

Experimental Studies in Public Finance – The Example of Tax Evasion.

Nadja Dwenger

June 16, 2023



Motivation for Field Experiments

Knowing the determinants and consequences of tax evasion is key.

Tax evasion hard to measure as individuals purposely conceal it.

→ Standard data collection methods are unreliable.

Approach in **randomized field experiments**

- Randomly assign taxpayers into treatment and control groups.
- No baseline differences between treatment and control: only differ in the treatment received.
- Any difference in tax paying behavior is due to the treatment.

→ Obtain the **causal effect** of the treatment on tax compliance.



Randomized Field Experiments: Treatments

How does treatment in randomized field experiments look like?

Usually: **letter treatments** in cooperation with the tax administration.

- Threat-of-audit letters
- Reward letters
- ...

Alternatives:

- Messages via smart phone
- Simplifying forms and procedures
- ...

→ Message needs to target individual, randomly selected taxpayers
(not population overall)

My Own Work on Tax Compliance



In the following, four examples of my own experimental work on tax compliance:

Example 1: Field Experiment on Intrinsic Motivation

Example 2: Field Experiment Imposing Norms

Example 3: Field Experiment on Fairness

Example 4: Shaming of Delinquent Taxpayers

Example 1: Field Experiment on Intrinsic Motivation



Dwenger, Kleven, Rasul, Rincke (2016): Extrinsic and Intrinsic Motivations for Tax Compliance, *American Economic Journal: Economic Policy*.

Earlier literature stresses deterrence as **extrinsic** motive

- audits
- third-party reporting.

Research question:

What is the importance of **intrinsic** motivation?

- Do individuals also comply in the absence of deterrence?

→ Study the local church tax in Germany.



Three Unique Features

Feature 1: tax and charity

- Legal obligation to pay for church members.
- Overpayments are encouraged and represent donations.

Feature 2: true tax base is observable

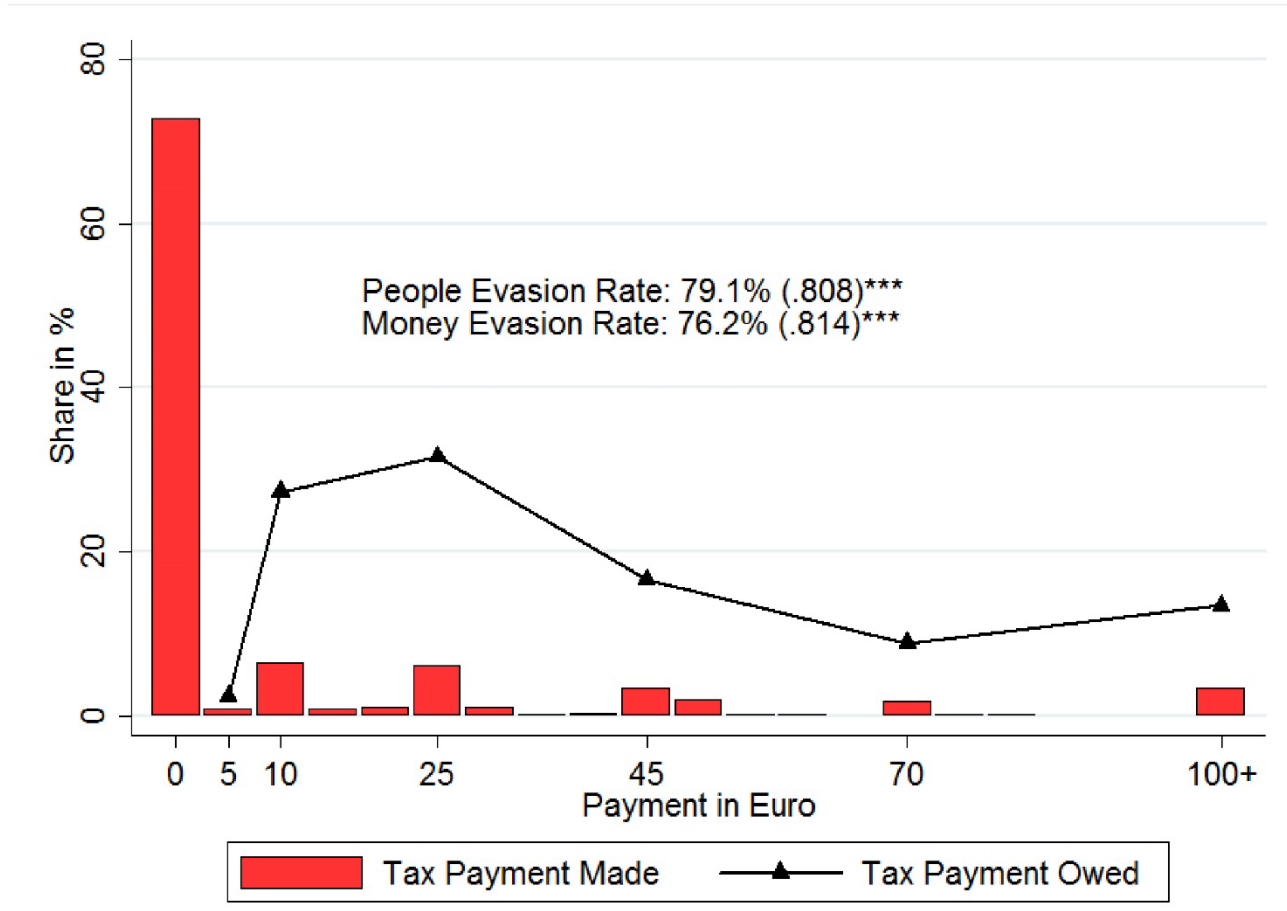
- True tax base for church = reported taxable income to government.
- Distinguish evaders, compliers & donors.

Feature 3: zero deterrence in the baseline

- Church never cross-checks reports against income tax returns.
 - Baseline compliance = social motivation (+ misperception).
-



Payment Made vs. Payment Owed





Intrinsic Motivation is Substantial (or Not)

Baseline behavior (with zero deterrence) reveals motivation:

- Baseline evaders: extrinsically motivated
- Baseline compliers: intrinsically motivated
- Baseline donors: strongly intrinsically motivated

A significant fraction of individuals comply:

- 20% of individuals make payment \geq true taxes owed
- 80% of individuals make payment $<$ true taxes owed (and most of them pay zero)



Manipulations of the official tax notification.

Individuals randomly assigned to **different treatment letters**:

- Tax simplification
- Zero deterrence
- Positive Deterrence (audit probabilities; audit probability notch)
- Social and monetary compliance rewards
- Social norms and moral appeal.

Randomization successful across all letter groups.

All treatments were truthfully implemented.

Recognition Works on the Intrinsically Motivated, Not on the Extrinsically Motivated



One set of treatments: social and monetary rewards.

Rewards create opposite effects on the two types:

- Positive effects on intrinsically motivated taxpayers.
- Negative effects on extrinsically motivated taxpayers.

Interpretation:

Rewarding compliers (rather than punishing evaders) highlights voluntary contribution aspect and downplays mandatory tax aspect.



Example 2: Field Experiment Imposing Norms

Boyer, Dwenger, Rincke (2016): Do norms on contribution behavior affect intrinsic motivation? Field-experimental evidence from Germany, *Journal of Public Economics*.

Randomized field experiment which turns a **voluntary** contribution into a **compulsory** tax.

Evidence of **intrinsic-extrinsic crowd out**

- strongly intrinsically motivated: don't respond at all
- weakly intrinsically motivated: crowding out dominates
- extrinsically motivated: increased compliance.



Example 3: Field Experiment on Fairness

Research question:

What is the impact of **fairness** considerations on tax compliance?

→ Property tax in Zanzibar.

Ongoing field work.

Example 4: Shaming of Delinquent Taxpayers



Dwenger and Treber (2022): Shaming for Tax Enforcement, *Management Science*.

Tax authorities in many countries have the power to publicize names of debtor taxpayers, including the Slovak Republic (OECD 2017).

Research question:

What is the impact of publicizing the names (shaming) of tax delinquents?

→ Tax debt in Slovenia.

Not a randomized field experiment but a **quasi-experiment**.



Source: If you don't pay these taxes, expect a troupe of drummers at your door, 2016, Wall Street Journal.

Shaming in Slovenia: Four Key Features



Feature 1: shaming is a new action

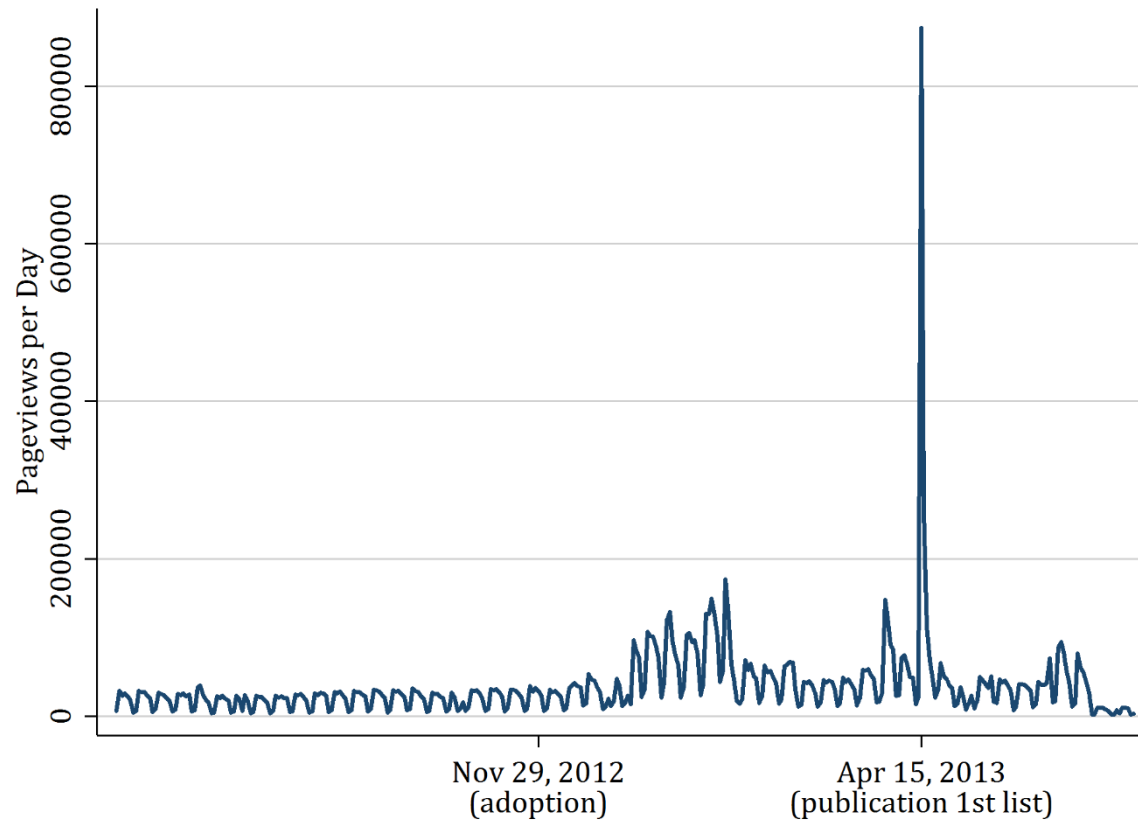
- Slovenian tax admin started to shame taxpayers in 2012
- only classical enforcement prior to shaming policy

Feature 2: shaming list is published on the internet

- individuals and corporations are shamed on the internet
- policy received wide public attention & is highly visible



Website of tax administration: page views





Shaming in Slovenia: Four Key Features

Feature 3: shaming policy focuses on tax delinquents

- shaming depends on level of tax debt
- tax debt important part of enforcement problem
- OECD: undisputed tax debt >10% of annual tax revenue
- Slovenia: tax debt = 5.3% of GDP
- behavioral response shows up in admin data

Feature 4: shaming policy was announced

- shaming starts 4 months after adoption of shaming law
 - between adoption and implementation: threat of shaming
 - timing allows to separate threat of shaming & actual shaming
-

Public Shaming in Slovenia



Shaming list published **monthly** on the website of the tax admin

Covers all taxpayers with **tax debt older than 90 days > € 5000**

Compiled at the 25th of each month; published at the 10th of the following month (no updating in between)

Unambiguously identifies taxpayers: name, address, tax id

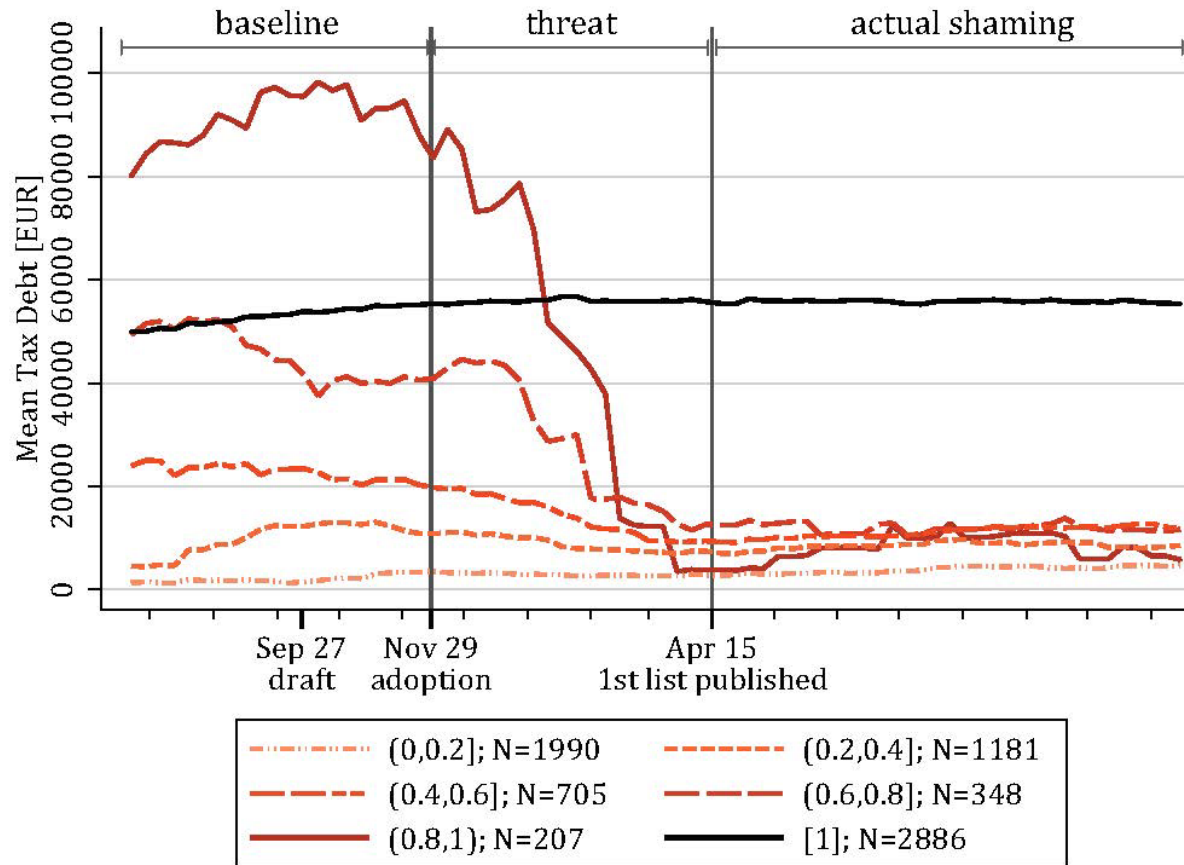
No individual tax debt amounts but tax debt amount categories

Shaming list provided as unarchived image (no search engines)

Taxpayers Reduce Tax Debt to Avoid Shaming



Tax debt by shaming probability: corporations



Total Effect of Shaming Threat on Tax Debt



Total effect of period of threat (4 months): -8.5%

One-time tax revenues of € 23 million collected among corporations due to shaming threat in Slovenia.



Actual Shaming has Negligible Effect

Small and short-lived effect of actual shaming.

- Additional reduction by 3.2%.
- Total effect of € 2.1 million.
- Fewer taxpayers affected.
- Shamed corporations perform worse in financial indicators.



Thank you for your attention!

nadja.dwenger@uni-hohenheim.de



Appendix



Payment Made vs. Payment Owed

	Full sample			
	Probability of evading (1)	Probability of donating (2)	Payment amount (3)	Probability of payment increase (4)
<i>Panel A. Deterrence</i>				
Positive audit probability versus zero audit probability				
Deterrence, pooled effect	-2.45 (0.971)	-0.438 (6.90)	9.73 (3.73)	33.61 (10.25)
Deterrence, individual effects				
Audit probability = 0.1	-3.29 (0.898)	5.38 (6.08)	9.52 (3.20)	29.76 (8.05)
Audit probability = 0.2	-3.11 (0.923)	17.61 (6.44)	11.48 (3.37)	26.81 (8.11)
Audit probability = 0.5	-2.99 (0.912)	18.27 (6.31)	10.38 (3.30)	24.17 (8.01)
Average outcome in comparison group	78.04%	8.93%	€11.63	9.42%
Observations	12,692	12,692	12,692	12,692

Source: Dwenger et al. (2016), p.224

Recognition Works on the Intrinsically Motivated, Not on the Extrinsically Motivated



Payment Made vs. Payment Owed

	Full sample			
	Probability of evading (1)	Probability of donating (2)	Payment amount (3)	Probability of payment increase (4)
<i>Panel B. Compliance rewards</i>				
Reward versus simplification				
Compliance rewards, pooled effect	0.259 (0.821)	-0.040 (5.23)	1.24 (2.86)	-9.48 (6.21)
Compliance rewards, individual effects				
Social reward	0.185 (1.03)	2.97 (6.68)	0.245 (3.51)	-11.60 (7.71)
Small private reward	0.450 (1.03)	-4.59 (6.74)	-1.15 (3.56)	-10.88 (7.74)
Large private reward	1.02 (1.00)	-3.30 (6.60)	2.12 (3.98)	-15.30 (7.63)
Social and private reward combined	-0.618 (1.04)	4.75 (6.57)	3.74 (3.73)	-0.15 (7.89)
Average outcome in comparison group	77.30%	9.75%	€11.65	10.92%

Source: Dwenger et al. (2016), p.224