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Rent Extraction and Prosocial Behavior

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Rent Extraction and Prosocial Behavior

Abstract

We present controlled experimental evidence on how rent extraction by an administrator affects giving to non-profit associations. Holding the price of giving constant, we compare contributions between two conditions: a rent extraction condition, in which an administrator can expropriate a part of the contributions and a control condition without rent extraction. We find that rent extraction strongly reduces average contributions. Studying the channels through which this effect operates, we demonstrate that rent extraction has situational spillovers, suggesting that it undermines the contributors' general preference for giving. In contrast, we do not find evidence for negative reciprocity towards the administrator.

JEL-Codes: D020, D030, H410.

Keywords: rent extraction, donations, prosocial behavior.

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1 Introduction

Politicians and bureaucrats frequently strive to increase their share of existing wealth by creating and extracting private rents. This has severe consequences for society. For example, rent extraction might cause a loss in tax revenues to the public exchequer (Niskanen, 1971), could contribute to income inequality (Stiglitz, 2012; Piketty *et al.*, 2014), or may be costly for economic growth (Murphy *et al.*, 1993).

Beyond these well-known allocative effects, however, rent extraction may also impact society in less direct ways. For instance, if prominent agents engage in visible forms of rent extraction, citizens might perceive this as a manifestation of anti-social behavior and be less inclined to behave prosocially themselves.[1] Consider, for example, Figure 1. It focuses on political corruption as an illegal and particularly prominent form of rent extraction.[2] The figure shows that among individuals who believe that corruption within their country's government is low, almost 38% identify themselves as volunteers. In contrast, among individuals who perceive their country's government to be highly corrupt, the share of volunteers is less than 27%. Of course, Figure 1 shows just a correlation, but the pattern emerging from the World Values Survey is consistent with the idea that anti-social forms of rent extraction can undermine prosocial behavior in the society. If true, this would imply that rent extraction is even more harmful than commonly perceived.

In this paper, we provide controlled experimental evidence on how rent extraction affects prosocial behavior. While prosocial behavior can take many forms, such as volunteering, sharing, or helping others, we focus on contributions to non-profit associations. Three observations motivate this decision. First, in many countries such as the US, individuals are significantly more likely to give money than time (List and Price, 2011). Second, the focus on giving money makes prosocial behavior easily quantifiable. Third, this choice allows us to implement a straightforward experimental design.

The effect of rent extraction on contributions to non-profit associations could work through different channels. First, if a rent is taken from the pool of contributions, rent extraction increases the price of giving by reducing, for each dollar spent, the amount received by the charity. Theory predicts that contributors will give less if they care about how much of their donation is received by the charity (Duncan, 2004; Atkinson,

[1] In this paper, we define prosocial behavior as actions that benefit society as a whole or other people (such as volunteering, sharing, helping, donating, or cooperating). Prosocial behavior might be motivated by altruism, empathy, or even practical or egoistic concerns, such as hope for reciprocity or reputation concerns (Brief and Motowidlo, 1986; Dovidio, 2001).

[2] The figure relies on data from the World Values Survey. The survey question used here is: "How widespread do you think that corruption is within the government in your country?" on a scale from 1 (no corruption) to 10 (high corruption). We define individuals with high (low) corruption perceptions as individuals who indicated values between 6 and 10 (1 and 5).

2009; Hungerman and Ottoni-Wilhelm, 2018). While the price effect induced by rent extraction is relevant and interesting in its own right, it has received considerable attention in the previous literature and is therefore not our focus (for reviews, see Bakija and Heim, 2011; Andreoni and Payne, 2013). Second, rent extraction might impact prosocial behavior through two types of motivational effects. The first one operates through negative reciprocity towards the administrator, resulting in tit-for-tat behavior (Rabin, 1993; Dufwenberg and Kirchsteiger, 2004).[3] Intuitively, individuals may give less to decrease the administrator's rent. The second motivational effect is of a more general nature and goes beyond a specific administrator-contributor relationship: Rent extraction may undermine the contributors' general preference for giving. For brevity, in the following, we label the strength of this preference as an individual's fundamental generosity. One reason why rent extraction may affect an individual's generosity is norm conformity (López-Pérez, 2008; Benabou and Tirole, 2011). Particularly, rent extraction could undermine the generosity of norm-abiding individuals by signaling that the existing social norm of behaving prosocially is weak.[4] Importantly, a lower generosity among individuals who have experienced rent extraction might result in situational spillovers (i.e., individuals would also give less in situations in which the rent-extracting administrator is uninvolved).

Our design aims at identifying the overall motivational effect of rent extraction and also allows us to separate the more general generosity effect from the more specific reciprocal response towards a rent-extracting administrator. The experimental design consists of two consecutive parts. Part 1, labeled Basic Rent-Extraction Game, identifies the overall motivational effect. Part 2, named Extension of the Basic Game, examines the channels. In the Basic Rent-Extraction Game, we observe individuals' contributions (out of an endowment) to non-profit associations operating outside the laboratory. We identify the effect of rent extraction on giving by comparing contributions in a RENT EXTRACTION condition, in which an administrator decides whether or not to expropriate a fixed share of contributions, to a CONTROL condition without active expropriation. As

[3] In this paper, we use negative reciprocity as an umbrella term capturing all types of considerations that are directed towards the administrator. For example, contributors might follow a social norm to responding to an adverse action with another negative action. Alternatively, fairness consideration might shape the contributors' behavior: If the administrator is mean to contributors, fairness allows them to be mean to her (Rabin, 1993). Contributors might also feel a desire to punish the administrator or may have an aversion against increasing the rents of the (undeserving) rent-extracting administrator.

[4] There might be additional reasons why an individual's generosity is lower in case of rent extraction. For example, individuals might act as conditional cooperators (Fischbacher *et al.*, 2001; Fischbacher and Gächter, 2010). In this case, rent extraction might lower beliefs about others' donations, resulting in a lower generosity and lower contributions. Contributors could also infer from rent extraction that a cause is less (socially) valuable, or could abstain from giving due to an aversion to be betrayed (Bohnet and Zeckhauser, 2004; Bohnet *et al.*, 2008). We use the term "generosity effect" as an umbrella term for all those effects.

we aim to study the pure motivational impact of rent extraction, we hold the price of giving constant in both conditions. To that end, in the CONTROL condition, a random draw determines whether or not the administrator receives the same fixed share of contributions as the expropriating administrator in the RENT EXTRACTION condition.

The Extension of the Basic Game adds a second part to the Basic Game. In Part 2 we let contributors again make a contribution decision. To examine reciprocity, we compare second-part contributions between two treatments: the RENT EXTRACTION OLD ADMIN condition allows for reciprocal behavior by letting second-part contributions affect the payoff of the administrator who extracted a rent in Part 1. The other treatment, labeled the RENT EXTRACTION NEW ADMIN condition, eliminates reciprocity. In this treatment, contributors also experience rent extraction in the first part. However, the contributors' second-part contributions impact the payoff of a passive, new administrator who did not make any rent-extraction decision. Our test of generosity effects, instead, builds on the previously highlighted observation that these should lead to situational spillovers beyond a specific contributor-administrator pair. We test for such effects by comparing second-part contributions between the RENT EXTRACTION NEW ADMIN condition and a CONTROL NEW ADMIN condition. In both treatments, the administrator from the first part is uninvolved in Part 2, and the price of giving is identical across conditions. The crucial difference between the two treatments is that in RENT EXTRACTION NEW ADMIN, individuals face a rent-extracting administrator in the first part, while in CONTROL NEW ADMIN contributors face a passive administrator. The comparison, hence, identifies the generosity effect.

Building on our experimental design, we present two main results. First, analyzing contributions in the Basic Rent-Extraction Game, we demonstrate that active rent extraction undermines prosocial behavior in terms of contributions to non-profit associations. The overall motivational effect of rent extraction is economically significant: Contributors who face a rent-extracting administrator (RENT EXTRACTION condition) reduce average contributions by 41% compared to contributors who face an administrator who passively receives a share of contributions (CONTROL condition). In contrast, the motivational effect of not extracting a rent is not statistically different from zero. Second, analyzing the Extension of the Basic Game, we find no support for the hypothesis that reciprocal motives affect contributions: The second-part contributions do not differ significantly between the RENT EXTRACTION OLD ADMIN and RENT EXTRACTION NEW ADMIN treatments. In contrast, our findings support the hypothesis that rent extraction triggers intertemporal spillovers across specific administrator-contributor interactions, suggesting a dampening effect of rent extraction on the contributors' generosity. The size of the spillover is substantial and almost equals the original drop in contributions

in Part 1.

Adding to our main findings, we also demonstrate that our results do not depend on using framed instructions. We also present evidence suggesting that we can interpret our findings as being driven by decisions judged as a form of unethical behavior.

Taken together, the main insight from our work is that rent-extraction decisions by administrators are manifestations of anti-social behavior reducing the motivation of other agents to behave prosocially. Moreover, rent extraction is particularly harmful by undermining an individuals' generosity in situations that are not directly related to the context where rent extraction occurred.

The structure of the paper is as follows. Section 2 outlines our contribution to the literature, Section 3 sets out a simple conceptual frame, Section 4 presents our experimental design, Section 5 describes the main findings, and Section 6 concludes.

2 Related Literature

In addition to what has been discussed in the introduction, this paper relates to several strands of research.

Our main research question connects our work to the literature on motives for charitable giving. As our design eliminates price effects, we do not discuss the extensive literature on how donors respond to changes in the price of giving. The presence of a rent-extracting administrator who moves first links our work to studies on how lead donors affect donations (e.g. Rondeau and List, 2008; Karlan and List, 2012). Also related is work on how giving responds to information about the behavior of other potential donors (e.g. Frey and Meier, 2004; Chen *et al.*, 2010). More broadly, our findings also link to evidence showing that leaders can increase cooperation in the private provision of public goods (e.g. Kelsey Jack and Recalde, 2015; Collins, 2016). For reviews of the experimental literature on leaders in public goods games, see Chaudhuri (2011) and Chaudhuri (2016).

Our finding that rent extraction triggers spillover effects connects our work to studies identifying similar spillovers in different contexts. For instance, Engl *et al.* (2018) demonstrate that the presence of a punishing institution in one public goods game enhances cooperation in another game. In a similar vein, Cassar *et al.* (2014) show that an increase in the probability of facing a dishonest partner in a market game decreases trustworthiness and trust.

A further link to existing literature is established by the fact that we test for a negative reciprocal response towards the administrator. In the large body of literature on reciprocity, the most closely related studies are those showing that individuals tend to

reject unfair offers in bargaining games (Camerer and Thaler, 1995) and are willing to punish norm violations in public goods games (Fehr and Gächter, 2000a,b; Herrmann *et al.*, 2008). Positive reciprocity has also been studied in the context of giving, with most studies showing that donors reciprocate gifts (e.g. Falk, 2007; Lacetera *et al.*, 2014).

As discussed before, we consider rent extraction as a form of anti-social behavior, connecting our paper to the experimental literature on corruption. Several studies focus on corruption in the form of bribery and investigate agents' motivation to engage in or punish corruption (e.g., reviewed by Abbink and Serra, 2012). Related to our focus on prosocial behavior, Banerjee (2016a) provides evidence that framing past experiences in an ultimatum game as bribery erodes trust in others.[5] Further evidence suggests that profit-seeking behavior destroys the efficacy of punishment in fostering cooperation (Xiao, 2013), and that the possibility to bribe diminishes contributions to the public good (Muthukrishna *et al.*, 2017; Buffat and Senn, 2018).

Finally, from a design perspective, our approach to study giving to real-world institutions in the laboratory links our paper to a substantial body of literature, including Eckel and Grossman (1996), Benz and Meier (2008), Laury and Taylor (2008), de Oliveira *et al.* (2011), and Grossman (2015).

3 Conceptual Considerations and Hypotheses

How does rent extraction impact contributions to non-profit associations? The default answer in standard economics is to predict the absence of any effects. Homines oeconomici will abstain from giving, leaving no room for further reductions in contributions. However, if we allow for non-selfish behavior, the answer is less clear. This section presents a stylized conceptual framework that discusses the potential effects of rent extraction on contributions, assuming two types of motives for giving. The purpose of the framework is to fix ideas and to derive hypotheses that can be tested experimentally.

Conceptual Framework Assume a population of n contributors and one administrator. Each contributor has an income y_i and can allocate her income between two goods: a private consumption good c_i and a contribution to a non-profit association g_i. The sum of contributions is $G = \sum_{i=1}^{n} g_i$. The administrator executes some administrative task.

[5] Going back to (Putnam, 1993), there is an older line of reasoning in political economy hypothesizing that autocratic power of executives and elite capture negatively affects interpersonal trust and civic participation, sometimes labeled as "social capital".

Our goal is to highlight the potential effects of rent extraction on prosocial behavior. For that purpose, we compare two scenarios: one with and one without active rent extraction. We first consider the contributors' behavior in a baseline scenario without rent extraction. In this case, the administrator passively receives a share s of G as a variable wage on top of a fixed salary w. Consequently, the non-profit association effectively gets $R_i = (1-s)\cdot g_i$ of i's contribution. Turning to the contributor's preferences, she considers s as exogenously given and, for simplicity, behaves consistently with the quasi-linear utility function[6]

$$U_i(c_i, g_i, R_i) = c_i + \frac{\theta_0}{1+1/e} \cdot \left(\frac{g_i^{\nu} \cdot R_i^{1-\nu}}{\theta_0} \right)^{1+1/e}, \qquad i = 1, \ldots, n, \tag{1}$$

where ν is a weight, and e and θ_0 are preference parameters (see subsequent discussion for details).

As apparent from equation (1), we follow Hungerman and Ottoni-Wilhelm (2018) and express a contributor's preference for giving (second term) as a combination of warm-glow of giving (Andreoni, 1989, 1990) and impact giving (Duncan, 2004; Atkinson, 2009).[7] To see this, consider two special cases. If the weight $\nu = 1$, the contributor is motivated to give only by warm-glow. When $\nu = 0$, the contributor is, instead, a pure impact philanthropist. She wants to "make a difference" and cares about how much of her own transfer the non-profit association receives. For $0 < \nu < 1$, the individual is an impure impact philanthropist. The parameter θ_0 reflects the strength of the contributor's (impure impact) preference for giving, henceforth the contributor's generosity under a variable wage.[8]

In the baseline scenario, each contributor i maximizes utility subject to $y_i = c_i + g_i$,

[6] Hungerman and Ottoni-Wilhelm (2018) present a more general but also more complicated form of our model. Studying the effects of rent extraction in this more general framework leaves our results unchanged.

[7] Our specification of utility nests two standard motives for giving to non-profit associations. One could additionally extend preferences to include altruism by adding the total size of the public good G to the second term. The contribution of one individual would then depend on the contributions of others. Importantly, the predictions regarding the effect of rent extraction would, however, be unchanged. Furthermore, altruism models typically assume that each individual "tops up" the public good to the own desired level G (see, e.g., the discussion in Andreoni, 2006). In contrast, in our experiment, contributions cannot influence whether or not and how much of the public good is provided.

[8] Contributors in our model ignore that the administrator receives a part of their contribution. Such considerations could affect behavior, for example, through inequality aversion. Because our experimental design controls for these types of effects, we do not model them further. Moreover, as we implement a one-shot experiment without interactions between contributors, we also abstain from modeling conditionality in the behavior of contributors.

$g_i = 1/(1-s) \cdot R_i$, $c_i \geq 0$, resulting in the optimal choice of

$$g_i^* = p_0^{(1-v)(1+e)} \cdot \theta_0, \tag{2}$$

with the price of giving $p_0 = 1/(1-s)$.

Equation (2) shows how the administrator's variable wage s impacts the contributor's choice of g_i^*. Without a variable wage (i.e., $s = 0$), we have $g_i^* = \theta_0$. Therefore, we can interpret the preference parameter θ_0 as the potential contribution. By contrast, a positive variable wage share s can depress giving below the potential contribution via increasing the price of giving $p_0 = 1/(1-s)$. Whether or not this happens depends on the contributor's warm-glow preference. To see this, note that the price elasticity of giving is $e_{g_i^*,p} = (1-v)(1+e)$. According to this formula, purely warm-glow oriented contributors ($v = 1$) do not react to price changes. Intuitively, they give for selfish reasons and do not care about how much the non-profit association receives. Price-elastic (impure) impact philanthropists ($0 \leq v < 1$, $e < -1$), instead, contemplate that a positive variable wage lowers the amount received by the association and, thus, reduce their contributions in response to increases in s. The strength of the effect decreases in v and increases in the absolute value of e (i.e., the price elasticity of R_i^* for $v = 0$).[9]

In line with the paper's goal to analyze how rent extraction affects contributions, we introduce a scenario with rent extraction. In this scenario, the administrator actively decides to extract a share r of G as a private rent on top of her fixed salary w. The association receives $R_i = (1-r) \cdot g_i$. Under rent extraction, the contributor i acts according to the utility function

$$U_i(c_i, g_i, R_i) = c_i + \frac{\theta_1}{1+1/e} \cdot \left(\frac{g_i^v \cdot R_i^{1-v}}{\theta_1} \right)^{1+1/e} - \chi \cdot r \cdot g_i, \qquad i = 1, \ldots, n, \tag{3}$$

with $\theta_1 \leq \theta_0$. Two differences to the baseline scenario stand out. First, active rent extraction can undermine a contributor's generosity ($\theta_1 \leq \theta_0$), for example, by signaling a weaker social norm to behave prosocially. Second, preferences allow for negative reciprocity towards the administrator (Rabin, 1993; Dufwenberg and Kirchsteiger, 2004). In particular, the third term represents an unkindness function, specifying that the contributor loses utility from transferring value $r \cdot g_i$ to an actively rent-extracting administrator. The utility loss is proportional to the size of the extracted rent r (i.e., the administrator's unkindness) and depends on the strength of reciprocity χ.[10]

[9] The price elasticity of R_i^* is $e_{R_i^*,p} = -1 + (1-v)(1+e)$. For $v = 0$, we obtain $e_{R_i^*,p} = e$.

[10] Notice two points. First, the linear specification follows Bellemare and Shearer (2009). Second, because negative reciprocity seems to be a more powerful force in the context of prosocial behavior (Fehr and Gächter, 2000a), we focus on this type of conduct. Empirically, we can also test for positive

Maximization of utility yields

$$g_i^\star = p_1^{(1-v)(1+e)} \cdot (1+\chi \cdot r)^e \cdot \theta_1, \tag{4}$$

with $p_1 = 1/(1-r)$. We can now compare the forces that drive giving in both scenarios. First, rent extraction and variable wages trigger price effects of a similar size. That is because, formally, the elasticity of $g_i^\star$ with respect to the price p_1 corresponds to the elasticity of g_i^* with respect to p_0, which is $e_{g_i^*,p} = (1-v)(1+e)$. Intuitively, this equivalence implies that independently of the reason for the price change, price-elastic (impure) impact givers respond similarly to the fact that the association receives less of their contribution.[11] Second, unlike a regime with variable wages, rent extraction can further depress contributions through two types of motivational effects. The first motivational effect operates through negative reciprocity. To see this formally, consider the second factor in equation (4) that decreases in r (if $e < 0$). The effect size depends on the strength of the reciprocity preference χ. The second motivational effect runs through the drop in the contributor's generosity ($\theta_1 \leq \theta_0$).

We summarize the discussion of our framework by formulating our hypotheses as follows:

Hypothesis 1 (Contributions)**.** *The contributions under rent extraction will be lower than under positive variable wages due to motivational effects (i.e., effects beyond price effects).*

Hypothesis 2 (Generosity)**.** *Rent extraction will undermine a contributor's generosity.*

Hypothesis 3 (Reciprocity)**.** *Rent extraction will trigger negative reciprocity.*

4 Experimental Design

Participants take part in a two-part laboratory experiment on giving to real-world associations under rent extraction. The first part, labeled the Basic Rent-Extraction Game, allows us to identify the overall motivational effect (Hypothesis 1). The second part, labeled the Extension of the Basic Game, serves to analyze the nature of the motivational effect by separating changes in contributors' generosity (Hypothesis 2) from negative reciprocity towards the administrator (Hypothesis 3).

reciprocity and find no evidence that it impacts the contributors' behavior.

[11] There is plenty of evidence demonstrating that contributions to non-profit associations react to price changes, at least to some extent. See, e.g., Bakija and Heim (2011) and Andreoni and Payne (2013) for reviews.

4.1 First Part: Basic Rent-Extraction Game

This subsection introduces the design of the Basic Rent-Extraction Game. The game is inspired by the donation game (see, e.g., Eckel and Grossman, 1996; Benz and Meier, 2008; de Oliveira *et al.*, 2011; Voors *et al.*, 2012), in which contributors receive an endowment and decide how much of the endowment to contribute to a selected non-profit association. The main difference of our design is that we add a potentially rent-extracting administrator to the game.

Treatment Conditions To identify motivational effects, we implement two treatment conditions: a RENT EXTRACTION condition and a CONTROL condition. In both conditions, we randomly determine the subjects' player type, either contributor or administrator. Both types of players receive a fixed endowment of 100 experimental currency units (ECU), which equals 10 Euro. We also randomly allocate subjects to groups, each group comprising three contributors and one administrator. Part 1 of Figure 2 summarizes the timing of the Basic Rent-Extraction Game and also highlights the main differences between the RENT EXTRACTION and CONTROL condition.

Both conditions consist of two stages. In the first stage of the RENT EXTRACTION condition, each contributor selects one of five non-profit associations to which she can contribute an amount between 0 and 100 ECU in the second stage. All subjects are informed that the experimenter will double transfers to associations. The instructions list the associations by name and inform subjects about the associations' main activities. For instance, the international student association AIESEC is introduced as "AIESEC: Placement of international exchanges and internships and corresponding counseling services; intercultural tutoring." While contributors select an association, each administrator makes a binary choice of whether or not to expropriate a fixed share of 10% of the second-stage contributions in her group. A decision in favor of rent extraction increases the price of giving and reduces overall efficiency, since the sum of payoffs of contributors, administrator and associations is lower. Administrators who decide for rent extraction know that this increases their payoff by 0 to 30 ECU, depending on contributions. We do not inform administrators about which associations are selected by contributors. Hence, the administrators cannot condition their rent-extraction decision on the choices of associations. In the second stage, contributors learn about their administrator's rent-extraction decision before they decide how much to contribute to the previously chosen association. The game does not involve any interaction between contributors.[12]

[12]Alternatively, we could have set up an experiment in which contributors directly punish the administrator. However, our goal was not to test whether contributors are, in general, willing to punish but to

The CONTROL condition differs from the RENT EXTRACTION condition in that the first stage does not involve any active decision-making by administrators. Instead of deciding for or against extracting a rent, we inform the administrators in the CONTROL condition about the outcome of a random draw that determines whether or not they receive 10% of the contributions in their group. In the experiment, we use the label "variable component" for this part of administrators' payoff. The probability that the administrator receives the variable component is 63%, which matches the share of administrators deciding in favor of rent extraction in the RENT EXTRACTION condition. Importantly, we neither communicate the exact probability nor mention that the probability depends on the behavior of administrators in another condition. In the second stage, contributors in the CONTROL condition learn about the outcome of the random draw before they make their contribution decision.

Non-profit Associations Our choice of the offered non-profit associations is led by the idea that our chances of identifying the effect of interest depend on a significant share of strictly positive contributions in the baseline scenario (i.e., without rent extraction but with variable wages). We take several measures to stimulate positive baseline contributions. First, to avoid that a strong aversion against one particular association undermines an individual's contribution, we give contributors a choice between five non-profit associations.[13] Second, we offer associations to contributors that (a) are mostly run by students, (b) operate at the department at which we implement our experiment, and (c) provide a broad range of services for students. Example services are the provision of international exchange programs, workshops, and tutoring or counseling sessions. The associations also participate in the organization of various social events at the department throughout the academic year. The idea behind selecting student-run associations is to increase the subjects' emotional attachment to the associations.[14] Third, before implementing our experiment, we also surveyed potential participants in our study.[15] As part of this survey, we elicited whether or not subjects

understand whether punishment considerations drive their contribution behavior. Therefore, we chose a design in which contributors can only indirectly punish the administrator by choosing lower contributions.

[13]The list of associations is as follows: FSI or Wasti e.V. (student council of the faculty of economic and social sciences); START (student-run start-up consultancy) or Academy Consult (consulting practice by students); local branch of Studentenwerk (state-run non-profit association for student affairs in Germany); local branch of AIESEC (world's largest non-profit youth-run organization); local branch RCDS (largest and oldest political student association in Germany). The least popular association was selected by 6% of contributors while the most popular one was selected by 48%. Because we implemented our experiment in two laboratories and not all associations operated at both departments, the list contains seven instead of five associations.

[14]As a side result, Feicht *et al.* (2016) show that, in our subject pool, individuals contribute indeed more if they are more attached to the cause.

[15]We excluded individuals who participated in this study from the main experiment.

are, in general, willing to contribute to one of the five associations or to other organizations. The results of this prestudy suggest that individuals indeed prefer contributions to these five student associations.

One direct result of our choice of associations is that contributors can potentially consume the provided services themselves. We, nevertheless, consider it unlikely that the marginal utility loss derived from losing the contributed monetary unit is lower than the marginal utility gain derived from the additional services provided with the contributed unit. One reason is that the associations received, on average, just 295 Euro from the experiment. Not surprisingly, this did not lead to any significant change in their service provision. Furthermore, most services are, at least to some extent, rival in consumption (think of counseling services or placement into exchange programs) which further reduces the contributor's benefit from her own contribution.

Further Details of Basic Rent-Extraction Game Several further details of our experimental design are worth noting. First, we assign individuals to groups of three contributors and one administrator to ensure that, despite the moderate rent-extraction rate, our design implements substantial monetary incentives for rent extraction. As this design feature leaves the price of giving unchanged, it does not change contributors' incentives. Second, as mentioned before, administrators and contributors make their decisions knowing that the experimenter doubles transfers to associations. In groups where the administrator benefits from contributions (either actively through rent extraction or passively through the variable component), the doubling applies to contributions net of the 10% share accruing to the administrator. The resulting price of giving in the laboratory decreases from $p = 1/(1-r)$ to $p = 1/2(1-r)$. Consequently, contributions to the same associations would be more expensive if contributors made them outside the laboratory. Third, the administrators perform a simple administrative task after contributors make their contribution decisions. Specifically, administrators have to assign contributions to associations according to contributors' choices.[16] The purpose of this element of the design is to ensure that the role administrators perform in the experiment is consistent with the function implied by the "administrator" label. Fourth, before the beginning of the experiment, we inform subjects that the experiment consists of two distinct parts. Furthermore, subjects receive the instructions for each part before the start of the respective part. Consequently, before the start of the second part, subjects do not know the second part's design and considerations regarding part two cannot influence the decisions in Part 1.

[16] We implemented the administrative task such that miscalculations by administrators were ruled out. Contributors and administrators were informed about this.

Test of Hypothesis 1: Total Motivational Effect of Rent Extraction To identify the motivational effect of active rent extraction, we compare the behavior of contributors matched to an expropriating administrator (RENT EXTRACTION condition) to the behavior of contributors paired with an administrator receiving passively the variable component (CONTROL condition). The only difference between both conditions is that administrators in the RENT EXTRACTION condition make an active decision in favor of extraction, whereas administrators in the CONTROL condition benefit passively from contributions. Consequently, our design separates the motivational effect from the price effect associated with rent extraction.[17] We also study the motivational effect of not expropriating a rent on contributions, holding the price of giving constant. In this case, we compare contributors matched to non-expropriating administrators (RENT EXTRACTION condition) to contributors facing administrators who do not receive the variable component (CONTROL condition).

4.2 Second Part: Extension of Basic Game

Our conceptual framework highlights two channels through which the motivational effect could operate: reciprocity and generosity. We design the second part of the experiment such that it allows us to gather evidence on the importance of these channels to explain the contributors' behavior.

Treatment Conditions As becomes apparent from Figure 2, in the second part of the experiment, we split the RENT EXTRACTION treatment into the RENT EXTRACTION OLD ADMIN condition and the RENT EXTRACTION NEW ADMIN condition. For all treatments, the second part is similar to the first one. Subjects receive, again, an endowment of 100 ECU. Each contributor selects once more an association, and contributes between 0 and 100 ECU. The subjects' total payoff is the sum over the payoffs in both parts. The difference to Part 1 lies in the role of the administrator.

In the RENT EXTRACTION OLD ADMIN treatment, contributors face the same administrator in Part 2 as in Part 1. However, the administrators do not decide actively about rent extraction anymore. Instead, in the second part, we implement the administrator's rent-extraction decision from the first part. For example, if the administrator chose to extract a rent in Part 1, she also receives 10% of her group's contributions in Part 2.

[17] Because administrators received a fixed endowment of the same size as a contributor's endowment, contributors could not reasonably interpret the expropriation of contributions as supportive to the fairness of the payoff allocation. Note also that because the administrator receives a share of contributions, there could be a potential crowding-in of contributions. However, since this effect should be equivalent in both treatment conditions, we can rule out an interaction with our treatment effect.

Hence, there is no active decision-making by administrators in the second part anymore.[18]

As for the RENT EXTRACTION NEW ADMIN condition, the only difference to the RENT EXTRACTION OLD ADMIN condition is that we match contributors to a new administrator in Part 2. The new administrator is uninvolved in the first part (i.e., she neither takes the role of an administrator nor the role of a contributor). We do not inform the subjects that an additional, new administrator exists until the start of the second part.[19] Equivalently, the old administrator is uninvolved in the second part. Furthermore, also the new administrator does not decide actively about rent extraction in Part 2. Instead, as in the RENT EXTRACTION OLD ADMIN treatment, we automatically implement the decision that was made by the administrator in Part 1. Despite being inactive in Part 1, the new administrator receives a payoff for the first part that equals the one of the first-part administrator. With this, we ensure that the second-part administrator in the RENT EXTRACTION OLD ADMIN and RENT EXTRACTION NEW ADMIN treatments have similar payoffs at the beginning of Part 2 and, hence, avoid that payoff differences can confound potential treatment effects.

We assign subjects who were in the CONTROL condition to the second-part CONTROL NEW ADMIN condition. As in the RENT EXTRACTION NEW ADMIN treatment, contributors in this condition face a new administrator in the second part. Nevertheless, part two implements again the outcome of the random draw from the first part that determines whether or not the administrator receives 10% of contributions.

Test of Hypothesis 2: Generosity Effect Hypothesis 2 states that rent extraction weakens the generosity of contributors. We test this by studying intertemporal spillovers beyond a particular administrator-contributor relationship: Contributors who experience rent extraction in one situation should contribute less in a subsequent situation if rent extraction lowered their generosity. To test for this type of spillover, we compare the contributors' behavior in the RENT EXTRACTION NEW ADMIN condition to the behavior in the CONTROL NEW ADMIN condition. In both treatments, reciprocity concerns cannot impact contributions in the second part since administrators did not make any decision. In addition, the price of giving is identical in both parts and both treatments. Consequently, our design separates the intertemporal spillover effect of active rent extraction from reciprocity and price effects.

[18] In the first part, neither administrators nor contributors know that the rent-extraction decision will have implications for the second part.

[19] We achieve this by showing a private pop-up message to the new administrators, informing them that they will not participate in the first part.

Test of Hypothesis 3: Reciprocity Concerns To identify negative reciprocity towards the administrator, we apply the following treatment-comparison strategy. Focusing on rent-extracting administrators, we compare contributions between the RENT EXTRACTION NEW ADMIN and RENT EXTRACTION OLD ADMIN treatments in the second part. The underlying idea is the following: If reciprocity matters, we expect contributions in the second part to be higher in the RENT EXTRACTION NEW ADMIN treatment than in the RENT EXTRACTION OLD ADMIN condition. That is because, in the former treatment, the contributor's decision does not affect the administrator who is accountable for rent extraction. Consequently, the contributors are unable to reciprocate the old administrator's behavior negatively. In contrast, reciprocity can affect the behavior of contributors in the RENT EXTRACTION OLD ADMIN treatment, as contributors in the second part face the administrator who is accountable for rent extraction.[20]

Our strategy to identify reciprocity fails if reciprocity is of a short-term nature, implying that individuals reciprocate only in part one. As we discuss in the results section, our design enables us to test the validity of this concern.

4.3 Neutrally-Framed Rent-Extraction Game

The use of abstract terms can eliminate considerations that are inherent in naturally-occurring situations (Alekseev *et al.*, 2017). As a consequence, laboratory experiments on corruption commonly use framed instructions (see, e.g., Abbink and Hennig-Schmidt, 2006; Banerjee, 2016b). Inspired by these and related studies, our Basic Rent-Extraction Game also relies on framing and labels the transfer to the administrator as "expropriation" in the RENT EXTRACTION treatments and as a "variable component" of her payoff in the CONTROL condition. The downside of this design choice is that it generates additional degrees of freedom in designing powerful treatments and potentially lowers experimental control because context can accentuate home-grown values (Alekseev *et al.*, 2017). To address these concerns, we implement a neutrally-framed version of the Basic Rent-Extraction Game that allows us to test if our treatment effects are pure framing effects.

Treatment Condition We neutralize the frame in the Basic Rent-Extraction Game by implementing what we label the NEUTRAL treatment condition. In this condition, an administrator actively decides in the first part whether or not to receive a "variable component" equal to 10% of contributions in her group on top of her fixed endowment. In all remaining aspects, the first part mirrors the Basic Rent-Extraction Game. The

[20] In a similar vein, we could conduct a comparison for the cases in which the administrators decide against rent extraction. However, we only obtained six observations for this case.

second part replicates the RENT EXTRACTION OLD ADMIN condition, using the neutral frame.

4.4 Implementation

We conducted the framed and neutrally framed two-part game at the Munich Experimental Laboratory for Economic and Social Sciences in 2018. The resulting dataset, labeled "Sample 1", includes 479 subjects (309 contributors, 103 old administrators, and 67 new administrators). In an earlier working paper, we implemented an experiment that consisted of the Basic Rent-Extraction Game only. This experiment was conducted at the Laboratory for Experimental Research Nuremberg in 2014 and 2015.[21] The corresponding dataset is labeled "Sample 2" and consists of 384 subjects, 288 contributors and 96 administrators. Because the design of the first part of the two experiments is identical, we can pool the respective data to analyze the Basic Rent-Extraction Game.[22]

The two-part game took approximately 70 minutes. When running only the Basic Rent-Extraction Game, sessions lasted about 60 minutes. Participants in the two-part game (one-part game) earned 23.8 (13.01) Euro on average, including the show-up fee of 6 (4) Euro. We programmed the experiments with z-Tree (Fischbacher, 2007) and recruited subjects with ORSEE (Greiner, 2015), without imposing any sampling restrictions. Furthermore, the subjects solved control questions before the experiment and answered survey questions on individual characteristics and game-related issues after the experiment. We also debriefed subjects via e-mail and informed them about the total amount transferred to the associations.

5 Results

5.1 Basic Rent-Extraction Game: Total Motivational Effects

This section studies behavior in the Basic Rent-Extraction Game to test for the existence of two types of overall motivational effects: the overall motivational effect of an active decision in favor of rent extraction and the overall motivational effect of an active decision against rent extraction.

[21] We would like to thank the referees for urging us to explore the mechanisms through which the motivational effect operates. Due to construction works in 2018, we could not collect the data for the two-part game in Nuremberg.

[22] The sets of associations were very similar at both laboratories. In particular, three of the non-profit associations operate at both universities and could be selected by contributors in both samples. For details, see the instructions in the Appendix.

We first estimate the motivational effect of active rent extraction in the pooled sample that combines Sample 1 and Sample 2 (i.e., the data from both laboratories). As previously highlighted, we can examine this type of effect by comparing contributions in the RENT EXTRACTION and the CONTROL conditions, as this allows us to fix the price of giving across treatments. To achieve the latter, we contrast the behavior of contributors whose administrator extracts a rent (RENT EXTRACTION condition) with the behavior of contributors facing administrators who benefit passively from contributions (CONTROL condition).

Figure 3 presents a first indication that the motivational effect of rent extraction is substantial. It shows (a) the treatment-specific histograms of contributions in percent of the endowment (contribution rate) and (b) the corresponding cumulative distribution functions (bin size 10%). Compared to the CONTROL condition, the figure reveals a higher likelihood of contributing up to 30% of the endowment under RENT EXTRACTION. In contrast, contributions of more than 40% of the endowment are more likely in the CONTROL condition. In summary, active rent extraction results in a substantial shift of the probability mass towards lower contributions.

This shift in the probability mass translates into significant treatment effects. Panel A in Table 1 reports the results. The contribution rate is 20.0 in the CONTROL condition and just 11.8 in the RENT EXTRACTION condition, a difference that is significantly different from zero (t-test, p-value < 0.01).[23] Active rent extraction in our design is, thus, associated with a 41% reduction in average contributions. We can also reject the hypothesis that both treatments stem from the same population with an identical distribution (Mann-Whitney U-test, p-value < 0.01). We conclude that, in line with Hypothesis 1, rent extraction triggers a sizable motivational effect. Therefore, our first finding is that even if we control for differences in the price of giving, contributors who face rent-extracting administrators are less inclined to behave prosocially in terms of voluntary contributions.

RESULT 1: *We find support for Hypothesis 1: Active rent extraction undermines prosocial behavior in terms of contributions to non-profit associations through a motivational effect (i.e., an effect beyond the fact that rent extraction increases the price of giving). Differences in average contributions are driven by a shift towards small and zero contributions in the presence of rent extraction.*

As regards the motivational effect of an active decision against rent extraction, we

[23] Tables A1 and A2 in the Appendix show that a separate test in Sample 1 and Sample 2 leads to very similar results. The corresponding effects when using only observations from Sample 1 or Sample 2 are 52% and 30.8%, respectively.

compare contributors' behavior in the RENT EXTRACTION and CONTROL conditions if the administrator does not benefit from contributions. Panel B in Table 1 presents the results. The main point to take away from Panel B is that the contribution rates in the RENT EXTRACTION and the CONTROL conditions are not significantly different from each other.[24] Contrasting this result with the previously discussed Result 1, the findings point to asymmetric effects: While the motivational effect of actively extracting a rent is economically and statistically significant, the motivational effect of not extracting a rent is not even statistically different from zero.

Notably, this finding is in line with previous literature. For example, negative information and negative experiences tend to influence evaluations and behavior more than positive ones (see, e.g., Ito *et al.*, 1998; Andreoni *et al.*, 2003). Furthermore, actions seem to be more salient to observers and, hence, more relevant for the observer's subsequent behavior if they deviate from a social norm (Kahneman and Miller, 1986). In this vein, it is possible that contributors perceive a social norm of no rent extraction, implying that deviations from that norm give rise to substantial responses.

5.2 Extension of Basic Game: Channels

We next study behavior in the Extension of the Basic Game to shed light on whether rent extraction affects prosocial behavior via negative reciprocity towards a rent-extracting administrator, or via a negative impact on contributors' generosity. The analysis focuses on Sample 1 since only individuals in this sample participated in both parts of the game.

Table 2 reports the treatment-specific contribution rates and the treatment effects in the second part, focusing on the cases in which the administrator benefits from contributions.[25] Figure 4 additionally presents the corresponding results in graphical form. The figure consists of three panels. The leftmost panel depicts contributions by treatment for both parts of the game. The panel in the middle shows how the RENT EXTRACTION NEW ADMIN treatment affects the contribution rates relative to the CONTROL NEW ADMIN group. The right panel highlights the treatment effect of the RENT EXTRACTION NEW ADMIN treatment relative to the RENT EXTRACTION OLD ADMIN treatment.

As discussed in Subsection 4.2, a comparison of the second-part contribution rates between the RENT EXTRACTION OLD ADMIN and the RENT EXTRACTION NEW ADMIN treatment makes reciprocal behavior observable. The reason is that individuals in both treatments share the same treatment history in Part 1, but only the first treatment allows

[24] This result holds irrespective of whether we consider observations in Sample 1, Sample 2, or the pooled sample (see Tables A1 and A2 in the Appendix).

[25] Table A3 in the Appendix reports contributions in Part 2 in the cases in which the administrator does not benefit from contributions.

to reciprocate the behavior of the rent-extracting administrator in the second part. Before turning to Table 2, we note that contributors assigned to the RENT EXTRACTION condition in the first part contribute on average 11.9 percent of their endowment (see Table A1 in the Appendix for details on contribution levels in Sample 1). Splitting up this group in the Extension of the Basic Game (Part 2), we find that contributors in both resulting subgroups behave very similarly: The contribution rate in the RENT EXTRACTION NEW ADMIN condition is 12.1 percent and 9.9 percent in the RENT EXTRACTION OLD ADMIN condition (see Table 2, Panel A). The second-part contribution rates in both conditions are not statistically different from each other (p-value t-test $= 0.539$, p-value Mann-Whitney $U = 0.599$). The rightmost panel in Figure 4 also shows the absence of an effect:[26] For Part 2, the confidence interval includes zero. We conclude that there is no evidence of reciprocity concerns affecting the contribution decisions in our experiment.

The identification of the effect on contributors' generosity builds on the idea that generosity should affect contributions beyond a particular administrator-contributor relationship. And, indeed, the panel in the middle of Figure 4 shows that contributors who face a new, passive administrator in Part 2 after having experienced rent extraction in Part 1 are less generous in the second part than contributors who face administrators passively benefiting from contributions in both parts. Table 2, Panel B shows that the second-part contribution rate in the RENT EXTRACTION NEW ADMIN condition is significantly lower than in the CONTROL NEW ADMIN group (p-value t-test $= 0.020$, p-value Mann-Whitney $U = 0.048$). Because contributors in both conditions face a new, passive administrator in Part 2 (eliminating reciprocity effects) and experience the same price of giving (eliminating price effects), the treatment difference suggests that rent extraction negatively impacts the contributor's underlying generosity. We conclude:

RESULT 2: *We find support for Hypothesis 2: Rent extraction triggers spillovers across situations, suggesting a reduced generosity. In contrast, we do not find support for Hypothesis 3: There is no evidence of negative reciprocity towards the rent-extracting administrator.*

As previously mentioned, we do not find an overall motivational effect of actively deciding against rent extraction (see Table 1, Panel B). Given the absence of a treatment effect, we abstain from further exploring the channels in those cases.

[26] In Part 1, subjects belong to the same treatment group. The figure, therefore, depicts no treatment effect.

5.3 Further Results and Robustness Checks

In the following, we present two complementary pieces of evidence that offer additional perspectives on our results and discuss several robustness checks.

Framing Effects To explore further the nature of our motivational effect, we examine whether it represents a framing effect. In particular, we test whether framing the administrator's choice as an expropriation decision drives our treatment effect. For this purpose, we exploit the NEUTRAL condition, in which we neutrally framed the administrators' choice as a decision of whether or not to receive a payoff augmented by a "variable component".

Table 3 collects the results for the Basic Rent-Extraction Game using contributors matched to administrators who benefit from contributions. Since we did not implement the NEUTRAL treatment in Sample 2, the table focuses on Sample 1 data.[27] For comparison, the first column re-states the motivational effect of actively extracting a rent, framed as an active expropriation, now for Sample 1. The second column estimates the treatment effect of the NEUTRAL condition in comparison to the CONTROL condition. As the table shows, the effect of actively deciding for a variable component on contributions is negative and significantly different from zero (p-value t-test $= 0.039$; p-value Mann-Whitney $U = 0.049$), yet somewhat smaller than the impact of the framed treatment. Consequently, contributions in the RENT EXTRACTION treatment are lower than in the NEUTRAL condition (see the last column). The difference between these two treatments is, however, not statistically significant at conventional levels (p-value t-test $=$ 0.134; p-value Mann-Whitney $U = 0.122$). It is possible, of course, that the insignificance is due to a lack of statistical power. We, thus, cannot exclude the possibility that a framing effect attributes to the overall treatment effect of the RENT EXTRACTION condition. However, we emphasize that the total motivational effect of rent extraction persists, even if we equalize the frame between the CONTROL and RENT EXTRACTION groups. Our main conclusion at this point is that the motivational effect is independent of the chosen frame. This finding is in line with previous literature, suggesting that in simple games with a clear structure, framing has often limited effects (Alekseev *et al.*, 2017).

Nature of Rent Extraction For a meaningful interpretation of the results, we must consider how the participants in our experiment perceived rent extraction. Contributors

[27] To examine framing effects we need only Part 1. Nevertheless, subjects participated also in the Extension of the Basic Game. They were matched to the same administrator as in Part 1 and contributed on average 16.2% of their endowment. Furthermore, in the first part, 12 administrators decided against the variable component. For completeness, Table A1 in the Appendix reports contributions for this case.

could perceive active rent extraction as a form of unethical behavior. In this case, our results would be indicative of how this type of unethical behavior impacts contribution decisions. Alternatively, contributors might perceive rent extraction as being part of the rules of the game. For example, they might view the share of contributions the administrator can capture as a legitimate component of her payoff. The results could then reflect an aversion against actively generating administrative expenses (Gneezy *et al.*, 2014).

Against the backdrop of this discussion, we collected evidence on how contributors perceive the rent-extraction decision in a post-experimental survey. In particular, contributors facing administrators who benefited from contributions evaluated the following statement: "From an ethical point of view, it is negative that the administrator receives 10% of the contributions in Part 1." The responses used a five-point Likert scale (1 = fully agree, 2 = agree, 3 = neither agree or disagree, 4 = disagree, and 5 = fully disagree).

As a reference value, the average evaluation of this statement in the CONTROL group is 2.46. Relative to the CONTROL group, the RENT EXTRACTION treatment shifts the contributors' responses towards a more unethical judgment of the statement (effect size: -8%; p-value t-test $= 0.061$; p-value Mann-Whitney $U = 0.018$). We observe a similar shift in the NEUTRAL condition (effect size: -12%; p-value t-test $= 0.014$; p-value Mann-Whitney $U = 0.016$). Furthermore, we cannot reject the hypothesis that the contributors' evaluations are similar in the RENT EXTRACTION and NEUTRAL conditions (p-value t-test $= 0.403$; p-value Mann-Whitney $U = 0.777$). Although not being an ultimate proof, the findings suggest that we can interpret our effects as being driven by decisions that contributors judge as unethical. Further, the fact that both the RENT EXTRACTION and the NEUTRAL treatments shift contributors' perceptions is in line with the finding that the effects of both treatments on the contributors' behavior are similar.

Robustness We discuss four types of robustness checks that we performed. First, given that we conducted the Basic Rent-Extraction Game in two different laboratories, we can replicate the results on the overall motivational effects in two different samples. Our data shows that the negative impact of rent extraction on prosocial behavior is present in both samples. Second, as mentioned above, all our findings are robust to using either simple t-tests, OLS regressions with various controls, or non-parametric Mann-Whitney U-tests (see the footnotes of the tables for further details). Our results are also robust if we fit Tobit models instead of linear models. Third, one point of skepticism regarding our analysis of the channels might be that reciprocity effects are of a short-term nature. In that case, we would falsely conclude from our results that

reciprocity plays no role. Figure 4 allows us to study if this is a valid concern. Consider the gray line in the left panel, showing how contributions in the RENT EXTRACTION NEW ADMIN treatment evolve over time. The figure clarifies that, compared to the CONTROL group (blue line), part-one contributions immediately drop to a lower level and rest at this lower level in the second part. If reciprocity would be of a short-term nature, we would have observed lower contributions under rent extraction in Part 1 that would have converged towards the higher level in the control group in Part 2.

6 Conclusion

A substantial literature suggests that rent extraction has detrimental effects on society in terms of public goods provision, income inequality, and long-run economic growth. We add to the literature by showing that rent extraction affects the society also in less direct ways. Specifically, we design and implement a laboratory experiment to examine how rent extraction affects subjects' motivation to behave prosocially. Following a sizable strand of literature, we study prosocial behavior in the laboratory as donations to real-world charities.

Two main findings emerge from our analysis. First, we demonstrate that active rent extraction undermines the overall motivation to behave prosocially: Contributors who face a rent-extracting administrator reduce average contributions by 41% compared to contributors who face an administrator who passively receives a share of contributions. Second, we examine the channels through which the overall motivational effect operates. Specifically, we distinguish between negative reciprocity towards an administrator deciding in favor of rent extraction, and a negative impact on the contributors' generosity (i.e., an effect that is independent of a given administrator-contributor pair). We find no support for the hypothesis that reciprocal motives affect contributions. In contrast, the evidence from the experiment supports the hypothesis that rent extraction triggers spillovers across specific administrator-contributor interactions. The presence of spillovers suggests that rent extraction is harmful to society, not only because it makes individuals behave more selfish, but also because it negatively affects prosocial behavior in situations that are not directly related to the context where rent extraction occurred. The consequences of rent extraction on prosocial behavior are, thus, potentially far-reaching.

While our design can identify the existence of spillovers within the context of our experiment, the question remains how strong the spillover would be in other settings. Further research could, for instance, study experimentally if the experience of active rent extraction affects behavior in a subsequent public goods game. Insights about the

extent of the spillover in the laboratory could guide further research about how corruption and other forms of anti-social rent-extraction activities of elites affect the citizens' willingness to behave prosocially in real-world settings. Another question worth studying is how the timing of the game affects the spillover. In our design, the part of the game that identifies the spillover is played immediately after the Basic Rent-Extraction Game. Future research could study a design in which the spillover part is played with some delay. The results would provide further evidence on the importance of spillovers in real-world settings, where decisions to behave prosocially often include longer time lags than in our experimental design.

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Table 1: Total Motivational Effects of Rent Extraction (Basic Rent-Extraction Game)

	Control	**Rent Extraction**	**Difference in Means**
A: Administrators Benefit from Contributions			
Mean Contribution Rate in %	20.0	11.8	-8.2
	(21.3)	(16.5)	[0.000]
Observations	186	192	378
B: Administrators Do Not Benefit from Contributions			
Mean Contribution Rate in %	21.9	21.0	-0.931
	(22.0)	(24.2)	[0.549]
Observations	72	75	147

Note: The table reports mean contributions in the Basic Rent-Extraction Game (Part 1), considering the pooled sample (combined Sample 1 and Sample 2), together with standard deviations (in round parentheses). The third column reports the treatment difference in mean contribution rates, together with p-values of a Mann-Whitney U-test [in square brackets].

Table 2: Channels of Motivational Effect (Extension of Basic Game)

A: Behavior if Administrators Benefit from Contributions

	Control	**Rent Extraction**	
	New Admin	**New Admin**	**Old Admin**
Mean Contribution Rate in %	20.7	12.1	9.90
	(23.9)	(16.3)	(14.5)
Observations	72	48	30

B: Treatment Effects if Administrators Benefit from Contributions

	Rent Extraction New Admin vs Control New Admin	**Rent Extraction New Admin vs Rent Extraction Old Admin**
Difference in Mean Contributions	-8.63	2.18
p-value OLS	0.020	0.539
p-value Mann-Whitney U	0.048	0.599
Observations	120	78

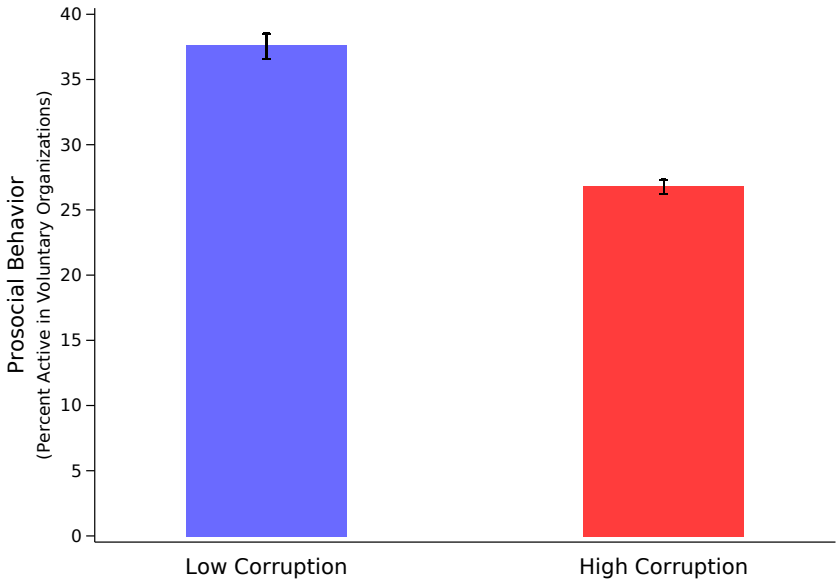
Note: The table reports results for the Extension of the Basic Game (Part 2). It focuses on cases in which the administrator benefits from contributions and relies on Sample 1, i.e., on subjects who participated in both parts of the game. Panel A shows mean contributions, together with standard deviations (in round parentheses). Panel B shows how the different treatments impact contribution rates, together with p-values derived from OLS regressions (no controls, robust) and Mann-Whitney U-tests.

Table 3: Framing Effects if Administrators Benefit from Contributions (Basic Game)

	Rent Extraction vs Control	**Neutral vs Control**	**Neutral vs Rent Extraction**
Difference in Mean Contributions	-12.9	-8.05	4.88
p-value OLS	0.000	0.039	0.134
p-value Mann-Whitney *U*	0.000	0.049	0.122
Observations	150	132	138

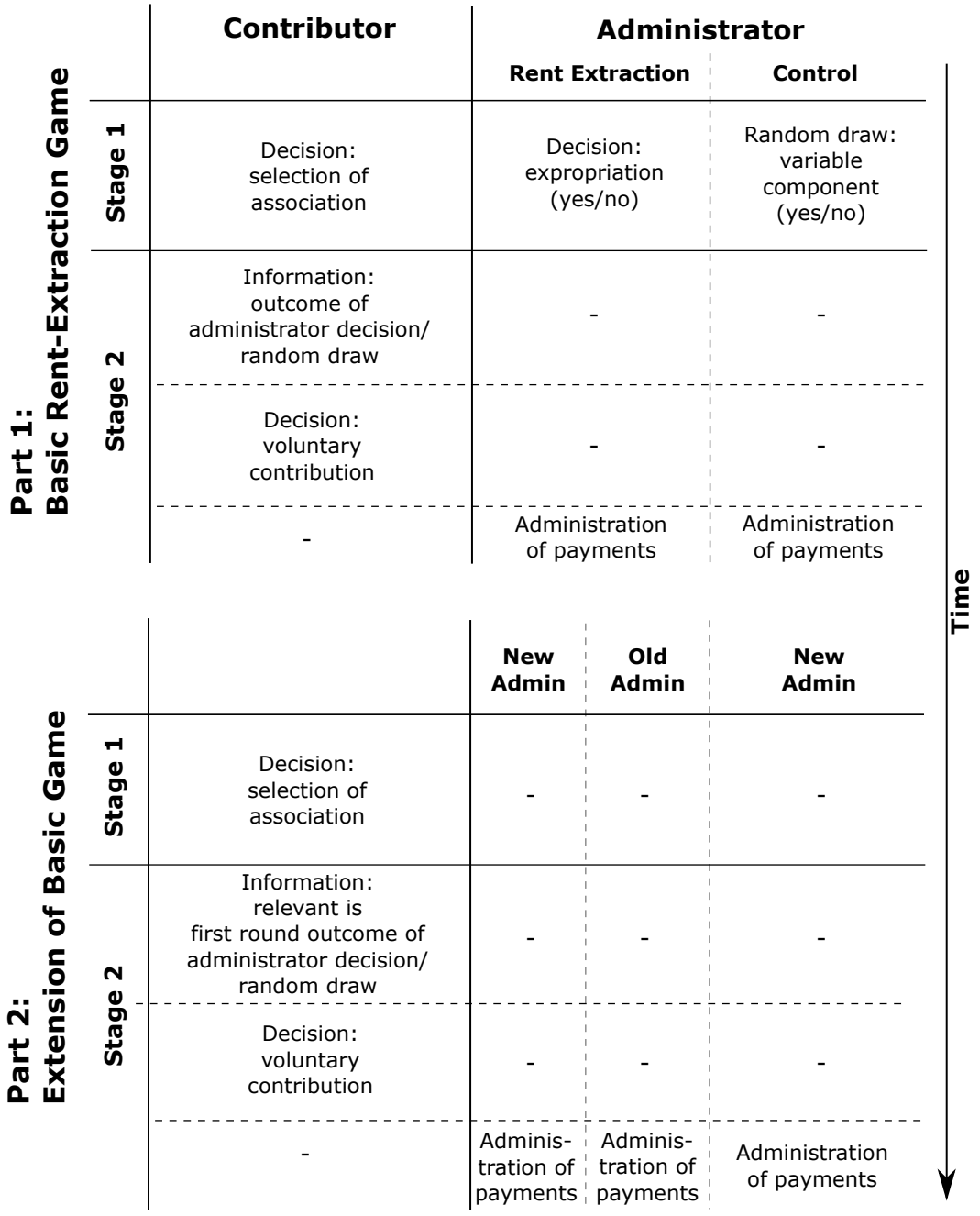
Note: The table tests whether the framing of the administrator's decision impacts the contributors' behavior in cases in which the administrator benefits from contributions. It focuses on the Basic Rent-Extraction Game (Part 1) and relies on Sample 1, as we did not implement the NEUTRAL treatment in Sample 2. As a baseline, the first specification shows the motivational effect of rent extraction in Sample 1. The second specification compares contribution rates if the administrator receives the variable component actively (NEUTRAL condition) to a situation in which she receives the variable component passively (CONTROL condition). The third specification shows the treatment effect of facing an administrator who has actively decided to receive the variable component (NEUTRAL condition) compared to facing an administrator who has actively extracted a rent (RENT EXTRACTION condition). We report *p*-values from OLS regressions (no controls, robust) and Mann-Whitney *U*-tests.

Figure 1: Corruption and Prosocial Behavior in the World Values Survey



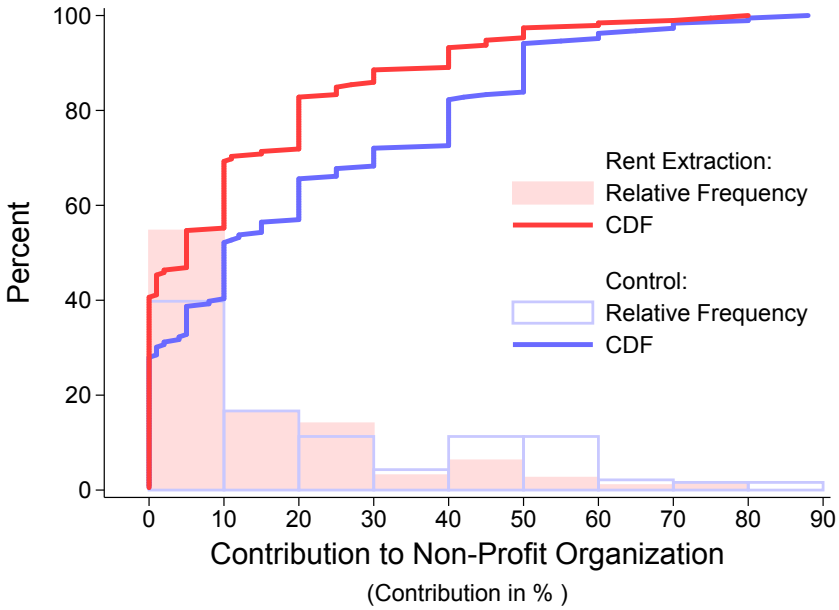
Note: The figure shows the percent of respondents to the World Values Survey wave 6 (2010-2014) stating they are spending a strictly positive number of hours per month in voluntary organizations, by perceived corruption among government officials. The left bar shows activity in voluntary organizations for respondents choosing an index value lower or equal to five (on a scale from one to ten) when assessing corruption within their country's government (low corruption). The right bar shows the respective figure for respondents choosing an index value larger or equal to six (high corruption). The difference in means between low and high corruption is significant at the 1% level (p-value $< 0.001, n = 7716$, Mann-Whitney U-test). Error bars show the mean ± the standard error of the mean. The set of countries where both survey questions were asked comprises Algeria, Bahrain, Iraq, Kuwait, Lebanon, Tunisia, and Yemen.

Figure 2: Experimental Design: Timing of the Games



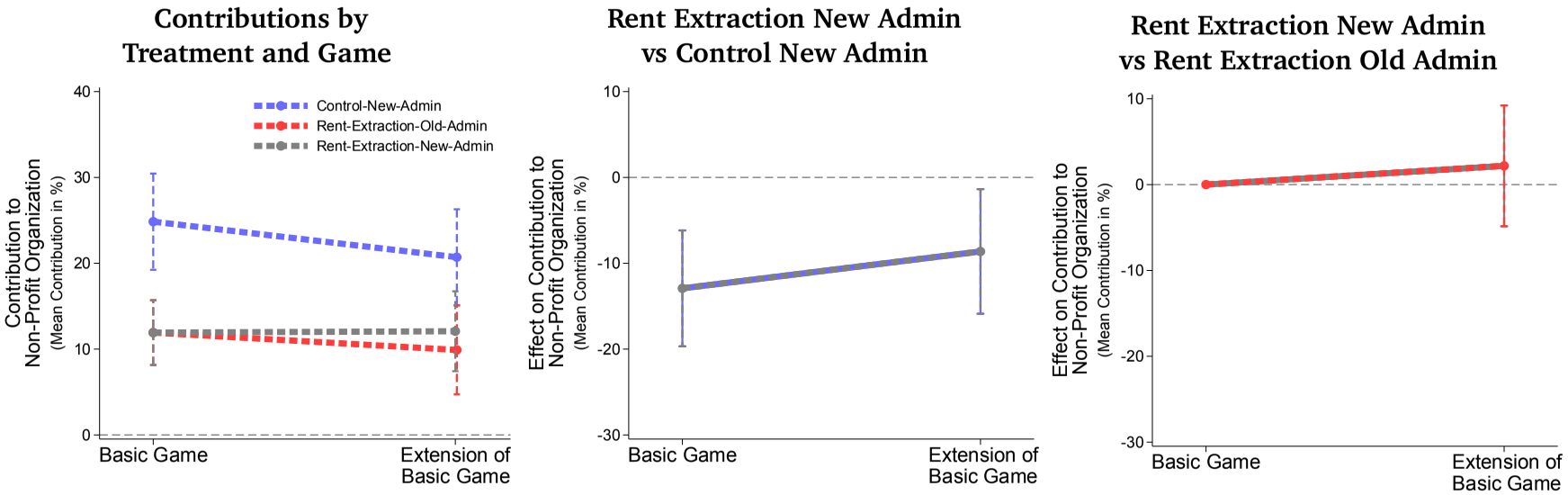
Note: The figure summarizes the experimental design. It considers both the Basic Rent-Extraction Game (Part 1) and the Extension of the Basic Game (Part 2) and shows the timing of events in all treatments separately.

Figure 3: Histograms of Contributions in the Basic Game and Corresponding CDFs



Note: The figure shows histograms of contribution rates in the Basic Rent-Extraction Game and corresponding cumulative distribution functions (CDFs) for the RENT EXTRACTION condition (red) and the CONTROL condition (blue). It relies on the pooled Sample (combined Sample 1 and Sample 2) and consider groups in which the administrator benefits from contributions ($N = 378$). The bin size for the histograms is 10%.

Figure 4: Identifying the Channels Through Which Rent Extraction Affects Contributions



Note: This figure summarizes the main results of the experiment across the two parts of the game (Basic Rent-Extraction Game and Extension of Basic Game). It focuses on groups in which the administrator benefits from contributions and relies on Sample 1, i.e., on subjects who participated in both parts of the game. The panel on the left shows mean contribution rates considering each treatment separately. The panel in the middle shows how the RENT EXTRACTION NEW ADMIN treatment affects contribution rates relative to the CONTROL NEW ADMIN group. The right panel highlights the treatment effect of the RENT EXTRACTION NEW ADMIN treatment relative to the RENT EXTRACTION OLD ADMIN treatment. We estimate linear regression for inference and cluster the standard errors at the level of the subject.