Online Appendix 1. Detailed experimental instruction

Translation from German to English

General information

The experiment consists of four parts and should require approximately 35 minutes of your time. […]

If you complete the entire experiment, you obtain an expense allowance of €10. In addition, each participant has the chance to receive a bonus between €96 and €1,590. Please read the following instructions carefully as your earnings from the experiment will depend on your decisions. […]

Of course, your data will be treated as confidential and will be analyzed anonymously.

First Part (information about the agricultural operation)

At the beginning we would like to ask some questions about your agricultural operation. […]

How many hogs do you currently keep on your farm? [Please enter the number]
[ ] finishing hogs
[ ] breeding hogs

[…]

Second Part (investment experiment)

Introduction

The investment experiment consists of two times ten repetitions of a game with an equal basic structure. Imagine that you as a farmer have liquid assets of €300,000 at your disposal, and you have the possibility to invest in a hog barn. The hog barn can be used for the production of hogs and will yield an annual gross margin (= **sales minus variable costs**) over a twenty-year lifetime. You can decide within the next 4 periods:

- to immediately invest in a hog barn
- to wait and see the development of the gross margins that can potentially be achieved (up to 4 periods) and to invest in a hog barn later
- or not to invest in a hog barn

During 0 and 4 periods you can invest in a hog barn only once. If you decide to invest in a hog barn, you have to pay €300,000.

The tree chart below shows the possible present values of the returns (= **value of the future gross margins in period 0**) which you can earn in the respective periods (period 1 to period 5) when investing in a hog barn. The present value corresponds to the gross margins in €, which can be achieved in case of a risk-free investment, at the respective time of investment assuming a twenty-year useful lifetime of the hog barn and an interest rate of 10%. Moreover, it is assumed that the gross margin observed at the time of investment is guaranteed by an appropriate insurance during the entire useful lifetime.

The tree chart starts with a present value of €300,000 in period 0. Starting from this initial value, the present value of the following period increases (with a possibility of 50%) or decreases by €60,000 (with a possibility of 50%). The probability of the occurrence of the present value in each period is indicated under the present value.

Period 0	Period 1	Period 2	Period 3	Period 4	Period 5
					€600,000 (3.12%)
				€540,000 (6.25%)	**€480,000** (15.62%)
			€480,000 (12.5%)	**€420,000** (25%)	**€360,000** (31.25%)
		€420,000 (25%)	**€360,000** (37.5%)	**€300,000** (37.5%)	**€240,000** (31.25%)
	€360,000 (50%)	**€300,000** (50%)	**€240,000** (37.5%)	**€180,000** (25%)	**€120,000** (15.62%)
€300,000 (100%)	**€240,000** (50%)	**€180,000** (25%)	**€120,000** (12.5%)	**€60,000** (6.25%)	**€0** (3.12%)

An investment decision example

Imagine you decide to invest in a hog barn in period 2. The investment return has developed randomly as shown below and currently amounts to €300,000. What exactly you will earn from the investment in hog production depends on the investment return development in the next period (period 3):

- you will either earn €240,000 with a probability of 50%
- or you will earn €360,000 with a probability of again 50%

Period 0	Period 1	Period 2	Period 3	Period 4	Period 5
		⬆ Implementation of the investment in period 2			
					€480,000 (12.5%)
				€420,000 (25%)	**€360,000** (37.5%)
			€360,000 (50%)	**€300,000** (50%)	**€240,000** (37.5%)
€300,000	**€240,000**	**€300,000**	**€240,000** (50%)	**€180,000** (25%)	**€120,000** (12.5%)

Example for the calculation of your final account balance in case of an investment in period 5

Imagine the situation of the aforementioned example. In period 2 you decided to invest at a present value of €300,000. We assume a positive development of the present value from period 2 to period 3 resulting in

an increase of €60,000. With this investment you would therefore earn €360,000. In this case your total balance of period 5 would be calculated as follows:

- Your starting credit of €300,000 increases by 10% to $€300{,}000 \cdot 1.1^2 = €63{,}000$. Your account balance in period 2 is therefore €363,000.
- You will invest €300,000 of the €363,000 to build a hog barn.
- The residual amount of €63,000 yields 10% interest by period 5 (another 3 periods) meaning that it increases as follows: $€63{,}000 \cdot 1.1^3 = €83{,}000$.
- In period 3 you receive an investment return from the investment in the hog barn of €360,000, which also will yield 10% interest by period 5 (another 2 periods). $€360{,}000 \cdot 1.1^2 = €435{,}600$.

In this example your total balance in period 5 will correspond to the following:
$€83{,}853 + €435{,}600 = €519{,}453$
In this example your account balance would be €519,453 in period 5. If this repetition is randomly selected for determining the cash premium, you would receive €692.60 $[€519{,}453 \div 750]$.

Bank account balances
The liquid assets you dispose of in your account in a given period will yield an interest rate of 10% meaning that they will increase by a tenth of their value. For example, if you do not decide to invest in hog production within the 5 periods (between period 0 and period 4), your chance to invest expires and you will leave the repetition with your starting credit of €300,000 that has increased to $[€300{,}000 \times 1.1^5]$ €483,153 over the 5 periods. In case this repetition is randomly selected for determining the cash premium, you will receive $[€483{,}153€ \div 750]$ €644.20.
Before the investment experiment starts we would like to ask you to answer some control questions. This is to ensure that you understand all instructions.

If the present value of the investment in a hog barn is €360,000 in one period, which two present values can occur in the next periods?
Please indicate the two present values here:
€ _____
€ _____

What is the probability (in %) that the present value in the tree chart increases by €60,000 from one period to another?
Please indicate your answer here: _____ %

What is the probability (in %) that the present value in the tree chart decreases by €60,000 from one period to another?
Please indicate your answer here: _____ %

How much interest (in %) do your liquid assets in your account yield per period?

Please indicate your answer here: _____ %

How much are the costs of the investment in a hog barn?

€ _____

In the observed period 2 the present value in the tree chart is €300,000. The possible present values which can be realized in the next periods are indicated in bold.

Which of the two present values can potentially be realized in the coming period (period 3)?

Please indicate the two present values here:

€ _____

€ _____

You answered all control questions correctly!

Please click 'continue' to start the investment experiment.

Here, the experiment starts

[The Investment experiment consists of two scenarios differing in the framing of the investment situation.

1) *Conventional investment:* Now you have the possibility to invest in a hog barn for **conventional** hog production at any time within the next 5 periods. Apply the initial described assumptions: Total investment costs of €300,000, 10% interest rate and 20-year useful life. The possible investment returns and their probabilities are known.

2) *Organic investment:* Now you have the possibility to invest in a hog barn for **organic** hog production at any time within the next 5 periods. Apply the initial described assumptions: Total investment costs of €300,000, 10% interest rate and 20-year useful life. The possible investment returns and their probabilities are known.

Besides the different wording of the investment situations, the parameters in the experiment are exactly the same (e.g. investment cost and discount rate). It is randomly determined in which order the individuals were confronted with both investment situations.

The farmers repeated both investment situations (conventional investment treatment and organic investment treatment) 10 times.

Third Part (lotteries)

(Instruction: Holt and Laury task) (cf., Holt and Laury 2002)

In the third part of this experiment the randomly chosen player can increase the cash premium of the investment experiment. Your cash premium only depends on your own decisions and on chance. […]

Decision situation	Lottery A		Lottery B
1	With 10% gain of €200.00 With 90% gain of €160.00	A ○ ○ B	With 10% gain of €385.00 With 90% gain of €10.00
2	With 20% gain of €200.00 With 80% gain of €160.00	A ○ ○ B	With 20% gain of €385.00 With 80% gain of €10.00
3	With 30% gain of €200.00 With 70% gain of €160.00	A ○ ○ B	With 30% gain of €385.00 With 70% gain of €10.00
4	With 40% gain of €200.00 With 60% gain of €160.00	A ○ ○ B	With 40% gain of €385.00 With 60% gain of €10.00
5	With 50% gain of €200.00 With 50% gain of €160.00	A ○ ○ B	With 50% gain of €385.00 With 50% gain of €10.00
6	With 60% gain of €200.00 With 40% gain of €160.00	A ○ ○ B	With 60% gain of €385.00 With 40% gain of €10.00
7	With 70% gain of €200.00 With 30% gain of €160.00	A ○ ○ B	With 70% gain of €385.00 With 30% gain of €10.00
8	With 80% gain of €200.00 With 20% gain of €160.00	A ○ ○ B	With 80% gain of €385.00 With 20% gain of €10.00
9	With 90% gain of €200.00 With 10% gain of €160.00	A ○ ○ B	With 90% gain of €385.00 With 10% gain of €10.00
10	With 100% gain of €200.00 With 0% gain of €160.00	A ○ ○ B	With 100% gain of €385.00 With 0% gain of €10.00

Fourth Part (personal information)

Finally, we would like to ask you some questions about personal details. All results of the survey will be presented anonymously, and it will not be possible to draw any inferences in respect of the actual persons or farms providing the information. […]

Are you planning to invest in the hog production on your farm in the near future?
[Click the appropriate answer]
[ ] Yes
[ ] No
[…]