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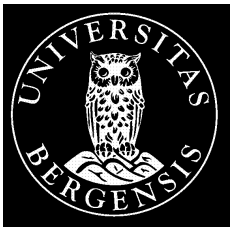

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Do non-enforceable contracts matter? Evidence from an international lab experiment

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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, partly which 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 international contracts. The most

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prominent reasons why certain contracts are hard to enforce are a lack of institutions for enforcing them, problems related to third-party verification of the terms of the contract, and enforcement costs. 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. 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 is then offered a better opportunity in a different company. In such a case, if the commitment is verbal it is hard for outsiders to verify what the true contract is. But even if the obligation is in written, it may not be beneficial for the employer to insist that the employee sticks to the terms of the contract as the latter may retaliate by putting in very little effort. 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 international courts at all with the power to make recalcitrant borrowers honor their obligations, and even though contracts are usually subject to the courts of some country these rarely have the means necessary to enforce their verdicts (Eaton and Gersovitz, 1981; Bulow and Rogoff, 1989; Tomz and Wright, 2007; Panizza, Sturzenegger, and Zettelmeyer, 2009).

What, then, is 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.[1] The matching of participants from one of the richest and one of the poorest countries in the world made needs considerations

[1]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.

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 could also potentially affect the participants' behavior.

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 a risky 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 the specific content of non-enforceable loan contracts does 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 in itself 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 design. 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.[2]

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.

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. We endowed lenders and borrowers with the same amount of money in order to rule out unequal endowments as a motive for lending. The borrowers kept their endowment, unless they used it to honor the loan contract. The main feature of the design was that the participants could agree on a non-enforceable loan contract. The money borrowed was automatically invested in a risky investment project with an expected gain equal to twice the amount invested. The lenders chose whether to offer 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. An overview of the experimental design is given in Table 1.

[Table 1 about here.]

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 determined 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 placed them in a box and transferred them to the lab. They then 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

[2]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.

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 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 the two 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 is about 16600 USD per year in Norway;[3] 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. This is also recognized by some of the participants when motivating their choices, as illustrated by the explanation of participant 45: "I had a lower threshold of not repaying the complete amount of the Norwegian loans,

[3] In local currency, the numbers are 112 000 NOK per year in Norway (Table 4, Løwe and Sæther, 2007)

as I assumed all Norwegian students are better off than the Tanzanians."[4] When interpreting the results, however, we should keep in mind that some participants may have focused on the relative, and 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.[5]

2.3 Lending

Lenders were asked how much of the endowment they wanted to lend to 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.[6] 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 risky 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 risky 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 on the loan

[4] Participant 45 refers to the anonymous code of this participant in the experiment.

[5] See also Cappelen, Moene, Sørensen, and Tungodden (forthcoming).

[6] To accommodate differences in session size, a few participants only made decisions in three situations.

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 should only pay back the loan amount. If the return on the investment was 100%, the borrower had to pay 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 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 loan to offer, the borrower's decision of whether to accept or reject the loan offer, and the borrower's decision of how much to repay. Overall, there are 472 loan situations, and as shown in Table 2, we have a good balance in the matching of lenders and borrowers across nationality.

[Table 2 about here.]

3.1 Loan offers

Figure 1 shows the distribution of the loan offers by country. We observe that the lenders offered 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 less compressed in Norway than in Tanzania, with fewer Tanzanians offering nothing or everything, but the average offer, also when broken down on the country of borrower and by loan contract, is strikingly similar in the two countries.

[Figure 1 about here.]

In Table 3, we break down the loan offers by the nationality of the borrower and by loan contract.[7] 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. Alternatively, it may reflect that needs and trustworthiness considerations go in opposite directions. Furthermore, we observe that lenders do not differentiate between contract type. The fact that lenders offer positive loan amounts is a strong indication that they expect borrowers to not act completely selfishly, but rather to be motivated by moral considerations.

[Table 3 about here.]

3.2 Accepting or rejecting

A majority of the loan offers were accepted by the borrowers, but a substantial fraction, close to 30%, was rejected. The Norwegians rejected 20.3% and the Tanzanians rejected 38.9% of the loan offers, and this difference is statistically significant also when broken down by country of borrower and contract type. We observe that there is an in-group-out-group difference, with more acceptance of loans from lenders with the same nationality, but this difference is not significant in any of the two countries ($p = 0.26$, Norway; $p = 0.34$, Tanzania).

The high rejection rate is striking, since the expected return for the borrower from accepting and honoring the loan contract is 50 percent. So how can it be explained? With a fixed interest rate contract, risk aversion provides a possible explanation. If the risky investment fails, a borrower would have to spend some of her own endowment to honor the contract. As shown in Table 4, 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 the contract, 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 surplus sharing contract.

[Table 4 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 that the lender does not consider them trustworthy, and as a consequence they may

[7] We provide a detailed breakdown of average loan offers, acceptance rates, and share repaid in Tables 1-3 in a web-appendix, available at the homepage of The Choice Lab.

have decided to punish the lender for not having trust in them.[8] 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, on average 41.7% versus 80.0%. This pattern applies to both lenders from Tanzania and from Norway, and 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 towards Norwegian lenders, but not towards Tanzanian lenders.

[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 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.[9] 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. Finally, we cannot rule out that some of the rejections of high loan offers reflect that participants misunderstood the instructions, and possibly there may also be cultural differences in how the word "loan" is perceived in the two subject pools that can contribute to explain the difference in acceptance rates between Norway and Tanzania.

3.3 Repayment

Did the borrowers honor the non-enforceable loan contract? The right panel in Figure 3 shows that a significant share of them did, 36.4% and 21.9% of the participants in Norway and Tanzania, respectively, returned at least the contract amount to the lender. We also observe from the left 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.

[8] 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.

[9] Note that the uncertainty effect is defined on risky outcomes, and does not relate to individuals evaluating prospects with subjective probabilities.

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 involving Norwegian borrowers and in only 2.9% of the situations involving Tanzanian borrowers. 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, respectively, and 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 loan to offer, as shown in Table 3, and borrowers did not differentiate between contract type when deciding whether to accept or reject the contract, as shown in Table 4, 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 5. 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). We also observe that there are no statistically significant differences between Norway and Tanzania when the share repaid is broken down by country of lender and contract type.

[Table 5 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 risky 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 6, 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 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.[10] The interaction term between the surplus variable and the fixed interest rate contract, however, would capture whether 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 Fischbacker, 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.[11] Second, as shown byEckel and Grossman (1996) and 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 an indicator variable showing whether the lender was from Tanzania or not. Finally, we include the background variables age and sex for the borrowers.

[Table 6 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 thse differences are not statistically significant. We take this as suggestive evidence that the contract itself does not motivate 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 under the 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 of contract type playing a role in explaining repayment behavior, we cannot rule out that the presence of a contract in itself may

[10]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). See also Udry (1990) for a study in rural Nigeria of how the rate of interest on informal loans depends positively on the luck of the borrower and negatively on the luck of the lender.

[11]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).

have affected the borrowers. The contract may have strengthened the reciprocal motive, since responding positively to a large loan amount also contributes to honoring the contract. Still, our point estimate 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 we thus 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 Cappelen et al. (forthcoming) 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 observe 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 contracts 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.

References

Al-Samarrai, Samer and Paul Bennell (2007). "Where has all the education gone in sub-Saharan Africa? employment and other outcomes among secondary school and university leavers," *Journal of Development Studies*, 7(7): 1270–1300.

Ashraf, Nava, Iris Bohnet, and Nikita Piankov (2006). "Decomposing trust and trustworthiness," *Experimental Economics*, 9(3): 193–208.

Ben-Ner, Avner and Louis Putterman (2009). "Trust, communication, and contracts: an experiment," *Journal of Economic Behavior and Organization*, 70(1-2): 106–121.

Berg, Joyce, John Dickhaut, and Kevin McCabe (1995). "Trust, reciprocity, and social history," *Games and Economic Behavior*, 10(1): 122–142.

Bulow, Jeremy and Kenneth Rogoff (1989). "Sovereign debt: Is to forgive to forget?" *American Economic Review*, 79(1): 43–50.

Camerer, Colin F. (2003). *Behavioral Game Theory: Experiments in Strategic Interaction*, Princeton, NJ: Princeton University Press.

Cappelen, Alexander W., Astri Drange Hole, Erik Ø. Sørensen, and Bertil Tungodden (2007). "The pluralism of fairness ideals: An experimental approach," *American Economic Review*, 97(3): 818–827.

Cappelen, Alexander W., Karl O. Moene, Erik Ø. Sørensen, and Bertil Tungodden (forthcoming). "Needs vs entitlements: An international fairness experiment," *Journal of European Economic Association*.

Cappelen, Alexander W., Knut Nygaard, Erik Ø. Sørensen, and Bertil Tungodden (2010a). "Efficiency, equality and reciprocity in social preferences: A comparison of students and a representative population." Discussion paper SAM 28/10, Department of Economics, Norwegian School of Economics and Business Administration.

Cappelen, Alexander W., Erik Ø. Sørensen, and Bertil Tungodden (2010b). "Responsibility for what? Fairness and individual responsibility," *European Economic Review*, 54(3): 429–441.

Charness, Gary (2004). "Attribution and reciprocity in an experimental labor market," *Journal of Labor Economics*, 22(3): 665–688.

Cox, James C., Daniel Friedman, and Steven Gjerstad (2007). "A tractable model of reciprocity and fairness," *Games and Economic Behavior*, 59(1): 17–45.

Eaton, Jonathan and Mark Gersovitz (1981). "Debt with potential repudiation: Theoretical and empirical analysis," *Review of Economic Studies*, 48(2): 289–309.

Eckel, Catherine and Philip J. Grossman (1996). "Altruism in anonymous dictator games," *Games and Economic Behaviour*, 16(2): 181–191.

Falk, Armin and Urs Fischbacker (2006). "A theory of reciprocity," *Games and Economic Behavior*, 54(2): 293–315.

Fehr, Ernst and Simon Gächter (2000). "Fairness and retaliation: The economics of reciprocity," *Journal of Economic Perspectives*, 14(3): 159–181.

Fehr, Ernst, Simon Gächter, and Georg Kirchsteiger (1997). "Reciprocity as a contract enforcement device: Experimental evidence," *Econometrica*, 65(4): 833–860.

Fehr, Ernst, Oliver D. Hart, and Christian Zehnder (2009). "Contracts, reference points, and competition—behavioral effects of the fundamental transformation," *Journal of the European Economic Association*, 7(2-3): 561–572.

Fehr, Ernst, Oliver D. Hart, and Christian Zehnder (2011a). "Contracts as reference points—experimental evidence," *American Economic Review*, 101(2): 493–525.

Fehr, Ernst, Oliver D. Hart, and Christian Zehnder (2011b). "How do informal agreements and renegotiation shape contractual reference points?" NBER Working Paper 17545.

Frohlich, Norman, Joe Oppenheimer, and Anja Kurki (2004). "Modeling other-regarding preferences and an experimental test," *Public Choice*, 119(1-2): 91–117.

Gneezy, Uri, John A. List, and George Wu (2006). "The uncertainty effect: When a risky prospect is valued less than its worst possible outcome," *Quarterly Journal of Economics*, 121(4): 1283–1309.

Hart, Oliver and John More (2008). "Contracts as reference points," *Quarterly Journal of Economics*, 123(1): 1–48.

International Comparison Program (2008). "2005 international comparison program: Tables of final results," International Bank for Reconstruction and Development/ The World Bank.

Irlenbusch, Bernd (2006). "Are non-binding contracts really not worth the paper?" *Managerial and Decision Economics*, 27(1): 21–40.

Konow, James (2000). "Fair shares: Accountability and cognitive dissonance in allocation decisions," *American Economic Review*, 90(4): 1072–1091.

Konow, James (2003). "Which is the fairest one of all? A positive analysis of justice theories," *Journal of Economic Literature*, 41(4): 1188–1239.

Løwe, Torkil and Jan Petter Sæther (2007). "Studenters inntekt, økonomi og boforhold," Statistics Norway, Rapporter 2007/2.

Malhotra, Deepak and J. Keith Murnighan (2002). "The effects of contracts on interpersonal trust," *Administrative Science Quarterly*, 47(3): 534–559.

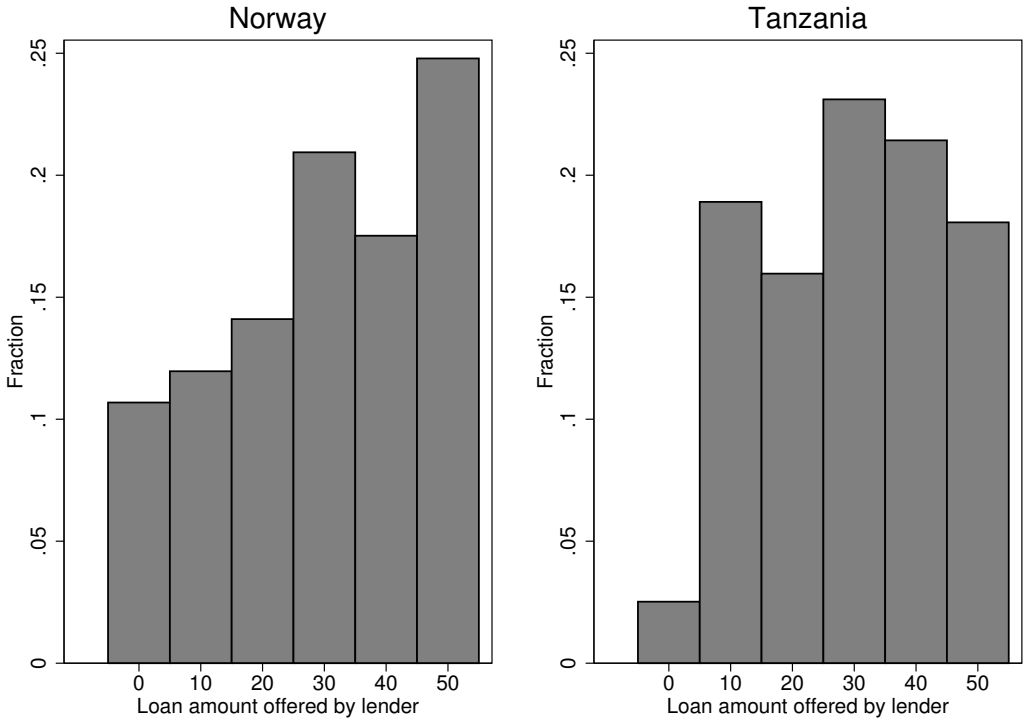
Panizza, Ugo, Fredrico Sturzenegger, and Jeromin Zettelmeyer (2009). "The economics and law of sovereign debt and default," *Journal of Economic Literature*, 47(3): 1–47.

Rigdon, Mary (2009). "Trust and reciprocity in incentive contracting," *Journal of Economic Behavior and Organization*, 70(1-2): 93–105.

Tomz, Michael and Mark L. J. Wright (2007). "Do countries default in "Bad Times"?" *Journal of the European Economic Association*, 5(2-3): 352–360.

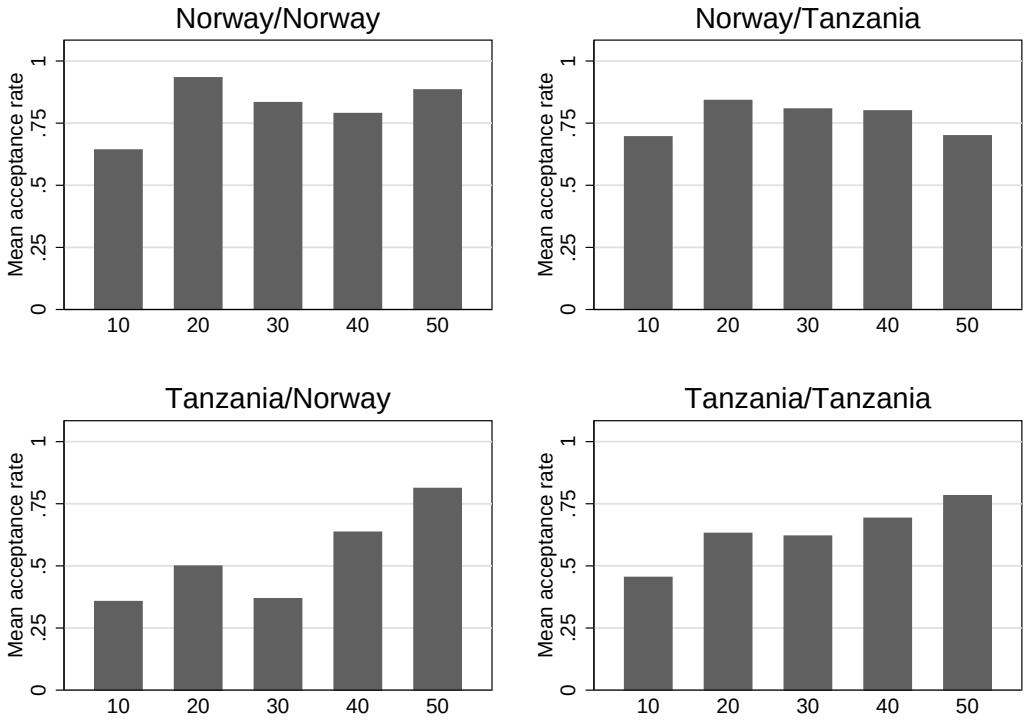
Udry, Christopher (1990). "Credit markets in northern Nigeria: Credit as insurance in a rural economy," *World Bank Economic Review*, 4(3): 251–269.

Figure 1: Histograms of loan amount offered



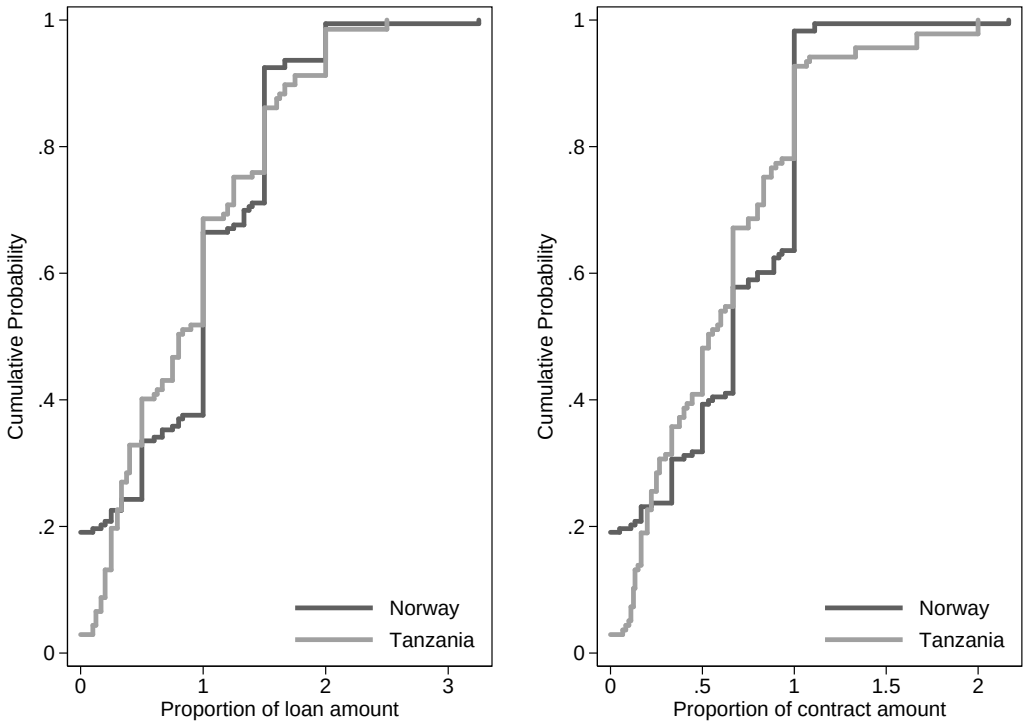
Note: The histograms show the fraction of lenders offering each of the six possible loan amounts, 0, 10, 20, 30, 40, and 50 USD, by the nationality of the lender.

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/lender.

Figure 3: Cumulative distribution functions of share repaid



Note: The panels show the cumulative distribution functions of share repaid of loan amount (left panel) and of contract amount (right panel), by the nationality of the borrower.

Table 1: Overview of experimental design

Stage	Event	Lender decision	Borrower decision
0	Each participant is assigned role as borrower or lender.		
1	Each lender is assigned contract type and borrower (country), initial endowments are $(50,50)$ to a lender, borrower pair.		
2		Propose a loan amount $L \in \{0,10,\ldots,50\}$.	
3	If proposed amount was zero, lender and borrower keep $(50,50)$, situation ends.		
4			Accept/reject loan offer.
5(a)	If borrower rejected offer, lender and borrower keep $(50,50)$, situation ends.		
5(b)	If borrower accepted offer, investment outcome is drawn, $Y = \xi L$ with ξ uniformly distributed on $\{1,2,3\}$.		
6			Return an amount $R \in \{0,5,10,\ldots,50+Y\}$.
7	Earnings if this situation are drawn is $(50-L+R, 50+Y-R)$.		

Note: For each participant stages 1-7 repeated 4 times with the 2×2 different combinations of opponent country and contract. For each participant, one of these situations is then drawn to determine pay-off from the experiment.

Table 2: Distribution of situations by country of lender and borrower

	Country of borrower		
Country of lender	Norway	Tanzania	total
Norway	118	116	234
Tanzania	118	120	238
total	236	236	472

Note: The table shows the distribution of situations across the nationality of the lender and the borrower.

Table 3: Loan offers

	Country of borrower		Contract type		
Country of lender	Norway	Tanzania	Fixed interest	Surplus sharing	All
Norway	28.81	30.60	28.30	31.02	29.70
	(2.01)	(2.07)	(2.14)	(2.01)	(1.98)
n	118	116	117	117	234
Tanzania	28.73	30.50	28.99	30.25	29.62
	(1.70)	(1.56)	(1.68)	(1.56)	(1.46)
n	118	120	119	119	238
p-value of no difference	0.974	0.968	0.821	0.761	0.974

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. The *p*-values are for tests of no difference between the lender countries and are based on regressions of the loan amount on dummies for country of borrower, where standard errors are clustered at the individual (lender) level.

Table 4: Acceptance of loan offers

	Country of lender		Contract type		
Country of borrower	Norway	Tanzania	Fixed interest	Surplus sharing	All
Norway	0.83	0.77	0.81	0.79	0.80
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)
n	104	113	108	109	217
Tanzania	0.58	0.64	0.63	0.59	0.61
	(0.05)	(0.04)	(0.05)	(0.05)	(0.03)
n	105	119	112	112	224
p-value of no difference	< 0.001	0.030	0.011	0.002	< 0.001

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 to the borrower, and are thus not included in the statistics. Standard errors (in parentheses) are corrected for clustering on individuals, *n* is the number of observations in a cell. The *p*-values are for tests of no difference between the borrower countries and are based on regressions of a dummy for acceptance on dummies for country of lender, where standard errors are clustered at the individual (borrower) level.

Table 5: Share repaid of loan amount

	Country of lender		Contract type		
Country of borrower	Norway	Tanzania	Fixed interest	Surplus sharing	All
Norway	0.838	0.987	0.888	0.938	0.913
	(0.083)	(0.083)	(0.079)	(0.078)	(0.073)
n	86	87	87	86	173
Tanzania	0.916	0.857	0.848	0.922	0.884
	(0.096)	(0.076)	(0.080)	(0.092)	(0.072)
n	61	76	71	66	137
p-value of no difference	0.540	0.250	0.721	0.891	0.772

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. The *p*-values are for tests of no difference between the borrower countries and are based on regressions of the share of loan repaid on dummies for country of lender, where standard errors are clustered at the individual (borrower) level.

Table 6: Regression of repaid amount on loan characteristics and background variables

	Norway	Tanzania
Loan amount	0.99***	0.48***
	(0.15)	(0.11)
Fixed interest contract	3.43	1.81
	(4.08)	(4.15)
Surplus	0.22**	0.24***
	(0.11)	(0.082)
Surplus × fixed interest rate contract	-0.13	-0.055
	(0.15)	(0.15)
Lender from Tanzania	5.68*	-1.43
	(3.05)	(2.66)
Borrower is female	-0.45	-9.57*
	(5.02)	(4.90)
Age in years	-0.00012	-0.24
	(0.0020)	(0.71)
Constant	-9.81**	15.4
	(4.23)	(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 (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

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