Two Working Papers on the Economics of Charitable Giving and Fundraising

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The Papers

- Paper 1: More Giving or More Givers? The Effects of Tax Incentives on Charitable Donations in the UK

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- Paper 2: Lift and Shift: The Effect of Fundraising Interventions in Charity Space and Time
Paper 1: More Giving or More Givers? The Effects of Tax Incentives on Charitable Donations in the UK

- Tax incentives...different kinds in different countries (e.g. mortgage interest payment relief, pensions, donations)
- They are costly for government
- Contributions to private activities produce a private benefit ⇒ there are no direct implications for public spending
- Contributions to charity affect the private provision of a public good or service (which to some degree substitutes for public provision) ⇒ there may be implications for government budget
Should government use tax incentives to subsidise charitable giving?

- It depends on how taxpayers respond to the tax incentive . . .
- Existing donors may adjust the amount they donate (the intensive margin behavioural response)
- Non-donors may become donors or existing donors may stop donating (the extensive margin behavioural response)
- It also depends on the cost of offering the incentive in terms of lost revenue and on whether public provision substitutes for private provision or not (crowd-in/crowd-out of private for public expenditures)
How do we think of a policy change that changes tax incentives for giving?

- Economists look at this in terms of the effect of the policy change on the ‘price of giving’

- Just like the price of candy affects how much candy people buy, the ‘price of giving’ affects how much people donate and a change in tax relief (or tax rates) changes this price

- So whether or not revenue goes up by more than the fall in spending (or down by more or stays the same), depends on how responsive donors are to changes in the ‘price of giving’
How do we measure the behavioural response to the change in the price of giving

- Use the price elasticity of giving – a number that measures the sensitivity of donor responses to changes in the price of giving
- No UK evidence (studies use mainly US data and only look at the intensive margin)

<table>
<thead>
<tr>
<th>Study</th>
<th>Range</th>
<th>Tax Measure</th>
<th>Data Type</th>
<th>Donation Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randolph (1995)</td>
<td>–.51 to –1.55</td>
<td>Temporary</td>
<td>Panel Tax filer</td>
<td>Donation</td>
</tr>
<tr>
<td>Reece (1979)</td>
<td>–1.19</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Donation</td>
</tr>
<tr>
<td>Reece and Zieschang (1985)</td>
<td>–.85</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Donation</td>
</tr>
<tr>
<td>Reece and Zieschang (1989)</td>
<td>–2.72</td>
<td>Temporary</td>
<td>Panel Survey</td>
<td>Donation</td>
</tr>
<tr>
<td>Ricketts and Westfall (1993)</td>
<td>–1.06</td>
<td>Permanent</td>
<td>Panel Tax filer</td>
<td>Donation</td>
</tr>
<tr>
<td>Robinson (1990)</td>
<td>–1.43 to –7.07</td>
<td>Temporary</td>
<td>Panel Survey</td>
<td>Donation</td>
</tr>
<tr>
<td>Rudney (1985)</td>
<td>–.61</td>
<td>Temporary</td>
<td>Panel Tax filer</td>
<td>Donation</td>
</tr>
<tr>
<td>Schiff (1985)</td>
<td>–2.79 to –4.97</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Donation</td>
</tr>
<tr>
<td>Schwartz (1970)</td>
<td>–.376 to –1.23</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Tax filer</td>
</tr>
<tr>
<td>Slemrod (1989)</td>
<td>–2.04 to –2.34</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Tax filer</td>
</tr>
<tr>
<td>Steinberg (1985)</td>
<td>–.08</td>
<td>Temporary</td>
<td>Cross-section</td>
<td>Donation</td>
</tr>
<tr>
<td>Taussig (1967)</td>
<td>0 to –.1</td>
<td>Temporary</td>
<td>Tax filer</td>
<td>Donation</td>
</tr>
<tr>
<td>Wu and Ricketts (1999)</td>
<td>+.12 to –.2</td>
<td>Temporary</td>
<td>Panel Tax filer</td>
<td>Donation</td>
</tr>
</tbody>
</table>

For which there were at least five cases (k) per moderator variable (Tabachnick and Fidell 1989).

Results

The weighted mean of the price elasticity of giving is –1.44, with a standard deviation of 1.21. Thus, on average, a 1% reduction in the cost of charitable giving (i.e., an increase in the charitable deduction) is expected to provide an increase in donations of 1.44%. The weighted mean of –1.44 is slightly greater than the previously accepted range of –1.1 to –1.3 (Clotfelter 1985). However, when outliers more than three standard deviations from the mean are removed from the analysis, the weighted average of price elasticities falls to –1.11, which is at the lower end of the generally accepted estimates. In addition, we consider the stability of this finding with respect to the file drawer hypothesis. It suggests that there could be unpublished studies that have lower values, thus decreasing the estimate of our effect size. Although our literature review specifically attempted to locate any unpublished work, we assess its possible impact here. Initially, we can examine a graphical distribution of effects (see Figure 1) to determine whether the distribution is nonsymmetrical. After excluding outliers, there remains a skew of the data toward the more negative estimates of elasticity. Furthermore, the data appear to be markedly truncated at an elasticity of zero. Given that elasticity estimates greater than zero are not theoretically supported, there may be publication bias excluding such findings. However, we can mathematically assess the file drawer problem in various ways. First, Begg (1994) suggests the use of a rank correlation test, specifically Kendall’s tau. Correlating sample sizes with correlations generates a coefficient of .11, which is not significant ($p = .067$), suggesting that potential publication bias is not substantive. Second, we can consider how many of these undiscovered studies must exist to affect our current analysis. The results indicate that at least 70 estimates of negative but inelastic giving (i.e., less than one in absolute value) with an average sample size of 11,000 are required to accept the null hypothesis that giving is not negatively elastic. Similarly, at least 242 estimates of no elasticity (i.e., an elasticity value of zero) with an average sample size of 11,000 are required to accept the hypothesis that charitable donations are elastic below a level of –.5 (i.e., that consumers do not donate to charity at least half of cost savings due to increased tax deductibility). Thus, our basic finding appears to be robust. However, the wide range of elasticities reported suggests that this basic estimate is affected by moderator variables. To examine moderator effects, we conducted regressions on the data set without outliers. Collinearity diagnostics indicate...
Exploit a major policy change in 2010 in the UK: Two new tax brackets for higher rate taxpayers – marginal tax rates increased from 40% to 50% (or 60% for a period of time).

Effect of reform was to lower the price of giving for higher-rate taxpayers who claim the rebate on their self assessment tax returns.
UK income tax reform of 2010
Data

- Full population of HMRC’s Self-Assessment (SA) Income Tax returns for the period 2004/05 through 2012/13
- Approximately 8-9 million returns per year: \( N = 75 \text{ million} \)
- Does not include about 22 million taxpayers who do not file a tax return (Pay As You Earn system)
- Only 11% of taxpayers report positive donations
Tax-Price of Giving in the Data (2009/10)

![Graph showing the price of giving in relation to adjusted net income. The x-axis represents adjusted net income (£ '000s) ranging from 0 to 200, while the y-axis represents price of giving ranging from 0 to 1. The graph includes two types of data points: one representing the first-pound price (solid dots) and another representing the last-pound price (open triangles).]
Tax-Price of Giving in the Data (2010/11)
### Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>p10</th>
<th>p50</th>
<th>p90</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donations (g)</td>
<td>211</td>
<td>25,632</td>
<td>0</td>
<td>0</td>
<td>59</td>
<td>75,646,776</td>
</tr>
<tr>
<td>Donations (if g &gt; 0)</td>
<td>1,927</td>
<td>77,376</td>
<td>63</td>
<td>382</td>
<td>2,796</td>
<td>8,296,291</td>
</tr>
<tr>
<td>Adjusted Net Income (z)</td>
<td>36,072</td>
<td>878,780</td>
<td>3,592</td>
<td>18,799</td>
<td>70,031</td>
<td>75,646,776</td>
</tr>
<tr>
<td>Disposable Income (y)</td>
<td>29,098</td>
<td>533,810</td>
<td>3,873</td>
<td>17,186</td>
<td>55,886</td>
<td>75,646,776</td>
</tr>
<tr>
<td>Price of Giving (p)</td>
<td>0.79</td>
<td>0.14</td>
<td>0.60</td>
<td>0.78</td>
<td>1.00</td>
<td>75,646,776</td>
</tr>
<tr>
<td>Age</td>
<td>49.92</td>
<td>15.02</td>
<td>31</td>
<td>49</td>
<td>70</td>
<td>74,007,168</td>
</tr>
<tr>
<td>Female</td>
<td>0.34</td>
<td>0.47</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>75,646,776</td>
</tr>
<tr>
<td>Used a Tax Advisor</td>
<td>0.67</td>
<td>0.47</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>75,646,776</td>
</tr>
</tbody>
</table>

Notes: this table reports summary statistics for the complete dataset of self-assessment income tax returns for the fiscal years between 2004/05 and 2012/13 (nine years). For each variable, we report the mean, standard deviation, the 10th, 50th and 90th percentiles and the total number of non-missing observations. Donations (g) are measured in pounds and are expressed gross of the Gift Aid match. The second row shows summary statistics for donations among donors, i.e. taxpayers reporting g > 0 in a given year. The ratio in the number of observations in the second and first rows indicates that 10.97% of the taxpayer-year observations include a positive amount of donations. Adjusted net income (z) is the measure of income that is used for the calculation of income-related deductions to the personal allowance. It is equal to (i) net income, minus (ii) the grossed-up amount of Gift Aid donations and pension contributions, plus (iii) any tax relief received for certain payments (e.g., trade union quotas). In turn, net income is the sum of all employment income, profits, pensions, and income from property, savings and dividends, after subtracting related deductions (e.g., trading losses and gross payments to pension schemes). The official definition of this concept from HMRC can be found at [www.gov.uk/guidance/adjusted-net-income](http://www.gov.uk/guidance/adjusted-net-income). Disposable income is defined as total gross income minus the total tax liability, setting donations to zero. As described in the text, we can write this down as y = z T(z), where we set g = 0 to ensure that, when including this variable in the regression, tax incentives for giving are incorporated only in the price of giving, rather than in disposable income. The price of giving (p) is defined as one minus the marginal tax rate. Note that the summary statistics for the first- and last-pound price of giving are essentially identical, so we only report them once. Age is measured in years and female takes value one for women and zero for men. There are some errors in these two variables in the original SA302 data. For example, age is sometimes reported inconsistently by taxpayers across years. In those cases (about 8% of all observations), we calculate the implied year of birth for each observation and assign the most frequent value for all observations of a given taxpayer. Since age is missing for all years for some taxpayers, we have some missing values for about 2% of observations. We do a similar exercise with the female dummy, as some taxpayers report a different gender across years. This might be due to the fact that HMRC assigns gender based on first names when that variable is missing.
Data descriptives

Figure: Fraction of Donors by Income and Gender

Note: Calculations derived from HMRC’s administrative data sources
Data descriptives

Figure: Share of Income Donated, by Income and Gender

Note: Calculations derived from HMRC’s administrative data sources
Graphical Diff-in-diff Analysis

Figure: Normalized Average Donations by Income Group

Note: Calculations derived from HMRC’s administrative data sources
Summary of Absolute Value Elasticity Estimates

- Panel fixed-effects (OLS/IV):
  - Intensive-margin price elasticity: $\approx 0.2$
  - Extensive-margin price elasticity: $\approx 0.8$
  - Total price elasticity: $\approx 1$
Absolute Value Elasticity Estimates by Income Level

- Bottom 25% of income distribution:
  - Extensive-margin price elasticity: $\approx 1.6$
  - Intensive-margin price elasticity: $\approx 0$
  - Total price elasticity: $\approx 1.6$

- Top 5% of income distribution:
  - Extensive-margin price elasticity: $\approx .17$
  - Intensive-margin price elasticity: $\approx .23$
  - Total price elasticity: $\approx .4$
Is Gift Aid optimal?

- Develop new optimal tax expenditures framework that allows for extensive-margin responses and for the government to place a different value on private donations vs direct govt subsidies.

- Predicts that our elasticity estimates are only consistent with the current subsidy being optimal if the govt values private donations less than direct govt provision. Otherwise, current subsidies are sub-optimal and should be increased.