Time to Give: A Field Experiment on Intertemporal Charitable Giving

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Abstract
We conducted a natural field experiment to understand intertemporal substitution in charitable giving. In partnership with nine nonprofit organizations, we sent e-mail match offers to over 39,000 potential donors prior to Giving Tuesday, a nationwide day of giving in the U.S. that has recently spread to nearly 100 countries. Potential donors were randomized to receive a time-limited match offer of either 80%, 100% or 120% two or four weeks prior to Giving Tuesday or to a control group that did not receive the match offer. All potential donors were also informed that they would receive a 100% match on Giving Tuesday. We find that earlier offers significantly increased donation rates and amounts and that the result was not due to donors shifting giving to earlier in the month. Donations on Giving Tuesday were not reduced in the special match offer group, and new donors seem to have been brought on board. Total fundraising dollars from those contacted before Giving Tuesday were 80% higher than from the control group. The price responsiveness to match rates is larger than found in previous studies and is particularly pronounced when the donation ask was four weeks before Giving Tuesday.

JEL classifications: C93, H4

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1 Introduction

One-day giving campaigns are becoming an increasingly common phenomenon in the charitable sector. A leading example is Giving Tuesday, a global day of giving that was established in the United States in 2012 and occurs on the last Tuesday of November each year. Participating organizations typically encourage their supporters to donate on this day through special match offers and other enticements. In 2016, Giving Tuesday raised $168 million in donations from donors in nearly 100 countries.\(^1\) Similar giving days include Amplify Austin and the Purdue University Day of Giving, which in 2016 raised $9.8 and $18.3 million dollars, respectively, in just 24 hours.\(^2\)

While giving days are clearly effective, an open question is whether the increase in charitable gifts on these days is actually an increase in overall giving, or simply intertemporal substitution of giving. More broadly, it is unclear how donors think about the timing of their donations over the course of a month, year or lifetime. Evidence that does exist suggests giving is ‘lumpy.’ For example, 30% of annual contributions occur in December and 12% of contributions occur in the last 3 days of the year.\(^3\) Donors may get utility, or ‘warm glow’ (Andreoni, 1990), from the act of giving at the time of the gift, but is ‘warm glow’ a durable good that persists even when donors concentrate their contributions on a giving day or at the end of the year? Our contribution is to explore these intertemporal trade-offs by providing time-limited match offers prior to Giving Tuesday and examining how this affects the decision to give.

There may be many reasons why a donor may choose to donate now or delay the gift. Delaying a gift to the end of the year might be attractive because the charitable sector substantially decreases the price of giving through matching gifts, donor gifts and the like. Another reason is that donors may not plan well and may wish to take advantage of tax subsidies for the current year. A large literature has explored the impact of matches on giving (for an overview, see List (2011); Jasper and Samek (2014)). We contribute to this literature by investigating the impact of matches when giving is time-limited. Specifically, in our field experiment matches expire within 3 days of receiving the offer.

In our field experiment, we contacted over 39,000 potential donors from email lists of supporters from nine nonprofit organizations. Potential donors were randomized to receive a time-limited match offer of either 80%, 100% or 120% two or four weeks prior

\(^1\)see \url{http://www.usatoday.com/story/money/2016/11/29/giving-tuesday-twitter-donations/94616650/} for a report.

\(^2\)Amplify Austin: \url{https://amplifyatx.ilivehereigivehere.org/}; Purdue Day of Giving: \url{https://dayofgiving.purdue.edu/}.

\(^3\)see, e.g., \url{https://www.charitynavigator.org/}
to Giving Tuesday, or to a control group that did not receive the match offer. All potential donors were also informed that they would receive a 100% match on Giving Tuesday. A donor who received the time-limited match offer prior to Giving Tuesday was informed that she was also eligible for the match offer on Giving Tuesday. That is, a donor could contribute prior to and on Giving Tuesday. In general, donors were free to make donations to the participating charities at any time, but would not qualify for the match if the donation was made outside of the special offer time period or Giving Tuesday.

We collected data on all gifts made to our partner organizations during our experimental period, as well as several months before and after. We found that earlier offers significantly increased donation rates and amounts, and that the result was not due to inter-temporal substitution. In fact, total fundraising dollars from those contacted before Giving Tuesday were 80% higher than from the control group. We also found a larger responsiveness to match rates than previously found (on the order of four times larger), and the responsiveness was particularly pronounced when the donation ask was four weeks before Giving Tuesday.

In what follows, Section 2 sketches out a theoretical background for our results. Section 3 summarizes related literature. Section 4 summarizes the design of our experiment. Section 5 presents the results and Section 6 provides a discussion and concludes.

2 Theoretical background

We consider a simplified version of the decisions faced by donors in the experiment. The agent has to decide how much to consume \((c_t)\) and donate \((g_t)\) in periods \(t = 1, 2, 3\). Here period 1 represents before Giving Tuesday (GT), period 2 represents GT, and period 3 represents after GT. Assuming the price of consumption is 1, the price of giving in period \(t\) is \(p_t\) and income in period \(t\) is \(\omega_t\), the consumers chooses donations that solve the following problem:

\[
\max_{c_t, g_t} \left\{ \sum_t \delta^{t-1} u(c_t, g_t) : \sum_t (1 + r)^{-(t-1)} (c_t + p_t g_t) \leq \sum_t (1 + r)^{-(t-1)} \omega_t \right\}
\]

In this model, the agent faces trade-offs between how much and when to consume. In particular, in an interior solution, the trade-off between current consumption and current donations is summarized in the marginal condition \(\frac{u_c(c_t, g_t)}{u_g(c_t, g_t)} = \frac{1}{p_t}\). Regarding giving, the trade-off between donating in period \(t\) and in period \(k\) is summarized in
the marginal condition \( \frac{\delta^{-1}u_g(c_t,g_t)}{\delta^{-1}u_g(c_k,g_k)} = \frac{(1+r)^{-(t-1)p_t}}{(1+r)^{-(k-1)p_k}} \). For instance, an agent considering donating before GT or on GT has the marginal condition \( \frac{u_g(c_1,g_1)}{u_g(c_2,g_2)} = \delta(1 + r) \frac{p_1}{p_2} \). If \( \delta(1 + r) \) is close to 1, the decision of when to donate over time will depend mainly on the prices across periods. For instance, an agent with linear preferences over giving will donate in the period where prices are lowest. In general, if prices are expected to drop, agents will delay donations.

The model can be extended to represent both time inconsistency as well as awareness of time inconsistency if present. In that situation, if an agent expects prices to drop, she might be less responsive to reductions in current prices. The agent may postpone the decision to donate.

The model suggests alternative ways to evaluate the effect of prices of giving over time on donations over time. First, there is the own price elasticity \( \frac{\% \Delta g_t}{\% \Delta p_t} \). All things constant, donations are expected to increase as current prices of giving decrease. These elasticities should be affected by expected prices across time as shown above. Second, there are cross-price elasticities \( \frac{\% \Delta g_t}{\% \Delta p_k} \), in which past or future prices can affect donations in period \( t \). For instance, evidence of across time substitution will be a decrease of donations on GT after a decrease in price prior to GT.

### 3 Related Literature

A nascent literature has begun to investigate inter-temporal giving. One area where timing may be important is how it interacts with transaction costs: giving involves some transaction costs and these costs may change over time.

Huck et al. (2010) hypothesized that reminders will be effective since having multiple opportunities to give increases the chances that the potential donor has lower transaction costs at that time. They randomized potential donors in a field experiment to receive an additional reminder or no reminder to give, and confirm that it is optimal for fundraisers to mail reminders to increase the donor participation. Knowles and Servátka (2015) conduct a laboratory experiment that varies 1) presence of transaction costs and 2) time that participants have to make their decision. They find that higher transaction costs decrease likelihood of giving but no impact of giving donors more time.

Timing may also matter because of dynamic inconsistency, which predicts different behaviors when decisions are made for the immediate period versus a later period (see, e.g., Laibson (1997)). Andreoni and Serra-Garcia (2016) conduct a laboratory experiment in which the authors allow subjects to pledge or pre-commit to giving at
a later date. They find that substantially more subjects give when they can make the decision to give in advance relative when the gift is immediate (45% giving rate versus 31% giving rate). The authors interpret their results as evidence of dynamic inconsistency in charitable giving. In contrast, Dreber et al. (2016) develop a model that assumes that people are generous in the short run but selfish in the long-run and find empirical support for this prediction in an online experiment on Amazon Mechanical Turk.

Our contribution to this growing literature is to explore inter-temporal substitution in giving by randomizing some donors to receive a match earlier. Our theoretical framework is most similar to Andreoni and Serra-Garcia (2016) since we also consider time inconsistency in the decision to give. Our design is different, however, since we investigate reducing the price for donors to give earlier.

This earlier opportunity to give at a reduced price can have a mixed impact on giving at the later date (i.e., on Giving Tuesday). Moral licensing theory from the psychology literature, which suggests that an opportunity to do a good deed in one period may cause an individual to forego good deeds in later periods, may suggest a decrease in giving on Giving Tuesday for those individuals who take up giving at the earlier time (Merritt et al., 2010). On the other hand, individuals who take up the earlier offer may increase their identification with their perception of themselves as a donor to the charity, which would cause them to increase giving on Giving Tuesday (Gneezy et al., 2012).

Another strand of related literature focuses on the role of matching grants on charitable giving (Eckel and Grossman, 2003; Karlan and List, 2007; Meier, 2007; Eckel and Grossman, 2008; Huck and Rasul, 2011; Karlan et al., 2011; Huck et al., 2013; Meer, 2014, 2017). This literature tends to find an overall positive effect of matching grants, but a very limited effect to changes in the match rate.

In contrast to this research, our match offers are extremely time-limited (expiring within 24 hours in the case of the Giving Tuesday match, and within 3 days in the case of the experimental earlier match; relative to related work which allows e.g., 4 weeks (Huck and Rasul, 2011)). Presence of transaction costs might suggest that our offers will be less popular among donors (since there is little flexibility in timing), but on the other hand very short deadlines may motivate donors to take immediate action.

Surprisingly, our results suggest much higher elasticities when match rates are varied than related work, especially when the match is offered four weeks prior to Giving Tuesday. One potential reason for this is that our match offers allow potential donors to make a direct comparison between two options, i.e., a smaller/larger earlier match
versus the later, Giving Tuesday match. Another difference between our work and related work on matches is the very short time limits to give to receive the match.

Also relevant is the effect of competition among charities, which has received increased attention recently. Competition may be greatest on giving days, when multiple charities may be offering special offers to donors. There are a handful of related papers on this topic and the results are mixed. Reinstein finds evidence of expenditure substitution both in a study with existing data and expenditure shocks (Reinstein, 2011) and in a laboratory study in which the price of giving is systematically varied (Reinstein, 2010). On the other hand, Filiz-Ozbay and Uler (2016) find that decreasing the price of giving to one charity has a positive impact on that charity without substitution away from another charity both in the laboratory Filiz-Ozbay and Uler (2016); Krieg and Samek (2016) and on a fundraising platform Meer (2017).

Our study also has relevance to work outside of the charitable giving field. For example, Mian and Sufi (2012) study the ‘Cash for Clunkers’ policy and find that intertemporal substitution undoes the positive effects of this program. It is not clear whether intertemporal substitution would follow similar patterns in charitable giving, since giving to charity is very different from purchases of durable goods.

4 Field Experiment

4.1 Setup

Our experiment was conducted in November of 2016 during the weeks leading up to Giving Tuesday (November 29, 2016). We collaborated with the Coleman Foundation, who provided the matching grants and helped us to secure nonprofit partners. The nine nonprofits we partnered with are local to Chicago, IL and also diverse, representing charities fighting cancer, helping people with disabilities, educating children with special needs and providing families with financial education. These non-profits shared with us email lists of potential donors, totaling 39,931 unique e-mail addresses.

We randomized donors at the individual level to a special match offer and sent all experimental e-mails ourselves using the MailChimp and Constant Contact softwares and standardized experimental language. Beyond this, each organization designed its own email (template, images and text about the charity) so that the email was consistent with the nonprofit’s image. In this way, we assured that the randomization and implementation of the e-mails was conducted as designed and that there was consistency between nonprofits in the treatment messages. At the same time, potential
donors received a solicitation that was in line with each nonprofit’s image. Importantly, the organizations were unaware which treatment any of their potential donors received. This provides assurance that the charities continued to treat all potential donors equally beyond the experimental treatments.

Donations were made either via the online giving platform GiveGab, or directly on the charity’s own website. We collected data directly from GiveGab or from the charity on all donations to the charity between November 1, 2016 and December 31, 2016. In addition to data on gifts from the donors in the potential donor list, we also have data on e-mail view and opening rates from MailChimp and Constant Contact.

In addition to the special match offer emails we sent, all nonprofits sent their regularly planned emails to promote Giving Tuesday to all individuals on their email lists (including the treatment and control groups). Promotions for Giving Tuesday also occurred on social media (e.g. Facebook, Twitter, Instagram).

4.2 Design

Potential donors of participating nonprofits were sent one of six messages via email that varied the size of a special match offer (e.g. 80%, 100% or 120%) and the weeks prior to Giving Tuesday it was sent (either four weeks prior on Nov 1 or two weeks prior on Nov 15). The email informed the potential donor of the special match offer they could receive if they completed a donation to the nonprofit within three days. The message also reminded the donor that she could receive a match of 100% if she gave on Giving Tuesday (Nov 29).

A donor receiving the special match offer could give within three days to take advantage of the special offer, could give on Giving Tuesday or could do both. The offer was only valid for the recipient and could not be shared with others (this was made clear in the solicitation). For the match to be honored, the recipient was required to make a donation and use the email address at which she received the offer. An additional group of donors (the Control group) did not receive a special match offer email. All groups received standard promotional emails and social media posting from the nonprofits as the normal course of promotions for Giving Tuesday. Table 1 provides a summary of the treatments, including the implied price of giving one dollar and the number of donors who were randomized to each treatment.

The text of the email and the subject line were standardized across each organization. The subject line for each email read, ‘Your donation in the next two days will be matched’. An example email is shown in Figure 1. The text in the email for the special match offer was worded as follows:
Table 1: Experimental Treatments

<table>
<thead>
<tr>
<th>Match ratio</th>
<th>Implied price of $1 of public good</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 1 - $0.8:$1.0</td>
<td>0.56</td>
<td>5,563</td>
</tr>
<tr>
<td>Nov 1 - $1.0:$1.0</td>
<td>0.50</td>
<td>5,630</td>
</tr>
<tr>
<td>Nov 1 - $1.2:$1.0</td>
<td>0.45</td>
<td>5,940</td>
</tr>
<tr>
<td>Nov 15 - $0.8:$1.0</td>
<td>0.56</td>
<td>5,644</td>
</tr>
<tr>
<td>Nov 15 - $1.0:$1.0</td>
<td>0.50</td>
<td>5,795</td>
</tr>
<tr>
<td>Nov 15 - $1.2:$1.0</td>
<td>0.45</td>
<td>5,470</td>
</tr>
<tr>
<td>Control</td>
<td>0.50</td>
<td>5,526</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>39,931</td>
</tr>
</tbody>
</table>

'We have two great matching offers in November – one that starts today and one on Giving Tuesday. Starting today, thanks to a generous donor, any donation you make between now and November 3 [17] will be matched at 80% [100%, 120%]. This means for every $1 you donate, the [nonprofit name] will receive $1.80 [$2.00, $2.20]. On Giving Tuesday (November 29), any donation you make will be matched at 100%. This means that for every $1 you donate, the [nonprofit name] will receive $2.00. If you are able to give today, your gift will be matched 80% [100%, 120%], and any donation you make on Giving Tuesday will still be matched 100%.'

Data were collected from different sources and linked to follow the path of donation behavior upon receipt of the special match offer email. From MailChimp and Constant Contact, we have data on whether or not the email bounced or was undeliverable, if it was opened and what links in the email were clicked. Donation data were collected from the online giving platform GiveGab and from the nonprofit that reported donations via its website or via check or cash. These data were linked by the donor’s email address and name. The final data allow us to examine how potential donors responded to the special match offer, if and when they donated, the number of times they donated and the amount donated.

5 Results

Over 39,000 unique emails were sent and received by potential donors. Overall, 16% of all emails sent were opened, and this rate varied by date sent. There is a significant decay in interest as the date gets closer to Giving Tuesday. Figure 2 shows open rates by treatment. Emails sent on November 1 were opened at a rate of 18.5%, and those
Your donation will be matched!

We have two great matching offers in November — one that starts today and one on Giving Tuesday.

Starting today, thanks to a generous donor, any donation you make between now and November 3 will be matched at 100%. This means for every $1 you donate, you will receive $2.00.

On Giving Tuesday (November 28), any donation you make will be matched at 100%. This means for every $1 you donate, you will receive $2.00.

If you are able to give today, your gift will be matched 100%, and any donation you make on Giving Tuesday will still be matched 100%.

DONATE NOW >

Figure 1: Example email - November 1 - 100% special match offer
sent on November 15 were opened at a rate of 15% (difference in means p-value=0.000). There is no significant difference in open rates across special match rate offers by date. Since the only information available to potential donors when making the decision to open the email is the subject line, we would not a priori expect differences across match rates for a particular date. The information about the special match offer rate could only be seen upon opening the email.

![Figure 2: Email open rates](image)

5.1 Number of donations

Over the course of the month of November, there were 553 total donations received that could be matched with individuals in our treatment or control groups across the nine participating nonprofits. Figure 3 shows the time trend in donations for each day in November for all individuals in these groups. The figure marks the two 3-day periods in which the special match offers applied on Nov 1-3 and Nov 15-17 and Giving Tuesday on November 29. There are spikes in donations during the two special match offer periods, and the earlier period of Nov 1-3 shows a monotonic price responsiveness to the special match offers with more donations for the 120% match compared to the 100% match and the 80% match. Such a monotonic pattern is not observed during the Nov 15-17 period. There is a large spike in donations on Nov 29 across all treatments and the control group.

The overall donation rate during the month of November is 1.2%, however, this varies by individuals assigned to the treatment and control groups. Figure 4 shows the donation rate by individuals in the treatment and control groups for any donation
made at any point during the month of November. In the treatment groups (those who received an email), the average number of people per treatment who donated at some point in November was 82.8. In the Control group, this was 56 individuals. In other words, a potential donor who received an earlier special match offer was 50% more likely to donate than a potential donor who did not receive an earlier offer. (This increase in donations is significant, t-test = 2.6231, p-value = 0.0087).

Individuals who received the special match offer on November 1 are differentially responsive to the match rate. Those in the Nov 1-80% group gave at a rate of 1.2%, those in the Nov 1-100% group gave at a rate of 1.45% and those in the Nov 1-120% group gave at a rate of 1.8%. Individuals who received the special match offer on November 15 do not have a monotonic donation rate pattern. These individuals received the email two weeks prior to Giving Tuesday, and the donation pattern could reflect some anticipation of participation on that day.

5.2 Amount donated

The average amount donated in November per potential donor was $3.38, and there is considerable variation across treatment and control groups. Figure 5, panel (a), shows the average unconditional donation by group. Individuals in the treatment groups gave more on average than those in the Control. In the Control (no email), the average amount donated in November per potential donor was $1.34 (s.e. 0.28). In the
treatment group, the average amount donated was $3.71 (s.e. 0.41). In other words, a potential donor who received an earlier special match offer gave more than double what a donor who did not receive an earlier offer gave. (This difference is significant, t-test = 2.3291, p-value = 0.0199).

Average donation amounts conditional on having made a donation follow a similar pattern when comparing the average donation by individuals in the treatment groups compared to the control group. Panel (b) in Figure 5 shows that average donations by treated individuals are double those made by individuals in the Control group. Holding constant the match rate at 100%, since that is the rate a potential donor could get on Giving Tuesday and in two of the treatment conditions, we see treated individuals gave $275 compared to $130 in the Control group.
The total amount donated in November by individuals in a treatment group is, on average, three times higher than the total amount donated by those in the control group. The total amount donated in the control group was $7,419.51, and in the six treatment groups, the total amount donated was $126,245.8. This is equivalent to $21,041.0 per treated group.

While average and total donations are higher in the treatment groups compared to the control group, it is important to note that the increase in donors and donations is not due to donors giving more than once in November. Very few did that. In fact, the results show that “new” donors were recruited to make donations when receiving earlier offers.

Figure 6: Number of donors who only gave before Giving Tuesday, on Giving Tuesday or after, or gave at both times

Figure 6 shows the distribution of when a donor made a donation (before GT, on GT, or both) by treatment. These groups are exclusive in that an individual is either classified as a before Giving Tuesday donor, an on or after Giving Tuesday donor or one who gave during both periods. Note that the number of donors on Giving Tuesday is similar across treatments and control. This shows that the earlier special match offer did not displace donations from Giving Tuesday to earlier in the month. Earlier donations are made by “new” donors, and only a handful of donors gave during both time periods.

Thus far, we find there is less interest in earlier special match offers as Giving Tuesday approaches, however, we do not find any uniform evidence that behavior on Giving Tuesday is affected by having received an earlier offer. Holding constant the price of
giving at 1/2, having received an earlier offer increases the number of donations and the total amount of money raised. We do not find support for intertemporal substitution in giving. Receiving an early offer brings new donors and donations without reducing donations on Giving Tuesday.

5.3 Responsiveness to match offer

In order to understand the benefits of providing matches relative to costs, we report how responsive potential donors in the study were to changes in the price of giving. We can do this by looking at how giving changes as different match rates are offered since a match allows a donor to give a final desired amount to the organization at a lower out-of-pocket cost.

Table 2 provides the information we use to make rough estimates of elasticities. For instance, we can calculate the own-price elasticities for donations made on time. For the time period November 1-3, the average price of giving in treatments $1:1 and $1.2:1 is 0.476 and the average amount donated on time per person is 1.028. Assuming that if donors where asked to donate without a match between November 1 and November 15 they would have donated no more than what they donated when offered a match of $0.8:1, we can calculate a lower bound of the own-price elasticity of donating on time during the November 1-3 period to be -1.69.\(^4\) The same calculation using all donations made prior to GT produces an elasticity of -5.64. The way to read these numbers is that a 1% reduction in the price of giving would increase the size of a donation by 1.69% during the time period November 1-3 and by 5.64% during the time period prior to GT. The corresponding elasticities for the November 15 condition are -4.95 and 0.32.

Another way to look at donor response to price changes is to examine how price changes in earlier periods affect giving on Giving Tuesday. To calculate this cross-price elasticity, we look at donations made on GT as a function of price changes in prior weeks. We follow the same approach and assume that those receiving a match of $0.8:1 represent a lower bound of what those receiving no match would have done. The cross-price elasticity for those receiving matches on November 1 is 0.30 if we consider only donations made on time (i.e. on GT) and 0.03 if we consider donations made on time and past the deadline. This suggests a weak substitution effect - a 1% reduction in the price of giving on November 1 would reduce giving on GT by 0.30%. The corresponding elasticities for those receiving matches on Nov 15 are -2.24 and -2.18. This, by contrast,

\(^4\)The average donation in condition $0.8:1 is 0.546 and the average donation in conditions $1:1 and $1.2:1 is 1.028. The percentage increase in donations between matching conditions is 88% and the percentage decrease in price is -52%. This gives an elasticity of -1.69
Table 2: Average amount donated by time of donation and treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Prior to GT</th>
<th>On GT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On time</td>
<td>On time and past deadline</td>
<td>On time</td>
</tr>
<tr>
<td>Nov 1 - $0.8:$1.0</td>
<td>0.55</td>
<td>0.76</td>
<td>1.82</td>
</tr>
<tr>
<td>Nov 1 - $1.0:$1.0</td>
<td>0.56</td>
<td>2.35</td>
<td>1.22</td>
</tr>
<tr>
<td>Nov 1 - $1.2:$1.0</td>
<td>1.49</td>
<td>3.21</td>
<td>1.86</td>
</tr>
<tr>
<td>Nov 15 - $0.8:$1.0</td>
<td>0.04</td>
<td>1.18</td>
<td>1.31</td>
</tr>
<tr>
<td>Nov 15 - $1.0:$1.0</td>
<td>0.19</td>
<td>1.44</td>
<td>3.00</td>
</tr>
<tr>
<td>Nov 15 - $1.2:$1.0</td>
<td>0.13</td>
<td>0.52</td>
<td>2.68</td>
</tr>
<tr>
<td>Control</td>
<td>0.04</td>
<td>0.25</td>
<td>1.04</td>
</tr>
</tbody>
</table>

provides evidence of strong complementarity of donations two weeks from GT - a 1% reduction in the price of giving on November 15 would increase giving on GT by 2.24%. The lack of consistency across the Nov 1 and Nov 15 treatments suggests the trade-offs indivuals make across time may depend on the time frame under consideration.\(^5\) In sum, the combined evidence across the two time periods suggests strong intertemporal substitution effects are weak at best.

Finally, we can calculate the elasticity of total donations (pre GT and GT) to changes in prices prior to GT. The price elasticity on total donations for the November 1 condition is -0.16 if we consider donations made on time and -1.51 if we consider on-time and past-deadline donations. The price elasticities for total donations for the Nov 15 condition are -2.33 and -1.02.

It is interesting to note that we find larger price responsiveness in our environment than in previous studies using matches. Karlan and List (2007) found that a 1% reduction in price would increase donations by 0.3%. The estimates from our project indicate that potential donors react strongly to match offers made four weeks prior to Giving Tuesday. The analysis also suggests that a fundraising campaign in the weeks prior to GT does not necessarily crowd out fundraising on GT.

### 6 Discussion and Conclusion

We conducted a large field experiment to gain a deeper understanding of how donors trade-off the timing of their giving decisions over a period of months. We exploited the worldwide giving day called Giving Tuesday (the first Tuesday following Thanksgiving), where the price of giving is lowered by half through donation matches, to see how individuals decide to give in the weeks prior to this deadline when offered the opportunity to give earlier at a lower price. By randomly offering different lower prices

\(^5\)The model proposed in the theory section assumes that the agent’s preferences are time separable. To obtain this result, past donations would have to affect the marginal utility of future donations.
to give and offering these discounted prices four and two weeks out from the deadline, we examine the intertemporal trade-offs of giving.

Our findings suggest that individuals do not intertemporally substitute between giving prior to the deadline and on the day of the deadline. The proportion of donors on Giving Tuesday is similar whether or not the donor received an earlier match offer. In addition, different individuals decide to donate earlier. That is, lowering the price of giving several weeks prior to Giving Tuesday brings in new donors and total donations increase. This is not a substitution effect of donors moving their donations from Giving Tuesday to earlier in the month.

The responsiveness of donors to these changes in the price of giving are large. Our calculated own price elasticities in the presence of a deadline are four times larger than previous results (Karlan and List, 2007). The price responsiveness across time periods confirm that intertemporal substitution effects are weak in our data.

The time dimension of giving is largely unexplored. Our study takes a first step in looking at this phenomenon by examining giving in the presence of a deadline. There are trade-offs between urgency (deadlines) and convenience (window of offers), and it would be important to understand how individuals behave in these environments.
References


