How Fair Shares Compare: Experimental Evidence from Two Cultures*

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Abstract

Individuals in poor, rural communities in the developing world often face pressure to share labor income and reduce inequality which results from disparities in effort or ability. We use experimental economic methods to study the internalized moral norms governing the sharing of earned and unearned income in rural villages in western Kenya. We use a suite of economic experiments which allow us to vary the extent to which income depends on effort while holding other aspects of the economic environment constant. Results suggest that, in rural villages, the moral cost of appropriating another individuals income does not depend on the amount of effort exerted by the other party, though subjects are less generous with their own earned income than with unearned income. In contrast, subjects in a standard lab in the U.S. consistently allocate more money to any player who has exerted effort, relative to a player in an analogous situation receiving windfall income.

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1 Introduction

People are sometimes willing to sacrifice their own payoffs to help strangers, reward helpful actions by others, and punish uncooperative or unusually selfish behavior; these *social preferences* have been formally documented in many cultures by experimental economists. In developing countries, other-regarding behavior is of particular interest because voluntary transfers between households are common, prompting anthropologists to describe the rural village as a "moral economy" in which individuals are motivated by concern for their neighbors' welfare and aversion to inequality within the community.[1] Economists studying norms of sharing in rural villages have long focused on characterizing the conditions under which purely self-interested individuals will make voluntary transfers to others within self-enforcing mutual insurance arrangements.[2] In this paper, we consider another side of gift-giving: that motivated by the "customary beliefs, values, and social constraints" of individuals in poor communities — in other words, by the cultural values of rural villagers.[3] Successful members of close-knit communities may, in fact, make transfers motivated by feelings of altruism toward community members, many of whom are also relatives. On the other hand, several recent studies suggest that for individuals in poor communities in Africa, the social costs of accumulating wealth can be large, and many feel obligated to share earned income with relatives and neighbors, even when they do not expect to receive compensating transfers in the future.[4]

In this paper, we use experimental economic methods to study internalized moral norms

[1]Scott (1976) emphasizes the primacy of the universal right to subsistence in the moral code of poor agricultural households. Platteau (2000) argues that rural communities in Africa distinguish between (desirable) economic progress which makes everyone better off and (undesirable) attempts by individuals to improve their own welfare without improving the welfare of their neighbors.

[2]Seminal papers in this literature include Coate and Ravallion (1993) and Ligon, Thomas, and Worrall (2002).

[3]Guiso, Sapienza, and Zingales (2006) adopt this definition of culture, emphasizing it's direct relation to "beliefs, preferences, and constraints" which enter into individual utility-maximization problems.

[4]Barr and Stein (2008) find that Zimbabwean households accumulating wealth are punished by their neighbors, who choose not to attend funerals for members of the offending families. Platteau (2000) and Bernard, de Janvry, and Sadoulet (2008) argue that successful individuals in African villages are pressured to share income which results directly from individual hard work or ability. Matsumura (2006) provides specific case study evidence of the phenomenon from rural Ethiopia, stating "In the research village, relatively wealthy persons constantly feel the pressure to share with other kinship members."

governing the sharing of earned and unearned income in rural villages in western Kenya. Moral norms constrain self-interested behavior, and can directly influence incentives in settings where output depends on individual effort. Increasing the extent to which individuals feel a moral compunction to share their labor income may decrease the willingness to exert costly effort.[5] We test whether moral values governing the distribution of unearned income are also called up in settings where differences in income result from disparities in effort and opportunities. We measure preferences for sharing in benchmark contexts where luck alone governs income, and compare them to behavior in related environments where income is generated by individual labor. The experimental setting allows us to vary the extent to which income depends on effort while holding other aspects of the economic environment constant. We then compare the behavioral patterns observed in rural Kenya to those found in a standard experimental subject pool at a U.S. university.

We test for differences in the moral codes governing the distribution of earned and unearned income using a suite of economic experiments which we conducted in both field laboratories in rural western Kenya and in the Experimental Social Science Lab (X-Lab) at the University of California, Berkeley. Subjects in the experiments participated in one of four variants of the dictator game in which they were asked to divide money between themselves and an anonymous partner. The experimental treatments differ along two dimensions: *how* the budget was generated, and *who* decided how to divide it. "Giving" treatments were conventional dictator games in which players decided how to divide money that had been allocated to them. In contrast, players in "Taking" treatments decided how to divide money that was either won or earned by their partners. In both Giving and Taking games, the dictator's budget was either determined by chance ("Luck") or earned by one of the two players ("Effort"). We conducted four distinct experimental treatments in total: Luck-Giving (LG), Effort-Giving (EG), Luck-Taking (LT), and Effort-Taking (ET).

We introduce an experimental economic measure of effort based on physical production

[5]On the other hand, increasing levels of altruism within a village can also increase the willingness to exert effort. We study the relationship between distributional norms and output empirically in Section 4.4.

rather than monetary contribution, which we employ in the Effort treatments.[6] Players in these games were paid a piece rate for completing a tedious task — sorting dried beans out of a bucket on the ground. The task was chosen to minimize the importance of intelligence and education, since one of our subject pools had low average levels of verbal and mathematical literacy, and to limit the extent to which the work was inherently satisfying.

Our sample includes 546 experimental subjects in Kenya and 196 in the United States. We surveyed all participants before or after the game, generating a rich data set on individual characteristics and self-reported values. We report four main results. First, subjects in the field experimental labs in Kenya display higher levels of overall generosity than participants in the companion experiments in the United States. Second, dictators in the Kenyan experiments are less generous with their own earned income than they are with unearned income, but they are no more generous with partners who have earned their endowment than with those receiving windfall income attributable only to luck. Third, within the Kenyan sample, more educated subjects are willing to sacrifice a larger budget share to compensate those who have exerted effort: completing secondary school is associated with significantly higher levels of generosity in situations where dictators divide income *earned* by their partners. Finally, subjects in comparison sessions in the U.S. are more selfish, on average, but consistently allocate any player earning a budget more than they would a player in a similar role receiving unearned income. Thus, the choices of U.S. subjects are consistent with patterns of behavior observed among more educated Kenyans.

This paper relates to recent non-experimental work on social pressures to share income, experimental studies of social norms and risk pooling, and field experimental work on savings constraints, all in poor communities in Africa.[7] More broadly, we contribute to the emerging literature on behavioral development economics, which provides insights into

[6]Many previous experiments examining the willingness to reward effort use individual contributions of money as a proxy for individual effort (e.g. Fehr, Gächter, and Kirchsteiger 1997, Cappelin, Hole, Sorensen, and Tungodden 2007). Konow (2000) uses the production of administrative letters as a measure of individual effort.

[7]See Platteau (2000), Barr and Stein (2008), and Bernard, de Janvry, and Sadoulet (2008) as examples in the first category; Barr and Genicot (2008) in the second; and Dupas and Robinson (2009) in the third.

the opaque relationship between culture, social norms, and economic growth.[8] Scholars in both economics and sociology have noted that industrialization is often preceded by changes in values and beliefs which facilitate the emergence of capitalist enterprises[9] — for example, the emergence of religious norms promoting literacy.[10] In rural communities in the developing world, egalitarian norms are often seen as anathema to the emergence of successful businesses. For example, in his study of firms in rural Indonesia, Geertz (1963) writes "Traditional values supporting collective benefits as against individual enrichment induce a strong resistance to the rationalization of [enterprises] once they are formed... This essentially conservative kind of approach to change can be very inhibiting to long-run development." Henrich, Boyd, Bowles, Camerer, Fehr, Gintis, and McElreath (2004) document substantial variation in revealed distributive preferences across primitive societies, arguing that the patterns are associated with levels of market integration and cooperation in food production. Our work complements these studies by considering cultural values governing the allocation of earned income, values which may translate into differential incentives for effort and entrepreneurialism in different communities.

The rest of this paper is organized as follows. In Section 2, we provide a conceptual framework and explain the experimental design. Section 3 describes lab experimental procedures in Kenya. Section 4 discusses results, and compares the choices of Kenyan subjects to those of a standard experimental lab subject pool in the U.S. Section 5 concludes.

[8] See Duflo (2006) and Mullainathan (forthcoming) for a discussion of behavioral development economics.

[9] The most well-known proponent of this position is Max Weber, who partially attributes European exceptionalism to the emergence of values consistent with capitalist enterprise (Weber 1992[1930]). He highlights two related elements of the Protestant moral code which encouraged entrepreneurship and individual labor: the belief among the religious that hard work was favored by God, and the characterization of charity as detrimental to the souls of the poor, which affected the incentives for effort in all religious groups by undermining the social safety net. Becker and Woessmann (2009) have recently questioned Weber's argument, suggesting that Martin Luther's encouragement of literacy facilitated human capital accumulation among Protestants.

[10] See Becker and Woessmann (2009) and Botticini and Eckstein (2006). Tabellini (2005) also associates historical literacy rates with cultural values promoting development and growth.

2 Experimental Design

Dictator games[11] measure revealed preferences for sharing in the absence of explicit strategic considerations. Giving in dictator games may be motivated by innate social preferences (e.g. altruism), a tendency to conform to prevailing social norms, or a combination of the two factors. Observed levels of dictator game giving may also be influenced by the size of stakes, specifics of the experimental protocol, or the level of scrutiny and anonymity within the game (Levitt and List 2007). We hold these design factors constant, allowing us to explore the extent to which distributional preferences and norms over earned and unearned income differ.

We conduct four variants of the dictator game. In all treatments, each dictator decides how to divide a budget, $b > 0$, between herself and a randomly-chosen partner.[12] The dictator's choice space is the set of feasible shares of her total budget that she can allocate to herself. Let $s \in [0, 1]$ denote the budget share that she allocates herself, and let $p = 1 - s$ denote the budget share that she allocates her partner. When choosing a utility-maximizing action, a dictator makes tradeoffs between her own monetary payoff and the benefit she derives from allocating money to her partner, including the utility gain from adhering to (or limiting deviations from) internalized social or moral norms of behavior. Following Levitt and List (2007), we argue that individual preferences for sharing in dictator games can be represented by a utility function of the form

$$u_i(s, b, n, o) = v_i(s, b) + m_i(s, b, n, o), \tag{1}$$

where $v_i(s, b) = v_i(sb)$ is a "standard" utility function which is monotonically increasing in income and $m_i(s, b, n, o)$ is a moral cost/benefit function.[13] $v_i(s, b)$ varies across individu-

[11] The dictator game was first used in Forsythe, Horowitz, Savin, and Sefton (1994). Camerer (2003) provides an overview of its use.

[12] Players did not learn their partners identities during or after the experiment.

[13] Any model of social preferences which allows for an additively separable utility representation — for example, the constant elasticity of substitution formulation employed in Andreoni and Miller (2002) and Fisman, Kariv, and Markovits (2007) — can be interpreted in this framework.

als, but for a given individual, it depends only on income and does not change over time. The moral utility of an action depends not only on the dictator's choice and the stakes in the experiment, but also on internalized social or moral norms of behavior, summarized by n, and on the extent to which one's actions are observable or scrutinized, summarized by o. Since $v_i(s, b)$ is independent of the treatment assignment and is strictly increasing in s, the optimal budget share that a dictator allocates to herself, s^*, is less than one if and only if

$$\frac{\partial}{\partial s} v_i(s^*, b) + \frac{\partial}{\partial s} m_i(s^*, b, n, o) = 0, \tag{2}$$

assuming that m_i is differentiable with respect to s. This implies that differences in optimal allocations across treatments, holding budget size constant, indicate differences in the *marginal moral cost* of selfish behavior, which are attributable to changes in n or o.

Consider a simple example: an individual in a community with strong egalitarian norms might choose to allocate herself a budget share, s, to optimize the utility function

$$u_i(s, b, n, o) = sb - \lambda b(s - p)^2, \tag{3}$$

where sb is her linear consumption utility and $m_i(s, b, n, o) = -\lambda b(s - p)^2$ represents the internalized cost of violating the moral norm, given some fixed level of observability. Here, income inequality violates the egalitarian ideal, and hence reduces an individual's utility. An individual with this utility function will allocate herself a budget share

$$s^* = \min\left\{\frac{1}{2} + \frac{1}{8\lambda}, 1\right\}. \tag{4}$$

If the moral cost of violating the egalitarian norm is low — $\lambda \leq \frac{1}{4}$ — a dictator will not share any income; for $\lambda > \frac{1}{4}$, however, the budget share that she keeps for herself is decreasing in λ, approaching one half as λ increases. Thus, a higher λ is associated with an optimal allocation closer to the "morally optimal" allocation — here, an equal split of the budget.

The moral cost/benefit function depends on n, an indicator of the social and moral norms called up in a specific experimental context. We test whether distributive norms over earned and unearned income differ by conducting dictator games which differ only in terms of how budgets are generated, holding all other factors constant. Evidence from dictator games suggests that moral norms relating to distributions within dictator games differ substantially across traditional societies (Henrich, Boyd, Bowles, Camerer, Fehr, Gintis, and McElreath 2004), and that social norms over earned and unearned income differ within standard lab populations in the U.S. (Hoffman, McCabe, Shachat, and Smith 1994, Cherry 2001, Cherry, Frykblom, and Shogren 2002, List 2007). In rural communities in Africa, individuals often face strong social pressures to share both earned and unearned income,[14] suggesting that egalitarian social norms may go beyond the pooling of idiosyncratic risk and act as a tax on individual effort or entrepreneurial energy.

Our simple example illustrates how egalitarian norms over earned income can influence incentives. Suppose the dictator discussed above had to earn the budget she divided, and the effort cost of generating a budget of size b were given by

$$c(b) = \frac{\gamma b^2}{2}. \tag{5}$$

She would then seek to maximize

$$U_i(s, b, n, o) = u_i(s, b, n, o) - c(b) = sb - \lambda b(s - p)^2 - \frac{\gamma b^2}{2}, \tag{6}$$

with respect to b and s. In this example, the optimal budget size, given accurate expectations about how one will divide one's own earnings, is

$$b^* = \frac{1}{16\lambda\gamma} + \frac{1}{2\gamma}, \tag{7}$$

[14]Bernard, de Janvry, and Sadoulet (2008) write that rural African villages "tend to enforce strict redistributive practices, whereby enriched individuals are socially compelled to share with the rest of the community not only their good fortunes but also the differentiated product of their hard work." Platteau (2000) and Barr and Stein (2008) also provide examples.

which is decreasing in λ, the parameter capturing the strength of egalitarian moral norms. The implication is that a higher moral cost of selfishness can lead to a lower level of effort and output, both in the experimental lab and in analogous "real world" settings such as the labor market.[15] On the other hand, if egalitarian moral norms are only relevant when income disparities result from idiosyncratic shocks, they cannot discourage labor supply or entrepreneurial effort.

We test whether norms governing the sharing of one's income differ depending on whether income results from individual effort, and also explore the norms governing the distribution of other people's money, testing whether norms and preferences which limit the extent of appropriation are stronger when others have earned their funds. We conduct four variants of the dictator game, which allow us to identify variation in distributive norms over earned and unearned income. Variation in allocation choices across treatments is indicative of differences in moral norms — or the internalized penalties for violating them — in different situations, since experimental stakes, levels of observability, and the range of feasible actions — i.e. divisions of the total budget — are held constant across treatments. Each dictator was asked to divide a budget between herself and her partner. The treatments differed along two dimensions: *how* the budget was generated and *who* decided how to divide it. The four treatments are represented in Figure 1 below.

Figure 1: Experimental Treatments

	Luck	Effort
Giving	Luck-Giving (LG)	Effort-Giving (EG)
Taking	Luck-Taking (LT)	Effort-Taking (ET)

The amount of money to be divided was either determined by luck or by the actions of

[15] Whether strengthening sharing norms over earned income reduces the level of effort among income-generators depends on the specific functional forms of $v_i(\cdot)$, $m_i(\cdot)$, and $c(\cdot)$.

one player. In the **Luck Treatments**, players won money by rolling a die, so the amount a player received was entirely random. Luck games serve as a benchmark which allow us to evaluate the extent to which dictators reward effort — either their own or by their partner — in other treatments where players earned the money that was subsequently divided. In the **Effort Treatments**, players were paid for completing a simple piece-rate task, so dictator budgets depended entirely on individual effort.

We also varied which player was assigned the dictator role — i.e. whether the player making the allocation decision was the same person who had won or earned the budget being divided. In **Giving Treatments**, players decided how to split money that they had either won or earned themselves; in **Taking Treatments**, players divided money that was won or earned by their partner.[16] For example, in the Effort-Giving (EG) treatment, Player i earns money and decides how to divide her earnings between herself and her partner, Player j. In the Luck-Taking (LT) game, on the other hand, Player j wins money, and Player i decides how to divide Player j's winnings between the two of them. We test the equality of average shares of the budget given to one's partner in the Luck-Giving and Effort-Giving treatments, and also test the equality of average shares of the budget not taken from one's partner in the Luck-Taking and Effort-Taking treatments. Differences in sharing between Luck and Effort treatments can be unambiguously attributed to disparities in moral norms, as all other factors are held constant.

3 Experimental Procedures and Data

3.1 Experimental Protocol

The experimental protocol used to administer lab sessions is common to all four treatments, and was followed in both the field experimental lab in Kenya and the companion sessions in the U.S. After a brief introduction, participants were divided into two groups, each assigned

[16] Dictator games which allow for both giving and taking have been employed by List (2007) and Bardsley (2008). Greig (2006) and Jakiela (2009) use taking games similar to the one employed here.

to a separate classroom.[17] Each subject was matched with a partner in the other room; partners' identities were not revealed to subjects during or after the experiment. Subjects in both rooms faced identical decision problems (i.e. all subjects played the dictator role); after the session ended, the decisions of one room were randomly chosen to determine final payouts. Experimental instructions were presented orally and further illustrated using wall posters and hypothetical scenarios acted out by members of the research team.[18] Subjects learned the entire structure of the game before making any decisions. The instructions included a trial period in which subjects were allowed to practice rolling the die (in the Luck Treatments) or carrying out the piece rate task (in the Effort Treatments). After the instructions and the trial period, subjects were called outside one at a time to make their allocation decisions, which were recorded by a member of the research team. Before recording any decisions, the enumerator quizzed the subject on the structure of the game to verify comprehension.[19] We used the strategy method to record decisions: each participant indicated how she would like to divide every feasible budget that could be generated in the game between herself and her partner.[20] Once all decisions had been recorded, the income-generation portion of the experiment began. In Effort Treatments, players were paid for completing a simple piece-rate task: each player was given a bucket containing three different varieties of dried beans and paid a fixed amount per gram of a designated variety of beans that she collected from the bucket during a ten minute period. Subjects were informed that, if they wished to stop collecting beans at any time, their earnings would be calculated immediately based on their work up to that point.[21] At the end of the ten minutes, players' beans were weighed using a digital scale. In Luck Treatments,

[17]The randomization of group assignment was stratified by arrival time at the game session.

[18]Copies of the instructions are included as an appendix. Instructions were first translated into Swahili, then verified via back-translation.

[19]In the few cases where participants did not understand the instructions, research assistants reviewed the protocol with them before proceeding.

[20]On use of the strategy method.

[21]No subjects in either Kenya or the U.S. chose to stop early. At the start of each effort game, about twenty percent of the beans in each player's bucket were the green variety; the total quantity of beans was calibrated such that a hard-working player could remove most, but not all, of the green beans within a ten-minute period. No player ever exhausted their supply of green beans during the experiment.

each player was given one opportunity to roll a twenty-sided die, which determined her winnings and, consequently, the dictator's budget. The set of feasible budgets in the Luck games was chosen to include the range of observed outcomes in the Effort treatments.[22] After the income generation of the experiment, subjects returned to a single classroom, and the room whose decisions would determine final payouts was selected. Two colored disks labeled "A" and "B" were placed into a large plastic cup, and one of the disks was chosen at random by a neutral observer. Subjects received their payments in cash at the close of the experimental session.[23]

3.2 Field Laboratory Settings

We conducted fourteen experimental sessions in field laboratories which we set up in Busia District, a poor, predominantly rural area in western Kenya. We conducted four sessions of each Effort treatment and three sessions of each Luck treatment. Each session took place in a different rural community located less than one hour from Busia Town, the main urban center. In each location, we recruited participants from the catchment area of a single primary school, using the schools to define the boundaries of a community for recruitment purposes and as a location in which to set up the field lab.

The experimental subjects were Kenyan adults drawn from the primary school catchment areas. Before each session, members of the research team worked with the school's head teacher and village elders to compile a list of adults between the ages of 18 and 35.[24] Letters of introduction explaining the presence of the research teams in the community were

[22]Each player who rolled the die in the Luck treatments won 100 Kenyan shillings plus the number that she rolled times ten shillings. Players in the Luck games won an average of 203 Kenyan shillings (3.06 U.S. dollars). In companion sessions in the Berkeley Experimental Social Science Lab, participants in the Luck games won identical payouts denominated in experimental currency tokens — i.e. subjects won 100 currency tokens plus the number rolled times ten currency tokens. Each currency token was equivalent to one-sixth of a U.S. dollar.

[23]Payouts were given out in envelopes, allowing subjects to hide their winnings easily.

[24]Sessions were conducted in Swahili, the local lingua franca. We chose to target adults aged 18–35 to minimize the extent to which Swahili-speakers would represent a selected sample, as it was not possible to conduct sessions in multiple tribal languages at the same time and variation in the linguistic requirements of subjects across neighborhoods could bias results. Almost all Kenyans under 35 are proficient in Swahili. Survey teams encountered very few potential subjects who were not conversant in Swahili.

sent to these target households.[25] The day before each experimental session, members of the research team visited each household on the target roster. Potential subjects completed a short survey and were invited to attend a session of economic games. 548 individuals were surveyed prior to the experiment, of whom 78.1 percent chose to attend the game session the next day. The sample also includes 118 individuals who were not surveyed prior to the game session, most of whom has received introductory letters, but were not at home when the survey team visited their household. A total of 546 people participated in the experimental sessions in Busia.

All experimental sessions were held in empty primary school classrooms. Sessions were held in the afternoon, by which time lower grades had left school for the day. The experiment was approximately three hours long. Table 1 presents summary statistics on the experimental sessions. The average number of subjects per session was 39. We report the participation rate — the fraction of individuals interviewed the day before the experiment who chose to attend — as a measure of the willingness to households to forgo the opportunity cost of spending three hours at the field lab session. Participants who had not been surveyed before the session met with a research assistant after the experiment was over to complete the questionnaire.

3.3 Participant Characteristics

The survey data document both the subjects' socioeconomic position and their values and beliefs; summary statistics for the four experimental treatments are included in Table 1. The survey data indicate that most of the subjects are poor subsistence farmers: 96.1 percent farm their own plot of land. 19.5 percent of subjects completed secondary school, and an additional 34.6 percent completed primary but not secondary. To generate a measure of "social capital" within each community, subjects were asked to describe their participation in a variety of community groups. On average, subjects are active members of two such

[25]Letters were either sent home with children in the school or hand delivered by a village elder.

groups, the most common being church groups, rotating savings and credit associations (ROSCAs), and women's groups.[26] Only 111 subjects do not actively participate in any community groups. We also collected data on values and trust.[27] These data provide insight into the culture and beliefs of the Kenyan subjects, and how these differ between Busia and the United States. In Section 4, we explore the importance of values — as opposed to differences in economic opportunities or educational attainment — in explaining disparities between the two samples. 77.3 percent of subjects report trusting their neighbors completely or somewhat. 41.5 percent of subjects believe that poverty in Kenya results from laziness and lack of willpower among the poor, and not from unfair treatment by society as a whole. 67.6 percent indicated that it would be acceptable for two primary school teachers to earn different salaries if one was a more reliable worker whose students performed better on standardized tests.

4 Results

This section describes individual allocation decisions and effort choices. We first compare Effort-Giving (EG) to Luck-Giving (LG) games. We find evidence that players reward their own hard work: being in the "earner" role increases the share of the budget that players allocate to themselves, suggesting that distributional norms over unearned income are stronger than those over labor income. Analyzing the differences between Effort-Taking (ET) and Luck-Taking (LT) treatments, however, we find no evidence of a parallel pattern of effort-rewarding behavior. We then predict individual behavior in the experiment using the survey data. While values and beliefs are not associated with differential behavior across treatments, educational attainment predicts the willingness to reward another subject's effort. Finally, we examine individual effort choices and find no evidence that subjects curtail their labor in response to insecure "property rights" in the ET treatment. However,

[26] A ROSCA is an informal group-lending mechanism funded by individual contributions from members.

[27] Several of these questions were taken from the World Values Survey (http://www.worldvaluessurvey.org) and adapted to the Kenyan context.

there is suggestive evidence that stronger sharing norms are associated with higher levels of effort in the EG treatments.

4.1 Comparing Allocation Decisions Across Treatments

In our main analysis, we test the hypothesis that moral norms and preferences over earned and unearned income differ, using data from dictator games in which individuals divide money won or earned by themselves or by other experimental subjects. The main outcome variable is Partner Share, $p \in [0, 1]$, the fraction of the total budget that a player allocates to her partner. In the Giving treatments, Partner Share represents the portion of a player's winnings or earnings that she allocates to her partner; in the Taking treatments, Partner Share is the fraction of a player's partner's winnings or earnings that the player allocates to her partner — i.e. that she does not transfer to her own account. We also examine the proportion of subjects who allocate themselves either the entire budget or precisely half the budget in each of the four treatments.

Our results draw on two types of empirical analysis. First, we explore the experimental decision data graphically. We present histograms of Partner Share, pooling the data for all players and budget sizes within each treatment (Figure 1). We also graph the results of non-parametric, locally-weighted Fan regressions of Partner Share as a function of the total budget (Figures 2, 3). Figure 2 includes both Fan regressions and average values of Partner Share at each budget size; these clearly indicate that the relationship between p and budget is approximately linear in all treatments. We therefore adopt a linear estimation strategy in much of our analysis. We pool data from all individual allocation decisions in the experimental sessions (Table 2) and estimate the regression equations

$$p_{itb} = \alpha + \mathbf{T}_{it}\phi + b\psi + (b \times \mathbf{T}_{it})\,\gamma + \mathbf{X}_{it}\beta + \epsilon_{itb} \tag{8}$$

and

$$p_{itb} = \alpha + \mathbf{T}_{it}\phi + \nu_{mt} + \mathbf{X}_{it}\beta + \epsilon_{itb} \tag{9}$$

in which p_{itb} represents the budget share that individual i allocates to her partner in treatment t when the budget size is b, $\mathbf{T}_{it}$ is a vector of indicators for the experimental treatments (the LG dummy is omitted), b is the budget size, $\mathbf{X}_{it}$ is a vector of controls drawn from the individual surveys, ν_{bt} are budget-size fixed effects interacted with the experimental treatments, and ϵ_{itb} is a conditionally mean-zero error term.[28] In addition to OLS, we estimate Tobit specifications which adjust for censoring of the Partner Share variable at zero (Table 2). The results of both specifications are similar. We also present probit regressions of the probability that a dictator allocates her partner either half the budget or nothing (Table 3).

4.1.1 Do Subjects Reward Their Own Effort?

Pooling data across subjects and budget sizes, dictators in the Luck-Giving (LG) game allocate their partners an average of 26.3 percent of the budget (Table 1). This finding is broadly consistent with previous work on dictator games.[29] Dictators allocate themselves a slightly larger share of the budget when they have earned the money they are dividing: they allocate their partners 22.4 percent of the budget, on average, in the Effort-Giving (EG) treatments (Table 1). Though the difference is not large in magnitude, we are able to reject the hypothesis that the two treatments have equal average values of Partner Share (p-value < 0.001). The histograms of Partner Share in the two treatments are broadly similar: both are bimodal with peaks at zero and fifty percent of the budget (Figure 1). However, significantly more dictators split the budget evenly in the LG treatment (15.9 percent vs. 11.3 percent, p-value < 0.001), and significantly fewer allocate themselves the

[28] Robust standard errors are clustered at the player level in all specifications included in the paper.

[29] Camerer (2003) provides an overview of demand for giving in dictator games. In her study of dictator game giving among the Orma people of northern Kenya, Ensminger (2004) finds that subjects allocate their partners 31 percent of the budget, on average. Marlowe (2004) finds that Hadza dictators in Tanzania offer their partners an average of 20 percent of the budget.

entire budget (15.0 percent vs. 17.2 percent, p-value 0.035). These results are confirmed by probit regressions, though only the difference in the probability of allocating one's partner half the budget is statistically significant (Table 3).

Thus, Kenyan subjects appear to reward their own effort, allocating their partners less of their earned income than they would if their budget were unearned. Regression estimates of Equations (8) and (9) confirm this finding: estimated coefficients on the EG treatment indicator are negative and significant in all specifications (Table 2). Controlling for budget size — either linearly or using dummy variables — within each treatment increases the magnitude of the coefficient slightly, though all experimental treatments included precisely the same range of budget sizes. However, point estimates do not depend on how we control for budget (Table 2, Columns 2 vs. 3), nor are they affected by the inclusion of individual controls drawn from the survey (Table 2, Column 4). After controlling for budget size and demographic characteristics, the coefficient estimates suggest that a dictator who has earned her budget allocates her partner 6.4 percentage points less of a 200 shilling budget than an individual whose budget was unearned. We are therefore able to reject the hypothesis that distributive norms over one's own earned and unearned income are the same — subjects appear to feel morally justified sharing less of their earned income.

4.1.2 Do Subjects Reward Effort by Others?

Next, we assess whether moral norms over earned and unearned income are symmetric by examining data on dictators who divided money earned or won by other players. We test the hypothesis that dictators are more generous with other players when those others have exerted effort by comparing allocation decisions in the Luck-Taking (LT) and Effort-Taking (ET) treatments. Pooling data across budget sizes, dictators allocate their partners an average of 42.9 percent of the budget in LT treatment (Table 1). The corresponding figure for ET treatments is 40.6 percent of the budget, indicating that dictators allow their partners to retain *less* of their earned income. Though the difference is small in magnitude,

we are able to reject the hypothesis that the average value of PARTNER SHARE is the same in the two taking treatments (p-value < 0.001). Histograms of the distribution of PARTNER SHARE in the two treatments both display a spike at the even split of the budget, though this peak is higher in the ET treatment (Figure 1). In fact, subjects in the ET treatment are significantly more likely to allocate their partners precisely half the budget, doing so 33.6 percent of the time as opposed to 27.7 percent of the time in the LG treatments (p-value < 0.001). Yet, they are also more likely to allocate their partners nothing, doing so 8.2 percent of the time in the ET treatment versus 6.2 percent of the time in the LT games (p-value $= 0.003$).[30]

Linear regressions of PARTNER SHARE provide further evidence that Kenyan subjects do not "reward" effort by other players: coefficient estimates on the ET indicator are below those of the LT indicator in all specifications, suggesting that dictators are less generous with those who have exerted effort than with those who have received windfall income, even after controlling for budget size and individual characteristics (Table 2). The difference between the coefficients on the LT and ET indicator variables is not significant in most specifications. Nonetheless, we can reject the hypothesis that effort is treated symmetrically — i.e. that dictators are as much more generous with effort-exerting partners, relative to those who receive windfall income, as they are with themselves when they have earned income rather than receiving it through luck (p-value $= 0.006$). Thus, the evidence indicates that the moral costs and benefits associated with appropriating others' income do not depend on whether that income results from luck or individual hard work.

4.2 Predicting Individual Behavior

Next, we explore the hypothesis that the willingness to reward effort is correlated with variables which may be linked to development — income, education, and cultural values. We use data from the pre-experiment survey to predict individual behavior within the

[30]However, probit regressions controlling for budget size and individual characteristics do not confirm the significance of these results 3.

dictator games, estimating Equation (9) both for the pooled sample of allocation decisions and separately for each of the four treatments (Table 4). The indicator for completing secondary school is significantly different from zero in each of the Taking treatments, but not in the Giving games. Subjects who completed secondary school allocate their partners 7.3 percent less of the budget in the LT treatments, and 10.6 percent more in the ET treatments (Table 4). Thus, in contrast to the rest of the sample, more educated subjects reward both their own effort *and* effort by other players.[31] Household size is also associated with distinct patterns of sharing across the treatments: an increase in household size is correlated with a 1.5 percentage point decrease in giving in the LG treatments, and a 1.6 percentage point increase in the LT treatments. There is no evidence that the asset indicators — dummies for owning a bicycle and owning cattle — are associated with differential patterns of sharing in any of the experimental treatments. Moreover, though the indicator for "trusting neighbors" is positively associated with PARTNER SHARE in the EG treatments, neither of the World Values Survey questions intended to explore the willingness to tolerate inequality are significantly associated with sharing in any of the treatments.[32] Finally, we find weak evidence that women are less generous within the experiment than men: the coefficient on the female dummy variable is weakly significant in the pooled sample, and is negative and significant in the EG treatment (Table 4).

4.3 U.S. Subjects

In this section, we discuss companion experiments conducted in the Experimental Social Science Lab (X-Lab) at U.C. Berkeley. These sessions allow us to compare sharing preferences in western Kenya to behavior in a conventional experimental economic lab. Specifi-

[31] Some caution is warranted in assessing the significance of the coefficients, since we test eleven variables for significance in four different sub-samples of the data. However, it is substantially less likely that any variable will be significantly different from zero in two of the four treatments. Moreover, the observed number of significant coefficients (seven) is much larger than the number expected number which would result from chance (between two and three).

[32] Subjects were asked two questions intended to measure beliefs about inequality and the determinants of economic outcomes. The survey instrument is included in the Appendix.

cally, we test test whether U.S. subjects treat individual effort asymmetrically, "rewarding" themselves by being less generous with earned income than with unearned income, but failing to reward effort by others in the same manner. Procedures in the Berkeley X-Lab sessions were identical to those used in Kenya, except that U.S. participants were recruited using standard procedures for the X-Lab.[33] 196 students participated in the U.S. sessions, all of whom completed an abbreviated survey after the experiment; this allows us to make cross-cultural comparisons of the correlates of behavior in the lab. Berkeley subjects are more likely to be female than their Kenyan counterparts: 61.7 percent of U.S. participants were female, vs. 41.3 percent in Kenya (Table 5). The U.S. sample is also, by construction, more educated, since subjects are recruited from the student population at U.C. Berkeley. U.S. subjects are more willing to tolerate wage inequality (83.7 percent vs. 67.6 percent), but less likely to believe that poverty results from laziness or lack of willpower among the poor (36.9 vs. 41.6 percent).

Data from dictators' allocation decisions indicates that experimental subjects in the U.S. are significantly less generous toward other participants than their Kenyan counterparts (Table 5). In all four treatments, U.S. subjects allocate less to their partners than dictators in Kenya; they allocate nothing to their partners more than a quarter of the time. Though cultural differences may partially explain this pattern, it may also be attributable to differences in participant characteristics — particularly the fact that the U.S. sample is made up of undergraduates — or the density of social networks within the sample.[34]

We find strong evidence that earned and unearned income are treated differently by U.S. subjects. Dictators allocate their partners an average of 19.5 percent of the budget in LG treatments, but only 13.9 percent of the budget in EG treatments (p-value < 0.001); dictators are also more likely to allocate their partners nothing in the EG treatments than in the LG games, doing so 41.6 percent and 28.1 percent of the time, respectively

[33]The instructions used in the U.S. sessions were exact translations of the Swahili instructions employed in Kenya.

[34]Camerer and Fehr (2004) report evidence that undergraduates are substantially less generous than non-student subjects in dictator games.

(p-value < 0.001). In the Taking treatments, dictators are more generous with partners who have earned their income than with those receiving a windfall, allocating them an average of 13.9 percent of the budget in LT treatments, compared to 26.8 percent in ET treatments (p-value < 0.001). Dictators are also more likely to allocate their partners nothing in the LT treatment than in the ET treatment (42.6 percent vs. 25.6 percent of observed allocations, p-value < 0.001) and less likely to allocate their partners exactly half the budget (9.6 percent vs. 24.0 percent of observed allocations, p-value < 0.001). Taken together, the evidence suggests disparate moral norms over sharing earned and unearned income: dictators in the U.S. sample are, on average, more generous with those who have exerted effort. In contrast to the Kenyan subjects, dictators in the U.S. are significantly more generous when their partners have earned their income, suggesting that the marginal moral cost of appropriating someone else's *earned* income is higher than the marginal moral cost of appropriating windfall income.

Regression analysis confirms the main findings. First, we estimate Equations (8) and (9), OLS and tobit regressions of Partner Share, for the U.S. sample. The coefficient on the ET indicator is positive and significantly different than the coefficient on the LT dummy in all specifications (Table 6). Controlling for budget size and individual characteristics, coefficient estimates suggest that dictators allocate their partners 8.3 percentage points more of the budget in the ET treatment than in the LG treatment (Table 6, p-value $=$ 0.042). The coefficient on the EG treatment indicator is positive but not significant. Probit regressions of indicators for allocating one's partner zero or exactly half the budget also confirm the qualitative findings, though are not consistently significant (Table 7). Dictators are significantly less likely to allocate their partners nothing in the ET treatment than in the LT treatment, and also appear more likely to allocate their partners half. Finally, Table 8 reports associations between individual characteristics, drawn from the post-experiment survey, and sharing in the four experimental treatments. Overall, the evidence suggests that female subjects in the U.S. are more generous than male subjects, awarding their

partners an average of 5.7 percentage points more of the budget (pooling across treatments). Coefficient estimates also suggest that those willing to tolerate inequality, as measured by the World Values Survey question, are less generous, particularly in the ET treatment.

4.4 Individual Effort

Next, we compare the level of effort exerted sorting beans in the EG and ET treatments. Traditional theories of self-interested agents predict that players facing convex effort costs will equate the marginal utility of consumption and the marginal cost of effort in the giving treatments, but exert minimal effort in the taking games if they expect purely selfish behavior by their partners. Our data are entirely inconsistent with this prediction.

Our measure of effort is the number of grams of beans collected in each by an individual player, the GRAMS variable. We report average values of GRAMS in each of the two Effort treatments for the Kenyan and U.S. subject pools (Tables 1 and 5). Effort levels are nearly identical in the two Effort games in both samples, and t-tests on the equality of the means across treatments do not reject the null hypotheses (p-values 0.84 and 0.39, respectively). On average, Kenyan subjects collect 212.2 grams of beans in the EG treatments and 212.9 grams in the ET treatments, while U.S. subjects collect 173.4 grams of beans in the EG treatments and 168.3 grams in the ET treatments.[35]

Next, we explore the correlates of individual effort in a regression framework by estimating the regression

$$g_i = \alpha + T_i\phi + \mathbf{X}_i\beta + \epsilon_i, \tag{10}$$

where g_i is the number of grams collected by Player i, T_i is an indicator for the ET game, and $\mathbf{X}$ is a vector of individual characteristics drawn from the survey. We also estimate Equation (10) separately for the EG and ET treatments. In the Kenyan sample, the FEMALE dummy is the only individual characteristic significantly associated with the

[35]Equal volumes of the various types of beans where used in the Kenyan and U.S. sessions. However, we cannot rule out the possibility that individual beans are, on average, slightly larger or smaller in Kenya.

quantity of beans collected: the coefficient estimate suggest that being female is associated with collecting 31.3 additional grams of beans, and the female indicator is positive and significant in both the EG and ET treatments (Table 9). The female dummy is also positively associated with this measure of effort in the U.S. sample: pooling the EG and ET treatments, women are predicted to collect 20.6 additional grams of beans (Table 10). In contrast to the Kenyan data, two other individual characteristics are associated with output in the U.S. sample. The number of community groups a subject participates in is positively correlated with effort in the EG treatment, while a belief that others can be trusted is negatively associated with output in the EG treatment. Neither is significant in the ET game sub-sample.

As discussed in Section 2, internalized egalitarian norms may increase or decrease individual effort relative to the purely self-interested case. Next, we explore the relationship between moral norms and effort levels empirically by constructing a measure of community-level norms. One's own allocation decision may influence the level of effort exerted in the EG treatment, so we construct a measure of the average level of giving by other players within an experimental sessions, Mean Partner Share w/in Session. When we include this variable in Equation (10), it is positive and weakly significant in the EG treatments. Though the coefficient is only weakly significant, the point estimate is large: moving from the lowest average level of generosity to the highest is associated with a 29.4 gram increase in the amount of beans collected, an effect similar in magnitude to the coefficient on the indicator for being female. Thus, stronger internalized egalitarian norms appear to be associated with increases, not decreases, in individual effort.

We also provide suggestive evidence on peer effects within the individual sessions, including a control for the average grams of beans collected by other players working in the same room as Player i. Including this Mean Peer Grams variable does not affect the significance patterns among the other variables. In both the Kenyan and U.S. samples, the coefficient on Mean Peer Grams is negative in the EG treatments, but positive in the

ET treatments (Table 9 and 10). However, it is only significant in the Kenyan sample of ET treatments. The point estimate in that case is quite large: each additional "average peer gram" is associated with 0.76 more grams of output (Table 9).

5 Conclusion

In this paper, we offer an experimental test of moral norms over the distribution of earned and unearned income in poor, rural villages in Kenya. We find mixed evidence. One the one hand, dictators share less of their own earned income than unearned income, suggesting that the marginal moral cost of selfish behavior is lower when one has exerted effort to generate one's wealth. At the same time, we find no evidence that the marginal moral cost of appropriating another individual's earned income is higher than the marginal moral cost of claiming a share of another person's windfall. However, this pattern does not hold for Kenyan subjects who have completed secondary school: these individuals are more generous with other players when those others have worked to earn their income. Subjects in comparison sessions in a university experimental lab in the U.S. behave in an "effort-rewarding" manner, sharing less of their own earned income than their windfall income, but also being substantially more generous with other players when the other players have exerted effort.

Our findings suggest that moral norms governing the distribution of earned income in rural communities in Kenya are not clear cut, and may be in dispute. They also highlight the potential for self-serving interpretations of ambiguous moral norms: individuals who have worked hard act as though obligations to share are less relevant when inequality results from disparities in effort, but those appropriating a share of another's money invoke comparable norms regardless of the source of their partners' income. Such tensions are likely to be particularly relevant in developing economies, where only a small fraction of the population has the human capital required to enter the formal sector.

Our paper contributes to a growing body of research using experimental economic meth-

ods to explore cultural norms likely to be economically relevant. We provide evidence that distributional preferences and values — in particular, the willingness to rein in selfishness in order to reward hard work — differ across cultures. This pattern suggests that disparities between communities in the extent of real-world sharing and public goods provision may be motivated by more than differences in the economic environment. Still, identifying the impact of values and beliefs on behavior is difficult, since they are not independent from the economic and social environment of those who hold them. While experimental economic methods allow us to collect data on moral values and norms, the challenging task of measuring the impacts of these norms on output, development, and growth, remains.

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Table 1: Summary Statistics — Experimental Sessions in Kenya

Treatment	LG	LT	EG	ET	All Sessions
Panel A: Session Characteristics					
Games Played	3	3	4	4	14
Participants	108	126	168	144	546
Participation Rate	0.754	0.820	0.801	0.740	0.781
Female	0.444	0.389	0.375	0.454	0.413
	(0.048)	(0.043)	(0.037)	(0.042)	(0.021)
Completed Primary School Only	0.358	0.379	0.327	0.357	0.353
	(0.047)	(0.044)	(0.037)	(0.041)	(0.021)
Completed Secondary School	0.245	0.290**	0.079**	0.207	0.194
	(0.042)	(0.041)	(0.021)	(0.034)	(0.017)
Household Size	5.953	6.048	5.817	6.036	5.955
	(0.235)	(0.232)	(0.193)	(0.198)	(0.106)
Household Farms	0.944	0.968	0.964	0.964	0.961
	(0.22)	(0.016)	(0.015)	(0.016)	(0.008)
Household Owns Bicycle	0.833	0.849	0.750	0.785	0.799
	(0.036)	(0.032)	(0.033)	(0.034)	(0.017)
Household Owns Cow(s)	0.481	0.667**	0.410**	0.513	0.511
	(0.048)	(0.042)	(0.038)	(0.042)	(0.021)
Community Groups	2.259	1.976	1.804	2.013	1.989
	(0.167)	(0.138)	(0.125)	(0.131)	(0.069)
Trusts Neighbors	0.766	0.752	0.770	0.801	0.773
	(0.041)	(0.039)	(0.033)	(0.034)	(0.018)
Accepts Inequality	0.622	0.718	0.695	0.657	0.676
	(0.047)	(0.042)	(0.036)	(0.040)	(0.020)
Poor Are Lazy	0.514**	0.424	0.372	0.383	0.415
	(0.049)	(0.044)	(0.038)	(0.041)	(0.021)
Panel B: Experimental Outcomes of Interest					
Grams	–	–	212.131	212.875	–
			(2.516)	(2.731)	
Partner Share	0.263	0.429	0.224	0.406	0.327
	(0.004)	(0.005)	(0.003)	(0.004)	(0.002)
Partner Share = Zero	0.150	0.062	0.172	0.082	0.118
	(0.008)	(0.005)	(0.006)	(0.005)	(0.003)
Partner Share = Half	0.159	0.277	0.113	0.336	0.219
	(0.008)	(0.009)	(0.005)	(0.009)	(0.004)

Standard errors in parentheses. ** indicates significantly different from the other three treatments at 1 percent level; * indicates significantly different from the other three treatments at 5 percent level. Participation Rate is the proportion of those surveyed the day prior to the experiment who chose to attend. Grams is the average number of grams of beans collected in the experiment, and Partner Share is the budget share that a dictator allocates to her to partner in a given experimental treatment, averaged over subjects and budget sizes. Partner Share = Zero is a dummy variable equal to one if a dictator allocated herself the entire budget at a given budget size. Partner Share = Half is a dummy variable equal to one if a dictator divided the budget evenly.

Table 2: OLS, Tobit Regressions of Partner Share

	OLS	OLS	OLS	OLS	Tobit	Tobit	Tobit	Tobit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effort Giving Treatment	-0.039*	-0.054***	-0.055**	-0.054**	-0.043*	-0.06**	-0.062**	-0.061**
	(0.02)	(0.02)	(0.024)	(0.025)	(0.024)	(0.023)	(0.027)	(0.028)
Luck Taking Treatment	0.165***	0.161***	0.159***	0.162***	0.178***	0.171***	0.165***	0.169***
	(0.022)	(0.021)	(0.027)	(0.027)	(0.025)	(0.023)	(0.029)	(0.029)
Effort Taking Treatment	0.142***	0.117***	0.107***	0.108***	0.153***	0.124***	0.111***	0.112***
	(0.024)	(0.023)	(0.028)	(0.029)	(0.027)	(0.026)	(0.03)	(0.031)
Budget	.	-0.003***	.	.	.	-0.004***	.	.
		(0.0005)				(0.0006)		
Effort Giving × Budget	.	0.002**	.	.	.	0.002**	.	.
		(0.0006)				(0.0008)		
Luck Taking × Budget	.	0.0005	.	.	.	0.0007	.	.
		(0.0008)				(0.0009)		
Effort Taking × Budget	.	0.003***	.	.	.	0.003***	.	.
		(0.0007)				(0.0008)		
Constant	0.263***	0.295***	0.296***	0.251***	0.245***	0.281***	0.286***	0.226***
	(0.016)	(0.015)	(0.019)	(0.053)	(0.019)	(0.017)	(0.021)	(0.061)
Budget FEs	No	No	Yes	Yes	No	No	Yes	Yes
Treatment × Budget FEs	No	No	Yes	Yes	No	No	Yes	Yes
Demographic Controls	No	No	No	Yes	No	No	No	Yes
Observations	10920	10920	10920	10520	10920	10920	10920	10520
R^2	0.15	0.154	0.155	0.168	.	.	.	.

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size. Demographic controls includes all variables listed in Table 1.

Table 3: Probit Regressions of Likelihood of Allocating Partner Half, Zero

	Partner Zero				Partner Half			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effort Giving Treatment	0.087	0.16	0.231	0.164	-0.213	-0.311*	-0.481**	-0.470**
	(0.149)	(0.16)	(0.207)	(0.207)	(0.154)	(0.162)	(0.192)	(0.201)
Luck Taking Treatment	-0.505***	-0.556***	-0.343	-0.468*	0.407***	0.417***	0.505***	0.522***
	(0.154)	(0.179)	(0.255)	(0.264)	(0.137)	(0.137)	(0.178)	(0.185)
Effort Taking Treatment	-0.349**	-0.287*	-0.155	-0.174	0.573***	0.489***	0.32*	0.397**
	(0.157)	(0.169)	(0.231)	(0.236)	(0.141)	(0.145)	(0.175)	(0.183)
Budget	.	0.012***	.	.	.	-0.010**	.	.
		(0.004)				(0.005)		
Effort Giving × Budget	.	-0.007	.	.	.	0.011	.	.
		(0.006)				(0.007)		
Luck Taking × Budget	.	0.005	.	.	.	-0.001	.	.
		(0.007)				(0.007)		
Effort Taking × Budget	.	-0.006	.	.	.	0.009	.	.
		(0.007)				(0.006)		

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size. Demographic controls includes all variables listed in Table 1.

Table 4: Individual Correlates of Dictator Game Giving, by Treatment

	All Treatments	Luck Giving	Effort Giving	Luck Taking	Effort Taking
	(1)	(2)	(3)	(4)	(5)
Female	-0.028*	0.015	-0.048*	-0.013	-0.032
	(0.016)	(0.033)	(0.029)	(0.031)	(0.04)
Completed Primary Only	0.021	0.034	0.029	0.002	0.04
	(0.019)	(0.04)	(0.03)	(0.041)	(0.04)
Completed Secondary School	0.028	0.03	0.061	-0.073**	0.106**
	(0.023)	(0.043)	(0.048)	(0.037)	(0.052)
Household size	0.001	-0.015**	0.003	0.016**	-0.005
	(0.004)	(0.007)	(0.006)	(0.007)	(0.009)
Household Farms	0.011	0.001	0.109**	-0.028	-0.067
	(0.042)	(0.054)	(0.047)	(0.048)	(0.141)
Household Owns Bicycle	-0.024	0.029	-0.005	-0.01	-0.043
	(0.023)	(0.056)	(0.032)	(0.062)	(0.046)
Household Owns Cow(s)	-0.007	0.002	-0.019	-0.034	0.028
	(0.017)	(0.033)	(0.027)	(0.033)	(0.039)
Community Groups	0.003	-0.004	0.0008	0.023**	-0.005
	(0.005)	(0.01)	(0.008)	(0.009)	(0.011)
Trusts Neighbors	0.032*	-0.021	0.062**	0.0008	0.046
	(0.019)	(0.036)	(0.03)	(0.039)	(0.045)
Accepts Inequality	0.019	-0.029	0.014	0.03	0.053
	(0.017)	(0.034)	(0.029)	(0.034)	(0.037)
Poor Are Lazy	0.009	0.006	0.015	0.01	-0.013
	(0.016)	(0.035)	(0.027)	(0.031)	(0.038)
Constant	0.251***	0.373***	0.067	0.372***	0.437***
	(0.053)	(0.085)	(0.058)	(0.098)	(0.144)
Treatment FEs	Yes	No	No	No	No
Budget FEs	Yes	Yes	Yes	Yes	Yes
Treatment × Budget FEs	Yes	No	No	No	No
Observations	10520	2100	3260	2460	2700
R^2	0.168	0.053	0.065	0.073	0.068
R^2	0.168	0.053	0.065	0.073	0.068

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size.

Table 5: Summary Statistics — Experimental Sessions in the U.S.

Treatment	LG	LT	EG	ET	All Sessions
Panel A: Session Characteristics					
Games Played	2	2	2	2	8
Participants	40	50	50	56	196
Female	0.600	0.700	0.540	0.625	0.617
	(0.078)	(0.065)	(0.071)	(0.065)	(0.035)
Community Groups	1.775	1.480	1.860	1.554	1.658
	(0.201)	(0.172)	(0.176)	(0.167)	(0.089)
Trusts Neighbors	0.553	0.612	0.600	0.582	0.589
	(0.082)	(0.070)	(0.070)	(0.067)	(0.036)
Accepts Inequality	0.842	0.878	0.896	0.745	0.837
	(0.060)	(0.047)	(0.045)	(0.059)	(0.027)
Poor Are Lazy	0.270	0.425	0.460	0.302	0.369
	(0.074)	(0.073)	(0.071)	(0.064)	(0.035)
Panel B: Experimental Outcomes of Interest					
Grams	–	–	173.360	168.321	–
			(3.995)	(4.300)	
Partner Share	0.195	0.139	0.157	0.268	0.187
	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)
Partner Share = Zero	0.281	0.426	0.416	0.256	0.345
	(0.016)	(0.016)	(0.016)	(0.013)	(0.008)
Partner Share = Half	0.111	0.096	0.134	0.240	0.150
	(0.011)	(0.009)	(0.012)	(0.013)	(0.006)

Standard errors in parentheses. ** indicates significantly different from the other three treatments at 1 percent level; * indicates significantly different from the other three treatments at 5 percent level. Grams is the average number of grams of beans collected in the experiment, and Partner Share is the budget share that a dictator allocates to her to partner in a given experimental treatment, averaged over subjects and budget sizes. Partner Share = Zero is a dummy variable equal to one if a dictator allocated herself the entire budget at a given budget size. Partner Share = Half is a dummy variable equal to one if a dictator divided the budget evenly.

Table 6: OLS, Tobit Regressions of Partner Share (U.S. Sample)

	OLS	OLS	OLS	OLS	Tobit	Tobit	Tobit	Tobit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effort Giving Treatment	-0.056	-0.054	-0.027	-0.009	-0.089*	-0.086	-0.045	-0.025
	(0.035)	(0.038)	(0.04)	(0.039)	(0.054)	(0.057)	(0.062)	(0.062)
Luck Taking Treatment	-0.057*	-0.025	0.003	0.028	-0.092*	-0.053	-0.005	0.026
	(0.034)	(0.038)	(0.041)	(0.043)	(0.052)	(0.058)	(0.062)	(0.066)
Effort Taking Treatment	0.073*	0.076*	0.101**	0.111***	0.082	0.091*	0.133**	0.143**
	(0.038)	(0.04)	(0.042)	(0.041)	(0.052)	(0.054)	(0.058)	(0.058)
Budget	.	-0.0008	.	.	.	-0.0006	.	.
		(0.001)				(0.002)		
Effort Giving × Budget	.	-0.0003	.	.	.	-0.0003	.	.
		(0.001)				(0.002)		
Luck Taking × Budget	.	-0.003**	.	.	.	-0.004*	.	.
		(0.002)				(0.002)		
Effort Taking × Budget	.	-0.0004	.	.	.	-0.001	.	.
		(0.001)				(0.002)		
Constant	0.195***	0.203***	0.177***	0.177***	0.149***	0.155***	0.112**	0.076
	(0.026)	(0.028)	(0.03)	(0.054)	(0.037)	(0.04)	(0.046)	(0.079)
Observations	3917	3917	3917	3657	3917	3917	3917	3657
(Pseudo) R^2	0.080	0.085	0.086	0.154	0.091	0.094	0.096	0.202

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size. Demographic controls includes all variables listed in Table 5.

Table 7: Probit Regressions of Likelihood of Allocating Partner Half, Zero (U.S. Sample)

	Partner Zero				Partner Half			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Effort Giving Treatment	0.369	0.359	0.168	0.133	0.113	0.155	0.201	0.328
	(0.25)	(0.264)	(0.27)	(0.29)	(0.325)	(0.326)	(0.35)	(0.389)
Luck Taking Treatment	0.393	0.367	0.117	0.107	-0.085	0.124	0.201	0.412
	(0.241)	(0.261)	(0.27)	(0.304)	(0.319)	(0.322)	(0.35)	(0.404)
Effort Taking Treatment	-0.078	-0.186	-0.413	-0.430	0.515*	0.573*	0.607*	0.688*
	(0.25)	(0.265)	(0.274)	(0.293)	(0.299)	(0.3)	(0.327)	(0.363)
Budget	.	-0.005	.	.	.	-0.002	.	.
		(0.011)				(0.007)		
Effort Giving × Budget	.	0.001	.	.	.	-0.004	.	.
		(0.012)				(0.01)		
Luck Taking × Budget	.	0.003	.	.	.	-0.024*	.	.
		(0.014)				(0.014)		
Effort Taking × Budget	.	0.011	.	.	.	-0.006	.	.
		(0.013)				(0.009)		
Constant	-0.579***	-0.532***	-0.319	0.15	-1.220***	-1.198***	-1.282***	-1.185***
	(0.18)	(0.193)	(0.202)	(0.397)	(0.246)	(0.243)	(0.271)	(0.445)
Observations	3917	3917	3917	3657	3917	3917	3917	3657
Pseudo R^2	0.021	0.022	0.024	0.097	0.030	0.033	0.037	0.080

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size. Demographic controls includes all variables listed in Table 5.

Table 8: Individual Correlates of Dictator Game Giving, by Treatment (U.S. Sample)

	All Treatments	Luck Giving	Effort Giving	Luck Taking	Effort Taking
	(1)	(2)	(3)	(4)	(5)
Female	0.057**	0.11**	0.067	-0.021	0.073
	(0.028)	(0.053)	(0.046)	(0.064)	(0.056)
Community Groups	0.003	-0.026	0.018	0.014	0.008
	(0.011)	(0.019)	(0.017)	(0.027)	(0.021)
Trusts Neighbors	0.032	0.118**	0.041	0.027	-0.019
	(0.028)	(0.05)	(0.047)	(0.052)	(0.06)
Accepts Inequality	-0.075**	-0.008	0.024	-0.056	-0.202***
	(0.037)	(0.058)	(0.083)	(0.069)	(0.048)
Poor Are Lazy	-0.041	-0.037	-0.043	-0.007	-0.144***
	(0.027)	(0.057)	(0.044)	(0.05)	(0.049)
Constant	0.177***	0.094	0.041	0.215*	0.43***
	(0.054)	(0.103)	(0.08)	(0.11)	(0.072)
Observations	3657	720	958	920	1059
R^2	0.154	0.201	0.107	0.053	0.304

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level. Budget is normalized by dividing by ten and subtracting off the smallest feasible budget size.

Table 9: Correlates of Individual Effort (Kenyan Sample)

	All	Effort Giving			Effort Taking		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	31.336***	35.460***	34.663***	35.600***	29.000***	28.828***	32.664***
	(3.626)	(5.051)	(5.104)	(5.056)	(6.349)	(6.302)	(6.345)
Completed Primary Only	2.005	-0.329	-0.23	-0.309	3.687	3.614	4.026
	(3.840)	(4.870)	(4.800)	(4.908)	(6.513)	(6.564)	(6.262)
Completed Secondary School	-7.765	-10.008	-9.841	-9.784	-5.292	-5.523	-3.913
	(5.294)	(9.182)	(9.094)	(9.475)	(8.035)	(7.983)	(7.320)
Household size	0.566	-0.513	-0.288	-0.525	1.977*	1.958*	1.229
	(0.692)	(0.993)	(0.992)	(1.008)	(1.077)	(1.074)	(1.008)
Household Farms	4.238	0.587	2.816	1.048	5.909	6.268	-0.445
	(8.443)	(12.426)	(11.942)	(12.216)	(10.481)	(10.623)	(9.688)
Household Owns Bicycle	2.905	3.986	3.850	3.873	3.046	2.695	0.994
	(4.206)	(5.806)	(5.762)	(5.820)	(6.545)	(6.691)	(6.222)
Household Owns Cow(s)	5.018	2.604	2.840	2.104	7.382	7.525	5.152
	(3.539)	(4.732)	(4.752)	(4.713)	(5.485)	(5.503)	(5.263)
Community Groups	-0.749	-0.677	-0.387	-0.874	-0.374	-0.347	-1.424
	(1.163)	(1.451)	(1.498)	(1.466)	(1.977)	(1.989)	(1.830)
Trusts Neighbors	4.253	1.306	2.051	0.796	8.463	8.909	7.502
	(3.993)	(5.359)	(5.266)	(5.399)	(6.415)	(6.434)	(6.190)
Accepts Inequality	0.814	0.056	-0.34	0.161	0.901	0.772	-0.515
	(3.733)	(4.957)	(4.906)	(4.970)	(6.185)	(6.174)	(5.870)
Poor Are Lazy	-0.163	-3.540	-4.713	-3.025	5.111	5.517	3.946
	(3.625)	(4.820)	(4.849)	(4.915)	(5.507)	(5.269)	(5.363)
Taking Treatment	-1.020	.	.	.	.	.	.
	(3.556)						
Mean Partner Share w/in Session	.	.	127.490*	.	.	38.473	.
			(75.373)			(112.086)	
Mean Grams w/in Room	.	.	.	-0.323	.	.	0.757***
				(0.355)			(0.213)
Constant	186.213***	199.554***	164.588***	268.503***	167.450***	151.160***	21.658
	(9.914)	(13.693)	(23.381)	(74.923)	(13.538)	(50.260)	(42.073)
Observations	298	163	163	163	135	135	135
R^2	0.246	0.27	0.282	0.274	0.255	0.256	0.33

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level.

Table 10: Correlates of Individual Effort (U.S. Sample)

	All	Effort Giving			Effort Taking		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	20.573***	15.327**	15.407**	14.533**	27.007***	26.948***	24.303**
	(6.234)	(6.880)	(6.854)	(6.852)	(9.528)	(9.739)	(11.022)
Community Groups	2.283	4.889**	4.456*	5.256**	-0.875	-1.023	-0.523
	(2.509)	(2.352)	(2.467)	(2.518)	(4.003)	(4.102)	(3.899)
Trusts Neighbors	-4.505	-22.664***	-24.323***	-23.079***	15.319	15.397	15.869
	(6.807)	(7.828)	(8.122)	(7.981)	(10.447)	(10.664)	(10.318)
Accepts Inequality	1.746	-11.020	-8.181	-10.306	7.373	7.373	6.646
	(8.406)	(11.075)	(11.624)	(11.336)	(8.752)	(8.773)	(9.267)
Poor Are Lazy	5.331	6.541	5.835	6.447	-1.328	-0.73	-2.996
	(5.887)	(7.026)	(7.218)	(7.054)	(8.764)	(9.314)	(8.942)
Taking	-4.444	.	.	.	.	.	.
	(6.093)						
Mean Partner Share w/in Session	.	.	87.665	.	.	-51.860	.
			(82.117)			(151.633)	
Mean Grams within Room	.	.	.	-0.316	.	.	0.386
				(0.504)			(0.35)
Constant	156.389***	175.874***	161.482***	230.009***	139.248***	153.797***	76.054
	(10.855)	(11.034)	(16.249)	(85.557)	(13.340)	(46.492)	(51.502)
Observations	101	48	48	48	53	53	53
R^2	0.131	0.316	0.335	0.322	0.191	0.193	0.211

Standard errors in parentheses. *** indicates significantly different from zero at 1 percent level; ** indicates significant at 5 percent level; * indicates significantly at 1 percent level.

Figure 1: Histograms of Partner Share by Treatment

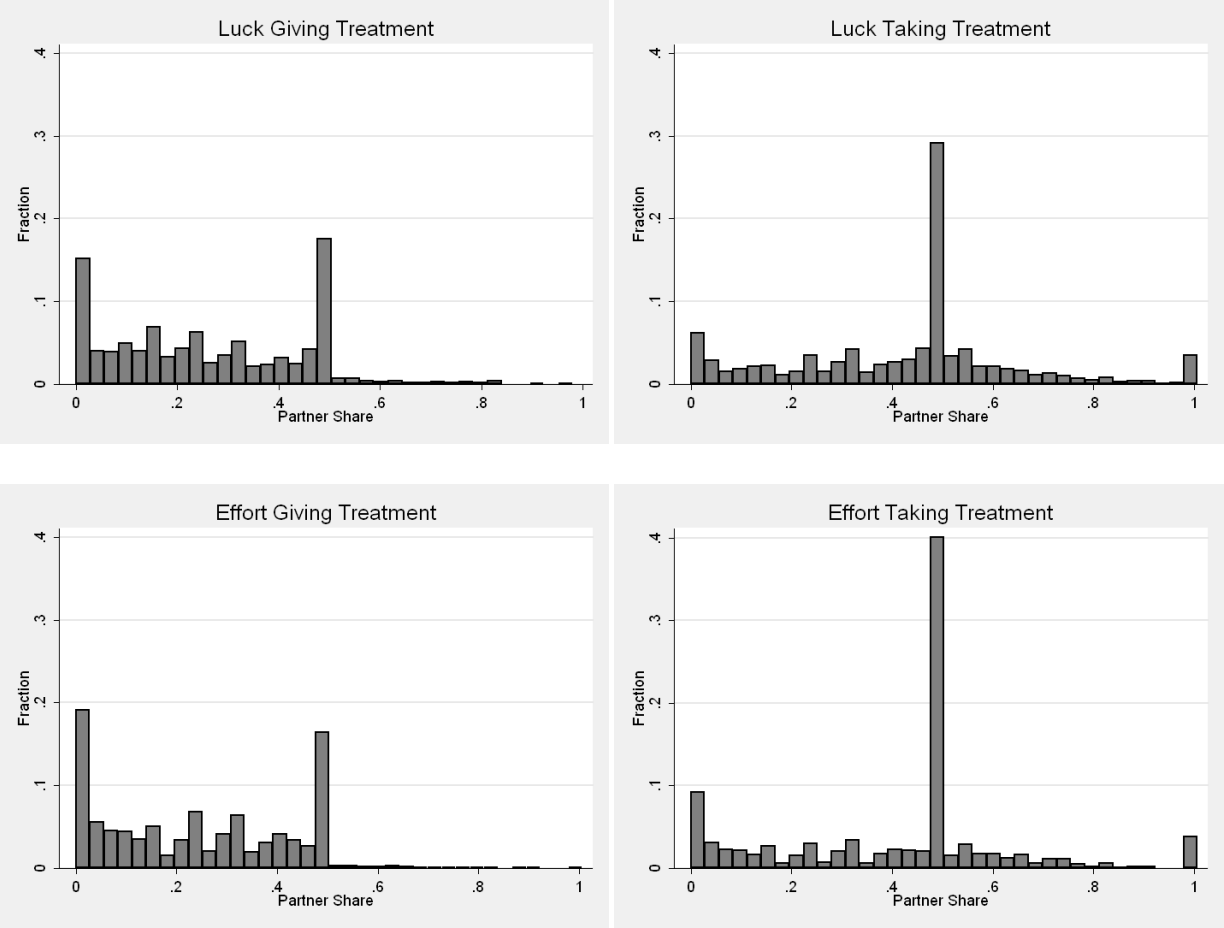

Figure 2: Fan Regressions of Partner Share, by Treatment

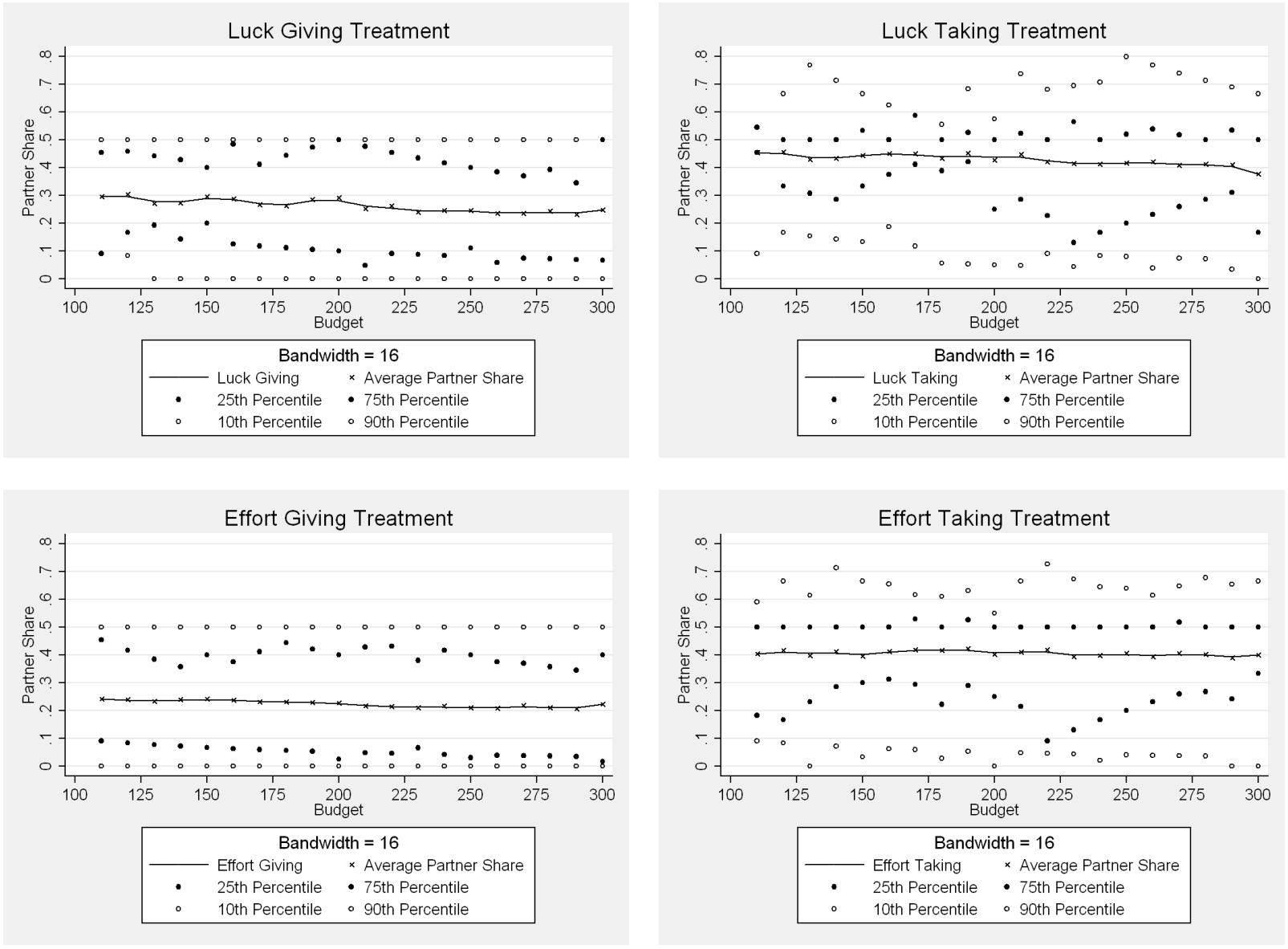

Figure 3: Fan Regressions of Partner Share