Voluntary Disclosure of Evaded Taxes – Increasing Revenues, or Increasing Incentives to Evade?

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Journal of Public Economics 151, 110-125, 2017

Motivation

Offshore tax evasion

- Around 8% of global financial wealth of households is held in tax havens (Zucman, 2013)
- In absolute numbers: almost US-$ 6 trillion
- IRS estimates that personal income tax evasion via offshore accounts costs about $70 billion annually (Gravelle, 2009)

How can governments react?

1. Negotiate information sharing agreements with tax havens
2. Induce individuals to declare offshore assets

   $\longrightarrow$ voluntary disclosure programs

Voluntary Disclosure

What is voluntary disclosure?

Rules

- Prerequisite: report *all* foreign asset holdings
- Individual must not yet be under investigation for tax evasion
- Retroactive taxation of income on these assets
- No or reduced penalty

Prevalence

- 33 out of 34 OECD countries have some form of voluntary disclosure
- In 29 of these countries codified in general law
  Alternatively: time-limited programmes

Literature

Large literature on individual tax evasion:

- Theory surveyed by Sandmo (2005), empirics by Alm (2012)
- But: No discussion of voluntary disclosure

Tax amnesties:

- In contrast to voluntary disclosure, amnesties usually
  - are short-term programmes ($\sim$ 3 months)
  - do not fine evaders
  - allow partial disclosures
  - allow disclosures by evaders under investigation
- Stella (1991) models how a tax amnesty affects the government's choice of audit rate
- Alm and Beck (1993) show in time-series analysis that amnesties are unlikely to generate additional revenue
- Andreoni (1991): amnesty similar to social insurance, allows those with shock to consumption to eliminate some risk

This Paper...

Theoretical model of tax evasion and voluntary disclosure

- How does the existence of a voluntary disclosure mechanism affect tax evasion? **(A:** $\uparrow$**)**
- Under which conditions should the government offer voluntary disclosure? **(A: Depends on administrative cost)**
- How should it fine disclosers? **(A: Depends on admin. cost)**

Survey among tax authorities

- Do tax administrations save administrative costs by offering voluntary disclosure? **(A: Yes)**

Empirical analysis

- Does the introduction of voluntary disclosure increase tax evasion? **(A: Yes)**

Outline

1 Introduction

2 Model

3 Survey on Administrative Costs

4 Empirical Evidence on Tax Evasion

5 Conclusion

Model Structure

Individuals...

- maximize their expected utility
- have an individual-specific moral cost of tax evasion, α_i

  $\longrightarrow$ differ in their willingness to evade taxes
- are risk-neutral

  $\longrightarrow$ evade all tax, or none
- have compliance costs c^c when preparing a voluntary disclosure
- face ex-ante uncertainty about detection probabilities
- decide whether to evade taxes, and later whether to voluntarily disclose

Model Structure

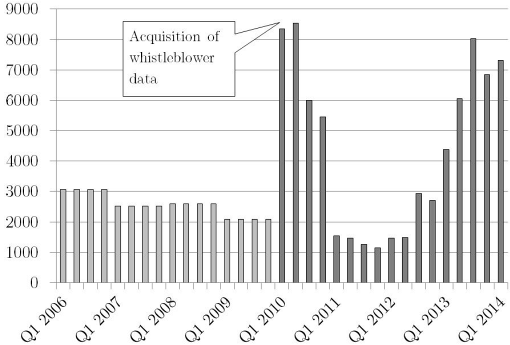
The government...

- taxes income at rate t and imposes fine at rate F on evaded taxes
- can offer a voluntary disclosure program
- sets voluntary disclosure fine (f) to maximize revenues
- has administrative costs $c^a > c^c$ when detecting tax evasion in audit, but no administrative costs after voluntary disclosure
- cannot influence the detection probability

Detection Probabilities

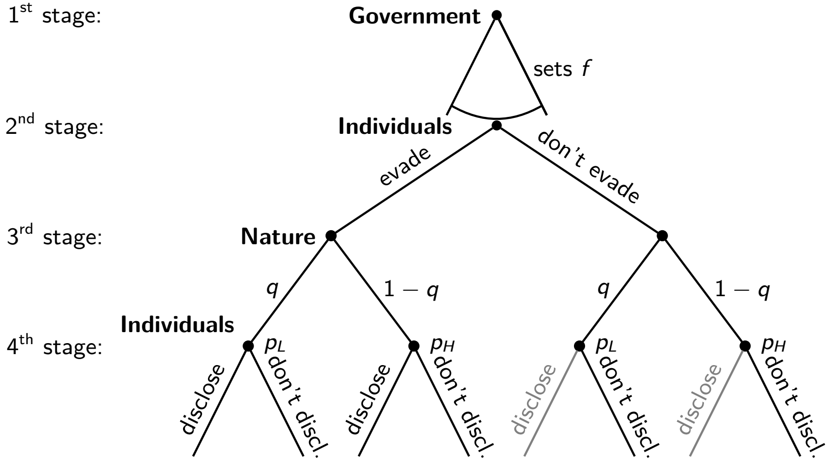
- Voluntary disclosures vary with detection probability

Voluntary Disclosures in Germany per Quarter



- In model: With probability q $(1 - q)$, a high (low) detection probability p_H (p_L) occurs
- All players know these probabilities

Game Tree



5th stage: Audits are carried out, taxes and fines are paid.

Benchmark: Model without Voluntary Disclosure

- Model without stage 4
- Individuals base evasion decision on expected detection probability $\bar{p} = qp_H + (1-q)p_L$
- Compare expected utilities

$$EU^0(\text{Don't evade}) = y - ty$$
$$EU^0(\text{Evade}) = y - \bar{p}Fty - \alpha_i$$

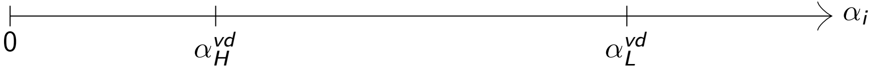
- Evasion optimal for individuals with $\alpha_i < \alpha^0$, with
$$\alpha^0 = ty\left(1 - \bar{p}F\right).$$

Disclosure Decision

- Compare EU(Evade, Disclose) and EU(Evade, Don't Disclose)

$\longrightarrow$ voluntarily disclose if moral cost α_i sufficiently high

- More individuals disclose if voluntary disclosure fine f lower or compliance cost c^c lower



If evaded: Don't discl. if p_L Don't discl. if p_H	If evaded: Don't discl. if p_L Disclose if p_H	If evaded: Disclose if p_L Disclose if p_H

$\left(\alpha_H^{vd} = ty(f - p_H F) + c^c\right)$ $\left(\alpha_L^{vd} = ty(f - p_L F) + c^c\right)$

Evasion Decision

Individuals with moral costs $\alpha_i \in [0, \alpha_H^{vd})$

- never disclose
- EU(Evade, Don't disclose) $>$ EU(Don't evade, Don't discl.)
- **evade all tax**

Individuals with moral costs $\alpha_i \in [\alpha_H^{vd}, \alpha_L^{vd})$

- if they evaded, they will disclose if p_H occurs
- **evasion is optimal if** $\alpha_i < \alpha^t$, with

$$\alpha^t = ty\frac{1 - qf - (1-q)p_L F}{1-q} - \frac{q}{1-q}c^c.$$

Individuals with moral costs $\alpha_i \in [\alpha_L^{vd}, A]$

- always disclose if they evaded
- **never evade taxes**

Equilibrium Behavior of Individuals

With voluntary disclosure program:

$0 \quad \alpha_H^{vd} \quad \alpha^t \quad \rightarrow \alpha_i$

$[0, \alpha_H^{vd}]$	$[\alpha_H^{vd}, \alpha^t]$	$[\alpha^t, \infty)$
Evade	Evade	Don't evade
Don't discl. if p_L	Don't discl. if p_L	Don't discl. if p_L
Don't discl. if p_H	Disclose if p_H	Don't discl. if p_H

Without voluntary disclosure program:

$0 \quad \alpha^0 \quad \rightarrow \alpha_i$

$[0, \alpha^0]$	$[\alpha^0, \infty)$
Evade	Don't evade

Equilibrium – Government

- Government sets voluntary disclosure fine f to maximize expected tax revenues net of administrative costs
- Net tax revenues $T = \int_0^{\alpha_H^{vd}} \bar{p}\,(Fty - c^a)\,dG(\alpha_i) + \int_{\alpha_H^{vd}}^{\alpha^t} [qfty + (1-q)p_L(Fty - c^a)]\,dG(\alpha_i) + \int_{\alpha^t}^{A} ty\ dG(\alpha_i)$
- Government fully anticipates individuals' decisions
- Optimal fine

$$f^* = 1 + (1-q)(p_H - p_L)F - \frac{(1-q)(p_H - p_L)c^a + c^c}{2ty}$$

- Trades off
  - Revenue from fine
  - Number of voluntary disclosures ($\longrightarrow$ administrative costs)
  - Effect on tax evasion decision

Effects of Voluntary Disclosure

Proposition 1: Tax Evasion

The introduction of a voluntary disclosure programme with a fine set optimally in the presence of administrative costs increases the number of individuals who evade taxes.

- Voluntary disclosure allows individuals to better differentiate their actions based on the detection probability

Proposition 2: Tax Revenues

If there are administrative costs when assessing evaded taxes, the existence of a voluntary disclosure programme raises expected net tax revenues.

- Without administrative costs, voluntary disclosure would lower expected tax revenues

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Administrative Costs

Survey among German tax authorities

- 60% noted that the work time necessary to assess taxes is significantly lower after a voluntary disclosure compared to a situation where the evasion has already been detected
- Most estimated a work time decrease above 80%
- Very high variation in estimates for the hours of work necessary to assess taxes after a voluntary disclosure

  (average: 6.5 days)
- Tax authorities with relatively high work time estimates more likely to cite substantial administrative cost savings

Magnitude of Administrative Costs

Back-of-the envelope calculations

- German tax inspectors cost about € 50 per hour
- Implied average administrative costs after a voluntary disclosure: € 2,620
- Implied average administrative costs without a voluntary disclosure: € 22,400
- Estimated average revenue after a voluntary disclosure: € 38,000-51,000

  (As Germany does not impose fines after a voluntary disclosure, this roughly equals the amount of evaded tax)

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Introduction of Voluntary Disclosure in U.S.

Background:

- U.S. introduced voluntary disclosure program in 2009
- First voluntary disclosure program since the 1950s
- Program ended in last quarter of 2009, renewed in 2011
- Requirements
  - Report all offshore income since 2003
  - Pay full tax, interest, and penalty of 25% of unpaid taxes
  - Additional penalty of 20-27.5% of value of foreign assets

Research Design:

- Compare how tax evasion evolved after 2009 in U.S. and in other countries
- ***Synthetic control method*** (Abadie et al., 2010)
  - Extends difference-in-difference framework
  - Creates a control region ("synthetic U.S.") from a weighted average of other countries
  - Weights are chosen to make the synthetic U.S. as similar to the U.S. before 2009 as possible

Data

How to measure tax evasion?

- Deposits in ***offshore banking centers***
  - Confidential data by Bank for International Settlements
  - Quarterly data for residents from different countries
  - Offshore banking centers: Bahamas, Bermuda, Cayman Islands, Isle of Man, Jersey, Macao, Panama, Singapore,...

	2006	2009	2012
Assets held abroad (total)	$ 3,205bn	$ 4,193bn	$ 4,132bn
Assets in offshore centers	$ 1,298bn	$ 1,634bn	$ 1,263bn

Table: Foreign asset holdings of U.S. residents

Selection of Synthetic Control

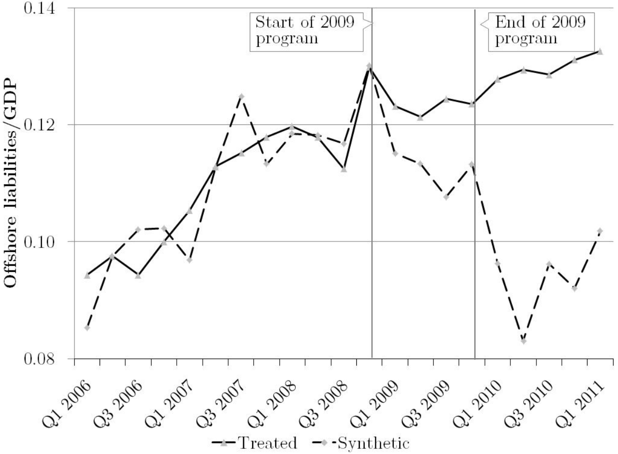
Procedure

- Control created from weighted average of other countries
- Weights chosen to minimize the difference between the U.S. and the control
- Matching on offshore deposits before the intervention and control variables (per capita GDP, GDP growth, capital tax rate)

Result

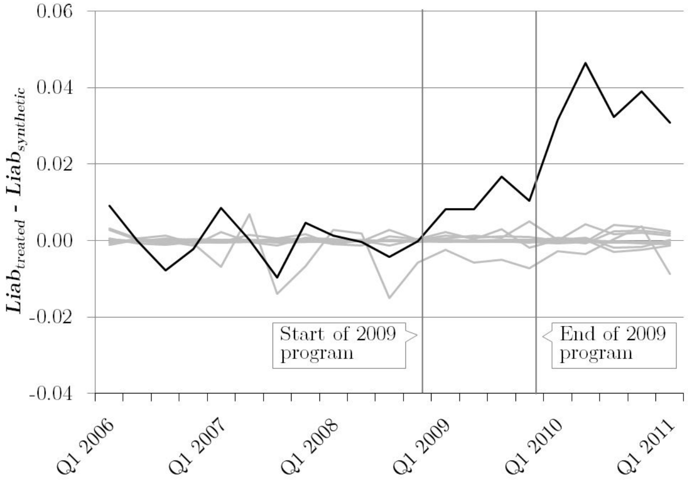
- U.S. is matched best by a combination of Canada (77.2%), Austria (10.2%), Luxembourg (6.8%) and Sweden (5.8%)

Results



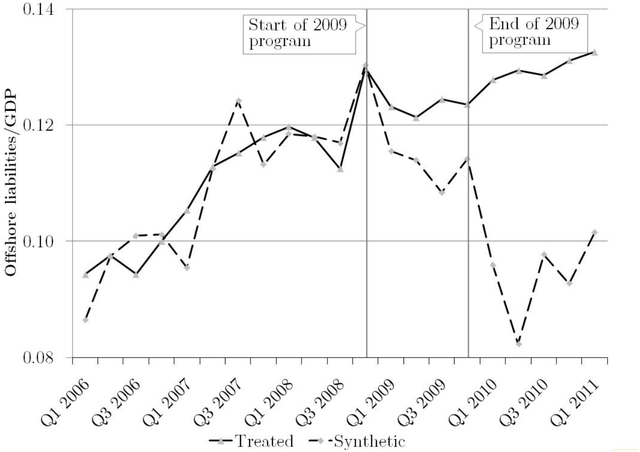
Countries in synthetic control: Canada (77.2%), Austria (10.2%), Luxembourg (6.8%) and Sweden (5.8%)

Placebo Test



Robustness Test: Different Matching Criteria

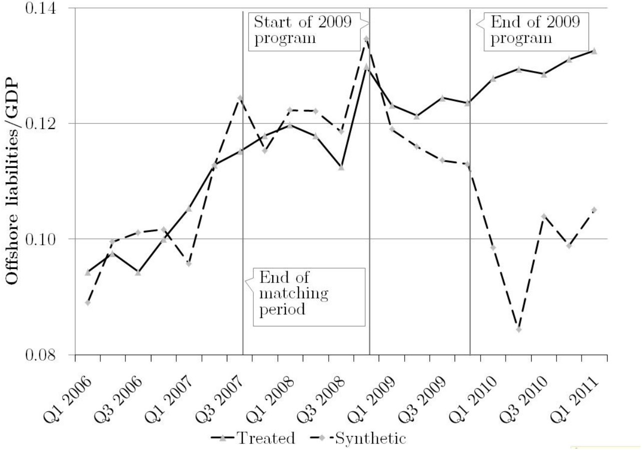
Matching only on prior values of offshore deposits:



Countries in synthetic control: Denmark (79.5%), Sweden (8.2%), Luxembourg (7.2%) and Austria (5.1%)

Robustness Test: Different Matching Period

Matching only on first half of preintervention period



Countries in synthetic control: Canada (93%), Luxembourg (7%)

Conclusion

- Possibility of voluntary disclosure increases tax evasion, as it enables individuals to react to changes in the detection probability.
- Confirmed in empirical analysis considering the introduction of voluntary disclosure in the U.S.
- In the presence of administrative costs, the existence of voluntary disclosure increases tax revenues (net of administrative cost).
- When assessing evaded taxes, administrative costs are significantly lower after a voluntary disclosure.