frame than with standard frame (column 4). This represents a 34% increase in the willingness to pay for insurance. In contrast, non-DPC agents are not willing to pay when the insurance is presented with this frame.[16] Using the conservative definition, we find the same effects as in the simple definition: agents with Discontinuous Preferences for Certainty are willing to pay 5583 FCFA more for the premium rebate frame (column 8). Interesting the order of the games has a significant impact on the WTP: farmers who started with the risky vs risky game are willing to pay more for the insurance.

While these results provide provocative evidence that a discontinuous preference for certainty explains the revealed preference for the insurance premium rebate frame, it is natural to ask whether alternative theoretical frameworks might explain the confluence of results. As mentioned in section 2.3.1 above, a mix of ideas from prospect theory and separate mental accounting might explain the preference for the rebate frame. As further developed in the Appendix E, other ideas from cumulative prospect theory (notably probability weighting in combination with rank order utility) may separately explain why individuals might exhibit a surprising (from the perspective of expected utility theory) preference for the degenerate lotteries studied in this section. However, given that these two separate alternative accounts seem orthogonal to each other, it is difficult to imagine how they might explain the striking relationship revealed here between a discontinuous preference for certainty and a preference for the rebate frame. In contrast, the parsimonious DPC theory offers an integrated explanation for the observed relationship between play in the two experimental games.

5 Conclusion

In recent years the demand of insurances has been characterized by a surprisingly low take up, although insurances provide a good alternative to the informal risk managing mechanism. In this paper we attempt to demonstrate how behavioral economics could help in designing supply insurance policies in respect to farmers' behavior. Behavioral lab experiments have uncovered a wealth of evidences that people do not approach risk in accord with economics' workhorse theory of "expected utility". This behavioral evidence would seem to have rich implications for the design and the demand for insurance, and to date efforts have been sparse to develop those implications (Elabed and Carter, 2014; Petraud 2011). In this regard, this paper presents a novel way to understand the low micro-insurance take-up using the behavioral concept of discontinuity of preferences. In a framed field experiment conducted with cotton farmers in Burkina Faso, we find that 10% of farmers generally do not behave in accordance with the conventional expected utility theory, since they prefer a premium rebate contract, in which

[16] Appendix C1 presents the same result, distinguishing further between players and expected utility agents. The results are unchanged.

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Appendix

A: Randomization and Socio Demographic Characteristics

A1: Randomization

Table 11 reports the results of the double randomization process (Insurance's frames and order of the DPC games) by providing the number of farmers in each of the four possible categories. In particular, 144 participants were first proposed the risky vs degenerate game and then the premium rebate frame; 140 were first proposed the risky vs risky game and then the premium rebate frame; 138 were first proposed the risky vs degenerate game and then the standard insurance frame; 149 were first proposed the risky vs risky game and then the standard insurance frame.

	RD vs RR	RR vs RD	Total
Premium Rebate Frame	144	140	284
Standard Frame	138	149	287
Total	282	289	571

Table 11: Players Randomization

In Table 2.12 we test whether the randomization is balanced at frame's level. We can clearly see that our randomization is balanced.

In Table 13 we test the balance of the randomization between the two frames for each agent type. The premium rebate frame is indicated by "PR" and the standard insurance frame by "S". We can see that the randomization is balanced.

A2: Individual Characteristics

Table 14 reports the individual characteristics.

B: WTP Game: Graphical Representation

In Table 15 we present the information available to the farmers for the WTP game. For each situation (no insurance, insurance presented with the standard frame and insurance presented with the premium-rebate frame). The first part of the Table considers the information in case of not insurance purchasing and the other two parts of the Table represent the gains for the farmers in case of standard insurance frame and premium rebate frame. The values reported distinguish between good and bad harvest [yields].

C: Robustness Checks

C1: WTP for the Insurance and Tobit Regression Considering Three Types of Agents

We report here the information relative to the WTP for the insurance distinguishing between the three agent categories. Specifically we further distinguish between "expected utility maximizer" and "players" within the category of "non-DPC". To understand this distinction, consider Table 16 presents the cross tabulation of switching points in both games. Expected utility agents (EUT) are on the diagonal since they are switching at the same pair in both games. We have two kinds of agents with discontinuous preferences. Agent with discontinuous preferences revealing strong preferences for certainty, called agents with "Discontinuous Preferences for Certainty" (DPC), and the ones having strong preferences for uncertainty, who we call "Players". DPC are below the diagonal since they switched earlier in the Risky vs Degenerate game than in the Risky vs Risky one. Players are above the diagonal.

Based on the combination of switching points of the two games, Table 17 presents the frequencies of the agent types using two classification criteria. The first is a simple classification and it considers as expected utility agent only those switching at the same pair in both games, while the second is a conservative classification since it allows for small departures from the standard model by calling expected utility agents even those who switch just below or above the diagonal. In particular we notice that 33% of the farmers in our sample belong to the category of EUT agents, 29% are DPC agents and 38% are Players. Under the conservative definition we will naturally increase the number of EUT agent to 63%.

Table 18 reports the WTP for the insurance distinguishing between the three agents categories. We notice that in general agents are willing to pay more for an insurance presented with a premium rebate frame, but this difference is entirely driven by DPC agents. This result is also confirmed by the Tobit regression reported in Table 19. We see that agents with DPC preferences are willing to pay 4576 FCFA significatively more for an insurance presented with a premium rebate frame than a standard frame.This result holds both in case of simple and conservative definition.

C2: Gneezy Agents. Are they DPC or EUT Agents?

Andreoni and Sprenger (2010) show that Gneezy agents can be easily considered as agents with extreme preference for certainty and therefore agents with Discontinuous Preferences for Certainty. In the following we re-group these agents among the ones with discontinuous preferences for certainty. In other words, we consider as Gneezy the farmers switching at pair 2 in both games. It follows that the number of DPC agents increases and they become the 35% of the sample, as shown in Table 20.

Agent Types	**Simple Definition**	**Conservative Definition**
Expected Utility Agent (EUT)	27%	55%
Discontinuous Preferences for Certainty Agent (DPC)	35%	21%
Player Agent	38%	24%
N	571	571

Table 20: Agent Types re-classified considering Gneezy Agents

Considering this new specification we run the same Tobit regression as we did in Section 4, and we report the results both for the simple and the conservative definitions of our agents.

Under the simple definition we confirm all the results obtained before. In particular, in Table 21 we notice that DPC agents are willing to pay 4131 FCFA more for an insurance presented with Premium Rebate Frame and they are willing to pay more than Players for this insurance frame.

Using the conservative definition, we notice that both agents with Discontinuous Preferences for Certainty and EUT are willing to pay more for an insurance presented with Premium Rebate Frame. Players are acting as in the previous specification: they are willing to pay less than agents with Discontinuous Preferences for Certainty and EUT for an insurance presented with Premium Rebate Frame.

D: CARA Utility Function

In this section we assume that our agents use a CARA utility function, instead of a CRRA utility function in evaluating the lottery choices, and we explore the consequences of the use of a CARA utility function on our DPC games. We remind that with a CRRA utility function, $u(x) = \frac{x^{1-\gamma}}{1-\gamma}$, the marginal effect of an increase in the outcome on the risk aversion is null. This implies that if we multiply or divide by the same constant, all the outcomes of the game, the risk aversion remains unchanged. In case of a CARA utility function, $u(x) = 1 - e^{-\gamma x}$, the marginal effect of an increase in the risk aversion on the relative risk aversion is equal to γ. This implies that if we multiply or divide by the same constant all the outcomes of the game, the risk aversion will change.

In Table 22 we report the ranges of risk aversion obtained with a CRRA utility function (Column 1) and the ranges of risk aversion obtained with a CARA utility function (Column 2 and 3) for both games. Assuming a CARA utility function we notice that the ranges are extremely close to zero for all pairs. Moreover we can see that the ranges of the Risky vs Risky Game are slightly different from the ranges of the Risky vs Degenerate Game.

Due to the small value of the ranges, in order to facilitate the comparison between the two games, we simply multiply the coefficients for 100.000. Column 2 and 4 of Table 23 respectively report the average CARA ranges for the Risky vs Risky and the Risky vs Degenerate game. We notice that the main difference between the ranges of the two games lies between pair 3 of the Risky vs Risky game and pair 4 of the Risky vs Degenerate game. In particular, the ranges of the CARA specification show that it is possible to consider expected utility maximizer people switching at pair 3 in the Risky vs Risky game and then switching at pair 4 in the Risky vs Degenerate game. In our empirical investigation we account for these agents through the conservative definition.

E: Alternative Behavioral Explanations

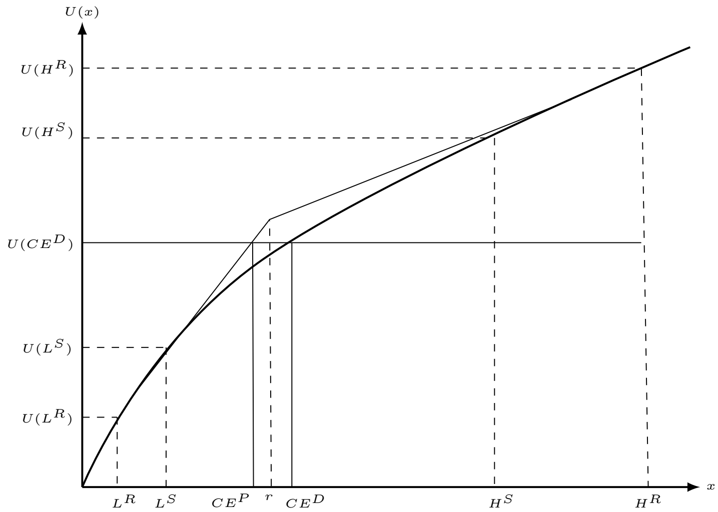
Prospect theory and, in particular loss aversion and probability weighting are natural alternative candidates for explaining departure from expected utility maximization. In the following sections we discuss alternative theories in the context of our experiments.

Loss Aversion

In this section we explore whether loss aversion may provide a satisfactory framework to account simultaneously for a disproportionate preference for a certain payoff and a higher willingness to pay under the premium rebate contract.

Let's consider first the risk aversion games. The disproportionate preference for the degenerate lottery in RD game may be compatible with loss aversion, provided the reference point that defines losses and gains is appropriately chosen. Indeed loss aversion can explain that agents behave as if very risk averse in the vicinity of the reference point. To see it, consider the situation illustrated in Figure 1. The

Figure 1: Prospect Theory: Loss Aversion



function $U(.)$ depicts the preferences of an EU maximizer indifferent between the riskier lottery (L^R, H^R) and the safer lottery (L^S, H^S) in RR game. The certainty equivalent for both lottery is CE^D. By definition, if the safer lottery is replaced by CE^D, as we did in RD game, an agent would be indifferent between CE^D and the riskier lottery. Suppose now that the individual has preferences captured by the function $V(.)$ which captures loss aversion in a very stylized way: at the reference point r, a marginal decrease in income has a greater impact on $V(.)$ than a marginal increase in income. The indifference between the safer and the riskier lottery is compatible with the preferences represented by the function $V(.)$. However, when faced with the choice between CE^D and the riskier lottery, an individual with utility $V(.)$ would strictly prefer CE^D to the riskier lottery since $CE^D > CE^P$, where CE^P is the certain equivalent associated to the riskier lottery for an agent using a value function $V(.)$.

Loss aversion may thus be compatible with a disproportionate preference for the degenerate lottery, provided the reference point is precisely between the low and the high outcome of the risky lottery.

Turning to the results of the insurance game, prospect theory alone can not explain a preference for premium rebate frame. In particular, assuming as reference point the initial monetary endowment of the agents, agents will never perceive a loss. Agents may therefore perceive some outcomes as losses as long as the reference point is greater than the low yield, but the net losses are exactly the same under both frames. For loss aversion to play a role, it must be that agents have separate mental accounts over gains and losses and value them individually. For example, if agents have a reference point r , such that $m \leq r < y_b + I$, and apply separate mental account for losses and gains, they might get more utility from the insurance product under premium rebate frame. The idea is that they perceive $y_b + I'$ and $y_b + I$ as gains but π as a loss. To illustrate it, we assume the simplistic loss aversion utility function used above (where $\lambda > 1$):

$$u(x) = \begin{cases} (x - r) & if x \geq r \\ -\lambda(-(x - r)) & if x < r \end{cases} \tag{10}$$

If agents use the liquid endowment, m , as their reference point, the utility levels reached with the standard and the premium rebate insurance contract are:

$$\begin{aligned} V_{I,S} &= p_b u(-\pi) + p_b u(y_b + I) + (1 - p_b) u(y_g) + (1 - p_b) u(-\pi) \\ &= -\lambda \pi p_b + p_b (y_b + I) + (1 - p_b) y_g \end{aligned} \tag{11}$$

$$\begin{aligned} V_{I,PR} &= p_b u(0) + p_b u(y_b + I') + (1 - p_b) u(-\pi) + (1 - p_b) u(y_g) \\ &= p_b (y_b + I') - \lambda \pi (1 - p_b) + (1 - p_b) y_g \end{aligned} \tag{12}$$

The comparison of the value of both contracts reveals that the premium rebate contract provides a higher utility level (loss aversion implies $\lambda > 1$).

In conclusion, loss aversion could be an alternative explanation for our set of results provided that individuals who are loss averse have a reference point which is between the low and the high outcome in the lottery game. in other words, this reference point should be such that the premium is perceived as a loss and the indemnity as a gain. However, since our games are framed in a way that subjects always experiment gains, it seems quite extreme to impose a reference point different from zero.

Probability Weigthing

In this section we use cumulative prospect theory (CPT) and the one-parameter form of Drazen Prelec's (1998) weighting function to re-estimate our first two games where we elicit the discontinuity of the preferences. Two distinctive features of CPT must be considered. First, cumulative prospect theory segregates value into gain and losses, with separate weighting function for losses and gains. Second, cumulative prospect theory applies decision weights to cumulative distribution functions rather than single events. This represents the main difference between prospect theory (PT) and CPT.[17] In particular in PT the utility of an alternative $X = (p_1, x_1; ...p_n, x_n)$, where outcome X_i occurs with probability

[17] The theory of rank dependent utility has been first introduced by Quiggin (1982) and then integrated in the prospect theory by Khaneman and Tversky (1992). The result is the cumulative prospect theory that is a version of rank dependent utility where decision weights are not just ranked, but also sign dependents.

p_i is defined as $U(X) = \sum_i \pi(p_i)u(x_i)$. The decision weights $\pi(p_i)$ are a function of the objective probabilities, and they are not required to sum to 1. This can give rise to violations of stochastic dominance. For instance, a prospect that offers 200$ with probability $\pi(0.8) = 0.65$ and 0$ with probability $\pi(0.4) = 0.27$, will be preferred to a prospect that offers 210$ with probability $\pi(0.4) = 0.27$, 200$ with probability $\pi(0.4) = 0.27$ and 0$ with probability $\pi(0.2)$, but this behavior constitutes a violation of stochastic dominance since the second prospect dominates the first one. In CPT the violation of the stochastic dominance is solved introducing decision weights not only depending on the probability, but also on the rank of the outcomes. More formally, consider a chance prospect $X = (p_1, x_1; ...p_n, x_n)$ with outcomes ordered in increasing order of preferences $u(x_1) < ... < u(x_n)$. The rank dependent utility associated to X will be $RDU(X) = \sum_i \pi(p_i, X)u(x_i)$ where the probability weighting is represented by $\pi(p_i, X) = w(p_i + ... + p_n) - w(p_{i+1} + ... + p_n)$. The decision weight $\pi(p_i, X)$ is a difference between two functions that no longer depend only on p_i , but also on the rank of outcome x_i in relation to other outcomes, and, thus, on the whole distribution of outcomes, X . The dependence on the rank of x_i comes because different probability values enter into the two summations, depending on the rank of x_i. In particular, the first expression is the sum over the probabilities of all outcomes that are at least as great as x_i; the second expression is the sum over the probabilities of all outcomes that are greater than x_i.

For instance, consider the risky lottery in our first game. In CPT the probability weighting associated to the high outcome corresponds to $\pi(1/2)$ that is around 0.4, as estimated in the literature by Abdellaoui (2000). This implies that the probability weighting associated to the low outcome is equal to $1-\pi(1/2) = 0.6$. In the following analysis we assume that there is not a reference point generating losses in the games (see previous Section for explanations). We use a CRRA utility function, $u(x) = \frac{x^{1-\alpha}}{1-\alpha}$, and the one parameter Prelec's (1998) probability weighting function, $\pi(p) = e^{-(-lnp)^{\theta}}$ for $0 < p \leq 1$ and $\theta > 0$, with $\pi(0) = 0$, $\pi(1) = 1$. The parameter θ represents the concavity/convexity of the weighting function. In particular, if $\theta < 1$, the weighting function is inverted S-shaped, i.e. individuals overweight small probabilities and underweight large probabilities, as shown by Tversky and Kahneman (1992). If $\theta > 1$, then the weighting function is S-shaped, i.e., individuals underweight small probabilities and overweight large probabilities.[18]

To elicit the two parameters of interest, α and θ, we use the series of paired lotteries designed for RR game and RD game.

The switching points in RR game and RD game jointly determine θ and α. For example, suppose a subject switched from lottery R to D at the fourth pair in RD game and at fourth pair in RR game. We

[18]Different weighting functions have been proposed in the literature (Khaneman and Tversky 1979;1992; Lattimore et al., 1992). However, the first axiomatically derived weighting function was the one of Prelec (1998).

will have a system of two equations where the first equation represents the indifference condition for a switching at pair 4 in the first game and the other represents the indifference condition for a switching at pair 4 in the second game. We will be therefore able to find the values of α and θ solving the following system.

$$\begin{cases} \pi(1/2)u(320000) + [1 - \pi(1/2)]u(60000) = \pi(1/2)u(240000) + [1 - \pi(1/2)]u(80000) \\ \pi(1/2)u(320000) + [1 - \pi(1/2)]u(60000) = u(139000) \end{cases} \tag{13}$$

In Table 24 we report all the possible combinations of (θ, α) rationalizing the switching in the RD game and in the RR game. By intersecting these parameter ranges from RR game and RD game, we obtain predictions of (θ, α) for all possible combinations of choices. We notice consistent differences in the weight associated to the probability $1/2$ along all the pair. In particular, we observe that as soon as α increases, the probability associated to the realization of the low outcomes, $1 - \pi(p)$, decreases since individuals are underweighting probabilities associated to small outcomes, as observed in the literature about probability weighting and rank dependent utility (Quiggin, 1982; Gonzalez and Wu, 1999; Stott 2006; Khaneman and Tversky 1992). The converse holds as soon as α decreases. In this case agents become more and more pessimistic since they associate higher probabilities to the low outcomes.[19] We notice that there is not probability weighting for individuals switching at the same pair in both games. These individuals are the ones on the diagonal of Table 24. In this new setting, Discontinuous Preferences for Certainty agents are the ones behind the diagonal of Table 24. We notice that in order to rationalize the presence of agents with Discontinuous Preferences for Certainty we need to assume a probability weighting always lower than 1/2. This implies that DPC agents will always associate high probabilities to the realization of low outcomes, with a level of α always lower than 0.2. For instance, consider an agent switching at pair 6 in the Risky vs Risky game and at pair 4 in the Risky vs Degenerate game. We classify this agent as an agent with Discontinuous Preferences for Certainty. His probability weighting function is equal to $\pi(p) = 0.27$ for high outcomes and $1 - \pi(p) = 0.73$ for low outcomes, with $\alpha = -0.18$. The presence of this probability weighting function can justify earlier

[19]Some RDU theorists (e.g., Quiggin, 1982) have used the labels pessimistic and optimistic to characterize the nonlinearity of the probability weighting function θ. The pessimistic θ function gives greater weight to lower outcomes (i.e., to outcomes with lower ranks). The easiest way to see it is by an example. Consider the alternative $X = (0.2, x_1; 0.2x_2; 0.6x_3)$ where $u(x_1) < u(x_2) < u(x_3)$. The rank-dependent utility is: $RDU(X) = [\pi(p_1 + p_2 + p_3) - \pi(p_2 + p_3)]\, u(x_1) + [\pi(p_2 + p_3) - \pi(p_3)]\, u(x_2) + \pi(p_3)u(x_3)$. In this case with a linear weighting function we would have $RDU(X) = (1 - 0.8)u(x_1) + (0.8 - 0.6)u(x_2) + 0.6u(x_3)$, while with a pessimistic weighting function we would have $RDU(X) = (1 - 0.62)u(x_1) + (0.62 - 0.36)u(x_2) + 0.36u(x_3)$. It is clear that the pessimistic weighting function takes away a portion of the objective probability weight of the highest outcome, x_3 (.24 out of .6) and transfers most of it (.18) to the lowest outcome, x_1, and some of it (.06) to the second lowest outcome, x_2.

switchings in the Risky vs Degenerate game with respect to the Risky vs Risky one. In particular, in our example, the value of the degenerate lottery associated to pair 4, and estimated with the new combination of curvature and probability weighting is 126.000 CFA and it is still lower than the value of the degenerate lottery estimated if the agent would have switched at pair 6, that is 151.000 FCFA. In conclusion, switching at pair 4 instead of pair 6, this agent is willing to sacrifice money in order to stay with the sure outcome. It follows that the presence of probability weighing can explain the attitude of Discontinuous Preferences for Certainty agents to sacrifice money in order to stay with the sure option, at the condition an agent weights the same probability (1/2) in very different ways along all the pairs, and he is very pessimistic at the same time.

G: Protocol of the Insurance Game

Insurance presented with STANDARD INSURANCE FRAME

"An insurance on cotton production is something you buy before you know your yield. The insurance gives you some money after the harvest, but only in case of bad yield. Let me explain how the insurance works.

The amount of your savings is 50.000 CFA. You decide to buy an insurance before you know your yield. The insurance price is 20.00 CFA.You pay the insurance with your savings. Therefore you remain with 30.000 CFA

- In case of a bad yield [indicate pink ball in the poster]

  You payed the insurance, your savings left are 30.000 CFA [indicate amount in the poster].The cotton revenue [indicate image in the poster] is 44.000 CFA [indicate amount in the poster]. The insurance [indicate image in the poster]gives you 50.000 CFA [indicate amount in the poster] since you had a bad yield.

How much family money [indicate image in the poster] do you have with the insurance in case of bad yield [indicate pink ball in the poster] ?

The family money is composed by:
- 30.000 CFA [indicate amount] that are the savings left after the insurance payment, plus
- 44.000 [indicate] that is the cotton revenue, plus
- 50.000 [indicate] CFA that the insurance gives you since you had a bad yield

Therefore the family money [indicate image] is 124.000 CFA [indicate amount]

- In case of a good yield [indicate orange balls in the poster]

You payed the insurance, your savings left are 30.000 CFA [indicate amount in the poster].The cotton revenue [indicate image in the poster] is 188.000 CFA [indicate amount in the poster]. The insurance [indicate image in the poster] gives you 0 CFA [indicate amount in the poster] since you had a good yield,.

How much family money [indicate image in the poster] do you have with the insurance in case of good yield [indicate orange ball in the poster]?

The family money is composed by:

- 30.000 CFA [indicate amount], that are the savings left after the insurance payment, plus

-188.000 CFA [indicate] that is the cotton revenue, plus

- 0 CFA since the insurance does not give you anything in case of good yield

Therefore the family money [indicate image] is 218.000 CFA [indicate amount]

Insurance presented with PREMIUM REBATE FRAME

An insurance on cotton production is something you buy before you know your yield. The insurance gives you some money after the harvest, but only in case of bad yield.Let me explain how the insurance works.

The amount of your savings is 50.000 CFA . You decide to buy an insurance before you know your yield. The insurance price is 20.000 CFA.You pay the insurance with your savings, BUT only in case of good yield. Therefore you remain with 30.000 CFA in case of good yield and 50.000 CFA in case of bad yield.

- In case of a bad yield [indicate pink ball in the poster]

You do NOT pay the insurance, your savings remain 50.000 CFA [indicate amount in the poster.]The cotton revenue [indicate image in the poster] is 44.000 CFA [indicate amount in the poster]. The insurance [indicate image in the poster] gives you 30.000 CFA [indicate amount in the poster] since you had a bad yield.

How much family money [indicate image in the poster] do you have with the insurance in case of bad yield [indicate pink ball in the poster] ?

The family money is composed by:

- 50.000 CFA [indicate amount], that are all your savings plus

- 44.000 CFA [indicate], that is the cotton revenue plus

- 30.000 [indicate] CFA that the insurance is giving you since you had a bad yield

Therefore the family money [indicate image] is 124.000 CFA [indicate amount]

- in case of a good yield [indicate orange balls in the poster]

You pay the insurance, your savings left are 30.000 CFA [indicate amount in the poster].The cotton revenue [indicate image in the poster] is 188.000 CFA [indicate amount in the poster].The insurance [indicate image in the poster]gives you 0 CFA [indicate amount in the poster] since you had a good yield .

How much family money [indicate image in the poster] do you have with the insurance in case of good yield [indicate orange ball in the poster]?

The family money is composed by:

- 30.000 CFA [indicate amount], that are the savings left after the insurance payment, plus

-188.000 CFA [indicate] that is the cotton revenue, plus

- 0 CFA since the insurance does not give you anything in case of good yield

Therefore the family money [indicate image] is 218.000 CFA [indicate amount]

	(1) Standard Frame	(2) Premium Rebate Frame	(3) ttest:p-value
Age	43.67	44.56	
	(12.34)	(13.29)	
	287.00	284.00	
			0.5
Education	0.99	0.98	
	(2.16)	(2.19)	
	285.00	276.00	
			0.97
Muslim	0.46	0.35	
	(0.50)	(0.48)	
	287.00	284.00	
			0.27
Animist	0.31	0.37	
	(0.46)	(0.48)	
	287.00	284.00	
			0.19
Christian	0.22	0.29	
	(0.42)	(0.45)	
	287.00	284.00	
			0.39
Bwaba	0.41	0.36	
	(0.49)	(0.48)	
	287.00	284.00	
			0.67
Mossi	0.38	0.38	
	(0.49)	(0.49)	
	287.00	284.00	
			0.97
Other Ethnicity	0.21	0.26	
	(0.41)	(0.44)	
	287.00	284.00	
			0.51
Household size	8.78	8.69	
	(5.45)	(5.08)	
	287.00	283.00	
			0.86
Number of Children	4.24	4.34	
	(3.27)	(3.03)	
	287.00	283.00	
			0.69
Years in GPC	10.13	10.59	
	(6.03)	(6.43)	
	285.00	284.00	
			0.51
Years Household Head	15.44	16.33	
	(11.01)	(12.25)	
	286.00	284.00	
			0.35
Total Agricultural Surface 2013	9.81	10.5	
	(6.9)	(7.23)	
	287.00	284.00	
			0.43
Leader	0.07	0.09	
	(0.26)	(0.29)	
	287.00	284.00	
			0.30

P-values are based on specifications including clusters at Cotton Group Level

Table 12: Balanced Randomization

	(1) DPC_S frame	(2) DPC_PR	(3) DPC_p-value	(4) EUT_S Frame	(5) EUT_PR	(6) EUT_p-value	(7) Players_S	(8) Players_PR	(9) Players_p-value
Age	43.04	44.45		45.13	47.11		42.98	42.40	
	(12.51)	(12.74)		(12.49)	(14.12)		(12.06)	(12.58)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.44			0.35			0.73
Education	0.94	0.55		1.27	0.96		0.79	1.25	
	(2.24)	(1.62)		(2.36)	(2.04)		(1.90)	(2.55)	
	94.00	67.00		88.00	97.00		103.00	112.00	
			0.19			0.38			0.22
Muslim	0.54	0.32		0.42	0.35		0.44	0.36	
	(0.50)	(0.47)		(0.50)	(0.48)		(0.50)	(0.48)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.07			0.61			0.50
Animist	0.26	0.30		0.38	0.37		0.30	0.40	
	(0.44)	(0.46)		(0.49)	(0.49)		(0.46)	(0.49)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.73			0.94			0.12
Christian	0.20	0.38		0.20	0.27		0.26	0.24	
	(0.40)	(0.49)		(0.40)	(0.45)		(0.44)	(0.43)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.08			0.37			0.76
Bwaba	0.31	0.37		0.48	0.30		0.44	0.41	
	(0.46)	(0.49)		(0.50)	(0.46)		(0.50)	(0.49)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.61			0.14			0.84
Mossi	0.48	0.38		0.33	0.37		0.34	0.39	
	(0.50)	(0.49)		(0.47)	(0.49)		(0.48)	(0.49)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.44			0.72			0.71
Other Ethnicity	0.21	0.25		0.19	0.32		0.22	0.20	
	(0.41)	(0.44)		(0.40)	(0.47)		(0.42)	(0.40)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.63			0.20			0.78
Household Size	9.29	8.30		8.87	9.03		8.22	8.63	
	(5.83)	(4.87)		(6.00)	(5.07)		(4.51)	(5.24)	
			0.25			0.94			0.53
Number Children	4.51	4.24		4.25	4.42		3.99	4.33	
	(3.86)	(2.66)		(3.13)	(2.97)		(2.77)	(3.32)	
	95.00	70.00		89.00	99.00		103.00	114.00	
			0.57			0.70			0.38
Years in Cotton Group	9.95	10.62		10.62	10.97		9.87	10.24	
	(6.17)	(6.30)		(5.85)	(6.76)		(6.09)	(6.26)	
	95.00	71.00		89.00	99.00		101.00	114.00	
			0.46			0.75			0.67
Years Household Head	14.29	17.34		14.84	17.08		17.04	15.05	
	(11.23)	(12.96)		(10.62)	(12.52)		(11.06)	(11.54)	
	95.00	71.00		89.00	99.00		102.00	114.00	
			0.10			0.18			0.21
Total Agricultural Surface 2013	9.91	10.75		9.88	9.89		9.64	11.00	
	(6.95)	(7.05)		(6.70)	(6.76)		(7.08)	(7.74)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.52			0.99			0.33
Leader	0.08	0.10		0.06	0.07		0.08	0.11	
	(0.28)	(0.30)		(0.23)	(0.26)		(0.27)	(0.31)	
	95.00	71.00		89.00	99.00		103.00	114.00	
			0.70			0.71			0.41

P-values are based on specifications including clusters at Cotton Group Level. Premium rebate frame is indicated by "PR" and Standard frame by "S".

Table 13: Balanced Randomization by Agent Types