

Online Supplementary Material

S.1 Additional Tables/Figures

Table S.1: Wald tests for perfect demand revelation by round

	Treatments									
	0.25 ECUs:1 €		€(no ECUs)		1 ECU:1 €		10 ECUs:1 €		25 ECUs:1 €	
	χ^2	p-value	χ^2	p-value	χ^2	p-value	χ^2	p-value	χ^2	p-value
R1	30.40	<0.001	39.31	<0.001	45.13	<0.001	2.68	0.26	20.16	<0.001
R2	33.12	<0.001	42.54	<0.001	54.75	<0.001	4.73	0.09	22.81	<0.001
R3	34.00	<0.001	43.55	<0.001	57.34	<0.001	5.45	0.07	23.69	<0.001
R4	34.81	<0.001	44.47	<0.001	59.58	<0.001	6.12	0.05	24.48	<0.001
R5	35.93	<0.001	45.73	<0.001	62.54	<0.001	7.07	0.03	25.59	<0.001
R6	29.37	<0.001	37.93	<0.001	39.53	<0.001	2.10	0.35	19.17	<0.001
R7	31.02	<0.001	40.07	<0.001	47.70	<0.001	3.12	0.21	20.77	<0.001
R8	31.36	<0.001	40.49	<0.001	48.98	<0.001	3.37	0.19	21.10	<0.001
R9	32.05	<0.001	41.30	<0.001	51.38	<0.001	3.89	0.14	21.77	<0.001
R10	30.62	<0.001	39.59	<0.001	46.09	<0.001	2.84	0.24	20.38	<0.001
R11	30.47	<0.001	39.40	<0.001	45.45	<0.001	2.73	0.25	20.23	<0.001
R12	31.20	<0.001	40.29	<0.001	48.38	<0.001	3.25	0.20	20.94	<0.001
R13	31.61	<0.001	40.78	<0.001	49.85	<0.001	3.55	0.17	21.34	<0.001
R14	31.84	<0.001	41.05	<0.001	50.65	<0.001	3.73	0.16	21.56	<0.001
R15	30.43	<0.001	39.35	<0.001	45.28	<0.001	2.71	0.26	20.19	<0.001
R16	29.52	<0.001	38.15	<0.001	40.56	<0.001	2.16	0.34	19.31	<0.001
R17	29.38	<0.001	37.95	<0.001	39.64	<0.001	2.10	0.35	19.18	<0.001
R18	32.26	<0.001	41.55	<0.001	52.07	<0.001	4.05	0.13	21.98	<0.001
R19	29.89	<0.001	38.65	<0.001	42.68	<0.001	2.36	0.31	19.66	<0.001
R20	29.60	<0.001	38.27	<0.001	41.09	<0.001	2.20	0.33	19.39	<0.001
R21	31.19	<0.001	40.28	<0.001	48.33	<0.001	3.24	0.20	20.93	<0.001
R22	31.73	<0.001	40.92	<0.001	50.27	<0.001	3.64	0.16	21.45	<0.001
R23	30.18	<0.001	39.03	<0.001	44.15	<0.001	2.54	0.28	19.95	<0.001
R24	29.73	<0.001	38.44	<0.001	41.83	<0.001	2.27	0.32	19.52	<0.001

Notes: * p<0.1, ** p<0.05, *** p<0.01.

Table S.2 below, shows summary statistics of the experimental data. With the exception of the 1 ECU: 1€ treatment, mean and median bids were only slightly larger than mean and median induced values, respectively. Depending on the treatment, the mean difference of bids and induced values ranges from 0.23 (S.D.=1.06) to 0.39 (S.D.=1.36) and the median is from 0 to 0.42. The difference in the 1 ECU: 1 € treatment is more than threefold that of the control (no ECUs) treatment. The ratio of bids to induced values is lower for the 10 ECUs:1€ treatment (mean ratio is just 1.18 and the median is exactly 1) and largest for the 1 ECU:1€ treatment (mean is 1.96 and median is 1.10). It is worth noting that a t-test on whether the bid-to-induced value ratio is equal to 1 is highly rejected for all treatments. Similarly, t-tests of whether bid minus induced value equals zero are highly rejected as well. Kolmogorov-Smirnov tests on whether the distributions of induced values and bids are equal, are consistent with the t-tests. A similar story is in place when we test for medians using a Sign test (Snedecor and Cochran, 1989). The last two rows of Table S.2 show ANOVA tests and its non-parametric version, the Kruskal-Wallis test, of whether the means of bid, bid minus induced value and bid to induced value ratio are equal between treatments. The null is highly rejected in all cases.

Table S.2: Descriptive statistics

		Bid	IV	Bid-IV	Bid-to-IV
0.25 ECUs:1 €	Mean	4.24	3.92	0.32***	1.35***
	S.D.	2.36	2.15	1.32	1.53
	Median	4.76	4.35	0.10***	1.05***
€(no ECUs)	Mean	4.31	3.92	0.39***	1.42***
	S.D.	2.36	2.15	1.36	2.09
	Median	4.73	4.35	0.08***	1.02***
1 ECU:1 €	Mean	5.15	3.92	1.23***	1.96***
	S.D.	3.05	2.15	2.30	3.15
	Median	5.30	4.35	0.42***	1.10***
10 ECUs:1 €	Mean	4.15	3.92	0.23***	1.18***
	S.D.	2.36	2.15	1.06	0.81
	Median	4.50	4.35	0.00**	1.00**
25 ECUs:1 €	Mean	4.23	3.92	0.31***	1.29***
	S.D.	2.38	2.15	1.30	1.89
	Median	4.72	4.35	0.05***	1.02***
ANOVA	F-statistic	20.72***	-	55.98***	16.91***
Kruskal-Wallis	χ^2	54.86***	-	182.21***	159.51***

Notes: *** for the means denotes rejection of the null that the Bid-to-IV ratio equals 1 or that Bid-IV equals 0 at the 1% level according to a t-test.

***(**) for the medians denotes rejection of the null that the sample median of Bid-to-IV ratio equals 1 or that the sample median of Bid-IV equals 0 at the 1%(5%) level according to a Sign test (Snedecor and Cochran, 1989).

*** for the ANOVA and Kruskal-Wallis test denotes rejection of the null that the means of Bid, Bid-IV and Bid-to-IV respectively, are equal between treatments at the 1% level.

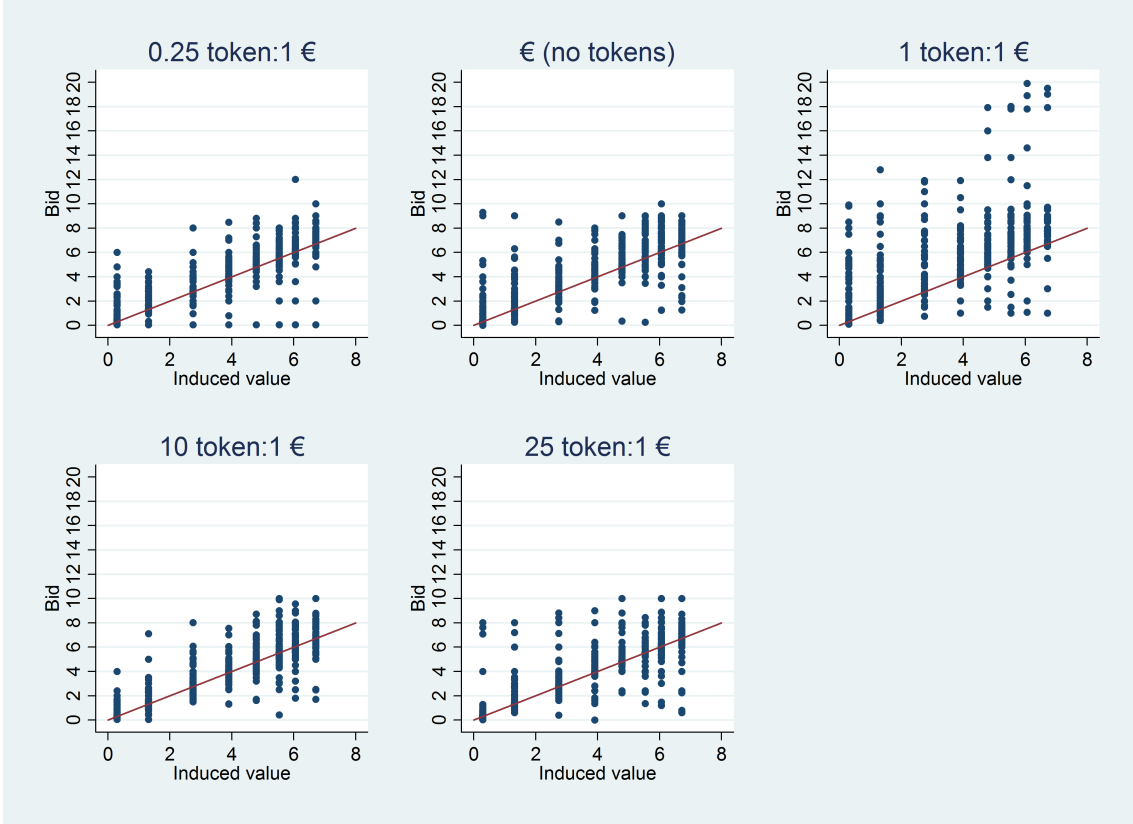


Figure S.1: Distribution of bids by treatment (solid lines represent perfect demand revelation; dashed lines represent linear predictions with their respective slope)

S.2 Additional analysis

This section shows estimation results when using as our dependent variable absolute deviations from induced values $|bid_{it} - IV_{it}|$. As we describe in the paper, for all treatments but the 1:1 treatment we fail to reject the null. In addition, the significant effect of the 1:1 treatment vanishes when we exclude three female subjects.

Given our null result, one may wonder about the probability of a false negative. Table 2 in the Appendix lists the minimum sample size required to detect the effects of the range depicted in Table S.3 with a power of 80%. Our sample size is sufficiently large to detect differences of about 0.4 and (under conditions) of 0.35, which covers the effects of the 1 ECU: 1€ (for females), of the 10 ECUs: 1€ (for males) and of the 25 ECUs: 1€ (for females) based on model (3) of Table S.3. However, smaller differences of about 0.1 or 0.15, like the effect we observe in the 0.25 ECUs: 1€ treatment for females or in the 25 ECUs:1€ for males, would be difficult to detect even with sample sizes much larger than most laboratory experiments employ.

Table S.3: Random effects regression of misbidding (absolute difference of bid minus induced value)

	(1)		(2)		(3)		(4)	
Constant	0.730***	(0.201)	1.313	(1.691)	1.706	(1.667)	1.724	(1.154)
0.25 ECUs:1 €	-0.079	(0.265)	-0.098	(0.259)	0.047	(0.354)	0.053	(0.243)
1 ECU:1 €	0.592**	(0.265)	0.481*	(0.264)	0.819**	(0.332)	0.236	(0.234)
10 ECUs:1 €	-0.231	(0.265)	-0.352	(0.264)	-0.274	(0.337)	-0.259	(0.231)
25 ECUs:1 €	-0.165	(0.265)	-0.172	(0.267)	-0.492	(0.384)	-0.432	(0.264)
Males	-	-	-0.478***	(0.170)	-0.303	(0.355)	-0.290	(0.244)
0.25 ECUs:1 € × Males	-	-	-	-	-0.314	(0.510)	-0.319	(0.350)
1 ECU:1 € × Males	-	-	-	-	-1.081**	(0.538)	-0.498	(0.373)
10 ECUs:1 € × Males	-	-	-	-	-0.180	(0.520)	-0.154	(0.357)
25 ECUs:1 € × Males	-	-	-	-	0.521	(0.505)	0.499	(0.347)
IV	0.024***	(0.007)	0.024***	(0.007)	0.024***	(0.007)	0.026***	(0.007)
Age	-	-	-0.042	(0.052)	-0.066	(0.051)	-0.074**	(0.035)
Household size	-	-	0.054	(0.104)	0.070	(0.102)	0.100	(0.071)
Income dummies	No		Yes		Yes		Yes	
Round dummies	Yes		Yes		Yes		Yes	
σ_u	1.043***	(0.060)	1.010***	(0.058)	0.982***	(0.057)	0.662***	(0.040)
σ_ε	0.887***	(0.010)	0.887***	(0.010)	0.887***	(0.010)	0.862***	(0.010)
N	3840		3840		3840		3768	
Log-likelihood	-5268.847		-5263.908		-5259.508		-5002.074	
AIC	10599.694		10603.816		10603.016		10088.148	
BIC	10793.544		10841.439		10865.652		10349.988	

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$ *** $p < 0.01$

S.3 Experimental Instructions

[This is an English translation of the original instructions written in Greek]
[Instructions were appropriately adjusted for the different token treatments]

Welcome!

Thank you for agreeing to participate in this survey. The survey concerns the economics of decision making.

Before we begin, I will ask each of you to draw a four digit number from this urn.

This four digit number is unique for each one of you across all sessions we will be conducting. That is, no other subject participating in this survey will have the same number. We will use this ID number for your payment.

After I explain the tasks, you will start making decisions using your computer. Before we begin with the tasks, you'll have to enter the four digit ID in an input screen to your computer. After we finish the session I will only know earnings corresponding to each ID number. You'll exit the room temporarily, I will then put the money in an envelope, seal the envelope, write the number on the back of the envelope and call you back one-by-one to the room to exchange your printed ID number with the corresponding envelope. I will not ask for your name at any point of the procedure. Thus, I cannot link your name with any profits you make today and this guarantees that the whole procedure is anonymized. All records and published results will be linked to four digit numbers, and not to your name. Please keep your printed codes private and do not share the information with anyone else.

[Each subject picks a number]

You should read all instructions carefully and answer any questions accurately. I will also read instructions loudly. It is very important to understand instructions because you might earn or lose money depending on your decisions.

It is very important that you do not communicate with any other participant. We want to know how you make decisions alone and not under the influence of someone else.

For your participation in the experiment you will receive the amount of 10€. The money given for your participation is yours to use as you wish.

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The procedure

In the tasks to follow you will participate in a type of auction known as a 2nd price auction. The 2nd price auction has 4 basic steps:

Step 1: We'll describe to you the product to be auctioned

Step 2: Each one of you, will submit a bid for buying the product

Step 3: The computer will rank all bids from highest to lowest

Step 4: The person(s) that submit the highest bid buys the product **but will pay the price of the second highest bidder**. If you don't bid the highest price then you don't purchase the good.

Consider this numerical example:

Suppose 8 people bid in an auction in order to buy a USB memory stick (16GB). Each bidder submits a bid separately. The submitted bids are given in the table below:

Person	Bid
1	12
2	15
3	20
4	18
5	30
6	25
7	35
8	32

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After ranking bids from highest to lowest (this is done by the computer internally), we have:

Person	Bid
7	35
8	32
5	30
6	25
3	20
4	18
2	15
1	12

Person 7 purchases the good because s/he bid the highest price (35) but s/he only pays 32 (second highest bid). All the other participants in the auction pay nothing and do not receive a memory stick.

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The training

We will now do a training task. This task is designed to allow you to familiarize yourself with the 2nd price auction and it doesn't count toward your earnings. We will repeat this task for three rounds. We will then select one round as binding by having one of you selecting a number from 1 to 3 from an urn. The numbers correspond to rounds, so if s/he picks number 1 then round 1 is binding, if s/he picks number 2 then round 2 is binding etc. Although we say binding, this is just for demonstration since the task will not count toward your earnings.

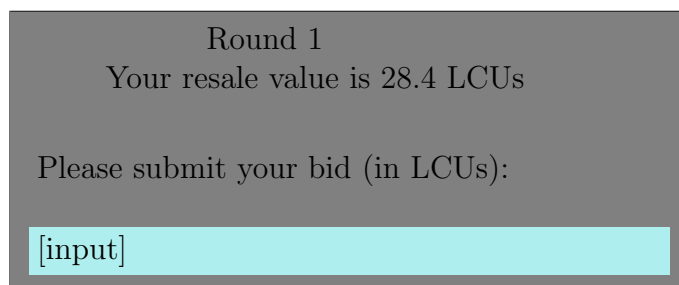
In this training task and the real task that will follow, you will bid in **Lab Currency Units (LCUs)**. That is, if you bid a number of 4, this means 4 LCUs. Lab currency units will be exchanged with Euros at the end of the session at this exchange rate: **10 LCU = 1 €**. That is, if you make a profit of 20 LCUs you will get 2 € on top of your participation fee. On the other hand if you make a loss of 10 LCUs we will deduct 1 € from your participation fee.

In this task we will proceed as follows:

You will bid for a fictitious product. This fictitious product has a **resale value**. The resale value is the value which we will pay you to buy back the fictitious product, if you actually purchase it. If you do not purchase the product then you cannot trade back the product to us. Resale values may be different for each participant. An example of this procedure can be described with the following steps:

Step 1: Each bidder looks at his/her *resale value* displayed at the computer screen

Example screen:



Round 1
Your resale value is 28.4 LCUs

Please submit your bid (in LCUs):

[input]

Step 2: Each bidder then submits a bid for the resale value displayed on the screen

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Step 3: Computer ranks bids from highest to lowest

Step 4: The second highest bid determines the price at which the good will be purchased from the highest bidder

Step 5: The buyer who bids the highest price purchases the good at the second highest bid

Step 6: The person who purchases the good, sells the good back to us **at the resale value**
Therefore, your net position is **resale value - 2nd highest price**.

You make a profit if **resale value > 2nd highest price**, since:

$$\text{Profit} = \text{resale value} - \text{2nd highest price} > 0$$

or a loss if **resale value < 2nd highest price**, since:

$$\text{Loss} = \text{resale value} - \text{2nd highest price} < 0$$

Step 7: Bidders at or below the 2nd highest price do not purchase the good and thus will make zero profit/loss

Step 8: Auction ends after the last round

After each round you will get some feedback. In case you are not the highest bidder in any given round your feedback screen will look something like this:

Your resale value in round 1 was 28.4 LCUs

Your bid was **AA** LCUs

You were not the highest bidder. Your profit/loss for the previous round is zero.

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In case you are the highest bidder in any given round your feedback screen will look something like this:

Your resale value in round 1 was 28.4 LCUs

Your bid was **AA** LCUs
Second highest price was **BB** LCUs

You are the highest bidder. Your profit/loss for the previous round is **28.4-BB=CC** LCUs.

[Training task is performed]

[One person is randomly selected to pick a number from the urn]

[Proctor asks: Are there any questions? Is everybody absolutely sure that s/he understood the task?]

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The actual auction

We will now move on to the actual task. This time it is for real. That is, profits will be added to your endowment while losses will be deducted. We will do **24 rounds** for this task. In each round each person will submit his/her bid for the object. After the last round we will randomly select one round as binding by having one of you selecting a number from an urn. The numbers correspond to rounds, so if s/he picks number 1 then round 1 is binding, if s/he picks number 2 then round 2 is binding etc. Only the binding round will count toward your profits/losses.

[Proctor asks: Are there any questions?]

[Real task is performed]

[One person is randomly selected to pick a number from the urn]

[Profits/losses are determined from the computer which also converts tokens in €(only for the token treatments)]

[Subjects leave the room temporarily; the experimenter puts money into envelopes and writes the corresponding four digit code on the back of the envelope; subjects return to the room and exchange their code with the envelope]

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References

Snedecor, G. W. and W. G. Cochran (1989). *Statistical Methods* (8th ed.). Ames, IA: Iowa State University Press.