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## Discussion paper

# Do non-enforceable contracts matter? Evidence from an international lab experiment

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# Do non-enforceable contracts matter? Evidence from an international lab experiment

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## Abstract

Many verifiable contracts are impossible or difficult to enforce. This applies to contracts among family and friends, contracts regulating market transactions, and sovereign debt contracts. Do such non-enforceable contracts matter? We use a version of the trust game with participants from Norway and Tanzania to study repayment decisions in the presence of non-enforceable loan contracts. Our main finding is that the specific content of the contract has no effect on loan repayment. Rather, the borrowers seem to be motivated by other moral motives, which contributes to explaining why they partly fulfill non-enforceable contracts. We also show that some borrowers violate the axiom of first order stochastic dominance when rejecting loan offers, which partly may reflect negative reciprocity, but also seems to reflect a fundamental aversion against uncertainty.

## 1 Introduction

Contracts are often difficult to enforce. This applies to contracts among family and friends, contracts regulating market transactions, and sovereign debt contracts. It may be prohibitively difficult for a family member to enforce a loan contract with another family member, or for an employer to have some types of labor contracts enforced.

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To illustrate the latter, consider the case where an employee has committed herself to work for a company for a certain period of time, but then is offered a better opportunity in a different company. In such a case, it may not be beneficial for the employer to insist that the employee sticks to the terms of the contract. Similarly, it may sometimes be very hard for companies to enforce contracts with suppliers located in other countries, since it may be extremely costly to take the case to court. Sovereign debt contracts are the quintessential example of non-enforceable contracts, as there are no courts at all with the power to make recalcitrant borrowers honor their obligations (Eaton and Gersovitz, 1981; Bulow and Rogoff, 1989; Tomz and Wright, 2007; Panizza, Sturzenegger, and Zettelmeyer, 2009).<sup>1</sup>

What is then the role of non-enforceable contracts? The classical view in economics is that non-enforceable contracts are nothing but cheap talk. If everyone understands that the contract is non-enforceable, then it plays no role in determining the actions of the contracting partners. The contract may still, of course, be fulfilled, for example due to reputation considerations, but the contracting partners will always renege on the contract if it is in their self-interest to do so. The recent literature on social preferences, however, has convincingly shown that people are not only selfishly concerned, but also motivated by moral considerations (Camerer, 2003; Konow, 2003). This may have important implications for our understanding of the role of non-enforceable contracts. It may be that people consider it a moral duty in itself to fulfill a contract, even when it is non-enforceable. The contract may serve as a reference point and create moral entitlements (Hart and More, 2008; Fehr, Hart, and Zehnder, 2009, 2011a,b), and thus the non-enforceable contract may turn out to be crucial in determining the actions of the contracting partners. But it is not obvious that morally motivated people assign such a role to the contract. Possibly, they may rather focus on other moral arguments considered relevant when there is a conflict of interest, which may overturn any concern they have for fulfilling the contract obligations.

In order to study the role of non-enforceable contracts in a setting where other moral motives also enter the picture, we conducted a version of the trust game with participants from Norway and Tanzania.<sup>2</sup> The matching of participants from one of the richest and one of the poorest countries in the world made needs considerations a salient feature of the situation. Furthermore, we introduced a random shock in the second part of the trust game, which implied that fairness considerations related to this shock also could potentially affect the participants' behavior.

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<sup>1</sup>Verifiability is another important challenge when designing contracts, but even verifiable contracts may be hard to enforce. This is most easily seen in the case of sovereign debt loan contracts, where the payment schedule is clearly specified and beyond dispute. If the loan obligation is not fulfilled by the borrowing country, then it is impossible to use legal means to force a country to repay its debt. This insight applies more generally, there are clearly many market and non-market situations where verifiable contracts are impossible or hard to enforce.

<sup>2</sup>For other studies introducing a contract in the trust game, see Malhotra and Murnighan (2002); Ben-Ner and Putterman (2009); Rigdon (2009). See also Irlenbusch (2006) for an early experimental analysis of how social norms may affect behavior in transactions governed by non-binding contracts.

In the experiment, some participants were asked to determine how much money they wanted to lend to another participant on the basis of information about the nationality of the borrower and the contract type. The contract was either a fixed interest contract or a surplus sharing contract. If the other participant accepted the loan contract, the money was automatically invested in an uncertain project which had an expected return that was twice the expected interest on the loan amount specified in the loan contract. When the outcome of the investment was realized the borrower was free to determine how much he wanted to repay, that is, the loan contract was non-enforceable.

Our main finding is that non-enforceable loan contracts do not appear to play an important role in explaining repayment behavior. In particular, repayment behavior does not depend on contract type. Rather, other moral motives seem to be more salient for the borrowers, including reciprocity, fairness, and needs considerations. Still, we cannot rule out, given our design, that the presence of a contract played some role for the participants, even though the specific contract type did not matter. In our setting, the contract may partly have strengthened the reciprocal motive and weakened needs considerations. We also show that some borrowers reject the offer of a non-enforceable loan contract, which suggests that non-selfish considerations matter for the participants. In some cases, rejecting the loan contract represents a violation of the axiom of first order stochastic dominance, and we provide evidence suggesting that this partly reflects a fundamental aversion against uncertainty.

The paper is structured as follows. Section 2 discusses the sample and the experimental. Section 3 analyzes the lenders' decisions about how much of their endowment to offer as a loan, and the borrowers' decisions about whether or not to accept the loan and honor the non-enforceable contract. Section 4 provides some concluding remarks.

## **2 Design**

In this section, we start by providing an overview of the main features of the experiment, before we move to a more detailed discussion of the sample and design.

### **2.1 Main features**

We conducted a version of the trust game (Berg, Dickhaut, and McCabe, 1995) with participants located in Norway and Tanzania. At the beginning of the experiment, all participants were given a complete description of how the experiment would proceed. At both locations, as part of the introduction, a research assistant took an overview picture of the lab and immediately uploaded it to an Internet site. The pictures from both locations were then shown to all participants on their computers after the introduction was completed. We did this to familiarize the participants with the idea that they were taking part in an international experiment where they would interact with participants

in another country.<sup>3</sup>

All interaction between the participants was anonymous and conducted through a web-based interface. English was the language of communication in both countries. It is an official language in Tanzania and Norwegian students are also fluent in English. The show up fees were calibrated to reflect local costs, but all participants faced the same incentives in the experiment. The average payment from the experiment was 81 USD for the participants in Norway and 68 USD for the participants in Tanzania.

The main feature of the design was that the participants, who were randomly assigned to be either a lender or a borrower, could agree on a non-enforceable loan contract. The money borrowed was automatically invested in an uncertain investment project with an expected gain equal to twice the amount invested. The lenders offered loans in four types of situations, which only differed with respect to whom they were paired with and the type of loan contract they could offer: a fixed repayment contract or a surplus sharing contract. When the outcome of the investment was realized, the borrower was free to determine how much he wanted to repay, that is, the loan contract was non-enforceable.

When all borrowers had made their repayment decisions, the computer randomly and with equal probability selected one of the situations that each of the participants had been involved in as the one that determining the outcome for them. The final payment from the experiment was the amount they received in the selected situation plus the show-up fee.

At the end of the experiment, each participant was assigned a payment code on their screen, which they were asked to write down on a payment form that was in a folder next to their computer. After the experiment was completed, the computer generated a list of the payment codes together with the corresponding amounts earned in the experiment for research assistants that were not present in the lab. On the basis of this list, the assistants prepared envelopes containing the payments. When the assistants had prepared all the envelopes, they put them in a box and transferred them to the lab. They immediately left the lab so that no one in the lab knew how much money each of the envelopes contained. The envelopes were then given to the participants in accordance with the payment code they had been assigned. The payment procedure was designed to ensure that no one in the lab, not even members of the research group, would know how much each participant earned from the experiment.

## 2.2 Sample

A total of 128 participants from the University of Dar-es-Salaam, Tanzania and 113 participants from the University of Bergen, Norway participated in six sessions run simultaneously in the two countries. The participants were recruited among the social

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<sup>3</sup>The pictures also ensured that the participants believed that there were actual recipients in the other lab, but they did not reveal any information beyond what can be observed by a participant when entering a lab.

science students at the two universities. The average age of the participants was 23.1 years in Norway and 24.2 years in Tanzania. The gender composition was balanced in both countries, the share of males was 47.2% in Norway and 50.9% in Tanzania. All participants in Tanzania were Tanzanians, but we cannot rule out that some of the participants in the Norwegian lab were non-Norwegians. Still, for short, we will refer to the nationality of the participants as uniquely determined by their location.

In the analysis, we assume that the participants in both countries consider the Tanzanian participants, on average, more needy than the Norwegian participants. This should be a rather uncontroversial assumption to make. Aggregate statistics show huge income gaps between these countries, where real GDP per capita is 47 times higher in Norway than in Tanzania (Table 6, International Comparison Program, 2008). This difference is also reflected in the average standard of living for students in the respective countries. To illustrate, the average disposable income (including transfers) of regular full-time students not living with parents was 16600 USD per year in Norway;<sup>4</sup> in contrast, there have been rioting and strikes over undisbursed student loans and stipends intended to help the students pay for books and meals at the University of Dar es Salaam and Makerere University. The typical self-assessment among students in the African countries has been that “the majority of us come from poor families” . . . “our parents have already sold pieces of land, herds of cattle . . . to pay . . . tuition fees” (East Africa in Focus, September 22, 2009). This situation has also been recognized by the donor community, and the University of Dar es Salaam receives support from international donors, including donors from Norway.

The long-term outlooks are also very different for the two groups of students. Al-Samarrai and Bennell (2007) report that university graduates with some years of experience in Tanzania had an average monthly income of 275 USD, and they point out that “[m]any university graduates were part-time entrepreneurs generating secondary income that is essential for their household survival, but these part-time activities were invariably limited in scale and sophistication ”(p. 31). Thus, it should be rather uncontroversial to assume that, on average, the participants from Tanzania are more needy than the participants from Norway. When interpreting the results, however, we should keep in mind that some participants may focus on the relative, not absolute, living standard of students in their country, which may weaken the perception of the African students as more needy than the European students.<sup>5</sup>

## 2.3 Lending

At the beginning of the experiment each participant was given an endowment of 50 US dollars, and then randomly and with equal probability assigned the role as lender or borrower. Lenders were asked how much of the endowment they wanted to lend to

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<sup>4</sup>In local currency, the numbers are 112 000 NOK per year in Norway (Table 4, Løwe and Sæther, 2007)

<sup>5</sup>See also Cappelen, Moene, Sørensen, and Tungodden (forthcoming).

another participant, where the choice set was 0, 10, 20, 30, 40 or 50 USD. They made choices in four one-shot situations, where in each situation they were paired with a different participant.<sup>6</sup> Since only one of the situations would be realized, the lenders could lend the entire endowment or less in each situation.

Before making a choice, the lender was given information about the potential borrower's nationality and the type of debt contract he could offer. In two situations he could offer a *fixed interest rate contract*, which specified that the borrower should repay the loan amount plus a fixed interest of 50%. The contract repayment amount was thus independent of the outcome from the uncertain investment. In two other situations the lenders could offer a *surplus sharing contract*, which specified that the borrowers should repay the loan amount plus 50% of the return on the investment. If the surplus sharing contract was honored, the expected return to the lender would be the same as if the fixed interest rate contract was honored, but the lender would be entitled to less with the surplus sharing contract if the investment was a failure and more if it was successful.

For each contract type, the lenders were paired once with a borrower from the same country and once with a borrower from the other country.

## 2.4 Borrowing and repayment

Participants who were assigned the role as borrowers were asked to accept or reject loan offers in up to four situations. Each offer consisted of a loan amount and a loan contract. Before they made a decision on whether to accept the loan offer, they were also informed of the nationality of the lender. If they accepted the offer, the loan was automatically invested in an uncertain project. The return on the investment was, with equal probability, 0, 100% or 200%, thus the expected return was 100%.

The fixed interest rate contracts specified a repayment of 150% of the loan amount. Thus, if the investment failed, the borrowers had to cover the interest from their own endowment if they were to honor the contract. In the two other possible investment outcomes, the return on the investment would more than cover the interest rate and the borrowers would earn a net surplus from the investment even if they honored the contract. The expected gain from accepting and honoring a fixed loan contract would be 50%.

The surplus sharing contracts specified a repayment that depended on the outcome of the investment. If the investment failed, there would be no interest, and the contract would specify that the borrower only should pay back the loan amount. If the return on the investment was 100%, the borrower had to a 50% interest rate, the same as with fixed interest, to honor the surplus sharing contract; if the return was 200%, the interest rate would be 100%. The expected gain from accepting and honoring a surplus sharing contract would be the same as with a fixed interest contract, 50%, but it is less

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<sup>6</sup>To accommodate differences in session size, a few participants only made decisions in three situations.

risky than a fixed interest contract. In fact, accepting and honoring a surplus sharing contract first order stochastically dominates not accepting it (in monetary terms).

When the computer had determined the investment outcome, the borrower had to decide how much to repay the lender. The choice set was discrete, so repayment had to be done in units of 5 USD. Before making a decision, the borrower was reminded of the nationality of the lender and the terms of the loan contract. They were also reminded that they were free to decide how much they wanted to repay since the loan contract could not be enforced.

### 3 Analysis

In this section, we analyze the data from the three types of decisions made in the experiment; the lender's decision of how much to offer in loan, the borrower's decision of whether to accept or reject the loan offer, and the borrower's decision of how much to repay.

#### 3.1 Loan offers

Figure 1 shows the distribution of the 472 loan offers by country. We observe that the lenders offer less than the full endowment, which is not surprising given that the loan contract is non-enforceable. Still, the large majority of the lenders offered positive amounts (93.4%), where the average loan offer was 29.7 USD out of an endowment of 50 USD. The distribution of loan offers is more compressed in Tanzania than Norway, where fewer Tanzanians offer nothing and everything, but the average offer is strikingly similar in the two countries.

[Figure 1 about here.]

In Table 1, we break down the loan offers by the nationality of the borrower and loan contract. Interestingly, we observe that the nationality of the borrower does not matter for the lenders, which is consistent with needs considerations not being salient in the lending decision. Furthermore, we observe that lenders do not differentiate between contract type, which provides initial evidence for the non-enforceable contract itself not being a crucial motive in the present context. The fact that lenders offer positive loan amounts is a strong indication of them expecting borrowers not to act completely selfishly, but rather being motivated by moral considerations. The lack of differentiation in loan amount across contract type, however, suggests that the lenders expect other moral motives than honoring the contract itself to be crucial when borrowers are to decide how much to return.

[Table 1 about here.]

### 3.2 Accepting or rejecting

A majority of the loan offers were accepted by the borrower, but a substantial fraction, close to 30%, were rejected. The Norwegians rejected 20.3% and the Tanzanians rejected 38.9% of the loan offers. The high rejection rate is striking, since the expected return for the borrower from accepting and honoring the loan contract is 50 percent.

What explains the high rejection rate? With a fixed interest rate contract, risk aversion provides a possible explanation. If the uncertain investment fails, a borrower would have to spend some of her own endowment to honor the contract. As shown in Table 2, however, the rejection rate does not depend on contract type, it is equally high for the surplus sharing contract. This is a striking finding, since a borrower cannot lose money on a surplus sharing contract. Accepting a surplus sharing contract first order stochastically dominates rejecting it, even for a borrower who intends to honor the contract. If the investment fails, there is no interest on the loan, and the borrower is equally well off as if she had rejected the contract. If there is a positive return on the investment, on the other hand, the borrower receives a substantial net surplus from accepting the contract.

[Table 2 about here.]

Negative reciprocity provides one possible reason for rejecting the loan offer, even with a surplus sharing contract. It is well established that people are willing to sacrifice own monetary payoff to punish unkind behavior (Fehr, Gächter, and Kirchsteiger, 1997; Charness, 2004), and in the present experiment borrowers may have become offended by small loan offers. They may have interpreted a small loan offer as a signal of the lender not considering them trustworthy, and as a consequence they may have decided to punish the lender for not having trust in them.<sup>7</sup> To study this explanation more closely, we consider the distribution of acceptance rate across loan offers, as shown in Figure 2. In Tanzania, we observe that the acceptance rate is much lower for the smallest loan offers than for the largest loan offers, 41.7% versus 80.0%, which lends support to Tanzanian borrowers being motivated by negative reciprocity when rejecting small loan offers. We find a similar, but less pronounced, relationship for Norwegian borrowers.

[Figure 2 about here.]

Still, both in Tanzania and Norway, we observe that about 20% of the loan offers representing the full endowment are rejected, which certainly cannot be explained by

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<sup>7</sup>An alternative strategy could of course be to accept the loan offer, but then punish the lender in the repayment phase. It is not obvious, however, that morally motivated individuals would find it appropriate to exploit an unkind act to their own advantage, even though it would have been a less costly punishment strategy in monetary terms. Second, the rejection of unkind loan offers may also reflect an emotional response, which did not involve strategic considerations of what would be the most appropriate punishment strategy.

negative reciprocity. If we only consider the surplus sharing contracts, where we also can rule out risk aversion as an explanation, we find that 12.5% and 20.7% of the loan offers of 50 USD were rejected in Norway and Tanzania, respectively. We suggest that this reflects that some borrowers have a fundamental aversion to uncertainty. The uncertainty effect was first demonstrated by Gneezy, List, and Wu (2006), who showed, both in field and lab experiments, that there are choice situations in which individuals value a risky prospect less than its worst possible realization. This is exactly what happens when borrowers reject a surplus sharing contract, and our data are thus consistent with the uncertainty effect influencing a non-negligible share of the borrowers.

### 3.3 Repayment

Did the borrowers honor the non-enforceable loan contract? The lower panel in Figure 3 shows that a significant share of them did, 36.4% and 21.9% of the participants in Norway and Tanzania returned at least the contract amount to the lender. We also observe from the upper panel that a majority of the participants returned at least the loan amount, both in Norway and Tanzania. Since the experiment was a one-shot game without any strategic reasons for repaying, this provides clear evidence of moral motivation among the borrowers both in Norway and Tanzania.

It is particularly striking to observe that only a very small share of the participants fully exploited the non-enforceable nature of the contract and returned nothing to the lender. This happened in 19% of the situations in Norway and only in 2.9% of the situations in Tanzania. The high level of repayment in Tanzania clearly demonstrates that it is a mistake to think of moral motivation as a luxury good that only the rich can afford. Even in the presence of very high stakes and a non-enforceable contract, almost all Tanzanians decided to return a significant amount to the lenders. On average, the borrowers returned 91.3% and 88.4% of the loan amount in Norway and Tanzania, where we observe that the distribution of repaid amount is more compressed in Tanzania than in Norway.

[Figure 3 about here.]

The fact that many borrowers returned a substantial amount is not very informative of the motivational role played by the contract. To better understand whether the non-enforceable contract motivated repayment, we need to study whether contract type mattered for repayment behavior. In this respect, it is important to keep in mind that since lenders did not differentiate between contract type when deciding how much to offer in loan, as shown in Table 1, and borrowers did not differentiate between contract type when deciding whether to accept or reject the contract, as shown in Table 2, the borrowers faced on average the same contract amount and the same kind of situation under the two contract types when deciding how much to repay. Thus, both honoring the contract and being motivated by some other moral considerations would imply that the average amount returned should be the same under the two contract types. This is

consistent with what we observe in Table 3. Even though the share repaid is higher under a surplus sharing contract, the difference is not statistically significant ( $p = 0.43$ , Norway;  $p = 0.44$ , Tanzania).

[Table 3 about here.]

If the contract itself motivated repayment, however, we should expect the contract type to matter for how much the borrowers repaid under different outcomes of the uncertain investment. The essential feature of the surplus sharing contract was that the contract amount should depend on the investment outcome, whereas the borrowers always faced the same contract amount under the fixed interest rate contract. In Table 3, we report regressions for Norway and Tanzania that test whether this difference mattered for the borrowers. We introduce the variable surplus that measures the net return from the investment, and then we interact it with the contract type. The surplus itself may matter for fairness reasons, since borrowers may consider it fair to share such a surplus with the lender.<sup>8</sup> The interaction term between the surplus variable and the fixed interest rate contract, however, would capture if sharing of the surplus was motivated by what is specified in the contract. We therefore consider the significance of this interaction to capture whether the contract itself motivated repayment.

We also include in the regression variables that capture other moral considerations potentially motivating the borrower. There is considerable evidence that people are motivated by reciprocal preferences and are willing to reward kind actions even at a cost to themselves (Fehr and Gächter, 2000; Falk and Fischbacher, 2006), and the size of the loan offer, included in the regression, may clearly be seen as a measure of the kindness of the lender's action.<sup>9</sup> Second, as shown by Eckel and Grossman (1996); Cappelen et al. (forthcoming), needs considerations may also be a powerful moral motive in many distributive situations. In the present experiment, the borrower was reminded of the nationality of the lender before deciding how much to return, and she might consider it morally imperative to return more to the needy lenders in Tanzania. We capture the needs motive in the regression by the indicator variable showing whether the lender was from Tanzania or not. Finally, we include the background variables age and sex for the borrowers.

[Table 4 about here.]

We observe from the interaction term that both Norwegian and Tanzanian borrowers share less of the investment surplus with the lenders under a fixed interest contract, but this difference is not statistically significant for any of the countries. We take

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<sup>8</sup>This may reflect that borrowers find it fair to eliminate inequalities between themselves and the lender that reflect factors beyond their control, see also Konow (2000); Frohlich, Oppenheimer, and Kurki (2004); Cappelen, Drange Hole, Sørensen, and Tungodden (2007); Cappelen, Sørensen, and Tungodden (2010b); Cappelen et al. (forthcoming).

<sup>9</sup>Reciprocal behavior may also reflect a concern for equality, see Ashraf, Bohnet, and Piankov (2006); Cox, Friedman, and Gjerstad (2007); Cappelen, Nygaard, Sørensen, and Tungodden (2010a).

this as evidence for the contract itself not motivating repayment behavior. We do, however, observe that the other moral motives play an important role in explaining repayment behavior. The reciprocal variable is highly significant for both countries ( $p < 0.01$ ), even though the point estimate is much higher for Norwegian borrowers. Interestingly, we observe that the needs motive is only significant for Norwegian borrowers ( $p = 0.068$ , Norway;  $p = 0.593$ , Tanzania). The fairness motive appears most prominently for the Tanzanian borrowers, where the surplus variable is statistically significant both under the surplus sharing contract ( $p < 0.01$ ) and fixed interest contract ( $p = 0.097$ ); for Norwegian borrowers, the surplus variable is only statistically significant under the surplus sharing contract ( $p < 0.01$ ).

Even though we do not find evidence for contract type playing a role in explaining repayment behavior, we cannot rule out that the presence of a contract in itself may have affected the borrowers. The contract may have strengthened the reciprocal motive, since responding positively to a large loan amount also contributes to honor the contract. Still, our point estimates for the Norwegian borrowers is very close to what is typically observed in a trust game without non-enforceable contracts (Camerer, 2003), and the point estimate for the Tanzanian borrowers is much lower, and thus we doubt that the contract has had a significant effect on the importance assigned to the reciprocal motive. The contract may, however, also have affected the importance assigned to needs considerations, and in this respect it is interesting to compare our results to Cappelen et al. (forthcoming), who study a distributive situation involving Norwegian and Tanzanian students without any non-enforceable contract. Whereas they find that Norwegian students assign less importance to needs considerations than Tanzanian students, which is consistent with a self-serving bias in moral motivation, we find the opposite result where Norwegian borrowers assign more importance to needs. In fact, there is no evidence of needs considerations affecting repayment behavior for Tanzanian borrowers, which may reflect that the presence of a non-enforceable contract crowded out the needs motive for this group.

## 4 Concluding remarks

Non-enforceable contracts are common in all societies, but their role is still poorly understood. Are such contracts more than cheap talk, and if so, why? We have reported from an experiment suggesting that even though a significant share of the participants honored (at least partly) the non-enforceable contract, the contract itself was not crucial in explaining their behavior. The participants rather seemed to have focussed on other relevant moral considerations, such as reciprocity, fairness, and needs.

We do, however, find some suggestive evidence of the presence of the contract affecting the importance assigned to the different moral considerations. In particular, we find that the Tanzanian participants did not pay attention to needs considerations, which may reflect that they did not find such considerations relevant in the presence of a contract. Our study thus points at two different ways that non-enforceable con-

tracts may change the behavior of morally motivated individuals; they may represent an independent moral consideration, but may also influence the role played by other morally relevant arguments.

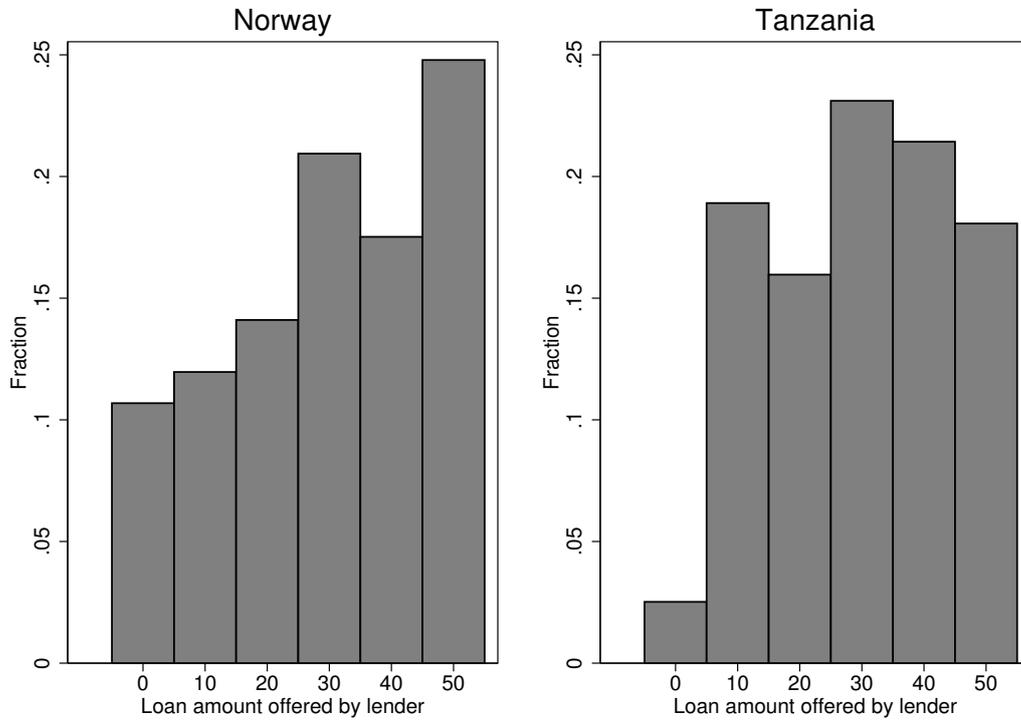
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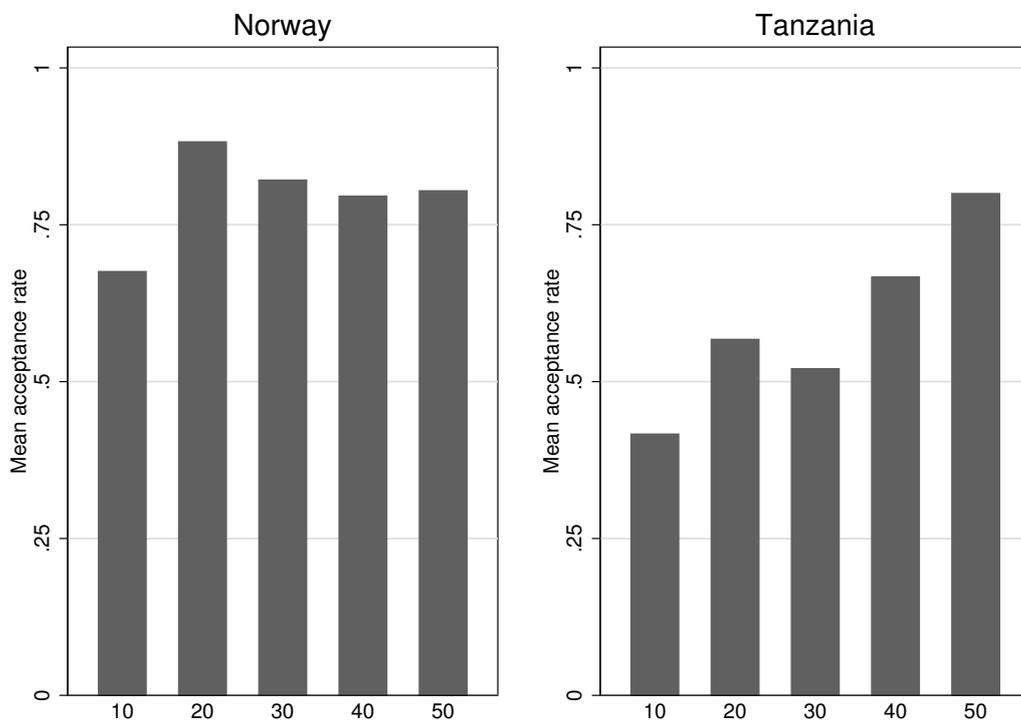
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Figure 1: Histograms of loan amount offered



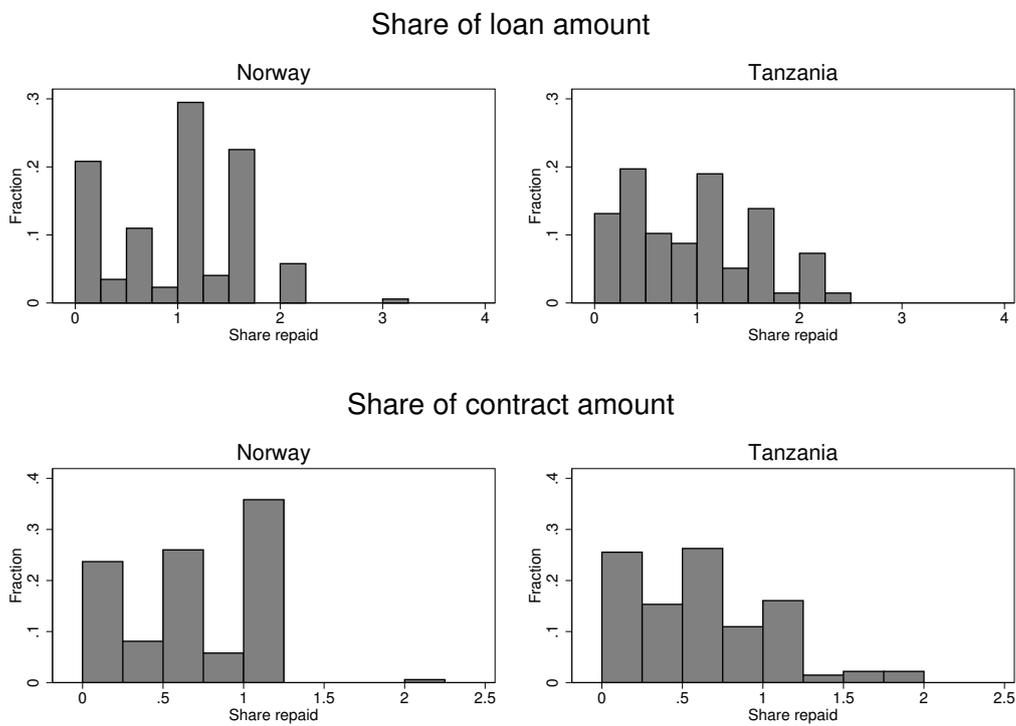
*Note:* The histograms show the fraction of lenders offering each of the six possible loan amounts, 0, 10, 20, 30, 40, and 50 USD, by the nationality of the lender.

Figure 2: Loan acceptance rates



*Note:* The histograms show the average acceptance rates for each of the six possible loan amounts offered, 0, 10, 20, 30, 40, and 50 USD, by the nationality of the borrower.

Figure 3: Histograms of share repaid



*Note:* The histograms show the distribution of share repaid of loan amount (upper panel) and of contract amount (lower panel), by the nationality of the borrower.

Table 1: Loan offers

Country of lender	Country of borrower		Contract type		All
	Norway	Tanzania	Fixed interest	Surplus sharing	
Norway	28.81 (2.01)	30.60 (2.07)	28.30 (2.14)	31.02 (2.01)	29.70 (1.98)
<i>n</i>	118	116	117	117	234
Tanzania	28.73 (1.70)	30.50 (1.56)	28.99 (1.68)	30.25 (1.56)	29.62 (1.46)
<i>n</i>	118	120	119	119	238

*Note:* Average loan offers in USD, by country of lender, country of borrower, and contract type. Standard errors (in parentheses) are corrected for clustering on individuals, *n* is the number of observations in a cell.

Table 2: Acceptance of loan offers

Country of borrower	Country of lender		Contract type		All
	Norway	Tanzania	Fixed interest	Surplus sharing	
Norway	0.83 (0.04)	0.77 (0.04)	0.81 (0.04)	0.79 (0.04)	0.80 (0.03)
<i>n</i>	104	113	108	109	217
Tanzania	0.58 (0.05)	0.64 (0.04)	0.63 (0.05)	0.59 (0.05)	0.61 (0.03)
<i>n</i>	105	119	112	112	224

*Note:* Average acceptance rates of all loan offers, by country of borrower, country of lender, and contract type. Loan offers of 0 USD were never presented for the borrower, and thus are not included in the statistics. Standard errors (in parentheses) are corrected for clustering on individuals, *n* is the number of observations in a cell.

Table 3: Share repaid of loan amount

Country of borrower	Country of lender		Contract type		All
	Norway	Tanzania	Fixed interest	Surplus sharing	
Norway	0.838 (0.083)	0.987 (0.083)	0.888 (0.079)	0.938 (0.078)	0.913 (0.073)
<i>n</i>	86	87	87	86	173
Tanzania	0.916 (0.096)	0.857 (0.076)	0.848 (0.080)	0.922 (0.092)	0.884 (0.072)
<i>n</i>	61	76	71	66	137

*Note:* Average share repaid of loan amount by country of borrower, country of lender, and contract type. Standard errors (in parentheses) are corrected for clustering on individuals, *n* is the number of observations in a cell.

Table 4: Regression of repaid amount

	Norway	Tanzania
Loan amount	0.99*** (0.15)	0.48*** (0.11)
Fixed interest contract	3.43 (4.08)	1.81 (4.15)
Surplus	0.22* (0.11)	0.24** (0.082)
Surplus $\times$ fixed interest rate contract	-0.13 (0.15)	-0.055 (0.15)
Lender from Tanzania	5.68 (3.05)	-1.43 (2.66)
Borrower is female	-0.45 (5.02)	-9.57 (4.90)
Age	-0.00012 (0.0020)	-0.24 (0.71)
Constant	-9.81* (4.23)	15.4 (18.9)
Observations	173	137
$R^2$	0.366	0.313

*Note:* Regression of repaid amount in USD, by the nationality of the borrower. “Loan amount” is loan amount in USD; “Fixed interest contract” is an indicator variable taking the value 1 if the borrower has accepted a fixed interest contract and the value 0 if the borrower has accepted a surplus sharing contract; “Surplus” is the return on the investment in USD; “Lender from Tanzania” is an indicator variable taking the value 1 if the lender is from Tanzania and the value 0 if the lender is from Norway; “Borrower is female” is an indicator variable taking the value 1 if the borrower is a female and the value 0 if the borrower is a male; “Age” is the age of the borrower, measured in years. Standard errors (in parentheses) are corrected for clustering on individuals, \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

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