

Do people care about democracy? An experiment exploring the value of voting rights *

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Abstract. In almost all democratic national elections an individual vote cannot change the election outcome. The fact that many individuals nevertheless participate voluntarily in such elections suggests that people do care about democracy as such. This experiment investigates the value of democratic voting rights by providing participants the chance to sell them. More specifically, an incentive compatible mechanism is used to elicit the willingness-to-accept value of the voting right in the election of the German Bundestag on 16 October 1994. A postexperimental questionnaire makes it possible to assess the relative importance of answers to the frequently raised question: Why do people vote?

1. Introduction

In democratic national elections an individual vote matters only in highly unlikely situations. It can be said that it is more likely to win the jackpot of the German state lottery than to become once the decisive voter in a lifetime or to be hit in a thunderstorm than to change the voting results. Here we do not want to engage in a discussion of how one compares two such unlikely events. In our view, it is an obvious and therefore an accepted fact that individual voters almost surely cannot alter an election result regardless of whether they vote or not and how they vote.

In public choice theory it is assumed that individuals as voters act rationally, i.e., by their voting behavior they try to maximise their own benefits.¹ Given the fact that voting means to invest some effort (gathering and evaluating information, going to the polling booth or requesting an absentee ballot for postal vote), the extremely low probability of one's own vote being decisive

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makes voting apparently irrational. Because of this conclusion it is often asked² why people vote, and one tries to give reasons.

Our emphasis in this paper is not to discuss these arguments theoretically, but to address the problem directly by attempting to measure the values which people assign to their voting rights. More specifically, we report on an experiment undertaken before the national election of the German Bundestag in 1994 in which participants had the opportunity to sell their voting rights for possibly substantial amounts. One usually requires replicability in experimental research. Although one no longer can sell the voting right for the election in 1994, analogous studies could be performed for any election with given voting rights. Since the experiment was based on an incentive compatible mechanism (Becker, de Groot and Marshak, 1963), the price bid attained can be interpreted as the true (willingness-to-accept) value for one's voting right. Usually the willingness-to-pay value is strictly smaller than the willingness-to-accept value (Römer, 1991). This is mostly attributed to an endowment effect which, however, would be difficult to detect in our experiment. Using a follow-up (postexperimental) questionnaire asking for reasons to vote and not to vote in addition to some personal characteristics, it is possible to assess the importance of the various reasons for why people vote or not and compare these to the individual values for being able to vote.

The results are striking: Most of our participants did not want to sell their voting right even at the top price of DM 200 (German marks) which had been offered. Only a surprisingly small minority of participants (2.8%) would have sold their voting right for any positive price. That is, only very few people view their individual voting power as inessential as suggested by the "why do people vote?" paradox. Another intermediate group (of about one quarter of our 174 participants) was willing to sell their voting right for substantial prices, but refused to do so at very low prices.

In our view, such results can be used to explain the different participation rates in different elections if one interprets non-willingness to sell one's voting right as willingness to vote. There is a small group of voters who hardly ever vote since they consider it to be inessential or worthless. Others only vote when the opportunity costs of voting are not prohibitive or if the election results are especially interesting like the outcome of some sports events. The majority of voters, however, considers it as their (moral) duty to participate in democratic elections. The answers of the postexperimental questionnaire provide further clues as to why most voters decide to vote and never consider not to vote.

Voters who care about their voting right although their vote is very unlikely to matter must view voting in democratic elections as a moral duty and/or attribute some intrinsic value to democratic voting acts. They do not behave

opportunistically! But then the question arises: Can one, like in public choice theory, assume opportunistic behavior when analysing which party a voter will select? Since a voter will hardly argue morally when deciding to vote and opportunistically when choosing a party, our experimental results seem to question the fundamental approach of public choice theory.

The value of voting rights can also be detected by comparing the market prices of common stocks and so-called preferred stocks (without voting rights) if the latter ones exist. Although preferred stocks have higher and/or more certain dividend payments, their market prices are more often below those of common stocks than otherwise.³ Assuming that an individual shareholder is nearly as insignificant as an individual voter in democratic (national) elections, the prices of preferred stocks should clearly exceed those of common stocks. Compared to voting in democratic elections, one, furthermore, would not expect that not caring for one's voting power is morally objectionable. The fact that preferred stocks are nevertheless usually cheaper than common stocks thus indicates that people strongly care for their voting right (even if they do not actively use it, but rely on banks etc.). In our view, at least small shareholders must either consider a take over as rather likely (in case of a takeover only common stocks with voting power are strategically relevant) or they must suffer from a control illusion which typically results if the individual voter thinks that others decide as he or she does ("if I do this, others will do the same").

In the following we first describe the experimental design (Section 2) and comment on the experimental results (Section 3). We then try to explain the individual bids, i.e., the revealed values of voting rights, by referring to the reasons (not) to vote which are brought forward in the literature (Section 4), and by analysing the answers to the postexperimental questionnaire (Section 5). The conclusion (Section 6) contains an evaluation and some reservations to our inquiry.

2. Experimental design

The experiment was performed on 11 October, i.e., 5 days before the national election of the German Parliament (Deutscher Bundestag) on 16 October 1994. It took place during the first lecture of a basic course in microeconomics, i.e., participants were "unspoilt" by economic theory, but biased by their common inclination to study economics. After some introductory remarks concerning the intentions and the contents of such a course, students were asked to participate in an experiment which required strict independence and therefore no public discussion. Whoever did not want to obey these rules was asked to leave the lecture room (30 to 40 students left without knowing more

about the experiment except for a remark on the course announcement asking students to bring their voting cards to the first lecture).

The remaining 176 students were told that all questions were to be answered only privately. We then distributed the instruction sheet and the decision form.⁴ Both contained the code number identifying the individual participant. Only one participant left the lecture room complaining (privately) about the experiment. Five other participants, who it seemed would have been able to fulfill our requirements (they did not indicate otherwise), did not participate properly by returning an empty decision form.

Most questions revealed some difficulties in understanding the incentive compatible sales mechanism: The price was determined by randomly selecting one price out of an urn containing 201 integer prices ranging from DM 0, DM 1, DM 2, . . . to the maximal price of DM 200.⁵ After the price was drawn, only those participants whose bid did not exceed the actual price were eligible to sell their voting right. Among these, four were to be selected by chance to actually be paid in reward for destroying their voting card themselves and leaving their identity card over the election weekend. Actually this did not rule out all legal possibilities to vote. No participant, however, mentioned this. Apparently all our participants thought that voting without a voting card is impossible or prohibitively troublesome.

It should be clear that it is an undominated strategy to submit a bid at which one is (due to the integer restriction, nearly) indifferent between selling and not selling one's voting right. A few students asked whether bidding DM 201 would suffice to exclude any risk of having to sell one's voting right. Our standard answer was that any bid above DM 200 will do.

After reading the instructions and filling in the decision form, a task which required about 15 minutes, the decision forms were collected and the post-experimental questionnaires⁶ were distributed. While students answered the questionnaire, the experimenters drew the price (with a student monitor) and singled out those decision forms with bids which did not exceed the chosen price of DM 112. Four of these were then selected by chance.

After collecting the postexperimental questionnaire, we publicly announced the code numbers of the four participants who were actually selected for selling their voting right. We did not announce the price which they were to receive. Altogether we needed 40 minutes for the experiment. The actual payment was made later and not by one of the two authors, in order to avoid any fear of a bad reputation for the participants. One of the four did not show up at all (this participant stated a weird, non-integer price between DM 0 and DM 1, claimed to be neither male nor female and should have been excluded rightaway; "it" is the only participant who has been excluded from our data set). Another "seller" suddenly reconsidered his decision when being

asked to destroy his voting card. He commented that "having to do it makes me doubtful whether it is okay" and disappeared without the money. The two remaining sellers collected the DM 112 and destroyed their voting cards without any comments.

We expected quite a number of foreign students who were not able to sell their voting right and we wanted to avoid any discriminatory action. An overhead transparency – visible to all participants – announced that one could turn in the voting card later (but before the election) and that those who cannot vote or show up with their voting card in time are able to participate, but required to indicate by "N" that they could not be elected for actual sale. Twenty-eight participants stated "N". Actually we cannot exclude the possibility that some of the participants who morally objected to selling their voting right preferred to state this by "N". Twenty-three of the 28 $N = 1$ -participants could be regular citizens of the Federal Republic of Germany: according to question 2 of the postexperimental questionnaire, they grew up in Germany. It is rather unlikely that all of them have no German citizenship.

3. Experimental results

The individual bids of the 142 $N = 0$ -participants, i.e., those who potentially could sell their voting right, are graphically illustrated in Figure 1. As already mentioned, five decision forms were returned empty: they contained neither a bid nor an "N", indicating that they could not sell a voting right. Of the 142 $N = 0$ -participants only 52 were in principle willing to sell their voting right. Many of these 52 potential sellers were clearly guided by prominence considerations (seven chose DM 50, five DM 100, five DM 150, and six DM 200). Not all the 14 participants who required at least DM 190, but did not completely rule out a sale, may have understood the sales mechanism. At least half of them, however, answered the control question (the last question of the postexperimental questionnaire) in a reasonable way.

The support for the public choice argument that individual votes do not matter and are therefore worthless is surprisingly small: only seven of the 142 participants made a bid below DM 10. Our participants were mainly unspoilt by public choice theory as revealed by question 1 of the postexperimental questionnaire which asked whether one had already studied the analysis of social decision-making. One-hundred-and-thirty-eight out of 174 cases replied negatively; 31 $N = 0$ -cases and five $N = 1$ -cases answered affirmatively.⁷

Among the 142 $N = 0$ -participants, 90 (that is, roughly 63% of this group) did not want to sell their voting right (at least not for DM 200). This majority of all the 142 $N = 0$ -participants is in line with the even higher share of voters

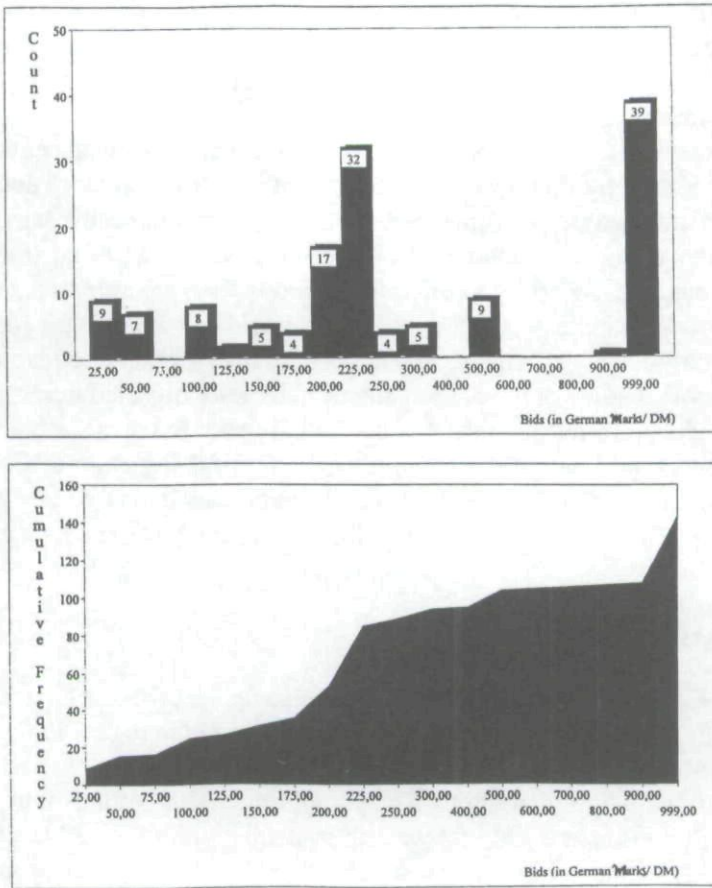


Figure 1.

always participating in national elections. In the Federal Republic of Germany the participation rate in national elections has always exceeded 77%. For most of our participants the reasons to vote were clearly outweighed by the reasons for not voting. In addition, four further $N = 0$ -participants did not submit a bid at all. Of the 28 $N = 1$ -participants 13 also refused to specify a numerical value for their voting right. Other eight $N = 1$ -participants bid above DM 200 and seven were in principle willing to sell.

It is an unintended result that so many of the 28 $N = 1$ -participants did not submit a bid. They only were asked to state an "N" next to their decision. The instructions to do this were illustrated on the overhead transparency visible to all participants.

"N DM _____ (only integer DM-amounts, please)"

Thirteen of the $N = 1$ -participants returned their forms with an "N" but no money value. Either they misunderstood the instructions as an order to leave the decision box empty or they viewed this as an easy way out of the "dilemma" of having to specify a numerical value for their voting right.

The bids of the 142 $N = 0$ -participants can be used to interpret actual participation rates in national elections. A majority of voters will participate whenever the costs of voting are reasonably low. Therefore, the rate of 63% of those, who refused the idea to sell their voting right, seems quite realistic. A very small minority of voters will hardly ever vote and can easily be seduced to abstain from voting. The proportion of about 4% of the $N = 0$ -participants bidding below DM 10 appears very small. It could be that students of economics are more interested in political elections than usual voters. As far as we know, however, there is no empirical proof for such a conjecture.

The 45 $N = 0$ -participants who are willing to give up their voting right if they receive something substantial in return (e.g., an amount of at least DM 10) could explain the variation in the voter participation of national elections (the lowest participation rates in the Federal Republic of Germany were 84.3% in 1987 and 77.8% in 1990, the highest was 91.1% in 1972). Apparently such voters participate if the opportunity costs of voting are negligible, but they do not mind (at all) to abstain from voting otherwise, e.g., when voting would mean to give up some other exciting opportunity.

4. On the reasons (not) to vote

With our incentive compatible procedure of buying the voting rights from our participants, we learn only the range of prices p (with $0 \leq p < b_i$) at which participants i with bid b_i want to keep their voting power as well as the range of the prices p (with $b_i \leq p \leq \text{DM } 200$) at which they are willing to sell their voting right. The first interval is, of course, empty in case of $b_i = 0$, and the second interval, when $b_i > \text{DM } 200$.

By interpreting b_i as participant i 's true (willingness-to-accept) value v_i of his or her voting right, one assumes that participant i understood and accepted the reason why it does not pay to over- or underbid his or her true value v_i in the sense of $b_i \neq v_i$. Unfortunately, this cannot always be expected. Although incentive compatibility is a very compelling normative principle, inexperienced participants do not always understand it, even when they are told why bidding truthfully ($b_i = v_i$) is optimal. According to the control question of our postexperimental questionnaire (question F11 in Appendix A), where the true value was exogenously predetermined (at DM 52.51), only 34.7% of those participants actually stating a bid (and 29.1% of all 174 participants) bid between DM 50 and DM 55. Here we do not want to discuss the differences

between normative and behavioral incentive compatibility. The fact that in total only 41 of our 174 participants bid exactly DM 52.51 as required by incentive compatibility proves that normative incentive compatibility does not guarantee truthful bidding.

In the following we want to discuss the essential reasons why a participant's true value v_i of his or her voting right is high or low, and to weigh them by the relative frequencies of such arguments in answering question 4 of the postexperimental questionnaire (Appendix A). The typical reason given by public choice theorists why v_i should be close to 0 is the extremely low probability that one's own vote is decisive.⁸ Among the 12 participants, however, who denied question 4 ("are you willing to participate in political elections?") only one chose the justification that the own vote would not change the result.

Besides the low probability justification for not voting ("my vote won't matter"), the costs of voting offer another justification. These costs include the necessary preparations (one needs the voting card or, as in the USA, is not even registered automatically by the authorities but has to take the initiative oneself). The most important costs of voting are, of course, the opportunity costs in terms of lost working or leisure time. Among those who denied question 4 of the questionnaire nobody indicated that voting is uncomfortable, i.e., requires too much effort.

Since in economics one usually assumes given preferences, most studies neglect the costs of constructing preferences, i.e., in the case at hand the costs of making up one's mind which party one should vote for. From a behavioral point of view, preferences over parties or coalitions are not given but the result of some cognitive and sometimes uncomfortable processes. According to the psychological theory of cognitive dissonance (Festinger, 1957; Akerlof and Dickens, 1982), a clear-cut preference for one party is usually the result of reevaluating, reinterpreting or even neglecting facts. By deciding not to vote, all these mental efforts can be avoided. Question 4 was denied only once for the reason that one does not know for which party/which politician one should vote.

The reasons why one should vote are the familiar ethical and philosophical justifications.⁹ If nobody would vote, the "my vote won't matter" justification can no longer be applied. Thus, the only general recommendation in the sense of Kant's (1785) ethical principle is to vote.¹⁰ One could describe non-voters as freeriders who enjoy the benefits of living in a democracy without accepting their democratic responsibilities. Among the 162 participants who answered question 4 affirmatively, 92 gave the reason that voting is a civil duty to preserve democracy.

Reasons of more behavioral sense also have to rely on psychological concepts. Participating in democratic elections certainly awakens political interests and thereby all the fun and inspirations induced by more or less active participation in political debates. Forty of the affirmative answers to question 4 were justified by indicating that voting keeps one's political interests awake. One also may enjoy the act of voting as such (most individuals are rather proud when they are allowed to vote for the first time) regardless of the election result. Seven of the affirmative answers reasoned that it is fun to vote and 83 argued that by voting one reveals one's political views.

The rational voter theory as applied in the literature on political support functions¹¹ somehow neglects the low probability argument for not voting and claims that people decide in public elections as in economic situations. In other words: a voter chooses that party or coalition whose program or expected policy is best for him or herself personally. According to such a view, parties are nothing more than competing firms trying to satisfy the voters' demands (given a perfectly competitive political system). That one votes to serve one's personal interests has been argued by 53 of the 162 affirmative answers of question 4 in the postexperimental questionnaire.

To justify such an approach one has to argue why the low probability argument does not apply. One way would be that most voters' subjective probabilities for being decisive are rather unrelated to the objective probabilities.¹² In the minimax-regret model of Ferejohn and Fiorina (1974, 1975) voting is interpreted as a decision under uncertainty, i.e., voters are unable to estimate the probabilities of the alternative outcomes. Thirty-six of the affirmative answers of question 4 were supported by the argument that one's own vote is decisive.

Others view voting not exclusively instrumental to determine the winning party or coalition, but as a private consumption act from which benefits accrue independent of the outcome of the election.¹³ We saw no easy way to distinguish such reasons for voting in spite of the "my vote won't matter" argument from the familiar ethical and philosophical justifications mentioned above. If a norm is internalized or socially controlled, norm-conforming behavior often appears as individually rational.

Since the answers to the postexperimental questionnaire did not influence the monetary expectations, one may view the weights for the traditional arguments why people (do not) vote as unreliable. Another objection may be that out of an ego-defensive attitude participants answered the postexperimental questionnaire in a way which justified their revealed value judgement for their voting right. None of these objections applies to the actual decisions, i.e., the revealed values. The bids, however, only tell us how participants evaluate their voting rights. As has been elaborated above, such an evaluation can be

determined by many "pros" and "cons" whose relative importance can be hardly assessed if one just observes the bids. If, however, the bid is positive, the reasons to vote seem to dominate those for not voting. If one even does not sell at all possible prices, this dominance appears to be strikingly robust. Thus the actual decision data may not allow the assessment of the importance of the individual "pros" and "cons", but they definitely allow one to weigh the importance of all "pros" against the one of all "cons".

5. An attempt to explain the value of voting rights

In the following, nevertheless, we will use the answers to the postexperimental questionnaire as well as the additional information given on the decision form (age, number of semesters of studying, subject of study, and sex) to try to explain the bids, i.e., the revealed values of voting rights.

For the 90 $N = 0$ -participants who would not even sell their voting right at the maximal possible price of DM 200, we cannot explain the exact value, but only argue why it is higher than those of the 52 remaining $N = 0$ -participants who submitted a bid. In Table 1 we compare the share of potential sellers with that of non-sellers for the seven specific reasons for voting as well as for the six specific reasons for not voting.

Although 52 participants were in principle willing to sell their voting right, only eight (and other four $N = 0$ -participants) denied question 4, i.e., claimed not to be interested in actively taking part in political elections. Thus only eight participants have exposed themselves as habitual non-voters for whom the experiment provided a nice opportunity to get paid for something they would have done anyhow (even though, according to question 5, only four of them stated that they actually intend not to participate in the next national election). The remaining 44 potential sellers may be described as voters who, in principle, want to vote, but who can be distracted from doing so by offering a rather small positive incentive. The eight $N = 0$ -participants of Table 1 justified their propensity for non-voting predominately with other reasons, i.e., with the lack of time (1), the lack of a real alternative (1), and their opposition to the political system in general (2). It is surprising, however, that the most frequent reason for non-voting (3) is that one cannot make up one's mind, i.e., the cognitive dissonance related to voting decisions. Observe that the public choice justification "my vote won't matter" is given only once. It appears that (social) psychologists might be able to better explain the variance in voting participation than public choice theorists.

Those of the $N = 0$ -participants who (according to Table 1) vote in principle gave lots of reasons (97 reasons by potential sellers and 241 by non-sellers). The number of "other reasons" amounts to 14. Many of these other reasons

Table 1. Reasons to vote and not to vote by the 142 N = 0-participants

		Type of voters		
		Potential sellers (n=52)	Non-sellers (n=90)	Both (n=142)
F4	No. of participants who are decided			
	– to participate in political elections	44	90	134
	– not to participate in elections	8	0	8
<i>Reasons to vote:</i>				
F4.1	for revealing my political views	18	51	69
F4.2	my vote is decisive	9	22	31
F4.3	it keeps my political interests awake	11	19	30
F4.4	it is fun to vote	2	3	5
F4.5	it serves my personal interests	15	30	45
F4.6	I'm supporter/opponent of a party/policy	18	48	66
F4.7	it is a civil duty to preserve democracy	21	57	78
F4.8	other reasons	3	11	14
Total		97	241	338
<i>Reasons not to vote:</i>				
F4.9	my vote would not change anything	1	0	1
F4.10	I don't know for which party/politician to vote	1	0	1
F4.11	it is too uncomfortable	0	0	0
F4.12	I don't care for politicians	0	0	0
F4.13	I don't know how to serve my personal views/interests best	3	0	3
F4.14	I'm not familiar with the party programs	1	0	1
F4.15	other reasons	6	0	6
Total		12	0	12

are, however, at least partly covered by those which we offered for justifying an affirmative answer of question 4. Most subjects viewed voting as civil duty (78) or as a possibility to state one's opinion (69). Frequent reasons are also that one is a supporter or an opponent of a specific party or policy (66) or that one is closely affiliated with a certain political party or line of politics (45).

The shape of the distributions for potential sellers and non-sellers is surprisingly similar. A binomial test for the various reasons to vote (questions F4.1 to F4.8) reveals a statistically significant difference only in case of questions F4.1, F4.6 and F4.7. The non-sellers consider it to be more important that voting enables them to reveal their political views (including support or

opposition to a specific party or policy), and that voting is a civil duty to preserve democracy.

A similar comparison for the remaining questions of the postexperimental questionnaire as well as for the information in the decision form (age, number of semesters, subject of study, sex) is contained in Table 2. In the group of all 142 $N = 0$ -participants there is no apparent gender effect nor a statistically significant difference in average age and length of study of the groups of potential sellers and non-sellers. According to a binomial test, the subject of study of the political sellers is, however, different from that one of non-sellers who have less students of business administration.

According to Table 2, most students did not engage in studies of social decision-making or public choice. There were slightly more East Germans in the sample of potential sellers than in the sample of non-sellers. Surprisingly, the latter effect does not go along with a different income distribution. Most participants (135) indicated their willingness to vote in the forthcoming national election, whereby, as expected, the non-voters mainly belong to the group of potential sellers. Rather few (57 altogether) revealed a close affiliation to a political party. Question 7 of the postexperimental questionnaire revealed a surprisingly high number of strategic voters (86), whereas only 54 participants stated that they would vote for their favourite party. Few (32) participants viewed the campaigns by political parties as inspiring participation in elections.

The remaining answers of Table 2 were related to the experiment: 91 participants considered it as morally objectionable to sell one's voting right (50 did not); 65 found it difficult to specify a numerical monetary value for one's voting right (75 did not). Not surprisingly, the non-sellers had more moral objections than those who actually offered a bid up to DM 200, but they had less difficulties in specifying a numerical monetary value.¹⁴

For the 52 participants with bids not exceeding DM 200 we tried to explain the variance of bids by dummy variables representing the various reasons (not) to vote specified in question 4 of the postexperimental questionnaire as well as by socio-economic dummies, e.g., growing up in former East or in former West Germany and income. We ran Tobit-regressions with all 142 $N = 0$ -participants¹⁵ and the dependent variable, the individual bid v_i , being modelled as right-censored variable (with DM 201 representing the right-censored value). In addition, we calculated OLS-estimates for the 52 potential sellers who had stated an accurate bid. Altogether, several aspects turn out to be statistically significant in determining the individual bids (the regression results are given in Appendix B): First, the bid is smaller, when participants have more experience with the analysis of social decision-making. Second, the intention not to vote in the forthcoming national election or in

Table 2. Answers to the postexperimental questionnaire and additional information, given by the 142 N = 0-participants

Questions	Type of voters		
	Potential sellers (n=52)	Non-sellers (n=90)	Both (n=142)
Age (average)	21.4	22.1	21.8
Number of semester (average)	1.23	1.30	1.27
Subject of study – business economics	34	53	87
– political economy	9	27	36
– otherwise	9	10	19
Sex – female	19	33	52
– male	33	57	90
F1: already been concerned with the analysis of social decision-making – yes	12	14	26
– no	40	76	116
F2: grown up – in old provinces of Germany	21	46	67
– in new provinces of Germany	30	43	73
– other	1	1	2
F3: amount of money at one's disposal			
– less than DM 800	31	42	73
– between DM 800 and DM 1200	14	29	43
– more than DM 1200	7	18	25
F5: intention to vote in the next national election – yes	46	89	135
– no	6	1	7
F6: closely connected to a political party – yes	17	40	57
– no	35	50	85
F7: vote for favourite party – yes	20	34	54
– no	31	55	86
F8: inspiration by election campaigns – yes	15	17	32
– no	37	73	110
F9: considering it as immoral to sell ballot-paper –yes	25	66	91
–no	27	24	51
F10: difficulties to state an accurate DM-amount –yes	36	29	65
–no	16	61	77

elections generally lowers the individual bid in a statistically significant way. An especially pronounced impact among the various reasons for voting is that “it is a civil duty to preserve democracy” (F4.7). Stating a bid in line with the true value (between DM 50 and DM 55) in the control question (F11) in the postexperimental questionnaire has a positive, but only for the 52 potential sellers statistically significant impact on the willingness-to-accept value. The Tobit-estimates suggest that those among the 142 N = 0-participants who

took the view that it is immoral to sell one's ballot-paper (*ceteris paribus*) are more inclined to state a higher bid. In addition, these estimates reveal that those who admitted that they had difficulties to state an accurate DM-amount not surprisingly are those with a lower bid, i.e., they seem to be the potential sellers who actually had to state an accurate bid.¹⁶

6. Conclusion

Although we refer to our empirical study (how people evaluate their voting rights) as an experiment, this is somewhat debatable. After all, participants were asked to state a monetary value for their actual voting right which they (seemingly) gave up by tearing their voting card into pieces. Furthermore, we do not know what political consequences the individuals expected when they abstained from voting. There were very likely none, although voters might rely on an illusion of control. Because of these aspects our study differs fundamentally from other experimental studies of voting behavior (e.g., Schram and Sonnemans, 1994, 1995). These may have a better control of most relevant variables (like voting costs and voting benefits) but cannot rely on actual democratic voting rights.¹⁷

With our experiment we mainly wanted to investigate the prices at which voters are indifferent between selling and non-selling their voting right in a specific and seemingly interesting election. As clearly revealed by the control question (F11) of our postexperimental questionnaire, one cannot be sure that all our participants completely understood that bidding truthfully is optimal. However, we learned from later discussions with our participants, as well as with those who assisted in the experiment, that it was seemingly more difficult to understand and answer the control question than the rules concerning the actual decision.

The bids which from a normative point of view should reveal the true values for one's voting right, show a strikingly strong non-willingness to sell one's voting right: A strong majority would not even sell at the maximal price of DM 200 which had been offered. Furthermore, the group of voters who hardly assign any positive value to their voting right is close to being negligible. Thus the famous public choice question "why do people vote?" can be answered in a roundabout way by stating: "The individual right to vote appears to be something precious". Some decision forms contained additional comments like "one cannot/should not sell one's voting right", other bids were outrageously large numbers showing that for some participants the voting right is a personal value which they would not easily give up for something less personal, e.g., money, in exchange.

It is, of course, a more demanding task to explore the specific reasons why people vote (or not) and apparently care for their voting right. Whereas the bids only tell us whether the reasons to vote dominate those for non-voting, the answers of the postexperimental questionnaire, especially question 4, indicate the relative importance of the main arguments as discussed in Section 4 above. Here we do not want to repeat these results, but briefly discuss how to weigh the "soft" data of the postexperimental questionnaire versus the "hard" decision data – where "soft", respectively "hard", means that no or substantial monetary incentives are involved.

In our view, the questionnaire data are less reliable than the decision data and were answered with less care. This was clearly revealed by the answers to the control question (F11), where fewer participants required further explanation than for the actual decision. Thus the questionnaire results can only provide a preliminary idea whether or not the various arguments to vote or not to vote matter. There seems to be, however, no easy experiment to elicit the relative importance of these arguments and whose observations are all based on – due to monetary incentives – relevant choices. At least for us the combination of "hard" decision data and "soft" questionnaire results seemed to be the most fruitful combination.

One may object to our results and say that we relied on a highly special sample by relying on beginning students enrolled in a basic course of micro-economics. Although we do not expect dramatically different results, one may perform a similar experiment with a different sample, but hopefully an equally interesting election. Our sample had at least two advantages: Students were not yet spoiled by economic theory (it was their first lecture in economics) and they were not very experienced with the details of national elections (only for those who were 22 years old or older it was the second national election in which they had the opportunity to actively take part; for citizens of Berlin and the eastern part of Germany this was not the case in former national elections, anyway).

Actually, the experimenters themselves when designing the experiment and most students when participating thought that without a voting card it is impossible to vote. Other voters might have been more familiar with the legal rules – as we are now. To rule out a voting act it does not suffice to destroy one's voting card. In addition, one must keep the personal identity card *and* the passport over the election weekend. Even then one may not be sure whether the vote had already been submitted by mail (here, of course, the participants would have lied, e.g., by falsely claiming that (s)he has lost the voting card). This illustrates that a completely cheatproof experiment is hard to perform and that our experiment seems to be an easy and reasonable compromise.

Often when discussing this experiment with colleagues, we confronted comments like: "you cannot run such an experiment", "this is illegal", or "I would not do it". In our view, legal violations have been avoided by asking the sellers themselves to destroy their voting card. As actually occurred, a potential seller had many opportunities to give up his or her plans, e.g., by leaving the lecture room before the experiment, by indicating an "N" on the decision form, by stating a bid greater than DM 200 or no bid at all, by not collecting the money. Furthermore, we could have never enforced such a sales contract legally.

When planning the experiment we were more worried that some participants would make public statements, probably by morally condemning the experiment, and thereby question the independence of individual bids. To take care of that we made the announcement that we need independent observations and have therefore to rule out any public comments. By allowing those who did not accept such an obligation to leave (30 to 40 students left), we were surprisingly successful in performing a "clean" experiment in spite of the many (altogether 175) active participants. Apparently all remaining students by their voluntary decision to participate, felt extremely committed to obeying the rules.

The experimental study reported above is unusual since the usual reservation against experimental results – that they do not reflect real life behavior – does not apply. We have explored real life behavior (our participants were mainly actual voters, they had to destroy their "real" voting card, etc.). Thus there remains only one reservation, namely that we have relied on a biased sample of student beginners. This, however, is no general restriction of our experimental procedure. Our experiment could be repeated with any group of participants where one only should take care to explain the optimality of truthful bidding in an appropriate way.

Notes

1. The rational voter theory was first developed by Downs (1957), Tullock (1967), and Riker and Ordeshook (1968), and it is summarized by Mueller (1989), Struthers and Young (1989), Schram (1991) and Kirchgässner (1992).
2. See, for instance, Schram and van Winden (1994) and Mueller (1989: Ch. 18).
3. See, for instance, the data summarized by Weber, Berg and Kruse (1992), and Kruse, Berg and Weber (1993).
4. The detailed formulation in German language (or in English translation) is available from the authors upon request.
5. If one uses discrete instead of continuous prices, the incentive compatibility is weaker: If the true value v_i happens to be one of the discrete prices, i.e., $v_i = k$ DM with $0 \leq k \leq 200$, both bids b_i , i.e., the truthful bid $b_i = k$ DM and the next higher bid $b_i = (k+1)$ DM, are optimal since they imply different implications only for the price $p = v_i$ which yields 0-profit.

6. The questions are given in English translation in Appendix A. Moreover, the detailed (German) formulation of the postexperimental questionnaire is available from the authors upon request.
7. It seems possible that these participants did not study social decision-making as such, but thought that they did so since they are members of some political party.
8. See, for instance, Mueller (1989: Ch. 18), and Struthers and Young (1989).
9. See, for instance, Riker and Ordeshook (1968), or Barzel and Silberberg (1973).
10. Harsanyi (1979), for instance, distinguishes norm from act utilitarianism, and Downs (1957) views voting as an insurance against a breakdown of democracies.
11. See, for a recent survey, Nannestad and Paldam (1994).
12. For a discussion, see Struthers and Young (1989), and a related argument referring to self-deception and diagnostic voting is given by Quattrone and Tversky (1985).
13. See Stigler (1972) and also, e.g., Guttman, Hilger and Shachmurove (1994) for the distinction between voting as consumption and voting as investment. Fiorina (1976) refers to the benefits as "expressive" and "instrumental", respectively. See also the arguments given in the theory of low-cost decisions by Kliemt (1986) and Kirchgässner (1992).
14. In effect, 39 indicated a very high monetary amount, even up to infinity, and all these values are illustrated in Figure 1 by including the value 999.
15. In fact, the data basis was reduced to only 133 observations due to missing values in the individual answers, i.e., the exogenous (dummy) variables.
16. The likelihood to sell or not sell one's voting right was explained also in a Logit-regression for all 142 $N = 0$ -participants. Overall, these estimates support the results of the Tobit-regressions.
17. One especially interesting aspect of the studies by Schram and Sonnemans (1994, 1995), which is largely neglected in other discussions, is the focus on the fact that most democratic elections can be viewed as a combination of intragroup (among party members and/or voters favoring a party) and intergroup (party) competition. It seems that voters are more likely to vote and therefore to care for their democratic voting right when parties are in a very close and tough race for winning the election.

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Appendix A: Questions (Fi) of the postexperimental questionnaire

-
- F1: "Have you already been concerned in your studies with the analysis of social decision-making?" (yes / no)
- F2: "Where have you grown up, in the old or new provinces of Germany?" (old (FRG) / new (GDR) / other)
- F3: "Which amount of money you have at your disposal on average monthly?" (less than DM 800 / between DM 800 and DM 1200 / more than DM 1200)
- F4: "Are you decided on participating in political elections actively?" (yes / no)

Reasons for participating in political elections:

- F4.1: – "for revealing my political views"
- F4.2: – "my vote is decisive"
- F4.3: – "it keeps my political interests awake"
- F4.4: – "it is fun to vote"
- F4.5: – "serving my personal interests"
- F4.6: – "I'm supporter/opponent of a specific party/policy"
- F4.7: – "it is a civil duty to preserve democracy"
- F4.8: – other reasons.

Reasons for not participating in political elections:

- F4.9: – "my vote would not change anything"
- F4.10: – "I don't know for which party/politician I should vote"
- F4.11: – "it is too uncomfortable"
- F4.12: – "I don't care for politicians"
- F4.13: – "I don't know how to serve my personal views/interests best"
- F4.14: – "I'm not familiar with the programs of the political parties"
- F4.15: – other reasons
- F5: "Do you intend to vote in the next national election (provided you will not be one of the four participants who will sell their voting right)?" (yes / no)
- F6: "Are you closely connected to a political party?" (yes / no)
- F7: "Will you ever vote for the party with which you are closely connected?" (yes / no)
- F8: "Do you believe that you are inspired to participate in the vote by election campaigns of political parties?" (yes / no)
- F9: "Do you consider it as immoral to sell your ballot-paper?" (yes / no)
- F10: "Did you have difficulties to state an accurate DM-amount as your minimal selling price?" (yes / no)
- F11: individual bid (in DM) to the control question.^a
-

^aControl question: "Gehen Sie davon aus, daß ein Gut besitzen, das für Sie *keinen eigenen Wert* besitzt. Sie können das Gut auf zwei Arten an uns veräußern. Einmal können Sie analog zu den Regeln des vorherigen Experiments das Gut an uns verkaufen, d.h. der Preis wird per Zufall aus einer Urne mit allen Preisen von DM 0 bis DM 200 ausgewählt und Sie müssen den Betrag festlegen, ab dem Sie zum Verkauf bereit sind. Falls Sie das Gut nicht wie oben beschrieben verkaufen, können Sie das Gut an uns abgeben zum Betrag von DM 52,51. Wir sind daran interessiert zu erfahren, ab welchem Betrag Sie bereit sind, das Gut an uns zu verkaufen. – Ihre Antwort: Ich bin bereit, das Gut ab dem Betrag von DM . . . zu verkaufen".

Appendix B: Regression results^a

Estimation procedure	Tobit		OLS	
	Individual bids v_i (all v_i ; with $v_i > 200$ DM \equiv 201 DM) 142 N=0-participants	Individual bids v_i (0 DM $\leq v_i \leq 200$ DM) 52 N=0-participants	Individual bids v_i (0 DM $\leq v_i \leq 200$ DM) 52 N=0-participants	Individual bids v_i (0 DM $\leq v_i \leq 200$ DM) 52 N=0-participants
Sex: DY=1: female (=0: male)	9,46 (0,2)	9,86 (0,2)	28,15 (0,3)	9,92 (0,5)
Subject of study: DY=1: political economy (=0: business economics and otherwise)	-4,74 (0,1)	-0,50 (0,0)	-10,45 (0,1)	11,35 (0,4)
F1: DY=1: studied social decision-making	-50,79* (4,0)	-48,57(*) (3,1)	-57,87* (3,6)	-33,43(*) (-1,8)
F2: DY=1: grown up in West Germany	-5,60 (0,1)	2,70 (0,0)	17,30 (0,6)	5,65 (0,3)
F3: DY=1,2,3: income	30,80* (4,7)	22,38 (2,1)	15,31 (0,9)	6,71 (0,5)
F4: DY=1: participating in political elections	-	176,95** (18,4)	-	-
F4.1: DY=1: revealing my political views	-	-	39,99 (2,5)	-9,79 (-0,4)
F4.2: DY=1: my vote is decisive	-	-	29,67 (0,8)	4,50 (0,2)
F4.3: DY=1: keeps my political interests awake	-	-	56,11* (2,9)	36,48 (1,3)
F4.4: DY=1: it is fun to vote	-	-	-46,72 (0,5)	10,46 (0,2)
F4.5: DY=1: serving my personal interests	-	-	9,29 (0,1)	-5,60 (-0,3)
F4.6: DY=1: supporter/opponent of specific party	-	-	64,58** (6,5)	-18,44 (-0,8)

Appendix B. Continued.

Dependent variable	Tobit		OLS	
	Individual bids v_i (all v_i ; with $v_i > 200 \text{ DM} \equiv 201 \text{ DM}$) 142 N=0-participants	Individual bids v_i (0 $\text{DM} \leq v_i \leq 200 \text{ DM}$) 52 N=0-participants	Individual bids v_i (0 $\text{DM} \leq v_i \leq 200 \text{ DM}$) 52 N=0-participants	Individual bids v_i (0 $\text{DM} \leq v_i \leq 200 \text{ DM}$) 52 N=0-participants
F4: DY=1: civil duty to preserve democracy	-	-	50,76* (4,1)	51,14* (2,3)
F5: DY=1: intention to vote in next national election	199,82** (25,9)	-	-	122,86** (4,4)
F6: DY=1: closely connected to political party	4,37 (0,1)	9,32 (0,1)	2,44 (0,0)	4,26 (0,2)
F7: DY=1: vote for party	19,31 (0,8)	2,48 (0,0)	7,90 (0,1)	28,01 (1,4)
F8: DY=1: influence of election campaigns	-22,60 (0,9)	-33,89 (1,8)	-30,91 (1,3)	-3,79 (-0,2)
F9: DY=1: immoral to sell ballot-paper	58,34** (7,4)	70,56** (9,2)	65,71** (6,4)	2,43 (0,1)
F10: DY=1: difficulties to state DM-amount	-69,87** (10,2)	-74,03** (9,8)	-81,01** (9,5)	11,36 (0,5)
F11: DY=1: individual bid in line with true value	-2,93 (0,1)	3,41 (0,1)	8,26 (0,1)	35,85** (1,8)
constant term	0,25	37,02	94,01	-43,16 -9,25
TOBIT				
Log likelihood	-327,5	-329,9	-331,1	37,86
Adjusted R-square	84	84	84	2,58
Right censored values	119	119	113	3,44**
Degrees of freedom				36
				37

*Due to multicollinearity the variables F4, F4.1-F4.7, and F5 are included only separately into the regression. The values in parentheses under the estimated coefficients are Chi-square- (TOBIT) and t-values (OLS), respectively. The asterisks (**/*) indicate that the parameter is statistically significant on a 99%/95%/90%-confidence level.

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