

Lessons about tax evasion and tax avoidance from collaboration with the Danish tax agency

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CENTER FOR
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Projects

- #1 The Danish large-scale tax compliance experiment
- #2 Introduction of information reporting on donations to charity
- #3 Introduction of a semi third-party reporting instrument on deductions for alimonies and child support transfers
- #4 Offshore tax evasion and inequality
- #5 Multinationals: “beggar my neighbor” problem in tax enforcement policy
- #6 Detection of intertemporal shifting in wage income
- #7 Introduction of interest payments on owed taxes

Why collaboration?

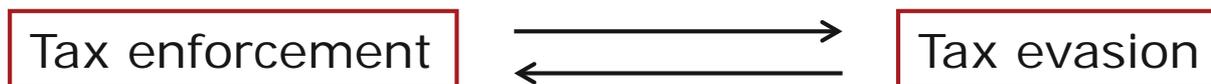
Empirical measurement of evasion and avoidance is difficult

Measurement problems

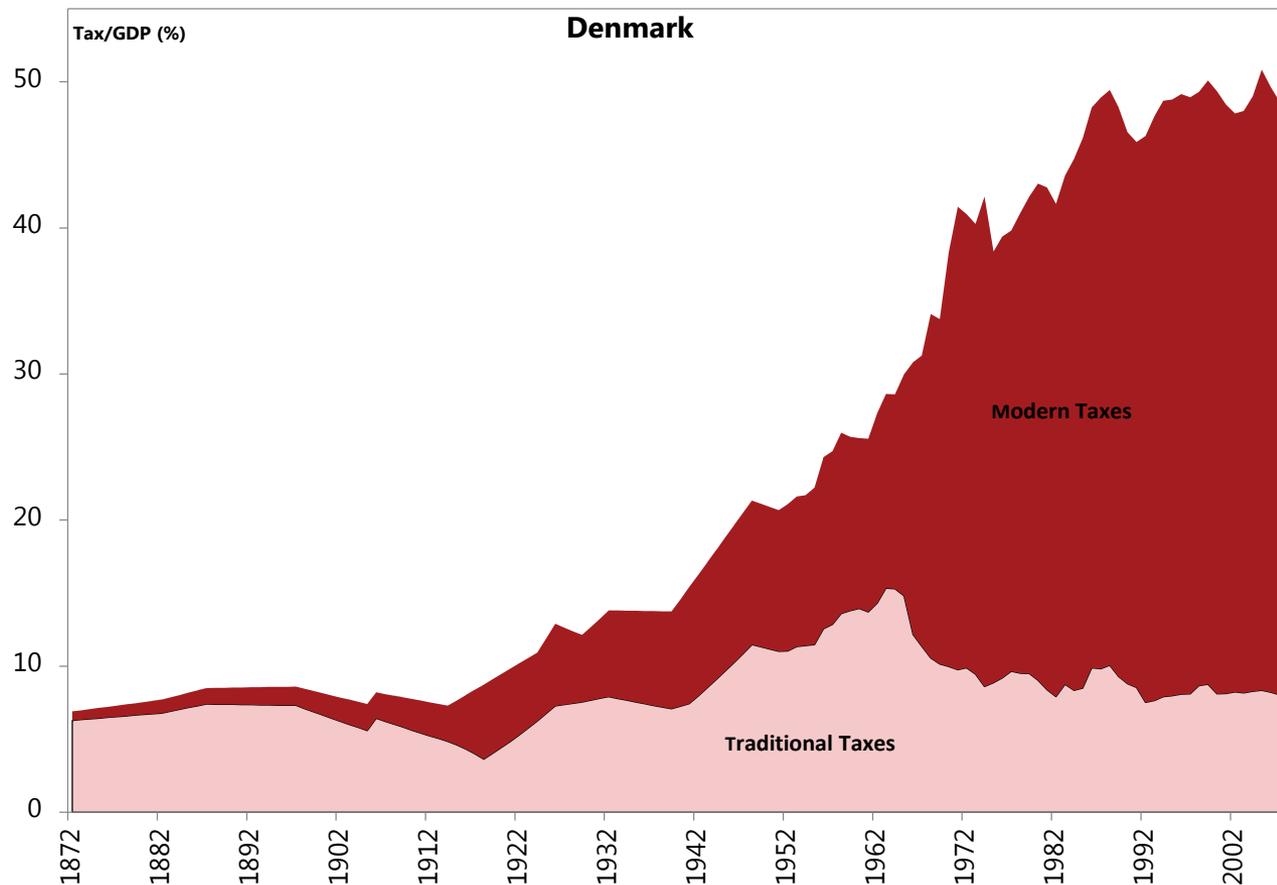
- Not possible to measure noncompliance directly in standard register data
- People don't tell the truth, even in anonymous surveys (and large samples of individuals are expensive)

Identification problems

- A relationship between resources used on tax enforcement and degree of tax evasion may not be casual



Long run development of taxation



Source: Kleven, Kreiner, Saez (Economica 2016)

Resources spend on tax enforcement: $\frac{1}{4}\%$ of GDP in DK

Economic theory of tax compliance behavior

In traditional theory (A-S-model), tax compliance depends on

- Economic gain of not complying
- Probability of being detected
- Costs of being detected
- Risk aversion

But theory greatly overpredicts noncompliance (Andreoni et al. JEL 1998).

Why does theory overpredict real-life evasion?

- Behavioral aspects: social norms, tax morale, guilt, shame, etc.

[Taxpayers are able but unwilling to cheat]

- Information aspects: third-party reporting, withholding, etc.

[Taxpayers are willing but unable to cheat]

The key questions

- How much noncompliance?
- Why comply: Unwilling or Unable to Cheat?
- Optimal tax enforcement strategies to reduce noncompliance?
- How many resources should society devote to tax enforcement?

#1 The Danish tax compliance experiment

Tax audit experiment carried out together with the Danish Tax Agency including more than 40,000 randomly selected individuals

Kleven et al.: "Unwilling or Unable to Cheat? Evidence from a Tax Audit Experiment in Denmark."

Econometrica, 2011

"Tax evasion and the administration of the Danish Tax System" Chapter 4 in the *Report of the Danish Economic Council*, 2011.

Kreiner: "What makes tax payers comply? Lessons from a tax audit experiment in Denmark." *European Economy Papers* 463. European Commission, 2012.



Empirical evidence

The Danish tax compliance experiment

Experimental design

A stratified random sample of about 20,000 individuals were selected for tax audits in 2007 [**100% audit group**]

Audits: not pre-announced, did not use audit flags, very rigorous.

⇒ Data from audited and filed tax returns used to analyze overall level of compliance, type of income, effect of the marginal tax rate, best predictors of evasion...

Randomly selected **0% audit group** + randomly selected **audit-threat letter group** in 2008

⇒ Effects of tax enforcement (audit correction and audit probability) on future reporting behavior

Empirical evidence

Detectable tax evasion in Denmark

		Total audit adjustment	Under-reporting	Over-reporting
Net income	Amount	2,2%	2,3%	-0,1%
	Individuals	10,7%	8,6%	2,2%
Total tax	Amount	2,8%	3,0%	-0,1%
	Individuals	10,6%	8,4%	2,2%

Empirical evidence

Income types, 3rd party information and tax evasion

	Share of total net income (%)	Evasion rate(%)
Total net income	100	2,3
Personal income	102	1,1
...		
Stock income	3	5,0
Self-employment income	5	15,7
Third-party reported income	95	0,3
Self-reported income	5	41,5

Empirical evidence

Income types, 3rd party information and tax evasion

	Social factors		Socio-economic factors		Information factors		All factors	
Constant	12.72	(1.06)	10.13	(1.12)	1.18	(0.25)	3.72	(1.01)
Female	-5.56	(0.63)	-4.17	(0.65)			-2.06	(0.62)
Married	1.22	(0.70)	-0.55	(0.72)			-1.50	(0.72)
Member of church	-1.59	(0.98)	-2.27	(0.97)			-0.94	(0.92)
Copenhagen	-1.49	(1.52)	-0.01	(1.51)			-0.25	(1.47)
Age above 45	-0.72	(0.67)	-0.63	(0.67)			-0.56	(0.61)
Home owner			5.49	(0.65)			0.15	(0.66)
Firm size below 10			5.07	(1.26)			3.47	(1.05)
Informal sector			4.37	(1.15)			0.27	(0.92)
Self-Reported Income					5.58	(0.75)	5.59	(0.80)
Self-Reported Income > 20K					21.68	(1.38)	21.09	(1.40)
Self-Reported < -10K					14.99	(1.42)	14.74	(1.42)
Audit Flag					13.22	(1.58)	13.07	(1.53)
R-square	1.2%		2.5%		16.2%		16.5%	
Adjusted R-square	1.1%		2.4%		16.1%		16.5%	

Empirical evidence

Income types, 3rd party information and tax evasion

Change in reported net income 2007-2008 due to audit correction in 2007

	Audit correction in 2007	Difference: 100% vs. 0% control group			IV-effect of correction
	Net income	Net income	Self-reported	Third-party reported	Net income
Amount (DKK)	8491	2557	2331	225	0,301

How many resources on tax enforcement?

	All	Self-employed	Wage Earners	Wage earners: Flag	Wage earners No flag
Population share	----- Percent -----				
	100	8	92	11	80
Revenue	----- 2009-DKK -----				
Mechanical	1.150	9.100	400	2.250	100
Behavior	600	3.450	350	2.350	50
Audit cost	1.900	14.600	700	700	700
Net effect	-150	-2.050	50	3.900	-550

Some lessons for tax administration

Third-party information

- Very effective instrument to reduce underreporting
- Policy impact: Introduction of full 3rd-party reporting on stocks (buying/selling prices + dividends)

Optimal audit strategy?

- Should focus on income information variables (“go after the money”). Socio-economic factors do not improve selection significantly

How many resources on tax audits?

- Take into account that audits have disciplinary effects afterwards
- Level of audit resources in Denmark probably not far away from the revenue-maximizing level

#2 Introduction of 3-party reporting on charitable giving

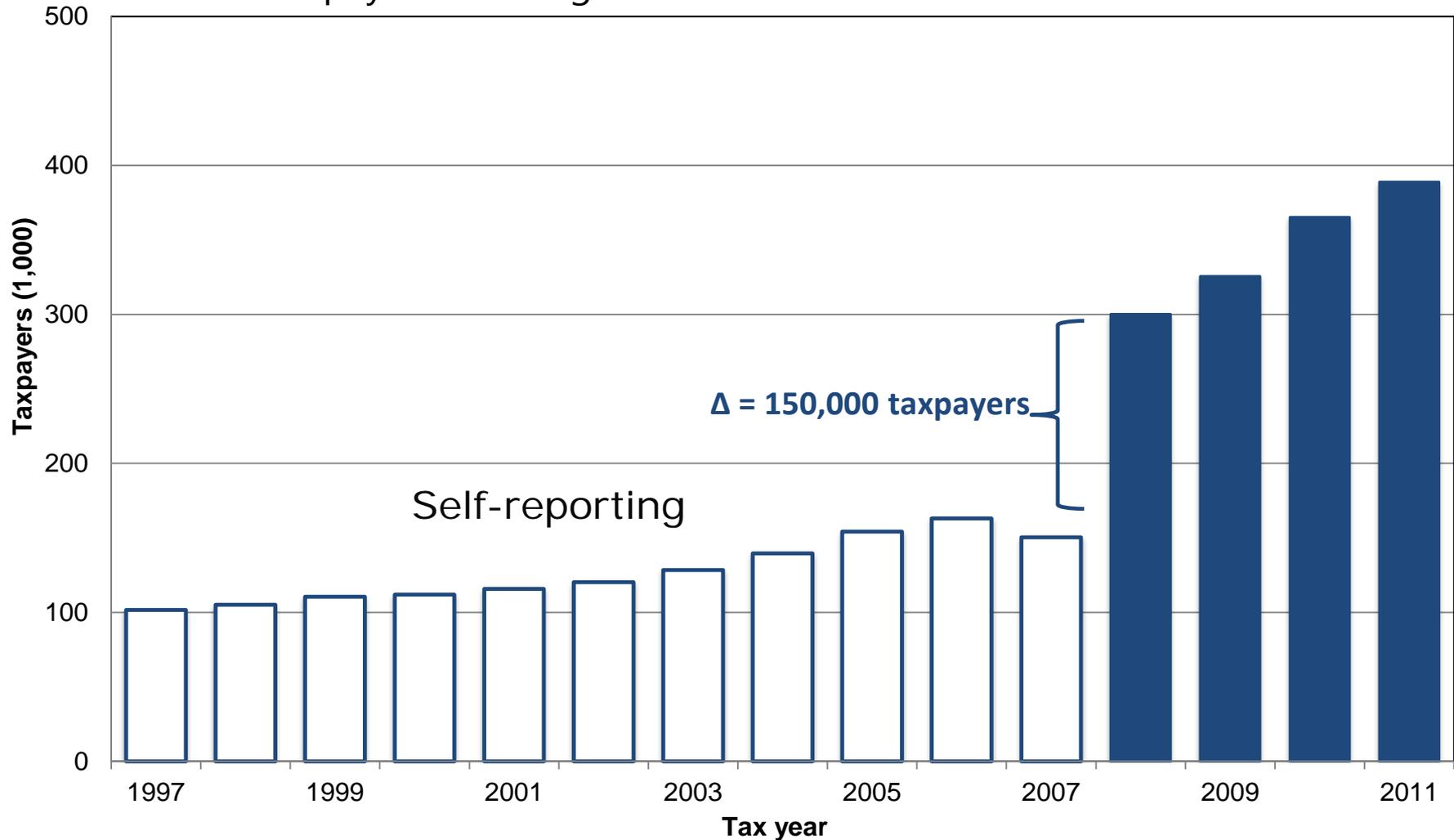
Introduction of third-party reporting and pre-population of charitable tax deductions in 2008 \Rightarrow effect on tax compliance



“The use of third-party information reporting for tax deductions: evidence and implications from charitable deductions in Denmark” Gillitzer and Skov, Oxford Economic Papers, 2018

Introduction of 3-party reporting caused a surge in deductions

Taxpayers claiming a tax deduction for charitable donations



#3 Introduction of a semi third-party reporting instrument on alimonies and child support transfers

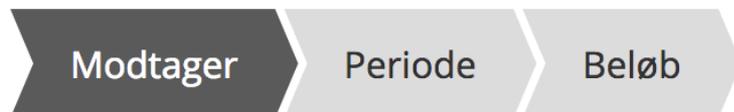
In 2013 SKAT introduced a new "calculation module" in TastSelv to combat misreporting of deductions for child support and alimony (CSA) transfers



"Effect of a semi third-party reporting instrument on tax compliance." Bentsen and Skov, Work-in-progress, 2019

TastSelv module

Børnebidrag



Modtager

Barnet har et dansk cpr-nummer

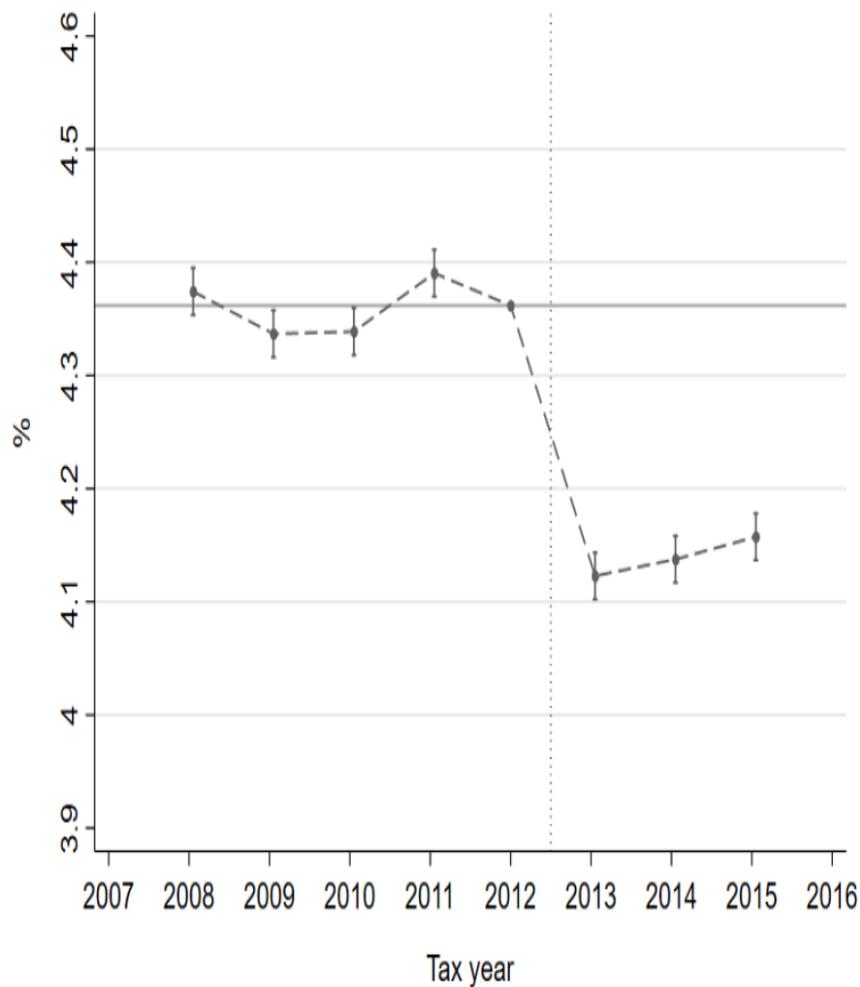
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Cpr/cvr-nummer *

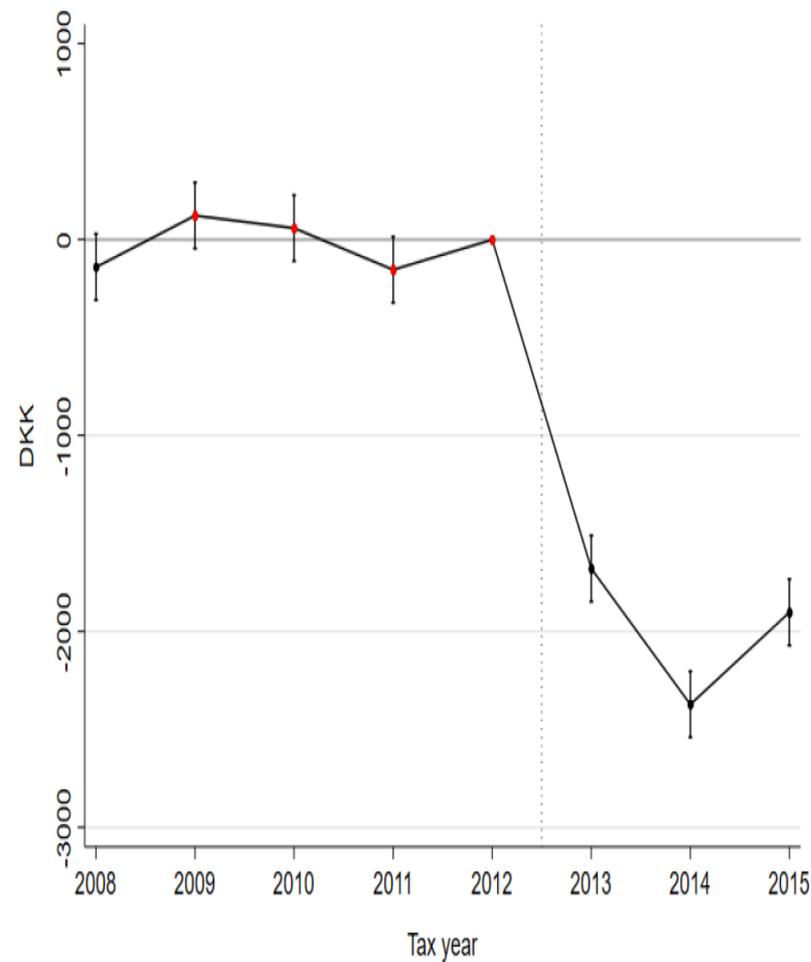
Skriv cpr/cvr-nummer

Effect of semi third-party reporting instrument

Share of taxpayers claiming CSA deductions



Size of deduction conditional on claiming



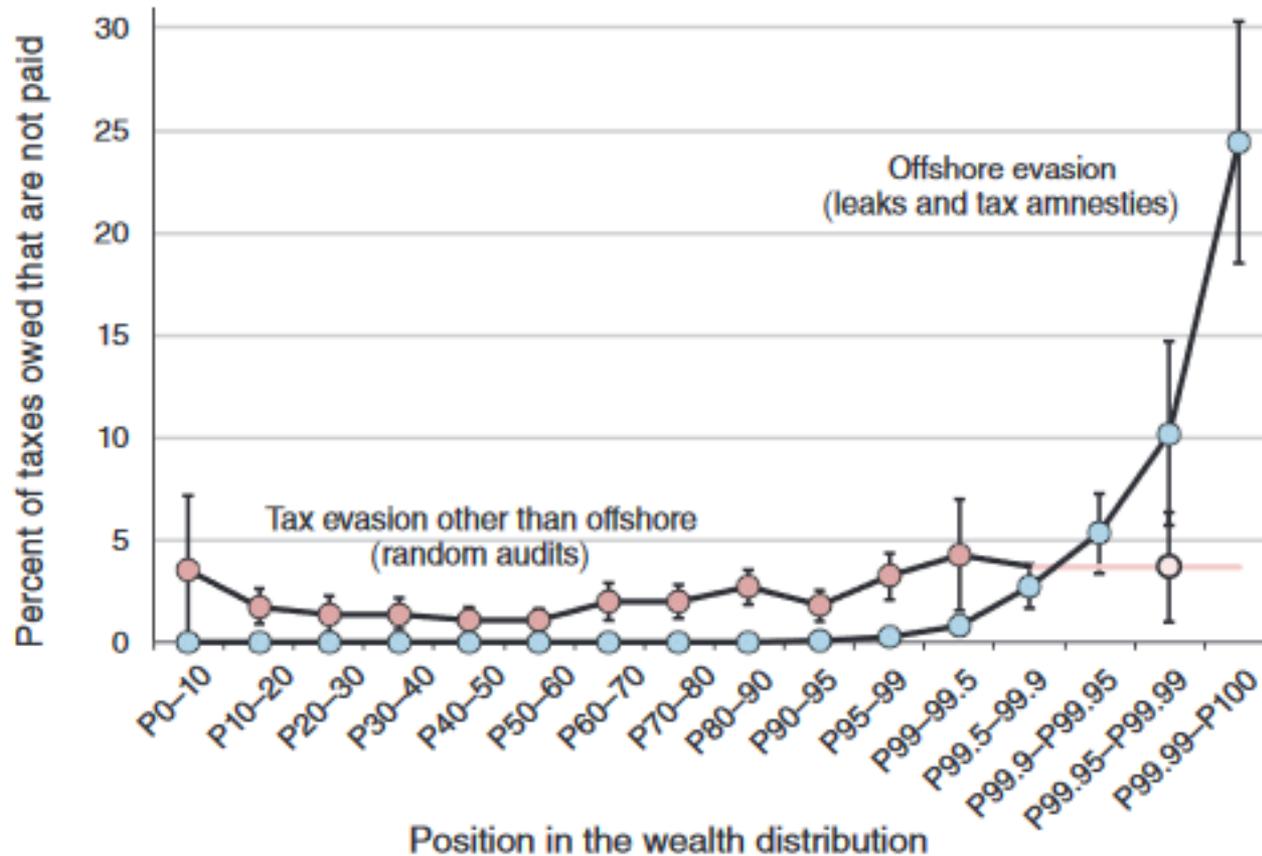
#4 Offshore tax evasion and inequality

Massive leaks from offshore financial institutions (HSBC Switzerland, “Swiss Leaks”; and Mossack Fonseca, the “Panama Papers”) matched to population-wide administrative income and wealth records in Norway, Sweden, and Denmark



“Tax Evasion and Inequality” Alstadsæter, Johannesen, and Zucman, American Economic Review 2019

#4 Offshore tax evasion and inequality



Sources: Alstadsæter, Johannesen, and Zucman, American Economic Review, 2019

#5 Multinationals: “beggar my neighbor” problem in tax enforcement policy

Internal confidential micro-data on the universe of transfer price corrections undertaken by the Danish tax authority



“Externalities in international tax enforcement: Theory and evidence” Tørslev, Wier and Zucman, NBER working paper 2020

#5 Multinationals: “beggar my neighbor” problem in tax enforcement policy

Danish transfer price corrections:

- 80% of transfer pricing cases involve countries with similar or higher tax rates than Denmark (not tax havens)
- Increase Danish tax revenue by €315 million
- Reduce tax payments abroad by €333 million



Reduce global tax bill of targeted multinationals by €19 million

#6 Detection of intertemporal income shifting

New data source with monthly payroll records for all Danish employees + tax reform reducing highest marginal tax rate from 63% to 56%

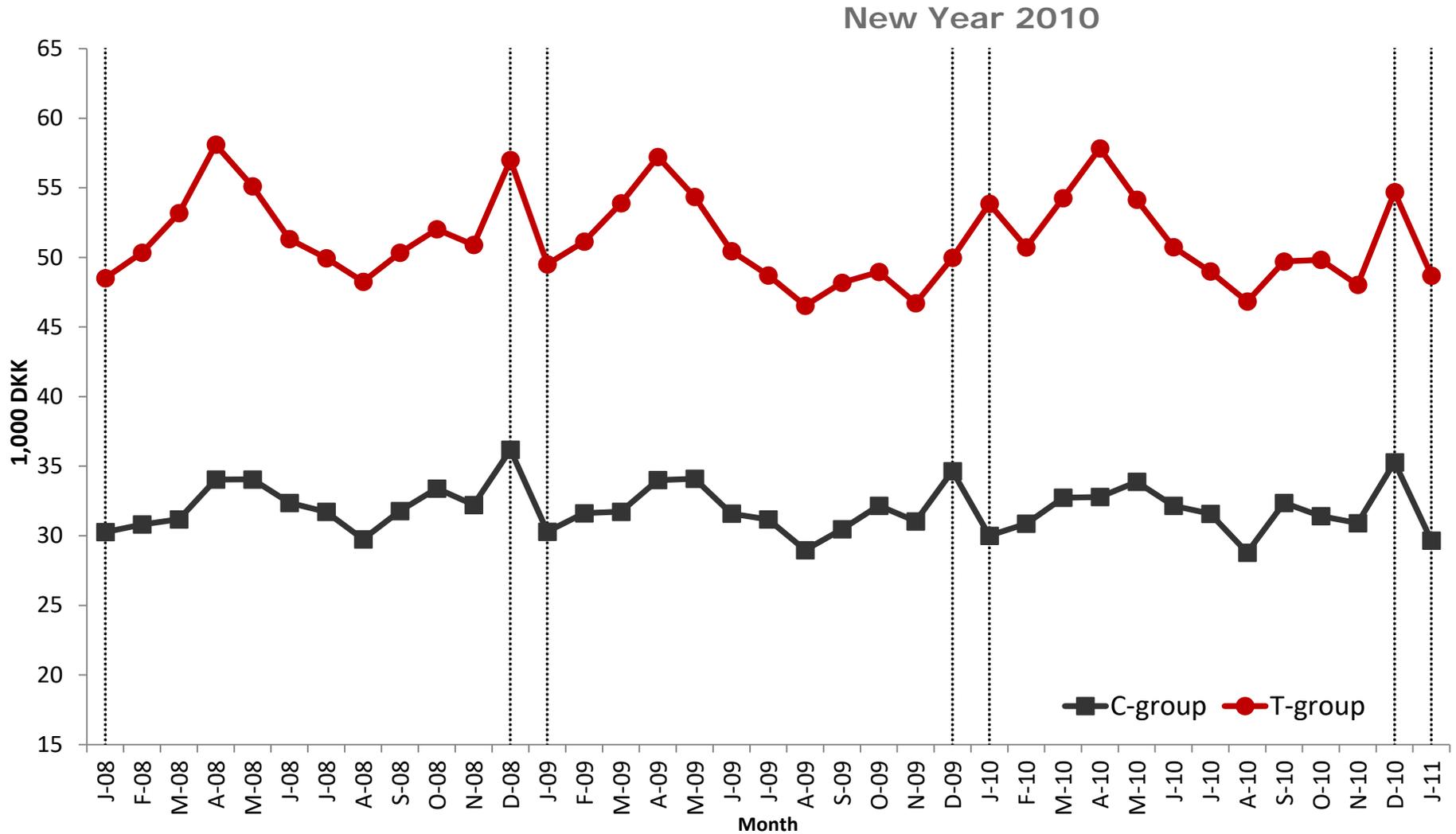
⇒ enable convincing identification of intertemporal shifting behavior



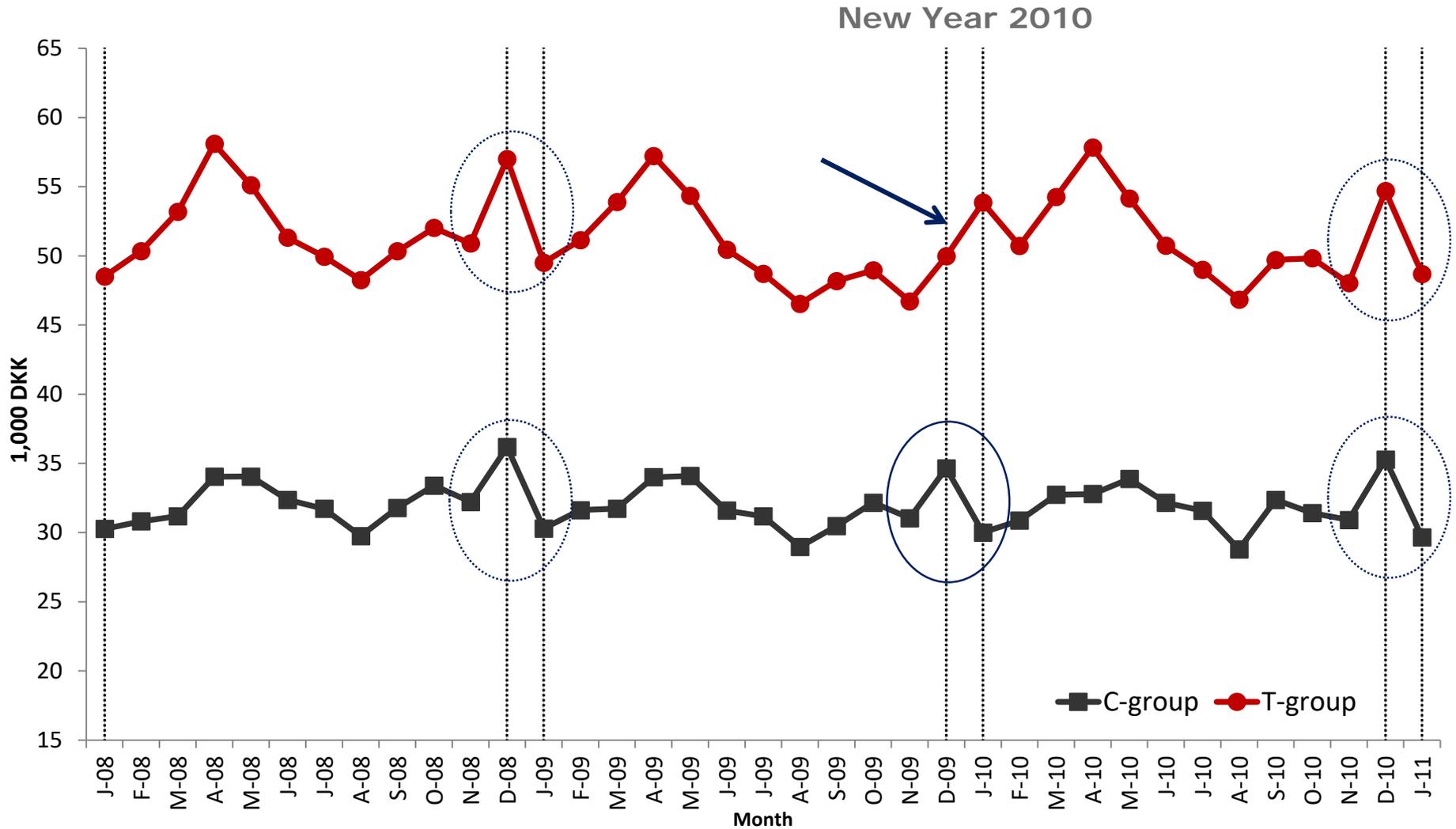
“Year-End Tax Planning of Top Management: Evidence from High-Frequency Payroll Data.” Kreiner, Leth-Petersen and Skov, Papers and Proceedings, American Economic Review, 2014

“Tax Reforms and Intertemporal Shifting of Wage Income: Evidence from Danish Monthly Payroll Records.” (with Søren Leth-Petersen and Peer Ebbesen Skov). American Economic Journal: Economic Policy, 2016

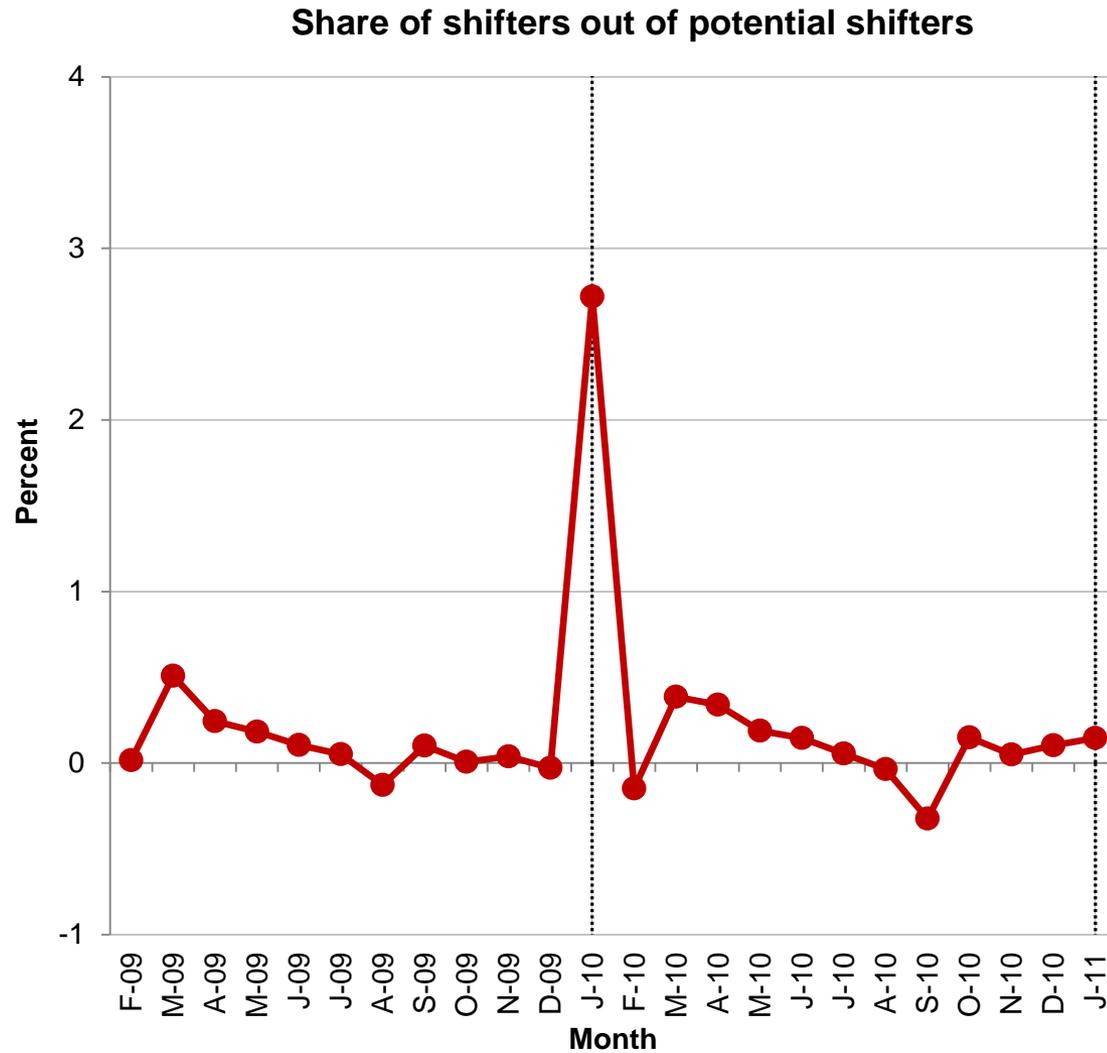
Intertemporal income shifting visible in raw data



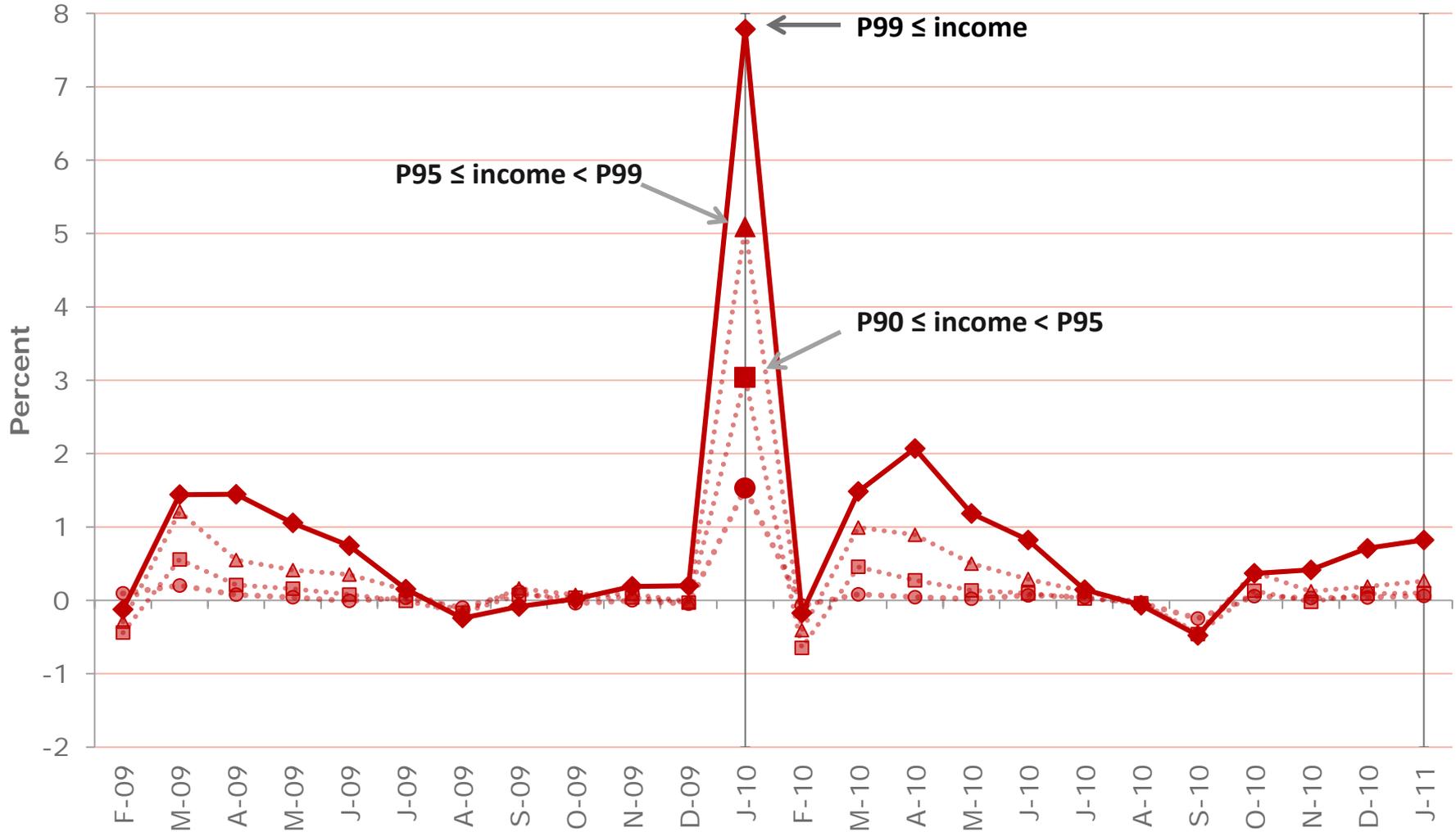
Intertemporal income shifting visible in raw data



Identifying taxpayers engaging in shifting activity



Shifting propensity increasing in the income level



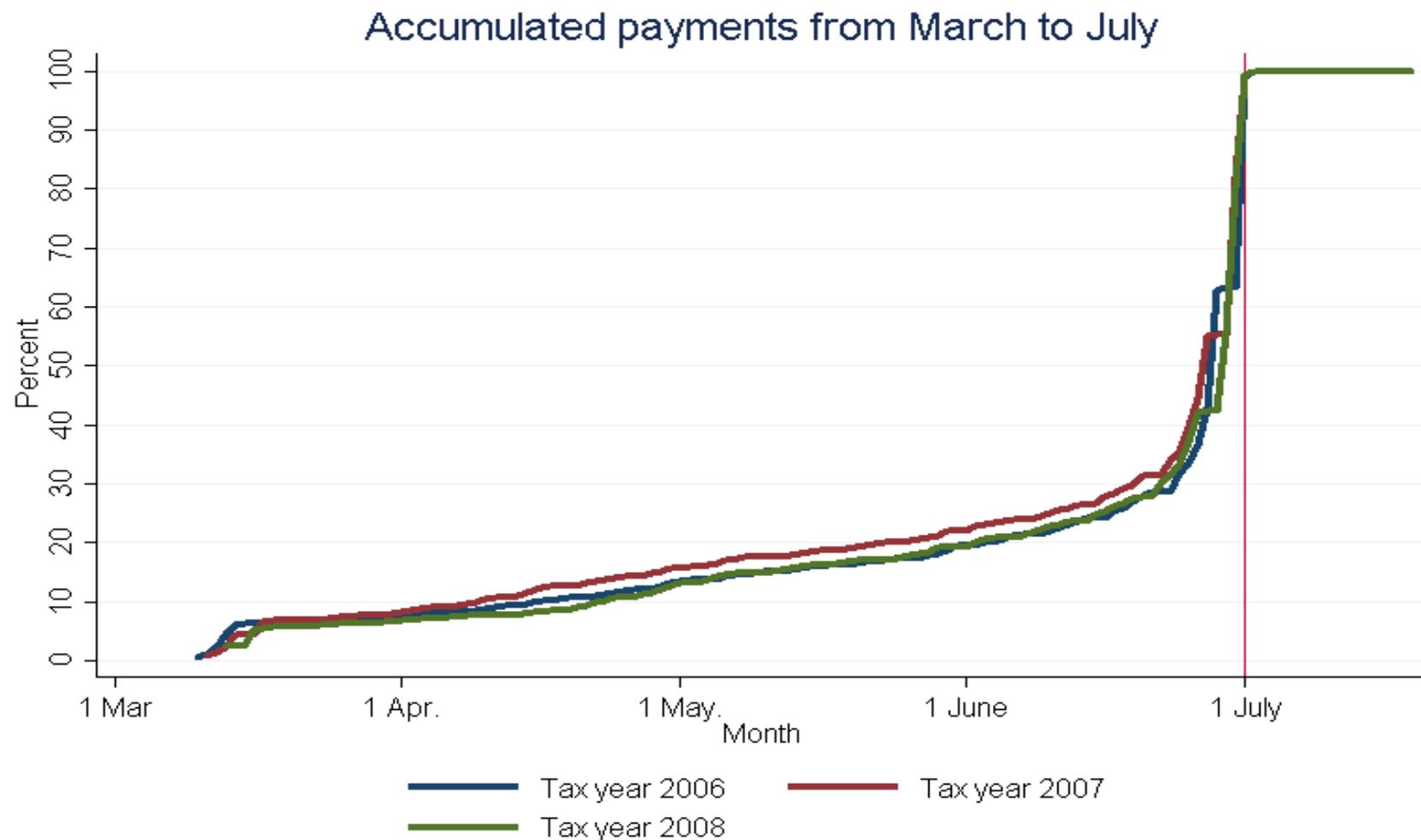
#7 Introduction of interest payments on owed taxes

2010 tax reform introduced an interest rate of 4.6% on owed taxes accruing from January 1st 2010 (until 2010 owed taxes paid before July 1st would avoid any interest payments)



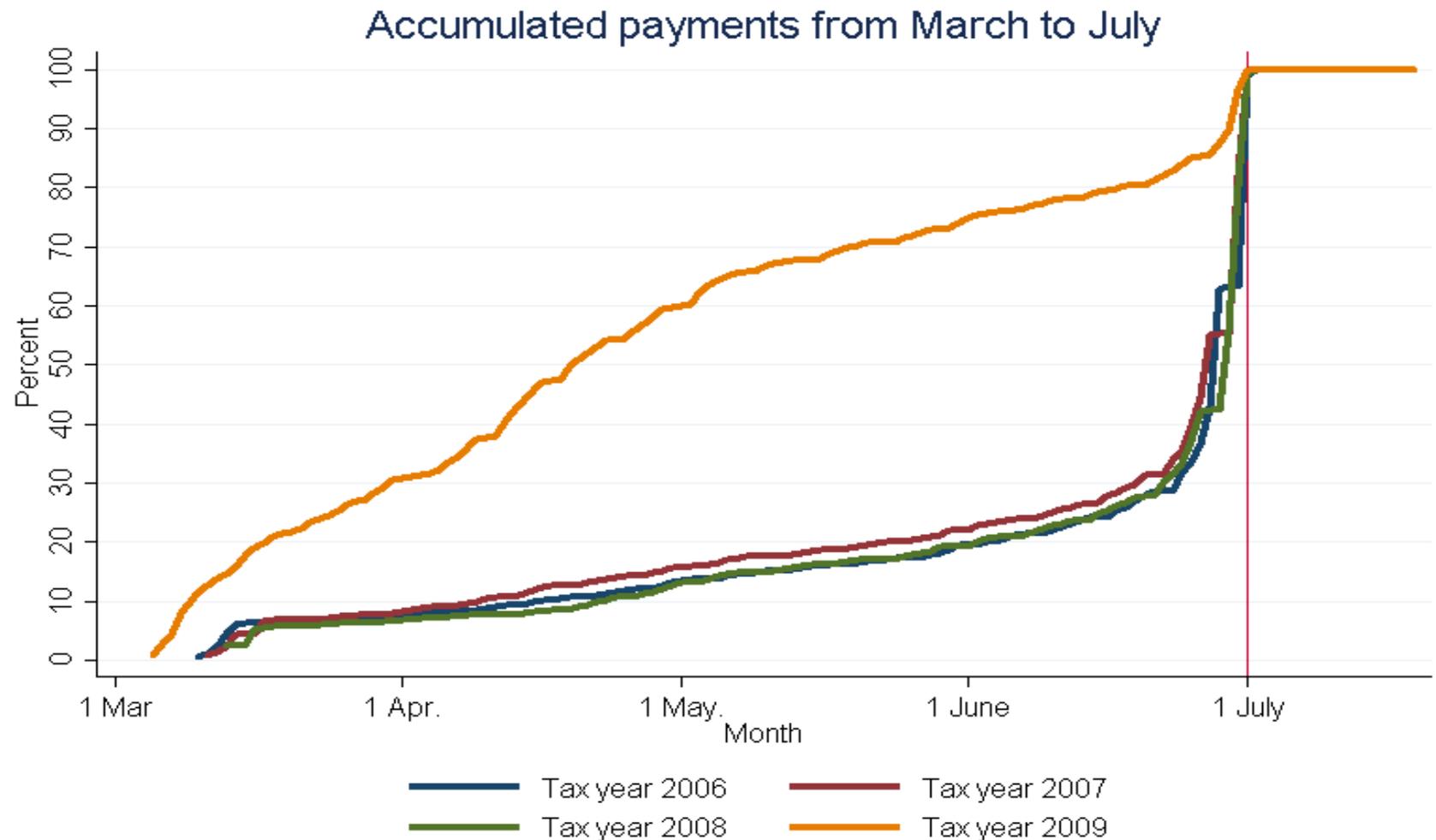
“Pay now or pay later: Danish Evidence on Owed Taxes and the Impact of Small Penalties.” Skov, Working paper, 2014

Pre-reform: bulk of owed amounts paid close to the July deadline



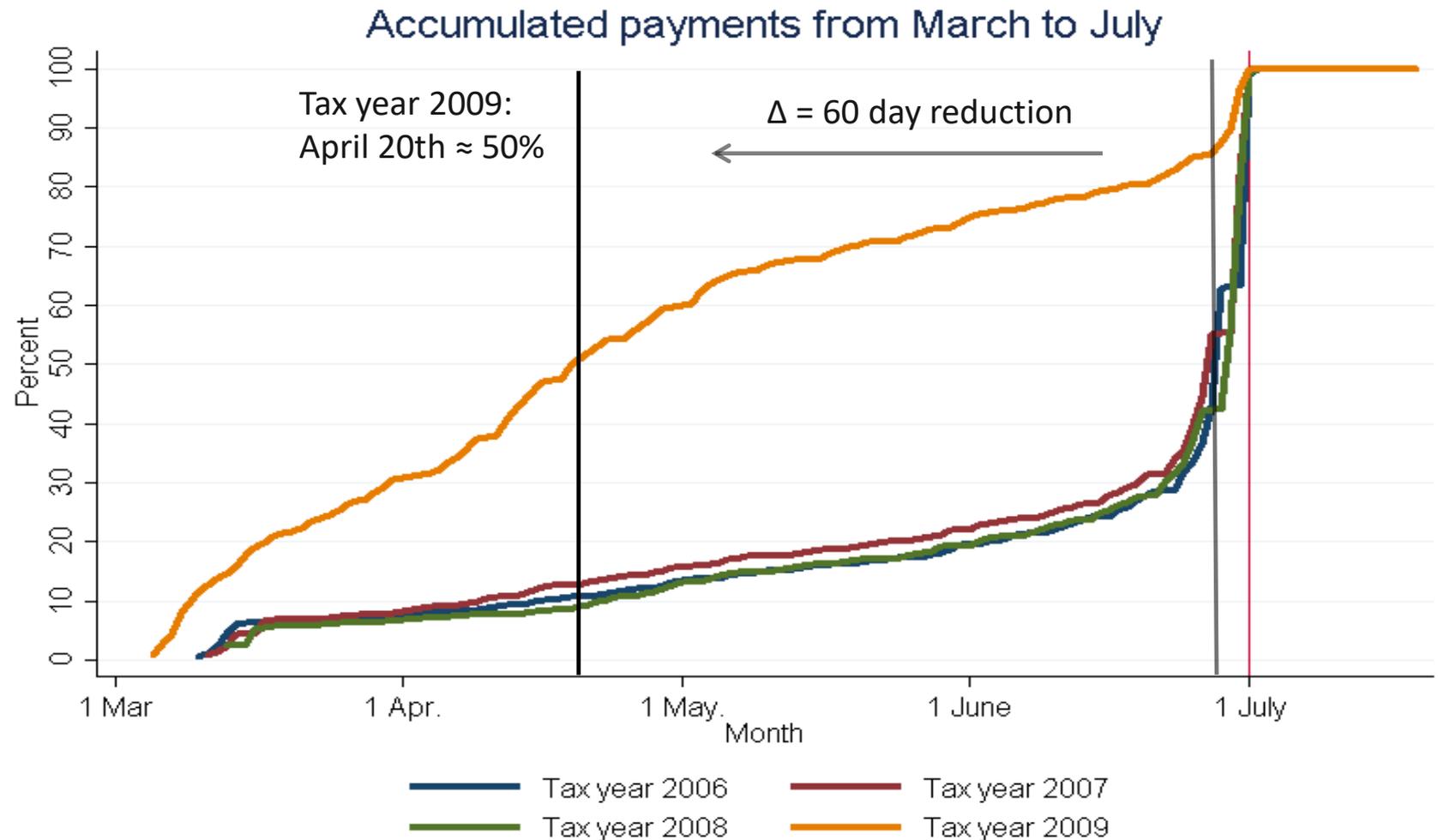
The figure shows the accumulated payments from the arrival of the pre-populated tax assesment in the beginning of March to end of the voluntary payment period, 1st July

Substantial change in payment profile after reform



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Substantial change in payment profile after reform



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Conclusions

3rd party reporting: very effective tax compliance instrument

Semi 3rd party reporting instruments: may further improve compliance

Optimal audit strategy: "follow the money"

Offshore tax evasion and income shifting: sizable and important for inequality

Multinational firms: High-tax countries tend to fight over the same pie instead of going after tax-heavens \Rightarrow need to coordinate

Owed taxes: Small interest rate incentive makes taxpayers significantly advance their payments

Other “random” thoughts

- Individuals: (i) Tax policy reform considerations should include tax compliance. (ii) Information reporting across countries. (iii) Internet trade.
- Self-employed: (i) Semi-third party reporting possible? (ii) Flag system?
- New technology: AI/machine learning
- Non-compliance of large firms: Difficult to measure statistically
- Multinational firms: increasing importance and complexity \Rightarrow enough resources and coordination?
- High focus on money going out of the tax agency