Tax Evasion and Inequality

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Introduction

How big is tax evasion in rich countries and how is it distributed?

An important question for:

- Study of income and wealth inequality
- Tax policy
- Tax enforcement

Main challenge in the literature: hard to capture evasion at the top

Widely used source to study tax evasion: random audits

Faces two key challenges:

- Small number of rich individuals sampled
- Hard to detect complex evasion involving intermediaries (private banks, shell corp., etc.)

$\rightarrow$ Random audits need to be supplemented by other data sources to capture evasion by the wealthy

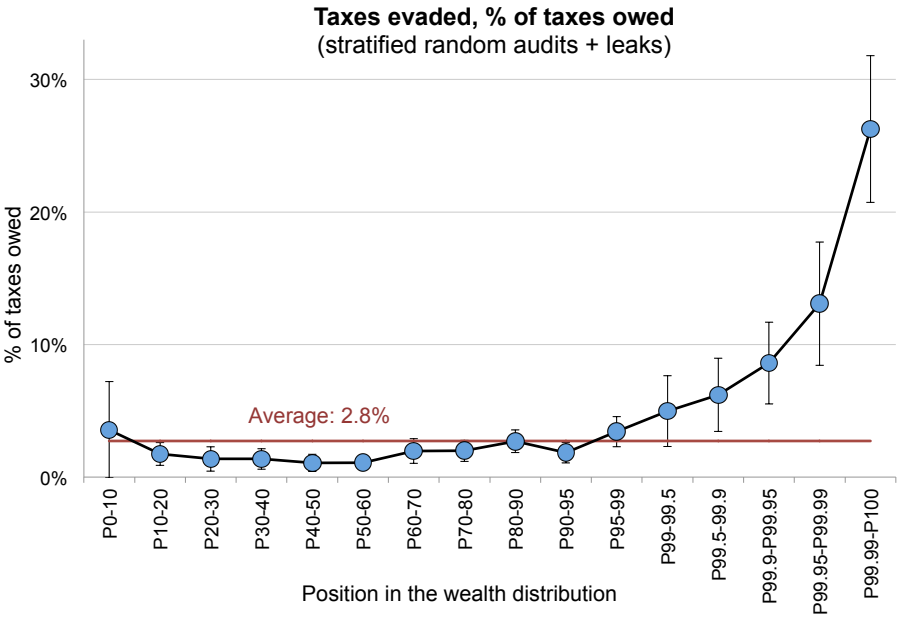
We analyze new data capturing evasion by the wealthy

Massive leaks from HSBC Switzerland and Mossack Fonseca ("Panama Papers")

- Leaks random & from big, representative intermed.
- Match to tax records in Norway, Sweden, Denmark
- Combine with macro stats on wealth hidden in tax havens, random audits, and amnesty data

$\rightarrow$ First estimate of size & distribution of total evasion

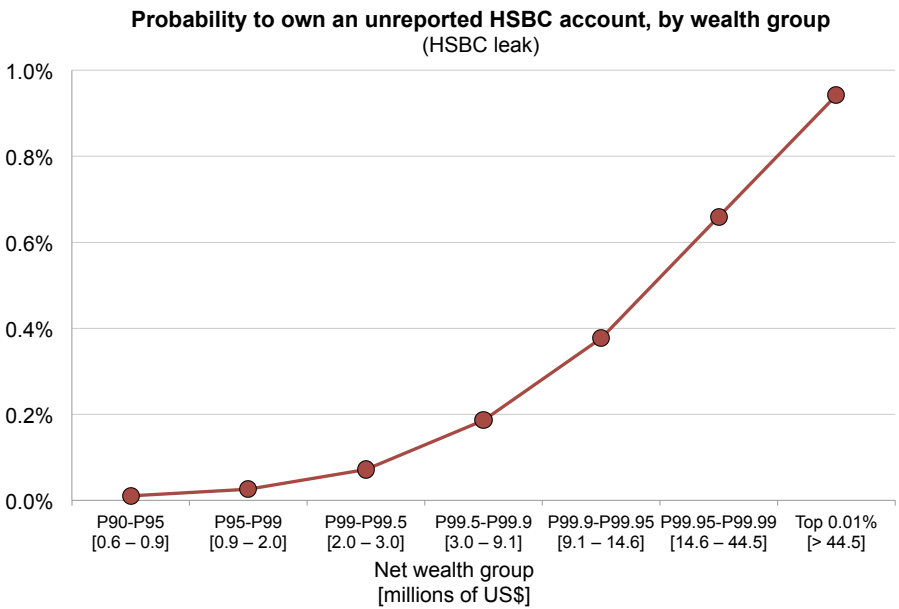
Main result: tax evasion is small overall but high at the top



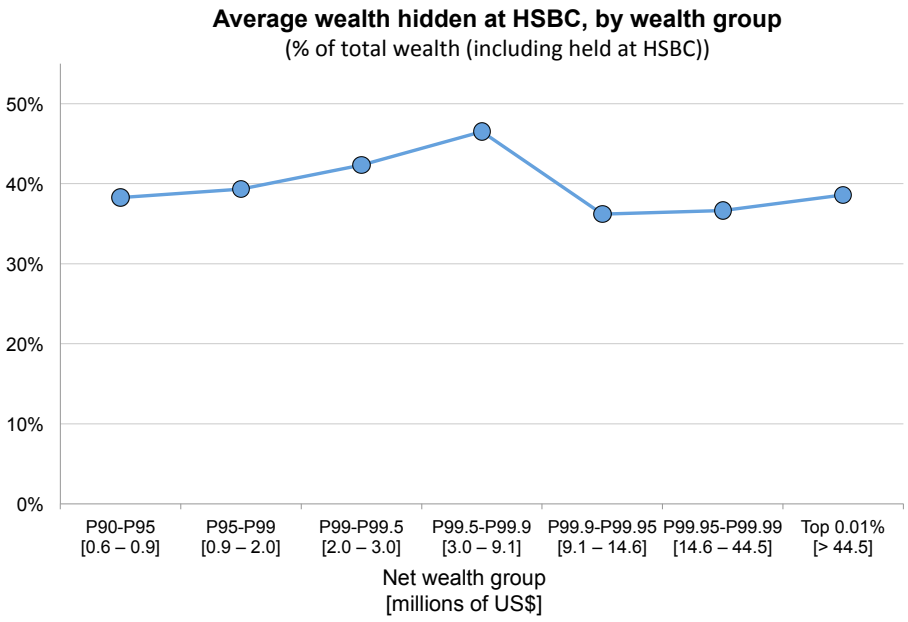
Tax Evasion by the Wealthy: Evidence from Leaks

The HSBC leak: a unique source to study evasion through intermediaries

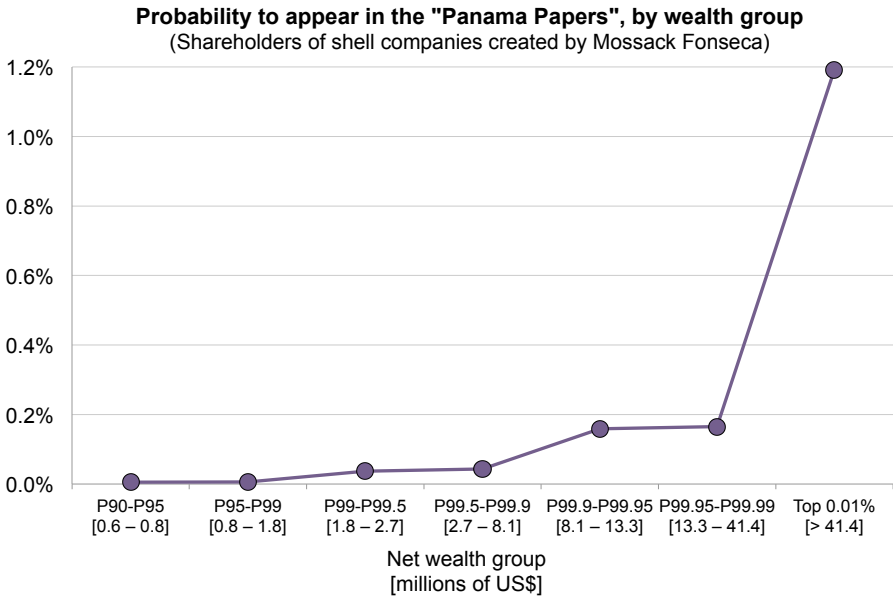
The proba to have an unreported HSBC account rises sharply within the top 1%



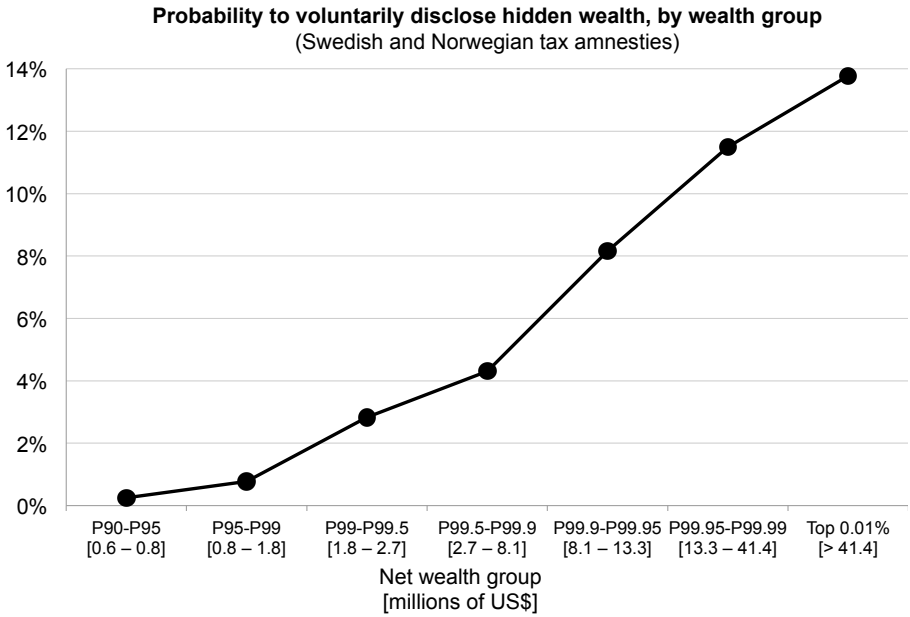
HSBC evaders hide close to half of their wealth at HSBC



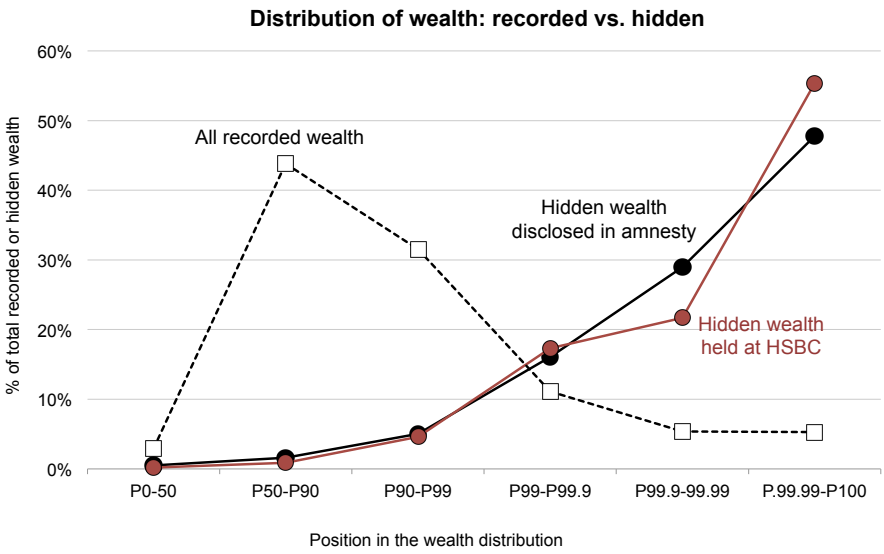
The Panama Papers confirm the sharp gradient in use of tax havens by wealth



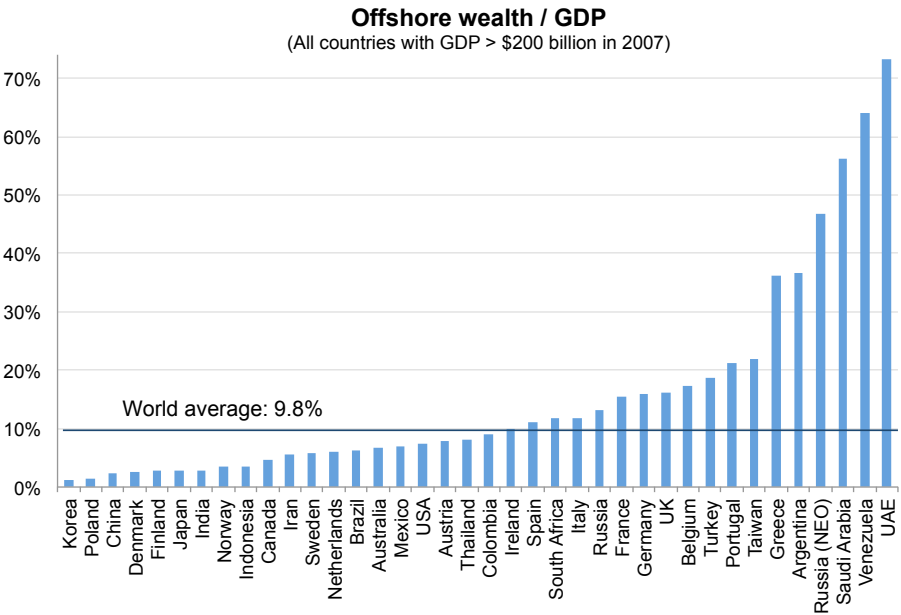
Amnesty data show widespread evasion at the top



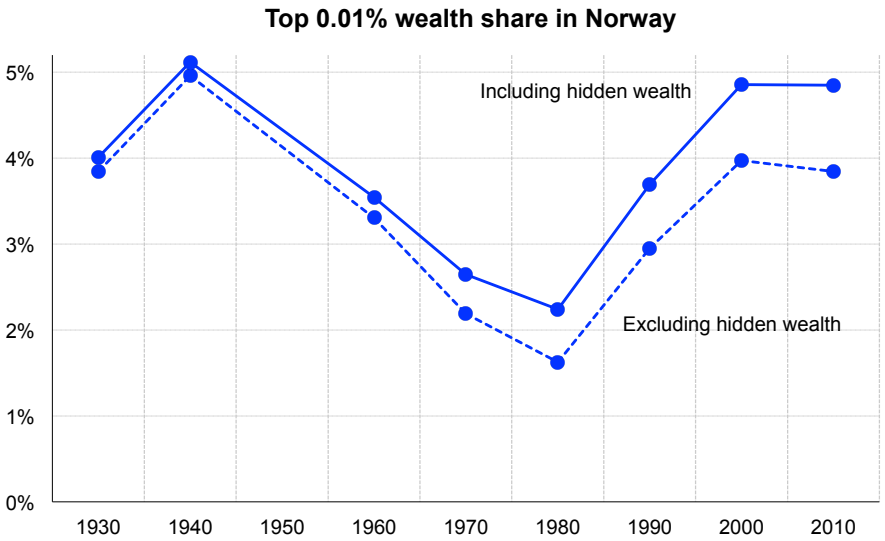
Hidden wealth is extremely concentrated



On aggregate, Scandinavian countries own relatively little offshore wealth

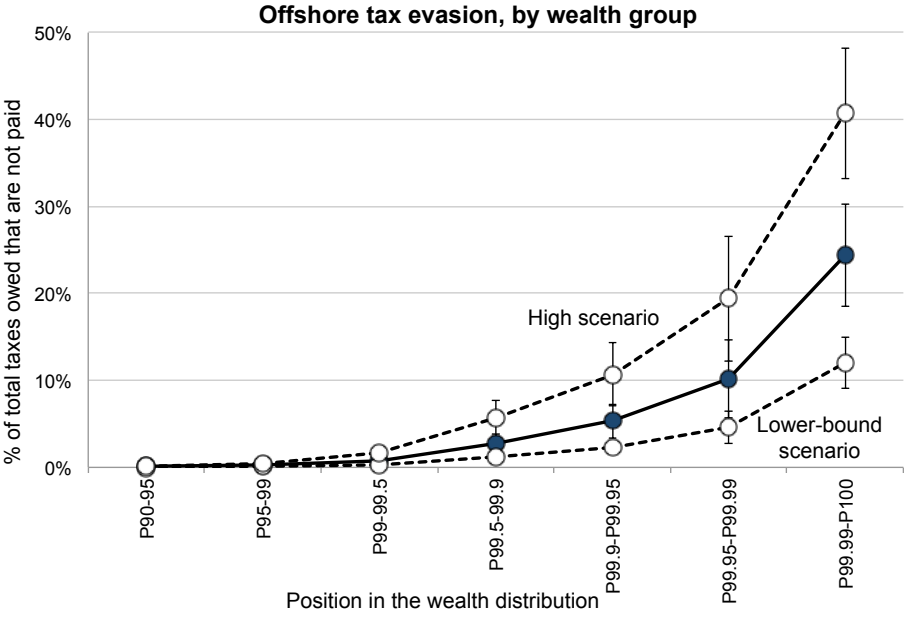


Even in countries with low total evasion, including hidden wealth ↑ inequality a lot

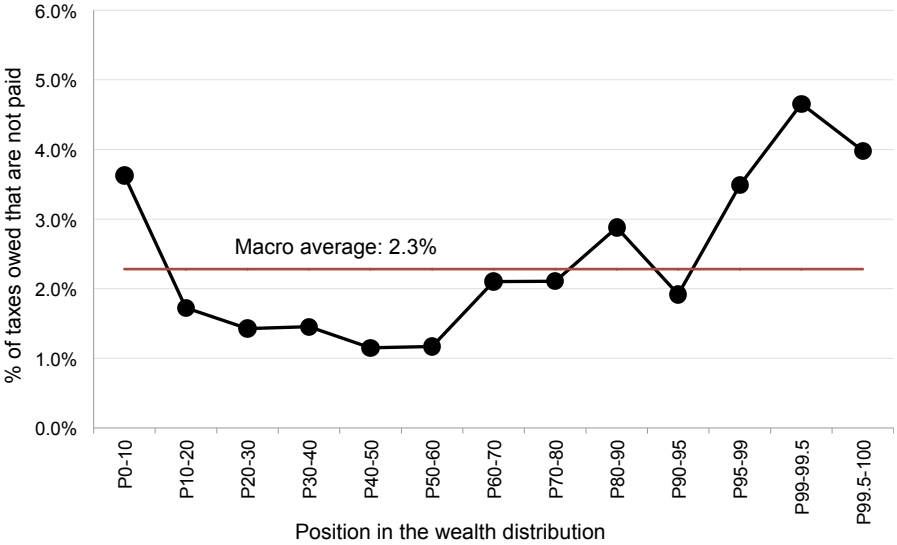


The size & distribution of tax evasion in rich countries

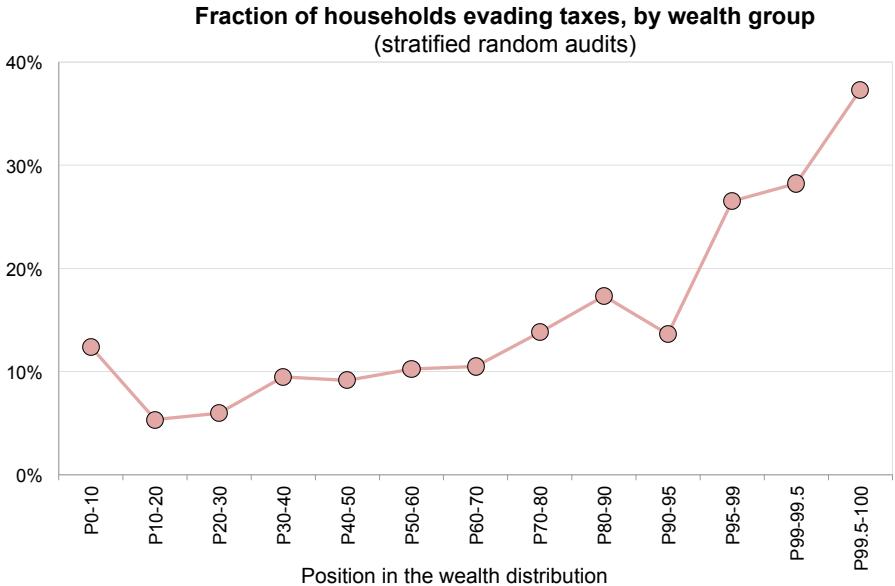
Tax evasion on hidden wealth



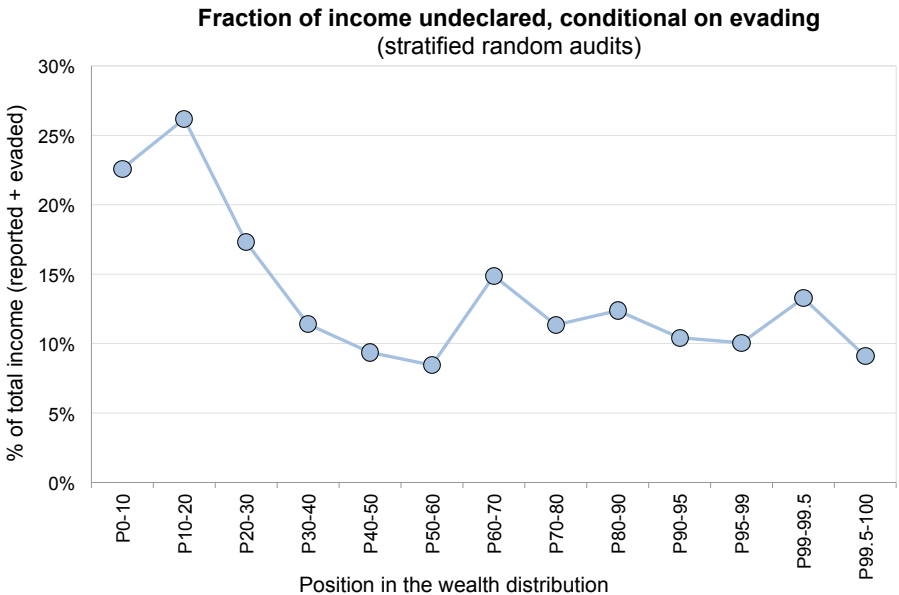
Tax evasion detected in random audits



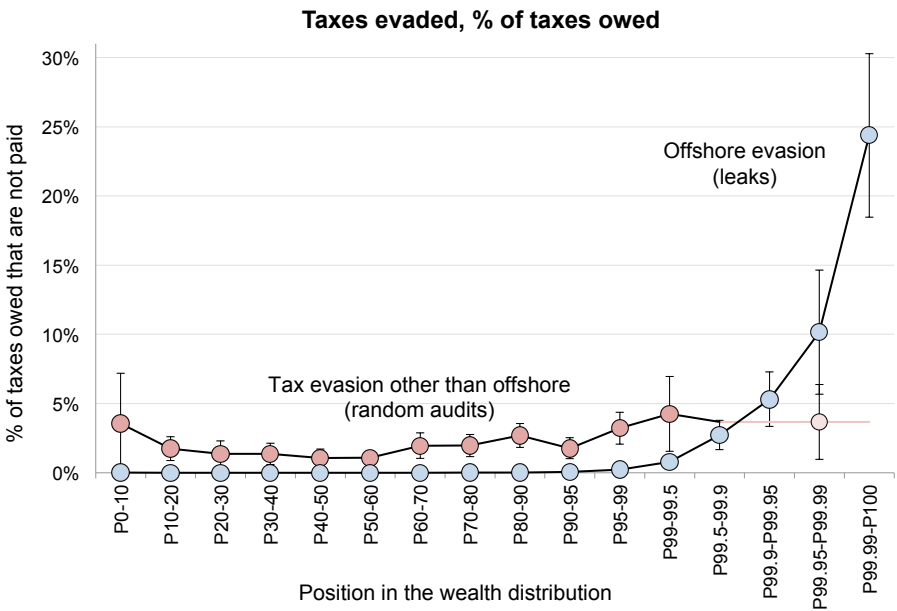
Random audits detect a lot of errors on tax returns



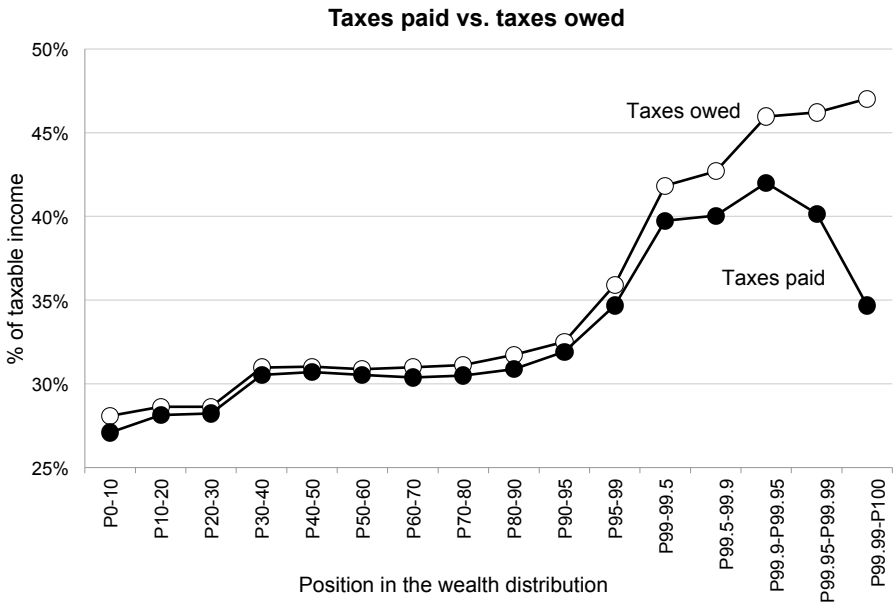
But random audits fail to capture sophisticated evasion at the top



Combining random audits and leaks



Tax evasion makes the tax system regressive at the top



The interplay between evasion and avoidance

Substitution between evasion and avoidance

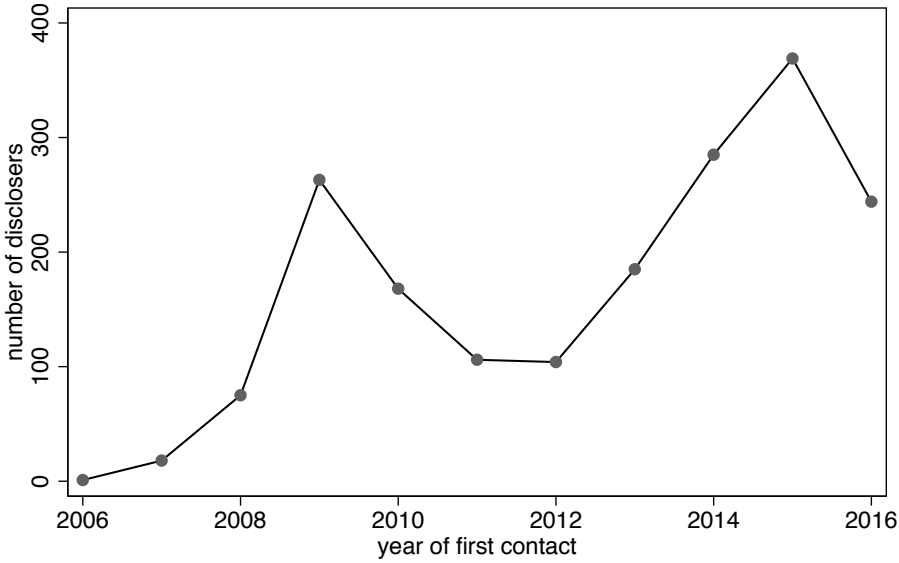
Can gov. increase tax collection on the wealthy by fighting tax evasion?

Depends on substitution between evasion and avoidance

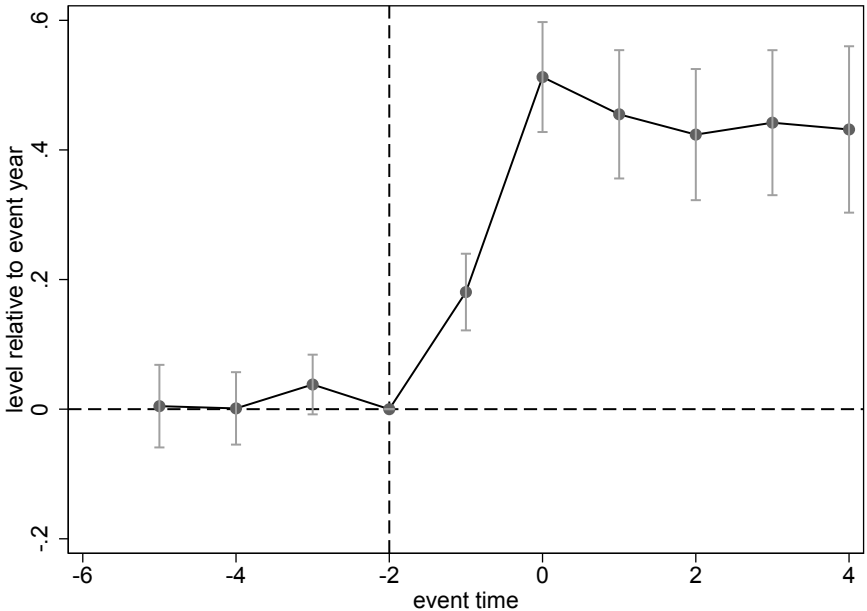
We study substitution using sample of Norwegians who use tax amnesty

- They used to hide a lot of wealth
- Decide to come clean
- Do they start avoiding more?

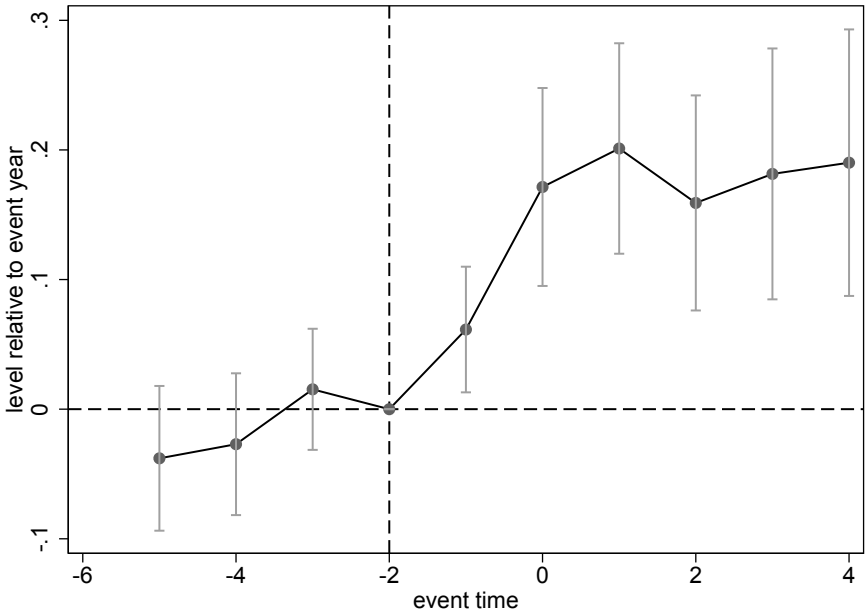
Number of amnesty participants by year



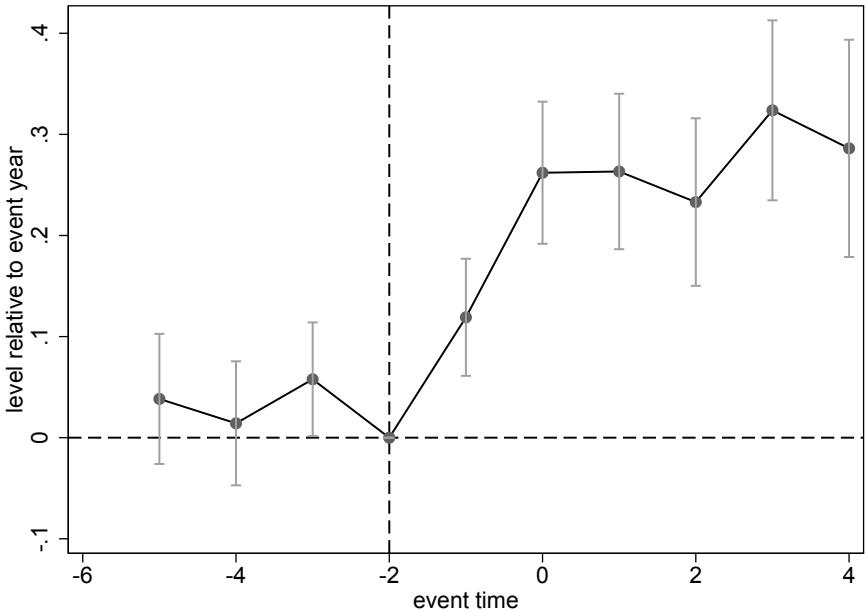
Reported wealth increases by 60% post-amnesty



Reported taxable income increases by 20%



Taxes paid rise in line with income & wealth: no sign of increased avoidance



Conclusion

Main results

In rich economies with low self-employment, tax evasion is small on aggregate

But high at the top, strong gradient within top 1%

This can be explained by model where suppliers of tax evasion services internalize the costs of being caught

Model and evidence suggest collecting more revenue from the wealthy may be possible

Next steps

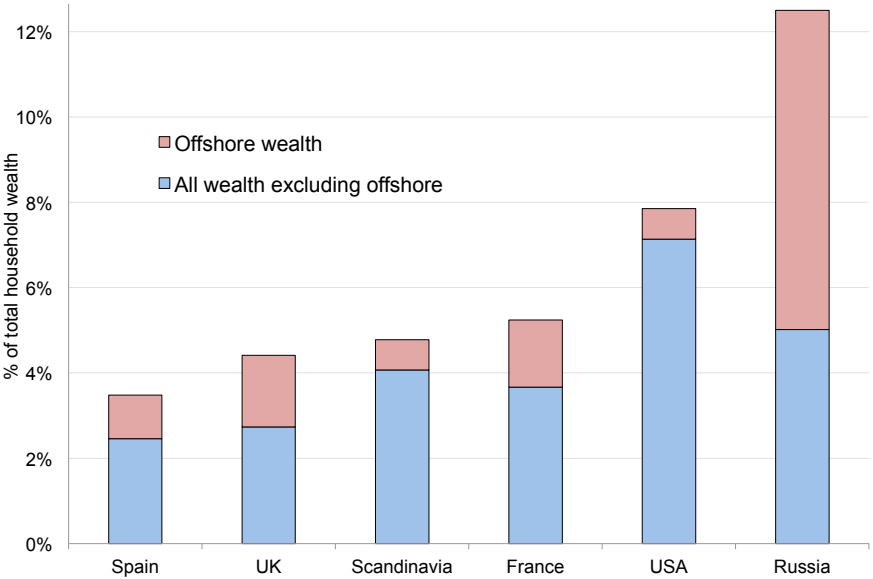
HSBC, Panama leaks and amnesty data available to many tax authorities

Our method could be applied broadly to construct distributional tax gaps in many countries

Ultimate goal is to correct global inequality statistics in a systematic way

$\rightarrow$ Tax evasion to be included in future Distributional National Accounts & `WID.world` inequality series

How offshore wealth affects inequality

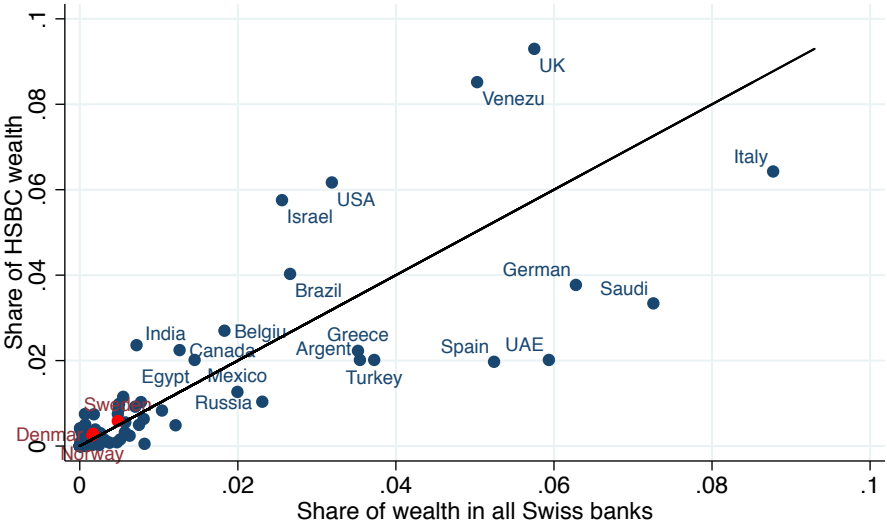


Supplementary Slides

Offshore wealth at HSBC, in all Swiss banks, and globally

	World	Scandinavia	*Sweden*	*Norway*	*Denmark*
A. Wealth held offshore ($ billion)					
At HSBC Switzerland Private Bank	118.4	1.01	*0.49*	*0.32*	*0.20*
In all Swiss banks	2,670	21.5	*12.8*	*4.2*	*4.4*
In all the world's tax havens (benchmark estimate)	5,620	51.0	*28.4*	*14.1*	*8.4*
- Bottom-up estimate	5,620	48.1	*23.3*	*15.4*	*9.5*
- Proportional allocation	5,620	108.8	*49.0*	*24.0*	*35.9*
B. Wealth held offshore (% of household wealth)					
In all Swiss banks	1.5%	0.7%	*0.9%*	*0.6%*	*0.4%*
In all the world's tax havens (benchmark estimate)	3.3%	1.6%	*1.9%*	*1.9%*	*0.8%*
- Bottom-up estimate	3.3%	1.5%	*1.6%*	*2.1%*	*0.9%*
- Proportional allocation	3.3%	3.3%	*3.3%*	*3.3%*	*3.3%*

HSBC was not the "go-to" place for Scandinavians to hide their wealth



HSBC evasion without re-ranking

Figure S.4: Probability to own an unreported HSBC account, by wealth group (All matched accounts, including vs. excl. account value)

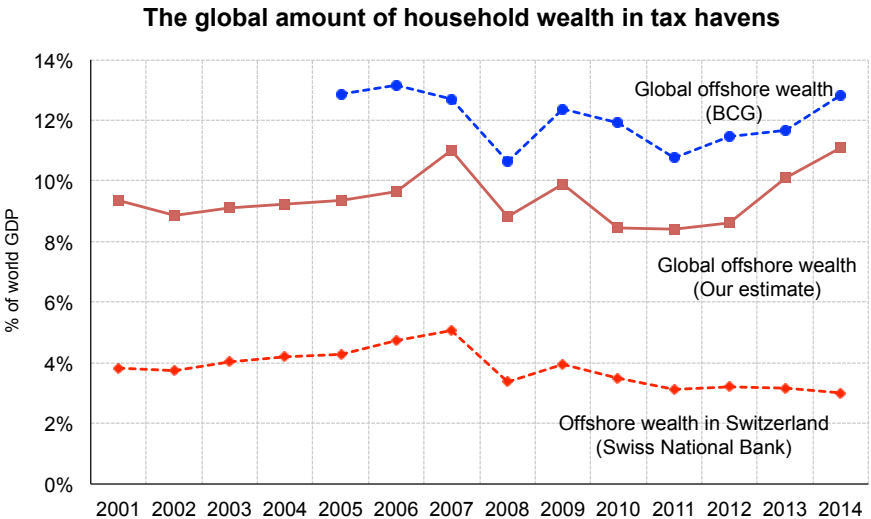
Standard errors

	HSBC				Panama Papers		Amnesty				HSBC + Amnesty	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
	Extensive margin		Intensive margin		Extensive margin		Extensive margin		Intensive margin		Extensive margin	
Wealth group	% of all households	Test	% of evaders' wealth	Test	% of all households	Test	% of all households	Test	% of evaders' wealth	Test	% of all households	Test
P0-90	0.00		35.08	A	0.00		0.03		36.52	C	0.03	
	(0.00)		(9.21)		(0.00)		(0.00)		(1.86)		(0.00)	
P90-95	0.01		38.27	A	0.01	A	0.25		25.32	A	0.26	
	(0.00)		(4.45)		(0.00)		(0.01)		(2.06)		(0.01)	
P95-99	0.03		39.34	A	0.01	A	0.78		27.42	AB	0.80	
	(0.00)		(3.51)		(0.00)		(0.02)		(1.26)		(0.02)	
P99-99.5	0.07		42.32	A	0.04	B	2.83		31.02	B	2.89	
	(0.01)		(5.91)		(0.01)		(0.09)		(1.95)		(0.09)	
P99.5-99.9	0.19		46.51	A	0.04	B	4.31		30.89	B	4.49	
	(0.02)		(3.77)		(0.01)		(0.12)		(1.52)		(0.12)	
P99.9-99.95	0.38	A	36.19	A	0.16	B	8.16		31.26	ABC	8.51	
	(0.08)		(5.85)		(0.06)		(0.45)		(2.79)		(0.45)	
P99.95-99.99	0.66	A	36.63	A	0.17	B	11.49	A	32.84	BC	11.76	
	(0.12)		(9.24)		(0.07)		(0.58)		(2.92)		(0.59)	
P99.99-100	0.94	A	38.60	A	1.19		13.77	A	26.30	AB	14.83	
	(0.30)		(9.34)		(0.39)		(1.25)		(4.51)		(1.29)	
Number of households	10,617,167		10,617,167		7,547,170		7,547,170		7,547,170		7,547,170	
Number of tax evaders	520		300		165		8,233		1,375		8,571	

Scandinavian macro aggregates and wealth distribution

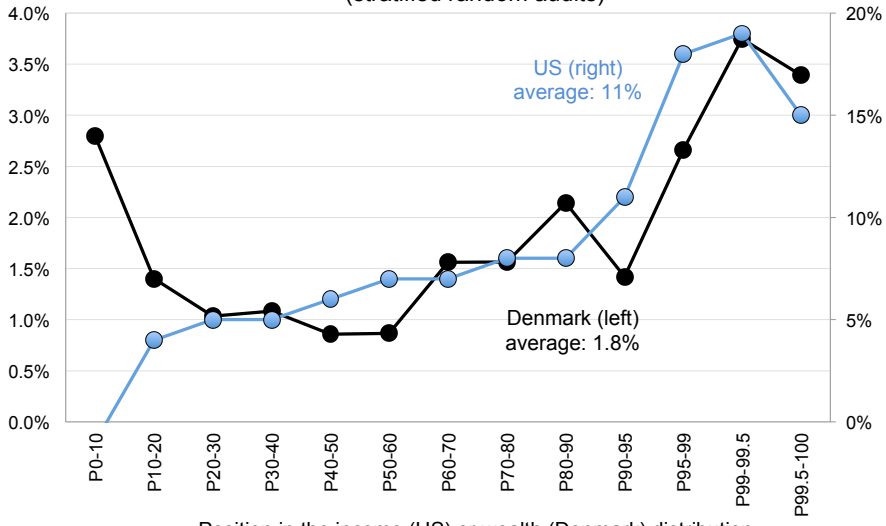
	Scandinavia	Sweden	Norway	Denmark
Macroeonomic aggregates				
Adult population (thousands)	**14,711**	7,179	3,434	4,097
National income per adult (US$)	**60,977**	49,949	87,119	58,387
Household wealth per adult (US$)	**201,658**	184,225	189,456	242,431
Household wealth / national income	**331%**	369%	217%	415%
Wealth shares (excluding offshore)				
Bottom 50%	**2.9%**	5.8%	-2.6%	2.7%
Middle 40%	**43.8%**	41.3%	52.8%	41.7%
Top 10%	**53.3%**	52.9%	49.9%	55.6%
Top 1%	**21.8%**	22.1%	17.9%	22.8%
Top 0.1%	**10.6%**	11.0%	8.9%	10.4%
Top 0.01%	**5.3%**	5.7%	4.6%	4.5%

Estimates of global offshore wealth

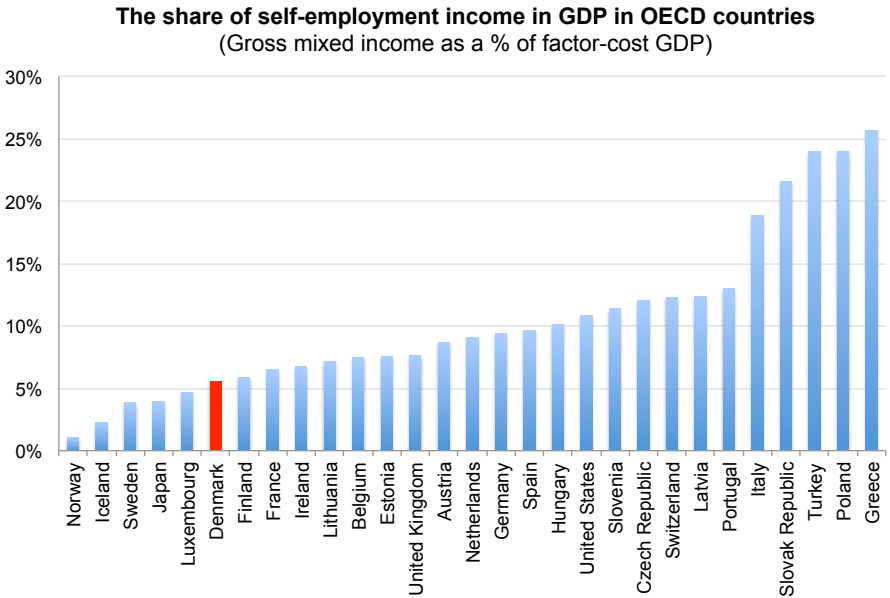


Tax evasion in random audits: US. vs. Denmark

Figure S.23: Fraction of income undeclared
(stratified random audits)



Why is detected evasion higher in US? DCE multiplier + self-employment



Why does evasion seem to rise sharply within the top groups?

A model of the supply of evasion services

Population of mass one with wealth density $f(y)$

Monopolistic bank sells tax evasion services (historically, Swiss banks have operated as a cartel)

Charges θ per dollar of wealth hidden

Simplification: infinitely elastic demand at price $\theta \rightarrow$ bank optimizes on the number of clients it serves

Manages $k(s)$ in wealth when serves $s = 1 - F(y)$ and earns $\theta k(s)$ in revenue

The bank's problem

Bank has probability λs to be caught $\rightarrow$ fine $\phi k(s)$

Risk-neutral bank maximizes profits

$$\pi(s) = \theta k(s) - \lambda s \phi k(s)$$

At interior optimum:

$$\theta = \left(\frac{1}{\epsilon_k(s)} + 1 \right) \phi \lambda s$$

Where $\epsilon_k(s) = sk'(s)/k(s)$ is elasticity of the amount of hidden wealth managed with respect to s

The Pareto case

If wealth Pareto-distributed, supply of evasion services is:

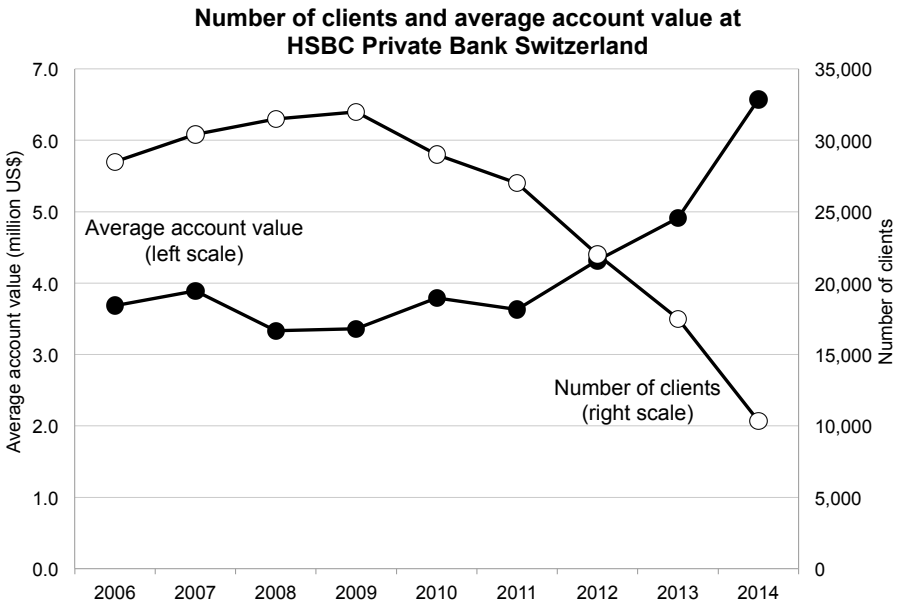
$$s = \frac{\theta}{(1+b)\,\lambda\phi}$$

b is the inverted Pareto-Lorenz coefficient (high $b \rightarrow$ high inequality)

Higher λ or higher $\phi \rightarrow$ fewer & richer clients

If high inequality, bank will serve tiny fraction of the pop.

Stronger enforcement → fewer, wealthier clients



How we estimate the impact of using the amnesty on tax avoidance

Event-study model

$$log(y_{it}) = \alpha_i + \gamma_t + X'_{it}\psi + \sum \beta_k D^k_{it} + u_{it}$$

y_{it}: reported taxable wealth, income, taxes paid

α_i: household fixed effects

γ_t: time fixed effects

D^k_{it}: event-time dummies

X'_{it}: Controls: 10 bins of 2007 wealth $\times$ year, 10 bins of 2007 income $\times$ year, 6 bins of 2007 age $\times$ year

Amnesty participants: summary statistics pre-disclosure

	All Norwegian residents (2007)	
	Not amnesty participants	Amnesty participants
Number of individuals	3,807,898	1,307
DEMOGRAPHICS		
Age	46	58
Male	50%	63%
Number of children	2.3	2.3
Foreign born or foreign national	13%	21%
Married	41%	57%
INCOME AND WEALTH ($)		
Reported taxable wealth (tax value)	20,641	2,466,276
True taxable wealth (tax value)	20,641	4,454,507
Reported taxable income	55,717	211,407
Reported taxable capital income	3,265	103,096
TAX AVOIDANCE INDICATORS		
Maximized dividend payments in 2005	0.7%	7.0%
Owns a holding company	0.6%	9.3%
Reports no taxable income	3.4%	1.1%
Reports no taxable wealth	2.1%	0.2%
Reports no capital income	44.4%	8.6%
Reports no wage income	23.8%	29.5%
Pays zero taxes	11.2%	2.4%
80% wealth tax reduction	0.3%	7.3%
Owns unlisted shares	3.9%	29.8%

Pre-disclosure, amnesty participants avoid less taxes than similarly wealthy taxpayers

	(1)	(2)	(3)	(4)
	True taxable wealth	Maximized dividend payments in 2005	Owns a holding company	80% wealth tax reduction
Amnesty participant	0.0049	-0.0275***	-0.0433***	-0.0157***
	(0.0064)	(0.0038)	(0.0035)	(0.0023)
Observations	524,647	724,176	724,176	724,176
R-squared	0.9839	0.0595	0.1641	0.1357
True taxable wealth	100 bins	100 bins	100 bins	100 bins
Income	10 bins	10 bins	10 bins	10 bins
age	6 bins	6 bins	6 bins	6 bins

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Summary of impact of disclosing previously hidden assets

	Compliance		
	(1)	(2)	(3)
	Reported wealth (in logs)	Reported income (in logs)	Taxes paid (in logs)
Post-disclosure (periods 0-2)	0.4571***	0.1817***	0.2296***
relative to pre-disclosure (period -4 to -2)	(0.0403)	(0.0333)	(0.0311)
Observations	5,820,893	7,956,464	7,771,735
R-squared	0.8499	0.7255	0.8000
Individual FE, wealth x year FE, income x year FE, age x year FE	X	X	X

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

No sign of rise in most obvious avoidance channels

	Channels of avoidance				
	(4)	(5)	(6)	(7)	(8)
	Founds holding company (dummy)	Unlisted shares (in logs)	Housing wealth (in logs)	Zero capital income (dummy)	Emigration (dummy)
Post-disclosure (periods 0-2) relative to pre-disclosure (period -4 to -2)	-0.0006 (0.0018)	-0.1141 (0.1048)	-0.0736 (0.0528)	0.0110 (0.0074)	-0.0001*** (0.0000)
Observations	8,176,582	900,957	6,142,102	8,176,582	8,176,582
R-squared	0.0944	0.8617	0.7446	0.6063	0.2515
Individual FE, wealth x year FE, income x year FE, age x year FE	X	X	X	X	X

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1