

*The effects of
public disclosure and peer
monitoring on tax compliance*

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Main idea:

- Tax authorities have access to the tax declarations of citizens, but they cannot monitor their real wealth without costly auditing.
- In contrast, individuals can observe the wealth of their peers, but they do not have access to their tax declarations.
- The mismatch can be lifted if tax declarations are made public so that peers can function as monitors, as is the case in some Nordic countries.
- Acknowledging real-life political constraints regarding the obligatory nature of tax disclosures, we test an alternative scheme where tax declaration disclosure is voluntary.
- We argue that real-life local networks can function as guards against evasive taxpayers.

This presentation

- Motivation
 - Empirical evidence
 - Literature
- Experimental Setting
 - PGG-baseline
 - Our mechanism
 - Additional treatments (2x2 design)
- Results
 - Pooled countries
 - By country
- Conclusion

Motivation

- Countries allowing public disclosure

The entire country has 4,740,063 taxpayers. Of these, 694,250 (14.6%) pay no tax. The average income is ISK 333,554.

Bærum has the highest average income in the country, and Trysil has the lowest.

The highest average wealth is found in Frøya municipality, and the lowest in Verran municipality. The cohort with the largest average fortune was born in 1923.

Hele landet

Hele landet har **4 740 063** skatteyttere. Av disse betaler **694 250** (14,6 %) ingen skatt. Snittinntekten er **333 554** kr.

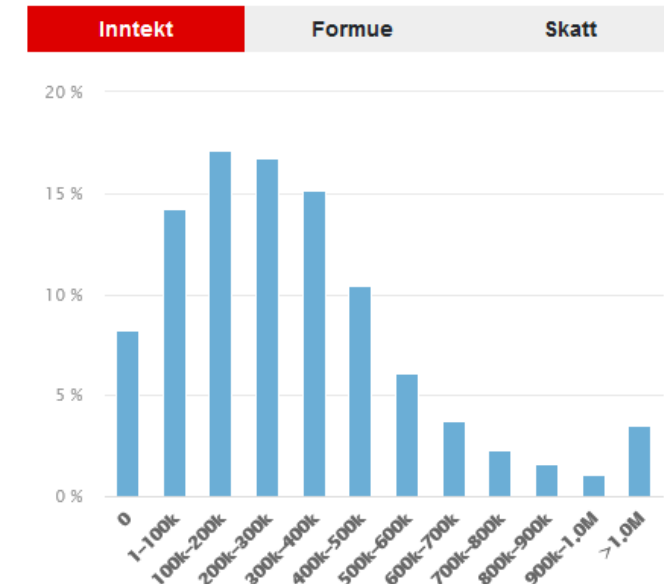
Bærum har den høyeste snittinntekten i landet, og **Trysil** har den laveste.

Den høyeste snittformuen finner vi i **Frøya** kommune, og den laveste i **Verran** kommune. Årskullet med størst snittformue er født i **1923**.

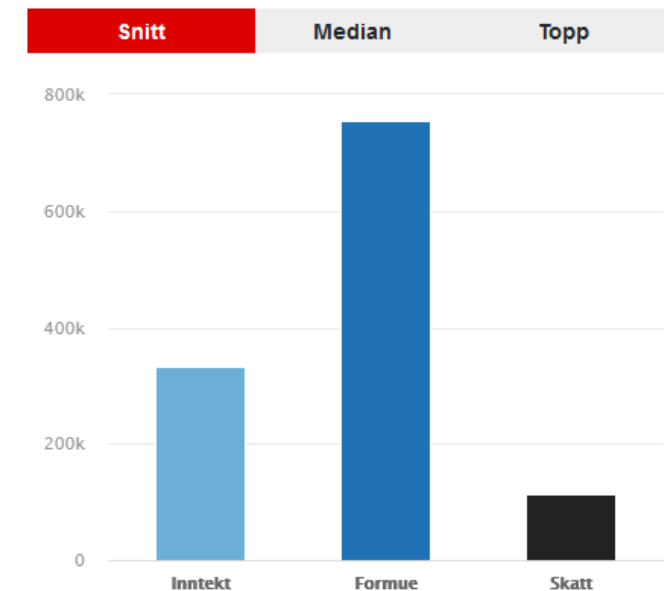
Topplisten

	Navn	Inntekt	Formue	Skatt
1.	TROND MOHN Bergen, f. 1943	598 527 943	4 463 208 712	227 821 709
2.	CHRISTIAN GRUNER SUNDT Oslo, f. 1977	405 685 960	23 652 384	60 756 682
3.	IVAR ERIK TOLLEFSEN Bærum, f. 1961	238 660 700	9 201 140 496	154 928 356
4.	GUSTAV MAGNAR WITZØE Frøya, f. 1993	182 958 644	20 915 323 825	235 526 503
5.	BJØRN RUNE GJELSTEN Oslo, f. 1956	155 388 937	1 494 232 568	60 792 428
5.	WENCHE WIKAN LIGÅRD Os, f. 1964	130 052 644	198 154 448	42 988 175
7.	LARS NILSEN Drammen, f. 1968	118 735 313	366 878 380	40 926 483
8.	HERBJØRN HANSSON Sandefjord, f. 1948	115 731 104	42 057 767	50 556 078
9.	JOHAN BERNHARD UGLAND Grimstad, f. 1953	111 782 227	950 683 161	43 956 839
10.	MAGNUS REITAN Oslo, f. 1975	110 533 459	4 891 240 730	77 253 211
11.	OLE GUNNAR SOLSKJÆR Kristiansund, f. 1973	108 097 552	70 522 018	2 120 253
12.	TOR ØIVIND FJELD	106 445 161	2 630 823 031	55 505 869

Fordeling



Nøkkeltall



Motivation

ACCESSIBILITY (Perez-Truglia 2020)

Norway: Online (2001)

Finland: Visit tax agency (journalists); Online 10K richest individuals

Sweden: not-anonymous phone, Ratsit website with fee

Iceland: 2 weeks access not easy

Others: online information of subset of the population (e.g. public employess)

Verotiedot ==Tax Information

Henkilöt Yritykset

SUODATA TULOKSIA ==Filter Results

Suodata tuloksia joko maakunnan tai nimen mukaan. ==Filter results by either province or name

Valitse maakunta ==Select a province

Kaikki Ahvenanmaa -Åland Etelä-Karjala Etelä-Pohjanmaa Etelä-Savo Kainuu Kanta-Häme Keski-Pohjanmaa Keski-Suomi Kymenlaakso Lappi Pirkanmaa Pohjanmaa Pohjois-Karjala Pohjois-Pohjanmaa Pohjois-Savo Päijät-Häme Satakunta Uusimaa Varsinais-Suomi

Hae nimellä ==Search by name

HAE

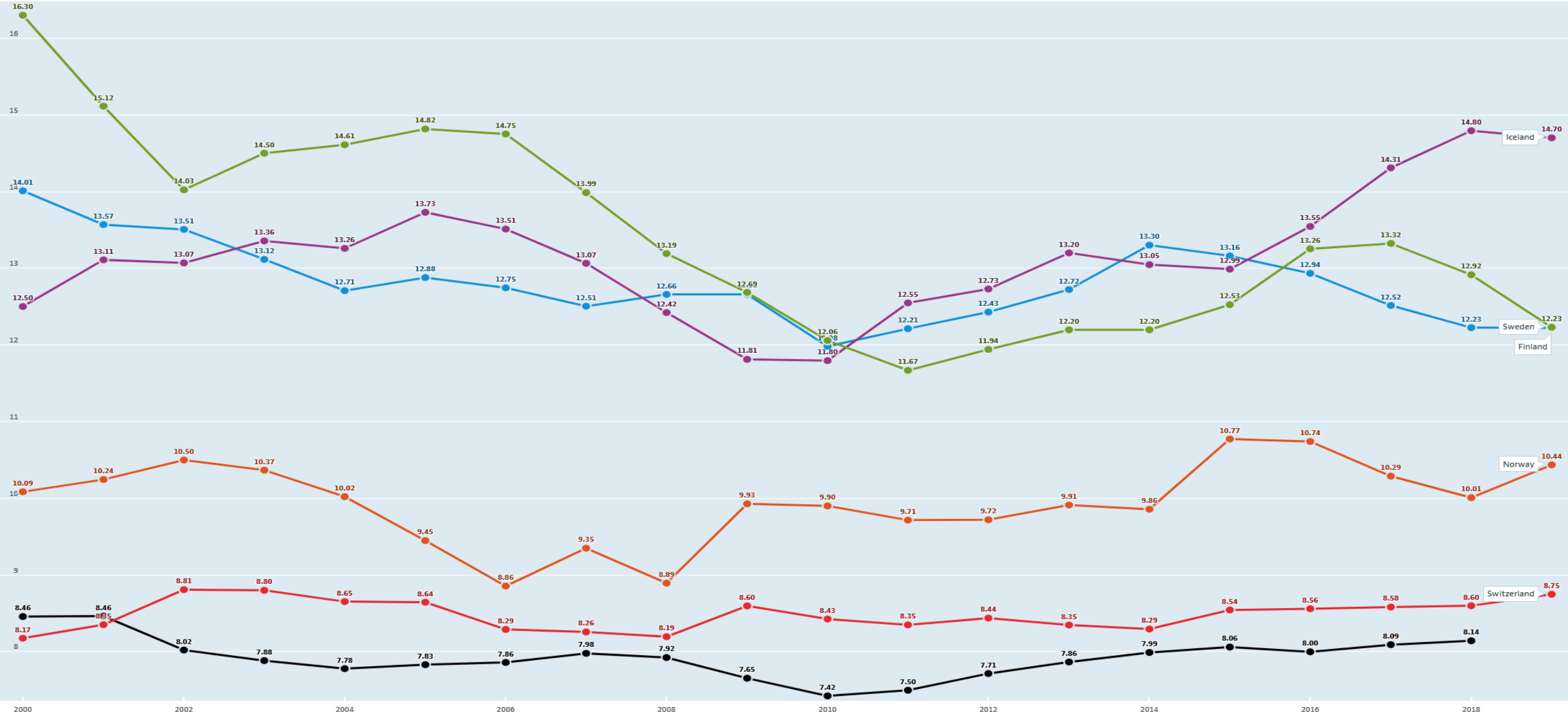
KAIKKI

Nimi ==name	Earnings Ansiotulo	Base income Pääomatulo	Total Tulot yhteensä	Province Maakunta
Hukkanen Hannu Tapani	1 203 827	26 662 597	27 866 424	Varsinais-Suomi
Kuntze Tomi Mikael	1 200 946	26 660 397	27 861 343	Varsinais-Suomi
Riihimäki Kimmo Sakari	37 373	24 529 672	24 567 045	Pirkanmaa
Wahlroos Björn Arne Christer	609 789	18 083 292	18 693 081	Varsinais-Suomi
Terentjeff Jorma Kalevi	48 214	16 200 307	16 248 521	Pohjois-Pohjanmaa

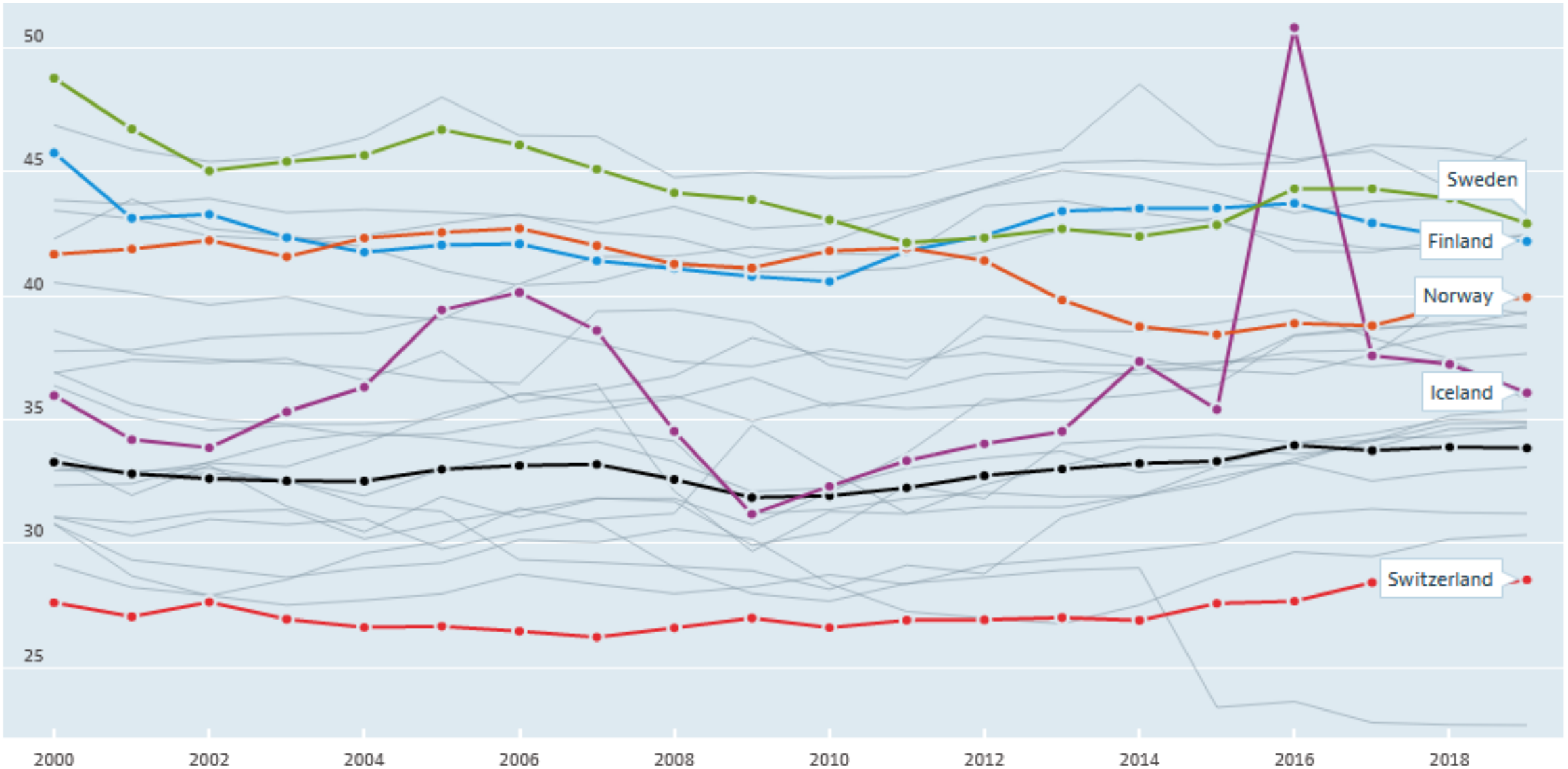
Tax on Personal Income (% of GDP), source OCDE



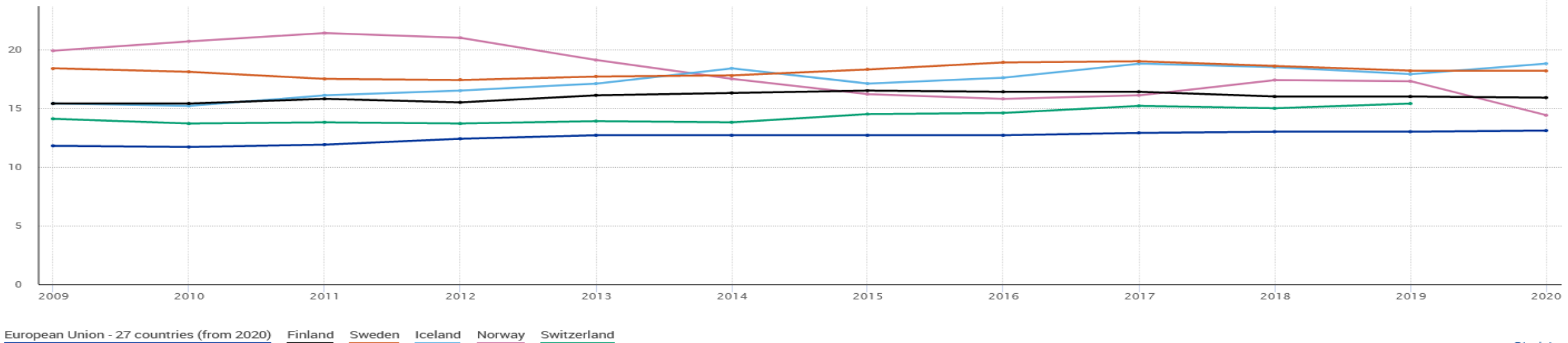
Tax on personal income Total, % of GDP, 2000 - 2019



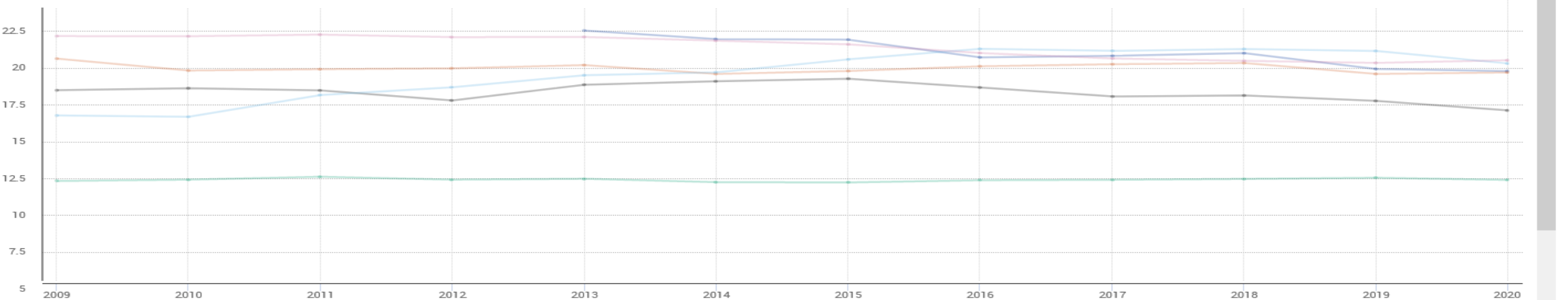
Tax Revenue (% of GDP), source OCDE



Taxes on income, wealth, etc. , EUROSTAT



Taxes rates, EUROSTAT



Literature (Public compulsory disclosure)

- **Bo et al., 2015:** found a slight increase (about 3%) in reported business income after 2002 in communities that previously had limited disclosure.
- **Hasegawa et al., 2013:** analyzed disclosure of individual and corporate tax information in Japan and found that the existence of a “disclosure threshold” encouraged some underreporting of income.
- **Perez-Truglia, 2020:** In Norway, that the higher transparency increased the gap in happiness between richer and poorer individuals by 29%, and it increased the life satisfaction gap by 21%.
- Experimental studies:
 - Positive (shame) effect: **Laury and Wallace, 2005; Coricelli et al., 2010; Casal and Mittone, 2016; Andreoni, Petrie, 2004; Alm et al., 2017**
 - Negative (mimicry): **Fortin et al. (2007), Lefebvre et al. (2011)**

Literature (Whistleblowing/Peer Monitoring)

- **Armin et al. 2018:** tax collections significantly increased after the introduction of the whistleblowing mechanism in Israel in February 2013
- **Mechtenberg et al. 2017:** increase in both truthful and fraudulent whistleblowing reports with an uncertain effect on tax collection
- **Masclet et al., 2013:** they observed that allowing for whistleblowing opportunities reduces tax evasion.
- **Masclet et al., 2019 :** Information on other taxpayers' compliance rates together with the opportunity to report tax evaders have a positive and very significant effect on the level of income reported.
- **Bazart et al., 2019:** under whistleblowing scheme (i) the targeting of evaders is improved, (ii) the monetary amount of tax evasion is smaller, and (iii) the tax levy is greater.

Literature (Voluntary disclosure)

- **Langemayr, 2017:** voluntary disclosure mechanisms increase (theoretically) the incentive to evade taxes, they nevertheless increase tax revenues net of administrative costs. Empirically shows the importance of administrative costs and the increase of tax evasion.
- **Kreitmair, 2015:** (i) Individuals tend to disclose their contribution information when given the option. (ii) Voluntarily revealed contributions are significantly higher than contributions under mandated disclosure. (iii) Voluntary disclosure may be helpful in attenuating the boomerang effect.
- **Dubois et al., 2018:** (i) the voluntary disclosure has a positive effect, measured by lower average extraction levels. (ii) If the disclosure mechanism allows self-declaring, there is a large tendency to lie leading to an increase in extraction.

Our Mechanism

- A Public Goods setting measuring cooperation
- Allows for voluntary public disclosure of tax declarations
- Allows for whistleblowing towards any actor (even co-operators)
- Allows for peer monitoring of others' actions (cooperating/revealing but not whistleblowing)
- Introduces (dis)incentives for misreporting even by free riders

EXPERIMENTAL SETTING

Public Goods Game (baseline)

Public Goods Game 6 players

Tax-framed

Endowment: 120 tokens

Binary decision: Declare or No

Tax rate: 50% to public good

Partners Matching (with photos)

Random Tax Auditing (1/6)

30 rounds

STAGE 1: Tax Declaration

Periode

1 von 1

Verbleibende Zeit [sec]: 7

ETAPA 1

Tu ingreso en este período es: **120**
Por favor, elige entre las dos opciones siguientes:

Haz clic en este botón si quieres **DECLARAR** tu ingreso.

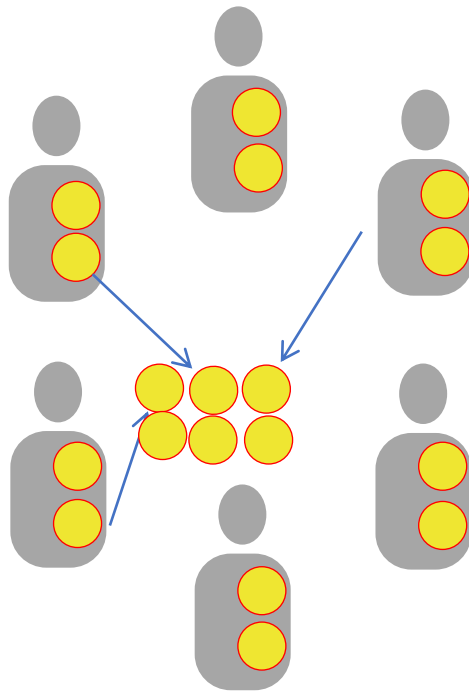
DECLARAR

Haz clic en este botón si quieres **NO DECLARAR** tu ingreso.

NO DECLARAR

● =60 Tokens

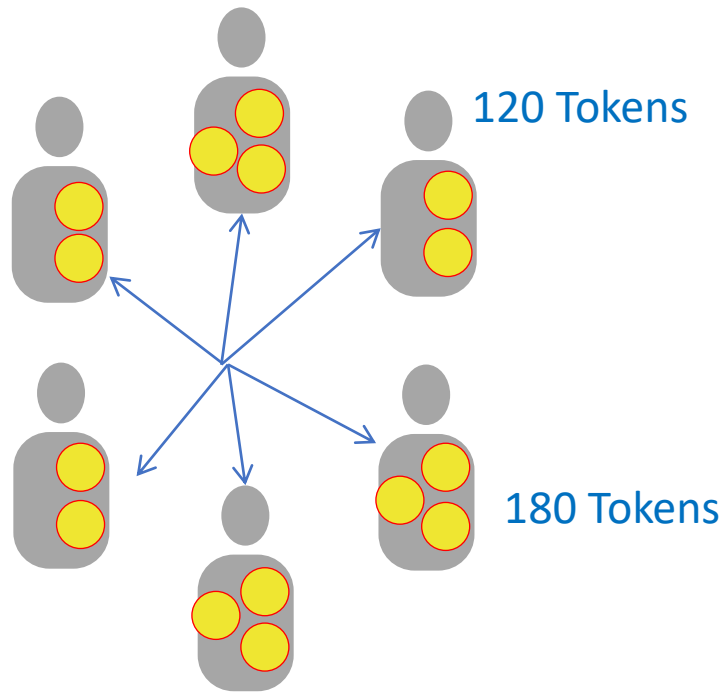
Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income
50% Taxation
PGG multiplication

● =60 Tokens

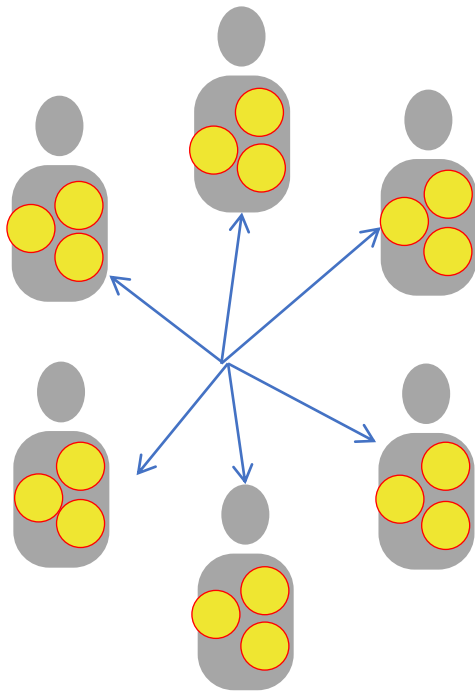
Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income
50% Taxation
PGG multiplication
PGG redistribution

● =60 Tokens

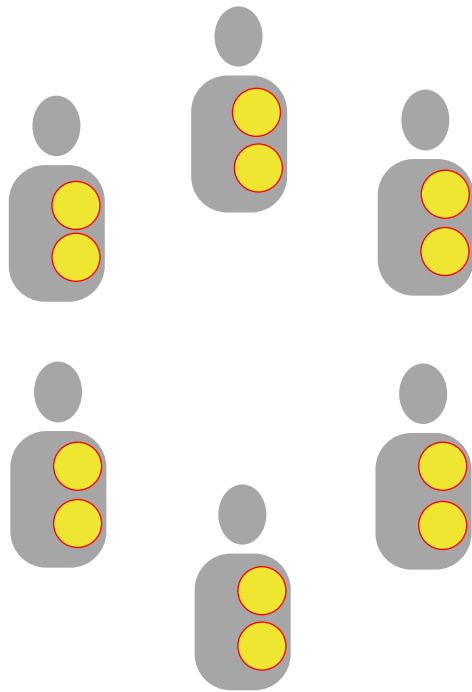
Binary Tax-Framed PGG



Full Cooperation
Everyone 180

● =60 Tokens

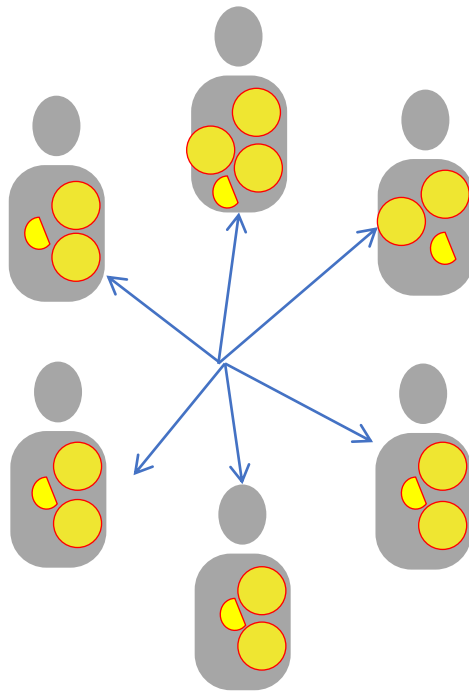
Binary Tax-Framed PGG



Full Evasion
Everyone 120

● =60 Tokens

Binary Tax-Framed PGG



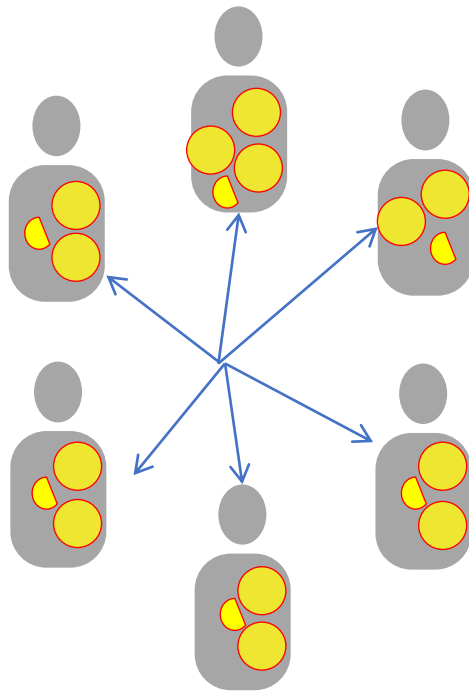
5 Cooperators 160 tokens

1 Evader 220

Tempting, no???

● =60 Tokens

Binary Tax-Framed PGG



5 Cooperators 160 tokens

1 Evader 20

Yes*6

STAGE 2: Tax Auditing

Periode

1 von 1

Verbleibende Zeit [sec]: 6

ETAPA 2

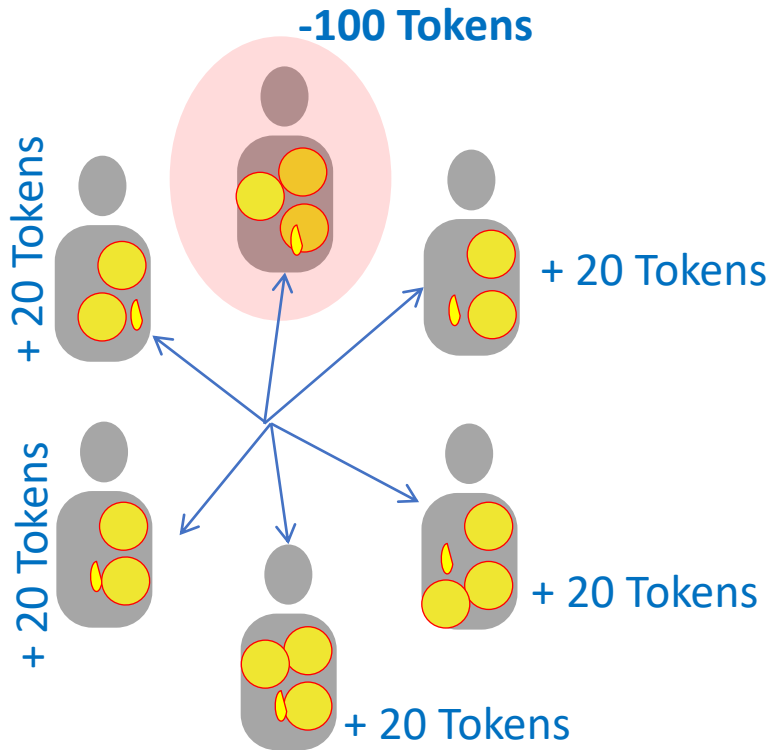
Los resultados de auditoría

Tú **NO** fuiste (al azar) **SELECCIONADO** para ser auditado.
El miembro auditado ha elegido **DECLARAR** su renta en la Etapa 1.
Este miembro **NO PAGA** una **multa de impuestos** (de 100 Fichas)
NINGUNO de los restantes 5 miembros (incluido tú) **recibe 20 Fichas**.

OK

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income

50% Taxation

Stage 2: Auditing Feedback

Audit Prob= $1/6$

Prob success= $3/6$

One Random Audit in the Group

If Dec_0 : Penalty 100 tokens

Redistributed to other 5

No revelation of who was audited

STAGE 3: Feed back

Periode

1 von 1

Verbleibende Zeit [sec]: 0



Miembro 1



Miembro 4



Miembro 2



Miembro 5



Miembro 3



Miembro 6

Tu decisión de declaración: **DECLARAR**

Número de declarantes (incluido tú): 1

Fichas ganadas de la Etapa 1: 120

Fichas ganadas de la Etapa de Auditoría: 0

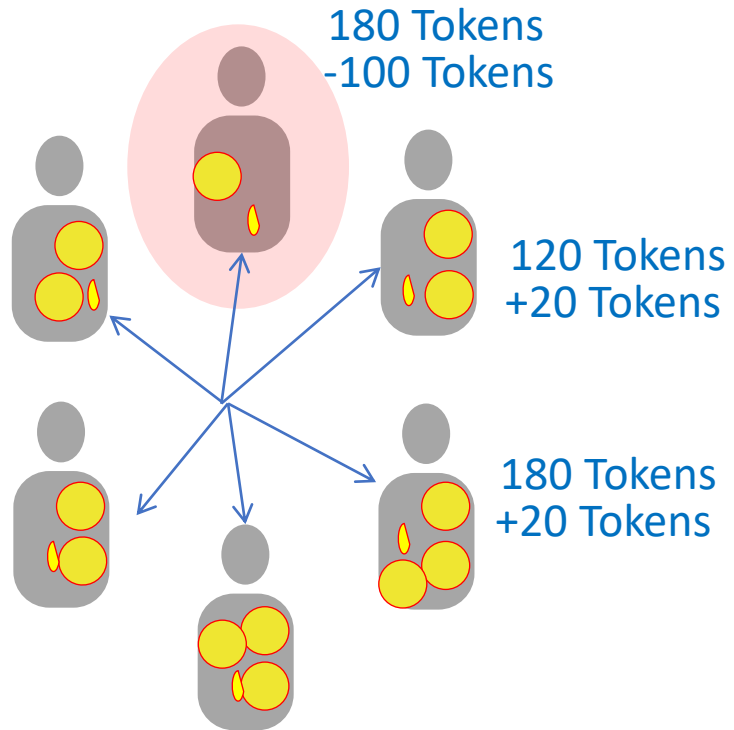
Fichas ganadas en esta ronda: 120

Fichas ganadas de todas las rondas: 120

OK

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income

50% Taxation

Stage 2: Auditing

Stage 3: Feedback:

Earnings from Stage 1 (PGG)

Earnings from Stage 2 (Audit)

Number of Declarants

Photo but no decisions:

	Pocket	Tax	Public Good	Pay fee	Compensation
	120	$-60*(1-c_i)$	$+(\sum c_i * 60 * 2)/6$	$-100(1-c_i)/6$	$(5+c_i)/6 * 20 * (6 - \sum c_i - (1-c_i)) / (6 - (1-c_i))$
c=1	120	-60	$+\sum c_i * 20$	0	$+20*(6-\sum c_i)/6$
c=0	120	-0	$+\sum c_i * 20$	-100/6	$+(5/6)*20(5-\sum c_i/5)$

	i_coop						
$\sum_{-i} c_i$		5	4	3	2	1	0
Payoff	1	180	163.3333	146.6667	130	113.3333	96.66667
Payoff	0	203.3333	186.6667	170	153.3333	136.6667	103.3333

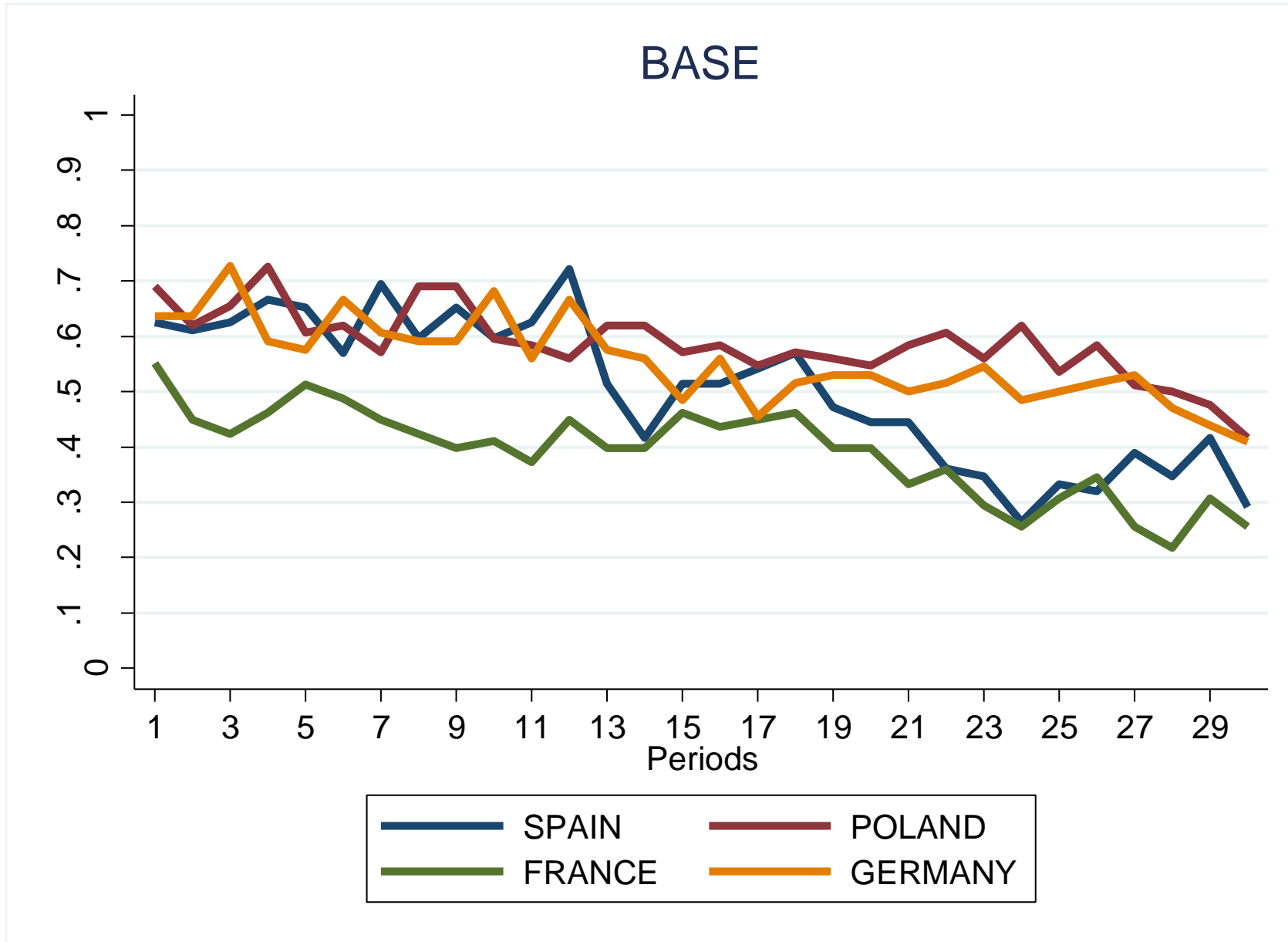
NE: Free Ride

0.75€

0.66€

0.36€

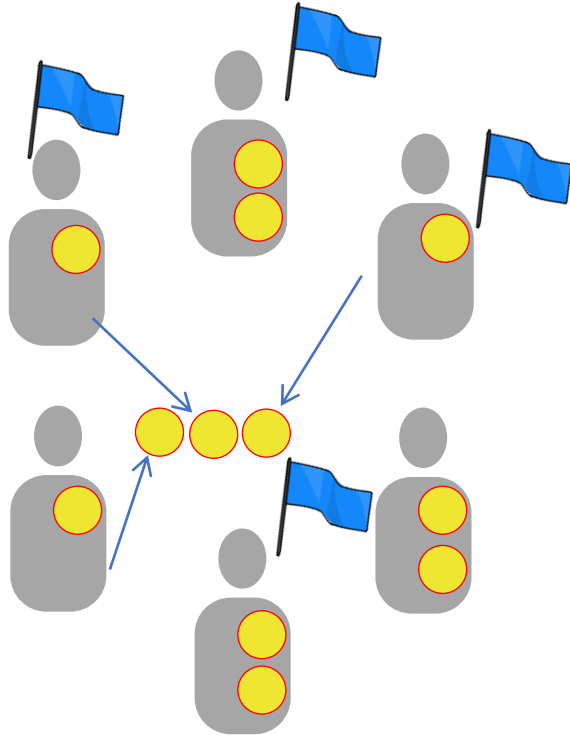
Baseline Treatment, n=300



OUR MECHANISM
Voluntary Disclosure
and
Whistleblowing

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income
50% Taxation
PG multiplication
PG redistribution

Stage 2: Reveal / Not Reveal Decision

Período

1 de 1

Tiempo [sec]: 0

Per favor, llegar a una decisión!

ETAPA 2

Has decidido **DECLARAR 120** fichas.
Por favor, elige entre las dos opciones siguientes:

Haz clic en este botón si quieres **REVELAR** tu decisión (**DECLARAR 120**) a los demás miembros de tu grupo.

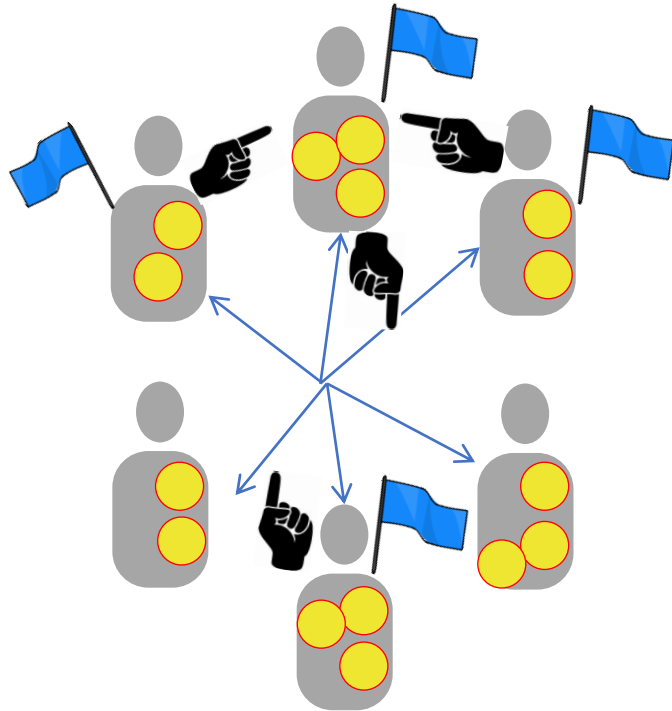
REVELAR

Haz clic en este botón si quieres **NO REVELAR** tu decisión a los demás miembros de tu grupo.

NO REVELAR

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income
50% Taxation

Stage 2: Reveal / Not Reveal Decision

Stage 3: Whistleblowing

Período

1 de 1

Tiempo [sec]: 0

Tu has decidido **DECLARAR 120** y **REVELAR** que te da el derecho de **DENUNCIAR** hasta un miembro del grupo

NO DENUNCIAR NADIE/SIGUIENTE



Ingreso 120
NO REVELAR

YA EN LA LISTA DE AUDITORIA



Ingreso 120
Declarar 120

DENUNCIAR



Ingreso 120
Declarar 0

DENUNCIAR



Ingreso 120
Declarar 120

DENUNCIAR



Ingreso 120
NO REVELAR

YA EN LA LISTA DE AUDITORIA

STAGE 4: Tax Auditing

Período

1 de 1

Tiempo [sec]: 0

ETAPA 4

Cuántos miembros son susceptibles de auditoría en esta ronda y con qué probabilidad

3 (incluido tú) miembros están **EXENTOS**.

3 miembros son **SUSCEPTIBLES**: 2 por **NO REVELAR** y 1 por **RECIBIR EL MAYOR NUMERO DE DENUNCIAS**

La probabilidad de auditoría de cada miembro susceptible es $1/3 = 33\%$

Resultados de la auditoría

Tú estás **EXENTO** de auditoría .

El miembro auditado ha elegido **DECLARAR 0** en la Etapa 1.

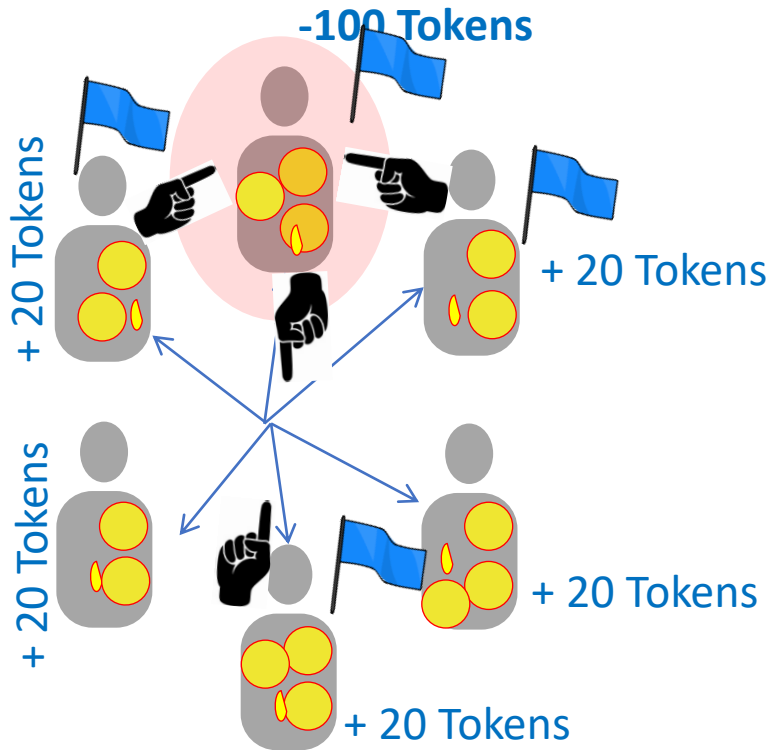
Este miembro **PAGA** una **multa de impuestos** (de 100 Fichas)

CADA UNO de los restantes 5 miembros (incluido tú) **recibe 20 Fichas**.

OK

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income
50% Taxation

Stage 2: Reveal / Not Reveal Decision

Stage 3: Whistleblowing

Stage 4: Auditing

Pool: Max Votes + No revealers

Audit Prob= $1/(1+2)$

Prob success= $2/3$

One Random Audit in the Eligible Group







If Dec_0 : Penalty 100 tokens

Redistributed to other 5

No revelation of who was audited

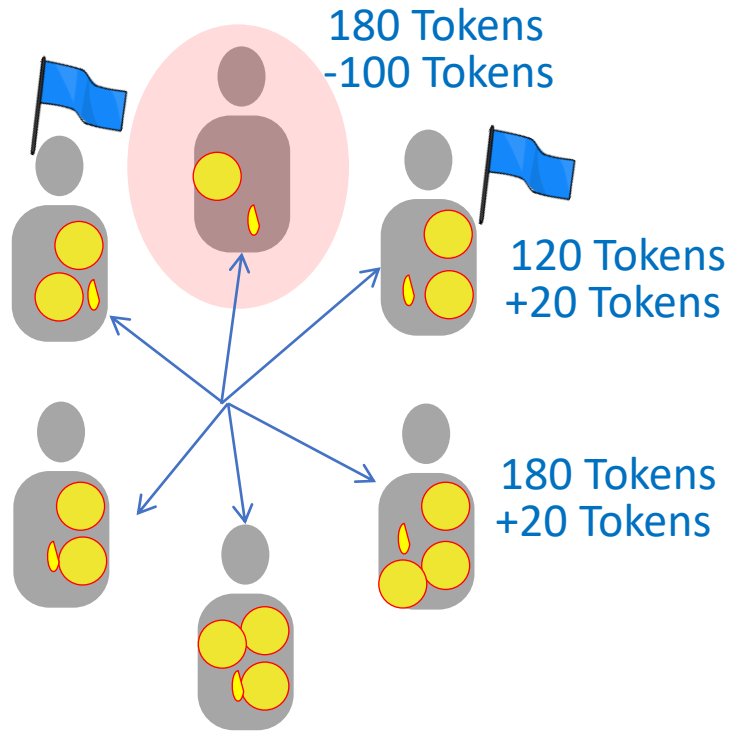
STAGE 4: Feedback

Período 1 de 1 Tiempo [sec]: 0

 1 Ingreso 120 Declarar 120	 4 Ingreso 120 NO REVELAR	<p>Tu decisión de declaración: DECLARAR 120</p> <p>Número que declaran 120 (incluido tú): 3</p> <p>Fichas ganadas de la Etapa 1: 120</p> <p>Fichas ganadas de la Etapa de Auditoría: 20</p> <p>Fichas ganadas en esta ronda: 140</p> <p>Fichas ganadas de todas las rondas: 140</p> <p style="text-align: right;"><input type="button" value="OK"/></p>
 2 Ingreso 120 Declarar 120	 5 Ingreso 120 Declarar 0	
 3 Ingreso 120 Declarar 120	 6 Ingreso 120 NO REVELAR	

● =60 Tokens

Binary Tax-Framed PGG



Stage 1: Declare / Not Declare Income

50% Taxation

Stage 2: Reveal / Not Reveal Decision

Stage 3: Auditing

Stage 4: Feedback:

Earnings from Stage 1 (PGG)

Earnings from Stage 3 (Audit)

Number of Declarants

Photo + info:

Declared_120 (if RV&DEC) or...

Declared_0 (if RV&NO_DEC) or...

Not Revealed (if No_RV)

Is it optimal to reveal???

- **Auditing Probability depends on no revealers & max votes**
- **If $c=1$, then you reveal so the prob. success is higher**
- **If $c=0$, then you reveal because it is the only chance not to be in the eligible group**

Is it optimal to denounce and who???

- **Denouncing affects the number of persons in the eligible group for -100**
- **Denouncing affects the success probability for +20**
- **Denounce free-riders is optimal for both types**
- **Only exception: if 1 free-rider then he votes against a cooperator**

	i_coop						
$\sum_{-i} c_i$		5	4	3	2	1	0
Payoff	1	180	180	160	140	120	
Payoff	0	120	160	160	150	136	120

NE:

Free Ride if $\sum_{-i} c_i < 3$

Indiferent if $\sum_{-i} c_i = 3$

Free Ride if $\sum_{-i} c_i > 3$

Experimental design

2x2 experimental design

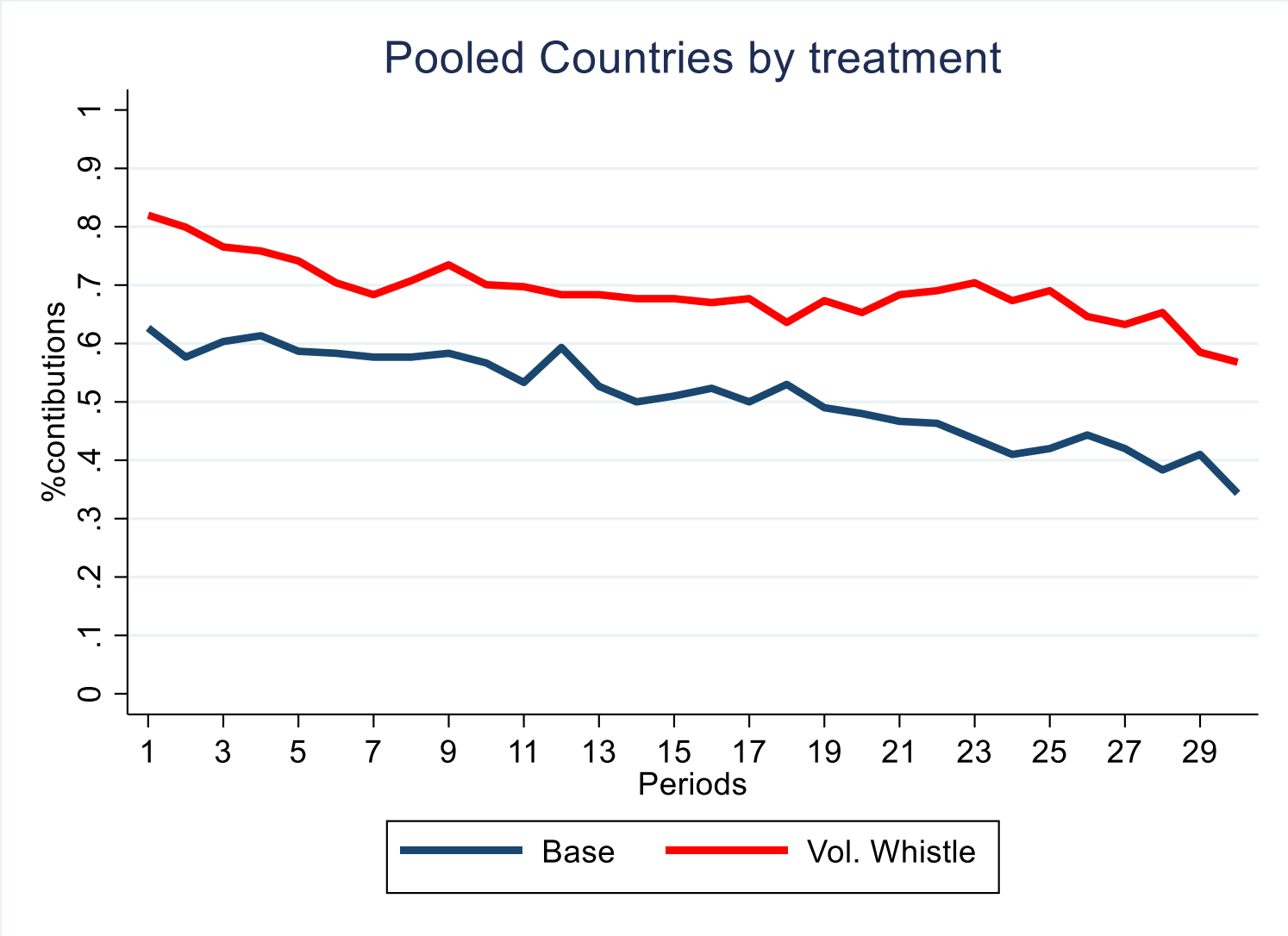
		Auditing	
		Endogenous (whistleblowing)	Exogenous (No-revealers/free-riders)
Public disclosure	Endogenous (voluntary)	Our mechanism (exempt if $rv=1 \& \max V=0$)	State Audit (exempt if $rv=1 \& cc=1$)
	Exogenous (compulsory)	Norway (exempt if $\max V=0$)	Ideal (exempt if $cc=1$)

RESULTS

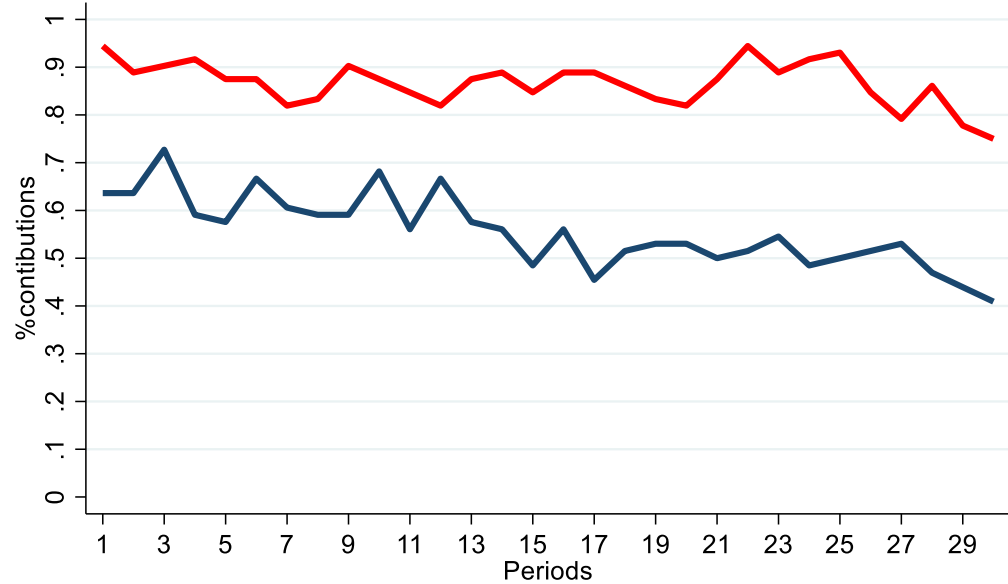
Sample Information

	Castellon	Warsaw	Lyon	Munich	Total	30 periods
Treatments	5 (7)	5	5	5	20	
N	372	384	366	336	1458	43740
N(G)	62	64	61	56	243	7290
Exchange	1€/270	1zł/100	1€/270	1€/270		
Fee	3€	13zł	3€	4€		
Earnings	16.7-19.4€	44.2-53.7zł	15.9-19.4€	17-19.4€		

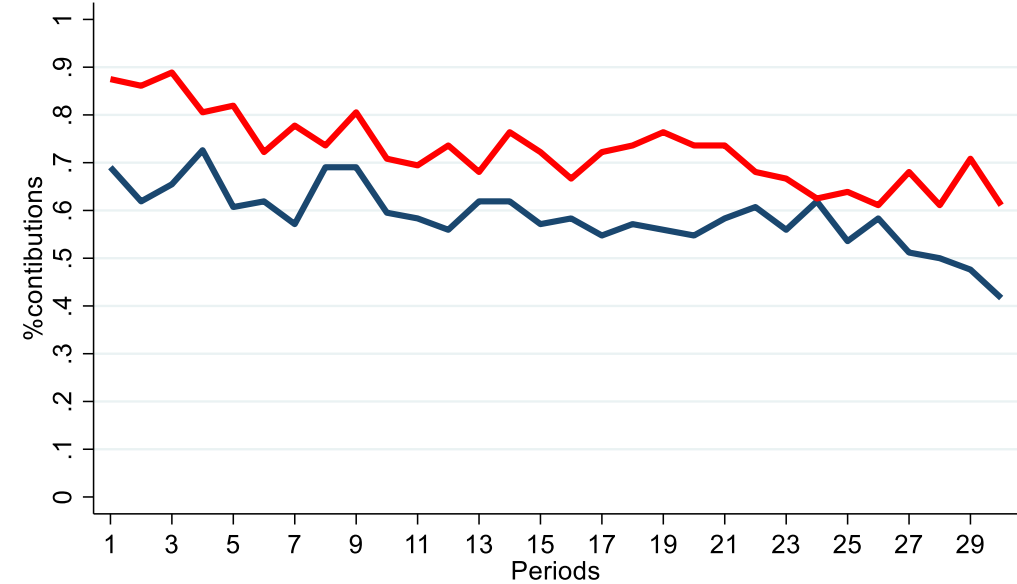
Vol. Whistle, n=294



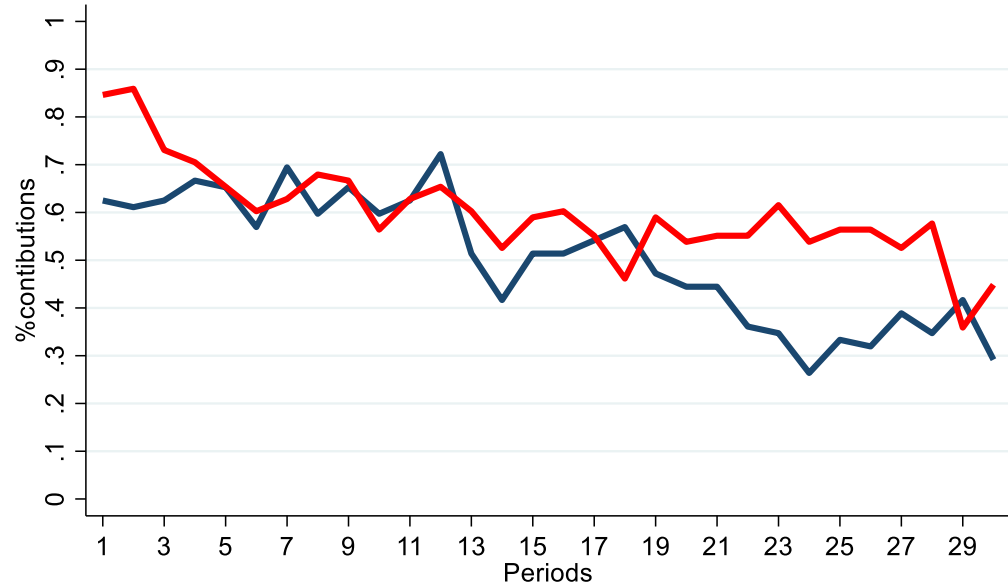
Germany by treatment



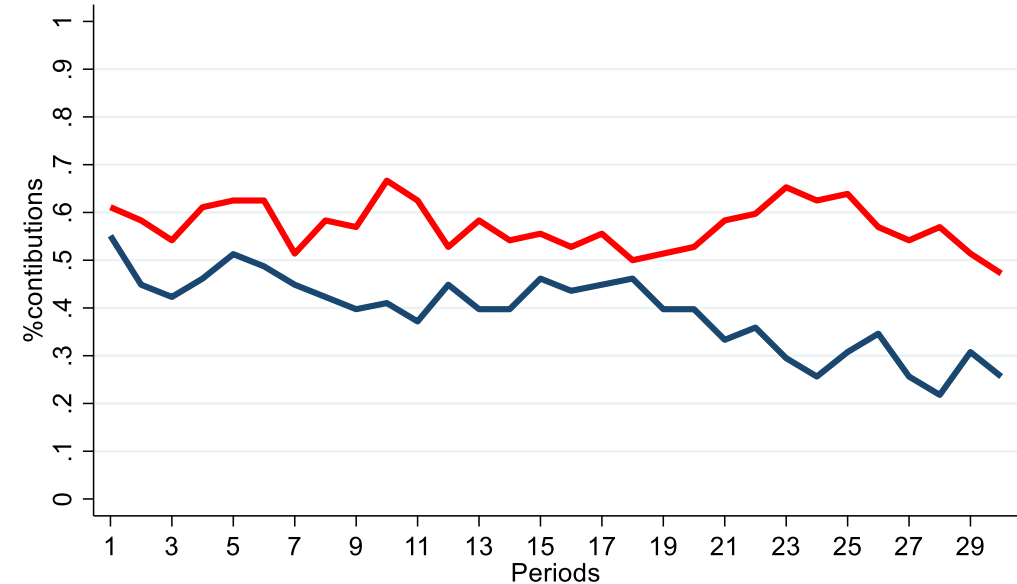
Poland by treatment



Spain by treatment



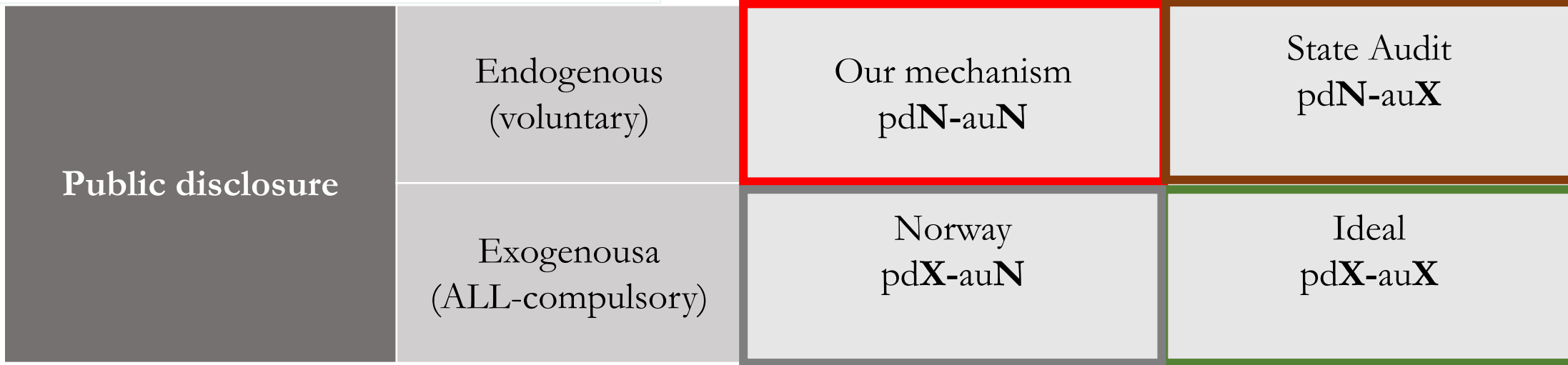
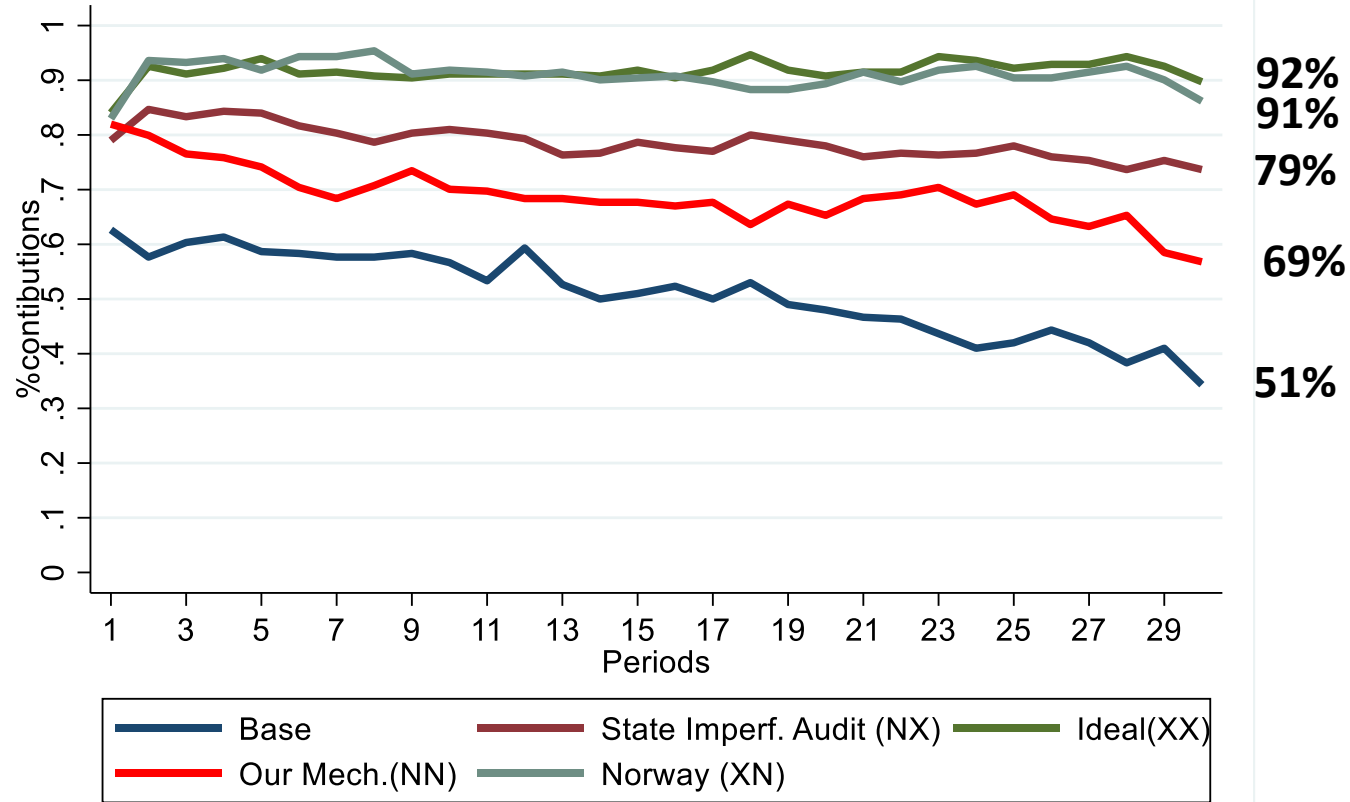
France by treatment



— Base — Vol. Whistle

— Base — Vol. Whistle

Pooled Countries by treatment



Regressions

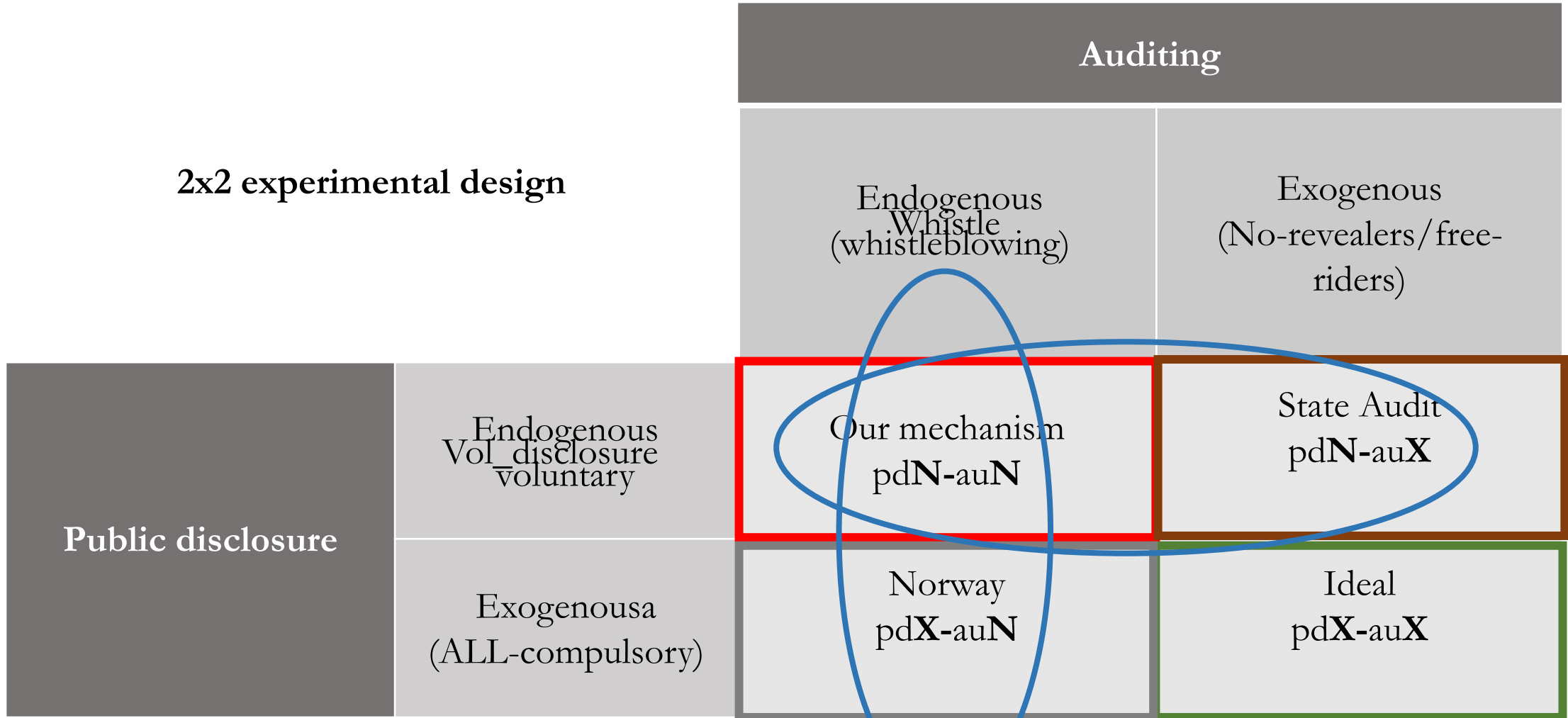
	(1) Logit	(2) RE	(3) poisson	(4) mixed	(5) mixed
State Imperf.(NX)	2.231*** (.195)	1.652*** (.199)	.435*** (.052)	1.652*** (.188)	-.79** (.308)
Ideal(XX)	4.393*** (.236)	2.445*** (.183)	.599*** (.047)	2.445*** (.227)	
Our Mech.(NN)	1.374*** (.184)	1.072*** (.204)	.3*** (.057)	1.072*** (.279)	-1.373*** (.383)
Norway(XN)	4.023***	2.405***	.589***	2.405***	-.04
POL					
FR					
GER	1.027*** (.177)	.518*** (.203)	.122*** (.054)	.518*** (.006)	.571*** (.006)
period	-.033*** (.199)	-.02*** (.181)	-.004*** (.041)	-.02*** (.002)	-.012*** (.003)
_cons	.4** (.003)	3.26*** (.003)	1.154*** (.001)	3.26*** (.003)	5.524*** (.003)
Observations	43740	7290	7290	7290	5790

ALL TREATMENTS ARE SIGNIFICANTLY BETTER THAN BASELINE

Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

2x2 experimental design



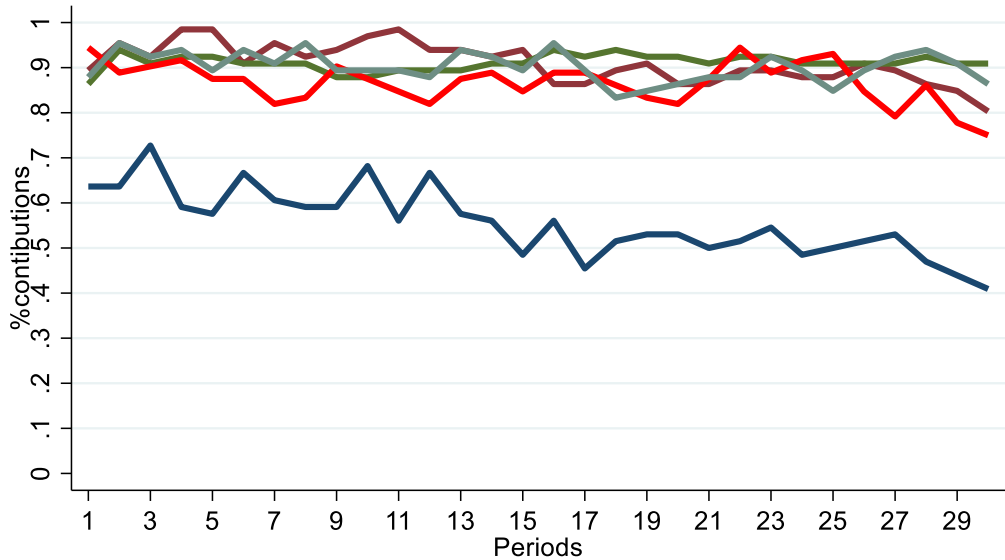
	(1)	(2)	(1)	(2)	(3)	(4)	(5)	(6)
	logit	logit	RE	RE	Poisson	Poisson	mixed	mixed
vol_disclosure	-2.444*** (.161)	-2.192*** (.244)	-1.06*** (.153)	-.79*** (.217)	-.225*** (.037)	-.162*** (.046)	-1.06*** (.306)	-.79** (.308)
whistle	-.667*** (.157)	-.385 (.262)	-.318** (.154)	-.04 (.192)	-.073** (.034)	-.009 (.036)	-.318*** (.123)	-.04 (.129)
whist_v_discl		-.482 (.327)		-.543* (.303)		-.126* (.066)		-.543* (.282)
POL	.786*** (.207)	.775*** (.206)	.346* (.192)	.34* (.187)	.072* (.041)	.072* (.04)	.346*** (.002)	.34*** (.005)
FR	-.64 (.21)							-.383*** (.006)
GER	1.239*** (.237)	1.234*** (.236)	.568*** (.214)	.571*** (.211)	.126*** (.045)	.128*** (.045)	.568*** (.002)	.571*** (.003)
period	-.024*** (.003)	-.024*** (.003)	-.012*** (.003)	-.012*** (.003)	-.002*** (.001)	-.002*** (.001)	-.012*** (.003)	-.012*** (.003)
_cons	4.774*** (.22)	4.628*** (.243)	5.702*** (.18)	5.564*** (.183)	1.751*** (.038)	1.717*** (.037)	5.702*** (.203)	5.564*** (.176)
Observations	34740	34740	5790	5790	5790	5790	5790	5790
Pseudo R ²		(2)	.z	.z	.z	.z	.z	.z

The main problem is disclosure!

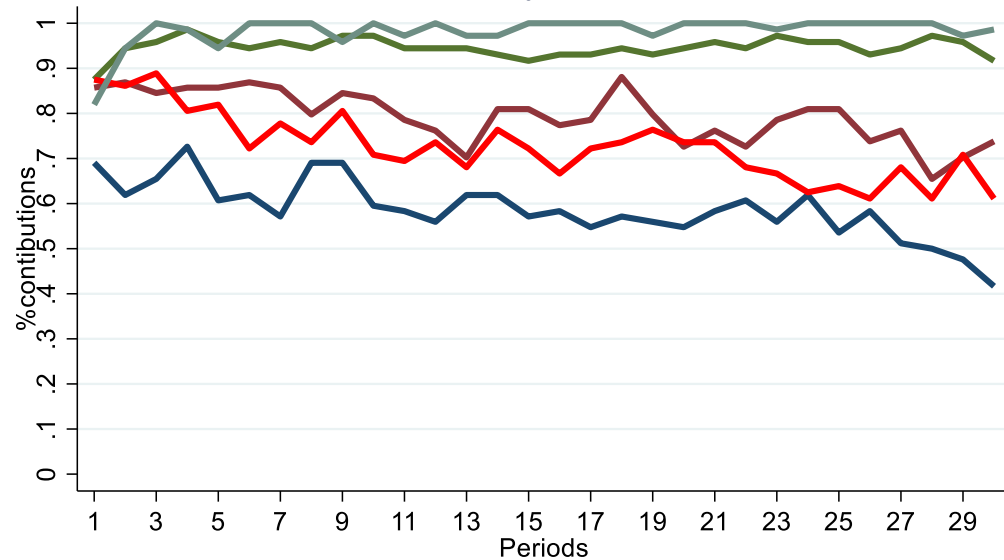
Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

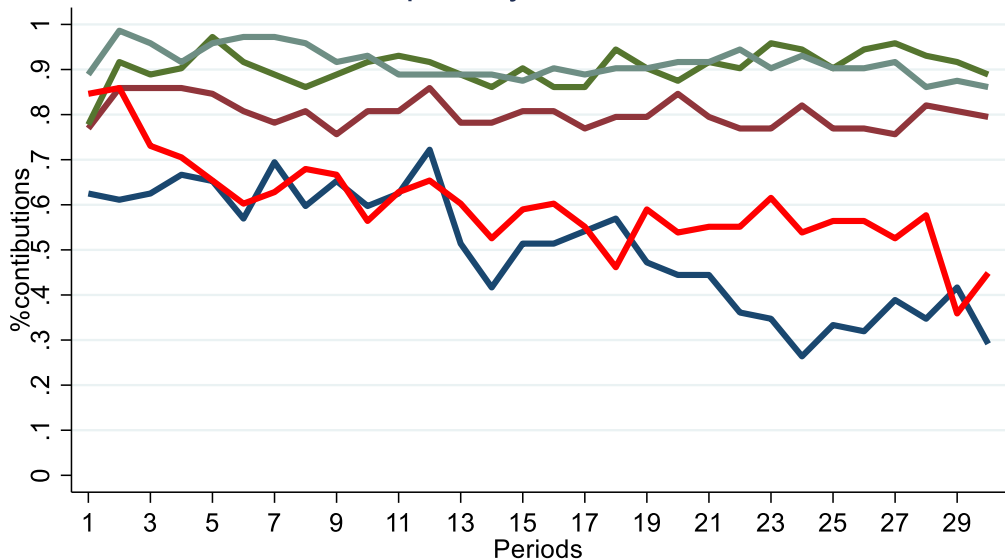
Germany by treatment



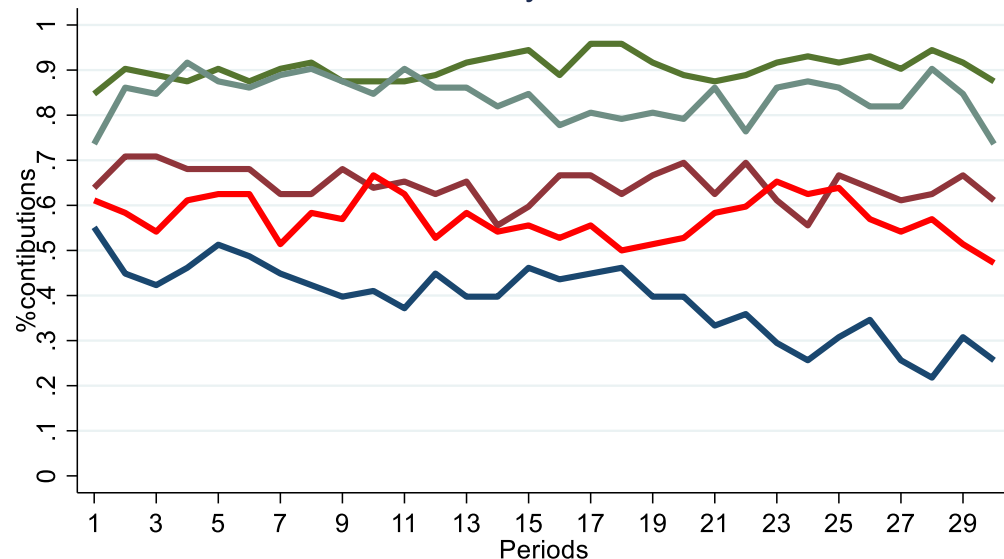
Poland by treatment



Spain by treatment



France by treatment



Mixed Regressions by Country

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	SPAIN	SPAIN	POLAND	POLAND	FRANCE	FRANCE	GERM	GERM
vol_disclos	-1.25*** (.301)	-0.612 (.446)	-1.216*** (.227)	-0.916*** (.346)	-1.582*** (.373)	-1.55*** (.474)	-0.114 (.266)	-0.009 (.412)
whistle	-0.608** (.304)	0.056 (.346)	-0.104 (.229)	0.219 (.229)	-0.413 (.373)	-0.381 (.416)	-0.16 (.265)	-0.055 (.448)
whist_v_di		-1.276** (.573)		-0.623 (.441)		-0.064 (.747)		-0.206 (.533)
period	-0.017*** (.007)						0.01 (.06)	-0.01 (.006)
_cons	6.031*** (.244)	5.699*** (.252)	6.081*** (.219)	5.919*** (.235)	5.516*** (.275)	5.5*** (.271)	5.671*** (.263)	5.618*** (.348)
Observatio	1500	1500	1500	1500	1440	1440	1350	1350

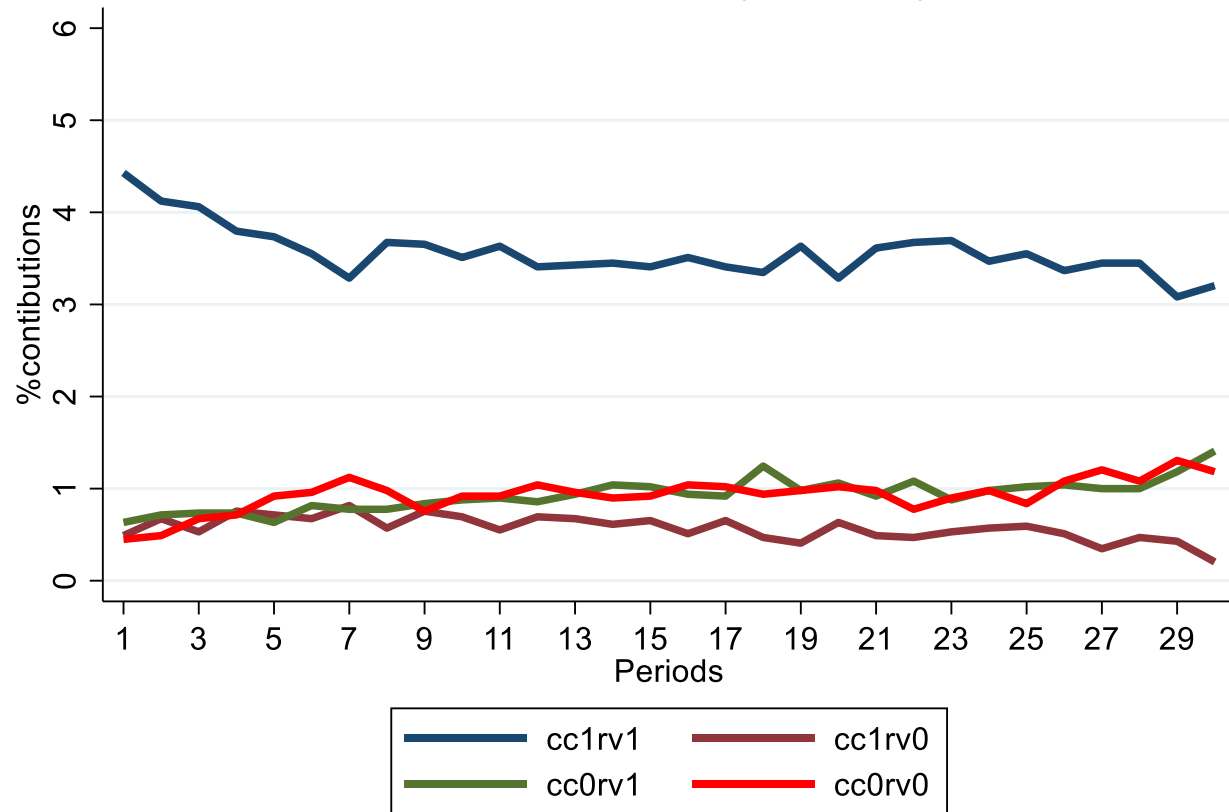
There are important differences across countries!

Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

A closer look to our mechanism

Pooled Countries by cc&rv type



	i_coop						
$\sum_{-i} c_i$		5	4	3	2	1	0
Payoff	1	180	180	160	140	120	
Payoff	0	120	160	160	150	136	120

Logit Regressions

	(1) Contrib.	(2) Contrib.	(3) Contrib.	(4) Contrib.
lagcc	.246 (.208)	-.414** (.186)	-.481*** (.178)	-.487*** (.177)
lagrv	.128 (.127)	-.634*** (.237)	-.375* (.193)	-.31 (.198)
lagccXlagrv		1.232*** (.293)	.958*** (.246)	.885*** (.252)
lagothercc			.401*** (.066)	-.249* (.128)
lagotherrv			.191*** (.055)	-.32*** (.091)
lagotherccrv				.183*** (.032)
lagvotes	.008 (.061)	.185** (.078)	.078 (.074)	.051 (.076)
lagaudited	.058 (.163)	.228 (.163)	.043 (.164)	-.021 (.165)

My and groups history are the best predictors!

	(.495)	(.489)	(.35)	(.332)
FR	-.119 (.611)	-.104 (.586)	-.142 (.414)	-.176 (.38)
GER	2.12*** (.618)	2.074*** (.608)	1.434*** (.5)	1.284*** (.464)
period	-.032*** (.009)	-.032*** (.009)	-.022*** (.007)	-.025*** (.006)
Qage	.053 (.042)	.052 (.042)	.053 (.041)	.052 (.041)
Qgender	-.239 (.258)	-.243 (.252)	-.294 (.223)	-.29 (.217)
_cons	-.141 (.956)	.106 (.929)	-1.85* (.988)	-.023 (.977)
Observations	8526	8526	8526	8526

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Regressions

	(1) RE	(2) Poisson	(3) mixed
lagcc	.123 (.144)	.085* (.045)	-.056 (.124)
lagrv	-.396*** (.096)	-.125*** (.04)	-.305*** (.092)
lagccXlagrv	.136*** (.025)	.032*** (.008)	.114*** (.023)
lagauditsuccess	.411***	.169***	.414***

Contribution is not important predictor if not revealed.

Revelation has a strong negative effect if cc=0!

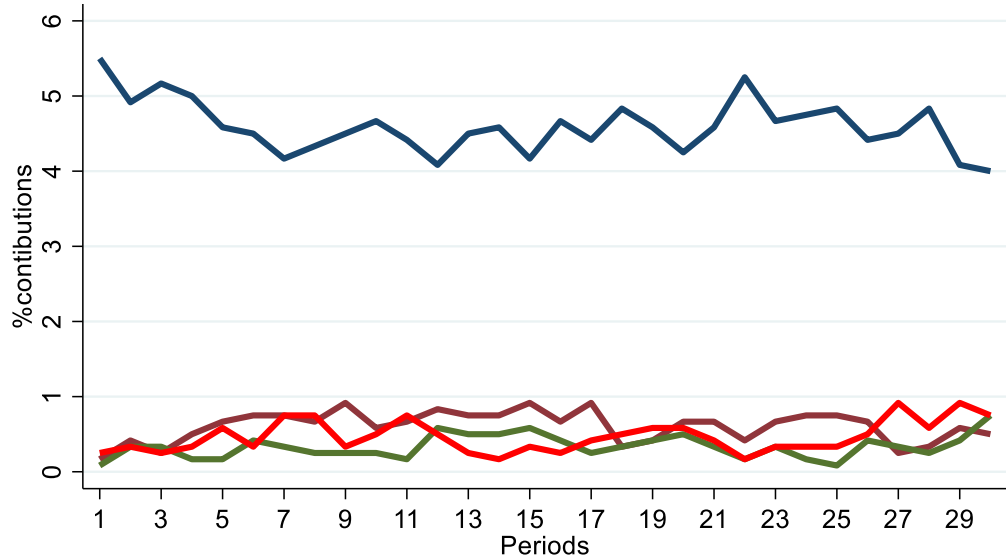
Interaction has a positive effect!

period	-.001 (.003)	-.002 (.001)	-.017 (.005)
_cons	2.519*** (.522)	.851*** (.182)	3.241*** (.485)
Observations	1421	1421	1421

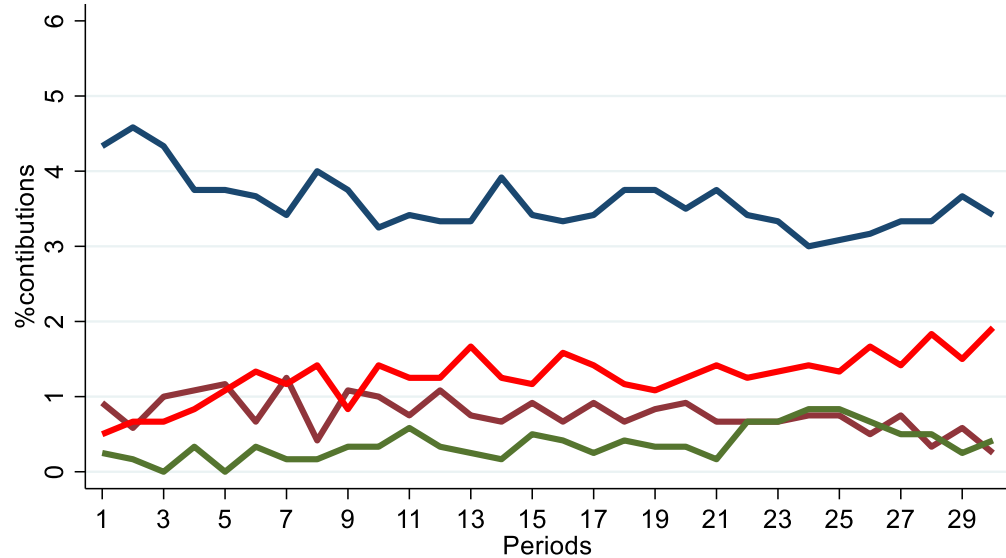
Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

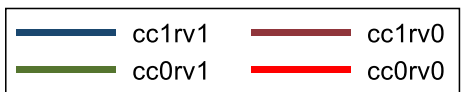
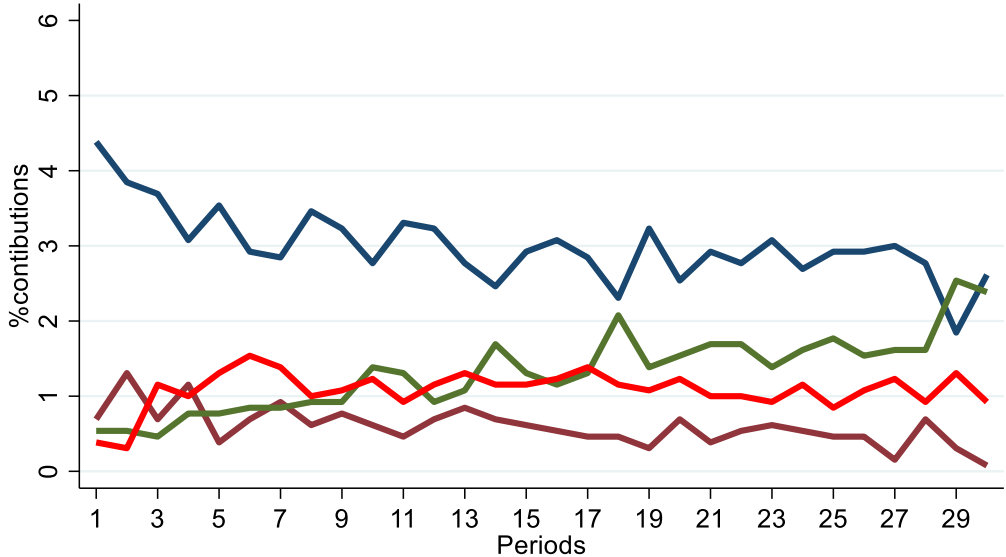
GERMANY by cc&rv type



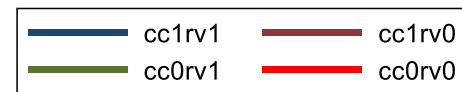
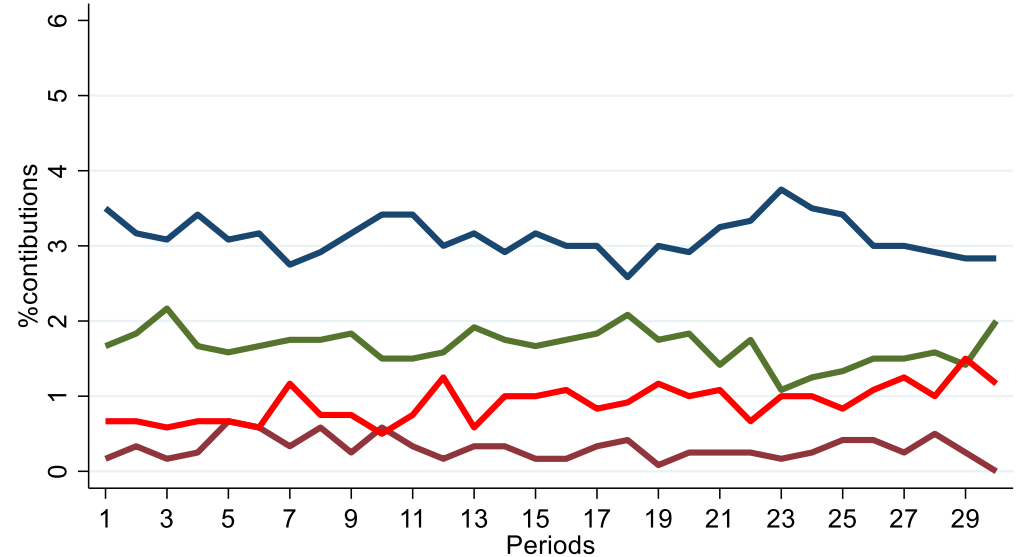
POLAND by cc&rv type



SPAIN by cc&rv type



FRANCE by cc&rv type



Logit Regressions

	(1) ES	(2) POL	(3) FRA	(4) GER
lagcc	-.529** (.232)	-.676* (.376)	-.334 (.46)	-.475 (.494)
lagrv	-.325 (.273)	1.206* (.629)	-.804** (.358)	.167 (.625)
lagccXlagrv	.6* (.337)	-.405 (.555)	1.634*** (.488)	.527 (.786)
lagothercc	-.315* (.18)	-.425*** (.119)	.391** (.195)	-.436 (.445)
lagotherrv	-.173 (.132)	-.367* (.189)	-.053 (.151)	-.607 (.424)
lagotherccrv	.115** (.051)	.246*** (.044)	.075 (.059)	.283** (.127)
lagvotes	.05 (.133)	-.374* (.203)	.251*** (.094)	-.103 (.182)
lagaudited	-.252	.373	-.313	-.02
_cons	-.375 (1.354)	-.028 (2.158)	-6.402 (4.296)	2.344 (1.99)
Observations	2262	2088	2088	2088

lag **There are important differences across countries!**

per **Germany only other interaction matters.**

Qa **France own history more important.**

Qg

Standard errors are in parentheses

**** $p < .01$, ** $p < .05$, * $p < .1$*

Conclusions (1)

- Endogenization has a positive effect (as compared to baseline) on cooperation
- Whistle blowing is not a problem!
- Voluntary disclose (and its interaction) has a negative effect!
- Country differences: ES: whistle interacts negatively with vol_disclos.; POL&FR: vol_disclose (if cc=0) matters; FR&GE: time trend disappears

Conclusions (2)

- In our mechanism, very important role of $cc1rv0$'s as they affect the auditing probability and expectations
- Own and others short history on cc and rv (and their interaction) are good predictors
- Country differences: ES: whistle interacts negatively with $vol_disclos.$;
POL&FR: $vol_disclose$ (if $cc=0$) matters; FR&GE: time trend disappears

Thank you for your attention!

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