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Corporate Social Responsibility in the work place - Experimental evidence from a gift-exchange game*

Hannes Koppel† Tobias Regner‡

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Abstract

We analyze the effect of investments in corporate social responsibility (CSR) on workers' motivation. In our experiment, a gift exchange game variant, CSR is captured by donating a certain share of a firm's profit to charity. We are testing for CSR effects by varying the possible share of profits given to charity. Additionally, we investigate the effect of matching mission preferences, i.e., a worker preferring the same charity the firm donates to. Our results show that, on average, workers reciprocate investments in CSR with increased effort. Matching mission preferences also result in higher effort, independently of the extent of the CSR investment.

Key words: Corporate Social Responsibility, gift-exchange game, experiment, labor market, incentives, moral hazard, principal agent
JEL Classification: C73, C91, D03, J01, M14, M52

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1 Introduction

Corporate social responsibility (CSR) has been a topic of hot debate in economics, not least because of a provocative article in New York Times – Friedman (1970) – that stated "the social responsibility of business is to increase its profits." In contrast to Friedman's view, it is often argued that firms' responsibility in society goes beyond making profits and that it also includes taking environmental or social aspects into account.[1] At first glance, these two points of view seem irreconcilable. However, if market reactions to a firm's stance on CSR are taken into account, it may not necessarily be a contradiction to maximize profits and assume 'social responsibility' at the same time. At least this is what recent research on CSR suggests. Costly CSR activities may actually be beneficial to firms as they can have a positive effect on the decisions of socially-/environmentally-minded individuals consuming products of the firm (see, Sen and Bhattacharya 2001, among others), investing in it (cf. Graff Zivin and Small 2005), or working for it (see, e.g., Turban and Greening 1997, Greening and Turban 2000). In labor markets – the focus of our paper – the argument in favor of CSR is that firms' CSR activities can attract more motivated workers which in turn may lead to increased profits (see, e.g., Brekke and Nyborg 2008). However, little is known about the driving factors at the individual level. Do workers react to CSR activities of a firm, possibly by increasing their effort? This is the concern of our paper.

A common finding in recent behavioral principal agent theory (see Charness and Kuhn 2011, for an overview), analyzing the employer-employee relationship, is that alternatives to monetary incentives can also motivate agents. Firms' investment in CSR may be regarded as such an alternative motivation, especially if workers like the particular CSR activity, i.e., mission, of the firm. Besley and Ghatak (2005) stress the importance of such matching mission preferences in a principal agent relationship and they theoretically show that missions can economize on the need for high monetary incentives if workers subscribe to the firm's mission.

Hence, the aim of this paper is to shed more light on workers' individual decision making in response to firms' investment into CSR and possible matching mission preferences. For this purpose we set up an experimental design based on the gift exchange game (a workhorse to analyze labor market settings, see Fehr et al. 1993,

[1] Corporate social responsibility propagates that firms engage voluntarily in costly efforts to address social or environmental issues. Firms may also try to directly reduce, or avoid altogether, negative externalities of their business activities. For general discussions of CSR, see, e.g., Baron (2007, 2008, 2009), Auld et al. (2008), Bénabou and Tirole (2010), or Kitzmueller and Shimshack (2012).

1998, 2007, among others), where firms set wages and then workers select their effort. CSR is introduced into this experimental labor market as a certain share of profits given to a third party, e.g., a "good cause." In the experiment, this CSR activity is implemented by a donation to charity.[2] In our main treatment ($CSR4$) firms can choose a share of profits to be donated to charity (none, 10%, 20% and 30%), and workers are asked about their respective effort choices. This allows us to analyze the effect of introducing CSR on firms' decisions as well as the response of workers to the extent of firms' CSR activity. In order to test the importance of matching mission preferences for the motivation of agents, we elicit participants' preferences for the five charitable organizations that are offered. If the worker's effort translates into a donation to a cause perceived as good (matching the mission preferences of the worker), this worker might be influenced in a positive way and chooses a higher effort level. In addition to the mere extent of CSR activity, we can thus study the role of matching mission/charity/cause preferences in workers' decision making. In two further treatments we control for the effect of the mere presence of a CSR investment option (treatment GEG, a standard gift exchange game), and whether CSR is regarded as continuous or categorial (treatment $CSR2$ in which only CSR levels of 0 or 10% are possible).

Our results confirm a positive effect of CSR activity on worker motivation. The effect depends not only on the introduction of CSR but also on its extent. Moreover, matching mission preferences matter. A shared charity preference of firm and worker results in higher effort, independently of the extent of the CSR investment.

Previous studies of CSR activities in the employer-employee context have been either theoretical or empirical (based on secondary data or survey responses). Firms' ability to use CSR investments as a screening device to attract more motivated workers has been theoretically analyzed by Brekke and Nyborg (2008). They show that CSR investment can pay off even if a substantial amount of workers have no moral motivations. Turban and Greening (1997) combine secondary data from KLD Company Profiles[3] with survey measures on the attractiveness of companies for students. They find that organizations utilizing CSR are more attractive to employees and might have a comparative advantage in attracting more productive applicants. Frank (2004) using survey and Nyborg and Zhang (2011) using register

[2]Note that CSR activities are manifold. We focus on donations to charity for practical reasons. Auld et al. (2008) discuss seven CSR categories, including corporate philanthropy, which is based on charitable giving by firms. Although they categorize corporate philanthropy as one of the 'old CSR' categories, it is still a valid CSR instrument used by firms.

[3]A database developed by Kinder, Lydenberg, Domini & Co., which makes organizations' Corporate Social Performance publicly available.

data show that CSR is associated with lower wages and therefore reduced personnel costs. To the best of our knowledge, we are the first to analyze effects of CSR and matching mission preferences in a laboratory experiment.[4] Therefore, the design might serve as a useful tool to investigate individual decision making when CSR aspects play a role.

Our main result – on average workers reciprocate not only higher wages but as well investments in CSR and matching mission preferences with increased effort – also contributes to the principal agent literature. It adds to the list of alternative instruments to motivate workers that contrast the monetary incentives approach of 'standard' contract theory.[5] Besley and Ghatak (2005) propose the firm's mission as one important motivational factor for workers. They use a matching model of the labor market with three types of principals and agents: not caring and caring about one of two particular missions. In equilibrium the concurrence of mission preferences between a firm and a worker leads to higher work motivation, less fixed wage and less bonus pay. Organizations can therefore substitute high monetary incentives by subscribing to a particular mission their workers care about. Our paper complements existing approaches to motivate workers and presents an alternative way to alleviate moral hazard in principal agent settings. It tests the effect of investments in CSR and missions set by firms on workers' motivation, which may lead to an increase in firms' profits.

Section 2 provides the theoretical background of our labor market setting and the resulting hypotheses. In section 3 we describe the experimental design, our treatments and the experimental protocol. Section 4 presents our results. Discussion and conclusions in section 5 round off the paper.

2 Theoretical Background and Hypotheses

Our stylized labor market setting builds on the gift exchange game, in which risk-neutral principals, indexed j, sequentially interact with risk-neutral agents, indexed

[4]Recently, Fehrler and Kosfeld (2012), Tonin and Vlassopoulos (2012), Gerhards (2013) have experimentally tested the model of Besley and Ghatak (2005). Note that in these experiments agents in mission treatments generate a donation to an NGO of their own choice or to the NGO they are actually working for. Hence, agents' effort contributes to a cause of their liking, but mission preferences of principals and agents do not actually match as in our experiment.

[5]Such alternatives include concerns for status (Moldovanu et al. 2007, Besley and Ghatak 2008), awards (Kosfeld and Neckermann 2011), and communication (Brandts and Cooper 2007). See List and Rasul (2011) for an overview of field experiments and Charness and Kuhn (2011) of laboratory experiments.

i. Agents are assumed to be identical in their ability to work for any principal and both, principal and agent, can obtain an outside option of zero. Moreover, agents incur opportunity costs for accepting a wage offer of $c_0(> 0)$. It is furthermore assumed that each principal faces an exogenous redemption value v, and wage offers are restricted to $w \leq v$ such that a principal cannot make losses. A principal proposes a wage w, which the matched agent accepts or rejects. If the agent rejects the offer, both principal and agent receive their outside option of zero. Otherwise, the agent supplies effort $e \in [\underline{e}, 1]$, with $\underline{e} > 0$, at increasing costs $c(e)$, with $c'(e)$ and $c''(e) > 0$. The chosen effort results in the principal's profit function of $\pi(e, w)$, with $\frac{\partial \pi(e,w)}{\partial e} > 0$, $\frac{\partial^2 \pi(e,w)}{\partial e} \leq 0$, and $\frac{\partial \pi(e,w)}{\partial w} < 0$. Conditional on accepting the wage offer, the agent's payoff is given by $y_i(w_j, e_i)$, with $\frac{\partial y_i(w_j,e_i)}{\partial w_j} > 0$ and $\frac{\partial y_i(w_j,e_i)}{\partial e_i} < 0$. Previous findings suggest that agents differ in their sensitivity to reciprocate wages (cf. Fehr et al. 1993, 1998, 2007), which is captured by $\rho_i(w) \in [0, \max\{c'(e)\}]$, with $\rho_i'(w) \geq 0$.[6] If $\rho_i(w) = 0$ agents are insensitive to reciprocate wages and only care about monetary outcomes.

The introduction of CSR does not change the basic structure of the interaction. CSR is captured by spending a certain share β of the principal's profit on CSR activity, i.e., a third CSR receiving party. It does not affect the agent's payoff, yet her effort decision not only determines the principal's profit but, indirectly, also the total amount spent on CSR. The principal simultaneously decides on a wage offer w and the investment in CSR β. In contrast to Besley and Ghatak (2005), in which principals are either mission-oriented or not, we choose $\beta \in [0, \overline{\beta}]$, with $\overline{\beta} > 0$. As a certain share of the principal's profit is spent on CSR, it seems natural to let principals also choose their level of CSR activity, i.e., how much of the profit is to be spent. We will later contrast this scenario with one in which the decision to engage in CSR is an on-off decision.

Similar to differentiating agents according to their inclination to reciprocate wages, we assume that principals and agents differ with respect to their valuation of CSR activity. In line with Besley and Ghatak (2005), CSR activities differ in terms of their mission, e.g., supporting different causes. Some principals and agents may value a particular mission over and above the monetary income from their work and CSR in general. In our basic model, principals can choose a particular mission from

[6] This also relates to intention-based models of reciprocity in which agents reciprocate kind behavior (cf. Rabin 1993, Dufwenberg and Kirchsteiger 2004). Given the experimental evidence that effort increases with wage offers, it is reasonable to assume that any wage offer above the minimum is regarded as kind and reciprocated if agents are reciprocal. In this paper, we abstain from modeling reciprocal behavior based on first and second order beliefs as we are mainly interested in the effects of CSR and matching mission preferences in addition to reciprocating wages.

an exogenously given set of k available missions. Hence, there are $(k+1)$ types of principals and agents, labeled $p \in \{0,\ldots,k\}$ and $a \in \{0,\ldots,k\}$, respectively, reflecting a particular mission preference. Principals and agents of type 0 do not care about this and have entirely monetary incentives, whereas the other types (i.e., $p>0$ and $a>0$) do care about this and may be driven by some non-pecuniary incentive or valuation of the mission. The utility for agents of type 0 depends positively on money and negatively on effort, as described above. In addition, all other agents' utility from exerting effort depends positively on the level of β, which adds to the utility they receive by reciprocating wages. Moreover, if the agent's mission (i.e., preferred cause) and the principal's mission match, agents are even more motivated and receive additional utility $\gamma > 0$ from exerting effort (cf. Besley and Ghatak 2005). We assume that γ enters the agents' utility function additively and adds to the utility agents receive from exerting effort. Therefore, the agents' utility function also depends on the particular type of principal they are matched with. Assuming additive separability in all aspects of the utility function, it can be summarized as follows:[7]

$$U_{ia}^{A} = \begin{cases} e_{ia}\rho_i(w_j) + w_j - c(e_i) - c_0 & \text{if} \quad a = 0 \ \vee \ p = 0 \\ e_{ia}(f_{ia}(\beta_{jp}) + \rho_i(w_j)) + w_j - c(e_i) - c_0 & \forall \quad a,p > 0 \ \wedge \ a \neq p \\ e_{ia}(f_{ia}(\beta_{jp}) + \gamma + \rho_i(w_j)) + w_j - c(e_i) - c_0 & \forall \quad a,p > 0 \ \wedge \ a = p \end{cases}$$

The function $f_i(\beta_{jp})$ captures the agent's reaction to the principal's actually chosen level of CSR activity and is increasing in β, i.e., $f_i'(\beta) > 0$, but not bound to zero, meaning that $f_i(0)$ may well be negative. Maximizing the agent's utility with respect to effort leads to the following FOCs:

$$\rho_i(w_j) = c'(e_i) \quad \text{if} \quad a = 0 \ \vee \ p = 0 \tag{1}$$

$$f_{ia}(\beta_{jp}) + \rho_i(w_j) = c'(e_i) \quad \forall \quad a,p > 0 \ \wedge \ a \neq p \tag{2}$$

$$f_{ia}(\beta_{jp}) + \gamma + \rho_i(w_j) = c'(e_i) \quad \forall \quad a,p > 0 \ \wedge \ a = p \tag{3}$$

Comparing equations (1) and (2) shows that if agents and principals generally care about a mission but their missions do not match, the agent's effort increases as long

[7] Note that with γ entering the agents' utility function additively, agents will reciprocate a mission match even when principals do not spend a positive share of their profit for the chosen cause. This approach is in line with the economics of identity literature (cf. Akerlof and Kranton 2000), which proposes that individuals treat others that are seen as alike better than those seen as more distinct. One may think of an alternative specification in which γ enters the agent's utility function multiplicatively, i.e., $U_{ia}^{A} = e_{ia}[(1+\gamma)f_{ia}(\beta_{jp}) + \rho_i(w_j)] + w_j - c(e_i) - c_0$ such that agents with matching mission preferences will care more about the level of CSR. We will consider and test this alternative specification in section 4.

as $f_{ia}(\beta_p) > 0$.[8]

> *Hypothesis 1: With agents caring about a mission, i.e., $a > 0$, average effort is increasing in the level of CSR activity (β).*

Equation (3) additionally shows that a mission match increases the agent's effort even more such that effort is higher than without such a match.

> *Hypothesis 2: For any given level of β, effort is higher when mission preferences of principals and agents match ($a = p$), i.e., $\gamma > 0$, compared to a mismatch ($a \neq p$).*

Similar to agents, *caring* principals exhibiting other-regarding concerns may also be interested in contributing to a good cause, as captured in $\theta_p(\beta_p)$ with $\theta'_p(\beta_p) > 0$. Besides offering higher wages – which may, however, be driven by reciprocal expectations – choosing higher levels of CSR will satisfy other-regarding concerns. Moreover, anticipating that agents may reciprocate higher levels of CSR, principals can choose their CSR level strategically. If a positive correlation between the level of CSR and effort exists, principals may increase net profits. Incorporating principals' other-regarding concerns is captured in the following utility function:

$$U_{jp}^{P} = \begin{cases} (v - w_j)e_i & \text{if} \quad p = 0 \quad \text{and} \quad a = 0 \\ (1 - \beta_{jp})(v - w_j)e_i(f_{ia}(\beta_{jp})) & \text{if} \quad p = 0 \quad \text{and} \quad a > 0 \\ (1 - \beta_{jp})(v - w_j)e_i + \theta_{jp}(\beta_{jp}) & \forall \quad p > 0 \quad \text{and} \quad a = 0 \\ (1 - \beta_{jp})(v - w_j)e_i(f_{ia}(\beta_{jp})) + \theta_{jp}(\beta_{jp}) & \forall \quad p, a > 0. \end{cases}$$

It can be seen that principals of type $p \in \{1, \ldots, k\}$ will choose a positive β as long as $\theta_{jp}(\beta_{jp}) > \beta_{jp}(v - w_j)e_i$. Moreover, a principal of any type $p \in \{0, \ldots, k\}$ can strategically increase profits if the paired agent is of type $a \in \{1, \ldots, n\}$ and $e_{ia}(f_{ia}(\beta_{jp})) > \beta_{jp}$.

> *Hypothesis 3: On average, principals choose a positive level of CSR, i.e., $\beta > 0$.*

[8] With respect to intention-based models of reciprocity, one might think that the opposite will happen. A greater β would reduce the set of possible monetary payoffs for the principal and, consequently, an equitable payoff. It seems that it becomes cheaper for the agent to return the favor of a higher wage. However, this is not the case; as part of the effort translates into a CSR investment, it is harder for the agent to reach an equitable payoff. The two effects cancel each other out exactly.

As in Besley and Ghatak (2005), the agent's reaction to the principal's chosen values of w and β in (1), (2) and (3) shows that w and β are substitutes in affecting agents' effort. Therefore, when choosing $\beta > 0$, principals are able to induce the same level of effort with a lower wage as long as the agent cares about a mission. This possibility is pronounced if the missions of principals and agents match. It is even more effective to invest in CSR if the agent cares about a mission and $f'(\beta) > \rho'(w)$ or if missions match and $f'(\beta) + \gamma > \rho'(w)$.

Hypothesis 4: Principals investing in CSR, i.e., $\beta > 0$, substitute their investment by lowering wage offers, i.e., $w'(\beta) < 0$.

As mentioned above, the agent's individual reaction function to the principal's chosen CSR activity, $f_i(\beta)$, might not be bound to zero. It may depend on the environment or, more precisely, on the set of possible values on β. Consider, for example, two environments which vary in the choice set on β values, i.e., the number of entries and the maximum value of β: $\beta \in \{0, 0.1\}$ (labeled $CSR2$) and $\beta \in \{0, 0.1, 0.2, 0.3\}$ (labeled $CSR4$).[9] If the agent actually perceives the game as consisting of three players and cares for the principal's intentions with respect to the third CSR receiving party, a principal choosing $\beta = 0.1$ in the first environment can only be perceived as kind: The principal has actually chosen the kindest possible action. However, in the second environment with four β values, choosing $\beta = 0.1$ is below the average of possible actions or the second worst choice with respect to the CSR receiving party. Hence, compared to the first environment, this choice can be perceived as unkind. If the agent cares about the principal's kindness toward the third player, this suggests that $f(0.1)$ in the first environment ($CSR2$) is greater than $f(0.1)$ in the second environment ($CSR4$). For any given wage offer and $\beta = 0.1$, the chosen effort would thus be greater in $CSR2$ than in $CSR4$.

Hypothesis 5: For $\beta = 0.1$, average effort is higher in $CSR2$ than in $CSR4$.

A similar argument applies for the comparison between the standard gift exchange game without CSR, as described at the beginning of this section, i.e., GEG, and the possibility of an investment in CSR ($CSR2$ or $CSR4$). If a principal decides

[9] In $CSR2$, investing in CSR is an on-off decision, similar to the environment described in Besley and Ghatak (2005). The argumentation is similar with continuous β values and increasing the maximum of β in one environment. However, as we will use the categorial set on β values in the experiment, the argument is made by contrasting two environments which differ in the choice set on β values.

not to invest in CSR, workers' effort choices may be negatively affected by such clear intentions against CSR. Agents may not only exert less effort for $\beta = 0$ than for $\beta > 0$ but also if $\beta = 0$ is chosen by the firm in an environment where the possibility to invest in CSR is known exist. Hence, no investment in CSR would result in lower effort when the principal could have invested in CSR but decided not to ($CSR2$ or $CSR4$), compared to a situation where there is no possibility to invest in CSR (GEG).

> *Hypothesis 6: For $\beta = 0$, average effort is higher in GEG than in $CSR2$ or $CSR4$.*

3 Experimental Design

In order to test our hypotheses, we extend the standard gift exchange game to a three player version.

3.1 Treatments

Treatment GEG employs the standard two player bilateral gift exchange game in which each firm, i.e., the principal, interacts with one worker, i.e., the agent, at a time (Fehr et al. 1998). In each period, a firm is paired in a perfect stranger fashion with a different worker to rule out any reputation effects within a pair.[10] A firm proposes a wage, w, after which its matched worker selects an effort level, $e \in [0, 1]$. Choosing an effort level $e = 0$ connotes a rejection of the offer, and both firm and worker earn nothing. Otherwise, the chosen effort e results in the firm's profit described by:

$$\pi = (v - w)e,$$

where $v(= 120)$ is an exogenously given redemption value. Wage offers are restricted to $w \in \{20, 30, \ldots, 120\} \leq v$ to rule out any form of loss aversion by firms. Since effort is costly, a worker's payoff is described by:

$$y = w - c(e) - c_0,$$

where $c(e)$ represents increasing costs of effort according to table 1 and $c_0(= 20)$ depicts the worker's opportunity costs of accepting a wage offer.

[10] We used a rotation matching known as turnpike protocol, first introduced by Cooper et al. (1996), to ensure that participants cannot affect the decisions of future participants they will be paired with through their choices in the current match.

Table 1: The agent's effort cost function

e	0	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5
$c(e)$	0	0	0.5	1	1.5	2	3	4	5	6
e	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1
$c(e)$	7	8	9	10	11	12	13.5	15	16.5	18

CSR is introduced by donating a certain share β of the firm's profit to a third receiving party. Instead of having a third inactive player in the laboratory, the share of the firm's profit is donated to charity. All participants are asked to state the charity they would donate to before and after information on the actual game. Moreover, they can state that they do not care about which charity they donate to as a sixth option.[11] This produces a clean preference for a charity (first question) and a possible strategic choice after participants know the rules of the game (second question). For firms' donations only the second choice is relevant and fixed throughout the experiment. Besides keeping instructions and the game as similar as possible between firms and workers, asking all participants for their preference of a charity gives us the possibility to analyze the effect of a matching mission preference, i.e., firm and worker prefer the same charity. Firms have to simultaneously decide on a wage, w, and, β, the level of their CSR activity. Subsequently, workers decide on their effort. This modification results in the following payoffs for the three player gift exchange game:

- Principal: $\pi = (1 - \beta)(v - w)e$
- Agent: $y = w - c(e) - c_0$
- Recipient: $d = \beta(v - w)e$.

In treatment $CSR4$, firms offer their matched worker a wage $w \in \{20, 30, \ldots, 120\}$ and simultaneously denote their CSR level $\beta \in \{0, 0.1, 0.2, 0.3\}$. Workers receive information on the wage offer w as well as the chosen charity and choose their effort

[11] Participants could choose from Amnesty International, Greenpeace, Caritas, Doctors without Borders, and Unicef. The questions before and after participants know about the game are slightly different. Before knowing about the game, they are asked to which charity they would like to donate 10 euro. After knowing about the game, they are asked to which charity they want to donate money from the experiment. If the sixth option is chosen, a random draw at the end of the experiment determines one of the five charities, which is clearly described in the instructions. See the Appendix for translated materials of the CSR4 treatment.

(see table 1) for all possible levels of β on one screen, i.e., in the strategy method (Selten 1967).[12] After each period participants are informed about the chosen wage, effort level, and payoff. Only firms are informed about their chosen CSR level.[13]

Going from GEG to $CSR4$ is realistic, but changes two aspects at the same time. $CSR4$ introduces not only CSR, but also various degrees of it. Thus, we are able to detect whether introducing CSR has an effect only in a situation in which different levels are possible. For workers, who generally value CSR, the reaction to $\beta < \overline{\beta}$ is ambiguous. Although choosing $0 < \beta < \overline{\beta}$ shows the firm's intention to engage in CSR, a worker might have preferences over the actual level as well. Hence, workers may sanction firms setting β below their preferred level by choosing an effort lower than, or equal to, the situation with $\beta = 0$ or no β as in GEG. Similarly, workers and firms might see the CSR activity as categorial instead of increasing and only take the highest β seriously. To control for such effects and, moreover, to look at the mere effect of introducing the possibility for firms to donate a share of profits, we implemented an additional treatment: $CSR2$. $CSR2$ is the same as $CSR4$, but the choice on β is limited to $\beta \in \{0, 0.1\}$, providing an on/off-decision only.

Overall, we set up three treatments, which are summarized in table 2.

Table 2: Treatments

GEG	$CSR4$	$CSR2$
$\beta = 0$	Strategy method $\beta \in \{0, 0.1, 0.2, 0.3\}$ no feedback on β for workers	Strategy method $\beta \in \{0, 0.1\}$ no feedback on β for workers

3.2 Experimental protocol

We ran five sessions for our main treatment $CSR4$ and four each for treatments GEG and $CSR2$. In total, 390 participants were recruited among students from various disciplines at the local university using the ORSEE software (Greiner 2004). The

[12] While evidence on the equivalence of the strategy method and the direct response method is not entirely conclusive, there has so far not been an instance where a treatment effect found with the strategy method was not also found with direct responses (Brandts and Charness 2011).

[13] Only firms know the actually chosen β to minimize workers' possibility to educate firms by choosing, e.g., a very low effort after being matched with a number of firms choosing a low level of CSR. Workers can actually calculate the β from their payoff if, in their choice, they have discriminated between the four levels of β. However, this is not immediately obvious and therefore requires some effort to figure it out.

experiment was programmed and conducted using the software z-Tree (Fischbacher 2007).

After entering the computer laboratory of the Max Planck Institute in Jena, participants received written instructions which described both roles. They were informed about their role when the actual experiment started, hence, all information was common knowledge. Participants' questions concerning the experiment were answered privately. Once all their questions had been answered, participants had to answer a few control questions. The experiment started only after all participants had answered all control questions correctly. In each session, 30 participants were subdivided in two equally large groups – workers and firms – to play the game for 15 periods. Participants knew that they would not be matched with a participant twice.

Sessions lasted on average 90 minutes, including reading instructions, answering control questions and payment. Average earnings were €10.22 with a minimum of €3.7 and a maximum of €21.3, including €2.5 show-up fee. In sessions with treatments including CSR, donations were made online directly after the payment. In order to make donations credible, we asked 2 participants in each session to monitor the transaction after the experiment.

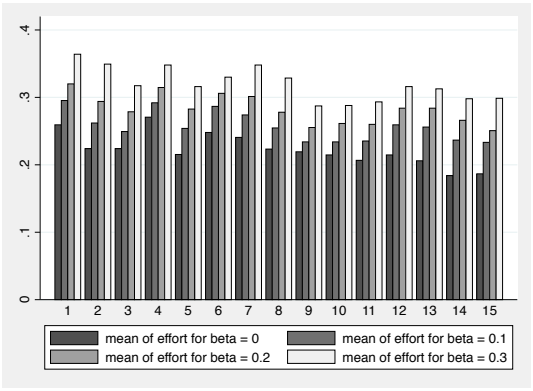
4 Results

In line with previous gift-exchange experiments we find strong evidence against general self-interest among workers and firms. Average effort levels are higher than the Nash equilibrium (NE) based on pure self-interest would predict, and wages (mean across all treatments: 61.78) are, on average, also significantly higher than the NE level of $w = 20$.

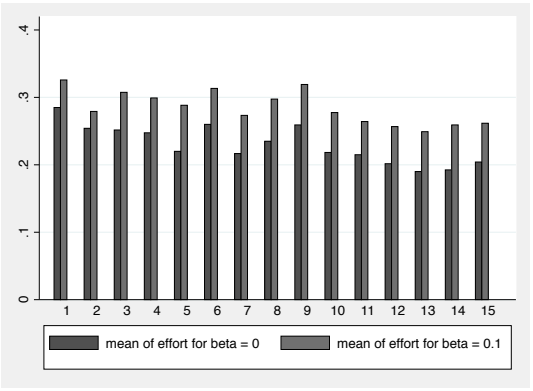
In the remainder of this section, we first look at workers' effort choices including the effect of matching mission preferences. We then study the CSR level and the wage decisions of firms. This analysis focuses on treatment $CSR4$. We round off our analysis with a comparison of choices in CSR4 to treatments GEG and $CSR2$ in order to evaluate the effect of the mere presence of a CSR investment option and whether CSR is regarded as continuous or categorial.

4.1 Workers

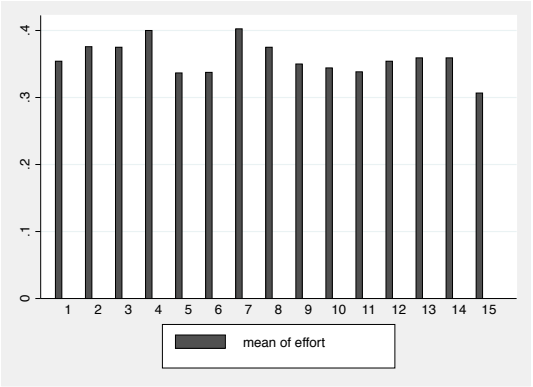
Figure 1 shows average effort in each period separately for the treatments $CSR4$, $CSR2$ and GEG. For the CSR treatments average effort is reported for all the CSR levels available.



(a) CSR4



(b) CSR2



(c) GEG

Figure 1: Average effort levels over periods by treatment

We set up a panel data structure that contains the four CSR4 effort choices of all 75 workers over the 15 periods. Table 3 reports the results of mixed effects regressions with random terms associated with sessions and workers.[14] In all specifications, effort is the dependent variable and dummies for the charities and periods are included. Column I presents a specification that only tests the effect of the wage offered. As in previous gift-exchange experiments, we find a significant correlation between the chosen effort level of the worker and the wage offered. There seems to be a clear tendency to reciprocate among workers.

The novel feature of our gift-exchange design is the level of CSR investment β, that is, how much a firm donates to charity. From the worker's perspective increasing effort still has a strictly negative effect on own material payoff. The firm, in turn, benefits from higher effort exerted in the form of increased profit, while it donates a share of profits to the charity. Does a positive CSR level nevertheless have any effect on workers' effort?

[14] The use of mixed effects models is supported by likelihood ratio tests that compare the mixed effects specifications to respective linear regression models.

Table 3: Determinants of exerted effort

Dependent variable:	I		II		III		IV		V	
Effort	coeff.	st.e.	coeff.	st.e.	coeff.	st.e.	coeff.	st.e.	coeff.	st.e.
Wage	.0052 ***	.0001	.0052 ***	.0001	.0041 ***	.0002	.004 ***	.0002	.0039 ***	.0002
CSR level $\beta = 0.1$	–	–	.0346 ***	.0061	.0071	.0085	.0071	.0085	.0117	.0093
CSR level $\beta = 0.2$	–	–	.0599 ***	.0061	.0049	.0134	.0049	.0134	.0142	.0153
CSR level $\beta = 0.3$	–	–	.0972 ***	.0061	.0146	.019	.0146	.0189	.0287	.0219
Wage * CSR level β	–	–	–	–	.0005 ***	.0001	.0004 ***	.0001	.0004 ***	.0001
Mission match	–	–	–	–	–	–	.0195 ***	.0053	-.0251	.02
Wage * match	–	–	–	–	–	–	–	–	.0005 **	.0002
Match * CSR level β	–	–	–	–	–	–	–	–	-.0056	.0044
Periods 1-5	.0246 ***	.0055	.0246 ***	.0053	.0246 ***	.0053	.0245 ***	.0053	.0243 ***	.0053
Periods 11-15	-.0155 ***	.0055	-.0155 ***	.0053	-.0155 ***	.0053	-.0145 ***	.0053	-.0143 ***	.0053
Constant	-.0079	.0249	-.0557 **	.0249	-.0144	.0265	-.0172	.0265	-.0025	.0273
Charity dummies	yes		yes		yes		yes		yes	
N	4,500		4,500		4,500		4,500		4,500	

Perfectly balanced panel with 300 choices (75 workers, 4 β levels) and 15 periods; mixed effects models grouped by sessions and workers; significance levels: $*** = 1\%, ** = 5\%, * = 10\%$

Result 1: The level of CSR and workers' effort are positively correlated.

In column II of table 3, we report results from a specification that also includes dummies for the CSR level β for which the effort choice has been made. The coefficient of the wage offered is again positive and highly significant as are the coefficients of the β dummies. Wald tests show that the coefficient of the $\beta = 0.2$ dummy is significantly greater than the one for $\beta = 0.1$ but smaller than the one for $\beta = 0.3$ ($p < .01$), confirming that workers' effort increases with the level of CSR. The specification in column III adds an interaction term between wage offered and the CSR level β. While the interaction term between wage and β is positive and highly significant, the main effect of the CSR level is not significant. It seems that wages have to be sufficiently high to prompt workers to respond to an investment in CSR by increasing their effort.

We allowed the CSR activity to be somewhat heterogenous by letting participants select one of five charities. Whenever a worker had to choose her effort, the organization preferred by the firm (the one the firm would donate to) was announced to the worker. Since Besley and Ghatak (2005) stress the importance of matching mission preferences for the motivation of agents, we analyzed whether a match – a worker prefers the same organization as the firm encountered – leads to any differences in behavior.

In our experiment, participants were asked twice to choose their preferred charity, once before they read the instructions[15] and once after they had read the instructions but before it was decided whether they would play as firm or worker. The second choice was used to determine to which charity a participant would donate in case of being a firm. Thus, there was some scope for a strategic adjustment of the charity selection in order to impress workers, while the first choice was 'innocent'. Hence, to determine a match, we used workers' choices made before they read the instructions and firms' choices afterwards.[16] Overall, a match occurred 302 times in the 1,125

[15] 13.7% picked Amnesty International, 14.44% Greenpeace, 9.26% Caritas, 40.74% Doctors without Borders and 16.67% Unicef. 5.18% did not choose any of the charities.

[16] Do participants anticipate the effect of matched mission preferences? Do they understand that donating to charity is perceived as good by many workers? There may be a discrepancy between one's own charity preference and the preference one believes the others may have. In such a case deviating from one's own charity preference could make sense. In $CSR4$ 15 out of 150 participants changed their preferred charity, and in $CSR2$ 17 out of 120 did so. Of the 32 switchers, 15 were firms and 17 were workers. Overall, 14 had not picked a charity when they were first asked, 5 had chosen Amnesty International, 4 Greenpeace, 3 Caritas and 6 Doctors without Borders. It could well be that some participants regarded the pick of a charity as strategically relevant after learning the rules of the game and, hence, they made a change, but we only found few cases.

meetings between a firm and a worker in the $CSR4$ treatment and 207 times in 900 meetings in $CSR2$.

Result 2: A mission match leads to higher effort, independently of β.

In column IV of table 3, we test the relevance of a mission match. The coefficient of the dummy for matching mission preferences is positive and highly significant. In column V, we report a specification that adds interaction terms between mission match and wage offered as well as the CSR level β. While the main effect of a mission match disappears, the interaction between wage and matching mission preferences is significant at the 5% level. There is no significant effect of the interaction term between match dummy and CSR level.

It seems that matching mission preferences do in fact matter, even more so when a high wage is offered. There is no indication of a multiplicative effect of the mission match and the CSR level. Instead, our results show that mere similarities between firm and worker based on their mission preference seem to be sufficient in order to increase workers' effort. Actual investment in the shared mission and its extent do not seem to boost the effort level.[17]

When we look at the *individual level* we observe that a substantial fraction of workers behave quite selfishly. 31 out of 135 (only treatments $CSR2$ and $CSR4$) workers put in the minimum effort independent of the wage offered or the CSR level. Further categorizing the workers, 86 out of 135 respond to higher wages by increasing their effort (holding β constant). 58 of the 86 wage-reciprocating workers also respond to the firm's CSR level by increasing their effort, while 28 only reciprocate wages. For 17 workers the effort decision is independent of the wage offered; instead they respond to the CSR level. One worker could not be categorized. While some workers simply put in the minimum effort (neither responding to a wage increase nor an investment in CSR), a substantial number of workers (43%) reciprocate not only wages but also CSR activities.

[17] Results are similar, when CSR investment is reduced to an on-off decision (treatment $CSR2$). The wage offered is highly significant in all specifications, effort is significantly higher for $\beta = 0.1$ (specification II), the interaction term between wage and $\beta = 0.1$ is significant at the 10% level (III-V), and the coefficient of the match dummy is positive and significant at the 5% level (IV). The interaction between wage and matching mission preferences is not significant (V).

4.2 Firms

Having established a positive effect of the existence and extent of CSR on the effort of workers in our experimental labor market, we now turn to the behavior of firms. Do principals actually invest in CSR, although the investment is deducted from their profit?

Result 3: A substantial amount of wage offers include a positive level of CSR.

Table 4 contains an overview of the firms' β choices. Many contracts were offered without CSR, but for roughly half of all contracts the level of CSR activity was greater than zero. It seems that, on average, firms value CSR investment or expect that a positive CSR level may be beneficial to them.

Table 4: Firms' chosen level of CSR activity

	$CSR4$				$CSR2$			
Periods	1-5	6-10	11-15	all	1-5	6-10	11-15	all
$\beta = 0$	.44	.51	.47	0.47	.47	.46	.48	.47
$\beta = 0.1$	.36	.32	.33	.34	.53	.54	.52	.53
$\beta = 0.2$	.16	.12	.12	.13				
$\beta = 0.3$	.04	.05	.08	.06				

Note: In total, 1,125/900 observations were made in treatment $CSR4/CSR2$.

Generally, wages offered in $CSR4$ (mean: 59.5, standard deviation: .58) are significantly lower than wages offered in GEG (64, .56, Wilcoxon rank-sum test, $p < .01$) or $CSR2$ (62.49, .64, $p < .01$). Do firms reduce their wage offers when they invest in CSR?[18]

Result 4: Firms substitute CSR investments with the wage offered, though only at the top end of the CSR level range, i.e., from $\beta = 0.2$ to $\beta = 0.3$.

Table 5 reports results of mixed effects regressions with random terms associated with sessions and firms (likelihood ratio tests support the use of mixed effects

[18]Besley and Ghatak (2005) show that firms may reduce monetary incentives, e.g., wages, when they employ a worker whose mission matches that of the firm. While our experiment is not designed to test for this type of substitution (our firms do not know whether their worker subscribes to the same mission), we can check whether, in a similar vein, firms substitute wages and the extent of their CSR investment.

models). In the column I specification, the wage offered is the dependent variable. Dummies for the CSR level for which the wage offer has been made (baseline: $\beta = 0.1$), the previous period's effort received, the wage offered and the CSR level chosen serve as independent variables as well as period dummies. The coefficients of the effort received and the wage offered in the previous period are highly significant. The dummy for $\beta = 0.2$ is positive and highly significant, while the other CSR level dummies are not. Wald tests confirm that the coefficient of the $\beta = 0.2$ dummy is significantly greater than the other coefficients ($p < .01$). Hence, at the top end of the CSR level range firms substitute high investments into CSR with lower wage offers, while there is no indication that they do for low CSR levels. Similarly, in treatment $CSR2$ wages offered are not lower when firms invest in CSR.

Table 5: Determinants of firms' wage offers and profits

Dependent variable:	I: wage		II: profit	
	coeff.	st.error	coeff.	st.error
$\beta = 0$	-1.873	1.277	-1.489 **	.6866
$\beta = 0.2$	5.903 ***	1.911	-.9446	1.002
$\beta = 0.3$	-.554	2.315	-.4721	1.396
Effort received in previous period	11.22 ***	2.155	–	–
Wage	–	–	.7523 ***	.0748
Wage * wage	–	–	-.0056 ***	.0006
Wage offered in previous period	.204 ***	.0314	–	–
β set in previous period	-4.271	6.861	–	–
Periods 1-5	-1.958 *	1.155	1.199	.7404
Periods 11-15	.103	1.088	-.3636	.7384
Constant	45.53 ***	2.339	-9.942 ***	2.437
N	1,050		1,125	

Perfectly balanced panel with 75 firms and 15 periods;
mixed effects models grouped by sessions and firms;
significance levels: $***= 1\%, ** = 5\%, * = 10\%$

What is the impact of CSR on firms' *profits*? Table 5 column II provides regression results with profit as the dependent variable. Dummies for the CSR level (baseline: $\beta = 0.1$), the wage offered and a squared term of the wage offered are independent variables as well as period dummies. The coefficients for the wage and the squared wage are highly significant. There seems to be an inverse U-shaped relationship between profit and wage offered. The dummy for $\beta = 0$ is negative and

highly significant. The dummies for the CSR levels of $\beta > 0.1$ are not significantly different from zero. While investing in CSR generally increases profits, the extent of β does not seem to have a positive effect on profits. In treatment $CSR2$, profits are also significantly higher when firms invest in CSR. Hence, in our setting the use of CSR pays off for firms. Nevertheless, this value should be regarded as a lower bound measure. As the focus of our paper is on the labor market and the reaction of workers, we do not take into account effects of CSR activity on consumers and investors. These may be positive, and, in turn, CSR activity would be even more profitable for firms.

4.3 Comparison across treatments

Finally, we analyze across treatments how the presence of a CSR investment option affects workers (comparison of treatments GEG and $CSR2/4$) and whether workers regard CSR activity as continuous or categorial ($CSR4$ and $CSR2$).

Result 5: Average effort in the GEG treatment is significantly higher than in the CSR treatments when $\beta = 0$.

There is a significant difference between effort levels in treatment GEG, when there is no mention of CSR (mean of .358, standard deviation .009), and effort levels for $\beta = 0$ in $CSR2$ (.221, .011, Wilcoxon rank-sum test, $p < .01$) and $CSR4$ (.222, .007, $p < .01$). We again use a mixed effects regression with random terms associated with sessions and workers (see table 6, column I) with effort at $\beta = 0$ as the dependent variable. The wage offered and dummies for the GEG and the $CSR2$ treatment are independent variables. The GEG dummy is significant at the 1% level, confirming that the introduction of the CSR setting combined with firms intentionally selecting no CSR investment has a negative effect on workers' effort choices. Workers seem to punish firms when they are aware that the firms could invest in CSR but still choose a CSR level of zero (results from a similar regression show that effort levels for $\beta = .1$ are also significantly lower in the CSR treatments compared to GEG, though only at the 5% level).

Result 6: Average effort for $\beta = 0.1$ is not statistically different in treatments $CSR2$ and $CSR4$.

In order to test for differences between treatments $CSR2$ and $CSR4$, we use a mixed effects model with effort at $\beta = 0.1$ as the dependent variable, and the wage

Table 6: Effort choices across treatments

Dependent variable:	I: effort ($\beta = 0$)		II: effort ($\beta = 0.1$)	
	coeff.	st.error	coeff.	st.error
Wage	.0058 ***	.0001	.0052 ***	.0002
GEG	.1088 ***	.0312	–	–
$CSR2$	-.0102	.0312	.0116	.0318
Periods 1-5	.0202 ***	.0067	.0173 *	.0077
Periods 11-15	-.026 ***	.0066	-.0172 *	.0077
Constant	-.1232 ***	.023	-.0568 ***	.024
N	2,925		2,025	

I: all observations, treatment $CSR4$ is the baseline, effort choices for $\beta = 0$;
II: only CSR observations, $CSR4$ is the baseline, effort choices for $\beta = 0.1$;
mixed effects models grouped by sessions and workers;
significance levels: $*** = 1\%, ** = 5\%, * = 10\%$

offered and a dummy for treatment $CSR2$ as independent variables. See column II in table 6 for results. The $CSR2$ treatment dummy is not significant (likewise in the column I regression for $\beta = 0$). Contrary to prediction 6 participants do not seem to regard CSR activity as categorial. For $\beta = 0.1$, the highest CSR level in $CSR2$ but the lowest positive level in $CSR4$, average effort is not statistically different.

5 Discussion

What is the effect of investments in corporate social responsibility (CSR) on workers' motivation? The empirical analysis of CSR in the workplace has so far been mainly based on secondary data.[19] However, knowledge of individual responses to such programs is important to improve our understanding of CSR and its impact. For this purpose, we have introduced CSR into an experimental labor market. Our design provides a tool to analyze the effects of CSR not only in the aggregate but also on the individual level. Investments into CSR are captured by donating a share of the firm's profit to a self-chosen charity. Therefore, we have extended the standard bilateral gift exchange game to a three player version in which the third player is the CSR investment receiving party. Our treatments vary the possible shares given to charity from none (a standard gift exchange game, treatment GEG) to two (0% or 10%, $CSR2$) and four (0%, 10%, 20% or 30%, $CSR4$). As all players

[19] See, e.g., Turban and Greening (1997), Frank (2004), or Nyborg and Zhang (2011).

are asked to state their preferred charity, we have been able to measure whether mission preferences between firm and worker match.

The introduction of a third CSR receiving party induces a substantial fraction of workers (58 out of 135) to reciprocate not only wages but also CSR activities, i.e., the higher the CSR level, the higher their effort. Moreover, we find evidence that workers react positively to a mission preference match, as suggested by the work of Besley and Ghatak (2005). If firm and worker prefer the same charity, workers exert overall more effort. This effect is independent of the extent of CSR investment. In fact, matching mission preferences matter even if the firm actually does not invest in CSR. It appears that it is the shared identity by itself that makes workers exert more effort.

On average, workers choose less effort in treatments where CSR investments ($CSR2$ and $CSR4$) are possible but firms do not make use of them, than in a situation in which CSR is not possible and not even mentioned (treatment GEG). This may be an indication of workers' general preference for CSR. In an environment where it is known that CSR investment is possible, workers' expectations about the CSR level might be raised. No investment into CSR would disappoint them, and they would, in turn, punish the firms. Such a reaction to behavior below expectations would be closely related to the reference-dependent preference theory by Köszegi and Rabin (2006). Another reason for the observed difference between the GEG and CSR treatments might be the use of the strategy method in CSR treatments. When faced with possible CSR investments by firms, workers have to decide on more options. The bigger action space in our CSR treatments might lead to more balanced decisions. If the CSR level is rather low and expectations are not fulfilled, workers' effort decisions could, together with the disappointment effect, shift downward in case of low CSR levels, though not upwards as a high CSR level is either taken for granted, or a positive surprise is perceived differently than a disappointment.

Caution should be exercised when generalizing our results. Since we have analyzed CSR in a market with an equal share of workers and firms, this might not adequately capture existing labor markets. These usually involve the possibility of unemployment, i.e., an excess labor supply. On the other hand, firms heavily compete for the best workers on the market, which can be captured in an excess demand for labor. It would be worthwhile to analyze effects of CSR on markets with excess supply or excess demand of labor. Since we find significant heterogeneity among firms and workers with respect to the use of, and response to, CSR, a market that allows for sorting might lead to separating equilibria.[20] Such a setting would also

[20]Note that Fehrler and Kosfeld (2012) show that agents who self-select into a contract including

allow for a direct test of the wage-mission substitution result in Besley and Ghatak (2005). These aspects are not within the scope of this paper and therefore remain for future research. Moreover, labor contracts are not necessarily limited to short-term contracts only. We have analyzed a situation in which contracts are negotiated anonymously on a round by round basis, which rules out reputation effects between firms and workers. Many real world contracts are longer rather than short term, though. It has so far not been investigated how investments in CSR translate into a long-term working relationship, which would be another promising topic for future research.

With respect to the positive effect of CSR activity on firms' profits in our paper, it is worth noting that the results should be seen as a lower bound. Social-image concerns are only partly considered in our experiment. The interaction with workers is just one channel through which CSR activities can be effective. Previous studies have shown that CSR can be beneficial, if this has positive effects on the decisions of consumers (cf. Sen and Bhattacharya 2001) or investors (cf. Orlitzky et al. 2003), respectively. Last but not least, there are also recipients of investment in CSR who may benefit substantially. According to Charity Navigator (http://www.charitynavigator.org/), 9 out of 10 evaluated charities spend at least 65% of their total functional expenses on programs and services.

In sum, our results show that, on average, workers react positively to CSR. They reciprocate not only higher wages but also investments in CSR with increased effort. Matching mission preferences motivate workers to exert more effort, independently of the extent of CSR investment.

a donation to their preferred NGO but lower fixed pay choose higher effort. Individuals' self-selection into sectors or organizations with a mission similar to their own is also analyzed by Serra et al. (2010). Using a survey and an experimental measure of pro-social motivations for Ethiopian health professionals, they find that these can predict the decision to work in the nonprofit sector. Moreover, pro-social workers earn less in the nonprofit sector than their colleagues, scoring lower on measures of pro-social motivation.

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Appendix

Instructions

Rating of charitable organizations before experimental instructions

Imagine you have 10 Euro at your disposal to donate it to a charity. To which of the following charities would you like to donate the 10 Euro?

- Amnesty International
- Greenpeace
- Caritas
- Doctors Without Borders
- Unicef
- I don't care

General rules

Welcome and thanks for participating in this experiment! In this experiment you can earn a certain amount of money, which depends on your and the other participants' decisions in the experiment. **It is therefore important that you read the following instructions carefully.**

Please note that these instructions are meant for you only and that you are not allowed to exchange any information with the other participants. Similarly, during the entire experiment it is not allowed to talk to the other participants. If you have any questions or concerns, please raise your hand. We will answer your questions individually. Please do not ask your question(s) aloud. It is very important that you follow these rules, since otherwise we have to stop the experiment. Please also turn off your mobile phones now.

General procedure

The experiment lasts about 75 minutes. Each decision will be explained again briefly on the screen. While you make decisions, the other participants also make decisions which may influence your payoff. During the experiment you can earn money. Your payoff will be calculated in ECU (Experimental Currency Units) and 1 ECU = 0.10 EURO. At the end of today's experiment your earnings will be converted into EURO and you are paid in cash. In addition, you will receive 2.50 Euro as a show-up payment. Your payoff from the experiment depends on your decisions and the

decisions of the other participants. However, only 3 of the 15 rounds will be chosen randomly and you will be paid according to the payoff from these rounds only.

After you have filled in a questionnaire the experiment will end and you will receive your payoff.

Again the procedure as an overview:

- Reading of the instructions, test questions (online)
- Decision situations
- Questionnaire
- Payoff and end of the experiment

Details of the procedure

The experiment consists of 15 rounds. In each round two participants interact: a company and an employee.

Procedure of one round:

1. The company sets a wage and a donation factor.
2. Next, the employee decides whether he/she accepts this offer or not.
3. In case he/she accepts the offer, he/she then decides on the effort level.

The profit of the company depends on

- the effort level,
- the paid wages,
- and the donation factor.

The income of the employee depends on

- the received wage and
- the cost of effort.

You will be informed whether you act in the role of the company or in the role of the employee over the course of the experiment. The allocation of each role is executed randomly and with equal probabilities. You will stay in the allocated role for the whole experiment. Hence, it is very important that you **familiarize yourself with both roles.**

In each round you are **randomly and anonymously** matched with another participant of the experiment, that you have not interacted with before. The company's chosen wage applies only to the employee assigned to this company in this round. Likewise, the employee's decisions (accepting or rejecting the offer and choosing an effort level following acceptance) only apply to the company that was assigned to this employee in this round. At the end of each round the company will be informed about the employee's choices. There will be no information regarding the decisions from previous rounds.

How you earn money during the experiment

Earnings as employee:

- If an employee rejects the offered wage, he/she will earn nothing. A rejection is expressed by entering 0 as the effort level.
- In case of acceptance of the offered wage the employee receives the offered amount. However, the fixed travel expenses (20 ECU) and the cost of effort will be deducted from this wage first.
- The effort level can be chosen on a scale from 0.1 to 1 in intervals of 0.05 and leads to costs according to the following table:

e	0	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5
$c(e)$	0	0	0.5	1	1.5	2	3	4	5	6
e	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1
$c(e)$	7	8	9	10	11	12	13.5	15	16.5	18

- A value of 0.1 corresponds to very low effort, a value of 0.2 is a slightly higher effort level and a value of 1 represents the maximum effort level.
- The higher the chosen effort the more profitable the outcome for the company.
- The earnings of the employee are calculated according to the following formula:

Earnings of the employee = wage – cost of effort – 20 ECU

- During the experiment the company can donate part of its profit. This share can be 0.0, 0.1, 0.2 or 0.3. The effort level will be asked for each possible level of the donation b, which the company can choose. For the earnings only the actually chosen share of donation will be relevant.

- After each round you will receive information about the offered wage, the rendered effort level and your earnings from this particular round.

Earnings as company:

- In each round each company receives a starting capital of 120 ECU. This can be used for wage payments. In order to do so the company chooses a wage between 20 and 120 ECU in intervals of 10 ECU. If, for example, the company offers a wage of 120 ECU, it will have no remaining ECU left. If, for example, it offers a wage of 20 ECU, it will have 100 ECU left.

- In case the offered wage of a company is rejected, the company earns nothing. This means, the starting capital remains unused and expires.

- In case the offered wage of a company is accepted, the remaining ECU of this company will be multiplied by the chosen effort of its employee. This corresponds to the profit of the company.

- Additionally, the company decides on a donation share b, which will be paid from the profit of the company to an organization that will be chosen at the beginning of the experiment. In doing so the company can set 0.0, 0.1, 0.2 or 0.3 as a value for b. The choice of the employee will be asked for all four possible values of b afterwards. That is, the employee will be informed about the offered wage and the organization being donated to and will then make a decision on the effort level for all possible b.

  Profit of the company = (120 ECU – wage) * effort
  Earnings of the company = (1-b) * (120 ECU – wage) * effort

- After each round you will receive information about the offered wages, the chosen donation share, the rendered effort, the profit, the donated amount and your earnings from this particular round.

Your payoff from the experiment (3 out of 15 rounds)

Your earnings from one round are calculated as presented above. For companies the donated amount, according to the donation share to the chosen organization, will be deducted from the profit. The received contributions will be donated online under the supervision of two participants after the experiment.

For your payoff from the experiment only the earnings from three out of the 15 rounds are relevant. These rounds are chosen randomly at the end of the experiment. The according payoff will be paid to you in cash directly after the end of the experiment, that is, after you completed the final questionnaire.

Rating of charitable organizations after experimental instructions

Please choose your preferred charity from the menu below, for which you would like to donate within the experiment.

- Amnesty International
- Greenpeace
- Caritas
- Doctors Without Borders
- Unicef
- I don't care (at the end of the experiment one charity will be randomly chosen)