

Asset Ownership and the Hold-Up Problem with Asymmetric Information Online Appendix

September 17, 2021

Written Instructions

Our written instructions were treatment-specific. The written instructions for each treatment are reproduced below, in the following order:²⁰

- i) Joint Ownership Treatment
- ii) Seller Ownership Treatment
- iii) Buyer Ownership Treatment

²⁰In the first session, a subject asked a clarifying question about the randomly drawn number between 0 and 100 that determines the value of the good. The quality of the object is determined by whether the random number falls above ($v = v_L$) or weakly below ($v = v_H$) the seller's investment level. To ensure consistency, we kept the instructions constant and the experimenter made an announcement at the beginning of each session. The detailed experimenter script is available from the authors upon request.

INSTRUCTIONS

Joint Ownership

Welcome. This is an experiment on decision-making. If you read the following instructions carefully, you can, depending on your and other participants' decisions, earn a considerable amount of money. It is therefore very important that you read these instructions carefully.

Please do not communicate with the other participants during the experiment other than described in these instructions. If you have a question at any time please raise your hand and the experimenter will come to your desk to answer it. Please switch off your mobile phone or any other devices which may disturb the experiment. Please use the computer only for entering your decisions.

In the experiment you will be making decisions that will earn you E\$ (Experimental Dollars). At the end of the experiment, the E\$ you earned will be converted into Australian Dollars at an exchange rate of E\$ 3 = AUD 1, and paid out in cash. This amount will be added to your show-up fee of AUD 10.

The experiment runs over 28|30|32 rounds in total. After completing the experiment, the computer will randomly select one round out of 28|30|32 (this will be the same round for all participants), and this round will then be used to determine your payoffs.

At the beginning of the experiment it will be randomly determined if you are a *Seller* or a *Buyer* and you will stay in this role throughout the experiment. At the beginning of each round, participants will be randomly matched to groups of two participants with one *Seller* and one *Buyer*. Over the 28|30|32 rounds the same *Seller* and a *Buyer* can meet at most twice.

At the beginning of each round the *Seller* has to **set a price**. Afterwards she/he decides how much to invest into the quality of the product that is for sale. The *Seller* has to **set an investment level** (from 0-100%) and the quality of the product can either be high (worth E\$ 100) or low (worth E\$ 60). The chosen investment level equals the probability that the product is of high quality. For example,

- When the investment level = 0%, then the quality of the product is low and has a value of E\$ 60;
- When the investment level = 50%, then with a chance of 50% the quality of the product is high and has a value of E\$ 100, and with a chance of 50% the quality of the product is low and has a value of E\$ 60;
- When the investment level = 100%, then the quality of the product is high and has a value of E\$ 100.

For the investment level any integer amount from 0-100% can be chosen and the *Seller* incurs costs. For example,

Investment level in %	0	10	20	30	40	50	60	70	80	90	100
Costs in E\$	0	0.25	1.00	2.25	4.00	6.25	9.00	12.25	16.00	20.25	25.00

After the *Seller* has set the price and the investment level the computer randomly draws a number between 0 and 100. Only the *Buyer* learns the **quality** of the product and decides if she/he accepts the **trade**.

The payoffs for each group of one *Seller* and one *Buyer* are calculated as follows:

For the <i>Seller</i> :	$\text{Payoff} = \text{Price} - \text{Costs}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = - \text{Costs}$	if the <i>Buyer</i> does not accept the trade.
For the <i>Buyer</i> :	$\text{Payoff} = \text{Value of the product} - \text{Price}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = \text{E\$ } 0$	if the <i>Buyer</i> does not accept the trade.

INSTRUCTIONS

Seller Ownership

Welcome. This is an experiment on decision-making. If you read the following instructions carefully, you can, depending on your and other participants' decisions, earn a considerable amount of money. It is therefore very important that you read these instructions carefully.

Please do not communicate with the other participants during the experiment other than described in these instructions. If you have a question at any time please raise your hand and the experimenter will come to your desk to answer it. Please switch off your mobile phone or any other devices which may disturb the experiment. Please use the computer only for entering your decisions.

In the experiment you will be making decisions that will earn you E\$ (Experimental Dollars). At the end of the experiment, the E\$ you earned will be converted into Australian Dollars at an exchange rate of E\$ 3 = AUD 1, and paid out in cash. This amount will be added to your show-up fee of AUD 10.

The experiment runs over 28|30|32 rounds in total. After completing the experiment, the computer will randomly select one round out of 28|30|32 (this will be the same round for all participants), and this round will then be used to determine your payoffs.

At the beginning of the experiment it will be randomly determined if you are a *Seller* or a *Buyer* and you will stay in this role throughout the experiment. At the beginning of each round, participants will be randomly matched to groups of two participants with one *Seller* and one *Buyer*. Over the 28|30|32 rounds the same *Seller* and a *Buyer* can meet at most twice.

At the beginning of each round the *Seller* has to **set a price**. Afterwards she/he decides how much to invest into the quality of the product that is for sale. The *Seller* has to **set an investment level** (from 0-100%) and the quality of the product can either be high (worth E\$ 100) or low (worth E\$ 60). The chosen investment level equals the probability that the product is of high quality. For example,

- When the investment level = 0%, then the quality of the product is low and has a value of E\$ 60;
- When the investment level = 50%, then with a chance of 50% the quality of the product is high and has a value of E\$ 100, and with a chance of 50% the quality of the product is low and has a value of E\$ 60;
- When the investment level = 100%, then the quality of the product is high and has a value of E\$ 100.

For the investment level any integer amount from 0-100% can be chosen and the *Seller* incurs costs. For example,

Investment level in %	0	10	20	30	40	50	60	70	80	90	100
Costs in E\$	0	0.25	1.00	2.25	4.00	6.25	9.00	12.25	16.00	20.25	25.00

After the *Seller* has set the price and the investment level the computer randomly draws a number between 0 and 100. Only the *Buyer* learns the **quality** of the product and decides if she/he accepts the **trade**.

The payoffs for each group of one *Seller* and one *Buyer* are calculated as follows:

If the *Buyer* does not accept the trade, then the *Seller* can keep the product and receives E\$ 60 from the experimenter independently of the actual quality of her/his product.

For the <i>Seller</i> :	$\text{Payoff} = \text{Price} - \text{Costs}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = -\text{Costs} + 60 \text{ E\$}$	if the <i>Buyer</i> does not accept the trade.

For the <i>Buyer</i> :	$\text{Payoff} = \text{Value of the product} - \text{Price}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = \text{E\$ } 0$	if the <i>Buyer</i> does not accept the trade.

INSTRUCTIONS

Buyer Ownership

Welcome. This is an experiment on decision-making. If you read the following instructions carefully, you can, depending on your and other participants' decisions, earn a considerable amount of money. It is therefore very important that you read these instructions carefully.

Please do not communicate with the other participants during the experiment other than described in these instructions. If you have a question at any time please raise your hand and the experimenter will come to your desk to answer it. Please switch off your mobile phone or any other devices which may disturb the experiment. Please use the computer only for entering your decisions.

In the experiment you will be making decisions that will earn you E\$ (Experimental Dollars). At the end of the experiment, the E\$ you earned will be converted into Australian Dollars at an exchange rate of E\$ 3 = AUD 1, and paid out in cash. This amount will be added to your show-up fee of AUD 10.

The experiment runs over 28|30|32 rounds in total. After completing the experiment, the computer will randomly select one round out of 28|30|32 (this will be the same round for all participants), and this round will then be used to determine your payoffs.

At the beginning of the experiment it will be randomly determined if you are a *Seller* or a *Buyer* and you will stay in this role throughout the experiment. At the beginning of each round, participants will be randomly matched to groups of two participants with one *Seller* and one *Buyer*. Over the 28|30|32 rounds the same *Seller* and a *Buyer* can meet at most twice.

At the beginning of each round the *Seller* has to **set a price**. Afterwards she/he decides how much to invest into the quality of the product that is for sale. The *Seller* has to **set an investment level** (from 0-100%) and the quality of the product can either be high (worth E\$ 100) or low (worth E\$ 60). The chosen investment level equals the probability that the product is of high quality. For example,

- When the investment level = 0%, then the quality of the product is low and has a value of E\$ 60;
- When the investment level = 50%, then with a chance of 50% the quality of the product is high and has a value of E\$ 100, and with a chance of 50% the quality of the product is low and has a value of E\$ 60;
- When the investment level = 100%, then the quality of the product is high and has a value of E\$ 100.

For the investment level any integer amount from 0-100% can be chosen and the *Seller* incurs costs. For example,

Investment level in %	0	10	20	30	40	50	60	70	80	90	100
Costs in E\$	0	0.25	1.00	2.25	4.00	6.25	9.00	12.25	16.00	20.25	25.00

After the *Seller* has set the price and the investment level the computer randomly draws a number between 0 and 100. Only the *Buyer* learns the **quality** of the product and decides if she/he accepts the **trade**.

The payoffs for each group of one *Seller* and one *Buyer* are calculated as follows:

If the *Buyer* does not accept the trade, then the *Buyer* still gets the product and receives E\$ 60 from the experimenter independently of the actual quality of her/his product and the posted price.

For the <i>Seller</i> :	$\text{Payoff} = \text{Price} - \text{Costs}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = - \text{Costs}$	if the <i>Buyer</i> does not accept the trade.

For the <i>Buyer</i> :	$\text{Payoff} = \text{Value of the product} - \text{Price}$	if the <i>Buyer</i> accepts the trade;
	$\text{Payoff} = \text{E\$ } 60$	if the <i>Buyer</i> does not accept the trade.