Who self-selects into committees: The pro-social or the corrupt?

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SEA Conference

Motivation

- The management of public funds usually relies on *Committees*:
  - City Councils
  - Homeowners Associations
  - Parent-Teacher Organizations
- Selecting into these committees:
  - is costly, but necessary for the provision of public goods
    - More pro-social or intrinsically motivated individuals may be more likely to join;

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- Selecting into these committees:
  - is costly, but necessary for the provision of public goods
    - More pro-social or intrinsically motivated individuals may be more likely to join;
  - but it can be a way to easily embezzle public funds, if corruption is widespread, and there is little transparency and accountability.
    - California's 55,000 homeowner association boards collect an estimated $200 million in assessments annually from homeowners, and association boards now control about $13 billion.
    - Association boards are unregulated by any state or federal agency. Cases of fraud and embezzlement are escalating at an alarming rate

Research Questions

- Who is more likely to self-select into committees?
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  - And does it matter for the way public funds are managed?

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    - Do corrupt committees attract corrupt types?
    - ...meaning that the self-selection processes in honest and corrupt societies are different? Possibly reinforcing long-run corruption vs. honesty equilibria?

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- What could induce more honest and pro-social types to join corrupt committees?
  - Pressure from the public, e.g. town hall meetings?
    - The need to communicate the committee's decisions and outcomes?
    - The need to answer to questions from citizens?

Motivation

- Large literature on selection into the public sector:
  - **Pro-social** individuals more likely to choose public over private sector: Banuri and Keefer (2018); Barfort et al. (2019), Friebel et al. (2019);
  - **Dishonest** types are more likely to choose public over private sector: Banerjee et al. (2015), Hanna and Wang (2017), Brassiolo et al. (2021)
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- Both could be true...
- **Novelty and Contribution**:
  - We focus on jobs/tasks that involve the management of public (or group) funds but:
    - require group decision-making, hence agreement between group members
    - rely on the volunteering of private citizens
    - apply also to private organizations (not just government jobs) as long as there are common funds to be managed

Model and Predictions

- We model a society made initially of n citizens and k committee members
- Each agent is characterized by type $a = m + b$, where m is a moral cost of embezzlement and b is a benefit from public service
- Citizens pay taxes on their labor income (or contribute a fixed percentage to a group fund)
- Committee receives the total taxes collected and invest into a project that if successful, augments the fund to be redistributed to citizens
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- Committee receives the total taxes collected and invest into a project that if successful, augments the fund to be redistributed to citizens
- Committee members can embezzle the money instead (majority voting)
- Citizens do not observe whether the project was successful and if the money was embezzled
  - They form beliefs on corruption in the committee $\mu(a)$
  - and on $\tilde{\mu}$—the corruptibility of other citizens that could join the committee (if self does not)
- After some time, a committee member steps down and a new citizen can self-select into the committee

Model

Model and Predictions

- **Predictions for types**:
  - i. More pro-social types (fixed m, higher b) are more likely to join
  - ii. More corrupt (less moral) types (fixed b, lower m) are more likely to join

- **The role of beliefs**:
  - i. An increase in $\tilde{\mu}$—the belief about corruptibility of other citizens—increases willingness to join
  - ii. An increase in $\mu(a)$—own corruptibility or corruptibility of the committee—increases willingness to join for corrupt citizens ($a < a_e$) but decreases willingness to join for honest citizens ($a > a_e$)

- **Treatment effects (for now)**:
  - i. Honest vs. Corrupt status quo $\rightarrow$ lower vs. higher $\mu(a) \rightarrow$ honest vs. corrupt citizens are more likely to join [Only holds if citizens update their beliefs by observing committee outcomes.]

The Experiment: Design

- When designing the experiment, we needed to make sure the following applied:
  1. Committee members should be able to embezzle public funds, without the public knowing;
  2. Initial committees should be either honest or corrupt (different *status quos*);
  3. Citizens should update their beliefs about the status quo level of corruption through experience:
     - Corrupt Committee $\Rightarrow$ citizens believe the committee is corrupt;
     - Honest Committee $\Rightarrow$ citizens believe the committee is honest;
  4. Citizens should be able to periodically self-select into the committee.

The Experiment: The Committee Game

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- 3 subjects are initially assigned the role of "Committee Member";
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- Subjects play in groups of 8: A "society";
- 3 subjects are initially assigned the role of "Committee Member";
- The remaining 5 are "Citizens."
- Subjects play in 4 blocks of 10 rounds, for a total of 40 rounds.
- In each round, **Citizens**:
  - start with a fixed wage (100 ECU);
  - engage in a simple real-effort task for 30 seconds:
    - Different task in each block of 10 rounds;
  - If successful, they earn money (50ECU) but have to deposit 64% (32ECU) of earnings to a public fund (21% tax rate);
  - Tasks designed so that every citizen should be successful;
  - *The public fund is managed by the 3 Committee Members*.

The Experiment: The Committee Game

- In each round, **Committee members**:
  - earn a fixed wage (80 ECU, lower than Citizens)
  - engage in a simple task (one general knowledge quiz question);
  - If none of them 3 are unsuccessful, the public fund is lost
  - If at least one of them is successful, the public fund is tripled with 80% probability, lost with 20% probability;
  - Each committee member **votes** on whether to:
    - Distribute the fund equally among all society members
    - Divide the fund among the 3 committee members only (corruption).
  - Outcome decided by majority voting. Parameters

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- **Lack of transparency**:
  - Citizens do not know if the fund was lost or tripled and what the Committee Members decided;
  - They get feedback on the amount they get back from the fund, if any;
  - If they get zero back, it could be because:
    - The Committee Members were unsuccessful, or;
    - They were successful but unlucky, or
    - They were successful and embezzled.

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  - At the beginning of round 1 and round 6, Committee Members can chat (through free-form messages) for 2 minutes.
- **Measurement of Citizens' Beliefs about Corruption**:
  - At the end of round 5 and round 10, we elicit citizens' beliefs about the occurrence of embezzlement in the previous 5 rounds.
- **Round 11: Self-Selection into The Committee**
  - At the end of round 10 one Committee Member is randomly selected to step down;
  - The 5 Citizens have the chance to volunteer to become a Committee Member;
  - The replacement is randomly selected among the volunteers.
- **Rounds 21 and 31: New Self-Selection into The Committee**

The Experiment: The Pre-Games

- We conducted 4 pre-games (random ordering and no feedback) with the aim of categorizing individuals into different "types" Parameters
  - Donation to a charity: 0-1
  - Dychotomous "Giving" VCM (groups of 4): 0-1
  - Dychotomous "Taking" VCM (groups of 4): 0-1
  - Coin toss game: 15 tosses, 1 if reported $N_{\text{tails}} \geq 12$
    - Theoretically, the probability of $N \geq 12$ is less than 2%
    - We consider these subjects "likely cheaters"

- We generate a **Corruptibility** index:
  - *Minimum of 0*
  - *Maximum of 4*

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- We use this index to create:
  - Honest Initial Committees: the 3 lowest scoring subjects
  - Corrupt Initial Committees: the 3 highest scoring subjects

The Experiment: Treatments

- Varying the *Status Quo Level of Corruption*:
  - **Honest Committee Treatment**
  - **Corrupt Committee Treatment**
  - Initial committee members are *subtly* informed of the selection rule:
    - Corrupt Committee: "We assign 1 point to participants who did not donate, 1 point to those who did not invest in the group account, 1 point to those who reported a large number of tails and 1 point to those who decided to take from the group. You and the other two participants have been chosen as Committee Members because you scored the highest in the four activities of Part 1."

The Experiment: Treatments

- Varying the *Status Quo Level of Corruption*:
  - **Honest Committee Treatment**
  - **Corrupt Committee Treatment**

- (In progress) Varying *Accountability to the Public*:
  - **Town Hall Meeting with One-way Communication**: Committee Members need to periodically agree on a message to send to the public to explain the outcomes;
  - **Town Hall Meeting with Two-way Communication**: Same but citizens can send message back (at a cost)

- **Outcomes of Interest**:
  - Committee Member decision to embezzle
  - Citizen beliefs about corruption
  - Citizen self-selection into the committee, conditional on his/her type

Implementation and Data (so far)

- Experiment programmed in oTree;
- We recently started the data collection (in-person);
- We collected data for 12 societies with assigned Honest Committee and 12 societies with assigned Corrupt Committee (8 subjects per society);
- 192 Texas A&M students, 55% women, 20 years old on average.

	No Accountability	**Town Hall One-Way**	**Town Hall Two-Way**
Honest Committee	36 Committee Members 60 Citizens	Not yet	Not yet
Corrupt Committee	36 Committee Members 60 Citizens	Not yet	Not yet

Preliminary Findings: The Pre-games

1. Donated to a charity: 45%
2. Invested in the VCM: 33%
3. Took from fund in the negative VCM: 64%
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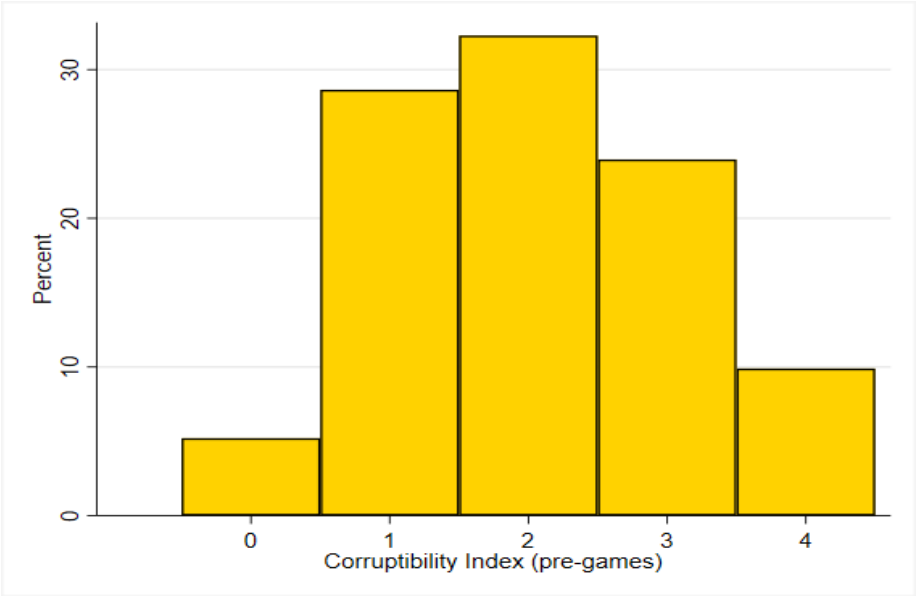
- We construct a **Corruptibility Index** based on the pre-games
  - Re-scaled so that 1 in each game indicates "less desirable" behavior



Preliminary Findings: Embezzlement

- By design, we selected more (less) corruptible subjects to become committee members in the Corrupt (Honest) Committee treatment
  - **Corrupt Committee** Treatment: average Corruptibility index of committee members = 3.28
  - **Honest Committee** Treatment: average Corruptibility index of committee members = 0.83 (p=0.000)
- Were we successful in creating corrupt vs. honest initial (e.g., *first 10 rounds*) committees using the pre-games?

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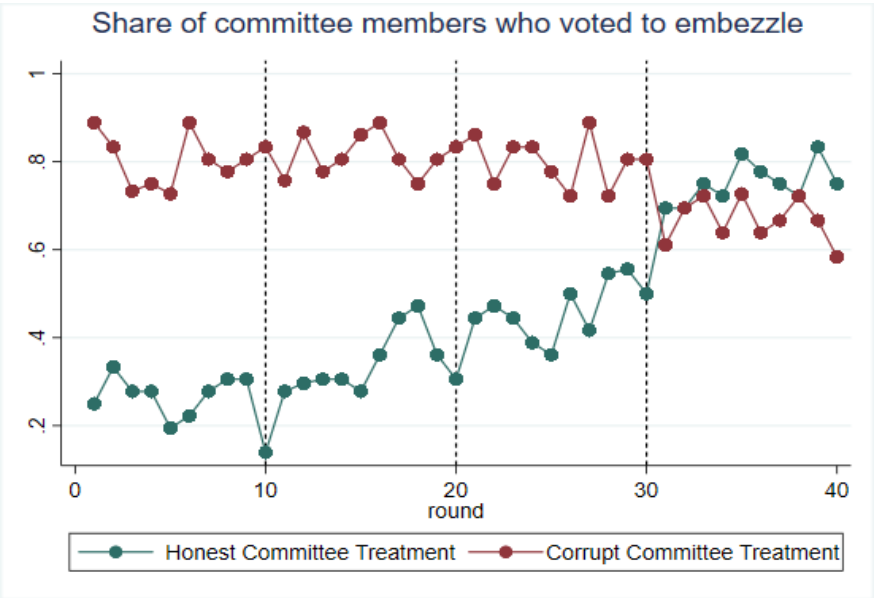
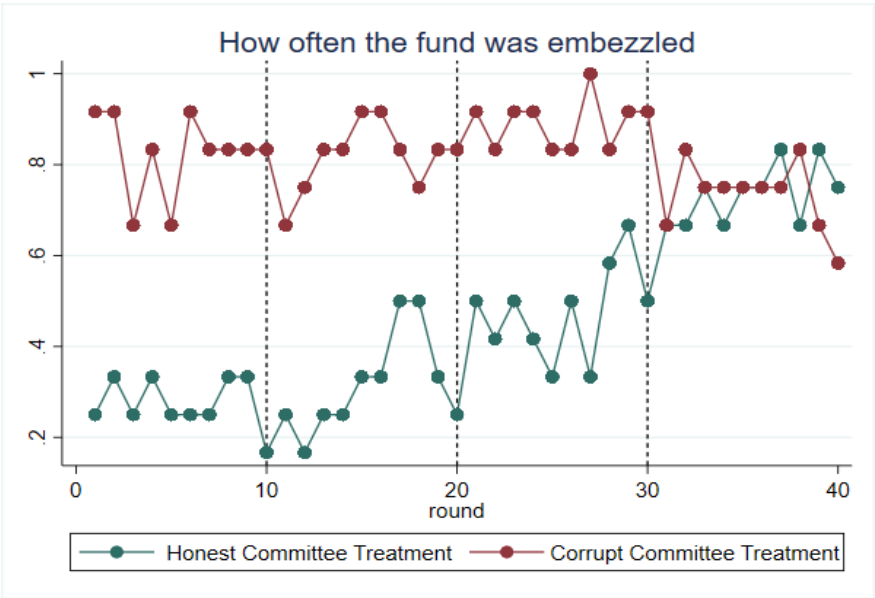
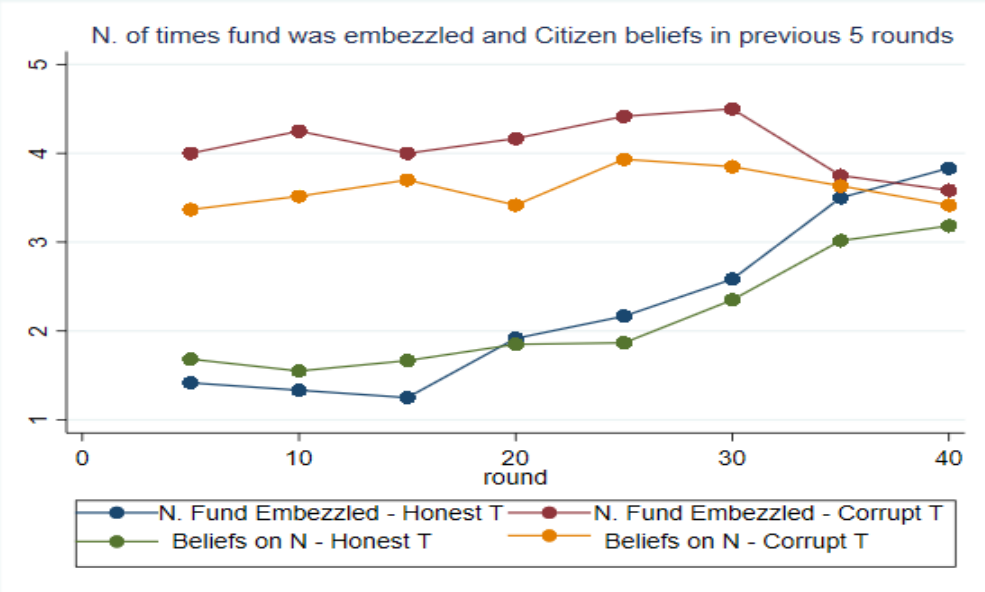
- YES





Preliminary Findings: Beliefs

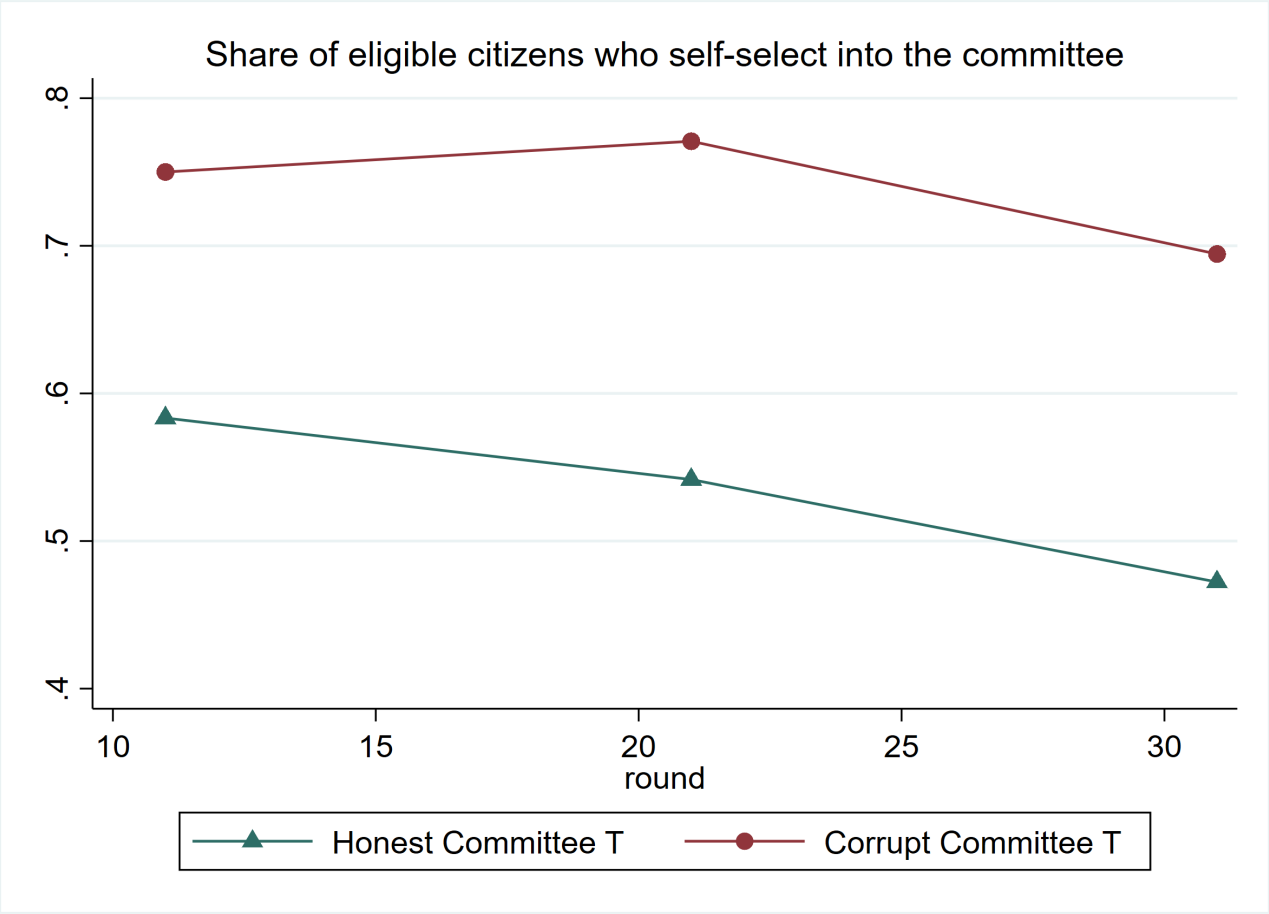
- Every 5 rounds:
  - Citizens get information on the number of times they got 0 from the fund (0-5);
  - We elicit citizens' beliefs; (*incentivized*) on the number of times the Committee Members kept the money;
  - (About 80% of times the project was successful - unknown to citizens)



- We successfully generated environments with different levels of embezzlement and different citizen beliefs about embezzlement.

Preliminary Findings: Self-selection

- Who wants to join the committee in rounds 11, 21 and 31?



- More citizens want to join corrupt committees
- Willingness to serve on the committee declines over time

The decision to join the committee

	Wants to join the committee (0-1)			
	(1)	(2)	(3)	(4)
Corrupt Committee Treatment	0.201**	0.169**	0.229	0.170**
	(0.087)	(0.075)	(0.244)	(0.075)
Corruptibility Index		0.041	0.054	0.058
		(0.058)	(0.089)	(0.077)
Belief about past embezzlement (%)		0.273***	0.274***	0.325*
		(0.079)	(0.079)	(0.159)
C Treatment x Corruptibility Index			-0.030	
			(0.114)	
Belief x Corruptibility Index				-0.027
				(0.075)
Round	-0.004*	-0.005**	-0.005**	-0.005**
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.617***	0.396**	0.367	0.362*
	(0.070)	(0.157)	(0.220)	(0.190)
Observations	288	288	288	288

Robust standard errors, clustered at the group level, in parentheses.

The decision to embezzle (by committee members)

	Votes to embezzle (0-1)			
	(1)	(2)	(3)	(4)
Corrupt Committee Treatment	0.308**	0.151	0.137	0.102
	(0.113)	(0.110)	(0.221)	(0.237)
Corruptibility Index		0.143***	0.140***	0.132**
		(0.027)	(0.050)	(0.052)
Corrupt Committee Treatment x Corruptibility Index			0.007	0.023
			(0.076)	(0.084)
New member				0.057
				(0.039)
Decision Sequence	0.064**	0.061**	0.063*	0.061*
	(0.029)	(0.023)	(0.033)	(0.032)
Constant	0.278**	0.063	0.065	0.068
	(0.116)	(0.123)	(0.124)	(0.123)
Observations	2,880	2,880	2,880	2,880

Robust standard errors, clustered at the group level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Next Steps

- Analysis of dynamics of play within the committee
  - By type and by treatment
  - Analysis of chat data:
    - What do more/less corruptible types say to others? Chat Examples
    - How hard is it to convince new members to conform to the old ways, conditional on type?

- Disentangle the (separate?) roles that pro-sociality and dishonesty play in the Corruptibility Index.

- Conduct the **Town Hall Meetings** treatments to test whether bottom-up accountability through communication to and pressure from citizens could:
  - reduce embezzlement in Corrupt Committee treatments
  - induce less corruptible types to select into Corrupt Committees.

Summary So Far

- **Embezzlement and beliefs**:
  - More embezzlement in the Corrupt Committees treatment;
    - We were successful in creating Honest vs Corrupt Committees through sorting via the 4 pre-games.
  - Even when there is lack of transparency on the Committee's actions, a history of embezzlement leads citizens to form (nearly) correct beliefs that the Committee is corrupt.

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  - Beliefs about corruption are the most important determinant of self-selection, for all types.

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  - Beliefs about corruption are the most important determinant of self-selection, for all types.
- **Voting to embezzle**:
  - Individuals vote in line with their type in all conditions;
  - More (less) corruptible types are more(less) likely to vote to embezzle;
  - Holds in the Corrupt and Honest Committee treatments;
  - Suggests that less corruptible types enter to clean up the committee, and more corruptible types enter to embezzle?

Thank You!

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Appendix

Pre-games Parameters

Exchange rate: 12 ECU = \$1

- Donation game
  - Subjects are given 20 ECU. Subjects can choose to either keep 20 ECU, or donate to one of the seven charity organizations.
- Coin toss game
  - Subjects are asked to toss the coin 15 times in private, and report the number of tails.
  - Subjects earn 1 ECU for each reported tail.

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Appendix

Pre-games Parameters

- "Giving" VCM
  - Subjects play in group of 4
  - Each member receives 10 ECU and invests it all in a private account or in a group account
  - Payoff if invest in private account:
    - 10 + 4 * (Number of people who invested in the Group account)
  - Payoff if invest in group account
    - 4 * (Number of people who invested in the Group account)
- "Taking" VCM
  - Subjects play in group of 4
  - A group account contains 80 ECU to be divided among group members
  - Each member can take 10 ECU from the account
  - Taking 10 reduces the account by 20 ECU.
  - Payoff if take from group account:
    - 25 - 5 * (Number of people who took from the Group account)
  - Payoff if do not take from group account:
    - 20 - 5 * (Number of people who took from the Group account)

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Appendix

Committee game parameters

- Citizen
  - Fixed wage: 100 ECU
  - Task: Encoding letters, counting zeros, finding letters, slider task (switch every 10 round)
  - Bonus if completes all tasks in one round: 50 ECU
    - 32 ECU (64%) is deposited into the public fund
    - 18 ECU (36%) is kept by the citizen
    - The public fund can have a maximum of 160 ECU
- Committee member
  - Fixed wage: 80 ECU
  - Task: trivia question (e.g., Which country held the 2016 Summer Olympics?)
  - If at least 1 member is successful in the task, the public fund will be tripled with probability 80%, or lost with probability 20%

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Appendix

Chat messages example: Corrupt Committee

do yall wanna keep the money between us 3 if we triple the acc
perfect
keep it all
im down
yes
sure
so only one of us needs to get the question right for us to be able to control the money?
capitalism
i think so
word
Yes I too would endeavor to retain the funds
hahah this is who things work
ahahaha
im excited
we keep the money
this is kind of live
nice
making bank w no effort
we only didnt get the money from the first round
hahah
$$$$$$$

Appendix

Chat messages example: Honest Committee

Hi
Hey
hello
do you guys want to be fair and
split everything
equally?
yeah
Sure, were all trying to get paid here!
meow
meow
meow
yes!
i'm glad we all agree lol
ok
i'd hate to get robbed
yeah, euqally!
equally
equally!
equally!

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Model

- Committee members receive flat wage w_c; citizens earn $w + s$, where $w > w_c$, $s \geq 0$ is labor income [lower earnings for committee members reflect opportunity costs]
- Citizens pay tax $\tau \in [0, 1]$ on their labor income; total collected tax $T = \tau n s$ is transferred to the committee
- Committee invests T into a project that yields lottery $(rT, 0; p, 1-p)$; $r > 1$, $p \in [0, 1]$ is the probability of success; $pr > \frac{n+k}{n}$ (ex ante efficiency)
- If the project fails, final earnings are $\pi_c = w_c$ and $\pi = w + (1-\tau)s$ for committee members and citizens
- If the project is successful, the committee can
  (i) **Share** the money equally: $\pi_c = w_c + \frac{rT}{n+k}$, $\pi = w + (1-\tau)s + \frac{rT}{n+k}$; or
  (ii) **Embezzle** the money (share only among themselves): $\pi_c = w_c + \frac{rT}{k}$, $\pi = w + (1-\tau)s$
- **Only committee members observe if the project was successful**
- The decision whether or not to embezzle is made by majority voting

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Model

- Each agent is characterized by type (m, b), where m is a moral cost of embezzlement and b is a benefit from public service
- Utility of committee member with type (m, b) is

$$u(m, b, Z) = w_c + Z\left(\frac{rT}{k} - m\right) + (1 - Z)\left(b + \frac{rT}{n+k}\right)$$

  where $Z = 1$ if money is embezzled, 0 otherwise
- Type (m, b) prefers embezzlement if $a = m + b < a_e = \frac{nrT}{k(n+k)}$
- "Honest" type: $a > a_e$; "corrupt" type: $a < a_e$
- Voting on the committee: Embezzle if $\text{median}\{a_1, \ldots, a_k\} < a_e$ (the median type is corrupt) [assume sincere voting]

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Model: Self-selection

- Repeated game and committee rotation:
  - i After R rounds, one committee member randomly steps down
  - ii Citizens state whether they are willing to be on the committee
  - iii One willing citizen randomly fills the spot
- Citizens' beliefs:
  - $\mu(a)$ is the belief of a citizen with $a = m + b$ that *after she joins the committee*, the committee will be corrupt
  - $\tilde{\mu}$ is the belief of a citizen that *after someone else joins the committee*, the committee will be corrupt
- Decision to join the committee for a citizen with type (m, b):

$$p\big[b + \mu(a)(a_e - a)\big] > (1 - \tau)s - \frac{p\tilde{\mu}rT}{n + k} + w - w_c$$

- Two reasons to join:
  - (i) utility from public service: Increases with b
  - (ii) earn money from embezzlement: Decreases with a; the total effect depends on whether a changes because of m or because of b

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