# Supplementary material to the paper "On the effect of anchoring on valuations when the anchor is transparently uninformative"

Konstantinos Ioannidis, Theo Offerman, Randolph Sloof

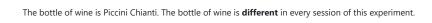
## Abstract

This supplementary material includes screenshots of the computer interface used in the experiment. The screenshots are presented in the order of appearance. Whenever a screen was different based on the role of the subject and/or their decisions, we present all relevant screenshots.

## Welcome!

Welcome to this experiment. Please read the following instructions carefully. We ask that you do not communicate with other participants during the experiment. The use of mobile phones is not allowed during this experiment. If you have any questions, or need assistance of any kind, at any time, an experimenter will assist you privately. The data collected through this experiment does not include your name or any other information that would allow your identification. All of the data you provide during the experiment cannot be traced back to you.

Your earnings in today's session will consist of money and/or a bottle of wine. You will start the experiment with a capital of €8.0. Besides this starting capital, your earnings will depend on your own decisions and may depend on other participants' decisions.





In this experiment you will make 5 decisions in total.

At the end of the experiment, one of your 5 decisions will be selected at random. Only this decision will determine your earnings (possibly in combination with the decisions of other participants). Your earnings for this decision will be added to your starting capital of €8.0. You will privately receive your earnings at the end of the experiment.

For each decision you will receive some instructions. You will only receive the instructions of a subsequent decision if a previous decision is completely finished.

Thank you for your participation.

For this part of the experiment, you are required to roll a 10-sided die twice and report the outcomes. The outcomes will be converted to a price that you will see in the next page. The price is constructed in the following way: the first roll is the integer (euros) part and the second roll is the decimal part of the price you will see. Please remain seated and the experimenter will come to your room with the die shortly.

Next

Submit the outcome of first die roll and click Submit.

6

Submit

Submit the outcome of second die roll and click Submit.

2

Submit

Please confirm that your rolls where 6 and 2.

Confirm

If the outcomes were different, please click Resubmit.

Resubmit

The outcomes of the rolls are registered. The corresponding price is €6.2. The experiment will continue shortly after the experimenter leaves the room. Please wait.

Proceed

# Decision 1



You are given the bottle of wine. You are asked to decide if you want to sell it back to the experimenter for a price equal to €6.2.

## <u>Instructions</u>

If this decision is selected at the end of the experiment, then

A. If you click  $\mathbf{NO}$ , you keep the bottle of wine.

B. If you click YES, you get 6.2 in return for the bottle of wine.





## Decision 2



You are given the bottle of wine. You are asked to report the lowest price (rounded to the nearest 10 cents) for which you are willing to sell the bottle of wine to the experimenter. The lowest price is the one that makes you indifferent between keeping the bottle and selling it.

### <u>Instructions</u>

If this decision is selected at the end of the experiment, a random price will be drawn between  $\in$ 0.00 and what the experimenter estimates to be the maximum price any buyer would be willing to pay. Then one of the following will happen:

- a. If the random price is smaller than the price you reported, then you keep the bottle of wine.
- b. If the random price is larger or equal to the price you reported, then the experimenter will buy the bottle of wine from you and you will receive the random price.

You will not receive the price you reported. Instead you may receive the random price drawn. The reported price has no impact on the random price as the price was drawn before the experiment started.

It is in your best interest to report a price that equals your true valuation for the bottle of wine.

8.2 Submit

Please confirm that your price was 8.2€. Confirm

If you'd like to change the price, please click Resubmit.

Resubmit

# **Market Instructions**

You will now participate in a market running for 2 periods. In this market, every participant is a trader. The item for trade is the same bottle of wine. The duration of each period of the market is 300 seconds.

#### Roles

In the first period of the market, every participant is assigned to the role of either a buyer or a seller. There are 4 buyers and 4 sellers in the market. In the second period of the market, all participants will change role.

#### Buvers

Each buyer is endowed with an amount equal to the price of the bottle of wine that we paid in the store. The size of this amount will be revealed to you only if it affects your payoffs.

#### Sallard

Each seller is endowed with a bottle of wine.

## Offers

All the Bids and Asks will automatically be recorded in the Order Book, which is visible to all participants in the market.

## **Trades**

When a trade occurs, it gets automatically recorded in the **Trade Book**, which is visible to everyone. The buyer and the seller that traded will receive a message informing them about the trade as well. They can no longer submit offers, but they continue to see the live-updated offer book and trade book.

## Rules

The rules of the market are presented in the next page.

# Market rules and control questions

### **Buyers**

Buyers are asked to submit the price they are willing to pay for the bottle of wine. Offers submitted by the buyers are called Bids. Buyers can increase their bid multiple times, but not decrease (or withdraw) their current bid.

#### Sellers

Sellers are asked to submit the price they are willing to accept for the bottle of wine. Offers submitted by sellers are called Asks. Sellers can decrease their ask multiple times, but not increase (or withdraw) their current ask.

#### Trades

A trade occurs automatically whenever any of these two rules are satisfied.

- When a buyer submits a bid that is higher than or equal to the lowest ask of the sellers in the  ${\bf Order\ Book},$  this buyer buys from the seller with the lowest ask and the corresponding ask is the transaction price.
- When a seller submits an ask that is lower than or equal to the highest bid of the buyers in the Order Book, this seller sells to the buyer with the highest bid and the corresponding bid is the transaction price.

#### Earnings

If a trade occurs, the seller receives the transaction price, while the buyer receives the bottle of wine and the transaction price is subtracted from his/her endowment. If a seller does not trade, the seller keeps the bottle of wine. If a buyer does not trade, the buyer keeps his/her endowment.

Please answer the questions on the right to make sure you fully understand the rules of the market.

• You are a buyer. Your bid is the second highest bid. You increase your bid and become the highest bidder. Your current bid is lower than the lowest ask.

Does this action result in a trade for you? And if yes, at which price?

<ul><li>○ Yes, for a price equal to buyer's bid</li><li>○ Yes, for a price equal to the seller's ask</li><li>○ No</li></ul>
You are a seller. You want to submit an ask higher than your current ask.  Is this ask allowed?
○ Yes ○ No
You are a seller. Your ask is the lowest ask. Your current ask is higher than the highest bid. You decrease your ask below the highest bid.  Does this action result in a trade for you? And if yes, at which price?
○ Yes, at a price equal to buyer's bid ○ Yes, at a price equal to the seller's ask ○ No
You are a buyer. Your bid is the highest bid. Your bid is lower than the lowest ask. A seller decreases his/her ask below your bid.  Does this action result in a trade for you? And if yes, at
which price?
○ Yes, at a price equal to buyer's bid ○ Yes, at a price equal to the seller's ask ○ No
You are a seller. Your ask is the second lowest ask. A buyer increases his/her bid above your ask.  Does this action result in a trade for you? And if yes, at which price?
○ Yes, for a price equal to buyer's bid ○ Yes, for a price equal to the seller's ask ○ No

• You are a buyer. You want to submit a bid higher than your current bid. Is this bid allowed?

O Yes

Click the "Check" button below to check your answers. You can only proceed to the next page if you have answered all questions correctly.



# **Market Instructions**

You will now participate in a market running for 2 periods. In this market, every participant is a trader. The item for trade is the same bottle of wine. The duration of each period of the market is 300 seconds.

#### Roles

In the first period of the market, every participant is assigned to the role of either a buyer or a seller. There is 1 buyer and 1 seller in the market. In the second period of the market, all participants will change role.

#### Buvers

Each buyer is endowed with an amount equal to the price of the bottle of wine that we paid in the store. The size of this amount will be revealed to you only if it affects your payoffs.

#### Sallard

Each seller is endowed with a bottle of wine.

## Offers

All the Bids and Asks will automatically be recorded in the Order Book, which is visible to both participants in the market.

## Trades

When a trade occurs, it gets automatically recorded in the **Trade Book**, which is visible to everyone.

## Rules

The rules of the market are presented in the next page.

## Market rules and control questions

## Buyer

The buyer is asked to submit the price he/she is willing to pay for the bottle of wine. Offers submitted by the buyer are called **Bids**. The buyer can *increase* his/her bid multiple times, but not decrease (or withdraw) his/her current bid.

#### Seller

The seller is asked to submit the price he/she is willing to accept for the bottle of wine. Offers submitted by the seller are called **Asks**. The seller can decrease his/her ask multiple times, but not increase (or withdraw) his/her current ask.

## **Trades**

A trade occurs automatically whenever any of these two rules are satisfied

- When the buyer submits a bid that is higher than or equal to the ask of the seller in the **Order Book**, the buyer buys from the seller and the seller's ask is the transaction price.
- When the seller submits an ask that is lower than or equal to the bid of the buyer in the **Order Book**, the seller sells to the buyer and the buyer's bid is the transaction price.

## Earnings

If a trade occurs, the seller receives the transaction price, while the buyer receives the bottle of wine and the transaction price is subtracted from his/her endowment. If a seller does not trade, the seller keeps the bottle of wine. If a buyer does not trade, the buyer keeps his/her endowment.

Please answer the questions on the right to make sure you fully understand the rules of the market.

•	You are the buyer. Your bid is lower than the seller's ask. You increase your bid. Your current bid is lower than the ask.  Does a trade take place? And if yes, at which price?
	<ul><li>○ Yes, for a price equal to buyer's bid</li><li>○ Yes, for a price equal to the seller's ask</li><li>○ No</li></ul>
•	You are the seller. You want to submit an ask higher than you current ask.  Is this ask allowed?
	○ Yes ○ No
•	You are the seller. Your current ask is higher than the buyer's bid. You decrease your ask below the buyer's bid.  Does a trade take place? And if yes, at which price?
	<ul><li>○ Yes, at a price equal to buyer's bid</li><li>○ Yes, at a price equal to the seller's ask</li></ul>

• You are the buyer. Your bid is lower than the seller's ask. The seller decreases his/her ask below your bid.

#### Does a trade take place? And if yes, at which price?

- Yes, at a price equal to buyer's bidYes, at a price equal to the seller's askNo
- You are the seller. Your ask is higher than the buyer's bid. The buyer increases his/her bid. Your ask is still higher than the current hid.

## Does a trade take place? And if yes, at which price?

- Yes, at a price equal to buyer's bidYes, at a price equal to the seller's ask
- You are the buyer. You want to submit a bid higher than your current bid.

## Is this bid allowed?

○ Yes

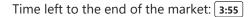
O No

 $\bigcirc$  No

Click the "Check" button below to check your answers. You can only proceed to the next page if you have answered all questions correctly.



# Decision 3 Decision 4





Order Book	
Asks	Bids
8.2	6.5
9.8	5.3
11.2	2.6
15.8	8.0

Trade Book	
Number	Price

You are a **buyer** in the market. 5.3

## Submit Bid

Your current bid is 5.3€.

Time left to the end of the market: 3:26

Order Book		Trade Book	
Asks	Bids	Number	Price
9.8	2.6	1	8.2
11.2	0.8	2	6.5

You are a **seller** in the market.

You agreed to trade for a price of 6.5€. Please wait until the auction is over.

You are a **buyer** in the market.

You agreed to trade for a price of 6.5€.

Please wait until the auction is over.

Time left to the end of the market: 2:16

Order Book		Trade Book	
Asks	Bids	Number	Price
9.8	2.6	1	8.2
11.2	0.8	2	6.5

You are a **buyer** in the market.

## Submit Bid

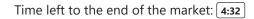
Your current bid is 0.8€.

You are a **seller** in the market. 11.2

## Submit Ask

Your current ask is 11.2€.

# Decision 3 Decision 4





Order Book		Trade Book	
Asks	Bids	Number	Price
8.65	5.2		

You are a **buyer** in the market. 5.2 Submit Bid Your current bid is 5.2€.

Time left to the end of the market: 4:12

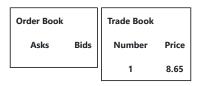
Order Book		Trade Book	
Asks	Bids	Number	Pric
8.65	5.2		

You are a **seller** in the market. 8.65

Submit Ask

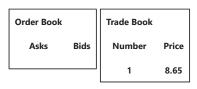
Your current ask is 8.65€.

Time left to the end of the market: 3:50



You agreed to trade for a price of 8.65€. Please wait until the auction is over.

Time left to the end of the market: 3:31



You agreed to trade for a price of 8.65€. Please wait until the auction is over.

# Market Summary of period 1

Period 1 of the market is now over.

In period 1, you did not agree on a trade.

The market will start again shortly. In the next period of the market, you will be a buyer.



# Market Summary of period 1

Period 1 of the market is now over.

In period 1, you did not agree on a trade.

The market will start again shortly. In the next period of the market, you will be a seller.

Next

# Market Summary of period 1

Period 1 of the market is now over.

In period 1, you were a buyer and bought the bottle of wine for €6.5.

The market will start again shortly. In the next period of the market, you will be a seller.

Next

# Market Summary of period 1

Period 1 of the market is now over.

In period 1, you were a seller and sold the bottle of wine for €6.5.

The market will start again shortly. In the next period of the market, you will be a buyer.

# Market Summary of period 2

Period 2 of the market is now over.

In period 2, you did not agree on a trade.



# Market Summary of period 2

Period 2 of the market is now over.

In period 2, you did not agree on a trade.



# Market Summary of period 2

Period 2 of the market is now over.

In period 2, you were a buyer and bought the bottle of wine for €8.65.



# Market Summary of period 2

Period 2 of the market is now over.

In period 2, you were a seller and sold the bottle of wine for €8.65.

## Decision 5



You are given the bottle of wine. You are asked to report the lowest price for which you are willing to sell the bottle of wine to the experimenter.

#### <u>Instructions</u>

If this decision is selected at the end of the experiment, a random price will be drawn between €0.00 and what the experimenter estimates to be the maximum price any buyer would be willing to pay. Then one of the following will happen:

- a. If the random price is smaller than the price you reported, then you keep the bottle of wine.
- b. If the random price is larger or equal to the price you reported, then the experimenter will buy the bottle of wine from you and you will receive the random price.

You will not receive the price you reported. Instead you may receive the random price drawn. The reported price has no impact on the random price as the price was drawn before the experiment started.

It is in your best interest to report a price that equals your true valuation for the bottle of wine.

Submit

Please confirm that your price was 6.5€. Confirm

If you'd like to change the price, please click Resubmit. Resubmit

# Please enter the following information.

Please indicate your age.
Please indicate your field of study.
O Economics
O Social Sciences (Non-economics)
O Natural Sciences
O Humanities
O Applied Sciences
Other
Please indicate your gender.
O Male
○ Female
O Prefer not to answer
Next

Thank you for your participation in the experiment. Your starting capital was €8.0

Additionally, **Decision 1** was randomly chosen for payment. You were endowed with the bottle of wine.

You reported you wanted to sell the bottle of wine to the experimenter for €6.2. Hence, you receive €6.2 from the sale of the bottle of wine

Your total payment is €14.2.

Please remain seated. The experimenter will come to your cubicle for the payment. After that you may leave the room. Please remember to pick your personal belongings that you stored in the lockers.

# Thank you!

Thank you for your participation in the experiment. Your starting capital was  $\in 8.0$ .

Additionally, **Decision 1** was randomly chosen for payment. You were endowed with the bottle of wine.

You reported you did not want to sell the bottle of wine to the experimenter for €2.1. Hence, you receive no money, but you get to keep the bottle of wine

Your total payment is €8.0. You will also receive the bottle of wine.

Thank you for your participation in the experiment. Your starting capital was €8.0

Additionally, Decision 2 was randomly chosen for payment. You were endowed with the bottle of wine.

You reported your willingness to sell the bottle of wine to the experimenter for €8.2. As explained in the instructions, your price will be compared with a random price. If the random price is smaller than yours, you get to keep the bottle of wine. If the random price is larger or equal to your own, then the experimenter will buy the bottle of wine from you at the random price. The random price drawn is €7.1.

The random price is smaller than your own. Hence, you get to keep the bottle of wine.

Your total payment is €8.0. You will also receive the bottle of wine.

Please remain seated. The experimenter will come to your cubicle for the payment. After that you may leave the room. Please remember to pick your personal belongings that you stored in the lockers.

# Thank you!

Thank you for your participation in the experiment. Your starting capital was €8.0.

Additionally, **Decision 2** was randomly chosen for payment. You were endowed with the bottle of wine.

You reported your willingness to sell the bottle of wine to the experimenter for €8.2. As explained in the instructions, your price will be compared with a random price. If the random price is smaller than yours, you get to keep the bottle of wine. If the random price is larger or equal to your own, then the experimenter will buy the bottle of wine from you at the random price. The random price drawn is €10.4.

The random price is larger or equal to your own. Hence, you receive €10.4 from the the sale of the bottle of wine.

Your total payment is €18.4.

Thank you for your participation in the experiment. Your starting capital was €8.0

Additionally, **Decision 3** was randomly chosen for payment, which was period 1 of the market.

You were a seller in that market. You were endowed with the bottle of wine. You sold the bottle of wine for €8.7.

Your total payment is €16.7.

Please remain seated. The experimenter will come to your cubicle for the payment. After that you may leave the room. Please remember to pick your personal belongings that you stored in the lockers.

# Thank you!

Thank you for your participation in the experiment. Your starting capital was €8.0.

Additionally, **Decision 3** was randomly chosen for payment, which was period 1 of the market.

You were a buyer in that market. You were endowed with the price of the bottle of wine that we paid in the store which was  $\leq$ 6.0. You bought the bottle of wine for  $\leq$ 8.7.

Your total payment is €5.3. You will also receive the bottle of wine.

Thank you for your participation in the experiment. Your starting capital was €8.0.

Additionally, **Decision 4** was randomly chosen for payment, which was period 2 of the market.

You were a buyer in that market. You were endowed with the price of the bottle of wine that we paid in the store which was €6.0. You did not buy the bottle of wine.

Your total payment is €14.0.

Please remain seated. The experimenter will come to your cubicle for the payment. After that you may leave the room. Please remember to pick your personal belongings that you stored in the lockers.

# Thank you!

Thank you for your participation in the experiment. Your starting capital was €8.0.

Additionally, **Decision 4** was randomly chosen for payment, which was period 2 of the market.

You were a seller in that market. You were endowed with the bottle of wine. You did not sell the bottle of wine. Hence, you keep it.

Your total payment is €8.0. You will also receive the bottle of wine.

Thank you for your participation in the experiment. Your starting capital was €8.0

Additionally, Decision 5 was randomly chosen for payment. You were endowed with the bottle of wine.

You reported your willingness to sell the bottle of wine to the experimenter for €6.5. As explained in the instructions, your price will be compared with a random price. If the random price is smaller than yours, you get to keep the bottle of wine. If the random price is larger or equal to your own, then the experimenter will buy the bottle of wine from you at the random price. The random price drawn is €3.9.

The random price is smaller than your own. Hence, you get to keep the bottle of wine.

Your total payment is €8.0. You will also receive the bottle of wine.

Please remain seated. The experimenter will come to your cubicle for the payment. After that you may leave the room. Please remember to pick your personal belongings that you stored in the lockers.

# Thank you!

Thank you for your participation in the experiment. Your starting capital was €8.0.

Additionally, **Decision 5** was randomly chosen for payment. You were endowed with the bottle of wine.

You reported your willingness to sell the bottle of wine to the experimenter for €6.5. As explained in the instructions, your price will be compared with a random price. If the random price is smaller than yours, you get to keep the bottle of wine. If the random price is larger or equal to your own, then the experimenter will buy the bottle of wine from you at the random price. The random price drawn is €8.5.

The random price is larger or equal to your own. Hence, you receive €8.5 from the sale of the bottle of wine.

Your total payment is €16.5.