

Accounting for Business Income
in Measuring Top Income Shares:
Integrated Accrual Approach
Using Individual and Firm Data from Norway

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Measuring top income shares

- Huge and influential literature, most prominently Piketty and Saez (2003) and follow ups
- Reliance on administrative tax data
 - Necessary to get coverage at the top
 - Data problems
 - not all of income taxable and hence not necessarily well observed (eg. fringe benefits, welfare benefits)
 - tax evasion and avoidance
 - income realization decisions
- Our interest: accounting for business income
- The bottom line: how you account for them matters for both levels and trends of top income inequality. That's because realization of income is responsive to tax environment.

How is business income observed on individual tax returns

Two general approaches:

- Treat profits as ordinary income, “pass through” taxation (**Accrual approach**)
 - This is the usual treatment of sole proprietors/self-employed and regular partnerships
 - It may also apply to other businesses depending on the tax regime. In particular, it applies to S-corporations and partnerships in the US
- Two tier system with (usually) corporate tax and individual taxation of dividends and capital gains. It applies to all incorporated businesses in Norway and C-corporations in the U.S. (**Realization approach**)

What is the problem here?

- Realizing income is under control of taxpayers: paying dividends is a decision of the firm, realizing capital gains is a decision of the individual.
- Wrong timing may imply mis-allocation of income in the distribution because of lumpiness of realizations
- Most extremely, business income need not show up on individual returns ever or may show up for different individuals:
 - Transfers
 - Deferral until death
 - Bankruptcy, losses
 - Consumption within a firm
- Different businesses accounted for differently
- Observable symptom: when changes in incentives change the mix of pass-through and realization, the level of inequality should be affected.
- Solution (or at least a step forward): allocate all business income on the pass-through basis

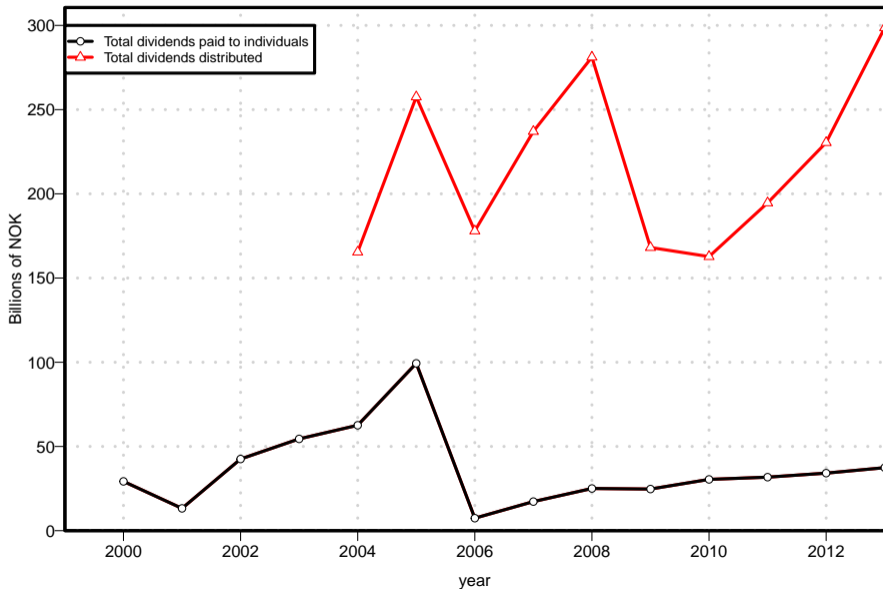
The Norwegian Tax Reform of 2006

- Individual shareholders:
 - Before 2006: no dividend tax, capital gains tax
 - As of 2006: dividend tax (28%), capital gains tax
- Corporate shareholders: no dividend tax, no capital gains tax as of 2004

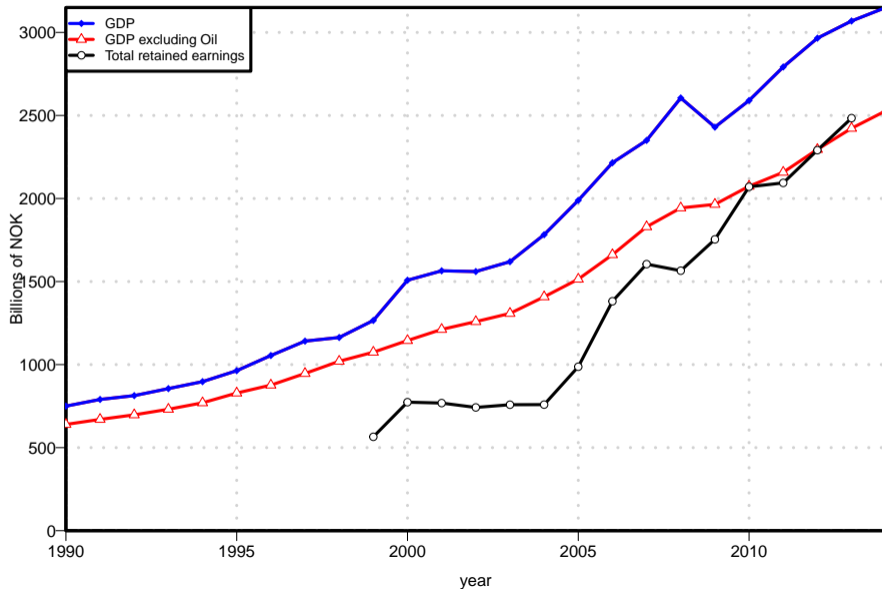
Incentives:

- unrestricted payment of dividends before 2006, effectively close to pass-through treatment
- incentives not to realize income starting in 2006...
- ...further facilitated by treatment of corporate tax shareholders: a lot of holding companies created (studied in Alstadsæter, Kopczuk and Telle, 2019)
- temporal incentives around the reform itself

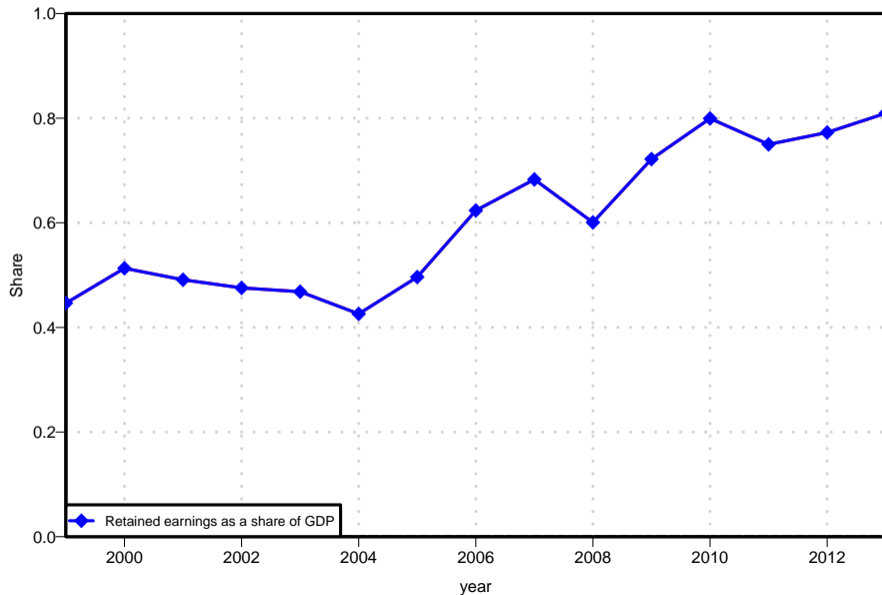
Total dividends distributed and received by individuals



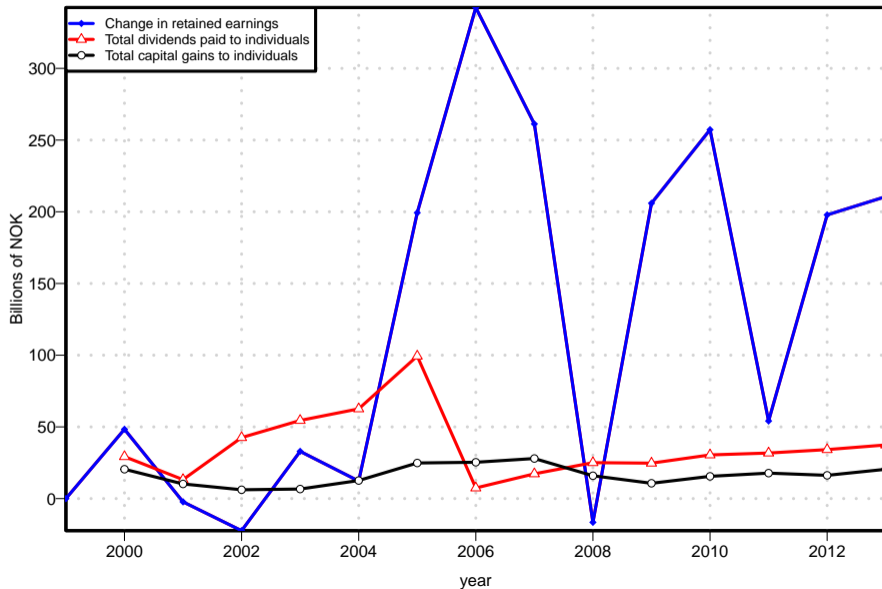
Retained earnings (and GDP)



Retained earnings as a share of GDP



Dividends, retained earnings and capital gains

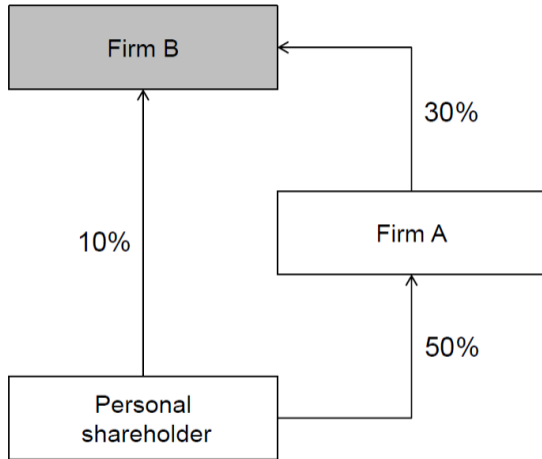


Main findings

- Realization approach understates the level of inequality (see also Fairfield and De Luis (2015) in Chile and Wolfson et al. (2016) in Canada and numerous imputation approaches)
- This understatement is massive: it more than doubles the top 0.1% share after 2005
- The extent of understatement varies over time and depending on the tax regime
- In particular, capital income flows observed on individual tax returns do not come close to reflecting the overall corporate profits, not even with a lag.
- Accrual approach allocates people to top groups in a much more stable way despite changes in the composition of income
- On the other hand, imputing retained earnings based on observed dividends fares poorly
- Implications for measurement of taxable income elasticity

- The universe of Norwegian corporations, self-employed and individuals, 2000-2013
- Individual level data from income tax returns
- Corporate level income from tax statements and balance sheet information
- Shareholder register, ownership shares at year end
- Profits \approx dividends to individuals + change in retained earnings

Allocating profits to shareholders



Stake of shareholder in Firm B

10% direct ownership

15% indirect ownership

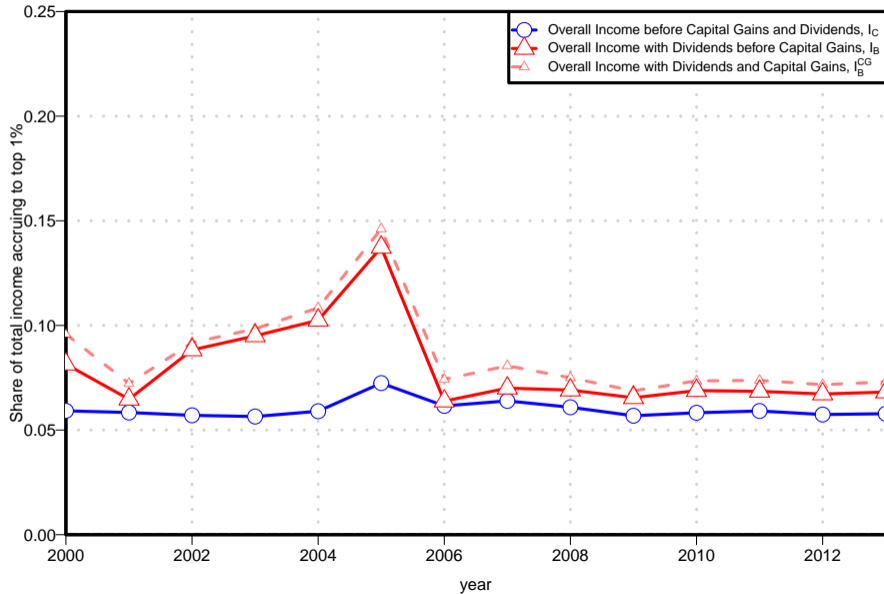
25% total ownership

We trace indirect ownership through 10 layers and allocate changes in retained earnings in proportion to ownership.

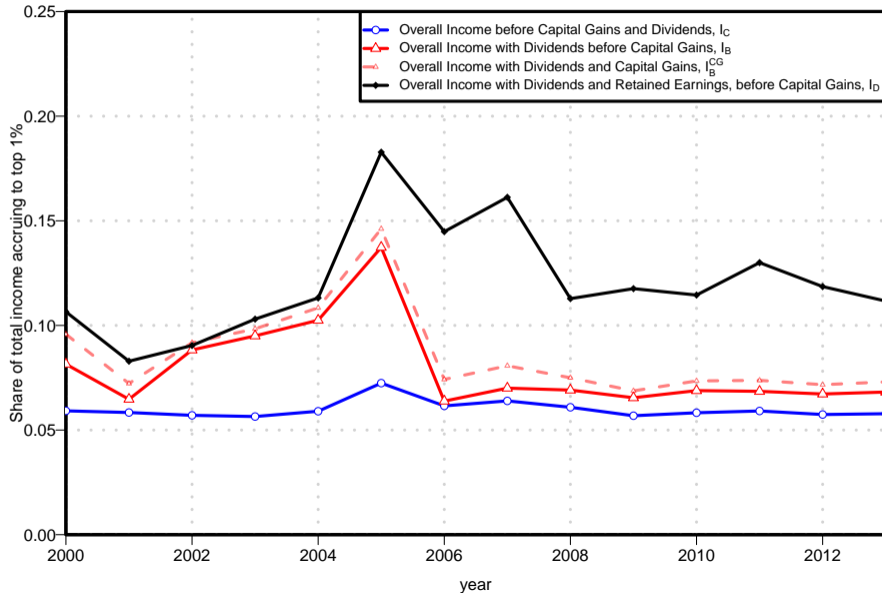
Measures of income

- Gross income before dividends and capital gains
- ...add dividends (I_B)
- ...add capital gains
- Gross income with dividends and retained earnings, i.e. profits (I_D)

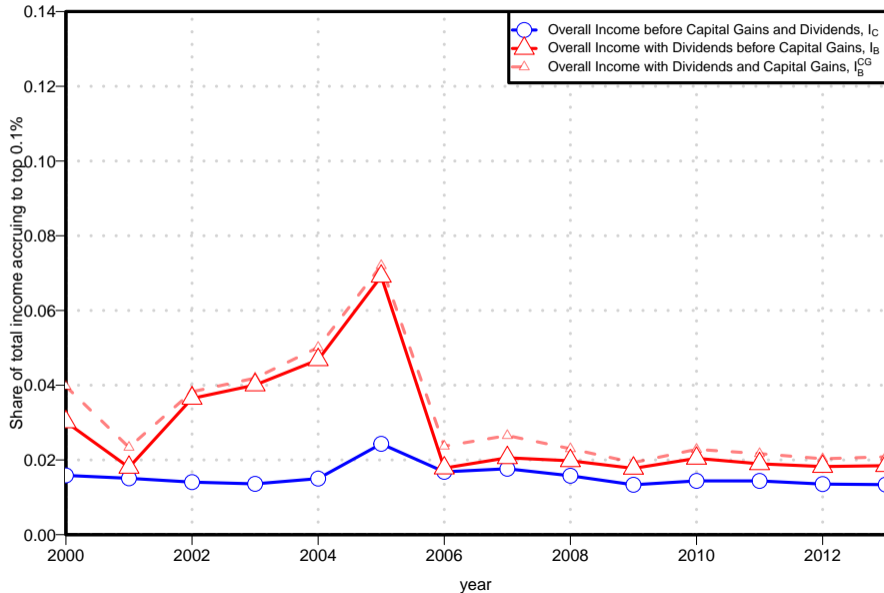
Top 1% share in Norway



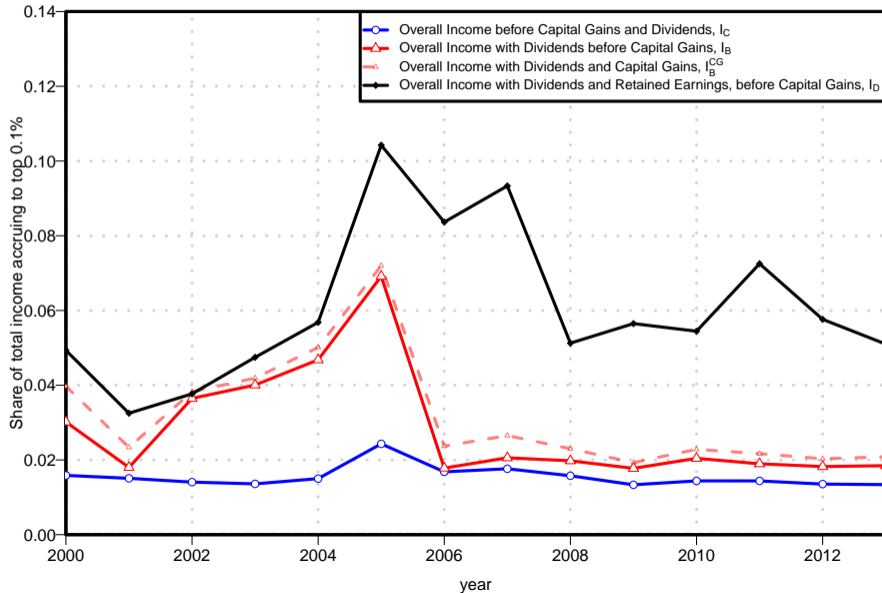
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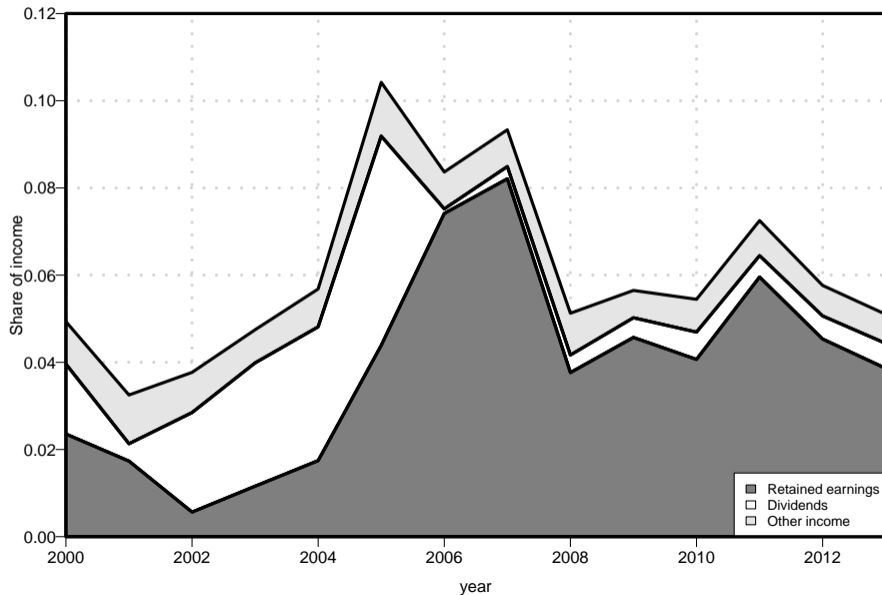
Top 0.1% share in Norway



Top 0.1% share in Norway



Composition of income of Top 0.1%



Implications for taxable income elasticity

- Treatment vs control — people with business income vs others
- Group size — top 1% in 2003 is about 82% business, 18% others; top business and others that add up to 1% keeping that mix constant
- Diff-in-diff on repeated cross-section (the approach advocated by Saez, Slemrod and Giertz, 2011)
- IV using treatment dummy for the tax rate
- Controls for mean reversion as a check (largely irrelevant)

Implications for taxable income elasticity

	I_B^{CG}	I_B	I_C	I_D
2004 vs 2007	-0.335	-0.373	-0.056	0.047
	(0.007)	(0.006)	(0.006)	(0.008)
N	76,294	76,294	76,294	76,294
R^2	0.025	0.022	0.101	0.120
2003-5 vs 2006-8	-0.399	-0.441	-0.068	-0.161
	(0.005)	(0.005)	(0.004)	(0.005)
N	228,249	228,250	228,250	228,250
R^2	0.079	0.086	0.096	0.107
Post-2005 dummy	-0.438	-0.449	-0.139	-0.250
	(0.004)	(0.004)	(0.004)	(0.004)
N	465,666	467,083	467,000	466,793
R^2	0.077	0.084	0.158	0.105

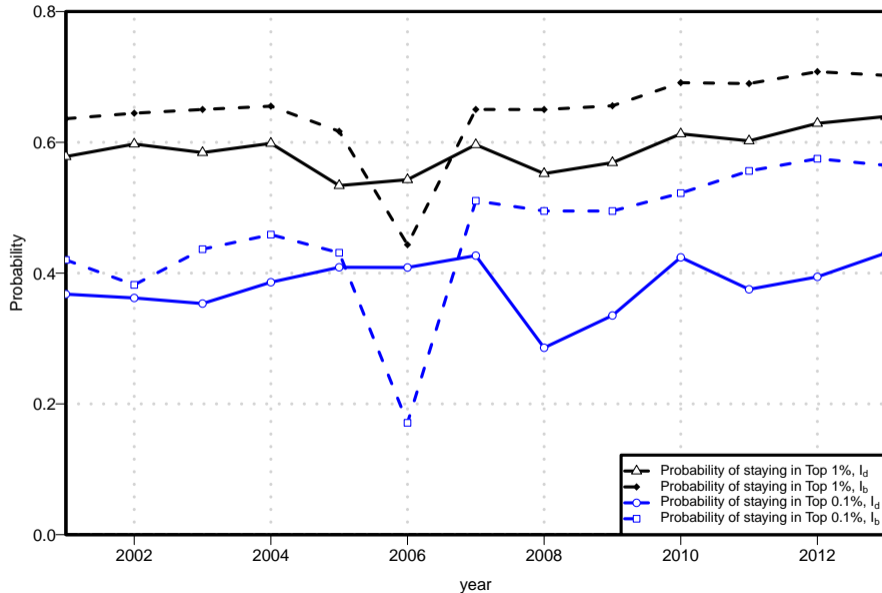
Implications for taxable income elasticity — IV

	I_B^{CG}	I_B	I_C	I_D
No controls	0.948 (0.009)	0.973 (0.009)	0.301 (0.008)	0.541 (0.010)
N	465,666	467,083	467,000	466,793
Control for I_{t-1}	0.914 (0.009)	0.945 (0.009)	0.289 (0.008)	0.521 (0.010)
N	465,666	467,083	467,000	466,793
Control for I_{t-1} and ΔI_{t-1}	0.912 (0.009)	0.945 (0.009)	0.289 (0.008)	0.521 (0.010)
N	465,666	467,083	467,000	466,793
As above, personal tax rate	0.922 (0.009)	0.957 (0.009)	0.293 (0.008)	0.509 (0.009)
N	465,666	467,083	467,000	466,793

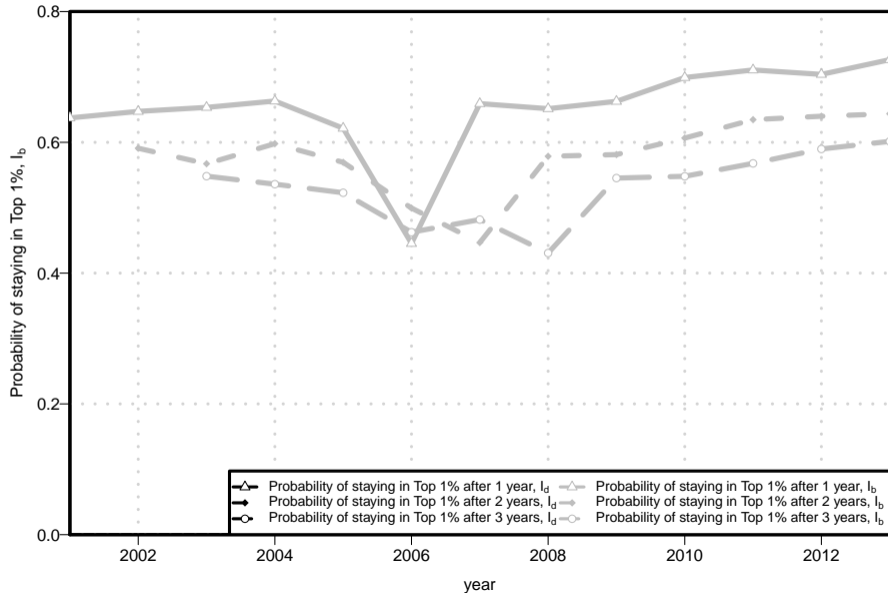
(In)stability of top groups

- Changes in observability of income may result in re-ranking of individuals
- Compare % of individuals who remain in the top group from year $t - k$ to t
- Are we at least getting the right people using the standard realization approach? Compare overlap between the groups

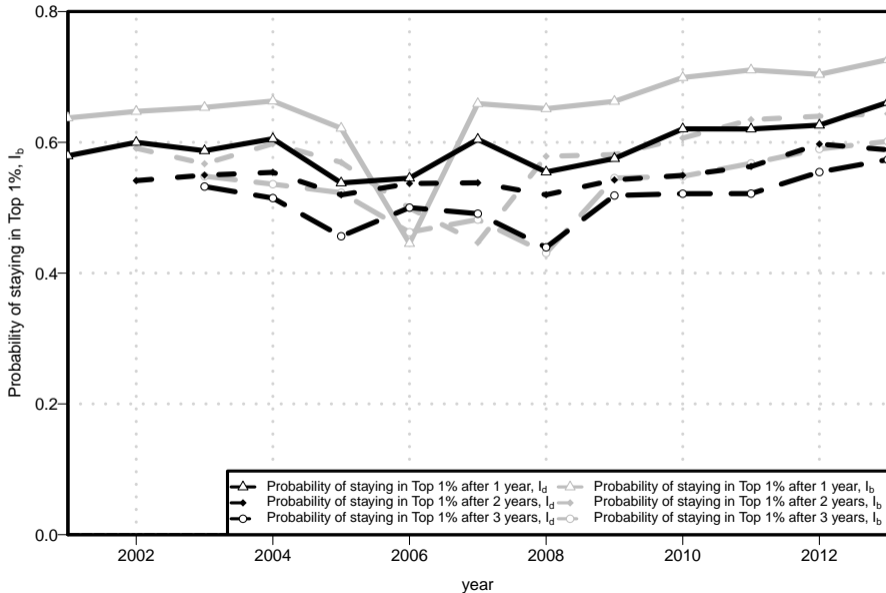
Mobility of top groups



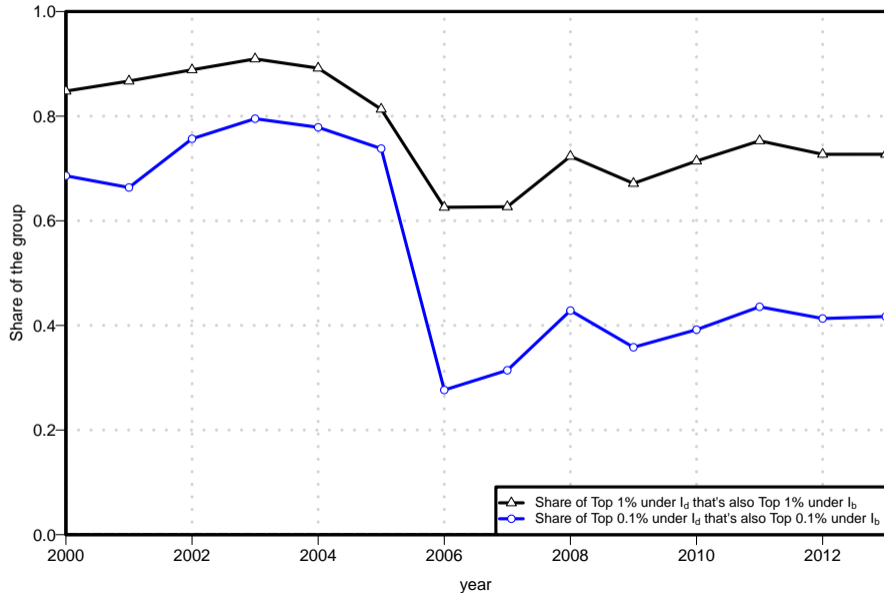
Mobility of top 1% — up to 3 years



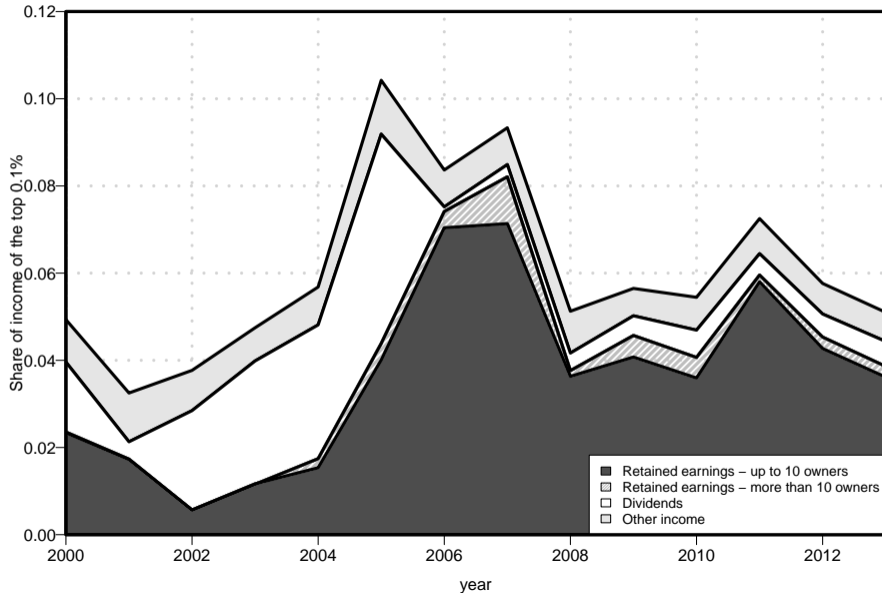
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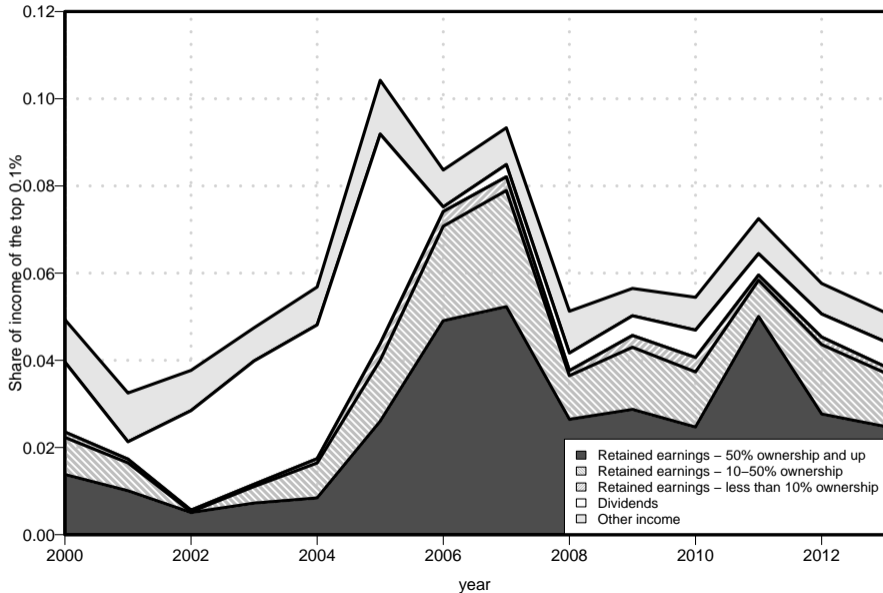
Membership in top groups under different definitions



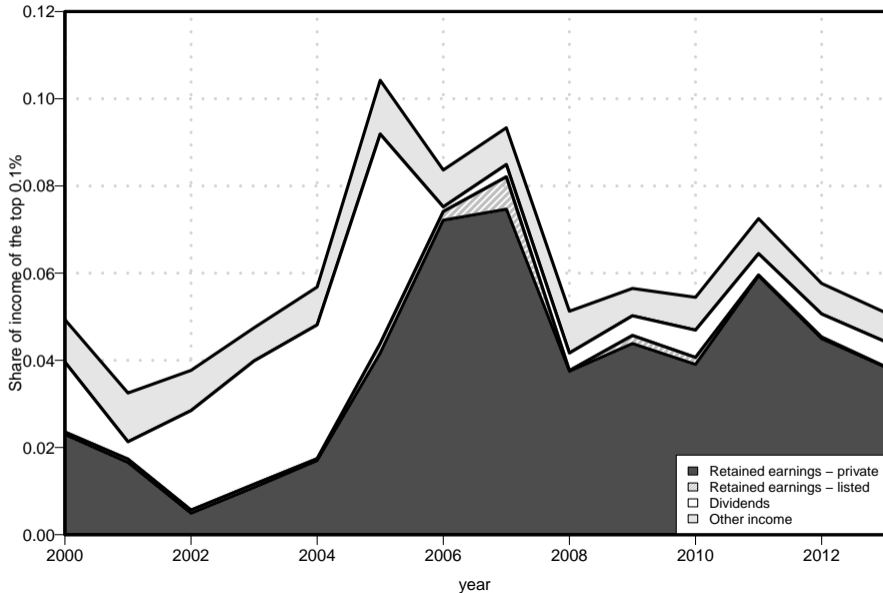
Who drives the effect? # of shareholders



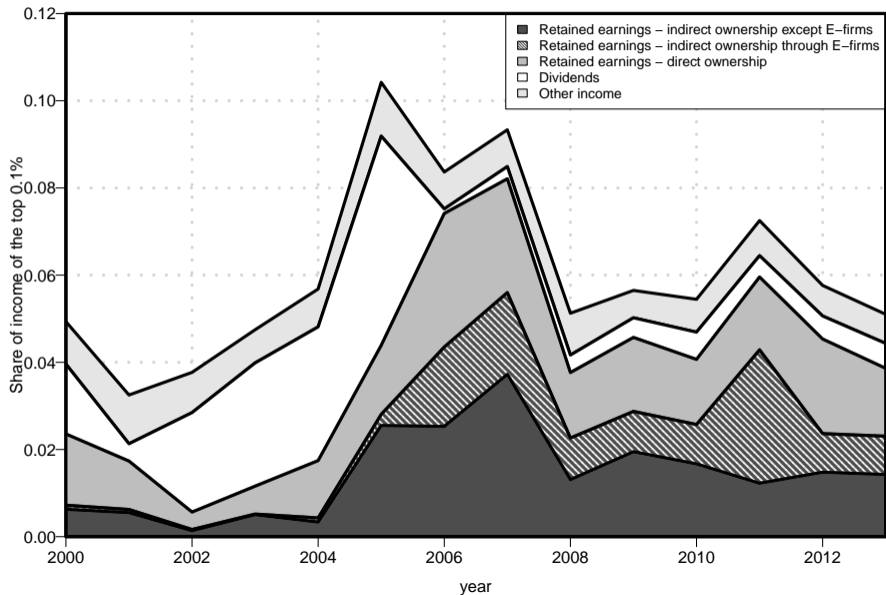
Who drives the effect? Majority shareholders



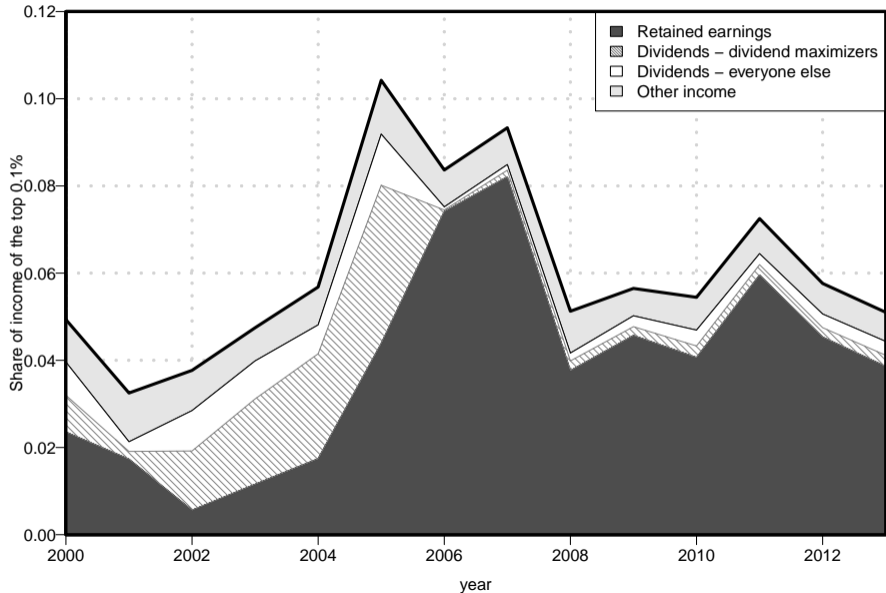
Who drives the effect? Private firms



Who drives the effect? Indirect ownership



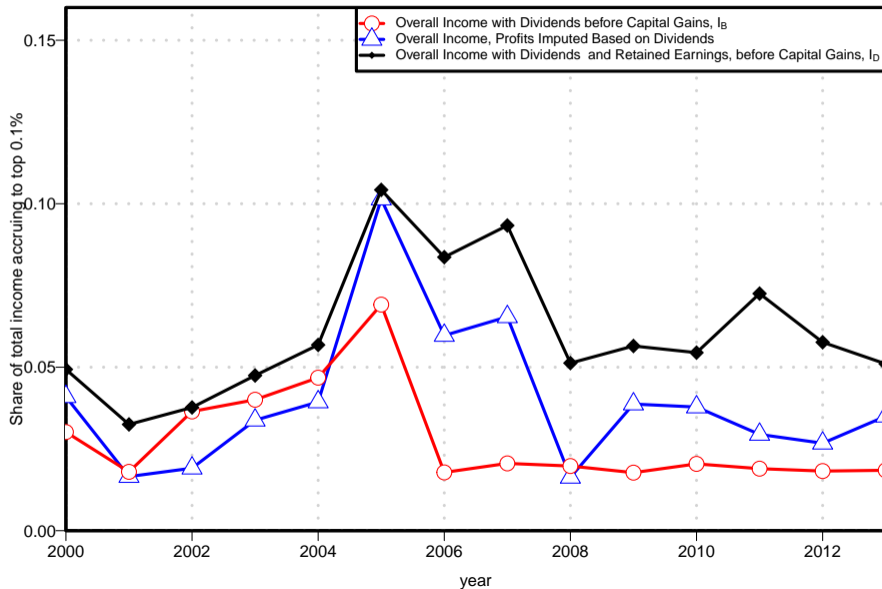
Who drives the effect? Dividend maximizers



What if you cannot link firm-level data?

- This is a known challenge . . .
- ...and recent studies attempt to deal with it by distributing observed aggregate retained earnings based on the observed distribution of capital income (dividend income or a mix of dividend and capital gains), see Piketty, Saez, Zucman (2017), Auten and Splinter (2019), Smith, Zidar and Zwick (2020)
- We have data to actually test this, and find that
 - ① the imputation approach performs poorly

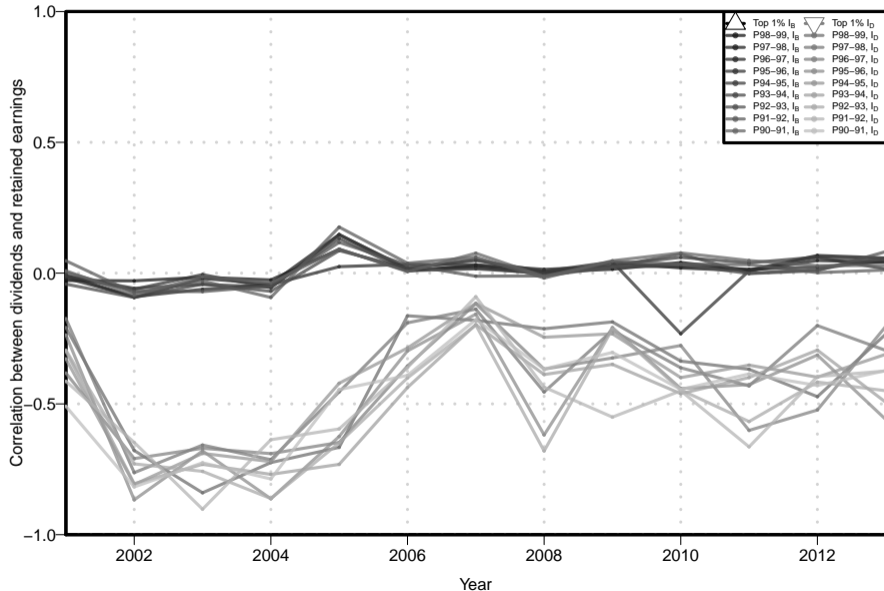
Imputation of retained earnings based on dividends



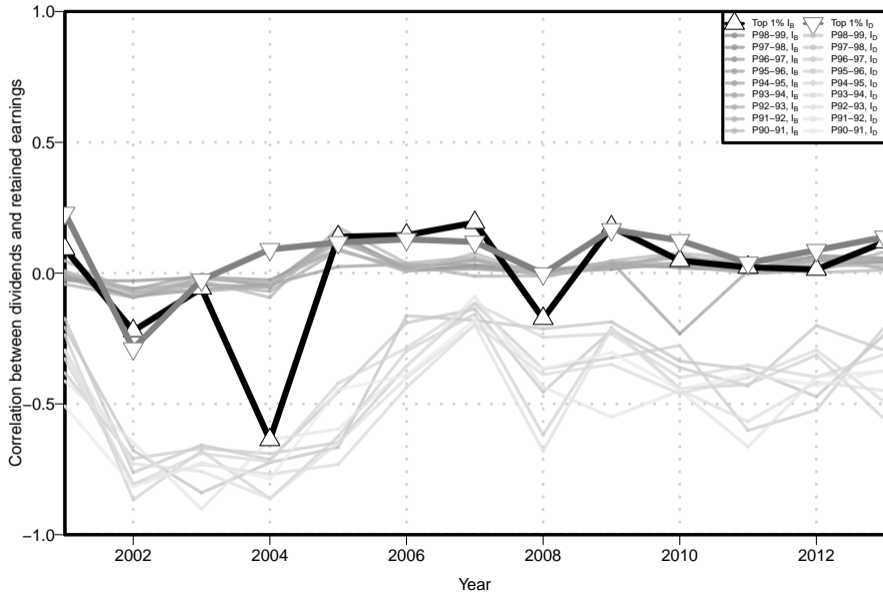
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 - 1 the imputation approach performs poorly
 - 2
 - For a given firm, the relationship between current retained earnings and dividends is mechanically negative
 - In the population, for most of the distribution, it is negative conditional on our full income measure (I_D) and about zero conditional on income observed on tax returns (I_B)
 - It is noisy and turns slightly positive on average at the very top
 - As the result, it is not a good predictor of profits/retained earnings

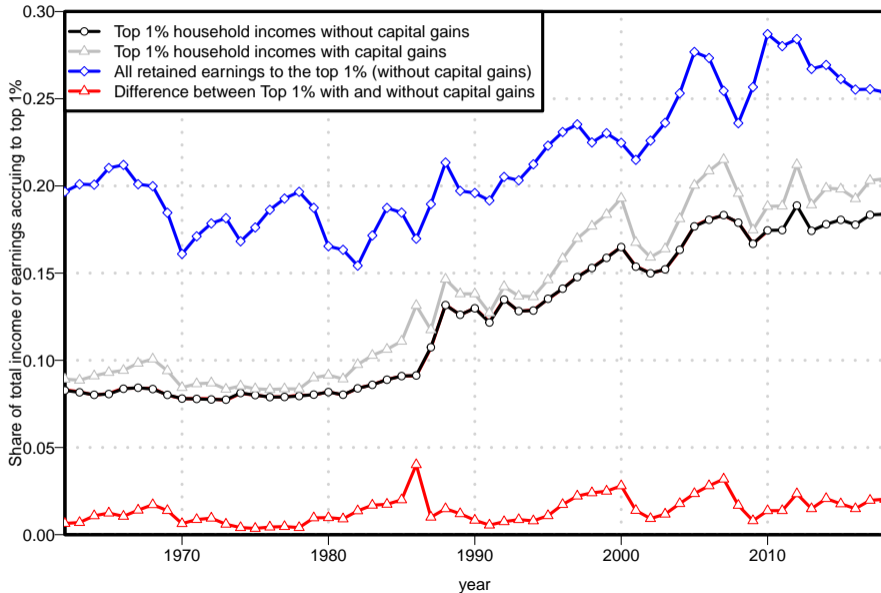
Correlation of ret. earnings and dividends — below the top



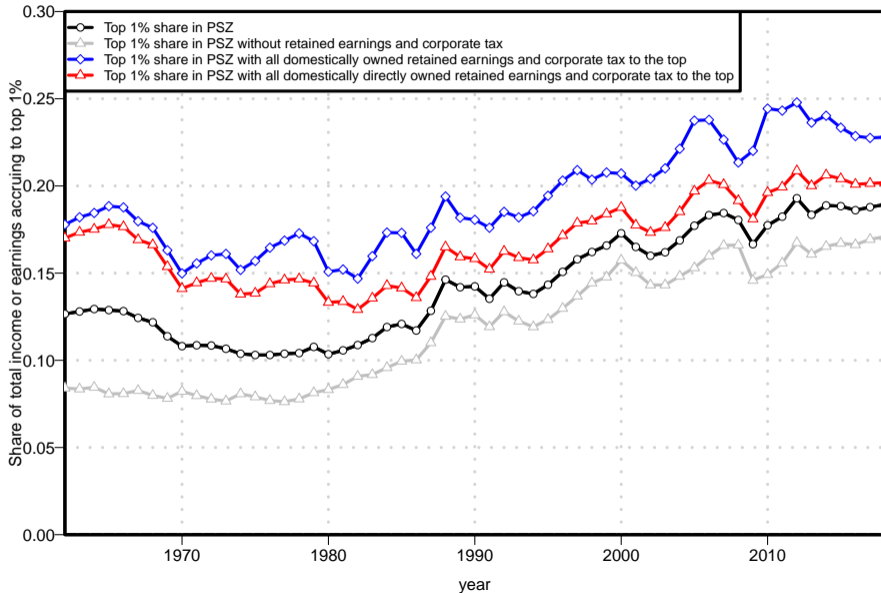
Correlation of ret. earnings and dividends — very top



Importance of retained earnings in the US



Importance of retained earnings in the US



Conclusions/Implications

- How one accounts for business income makes a big difference in measurement of inequality when there are incentives to delay realization
- Allocating retained earnings stabilizes measures of inequality and mobility
- Importance of closely-held firms
- Non-comparability across tax regimes; also across countries
- How about the US?
 - incentives for realization vs pass-through changed after 1986
 - strong trend in the importance of S-corporations and then LLCs afterwards
 - wages are a large part of the increase in top shares after TRA'86
 - however, these are partially wages paid by S-corporations — an alternative way of realizing business income
 - yet another change in incentives starting in 2017