

Online Appendix to Credit Ratings and Investments*

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A Additional results and robustness tests

This section presents additional results and robustness tests for our main findings.

A.1 Participants' characteristics

We show that our individual-level results are robust to controlling for risk and loss aversion metrics, as well as for participants' socioeconomic characteristics or experience in the game. Table A.1 replicates the results from Table 8 in the manuscript, including these additional covariates. In particular, risk and loss aversion have been found to affect behaviour in coordination games (Brown *et al.*, 2017; Kiss *et al.*, 2018), and we, therefore, control for them in our experiment. We include indicator variables capturing risk and loss aversion, following the tests proposed in Dave *et al.* (2010) and Gächter *et al.* (2022), respectively.¹

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¹The risk aversion indicator equals 1 if a subject chooses one of the first three gambles depicted in Figure B.1 from Appendix C, corresponding to a risk-averse attitude in Dave *et al.*'s (2010) test. The loss aversion indicator equals one if a participant accepts at most two of the lotteries depicted in Figure B.2 from Appendix C, corresponding to an implied degree of loss aversion greater than 1.5 in the loss aversion test proposed in Gächter *et al.* (2022). Note that we depart from Gächter *et al.*'s (2022) original test in the way we incentivize the choice of lotteries. In Gächter *et al.* (2022), one of the six lotteries is picked at random to pay participants, while in our version, we choose at random from one of the lotteries that the participant *accepted* to play (see also Brown *et al.*, 2017, for other variations of elicitation of beliefs in loss aversion games).

Table A.1: Investment behaviour - Robustness tests

Dependent variable	$\mathbb{1}\{\text{Invest} = 1\}$		Belief fundamentals		Belief number investors	
	Bad Rating (B)	Good Rating (A)	Bad Rating (B)	Good Rating (A)	Bad Rating (B)	Good Rating (A)
Hint about IF	0.006*** (0.001)	0.014*** (0.002)	0.929*** (0.012)	0.884*** (0.012)	0.012*** (0.001)	0.015*** (0.001)
CRA Treatment	-0.487*** (0.129)	0.559*** (0.133)	7.896** (3.966)	5.606*** (1.612)	-0.970*** (0.125)	0.583*** (0.134)
Period	-0.011 (0.011)	0.047*** (0.011)	-1.453*** (0.274)	0.115 (0.138)	-0.051*** (0.011)	0.080*** (0.009)
Risk aversion	-0.015 (0.117)	-0.177 (0.127)	6.478 (4.045)	0.482 (1.473)	-0.022 (0.122)	-0.211* (0.127)
Loss aversion	-0.239* (0.124)	-0.257* (0.138)	-6.637 (4.589)	-0.601 (1.621)	-0.242** (0.122)	0.020 (0.141)
Negative past experience	2.679*** (0.219)	0.765** (0.300)	138.032*** (17.836)	9.919 (6.048)	4.255*** (0.306)	0.579* (0.325)
Capital market investor	-0.158 (0.158)	-0.094 (0.153)	-5.341 (4.453)	-1.251 (1.754)	-0.036 (0.149)	0.058 (0.160)
Bank accounts	-0.073 (0.125)	0.015 (0.131)	5.086 (4.396)	-1.560 (1.649)	-0.219* (0.125)	0.158 (0.132)
Gender	0.078 (0.134)	0.324** (0.138)	-2.520 (4.475)	0.293 (1.574)	0.110 (0.129)	0.221 (0.136)
Observations	3,200	2,650	3,200	2,650	3,200	2,650

Notes: Columns (1)-(2) report estimates from probit regressions where the dependent variable is an indicator equal to 1 if a participant invests. Columns (3)-(4) present estimates from OLS regressions where the dependent variable is the stated belief about the value of the firm's internal funds (IF). Columns (5)-(6) report estimates from ordered logit regressions where the dependent variable is the stated belief about the number of participants who buy the bond. *Good (Bad) rating A (B)* corresponds to the sample of fundamentals above (below) -31. *Hint about IF* captures the private information about firm fundamentals. *CRA Treatment* is an indicator variable equal to 1 if the treatment is CRA and 0 if the treatment is the Baseline one. *Risk/Loss aversion* are dummy variables equal to 1 if the participant was classified as risk/loss averse in the post-experiment questionnaire. *Negative past experiences* captures the average number of negative surprises from previous periods. *Capital market investor* is a dummy that equals 1 for subjects who report investing in capital markets. *Bank accounts* is a dummy that equals 1 for subjects with more than one bank account. *Gender* is a dummy that equals 1 for male participants. Standard errors clustered at the subject level are reported in parentheses. ***, **, * indicate significance at the 1, 5, and 10% levels, respectively.

We control for the following selected socioeconomic characteristics of subjects: gender, and whether the subject has more than one bank account or invests in capital markets. Finally, we control for past outcomes in the experiment by including a variable that captures the average number of negative surprises in previous rounds.

Our main results are robust to including these additional explanatory variables. Furthermore, we find evidence that loss-averse individuals are less likely to invest (columns (1) and (2)) and hold more pessimistic beliefs about the behaviour of other investors (column (6)), while

Table A.2: Probability of investing across treatments- robustness with individual controls

	Baseline			CRA		
	(1)	(2)	(3)	(4)	(5)	(6)
Belief about IF	1.474*** (0.107)		0.615*** (0.096)	2.107*** (0.183)		0.912*** (0.133)
Belief about # investors		2.193*** (0.107)	1.924*** (0.118)		2.184*** (0.165)	1.760*** (0.151)
Period	0.002 (0.009)	-0.017 (0.011)	-0.011 (0.011)	0.027*** (0.009)	-0.003 (0.007)	0.014 (0.010)
Risk Aversion	-0.110 (0.105)	0.009 (0.119)	-0.010 (0.123)	-0.083 (0.145)	0.060 (0.241)	0.007 (0.222)
Loss aversion	-0.143* (0.081)	-0.232*** (0.088)	-0.240*** (0.091)	-0.144 (0.145)	-0.244 (0.240)	-0.232 (0.229)
Negative past experience	0.843*** (0.297)	-0.426* (0.239)	-0.134 (0.248)	-0.187 (0.222)	-1.111*** (0.256)	-0.609*** (0.218)
Capital market investor	0.067 (0.121)	-0.102 (0.146)	-0.053 (0.161)	-0.117 (0.134)	-0.182 (0.160)	-0.197 (0.155)
Bank accounts	-0.006 (0.120)	0.078 (0.101)	0.036 (0.114)	-0.112 (0.158)	-0.226 (0.213)	-0.236 (0.210)
Gender	0.199 (0.130)	0.085 (0.108)	0.117 (0.124)	0.050 (0.163)	0.049 (0.173)	0.082 (0.177)
Observations	3,375	3,375	3,375	2,475	2,475	2,475

Notes: The table presents estimates from probit regressions where the dependent variable is an indicator equal to 1 if the participant invests. Columns (1)-(3) correspond to the Baseline treatment, while (4)-(6) correspond to the CRA, respectively. *Hint about IF* captures the private information about firm fundamentals. *Belief about IF* and *Belief # investors* capture the stated beliefs (as a number) about firm fundamentals and the other participants investing, respectively. *Risk/Loss aversion* are dummy variables equal to 1 if the participant was classified as risk/loss averse in the post-experiment questionnaire. *Negative past experiences* captures the average number of negative surprises in previous periods. *Capital market investor* is a dummy that equals 1 for subjects that report investing in capital markets. *Bank accounts* is a dummy that equals 1 for subjects with more than one bank account. *Gender* is a dummy that equals 1 for male participants. Standard errors clustered at the subject level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

risk aversion has little explanatory power.² At the same time, more negative past surprises appear positively correlated with the probability of investing (column (2)) and have a strong impact on investors' beliefs (columns (4) and (6)), but only when a bad rating is observed. Socioeconomic characteristics such as financial experience are not significantly correlated with the likelihood of investing or belief formation. Male participants are more likely to invest for values of the fundamental corresponding to a good rating.

Table A.2 shows the robustness of the results from Table 7 in the manuscript to the inclusion of additional controls. Overall, our main results regarding individual investment behavior

²Note that due to a technical error, the post-experimental survey was not saved for three of the sessions in the CRA treatment. One of these sessions included 15 participants, so for a total of 55 participants, the risk, loss aversion and socio-economic characteristics are missing. This explains the lower number of observations in the robustness tables in this section, as compared to the ones in the main text.

are robust to the inclusion of socioeconomic measures, as well as measures of risk and loss aversion and experience in the game.

A.2 Additional treatment: CRA Salient

In the CRA treatment, participants can rationally deduce that, for some values of the fundamentals, the credit rating is inflated. However, we do not know whether they actually make this reasoning. Consequently, a potential concern arises: is the difference in subjects' behaviour between the CRA and the Baseline treatments due to the mere presence of the credit rating, or is it because the ratings are inflated? To disentangle these two potential explanations, we ran an additional treatment, called *CRA Salient*, where we explicitly stated that credit ratings might be inflated. The main difference between the CRA and CRA Salient treatments is the inclusion of the following sentence in the instructions:

*Notice that credit ratings can sometimes be inflated: this means that a Rating A can be assigned to some firms that do not have high levels of internal funds. Even if the rating agency expects these firms to invest in low-risk (LR) projects, they might still choose high-risk (HR) projects.*³

We conducted six additional sessions in which participants played this alternative CRA treatment with salient inflated ratings. These sessions involved 115 participants, with an average pay of 18.3 Euros.

We present in this section how our results from the Baseline and CRA treatment compare to those in this additional CRA salient treatment.

Table A.3 shows the average number of participants that invested in the Baseline treatment compared to the CRA Salient treatment. Similar to Result 1 in the manuscript, in this CRA Salient treatment, we also find that firms with a good (bad) rating receive significantly more (less) external funding than firms in the Baseline treatment with similar fundamentals. Furthermore, in Figure A.1, we show the proportion of firms actions across the experimental

³We have also added a sentence after the example explaining how credit ratings might be inflated.

Table A.3: Average number of participants investing (CRA Salient)

Treatment	Baseline		CRA Salient		Tests (p-values)			
	(1) Rating A	(2) Rating B	(3) Rating A	(4) Rating B	(1) vs. (3) Test 1	(3) vs. (2) Test 2	(2) vs. (4) Test 1	(4) vs. (1) Test 2
Hypothetical/ Observed rating								
Investors	3.96 (1.23)	0.78 (0.99)	4.48 (0.82)	0.32 (0.63)	0.00	0.00	0.00	0.01
Observations	303	372	165	180	468	18	552	18

Notes: Columns (1)-(4) present the mean (standard deviation) of the number of subjects (per group) investing conditional on the treatment and observed (in the CRA Salient treatment)/hypothetical (in the Baseline treatment) rating. Test 1 is a t-test of equality of means performed at the group level. Test 2 is a non-parametric Mann-Whitney U test performed at the session level.

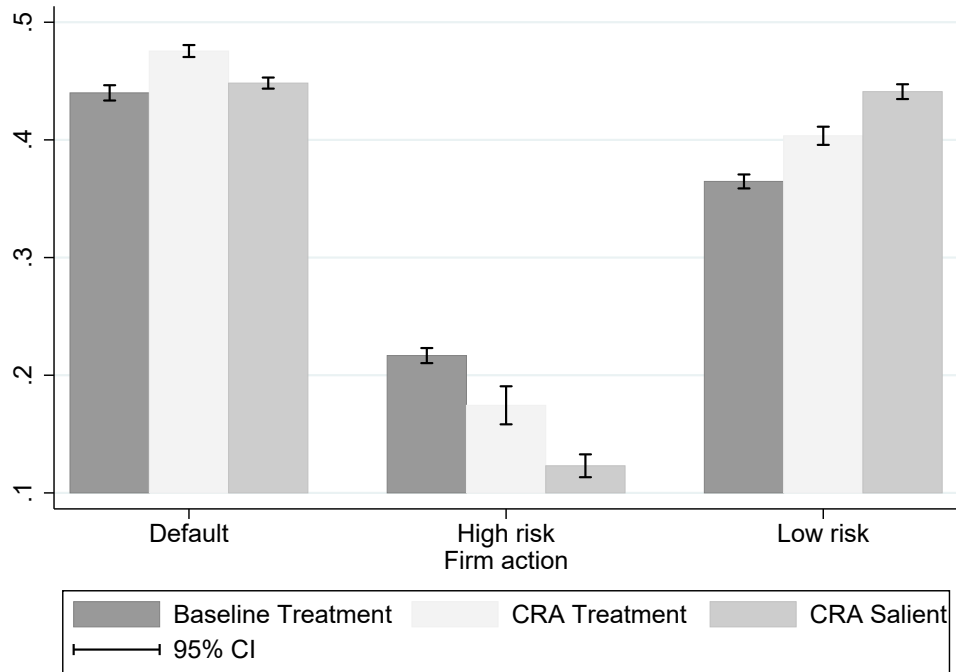
sessions in all three treatments. Overall, the CRA Salient treatment yields similar results to those of the original CRA treatment.

The findings from the CRA Salient treatment further strengthen our main results and suggest that participants likely infer that the rating is inflated for high-risk firms in the CRA treatment.

A.3 Post-experimental questionnaire on the investment game

Finally, we analyze the information collected during the experiment’s second part, which included several questions aimed at understanding subjects’ experience and attitudes in the investment game. Specifically, we inquired about the ease of making choices in the experiment, the level of confidence in making the investment decisions, and the importance of estimating the behaviour of others or the actual level of the firm’s fundamentals. The questions were presented on a Likert scale from 1 to 5, with 1 representing “Strongly Disagree” and 5 representing “Strongly Agree”, respectively. Table A.4 presents the questions and summary statistics for participants’ responses across the two treatments. There is minimal variation across the treatments and all responses average between 3 and 4. Notably, there are no statistically significant differences between the two treatments in the perceived ease of making choices or subjects’ confidence. The results of the post-experiment survey corroborate with the findings previously discussed: on average, participants give more importance

Figure A.1: Firms' actions across treatments (with CRA Salient treatment)



Notes: The figure shows the proportion of firm defaults, and high and low-risk projects across the three treatments (including the CRA Salient treatment). The sample size is 1,680 unique groups of investors. Whiskers mark the 95% confidence interval.

to estimating the behaviour of others as compared to the firm's fundamentals.

Table A.4: Post-experiment survey

	N	Baseline Mean	Treatment St. Dev.	CRA Mean	Treatment St. Dev.	p-value
Making the choices in Part I of the experiment was easy	390	3.71	(0.93)	3.76	(0.98)	0.89
I was confident in taking the decisions in Part I of the experiment	390	3.96	(0.92)	4.00	(0.90)	0.64
In Part I of the experiment, the most important element was estimating the level of the firm's internal funds	390	3.07	(1.10)	3.19	(1.15)	0.48
In Part I of the experiment, the most important element was estimating how many other investors invest	390	3.88	(0.94)	3.84	(0.94)	0.89

Notes: The last column shows a non-parametric Mann-Whitney U test of the difference in mean responses across the two treatments performed at the session level.

B Experimental instructions

We present the experimental instructions for the CRA treatment. The instructions for the Baseline treatment are identical, except that any information concerning the credit rating is omitted.

General instructions

This is an experiment on financial decision-making. If you follow these instructions carefully, you can earn a considerable amount of money, which we will pay you at the end of this experiment. Please read the instructions carefully. Please do not talk or communicate with other participants. The use of mobile phones is not allowed. The rules are the same for all the participants. All your decisions and answers to questions remain anonymous.

The experiment consists of two parts: in Part 1, you will play a financial game with other participants. In Part 2, you will be asked to fill out several individual questionnaires. We will convert your experimental gains from Parts 1 and 2 into Euros at the end of the experiment and add a 7 Euro show-up fee to that amount.

If you have any questions during the experiment or difficulties in understanding these instructions, please raise your hand and wait for the experimenter to come to your cubicle and answer your questions privately.

Thank you for your participation!

Part 1. An investment game

Background In this part of the experiment, all participants will play the role of investors who must decide whether to invest in a firm or not. There are 15 rounds and you will make an investment decision in each of them. Each round is independent of the others. In each round, 5 participants are potential investors in the same firm (you and four others). The computer plays the role of the firm. Investors in your group will change randomly from round to round. You will not know which of the other participants belong to your group in a given round. Your payoff will depend on your own decision and on that of the other four

investors in your group, as well as on the firm's action.

Your decision In each round, each investor is endowed with 100 Experimental Currency (EC) and will choose one of the following two decisions:

- NOT INVEST and you keep your initial 100 EC.
- INVEST and finance the firm with 100 EC. If you invest, your payoff depends on the firm's action. The firm can undertake one of the following three actions:
 - The firm can invest in a low-risk (LR) project, in which case you will obtain 200 EC with a probability of 90% and 0 with a probability of 10%.
 - The firm can invest in a high-risk (HR) project, in which case you will obtain 200 EC with a probability of 20% and 0 with a probability of 80%.
 - The firm can also default, in which case you will obtain 0 EC with 100% probability.

These payoffs are the same for all investors in your group. Now, we will explain how the firm's action is affected by your investment decision and that of the other members of your group.

The firm's action

In each round, the computer plays the firm's role and chooses automatically between the low-risk project (LR), the high-risk project (HR), and default, depending on how much financing the firm has available. The firm has two funding sources: its own funds (internal funds, denoted IF) and the external funds (denoted EF) provided by you and the other four investors. Details about the firm's IF are provided below (*Information section*). The firm's automatic decision is as follows:

- If the firm obtains 300 EC or more from both IF and EF (provided by all five investors), it undertakes the LR project.
- If the firm has less than 300 EC (but at least zero) financing from both IF and EF

(provided by all five investors), it undertakes the HR project.

- If the firm has losses (i.e., IF are less than 0) and EF are lower than the losses, it defaults.

We summarize the firm's actions in the following table.

Financing	Firm's action
$300 \leq IF + EF$	LR project
$0 \leq IF + EF < 300$	HR project
$IF + EF < 0$	Default

Example:

The table below provides an example of the different actions of the firm for hypothetical values of the internal and external funds available.

Hypothetical number of players who invest	Internal funds of the firm													
	-400		-300		-200		-100		0		100		200	
	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action	Total Funds available to the firm	Firm's action
0	-400	Default	-300	Default	-200	Default	-100	Default	0	HR	100	HR	200	HR
1	-300	Default	-200	Default	-100	Default	0	HR	100	HR	200	HR	300	LR
2	-200	Default	-100	Default	0	HR	100	HR	200	HR	300	LR	400	LR
3	-100	Default	0	HR	100	HR	200	HR	300	LR	400	LR	500	LR
4	0	HR	100	HR	200	HR	300	LR	400	LR	500	LR	600	LR
5	100	HR	200	HR	300	LR	400	LR	500	LR	600	LR	700	LR

The credit rating agency

Before your decision and the firm's action, a *credit rating agency* assigns a rating to the firm. A credit rating is a grade that indicates the firm's ability to repay its investors. We will provide details below on how this rating is assigned.

Information

The firm's IF consist of profits (or losses) from ongoing activities. These funds are known by the firm and the credit rating agency and unknown to any investor. In each round, the firm's IF are randomly selected from the interval $[-400, 200]$. Each number in this interval

has the same probability of being drawn. The number is the same for all investors in your group. When you make your investment decision, you do not know the exact value of the firm's profits (or losses). However, before investing, you and all the other investors from your group receive information about the firm's IF from two sources:

1. A private hint about the firm's IF. The hint number is randomly selected from the interval:

$$[\text{True value of firm's IF}-30, \text{True value of firm's IF}+30].$$

All numbers in the interval have the same probability of being drawn. Hint numbers of different investors are drawn independently from the same interval. Note that each of the investors in your group receives a different hint, which is known only by the participant who receives it.

2. A public credit rating from the credit rating agency about the firm's ability to repay its creditors. The rating can be either A or B. All investors in your group observe the same rating. In each round, the rating agency uses a theoretical scoring model to predict the ability of the firm to repay. The model considers the firm's IF (which it knows perfectly) and how the rating might affect a hypothetical investor's decision and thus the total amount of funds available to the firm and its corresponding action. The rating agency decides on a rating as follows:

- Rating A is assigned if the firm's IF are greater than or equal to -31. By giving this rating, the rating agency estimates that the firm will invest in the LR project, and investors have a 90% probability of being repaid.
- Rating B is assigned if the firm's IF are lower than -31. By giving this rating, the rating agency estimates that the firm will default, and investors have a 0% probability of being repaid.

Example:

Suppose that the firm's IF are 0. This amount is known to the firm and the rating agency

but not to investors. The hints the five investors receive are in the range $[-30, 30]$ and are equal to -30, 27, 19, -15, 1. The participant who receives hint -30 knows that the firm's IF must be between -60 and 0. The participant who receives hint 19 knows that the firm's IF must be between -11 and 49, etc.

All investors observe that the public credit rating of the firm is A, which implies that the firm's IF are greater than or equal to -31 and the rating agency estimates a probability of repayment of 90%. As explained above, this probability is only an estimation based on the theoretical scoring model used by the rating agency. The actual probability of repayment depends on how many investors finance the firm and the project that the firm undertakes.

Suppose that you receive a private hint of -15. This implies that the firm's IF must lie between $[-45, 15]$. You also observe the public rating A, which means that the firm's IF must be greater than or equal to -31. Therefore, using these two pieces of information, the possible range of the firm's IF must lie between $[-31, 15]$. Suppose you think, based on this information, that the firm's IF = -2. Given your beliefs about the firm's IF, the table below illustrates your payoff and probabilities from choosing between investing and not investing (conditional on the hypothetical number of other investors that decide to invest). (During the experiment, you will have access to a simulator similar to the table below).

Hypothetical number of other players who invest	Do not invest		Invest				
	Probability of 100 EC payoff	Expected payoff (EC)	Total funds available to the firm	Firm's action	Probability of 200 EC payoff	Probability of 0 EC payoff	Expected payoff (EC)
0	100%	100	-2+100=98	HR	20%	80%	40
1	100%	100	-2+200=198	HR	20%	80%	40
2	100%	100	-2+300=298	HR	20%	80%	40
3	100%	100	-2+400=398	LR	90%	10%	180
4	100%	100	-2+500=498	LR	90%	10%	180

Your beliefs

Before making your investment decision, you will also be asked to indicate:

(a) what you think the true level of the firm's internal funds (IF) is (type a number)

(b) how many other investors you expect to invest and finance the firm (0, 1, 2, 3, or 4)

Feedback

After all participants in a given round take their decisions, you will learn the true level of the firm's IF, how many other players invested in the firm, the firm's action, and your potential payoff in ECs for this round.

Your earnings

One of the 15 rounds will be randomly chosen to determine your payoffs for Part 1 of the experiment. Therefore, you should carefully consider each decision, as it could be the one that is relevant for your total earnings from this part of the experiment. At the end of the entire experiment, you will learn which round has been selected to determine your payoff. Your earnings will be converted into Euros at the conversion rate of 15 EC= 1 Euro.

Comprehension quiz

Before starting Part I of the experiment, there will be a short comprehension quiz to check that you understood these instructions. The quiz is not incentivized.

Part 2. Two individual tasks

You will be asked to make several other decisions, which are answered individually and do not depend on the choices of other participants.

At the end of the second part, we will ask you for some personal information. The data is treated confidentially and will be used only for research purposes.

Risk aversion

You have to select ONE gamble that you would like to play from the gambles below (see Figure B.1). Each gamble has two possible outcomes (Event A or Event B), each with 50% chance of occurring. For example, if you select gamble 4 and Event A occurs, you will gain 21 points. If event B occurs, you will get 57 points. Your gains in points will be converted

into Euros according to the following conversion rate: 20 points are equivalent to 1 Euro.

Figure B.1: Risk aversion test

Gamble	Event	Payoff in Points	Probabilities
1	A	33	50%
	B	33	50%
2	A	29	50%
	B	41	50%
3	A	25	50%
	B	49	50%
4	A	21	50%
	B	57	50%
5	A	17	50%
	B	65	50%
6	A	7	50%
	B	75	50%

Loss aversion

For EACH gamble below, you have to choose whether you want to Accept or Reject it (see Figure B.2). If you reject a gamble, your payoff is zero. Each gamble has two possible outcomes (Event A or Event B), each with a 50% probability of occurring. After you have made your choice, one of the gambles you accepted will be picked at random and you will be paid the outcome of that gamble. Your gains in points will be converted into Euros according to the conversion rate of 20 points for 1 Euro.

Figure B.2: Loss aversion test

Gamble	Event	Payoff in Points	Probabilities
1	A	6	50%
	B	-2	50%
2	A	6	50%
	B	-3	50%
3	A	6	50%
	B	-4	50%
4	A	6	50%
	B	-5	50%
5	A	6	50%
	B	-6	50%
6	A	6	50%
	B	-7	50%

C Experimental sessions and screens

In this section, we summarize the experimental sessions and present several screenshots from Part I of the experiment.

Table C.1: Experimental sessions

Treatments	Number of Students	Date	Location
Baseline Treatment, Session 1	20	March 2022	ESADE
Baseline Treatment, Session 2	15	March 2022	ESADE
Baseline Treatment, Session 3	20	March 2022	ESADE
Baseline Treatment, Session 4	20	April 2022	Pompeu Fabra University
Baseline Treatment, Session 5	20	April 2022	Pompeu Fabra University
Baseline Treatment, Session 6	20	April 2022	Pompeu Fabra University
Baseline Treatment, Session 7	20	March 2025	ESADE
Baseline Treatment, Session 8	15	March 2025	ESADE
Baseline Treatment, Session 9	20	March 2025	ESADE
Baseline Treatment, Session 10	15	April 2025	Pompeu Fabra University
Baseline Treatment, Session 11	20	April 2025	Pompeu Fabra University
Baseline Treatment, Session 12	20	April 2025	Pompeu Fabra University
CRA Treatment, Session 1	20	March 2022	ESADE
CRA Treatment, Session 2	15	March 2022	ESADE
CRA Treatment, Session 3	20	March 2022	ESADE
CRA Treatment, Session 4	20	April 2022	Pompeu Fabra University
CRA Treatment, Session 5	20	April 2022	Pompeu Fabra University
CRA Treatment, Session 6	20	April 2022	Pompeu Fabra University
CRA Treatment, Session 7	20	March 2025	ESADE
CRA Treatment, Session 8	15	March 2025	ESADE
CRA Treatment, Session 9	20	March 2025	ESADE
CRA Treatment, Session 10	15	April 2025	Pompeu Fabra University
CRA Treatment, Session 11	15	April 2025	Pompeu Fabra University
CRA Treatment, Session 12	20	April 2025	Pompeu Fabra University

Figure C.1: Practice questions

Review questions

Before starting the experiment, you will need to answer five questions to test your understanding of the investment game that you will play for 15 rounds. You have to answer all the questions below correctly to move to the first part of the experiment. There is only one correct answer per question.

1. If you receive a private hint about the firm's internal funds (IF) equal to **-25**, then you know that the true value of the firm's internal funds is:

☐ -25
☐ Any number between -30 and 30.
☐ Any number between -55 and 5.
☐ The true value can be any number.

Correct! The true value of the internal funds is between hint -30 and hint +30.

4. Suppose that based on the information you receive, you believe the firm's internal funds (IF) are **-10**. Suppose you and 2 other participants invest (a total of 3). Your payoff is:

☐ 100.
☐ 200 with 90% probability and 0 with 10% probability.
☐ 200 with 10% probability and 0 with 90% probability.
☐ 200 with 20% probability and 0 with 80% probability.

Correct! If 3 participants invest the fund has total fund of 300-10=290. As this is lower than 300, the firm will invest in the high-risk project which has a 20% probability of paying 200 and a 80% probability of paying 0.

2. If you receive a private hint about the firm's internal funds (IF) equal to **-25** and the credit rating agency announces a rating of **A**, then you know that the true value of the firm's internal funds is:

☐ -31
☐ Any number between -31 and 5.
☐ Any number higher than -31.
☐ Any number between -55 and 5.

Correct! A rating of A means IF are higher than -31.

5. Suppose that based on the information you receive, you believe the firm's internal funds (IF) are **-10**. Suppose you and 4 other participants invest (a total of 5). Your payoff is:

☐ 100.
☐ 200 with 90% probability and 0 with 10% probability.
☐ 200 with 10% probability and 0 with 90% probability.
☐ 200 with 20% probability and 0 with 80% probability.

Correct! If 5 participants invest the fund has total fund of 500-10=490. As this is higher than 300, the firm will invest in the low-risk project which has a 90% probability of paying 200 and a 10% probability of paying 0.

3. If you receive a private hint about the firm's internal funds (IF) equal to **-25** and the credit rating agency announces a rating of **B**, then you know that the true value of the firm's internal funds is:

☐ -31
☐ Any number between -55 and 5.
☐ Any number lower than -31.
☐ Any number between -55 and -31.

Correct! A rating of B means IF are lower than -31.

CONTINUE

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Figure C.2: Decision screen 1

Information about the investment decision	Your beliefs
Your private hint about the firm's <u>internal funds</u> (IF) is: -300	What do you think is the actual level of the firm's <u>internal funds</u> (IF)?
The public credit rating of the firm's ability to repay is: Rating B	What is your estimate of the total number of <u>other</u> investors that choose to invest?
Dialog The number of other investors can only be between 0 and 4 OK CONFIRM BELIEFS	

Figure C.3: Decision screen 2

Information about the investment decision	Your beliefs
Your private hint about the firm's <u>internal funds</u> (IF) is: -300	What do you think is the actual level of the firm's <u>internal funds</u> (IF)? 100
The public credit rating of the firm's ability to repay is: Rating B	What is your estimate of the total number of <u>other</u> investors that choose to invest? 2
SIMULATOR Your decision NOT INVEST INVEST	