The Tax-Price Elasticity of Charitable Giving and the Allocation of Tax Revenues

Stephanie Karol*
Office of Tax Analysis
U.S. Department of the Treasury

Ariel Listo
University of Maryland

Neslihan Uler
University of Maryland

September 2025†

Abstract

This paper examines whether the tax-price elasticity of charitable giving depends on the taxpayer's attitude towards the beneficiary of the collected tax revenue. We provide a simple model that shows that charitable donations increase when the collected tax revenue benefits a cause that is misaligned with the donor's giving priorities, as opposed to a cause which aligns with the donor's priorities. The tax-price elasticity rises towards zero as this alignment increases, and may even become positive if the donor approves sufficiently of the beneficiary of the collected tax revenue. We conduct a real donation experiment using a representative sample in the United States to test these theoretical predictions. Both predictions are supported by our results, which highlight a novel link between taxpayers' attitudes towards the allocation of tax revenues and the efficacy of tax instruments.

Keywords: Charitable giving, taxation, online experiment

1 Introduction

Governments choose how to allocate tax revenues across a portfolio of programs and projects. The composition of this portfolio depends on the outcome of a social choice process. As such, some citizens will find that their preferences are more closely aligned to the ultimate allocation of tax revenue than other citizens' preferences are. Some argue that this misalignment motivates charitable giving (Rose-Ackerman, 1997; Weisbrod, 1977). If this hypothesis holds, then fluctuations in the match between an individual's giving priorities and the government's spending priorities should affect tax policy levers' power to encourage, or discourage, flows of resources towards charity.

*This research was conducted while this author was an employee at the U.S. Department of the Treasury. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily reflect the views or the official positions of the U.S. Department of the Treasury. Any taxpayer data used in this research was kept in a secured IRS data repository, and all results have been reviewed to ensure that no confidential information is disclosed.

†We thank Benjamin Glass for helpful comments and suggestions. We gratefully acknowledge financial support from the Department of Agriculture and Resource Economics at the University of Maryland. Our experiment was preregistered at AsPredicted.org (#234,540).

In the American context, the most important of these levers is the tax-deductibility of charitable giving. Donations to charities have historically been tax-deductible for individuals who itemize their donations, up to a certain threshold. Recent legislation has extended some tax-deductibility to non-itemizers, as well. For those eligible to claim this tax deduction, the opportunity cost of donating \$1 to a charity is reduced to $\$1 - t$, where t represents the individual's marginal tax rate. By lowering the effective price of giving, tax deductions can incentivize greater charitable donations, to the extent that the tax-price elasticity of charitable giving is negative. Estimates of this elasticity in the literature vary widely, with reported elasticities ranging from near zero to well below -1 (e.g., Clotfelter (1985, 1990); Randolph (1995); Auten et al. (2002); Peloza and Steel (2005); Bakija and Heim (2011); Duquette (2016); Hungerman and Ottoni-Wilhelm (2021); Sheremeta and Uler (2021)).

In this paper, we hypothesize that the tax-price elasticity of charitable giving may depend on the taxpayer's attitude towards the beneficiary of the collected tax revenue. To test this hypothesis, we conduct an online experiment using a representative sample in the United States. The incentive-compatible experiment features real donations to charities, providing participants with a tangible motivation. We manipulate the tax rate and the allocation of tax revenues exogenously. As opposed to using naturally-occuring data, which are limited by endogeneity and omitted variable biases, our experimental approach allows us to draw causal conclusions about the impact of these variables on charitable giving. In the experiment, we approximate the role of the government by taxing participants' endowments net of their donations, and by contributing the tax revenue towards charitable causes resembling publicly-provided goods and services. By systematically varying the tax rate and the beneficiary of the tax revenues, we can gain insights into how individuals' donations react to these changes.

We find that, all else equal, the average charitable gift is larger when the collected tax revenue benefits a cause that is misaligned with the donor's giving priorities, as opposed to a cause which aligns with the donor's priorities. When tax revenues would benefit a charity the donor dislikes, we find negative tax-price elasticities of charitable giving, of comparable magnitudes to those found in recent literature. However, the tax-price elasticity of charitable giving increases monotonically in the donor's approval of the beneficiary of the collected tax revenue. When the donor places sufficiently high priority on the cause funded by their tax revenue, the tax-price elasticity of charitable giving becomes positive. While at first glance this result might seem surprising and even counterintuitive, we present a simple theoretical model that reconciles this finding with previous empirical and theoretical results on the normality of charitable giving.

This paper is the first to show how the tax-price elasticity of charitable giving depends on the match between taxpayers' giving priorities and those of the government. In doing so, it illustrates some implications of the literature linking social choice with charitable giving for the design of tax policy. Several previous results within that nascent literature (Klein Teeselink and Melios, 2024; Karol, 2025) find that donors' perceptions of the government can shape their charitable giving. Our work nests both of these results as special cases. As we solicit donors' opinions on a set of six charities, each operating in a distinct cause area, our results do not require that individuals align themselves along a binary ideological spectrum. Furthermore, we innovate by examining the relationship between perceptions of the use of tax revenues and the impact of tax policy instruments. This innovation is also closely related to Giaccobasso et al. (2025), which studies how taxpayers' perceptions of government spending affect their willingness to pay taxes. We expand upon this result by asking how these perceptions may affect the power of a key tax subsidy to generate charitable contributions. Our paper is the first to demonstrate that the

tax-price elasticity of charitable giving varies with the taxpayer's attitude towards the use of their tax dollars. For a taxpayer who approves sufficiently of the cause their taxes finance, the tax-price elasticity may be positive. We demonstrate how this unexpected sign for an own-price elasticity remains consistent with economic theory.

The paper proceeds as follows. Section 2 presents a simple model of tax-deductible charitable donations, which illustrates how the tax-price elasticity of charitable giving should depend on the donor's opinion of the beneficiary of the collected tax revenue. We test these conjectures using the experiment described in Section 3. Section 4 discusses the data collected through this experiment. Results are presented in Section 5. Section 6 concludes.

2 A Simple Model

Here we develop a simple model to understand how taxes, and government spending on alternative causes, affect the tax-price elasticity of charitable giving, and we derive testable predictions.

Suppose a representative taxpayer-donor has pre-tax income m, and is taxed at rate t. This donor consumes x, and can choose to make a tax-deductible gift, g, to a charity. Any revenue collected will fund a tax-financed public good. The donor's utility-maximization problem is:

$$\max_{x,g}\{u(x, g, (m-g)t)\} \text{ s.t. } x + g(1-t) = m(1-t) \tag{1}$$

As in a standard utility-maximization problem, we assume that utility is increasing and concave in the donor's own consumption. The first derivative of the utility function with respect to its second argument will be weakly positive if and only if the donor places non-negative value on charitable production. Similarly, the first derivative of the third argument will be weakly positive if and only if the donor weakly likes the tax-financed public good.[1]

Let $p := 1 - t$ be the net-of-tax rate, or equivalently the tax price of giving to the charity. Then the constrained optimization problem (1) can be rewritten as:

$$\max_{g}\{u((m-g)p, g, (m-g)(1-p))\} \tag{2}$$

The first-order condition is:

$$-u_1 p + u_2 - u_3(1-p) = 0 \tag{3}$$

It is easy to see from Equation (3) that private contribution to the charity depends on the alignment with governmental public good provision. An individual will give more to the charity if their giving priorities are misaligned (i.e., $u_3 < 0$) with the government's provision than if it is aligned (i.e., $u_3 > 0$). Appendix D provides a formal proof.

For simplicity, we now assume the maximand in Equation (2) is additively separable in each of its three arguments. This assumption is relaxed in Appendix D. We also assume that the first two summands are increasing and strictly concave in their arguments. The third summand will be increasing and strictly concave if the taxpayer's priorities are aligned with those of the government, or decreasing and strictly convex otherwise.

Applying the implicit function theorem to the first-order condition gives:

[1] In this setup, we abstract from distinctions between altruistic and warm-glow utility.

$$\frac{\partial g}{\partial p} = \frac{u_1 + p(m-g)u_{11} - u_3 - (1-p)(m-g)u_{33}}{p^2 u_{11} + u_{22} + (1-p)^2 u_{33}} \tag{4}$$

Note that the denominator will always be negative, and the numerator will determine the sign of the tax-price elasticity. Therefore, the sign of the own-price derivative (4) depends on the marginal utility of consumption, relative to the marginal utility derived from the tax-financed public good. That is, the relationship between private donations made to the charity and the tax price of charitable giving depends on the donor's attitude towards the beneficiary of their tax dollars. The tax-price elasticity of charitable giving increases in the value the donor places on the cause funded by their tax dollars. If the donor's giving priorities are sufficiently well-aligned with the tax-financed public good, the tax-price elasticity of charitable giving may be positive. See Appendix D for a more detailed discussion.

2.1 Hypotheses

Our formal (pre-registered) hypotheses regarding donations to the private charity are listed below.

1. Everything else constant, voluntary donations will be higher when the collected tax revenue goes to a public good that is misaligned with one's giving priorities, relative to the case when it goes to a public good that is aligned with one's giving priorities.

2. The relationship between the tax rate and donations will depend on governmental tax allocation. In particular, the tax-price elasticity of giving to the private charity will decrease (i.e., will become more negative) as the collected tax revenue goes to a public good that is more misaligned with one's giving priorities.

The following section will describe the design of our experiment which will permit us to test these hypotheses.

3 Experiment

To test the hypotheses laid out in Section 2.1, we conduct an incentivized online experiment featuring real donations to charities. Instructions used in the experiment can be found in Appendix C. We describe the design of the experiment in Section 3.1, and discuss the experimental procedures in Section 3.2.

3.1 Experimental Design

The experiment consists of three parts. Part 1 presents the core of our study. We endow each participant with $w = 100$ experimental tokens for each problem they face. In each decision problem, participants are asked if they would like to make a tax-deductible donation out of this endowment, and if so, how many tokens to donate. All of these donations benefit one charity, which we will call Charity A. Participants are told that their income net of their donations to Charity A will be taxed at the rate t, and that all tax revenue will be sent to Charity B. Note that donations to Charity A (by the participants) approximate the private provision of public goods, while donations to Charity B (by the experimenters) represent a tax-financed public good, analogous to government provision in a non-experimental context.

Part 1 of our study consists of five sets of three decision problems, for a total of 15 problems. While Charity A remains the same across all 15 questions, each of the five sets of three problems involves a different Charity B. The exogenous variation of Charity B is central to our experimental design, allowing us to elicit the causal effect of varying how tax monies are spent on private donations of individuals. For each Charity B, we ask participants how much they would donate to Charity A under three alternative tax rates: $t \in \{0.1, 0.25, 0.5\}$.

Each set of 3 problems is presented on a new page. This minimizes confusion, since in a given page Charity A and Charity B are always the same. Within each page, only the tax rate varies. Once participants make their decisions in a given set of 3 problems, they are able to move forward to see the next set of 3 problems. To control for order effects, the 5 sets of 3 decision problems are presented to participants in random order.

To preserve incentive compatibility, we randomly select one out of the 15 decision problems from Part 1 to be implemented at the end of the experiment. The donations that participants make to Charity A in that randomly selected question, as well as the tax revenue collected for Charity B, were sent to these charities at the completion of the experiment.

The selection of the six charities used in our experiment was carefully made. Our criteria for choosing these charities were as follows. First, we require that each charity be of high quality, as measured by their ratings on Charity Navigator in the month in which the experiment took place. Second, we aimed to choose a Charity A with near-universal appeal, and to choose a set of Charities B which would generate variation in participants' responses. In other words, the Charity B set must include some charities which would hold appeal for only a strict subset of the general population. Third, we require that each of these six charities represent a different cause area. Variation in missions, reflecting values and objectives along a wide continuum of issues, is an important feature of our design.

After careful consideration of several top-rated organizations, we selected the American Society for the Prevention of Cruelty to Animals (ASPCA) as our Charity A, and World Central Kitchen, Americans for the Arts, Wounded Warrior Project, Immigrant Legal Defense, and March for Life as our Charity B set. These charities were introduced to participants along with their mission statements. Charities' mission statements were presented as they appear on each charity's annual Form 990 filing with the Internal Revenue Service.

In Part 2, participants are asked to make direct, incentivized donation decisions (i.e., without tax implications) to all six charities (including Charity A) out of an endowment of 100 tokens for each decision problem. Participants are told that five people will be randomly selected, and their decisions in one of these six questions will be implemented, with equal probability. Because everyone has a chance to be selected and have their choices be implemented, they have an incentive to be truthful. Although this probabilistic payment system might induce more generous donations, the important thing for our purposes is the comparison of donations across different charities.

Part 3 of our experiment consists of a series of unincentivized survey questions about the respondents. We start by asking respondents to reveal, on a scale of -5 to 5, how they feel about the causes each of the six charities support. We explain that a rating of -5 indicates that the participant strongly dislikes the charity, while a rating of 5 indicates that the participant strongly likes the charity, and 0 indicates neutrality. Responses are not restricted to be integers.

Using these survey questions, as well as the incentive-compatible real donation questions of Part 2, we construct measures of priority or "alignment" of charities' missions for each participant. This will be explained in detail in Section 4. The remainder of Part 3 consists of a basic

demographic questionnaire, as well as a set of questions regarding participants' past donation behavior.

3.2 Experimental Procedures

Participants were recruited via Prolific in June 2025. Our sample of 550, US-based Prolific participants is representative of the US population along the lines of sex, age, and ethnicity. The fixed participation fee was USD $3 and the average bonus (excluding charitable donations) was USD $0.51. The median completion time was 16.5 minutes. All amounts in the experiment were expressed in terms of experimental tokens. Participants were repeatedly informed that the conversion rate of tokens to USD dollars was 100 tokens = 1 US dollar.

The experimental survey was administered using Qualtrics. Given our within-subject design, the order of the tasks in Part 1 of our experiment was randomized, which we achieved using Qualtrics' built-in randomizer with the "Evenly Present Elements" feature for balance. Additionally, for incentive-compatibility, all randomly selected decision problems and their corresponding bonus payments were calculated in real time using JavaScript. As a result, participants were informed of their total payoff before exiting the survey. We deposited all bonuses in Prolific accounts within 48 hours of study completion.

Throughout the experiment, tax revenue and income calculations are made by the programming and are immediately shown to the participants as they enter their donation decisions. Therefore, calculation mistakes are not possible, and cannot confound our findings.

4 Data

This section will describe our empirical approach to testing the hypotheses set forth in Section 2.1, using the data we collect from the experiment described in Section 3.

To test our hypotheses, we estimate the following specification:

$$Donation_{ibt} = \beta(1 - TaxRate_t) + \alpha_i + \gamma_{o(b)} + \varepsilon_{ibt} \tag{5}$$

The outcome $Donation_{ibt}$ represents donations made to Charity A by individual i, when the collected tax revenue would fund a given charity b within the Charity B set. In keeping with our experimental setup, $Donation_{ibt}$ is measured in tokens, and can take any integer value between 0 and 100, inclusive. The parameter β represents the derivative of voluntary gifts to Charity A with respect to their own price. We include individual-level fixed effects α_i and order effects $\gamma_{o(b)}$. Error terms are represented by ε_{ibt}.

In addition to this baseline specification, we calculate four alternative measures of the priorities donors assign to each charity b. We interact these measures with $1 - TaxRate_t$ to produce an augmented version of Specification (5). These measures include: the stated preference of the respondent, a binary priority measure, a continuous priority measure, and an alternative preference rank. Each of these measures is derived in terms of one or both of the preference questions - stated or incentivized - included in our experiment. We next describe each of these measures.

Our first measure is the donor's stated preference over charities, $StatedPref_{ic}$. These ask donor i to rate how much they like charity c on a continuous scale ranging from [-5,5], where c may refer either to Charity A or to any of the charities in the Charity B set.

Our second measure is the Binary Priority Measure, which simply encodes whether or not a donor (weakly) likes charity c. To define this, let $IncentPref_{ic}$ represent individual i's response

to the incentivized preference questions (i.e., how many tokens $\in [0, 100]$ they would like to donate to a given charity c). Then let the Binary Priority Measure be given by:

$$BinaryPriority_{ic} = \begin{cases} 1 & \text{if } IncentPref_{ic} > 0 \\ 1 & \text{if } IncentPref_{ic} = 0 \ \& \ StatedPref_{ic} \geq 0 \\ 0 & \text{if } IncentPref_{ic} = 0 \ \& \ StatedPref_{ic} < 0 \end{cases}$$

The Binary Priority Measure is useful, but has its limits: it reveals whether or not a donor likes a given charity, but not how much a donor likes one charity relative to another. To fill this gap in our understanding, we construct our third preference ranking, the Continuous Priority Measure.

Constructing a continuous ranking of respondents' giving priorities is not a trivial task. The incentivized preference measure, $IncentPref_{ic}$, is useful in terms of ranking charities when an individual makes a positive donation. However, this measure does not give us a complete ranking of individuals' preferences over charities for those who never donate, or who donate to only a subset of charities. For example, an individual who never donates might like all of the charities presented in the experiment, but may still refrain from donating if their marginal utility from consumption exceeds the marginal utility of one unit of donation. Therefore, in order to construct a continuous ranking, we must use the information encoded by our stated preference question ($StatedPref_{ic}$) to supplement the information captured by our incentivized preference tasks. As we explain in our preregistration, the resulting measure will give priority to $IncentPref_{ic}$ over $StatedPref_{ic}$ where possible.

For individuals who make a positive donation to a charity, our Continuous Priority Measure assigns a value equal to $IncentPref_{ic}$ for that given charity. For individuals who never donate to any charities, Continuous Priority Measure is equal to $StatedPref_{ic}$ but scaled up 20 times (to reconcile the scales of $StatedPref_{ic}$ and $IncentPref_{ic}$, as one ranges from -5 to 5 and the other ranges from 0 to 100). For individuals who make positive donations to some, but not all, of the charities, we make use of both $IncentPref_{ic}$ and $StatedPref_{ic}$ together. To construct this continuous measure for those cases, we first identify the charity to which the donor would give the smallest strictly positive amount, as measured by the incentivized preference question. Call this charity $c(\tilde{i})$. This charity $c(\tilde{i})$ will have been ranked by the donor under both the incentivized and stated preference questions. We use $c(\tilde{i})$ to define an individual-specific multiplier, $\rho(i) = IncentPref_{ic(\tilde{i})}/StatedPref_{ic(\tilde{i})}$ when $StatedPref_{ic(\tilde{i})} > 0$.[2] Otherwise $\rho(i) = 20$. Note that there exists a subset of 16 respondents whose stated preference for charities, scaled up by $\rho(i)$, for which $IncentPref_{ic} = 0$ exceeds $IncentPref_{ic(\tilde{i})}$. In these cases, the continuous priority measure is undefined. Histograms of the Continuous Priority Measure are presented in Appendix A.

We summarize the construction of the Continuous Priority Measure in the following:

$$ContPriority_{ic} = \begin{cases} IncentPref_{ic} & \text{if } IncentPref_{ic} > 0 \\ \rho(i) \times StatedPref_{ic} & \text{if } IncentPref_{ic} = 0 \ \& \ \exists \ c' \text{ s.t. } IncentPref_{ic'} > 0 \\ 20 \times StatedPref_{ic} & \text{if } IncentPref_{ic} = 0 \ \forall \ c \end{cases}$$

Finally, we define an Alternative Preference Rank ($PrefRank_{ic}$) as a simple ranking of charities according to $IncentPref_{ic}$ when this measure is strictly positive, followed by a ranking of

[2] For sufficiently small values of $StatedPref_{ic(\tilde{i})}$, this formula gives rise to values of $\rho(i) > 20$, which artificially creates a long left tail in the distribution of the continuous measure. To ensure that $ContPriority_{ic}$ will be defined on [-100, 100], we censor $\rho(i)$ from above at 20.

charities according to $StatedPref_{ic}$ when $IncentPref_{ic} = 0$.

Our most preferred priority measures are $BinaryPriority$ and $ContPriority$. Nevertheless, in Appendix B, we present the robustness of our findings using the other two measures as well. Moreover, although the strength of these correlations varies, all four measures have strong and positive correlations with one another. Table 1 presents a matrix of correlations between these four priority measures.

Table 1: Correlation Between Priority Measures

	Continuous Priority Measure	Binary Priority Measure	Stated Preference	Alternative Preference Rank
Continuous Priority Measure	1.000	0.643	0.712	0.575
Binary Priority Measure	0.643	1.000	0.750	0.430
Stated Preference	0.712	0.750	1.000	0.624
Alternative Preference Rank	0.575	0.430	0.624	1.000

We exclude a subset of our 550 respondents from our analysis for a variety of reasons, each of which was included in our pre-registration. We first drop 15 respondents who stated that they support all six charities to the same extent, as this suggests inattention. Next, we drop 60 respondents who missed any of our four practice questions more than twice. Finally, we drop 23 respondents who state that they dislike Charity A, as our model assumes the marginal utility of the voluntarily-provided public good is positive. We are left with 452 total respondents. As per our pre-registration, in Appendix B.1, we also provide robustness checks for all of our results by dropping all respondents whose stated and incentivized preference measures imply inconsistencies. Note that such inconsistencies are not unusual, because survey questions are not incentivized and, moreover, it is expected that some respondents might lose attention over time. Appendix B.1 shows that none of our results change.

The demographics of our estimation sample are summarized in Table 2, along with a set of statistics characterizing respondents' previous donation behavior and reported attitudes towards the charities in our study.

Table 2: Summary Statistics

	Demographics			Donation Behavior	
	Mean	St. Dev.		Mean	St. Dev.
Female	0.513	0.500	Any Prior Gift	0.712	0.453
Age			Mean Prior Gift		
18-24	0.122	0.327	$< \$50$	0.261	0.440
25-34	0.177	0.382	\$50 - \$99	0.205	0.404
35-54	0.336	0.473	\$100 - \$499	0.342	0.475
55-64	0.259	0.438	\$500 - \$999	0.096	0.295
65 and above	0.106	0.308	$\geq \$1{,}000$	0.093	0.291
Education			Giving Priorities		
Some high school or below	0.011	0.105	Mean, $IncentPref_{ic}$	24.347	19.739
High school degree	0.108	0.311	Range, $IncentPref_{ic}$	32.344	28.089
Some college, no degree	0.144	0.351	Mean, $StatedPref_{ic}$	2.047	1.102
Associates' degree	0.106	0.308	Range, $StatedPref_{ic}$	5.840	3.125
Bachelors' degree	0.367	0.482			
Graduate degree	0.259	0.438			
Income					
$< \$25{,}000$	0.126	0.332			
\$25,000 - \$49,000	0.204	0.403			
\$50,000 - \$74,999	0.192	0.395			
\$75,000 - \$99,999	0.159	0.366			
\$100,000 - \$149,999	0.199	0.400			
$\geq \$150{,}000$	0.100	0.300			
Respondents	452				

Notes. All figures, except those characterizing the giving priorities, represent shares of the estimation sample. Giving priority variables represent the mean responses to the incentivized-preference questions, or stated-preference questions, respectively. The range of each giving priority variable represents the mean within-respondent range of answers provided for each question. Mean prior gifts are calculated conditional on reporting that the respondent has previously donated to charity.

5 Results

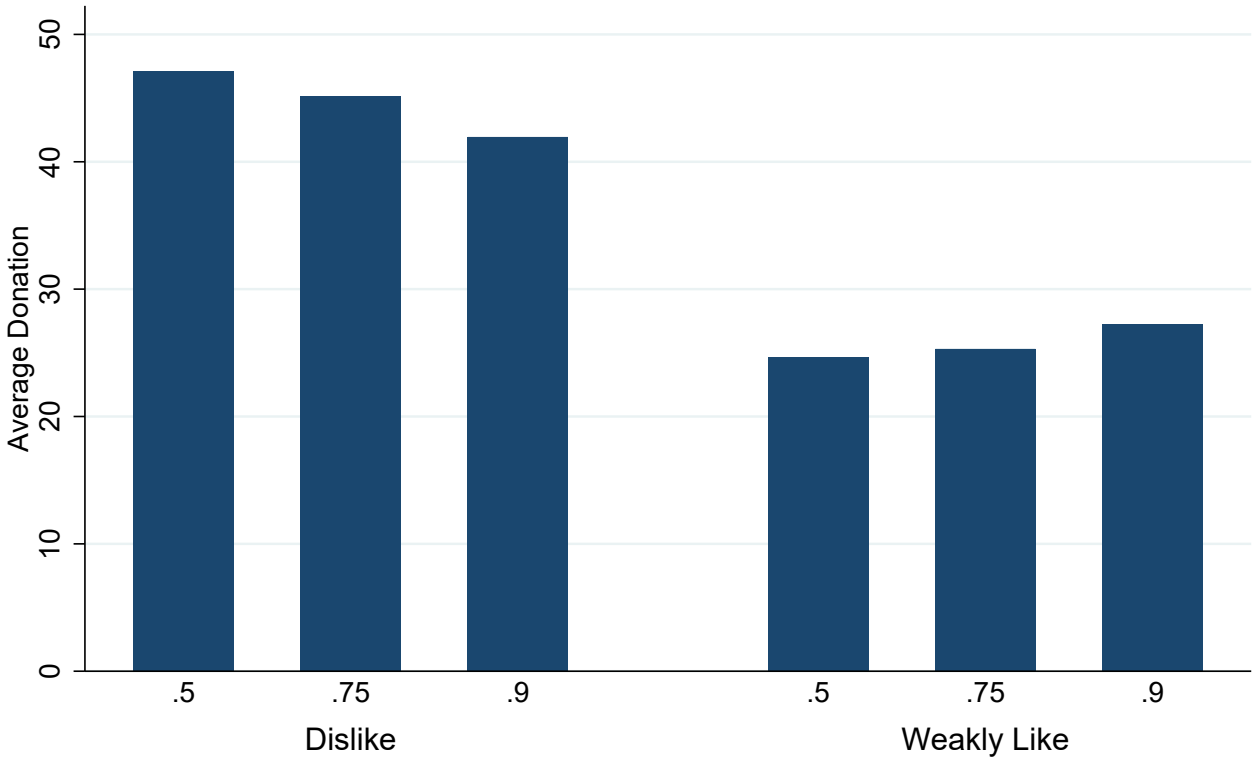
In this section, we evaluate our hypotheses regarding the relationship between tax-deductible charitable giving and the donor's attitude towards the beneficiary of their tax revenue. We have hypothesized that the more donors value the causes they indirectly fund through the tax system, the less they will give to charity. Furthermore, we hypothesize that the tax-deductibility of charitable donations will be a more effective tool for stimulating charitable giving when the donor dislikes the beneficiary of their tax dollars. We find evidence to support both hypotheses.

Figure 1 plots the mean charitable donation our respondents make to Charity A, for each value of the net-of-tax rate. These means are presented separately, according to the donor's attitude towards Charity B, as measured by the binary priority ranking. That is, the first set of

three bars refer to mean donation to Charity A when the donor strictly dislikes the beneficiary of their tax dollars. The second set of three bars reflect the mean donation to Charity A when the donor likes, or feels neutrally towards, the beneficiary of their tax dollars. The net-of-tax rate, or tax price of charitable giving, ranges from 0.5 for a tax rate of 50%, to 0.9 for a tax rate of 10%.

At each of the three given tax prices, we find that on average, donors give more to Charity A when they dislike Charity B than they do when they like Charity B. For a tax rate of $t = 0.1$, the mean difference between gifts is 14.5 tokens. The mean difference rises to 19.8 tokens at a tax rate of $t = 0.25$, and climbs to 22.5 tokens at a tax rate of $t = 0.5$. Each of these differences is statistically significant.[3] This finding provides some support for Hypothesis 1. Under this hypothesis, all else constant, donors will give more generously to Charity A when their tax dollars go to a cause they dislike, relative to the case when their tax dollars benefit a cause they like.

Figure 1: Mean Donation to Charity A, by Tax Price and Preference for Charity B



Notes: For each tax price - Charity B pair, this figure presents the mean donation made to Charity A. Donations are measured in tokens; valid donations are integers in the interval $\{0, \ldots, 100\}$. Tax prices are presented on the first categorical axis. They are defined as $1 -$ Tax Rate, for three possible tax rates: 10%, 25%, or 50%. The second categorical axis reflects the respondent's attitude towards the charity which benefits from the collected tax revenue, as given by the Binary Preference Measure.

Note that these results are consistent with "crowd-out" of private charitable giving by tax-financed public good provision, provided that the donor likes the public good. When the tax price rises, the revenue provided to the tax-financed good falls. As funding for the tax-financed

[3] $p < 0.0000$ in all cases.

good falls, Figure 1 shows that private charitable giving increases among donors who approve of the tax-financed good, and falls among donors who disapprove of the tax-financed good. The former is consistent with a pattern of "crowd-out," as voluntary and involuntary provision move in opposite directions, whereas the latter is consistent with a pattern of "crowd-in," as voluntary and involuntary provision move together. This finding is consistent with Grasse et al. (2022), which finds that crowd-out varies by the type of charitable good provided.

While the evidence presented in Figure 1 is consistent with this hypothesis, mean differences across groups will only hold ceteris paribus if these differences net out individual-level unobservable effects. These effects are important determinants of donors' latent generosity. As the composition of the groups differ – 196 donors dislike at least one charity, whereas all 452 donors like at least one charity – the differences in mean giving do not effectively control for unobservable generosity. We control for these individual-level unobservables in Table 3.

Table 3: The Tax-Price Elasticity of Charitable Giving Varies by Preference for the Beneficiary

	(1)	(2)	(3)
	Panel A: Regression Coefficients		
1 - Tax Rate	4.001**	4.053**	1.816
	(1.969)	(1.951)	(2.089)
Continuous Priority Measure		-0.226***	-0.298***
		(0.023)	(0.037)
1 - Tax Rate × Continuous Priority Measure			0.100**
			(0.040)
	Panel B: Implied Elasticity		
Tax-Price Elasticity	0.102**	0.113**	0.145**
	(0.050)	(0.054)	(0.057)
Observations	6,780	6,555	6,555
Respondents	452	437	437
Respondent FE	X	X	X
Order FE	X	X	X

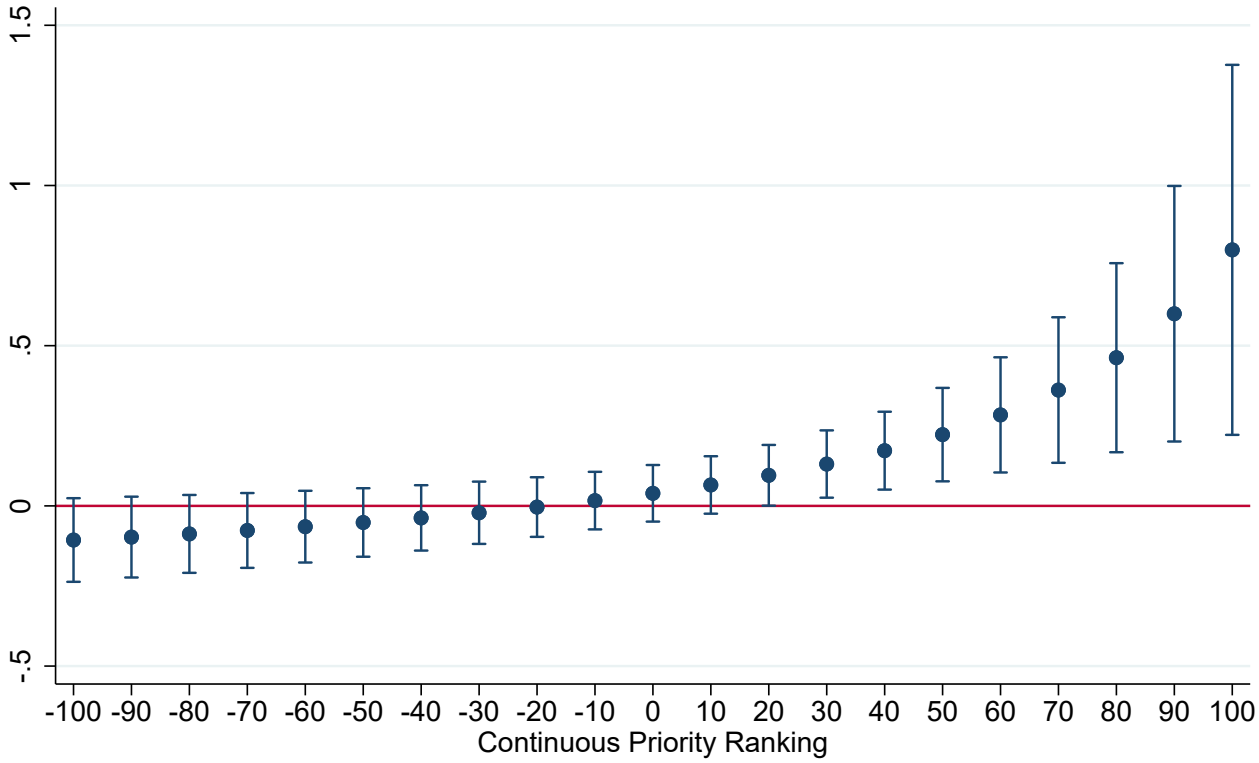
Notes. In Panel A, Column 1 presents the estimate of β produced by estimating Specification (5), pooling across all respondents. Column 2 adds a control for the respondent's Continuous Priority Measure for the charity which stands to benefit from the collected tax revenue. Column 3 adds an interaction between the tax price of charitable giving and the preference for the charity which would receive the collected tax revenue. All columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3 presents an estimate of Specification (5) in Column 1, where the data includes all responses, regardless of the donor's attitude towards Charity B.[4] A control for this attitude is

[4]All specifications in the main text are estimated via OLS, where the outcome variable enters linearly. Alter-

introduced in Column 2, where it is represented using our continuous priority measure. Column 3 builds on Column 2 by interacting the continuous priority measure with the tax price of charitable giving. All columns include respondent fixed effects and charity order effects, thereby controlling for latent generosity and other unobservables that may affect the outcome. In Columns 2 and 3, we clearly see that the stronger the affinity a respondent has for the beneficiary of their tax dollars, the smaller their tax-deductible voluntary gift becomes. As these results do hold all else constant - including unobservable generosity - we can definitively conclude that Hypothesis 1 is supported by the data. Tax-deductible contributions are lower, and thus tax revenues are higher, when taxpayers perceive that tax revenues support causes they care about. These results are consistent with those of Giaccobasso et al. (2025), which finds that taxpayers' willingness to pay taxes increases when they believe that they personally are the ultimate beneficiaries of their tax dollars.

Figure 2: The Tax-Price Elasticity of Charitable Giving, by Preference for Charity B



Notes: Coefficients represent the implied tax-price elasticity of charitable giving, as a function of the respondent's preference for the charity which benefits from the collected tax revenue. These preferences are measured using the Continuous Priority Measure. Error bars represent the 95% confidence interval for the corresponding elasticity estimate. Standard errors are calculated via the delta method.

As shown in Panel B of Table 3, these results indicate that on average, the tax-price elasticity of charitable giving is positive. This result is an outlier relative to the literature, which tends to find negative own-price elasticities of charitable giving. We hypothesized that the tax-price elasticity of charitable giving may depend on the donor's attitude towards the use of their tax dollars. This Hypothesis 2 will be borne out by the data if we find a positive relationship

native specifications are presented in Appendix B.

between the tax-price elasticity of charitable giving and donors' attitudes towards Charity B. As the interaction term in Column 3 of Table 3 is positive, the results of our experiment indeed support Hypothesis 2.

To further characterize this relationship, we use the estimates in Column 3 of Table 3 to calculate the tax-price elasticity of charitable giving at different values of our Continuous Priority Measure. Figure 2 plots the resulting elasticity estimates against this measure of the donor's attitude towards Charity B. Indeed, we find that the tax-price elasticity of charitable giving is most negative when the donor has the strongest dislike towards charity B.[5] This elasticity rises towards zero as the strength of the dislike fades to neutrality, and becomes positive - and quite large - as the donor's liking for Charity B grows.[6] The tax-price elasticity of charitable giving increases monotonically as the beneficiary of the tax revenue becomes more aligned with the donor's giving priorities. These results provide further support for our Hypothesis 2.

Table 4: The Tax-Price Elasticity of Charitable Giving Varies by Preference for the Beneficiary

	(1) Dislike	(2) Weakly Like
	Panel A: Regression Coefficients	
1 - Tax Rate	-12.418***	6.080***
	(4.540)	(2.038)
	Panel B: Implied Elasticity	
Tax-Price Elasticity	-0.201***	0.168***
	(0.075)	(0.056)
Observations	762	6,018
Respondents	196	452
Respondent FE	X	X
Order FE	X	X

Notes. Panel A presents the estimates of β produced by estimating Specification (5), separately for each value of the Binary Priority Measure. Column 1 restricts estimation to the subsample of observations in which the respondent dislikes Charity B. Column 2 includes only observations in which the respondent weakly likes Charity B. Both columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The estimates and confidence intervals depicted in Figure 2 illustrate that the tax-price elasticity of charitable giving is significantly lower when Charity B is strongly disliked (Continuous Priority Measure < -80) compared to the case where Charity B is at least mildly liked (Continuous Priority Measure $>= 20$). These results are further confirmed in Table 4, which estimates

[5] When the Continuous Priority Measure $= -100$, our estimate of the tax-price elasticity of charitable giving is -0.107, with $p-$value of 0.110. The 95% confidence interval for this estimate is $(-0.237, 0.024)$.

[6] When the Continuous Priority Measure $= 100$, our estimate of the tax-price elasticity of charitable giving is 0.799, with $p-$value of 0.007. The 95% confidence interval for this estimate is $(0.222, 1.376)$.

Specification (5) separately for each value of the binary preference ranking used to construct Figure 1. On average, we find a tax-price elasticity of charitable giving of -0.201 when donors dislike Charity B. This is quite comparable to some recent estimates of the tax-price elasticity of charitable giving (Hungerman and Ottoni-Wilhelm, 2021). However, we estimate a positive tax-price elasticity of charitable giving when donors like Charity B. In that circumstance, a 1% increase in the tax price of charitable giving increases the value of gifts made to charity A by 0.168%.

At first glance, these results present a puzzle. Typically, when demand for a good increases in its own price, it is thought that this good must be Giffen, and therefore an inferior good. Charitable giving cannot be an inferior good: through both lab experiments (Exley, 2016; Ottoni-Wilhelm et al., 2017; Duquette and Hargaden, 2021) and natural experiments (Duquette et al., 2025), prior work has repeatedly found that increases in endowments generate more giving. If charitable giving is normal, why can it increase in its own price?

The model presented in Section 2 serves to clarify the mechanisms underlying this puzzling result. Appendix D expands on this model and derives the Slutsky equation for charitable giving, presented below in Equation (6).

$$\frac{\partial g^*(p,u)}{\partial p} = \frac{\partial g^h(p,m)}{\partial p} - \frac{\partial g^*(p,m)}{\partial m}\left(\frac{-g^* - m + \mu(u_1 - u_3)(m - g^*)}{p}\right) \tag{6}$$

Here, the derivative of charitable giving with respect to income is multiplied by a term that depends on the marginal utility of consumption, relative to the marginal utility derived from the tax-financed public good: Charity B. As the donor places greater value on Charity B, this coefficient decreases in value, and can become negative. In that case, the income effect evaluates with a positive sign, and may overwhelm the substitution effect if large enough. This is precisely the pattern we observe in Figure 2.

6 Conclusion

This work demonstrates how the sign and magnitude of key tax policy parameters depend on public perceptions of the use of tax revenue. We develop a simple model of public good provision, in which decision-makers fund some public goods voluntarily via charitable giving, and fund other public goods indirectly via taxation. This model informs our two experimental hypotheses concerning charitable giving. First, we hypothesize that as the government's spending priorities become better aligned with the taxpayer's giving priorities, the total value of tax-deductible charitable contributions will fall. Second, we hypothesize that the tax-price elasticity of charitable giving is positively related to this alignment in priorities.

We field an incentivized online experiment to test these hypotheses, finding support for both. Strikingly, we find that when tax revenues are used to support causes that are sufficiently high-priority for the taxpayer, the tax-price elasticity of charitable giving may be positive. We reconcile this result with neoclassical theory by showing that when the tax-price elasticity of giving rises, the sign of the associated income effect depends on the marginal utility the taxpayer derives from the tax-financed good. This relationship will hold if and only if the taxpayer internalizes the relationship between their own tax deductions and the amount of funding available for the tax-financed good. This suggests that the negative tax-price elasticities frequently found in non-experimental settings may obtain for one of two reasons. First, these studies may capture donors

whose giving priorities are misaligned with the spending portfolio the government has chosen, or their subjective perception of that spending portfolio. Second, these studies may capture individuals who do not consider the impact of their tax-deductible activity on the government's budget constraint.

Our experimental setup makes the relationship between tax-deductibility, tax revenues, and public goods provision highly salient to our respondents. This high salience is typical of models of voluntary public good provision, such as Bergstrom et al. (1986), where the donor internalizes the impact of their own contribution to the public good. By contrast, empirical work finds that most individuals lack awareness of the actual composition of the government's spending portfolio (Bekkers and Wiepking, 2011; Giaccobasso et al., 2025). Although our high-salience environment is unlikely to generalize beyond our experimental context, the mechanism highlighted in this paper still carries policy relevance. The tax-price elasticity of charitable giving will remain sensitive to donors' perceptions of the use of their tax revenue, regardless of how well those perceptions align with actual spending.

This paper also enriches our understanding of the crowd-out of private charitable giving by tax-financed contributions to the public good. Traditional models of voluntary public good provision typically assume that charitable gifts and tax dollars all finance the same public good, which confers positive utility on the charitable donor. Most empirical studies of crowd-out, whether experimental or quasi-experimental, only consider crowd-out within a charity or cause area (Kingma, 1989; Andreoni and Payne, 2003; Hungerman, 2005; Vesterlund, 2016; Ottoni-Wilhelm et al., 2017; De Wit and Bekkers, 2017). We relax this constraint, explicitly allowing the donor's utility from the public good to vary across causes. Our study also differs from previous work in that we consider tax deductions, rather than lump-sum transfers. Our results are consistent with crowd-out when donors approve of the tax-financed good, and consistent with crowd-in when donors disapprove of the tax-financed good. Importantly, we show that when donors internalize the link between tax-deductible private provision and tax-financed public provision, crowd-out can occur across cause areas, not only within a cause or charity.

This paper also opens new avenues for future research. Our results imply that the tax-price elasticity of charitable giving can fluctuate over time, as taxpayers' attitudes towards the allocation of tax revenues change. This relationship is likely to depend on the quality of taxpayers' information on government spending, as well as the attention taxpayers devote to this information. Further research is needed to verify this relationship outside of an experimental context.

References

Andreoni, J. and A. A. Payne (2003): "Do government grants to private charities crowd out giving or fund-raising?" *American Economic Review*, 93, 792–812.

Auten, G. E., H. Sieg, and C. T. Clotfelter (2002): "Charitable giving, income, and taxes: An analysis of panel data," *American Economic Review*, 92, 371–382.

Bakija, J. and B. T. Heim (2011): "How does charitable giving respond to incentives and income? New estimates from panel data," *National Tax Journal*, 64, 615–650.

Bekkers, R. and P. Wiepking (2011): "A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving," *Nonprofit and voluntary sector quarterly*, 40, 924–973.

Bergstrom, T., L. Blume, and H. Varian (1986): "On the private provision of public goods," *Journal of public economics*, 29, 25–49.

Clotfelter, C. T. (1985): *Federal Tax Policy and Charitable Giving*, University of Chicago Press, 1 ed.

——— (1990): "The impact of tax reform on charitable giving: A 1989 perspective," .

De Wit, A. and R. Bekkers (2017): "Government support and charitable donations: A meta-analysis of the crowding-out hypothesis," *Journal of Public Administration Research and Theory*, 27, 301–319.

Duquette, N., A. Isen, S. Karol, and B. Marx (2025): "Dutiful Altruism and Propensities to Donate from Wealth," .

Duquette, N. J. (2016): "Do tax incentives affect charitable contributions? Evidence from public charities' reported revenues," *Journal of Public economics*, 137, 51–69.

Duquette, N. J. and E. P. Hargaden (2021): "Inequality and giving," *Journal of Economic Behavior & Organization*, 186, 189–200.

Exley, C. L. (2016): "Excusing selfishness in charitable giving: The role of risk," *The Review of Economic Studies*, 83, 587–628.

Giaccobasso, M., B. Nathan, R. Perez-Truglia, and A. Zentner (2025): "Where Do My Tax Dollars Go? Tax Morale Effects of Perceived Government Spending," *American Economic Journal: Applied Economics*.

Grasse, N. J., E. A. Searing, and D. G. Neely (2022): "Finding your crowd: The role of government level and charity type in revenue crowd-out," *Journal of Public Administration Research and Theory*, 32, 200–216.

Hungerman, D. M. (2005): "Are church and state substitutes? Evidence from the 1996 welfare reform," *Journal of public economics*, 89, 2245–2267.

Hungerman, D. M. and M. Ottoni-Wilhelm (2021): "Impure impact giving: Theory and evidence," *Journal of Political Economy*, 129, 1553–1614.

Karol, S. A. (2025): "Polarizing the Donorate: Charitable Giving and Negative Political Advertisements," *Journal of Nonprofit & Public Sector Marketing*, 37, 302–327.

Kingma, B. R. (1989): "An accurate measurement of the crowd-out effect, income effect, and price effect for charitable contributions," *Journal of Political Economy*, 97, 1197–1207.

Klein Teeselink, B. and G. Melios (2024): "Partisanship, political alignment, and charitable donations," *Public Choice*.

Ottoni-Wilhelm, M., L. Vesterlund, and H. Xie (2017): "Why do people give? Testing pure and impure altruism," *American Economic Review*, 107, 3617–3633.

Peloza, J. and P. Steel (2005): "The price elasticities of charitable contributions: A meta-analysis," *Journal of Public Policy & Marketing*, 24, 260–272.

Randolph, W. C. (1995): "Dynamic income, progressive taxes, and the timing of charitable contributions," *Journal of Political Economy*, 103, 709–738.

Rose-Ackerman, S. (1997): "Altruism, ideological entrepreneurs and the non-profit firm," *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 8, 120–134.

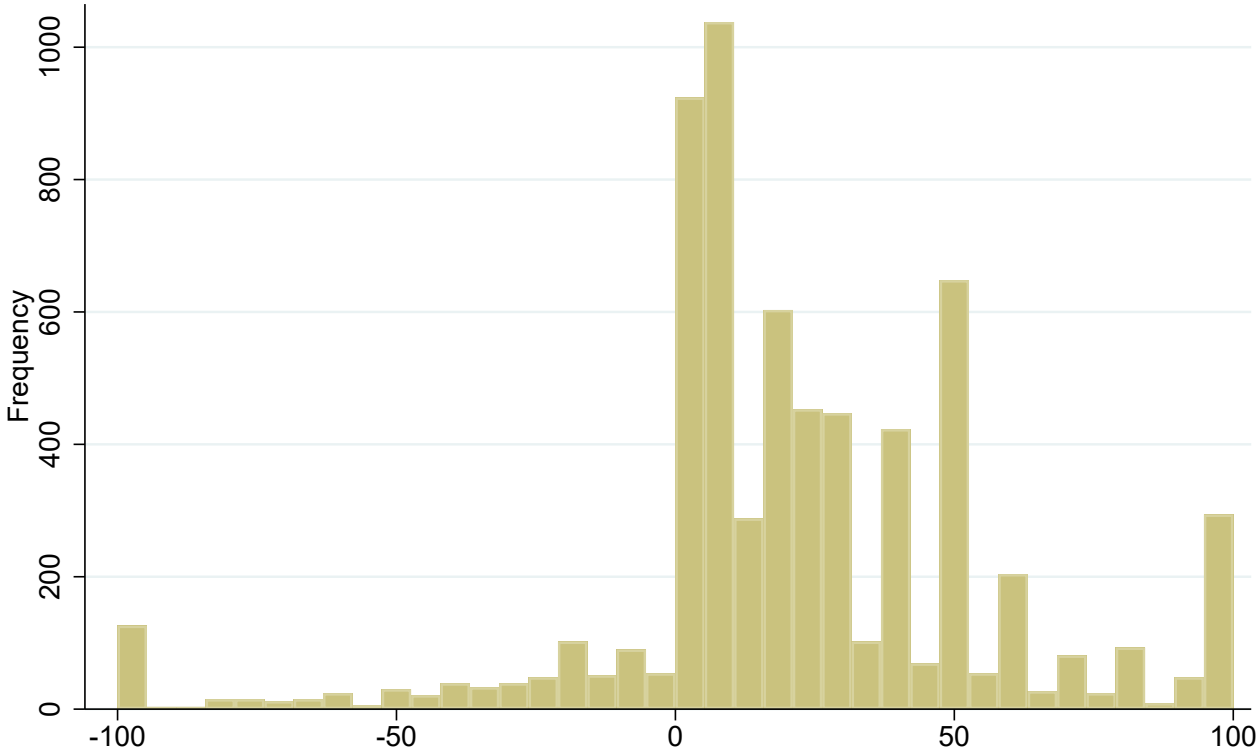
Sheremeta, R. M. and N. Uler (2021): "The impact of taxes and wasteful government spending on giving," *Experimental Economics*, 24, 355–386.

Vesterlund, L. (2016): "Using experimental methods to understand why and how we give to charity," *Handbook of experimental economics*, 2, 91–151.

Weisbrod, B. A. (1977): *The Voluntary Nonprofit Sector: An Economic Analysis*, Lexington Books.

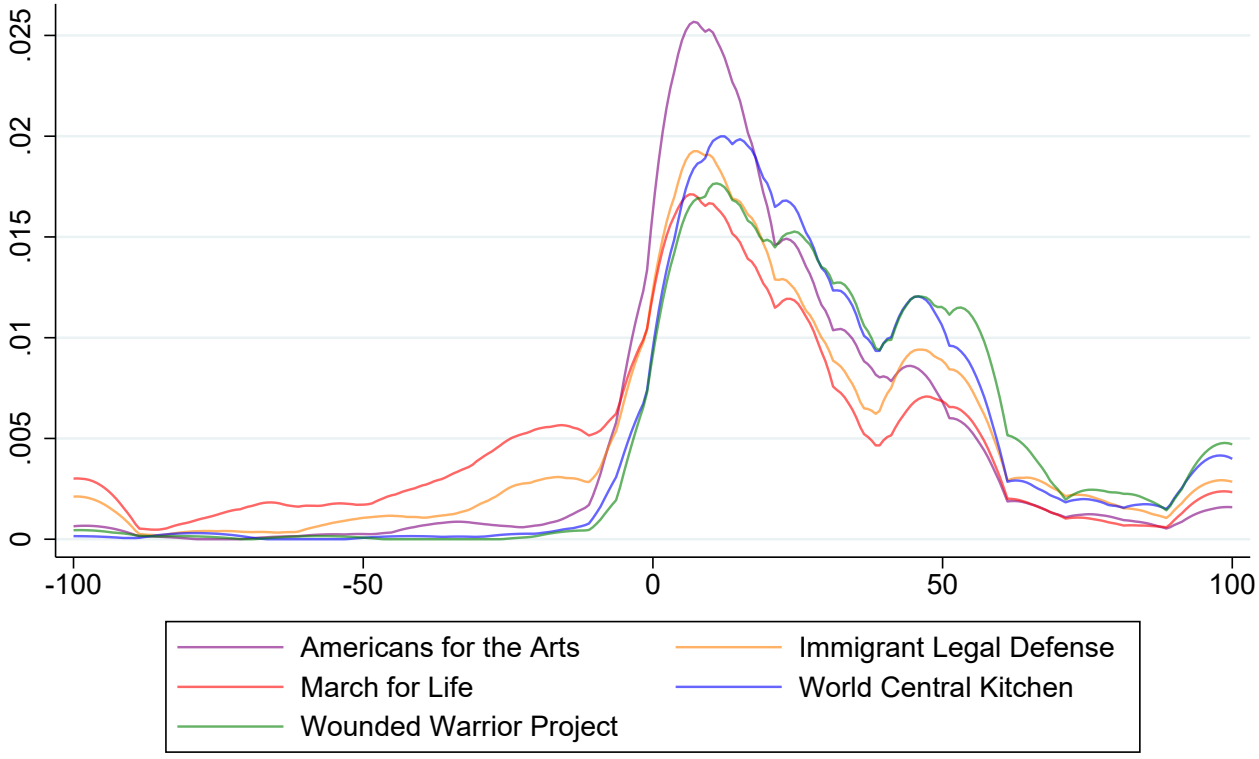
Appendix A Preference Rankings

Figure A1: Distribution of Preferences for Charity B



Notes: This figure presents the histogram of preferences for Charity B, pooling across all five alternative charities. These preferences are measured using the Continuous Priority Measure.

Figure A2: Distribution of Preferences for Charity B, By Charity B



Notes: This figure presents the kernel density of preferences for each charity B. These preferences are measured using the Continuous Priority Measure. Each line corresponds to one of the five alternative charities.

Appendix B Robustness Checks

This section presents robustness checks using alternative functional forms. Tables B1 and B2 transform the outcome variable using the inverse hyberbolic sine, while Tables B3 and B4 estimate Specification (5) via Poisson pseudo-maximum likelihood. Finally, Table B5 presents variants of Columns 2 and 3 from Table 3, using the Stated Preference and Alternative Preference Rank measures of giving priority.

Table B1: The Tax-Price Elasticity of Charitable Giving (Inverse Hyperbolic Sine)

	(1)	(2)	(3)
	Panel A: Regression Coefficients		
1 - Tax Rate	0.590***	0.566***	0.555***
	(0.118)	(0.118)	(0.141)
Continuous Priority Measure		-0.007***	-0.008***
		(0.001)	(0.002)
1 - Tax Rate × Continuous Priority Measure			0.000
			(0.002)
	Panel B: Implied Elasticity		
Tax-Price Elasticity	0.130***	0.125***	0.125***
	(0.026)	(0.026)	(0.025)
Observations	6,780	6,555	6,555
Respondents	452	437	437
Respondent FE	X	X	X
Order FE	X	X	X

Notes. In Panel A, Column 1 presents the estimate of β produced by estimating Specification (5), pooling across all respondents. Column 2 adds a control for the respondent's continuous preference for the charity which stands to benefit from the collected tax revenue. Column 3 adds an interaction between the tax price of charitable giving and the preference for the charity which would receive the collected tax revenue. All columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method. All outcomes are transformed via inverse hyperbolic sine.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B2: The Tax-Price Elasticity of Charitable Giving (Inverse Hyperbolic Sine)

	(1) Dislike	(2) Weakly Like
	Panel A: Regression Coefficients	
1 - Tax Rate	-0.157	0.685***
	(0.287)	(0.120)
	Panel B: Implied Elasticity	
Tax-Price Elasticity	-0.032	0.152***
	(0.059)	(0.026)
Observations	762	6,018
Respondents	196	452
Respondent FE	X	X
Order FE	X	X

Notes. Panel A presents the estimates of β produced by estimating Specification (5), separately for each value of the Binary Priority Measure. Column 1 restricts estimation to the subsample of observations in which the respondent dislikes Charity B. Column 2 includes only observations in which the respondent weakly likes Charity B. Both columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method. All outcomes are transformed via inverse hyperbolic sine.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B3: The Tax-Price Elasticity of Charitable Giving (Poisson)

	(1)	(2)	(3)
	Panel A: Regression Coefficients		
1 - Tax Rate	0.144**	0.145**	0.085
	(0.071)	(0.070)	(0.069)
Continuous Priority Measure		-0.007***	-0.009***
		(0.001)	(0.001)
1 - Tax Rate × Continuous Priority Measure			0.003***
			(0.001)
	Panel B: Implied Elasticity		
Tax-Price Elasticity	0.103**	0.104**	0.109**
	(0.051)	(0.050)	(0.050)
Observations	6,270	6,045	6,045
Respondents	418	403	403
Respondent FE	X	X	X
Order FE	X	X	X

Notes. In Panel A, Column 1 presents the estimate of β produced by estimating Specification (5), pooling across all respondents. Column 2 adds a control for the respondent's continuous preference for the charity which stands to benefit from the collected tax revenue. Column 3 adds an interaction between the tax price of charitable giving and the preference for the charity which would receive the collected tax revenue. All columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method. Estimation via Poisson pseudo-maximum likelihood estimator.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B4: The Tax-Price Elasticity of Charitable Giving (Poisson)

	(1) Dislike	(2) Weakly Like
	Panel A: Regression Coefficients	
1 - Tax Rate	-0.276***	0.238***
	(0.094)	(0.080)
	Panel B: Implied Elasticity	
Tax-Price Elasticity	-0.198***	0.170***
	(0.068)	(0.057)
Observations	651	5,490
Respondents	168	408
Respondent FE	X	X
Order FE	X	X

Notes. Panel A presents the estimates of β produced by estimating Specification (5), separately for each value of the Binary Priority Measure. Column 1 restricts estimation to the subsample of observations in which the respondent dislikes Charity B. Column 2 includes only observations in which the respondent weakly likes Charity B. Both columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method. Estimation via Poisson pseudo-maximum likelihood estimator.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B5: The Tax-Price Elasticity of Charitable Giving (Alternative Preference Measures)

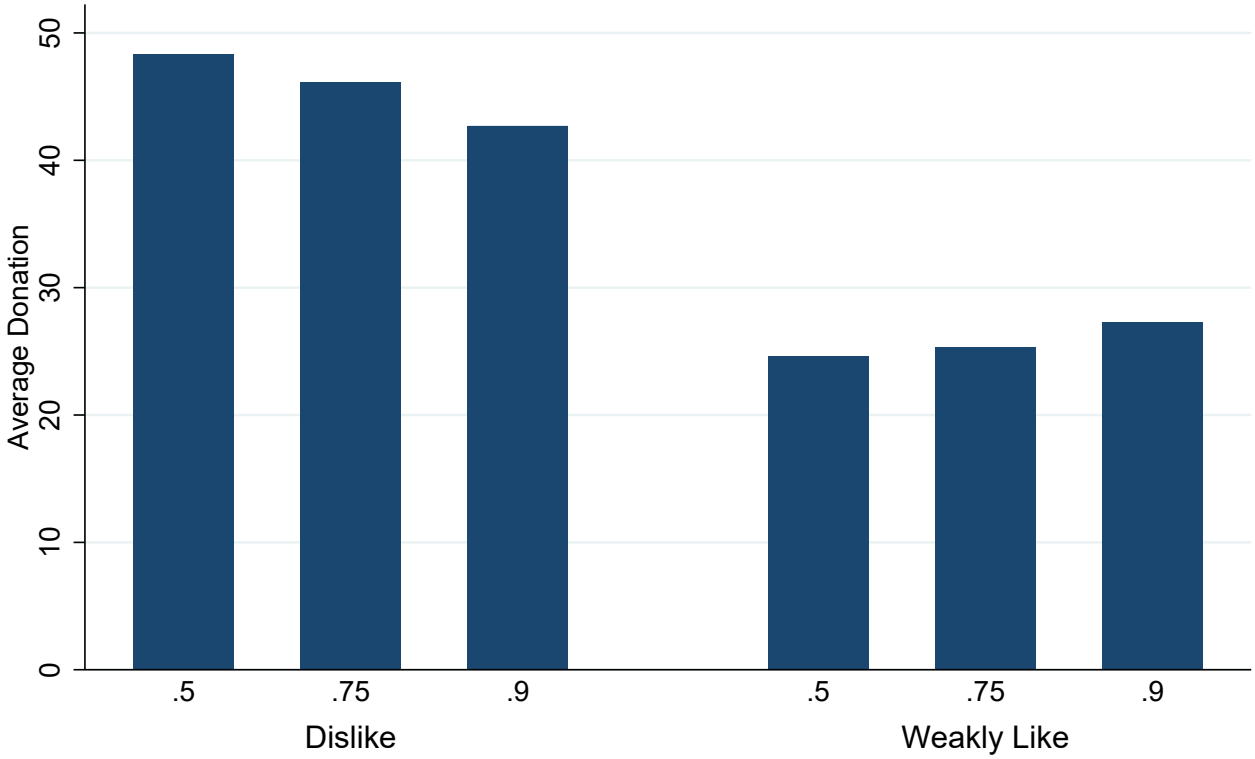
	(1)	(2)	(3)	(4)
	Panel A: Regression Coefficients			
1 - Tax Rate	4.001**	1.115	4.001**	-1.224
	(1.969)	(2.106)	(1.969)	(3.044)
Stated Preference	-3.087***	-4.251***		
	(0.252)	(0.449)		
1 - Tax Rate × Stated Preference		1.624***		
		(0.506)		
Alternative Preference Rank			-3.174***	-4.300***
			(0.316)	(0.546)
1 - Tax Rate × Alternative Preference Rank				1.571**
				(0.611)
	Panel B: Implied Elasticity			
Tax-Price Elasticity	0.111**	0.140**	0.106**	0.117**
	(0.054)	(0.055)	(0.052)	(0.051)
Observations	6,780	6,780	6,780	6,780
Respondents	452	452	452	452
Respondent FE	X	X	X	X
Order FE	X	X	X	X

Notes. Panel A presents the OLS estimates of Specification (5), interacted with measures of giving priorities. The measures used in this table are the Stated Preference and Alternative Preference Rank. All columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B.1 Non-Contradictory Preference Subsample

The tables and figures presented in this section are produced dropping 44 respondents whose preferences may be considered contradictory. Contradictions may occur in one of two ways. First, stated preference for charities where $IncentPref_{ic} = 0$ may exceed stated preference for charities where $IncentPref_{ic} > 0$. Second, the preference rankings implied by $IncentPref_{ic}$ and $StatedPref_{ic}$ may be negatively correlated within one individual.

Figure B1: Mean Donation to Charity A, by Tax Price and Preference for Charity B (Non-Contradictory Subsample)



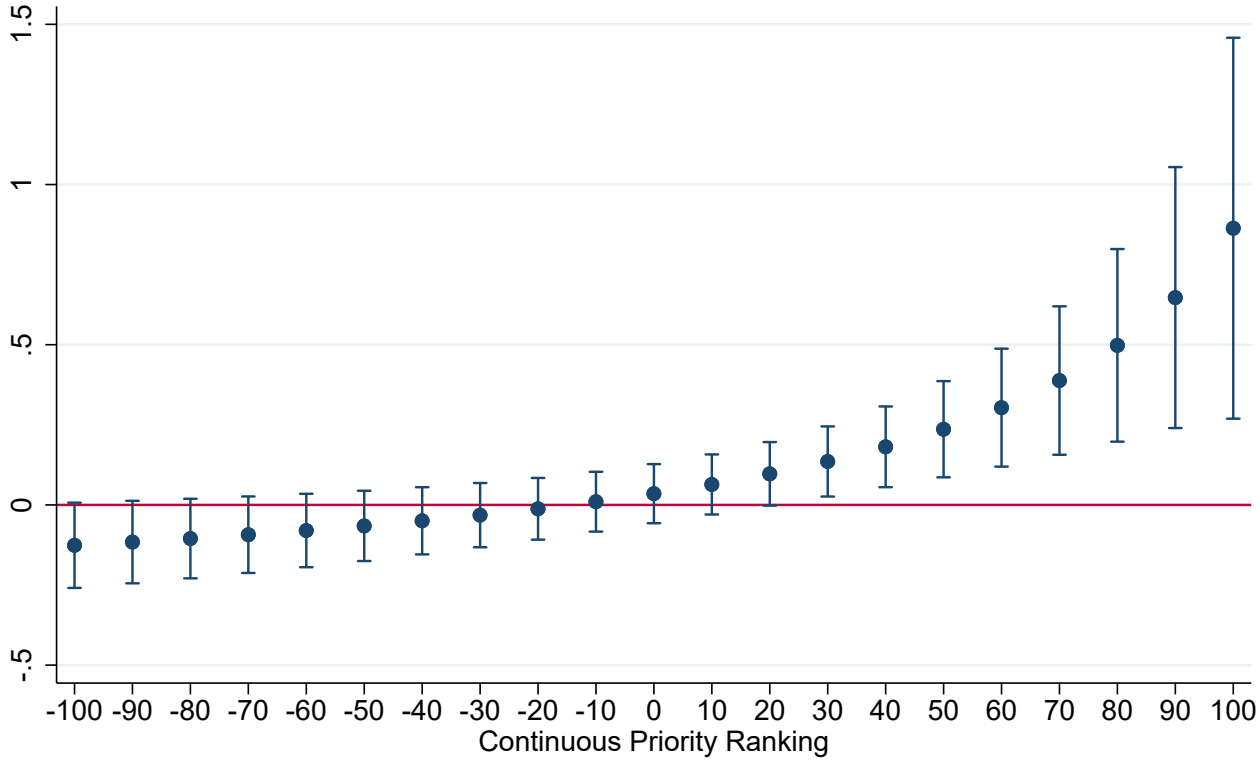
Notes: For each tax price - Charity B pair, this figure presents the mean donation made to Charity A. Donations are measured in tokens; valid donations are integers in the interval $\{0, \ldots, 100\}$. Tax prices are presented on the first categorical axis. They are defined as $1 -$ Tax Rate, for three possible tax rates: 10%, 25%, or 50%. The second categorical axis reflects the respondent's attitude towards the charity which benefits from the collected tax revenue, as given by the Binary Preference Measure.

Table B6: The Tax-Price Elasticity of Charitable Giving Varies by Preference for the Beneficiary (Non-Contradictory Subsample)

	(1)	(2)	(3)
	Panel A: Regression Coefficients		
1 - Tax Rate	4.125**	4.125**	1.622
	(2.037)	(2.038)	(2.174)
Continuous Priority Measure		-0.224***	-0.304***
		(0.023)	(0.037)
1 - Tax Rate × Continuous Priority Measure			0.113***
			(0.040)
	Panel B: Implied Elasticity		
Tax-Price Elasticity	0.105**	0.116**	0.153**
	(0.052)	(0.057)	(0.060)
Observations	6,120	6,120	6,120
Respondents	408	408	408
Respondent FE	X	X	X
Order FE	X	X	X

Notes. In Panel A, Column 1 presents the estimate of β produced by estimating Specification (5), pooling across all respondents. Column 2 adds a control for the respondent's Continuous Priority Measure for the charity which stands to benefit from the collected tax revenue. Column 3 adds an interaction between the tax price of charitable giving and the preference for the charity which would receive the collected tax revenue. All columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure B2: The Tax-Price Elasticity of Charitable Giving, by Preference for Charity B (Non-Contradictory Subsample)



Notes: Coefficients represent the implied tax-price elasticity of charitable giving, as a function of the respondent's preference for the charity which benefits from the collected tax revenue. These preferences are measured using the Continuous Priority Measure. Error bars represent the 95% confidence interval for the corresponding elasticity estimate. Standard errors are calculated via the delta method.

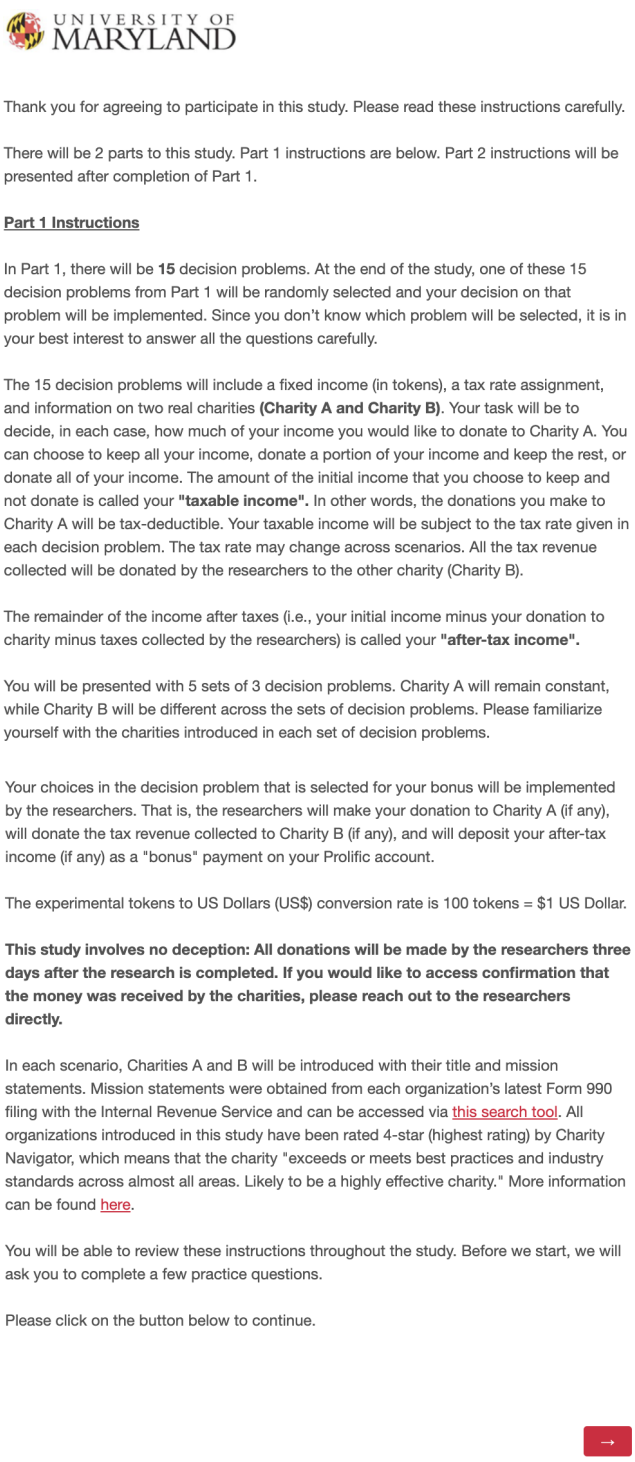
Table B7: The Tax-Price Elasticity of Charitable Giving Varies by Preference for the Beneficiary

	(1) Dislike	(2) Weakly Like
	Panel A: Regression Coefficients	
1 - Tax Rate	-13.446***	6.412***
	(4.906)	(2.087)
	Panel B: Implied Elasticity	
Tax-Price Elasticity	-0.214***	0.177***
	(0.079)	(0.057)
Observations	705	5,415
Respondents	181	408
Respondent FE	X	X
Order FE	X	X

Notes. Panel A presents the estimates of β produced by estimating Specification (5), separately for each value of the Binary Priority Measure. Column 1 restricts estimation to the subsample of observations in which the respondent dislikes Charity B. Column 2 includes only observations in which the respondent weakly likes Charity B. Both columns include respondent and question order fixed effects, and standard errors are clustered by respondent. For each specification, Panel B presents the implied value of the average tax-price elasticity of charitable giving. Standard errors for these elasticity estimates are calculated using the delta method.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix C Experimental Instructions

Figure C1: Part 1 Instructions



UNIVERSITY OF MARYLAND

Thank you for agreeing to participate in this study. Please read these instructions carefully.

There will be 2 parts to this study. Part 1 instructions are below. Part 2 instructions will be presented after completion of Part 1.

Part 1 Instructions

In Part 1, there will be **15** decision problems. At the end of the study, one of these 15 decision problems from Part 1 will be randomly selected and your decision on that problem will be implemented. Since you don't know which problem will be selected, it is in your best interest to answer all the questions carefully.

The 15 decision problems will include a fixed income (in tokens), a tax rate assignment, and information on two real charities **(Charity A and Charity B)**. Your task will be to decide, in each case, how much of your income you would like to donate to Charity A. You can choose to keep all your income, donate a portion of your income and keep the rest, or donate all of your income. The amount of the initial income that you choose to keep and not donate is called your **"taxable income".** In other words, the donations you make to Charity A will be tax-deductible. Your taxable income will be subject to the tax rate given in each decision problem. The tax rate may change across scenarios. All the tax revenue collected will be donated by the researchers to the other charity (Charity B).

The remainder of the income after taxes (i.e., your initial income minus your donation to charity minus taxes collected by the researchers) is called your **"after-tax income".**

You will be presented with 5 sets of 3 decision problems. Charity A will remain constant, while Charity B will be different across the sets of decision problems. Please familiarize yourself with the charities introduced in each set of decision problems.

Your choices in the decision problem that is selected for your bonus will be implemented by the researchers. That is, the researchers will make your donation to Charity A (if any), will donate the tax revenue collected to Charity B (if any), and will deposit your after-tax income (if any) as a "bonus" payment on your Prolific account.

The experimental tokens to US Dollars (US$) conversion rate is 100 tokens = $1 US Dollar.

This study involves no deception: All donations will be made by the researchers three days after the research is completed. If you would like to access confirmation that the money was received by the charities, please reach out to the researchers directly.

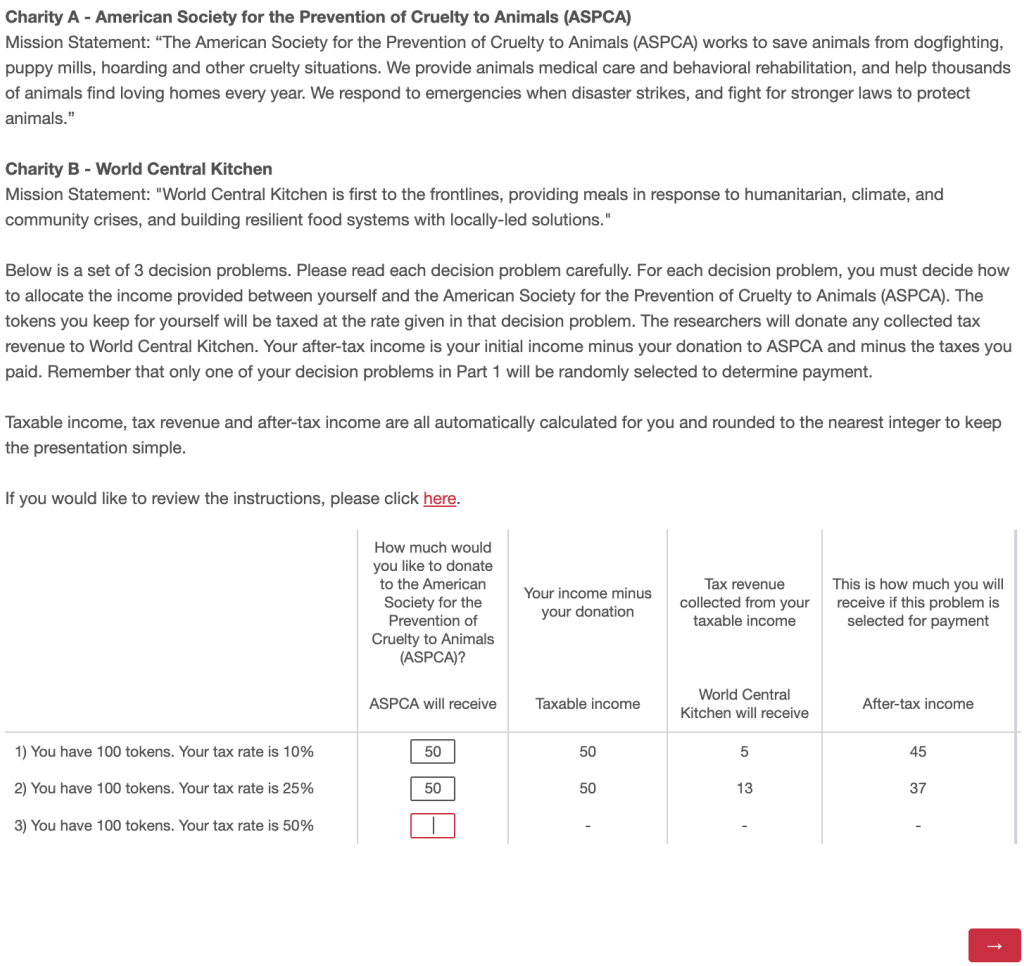
In each scenario, Charities A and B will be introduced with their title and mission statements. Mission statements were obtained from each organization's latest Form 990 filing with the Internal Revenue Service and can be accessed via this search tool. All organizations introduced in this study have been rated 4-star (highest rating) by Charity Navigator, which means that the charity "exceeds or meets best practices and industry standards across almost all areas. Likely to be a highly effective charity." More information can be found here.

You will be able to review these instructions throughout the study. Before we start, we will ask you to complete a few practice questions.

Please click on the button below to continue.

→

Figure C2: Part 1 Task



Notes: This screenshot shows one out of five possible sets of three questions. The other decision screens are similar with only Charity B changing. Participants could only fill out the first column (i.e., "ASPCA will receive..."). As the instructions indicate, the rest of the columns (i.e.,"Taxable income", "World Central Kitchen will receive..." and "After-tax income" were automatically populated in real-time with the corresponding values after the participant made their donation decision. This feature reduces the cognitive load of repeated calculations and eliminates the possibility of calculation errors.

Figure C3: Part 2 Task - Donations

Part 2

In each of the following six (6) scenarios, you will have 100 tokens as income. Please decide how to allocate this income between yourself and the charity given in each scenario. **Your response, in each case, must be between 0 and 100.**

⚠️ **Important:** Your decision in each of the six scenarios is independent. You can give up any number of tokens between 0 and 100 in each case, and there is no requirement for the total across the six scenarios to add up to 100.

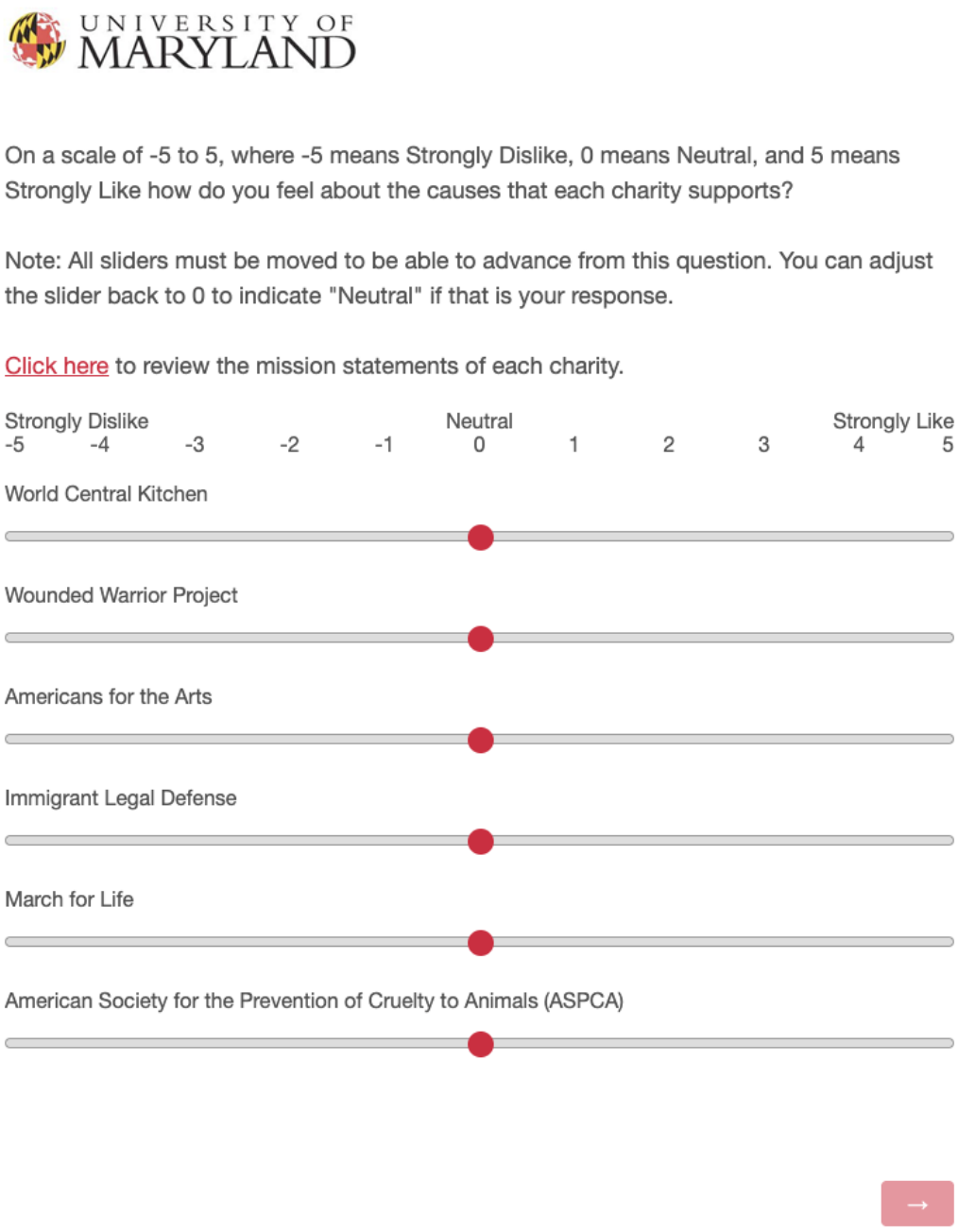
Recall that only one out of the 6 scenarios in Part 2 will be randomly selected to be implemented if you are one of the 5 lucky winners.

Click here to review the mission statements of each charity.

	How much would you like to donate to the charity? The charity would receive:	Your remaining experimental tokens after your donation You would be left with:
You have 100 tokens. How much would you donate to Immigrant Legal Defense?	50	50
You have 100 tokens. How much would you donate to World Central Kitchen?	25	75
You have 100 tokens. How much would you donate to the American Society for the Prevention of Cruelty to Animals (ASPCA)?	0	100
You have 100 tokens. How much would you donate to Wounded Warrior Project?	10	90
You have 100 tokens. How much would you donate to Americans for the Arts?		100
You have 100 tokens. How much would you donate to March for Life?		100

→

Figure C4: Part 2 Task - Like/Dislike



Notes: All sliders started at 0 ("Neutral") and the "Next" button remained disabled until all sliders were moved in order to prevent inattention.

C.1 Demographic Questionnaire

The demographic questionnaire at the end of our study included the following questions:

1. What is your age?
    - 18–24
    - 25–34
    - 35–44
    - 45–54
    - 55–64
    - 65–74
    - 75–84
    - 85 or older
2. What is your gender?
    - Male
    - Female
    - Non-binary / third gender
    - Prefer not to say
3. Choose one or more races that you consider yourself to be
    - White or Caucasian
    - Black or African American
    - American Indian / Native American or Alaska Native
    - Asian
    - Native Hawaiian or Other Pacific Islander
    - Other
    - Prefer not to say
4. Are you of Spanish, Hispanic, or Latino origin?
    - Yes
    - No
    - Prefer not to say
5. What is the highest level of education you have completed?
    - Some high school or less
    - High school diploma or GED
    - Some college, but no degree

- Associates or technical degree
- Bachelor's degree
- Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)
- Prefer not to say

6. What was your total household income before taxes during the past 12 months?
    - Less than $25,000
    - $25,000–$49,999
    - $50,000–$74,999
    - $75,000–$99,999
    - $100,000–$149,999
    - $150,000 or more
    - Prefer not to say
7. Please choose your marital status
    - Married
    - Widowed
    - Divorced
    - Separated
    - Never married
    - Prefer not to say
8. What is your US Zip Code? _____
9. Have you donated any amount for a charitable purpose in the last year?
    - Yes
    - No
10. How much do you donate for charitable purposes in a typical year?
    - $0–$49
    - $50–$99
    - $100–$499
    - $500–$999
    - $1000 or more

Appendix D General Model

This appendix will relax the additive separability assumption placed on the model of Section 2. We show that even in the absence of this assumption, the sign of the tax-price elasticity of charitable giving depends on the donor's attitude towards the beneficiary of their tax dollars. Finally, we derive the Slutsky equation for charitable giving and show how a positive own-price elasticity may occur despite charity's well-established status as a normal good.

Suppose a taxpayer-donor has pre-tax income m, and is taxed at rate t. This donor consumes x, and can choose to make a tax-deductible gift, g, to the charity (i.e., Charity A). Any revenue collected will fund the governmental public good (i.e., Charity B). The donor's utility-maximization problem is:

$$\max_{x,g}\{u(x, g, (m-g)t)\} \text{ s.t. } x + g(1-t) = m(1-t) \tag{D1}$$

Let $p := 1 - t$ be the net-of-tax rate, or equivalently the tax price of giving to charity A. Then the constrained optimization problem (D1) can be rewritten as:

$$\max_{g}\{u((m-g)p, g, (m-g)(1-p))\} \tag{D2}$$

The first-order condition (FOC) is:

$$-u_1 p + u_2 - u_3(1-p) = 0 \tag{D3}$$

From the FOC it is clear that private contribution to the charity depends not only on the marginal utility from consuming one additional unit, but also on the alignment with governmental public good provision. In fact, an individual would donate more to charity A if their giving priorities are misaligned with charity B than if it is aligned. To see this, first assume the opposite. Suppose the individual contributes g_l (g_d) to charity A when they like (dislike) the charitable cause of governmental public good provision, and that $g_l > g_d$. Then, the following two inequalities should hold simultaneously:

$$-u_1(p(m-g_l))p + u_2(g_l) > 0 \tag{D4}$$

and

$$-u_1(p(m-g_d))p + u_2(g_d) < 0 \tag{D5}$$

However, this is a contradiction because if Equation D4 holds, then D5 cannot hold. This leads to our first result summarized below.

Result 1 *An individual will donate more to the charity if their giving priorities are misaligned with the government's provision (i.e., $u_3 < 0$) than if it is aligned (i.e., $u_3 > 0$).*

Next we examine whether tax-price elasticity of giving also depends on the donor's attitude towards the beneficiary of their tax dollars, and if yes, how. First, we derive the value function. Suppose the solution to equation D3 is $g^*(p, m)$. Then, the value function can be written as:

$$V^*(p, m) = u((m - g^*(p, m))p, g^*(p, m), (m - g^*(p, m))(1-p)) \tag{D6}$$

Suppressing the arguments, its derivative with respect to p is:

$$\frac{\partial V^*}{\partial p} = u_1(-\frac{\partial g^*}{\partial p}p + m - g^*) + u_2\frac{\partial g^*}{\partial p} + u_3(-\frac{\partial g^*}{\partial p}(1-p) - (m-g^*)) \tag{D7}$$

$$= (u_1 - u_3)(m - g^*) + \frac{\partial g^*}{\partial p}(-u_1 p + u_2 - u_3(1-p)) \tag{D8}$$

$$= (u_1 - u_3)(m - g^*) \tag{D9}$$

Turning to the expenditure-minimization problem, let μ be the Lagrangian multiplier, and maximize:

$$\mathcal{L} = -x - pg + \mu(u(x, g, (m-g)(1-p)) - \bar{u}) \tag{D10}$$

Optimizing with respect to p and applying the envelope theorem:

$$\frac{\partial e(p,u)}{\partial p} = \frac{\partial \mathcal{L}}{\partial p} \tag{D11}$$

$$= -g + \mu\frac{\partial V^*}{\partial p} \tag{D12}$$

$$= -g^* + \mu((u_1 - u_3)(m - g^*)) \tag{D13}$$

where complementary slackness for a minimization problem gives $\mu \geq 0$.

Turning to the Slutsky: let $g^h(p,u)$ represent the Hicksian supply of donations to charity A, while $g^*(p,m)$ above represents the Marshallian supply of donations to charity A.

$$\frac{\partial g^h(p,u)}{\partial p} = \frac{\partial g^*(p,m)}{\partial p} + \frac{\partial g^*(p,m)}{\partial e(p,u)/p}\frac{\partial e(p,u)/p}{\partial p} \tag{D14}$$

$$= \frac{\partial g^*(p,m)}{\partial p} + \frac{\partial g^*(p,m)}{\partial m}\frac{1}{p}(-g^* - m + \mu(u_1 - u_3)(m - g^*)) \tag{D15}$$

$$\frac{\partial g^*(p,m)}{\partial p} = \frac{\partial g^h(p,u)}{\partial p} - \frac{\partial g^*(p,m)}{\partial m}\frac{1}{p}(-g^* - m + \mu(u_1 - u_3)(m - g^*)) \tag{D16}$$

The first term on the right-hand side of (D16) is the substitution effect; the second term is the income effect. A necessary condition for the income effect to overwhelm the substitution effect is:

$$-g^* - m + \mu(u_1 - u_3)(m - g^*) < 0 \tag{D17}$$

$$\mu(u_1 - u_3) < \frac{g^* + m}{m - g^*} \tag{D18}$$

So long as $u_1 > 0$, the donor should optimally spend a nonzero amount on their own consumption, keeping the denominator of (D18) well-defined. The expression on the lesser side of the inequality is the product of two terms. The first is the marginal savings the donor would receive if they allowed their utility to slip below $\bar{u}$. The second is the marginal utility of the donor's own consumption, relative to the marginal utility the donor derives from the tax-financed public good. Suppose $\mu > 0$, so that the donor would save money by falling to a lower indifference curve.

Note that as the choice of Charity B becomes better-aligned with the donor's own preferences, u_3 will increase, ceteris paribus. As u_3 increases, the left-hand side of the inequality falls, thus raising the probability that the inequality (D18) holds.[7]

These derivations lead to our second result:

Result 2 *The tax-price elasticity of charitable giving can become positive when individual's giving priorities are sufficiently aligned with the governmental public good provision.*

When the marginal utility from the tax-financed public good (charity B) is large relative to the marginal utility of the donor's own consumption, such that $u_1 - u_3$ is sufficiently small, the income effect can swamp the substitution effect. In these cases, the tax-price elasticity of charitable giving can be positive. Equivalently, this case obtains when the marginal utility of the tax-financed good sufficiently exceeds the marginal utility of the voluntarily-provided public good.[8]

This does not imply that charitable giving is an inferior or Giffen good. To be a Giffen good, charitable giving would have to be inferior; and to be an inferior good, $\partial g/\partial m$ would have to be negative. This is not the case. Instead, the income effect receives a negative weight due to the preference for the tax-financed good over own consumption.

This derivation assumes that the individual internalizes the entire effect of their tax deduction on tax revenues used to finance the public good. This is consistent with our experimental setup. However, in non-experimental contexts, this salience cannot be taken for granted. In those circumstances, the individual's first-order condition becomes:

$$-u_1 p + u_2 = 0 \tag{D19}$$

In the resulting Slutsky equation, the income effect can overwhelm the substitution effect only if:

$$\mu u_1 < \frac{g^* + m}{m - g^*} \tag{D20}$$

[7]Note that the right-hand side of the inequality must exceed 1. The left-hand side of the inequality faces no such restriction.

[8]To see this, solve the first-order condition for $u_1 - u_3$ and substitute into (D18).