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Measuring Norms of Redistributive Transfers: Trust Experiments and Survey Data from Vietnam

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Abstract

This paper compares the social norms of distributive transfers within village communities in the north and south of Vietnam by analyzing household survey and experimental data. The results of household data analysis show private transfers flow from high-income households to low-income households in the south where social safety net is limited. In contrast, private transfers do not correlate with pre-transfer income in the north where public transfers are more widespread. In addition, public transfers crowd out private transfers in the north. We conducted trust game in both regions and found consistent results. People in the south are more altruistic toward the poor: they send more to the poor without expecting higher repayment. This pattern is consistent with the idea that private norms of redistribution from rich to poor are active in the south but are crowded out in the north, possibly by communist public institutions, although we observe a strong overall positive effect of communism on reciprocity in the north.

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This paper compares the social norms of distributive transfers within village communities in the north and south of Vietnam by analyzing survey and experimental data. The combination of survey and experimental data enables us to link evidence on transfers to corresponding behavior in experiments on pro-social trust (conducted for high stakes).

Fukuyama (2002) and Putnam (1995) among others, argue that social capital is a crucial factor in facilitating economic development. Putnam (1995) defines social capital as “features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives”. Fukuyama (2002) describes social capital as “any instance in which people cooperate for common ends on the basis of shared informal norms and values”, and claims that social capital is “simply a means of understanding the role that values and norms play in economic life”. Knack and Keefer (1997) find that simple expressions of trust (from the General Social Survey) correlate with economic success across countries.

One kind of social capital is the willingness to provide social insurance in the form of private or public transfers. In developing countries where the social safety net is inadequate, private transfers between households play an important role in smoothing out with income shocks (Donald Cox, Bruce E. Hansen and Emmanuel Jimenez, 2004, Donald Cox and Emmanuel Jimenez, 1998, Mark Rosenzweig and Oded Stark, 1989, Robert M. Townsend, 1994). In this paper, we focus on the social norms of distributive transfers within village communities, and demonstrate how different forms of social norms arise under different political and economic environments.

Vietnam has several advantages as a research site:

1. Northern and Southern Vietnam have different political histories. Villages in the north moved rapidly toward collectivization under communism in the 1950s, while people in the south resisted collectivization (even after post-war unification in the 1970s).¹ This difference gives us a way to measure whether different histories of effective communism are correlated with social

¹ By 1986, less than 6 percent of the farmers in the south participated in cooperatives, while about 95 percent of farmers in the north belonged to cooperatives (Pingali, Prabhu and Vo-Tong Xuan, 1992, Vo-Tong Xuan, 1995).

preferences, while controlling to some extent for ethnicity, language, and national culture which is shared by the two regions.²

2. As a result of difference in the history of collectivization, a larger social safety net system developed in the north, while people in the south have limited access to social safety net. This enables us to compare the pattern of public and private transfers in both regions, and investigate whether public safety net crowds out private transfers.

(In a similar study, Alesina and Fuchs-Schundels (2007) examined the effects of communism on preferences for public policies by analyzing household survey data collected in former Eastern and Western Germany (2007). They found that people in former Eastern Germany showed a stronger preference for redistributive policies than people in former West Germany.)

3. A 2002 living standard survey conducted in Vietnam enabled us to link survey responses from individuals directly to experimental responses by the same individuals with little sample attrition. Having the previous survey responses also enabled us to handpick a sample of villages with a wide range of average incomes to study the effect of cross-village income differences. This kind of use of detailed survey data to both control the design (by stratifying samples) and link survey results to experimental results is essentially impossible to do in many other settings.

4. Vietnamese villagers are mostly poor. As a result, it is easy to motivate them with financial stakes that are affordable and moderate by Western standards, but valuable in terms of local purchasing power. This feature of doing experiments in poor countries addresses a long-standing concern about whether behavioral patterns are sensitive to the money at stake (they generally do not seem to be). At the same time, Vietnamese are also highly literate, so we can be confident that they comprehend experimental instructions.³

² Terry A. Rambo(1973) reports that the social structures were different in the North and South before communism. It is possible that Northern villages have a stronger social safety net system by tradition.

³ According to the World Bank (2005), 45% of the rural population lives below the poverty line. So modest experimental payments, by Western standards, amount to several days' wages. At the same time, the national literacy rate is around 90% (and is slightly higher in our sample), There are only three countries which are both poorer (lower GNP per capita) and more literate-- Kyrgyz, Tajikistan, and Uzbekistan (World Bank, 2005).

Our results of household data analysis show the probability of private transfers increases with pre-transfer income with the south where social safety net is limited. In contrast, the probability of private transfers do not correlate with pre-transfer income in the north where public transfers are more widespread. In addition, public transfers crowd out private transfers in the north.

The 2002 living standard survey has a limitation. The survey data does not tell us the identities of the senders and receivers of private transfers. Therefore, we cannot distinguish private transfers made among family and non-family within village communities. We conduct a trust game to directly measure the social norms of distributive transfers in both regions, and found consistent results. People in the south are more altruistic toward the poor: they send more to the poor without expecting higher repayment. This pattern is consistent with the idea that private norms of redistribution from rich to poor are active in the south but are crowded out in the north, possibly by communist public institutions, although we observe a strong overall positive effect of communism on reciprocity in the north.

Patterns of Private Transfers in Vietnam

Theoretical predictions of private transfers

Two motives for private transfers have been modeled and measured (Donald Cox, 1987, Donald Cox, Zekeriya Eser and Emmanuel Jimenez, 1998): Altruism and self-interested exchange. The altruism hypothesis is that private transfers are designed to enhance the utility of the recipient (and to indirectly satisfy the giver through a taste for altruism). The exchange hypothesis is that transfers represent a kind of social insurance or karmic giving which is expected to be noticed and repaid in the future when valuable for the giver. Both altruism and exchange hypotheses predict the *probability* of any private transfers is inversely related to the pre-transfer income of recipients (needy recipients get more). Regarding the *amount* of any transfers, an increase in recipients' income is expected to reduce the amounts of transfers under the altruistic motivation hypothesis (since higher-earning recipients are less needy), whereas the exchange hypothesis does not necessarily predict a crowding-out effect (since giving to relatively-wealthy recipients might have a higher chance of future 'repayment').

The answer to whether private transfers are motivated by altruism or by self-interested exchange has important policy implications. Under the altruism hypothesis, public transfers will crowd out private transfers. Under the exchange hypothesis, public transfers will not crowd out private transfers as strongly.

The empirical evidence is mixed. Studies from the U.S. (Donald Cox, 1987), Indonesia (Martin Ravallion and Lorraine Dearden, 1988) and the Philippines (Donald Cox, Bruce E. Hansen and Emmanuel Jimenez, 2004) support the altruistic motivation hypothesis. Other studies report evidence which are consistent with the exchange hypothesis and are inconsistent with the altruistic motivation hypothesis (Donald Cox, Zekeriya Eser and Emmanuel Jimenez, 1998, Robert E. B. Lucas and Oded Stark, 1985).

Data

We use the 2002 Vietnam Household Living Standard Survey (VHLSS) data for our analysis. The survey was conducted with 3848 and 3972 observations in the Red River Delta (in the north) and the Mekong River Delta (in the south).

Results

Table 1 shows the number of households receiving private transfers, as well as overseas remittances and public transfers. Private transfer is extensively practiced in both regions (82% in the north and 75% in the south). Public transfer is more widespread in north (23%) than in south (8%).

Figure 1 graphs the mean income of the households by type of transfers they receive. The graph shows that the mean income of households receiving public transfers exceed the mean income of the region in the north after transfers, while the mean income of households receiving public transfers is below the mean income of the region in the south.

We conducted probit regressions for the probability of receiving private transfers, and OLS regressions using the amount of private transfers received as the dependent variable for both regions.

Table 2 shows regression results. Let us first look at the factors correlating with the probability of private transfers. Pre-transfer income is negatively correlated with the chance of receiving private transfers in the south, but not in the north. Mean village income is positively

correlated with the chance of receiving private transfers in the north but is negatively correlated with the probability of private transfers in the south. Overseas remittance crowds out private transfers in both regions. *Senders* of private transfers are more likely to *receive* private transfers in both regions, suggesting private transfers are partly motivated by exchange. The amount of the public transfers is negatively correlated with the chance of receiving private transfers in the north but not in the south, further indicating the crowding out effects of public transfers on private transfers in the north. Households with household heads who are underemployed, female, or especially young or old are more likely to receive private transfers in north. This effects might be because private transfers are predominantly practiced among family and relatives in the north. The village Gini coefficient is negatively correlated with the probability of private transfers in both regions; since a high Gini coefficient indicates substantial inequality, this correlation means that more income-equal villages have more private transfers.

The *amount* of transfer is positively correlated with mean village income and with the *probability* that a person sends any transfer, in both regions. Pre-transfer income is negatively correlated not only with the chance of receiving private transfers but also with the amount of receiving private transfers in the south. This suggests private transfers flow from high-income households to low-income households in the south and are altruistic rather than exchange-motivated.

In sum, the results of household data analysis show private transfers flow from high-income households to low-income households in the south where social safety net is limited. In contrast, private transfers do not correlate with pre-transfer income in the north where public transfers are more widespread. In addition, public transfers crowd out private transfers in the north. Our empirical results from the south are partially consistent the altruism hypothesis of Cox (1987). The amount of private transfers is correlated with pre-transfer income. However, contrary to the altruism hypothesis of Cox (1987), our empirical finding suggest the probability of private transfers also correlate with pre-transfer income.

The survey data does not tell us the identities of the senders and receivers of private transfers. Therefore, we cannot distinguish private transfers made among family and non-family within village communities. However, according to Cox (2002), only 32% of households received private transfers from family and relatives in the 1992/93 and 1997/98 household survey, while the 2002 household data indicates 82 and 85 percents of households receive private

transfers. This suggests a large percentage of private transfers are made among non-relatives in our data.

Selection of Research Sites and Experimental Procedure

In July-August 2005, we conducted a trust game⁴ with members of households who were previously interviewed during a 2002 living standard measurement survey. In the 2002 survey, 25 households were interviewed in each of 142 and 137 rural villages in the Mekong Delta (in the south) and the Red River Delta (in the north). From these, we chose nine villages, five villages in the south and four villages in the north, with substantial differences in mean income, inequality, and market access to permit statistically powerful cross-village comparisons.

Some descriptive statistics about the nine experimental village sites are given in Table 3. See Table 4 for variable definitions. The southern villages are indexed by S1, S2, S3, S4, and S5 (where S1 indexes the highest village wealth and S5 indexes the lowest), and northern villages are indexed by N1, N2, N3, and N4, respectively.

A week before the experiments, research coordinators contacted local government officials in each research site, and asked them to invite one person from each of the 25 previously surveyed households to the experiments.⁵ The response rate was high (82 percent), which limits concern about self-selection in participation. Figure A.1 in the Appendix shows pictures of all research sites (village meeting rooms or school classrooms).

Before the experiments, potential subjects were divided into three groups, H, M and L (high, medium, and low) based on their wealth from the 2002 survey.⁶ Groups H, M and L were

⁴ Risk and time discounting experiments were also conducted after the trust game, and are reported in Tanaka, Camerer and Nguyen (2008)

⁵ Village officials were asked to prepare one extra subject in case the total number of subjects turned out to be an odd number (because an even number of subjects are needed to play the trust game). In three out of nine villages, an odd number of subjects showed up to the experiment. In those villages, we included an additional subject in the experiment to create an even number in order to do pairwise trust game matching. We did not have 2002 survey data from these “equalizer” subjects. We followed village officials’ advice when placing the additional subjects into respective income categories.

⁶ To create H, M and L groups we ranked households by their total income, per capita household income and per capita expenditure using the 2002 living standard measurement, respectively. If a household is within top eight in all three criteria among 25 households, or two criteria are within the top eight and the other criterion is in the middle range (ranking between 9 and 16), then the household is categorized as Group H. If all three criteria are within the bottom 8 among the 25 potential households, or

called Groups A, B, and C in the experiments. Subjects were assigned ID numbers upon arrival. Their IDs are numbered by A1, A2,..., B1, B2, C1, C2,.. After all subjects arrived, we assigned them seats according to their subject IDs. Subjects in Group A, B and C were seated on the right, middle and left sides of the room, and were given white, yellow, and red ID tags and folders, respectively. They were not told the grouping was based on wealth, because we did not want to induce demand effects (i.e., a presumption, inferred from visible categorization, that wealth categories should matter) but most people in these small villages know each other and their approximate wealth very well.

After an experimenter reads the instruction, the subjects solved a quiz. Illiterate subjects and subjects who had difficulty understanding the game were helped by research assistants.⁷ After having solved the quiz, subjects went out of the room, one by one, and drew numbered balls in a bingo cage. The subjects who drew odd numbers were assigned the roles of Player 1. Subjects who drew an even number were assigned the role of Player 2. Figure A.2 in the Appendix illustrates the experimental procedures.

Both Player 1 and Player 2 were endowed with 20,000 dong, about a day's wage in the rural north. Player 1 is then given a chance to send some money to Player 2 (in multiples of 2,000 dong). The experimenter triples the amount sent before it reaches Player 2. Player 2 is then asked to send back as much money as he wants (including zero). We used the strategy method, asking Player 1 how much they would send to Player 2 if Player 2 was in each of Groups A, B and C, respectively, so there is a within-subject comparison of how Player 1's react to player 2's in different income groups (which is much more powerful than between-subjects comparisons). In addition, Player 1's reported how much they expected to get back from Player 2 in Group A, B and C, respectively. We used the strategy method for Player 2 as well, asking how much they would send back to Player 1 for each of the 10 possible positive investments. The English translation of the instruction is provided in the Appendix.

There are many challenges of field experiments like these, and some advantages. The challenges include these: To the extent that subjects respond to perceived experimenter demands or are influenced by some kind of experimenter authority, such effects could conceivably be

two criteria are within the bottom 8 and the other criterion is in the middle range, then the household is categorized as Group M. The rest of households are categorized as Group L.

⁷ Since the waiting time was long for the subjects who could not finish the quiz quickly, we had enough time to explain the game to those slow subjects. Eventually, all subjects passed the quiz.

magnified in these settings (a challenge familiar to every anthropologist). Translating languages is sometimes important since the words used to describe these exchange games can influence behavior (we used back-translation in which the Vietnamese coauthor translated instructions from English and then another coder translated that translation back to English so we could check what mutations occurred in the round-trip across languages.) The fact that our results are generally comparable to those in many other populations suggests any such effects are not dramatically changing the results compared to other experiments.

A major advantage are that subjects take these types of experiments very seriously. They were attentive and asked questions—more so than many American college student populations, who often skim the instructions and make dumb mistakes. The household survey data also mean that we know more about the socioeconomic characteristics of our subjects than in almost any experiment ever conducted in a typical Western psychology lab. These variables serve as a rich list of control variables, so that when all those variables are included we can have some confidence that remaining effects have to do with income rather than variables which correlate with income (such as education and ethnicity).

Experimental Results

We conduct a trust game to directly measure the social norms of distributive transfers in both regions. The trust game can be viewed as a highly stylized model of efficient (mutually-beneficial) investment with no contractual protection against moral hazard (i.e., Player 2 can keep all the money without an explicit penalty for doing so). At the same time, it can also be seen as a temporally-compressed version of a social exchange game in which one player gives money presuming that another player will give back. Player 2's repayment is a measure of moral obligation or positive reciprocity. Player 1's initial investment combines altruistic giving and an expectation of repayment (which we can separate empirically because expectations are measured as well as investment).

The mean amounts sent by Player 1 in the trust game were 5,707 and 7,840 in the south and north, respectively. The fractions sent by Player 1's in the south and north were 28 percent and 40 percent, respectively. These repayment rates are a little lower than other studies

conducted in Zimbabwe, South Africa, Honduras, Tanzania, Kenya, Bangladesh, Peru, Uganda, and Paraguay (see Cardenas and Carpenter (2005) for a review).⁸

Figure 2 illustrates the mean amount sent by Player 1 (sender) in each village. The most striking difference is in the south where there is a substantial gap between the mean amounts sent to different groups of receivers; the southern subjects send more to the lower income group (Group L) and less to the high income groups (Group H). This pattern is visible in all the villages in the south except S2. However, notice from Table 3 that the Gini coefficient of village S2 is small, 0.19, and the mean income of groups M and L are close. It may have been difficult for the subjects to recognize any difference in wealth between groups M and L. In contrast, we do not see significant difference in the amount sent by income group of receivers in northern villages. As shown in Table 3, the Gini coefficient of northern villages are not particularly smaller than the ones of the southern villages, so the difference in behavior cannot be due to village-level differences in inequality in the north and south.

The mean amount sent by Player 1 in the south and north (aggregating across villages) is shown in Figure 3. All three income groups send significantly more to the low and medium income groups than to the high income group in the south. On the contrary, Player 1s in the north do not differentiate the amount sent to different income groups, except for medium income group which sends significantly more to their own group members than to the high-income group members.

Keep in mind that Player 1's investments are not necessarily expectations of reciprocal repayment. Ashraf, Bohnet and Piankov (2006) show that trusting investments might also just reflect altruistic giving to other players, because the investment-tripling multiplier means investing a small amount creates a much larger amount the second player could keep. Separating the altruistic and investment (expected repayment) motives is the reason we measured expectations of repayment as well as investment. Figure 4 shows the mean expected return by income group of Player 2. The expected return ratio is calculated as the expected amount of money back divided by the amount of money sent (tripled amount). Both in the south and north, Player 1 do not expect higher returns from the low-income group. A natural interpretation of the

⁸ Barr (2001, 1999), Ensminger (2000), Carter and Castillo (2003, 2002), Mosley and Vershoor (2003), Johansson-Stenman et al. (2004), Holm and Danielson (2005), Karlan (2005), and Schechter (2005).

tendency in the south therefore is that the subjects give more to the poor (the L group), and less to the rich (the H group) because they are redistributing wealth, not because they expect repayment. The fact that this pattern is less evident in the north suggests an effect of political institutions crowding out private transfer—in the north, communist redistribution equalizes resources, but in the south, villagers privately redistribute income from rich to poor on their own.

Table 5 shows the results of linear regressions on the amount sent by Player 1. We first conducted regressions for the south and north separately, and then ran regressions, pooling data from both regions.⁹ The regression results demonstrate Player 1s send significantly larger amount of money to lower income groups, Groups M and L, in the south while this redistribution trend is much weaker in the north. This is consistent with our earlier observation that Player 1 in the south send significantly more to the low and medium income groups than to the high income group while Player 1 in the north do not differentiate the amount sent to different income groups. It also suggests there may exist different sharing norms in the south and north.

In the north, Player 1s who received a higher amount of oversea remittance and private transfers send significantly more to Player 2, an indication of communal sharing. On the contrary, in the south, individuals who received a higher amount of private transfers send significantly less, while those who gave out a higher amount of private transfers send significantly more to Player 2. In both regions, the members of households which made larger public donations also send a significantly larger amount of money to Player 2.

The Gini coefficient effect on trust is negative and significant in the south, and is also significant for the pooled data estimations. Our findings support Knack and Keefer's (1997) conclusion that trust is positively correlated with equality.

Figure 5 illustrates the amount of money sent back by Player 2 in each session. The x and y axes represent the amounts sent and returned, respectively. The amount returned is greater than the amount sent in most northern villages and across all income groups, indicating trust pays off in the north. By contrast, the amount returned is greater than the amount sent only for Group L in Villages S1 and S2, the wealthiest villages. It may be that Group L in these wealthy villages felt they needed to prove they are not underprivileged.

⁹ Since there are repeated observations on individual subjects, we specified that the observations are not independent within subjects. We also ran regressions with the survey responses to the GSS questions on trust, fairness and helpfulness, but they were not significant.

Table 6 presents the results of linear regressions on the proportion of money sent back by Player 2. Coefficients of relative income are positive in all regressions. This implies wealthy individuals are more inclined to reciprocate. The poor in wealthy communities are also significantly more reciprocal in the south. Public transfer recipients reciprocate less in the south. Older and male subjects and those who engage in trading activities repay more in the north. The dummy variable for south is negative and significant, suggesting subjects in the north reciprocate more than the subjects in the south.

Following the trust game, we conducted a risk experiment to investigate whether Player 1's decisions correlate with risk preferences. Player 1 may hesitate to send money to Player 2 if he is risk averse. Ashraf, Bohnet, and Piankov (2004) and Catherine C. Eckel and Rick K. Wilson (2004) do not find significant relations between risk and trust, while Laura Schechter (2005) finds a positive relation between risk and trust. However, previous studies conducted experiments with lotteries involving only gains¹⁰, and applied expected utility theory (EU) in their analysis. EU has often been reliably rejected by experimental data in Western educated populations, in favor of models with multiple components of risk, such as prospect theory (Colin F. Camerer, 2000). We conduct experiments with lotteries involving gains and losses (to measure loss-aversion), and consider prospect theory as an alternative theoretical framework to EU.

In EU, risk aversion is expressed solely by the concavity of utility function. Prospect theory differs from EU in two respects. First, people have non-linear decision weights over probabilities. Most experimental evidence suggests people act as if they overweight small-probability outcomes and underweight large-probability outcomes.¹¹ Secondly, in prospect theory, carriers of utility are the difference between outcomes and a reference point, rather than final wealth positions. Diminishing sensitivity to gain and loss magnitudes implies concavity of utility for gains (implying risk-aversion in EU), but implies convexity of disutility for losses (risk preference in the loss domains). Furthermore, there is much evidence that people dislike losses roughly twice as much as they like equal-sized gains, a regularity called "loss-aversion". We use

¹⁰ Nielsen included lotteries with losses but they were hypothetical (Uffe Nielsen, 2001). Wik and Holden, and Yesuf had risk games with both gains and losses (Mette Wik and Stein Holden, 1998, Mahmud Yesuf, 2004).

¹¹ Hansen, Marx and Weber (2004) illustrate the effects of subjective probabilities on farming decisions in Argentina and Florida.

cumulative prospect theory (Amos Tversky and Daniel Kahneman, 1992) and the one-parameter form of Prelec's axiomatically-derived weighting function (1998) as follows:

$$U(x,p;y,q) = \begin{cases} v(y) + \pi(p)(v(x) - v(y)), & x > y > 0 \quad \text{or} \quad x < y < 0 \\ \pi(p)v(x) + \pi(q)v(y) & x < 0 < y \end{cases}$$

$$\text{where } v(x) = \begin{cases} x^\sigma & \text{for } x > 0 \\ -\lambda(-x^\sigma) & \text{for } x < 0 \end{cases}$$

$$\text{and } w(p) = \exp[-(-\ln p)^\alpha]$$

$U(x,p;y,q)$ is the expected prospect value over binary prospects consisting of the outcome x with the probability p and the outcome y with the probability q . $v(x)$ denotes a power value function. σ represents concavity of the value function, and λ represents the degree of loss aversion. The weighting function is linear if $\alpha = 1$, as it is in EU. If $\alpha < 1$, the weighting function is inverted S-shaped, i.e. individuals overweight small probabilities and underweight large probabilities. If $\alpha > 1$, then the weighting function is S-shaped, i.e. individuals underweight small probabilities and overweight large probabilities. We use Prelec's weighting function because it is flexible enough to accommodate the cases where individuals have either inverted-S or S-shaped weighting functions, and has fit previous data reasonably well.¹²

Table 7 shows the relation between risk parameters and trust. We find a small negative relation between the amount sent by Player 1 and probability weighting (α) but did not find a substantial correlation between risk aversion (concavity of utility function) or loss aversion and trust. This suggests Player 1 with inflected probability weights (overweighting low probabilities) send more money to Player 2. This is consistent with the idea that they treat a trusting investment as a gamble and overweight the chance of winning.

¹² Most studies indicate an inverted S-shape and there is even evidence from brain scanning of a similar pattern in the striatum (an area thought to be linked to reward or prediction error; Hsu et al., 2008.). However, there are some interesting exceptions to that general pattern. Harbaugh, Krause and Vesterlund (2000), and Real (2002) show that contrary to the standard assumption of prospect theory, children and bees apparently have S-shaped weighting functions, underweighting small-probability outcomes and overweighting large-probability outcomes. (Real's study does not control for concavity of the utility of nectar, however, and may therefore misidentify curvature of the weighting function.) Humphrey and Verschoor (2004) claim that in Ethiopia, India and Uganda, some individuals make choices which are consistent with S-shaped weighting functions. However, they use only three probabilities, 25%, 50% and 75%, and simple gambles. It is arguable whether 25% and 75% are small and large enough to identify overweighting and underweighting of probabilities.

Conclusion

A perennial unanswered question in development economics is the nature of private transfers and how they interact with income and with public transfers. We explore this question combining a detailed household survey of Vietnamese villages with original experiments on trust investment games. Vietnam is an especially interesting target location because the history of communism in the north (and post-1975, in the south) creates a natural historical accident that could influence long-held behaviors. We also have unique access to detailed survey data there and, since Vietnamese are typically poor but highly literate, they are subjects who comprehend experimental instruction clearly and are also highly motivated by money.

While there are many subtle details in our findings, there are three basic implications:

First, the survey data show that private transfers flow from high-income households to low-income households in the south, representing voluntary redistribution or social insurance. In the north however, private transfers do not correlate with recipient pre-transfer income (the poor are not getting more) and private transfers are lower, replaced by public transfers from longer-standing Communist institutions.

Second, the trust game data largely reproduce this pattern of voluntary redistribution which is stronger in the south than in the north. A wrinkle to this story is that poor villagers in the south, who get more invested in trust games, tend to repay more, as if to signal that they don't need the money. Trust is lower in the north.

Third, there is more repayment of trust in the north than in the south. This is consistent with trust in the south representing altruistic giving, and is also consistent with a "crowding in" of socialistic attitudes toward sharing in the north which spill over to these games.

References

- Alesina, Alberto and Fuchs-Schundeln, Nicola.** 2007. "Good-Bye Lenin (nor Not?): The Effect of Communism on People's Preferences." *American Economic Review*, 97(4), pp. 1507-28.
- Ashraf, Nava; Bohnet, Iris and Piankov, Nikita.** 2006. "Decomposing Trust and Trustworthiness." *Experimental Economics*, 9(2), pp. 193-208.
- _____. 2004. "Is Trust a Bad Investment?," Harvard University Working Paper.
- Barr and Abigail.** 2001. "Trust and Expected Trustworthiness: An Experimental Investigation," University of Oxford Centre of the Study of African Economics Working Paper.
- Barr, Abigail.** 1999. "Familiarity and Trust: An Experimental Investigation," Oxford University Center for the Study of African Economies Working Paper.
- Camerer, Colin F.** 2000. "Prospect Theory in the Wild," In *Choices, Values and Frames*. D. Kahneman and A. Tversky, Cambridge: Cambridge University Press,
- Cardenas, Juan-Camilo and Carpenter, Jeffrey.** 2005. "Experiments on Equipment: Lessons from Labs in the Field around the World," Universidad de los Andes Facultad de Economia Working Paper.
- Carter, Michael R. and Castillo, Marco.** 2003. "An Experimental Approach to Social Capital in South Africa," University of Wisconsin-Madison Agricultural & Applied Economics Staff Paper.
- _____. 2002. "The Economic Impacts of Altruism, Trust and Reciprocity: An Experimental Approach to Social Capital," University of Wisconsin-Madison Agricultural & Applied Economics Staff Paper.
- Cox, Donald.** 1987. "Motives for Private Income Transfers." *Journal of Political Economy*, 95(3), pp. 508-46.
- Cox, Donald; Eser, Zekeriya and Jimenez, Emmanuel.** 1998. "Motives for Private Transfers over the Life Cycle: An Analytical Framework and Evidence for Peru." *Journal of Development Economics*, 55(1), pp. 57-80.
- Cox, Donald; Hansen, Bruce E. and Jimenez, Emmanuel.** 2004. "How Responsive Are Private Transfers to Income? Evidence from a Laissez-Faire Economy." *Journal of Public Economics*, 88(9-10), pp. 2193-219.
- Cox, Donald and Jimenez, Emmanuel.** 1998. "Risk Sharing and Private Transfers: What About Urban Households?" *Economic Development and Cultural Change*, 46(3), pp. 621-37.
- Eckel, Catherine C. and Wilson, Rick K.** 2004. "Is Trust a Risky Decision?" *Journal of Economic Behavior and Organization*, 55(4), pp. 447-65.
- Ensminger, Jean.** 2000. "Experimental Economics in the Bush: Why Institutions Matter," In *Institutions and Organizations*. C. Menard, London: Edward Elgar,
- Fukuyama, Francis.** 2002. "Social Capital and Development: The Coming Agenda." *SAIS Review*, 21, pp. 23-37.
- Hansen, James; Marx, Sabine and Weber, Elke.** 2004. "Expectations and Forecasts in Farmer Decision Making: The Argentine Pampas and South Florida," New York: International Research Institute for Climate Prediction (IRI).
- Harbaugh; T., William; Krause, Kate and Liday, Steve.** 2000. "Children's Bargaining Behavior: Differences by Age, Gender, and Height," University of Oregon Working Paper.
- Holm, Håkan J. and Danielson, Anders.** 2005. "Tropic Trust Versus Nordic Trust: Experimental Evidence from Tanzania and Sweden." *Economic Journal*, 115(503), pp. 505-32.

Hsu, Ming; Krajbich, Ian; Zhao, Chen and Camerer, Colin F. 2008. Neural Response to Reward Anticipation under Risk is Nonlinear in Probabilities. Caltech working paper.

Humphrey, Steven J. and Verschoor, Arjan. 2004. "The Probability Weighting Function: Experimental Evidence from Uganda, India and Ethiopia." *Economics Letters*, 84(3), pp. 419-25

Johansson-Stenman, Olof; Mahmud, Minhaj and Martinsson, Peter. 2004. "Trust, Trust Games and Stated Trust: Evidence from Rural Bangladesh," Göteborg University Department of Economics Working Paper.

Karlan, Dean S. 2005. "Using Experimental Economics to Measure Social Capital and Predict Financial Decisions." *American Economic Review*, 95(5), pp. 1688-99.

Knack, Stephen and Keefer, Philip. 1997. "Does Social Capital Have an Economic Payoff?: A Cross-Country Investigation." *Quarterly Journal of Economics*, 112(4), pp. 1251-88.

Lucas, Robert E. B. and Stark, Oded. 1985. "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy*, 93(901-918).

Mosley, Paul and Verschoor, Arjan. 2003. "The Development of Trust and Social Capital in Rural Uganda: An Experimental Approach," University of Sheffield Working Paper.

Nielsen, Uffe. 2001. "Poverty and Attitudes Towards Time and Risk - Experimental Evidence from Madagascar," *Royal Veterinary and Agricultural University of Denmark Working Paper*.

Pingali; Prabhu and Xuan, Vo-Tong. 1992. "Vietnam: Decollectivization and Rice Productivity Growth." *Economic Development and Cultural Change*, 40(4), pp. 697-718.

Prelec, Drazen. 1998. "The Probability Weighting Function." *Econometrica*, 66(3), pp. 497-527.

Putnam, Robert D. 1995. "Turning in, Turning Out: The Strange Disappearance of Social Capital in America." *PS: Political Science and Politics*, 28(4), pp. 664-83.

Rambo, A. Terry. 1973. *Comparison of Peasant Social Systems of Northern and Southern Vietnam: A Study of Ecological Adaptation, Social Succession, and Cultural Evolution*. Center for Vietnamese Studies, Southern Illinois University.

Ravallion, Martin and Dearden, Lorraine. 1988. "Social Security in a "Moral Economy": An Empirical Analysis for Java." *Review of Economics and Statistics*, 70(1), pp. 36-44.

Rilling, James K.; ; Gutman, David A.; Zeh, Thorsten R.; Pagnoni, Giuseppe; Berns, Gregory S. and Kilts, Clinton D. 2002. "A Neural Basis for Social Cooperation." *Neuron*, 35(2), pp. 395-405.

Rosenzweig, Mark and Stark, Oded. 1989. "Consumption Smoothing, Migration and Marriage: Evidence from Rural India." *Journal of Political Economy*, 97(4), pp. 905-27.

Schechter and Laura. 2005. "Traditional Trust Measurement and the Risk Confound: An Experiment in Rural Paraguay." *Journal of Economic Behavior and Organization*, forthcoming.

Tanaka, Tomomi; Camerer, Colin F. and Nguyen, Quang. 2008. "Risk and Time Preferences: Experimental and Household Survey Data from Vietnam," Arizona State University.

Townsend, Robert M. 1994. "Risk and Insurance in Village India." *Econometrica*, 62(3), pp. 539-91.

Tversky, Amos and Kahneman, Daniel. 1992. "Advances in Prospect-Theory - Cumulative Representation of Uncertainty." *Journal of Risk and Uncertainty*, 5(4), pp. 297-323.

Wik, Mette and Holden, Stein. 1998. "Experimental Studies of Peasant's Attitudes toward Risk in Northern Zambia," Agricultural University of Norway Department of Economics and Social Sciences Working Paper.

Xuan, Vo-Tong. 1995. "Rice Production, Agricultural Research, and the Environment," In *Vietnam's Rural Transformation*. Kerkvliet, B. J. Tria, Porter and D. J., Boulder: Westview Press,

Yesuf, Mahmud. 2004. "Risk, Time and Land Management under Market Imperfections: Applications to Ethiopia," Göteborg University Working Paper.

Table 1: Number of households which received transfers in the 2002 household survey

	North	(%)	South	(%)
Total number of households interviewed	6,349		6,294	
Number of households receiving no transfers	820	(13)	1,250	(20)
Number of households receiving oversea remittance	201	(3)	406	(6)
Number of households receiving (domestic) private transfers	5,220	(82)	4,738	(75)
Number of households receiving public transfers	1,469	(23)	521	(8)

Table 2: Determinants of private transfers

	Dependent Variable			
	Probability of private transfers		Amount of private transfers	
	North	South	North	South
Income before transfers	-0.002	-0.004 ***	0.001	-0.005 *
Mean village income	0.008 **	-0.007 *	0.038 ***	0.043 ***
Oversea remittance	-0.030 ***	-0.020 ***	-0.022 ***	-0.002
Public transfer	-0.031 ***	-0.017	-0.016	0.026
Sender of private transfers (dummy)	0.200 **	0.338 ***	0.285 **	0.458 ***
Education cost (% of income)	0.580 *	0.256	-0.511	-0.685
Health cost (% of income)	0.493	0.148	0.752 ***	1.110 **
Wedding cost (% of income)	2.482 ***	2.919 ***	11.742 ***	21.559 ***
Funeral cost (% of income)	0.106	1.845 ***	2.891 *	2.686 *
Male headed (=1 if male headed)	-0.255 ***	0.011	-0.710 ***	-0.119
Education	0.015	0.018 **	0.100 ***	0.058 ***
Age	-0.026 **	-0.009	0.000	0.002
Age^2	0.000 ***	0.000	0.000	0.000
Divorced	-0.135	0.154	-0.660	-0.006
Single	0.048	0.063	-0.519 **	-0.233
Widow	0.004	0.093	-0.428 *	-0.116
Separated	0.054	0.231	-0.633 **	-0.311
Working days	-0.011 ***	-0.001	-0.008	-0.003
Gini coefficient	-2.085 ***	-1.568 ***	-0.603	-0.786
Constant	1.906	1.031	-0.045	-0.601
Observations	3848		3848	-0.005
(Pseudo) R ²	0.05		0.09	0.11

Note: * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 3: Descriptive statistics

	S1	S2	S3	S4	S5	N1	N2	N3	N4
Number of subjects (Number of Chinese subjects are in parentheses)									
Total	22 (9)	16	18	22 (1)	22	18	22	24	20
Of which ethnic Chinese									
	9	0	0	1	0	0	0	0	0
Group H	6 (4)	5	7	7 (1)	7	5	8	8	6
Group M	9 (3)	7	7	9	9	6	7	9	9
Group L	7 (2)	4	4	6	6	7	7	7	5
Mean household income in 2002 (in 1 million dong)									
Total	36.6	35.8	20.3	18.5	15.0	28.0	17.5	9.1	6.8
Group H	80.6	51.9	26.1	32.6	29.5	49.0	29.2	14.4	13.5
Group M	21.3	29.9	19.9	14.9	11.8	26.8	13.4	7.8	5.0
Group L	18.4	26.1	10.6	6.9	5.3	14.0	8.2	4.7	2.1
Age (mean)	47.7	44.6	48.8	43.1	48.3	54.1	42.5	49.9	48.6
Gender (mean)	0.59	0.88	0.83	0.68	0.82	0.44	0.36	0.50	0.50
Education(mean)	7.2	7.1	8.4	5.8	5.0	7.8	8.0	4.8	7.6
Literacy rate	0.95	0.94	0.95	0.95	0.91	0.89	0.95	0.83	0.90
Acquaintance ratio (mean)	0.42	0.86	0.76	0.74	0.82	0.62	0.91	0.98	0.90
Main occupation of the subject in percent (multiple answers allowed)									
Farming	0	13	17	91	77	6	0	83	75
Livestock	5	19	56	50	32	6	45	54	10
Fishery	0	94	22	9	9	0	0	17	0
Trade	36	0	0	5	5	28	14	8	5
Business	23	0	17	0	5	6	14	8	10
Government officer	9	19	22	14	14	22	18	25	10
Casual work	27	0	11	5	14	0	5	17	10
Not working	23	0	17	0	9	50	9	8	15
Village-level data from the 2002 Living Standard Measurement Survey (25 households)									
Village Gini coefficients	0.44	0.19	0.30	0.36	0.38	0.29	0.38	0.28	0.36
Distance to nearest market	0.0	5.0	0.0	4.2	0.0	0.0	1.0	3.0	0.3
Daily wage for male labor for harvesting (1000 dong)	-	-	30	30	30	18	18	20	20

Table 4: Variable definitions

Variable name	Description
Age	Age of the subject
Gender	Gender of the subject, 1=male
Education	Number of years the subject attended school
Acquaintance ratio	Number of other subjects the subject knows by name divided by the total number of subjects in the session
Farm/livestock	Subject's main occupation is farming or raising livestock
Fishery	Subject's main occupation is fishing
Trade	Subject's main occupation is trading
Business	The subject is engaged in household business
Government officer	The subject works for a local government
Relative income	The difference between subject's household income and mean income of the village divided by the standard deviation of income within the village
Mean village income	Mean household income of the village (million dong)
Gini coefficient	Gini coefficient of the income among 25 households surveyed in 2002
Distance to market (Table 5)	Distance to the nearest local market (km)
Oversea remittance	The amount of oversea remittance the subject's household received (million dong)
Public transfer	The amount of public transfer the subject's household received (million dong)
Private transfer (received)	The amount of domestic private transfer the subject's household received (million dong)
Private transfer (sent)	The amount of domestic private transfer the subject's household sent (million dong)
Donation	The amount of public donations the subject's household made (million dong)
Number of officers	Number of local government officers in the session
Group M	1=Player 2 is in Group M
Group L (Table 6)	1=Player 2 is in Group L
Group M	1=if Player 2 is in Group M
M*Mean village income	The cross effect of Mean village income and Player 2 being in Group M
Group L	1=if Player 2 is in Group L
L*Mean village income	The cross effect of Mean village income and Player 2 being in Group L

Table 5: Determinants of amount sent by Player 1

	North	South	Total
Chinese		-681	4,197 **
Age	-71	-165 ***	-66
Gender	2,359	1,383 *	1,798 *
Education	248	-387 ***	-3
Oversea remittance	348 ***	19	70 *
Public transfers	202	517	71
Private transfers (received)	659 ***	-311 **	-11
Private transfers (sent)	-2,695	1,400 **	-287
Donation	14,398 **	26,475 **	7,822 **
Acquaintance ratio	8,272	1,744	2,344
Farm/livestock	-1,937	-1,733 *	-1,812
Fishery	-4,495	-3,704 **	-1,848
Trade	3,093	4,505 ***	2,127 *
Business	-5,445 *	-1,918 *	-3,448 ***
Government officer	210	-2,019 *	404
Relative income	-646	-1,162 ***	-186
Mean village income	-256 **	173 ***	-19
Gini coefficient	-50,766	-16,975 **	-20,329 **
Number of officers	357	132	89
Group M	634	1,864 ***	1,306 ***
Group L	1,366 *	2,585 ***	2,035 ***
South			-1,404
Constant	19,550	13,470 ***	14,205 ***
Observations	123	147	270
R ²	0.428	0.488	0.273

Note: * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.
We conducted robust regressions, and adjusted standard errors for correlations within individuals.

Table 6: Determinants of the proportion sent back by Player 2

	North	South	Total
Chinese		2.64	-0.26
Age	0.43 ***	0.10	0.24 **
Gender	18.02 ***	3.20	9.58 ***
Education	-0.69	-0.02	-0.35
Oversea remittance	-0.18	0.10	0.06
Public transfers	-0.01	-9.46 **	-1.20
Private transfers (received)	1.11	1.67	1.28
Private transfers (received)	7.20	5.08	0.12
Donation	-123.80	-8.13	-43.13
Acquaintance ratio	-0.25	-0.05	0.30
Farm/livestock	-3.59	0.56	0.98
Fishery	-0.08	-19.19	-12.41 *
Trade	19.83 ***	9.37	10.92
Business	-0.15	11.67	-1.10
Government officer	1.03	-10.28	-1.14
Relative income	9.27 ***	9.26 **	8.20 ***
Mean village income	-0.15	-0.88	-0.35
Gini coefficient	-28.28	-32.80	-33.28
Number of officers	0.14	13.30 *	0.84
Group M	13.17 **	-17.18	-0.92
M*Mean village income	-0.64	1.10 *	0.48
Group L	6.00	-41.86	-9.81
L*Mean village income	0.04	2.46 **	1.23 ***
South			-10.91 **
Constant	30.85	17.44	32.73 *
Observations	420	490	910
R ²	0.478	0.255	0.288

Note: * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level. We conducted robust regressions, and adjusted standard errors for correlations within individuals.

Table 7: Correlation between risk parameters and the mean amount sent by Player 1

	Correlation
α (Weighting function)	-0.26**
σ (Curvature of utility function)	-0.15
λ (Loss aversion)	-0.11

Note: ** Significant at the 5% level.

Figure 1: Mean income of households by types of transfers

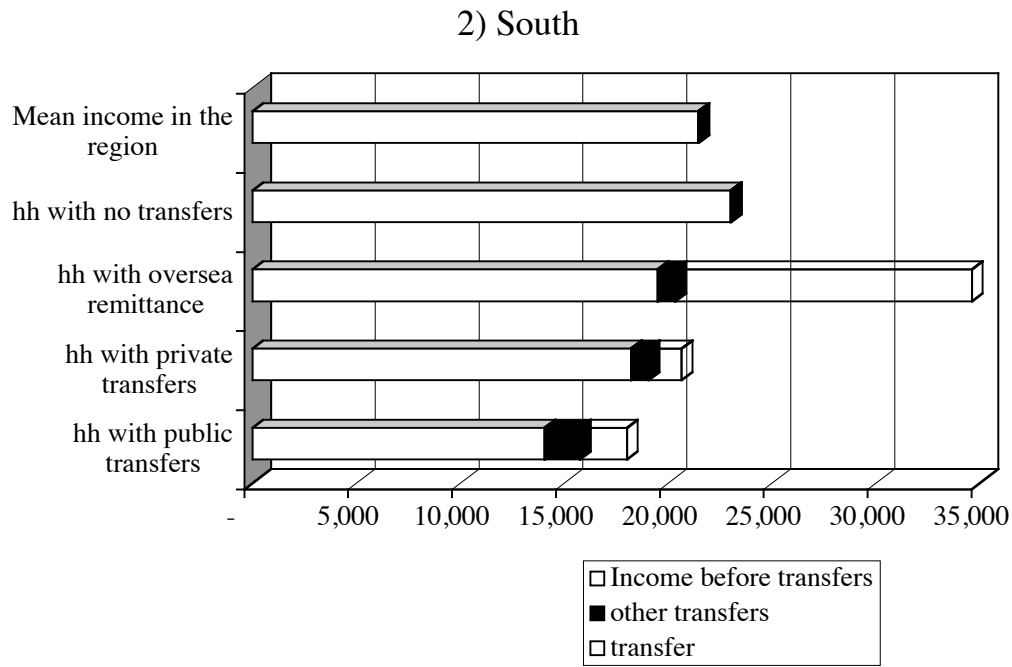
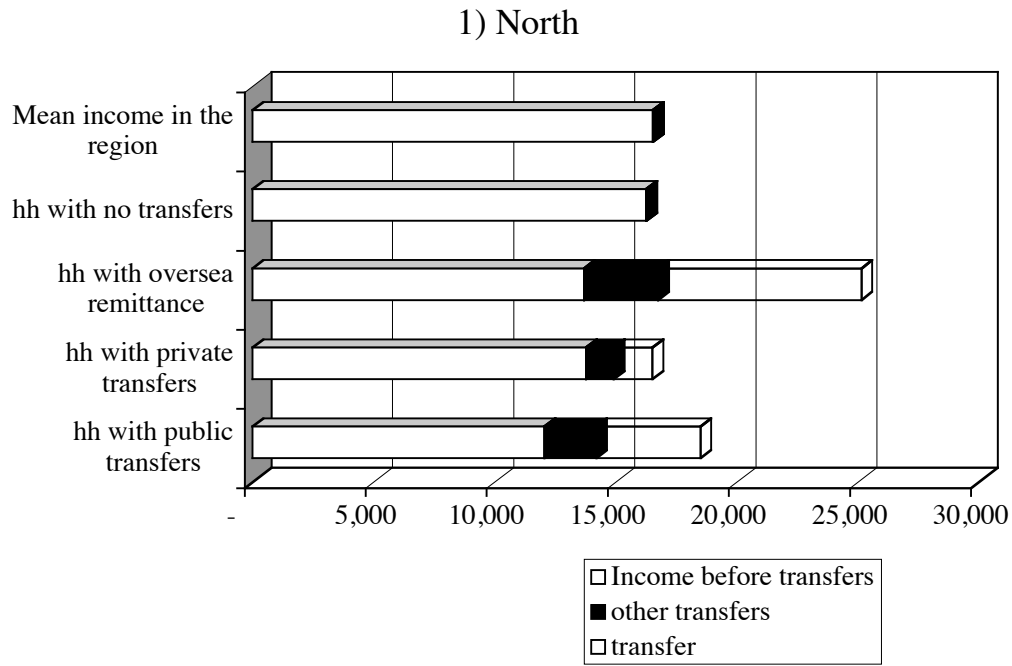
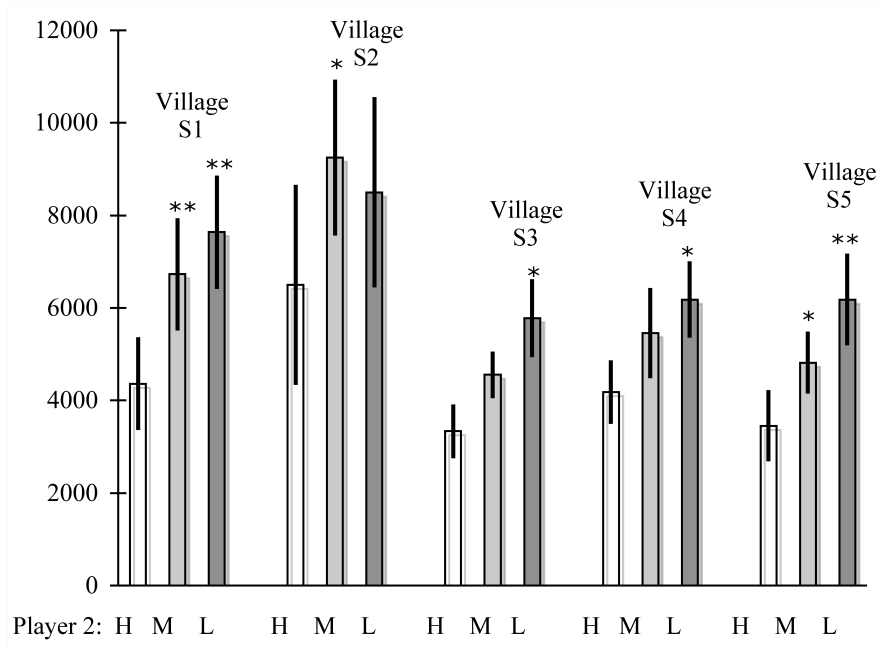
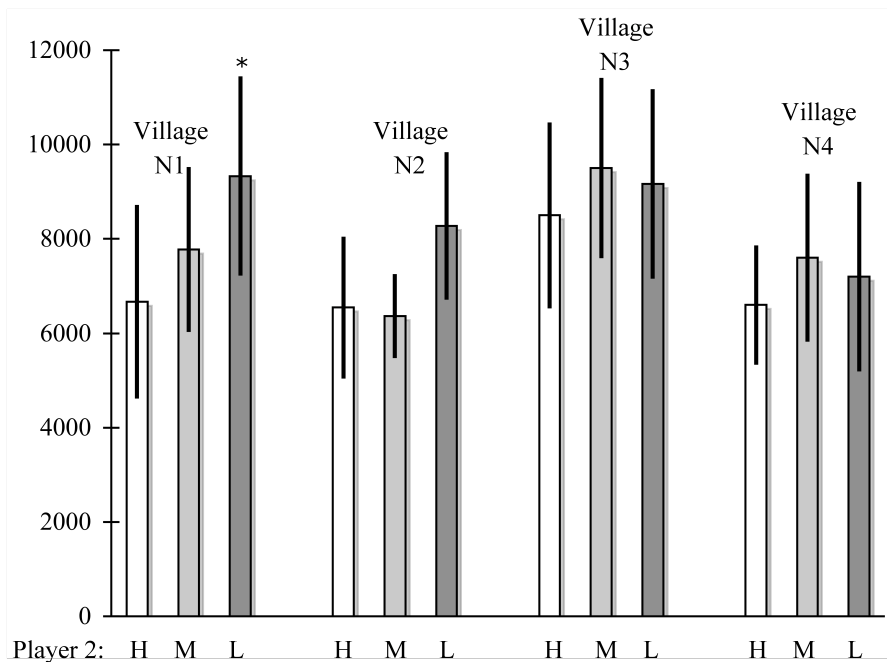


Figure 2: Mean amount sent by Player 1 (sender) in each village

South



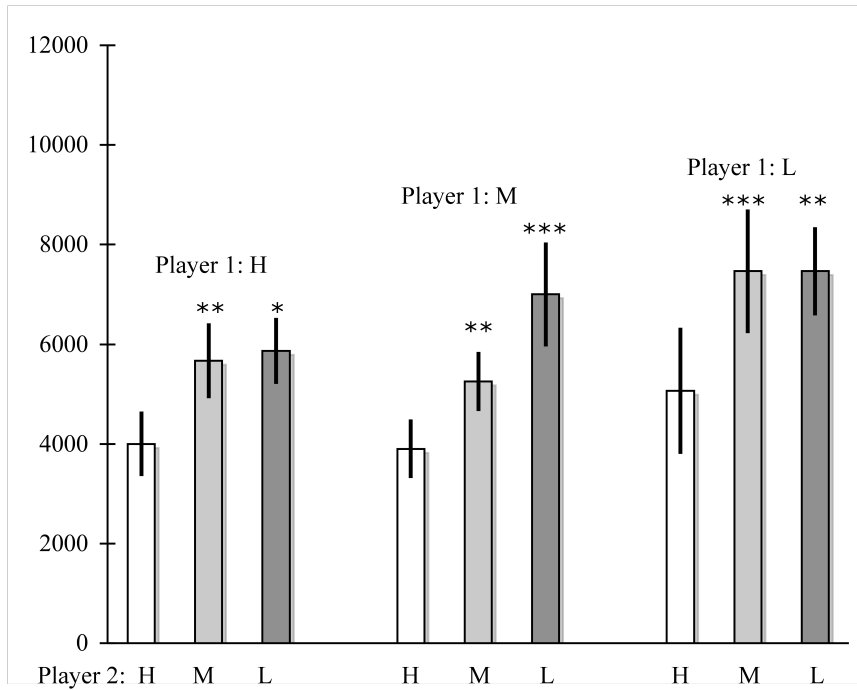
North



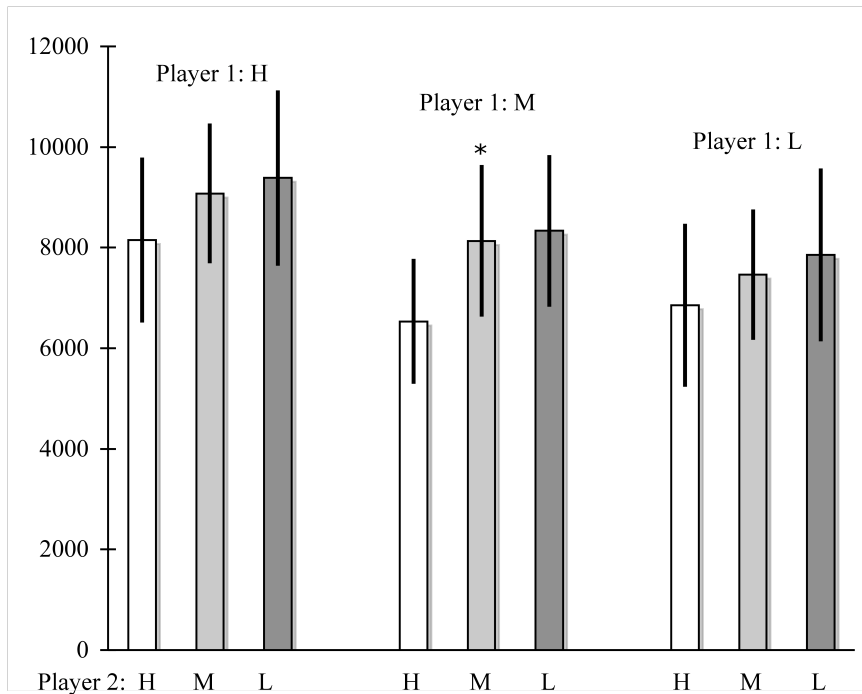
* and ** indicate the amount sent to this group is significantly higher the amount sent to Group H at the 10% and 5% significance levels by paired t-test, respectively. The bars are standard errors.

Figure 3: Mean amount sent by Player 1 by income groups of Player 1 and Player 2

South



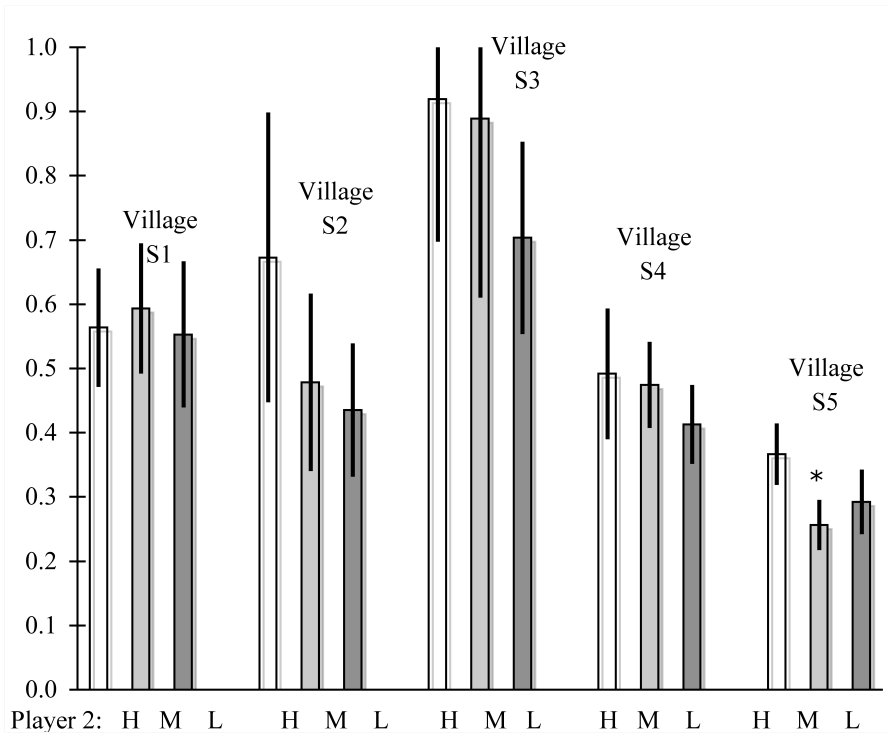
North



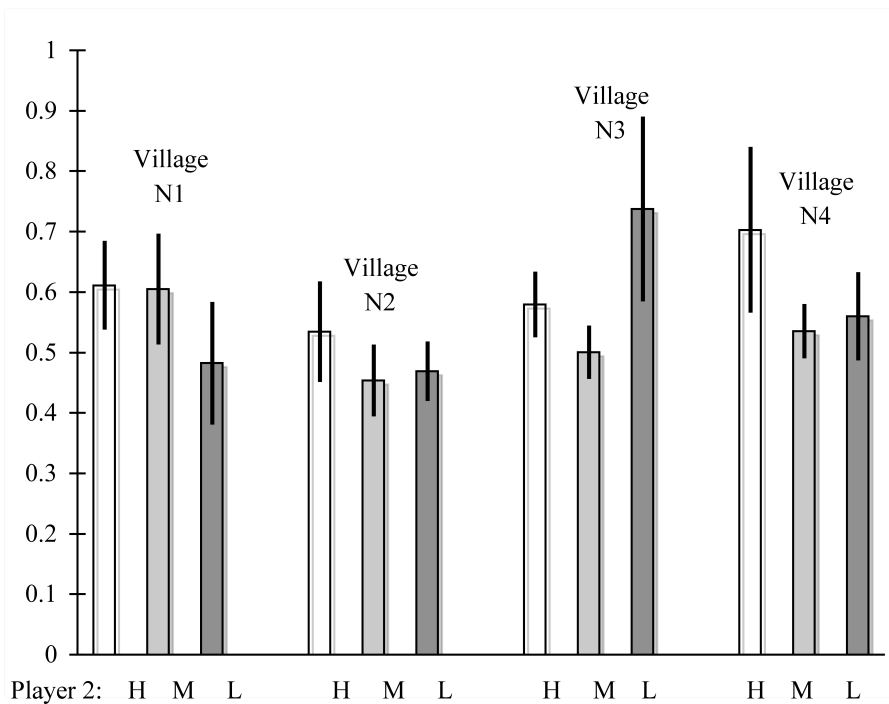
* and ** indicate the amount sent to this group is significantly higher the amount sent to Group H at the 10% and 5% significance levels by paired t-test, respectively. The bars are standard errors.

Figure 4: The ratio of expected return by income group of Player 2 in each village

South



North

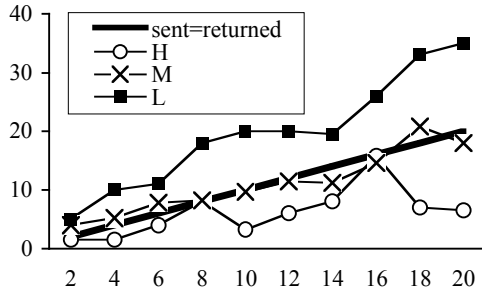


* indicates the expected return rate to this group is significantly lower than the expected return rate of Group H at the 10% significance levels by paired t-test. The bars are standard errors.

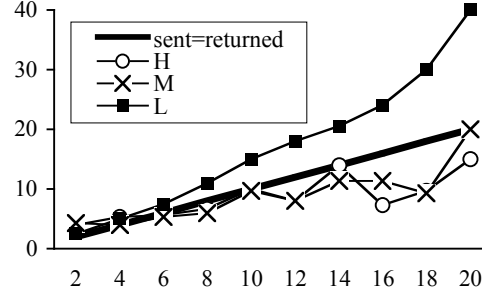
Figure 5: Amounts sent back by Player 2 (1000 dong)

South

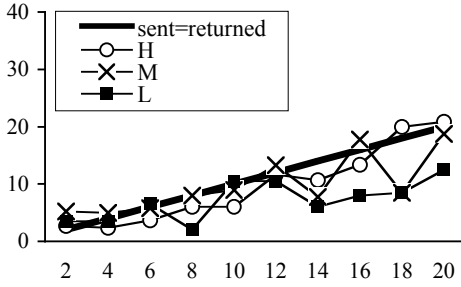
S1



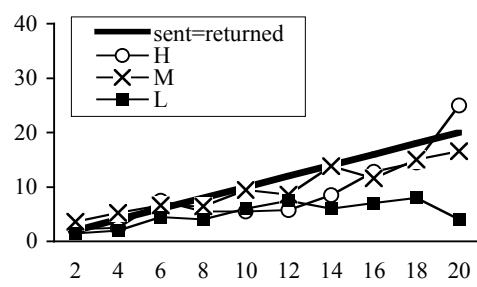
S2



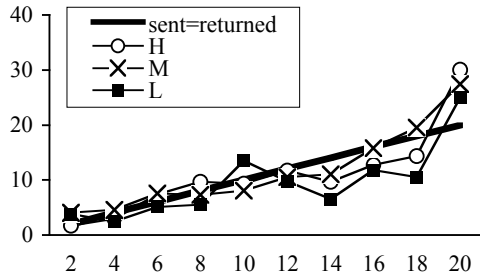
S3



S4

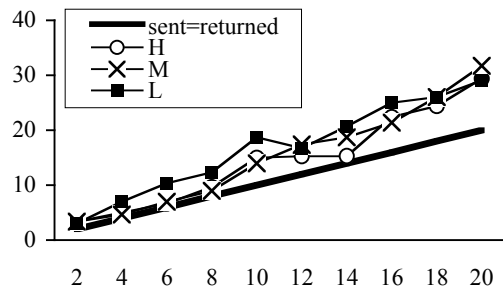


S5

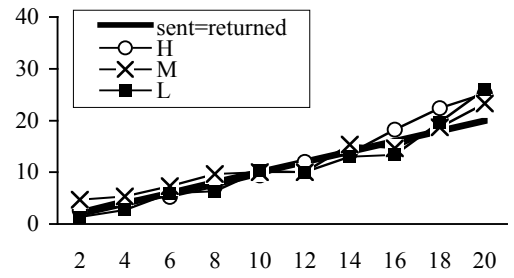


North

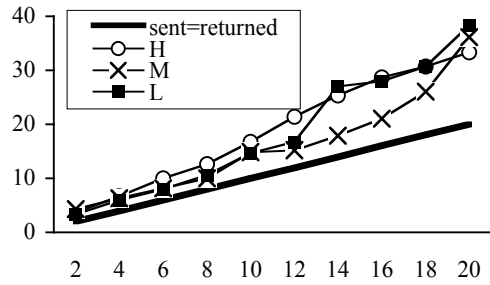
N1



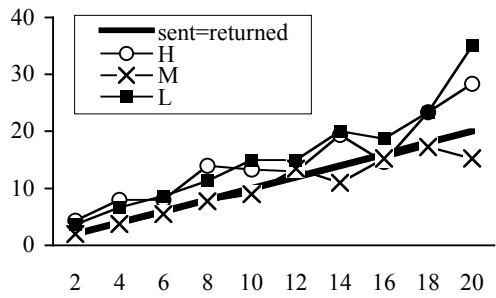
N2



N3



N4



Appendix

Figure A.1: Research sites

Village S1



Village S2



Village S3



Village S4



Village S5



Village N1



Village N2



Village N3



Village N4



Figure A.2: Procedures of trust game (Pictures taken in Village S4)

(1) An experimenter reads the instruction.



(2) Subjects solve quiz. The few illiterate subjects are helped by research assistants.



- (3) After solving the quiz, subjects go out of the room and draw numbered balls from a bingo cage, which determines their roles (Player 1 or Player 2). Then, they receive instructions and record sheets.



- (4) Subjects are helped by research assistants when making decisions.



Instruction

Introductory Comments

Thank you all for taking the time to come today. Today's session will take as much as 4 hours, so if you think you will not be able to stay that long let us know now. Before we begin I want to make some general comments about what we are doing here today and explain the rules that we must follow. We will be playing some games with money. Whatever money you win in the games will be yours to keep and take home.

We will be playing 3 games. We are about to begin the first game. It is important that you listen as carefully as possible.

If you have any questions, please raise your hand and we will answer your questions in private. Please do not ask questions to your friends or talk about the game with them. This is very important. Please be sure that you obey this rule.

Game 1

This game is played by pairs of individuals. Each pair is made up of a Player 1 and a Player 2. Each of you will play this game with someone who's identified as A, B or C. Please look around the room and remember who belong to which Identification Groups, A, B or C. It will help you to make decisions when you go out of the room.

Group A has white nametags and white folders. Group B has yellow nametags and yellow folders. Group C has red nametags and red folders.

After you finish exercises, we will ask you to go out of this room. Our research assistants will be waiting for you outside of this room. You will draw a lottery which will determine whether you will be playing either Player 1 of Player 2. If you draw an odd number such as 1, 3, 5, and 7, you

will play Player 1. If you draw an even number such as 2, 4, 6, and 8, you will play Player 2.

This is how the game is played.

We will give 20,000VND to Player 1 and another 20,000 VND to Player 2. Player 1 then has the chance to give a portion of their 20,000VND to Player 2. He/She could give 2,000VND, 4,000VND, 6,000VND, 8,000VND, 10,000VND, 12,000VND, or 14,000VND, or 16,000VND, or 18,000VND, or 20,000VND, or nothing. Whatever amount Player 1 decides to give to Player 2 will be tripled before it is passed on to Player 2. Player 2 then has the option of returning any amount of money they have to Player 1. Player 2 does not have to return any money if he/she does not want to.

Now, we will go over some examples. We prepared Tables 1-10 to help you understand the game.

Example 1

Please look at Table 1. Imagine that Player 1 gives 2,000VND to Player 2. We will triple this amount, so Player 2 gets 6,000 VND (3 times 2,000 equals 6,000) in addition to their initial 20,000VND. At this point, Player 1 has 18,000VND (20,000 minus 2,000) and Player 2 has 26,000VND (20,000 plus 6,000).

Now Player 2 has to decide whether they wish to give anything back to Player 1, and if so, how much.

- If Player 2 returns nothing to Player 1, then Player 1 will make 18,000 VND, and Player 2 will make 26,000 VND in this game.
- Suppose Player 2 decides to return 1,000 VND to Player 1. Then, Player 1 will make 19,000 VND (18,000 plus 1,000), and Player 2 will make 25,000 VND (26,000 minus 1,000).
- Suppose Player 2 decides to return 2,000 VND to Player 1. Then, Player 1 will

make 20,000 VND, and Player 2 will make 24,000 VND.

- Suppose Player 2 decides to return 3,000 VND to Player 1. Then, Player 1 will earn 21,000 VND, and Player 2 will earn 23,000 VND.
- Suppose Player 2 decides to return 4,000 VND to Player 1. Then, both Player 1 and Player 2 will earn 22,000 VND.
- Suppose Player 2 decides to return 5,000 VND to Player 1. Then, Player 1 will earn 23,000 VND, and Player 2 will earn 21,000 VND.
- Suppose Player 2 decides to return 6,000 VND to Player 1. Then, Player 1 will earn 24,000 VND, and Player 2 will earn 20,000 VND.

Let's try another example.

Example 2

Let's look at Table 8. Imagine that Player 1 gives 16,000VND to Player 2. We will triple this amount, so Player 2 gets 48,000VND (3 times 16,000 equals 48,000) in addition to their initial 20,000VND. At this point, Player 1 has 4,000VND and Player 2 has 68,000VND.

Then Player 2 has to decide whether they wish to give anything back to Player 1, and if so, how much.

- If Player 2 returns nothing to Player 1, then Player 1 will earn 4,000VND, and Player 2 will earn 68,000 VND.
- Suppose Player 2 decides to return 8,000VND to Player 1. Player 1 will earn 12,000VND and Player 2 will earn 60,000VND.
- Suppose Player 2 decides to return 16,000VND to Player 1. Player 1 will earn 20,000VND and Player 2 will earn 52,000VND.
- Suppose Player 2 decides to return 24,000VND to Player 1. Player 1 will earn 28,000VND and Player 2 will earn 44,000VND.
- Suppose Player 2 decides to return 32,000VND to Player 1. Both Player 1 and Player 2 will earn 36,000VND.

- Suppose Player 2 decides to return 40,000VND to Player 1. Player 1 will earn 44,000VND, and Player 2 will earn 28,000VND.
- Suppose Player 2 decides to return 48,000VND to Player 1. Player 1 will earn 52,000VND, and Player 2 will earn 20,000VND.

In the real game, Player 1 could give only 2,000VND, 4,000VND, 6,000VND, 8,000VND, 10,000VND, 12,000VND, or 14,000VND, or 16,000VND, or 18,000VND, or 20,000VND, or nothing. They cannot choose any other amount. Player 2 can send back any amount of money they want or nothing. It does not have to be the same as the ones shown in Tables 1-10. Tables 1-10 are given just as references for Player 2.

Please complete the following exercises by filling the parentheses (). You may want to use Tables 1-10 to help you solve them. If you have questions or do not understand the game, please let us know. We are very happy to help you. When you finish all 4 exercises, please raise your hand.

Exercise 1.

Imagine Player 1 gives 12,000VND to Player 2.

We will triple this amount, so Player 2 gets () VND in addition to their initial 20,000VND.

At this point, Player 1 has () VND
and Player 2 has () VND.

Suppose Player 2 decides to return 6,000VND to Player 1.

Player 1 will earn () VND and Player 2 will earn () VND.

Exercise 2.

Imagine Player 1 gives 6,000VND to Player 2.

We will triple this amount, so Player 2 gets () VND in addition to their initial 20,000VND.

At this point, Player 1 has () VND
and Player 2 has () VND.

Suppose Player 2 decides to return 6,000VND to Player 1.

Player 1 will earn ()VND and Player 2 will earn ()VND.

Exercise 3.

Imagine Player 1 gives 18,000VND to Player 2.

We will triple this amount, so Player 2 gets ()VND in addition to their initial 20,000VND.

At this point, Player 1 has ()VND

and Player 2 has ()VND.

Suppose Player 2 decides to return 9,000VND to Player 1.

Player 1 will earn ()VND and Player 2 will earn ()VND.

Exercise 4.

Imagine Player 1 gives 20,000VND to Player 2.

We will triple this amount, so Player 2 gets ()VND in addition to their initial 20,000VND.

At this point, Player 1 has ()VND

and Player 2 has ()VND.

Suppose Player 2 decides to return 39,000VND to Player 1.

Player 1 will earn ()VND and Player 2 will earn ()VND.

After you complete above exercises, we will ask you to go out of the room to make decisions.

Table 1

Suppose Player 1 sends 2,000VND to Player 2.

Then, Player 2 will receive 6,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	18,000	26,000	44,000
If Player 2 returns 1,000VND,	19,000	25,000	44,000
If Player 2 returns 2,000VND,	20,000	24,000	44,000
If Player 2 returns 3,000VND,	21,000	23,000	44,000
If Player 2 returns 4,000VND,	22,000	22,000	44,000
If Player 2 returns 5,000VND,	23,000	21,000	44,000
If Player 2 returns 6,000VND,	24,000	20,000	44,000

Table 2

Suppose Player 1 sends 4,000VND to Player 2.

Then, Player 2 will receive 12,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	16,000	32,000	48,000
If Player 2 returns 2,000VND,	18,000	30,000	48,000
If Player 2 returns 4,000VND,	20,000	28,000	48,000
If Player 2 returns 6,000VND,	22,000	26,000	48,000
If Player 2 returns 8,000VND,	24,000	24,000	48,000
If Player 2 returns 10,000VND,	26,000	22,000	48,000
If Player 2 returns 12,000VND,	28,000	20,000	48,000

Table 3

Suppose Player 1 sends 6,000VND to Player 2.

Then, Player 2 will receive 18,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	14,000	38,000	52,000
If Player 2 returns 3,000VND,	17,000	35,000	52,000
If Player 2 returns 6,000VND,	20,000	32,000	52,000
If Player 2 returns 9,000VND,	23,000	29,000	52,000
If Player 2 returns 12,000VND,	26,000	26,000	52,000
If Player 2 returns 15,000VND,	29,000	23,000	52,000
If Player 2 returns 18,000VND,	32,000	20,000	52,000

Table 4

Suppose Player 1 sends 8,000VND to Player 2.

Then, Player 2 will receive 24,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	12,000	44,000	56,000
If Player 2 returns 4,000VND,	16,000	40,000	56,000
If Player 2 returns 8,000VND,	20,000	36,000	56,000
If Player 2 returns 12,000VND,	24,000	32,000	56,000
If Player 2 returns 16,000VND,	28,000	28,000	56,000
If Player 2 returns 20,000VND,	32,000	24,000	56,000
If Player 2 returns 24,000VND,	36,000	20,000	56,000

Table 5

Suppose Player 1 sends 10,000VND to Player 2.

Then, Player 2 will receive 30,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	10,000	50,000	60,000
If Player 2 returns 5,000VND,	15,000	45,000	60,000
If Player 2 returns 10,000VND,	20,000	40,000	60,000
If Player 2 returns 15,000VND,	25,000	35,000	60,000
If Player 2 returns 20,000VND,	30,000	30,000	60,000
If Player 2 returns 25,000VND,	35,000	25,000	60,000
If Player 2 returns 30,000VND,	40,000	20,000	60,000

Table 6

Suppose Player 1 sends 12,000VND to Player 2.

Then, Player 2 will receive 36,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	8,000	56,000	64,000
If Player 2 returns 6,000VND,	14,000	50,000	64,000
If Player 2 returns 12,000VND,	20,000	44,000	64,000
If Player 2 returns 18,000VND,	26,000	38,000	64,000
If Player 2 returns 24,000VND,	32,000	32,000	64,000
If Player 2 returns 32,000VND,	38,000	26,000	64,000
If Player 2 returns 36,000VND,	44,000	20,000	64,000

Table 7

Suppose Player 1 sends 14,000VND to Player 2.

Then, Player 2 will receive 42,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	6,000	62,000	68,000
If Player 2 returns 7,000VND,	13,000	55,000	68,000
If Player 2 returns 14,000VND,	20,000	48,000	68,000
If Player 2 returns 21,000VND,	27,000	41,000	68,000
If Player 2 returns 28,000VND,	34,000	34,000	68,000
If Player 2 returns 35,000VND,	41,000	27,000	68,000
If Player 2 returns 42,000VND,	48,000	20,000	68,000

Table 8

Suppose Player 1 sends 16,000VND to Player 2.

Then, Player 2 will receive 48,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	4,000	68,000	72,000
If Player 2 returns 8,000VND,	12,000	60,000	72,000
If Player 2 returns 16,000VND,	20,000	52,000	72,000
If Player 2 returns 24,000VND,	28,000	44,000	72,000
If Player 2 returns 32,000VND,	36,000	36,000	72,000
If Player 2 returns 40,000VND,	44,000	28,000	72,000
If Player 2 returns 48,000VND,	52,000	20,000	72,000

Table 9

Suppose Player 1 sends 18,000VND to Player 2.

Then, Player 2 will receive 54,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	2,000	74,000	76,000
If Player 2 returns 9,000VND,	11,000	65,000	76,000
If Player 2 returns 18,000VND,	20,000	56,000	76,000
If Player 2 returns 27,000VND,	29,000	47,000	76,000
If Player 2 returns 36,000VND,	38,000	38,000	76,000
If Player 2 returns 45,000VND,	47,000	29,000	76,000
If Player 2 returns 54,000VND,	56,000	20,000	76,000

Table 10

Suppose Player 1 sends 20,000VND to Player 2.

Then, Player 2 will receive 60,000VND.

	Player 1 earns	Player 2 earns	Total
If Player 2 returns nothing,	0	80,000	80,000
If Player 2 returns 10,000VND,	10,000	70,000	80,000
If Player 2 returns 20,000VND,	20,000	60,000	80,000
If Player 2 returns 30,000VND,	30,000	50,000	80,000
If Player 2 returns 40,000VND,	40,000	40,000	80,000
If Player 2 returns 50,000VND,	50,000	30,000	80,000
If Player 2 returns 60,000VND,	60,000	20,000	80,000

Instruction to Player 1

You are Player 1. You are given 20,000VND. I would like you to decide how much money you want to send to Player 2. You can send Player 2 nothing, 2,000VND, 4,000VND, 6,000VND, 8,000VND, 10,000VND, 12,000VND, 14,000VND, 16,000VND, 18,000VND, or 20,000VND.

Please write down how much money you want to send to Player 2 if his/her ID is A, B, or C, respectively. After we collect the record sheets from all participants, we will randomly match you with someone who was assigned a role of Player 2. At this time we don't know who is receiving your money or what their ID is. So, please write down the amounts you want to send to Player 2, depending on their ID (A, B or C). Also, please write down how much money you think Player 2 will return to you.

After you complete the record sheet, please give it back to me. Please do not go back to the room until all participants finish playing the game. We will call you back to the room when we are ready for the next game. While you are waiting, please fill in the questionnaire.

Please do not discuss the game with your friends while you are waiting.

Record Sheet - Game 1 (Player 1)-

Please fill in the following parentheses ().

A.

I want to send () VND to Player 2 if his/her ID is **A**.

The money will be tripled, so Player 2 will get ()VND in addition to his/her initial 20,000VND.

I think Player 2 will return ()VND to me.

B.

I want to send () VND to Player 2 if his/her ID is **B**.

The money will be tripled, so Player 2 will get ()VND in addition to his/her initial 20,000VND.

I think Player 2 will return ()VND to me.

C.

I want to send () VND to Player 2 if his/her ID is **C**.

The money will be tripled, so Player 2 will get ()VND in addition to his/her initial 20,000VND.

I think Player 2 will return ()VND to me.

You can choose either the same amount of money or different amounts of money for each case (for each ID).

Your decisions will remain confidential.

Instruction to Player 2

You are Player 2. You are given 20,000VND. In addition to 20,000VND, you will receive some money from Player 1. you must decide how much money you want to send back to Player 1. You may want to refer to Tables 1-10 to make your decisions. However, you can send back any amount of money you want. It does not have to be the same as the ones in the Tables 1-10. Or you may send nothing.

Please write down how much money you want to return to Player 1 depending on the amount he/she sends to you. After we collect the record sheets from all participants, we will randomly match you with someone who was assigned a role of Player 1. At this time we don't know who is sending you money, or how much he/she is sending you. So, please write down the amounts you want to return to Player 1, contingent on how much he/she sends to you.

After you complete the record sheet, please give it back to me. Please do not go back to the room until all participants finish playing the game. We will call you back to the room when we are ready for the next game. While you are waiting, please fill in the questionnaire.

Please do not discuss the game with your friends while you are waiting.

Record Sheet - Game 1 (Player 2)-

If Player 1 sends me 2,000 VND, I will return ()VND.

If Player 1 sends me 4,000 VND, I will return ()VND.

If Player 1 sends me 6,000 VND, I will return ()VND.

If Player 1 sends me 8,000 VND, I will return ()VND.

If Player 1 sends me 10,000 VND, I will return ()VND.

If Player 1 sends me 12,000 VND, I will return ()VND.

If Player 1 sends me 14,000 VND, I will return ()VND.

If Player 1 sends me 16,000 VND, I will return ()VND.

If Player 1 sends me 18,000 VND, I will return ()VND.

If Player 1 sends me 20,000 VND, I will return ()VND.

Your decisions will remain confidential.