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The price elasticity of charitable giving: does the form of tax relief matter?

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Abstract

This paper uses a survey-based approach to test alternative methods of channeling tax relief to donors – as a tax rebate for the donor or as a matched payment to the receiving charity. On accounting grounds these two are equivalent but, in line with earlier experimental studies, we find that gross donations are significantly more responsive to a match change than to a rebate change. We show that the difference can largely be explained by the fact that a majority of donors do not adjust their nominal donations in response to a change in subsidy. This evidence adds to the growing empirical literature suggesting that consumers may not react to tax changes. In the case of tax subsidies for donations, this has implications for policy design – we show for the UK that a match-based system is likely to be more effective at increasing the total amount of money going to charities.

Keywords charitable giving, tax subsidies, price elasticity

JEL Classification C99, D12, D64, H24, H31, H41

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1 Introduction

The majority of developed countries offer government support to charities in the form of tax relief for private donations. Most offer a tax rebate – either deductions from taxable income or tax credits granted at the marginal rate of income tax; some countries, including the UK, also offer a “match” element, i.e. charities can claim tax relief on donations at an income-tax equivalent rate.

One of the aims of offering tax relief – whether through a rebate or a match – is to encourage donations by lowering the “price” of giving to charity. Empirical evidence on the responsiveness of giving to changes in the tax-price is, however, mixed: early studies suggested that the price elasticity was negative and greater than unity in absolute value (see Clotfelter, 1985, Steinberg, 1990, and Triest, 1998), but later studies found that, after correcting for short-term price effects, tax-price elasticities were significantly smaller than this in absolute terms.¹

More recently, experimental evidence has cast doubt on the idea that there is a single price elasticity, pointing to a possible effect of the *form* in which tax relief is offered. Specifically, lab and field experiments have shown that offering donors a match has a bigger effect on the total amount of money going to the charity than offering a rebate of equivalent value (Eckel and Grossman, 2003 and 2008).

For policy-makers, this finding is potentially important since it suggests that directing tax relief through a match rather than a rebate may be more effective at increasing gross donations² – but this conclusion is tempered by the fact that the experiments were

¹ Most studies are US based and exploit changes in rebate rates for itemizers. Randolph (1995) uses panel data to find a long-run price elasticity of giving of -0.51 . Using a longer but similar panel to that used by Randolph but a different estimation technique, Auten, Sieg and Clotfelter (2002), arrive at the significantly higher estimate of -1.26 . More recently, Bakija and Heim (2008) find a long-run value of -0.7 – close to Randolph's estimate. Field experiments studying the responses to variations in the match rate offered on donations to individual causes have also found that donations respond to whether or not there is a match but not the size of the match (Karlan and List, 2007; Huck and Rasul, 2009).

² Gross donations refer to the total amount of money received by the charity, including the value of match subsidies. Most previous studies have estimated the effect of tax incentives on gross donations and we

carried out in relation to incentives offered by individual charities and donors' reactions to fiscal incentives may be different. The first contribution of this paper is explicitly to test the finding in relation to tax subsidies and to show that gross donations are more responsive to changes in a *fiscal* match than to changes in a *fiscal* rebate. The UK makes an ideal case study because the main scheme through which individuals get tax relief on their donations – known as Gift Aid – has both a match and rebate element for higher-rate taxpayers.³

Since allocating people randomly different tax rates was not possible, ruling out a field experiment we instead used a survey-based approach, which looked at how individuals would respond to (hypothetical) changes in tax treatment of donations. There is a potential concern that our results may be driven by hypothetical bias; we discuss the reliability of our findings in section 3. The fact that our findings are similar to those from the previous experimental studies also acts as a validation of our results.

The second contribution of the paper is to shed further light on the underlying reason for why gross donations respond more to the match than to the rebate. We show that the difference holds for a number of sub-groups, including those who reclaim the rebate, those with a higher level of understanding of tax incentives for giving and those who give substantial amounts to charity (more than £40,000 a year). Eckel and Grossman suggest, but do not test, one possible explanation that a match may create a warmer glow for consumers since it is associated with a co-operative frame (Bénabou and Tirole, 2006) as opposed to the reward frame of the rebate. However, we show that the difference can largely be attributed to the fact that the majority of donors do not adjust their nominal donations (i.e. their donations out of net-of-tax income) in response to either a change in the match or a change in the rebate. Total donations received by charities (i.e. gross of tax relief) therefore adjust more to a change in the match than they do to a change in the rebate.⁴ Among those who do adjust their nominal donations, we

follow this approach here, but also present findings in relation to nominal donations (i.e. how much donors give out of their net-of-tax income).

³ The UK tax system has a basic marginal tax rate of 20% on earnings between £6,475 and £43,875 (2009-10 rates) and a higher marginal tax rate of 40% on earnings above this. Median earnings in 2009 were £20,801. In April 2010 – after the analysis in this paper was completed – a higher rate of 50% was introduced for with income over £150,000.

⁴ If nominal donations are unchanged then the elasticity of gross donations will be -1 in the case of the match and zero in the case of the rebate.

cannot reject that the match and rebate elasticities are the same. We discuss possible reasons why donors may not adjust their nominal donations in response to tax changes.

For policy-makers the finding that gross donations are more responsive to a match than to a rebate suggests that, for a given total amount of public funding available to support private donations, redirecting tax relief from rebates to a match could result in a higher volume of total donations going to charity – at least in the short run. We conclude the paper by showing for the UK that it would be possible to introduce a cost-neutral change in the system of tax relief that increases the total amount of funding for charities.

The rest of the paper is structured as follows. Section 2 describes the relevant features of the UK system of tax relief on donations. Section 3 presents our survey design and section 4 presents the main findings. Section 5 explores heterogeneity of responses across donors. Section 6 discusses the implications of our results for policy and concludes.

2 Gift Aid in the UK

Unlike the US, where tax subsidies for donations are in the form of a deduction, the main scheme for providing tax relief on donations in the UK offers a match subsidy on donations made by all taxpayers through the scheme, combined with an additional rebate subsidy for higher rate taxpayers.

The scheme, known as Gift Aid, works in the following way: individuals donate to charity out of their net-of-tax income.⁵ The charity can reclaim tax relief on donations made by taxpayers at the basic rate of tax, currently 20 per cent,⁶ which means that for every £1 donated to charity, the charity can reclaim 25 pence.⁷ This can be thought of as a match on donations made by taxpayers. In addition, higher-rate taxpayers can reclaim

⁵ When it was originally established, tax relief was only given for donations exceeding a minimum threshold. This threshold was initially set at £600, reduced to £400 from May 1992 and to £250 from March 1993 and abolished altogether in 2000.

⁶ Note that individuals must have paid the amount of tax that the charity is going to reclaim, i.e. the relief is a non-refundable tax credit.

⁷ In addition, charities can reclaim an additional 3 pence of transitional relief for every £1 given on donations made before April 6, 2011 if a claim is made within two years of the end of the tax year in which the donation is made. This is compensation for an earlier cut in the basic rate of income tax.

a rebate equal to the difference between the higher rate of tax at 40 per cent and the basic rate of tax at 20 per cent on the “gross” equivalent donation, i.e. the amount before basic rate tax was deducted. This means that for every £1 donated out of net income, a higher-rate taxpayer can get an additional rebate of 25 pence.

This two-part system is slightly more complicated than the US system of deductions but is designed for a tax system where the majority of taxpayers do not file tax returns. Note that in order for higher-rate taxpayers to receive the additional higher rate rebate, they need to make a claim through a self-assessment tax return (completed by approximately a third of all UK taxpayers) or ask for a change in their tax code via a simpler tax review form. Either way, there is an additional administrative cost for donors on the rebate element compared to the match element. In practice, not all higher-rate taxpayers reclaim the additional rebate, although it is more common among those donating larger amounts.

Table 1: Tax relief on charitable donations in the UK

	Gross donations	Cost of tax relief
Gift Aid	£4,578 million	£1,336 million ⁽¹⁾
Payroll Giving	£106 million	£30 million ⁽²⁾
Tax relief on shares or property	£266 million ⁽³⁾	£70 million ⁽³⁾
Legacies	£1,932 million	£300 million ⁽³⁾

Notes to table:

(1) The cost of Gift Aid tax relief comprises Gift Aid repayments to charities, including transitional relief payments, and the estimated cost of higher-rate relief.

(2) Estimated

(3) The most recent statistics are for 2007-08

Source: HM Revenue and Customs

Gift Aid is not the only scheme offering tax incentives for UK donors. There is also a payroll-giving scheme that allows donors to give to charity out of their gross earnings; gifts of shares and property also attract tax relief and charitable bequests are exempt from inheritance tax. However, as shown in Table 1, Gift Aid accounts for the majority of tax-free donations – more than £4 billion in 2009-10 out of estimated total donations of around £10 billion.⁸ Given the presence of both a match and a rebate element for

⁸ The figure for total donations is an estimate. However, it suggests that a large proportion of all donations do not attract tax relief. This includes many donations made into collecting tins, as well as donations made by non-taxpayers.

higher-rate taxpayers, Gift Aid provides the ideal opportunity to test the effect of match and rebate subsidies in a fiscal policy setting.

The effect of offering tax relief through Gift Aid is to lower the “price” of giving to charity. The price of giving £1 of funding to the charity is equal to $(1 - r) / (1 + m)$ where r is the rebate rate and m is the match rate. In the UK, the effective match and rebate rates are .25, but only higher-rate taxpayers are eligible for the rebate. Both basic-rate taxpayers and higher-rate taxpayers get relief at their marginal tax rates – for higher-rate taxpayers, the price of giving £1 of funding to a charity through Gift Aid is therefore £.60, while for basic-rate taxpayers (and higher-rate taxpayers who do not reclaim) it is £.80.

Assuming that consumers care about how much money charities receive,⁹ this reduction in price brought about by the tax relief would be expected to result in an increase in total funding going to charities (i.e. gross donations) but not necessarily an increase in individuals’ net donations. Donors may take advantage of the fact that the government has increased the value of the subsidy to charity to reduce the value of their cash donation, an effect referred to as “crowd out” (see Andreoni, 2006, for a discussion).¹⁰ If the price elasticity of gross donations is less than unity in absolute value – as suggested by recent estimates (e.g. Randolph, 1995, and Bajika and Heim, 2008) – then the effect of tax relief will be to increase gross donations received by charity, but individuals’ net donations will fall.

However, the experimental findings of Eckel and Grossman (2003) suggest that there may not be a single price elasticity, with gross donations responding differently to changes in the match than to changes in the rebate. In light of those results, it is important to account not only for how tax relief affects the price of giving, but also for the actual form tax relief takes.

⁹ This is the assumption in the classic “warm glow” model of giving (see Andreoni, 1980). We discuss other possible models in section 5.

¹⁰ If donors care only about how much the charity receives and not their own contribution (i.e. they are pure altruists), then there is likely to be 100% crowd out; if donors also care about their own contribution to the charity (i.e. if they are warm glow givers) then it will be less than this.

3 Sample and survey design

Eckel and Grossman (2003) tested responses to a match and a rebate in a laboratory experiment that involved 181 undergraduate students each given twelve allocation problems varying in the initial endowment and match and rebate rates. In the experiment, match rates resulted in gross donations that were 1.2 to 2 times greater than the equivalent-value rebate. The estimated elasticity of gross donations with respect to the price was -1.14 compared a rebate elasticity of -.36. Similar results were obtained from a field experiment (Eckel and Grossman, 2008). Based on approximately 7,000 responses to a mail-out on behalf of Minnesota Public Radio, offering match rates resulted in a higher level of gross donations than equivalent-value rebates. The estimated elasticity of gross donations was -1.05 in the case of the match rate and -.11 in the case of the rebate rate.

These findings are potentially relevant for policy design since they imply that fiscal incentives involving a match could be more effective than rebate incentives at increasing the amount of money going to charities. However, there are a number of reasons why the response to tax incentives may be different to the response to single charity incentives, including possible substitution effects associated with single charity incentives which change the relative prices of giving to different charities, as well as the fact that donors may interpret the offer of a match or rebate for a single charity as a quality signal for a particular organisation. For policy-makers, this makes it important to find evidence that the finding holds in relation to tax-price changes as well as in relation to single-charity incentives.

An ideal – though not practically possible – test would have involved replicating the field experiments but offering individuals randomly different tax treatments. Nor was there sufficient variation in past match and rebate rates in the UK to allow us credibly to identify the separate effects using survey data on donations. Instead, we used a survey-based approach where we asked individuals how they would respond to (hypothetical) changes in the tax treatment.

Hypothetical surveys have been widely used in environmental valuations to obtain estimates of consumers' willingness to pay where market measures are unavailable. These estimates have been shown to be potentially subject to bias, with individuals typically overstating their willingness to pay when compared to alternative, revealed preference methods (see List and Gallett, 2001, for a survey). For example, Alpizar et al (2008) find that actual donations to a national park are much lower than hypothetical

donations to the same cause. Hypothetical bias is an obvious potential concern with our study.

However, our survey differs from these previous studies in an important respect in that we are not interested directly in the amount of donors' hypothetical donations, but in how those donations would respond to changes in fiscal incentives. A priori, it is not clear whether – or how – hypothetical bias will affect our results. It is possible that individuals may overstate the extent to which they would respond by adjusting their donation out of net-of-tax income since, first, they are directly informed in the survey about the change in tax treatment and, second, they incur no real adjustment costs (eg changing standing orders or direct debits); alternatively they may understate the extent to which they would respond in practice since a “no adjustment” response is the easiest answer to give.

We tried to mitigate any potential bias in a number of ways. At the start, the respondents were informed that the survey was carried out on behalf of the UK Treasury and they should answer questions carefully and honestly to “ensure that any changes in the tax treatment of donations are designed to help both donors and charities.” We also made the hypothetical scenarios more concrete by asking respondents to consider how the alternative tax treatments would affect a specific donation that they had previously in the survey said that they were likely to make in the next six months rather than asking generally how they would respond to a change in tax incentives.

Also, the survey itself contained a number of consistency checks. Respondents were asked to respond to two scenarios, allowing us to assess whether they were taking the survey seriously (by checking for variation across the two scenarios) as well as checking for consistency. For example, we deliberately included the same treatment twice but in a different order to rule out so-called “embedding effects” (the phenomenon that the responses depend on the way, and the order, in which questions are presented, see Diamond and Hausman, 1994). We discuss the consistency of our results in more detail in the next section.

Finally, the earlier experimental studies also provide some validation of our findings. The fact that we reach similar conclusions to the earlier studies gives us greater confidence that our results were not driven by hypothetical bias.

3.1 The sample

Invitations to take part in an on-line survey were e-mailed to 40,000 donors, split equally between people with a Charities Aid Foundation (CAF) Charity Account and people who had donated online through Justgiving during the previous six months.

CAF is a charity that, among a range of services for individuals and charities, provides a charity account to donors to facilitate tax-efficient giving. Individuals pay into an account and use the funds to make donations to any registered charity (currently more than 80,000) through a variety of different means (direct debit, online, by phone or using a CAF card or cheque book). For the survey, the relevant population consisted of 32,339 CAF account-holders with an e-mail address. E-mail invites were sent to a randomly selected sample of 20,000 individuals within this population.

Justgiving is an online giving portal that processes donations from individuals direct to charity and individual sponsorships of charity fundraisers. Justgiving reclaims tax relief at the basic rate of tax (assuming the donor is a taxpayer) and passes on the donations and the tax relief to member charities. Since it started in 1994, it has processed donations for more than 8,000 charities. For the survey, a random sample of 20,000 donors were sent an e-mail invite out of a total population of 2.56 million who had donated via Justgiving in the past six months.

The response rates were 9.86% among the CAF sample and 9.19% among the Justgiving sample. After some data cleaning, our analysis sample comprises 3,146 donors – 1,442 higher-rate taxpayers and 1,704 basic-rate taxpayers.¹¹ In this paper we focus on higher-rate taxpayers who faced changes in match and rebate incentives.¹² Descriptive statistics on this sample are summarised in Appendix 1. Due to both sampling and response bias, our responses are unlikely to be fully representative of the UK population of Gift Aid donors. In Appendix 1 we present some evidence that we over-sample larger donors; respondents may also be better informed about in tax incentives than the average Gift Aid donor. Section 5 analyses responses among various sub-groups, which gives an indication of how this is likely to affect our results.

¹¹ A small-scale pilot was used to test the questionnaire and observe response rates. In the pilot, individuals were randomly offered a small financial inducement to take part but this had no significant effect on response rates and was not offered in the main survey.

¹² We also designed specific scenarios for basic-rate taxpayers. These are discussed in Scharf and Smith (2009)

3.2 Survey design

The overall design of our study was broadly consistent with the field experiments described above.¹³ Survey respondents were randomly allocated across “treatments” offering different levels of match and/or rebate subsidy in order to test how donations respond.

Respondents were randomly allocated to one of five treatment groups each of which contained two hypothetical scenarios reflecting different combinations of match and rebate. All the scenarios are summarized in Table 2. The design and description of the scenarios in the survey reflect the way Gift Aid is currently portrayed to donors – i.e. the charity receives X pence for every £1 given out of net-of-tax income and the individual can reclaim X pence for every £1 given out of net-of-tax income.

Before being presented with the scenarios, respondents were first asked whether they were likely to make a donation in the next six months – and how much they were likely to give. For each scenario, respondents were asked how the change in tax would affect this specific “initial donation”.¹⁴ Appendix A2 provides further information on how the hypothetical scenarios appeared in the on-line survey. Note that the specific terms, “match” and “rebate” were not used in the survey because they are not used in relation to the Gift Aid scheme in practice. Respondents were first asked whether the change in tax treatment would mean they would give the same, give more or give less. Follow-up questions then asked how much they would give if they reported that their donation would change.

Table 2: Alternative tax treatments

Match/rebate per £1 nominal donation	Price	Match/rebate per £1 nominal donation	Price	Mean Gift Aid donations	N
Current system					
$m = .25, r = .25$	.600				
(a) Changes in <i>either</i> match <i>or</i> rebate					

¹³ See also Karlan and List (2007) and Huck and Rasul (2009).

¹⁴ Only 10% of respondents said that they were unlikely to give in the next six months. Where this was the case, they were asked about a specific donation they had made within the past six months. Whether individuals were asked about a future or past donation made no significant difference to the responses.

A1	$m = .30, r = .25$	.577	A2	$m = .25, r = .30$	.560	£2,211	290
B1	$m = .20, r = .25$	.625	B2	$m = .25, r = .20$	.640	£2,818	293
(b) Changes in <i>both</i> match <i>and</i> rebate							
C1	$m = .50, r = 0$	.667	C2	$m = .30, r = 0$	.769	£2,043	289
D1	$m = .30, r = 0$	.769	D2	$m = .37, r = 0$	.730	£1,905	288
E1	$m = .66, r = 0$	.600	E2	$m = .50, r = 0$	.667	£2,934	282

Two treatment groups – set A and set B in panel (a) – tested responses to changes in *either* the match *or* the rebate (but not both). Note that the changes in match and rebate were symmetrical in terms of pence change for each £1 donated but, as shown in column (III), not price changes.¹⁵ This is in contrast to Eckel and Grossman (2003, 2008) who defined match and rebate pairs that were equivalent in value but had different rates – for example, a 25% match and a 20% rebate. However, experimental evidence shows that individuals respond differently to alternatives that produce exactly the same outcome but that are presented to them through different “frames of reference” (Kahneman and Tversky, 1979). In this case, there is a potential concern that donors may respond more to what they perceive is a “larger” match.

In our survey, the changes in the match and rebate are expressed in terms of equal pence changes but are not equivalent in terms of price. For example, in Set A, individuals are faced with two scenarios:

- 1) A match of 30 pence and a rebate of 25 pence (price of giving = .577);
- 2) A match of 25 pence and a rebate of 30 pence (price of giving = .560).

If the match and rebate elasticities are the same, there should be a larger percentage change in gross donations under (2) because the price change is greater. If the donor perceives the changes under (1) and (2) to be equivalent, gross donations should respond in the same way under both. If we find that gross donations respond less to (2), this is a strong indication that donations are less responsive to changes in the rebate than to changes in the match.

The other treatment groups – sets C, D and E in panel (b) – were designed to explore responses to specific, possible policy options. They involved scenarios that eliminated

¹⁵ The choice to make the changes symmetrical in terms of pence was to make it easier for respondents to understand the proposed changes since they reflected the way Gift Aid is typically presented.

the rebate altogether and made the match subsidy more generous. In set E, scenario 1 the match is 66 pence, changing the form of the tax subsidy but not the price. The other scenarios in sets C, D and E, while increasing the generosity of the match subsidy, involve increases in the price of giving compared to the current system. The same scenarios were included twice (C1 & E2 and C2 & D1) to test for embedding effects.

Table 2 also summarizes the number of people faced with each scenario and the average amount donated by these individuals through Gift Aid over the previous 12 months. While there is some variation in donations across scenarios, none of the differences is statistically significant, indicating that the random allocation was effective.

4 Estimating responses to match and rebate

In order to look at the effect of alternative tax treatments on donations, we estimate a model of the following form:

$$\ln d_{in} = \beta_0 + \sum_{s=1}^S \beta_s T_{si} + v_{in} \quad (1)$$

where d_{in} is the donation of individual i for scenario n , including the baseline case and up to two hypothetical changes to the tax treatment. We include a set of binary indicators for each of the hypothetical scenarios that our respondents were faced with ($T_{1i} = 1$ if $m = .30$ and $r = .25$ and $T_{1i} = 0$ otherwise; $T_{2i} = 1$ if $m = .25$ and $r = .30$ and $T_{2i} = 0$ otherwise; and so on). The error term is decomposed into a constant, individual-specific effect and a pure random error term that can be thought of as capturing rounding or reporting error for each individual for each scenario they face, i.e. $v_{in} = \alpha_i + u_{in}$. We estimate (1) using a random effects model.¹⁶

In the first instance, we include indicators for all ten scenarios to test for embedding effects (i.e. separately including indicators for each scenario, even for those scenarios which represent the same match-rebate pairs). Tests for significant differences across the scenarios, reported in Appendix A3, showed there were significant differences in gross donations across distinct scenario pairs and not across same scenario pairs. This acts a check on the reliability of our results, and is consistent with there being no embedding effects.

¹⁶ This is efficient and unbiased if the rebate and match terms are unrelated to individuals' characteristics. Since the rebate and match terms are randomly allocated to individuals this should be true by assumption. Very similar results were obtained from a fixed effects model.

With no significant difference in donations across same-scenario pairs, we choose to focus the rest of the analysis on the smaller set of eight distinct scenarios. We present results separately for “reclaimers” and “non-reclaimers”. In practice, many higher-rate taxpayers (44% in our sample) do not reclaim the rebate although the probability of reclaiming is closely linked to the amount donated – from fewer than 20% of those who give a few pounds a year through Gift Aid to around 75% of those who give more than £2,000 a year. Assuming that the rebate is not relevant to non-reclaimers, the base price is different for two groups – 0.6 for reclaimers and 0.8 for non-reclaimers – and the price effects brought about by the proposed tax changes are also likely to be different for the two groups. In particular, the scenarios that involve withdrawing the rebate and increasing the match (panel b in Table 2) lower the price of giving for non-reclaimers, while the price for reclaimers is higher or, at best, unchanged. This makes it important to look at the two groups separately.

One of the features of our survey is that the pseudo-panel element allows us to see exactly how individuals respond to each of the proposed tax changes. Column (1) shows the proportion who report that they would adjust their donation for each scenario. In practice, we find that donors are not very responsive to the proposed tax changes with the majority of donors reporting that they would not adjust their nominal donations (i.e. out of net-of-tax income).

A potential concern is that this finding on non-responsiveness may be an artefact of the hypothetical nature of the survey; it may be easiest for respondents to report that they would give the same. However, the proportion adjusting varies significantly across the scenarios and in many cases, this is because the same individual reports that they will adjust in the case of one of the scenarios and not the other. We also find that larger donors are more likely to adjust.

Column (2) reports the coefficients on the treatment indicators from estimating equation (1) with (ln) nominal donations as the dependent variable, showing the extent to which donations out of net of tax income adjust. Column (3) shows the coefficients from estimating the same equation but with (ln) gross donations on the left-hand side, i.e. including the change in the value of the match where appropriate. These results are directly comparable with those from previous studies which focus on the amount received by the charity.

Among the responses, there are some anomalies – such as non-reclaimers who report that they would adjust to changes in the rebate. However, generally, the responses seem plausible. Non-reclaimers respond by increasing their nominal donations when the

match rate increases – and generally respond more to bigger increases in the match rate (i.e. to bigger price changes). Among reclaimers, we also find that a higher proportion adjusts to changes in the rebate than to changes in the match. This is plausible since, in the case of a change in rebate, individuals need to adjust their nominal donation in order for the price change to have any effect on the amount received by the charity while, in the case of the match, the change in match rate will directly impact on charities’ incomes. We return to this issue of the differential impact of changes in the match and rebate in the next section. Reclaimers react to the withdrawal of the rebate (and increase in match) by reducing their nominal donations, although typically the extent to which they reduce donations is not enough to compensate for the withdrawal of the rebate, such that gross donations increase significantly even when the price rises for all scenarios apart from (C2, D1). This explains why the implied elasticity estimates have the “wrong” sign for these scenarios.

Table 3: Main regression results

Scenario		(1)	(2) <i>Dependent variable</i> = $\ln(\text{nominal donation})$		(2) <i>Dependent variable</i> = $\ln(\text{gross donation})$		
		Proportion Adjusting	Coeff	SE	Coeff	SE	Elasticity
<u>Reclaimers</u>							
A1	$m = .30, r = .25$	0.149	.0261	(.0064)	.0653	(.0064)	-1.703
A2	$m = .25, r = .30$	0.377	.0505	(.0065)	.0505	(.0065)	-0.758
B1	$m = .20, r = .25$	0.086	.0036	(.0063)	-.0372	(.0063)	-0.893
B2	$m = .25, r = .20$	0.126	-.0049	(.0063)	-.0050	(.0063)	-0.075
E1	$m = .66, r = 0$	0.239	-.0212	(.0063)	.2664	(.0063)	--
C1, E2	$m = .50, r = 0$	0.225	-.0207	(.0044)	.1615	(.0044)	1.258
D2	$m = .37, r = 0$	0.266	-.0314	(.0062)	.0602	(.0062)	0.278
C2, D1	$m = .30, r = 0$	0.222	-.0368	(.0044)	.0024	(.0044)	0.009
<u>Non-reclaimers</u>							
A1	$m = .30, r = .25$	0.059	.0025	(.0063)	.0417	(.0063)	-1.084
A2	$m = .25, r = .30$	0.090	.0136	(.0063)	.0136	(.0063)	--
B1	$m = .20, r = .25$	0.024	.0079	(.0065)	-.0329	(.0065)	-0.790
B2	$m = .25, r = .20$	0.012	.0024	(.0065)	.0024	(.0065)	--
E1	$m = .66, r = 0$	0.130	.0281	(.0065)	.3157	(.0065)	-1.262
C1, E2	$m = .50, r = 0$	0.146	.0288	(.0046)	.2111	(.0046)	-1.373
D2	$m = .37, r = 0$	0.125	.0202	(.0060)	.1119	(.0060)	-1.279
C2, D1	$m = .30, r = 0$	0.067	.0062	(.0044)	.0454	(.0044)	-1.172

The implied elasticities, shown in the final column, are based on the estimated

percentage change in gross donations and the associated percentage price change, assuming that the base price is 0.6 for reclaimers and 0.8 for non-reclaimers. We additionally assume that changes in the rebate have no effect on the price for non-reclaimers.¹⁷ In three cases, the elasticity is not defined because there is no change in price. We focus on the elasticity of gross donations for comparability with previous studies – both the earlier experimental studies by Eckel and Grossman and also the numerous studies which have estimated tax price elasticities.

Focusing on the cases where there are changes to *either* the match *or* the rebate, but not both (i.e. scenarios A1 – B2 for both reclaimers and non-reclaimers and scenarios C1 – E2 for non-reclaimers), our findings are broadly in line with the earlier experimental studies in that the match elasticity (range -0.790 – -1.703) is greater in absolute terms than the rebate elasticity (range -0.075 – -0.758), although the magnitudes of both the match and rebate elasticities are greater than in previous studies. One factor explaining this may be differences in sample composition across the studies since we over-sample big donors and, as we show in the next section, there is some variation in elasticities across the population, according to characteristics such as size of donation.¹⁸

Our results also show that individuals are much more likely to increase their donations in response to an increase in the generosity of the tax incentives than they are to cut their donations in response to a decrease in generosity. If robust, this is an interesting finding, although we cannot rule out that individuals do not want to appear to be ungenerous and understate the extent to which they would reduce their donations (and overstate the extent to which they would increase their donations). However, while this may be attributable to hypothetical bias, it does not affect the main finding on the differential responses to changes in match and rebate consistent with previous studies.

5 Heterogeneity of responses

In this section we explore the responsiveness of gross donations to changes in the match and rebate among a number of sub-groups. The aim is both to illustrate differences

¹⁷ It is possible that tax price changes affect the probability of reclaiming but this is not something that we can address using the survey.

¹⁸ There is no information on the sample composition in Eckel and Grossman's (2008) field experiment which would allow us to make a direct comparison. One further possible source of difference is that our results correspond only to adjustment on the intensive margin since we sample people who give through Gift Aid.

across groups and to explore possible explanations for the observed difference between match and rebate elasticities.

Table 4 reports estimates of elasticities for different sub-groups. We focus on higher-rate taxpayers and on responses to changes in *either* the match *or* the rebate (i.e. the set of four scenarios A1 – B2 in Table 2). Because of the smaller number of observations in each group we pool across the four scenarios and run regressions of the form:¹⁹

$$\ln g_{in} = \beta_0 + \beta_r \ln(1 - r_s) - \beta_m \ln(1 + m_s) + v_{in} \quad (2)$$

where g_{in} is gross donation of individual i in scenario n , β_m and β_r capture the elasticity of gross donations with respect to the match and rebate, respectively. As in equation (1) we assume v_{in} can be decomposed into a constant, individual-specific effect and a pure random error term. We estimate (2) using a random effects model. Note that when we estimate this equation for our sample of higher-rate taxpayers, the estimated match and rebate elasticities are brought much closer to the earlier experiment results (Table 4, panel a).

5.1 Size of donations

Table 4 shows elasticity estimates by size of total donations, focusing on higher-rate reclaimers. There is some evidence that donations from larger donors are more sensitive to changes in the rebate than donations from smaller donors. Given that we over-sample large donors, our results are therefore likely to be an under-estimate of the difference in match and rebate elasticity among the population. Even in the top decile, however, which includes donors who give £40,000 a year or more, the estimated match elasticity is significantly greater than the rebate elasticity.

5.2 Level of understanding

One possible explanation for the differential response to match and rebate rates could be that people don't really understand the two types of incentives – and understand them differently. To explore this, we analyse the responses separately for donors according to their likely level of understanding of tax incentives. This is assessed on the basis of their response to a question about how much the match is worth to charities. Respondents are

¹⁹ This assumes that gross donations depend on the price in the following way $g_i = \theta_i q^{\beta_r}$, where $q = (1 - r) / (1 + m)^{\beta_m / \beta_r}$, and β_m / β_r is the relative weight given to the match compared to the rebate in the price of giving.

told that the charity can reclaim basic-rate tax and asked to say how much the charity gets for each £1 donated out of net-of-tax income (choosing one out of a set of possible responses). If they respond correctly, we define them as having a good level of understanding. If they do not choose the correct answer, we define them as having a poor level of understanding. We find some difference between those with “good” and “poor” understanding” – those with a good understanding are more responsive to changes in both match and rebate (this may also reflect the fact that they typically give more). Nevertheless, we find that the match elasticity is significantly higher than the rebate elasticity for both groups.

Table 4: Estimated elasticities for sub-groups

	Estimated match elasticity	Estimated rebate elasticity	p-value
(a) All	-1.127 (.067)	-.212 (.041)	.0000
Reclaimers	-1.277 (.096)	-.415 (.091)	.0000
Non-reclaimers	-.946 (.091)	.032 (.054)	.0000
<i>(b) Size of donations (higher-rate reclaimers)</i>			
Quartile 1: £334	-1.177 (.220)	-.473 (.132)	.0002
Quartile 2: £1,056	-1.220 (.170)	-.277 (.119)	.0000
Quartile 3: £2,951	-1.154 (.180)	-.366 (.110)	.0000
Quartile 4: £20,193	-1.496 (.202)	-.559 (.123)	.0000
Top decile: £39,127	-1.207 (.334)	-.486 (.199)	.0170
<i>(c) Level of understanding (higher-rate reclaimers)</i>			
“Good”	-1.368 (.116)	-.440 (.070)	.0000
“Poor”	-1.095 (.170)	-.366 (.102)	.0000
<i>(d) Whether or not donor adjusts nominal donations (higher rate reclaimers)</i>			
Adjusters	-1.929 (.297)	-1.431 (.179)	.0581

Notes: standard errors in parentheses, p-value is for the test that the match and rebate elasticity are equal

5.3 Adjusters/non-adjusters

Finally, we consider that the difference between match and rebate elasticities may be explained by the high levels of non-adjustment because of the way in which the match and rebate differentially impact on gross donations among non-adjusters – the elasticities of gross donations with respect to match and rebate among non-adjusters are -1 and zero respectively. Assuming that there is a single underlying elasticity, ε , with respect to changes in the match or rebate, but that only a proportion of donors π^m (π^r)

adjust to the match (rebate) then the observed match ($\tilde{\varepsilon}^m$) and rebate ($\tilde{\varepsilon}^r$) elasticities are given by:

$$\tilde{\varepsilon}^m = (1 - \pi^m) + \pi^m \varepsilon, \quad (3)$$

$$\tilde{\varepsilon}^r = \pi^r \varepsilon \quad (4)$$

The observed match elasticity will be greater than the observed rebate elasticity if

$$\frac{1 - \pi^m}{\pi^r - \pi^m} > \varepsilon. \quad (5)$$

If the probabilities of adjusting to the match and rebate are the same (and less than one), the observed match elasticity will always be greater than the observed rebate elasticity. In practice, we find that more people adjust to a change in the rebate than to a change in the match (see Table 3). However, based on the observed proportions adjusting (and focusing on responses to an increase in match/rebate), the observed match elasticity for higher-rate reclaimers would still be greater than the observed rebate elasticity so long as the elasticity among adjusters is less than 3.70.

The last row of Table 4 shows estimates of match and rebate elasticities separately for adjusters (i.e. donors who adjust to at least one of the two scenarios). Not surprisingly, gross donations are much more responsive to changes in the rebate for this group compared to the rest of the sample. While the match elasticity is still higher, the difference is no longer statistically significant. This finding indicates that much of the explanation for the large observed difference between match and rebate elasticities both here and in the earlier experimental studies is likely to lie in the fact that many donors do not adjust their nominal donations in response to a tax change, and the differential implications of changes in the match and rebate for gross donations among non-adjusters.

This provides an explanation for why match incentives have a bigger impact on money going to charities than rebates. If many donors do not adjust their nominal donations when tax incentives change, then charities will benefit much more from changes in match incentives than from changes in rebates. However, it begs another question of why so many donors do not adjust their nominal donations.

Table 5 summarizes the reasons that donors give for not changing their donation in response to the proposed hypothetical scenario. Approximately one-fifth of non-

adjusters say that they take no account of tax incentives at all in deciding how much to give. However, the most common reason – given by just over half of all non-adjusters – is that donors decide on their level of nominal donations before taking account of the tax relief.

Table 5: Main reason for not adjusting nominal donations

	Non-reclaimers	Reclaimers
I make my decision about how much to give before considering the tax relief	55.8%	49.2%
The tax relief has no effect on my decision about how much to give	20.1%	19.2%
I have a regular commitment to giving money that I don't want to change	11.2%	20.0%
I prefer to give a rounded amount and not make small adjustments	5.5%	5.7%
The change in tax is so small, it is not worth bothering about	4.6%	3.6%
Other/ don't know	2.9%	2.5%
Number of observations	583	647

One interpretation of this is that donors care about nominal donations and not about how much the charity receives. Within the literature on why people give to charity, there are a number of possible explanations for this, including donors' desire to signal either their wealth or generosity.²⁰ Consistent with this, the results in column (2) of Table 3 show that nominal donations respond more to a change in the rebate than to a change in the match. But, if individuals really cared about their nominal donations then we would not expect any change in nominal donations when the match changed since the match rate has no bearing on the price of the signal, which is affected only by the rebate. By a similar token, we would expect nominal donations to respond even more than they do to a change in the rebate. In our survey data, we cannot reject that the elasticity of nominal donations with respect to the match is the same as the elasticity with respect to the

²⁰ See Andreoni (2006) and Vesterlund for discussions of motives for giving.

rebate.²¹ Among those with a reasonable level of understanding (who could be assumed to understand that the rebate affects the price of the signal), the nominal match and rebate elasticities are closer still.²²

Another interpretation is that these responses indicate that tax incentives are simply not “salient” for many individuals’ decisions about how much to give. This is consistent with other recent evidence that many consumers do not fully optimize with respect to tax-inclusive prices (Chetty *et al.*, 2009; Finkelstein, 2009). In these studies, the fact that taxes are not salient is attributable to their being “shrouded” attributes. In the case of tax incentives for giving to charity, the information on the tax-inclusive price is available – or at least the information needed to work out the tax-inclusive price is available – but individuals may have to incur some processing costs to work out the new tax-inclusive price and to respond accordingly.²³ Chetty et al (2009) show that even small processing costs can give rise to non-salience since the welfare costs from failing to process tax changes are second order. Other costs associated with responding to tax changes – such as regular commitments, which are mentioned by one-fifth of non-adjusters in Table 5 – would add to the costs of immediately re-optimizing with respect to the new tax-inclusive price. In principle, these processing and adjustment costs could explain why a large proportion of donors appear not to respond to tax changes even when all the relevant information is potentially available to them. The fact that larger donors are more likely to adjust also fits with this potential explanation.

6 Conclusions and implications for policy design

An explicit aim of this study was to test earlier findings on the differential impact of match and rebate incentives in relation to broad-based fiscal incentives – with a view to informing public policy. Finding suitable and timely evidence for policy-making can prove challenging. Results from lab and field experiments may not be externally valid and there may not be suitable “natural” experiments from past policy. As an alternative,

²¹ The elasticity of nominal donations is the same as the gross elasticity in the case of the rebate, and equal to one plus the gross elasticity in the case of the match.

²² This was also supported by other choice experiment questions in the survey that revealed that more people would prefer tax relief in the form of a match-only system to the current match and rebate system. This would not be the case if donors cared about nominal donations.

²³ See Scharf and Smith (2010) for further analysis.

we used a survey-based approach which asked donors how they would respond to changes in tax incentives. While we might not want to rely on a hypothetical survey as the only piece of evidence on how donors respond to the two types of incentive, in this case it provided a useful test of the findings from the experimental studies in relation to fiscal incentives.

Taking as a given that the government has an objective of promoting private contributions through fiscal incentives,²⁴ this difference between the effect of match and rebate elasticities suggests that it would be more effective to offer tax subsidies in the form of a match rather than a rebate, in terms of securing more money for charities. However, a match-based system could be at a higher cost for the government not only because a higher match would be more generous than the current system for non-reclaimers but also because reclaimers do not reduce their nominal donations. A key question for policy-makers is whether it is possible to introduce a revenue-neutral policy change that will lead to an increase in the amount of money going to charities.

To provide some further insight into this, Figure 1 shows indicative estimates of the likely overall effect on gross donations and the estimated percentage change in the cost of tax relief for each of the four scenarios that involve withdrawing the rebate and increasing the value of the match for higher-rate donors²⁵ – £0.30, £0.37, £0.50 and £0.66 – together with smoothed, linear predictions through these point estimates. These take into account adjustments by reclaimers and non-reclaimers from the survey and the relative proportions of the two groups in the population of Gift Aid donors.²⁶

The results give an indication that it would be possible to increase gross donations, without increasing the cost of tax relief compared to the current system – by

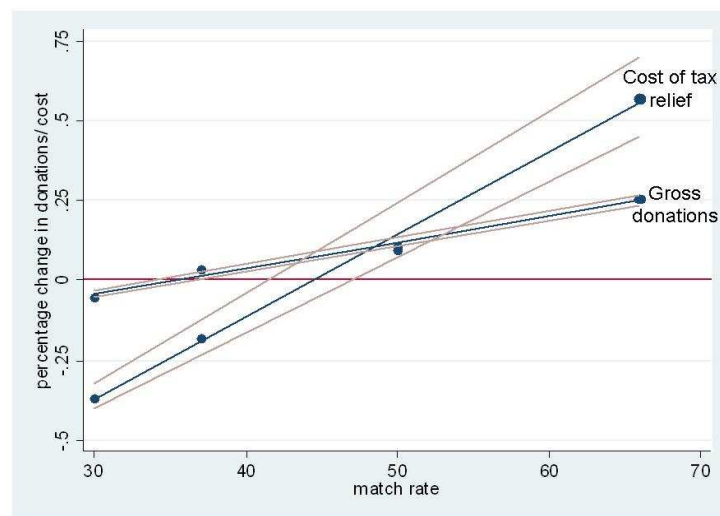
²⁴ Behind this lies a much broader set of issues relating to the role of private provision alongside public provision of collective goods (see Feldstein and Clotfelter, 1977, Warr 1982, Scharf, 2000) and the choice of tax subsidies versus direct government grants as a way of encouraging private provision (see Roberts, 1987, Andreoni and Payne, 2001).

²⁵ In principle it would be possible to give a higher match on donations from all taxpayers and this option is considered in relation to the £0.30 and £0.37 match in Scharf and Smith (2009)

²⁶ We assume that 35% higher-rate taxpayers reclaim on the basis of analysis of the Justgiving sample on the proportion of reclaimers and HMRC statistics on the value of tax relief claimed. See Appendix A1 for further information. We carry out sensitivity analysis, varying the proportion of higher-rate taxpayers who reclaim in the population by ten percentage points above and below the central assumption (shown by the paler lines in Figure 1).

withdrawing the rebate and replacing it with a match in the range £0.42 to £0.47, depending on the proportion of higher-rate reclaimers. Alternatively, there is a possible policy change that maintains the current level of gross donations but with a cost saving (a match rate of £0.35). The form of tax incentive – and the differential responses to match and rebate – therefore should be taken into account in the design of public policy.

Figure 1: Estimated change in gross donations and cost of tax relief associated with match-only options



Note to figure: The central, bold line indicates the percentage changes in gross donations and the cost of tax relief compared to the current system based on an assumption that 35% of higher-rate taxpayers reclaim the rebate. The paler lines show the same, assuming that 25% and 45% reclaim.

The second contribution of this paper was to shed light on why match incentives are more effective than rebate incentives. The difference can largely be explained by the fact that most donors are unresponsive to changes in tax incentives in terms of changing their nominal donations – which in turn means that changes in the match rate have a direct impact on how much money the charity receives while changes in the rebate only affect the cost to the donor. We also argued that the observed patterns of adjustment fit better with a story in which tax incentives are not salient to many donors rather than an alternative story in which donors care only about nominal donations, but this was not the main focus of our survey. Further work on the salience of tax incentives to donors’ decisions would seem a fruitful area for future research.

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Appendix 1

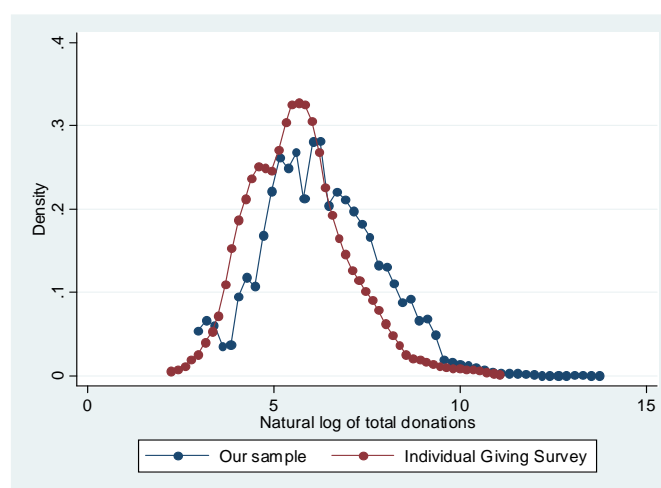
Summary Statistics

	Higher-rate taxpayers: Non-reclaimers	Higher-rate taxpayers: Reclaimers
Total donations – last 12 months	£1037	£5121
Donations through Gift Aid – last 12 months	£514	£3842
Female	0.38	0.20
Aged < 35	0.28	0.07
Aged 35-44	0.31	0.17
Aged 45-54	0.26	0.34
Aged 55-64	0.12	0.24
Aged 65-74	0.02	0.12
Aged 75+	0.00	0.06
Individual income < £30K	0.00	0.00
Individual income £30K - £40K	0.00	0.00
Individual income £40K - £75K	0.62	0.42
Individual income £75K - £100K	0.13	0.14
Individual income £100K - £200K	0.13	0.23
Individual income > £200K	0.04	0.09
Employed full-time	0.87	0.60
Employed part-time	0.02	0.05
Self-employed	0.07	0.13
Retired	0.03	0.19
Other non-working	0.01	0.02
Highest qualification – degree	0.45	0.40
Highest qualification – higher degree	0.35	0.42
Married	0.60	0.80
Cohabiting	0.15	0.05
Single	0.18	0.09
Widowed	0.02	0.02
Divorced	0.04	0.03
Separated	0.01	0.01
Ever had children	0.54	0.77
Understands tax incentives	0.46	0.64
Regular giver	0.40	0.35
Ever worked as a volunteer	0.62	0.66
Ever worked for a charity	0.10	0.10
Type of charity supported		
Medical	0.64	0.60
Education	0.11	0.24
Religious	0.17	0.46
Community	0.10	0.14
Arts	0.14	0.30
Sports	0.07	0.05
Hospices	0.48	0.48
Rights	0.15	0.19
Environment	0.17	0.26
Housing	0.05	0.09
Overseas aid	0.43	0.65
Welfare	0.52	0.58
Animals	0.18	0.17
Homeless	0.25	0.37
Disaster	0.39	0.53
Rescue	0.14	0.17
<i>Sample size</i>	633	809

Sampling

Our sample would ideally be representative of the population of Gift Aid donors but this is unlikely because of both sampling and response bias. In practice, there is no population information on Gift Aid donors to allow us to investigate the extent of bias. The best benchmark is the Individual Giving Survey (IGS), a population-based survey that collects information on giving, including the use of Gift Aid. However, as shown in the figure below, the IGS is also likely to suffer from bias particularly in not capturing higher-value donors – the largest donation was £46,000 in the last year in the IGS, compared to more than 100 donors who gave more than £100,000 in the CAF/Justgiving sample.

Figure A1: Distribution of total donations over the last 12 months



To analyse the effect of possible policy options, we re-weight the taxpayer groups in the CAF/Justgiving sample to reflect estimated population shares, assuming that 80 per cent of Gift Aid donors are basic rate taxpayers and assuming that 35 per cent of higher-rate taxpayers reclaim.

The estimate of the proportion of Gift Aid donors who are higher-rate taxpayers is based on individuals' reported personal, gross annual incomes in the IGS. This is not perfect since individuals were asked to give banded amounts which do not directly correspond to the threshold for paying higher-rate tax. A sizeable proportion refused to answer or did not know their income. Assuming that the incomes of this group were distributed in the same way as the rest of the sample, the estimated proportion of higher-rate donors was 0.204. Assuming that the refusals and don't knows were higher-rate taxpayers (which seems more likely in the case of refusals), the estimated proportion was 0.247. These estimates assume that everyone in the £36,400 - £38,999 band is a higher-rate taxpayer: the threshold in 2005-06, the year the data were collected, was £37,295.

Excluding this band, the proportions are 0.179 and 0.234 respectively. For the analysis, the central assumption is that 20 per cent of Gift Aid donors are higher-rate taxpayers.

In the unweighted sample, 55.9 per cent of higher-rate taxpayers reported that they reclaimed higher-rate relief. This is likely to over-estimate the (unknown) proportion of reclaimers in the population. A person with a CAF account is more likely than the typical higher-rate donor to reclaim the additional relief; indeed this may be one of the motivations for opening an account in the first place. There is no information on reclaiming in the IGS. The proportion of reclaimers in the Justgiving sample – at 34.4 per cent – is likely to be closer to the proportion in the population. Therefore, the assumption used in this report is that 35.0 per cent of higher-rate donors reclaim the additional relief. As well as reflecting the proportion in the Justgiving sample, this proportion is also consistent with HMRC statistics on the value of tax relief claimed.

This re-weighting reduces the mean annual donation in the sample from £2,272 to £1,345. This is still larger than the mean annual donation in the IGS sample as shown in the table below. But at least some of this is explained by the larger tail in the CAF/Justgiving sample. Excluding donations of £50,000 or more (of which there are none in the IGS sample), the mean annual donation in the CAF/Justgiving sample falls to £1,137.

Mean annual donation

	CAF/ Justgiving	IGS
Unweighted	£2,273	£854
Weighted	£1,345	£854
Weighted (excluding donations >= £50,000)	£1,137	£854

Appendix 2: How the scenarios were presented

Initial donation

How likely are you to make any Gift Aid donations to a charity within the next six months? This could be a one-off donation or a regular donation set up as a standing order or direct debit.

- Certain
- Very likely
- Fairly likely
- Not very likely
- Not at all likely
- Don't know

IF 'Certain' or 'Very likely' or 'Fairly likely'

And how much do you think that you are likely to give (to the nearest pound)? If the donation you are thinking about is a regular direct debit or standing order, please give the total of that donation for a six month period.

Introduction to scenarios

The Gift Aid scheme allows charities to reclaim the basic rate income tax on your donation and allows higher rate taxpayers to claim back higher rate tax relief. You are now going to be presented with two hypothetical changes to the Gift Aid scheme – either to the amount that the charity can reclaim and/or to the amount that higher rate taxpayers can claim back. In each case you will be asked to consider whether the amount of money that you are likely to give to charity would be affected by the proposed changes.

Example

Through the Gift Aid scheme, the charity you are donating to reclaims the basic rate income tax on your donation. This is worth 25 pence for every £1 you donate. Suppose instead that the charity received 30 pence for every £1 you donate. (Assume that the amount of higher rate relief that you can claim back is unchanged).

Thinking about your donation of [£X] would this change affect the amount you are likely to give? SINGLE CODE ONLY

- Yes - I would give more than [£X]
- Yes - I would give less than [£X]
- No - I would give the same amount
- Don't know

IF yes, how much would you be likely to give (to the nearest pound)?

- (write in)
- Don't know

IF 'don't know', which of these comes closest to what you think you might increase/ reduce your donation by?

- By 10% or less?
- By more than 10%?
- Don't know

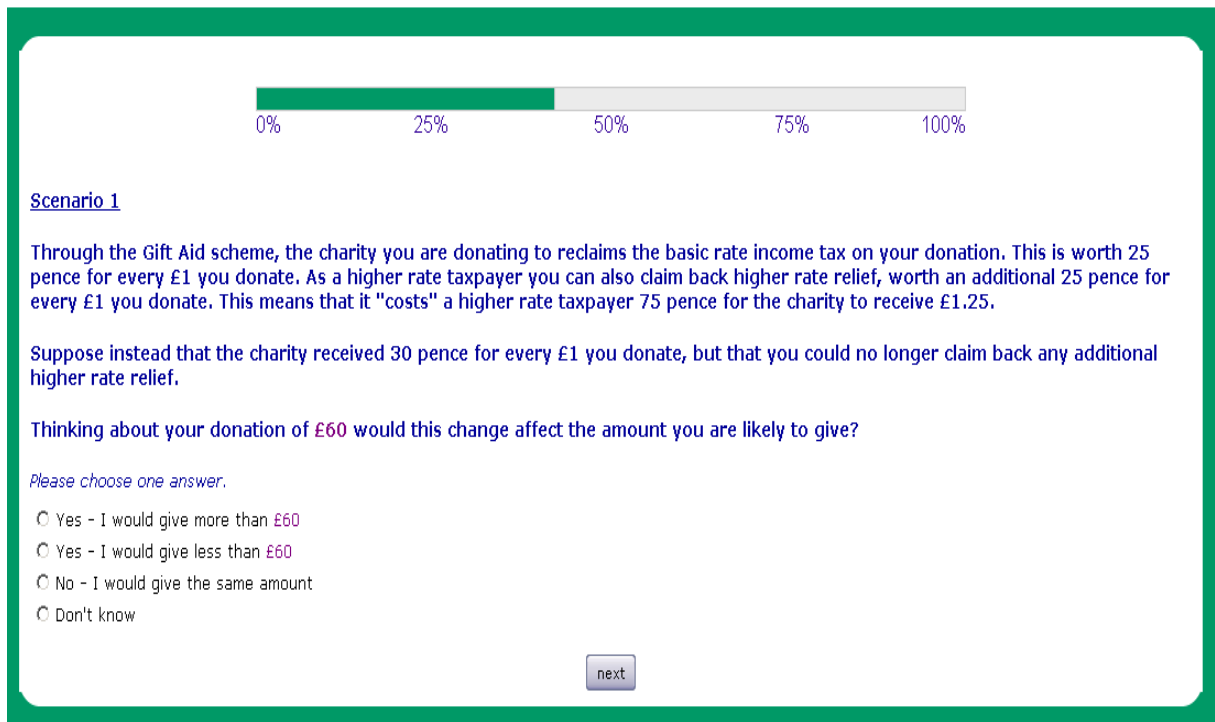
If more than 10%, Would you increase/ reduce your donation by 25% or more?

- Yes
- No
- Don't know

If yes, Would you increase/ reduce your donation by 50% or more?

- Yes
- No
- Don't know

Figure A2: How the scenarios appeared to respondents



Appendix 3

P-values: test for significant differences across scenarios – $H_0: \beta_s = \beta_z, s \neq z$

Higher-rate taxpayers

Dependent variable = ln (gross donations)									
	M25R30	M20R25	M25R20	M50R0	M30R0	M30R0	M37R0	M66R0	M50R0
M30R25	.000	.000	.000	.000	.000	.000	.000	.000	.000
M25R30		.000	.000	.000	.000	.020	.449	.000	.000
M20R25			.000	.000	.000	.000	.000	.000	.000
M25R20				.000	.000	.096	.001	.000	.000
M50R0					.000	.000	.000	.000	.842
M30R0						.124	.000	.000	.000
M30R0							.000	.000	.000
M37R0								.000	.000
M66R0									.000

Dependent variable = ln (nominal donations)									
	M25R30	M20R25	M25R20	M50R0	M30R0	M30R0	M37R0	M66R0	M50R0
M30R25	.000	.219	.273	.026	.000	.000	.007	.024	.017
M25R30		.000	.000	.000	.000	.000	.000	.000	.000
M20R25			.850	.317	.000	.008	.139	.297	.234
M25R20				.257	.000	.005	.107	.240	.187
M50R0					.000	.102	.632	.958	.842
M30R0						.124	.007	.002	.003
M30R0							.103	.118	.156
M37R0								.674	.783
M66R0									.838