## **Online Appendix (not for publication)**

## **Appendix A. Experiment Instructions**

## Instructions for the first 10 paying periods [same for all treatments]

#### General

Thank you for coming! You've earned \$5 for participating, and the instructions explain how you can make decisions and earn more money which will be paid to you in cash.

This is an experiment in the economics of market decision making. In this experiment we are going to simulate a market in which each participant will be a buyer in a sequence of trading periods.

There should be no talking at any time during this experiment. If you have a question, please raise your hand, and an experimenter will assist you.

During the experiment your earnings will be calculated in experimental points. Experimental points will be converted in Dollars at the following exchange rate:

200 experimental points = 1\$

At the end of today's experiment you will receive, in cash, the earnings you make today. In addition, you will receive a payment certificate to pick up your \$5 participation bonus and an additional cash payment of \$18 the same day next week.

For example, if today is Monday, you will receive the \$5 participation bonus and the additional \$18 cash payment next Monday. To pick up these amounts, you need to come back to the same lab the same day next week (if you cannot make it at the time indicated on your payment certificate please send an email to lingbo.huang@monash.edu to schedule another time on the same day or you can send someone else to pick up your cash payment on the same day). You do not need to participate in any decision task next week to receive the additional \$18 payment.

However, as we describe below, you may lose some of this \$18 depending on the decisions you and the other 3 buyers in your market make today. Therefore, the final amount of the additional cash payment you will pick up next week will depend on the decisions you and the other 3 buyers in your market make in today's experiment.

In today's experiment, you will first participate in two practice trading periods followed by a number of paid trading periods. In the practice trading periods you do not earn money, but you should take these periods seriously since you will gain valuable experience for the paid trading periods.

#### • Specific instructions to buyers

In this experiment each participant is a buyer. Each buyer is randomly assigned to a group of 4 buyers – a market – and <u>remains in the same market with the same buyers throughout the experiment.</u> What is happening in other markets is irrelevant for your own market and hence for your own earnings. During each trading period each buyer can buy units (<u>up to 3 units</u>) of a hypothetical consumption good from an automated (computerized) seller.

Resale value of a unit. At the beginning of each trading period, you will be given three separate resale values for each of the three units of the good you can purchase. These are your privately known resale values. You can think of the resale value of a unit as the potential earnings you can make out of that unit. Your resale values will remain the same in each period during the experiment.

*Bid.* As a buyer, you can submit a "bid" to buy a unit from the seller during a trading period. A "bid" is the amount you are willing to pay for that unit of the good. You must submit one "bid" for each of the three units. (If you do not want to purchase a unit, you may simply submit a bid "0".) Your bids have to follow the following two rules: 1) "Trade at no loss": your bid for each unit cannot be above your resale value for that unit; 2) Your bid for the third (second) unit cannot be above your bid for the second (first) unit.

#### • How the market works

At the beginning of each trading period each buyer submits bids for each unit offered in the market. At the end of each trading period, all submitted bids are collected and ranked from high to low. If two or more bids are equal, ranks will be randomly assigned by the computer.

#### 1. How the Market Price is determined

The automated seller has a production cost unknown to all buyers. The production cost does not change during the experiment. The seller never trades at a loss, therefore it will not accept bids below its production cost. The seller will accept, among all bids from all buyers in the market, the lowest bid above or equal to the production cost. This will be the per-unit **Market Price**. Bids that are below the production cost will be rejected and buyers who have submitted those bids won't buy any units (i.e. buyers will neither pay for those units they placed a bid nor gain any resale value from those units).

The market price can be different in each period because it depends on the bids that are submitted in each period.

## 2. How the Market Quantity is determined

Buyers will purchase a unit when their bid is greater than or equal to the market price. The **Market Quantity** is the total number of units purchased by the 4 buyers in one market in one period at the market price.

**Example:** Suppose, in one market and in one trading period, the automated seller's production cost is 70. And suppose the automated seller collects the following bids from the 4 buyers.

	Buyer 1	Buyer 2	Buyer 3	Buyer 4
Bid Unit 1	135	135	140	145
Bid Unit 2	85	90	94	85
Bid Unit 3	80	0	80	40

The bids are ranked from high to low as follows: 145, 140, 135, 135, 94, 90, 85, 85, 80, 80, 40, 0. In this case, the **Market Price is 80** (the lowest bid above the production cost of 70). All 10, and only the 10 units for which the bids were equal or above the market price of 80 will be purchased by the buyers who submitted the corresponding bids. These 10 sold units are bolded in the table. Each of these 10 units will be exchanged at 80. The market quantity in this case is 10. The number of sold units is determined by the number of submitted bids above or equal to the market price. Units for which the submitted bids are below the market price will not be sold.

**Please note:** The information on values and production costs of a unit is private. Buyers do not know the bids of other buyers, nor do they know the per-unit production cost for the seller.

#### 3. Additional Costs from Trading

Each unit traded in the market (i.e. each unit sold) causes an additional cost of 60 points that will be equally split by the 4 buyers in the market. This means that each of the 4 buyers in the market has to pay an additional cost of 60/4=15 points. **Note** that you will bear a share of the additional costs even if you do not buy any units yourself.

Using the example above where the market quantity is 10 units, in this case, each buyer incurs an additional cost of (60/4)\*10=150 points=\$0.75.

These additional costs will not affect your earnings today but will be deducted from the \$18 cash payment you will receive next week.

## 4. How your earnings today in each trading period are calculated

Your Final earnings in one trading period = (Resale value - Market price) of each unit purchased

In the example above Buyer 4 buys two units. Her resale value for Unit 1 is 200, her resale value for Unit 2 is 140 and her resale value for Unit 3 is 100. The market price is 80. Her **Final earnings** in this period = 200 (resale value of Unit 1) + 140 (resale value of Unit 2) – 2\*80 (market price) = 340 - 160 = 180.

As you can see, in this case, even though Buyer 4's resale value for Unit 3 is 100, which is higher than the market price 80, Buyer 4 did not purchase the unit because her bid for Unit 3 (40) is lower than the market price (80).

Your total Final earnings for today are the sum of your Final earnings in each trading period over all the paid trading periods.

## 5. How your earnings next week are calculated

Each participant will receive \$18 next week. However, the final amount of the cash payment you will pick up next week will depend on the decisions you and the other 3 buyers in your market make today.

In the example above, since the market quantity is 10, the additional costs per person are (60/4)\*10 = 150 points. This additional cost will be deducted from Buyer 4's cash payment for the next week.

So, the final payment each buyer will receive next week = \$18 - the Sum of the Additional Cost per person in each period today.

You do not need to participate in any decision task next week to receive the cash payment for the next week. You just need to pick it up in the lab on the same day next week.

#### Instructions for the next 10 periods

## [same for all treatments]

You and the other three participants in your market will now vote whether to introduce a tax of 60 points on each purchased unit of the good. If at least two out of four buyers in each market vote "Yes", the tax is accepted and the following changes are implemented for the following trading periods: 1) a tax of 60 points will be deducted from your final earnings for each unit you purchase; 2) at the end of each period, an equal share (one-fourth) of the total tax revenues collected from all units traded in your market will be returned to each buyer. All the other rules described in the instructions for the first 10 trading periods remain the same. In particular, seller's production cost and each buyer's resale value of each unit remain the same as the previous 10 periods.

## Example

Suppose the tax of 60 points per unit is accepted as the outcome of the voting in your market.

To illustrate how this would affect the outcome of the market and your earnings we use the same example from the instructions for the first 10 trading periods. In that example, when a buyer obtains one unit of the good, she will receive her resale value but now she will also have to pay the tax of 60 points. Consider Buyer 4. Buyer 4's resale value for Unit 1 is 200, her resale value for Unit 2 is 140 and her resale value for Unit 3 is 100. Since buyer 4 will also have to pay the tax of 60 points on each purchased unit, the maximum she could pay to the seller and still make a gain is (200 - 60) = 140 for Unit 1, (140-60)=80 for Unit 2 and (100 - 60)=40 for Unit 3.

Consider again the example in which the seller collects the following bids from the 4 buyers. Let's assume each buyer bids 60 less than before for each unit due to the tax he/she has to pay for each purchased unit.

	Buyer 1	Buyer 2	Buyer 3	Buyer 4
Bid Unit 1	(135 - 60) = 75	(135 - 60) = 75	(140 - 60) = 80	(145-60) = 85
Bid Unit 2	(85-60) = 25	(90-60) = 30	(94-60) = 34	(85-60) = 25
Bid Unit 3	(80-60) = 20	0	(80-60) = 20	0

The bids are ranked from high to low as follows: 85, 80, 75, 75, 34, 30, 25, 25, 20, 20, 0, 0. Again, suppose the automated seller's production cost is 70. Thus, the Market price is 75 (that is, the lowest bid above 70). The Market quantity is 4. These 4 sold units are bolded in the table. Following the same rule as in the first 10 trading periods, each of these 4 units will be traded at the Market price 75.

To illustrate how a buyer's earnings today are calculated, again let's use the example of Buyer 4. Since the Market price is 75, Buyer 4 buys 1 unit. Since 4 units are sold, the total tax revenues in this period are 4\*60=240. One fourth of the total tax revenues, 240/4=60 points will be returned to buyer 4.

Buyer 4's **Final earnings** in this period are = 200 (resale value of unit 1) - 60 (tax) – 75 (market price) + 60 (returned tax revenues) = 125.

Since the Market quantity is now 4, in this period the **Additional costs per person** are (60/4)\*4 = 60 points. These additional costs will not affect Buyer 4's earnings today but will be deducted from the \$18 cash payment Buyer 4 will receive next week.

So, the final cash payment each buyer will receive next week = \$18 - the sum of the Additional Cost per person in each period.

Suppose the tax proposal is rejected.

Trading will continue as before the vote and no changes will apply. Thus, in the above example, the seller will only accept bids above or equal to the production cost 70. The Market price is therefore 80. Buyer 4 buys two units. Her final earnings for that period are 180.

Since the Market quantity is 10, in this period the additional costs per person are (60/4)\*10 = 150 points. Again, these additional costs will be deducted from the cash payment Buyer 4 will receive next week. All final earnings in the following periods will be calculated as illustrated above.

#### Voting procedure

#### [No First Voter]

In the ballot, all participants simultaneously vote Yes or No for the introduction of the tax. Abstentions or neutral votes are not possible.

## [First Voter With Message]

When voting on the tax, one member in your group will vote first and write a message to the other three members explaining why he/she voted Yes or No to the introduction of the tax. The other three members will see the result of the first vote and the message, and then decide whether to vote Yes or No to the introduction of the tax. Abstentions or neutral votes are not possible.

#### [First Voter Fixed Message]

When voting on the tax, one member in your group will vote first and write a message to the other three members. The message can be either "Let's vote Yes" or "Let's vote No". The other three members will see the result of the first vote and the message, and then decide whether to vote Yes or No to the introduction of the tax. Abstentions or neutral votes are not possible.

## [First Voter No Message]

When voting on the tax, one member in your group will vote first. The other three members will see the result of the first vote, and then decide whether to vote Yes or No to the introduction of the tax. Abstentions or neutral votes are not possible.

## [same for all treatments]

You will be informed about the outcome of the vote in your group on the screen before the trading continues. All decisions are anonymous.

Before proceeding to the vote you will be asked to do an exercise to make sure you understand the instructions.

If you now have questions, please, raise your hand and wait until an experimenter will come by to answer your questions individually.

## Appendix B. Trading Behavior

Figure B1 plots the average market quantity over the 20 trading periods for all treatments, separated by those groups that adopted the tax and those that did not. We find a similar pattern across all treatments. For groups that adopted the tax (from period 11 onward), there was a fast convergence to the socially optimal quantity of 8 units. In contrast, for groups that did not adopt the tax, there was instead a fast convergence to the market equilibrium quantity of 12 units. All comparisons in market quantity between groups adopting the tax and groups rejecting the tax are significant at the 1% level. This means the adoption of the tax is crucial for reaching socially efficient outcomes.

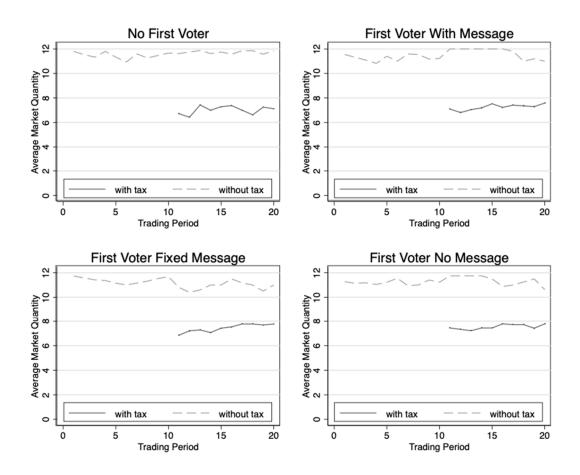


Figure B1: Average market quantity by tax regime

Figure B2 plots the average market quantity over the 20 trading periods for all treatments. There was a fast convergence to the market equilibrium quantity of 12 units during the first 10 periods without the tax. After the first ballot, the market quantity in the First Voter With Message treatment drops to 7.8 units since almost all groups adopt the tax. In contrast, the market quantity in the baseline No First Voter treatment drops to between 9.5 units, significantly higher than that in First Voter With Message treatment (the unit of observations is market quantity per group averaged across periods, ranksum test, same below, p = 0.002), since only 47% of the groups adopted the tax. The market quantity in the other two First Voter treatments, First Voter Fixed Message and First Voter No Message, is similar: 74% and 82% of the groups respectively adopted the tax (recall that the pass of the tax needed at least two

"yes" votes out of four). The market quantities in both treatments are significantly lower than that in the No First Voter treatment (p = 0.050 and p = 0.033) and significantly higher than that in the First Voter With Message treatment (p = 0.047 and p = 0.019). In sum, the average market quantity decreases as more groups adopted the tax across treatments. This is consistent with the pattern observed in Figure B1.

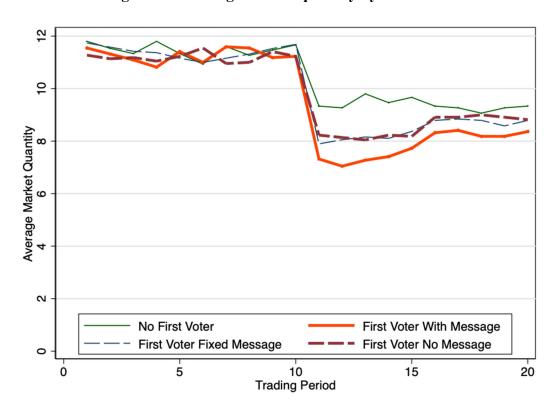


Figure B2: Average market quantity by treatment

# Appendix C. Additional Tables

Table C1. "Yes" votes in the first ballot

Each cell contains [the number of "yes" votes]/[the total number of buyers] in the corresponding category.

	No First Voter				oter Fixed essage	First Voter No Message		
Initial attitude	All	First Voters (yes voters)	Followers	First Voters (yes voters)	Followers	First Voters (yes voters)	Followers	
Strong No	0/9	0/0	5/18	0/0	2/18	0/0	2/18	
Moderate No	0/5	0/0	5/10	0/0	1/9	0/0	2/11	
Slight No	0/7	0/0	1/3	0/0	4/5	0/0	1/6	
Indifferent	4/8	0/0	11/13	0/0	3/6	0/0	5/10	
Slight Yes	9/9	5/5	5/7	5/5	5/9	8/8	2/6	
Moderate Yes	11/11	11/11	3/5	6/6	5/6	10/10	8/9	
Strong Yes	3/3	6/6	10/10	8/8	4/4	4/4	6/6	
No (Strong, Moderate and Slight No)	0/21	0/0	11/31	0/0	7/32	0/0	5/35	
Indifferent	4/8	0/0	11/13	0/0	3/6	0/0	5/10	
Yes (Strong, Moderate and Slight Yes)	23/23	22/22	18/22	19/19	14/19	22/22	16/21	
Total	27/52 =52%	22/22 =100%	40/66 =61%	19/19 =100%	24/57 =42%	22/22 =100%	26/66 =39%	

**Table C2:** Tax-supporting first voters' messages in the two ballots in the First Voter With Message treatment

First	Ballot	allot Message		Followers			
Voter			# of	Initial Attitude <sup>+</sup>			
			Yes Votes	# of No	# of Yes		
1	1	Tax ensures that each of our purchase's profit > 60 (cost per purchase), hence number of units of purchased will be minimised (cost 60 per purchase) at the same time ensuring only high margin units will be purchased, thus maximising profit	3	2	1		
1	2	If tax is abolished, profit will return to 40 per round (i.e. profit unit $1+2+3=220$ -180(cost assuming everyone purchased). With the current tax system, with market price of 40, profit will be 70 if everyone only purchased unit 1 and 2 at 40.	2				
2	1	the outcome (return at the end) will be worth the deduction at the start	3	1	2		
2	2	The tax will provide a greater amount of revenue at the end compared to the amount you may pay for each trade	1				
3	1	introduce to increase final earnings	1	1	0		
3	2	yes because lower additional cost	2				
4	1	As shown in the practice example, the sum when tax was applied was more than without the tax earnings, also it seems the tax cancels out the additional cost deduction, and thus the profit is surely slightly more than the deduction of the additional costs. (which are balanced with tax received)	3	1	1		
4	2	Ok, so first round avg earnings: 220 and add cost = 180, thus 40 points profit each time. with tax: earnings average = 175, add cost average = 105, thus 70 profit each time. Overall with tax, we have average 30 points more gain than no tax condition. (AS PER MY CALCULATION, pardon me if i am wrong)	3				
5	1	No reason, i just want to test out what the tax does to my revenue	2	1	0		
5	2	My net revenue is greater with the tax than without	1				
6	1	you can get higher final earnings	3	1	1		
6	2	Will earn more final earnings. Everyone just bids for one unit	3				
7*	1	get higher sale	2	2	0		
7*	2	just trying another way round	1				
8	1	Yes please!! Cause why do the same thing all over again, it's boring YAWNNNNN	2	1	1		
8	2	:)	3				
9	1	will be more profitable overall	1	1	2		
9	2	tax will be shared equally so doesnt matter	1				
10*	1	i duno lol	1	3	0		
10*	2	i duno lol	0				
17	1	in order to effect the final earnings.	2	1	2		
17	2	N/A	3				
18*	1	Introducing tax increases the total earnings :) (:	2	1	1		

18*	2	I really dont know. Decide for yourselves but it seems like total	1		
10	1	earnings reduced after introducing tax :(	1	2	
19	1	I believe that our earnings will grow if we introduce tax on the fact that	1	3	0
1.0		the market quantity is high. The tax return will favour everyone.	1		
19	2	Earnings were higher in this case, I think we should stick with this	1		
21*	1	form of trading.	1	1	2
21*	1	I think getting tax is a good idea	1	1	2
21*	2	Introducing an additional tax willl reduce our ability to bid which	3		
22	1	reduces what we earn, so its a no for me.	1	2	0
22	1	Different from previous	1	3	0
22	2	lower market quantity, so lower cost per unit	1	1	
25	1	Everyone will gain more from the tax.	1	1	2
25	2	There is overall benefit	1		
26	1	We will earn more money with tax. With more units traded, more tax	3	1	1
		revenue will be gained which will be spilt up evenly between the 4 of			
		us. This is more beneficial than without tax, as seen in the previous			
		game, we suffered lots from the additional cost and having more units			
		traded did not benefit us. This is the way to earn more money, as having			
		more units traded = more revenue = more earnings to byset additional			
2.6		cost.			
26	2	Tax will help us earn more money, even if the total final earnings were	1		
		lower. If you deduct additional cost from final earnings, the profit is 70.			
		(This is the total you will get from today and next week's payment).			
		Whereas for the previous round, the profit is 40. We still earn more this			
		way from tax revenue, even if we are unable to purchase unit 3 that			
		decreases our final earning. (Try to purchase as many units as possible			
20*	1	to increase tax revenue split by us)	1	12	0
28*	1	The final earnings will increase	1	2	0
28*	2	dont know	1		1
30	1	On average we'd make more considering the decrease in additional costs per period.	3	0	3
30	2	Yeah same deal we're still making more considering we're paying less	2		
		in additional costs. let's yabba dabba do it again			
31	1	I would like to introduce the tax as it decreases the market quantity	2	1	1
		while being able to enhance our final earnings with the addition of tax			
		revenue. In addition, it is also able to reduce the additional cost per			
		person which will be deducted in next week's \$18 due to the decrease in			
		market quantity. In conclusion, the revenue we would earn would be			
		higher due to the increase in final earnings and the reduction in			
		additional cost.			
31	2	While we are unable to increase market quantity, our net increase in	1		
		final earnings increases.			
33	1	Lower additional costs after each buying period.	0	3	0
33	2	The additional costs are higher for us due to high market quantity (now	1		
	1	consistently at 12). Next week's payment is now decreasing.			

34*	1	It increases the final earnings with lower additional costs.	2	0	3
34*	2	More earnings	2		

<sup>\*</sup> First voters 7, 10, 18, 21, 28 and 34 are those who switched from yes to no in the second ballot.

† # of No includes all followers whose initial view was either Strong No, Moderate No, or Slight No.

# of Yes includes all followers whose initial view was either Strong Yes, Moderate Yes, or Slight Yes. The number of followers whose initial view was "indifferent" is small and can be retrieved from the total number of other two views.

Table C3: Regression analysis of treatment differences in tax support rate

		First	ballot			Second	d ballot	
	O	LS	Pro	obit	0	OLS		obit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FV Mes.	.185**	.209**	.185**	.210**	.195**	.215**	.195**	.214**
	(.093)	(.096)	(.093)	(.094)	(.081)	(.086)	(.080)	(.084)
FV Fix	.026	.066	.026	.068	.138	.182*	.138	.182**
	(.089)	(.094)	(.088)	(.092)	(.086)	(.094)	(.096)	(.092)
FV No	.047	.064	.047	.067	.168*	.180*	.168*	.179*
	(.098)	(.101)	(.097)	(.099)	(.093)	(.098)	(.093)	(.095)
Control	No	Yes	No	Yes	No	Yes	No	Yes
H0: FV Mes. = FV Fix (p value)	.063	.058	.060	.052	.767	.699	.765	.687
H0: FV Mes. = FV No (p value)	.011	.025	.012	.023	.498	.699	.494	.692
N	304	304	304	304	304	304	304	304

Note: Probit regressions report average marginal effect estimates with standard errors clustered at the group level. Control includes subjects' age, gender and political attitude fixed effects. \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

## **Appendix D. Message Coding Instructions**

## **Your Task:**

You will be given a list of messages. The messages were written by participants in a market experiment on whether to introduce a tax on market transactions. The experiment consists of two parts.

In the first part, a group of four buyers traded with an automated seller who would sell up to three units to each buyer as long as a buyer's bid for a unit was higher than the production cost. Participants remained in the same group for 10 trading periods.

At the beginning of the second part, each group needed to decide whether to introduce a tax to the market. One of the buyers would be the first voter who could vote first and send a free-form message to the other three buyers, who would then vote themselves after seeing the first voter's vote and message. As long as two out of four voted Yes to the tax, the tax would be effective from periods 11 to 15. In period 16, buyers were asked to vote again. This second ballot followed the same procedure as the first one. In particular, the same first voter could again vote first and send a message to the other three buyers. The tax, if passed, would be effective from periods 16 to 20. Buyers was not informed about the second ballot in period 16 when they voted in the first ballot in period 11.

## [Instructions for coders evaluating the messages of first voters who voted "yes"]

Your task today is to evaluate the messages written by first voters **who voted Yes** to the tax. You are asked to classify each message according to i) whether the message provided any reason for the first voter's vote; and ii) whether the message revealed the first voter's confidence in his/her vote.

- i) To classify whether the message provided any reason for the first voter's vote, please use the following categories:
  - 1. Explained why: The first voter explained why introducing taxes is to everyone's best interest (i.e. increases payoffs).
  - 2. Statement only: The first voter only made a statement that introducing taxes is to everyone's best interest (i.e. increases payoffs) but did not explain why.
  - 3. Other reasons: The first voter provided some reasons why he/she voted yes but they are NOT related to profit maximization. Please explain briefly the reasons provided by the first voter.
  - 4. **No reasons**: The first voter's message **did not provide any reason** why he/she voted yes.
- ii) To classify whether the message revealed the first voter's confidence in his/her vote, please use the following categories:
  - 1. **Confident:** The message reveals that the first voter is confident in his/her vote.
  - 2. **Not confident:** The message reveals that the first voter is NOT confident in his/her vote.
  - 3. **No information:** The message does not reveal any information about whether the first voter is confident in his/her choice.

While coding the messages, please pay attention to the following:

- 1) You should code all messages independently. Please do not discuss with anyone else how to code the messages.
- 2) Your job is to evaluate the content of the messages.
- 3) When you complete the coding, please go through the entire list of messages for a second time to (i) review all your codes and revise them if needed for accuracy; (ii) make sure that you have coded every message.

**NOTE:** You will be first given the messages written in the first ballot. After you finish the coding all these messages, please raise your hand and the experimenter will collect your sheets and also give you the messages written in the second ballot. For your record, the second set of message sheets you receive will include the messages in the first ballot, however, you only need to evaluate the message in the second ballot.

#### Your compensation

You will receive \$15 for completing coding all the messages. In addition, two messages will be randomly chosen at the end of today's session after all the participants have finished the coding task. For each of the chosen messages, if your coding outcome is the same as the most popular coding outcome, you will receive another \$5.

To evaluate the messages, you need to first understand the market experiment. The first instructions attached below explain to the participants how to trade in the market. The second instructions explain how to vote and how the tax works for the voting part. Please read both of them carefully.

After you finish reading the instructions, please complete the comprehension questions for both sets of instructions to make sure you understand the instructions. When you finish, please raise your hand and show the experimenter your answers to those questions. The experimenter will hand out the messages to you after checking your answers.

## Appendix E. Additional Results from the Content Analysis of Messages

In the main text, we explained how we evaluated first voters' messages in the First Voter With Message treatment and reported our main results. To examine the message effect, we mainly focus on the messages and voting decisions in the first ballot. The voting decisions in the second ballot can potentially be affected by the messages in both ballots. Our interest in the analysis of the second ballot messages is mainly whether the content of the messages changes from the first to the second ballot. In particular, do first voters learn to make better arguments over time? This does not seem to be the case. For example, out of the seven first voters whose first message is coded as "Statement only," only one first voter's second message is coded as "Explain Why." Among the remaining six, five remain as "Statement only" and one is coded as "No reasons." We also find that for the three first voters whose first message is coded as "Other Reasons" or "No reasons," none of their second messages is coded as "Explain why". Hence, the quality of the messages does not seem to improve. This is consistent with the results that the support rate in the second ballot does not improve as compared to the first ballot.

Tables E1 and E2 present detailed information on the ratio of "yes" votes in the first ballot in each category.

**Table E1.** Ratio of "yes" votes in the first ballot by reasons (First Voter With Message treatment)

Initial attitude	Explained why	Statement only	Other or no reasons
No (Strong, Moderate and Slight No)	5/8	4/16	2/7
Indifferent	4/4	5/6	2/3
Yes (Strong, Moderate and Slight Yes)	8/9	7/8	3/5

Note: Each cell contains [the number of "yes" votes]/[the total number of buyers] in the corresponding category.

**Table E2.** Ratio of "yes" votes in the first ballot by confidence (First Voter With Message treatment)

Initial attitude	Confident	Not confident	No Information
No (Strong, Moderate and Slight No)	6/14	3/10	2/7
Indifferent	5/5	3/3	3/5
Yes (Strong, Moderate and Slight Yes)	10/11	6/8	2/3

Note: Each cell contains [the number of "yes" votes]/[the total number of buyers] in the corresponding category.