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Potential Collusion and Trust

Evidence from a Field Experiment in Vietnam

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ABSTRACT

We conduct framed trust games using contract dairy farmers in Vietnam as first movers to assess the impact of potential collusion on trust. Disaggregated analysis suggests that female farmers are more likely to trust overall, but are also more responsive to the addition of a *third party* and *potential collusion*. A third party induces them to trust at higher levels, but potential collusion between the trustee and the third party also induces them to trust at lower levels. Our findings corroborate well with existing studies on gender differences in decision making, which suggest that women's social preferences are more context-specific than men's.

Keywords: collusion, trust game, Vietnam, field experiment, gender

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1. INTRODUCTION

Trust is important for sustaining relationships, even when such relationships are formalized by contracts. This insight has sparked a relatively large and growing literature on trust, reciprocity, and mutual cooperation, particularly in developing countries where formal institutions tend to be weak. Berg, Dickhaut, and McCabe (1995); Cox (2004); Fafchamps (2004); Hill, Maruyama, and Viceisza (2010); and the numerous references within this paper all discuss the importance of trust and reciprocity for engaging in economic transactions. Insight into the conditions under which trust can be built, sustained, or destroyed is crucial for understanding the potential existence of formal and informal institutions.

One such institution is contract farming. In a typical contract farming arrangement, a firm contracts a farmer to deliver a certain quantity–quality combination of a product at a certain point in time for payment at a specified price (for further discussion, see Roy and Thorat 2008; Miyata, Minot, and Hu 2009). These arrangements tend to be complicated since typically there is asymmetric information. Additionally, both parties may have incentives to renege on the contract when the specified time comes. The key problem of asymmetric information arises when quality attributes are unobservable and special technology is required to assess them. In an environment in which the contracting firm possesses such technology and the farmer does not, the final quality assessment remains unobservable to the farmer. Therefore, the contract is incomplete (Gow and Swinner 1998) and, thus, subject to the traditional problem of moral hazard.

The potential for opportunistic behavior by the firm can have important consequences for farmers' trust levels, since the firm may ex post try to discredit the quality of the farmer's goods in an attempt to reduce the agreed-upon price. Vukina and Leegomonchai (2006) indicate that this may result in farmers underinvesting in productivity or quality improvements. Reardon et al. (2003) find that this problem is further exacerbated for smallholder farmers.

This paper contributes to existing literature (see Charness, Cobo-Reyes, and Jiménez 2008), which shows that third-party intervention is one mechanism that can be used to build trust. Consider the standard dichotomous trust game à la Berg, Dickhaut, and McCabe (1995) in which a first mover (the truster) takes an action to trust or not and the second mover (the trustee), when trusted, takes an action to reciprocate or not. Studies such as Charness, Cobo-Reyes, and Jiménez have shown that potential third-party intervention can have significant effects on trust and reciprocity in this context. We start with the same premise.

We conduct framed trust games (that is, framed field experiments; see Harrison and List 2004 for a definition) with Vietnamese dairy farmers as first movers and the firm by which they are contracted as potential second movers (this is further discussed in Section 2). Our experimental design comprises three treatments and randomly assigns any given subject to one of these treatments. The first treatment is the baseline, which consists of a standard trust game à la Berg, Dickhaut, and McCabe (1995). We refer to this treatment as TG. The second treatment introduces a third party, the so-called *auditor*, who has the option to force the firm to reciprocate when she is trusted. We refer to this treatment as 3TG. Finally, the third treatment allows for potential collusion between the firm and the auditor; in particular, if the firm chooses not to reciprocate when trusted, the auditor has the option to share the benefits from defection with the firm, thus making them both better off and leaving the farmer with nothing. We refer to this treatment as 3TGC. We are interested in the extent to which the potential for collusion has an effect on farmers' trust levels.

The framed field experiments reported in this paper are part of a larger project that seeks to test innovative contract farming mechanisms between a dairy distributor in Vietnam (the firm in question) and its contract farmers (the farmers in question) using randomized controlled trials (RCTs). Our framed field experiments relate to these RCTs in the following way. First, since the firm currently assesses the quality of the farmers' milk using three tests, two of which occur *behind closed doors* (this will be explained further in Section 2), the farmers distrust the firm's assessment. The TG represents this environment: a status quo of distrust between the farmers and the firm.

Second, one of the alternative contract farming arrangements being tested as part of the larger project introduces an independent laboratory (a third party) that can be called upon by a farmer to verify the firm's assessment of milk quality. The 3TG, which introduces a third-party auditor, represents the main features of this proposed intervention. In particular, the third party's action in the game to force the firm to reciprocate when trusted can be seen as the case in which the laboratory contests the firm's assessment of the quality of the farmers' milk at the RCT level.

Finally, the mechanism described above may be prone to collusion between the firm and the laboratory, for example, if the firm tries to pay off the laboratory in an attempt to prevent their assessment from being contested. Although our RCTs were designed to mitigate such concerns, *ex ante* we were still concerned that farmers could have the perception that the mechanism was not collusion-proof. We were interested in to what extent trust could be sustained even in the presence of (perceived) potential collusion. The 3TGC enables us to assess this question.

Our findings suggest that our main treatment effects are gender-specific. Female farmers respond strongly to the introduction of a third party by trusting at higher levels relative to male farmers in the 3TG (relative to the TG). At the same time, they respond strongly to (perceived) potential collusion by trusting at lower levels when there is the possibility for collusion between the firm and the auditor in the 3TGC (relative to the 3TG).

These gender-specific findings corroborate with existing findings on third-party enforcements, as well as findings on gender differences in preferences and decisionmaking. For example, Charness, Cobo-Reyes, and Jiménez (2008) find that third parties substantially increase trust and reciprocity in trust games. We find a similar effect on trust, specifically regarding women. One of our main contributions in this vein is that women are more likely to respond to potential collusion in third-party arrangements. Furthermore, Cox and Deck (2006) as well as Croson and Gneezy (2009) indicate that women's social preferences are much more context-specific than men's. Our findings are consistent with this view. Female farmers respond more strongly than male farmers to changes in the social context, such as the introduction of a third party that can *do the right thing* (thus lowering the cost of trust) or allow for the possibility for collusion (thus increasing the cost of trust) or both.

The remainder of the paper proceeds as follows. Section 2 discusses the design of the study. Section 3 addresses the main findings. Section 4 concludes.

2. STUDY DESIGN

The Context

The experiments reported in this paper are part of a larger research project aimed at studying innovative contract farming arrangements using RCTs. We partner with a large dairy distributor and processor in Vietnam that currently obtains fresh milk from production on firm-owned farms and from contract farmers. The study area is located in two representative provinces, Long An and Tien Giang, south of Ho Chi Minh City (HCMC) where the firm has contracted 409 dairy farmers. We conduct a census of all these farmers. Thus, our sample comprises 409 farmers that deliver milk to four milk collection centers (MCCs).

The basic process for milk delivery and verification of milk quality, which is defined according to the three parameters milk fat, total solid content, and bacterial contamination, is as follows. Each farmer delivers milk twice a day to their designated MCC. Upon arrival, milk samples are taken for subsequent testing. The technologically simplest test for bacterial contamination is carried out on-site at the MCC. The additional samples are sent to the dairy plant where the two remaining parameters are tested *behind closed doors*. These additional tests are most important since failing to pass any of them results in severe price penalties. Although it intuitively makes sense that farmers would be concerned about this type of testing/pricing mechanism, we confirm this via focus groups conducted prior to the study. Farmers revealed distrust toward the firm's mechanism for assessing milk quality since they do not themselves possess the technology to verify it. The TG is intended to capture this in a framed field experiment.

At the RCT level, one of our main treatments introduces an independent laboratory that can be called upon by a farmer to verify the firm's assessment of milk quality. The 3TG is intended to parallel this mechanism by introducing a third party, the so-called auditor, who can force the firm to reciprocate. Finally, the 3TGC allows for the possibility of collusion between the firm and the auditor by allowing an additional action in which the firm and the auditor can share the benefits reaped from defection, while leaving the farmer with nothing. This enables us to test whether farmers' perceptions of potential collusion at the RCT level would undermine the purpose of introducing the independent laboratory. Specifically, the 3TGC enables us to assess *ex ante* (that is, prior to implementation of the RCTs) whether the third-party mechanism could still be successful in the presence of perceived collusion.

Next, we discuss the games in further detail.

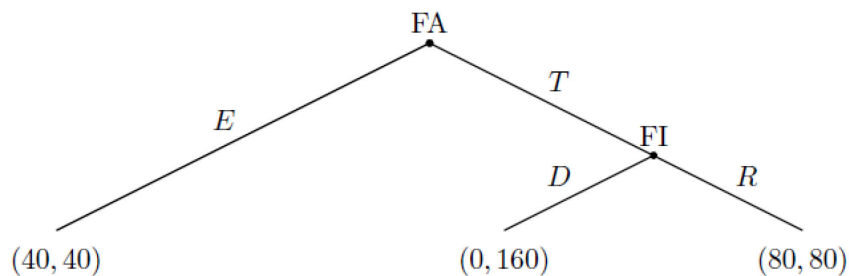
Experimental Games

As explained previously, we conduct three types of *framed* trust games: the TG, the 3TG, and the 3TGC.¹ We frame the games because this facilitates understanding for field subjects, particularly in rural areas. Each farmer is randomly allocated to one of these games.

Figure 2.1 displays the extensive form of the TG. At the beginning of the game, both the first mover (the farmer, player FA) and the second mover (the firm, player FI) have 40,000 Vietnamese dong (VND). The farmer has the choice between not investing (a move denoted by E for "exit") and investing in a fund managed by the firm (a move denoted by T for "trust"). If the farmer chooses E, the game ends and both players have 40,000 VND. If the farmer chooses T, then the firm receives 120,000 VND in addition to the initial 40,000 VND as a benefit of the investment. The firm then has the choice between keeping all 160,000 VND and leaving the farmer with 0 (a move denoted by D for "defect") or paying the farmer his return on investment by splitting the money equally at 80,000 VND (a move denoted by R for "reciprocate").

¹ Complete subject instructions are available from the authors upon request.

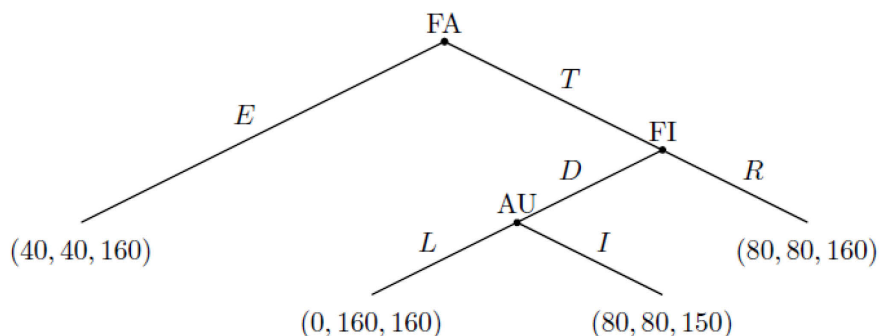
Figure 2.1—Extensive-form trust game



Source: Torero and Viceisza (2011).

Figure 2.2 displays the extensive form of the 3TG, which introduces an auditor (player AU) who has a role to play only if the firm does not reciprocate. The auditor can leave the situation as is (a move denoted by *L* for “leave”) or rule that the firm has to reciprocate (a move denoted by *I* for “intervene”). We calibrate the game such that taking action *I* is costly. We do so because we want some uncertainty as to whether or not the auditor will take action *I*. If the auditor were able to intervene without any costs, there would be no trade-off between *doing the right thing* and not. As a result, the farmer could expect the auditor to always choose *I*, such that there would essentially be no risk in taking action *T*. Furthermore, a costly action *I* was easier to motivate our subjects, given its parallel in the naturally occurring environment, for example, if legal action were to become necessary to discipline the firm. It is an empirical question of how farmers’ trust would be affected if we varied the costs from taking action *I* downward (for example, to five or zero) or upward (for example, to 20, 30, or 40). Although we do not address this question as part of our experimental design, we speculate that the farmer would be more (less) likely to trust as the costs of taking action *I* were to decrease (increase).

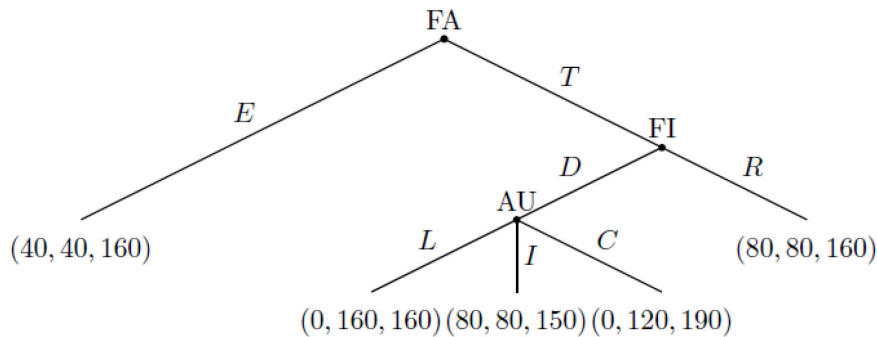
Figure 2.2—Extensive-form trust game with third party



Source: Torero and Viceisza (2011).

Finally, Figure 2.3 displays the extensive form of the 3TGC, which allows for the possibility of collusion between the firm and the auditor. Relative to the 3TG, the auditor has a third possible move (denoted by *C* for “collude”) in which the benefits from the investment are shared with the firm at the expense of the farmer. This action is also costly since colluding requires time and effort.

Figure 2.3—Extensive-form trust game with third party and possibility for collusion



Source: Torero and Viceisza (2011).

We now turn to the details of implementation.

Protocol and Implementation

Our protocol starts from the premise that we are only interested in farmers’ trust levels across the different treatment regimes (that is, the TG, the 3TG, and the 3TGC). As a result of this and because *manually* implementing two- or three-person sequential games is complex in the field (as they require coordination of groups of players in different rooms or locations), we maintained the following protocol.

The first mover was always played by actual farmers. In particular, 206 of the 409 farmers referred to previously were randomly assigned to one of the three trust games to play the role of first mover. The remaining farmers were assigned to other games not addressed in this paper. As we were not interested in either the second or the third mover’s decisions across the trust games, the assistant experimenter played both roles. We explain this further below.

To elicit credible decisions without deceiving the subjects, we maintained the following framing for the second mover (fund manager). Subjects were informed that the fund manager could be one of the following persons: another farmer, an employee of the firm, an employee of the MCC, or some other person. For each identity, subjects had to decide whether or not they wanted to invest/trust. Subjects were informed that only one of these decisions would become binding depending on the identity of their partner and that they would get paid according to that choice. Thus, they were urged to take each decision seriously. This elicitation method is comparable to the strategy method, which asks subjects to make several decisions, one of which becomes binding depending on a certain condition being met. This enabled us to have the assistant experimenter (a different person) playing the different roles in the following manner.

The assistant experimenter prepared a sheet of random second-mover responses (that is, to reciprocate or defect if trusted) associated with a randomly chosen identity for the fund manager. These decisions were tagged using the farmer’s seat number. For example, if the farmer in seat 1 was paired with a firm employee as a fund manager and the firm employee’s random response was to reciprocate when trusted, then the farmer in seat 1 would be paid 80,000 VND if s/he decided to trust. This allowed for *fair* payment, since the assistant experimenter could otherwise have perverse incentives to play the game, such as saving on subject payments (thus wanting to deflate earnings) or fostering subjects’ cooperation in the RCTs (thus wanting to inflate earnings).

It is important to note that farmers had limited information regarding the fund manager. We consciously chose to keep some information implicit in order to avoid deceiving our subjects. For example, subjects were not informed of specific aspects such as how the second mover would make a decision. This is important since it sets the experiment apart from other experiments in which subjects

play with computer agents (and are explicitly informed of the computer's random strategy) or experiments in which subjects are explicitly told untrue statements (that is, deception).

Subjects were told that the auditor could be thought of as someone who was put in place by the government to monitor the fund (see hypothetical example in the instructions). Other than this, subjects were given no further information regarding the identity of the auditor. All they knew was that the auditor could force reciprocation in the 3TG (action I), collude in the 3TGC (action C), or leave the situation as is (action L). Similarly to the second mover, the assistant experimenter prepared a sheet of random third-mover responses that were tagged using the farmer's seat number. These responses were conditional on the type of game in question, that is, the 3TG versus the 3TGC. Despite that some of the information regarding the identities of the second and third movers was implicit, none of the subjects asked additional questions about who exactly was making the decisions or how/when/where such decisions were being made. As a result, subjects had the information provided in the instructions.

Although we elicited farmers' trust levels for different types of fund managers, in this paper, we restrict our analysis to farmers' choices made with respect to the firm employee. To test for consistency and understanding, we had subjects play each game twice. In other words, a farmer in the TG (3TG or 3TGC) played the role of first mover twice. The farmer did not receive feedback between rounds. This mitigated learning toward the fund manager (or auditor), while still rendering an additional point for verifying consistency of decisionmaking. To avoid additional repeated play considerations, farmers were informed that the fund manager would not have the same identity in subsequent rounds. This was actually reflected in the assistant experimenter's random response sheet. Finally, to mitigate end-of-game effects, farmers were informed that they would play the game more than once but were not informed of the exact number of rounds.

To increase attendance of the experiments, our collaboration with the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD) and the MCC managers in recruiting the farmers was essential, given that both are considered familiar parties. We also personally invited farmers to attend the experiment sessions using a written letter and arranged transportation for those farmers who were farthest away from the experiment site to ensure maximum attendance. In particular, we wanted to avoid attrition by farmers who were farthest away and, thus, most likely to be different on (un)observables. Ninety-three percent of the 206 farmers showed up. Attrition was typically due to random circumstances and was balanced across games.

The data for each game were collected across two sessions. This enables us to control for any session-level effects. Each session consisted of registration, instructions, questions and answers, decisionmaking, a post-quiz, and payment. Sessions lasted on average two hours and paid 101,309 VND (standard deviation: 42,126 VND), which compares to a total daily income of approximately 176,671 VND (standard deviation: 134,974 VND).² The sessions were conducted in English by the main experimenter with line-by-line translation to Vietnamese by a trained translator.

To mitigate peer effects during the decisionmaking process and to maximize subject privacy, the sessions were conducted in a large room that allowed for a lot of space between farmers during decisionmaking. Furthermore, subjects made decisions behind large voting boxes that made it impossible to observe peers' decisions. A picture of one of our sessions is included in Figure 2.4. Finally, payment was arranged in a separate room by the assistant experimenter and was provided to the subjects in a sealed envelope by the experimenter.

² During the month the experiments were conducted, US\$1 was on average equal to 17,811.35 VND.

Figure 2.4—Experimental Session



Source: Torero and Viceisza (2011).

Next, we discuss the hypotheses and empirical strategy.

Hypotheses and Empirical Strategy

Given the random assignment of subjects to one of the above treatments—that is, the TG, the 3TG, or the 3TGC—and the existence of two rounds of data, we estimate the main treatment effects associated with the TG and the 3TGC (relative to the 3TG as the baseline) using the following panel dummy variable regression:

$$Trust_{FA,FI,t} = \beta_0 + \beta_{TG}D_{TG} + \beta_{3TGC}D_{3TGC} + \beta_{X_{FA}}X_{FA} + \beta_tR + \varepsilon_{FA,FI,t}, \quad (1)$$

where the dependent variable $Trust_{FA,FI}$ is the farmer's trust exhibited toward the firm in round t , β_0 is a constant term, D_{TG} is a dummy variable that takes value 1 if the subject is in the TG, D_{3TGC} is a dummy variable that takes value 1 if the subject is in the 3TGC, X_{FA} is a set of individual time-invariant characteristics (we revisit this later), R is a dummy variable that takes value 1 if the subject is in round 2 of the game, and $\varepsilon_{FA,FI,t}$ is an error term. We take the 3TG as our baseline treatment in the analysis since we want to see to what extent trust is significantly lower in the TG or the 3TGC or both.

Although we have panel data, we cannot estimate the treatment effects in the presence of individual fixed effects since the treatment effects are themselves individually invariant and, thus, will be wiped out by such estimation. We run random effects specifications. In principle, this need not be problematic if our randomization was successful. When analyzing the results, we test for this by checking for balance of observable characteristics across treatments. We are able to do this since we have a rich set of survey data that was collected as part of the larger research project.

We are interested in the coefficients β_{TG} and β_{3TGC} . Taking the 3TG as the baseline treatment, we would expect $\beta_{TG} < 0$, reflecting that introduction of the third party (the auditor) increases farmers' trust with respect to the firm. We would also expect $\beta_{3TGC} \leq 0$, reflecting that *holding the presence of a third party (the auditor) constant*, (perceived) potential collusion (weakly) reduces trust.

We now turn to the results.

3. RESULTS

As mentioned previously, each farmer household completed a survey prior to our experiments as part of the larger research project. This provides a rich set of controls that can be used to test for balance of observables across the three games. Table 3.1 summarizes the differences between all variables that are different across treatments and selected variables that are not. Some of the reported variables are at the participant level and some are at the household level. Typically, the person responding to the household questionnaire coincided with the person participating in our experiment. In some instances, this did not occur; we correct for this in our analysis if the concerning variable is at the participant level. As a result, the number of observations may vary depending on the variables under consideration (this particularly applies to our estimations).

Table 3.1—Sample means of basic characteristics by treatment

	1: TG	2: 3TG	3: 3TGC	Δ_{12}^c	Δ_{13}	Δ_{23}
Demographic Variables						
Age	45.34 ^a (1.30) ^b	42.66 (1.20)	43.81 (1.29)	2.69 (1.76)	1.53 (1.83)	-1.16 (1.76)
Gender	0.25 (0.05)	0.22 (0.05)	0.13 (0.08)	0.02 (0.07)	0.12* (0.07)	0.10 (0.07)
Education HH head	8.69 (0.38)	8.03 (0.35)	8.48 (0.40)	0.66 (0.52)	0.21 (0.55)	-0.45 (0.53)
Education oldest son	6.34 (0.77)	7.27 (0.86)	5.25 (0.61)	-0.93 (1.16)	1.09 (0.99)	2.02* (1.06)
Economic and Social Distance Variables						
Total income	61400.00 (6077.70)	6100.00 (5321.09)	66000.00 (6987.50)	-4700.00 (8083.35)	-4600.00 (9255.23)	100.00 (8766.70)
Dairy income	41200 (4535.57)	41400 (4725.00)	38000 (5283.21)	-200.00 (6550.83)	3200.00 (6954.04)	3400.00 (7073.53)
Average price per liter	6.82 (0.09)	6.78 (0.04)	6.87 (0.04)	0.04 (0.10)	-0.05 (0.10)	-0.09 (0.10)
Distance	0.29 (0.06)	0.37 (0.11)	0.53 (0.10)	-0.08 (0.12)	-0.24** (0.11)	-0.16 (0.15)
Economic and Social Distance Variables						
Borrow	0.62 (0.06)	0.52 (0.06)	0.47 (0.06)	0.09 (0.09)	0.15* (0.09)	0.05 (0.09)
Preferences						
Trust	1.23 (0.05)	1.34 (0.06)	1.27 (0.06)	-0.11 (0.08)	-0.03 (0.08)	0.07 (0.08)
Altruism	1.15 (0.05)	1.23 (0.05)	1.16 (0.05)	-0.08 (0.07)	0.00 (0.06)	0.07 (0.07)
Risk	1.89 (0.15)	2.00 (0.16)	1.67 (0.14)	-0.11 (0.22)	0.22 (0.21)	0.33 (0.21)
Patient (1 = yes)	0.45 (0.06)	0.36 (0.06)	0.28 (0.06)	0.08 (0.09)	0.16** (0.08)	0.08 (0.08)

Source: Torero and Viceisza (2011).

Notes: *** p < 0.01, ** p < 0.05, * p < 0.1.

^a mean for given treatment group, ^b standard error in parenthesis.

^c Δ_{ij} represents the difference in means for treatment group i and j (that is, $\text{mean}_i - \text{mean}_j$).

Whether or not the household borrowed money is also significantly different across 3TGC and TG. We do not include this variable in subsequent analysis since it is highly correlated with whether or not the household attempted to borrow. The results are robust to inclusion of this variable in the analysis.

The individual-level characteristics reported in Table 3.1 are the participant’s age (in years), gender (1 is female), and preferences, which include proxies for trust (a categorical variable based on the frequency with which the participant lends money), altruism (a categorical variable based on the frequency with which the participant gives money), risk, and time. The risk preference question presented the participant with a choice of hypothetical lotteries that increase the mean and variance for each subsequent option (see Binswanger 1980 for a detailed discussion). The time preference question presented the participant with a choice of hypothetical options that offer a fixed amount of money today or a larger and growing amount of money one month from now. The reported measure is a dummy variable that classifies the respondent as patient (takes the value 1) if he chose the future amount when it implied a monthly interest rate of 1 percent or less.

The household-level characteristics are the household (HH) head’s and oldest son’s education levels (these are categorical variables), the total and dairy annual incomes (in thousands of VND), the average price received per liter of milk (in thousands of VND), the distance to the closest paved road (in kilometers), and a dummy variable capturing whether the household faced a borrowing constraint (1 is yes).

Table 3.1 suggests that subjects in the 3TGC are more likely to be male, closer to a paved road, impatient, and unlikely to have borrowed. Given the large set of observables we have for each farmer household, we consider this imbalance to be relatively minor. Thus, we deem our randomization to have been successful.³ Nonetheless, in order to control for this selection on observables, we employ two types of estimating equations. The first is of the type in equation (1) where we include the observables that are different across treatments as controls in the regression. These are what we refer to as X_{FA} . We include these covariates as regressors in order to capture observable differences across our experiment treatments that are not due to the effect of the treatment.

The second type of estimating equation expands upon equation (1) by including the covariates (that is, X_{FA}) and interaction terms between them and the treatment dummies of interest (that is, $D_{TG} * X_{FA}$ and $D_{3TGC} * X_{FA}$). In other words, we estimate the following expanded regression equation:

$$Trust_{FA,FI,t} = \beta_0 + \beta_{TG}D_{TG} + \beta_{3TGC}D_{3TGC} + \beta_{X_{FA}}X_{FA} + \delta D_{TG} * X_{FA} + \gamma D_{3TGC} * X_{FA} + \beta_t R + \varepsilon_{FA,FI,t}. \quad (2)$$

This specification is suggested by Wooldridge (2002) when one has reason to believe that one’s treatment effect may be correlated with specific observable characteristics. We discuss the results in further detail below.

Prior to discussing our treatment effects, however, we briefly summarize trust levels across the three games and across the two rounds. These results are presented in Table 3.2. The table suggests that farmers are more likely to trust in the third-party trust games (3TG and 3TGC) than in the baseline trust game (TG). Furthermore, these effects are relatively consistent across rounds. However, we note that these levels are unconditional in the sense that they do not control for any individual- or session-specific effects, contrary to the regression results that will follow.

Table 3.2—Mean trust levels

TG (N = 64)		3TG (N = 61)		3TGC (N = 58)	
Round 1	Round 2	Round 1	Round 2	Round 1	Round 2
0.53 ^a	0.50	0.59	0.57	0.72	0.71
(0.50) ^b	(0.50)	(0.50)	(0.50)	(0.45)	(0.46)

Source: Torero and Viceisza (2011).

Notes: ^a Unconditional means reported.

^b Standard error in parentheses.

³ The randomization was done in two steps. Farmers were first randomly assigned to one of the main experimental interventions. Then a subset for any given intervention was randomly assigned to one of the experimental games in order to avoid perfect alignment between the interventions and the lab-like experiments. The randomization was done using Stata’s random number generator.

Table 3.3 contains the results of our main estimations. The dependent variable is a dummy variable that takes the value 1 if the farmer trusts the firm. The results are for a random effects panel assuming a linear probability specification.⁴ All specifications take the 3TG as the baseline treatment and include session-level fixed effects to control for any session-level idiosyncrasies. Specifications (1) through (5) are different variants of equation (1). Specifications (1) and (2) do not control for selection on observables, but (2) does control for MCC- and round-level fixed effects. Controlling for any MCC-level effects is important since one of the MCCs is relatively far from HCMC and farmers delivering to this location may be different. Controlling for round-level effects is important in case farmers *learn* how to play the game. Specification (3) controls for selection on observables as well as any MCC- and round-level effects. Specifications (4) and (5) control for selection on observables, but not for round-level effects and/or MCC-level effects. Finally, specification (6) is in accordance with equation (2). This specification is the most complete since it includes the interactions between the covariates and the treatment dummies as well as session-, round-, and MCC-fixed effects. We mainly focus on the effects in column (6).

Table 3.3—Estimates of treatment effects

Dependent variable: Whether or not the farmer trusts the firm (1 = yes)						
	(1)	(2)	(3)	(4)	(5)	(6)
TG dummy	-0.377***	-0.375***	-0.375***	-0.378***	-0.378***	-0.254
	(0.119)	(0.119)	(0.12)	(0.12)	(0.12)	(0.187)
3TGC dummy	-0.0655	-0.0571	-0.0258	-0.0342	-0.0342	-0.102
	(0.12)	(0.12)	(0.121)	(0.12)	(0.12)	(0.176)
Gender			0.0301	0.0367	0.0367	0.374**
			(0.0868)	(0.0858)	(0.0858)	(0.156)
Distance			-0.0074	0.0011	0.0011	-0.0203
			(0.0479)	(0.0471)	(0.0471)	(0.0658)
Borrow			-0.0523	-0.0621	-0.0621	-0.07
			(0.0707)	(0.0699)	(0.0699)	(0.128)
Patient			0.158**	0.157**	0.157**	0.167
			(0.073)	(0.072)	(0.072)	(0.127)
Education oldest son (edu)			-0.0103*	-0.0104*	-0.0104*	-0.0153*
			(0.00554)	(0.00549)	(0.00549)	(0.00873)
Gender*TG dummy						-0.532***
						(0.204)
Gender*3TGC dummy						-0.556**
						(0.242)
Distance*TG dummy						-0.13
						(0.14)
Distance*3TGC dummy						0.12
						(0.107)

⁴ Results are robust to panel logit/probit specifications, where feasible, due to the incidental parameter problem.

Table 3.3—Continued

	Dependent variable: Whether or not the farmer trusts the firm (1 = yes)					
	(1)	(2)	(3)	(4)	(5)	(6)
Borrow*TG dummy						0.016 (0.177)
Borrow*3TGC dummy						-0.0419 (0.178)
Patient*TG dummy						0.0926 (0.174)
Patient*3TGC dummy						-0.0896 (0.187)
Edu *TG dummy						-0.00046 (0.0129)
Edu *3TGC dummy						0.0229 (0.0148)
Constant	0.732*** (0.086)	0.680*** (0.101)	0.724*** (0.118)	0.773*** (0.105)	0.762*** (0.104)	0.678*** (0.132)
Observations	364	364	362	362	362	362

Source: Torero and Viceisza (2011).

Notes: Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In the presence of the interaction terms, we note that the treatment effects are gender-specific. In particular, female farmers are less likely to trust the firm both in the TG and in the 3TGC (relative to the 3TG). This suggests that female farmers are more sensitive to the presence of an auditor, but also to the actions that the auditor can take. Specifically, if the auditor is able to collude with the firm (as is the case in the 3TGC), they are more responsive to this environment than men and, thus, less likely to trust. If we do not include the interaction terms, however, column (5) suggests that the introduction of the third party still significantly increases trust for the overall sample.

Our gender-specific findings corroborate with the existing literature on gender differences in preferences and decisionmaking. Indeed, Cox and Deck (2006) and Croson and Gneezy (2009) indicate that women's social preferences are more situationally specific than men's. The same dynamic seems to be suggested here. Female farmers are more responsive to the context in which the decision to trust is being taken.

Indeed, Cox and Deck also indicate that women tend to be more *generous* than men when—among other factors—the total monetary cost of generosity is low. The presence of an auditor that can *correct* the firm's decision when she chooses not to reciprocate can be argued to reduce the cost of generosity or trust in this circumstance. That introduction of such a third party induces female farmers to trust at *higher* levels is consistent with the view that women are more likely to trust when the cost of trusting is lower. On the other hand, *potential collusion* between the trustee and the auditor induces female farmers to trust at *lower* levels. This further supports the view that women are less likely to trust when the cost of trusting is higher.

4. CONCLUSION

We conduct three framed trust games using contract dairy farmers in rural Vietnam in the role of first mover to assess the impact of (perceived) potential collusion on trust in third-party arrangements.

Our findings suggest that our main treatment effects are gender-specific. Female farmers respond strongly to the introduction of a third party by trusting at higher levels relative to male farmers in the 3TG (relative to the TG). At the same time, they respond strongly to (perceived) potential collusion by trusting at lower levels when there is the possibility for collusion between the firm and the auditor in the 3TGC (relative to the 3TG).

These gender-specific findings corroborate with existing findings on third-party enforcements, as well as findings on gender differences in preferences and decisionmaking. For example, Charness, Cobo-Reyes, and Jiménez (2008) find that third parties substantially increase trust and reciprocity in trust games. We find a similar effect on trust, specifically regarding women. One of our main contributions in this vein is that women are more likely to respond to potential collusion in third-party arrangements.

Furthermore, Cox and Deck (2006), as well as Croson and Gneezy (2008), indicate that women's social preferences are much more context-specific than men's. Our findings are consistent with this view. Female farmers respond more strongly than male farmers to changes in the social context, such as the introduction of a third party that can *do the right thing* (thus lowering the cost of trust) or allow for the possibility for collusion (thus increasing the cost of trust) or both.

Our study is part of a larger research project in which an actual third-party contract arrangement is being implemented using RCTs. This actual arrangement in farmers' day-to-day contexts will allow for the possibility of an independent laboratory (the third party) intervening between the farmer and the firm (at the farmer's request) by contesting or confirming the firm's assessment of the quality of the farmer's milk. Although our experimental findings are of independent interest, they also enable us to get an ex ante assessment of the impact of this proposed arrangement. Specifically, our lab-like field experiments enable us to assess whether the proposed third-party arrangement will still be successful at inducing trust at the RCT level when farmers perceive it to not be collusion-proof.

Our findings suggest that this may be the case overall, but it is not the case for female-headed or female-influenced farms. Specifically, female farmers in our experiment seem to be sensitive to potential collusion; trust *breaks down* in such circumstances. It will be interesting to see to what extent this finding will be supported in the data at the RCT level, for example, by comparing whether women are less likely to call upon the laboratory to verify the firm's assessment or carry different ex ante beliefs with respect to the third-party arrangement. This would enable us to generalize the gender-specific treatment effects established here to a broader context, that is, an environment external to the *lab*.

Finally, we would like to conclude with some cautionary notes that could lead to avenues for future work. First, our findings could be subject to framing effects. For example, the manner in which the auditor was framed/motivated (that is, as someone who was put in place by the government to monitor the fund) could induce more trust toward this figure than otherwise. Because our main treatment effects are gender-specific, our findings are unlikely to be driven purely by framing (unless such effects are perfectly correlated with gender as well).

Second, our experiments were framed as an *investment*, which could have induced subjects to *trust* more frequently than otherwise. Anecdotal evidence suggests that investments are typically viewed in a positive light in rural Vietnam. Although this may affect the baseline levels of trust in the respective games, we do not think it necessarily affects our treatment effects, as these are identified across treatments. Nonetheless, exploring the effects of different types of framing in this context could be interesting.

Finally, our effects may also be subject to how the payoffs were calibrated. As alluded to previously, an interesting future variation could be to play with different costs of *doing the right thing* versus *colluding*.

APPENDIX: EXPERIMENT INSTRUCTIONS

The following scripts were used by the experimenter and translator to explain the games. They have been edited to correspond to style guidelines, but not for content.

TG

- **Introduction and agenda**
 - Hello and welcome. Thanks for coming to our workshop.
 - This workshop will consist of the following steps:
 1. Instructions.
 2. Decisionmaking on investment.
 3. Questions at the end.
 4. Then, you will:
 - Receive payment for participation.
 - Participate in a lottery to determine if you are in the control or treatment group.
 - At the end of the workshop, you will be paid IN CASH for your participation.
 - So, you should think ***carefully*** about every decision you make or answer you give. We will explain this in detail in a few moments.
 - Some additional comments:
 1. Please turn off all cellular phones, pagers, and so on.
 2. All decisions you make or answers you give during the workshop are ***private, confidential, and anonymous***. This is why we have boxes in which you can make your decision. These boxes are like your houses. They give you privacy.
 3. Since all decisions/answers are private, please do NOT talk to each other anymore. If you have questions, please ask us by raising your hand and one of us will approach you to answer them. Please do NOT discuss with your neighbor.
 4. When making decisions, there are no correct or incorrect decisions. You should make the decision that you most prefer because you will be paid for that decision.
 5. Please make your decisions as if they are real-life decisions.
 6. If at any point there are questions, please raise your hand to ask the question.
 - *Any questions before we begin?*
- **Explaining the decisionmaking: What is the decision you need to make?**
 - Think of the following situation.
 - The government or a donor agency decides to sponsor some amount of money to you and a fund manager.
 - The investment fund requires you to invest money and the fund manager is in charge of investing these funds and paying you back for the benefits of your investment.
 1. For example, the fund manager may use the funds to buy new milking equipment. Over time the fund manager charges other people for use of this equipment and pays you back the benefits of your investment in terms of dividends or free use of the equipment.
 - Suppose that before any investment is made, you and the fund manager EACH have 40,000 VND that was given by a donor agency or government to cover initial start-up cost of an investment.
 - For the fund manager to start the fund and make the investment into the new equipment, the fund manager needs 80,000 VND.
 - So, the fund manager approaches you and asks you to invest in the fund that he will manage.

- You have two options:
 1. You can invest in the fund and give 40,000 VND to the fund manager. OR
 2. You can decide NOT to invest in the fund and keep the 40,000 VND.
- If you do NOT INVEST, then there is no relationship between you and the fund manager. You will keep the 40,000 VND and the fund manager will also keep the 40,000 VND.
- If you DO INVEST, then the fund manager invests the 80,000 VND, and over time he doubles this amount into 160,000 VND.
- Since both you and the fund manager EACH invested 40,000 VND in the fund, once the fund manager makes the fund successful, he needs to pay you back the benefit of investment, which is 50 percent of 160,000 VND—80,000 VND.
- Although the fund manager is supposed to pay you back, he may or he may not.
- Why? Well, the fund manager may want to keep all the money and take all the benefits.
 1. For example, the fund manager may claim that the investment was unsuccessful so that he does not have to pay you.
 2. Since you do not have full information, you cannot be sure if he is telling the truth or not.
- So, once you give your money to the fund manager and he invests it, the fund manager has two options:
 1. The fund manager can share the return on the investment with you equally by paying you 80,000 VND.
OR
 2. The fund manager can default and NOT pay you back for your investment. In this case, he pays you ZERO and keeps the full benefits: 160,000 VND.
- *Does this make sense so far? REPEAT.*
- Today, you will have to decide whether or not to invest 40,000 VND with the fund manager.
- There is someone in another location that represents a fund manager.
- If you do not invest, there is no relationship between you and the fund manager. You will make 40,000 VND.
- If you DO invest in the fund, the fund manager will invest it, but the fund manager can pay you back or NOT.
- If he pays you back as promised, you will each have 80,000 VND.
- If he does NOT pay you back by claiming that the investment was unsuccessful, he will have 160,000 VND and you will have zero.
- It is important that you think carefully about this decision because you will be paid according to the decision that you and the fund manager make. For example:
 1. If you do not invest, you will be paid 40,000 VND and the fund manager also.
 2. If you invest and the fund manager pays you back as promised, you will be paid 80,000 VND and the fund manager also.
 3. If you invest and the fund manager does NOT pay you back, you will be paid ZERO VND and the fund manager will be paid 160,000 VND.
- Again, there are no correct or incorrect decisions. You should make the decision that you most prefer. For example:
 1. If you think that the fund manager is NOT likely to pay you back, you may choose NOT to invest.
 2. However, if you think the fund manager is likely to pay you back, you may choose to invest.
- Remember:
 1. All decisions are private and anonymous.
 2. Do not talk to each other when making your decision.
- *Is this clear so far? REPEAT.*

Who is the fund manager? What do you know about this person?

- You will NOT know the fund manager.
- Also, the fund manager will not know you.
 1. This is similar to life. Even though you may know what the fund manager looks like, you do NOT know if the fund manager is the type of person who will pay you back or not.
- What you DO know about the fund manager is the following:
 1. The fund manager can be one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
 2. So, in each of the above cases, the investment fund is managed by one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
- The fund manager can be ANY of the above four people.
- So, you will have to decide for EACH CASE, invest or not invest.
- *Does this make sense? REPEAT.*

• Example

- Suppose you decide the following:
 1. If the fund manager is a farmer, invest.
 2. If the fund manager is a firm employee, not invest.
 3. If the fund manager is an MCC employee, invest.
 4. If the fund manager is another person, not invest.
- Then, we will communicate the decision you make to the fund manager, depending who they are. So, for example:
 1. If the fund manager is a fellow farmer, he will be told that you invested. At that point, he needs to decide whether or not to pay you back or not. If he pays you back, you each have 80,000 VND. If not, he has 160,000 VND and you have? ZERO.
 2. On the other hand, if the fund manager is a firm employee, he will be told that you did NOT invest. At that point, he knows that there is no relationship and each of you have 40,000 VND.
- So, again, you will NOT know the fund manager and the fund manager will NOT know you.
- All you know is that the fund manager could be:
 1. A fellow farmer who is NOT family from one of the MCCs.
 2. A firm employee.
 3. An employee from the MCC where you deliver milk.
 4. Some other person from outside this area (for example, a businessman from HCMC).
- That is why you need to make a decision in each case.
- *If this clear? REPEAT.*

- **Recording your decision: Privacy and repetition**
 - You will decide whether or not to invest IN EACH CASE using the following record sheet (*show record sheet*).
 - The record sheet contains today's session number as well as your seat number. Since all responses are anonymous, we record them by seat number and NOT using your name.
 - You will choose to invest or NOT a few times. So, you will make more than one decision.
 - Each time you decide whether or NOT to invest, the fund manager will be a different person.
 - So, in round 1, the fund manager may be a fellow farmer; in round 2, he may be a firm employee; in round 3, he may be a different fellow farmer; in round 4, he may be an MCC employee; and so on.
 - So, remember:
 - 1. You will not know the fund manager.
 - 2. All you know is that he is one of the four people we described above.
 - 3. Also, you know that every time you decide whether or not to invest, the fund manager will be a different person.
 - 4. So, each round you decide whether or not to invest, it is toward a DIFFERENT fund manager.
 - Furthermore, when you make your next decision, you will not know whether or not the previous fund manager paid you back or not.
 - 1. Sometimes in life you have to make the next decision without knowing what the result of the previous one was. It is the same in this case.
 - So, for each round, you will have to decide:
 - 1. If farmer: Invest or NOT.
 - 2. If firm employee: Invest or NOT.
 - 3. If MCC employee: Invest or NOT.
 - 4. If another person: Invest or NOT.
 - You will record this on the record sheet FIRST for round 1.
 - Once you do that, to guarantee the privacy of your decision, please fold the record sheet and place it in the yellow envelope.
 - I will collect all the envelopes and take them to the other room where someone else will:
 - 1. Make note of your decisions to invest or not.
 - 2. Communicate your decision to the fund manager. This will be done using your seat number.
 - We will then bring back the yellow envelopes so you can make your decision for the next round.
 - We will continue this process until all rounds are complete.
 - You will not know the total number of rounds of decisionmaking. So, the final round will be suddenly determined.
 - 1. Like in real life, opportunities for investment can suddenly appear or disappear.
 - At the end of decisionmaking, we will bring back the record sheets of your decisions and those of the different fund managers.
 - At this point, you can check how the fund managers responded and that will tell you how much you will get paid for this part of the workshop at the end. This amount will be provided in a white envelope at the end of the workshop.
 - For example:
 - 1. Suppose you make two rounds of decisions.
 - If you never invested in any of the rounds, then your white envelope will contain $2 \times 40,000 \text{ VND} = 80,000 \text{ VND}$.

- If you invested in BOTH rounds and each fund manager paid you back, the white envelope will contain $2 \times 80,000 = 160,000$ VND.
 - If you invested in BOTH rounds, *did not get paid once* but *did get paid the other time*, then the white envelope will contain 80,000 VND.
 - Remember:
 1. Each round that you make a decision, you will face a different fund manager.
 2. You will know each fund manager's decision ONLY at the end. So, when you decide in any round, you will not know whether the previous fund manager paid you back or not. You will only know all of the results at the end.
 3. You do NOT know how many rounds of decisions you will make.
 - *Any questions at this point? REPEAT.*
- **Examples and quiz**
 - In a few moments, you will have to make a decision. What is it?
 - Invest 40,000 VND or NOT.
 - Will you know the identity of the fund manager?
 - NO.
 - Will the fund manager know your identity?
 - NO, the game is completely anonymous.
 - What do you know about the fund manager?
 - The fund manager can be one of the following:
 - A farmer who is NOT family from one of the MCCs.
 - An employee from the firm.
 - An employee from the MCC where you deliver your milk.
 - Another person that is not from this area.
 - What do you have to do?
 - In each case, you have to decide whether you want to invest or not.
 - How will you record your decision?
 - You will write it down on the record sheet, fold the paper, and place it in the yellow envelope.
 - We will collect the yellow envelopes, make note of your decisions, and communicate them to the fund manager.
 - Will you know the fund manager's decision before you make your next decision?
 - NO.
 - When you make your next decision is it toward the same fund manager?
 - NO, you will face a different fund manager each time.
 - How many rounds of decisions will you make?
 - You do not know. It can be 1, 2, 3, 4, or more.
 - Suppose you record the following decisions:
 - Farmer: INVEST.
 - Firm: NOT INVEST.
 - MCC: INVEST.
 - Other person: INVEST.
 - If the fund manager is a firm employee, what options does he have?
 - None, because you did not invest. You have 40,000 VND for that round and so does he.
 - If the fund manager is a farmer, what options does he have?
 - Well, he will invest the money and can decide to:
 - Pay you back, in which case you both have 80,000 VND.

- Not pay you back and keep everything. In this case, he has 160,000 VND and you have ZERO.
 - *Is this clear? REPEAT.*
- **Final recap**
 - You and the fund manager now have 40,000 VND as a grant from a donor agency or government.
 - You need to decide between two options: Invest 40,000 VND in the fund or NOT.
 - All decisions are anonymous. You will not know the fund manager and the fund manager will not know you.
 - You need to decide for four types of fund managers whether you want to invest or not:
 1. The fund manager can be another farmer from some MCC, but not a family member.
 2. The fund manager can be an employee from the firm.
 3. The fund manager can be an employee from the MCC where you deliver milk.
 4. The fund manager can be another person from outside this area.
 - For each case, you have to decide: invest or not.
 - Record your decision on the record sheet; fold the sheet and place it in the yellow envelope.
 - We will collect the yellow envelope, record your decisions, and communicate them.
 - We will then bring back the yellow envelope and ask you to make the next decision.
 - Each round you make a decision it will be toward a different fund manager.
 - You will NOT know the previous fund manager's decision when you make your decision this round.
 - You may make several rounds of decisions. The number of rounds is suddenly determined. Like in real life, opportunities for investment can suddenly disappear.
 - Once all rounds have finished, we will record the decisions from your final round. Then, we will bring back the yellow envelope with all of your decisions and the fund managers' decisions.
 - *Any questions before we start decisionmaking?*

3TG

- **Introduction and agenda**
 - Hello and welcome. Thanks for coming to our workshop.
 - This workshop will consist of the following steps:
 1. Instructions.
 2. Decisionmaking on investment.
 3. Questions at the end.
 4. Then, you will:
 - Receive payment for participation.
 - Participate in a lottery to determine if you are in the control or treatment group.
 - At the end of the workshop, you will be paid IN CASH for your participation.
 - So, you should think ***carefully*** about every decision you make or answer you give. We will explain this in detail in a few moments.
 - Some additional comments:
 1. Please turn off all cellular phones, pagers, and so on.
 2. All decisions you make or answers you give during the workshop are **private, confidential, and anonymous**. This is why we have boxes in which you can make your decision. These boxes are like your houses. They give you privacy.

3. Since all decisions/answers are private, please do NOT talk to each other anymore. If you have questions, please ask us by raising your hand and one of us will approach you to answer them. Please do NOT discuss with your neighbor.
 4. When making decisions, there are no correct or incorrect decisions. You should make the decision that you most prefer because you will be paid for that decision.
 5. Please make your decisions as if they are real-life decisions.
 6. If at any point there are questions, please raise your hand to ask the question.
- *Any questions before we begin?*
- **Explaining the decisionmaking: What is the decision you need to make?**
 - Think of the following situation.
 - The government or a donor agency decides to sponsor some amount of money to you and a fund manager *and an auditor is put in place.*
 - The investment fund requires you to invest money and the fund manager is in charge of investing these funds and paying you back for the benefits of your investment. *The auditor is in charge of monitoring that the fund manager pays you back.*
 1. For example, the fund manager may use the funds to buy new milking equipment. Over time the fund manager charges other people for use of this equipment and pays you back the benefits of your investment in terms of dividends or free use of the equipment. *The auditor needs to verify this.*
 - Suppose that before any investment is made, you and the fund manager EACH have 40,000 VND *whereas the auditor has 160,000 VND* that was given by the donor agency or government to cover the initial start-up cost of an investment.
 - For the fund manager to start the fund and make the investment into the new equipment, the fund manager needs 80,000 VND.
 - So, the fund manager approaches you and asks you to invest in the fund that he will manage.
 - You have two options:
 1. You can invest in the fund and give 40,000 VND to the fund manager. OR
 2. You can decide NOT to invest in the fund and keep the 40,000 VND.
 - If you do NOT INVEST, then there is no relationship between you and the fund manager. You will keep the 40,000 VND and the fund manager will also keep the 40,000 VND. *The auditor has no role to play and keeps his 80,000 VND.*
 - If you DO INVEST, then the fund manager invests the 80,000 VND, and over time he doubles this amount into 160,000 VND.
 - Since both you and the fund manager EACH invested 40,000 VND in the fund, once the fund manager makes the fund successful, he needs to pay you back the benefit of investment, which is 50 percent of 160,000 VND—80,000 VND.
 - Although the fund manager is supposed to pay you back, he may or he may not.
 - Why? Well, the fund manager may want to keep all the money and take all the benefits.
 1. For example, the fund manager may claim that the investment was unsuccessful so that he does not have to pay you.
 2. Since you do not have full information, you cannot be sure if he is telling the truth or not. *But that is why there is an auditor. He will verify whether the fund manager is supposed to pay you back or not.*
 - So, once you give your money to the fund manager and he invests it, the fund manager has two options:
 1. The fund manager can share the return on the investment with you equally by paying you 80,000 VND.

OR

2. The fund manager can default and NOT pay you back for your investment. In this case, he pays you ZERO and keeps the full benefits: 160,000 VND.
- *If the fund manager defaults, then the auditor will say whether the fund manager should pay you back or not. The auditor will look at the books/numbers and say:*
 1. *The fund manager should NOT pay you back and can keep all the money.*
 - *In this case, you have zero, the fund manager has 160,000 VND, and the auditor has 160,000 VND.*
 2. *The fund manager should pay you back. In this case, the auditor will spend 10,000 VND to take 80,000 VND from the fund manager and give it back to you.*
 - *In this case, you will have 80,000 VND, the fund manager will have 80,000 VND, and the auditor will have 150,000 VND.*
 - *So, the auditor checks whether the fund manager is doing the correct thing or not.*
 - *Does this make sense so far? REPEAT.*
 - Today, you will have to decide whether or not to invest 40,000 VND with the fund manager *in the presence of an auditor.*
 - There is someone in another location that represents a fund manager *and someone that represents the auditor.*
 - If you do not invest, there is no relationship between you and the fund manager. You will make 40,000 VND.
 - If you DO invest in the fund, the fund manager will invest it, but the fund manager can pay you back or NOT.
 - If he pays you back as promised, you will each have 80,000 VND.
 - If he does NOT pay you back by claiming that the investment was unsuccessful, he will have 160,000 VND and you will have zero. *At this point, the auditor will step in to review the fund manager.*
 1. *The auditor may say that he agrees with the fund manager to leave the situation as it is. In this case, you have zero, the fund manager has 160,000, and the auditor also has 160,000.*
 2. *The auditor may say that he disagrees with the fund manager and can use 10,000 VND to force the fund manager to pay you back 80,000 VND. In that case, you have 80,000, the fund manager has 80,000, and the auditor has 150,000.*
 - It is important that you think carefully about this decision because you will be paid according to the decision that you, the fund manager, *and the auditor* make. For example:
 1. If you do not invest, you will be paid 40,000 VND and the fund manager also.
 2. If you invest and the fund manager pays you back as promised, you will be paid 80,000 VND and the fund manager also.
 3. *If you invest and the fund manager does NOT pay you back, you will be paid according to what the auditor decides.*
 - *If the auditor agrees with the fund manager, you will have zero, the fund manager will have 160,000, and the auditor will also have 160,000 VND.*
 - *If the auditor disagrees with the fund manager, he will spend 10,000 VND to take 80,000 VND from the fund manager and give it back to you. In that case, you will have 80,000 VND, the fund manager will have 80,000 VND, and the auditor will have 150,000 VND.*
 - Again, there are no correct or incorrect decisions. You should make the decision that you most prefer. For example:
 1. If you think that the fund manager is NOT likely to pay you back *and the auditor is likely to agree with him*, you may choose NOT to invest.

2. However, if you think the fund manager is likely to pay you back *or that the auditor is likely to disagree with him and make him pay you back*, then you may choose to invest.
- Remember:
 1. All decisions are private and anonymous.
 2. Do not talk to each other when making your decision.
 - *Is this clear so far? REPEAT.*
- **Who are the fund manager and the auditor? What do you know about these persons?**
 - You will NOT know the fund manager *or the auditor*.
 - Also, the fund manager *and the auditor* will not know you.
 1. This is similar to life. Even though you may know what the fund manager *or auditor* looks like, you do NOT know if they are the type of people who will pay back or not.
 - What you DO know about the fund manager is the following:
 1. The fund manager can be one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
 2. So, in each of the above cases, the investment fund is managed by one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
 - The fund manager can be ANY of the above four people.
 - So, you will have to decide for EACH CASE, invest or not invest.
 - *You do NOT know anything else about the auditor. He or she is just some other person you do not know—an independent auditor hired by the government.*
 - *Does this make sense? REPEAT.*
 - **Example**
 - Suppose you decide the following:
 1. If the fund manager is a farmer, invest.
 2. If the fund manager is a firm employee, not invest.
 3. If the fund manager is an MCC employee, invest.
 4. If the fund manager is another person, not invest.
 - Then, we will communicate the decision you make to the fund manager, depending who they are. So, for example:
 1. If the fund manager is a fellow farmer, he will be told that you invested. At that point, he needs to decide whether or not to pay you back or not. If he pays you back, you each have 80,000 VND. If not, he has 160,000 VND and you have? ZERO. *BUT the auditor gets to decide if he agrees with this or not. If he agrees, you have zero, the fund manager has 160,000, and the auditor has 160,000 VND. If he disagrees, he will make the fund manager pay you back. He will use 10,000 VND to take 80,000 VND from the fund manager and pay it back to you.*

2. On the other hand, if the fund manager is a firm employee, he will be told that you did NOT invest. At that point, he knows that there is no relationship and each of you have 40,000 VND.
- So, again, you will NOT know the fund manager *or the auditor* and the fund manager *or auditor* will NOT know you.
 - All you know is that the fund manager could be:
 1. A fellow farmer who is NOT family from one of the MCCs.
 2. A firm employee.
 3. An employee from the MCC where you deliver milk.
 4. Some other person from outside this area (for example, a businessman from HCMC).
 - That is why you need to make a decision in each case. *If this clear? REPEAT.*
- **Recording your decision: Privacy and repetition**
 - You will decide whether or not to invest IN EACH CASE using the following record sheet (*show record sheet*).
 - The record sheet contains today's session number as well as your seat number. Since all responses are anonymous, we record them by seat number and NOT using your name.
 - You will choose to invest or NOT a few times. So, you will make more than one decision.
 - Each time you decide whether or NOT to invest, the fund manager will be a different person.
 - So, in round 1, the fund manager may be a fellow farmer; in round 2, he may be a firm employee; in round 3, he may be a different fellow farmer; in round 4, he may be an MCC employee; and so on.
 - *The auditor is also a different person.*
 - So, remember:
 1. You will not know the fund manager *or the auditor*.
 2. All you know is that the fund manager is one of the four people we described above.
 3. Also, you know that every time you decide whether or not to invest, the fund manager *and the auditor* will be different people.
 4. So, each round you decide whether or not to invest, it is toward a DIFFERENT fund manager *and auditor*.
 - Furthermore, when you make your next decision, you will not know whether or not the previous fund manager paid you back or not *OR whether the auditor intervened or not*.
 1. Sometimes in life you have to make the next decision without knowing what the result of the previous one was. It is the same in this case.
 - So, for each round, you will have to decide:
 1. If farmer: Invest or NOT.
 2. If firm employee: Invest or NOT.
 3. If MCC employee: Invest or NOT.
 4. If another person: Invest or NOT.
 - You will record this on the record sheet FIRST for round 1.
 - Once you do that, to guarantee the privacy of your decision, please fold the record sheet and place it in the yellow envelope.
 - I will collect all the envelopes and take them to the other room where someone else will:
 1. Make note of your decisions to invest or not.
 2. Communicate your decision to the fund manager. This will be done using your seat number.

- We will then bring back the yellow envelopes so you can make your decision for the next round.
- We will continue this process until all rounds are complete.
- You will not know the total number of rounds of decisionmaking. So, the final round will be suddenly determined.
 1. Like in real life, opportunities for investment can suddenly appear or disappear.
- At the end of decisionmaking, we will bring back the record sheets with your decisions and those of the different fund managers *and auditors*.
- At this point, you can check how the fund managers *and auditors* responded and that will tell you how much you will get paid for this part of the workshop at the end. This amount will be in a white envelope at the end of the workshop.
- For example:
 1. Suppose you make two rounds of decisions.
 - If you never invested in any of the rounds, then your white envelope will contain $2 \times 40,000 = 80,000$ VND.
 - If you invested in BOTH rounds and each fund manager paid you back, the white envelope will contain $2 \times 80,000 = 160,000$ VND.
 - If you invested in BOTH rounds, did not get paid once and the auditor agreed with the fund manager but you got paid the other time by the fund manager, then the white envelope will contain 80,000 VND.
 - If you invested in BOTH rounds, did not get paid once and the auditor forced the fund manager to pay you back and you got paid the other time by the fund manager, then the white envelope will contain 160,000 VND.
- Remember:
 1. Each round that you make a decision, you will face a different fund manager *and auditor*.
 2. You will know each fund manager's *and auditor's* decision ONLY at the end. So, when you decide in any round, you will not know whether the previous fund manager paid you back or not *or whether the auditor agreed or disagreed with the fund manager if the fund manager did not pay you back*.
 3. You do NOT know how many rounds of decisions you will make.
- *Any questions at this point? REPEAT.*
- **Examples and quiz**
 - In a few moments, you will have to make a decision. What is it?
 - Invest 40,000 VND or NOT.
 - Will you know the identity of the fund manager *or auditor*?
 - NO.
 - Will the fund manager *or auditor* know your identity?
 - NO, the game is completely anonymous.
 - What do you know about the fund manager?
 - The fund manager can be one of the following:
 - A farmer from who is NOT family from one of the MCCs.
 - An employee from the firm.
 - An employee from the MCC where you deliver your milk.
 - Another person that is not from this area.
 - What do you have to do?
 - In each case, you have to decide whether you want to invest or not.
 - How will you record your decision?

- You will write it down on the record sheet, fold the paper, and place it in the yellow envelope.
 - We will collect the yellow envelopes, make note of your decisions, and communicate them to the fund manager.
 - Will you know the fund manager's *or auditor's* decisions before you make your next decision?
 - NO.
 - When you make your next decision is it toward the same fund manager *or auditor*?
 - NO, you will face a different fund manager *and auditor* each time.
 - How many rounds of decisions will you make?
 - You do not know. It can be 1, 2, 3, 4, or more.
 - Suppose you record the following decisions:
 - Farmer: INVEST.
 - Firm: NOT INVEST.
 - MCC: INVEST.
 - Other person: INVEST.
 - If the fund manager is a firm employee, what options does he have?
 - None, because you did not invest. You have 40,000 VND for that round and so does he. *The auditor has 160,000 VND.*
 - If the fund manager is a farmer, what options does he have?
 - Well, he will invest the money and can decide to:
 - Pay you back, in which case you both have 80,000 VND.
 - Not pay you back and keep everything. In this case, he has 160,000 VND and you have ZERO.
 - *BUT then the auditor gets to decide if he agrees with the fund manager or not. If he agrees, then you have zero, the fund manager has 160,000 VND, and the auditor has 160,000 VND. If he disagrees, then he will use 10,000 VND of his own money to take 80,000 VND from the fund manager and give it back to you, so that you both have 80,000 VND. The auditor then has 150,000 VND.*
 - *Is this clear? REPEAT.*
- **Final recap**
 - You and the fund manager now have 40,000 VND. *The auditor has 80,000 VND.* All of this is as a grant from a donor agency or government. The auditor has been hired independently to oversee the fund.
 - You need to decide between two options: Invest 40,000 VND in the fund or NOT.
 - All decisions are anonymous. You will not know the fund manager *or the auditor* and the fund manager *or auditor* will not know you.
 - You need to decide for four types of fund managers whether you want to invest or not:
 1. The fund manager can be another farmer from some MCC, but not a family member.
 2. The fund manager can be an employee from the firm.
 3. The fund manager can be an employee from the MCC where you deliver milk.
 4. The fund manager can be another person from outside this area.
 - For each case, you have to decide: invest or not.
 - Record your decision on the record sheet; fold the sheet and place it in the yellow envelope.
 - We will collect the yellow envelope, record your decisions, and communicate them.
 - We will then bring back the yellow envelope and ask you to make the next decision.
 - Each round you make a decision it will be toward a different fund manager *and auditor*.

- You will NOT know the previous fund manager's *or auditor's* decision when you make your decision this round.
- You may make several rounds of decisions. The number of rounds is suddenly determined. Like in real life, opportunities for investment can suddenly disappear.
- Once all rounds have finished, we will record the decisions from your final round. Then, we will bring back the yellow envelope with all of your decisions and the fund managers' decisions.
- *Any questions before we start decisionmaking?*

3TGC

- **Introduction and agenda**

- Hello and welcome. Thanks for coming to our workshop.
- This workshop will consist of the following steps:
 1. Instructions.
 2. Decisionmaking on investment.
 3. Questions at the end.
 4. Then, you will:
 - Receive payment for participation.
 - Participate in a lottery to determine if you are in the control or treatment group.
- At the end of the workshop, you will be paid IN CASH for your participation.
- So, you should think *carefully* about every decision you make or answer you give. We will explain this in detail in a few moments.
- Some additional comments:
 1. Please turn off all cellular phones, pagers, and so on.
 2. All decisions you make or answers you give during the workshop are **private, confidential, and anonymous**. This is why we have boxes in which you can make your decision. These boxes are like your houses. They give you privacy.
 3. Since all decisions/answers are private, please do NOT talk to each other anymore. If you have questions, please ask us by raising your hand and one of us will approach you to answer them. Please do NOT discuss with your neighbor.
 4. When making decisions, there are no correct or incorrect decisions. You should make the decision that you most prefer because you will be paid for that decision.
 5. Please make your decisions as if they are real-life decisions.
 6. If at any point there are questions, please raise your hand to ask the question.
- *Any questions before we begin?*

- **Explaining the decisionmaking: What is the decision you need to make?**

- Think of the following situation.
- Your province decides to organize an investment fund for which there is a fund manager and an auditor that is placed by a donor agency or the government.
- The investment fund requires you to invest money and the fund manager is in charge of investing these funds and paying you back for the benefits of your investment. *The auditor is in charge of monitoring that the fund manager pays you back.*
 1. For example, the fund manager may use the funds to buy new milking equipment. Over time the fund manager charges other people for use of this equipment and pays you back the benefits of your investment in terms of dividends or free use of the equipment. *The auditor needs to verify this.*
- Suppose that before any investment is made, you and the fund manager EACH have 40,000 VND whereas the auditor has 160,000 VND that was given by the donor agency or government to cover the initial start-up cost of an investment.

- For the fund manager to start the fund and make the investment into the new equipment, the fund manager needs 80,000 VND.
- So, the fund manager approaches you and asks you to invest in the fund that he will manage.
- You have two options:
 1. You can invest in the fund and give 40,000 VND to the fund manager. OR
 2. You can decide NOT to invest in the fund and keep the 40,000 VND.
- If you do NOT INVEST, then there is no relationship between you and the fund manager. You will keep the 40,000 VND and the fund manager will also keep the 40,000 VND. *The auditor has no role to play and keeps his 80,000 VND.*
- If you DO INVEST, then the fund manager invests the 80,000 VND, and over time he doubles this amount into 160,000 VND.
- Since both you and the fund manager EACH invested 40,000 VND in the fund, once the fund manager makes the fund successful, he needs to pay you back the benefit of investment, which is 50 percent of 160,000 VND—80,000 VND.
- Although the fund manager is supposed to pay you back, he may or he may not.
- Why? Well, the fund manager may want to keep all the money and take all the benefits.
 1. For example, the fund manager may claim that the investment was unsuccessful so that he does not have to pay you.
 2. Since you do not have full information, you cannot be sure if he is telling the truth or not. *But, that is why there is an auditor. He will verify whether the fund manager is supposed to pay you back or not.*
- So, once you give your money to the fund manager and he invests it, the fund manager has two options:
 1. The fund manager can share the return on the investment with you equally by paying you 80,000 VND.
OR
 2. The fund manager can default and NOT pay you back for your investment. In this case, he pays you ZERO and keeps the full benefits: 160,000 VND.
- *If the fund manager defaults, then the auditor will say whether the fund manager should pay you back or not. The auditor will look at the books/numbers and say:*
 1. *The fund manager should NOT pay you back and can keep all the money.*
 - *In this case, you have zero, the fund manager has 160,000 VND, and the auditor has 160,000 VND.*
 2. *The fund manager should pay you back. In this case, the auditor will spend 10,000 VND to take 80,000 VND from the fund manager and give it back to you.*
 - *In this case, you will have 80,000 VND, the fund manager will have 80,000 VND, and the auditor will have 150,000 VND.*
 3. *The fund manager should NOT pay you back, **but the auditor says this so that he can collude with the fund manager to share the benefit from the investment.** In other words, sometimes the auditor cannot be trusted. He may lie to you so that he and the fund manager can benefit from your investment.*
 - *In this case, the auditor will spend 10,000 VND to get 40,000 from the fund manager, so that the fund manager has 12,000, the auditor has 190,000, and you are still left with zero.*
 - *So, in this last case, the auditor and the fund manager collude to benefit from your investment.*
- *Does this make sense so far? REPEAT.*
- Today, you will have to decide whether or not to invest 40,000 VND with the fund manager *in the presence of an auditor.*

- There is someone in another location that represents a fund manager *and someone that represents the auditor*.
- If you do not invest, there is no relationship between you and the fund manager. You will make 40,000 VND.
- If you DO invest in the fund, the fund manager will invest it, but the fund manager can pay you back or NOT.
- If he pays you back as promised, you will each have 80,000 VND.
- If he does NOT pay you back by claiming that the investment was unsuccessful, he will have 160,000 VND and you will have zero. *At this point, the auditor will step in to review the fund manager.*
 1. *The auditor may say that he agrees with the fund manager to leave the situation as it is. In this case, you have zero, the fund manager has 160,000, and the auditor also has 160,000.*
 2. *The auditor may say that he agrees with the fund manager in order to collude with the fund manager and share the benefits of your investment. In this case, you still have zero, but the fund manager has 120,000 and the auditor has 190,000 VND since he needs to spend 10,000 VND to collude with the fund manager.*
 3. *The auditor may say that he disagrees with the fund manager and can use 10,000 VND to take 80,000 VND from the fund manager and give it back to you. In that case, you have 80,000, the fund manager has 80,000, and the auditor has 150,000.*
- It is important that you think carefully about this decision because you will be paid according to the decision that you, the fund manager, *and the auditor* make. For example:
 1. If you do not invest, you will be paid 40,000 VND and the fund manager will also.
 2. If you invest and the fund manager pays you back as promised, you will be paid 80,000 VND and the fund manager will also.
 3. *If you invest and the fund manager does NOT pay you back, you will be paid according to what the auditor decides.*
 - *If the auditor agrees with the fund manager and lets him keep all, you will have zero, the fund manager will have 160,000, and the auditor will also have 160,000 VND.*
 - *If the auditor agrees with the fund manager, but shares in the benefit of the investment through collusion, you will still have zero, the fund manager will have 120,000, and the auditor will have 190,000 VND. So, the auditor profits from your benefits.*
 - *If the auditor disagrees with the fund manager, he will spend 10,000 VND to force the fund manager to pay you back 80,000. In that case, you will have 80,000 VND, the fund manager will have 80,000 VND, and the auditor will have 150,000 VND.*
- Again, there are no correct or incorrect decisions. You should make the decision that you most prefer. For example:
 1. If you think that the fund manager is NOT likely to pay you back *and the auditor is likely to agree with him or that the auditor is likely to collude with the fund manager*, then you may choose NOT to invest.
 2. However, if you think the fund manager is likely to pay you back *or that the auditor is likely to disagree with him and make him pay you back*, then you may choose to invest.
- Remember:
 1. All decisions are private and anonymous.
 2. Do not talk to each other when making your decision.

- *Is this clear so far? REPEAT.*
- **Who are the fund manager and the auditor? What do you know about these persons?**
 - You will NOT know the fund manager *or the auditor*.
 - Also, the fund manager *and the auditor* will not know you.
 - 1. This is similar to life. Even though you may know what the fund manager *or auditor* looks like, you do NOT know if they are the type of people who will pay back or not.
 - What you DO know about the fund manager is the following:
 - 1. The fund manager can be one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
 - 2. So, in each of the above cases, the investment fund is managed by one of the following people:
 - A fellow farmer who is NOT family from one of the MCCs.
 - A firm employee.
 - An employee from the MCC where you deliver milk.
 - Some other person from outside this area (for example, a businessman from HCMC).
 - The fund manager can be ANY of the above four people.
 - So, you will have to decide for EACH CASE, invest or not invest.
 - *You do NOT know anything else about the auditor. They are just some other person you do not know—an independent auditor hired by the government.*
 - *Does this make sense? REPEAT.*
- **Example**
 - Suppose you decide the following:
 - 1. If the fund manager is a farmer, invest.
 - 2. If the fund manager is a firm employee, not invest.
 - 3. If the fund manager is an MCC employee, invest.
 - 4. If the fund manager is another person, not invest.
 - Then, we will communicate the decision you make to the fund manager, depending who they are. So, for example:
 - 1. If the fund manager is a fellow farmer, he will be told that you invested. At that point, he needs to decide whether or not to pay you back or not. If he pays you back, you each have 80,000 VND. If not, he has 160,000 VND and you have? ZERO. *BUT the auditor gets to decide if he agrees with this or not. If he agrees and lets the fund manager keep it all, you have zero, the fund manager has 160,000, and the auditor has 160,000 VND. If he agrees, but colludes with the fund manager to share in the benefits of your investment, he uses 10,000 VND to share in the benefits of investment so that he has 190,000 VND, the fund manager has 120,000, and you have zero. If he disagrees, he will make the fund manager pay you back. He will use 10,000 VND to take 80,000 VND from the fund manager and pay it back to you.*
 - 2. On the other hand, if the fund manager is a firm employee, he will be told that you did NOT invest. At that point, he knows that there is no relationship and each of you have 40,000 VND.

- So, again, you will NOT know the fund manager *or the auditor* and the fund manager *or auditor* will NOT know you.
 - All you know is that the fund manager could be:
 1. A fellow farmer who is NOT family from one of the MCCs.
 2. A firm employee.
 3. An employee from the MCC where you deliver milk.
 4. Some other person from outside this area (for example, a businessman from HCMC).
 - That is why you need to make a decision in each case.
 - *If this clear? REPEAT.*
- **Recording your decision: Privacy and repetition**
 - You will decide whether or not to invest IN EACH CASE using the following record sheet (*show record sheet*).
 - The record sheet contains today's session number as well as your seat number. Since all responses are anonymous, we record them by seat number and NOT using your name.
 - You will choose to invest or NOT a few times. So, you will make more than one decision.
 - Each time you decide whether or NOT to invest, the fund manager will be a different person.
 - So, in round 1, the fund manager may be a fellow farmer; in round 2, he may be a firm employee; in round 3, he may be a different fellow farmer; in round 4, he may be an MCC employee; and so on.
 - *The auditor is also a different person.*
 - So, remember:
 1. You will not know the fund manager *or the auditor*.
 2. All you know is that the fund manager is one of the four people we described above.
 3. Also, you know that every time you decide whether or not to invest, the fund manager *and the auditor* will be different people.
 4. So, each round you decide whether or not to invest, it is toward a DIFFERENT fund manager *and auditor*.
 - Furthermore, when you make your next decision, you will not know whether or not the previous fund manager paid you back or not *OR whether the auditor intervened or not*.
 1. Sometimes in life you have to make the next decision without knowing what the result of the previous one was. It is the same in this case.
 - So, for each round, you will have to decide:
 1. If farmer: Invest or NOT.
 2. If firm employee: Invest or NOT.
 3. If MCC employee: Invest or NOT.
 4. If another person: Invest or NOT.
 - You will record this on the record sheet FIRST for round 1.
 - Once you do that, to guarantee the privacy of your decision, please fold the record sheet and place it in the yellow envelope.
 - I will collect all the envelopes and take them to the other room where someone else will:
 1. Make note of your decisions to invest or not.
 2. Communicate your decision to the fund manager. This will be done using your seat number.
 - We will then bring back the yellow envelopes so you can make your decision for the next round.
 - We will continue this process until all rounds are complete.

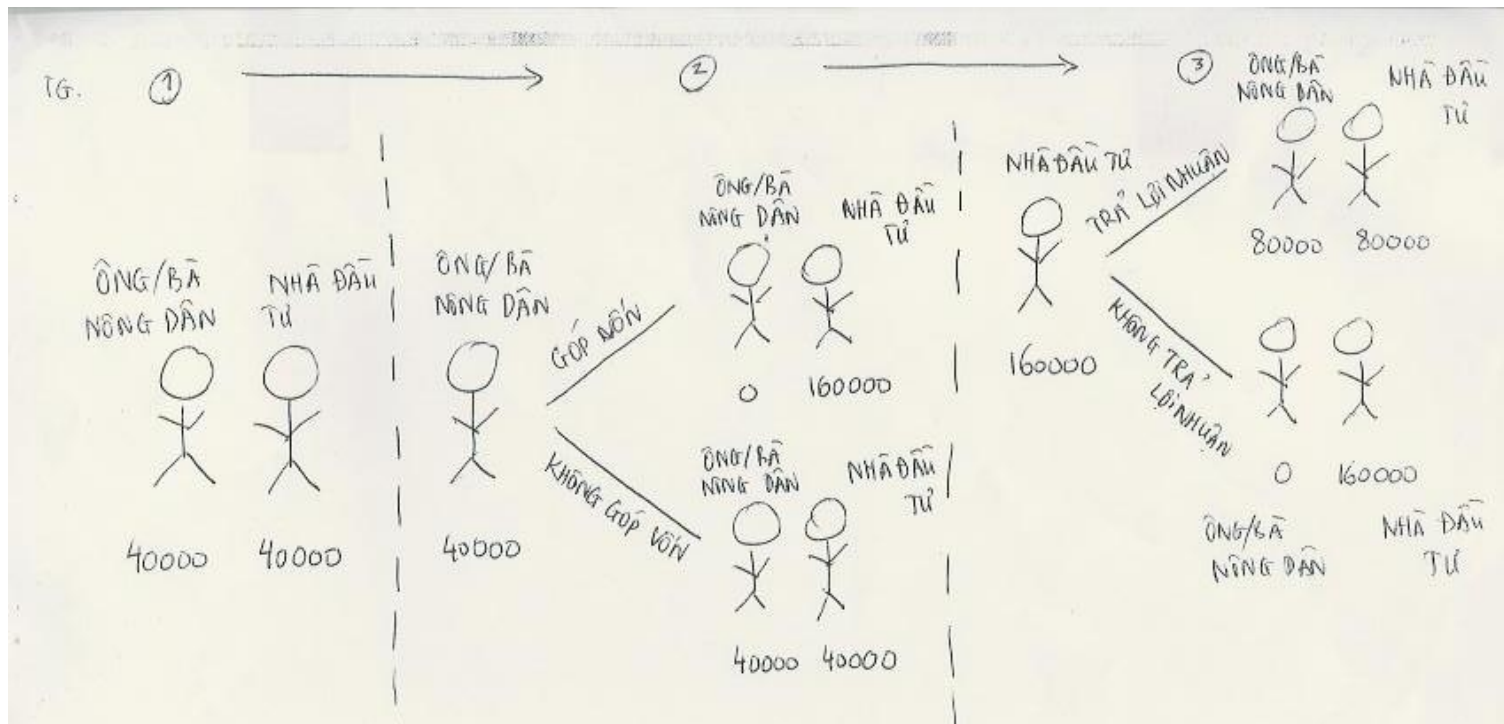
- You will not know the total number of rounds of decisionmaking. So, the final round will be suddenly determined.
 1. Like in real life, opportunities for investment can suddenly appear or disappear.
- At the end of decisionmaking, we will bring back the record sheets with your decisions and those of the different fund managers *and auditors*.
- At this point, you can check how the fund managers *and auditors* responded and that will tell you how much you will get paid for this part of the workshop at the end. This amount will be in a white envelope at the end of the workshop.
- For example:
 1. Suppose you make two rounds of decisions.
 - If you never invested in any of the rounds, then your white envelope will contain $2 \times 40,000 = 80,000$ VND.
 - If you invested in BOTH rounds and each fund manager paid you back, the white envelope will contain $2 \times 80,000 = 160,000$ VND.
 - If you invested in BOTH rounds, did not get paid once and the auditor agreed with the fund manager but you got paid the other time by the fund manager, then the white envelope will contain 80,000 VND.
 - If you invested in BOTH rounds, did not get paid once and the auditor forced the fund manager to pay you back and you got paid the other time by the fund manager, then the white envelope will contain 160,000 VND.
 - If you invested in BOTH rounds, did not get paid once and the auditor colluded with the fund manager and you did not get paid the second time and the auditor agreed with the fund manager, then the white envelope will contain ZERO VND.
- Remember:
 1. Each round that you make a decision, you will face a different fund manager *and auditor*.
 2. You will know each fund manager's *and auditor's* decision ONLY at the end. So, when you decide in any round, you will not know whether the previous fund manager paid you back or not *or whether the auditor agreed, disagreed, or colluded with the fund manager if the fund manager did not pay you back.*
- *Any questions at this point? REPEAT.*
- **Examples and quiz**
 - In a few moments, you will have to make a decision. What is it?
 - Invest 40,000 VND or NOT.
 - Will you know the identity of the fund manager *or auditor*?
 - NO.
 - Will the fund manager *or auditor* know your identity?
 - NO, the game is completely anonymous.
 - What do you know about the fund manager?
 - The fund manager can be one of the following:
 - A farmer who is NOT family from one of the MCCs.
 - An employee from the firm.
 - An employee from the MCC where you deliver your milk.
 - Another person that is not from this area.
 - What do you have to do?
 - In each case, you have to decide whether you want to invest or not.
 - How will you record your decision?

- You will write it down on the record sheet, fold the paper, and place it in the yellow envelope.
 - We will collect the yellow envelopes, make note of your decisions, and communicate them to the fund manager.
 - Will you know the fund manager's *or auditor's* decisions before you make your next decision?
 - NO.
 - When you make your next decision is it toward the same fund manager *or auditor*?
 - NO, you will face a different fund manager *and auditor* each time.
 - How many rounds of decisions will you make?
 - You do not know. It can be 1, 2, 3, 4, or more.
 - Suppose you record the following decisions:
 - Farmer: INVEST.
 - Firm: NOT INVEST.
 - MCC: INVEST.
 - Other person: INVEST.
 - If the fund manager is a firm employee, what options does he have?
 - None, because you did not invest. You have 40,000 VND for that round and so does he. *The auditor has 160,000 VND.*
 - If the fund manager is a farmer, what options does he have?
 - Well, he will invest the money and can decide to:
 - Pay you back, in which case you both have 80,000 VND.
 - Not pay you back and keep everything. In this case, he has 160,000 VND and you have ZERO.
 - *BUT then the auditor gets to decide if he agrees with the fund manager or not. If he agrees and lets the fund manager keep all, then you have zero, the fund manager has 160,000 VND, and the auditor has 160,000 VND. If he agrees with the fund manager in order to collude with him, then you still have zero, the fund manager has 120,000 VND, and the auditor has 190,000 VND. If he disagrees, then he will use 10,000 VND of his own money to take 80,000 VND from the fund manager and give it back to you, so that you both have 80,000 VND. The auditor then has 150,000 VND.*
 - *Is this clear? REPEAT.*
- **Final recap**
 - You and the fund manager now have 40,000 VND. *The auditor has 80,000 VND.* All of this is a grant from a donor agency or government. The auditor has been hired independently to oversee the fund, *but can collude with the fund manager.*
 - You need to decide between two options: Invest 40,000 VND in the fund or NOT.
 - All decisions are anonymous. You will not know the fund manager *or the auditor* and the fund manager *or auditor* will not know you.
 - You need to decide for four types of fund managers whether you want to invest or not:
 - The fund manager can be another farmer from some MCC, but not a family member.
 - The fund manager can be an employee from the firm.
 - The fund manager can be an employee from the MCC where you deliver milk.
 - The fund manager can be another person from outside this area.
 - For each case, you have to decide: invest or not.

- Record your decision on the record sheet; fold the sheet and place it in the yellow envelope.
- We will collect the yellow envelope, record your decisions, and communicate them.
- We will then bring back the yellow envelope and ask you to make the next decision.
- Each round you make a decision it will be toward a different fund manager *and auditor*.
- You will NOT know the previous fund manager's *or auditor's* decision when you make your decision this round.
- You may make several rounds of decisions. The number of rounds is suddenly determined. Like in real life, opportunities for investment can suddenly disappear.
- Once all rounds have finished, we will record the decisions from your final round. Then, we will bring back the yellow envelope with all of your decisions and the fund managers' *and auditors'* decisions.
- *Any questions before we start decisionmaking?*

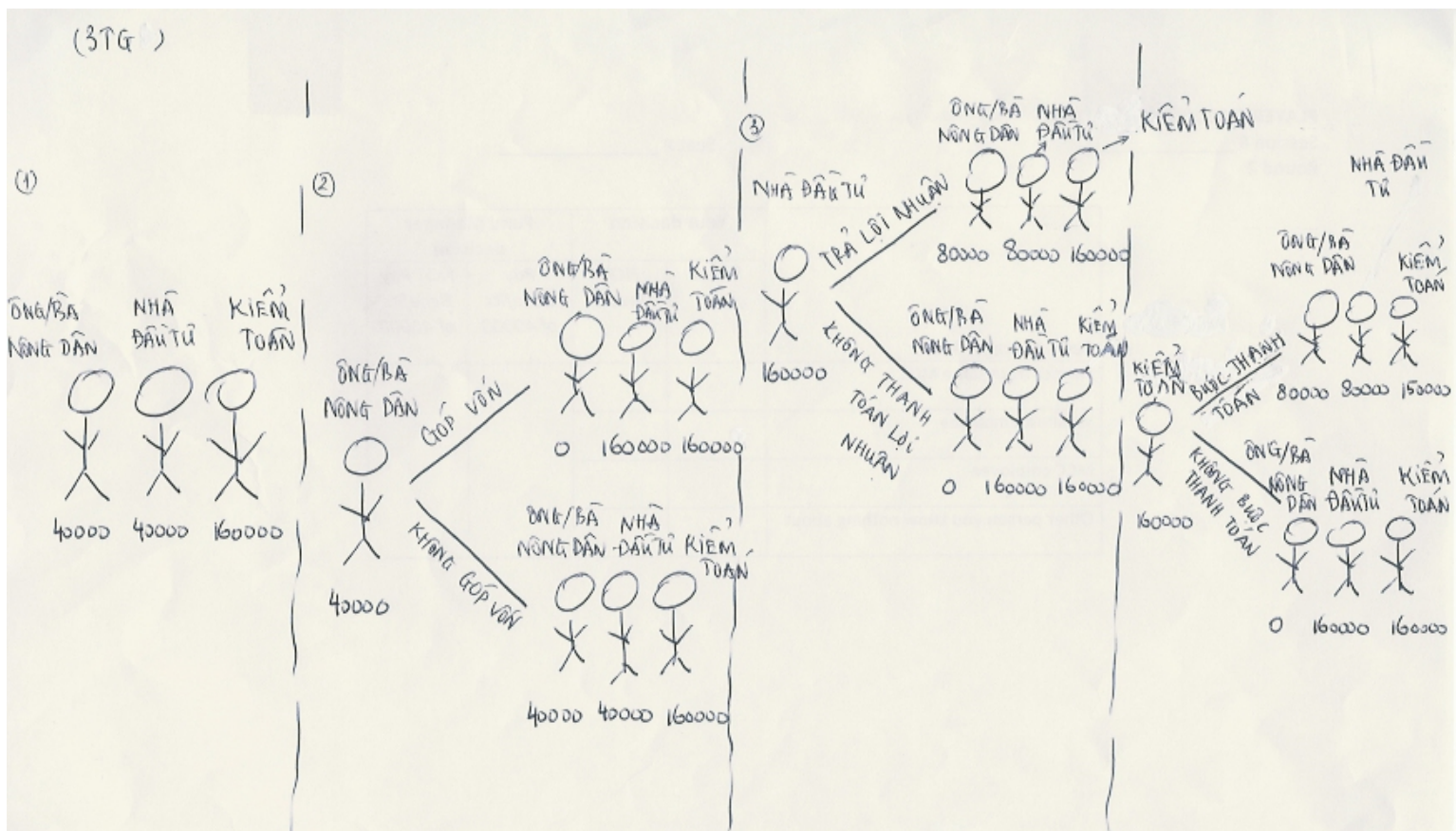
The graphical displays below, for TG, 3TG, and 3TGC, respectively, were provided on paper to each subject and were depicted on a large board at the front of the room.

Figure A.1—Graphical display for TG



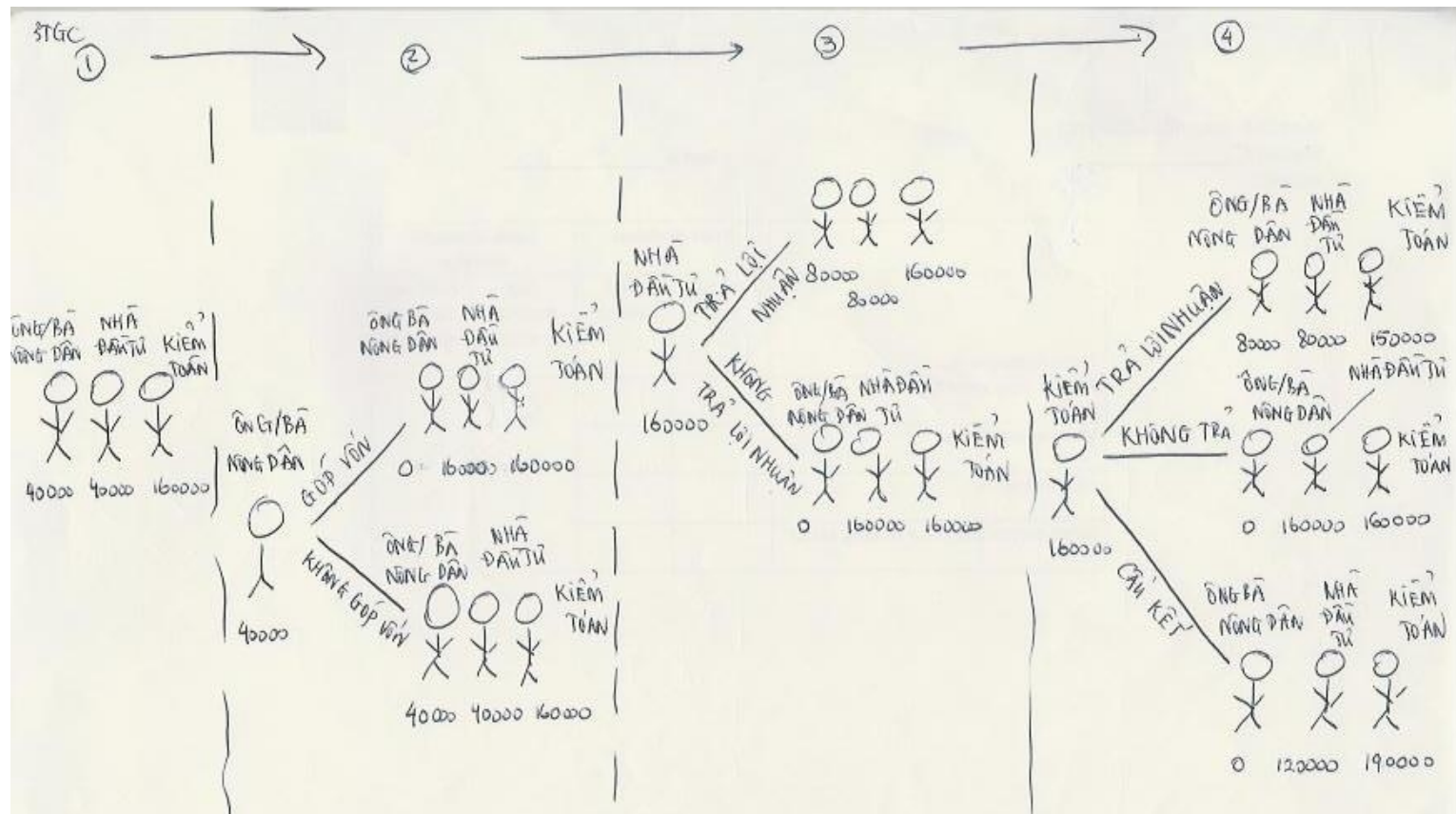
Source: Authors.

Figure A.2—Graphical display for 3TG



Source: Authors.

Figure A.3—Graphical display for 3TGC



Source: Authors.

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