Judgment and Decision Making, Vol. 15, No. 3, May 2020, pp. 346–352

Crowding-out (-in) effects of subsidy schemes on individual donations: An experimental study

Hui-Chun Peng* Wen-Jing Liu†

Abstract

We conduct a laboratory experiment to investigate whether the rebate and matching subsidy schemes cause crowding-out or crowding-in effects (reductions or increases in amount donated) on individual net donations. We find that when the rebate subsidy scheme is implemented, it does not result in crowding-out or crowding-in effects on individual net donations. However, when the matching subsidy scheme is implemented, it encourages individuals to donate more and generates crowding-in effects on individual net donations.

Keywords: crowding-in effect, crowding-out effect, matching subsidy, rebate subsidy.

1 Introduction

Individual donations play an important role in supporting charitable organizations. To encourage individual donors to contribute more, subsidy schemes may be implemented. The matching and rebate subsidy schemes are most widely used around the world. The matching subsidy scheme means that, when an individual donates one dollar to the charity, the government (or some other donor) will match this donation at a pre-announced rate. For example, in the case of 100% matching, when an individual donates 1 dollar to a charity, the government also donates 1 dollar to this specific charity. The charity thus receives 2 dollars in total and the individual net donation, which is the donor's contribution excludes the match, is 1 dollar. The rebate subsidy scheme means that when an individual donates 1 dollar to a charity, the government will refund a pre-announced portion of the donation back to the donor. For instance, in the case of a 50% rebate, when an individual donates 2 dollars to a charity, the government refunds 1 dollar back to the donor, thus, the individual net donation, which is the donor's contribution minus the rebate, is 1 dollar; however, the charity still receives a 2-dollar donation in total.

From these two examples, we can derive that given the matching rate, M, and the rebate rate, R, the matching subsidy mechanism and the rebate subsidy mechanism generate theoretically an identical predicted individual net donation when $M = \frac{R}{1-R}$. Most previous studies of matching and rebate schemes compared individual net donations under these two different subsidy schemes and tried to explain why the individual net donation under the matching subsidy scheme is always larger than that under the theoretically equivalent rebate subsidy scheme. Eckel and Grossman (2003) is the first paper that employs dictator games with charity recipients to examine the effect of different subsidy schemes on charitable giving. They showed that individual net donations are larger with matching subsidies than with theoretically comparable rebate subsidies; the authors explained that it is because subjects may view the act of contributing with matching subsidies in a "cooperation frame". Davis et al. (2005) employed the similar experimental method in Eckel and Grossman (2003) and found that a simple and constant donation rule renders the individual net donation under the matching subsidy scheme larger than that under the theoretically equivalent rebate subsidy scheme.

In order to reduce subjects' confusion, Eckel and Grossman (2006a) used a between-subject experimental design and found that, although the difference in the individual net donation for these two subsidy schemes is lesser, the individual net donation under the matching subsidy scheme is still higher than that under the theoretically equivalent rebate subsidy scheme. Further, Eckel and Grossman (2006b) tried to investigate whether donors are rebate-averse. Subjects first made a choice to participate in a dictator game involving either a 50% rebate or a 1-for-1 match. Then, they made their allocation decisions with the chosen subsidy scheme. The authors found that there is no significant difference in

This project was supported by a grant from the Ministry of Science and Technology (MOST) in Taiwan (MOST 106-2410-H-305-009-MY2). The authors thank the Editor, Jonathan Baron, and two anonymous reviewers for the useful comments and suggestions. The authors also benefit from comments by participants at Graduate Student Seminar in the Department of Public Finance at National Taipei University.

*Corresponding author: Department of Public Finance, National Taipei University. Email: hcpeng@mail.ntpu.edu.tw

†Department of Public Finance, National Taipei University. Email: 01154220@gm.scu.edu.tw

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

the choice of subsidy schemes. Thus, the rebate aversion is not the reason resulting in the significantly larger individual net donations under the matching subsidy scheme. Discussing another experiment, Davis (2006) suggested that the isolation effect – which means that individuals tend to disaggregate dimensions of the problem and focus only on those components that they control most directly or that affect them most directly – may lead to larger individual net donations under matching subsidies than under comparable rebate subsidies.

Any charity would hope that subsidy schemes will not only increase total charity receipts, but also increase the individual net donation. Previous experimental studies have shown that subsidy schemes, especially the matching subsidy, increase the total charity receipts. However, to our best of our knowledge, the question of whether subsidies increase individual net donation is not fully answered. Theoretically, it is not clear that whether the rebate/matching subsidy scheme increases, decreases or does not change the individual net donation, which is the individual donation amounts excluding the match or subtracting the rebate. If the individual net donation falls when the subsidy scheme is implemented, it means that the subsidy crowds out the individual net donation; conversely, if the individual net donation increases when the subsidy scheme is implemented, it implies that the subsidy crowds in the individual net donation. Few studies discussed the crowding-out and -in effect and the findings were mixed. Eckel and Grossman (2003) found that there is a partial crowding-out effect on individual net donations for rebate subsidies, but none for matching subsidies. But, Eckel and Grossman (2007) found that matching subsidies crowd in additional individual net donations.

In this paper, we replicate the experimental design in Eckel and Grossman (2006a) but modify some minor parts intended to simplify procedures. In our experiment, subjects have to answer three donation decisions, one is with zero subsidy rate, and the other two are with positive subsidy rates, under the matching subsidy scheme or the rebate subsidy scheme. We compare subjects' decisions with and without the subsidy to capture how the subsidy affects the individual net donation. We find that, when the matching subsidy is implemented, the individual net donation increases. But, when the rebate subsidy is implemented, the individual net donation does not increase nor decrease. Therefore, there appears to be some crowding-in effects on individual net donations for the matching subsidy scheme, but none for the rebate subsidy scheme.

The remainder of this paper is organized as follows. Section 2 explains the experimental design and procedures, and Section 3 presents experimental results. Section 4 is the general discussion and conclusion.

2 Experimental Design and Procedures

2.1 Design

The experimental design and procedures in this study replicate most of those used by Eckel and Grossman (2006a) but have minor procedural alterations intended to simplify the experiment. This experiment has two treatments, the Rebate treatment and the Matching treatment. In each treatment, each subject must answer three modified dictator allocation problems (Eckel & Grossman, 2003). For each problem, the subject is given 20 tokens as his/her endowment, and he/she needs to decide how many tokens to allocate to the selected charity and how many tokens to keep for himself/herself. The selected charity in this experiment is "Jing Chuan Child Safety Foundation". This foundation promotes child safety education advocacy, legislative amendments, policy initiatives, and accident injury trauma healing, etc. We use the strategy method, that is, subjects make three allocation decisions with different rebate/matching rates, one of which is selected for payment.

In the Rebate treatment, the allocations to charity are rebated at the rates of 0, 20, and 50%. In the Matching treatment, the allocations to charity are matched at the rates of 0, 25, and 100%. When subjects answer these three allocation problems, the problems are shown in the same computer screen. Before the subject clicks "OK", he/she can change his/her allocation decisions as many times as he/she wants.[1] When all the subjects complete their allocation decisions, one randomly selected problem is implemented.

The experimental design in this study, like that in Eckel and Grossman (2006a), is between subjects; each subject is only involved one type of treatment, Rebate or Matching. However, we simplify the procedures in a few minor parts. First, we select a single charity to receive all donations rather than giving subjects a list of charity to choose. Second, subjects use tokens rather than cash to make allocation decisions in our experiment. Third, we use the computerized approach, while Eckel and Grossman (2006a) use the paper-and-pencil approach. More substantively, to simplify the decisions subjects have to make, we ask the allocation problems for three rebate or matching subsidy rates under just one endowment condition. Eckel and Grossman (2006a) ask the allocation problems for four rebate or matching subsidy rates under three endowment conditions. Although we have some minor procedural modifications in this study, we do not expect these substantially affect the decisions.

[1]The order of allocation problem presented is that for the Rebate treatment, the rebate rate of 0% is on the top and followed by the rate of 20% and the rate of 50%; for the Matching treatment, the matching rate of 0% is on the top and followed by the rate of 25% and the rate of 100%. The order of presentation is the same for each subject in the same treatment.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

2.2 Procedures

The experiment was conducted at National Taipei University from December 2018 to June 2019. The computerized experimental sessions were run by z-Tree (Fischbacher, 2007). Each treatment had five sessions. Each subject was recruited via an online recruiting website and participated voluntarily in only one session.

When subjects arrived, they checked in and received an identification number and then were seated in the personal computer carrels. A monitor (a person) was chosen at random to observe and assist in conducting the experiment. The monitors signed a statement verifying donation amounts subjects made and the procedures at the end of the experiment. The monitors received a flat fee of 200 New Taiwan dollars (NTD, 6.67 USD) at the end of the experiment. After the experimenter read the instructions aloud, a short quiz evaluated the subjects' understanding of the instructions. Subjects had to answer all questions correctly for the experiment to continue. If any subjects had questions, they could raise their hands, and the experimenter would come to answer their questions in private.

After all subjects completed the three allocation problems, one randomly selected problem was implemented. For that problem, the subjects' kept tokens were converted to cash at the rate of 1 token to 6 NTD. Before receiving any experimental earnings, the subjects had to complete a socioeconomic status survey and an experiment checking questionnaire. The average amount a subject received was 196 NTD[2], including a 100 NTD show-up fee. The experimenter also totaled the amounts allocated to the charity and donated them online. Completing a session took about 40 minutes.

Table 1: Summary Statistics

Treatment	All N=155 (%)	Rebate N=77 (%)	Matching N=78 (%)
Male	50 (33.55%)	23 (29.49%)	29 (37.66%)
Class			
Freshmen	14 (9.03%)	5 (6.41%)	9 (11.69%)
Sophomore	43 (27.74%)	27 (34.62%)	16 (20.78%)
Junior	48 (30.97%)	22 (28.21%)	26 (33.77%)
Senior	43 (27.74%)	21 (26.92%)	22 (28.57%)
Graduate	7 (4.52%)	3 (3.85%)	4 (5.19%)
Major			
Economics/ Public Finance	70 (45.16%)	33 (42.31%)	37 (48.05%)
Others	85 (54.84%)	45 (57.69%)	40 (51.95%)
Economic courses taken	139 (89.68%)	74 (94.87%)	65 (84.42%)
Religion	19 (12.26%)	11 (14.10%)	8 (10.39%)
Donation in one year	76 (49.03%)	37 (47.44%)	39 (50.65%)

3 Results

3.1 Summary Statistics

A total of 165 subjects participated in this experiment: 155 completed the assignments (77 subjects for the Rebate treatment and 78 subjects for the Matching treatment) and 10 subjects served as session monitors. Table 1 summarizes the socioeconomic characteristics of the subject pool. In total, 33.55% of subjects were males and 12.26% had specific religious beliefs. Approximately 90% of the subjects have taken at least one economic course; and about 49.03% made donations within one year. Furthermore, approximately 45.16% of the subjects were pursuing economics or public finance as their majors.

Table 2 summarizes the responses regarding the experiment checking questions, which are on a five-point Likert scale ranging from one (strongly disagree/disbelieve) to five (strongly agree/believe). Subjects' responses indicated that they understood the experimental rules and procedures (4.67 out of five for Question 1). They agreed that the selected charity deserved supports (4.12 out of five for Question 2), and believed that the donations were really sent to the selected charity (4.65 out of five for Question 3).

3.2 Subsidies and Total Charity Receipts

We first test whether subsidy schemes would help charitable organizations to receive larger amounts of total donations. Table 3 shows the total charity receipts under different subsidy conditions. In the table, the entries in column (1) list the total charity receipts in the no subsidy condition (the rebate rate and matching rate are both 0%), while the entries in column (2) and (3) list the total charity receipts when the rebate rate is 20% and 50% (the matching rate is 25% and 100%), respectively.

[2]It is equal to 6.53 USD. The minimum hourly wage in Taiwan is 150 NTD (= 5 USD) in 2019.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

TABLE 2: Manipulation checking questionnaire summary statistics

Manipulation checking questions	Mean(S.D.)		
	All	Rebate	Matching
1. The instructions for the experiment were clear and easy to follow.	4.67 (0.05)	4.67 (0.06)	4.66 (0.07)
2. The recipients of donations to the Charity are deserving of support.	4.12 (0.06)	4.08 (0.08)	4.15 (0.08)
3. The money you allocated to the Charity will be sent to the Charity.	4.65 (0.05)	4.58 (0.06)	4.71 (0.07)

Consider first the total charity receipts in the Rebate treatment. As indicated by the entries in column (1) to (3) of row (a), the total charity receipts are larger when the rebate subsidy scheme is adopted and increase with the rebate rate. The paired t tests, in column (4), (5), and (6) of row (a), confirm the statistical significance of the larger total charity receipts generated with the higher rebate subsidy rate.

As for the Matching treatment, shown in the bottom panel of Table 3, the total charity receipts with different matching rates are listed in the entries in column (1) to (3) of row (c).[3] They reveal that the total charity receipts are larger when the matching subsidy scheme is adopted and increase with the matching rate. The paired t tests, in column (4), (5), and (6) of row (c), verify the finding of statistical significance.

When individuals are not willing to donate to the charity, we cannot examine the effect of subsidy scheme on the total charity receipts. Thus, it is perhaps better to compare the total charity receipts by positive donors' decisions. Define the positive donor as the contributor who donates positive amounts at least in one of the three allocation problems. That is, we drop subjects who kept all funds for themselves in all three decisions. Table 3 reports the total charity receipts under different subsidy schemes when subjects are positive donors. The entries in column (1) to (3) of row (b) list the total charity receipts when subjects are positive donors in the Rebate treatment; the entries in column (1) to (3) of row (d) list the total charity receipts when subjects are positive donors in the Matching treatment. According to the paired t tests, we have the consistent result that the total charity receipts increase with the rebate rate; also, they increase with the matching rate.

Result 1: *Regardless of the subsidy scheme, rebate or matching, it helps to increase the total charity receipts (if only because the subsidy is included in the receipts); the larger the rebate/matching rate is, the larger the total donation the charity receives.*

3.3 Crowding-out or -in Effects on Individual Net Donation

We have found that the total charity receipts increase when the rebate or matching subsidy scheme is implemented. Next, we try to examine where the increased amounts come from.

Table 4 shows the individual net donations (excluding the subsidy) under different treatments. The individual net donation means the donor's contribution excludes the match and subtracts the rebate. Considering all subjects' donation decisions in the Rebate treatment first, the individual net donations with different rebate rates are reported in column (1) to (3) of row (a). Comparing the individual net donation with a 0% rebate rate with that with a 20% rebate rate or with a 50% rebate rate, there are no statistically significant differences (paired t test statistics are shown in column (4) and (5) of row (a)). Since the individual net donation does not increase or decrease when the rebate subsidy scheme is implemented, this result indicates that the rebate subsidy scheme does not result in crowding-out or crowding-in effects on individual net donations. That is, when the rebate subsidy scheme is implemented, the increased total charity receipts totally come from the subsidy scheme per se. This finding is consistent when we consider the positive donors' decisions only, which can be seen in row (b).

In the Matching treatment, we have different results. Results of the Matching treatment are shown in the bottom panel of Table 4. As can be seen from column (1) to (3) of row (c), for all subjects, the individual net donation with a 25% matching rate or with a 100% matching rate is significantly larger than that with a 0% matching rate (paired t test statistics are shown in column (4) and (5) of row (c)). Thus, when the matching subsidy scheme is implemented, it generates crowding-in effects on individual net donations, that is, the increased total charity receipts not only come from the subsidy scheme per se but also the larger individual net donations. This finding is consistent with the result in Eckel and Grossman (2007). Therefore, the matching subsidy may encourage individuals to donate more. When we consider the positive donors' decisions only, which are listed in row (d), we have the same result.

Result 2: *For the rebate subsidy scheme, there is no crowding-out nor -in effect on individual net donations; but the matching subsidy scheme results in crowding-in effects on individual net donations.*

[3]The 100% Match has a larger variance because the maximum of total donation, 40 tokens, is much higher than the maximum of total donation in the 25% Match, 25 tokens, and in the 0% Match, 20 tokens. In other words, higher matching subsidy rate results in higher variance in total charity receipts.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

TABLE 3: Total Charity Receipts in Each Treatment

		(1)	(2)	(3)	(4)	(5)	(6)
		Mean (S.D.)			paired t test statistics		
	Rebate rate	0%	20%	50%	0% v. 20%	0%v. 50%	20% v. 50%
(a)	All subjects	3.64 (0.63)	4.78 (0.57)	6.70 (0.63)	-3.19^{***}	-5.17^{***}	-4.76^{***}
(b)	Positive donors	4.24 (0.71)	5.58 (0.62)	7.82 (0.63)	-3.22^{***}	-5.33^{***}	-4.88^{***}
	Matching rate	0%	25%	100%	0% v. 25%	0%v. 100%	25% v. 100%
(c)	All subjects	3.03 (0.51)	4.86 (0.55)	9.23 (0.99)	-6.02^{***}	-6.97^{***}	-6.32^{***}
(d)	Positive donors	3.69 (0.59)	5.92 (0.59)	11.25 (1.05)	-6.35^{***}	-7.50^{***}	-6.70^{***}

Note. The paired t tests are two-tailed. ***(**,*) represents 1%(5%, 10%) significance.

TABLE 4: Individual Net Donation in Each Treatment

		(1)	(2)	(3)	(4)	(5)
		Mean (S.D.)			paired t test statistics	
	Rebate rate	0%	20%	50%	0% v. 20%	0%v. 50%
(a)	All subjects	3.64 (0.63	3.82 (0.46)	3.35 (0.31)	−0.52	0.54
(b)	Positive donors	4.24 (0.71)	4.46 (0.49)	3.91 (0.32)	−0.52	0.54
	Matching rate	0%	25%	100%	0% v. 25%	0%v. 100%
(c)	All subjects	3.03(0.51)	3.88 (0.44)	4.62 (0.49)	-3.08^{***}	-2.99^{***}
(d)	Positive donors	3.69 (0.59)	4.73 (0.48)	5.63 (0.52)	-3.12^{***}	-3.02^{***}

Note. The paired t tests are two-tailed. ***(**,*) represents 1%(5%, 10%) significance.

To examine the heterogeneity in the donation behavior among subjects, and to analyze the crowding-out and -in effects in further detail, we used two-stage hurdle regressions (Huck and Rasul, 2011). The estimated results confirm again that the rebate subsidy scheme does not generate the crowding-out nor -in effect on individual net donations, but the matching subsidy scheme causes the crowing-in effects on individual net donations. The regression analysis and estimated results are shown in the Appendix.

4 Discussion and Conclusion

Since the experimental design and procedures in this study are very close to those in Eckel and Grossman (2006a), we would like to discuss the similarities and differences in aggregate results and the subject pool between these two studies further. These two studies have two similarities in aggregate results. First, Eckel and Grossman (2006a) found that the matching subsidy scheme elicits considerably larger charity receipts than the comparable rebate subsidy scheme does. According to the experimental results in this paper, which can be seen in Table 3, we confirmed this consistent finding. Second, the experimental data in these two studies both showed that the matching subsidy scheme generates some crowding-in effects on individual net donation, but the rebate subsidy scheme does not. Table 5 lists the individual net donations in each subsidy condition from this study and Eckel and Grossman (2006a). For the comparison purpose, the individual net donation expresses as a percentage of endowment[4]. As Table 5 indicates, in both studies, the percentages of individual net donation with different rebate rates are approximately close, thus, the rebate subsidy does not generate crowding-out nor -in effects on individual net donations; but, the percentages of individual net donation increase with the matching rates, thus, the matching subsidy results in crowding-in effects on individual net donations.

The most substantial difference in results between this study and Eckel and Grossman (2006a) is the level of individual net donation. As shown in Table 5, subjects in this study donated roughly 20% of the endowment to the charity, but subjects in Eckel and Grossman (2006a), on average,

[4]We use the experimental results in Table 2 in Eckel and Grossman (2006a) (page 797) to calculate the individual net donation and to evaluate the crowing-out and -in effect in Eckel and Grossman (2006a). We pooled their data across endowment levels.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

TABLE 5: Individual net donation as percentage of endowment.

Treatment	Rebate rate	0%	20%	50%
Rebate	This study	0.18	0.19	0.17
	Eckel and Grossman	0.30	0.33	0.25
	Matching rate	0%	25%	100%
Matching	This study	0.15	0.19	0.23
	Eckel and Grossman	0.25	0.41	0.54

donated 25% to 54% of the endowment. It means that the subjects in Eckel and Grossman's study are more generous. Since the subject pools are very different in these two studies, we presume the heterogeneity in levels of individual net donation in these two studies may be due to the characteristics of subjects. The first difference of subject pool is that this experiment was conducted in Taiwan but the experiment in Eckel and Grossman (2006a) was conducted in the United States. In addition, about 34% of subjects in this study were males, but 62% of them in Eckel and Grossman's study were males. One-third of subjects in this study were juniors, but over one-third of subjects in Eckel and Grossman's study were freshmen. 90% in this study have taken at least one economic course, but a majority in Eckel and Grossman's study have not taken or have taken only one economic course. 80% in Eckel and Grossman's study attended religious servious, but only 12% in this study had a specific religious beliefs. Another difference is that in the Eckel and Grossman's study, subjects, if they wished, could receive acknowledgment from the charity; but in this study, subjects all made anonymous donations. Although the levels of individual net donations in this study and Eckel and Grossman (2006a) have large differences, the experimental results in these two studies support each other's main research questions.

The main finding in this paper is that implementing the matching subsidy scheme results in a significant increase of individual net donation but implementing the rebate subsidy scheme does not generate an increase nor a decrease of individual net donation. We speculate the reasons that may explain this observation. The first possibility is the framing effect that affects the subject's perception of the subsidy scheme. Subjects may view the matching subsidy as a cooperative framing, which is the act of donating is a cooperative effort between the individual donor and the third party. When the matching subsidy is implemented, the subject is convinced that at least the experimenter also will make the charitable giving. Thus, individuals may be more willing to make donation if others are also doing the same. Since the rebate subsidy scheme does not form the cooperative framing, the individual net donation may not be affected by the rebate subsidy.

Bryan and Test (1967) and Kreps (1970) found that giving by one subject may affect giving by others. When there is a matching subsidy, the subject may consider that his/her donation induce the experimenter to also donate to the charity. Thus, the notion that the experimenter is willing to donate elicits the higher individual net donation under the matching subsidy scheme.

Another possibility is that the experimenter may be considered the subject's reference group, that is, a group that individuals use as a standard for evaluating themselves and their own behavior. When the matching subsidy is implemented, contrasted with the rebate subsidy, the subjects know that their donation will result in other donations to the same charitable organization by the experimenter, with whom he/she can identify. Thus, perhaps the reference group effect induces individuals to donate higher amounts.

In addition, the isolation effect may explain why subjects are not affected by the rebate scheme. Subjects appear to disregard how this scheme works, instead focusing mostly on their initial donations, rather than realizing that they need to donate more than their intended share in order to insure that they donate the latter out of their own funds. Since the lack of data about how subjects think, we cannot examine these possibilities further in this paper. Thus, which possibility can explain mostly the results we find may be an interesting future research direction.

In summary, we conducted a laboratory experiment to investigate whether the rebate and matching subsidy schemes would cause crowding-out or crowding-in effects on individual net donations. We found that the total charity receipts increase with the rebate/matching subsidy rate. To examine how the increased charity receipts are generated, we find that it depends on the type of subsidy scheme. When the rebate subsidy scheme is implemented, the individual net donation does not increase nor decrease significantly, that is, the increased charity receipts are totally from the rebate subsidy per se. Thus, the rebate subsidy scheme does not result in crowding-out nor crowding-in effects on individual net donations. However, when the matching subsidy scheme is implemented, the individual net donation increases. Thus, the matching subsidy not only generates higher total charity receipts but also encourages individuals to donate more. That is to say, the matching subsidy scheme results in crowding-in effects on individual net donations.

References

Bryan, J. H. & Test, M. A. (1967). Models and Helping: Naturalistic Studies in Aiding Behavior. *Journal of Personality and Social Psychology, 6*, 400-–407.

Davis, D. D., Millner, E. L. & Reilly, R. J. (2005). Subsidy Schemes and Charitable Contributions: a Closer Look. *Experimental economics, 8*(2), 85–106.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press

TABLE A1: Regression results.

Treatment	Rebate				Matching			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Rebate 20%	−0.90	−0.91	−1.18	−1.22				
	(0.98)	(0.98)	(0.98)	(0.98)				
Rebate 50%	−1.09	−1.09	−0.69	−0.71				
	(0.98)	(0.98)	(0.99)	(0.99)				
Match 25%					0.71	0.75	0.61	0.66
					(0.31)	(0.28)	(0.42)	(0.38)
Match 100%					1.48**	1.50**	1.80***	1.83***
					(0.02)	(0.02)	(0.01)	(0.01)
Gender		0.33		0.39		−0.42		−0.52
		(0.39)		(0.39)		(0.31)		(0.31)
Religion		−0.49		−0.57		−0.21		−0.25
		(0.42)		(0.42)		(0.73)		(0.73)
Donation in one year		0.59		0.68		−0.20		−0.24
		(0.12)		(0.12)		(0.61)		(0.60)
No. of observation	231	231	198	198	234	234	192	192

Note. Numbers in parentheses are p-value. ***(**,*) represents 1%(5%, 10%) significance.

Davis, D. D. (2006). Rebate Subsidies, Matching Subsidies and Isolation Effects. *Judgment and Decision Making, 1*(1), 13–22.

Eckel, C. C. & Grossman, P. J. (2003). Rebate versus Matching: Does How We Subsidize Charitable Contributions Matter? *Journal of Public Economics, 87*, 681–701.

Eckel, C. C. & Grossman, P. J. (2006a). Subsidizing Charitable Giving with Rebates or Matching: Further Laboratory Evidence. *Southern Economic Journal, 72*(4), 794–807.

Eckel, C. C. & Grossman, P. J. (2006b). Do Donors Care about Subsidy Type? An Experimental Study. *Experiments Investigating Fundraising and Charitable Contributors*, Emerald Group Publishing Limited: 157–175.

Eckel, C. C. & Grossman, P. J. (2007). Is More Information Always Better? An Experimental Study of Charitable Giving and Hurricane Katrina. *Southern Economic Journal, 74(2)*, 388–411.

Fischbacher, U. (2007). z-Tree: Zurich Toolbox for Ready-made Economic Experiments, *Experimental Economics, 10*(2), 171–178.

Huck, S. & Rasul, I. (2011). Matched Fundraising: Evidence from a Natural Field Experiment *Journal of Public Economics, 95*, 351–362.

Kreps, D. L. (1970). Altruism — An Examination of the Concept and A Review of the Literature. *Psychological Bulletin, 73*, 258-–302.

Appendix

The dependent variable is the individual net donation, ranging between 0 and 20. The control variables are as follows. *Rebate 20%* (*Rebate 50%*) is a dummy variable, 1 for a rebate rate of 20% (50%). *Match 25%* (*Match 100%*) is also a dummy variable, 1 for a matching rate of 25% (100%). *Gender* is a dummy variable, 1 for male and 0 for female. *Religion* represents whether the subject is religious, 1 for yes and 0 for no. *Donation within one year* is also a dummy variable, 1 for yes and 0 for no.

Table A1 reports the regression results under different treatments. We consider the samples from all subjects and positive donors separately. The samples in Model 1 and 2 (Model 5 and 6) are from all subjects in the Rebate (Matching) treatment; the samples in Model 3 and 4 (Model 7 and 8) are from positive donors only in the Rebate (Matching) treatment.

In the Rebate treatment, we find that *Rebate 20%* and *Rebate 50%* are not statistically significant whether the samples are all subjects or positive donors. This result shows again that the rebate subsidy scheme does not result in crowding-out nor crowding-in effects on individual net donations. In the Matching treatment, we find that *Match 100%* is positive and statistically significant. This result is consistent with what we have found: the matching subsidy scheme generates crowding-in effects on individual net donations. As for the individual socioeconomic variables, the regression results show that they have statistically insignificant effects on the individual net donations.

https://doi.org/10.1017/S1930297500007154 Published online by Cambridge University Press