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Conforming to Group Norms: An Experimental Study

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Abstract

There is substantial experimental and empirical evidence to suggest that individual behaviour in bilateral or small-group interactions is affected by social norms. Further, social norms vary according to context. Previous research largely focuses on norms of fairness, not norms per se. We design an experiment to decouple norm-adherence from fairness. We find that (a) a group norm evolves and individuals cluster more tightly around it as they learn the average behaviour of the group, (b) actions further from this norm in a self-serving direction are less acceptable by others, and (c) when an agent is moved to a group with a different norm, s/he conforms quickly to the new norm.

Keywords: group behaviour, norms, conformism, fairness, ultimatum game.

JEL Codes: C72, C78, C92, Z13.

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Economists have accumulated substantial evidence that social norms significantly condition the behaviors of economic agents in bilateral or small-group transactions. In experimental studies using the ultimatum game,[1] Roth et al. (1991); Henrich et al. (2001) and Henrich (2000) have demonstrated that norms vary widely between cultures. Norms are frequently supported by threats of punishment (Fehr and Fischbacher, 2003), which may be as mild as disapproval (Andreoni and Bernheim, 2009; Bicchieri and Chavez, 2010). The opportunity to punish arises naturally in the ultimatum game, where the responder can deny the proposer a payoff at the cost of foregoing the sum that has been offered to him. Differences in standards of behavior between contexts have also been observed in empirical investigations.[2] Further, in studies of worker productivity and absences, it has been found that workers adapt their behavior to different standards when they move between environments (Ichino and Maggi, 2000; Bandiera et al., 2010; Falk and Ichino, 2006).

These findings naturally suggest two questions about the evolution of norms, and about individual adaptation to new environments. First, are norms of social behavior internalized by individuals as part of their early socialization, do these norms evolve anew in each instance of association, or do they crystallize somewhere between early childhood and the immediate present? The interpretation of behavior as culturally based would suggest that the acquisition of norms happen earlier rather than later; a view that is supported by sustained and significant differences in behavior between cultures that has been noted in the literature. Secondly, when individuals find themselves placed in a population that displays behavior significantly different from that to which they have previously conformed, do they adapt to these different norms?

In this paper we present the results of a laboratory experiment based on the ultimatum game to explore norm-referenced behavior. We divide our subjects into two separate and non-interacting groups to play the game. The sorting is based on the initial offer each subject makes as proposer. Those who make initial offers below the median are placed in the "low" group, and the remainder form the "high" group. Participants within each group are then randomly paired to play the game in each of several successive rounds. In each round, each participant is a member in two random pairs; she is the proposer in one game and the responder in the other. The same amount is available for division in each game. Thus if the same offer is made and accepted in every game in a given round, then all participants receive the same final payoff in that round, irrespective of the numerical value of the offer. The placement of each participant in both roles in each round eliminates asymmetry between subjects. After several rounds of the game have been played, we move a small number of participants from the "low" group to the "high group", and vice versa. Several more rounds of the

[1] An ultimate game is played between two players. One player—designated the "proposer"—proposes a division of a given sum of money between herself and the other player, who is the "responder". The responder either accepts the proposal, in which case the money is divided as proposed, or he rejects it, which results in the money being withdrawn and no payments made to either player. We refer to the sum that the proposer offers to the responder as the "offer". The subgame-perfect equilibrium is a proposal that gives (almost) nothing to the responder, and is accepted. However, this outcome is never observed in an experimental setting; proposers tend to make offers much closer to an equal division, while responders consistently reject selfish offers.

[2] There are several excellent surveys of the literature. See for example, Kagel and Roth (1995), Chapters 2 and 4, Fehr and Schmidt (1999); Oosterbeek et al. (2004) and Fehr and Fischbacher (2004).

game are then played.

The first objective of the present experiment is to investigate whether a norm of behavior develops endogenously in repeated group interaction, and whether behavior increasingly conforms to this norm as members learn the norm better. Intuitively, the norm is the typical behavior in a group. However, neither "norm" nor "typical" are well-defined concepts in economics. Our candidate for the group norm is the average offer made in the group. To qualify as a group norm, the average must possess at least two further properties: it must be relatively stable over time, and as the group members obtain more information their behavior must converge more tightly around it. We find that, indeed, the offers in each group (high and low) tend to converge to a stable level and the distribution around the norm tightens as time passes. These averages are substantially different between the groups (44 percent and 26 percent of the stake, respectively).

The standard of behavior that develops in a group, which we interpret as the norm, draws upon the initial attitudes of the agents that are put together in the group; it can be thought of as a socially generated compromise between the diverse initial (pre-social) predispositions of the members. It is reasonable to conjecture that behavior will converge to the norm as agents accumulate information about each others' dispositions and adapt to them. In one treatment, we provide information to subjects about the average offers made in previous rounds. We find that the speed of convergence is more rapid when participants are provided public information, than in the other treatment where no such information is provided and participants must infer group behavior from their private histories.

In an early study that is now a classic, Roth et. al. (1991) conducted an experiment based on the ultimatum game in four cities on different continents. They found that the distributions of offers in different cities were significantly different, implying that in some cities (Tokyo and Jerusalem) the probability of a high offer being made was lower than in other countries (Ljubljana and Pittsburg). However, there were no correspondingly significant differences in the probability that an offer would be rejected. The probability of rejection depended on the position of the offer within the distribution for that city, and not on the absolute value of the offer. The authors cautiously concluded that the tendency to make lower (or higher) offers and correspondingly to accept lower (or higher) offers in some cities was a function of 'culture' (also defined cautiously). Henrich et al. (2001) report similar observations from their studies in a number of remote tribal societies.

We interpret this as meaning that the perception of what constitutes an acceptable or "fair" division under the circumstances differs between socio-economic contexts. Fairness may thus be constituted as a function of socialization, which inculcates in individuals a perception of acceptable versus unacceptable behavior. This sense, adequately nurtured, may well enter the utility functions of individuals in a quantifiable way, whereby one experiences disutility in accepting (or witnessing) an offer that is patently unfair relative to the local norm.

This interpretation presupposes well-defined criteria for acceptable behavior. An endogenous criterion is difficult to define for ultimatum games. Perfect fairness or a 50-50 split may provide a notional criterion. However, in a single play of the ultimatum

game, there is an inherent asymmetry between the two players (proposer and responder), and evidence shows that subjects often consider it fair for the proposer to receive a somewhat larger fraction of the pie. The acceptable premium varies significantly from context to context. The differences have sometimes been ascribed to "culture" (see the discussion of Roth et al. (1991) above). Henrich (2000) and Henrich et al. (2001) provide evidence that in a diverse collection of remote societies behaviour deviates significantly and systematically from the selfish model, with wide variation between the societies in norms of behavior. In her experiment conducted in Yogyakarta, Indonesia, Cameron (1999) provides some evidence that, within a culture, these norms are robust to large changes in the stake.

Our experiment is designed to eliminate the asymmetry between proposer and responder. Since each player is both a proposer and a responder in each round, all players will receive the same payoff if all offers are identical and all are accepted. If the norm is well-known and generally adhered to, then the only deviation from perfect fairness consists of making an offer that is different from the norm. An offer below the norm is a selfish deviation while one above the norm is an altruistic deviation. The "fair" offer is therefore clearly identified with the norm, and independent of its numerical value. The experiment therefore investigates adherence to the norm, rather than the location of the fairness norm.

Our second objective is to explore whether agents adapt readily to different norms. In life it is often the case that individuals who have been socialized in groups with certain norms of behavior sometimes find themselves placed in groups that act according to significantly different tenets. In the experiment we simulate this by exchanging a small number of participants between pairs of groups in which different norms have developed, and observing their behavior as they interact in their new groups. We find that, as time proceeds, the newcomers adjust their behavior in the direction of conformity with their new groups. Again, this conformity is faster and much more marked in treatments where information about group averages is publicly disseminated.

Our findings find some support in the literature on peer effects in the workplace. We cite three examples. Ichino and Maggi (2000) studied shirking behavior among employees in a large Italian firm which had branches in both the north and south of Italy. They found that shirking behavior was more common in the south, but that workers who transferred from one region to the other tended to conform to the norms in their destination region. However, they also note that some of this effect may be explained by selection, since the set of transferees in general did not appear to be a random draw from the region of origin. Bandiera et al. (2010) observe that the productivity of workers tend to increase when they work in the company of high-productivity colleagues and decrease in the company of low-productivity colleagues, even when there are no wage-incentives nor externalities in output. Falk and Ichino (2006) study workers working singly and in pairs, and find that the productivity varies less within pairs.

Andreoni and Blanchard (2006) report an experiment that is similar to ours in the sense that they attempt to suppress the fairness aspect of ultimatum game offers. In their setting, the payoffs of proposers and responders depend on their performance vis-a-vis others of the same type, rather than on interactions in game-playing pairs. As a consequence fair-minded subjects should also play the selfish, subgame-perfect

strategies. However, they investigate learning on the part of the subjects, which is a concern quite distinct from ours.

Cooper and Dutcher (2011) use data from several other experiments to explore the effect of experience on the behaviors of participants. They find that, as players gain experience, they tend to accept high offers (greater than 20 percent) and reject low offers (less than 20 percent) more often. We find much the same tendency, except that in out study the dividing line ("norm") evolves from the characteristics of the player group. Interestingly, they find "a strong negative relationship between the previous offer received and the likelihood that the current offer is accepted", which is evident in our data as well. In addition, we find that agents tend to significantly increase their offers if the previous offer was rejected.

Each of the papers discussed above has a goal distinctly different from that of the present paper. Our objective is to study the development of a norm of behavior in a group, and explore the distribution of agents' attitudes towards selfishness. Our results suggest that agents who find themselves in a group tend to choose actions that conform to perceived norms of the group, and find it unacceptable when others take actions that deviate too much from those norms in the direction of selfishness. Further, this norm develop endogenously within a group; it is a product of group interaction and not hardwired in individuals. However, agents are heterogeneous, and each agent has an inherent tendency towards selfishness or generosity. This dispersion tightens as agents learn their environment; it is in this sense that we can designate the average behavior to be a group "norm". Nevertheless, some heterogeneity remains. Finally, when an individual moves to a different group with a different norm, she adapts to the new norm of behavior. However, the influence of earlier socialization does not vanish entirely.

In Section 1 we describe the design of the experiment in detail. Section 2 discusses the intuitive economic reasoning that drives our empirical analysis. Section 3 presents the main results, and Section 4 analyses the variables that detemine the offers made by individuals. Section 5 concludes.

1 Description of the experiment

The experiment is based on the ultimatum game played repeatedly in anonymous, randomly matched pairs. In each round, each subject participated in two separate games with (typically) different, randomly matched partners: in one game the subject acted as a proposer and proposed a division of 100 Experimental Dollars (ED, 100 ED = 1 AUD) between herself and a responder, in the other game she acted as a responder and either accepted or rejected a division of 100 ED proposed by her partner. The experiments were conducted in the Experimental Laboratory of the Australian School of Business at the University of New South Wales, which is a recently built facility with computer terminals separated by dividers. The experiment was programmed and conducted with the software z-Tree (Fischbacher, 2007). Participants were recruited using the recruitment system ORSEE (Greiner, 2004). No subject could participate in more than one session of the same experiment.

Sessions and rounds: We ran five session of each of two treatments T1 and T2. Each session had between 18 and 24 participants (even numbers). Altogether there were 108 participants in the five sessions of treatment 1 (TI), and 110 in the five sessions of treatment 2 (T2). Each session ran for 31 rounds, and in each round, each participant participated in two instances of the ultimatum game as described above.

In the first round (round 0), pairings were made across the entire set of participants for the session. Each participant made a proposal in the game in which s/he was a proposer. However, these offers were withheld and sent to receivers only after the remaining 30 rounds had been played. Session participants were then ordered according to the value of offers they made. The participants that made offers in the lower half of the distribution were grouped together (the "low group", or GL in this paper), and those that were in the upper half of the distribution were grouped together (the "high" group, or GH). The players only knew their own groups as the "red" or the "blue" group. Since we started with an even number of players, the two groups had equal numbers of players. In subsequent rounds, players were paired within their respective groups, so that each group constituted a separate sub-session. Fifteen rounds of the game (rounds 1 to 15) were then played.

After round 15, an equal number of players from each group (high and low) were randomly selected and moved to the other group (low or high). In each session, the number of players that was moved from one group or the other was the largest integer less than or equal to a third of the number that were originally in the group. Hence in sessions that had a total of 18 or 20 players (9 or 10 per group), three players were moved from each group, and in sessions with 24 players four players were moved from each group. Another fifteen rounds (rounds 16 to 30) were then played in the new groups.

Finally the offers from round 0 were communicated to the respective recipients, who responded to the offers. Each player was then informed of the total payoff that s/he had accumulated, and paid this amount. This concluded a session.

The sole difference between treatments 1 and 2 consisted of one piece of information communicated to each player after every two rounds of play: the average of all the offers that were made in his/her group in the previous two rounds. This information was communicated to players in the sessions in Treatment 2 but not in Treatment 1. This information was provided after every even numbered round starting with round 2. Note that, when some players were moved from their original groups and started to play in new groups in round 16, they had no information regarding the average offer in their new group. Only after they had played one round (and hence made one offer and responded to one offer) did they receive this information.

Information given to players: Players were given a printed instruction sheet at the beginning of the experiment, which they had adequate time to read. The instructions were also read out to them, and there was an opportunity to ask questions. The ultimatum game was explained to players, as was the structure of each round in which each player participated both as a proposer and a responder. The conversion rate between experimental dollars and Australian dollars was explained. We rounded payoffs up to half-dollars for convenience. They were told that they would play one round across the entire session and that offers made in this round would be withheld

until all the subsequent rounds were played. They were told that they would then be divided into two groups and play some number of rounds within those groups. After some rounds a few players would be reallocated between groups, and subsequent games would be played within the newly constituted groups. The players were told that the two groups were the "red" group and the "blue" group.

At the beginning of each round 1 to 30, with the exception of round 16, each player was reminded that "you are in the red (or blue) group". At the beginning of round 16 each player got a message saying "you were previously in the red (or blue) group", followed by a message which read either "you are still in the red (or blue) group", or "you are now in the blue (or red) group".

As mentioned earlier, after every even numbered round starting with round 2, each player in the treatment 2 sessions was also sent a message saying "the average offer in your group in the previous two rounds was [value of the average offer]". Of course, any information that was given to players was the correct information.

INFORMATION *not* GIVEN TO PLAYERS: Players were not informed of the number of rounds that would be played in each phase (except that there was to be one initial round before groups would be formed), or the criterion that would be used to sort them into groups. They were not informed of the number of players that would be exchanged between the groups after the first set of rounds. At no stage was any participant given false information, or information calculated to mislead.

The terms "norm" or "conformity" or "fairness" any of their derivatives were not used anywhere in the written or verbal instructions.

2 Conceptual framework

We interpret the mean offer behavior of the group as the norm. If behavior conforms to the norm, then as agents accumulate more information their offers must converge to the mean. Offers may move closer to the mean for two reasons. First, if an agent prefers to conform to the perceived norm, then she would make offers closer to the norm to the extent that her accumulated information allows her to do so. Alternatively, norm-referenced behavior may be reflected in the responses—agents reject offers that they judge to be too far below the norm as their information allows them to make this judgement with increasing confidence. In the latter case, purely profit-maximizing behavior would lead proposers to then make offers closer to the norm. In either case, if the distribution of offers converge to the mean as the game progresses, we may interpret this as evidence of norm-regarding behavior. Further, since subjects are provided clear information about the average offers in treatment 2, whereas information is imperfectly gleaned from private histories in treatment 1, we expect the convergence to occur faster in treatment 2.

We assume that agents get positive utility from income earned in each round. If nevertheless an agent rejects low offers, then it follows that she receives disutility from accepting a selfish offer, or utility from rejecting it. Similarly, agents may make higher offers relative to the mean even when a lower offer would be accepted because they obtain utility from being generous. The extent to which a given agent's utility is affected from accepting a selfish offer may well be related to her utility from making a

generous one, but we have no *a priori* basis for predicting the direction in which the two are related.

Let x_i be the offer that agent i receives in her capacity as a responder, and y_i be the amount she retains when she makes an offer as a proposer. Thus if i is the proposer and k the responder in a given pair, then $x_k = 1 - y_i$.[3] Let μ^j represent the average offer or "norm" in the group. If the position of the offer relative to the norm matters to the responder, then her utility from accepting the offer must be of the form $u_i^R = u(x_i, \mu^j, \alpha_i)$, where α_i is a parameter that captures her attitude towards deviations from the norm. We posit the following simple additive version:

$$u_i^R(x_i, \mu^j; \alpha_i) \;=\; x_i \;+\; \alpha_i(\frac{x_i - \mu^j}{\mu^j})$$

where α_i is positive if selfish deviations from the norm generate disutility.

We normalize the utility from rejecting an offer to zero.[4] An agent's optimal response is then to accept if and only if

$$u_i^R(x_i, \mu^j; \alpha_i) \geq 0 \quad \Longrightarrow \quad x_i \geq \frac{\alpha_i \mu^j}{\alpha_i + \mu^j}.$$

Note that as the norm increases without bound, the acceptance threshold converges to α_i. This is consistent with Rabin's (1993) hypothesis that players put a premium on fairness, but "the bigger the material payoffs, the less the players' behavior reflects their concern for fairness". However, Cameron (1999) provides evidence to the contrary.

Different degrees of tolerance for deviations are captured by differences in α. A higher α indicates an agent who is more intolerant of selfish behavior in others, and corresponds to a higher acceptance threshold. If players are heterogeneous, then there will be a non-degenerate distribution of acceptance thresholds, and offers further below the norm will be rejected with greater probability. A perfectly selfish, rational proposer will then make an offer that maximizes expected utility. If different proposers have different degrees of risk-aversion, or if the optimum is not unique, the distribution of offers will also be non-degenerate. Given positive α's, rational offers will remain bounded above zero.

However, selfishness may also feature in the utility of proposers. By arguments similar to above, we postulate a utility function for a proposer of the form:

$$u_i^P(y_i, \gamma_i) \;=\; \pi(1 - y_i)y_i + \gamma_i(\frac{(1 - y_i) - \mu^j}{\mu^j}),$$

where $\pi(x)$ is the probability that x will be accepted, and $\gamma_i \geq 0$ is a parameter reflecting the agent's selfishness-aversion in her capacity as a proposer. It follows that agents who have low aversion (small γ) will make offers close to the level that maximizes expected income, but agents with high selfishness-aversion will make offers which are

[3] When necessary we will use an additional subscript t to represent the time (i.e., round of play) and a superscript j to represent the group (high or low) in which the encounter occurs. We will suppress these indicators when there is no confusion.

[4] An agent may of course receive positive utility from rejecting particularly selfish offers, since this denies the proposer a correspondingly high payoff. It is not difficult to incorporate this possibility.

biased above this level and towards the norm. Indeed, note that if γ_i is sufficiently high then agent i will make offers higher than the norm, even if offers at the norm are accepted with probability one.

In order to explain the occurrence of positive offers, we need at least one of the selfishness-aversion parameters α or γ to be positive. To further explain a persistent non-degenerate distribution of offers, proposers must have different degrees of selfishness-aversion, i.e., the distribution of γ's must be non-degenerate.[5] Since we interpret the norm as the mean of the offer distribution, there must indeed be agents that have sufficiently high γ's to induce offers above the norm.[6]

Whether behavior is norm-referenced or not, information about behavior of other agents in the group may affect offers and responses. We assume that a move (offer or response) by a given subject at any point of time is determined by the information that the subject has accumulated prior to that move, and by her individual characteristics. Hence any change in the offer between periods t and $t+1$ is driven by additional information received after the period t offer was made, and by a possible effect of the passage of time. Additional information consists of the offer received in period t, the response the subject made to this offer, and the response received to the offer that the subject made in period t. In addition, her accumulated wealth at the time of making the offer may also be relevant. In other words, for $t \geq 1$,

$$OM^j_{i,t+1} - OM^j_{i,t} \;=\; f(OR^j_{i,t}, RR^j_{i,t}, RM^j_{i,t}, W^j_{i,t}, t+1) \tag{1}$$

Where OM denotes "Offer made", OR denotes "offer received", and RM and RR denote responses made and received respectively. W is accumulated wealth. Subjects are indexed by i, groups by j, and time by t.

Similarly, the subject's response to the offer she receives is determined by the offer itself, and the information she has acquired prior to receiving the offer. This latter information is incorporated in the offer she has made in the same period.

3 Overview of the results

Table 1 summarizes the data we collected. The upper panel reports the key outcomes for all players by treatment. There are no significant differences between treatments 1 and 2 in terms of average offer, rejection probability or profit. The value of the initial offer (around 40 ED) and rejection probability over all periods (around 16%) are comparable to findings in other studies. For example Roth, Prasnikar, Okuno-Fujiwara, and Zamir (1991) find the average offer to be around 40% of the stake and rejection probability of 15%, while in the 75 experiments summarized by Oosterbeek et al. (2004) the average offer was also 40% and the average rejection rate was about 16%.

[5] Another way to obtain a spread of offers is to assume that utility is concave in income (x and y), and different agents have different degrees of risk-aversion. Then faced with the same distribution of acceptance thresholds, proposers will make different offers. However, this cannot explain offers above the norm.

[6] Alternatively we could set the benchmark at a value systematically different from the mean, but it is not clear what factors should determine it.

In each treatment, the initial bid is used to divide participants into a low group GL (offers in the lower half of the distribution), and a high group GH (upper half of the distribution). Columns (2) and (3) report the outcomes for each group. The average initial bid across the two treatments is around 40 ED for all players, 27 ED for players in the low group and 53 ED for players in the high group. Mean offers in rounds 1-15 are 26 ED and 43 ED for low and high groups, respectively, with rejection rates of 20% and 14%. Columns (4)-(7) document outcomes for GH and GL by treatment. Within GL, there is a small variation in the average offer value between the treatments. Within GH, the results are very similar across treatments, in terms of average offers, profits and probability of accepting an offer.

In each session, in round 16 one third of the players in each of GL and GH were randomly reassigned to the other group, GH or GL. The lower panel of Table 1 documents outcomes for the second part of the game but does not distinguish between movers and non-movers. The mean offer in rounds 16-30 in GL is very similar to the mean in rounds 1-15. There is a small decline in the mean offer in GH. Acceptance rates are slightly higher in GL compared to the first fifteen rounds; there is no change in acceptance rates in GH.

The differences across the low and high groups are substantial when we consider offers in the bottom 20% of the entire distribution (pooled across treatments and groups) of the entire offer distribution. The low group respondents are much more likely to accept low offers, 67% vs. 43%. The TR2 players are more likely to accept low offers. On the other hand, when we restrict attention to the lowest 20% of the group-specific distributions for GL and GH, the acceptance rates across groups are very similar, 61% in GL and 57% in GH. Our findings are in line with results of other studies, that find that the propensity to reject relatively low offers depends on geographical location or cultural background of the respondents (see for example Roth et al. (1991) and Henrich et al. (2001)). On the other hand, our results show that there is little difference between the groups in the propensity to reject offers in the bottom quintile of the group-specific distribution.

Figure 1 shows the average offer over timefor each treatment, pooled across all sessions, in the high and low groups. The differences between the low and high groups are substantial and they persist throughout the game. We distinguish between two stages, before and after the move of one third of players between the groups. In round 16 one third of randomly chosen players in each group GH and GL are moved to the other group GL or GH. The average offers made by these players are shown by the dotted lines in figure 1. These players enter round 16 with significantly higher or lower offers than the destination group but converge fairly quickly to the group average. This convergence occurs faster in the second treatment, where information on average offers in the group is available in every other round.

Table 2 documents the outcomes in rounds 16-30 distinguishing between stayers and movers. Comparison between average offers in the first 15 rounds and the last 15 rounds provides information about adjustment to the prevalent norm. Non-movers exhibit very slight changes in the offers or acceptance rates. Non-movers in GL TR1 do not change their behavior while there is slight increase of 2.5 ED in the average offer in GL TR2, possibly due to higher offers from ex-GH players. Offers in GH decline 2 ED on average. On the other hand, movers show substantial changes in offers and

acceptance rates. Movers from GH to GL decrease their offer by 17 ED on average and movers from GL to GH increase their offers by 11 ED. The changes in TR2 are larger, TR2 players receive information about the mean offer in every even round and therefore change their behavior more than TR1 players. Acceptance rates are lower for those who move from the high to the low groups than for non-movers, while movers from GL to GH have much higher acceptance rates.

A primary objective of this exercise is to investigate whether individual behavior conforms to the norm of the group. This has two parts. First, we need to identify a behavior that is a candidate for the norm. Our proposed candidate is the average offer made in the group. Figure 1 shows that in each treatment and in each group GH and GL, the average offers converge to a stable level over time. There is some disruption that occurs when players from a different group (with a different stable average) enter the group in period 16, but the average offers again converge to a stable level thereafter. Further, the new arrivals that enter a group in period 16 clearly adapt their behavior to that prevailing in the group they have now joined.

The second part is to verify that agents take account of the norm in choosing their actions. As the game progresses, players receive information about the behavior of other members of the group. As a result, their beliefs about the average behavior should converge over time. If agents conform to the norm, then their behavior should also converge. Indeed, if behavior does not converge towards the norm, it is difficult to impart meaning to the term "norm" in this context. We find that the distribution of offers around the mean does tightens as the game progresses. Figure 2 presents the standard deviations of the distribution of offers around the session/group means in each period.[7] In both treatment groups we find that the standard deviation declines through rounds 1 to 15, increases abruptly in round 16, and then declines again after round 16. when players are moved between groups. The speed of convergence to the mean varies but the differences are relatively small. Only in GL in treatment 2, the spike at round 16 is relatively small and there is correspondingly a smaller decline after round 16. However, the overall decline in dispersion is comparable to the other groups.

If agents decide on their actions only with reference to group norms, then we should expect that the distribution of offers around the mean should be similar between the high and low groups. Figure 3 show that this is indeed true. For each group GH and GL in treatment 1, the upper panel of Figure 3 plots the deviations of offers from the mean of the relevant session and period. The lower panel shows the same information for Treatment 2. In each case, the distributions for GH and GL are very similar.

It is likely that this distribution is constrained above by self-interest that counteracts generosity, and below by the threat of refusal. Figure 4 show the fraction of offers that are rejected in successive intervals of 5 ED below the mean. Again, we see that in the high group offers below but close to the mean are rejected with somewhat smaller probability than in the low group. However, this should not obscure the fact that very much smaller offers, in absolute terms, are accepted in the low group. An offer that is

[7]For a given treatment, Let the offer of agent i in session h and group j at time t be x^i_{hjt}. Let the average offer in that session, group and period be μ_{hjt}. Figure 2 shows the standard deviation of the distribution $x^i_{hjt} - \mu_{hjt}$ across h and j for each t.

15 ED below the mean in the high group would in absolute terms be marginally higher than the mean offer in the low group.

Figure 3 also shows the distributions of offers that were rejected in each group. We note that for Treatment 1 this distribution for the high group sits slightly but distinctly to the left of that for the low group, indicating that in GH responders are willing to accept somewhat larger deviations below the mean than in the low group. This is in accordance with Rabin's hypothesis discussed in section 2, and is different from the behavior that Cameron observed in Indonesia. In treatment 2 there is no systematic difference between the two groups.

Finally, we inquire whether a player who moves from one group to another locates himself at the same position relative to the mean in the new group as he did in the old group. A cursory glance at figure 1 suggests that the players moved up from GL to GH tend on average to make offers lower than the mean after the move (left panel), and the opposite is true for those moved down (right panel). Figure 5A and 5B offer an alternative view. The distributions of the deviations of offers from the current session/period mean is plotted for movers separately for periods 6-15 and periods 21-30. We discard the first five periods at the start and after the move to focus attention on choices after allowing some time for the initial adjustment to group behavior. We find that in Treatment 1 (figure 5A) those who move up tend to make offers that are lower, relative to the mean, than they made in their previous group, while those who are moved down make offers that are higher. In treatment 2 (Figure 5B), this tendency is still evident, but much weaker than in Treatment 1. One may conjecture that the norm an agent was exposed to in the past continues to carry weight, but this weight is much smaller when more accurate information about current norms is available.

In sum, our data supports the following interpretation of behavior. Once agents obtain some information about the average behavior of other agents in the group within which they are interacting, our data suggests that agents then choose actions that conform to to that average. Thus actions tend to cluster more closely to the average as time passes and more information is available. It is in this sense of increased clustering of actions that the average may be thought of as a norm.

Further, in both the high and the low groups we observe that agents assume a distribution of positions around the norm, some making offers that are higher while others make offers that are lower, creating a somewhat smooth distribution. This heterogeneous behavior of agents is more clear in treatment 2, where the average offers are clearly communicated to all agents, but agents nevertheless don't all choose to offer the average. Thus some agents are naturally more altruistic, while others are naturally less so.

However, the more selfish an offer is *relative to the norm*, the larger is the proportion of agents that find it unacceptable, hence the rejection rate is higher for offers that are further below the norm. When information is more noisy and the norm is larger, there is greater tolerance for selfish offers.

Finally, when agents move from one group to the other, they adjust to the norm of the new group they find themselves in. This adjustment occurs fairly quickly, and appears to be only constrained by the speed at which information about the new norm is accumulated. However, the norm learned in the previous group imparts a bias to

their actions. Thus agents become relatively less generous when moved up from a low-mean group to a high-mean group, and the converse is also true. However, this bias is small or negligible when accurate information about group behavior is available.

4 Information and offers

Our primary hypothesis is that the offers that an individual makes are determined by her estimate of the mean offer in the group and by her personal characteristics (e.g., whether she is naturally selfish, her prior socialization, etc.). The personal characteristics dictate where she will position herself relative to the mean.

As time passes, players receive new information about group behavior, and hence form better estimates of the group mean. When a player makes an offer in period t, we expect that he is using all the information that he has at that point. Before he makes the next offer in period $t+1$ he receives a response (accept or reject) to his t-offer, he receives an offer himself in t, and he responds to that offer. In treatment 1, this is all the new information that he obtains between the two offers. In TR2, if t is even, he also learns the average offer in the group.

The additional information conveyed by new offers and responses must diminish as time passes. Without attempting to formulate a theory of learning for this context, it is intuitively plausible that an offer conveys more information about the group mean when the player has observed few earlier offers, than when she has observed many earlier offers.

If players act rationally and use all the information at their disposal, then it follows that any change in the offer that a player makes between periods must be the result of this new information, moderated by the number of periods that have already passed. The exception to this is when players know they have been moved to a new group in period 16, where the new observations are likely to convey much more information.

We estimate the following specification, using individual observations until round 15 and after round 15. In rounds $1-15$ the game is broadly similar to many other experiments using the ultimatum game and repeated random matching. we expect faster convergence to the mean in treatment 2. The main innovation of the game is in rounds $16-30$, after one third of participants are randomly moved across GH and GL. Based on the discussion in Section 2, we use the following estimation equation separately for treatments 1 and 2.

$$\begin{aligned} OM^j_{i,t+1} &= \beta_0 + \beta_1 OM^j_{i,t} + \beta_2 OR^j_{i,t} + \beta_3 RR^j_{i,t} + \beta_4 RM^j_{i,t} + \beta_5 W^j_{i,t} + \beta_6 \overline{O}^j_t \qquad \text{(X)} \\ &+ t\left(\beta_7 + \beta_8 OM^j_{i,t} + \beta_9 OR^j_{i,t} + \beta_{10} RR^j_{i,t} + \beta_{11} RM^j_{i,t}\right) + \beta_{12} M_i + \epsilon^j_{i,t}, \end{aligned}$$

where i, j, t denote the individual, the group and the time period respectively. OM is the offer made by the agent, OR is the offer received, RM and RR respectively denote the response made and received (0 if "reject" and 1 if "accept"), W is the individual's accumulated wealth, $\overline{O}$ is the group average offer and M takes value 1 for men and 0 for women.

The summary statistics show that individuals adjust their behavior when placed in environments governed by different norms. Adjustment of the offer values suggests that considerations other than individual beliefs are important.

Table 2 reports the findings for periods $1-15$ for each group GL and GH in each treatment TR1 and TR2. In the ordinary least squares (OLS) estimations we control for individual effects by including the initial offer in period 0 and a gender indicator. The initial bid is made before receiving any information from other players and we use it as a proxy for individual beliefs. We also perform a fixed effects estimation, FE, to further control for individual effects. The initial bid can be a noisy measure of individual beliefs, the FE estimation accounts for unobserved heterogeneity by subtracting means to remove any time invariant components of the model.

The offer made in period t sums up information the individual had in the previous period. This information is updated by the offer received in period t, and the accept/reject decision for offer made and received. Interactions of these variables with the period t are included to evaluate how determinants of offer change during the experiment. We also include the mean offer made in period t in the relevant group and session; this control mimics the additional information available for T2 participants. Finally, total profit received till period t is included to control for wealth effects.

Columns (1)-(4) in Table 3 report the OLS results for the first 15 periods. The main determinants of offer in period $t+1$ are offers made and received in t as well as associated acceptance decisions. We find that the importance of one's own offer increases over time while the importance of the received offer decreases. This agrees with our expectation that, as time passes, previously accumulated information gains more weight in the decision than newly received marginal information. Acceptance of the offer made by the agent in the previous period reduces the current offer; this negative effect declines over time in GL but not in GH. Accepting the received offer also has a negative effect on the offer made in the subsequent period; this negative effect also declines over time, especially in GL.

Individual beliefs and characteristics, proxied by the initial bid, do not add to the explanation of offer values. We do not find that wealth affects the offer value. As expected, the mean offer positively affects the offer value in TR2, however it not statistically significant in GH and only significant at the 5% level in GL. The estimated effect of the mean offer is relatively small, probably because it does not add much information beyond the first few periods.

FE estimations for periods 1 to 15 are in columns (5)-(8) of Table 3. The main difference between the FE and OLS results is in the coefficient of the offer made in t, β_1. This difference indicates that individual characteristics are important in determining the offer value although they are not captured by the initial bid. On the other hand, there is only a slight change in β_2, the coefficient of offer received, suggesting that the updating of the information through offer received does not depend on individual characteristics.

In $t=0$ participants are sorted into GL and GH based on their initial bid. The initial bid to some extent represents individual preconceptions about norms. Table 1 summarizes the difference between the two groups and shows that the mean offer values are substantially different. Table 1 shows that subsequent offers made are not very different from the initial bid, in comparison with the difference between the groups.

In $t = 16$ one third of each group is randomly selected and moved to the other group (GL to GH or GH to GL). We test how offer value that was established in the first 15 rounds affects individual behavior in the final 15 rounds of the game. For comparison, we perform estimations for players who moved groups and for those who remain in their original group.

The OLS and FE results are reported in Tables 4 and 5, respectively. Columns (1)-(4) report results for non-movers and columns (5)-(8) report results for movers. Offers in rounds 1-15 have a large and significant effect on offers in rounds 16-30 for non-movers, but this effect is small and not significant for the movers. The mean offer in periods 1-15 reflects the previous group norm. For non-movers, this continues to be the prevailing norm. However, for movers the main determinant of offers in 16-30 is the norm in the new group, so the offers they made in the first 15 periods cease to be important. In periods 16-30, the effect of the offer made in period t on the offer made in $t + 1$ is more pronounced for movers than non-movers. Results in Table 3 indicate that individuals adjust quickly to new norms when placed in a different environment. This is more evident in the FE model. Along with other outcomes, this result shows that movers learn about the group norm and adjust their behavior in rounds 16-30.

Our results in tables 1-4 suggest that individuals tend to behave according to the norms prevalent in their groups. In the case of agents that move from one group to another, prior socialization or environment does not play a large role in determining later behavior.

5 Conclusions

Our findings add to the literature that investigates the relationship between culture or environment and concepts like rationality, fairness and generosity. The existing experimental literature shows that individuals take account of social norms such as those of fairness in one-to-one or small-group interactions. It also points out that there are substantial differences in group behavior between different locations. Our experiment contributes to a sharpening of these results by decoupling norm-adherence from fairness. Further, we show that individuals adjust their behavior quickly to conform to new social norms when placed in a new environment.

References

Andreoni, J. and B. D. Bernheim (2009). Social image and the 50–50 norm: A theoretical and experimental analysis of audience effects. *Econometrica 77*(5), 1607–1636.

Andreoni, J. and E. Blanchard (2006). Testing subgame perfection apart from fairness in ultimatum games. *Experimental Economics 9*(4), 307–321.

Bandiera, O., I. Barankay, and I. Rasul (2010). Social incentives in the workplace. *The Review of Economic Studies 77*(2), 417–458.

Bicchieri, C. and A. Chavez (2010). Behaving as expected: Public information and fairness norms. *Journal of Behavioral Decision Making 23*(2), 161–178.

Cameron, L. A. (1999). Raising the stakes in the ultimatum game: Experimental evidence from indonesia. *Economic Inquiry 37*(1), 47–59.

Cooper, D. J. and E. G. Dutcher (2011). The dynamics of responder behavior in ultimatum games: a meta-study. *Experimental Economics 14*(4), 519–546.

Falk, A. and A. Ichino (2006). Clean evidence on peer effects. *Journal of Labor Economics 24*(1), pp. 39–57.

Fehr, E. and U. Fischbacher (2003). The nature of human altruism. *Nature 425*(6960), 785–791.

Fehr, E. and U. Fischbacher (2004). Social norms and human cooperation. *TRENDS in cognitive sciences 8*(4), 185–190.

Fehr, E. and K. M. Schmidt (1999). A theory of fairness, competition and cooperation. *Quarterly Journal of Economics 114*, 817–868.

Fischbacher, U. (2007). z-tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics 10*(2), 171–178.

Greiner, B. (2004). An online recruitment system for economic experiments. In K. Kremer and V. Macho (Eds.), *Forschung und wissenschaftliches Rechnen*, pp. 79–83. GWDG Bericht 63: GWDG, Gttingen.

Henrich, J. (2000). Does culture matter in economic behavior. *The American Economic Review*.

Henrich, J., R. Boyd, S. Bowles, C. Camerer, E. Fehr, H. Gintis, and R. MacElreath (2001, May). In search of homo economicus: Behavioral experiments in 15 small-scale societies. *American Economic Review 91*(2), 73–78.

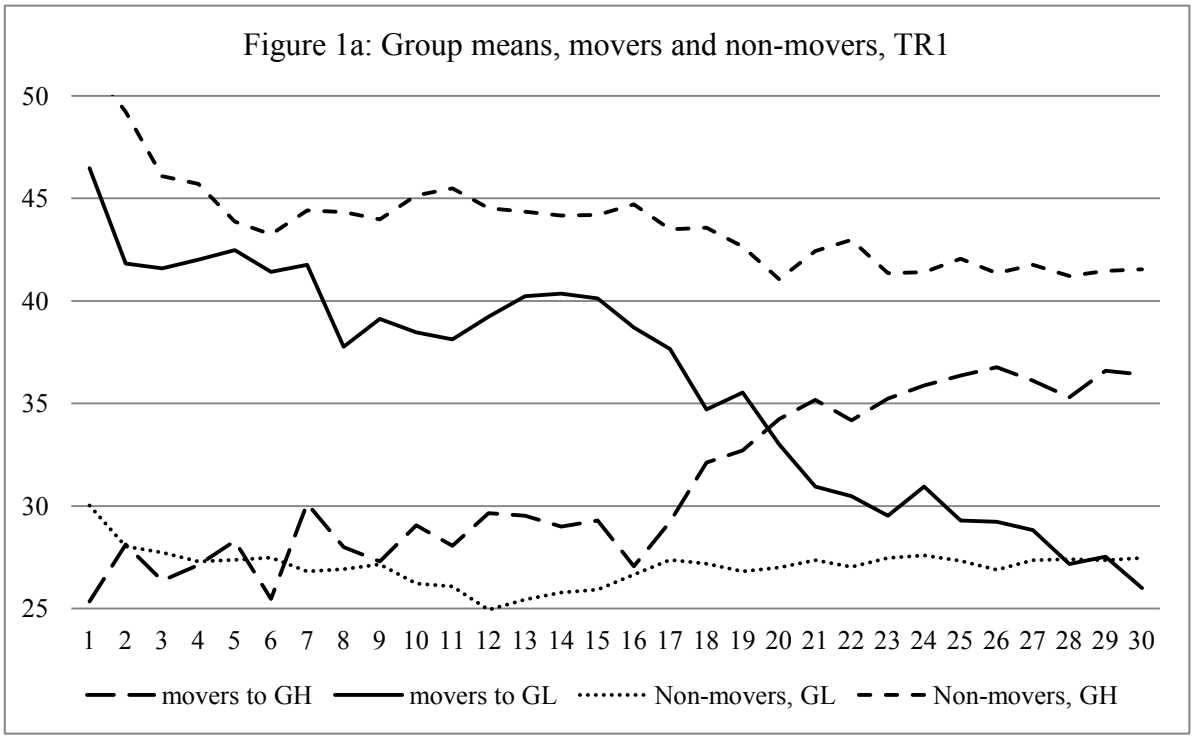
Ichino, A. and G. Maggi (2000). Work environment and individual background: Explaining regional shirking differentials in a large italian firm. *The Quarterly Journal of Economics 115*(3), 1057–1090.

Kagel, J. H. and A. E. Roth (Eds.) (1995). *The Handbook of Experimental Economics*. Princeton, NJ: Princeton University Press.

Oosterbeek, H., R. Sloof, and G. van de Kuilen (2004). Cultural differences in ultimatum game experiments: Evidence from a meta-analysis. *Experimental Economics 7*, 171–188.

Rabin, M. (1993). Incorporating fairness into economics and game theory. *American Economic Review 83*(5), 1281–302.

Roth, A., V. Prasnikar, M. Okuno-Fujiwara, and S. Zamir (1991). Bargaining and market behavior in jerusalem, ljubljana, pittsburgh, and tokyo: An experimental study. *American Economic Review 81*(5), 1068–1095.



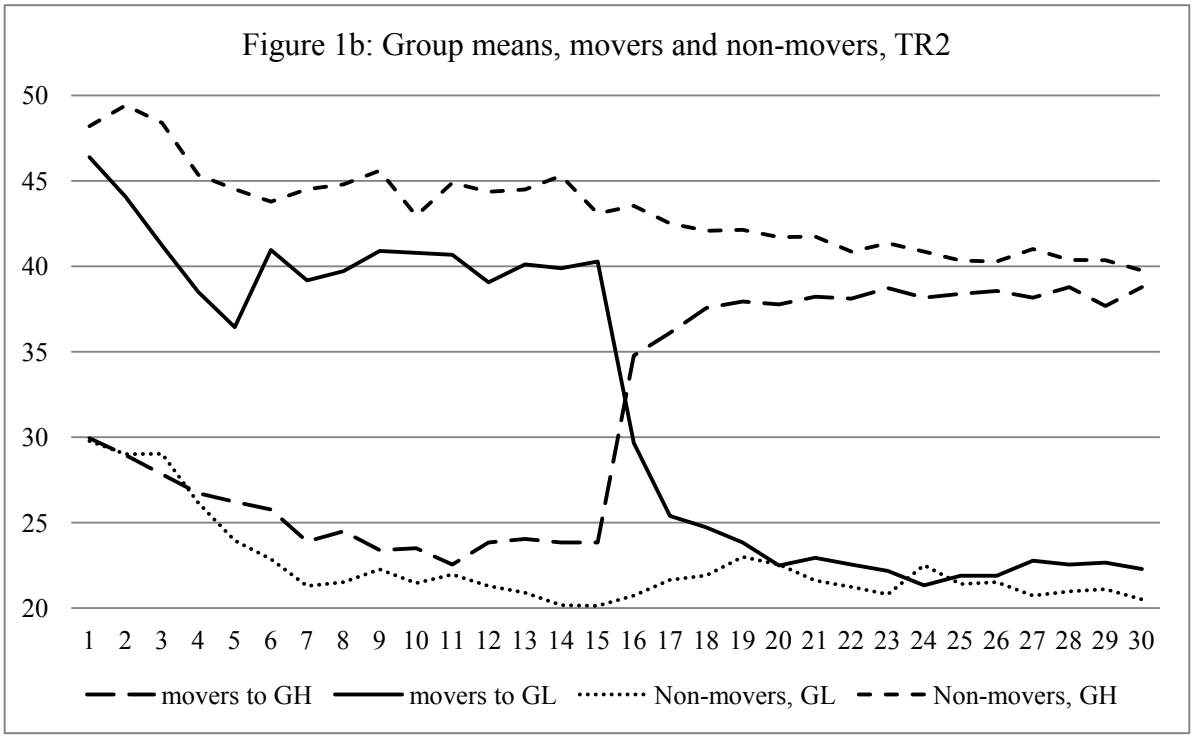


Figure 1: Average offer by group, movers and stayers

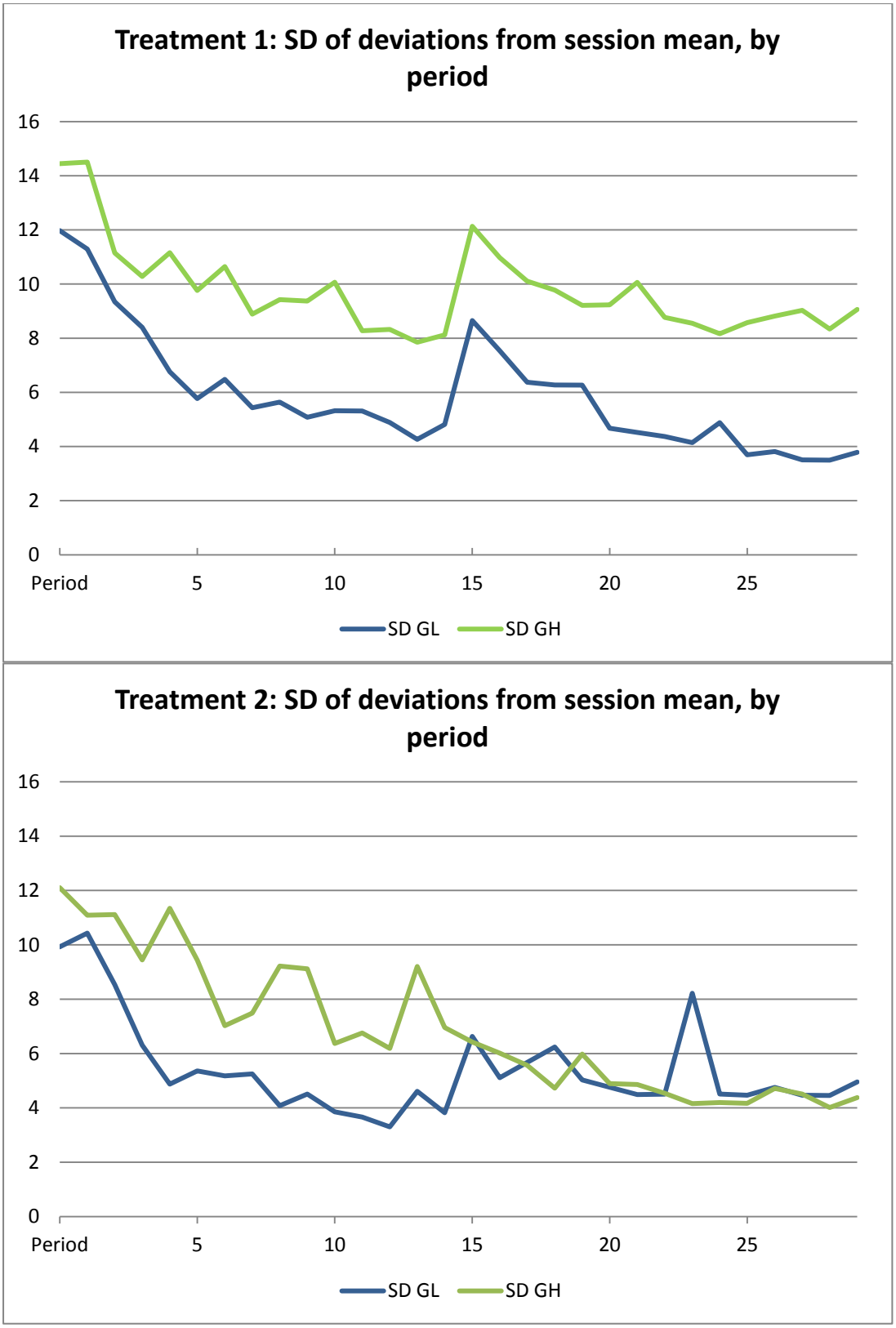


Figure 2: Changes in offer deviations over time

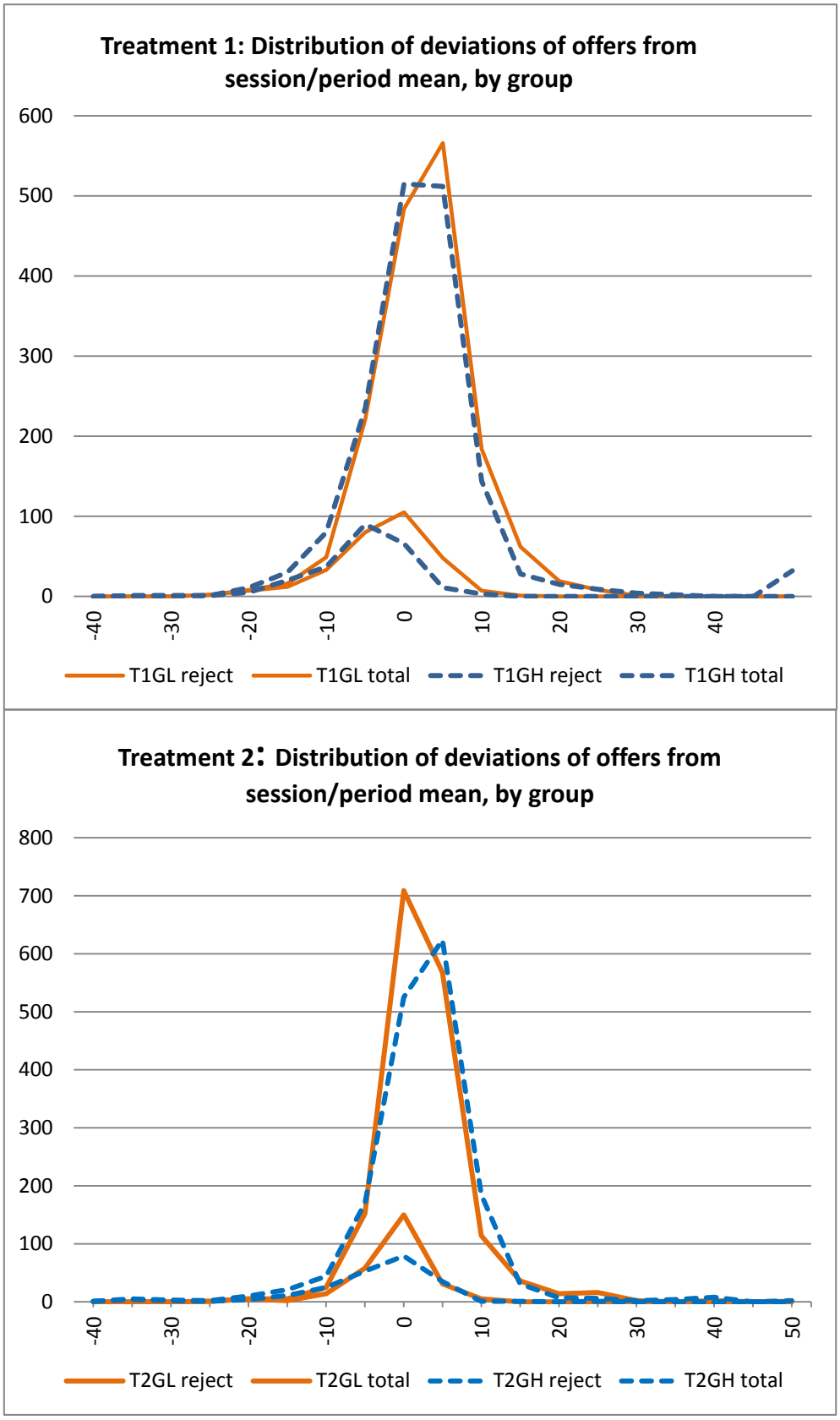


Figure 3: Distribution of offers around the mean, within session and group

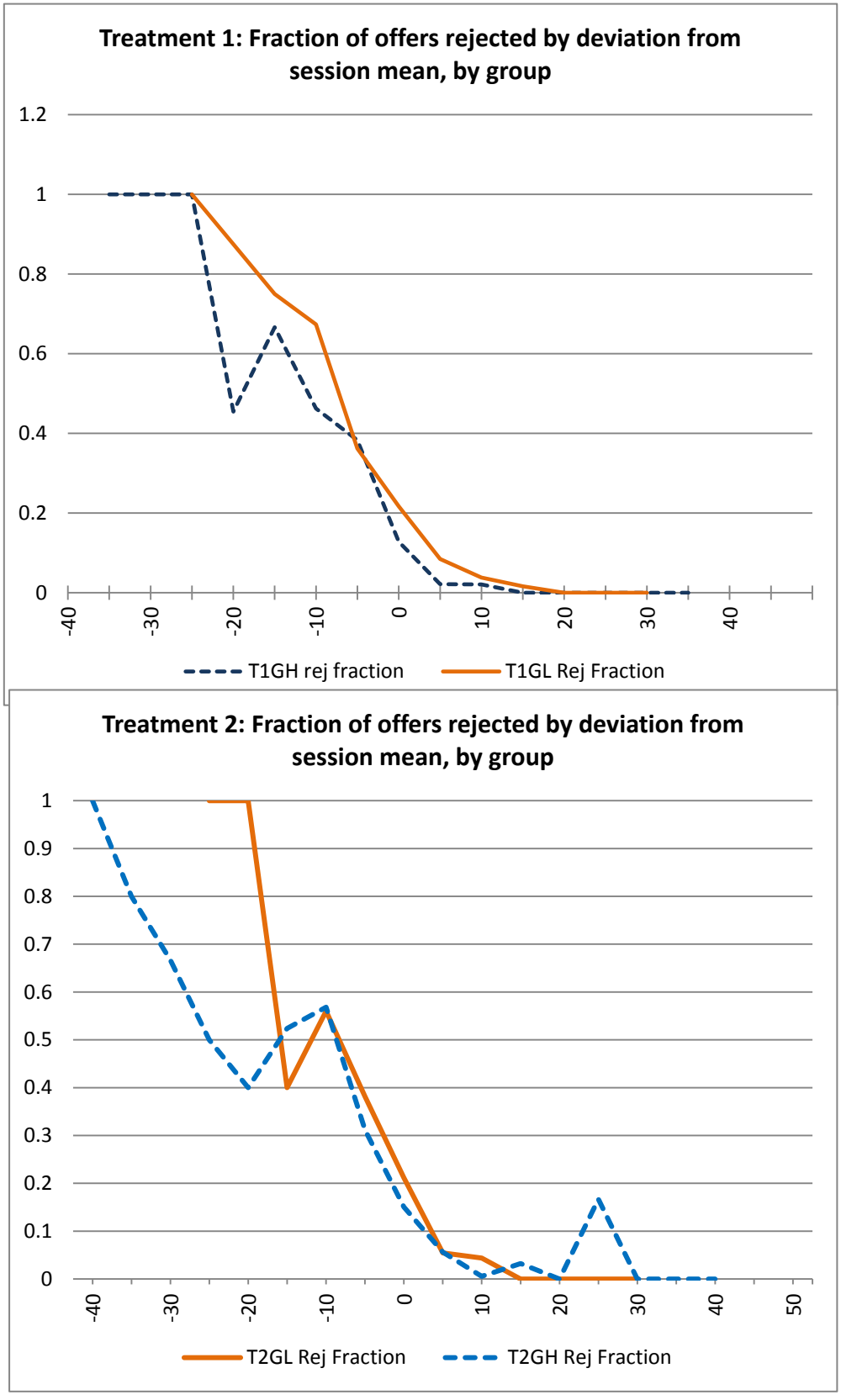


Figure 4: Rejection rates

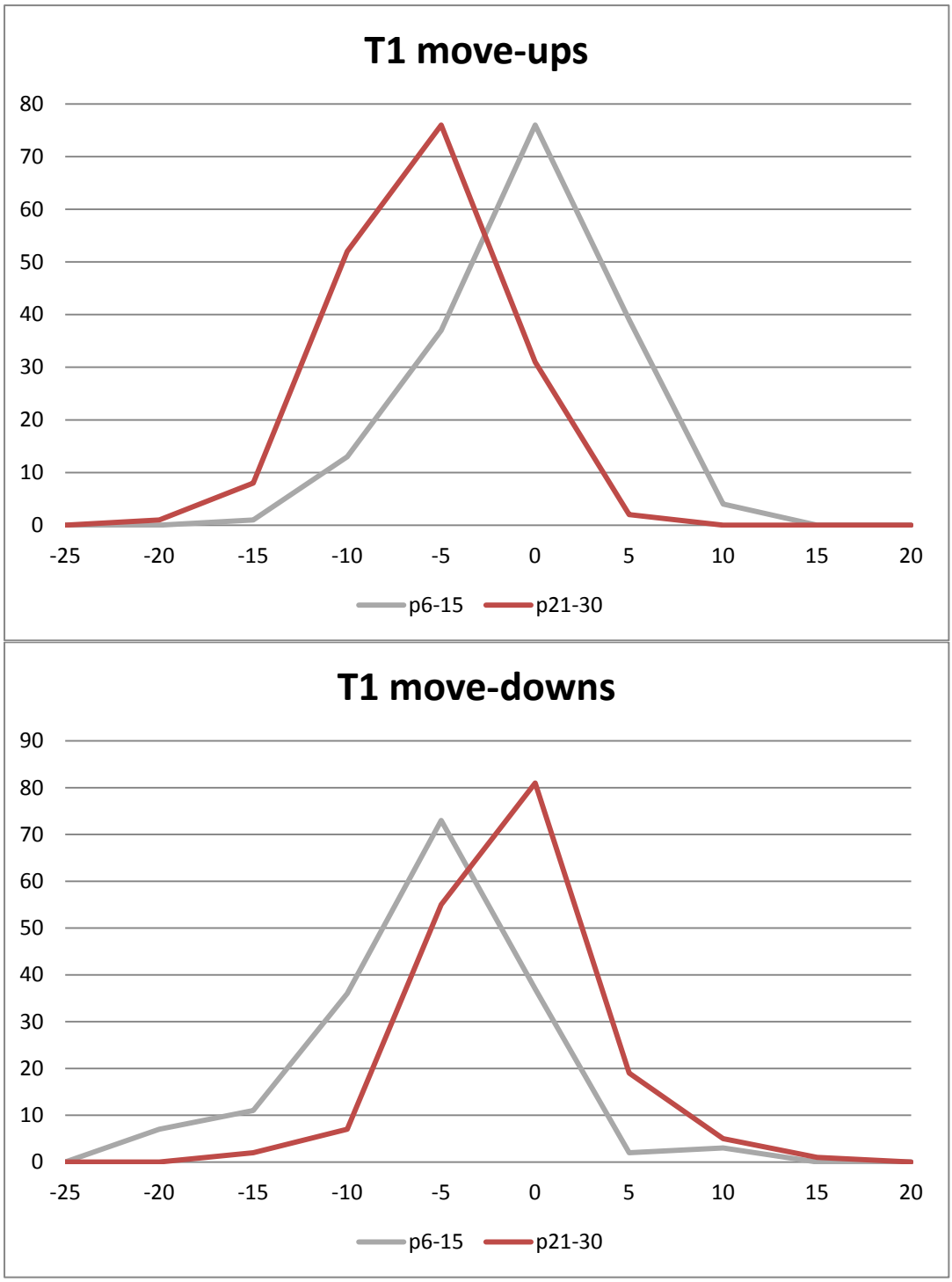


Figure 5A: Distribution of movers' offers relative to the mean, last ten periods before and after the move (Treatment 1)

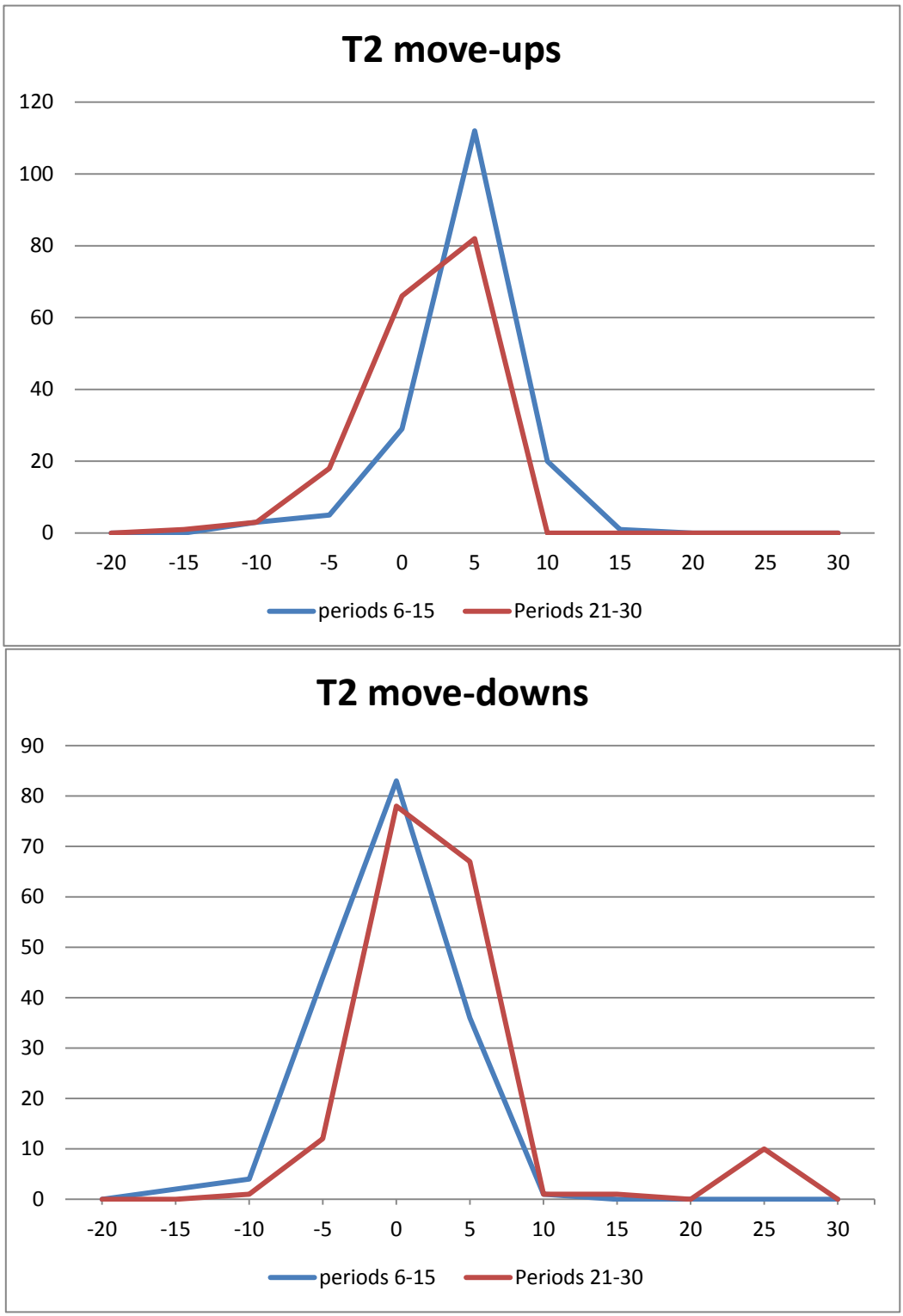


Figure 5B: Distribution of movers' offers relative to the mean, last ten periods before and after the move (Treatment 2)

Table 1: Summary statistics, means and standard deviations

				1<=t<16			
	all	GL	GH	GL, TR1	GH, TR1	GL, TR2	GH, TR2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
offer	34.72	25.63	43.82	27.25	43.89	24.04	43.75
	13.35	8.36	11.00	8.68	11.80	7.71	10.16
acceptance rate	0.83	0.80	0.86	0.78	0.86	0.83	0.87
	0.37	0.40	0.34	0.42	0.35	0.38	0.34
accept<20%	0.66	0.67	0.43	0.61	0.38	0.71	0.45
	0.47	0.47	0.50	0.49	0.52	0.45	0.51
accept<20%, by group	0.66	0.61	0.57	0.47	0.54	0.64	0.51
	0.47	0.49	0.50	0.50	0.50	0.48	0.50
initial bid	40.19	27.31	53.07	26.28	53.43	28.33	52.73
	17.40	12.10	11.30	11.76	11.26	12.34	11.33
bid in 1st period	38.99	29.20	48.77	28.56	49.96	29.84	47.60
	16.27	11.79	14.09	12.80	14.78	10.68	13.29
total profit	82.48	79.04	85.91	74.52	85.91	83.47	85.91
	15.73	16.31	14.34	17.47	14.82	13.72	13.86
male	0.55	0.51	0.58	0.46	0.54	0.56	0.62
	0.50	0.50	0.49	0.50	0.50	0.50	0.49
N	3270	1635	1635	810	810	825	825

				15<t<=30			
	all	GL	GH	GL, TR1	GH, TR1	GL, TR2	GH, TR2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
offer	32.59	25.26	39.92	28.50	39.69	22.07	40.14
	11.40	7.59	9.74	6.47	11.50	7.25	7.63
acceptance rate	0.86	0.85	0.86	0.86	0.85	0.85	0.87
	0.35	0.35	0.35	0.35	0.36	0.36	0.34
avg offer in 1<=t<16	34.72	30.13	39.32	31.24	39.90	29.04	38.74
	11.71	9.29	12.07	9.03	12.45	9.41	11.67
total profit	83.74	83.05	84.44	81.89	83.12	84.19	85.72
	8.82	8.62	8.96	9.71	9.62	7.22	8.06
male	0.55	0.55	0.54	0.57	0.43	0.53	0.65
	0.50	0.50	0.50	0.49	0.49	0.50	0.48
N	3270	1635	1635	810	810	825	825

Table 2: Summary statistics, means and standard deviations , movers and non-movers, 15<=t<=30

			non-movers			
	GL	GH	GL, TR1	GH, TR1	GL, TR2	GH, TR2
offer	24.35	41.73	27.22	42.20	21.48	41.26
	6.74	10.38	5.81	12.43	6.37	7.80
acceptance rate	0.88	0.81	0.88	0.79	0.88	0.82
	0.33	0.40	0.32	0.41	0.33	0.38
avg offer in 1<=t<16	25.17	45.33	26.88	45.35	23.45	45.30
	6.20	9.47	6.93	10.92	4.80	7.75
total profit	81.48	85.37	80.02	85.19	82.95	85.55
	8.80	9.60	10.11	10.36	6.95	8.79
male	0.57	0.61	0.57	0.51	0.57	0.70
	0.50	0.49	0.50	0.50	0.50	0.46
N	1110	1110	555	555	555	555

			movers			
	GL	GH	GL, TR1	GH, TR1	GL, TR2	GH, TR2
offer	27.18	36.09	31.30	34.22	23.28	37.85
	8.83	6.78	6.95	6.35	8.66	6.72
acceptance rate	0.80	0.97	0.82	0.97	0.79	0.96
	0.40	0.18	0.39	0.16	0.41	0.19
avg offer in 1<=t<16	40.63	26.61	40.73	28.05	40.54	25.26
	4.99	5.13	4.83	5.22	5.15	4.67
total profit	86.35	82.46	85.95	78.62	86.73	86.09
	7.19	7.04	7.28	5.58	7.10	6.32
male	0.51	0.40	0.59	0.24	0.44	0.56
	0.50	0.49	0.49	0.43	0.50	0.50
N	525	525	255	255	270	270

Table 3: Determinants of offer in t+1, 1<=t<15

	OLS				FE			
	TR1		TR2		TR1		TR2	
	GL	GH	GL	GH	GL	GH	GL	GH
offer made	0.668***	0.706***	0.597***	0.480***	0.520***	0.433***	0.554***	0.211**
offer made * t	0.01	0.013	0.009	0.015	-0.016*	-0.008	-0.018	-0.016
offer received	0.149**	0.131**	0.261***	0.097	0.145**	0.104**	0.240***	0.044
offer received * t	0.001	-0.008	-0.01	0.001	0.001	-0.002	-0.005	0.005
offer rec. accepted	-1.311	-5.058***	-4.207***	-3.956**	-2.600*	-4.927***	-4.810***	-5.034***
offer rec. accepted *t	-0.037	0.473***	0.194**	0.377**	0.143	0.394***	0.311***	0.638***
offer made accepted	-8.199***	-6.447***	-7.500***	-4.807**	-6.751***	-4.474***	-6.487***	-1.946
offer made accepted *t	0.406**	0.278	0.492***	0.256	0.417***	0.227	0.489***	0.137
initial bid	0.072	-0.079	0.086*	-0.058				
initial bid *t	-0.004	0.005	-0.005	0.004				
mean offer in t	0.052	0.125*	0.125**	0.155	0.007	0.261	0.274***	0.22
total profit till t	0.001	-0.009***	-0.005**	-0.011	-0.015***	-0.004	-0.022***	-0.029***
t	-0.434*	-0.254	0.032	-0.459	1.167***	0.281	1.696***	2.267**
male {0,1}	-0.321	0.076	0.619	-0.618				
const	7.889***	15.226**	5.136**	23.579***	15.333**	18.224**	4.369	31.029***
N	756	756	770	770	756	756	770	770
R2 adj.	0.681	0.736	0.721	0.45	0.353	0.259	0.601	0.11

Note: clustered at individual level. *** 0.01; ** 0.05; *0.1.

Table 4: Determinants of offer in t+1, OLS, 15<=t<=30

	non-movers				movers			
	TR1		TR2		TR1		TR2	
	GL	GH	GL	GH	GL	GH	GL	GH
offer made	0.508***	0.314*	0.371***	0.234	0.400**	0.608***	0.370***	0.611***
offer made * t	0.023	0.025**	0	0.042*	0.015	0.016	0.054***	0.014
offer received	0.053	0.057	0.116**	0.218***	0.196*	0.216*	0.193**	-0.125
offer received * t	0	0	-0.003	-0.01	0.005	-0.016	-0.016	0.019*
offer rec. accepted	-0.028	-0.906	0.246	-3.291***	-5.485***	-7.192	-3.865*	-4.887*
offer rec. accepted *t	-0.007	-0.025	-0.044	0.13	0.347**	0.748	0.335	0.428
offer made accepted	-3.838***	0.151	-1.705***	-1.487	-3.314	-2.352	-4.434*	-1.647
offer made accepted *t	0.147	-0.416***	0.088	-0.072	0.022	0.049	0.169	0.009
mean offer, 12<t<16	0.349***	0.668***	0.514**	0.361**	0.203	-0.129	0.336	0.012
mean offer, 12<t<16 *t	-0.020*	-0.026**	-0.01	-0.022	-0.014	0.009	-0.035*	-0.021**
mean offer in t	0.046	0.059	0.097	0.271***	0.008	0.12	0.114	0.343
total profit till t	0	-0.001	0	0.001	0.003**	0	-0.001	0.002
t	-0.156	0.493*	0.181	-0.518**	-0.869*	-0.797	0.313	-1.428**
male {0,1}	0.117	-0.539	0.421	-0.483	-0.841	0.917	1.138*	0.134
const	4.301	-1.741	-1.605	1.562	9.991*	12.977	0.214	12.401**
N	555	555	555	555	255	255	270	270
R2 adj.	0.763	0.9	0.69	0.863	0.651	0.75	0.815	0.777

Note: in regressions for 15<=t<=30 the variable t is the number of round minus 15. Clustered at individual level. *** 0.01; ** 0.05; *0.1.

Table 5: Determinants of offer in t+1, FE, 15<=t<=30

	non-movers				movers			
	TR1		TR2		TR1		TR2	
	GL	GH	GL	GH	GL	GH	GL	GH
offer made	0.235*	0.259	0.157*	0.07	0.388***	0.179***	0.430***	0.274**
offer made * t	0.001	-0.002	-0.009	0.013**	0	0.016	0.005	0.008
offer received	0.05	0.066	0.092**	0.072*	0.232*	0.205***	0.192**	-0.019
offer received * t	0.001	0.001	-0.005	0.001	0.003	-0.016**	-0.01	0.016**
offer rec. accepted	-1.217	-1.786**	0.196	-1.628***	-7.348***	-2.334	-7.274	-2.17
offer rec. accepted *t	0.155	0.018	-0.022	0.121	0.628***	0.199	0.760*	0.251
offer made accepted	-2.995***	0.84	-1.451**	-0.801	-3.124	-3.374	-1.722	-0.794
offer made accepted *t	0.203**	-0.369***	0.073	-0.012	-0.002	0.077	0.074	0.065
mean offer in t	0.078	0.342	0.189*	0.361**	-0.634	0.16	0.043	-0.052
total profit till t	-0.014***	-0.008	0	-0.008**	-0.006	-0.003	-0.014**	-0.026***
t	0.919***	0.913	0.208	-0.059	-0.436	-0.066	0.857	1.091
const	36.287***	28.043***	11.426***	37.796***	53.622**	18.092	32.814***	65.055***
N	555	555	555	555	255	270	255	270
R2 adj.	0.193	0.148	0.025	0.23	0.558	0.37	0.57	0.394

Note: in regressions for 15<=t<=30 the variable t is the number of round minus 15. Clustered at individual level. *** 0.01; ** 0.05; *0.1.