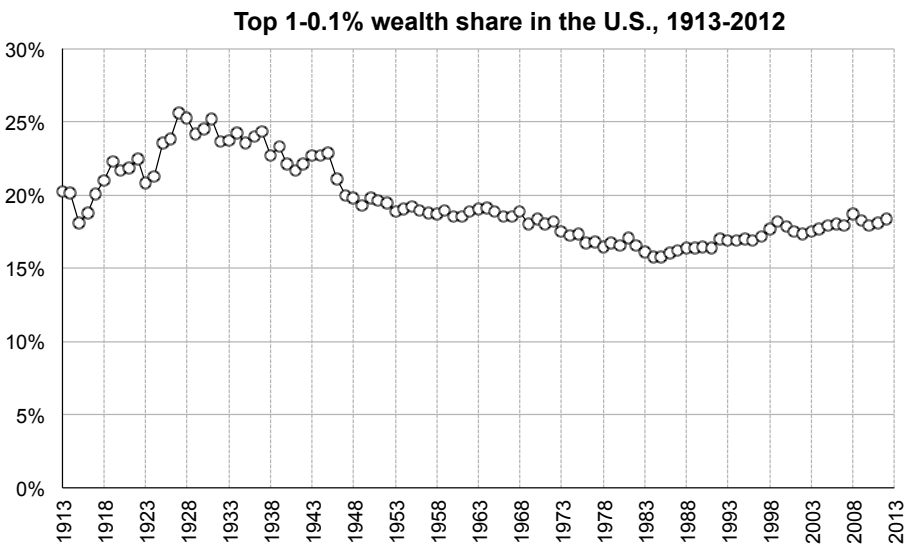
The middle rich are losing ground



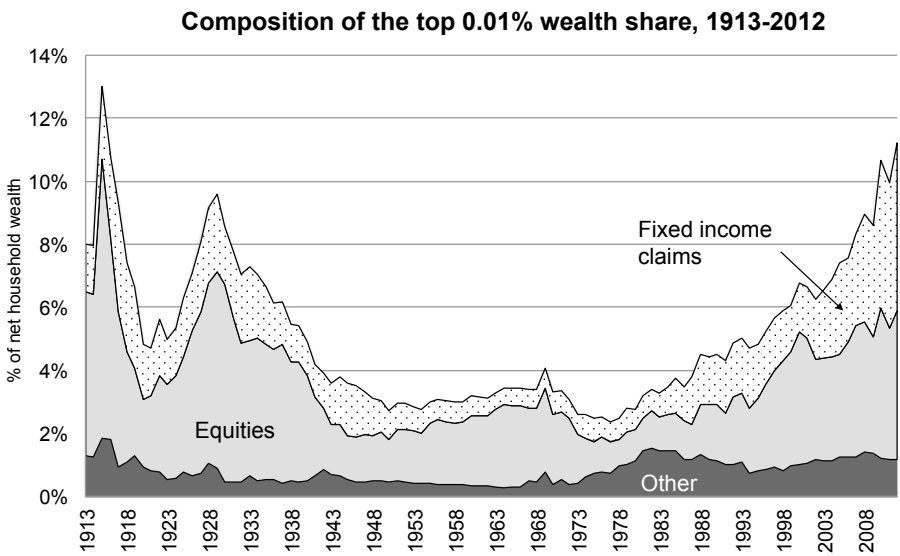
Top 1% surge is due to the top 0.1%



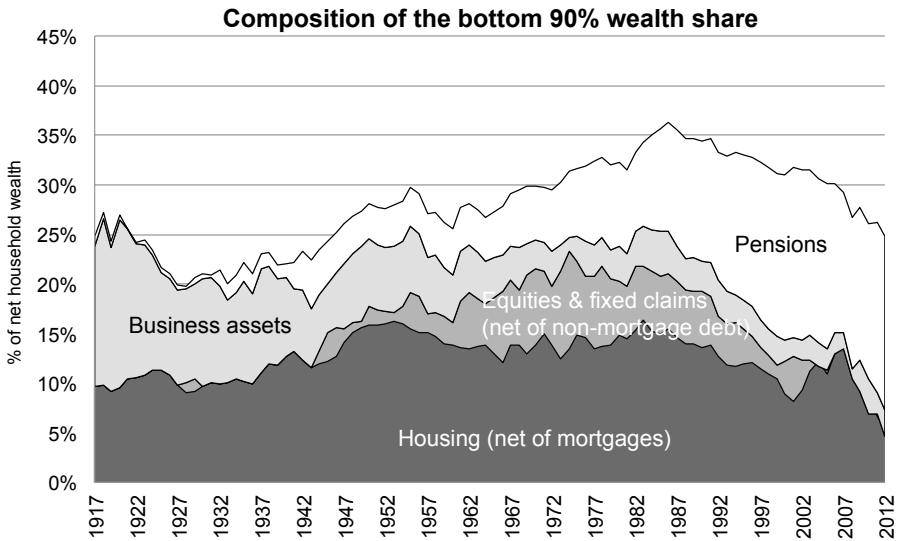
Almost no recovery for the merely rich



Top 0.01% share: $\times$ 4 in last 35 years



The rise and fall of middle-class wealth



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

$\Downarrow$

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

IV- Decomposing Wealth Accumulation: The Distribution of Rates of Returns and Saving Rates

What is driving the dynamics of the wealth distribution?

Wealth accumulation can always be written:

$$W_{t+1} = W_t \cdot [1 + r \cdot (1 - \tau_K) + q] + Y_L \cdot (1 - \tau_L) - C$$

Forces potentially pushing toward more wealth concentration:

Pre-tax rate of return $r + q$ rising with wealth

Tax rates on capital τ_K and labor τ_L going down

Saving rates rising with wealth

$$\Downarrow$$

In what follows, estimates of saving and rates of returns by wealth group

We construct new estimates of saving rates and returns by wealth group

Returns:

Yields and price effects by asset class from national accounts

Combined with wealth composition of different groups

For pre-tax r: needs incidence assumptions

Saving rates:

Compute **synthetic saving rates** by wealth group

Using changes in the market value of wealth and capital gains/losses by wealth group: $W_{t+1} = (Q_{t+1}/Q_t) \cdot (W_t + S_t)$

$$\Downarrow$$

We have income, wealth, saving & returns by wealth group

The role of saving and returns differentials has changed over time

1913-1929: Saving rates and returns $r + q$ both sharply rising with wealth $\rightarrow$ explosive inequality dynamics

1929-1986: Major shocks on asset prices q affecting the rich disproportionately and highly progressive capital taxes $\rightarrow$ compression

1986-2013: 0 saving at the bottom and high S at the top $\rightarrow$ rising wealth concentration

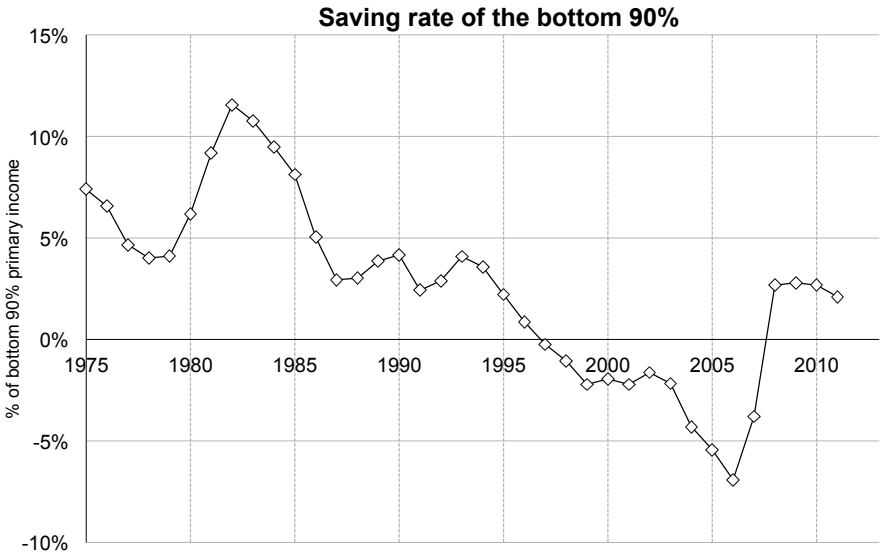
Higher pre-tax returns for rich today, but differential lower than 1 century ago bc. democratization of equities through pensions

$\Downarrow$

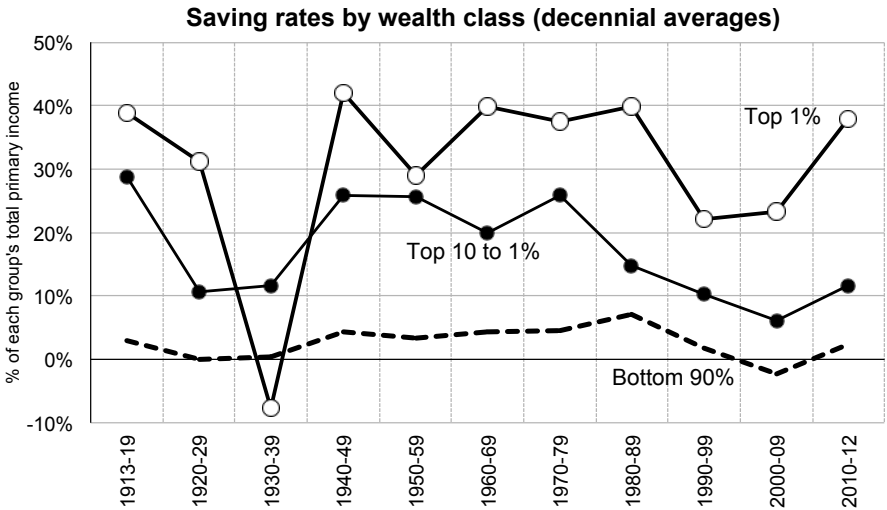
Three distinct periods

		Decomposition of wealth growth rate				Rates of saving & return	
	Real growth rate of wealth	Savings-induced wealth growth rate	Real rate of capital gains	Growth rate of number of families	**Real growth rate of wealth per family**	Private saving rate (personal + retained earnings)	Total pre-tax rate of return
	g_w	$g_{ws} = S/W$	$q=(1+g_w) / (1+g_{ws}) -1$	n	g_{wf}	s = S/Y	r + q
				1917-1929			
All	**3.8%**	2.7%	1.0%	2.0%	**1.8%**	10%	9.2%
Bottom 90%	**1.3%**	0.1%	1.2%		**-0.6%**	0%	8.2%
Top 10%	**4.4%**	3.5%	0.9%		**2.4%**	24%	9.4%
Top 1%	**5.1%**	4.1%	1.0%		**3.1%**	35%	10.1%
				1929-1986			
All	**3.0%**	3.4%	-0.4%	1.4%	**1.5%**	11%	6.7%
Bottom 90%	**4.3%**	3.1%	1.2%		**2.8%**	4%	7.4%
Top 10%	**2.5%**	3.6%	-1.0%		**1.1%**	23%	6.5%
Top 1%	**2.0%**	3.5%	-1.5%		**0.5%**	29%	6.5%
				1986-2012			
All	**3.4%**	1.9%	1.5%	1.4%	**1.9%**	7%	7.8%
Bottom 90%	**2.1%**	0.4%	1.8%		**0.7%**	1%	7.7%
Top 10%	**3.9%**	2.6%	1.3%		**2.5%**	16%	8.0%
Top 1%	**4.9%**	3.5%	1.4%		**3.4%**	26%	8.3%

The bottom 90% massively dis-saved in the decade preceding the crisis

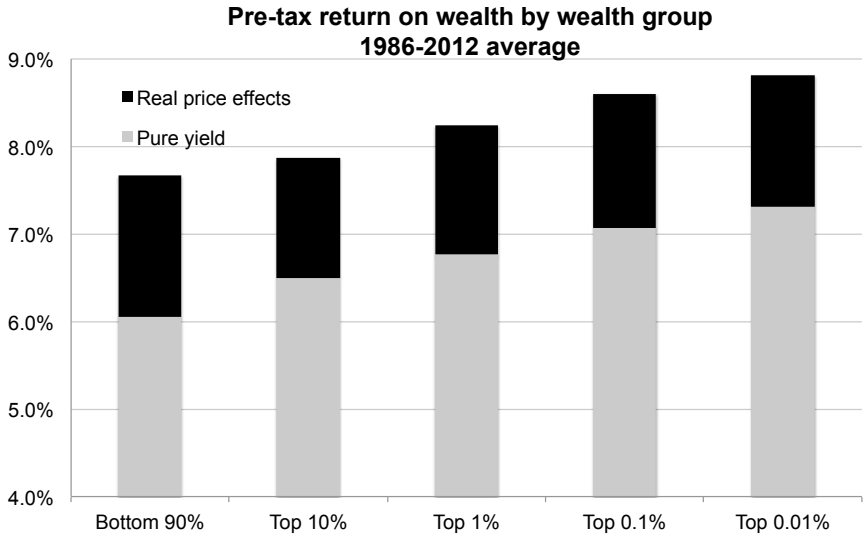


Saving rates rise with wealth except in the 1930s

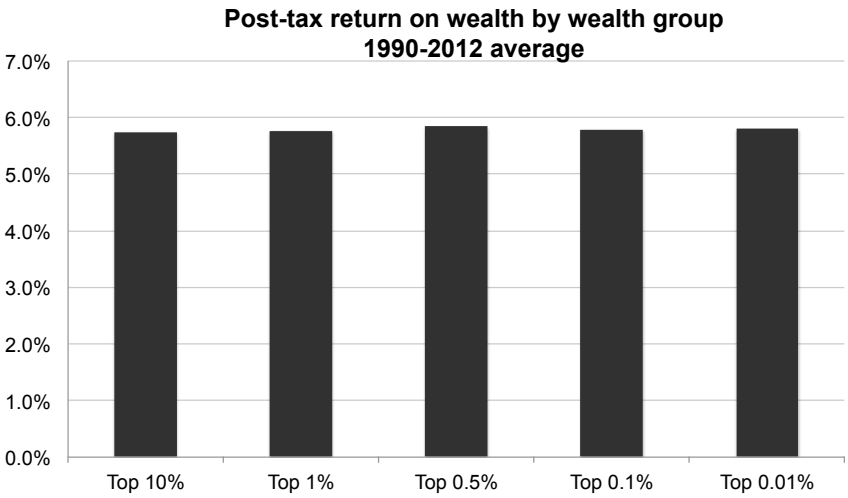


The rich save more as a fraction of their income, except in the 1930s when there was large dis-saving through corporations. NB: The average private saving rate has been 9.8% over 1913-2013.

Pre-tax rates of returns rise with wealth

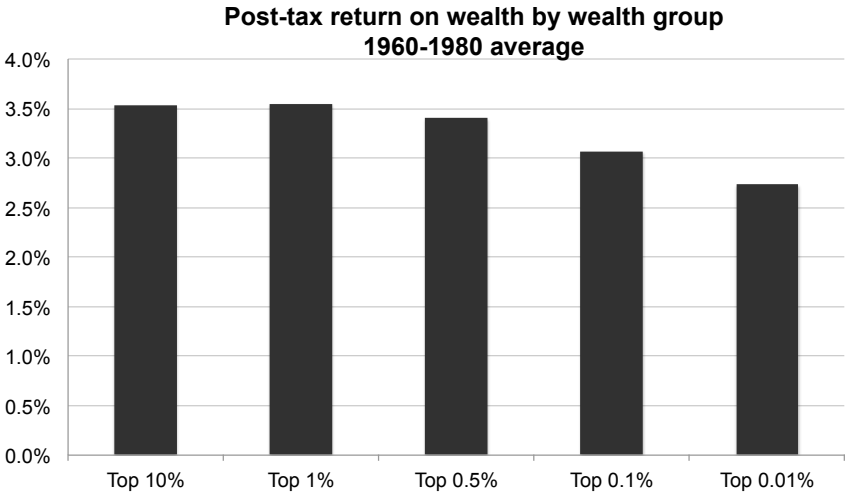


Post-tax rates of returns are the same across wealth groups today



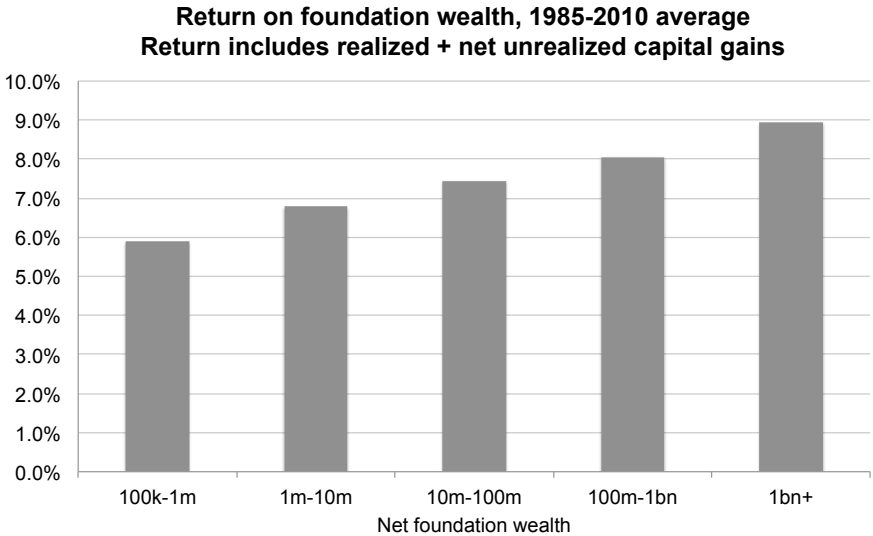
Note: the average post-tax total return on wealth has been 5.5% over 1990-2012

Post-tax rates of returns used to decline with wealth



Note: the average post-tax total return on wealth has been 3.5% over 1960-1980

Rates of returns rise with wealth: the case of foundations



V- Conclusion

A first step toward DINA

We are constructing new, consistent series on the distribution of wealth W and capital income Y_K

Y_K is about $1/3$ of national income Y

Next step: distribution of Y_L so as to obtain the full distribution of national income $Y = Y_K + Y_L$

Will make it possible to break GDP growth by fractile, before and after-tax, based on a representative microfile with individual-level income and wealth consistent with macro aggregates

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

There is a need for more 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:

401k sending account balances (and not only IRAs)

Mortgages outstanding

Market value of portfolio securities on forms 1099

Purchases and sales of securities ($\rightarrow$ saving)

$\Downarrow$

All of this 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

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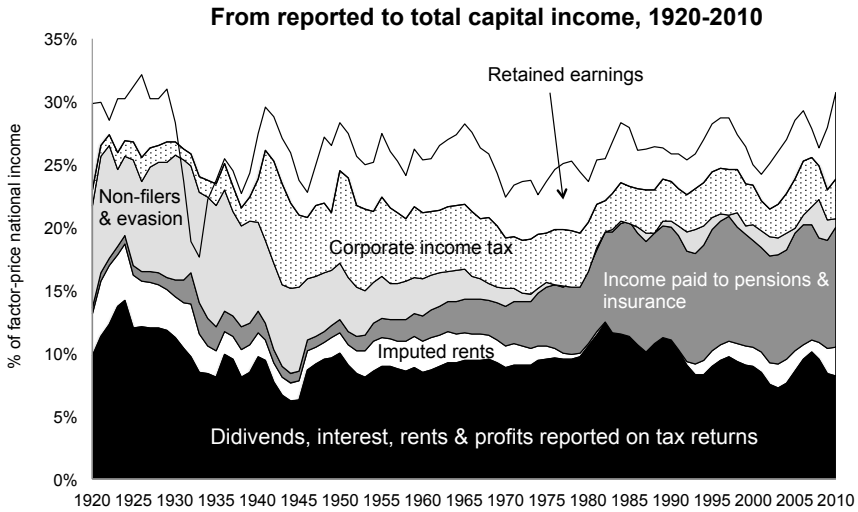
What tax data miss



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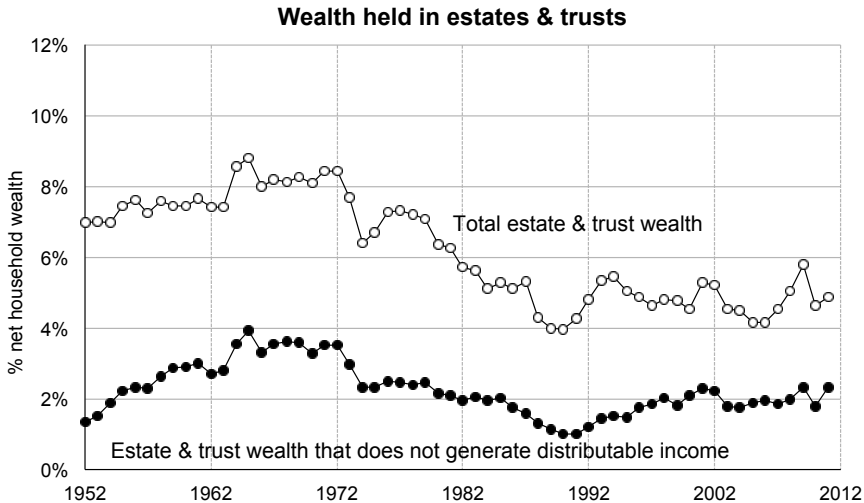
Most trusts generate income taxable at the individual level



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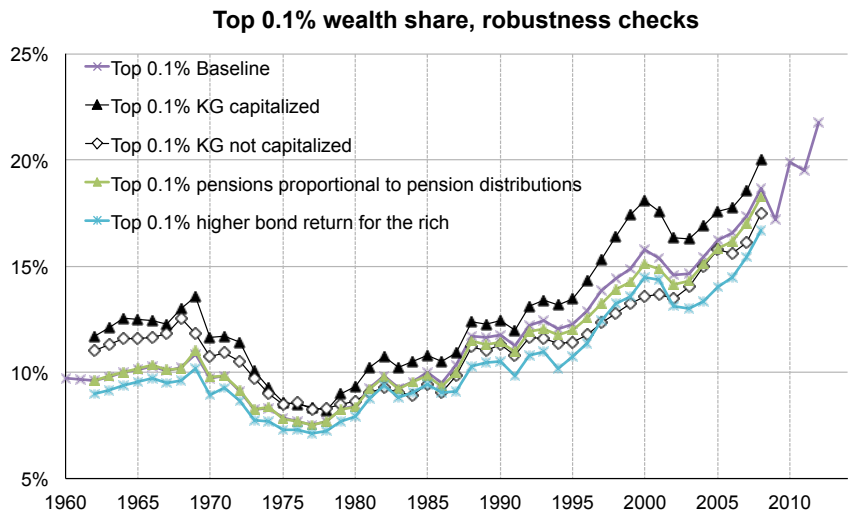
Results robust to alternative treatment of pensions, capital gains, bond returns



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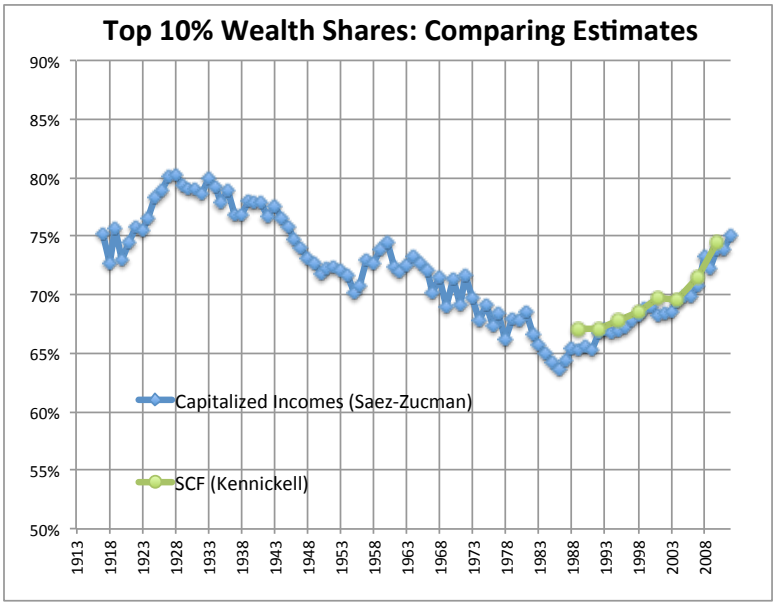
Our top 10% wealth share is consistent with SCF



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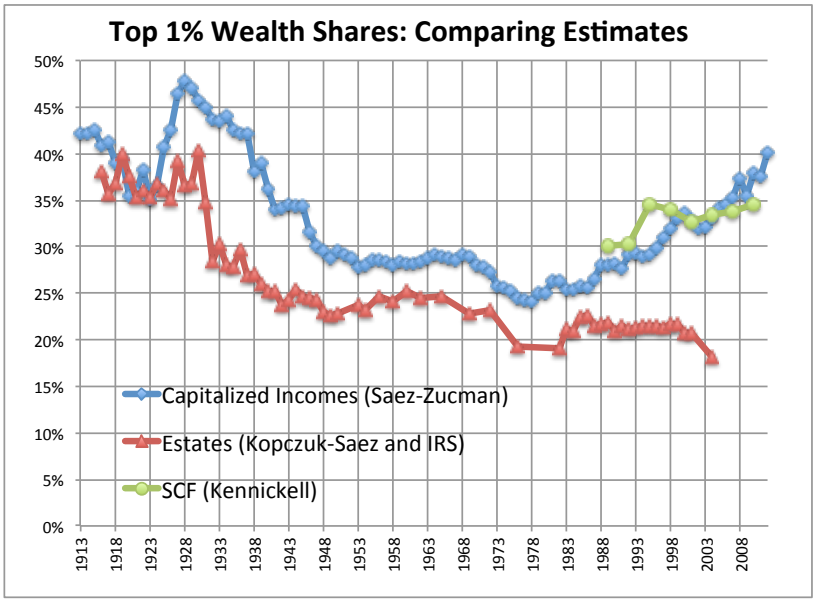
Estate tax returns fail to capture rising top wealth shares



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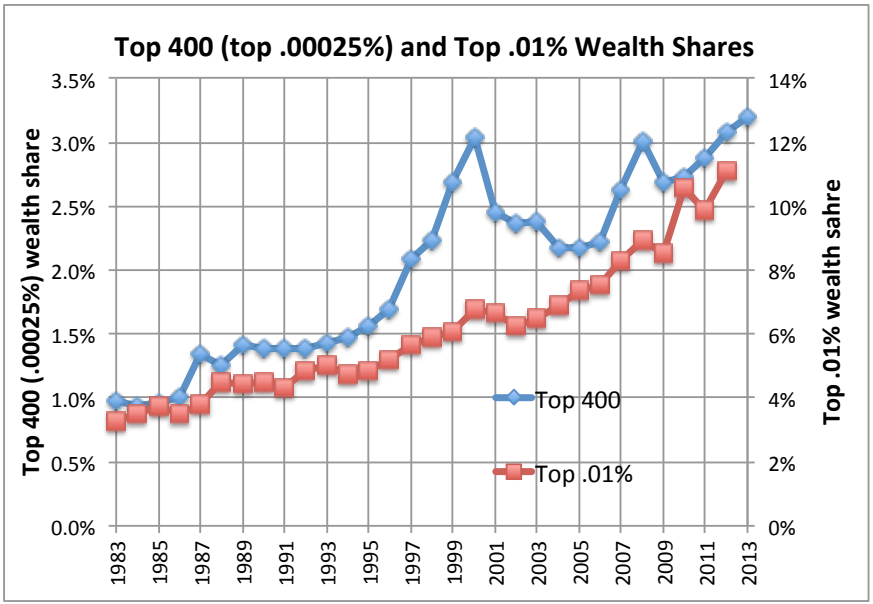
Our estimate for top 0.01% is consistent with Forbes rankings



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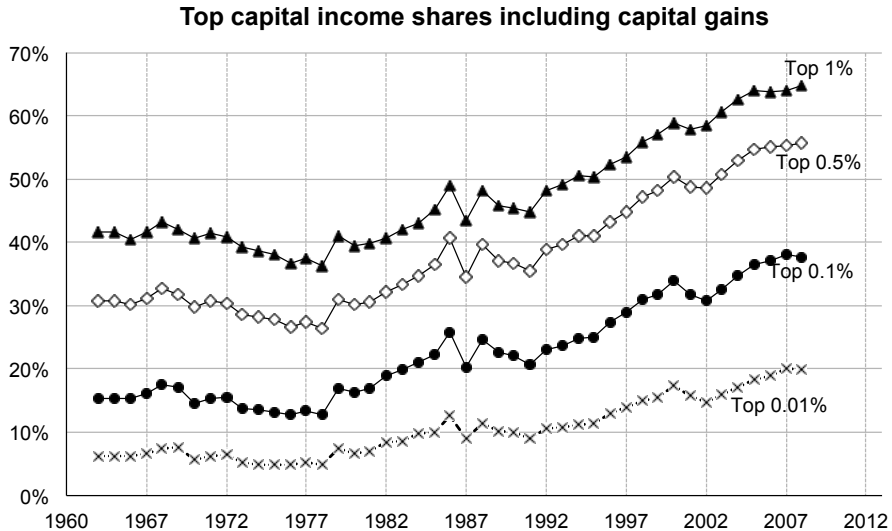
The concentration of declared capital income is rising fast



Improving Estimates with Internal Data

Internal IRS data could be used to refine our estimates:

Value of all IRAs available at individual micro level (30% of all pensions)

Value of DB and 401(k) pensions could be estimated from employer and past contributions

Value of homes could be estimated using geo-code and Zillow

Value of businesses (partnerships and S-corps) could be estimated by matching with business returns balance sheets

Date of birth data to compute wealth distributions by age

Date of death data to compute mortality rates by wealth and improve estate multiplier estimates

back

Improving Estimates with Enhanced Information Tax Reporting

401k reporting of account balances (and not only IRAs)

Market/assessed value of real estate on property tax bills

Mortgages outstanding on form 1098

Market value of accounts and portfolio securities on forms 1099

Purchases and sales of securities ($\rightarrow$ saving)

$\Downarrow$

This would allow to obtain consistent income, wealth, and savings information at the micro-level

Foundations or charitable organizations already report all this information back