

Do charities know what triggers donations?

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ESA Global Meetings
(many places on Earth)

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Lead with...



- ▶ ESA conference organizing committee
- ▶ Research partners
 - ▶ The Coleman Foundation
 - ▶ Many generous charities in the Chicago area
- ▶ Based on
 - ▶ Castillo, Marco and Ragan Petrie, "Optimal Incentives to Give," 2020, SSRN Working Paper
 - ▶ 2020 field study

nonprofit

- ▶ Nonprofits provide public goods, esp important in U.S.
- ▶ 1.5 million nonprofits, 5.6% of GDP, 10% private sector labor force (Urban Institute)
- ▶ Despite importance, 1/3 of charities do not survive to 10 years (NCCS, 2015). Half for for-profit firms (Daepf et al , 2015)
- ▶ 7% technically insolvent (Morris et al, 2018)



- ▶ Charities often use matches for donations to reduce the price of giving
- ▶ What do optimal incentives to give look like?
- ▶ Do charities know how to set matches to maximize fundraising?

Fundraising

- ▶ Usually “dollar-for-dollar”, e.g. for each dollar given, donation is matched. This effectively lowers the price of giving to one-half
 - ▶ Inefficient, esp if price elasticity of giving is < 1 as found in several studies (Eckel and Grossman, 2003; Karlan and List, 2007; Huck and Rasul, 2011; Andreoni and Payne, 2013; Castillo and Petrie, 2020; Hungerman and Ottoni-Wilhelm, 2021).
 - ▶ Donor can reduce out-of-pocket donation, even though money received by charity increases.
 - ▶ Charity may be better off announcing a large donation and not reducing the price of giving (Huck and Rasul, 2011)

Design problem for charities

- ▶ Objective of charity - max out-of-pocket donations, attract new donors, increase donor retention/participation
- ▶ Choose an incentive that meets objective and accounts for donor preferences
- ▶ We assume quasi-linear preferences over donations and consumption, propensity to donate in population (“donor base”) and elasticity of giving

Optimal fundraising scheme

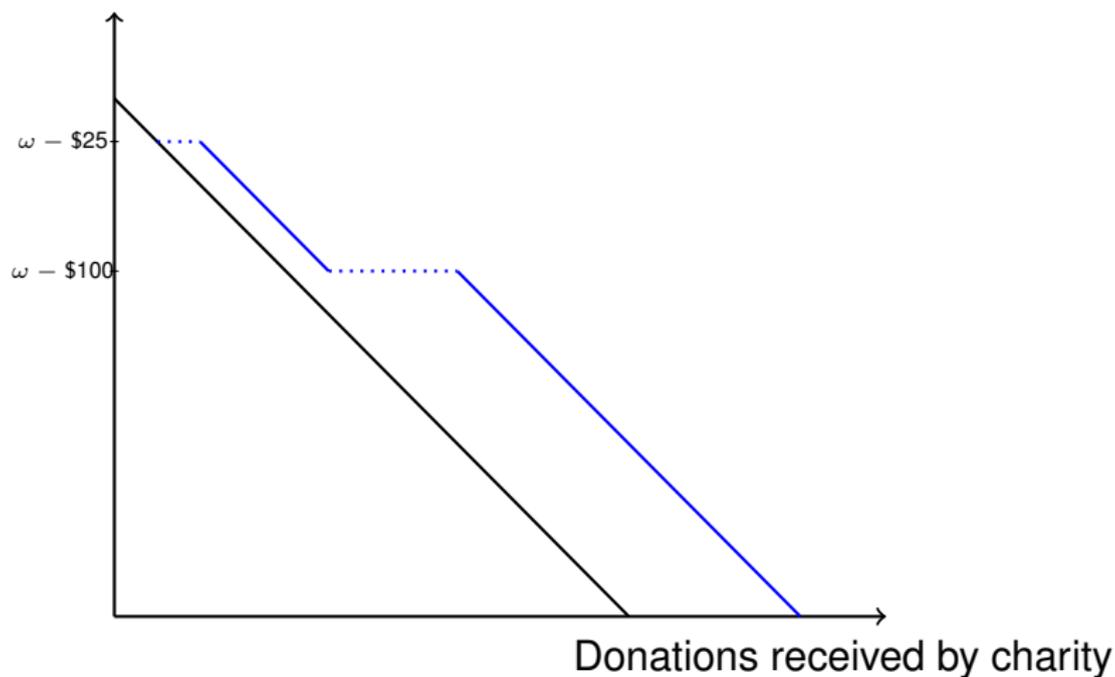
- ▶ Assuming individuals respond to marginal pricing and demand is inelastic, optimal incentive is not popular one-to-one match.
 - ▶ Only donations above a threshold are matched. Small donors do not get a price reduction.
 - ▶ Increasing discount for large donors
 - ▶ Intuition: excluding small donors from the match forces donors to increase donations. Nonlinear price encourages higher donations.

Threshold - fixed match

- ▶ Donors may not respond to marginal pricing but to average prices, i.e. “schmedulers” or warm-glow/impure givers (Rees-Jones and Taubinsky, 2020; Ito, 2014; Liebman and Zeckhauser, 2004; Hungerman and Ottoni, 2021)
 - ▶ Donors underreact to price changes
- ▶ In this case, “notches” (discontinuity in budget set) would help (Kleven and Waseem, 2013; Kleven, 2016; Blinder and Rosen, 1985)
 - ▶ Intuition: need to increase donation to notch to get match, reduction in donation above notch not as large as those who react to marginal prices
- ▶ **Threshold and fixed match meet these characteristics**
 - ▶ e.g. “Donations of \$100 and above are matched at \$100”

Effect of thresholds on giving

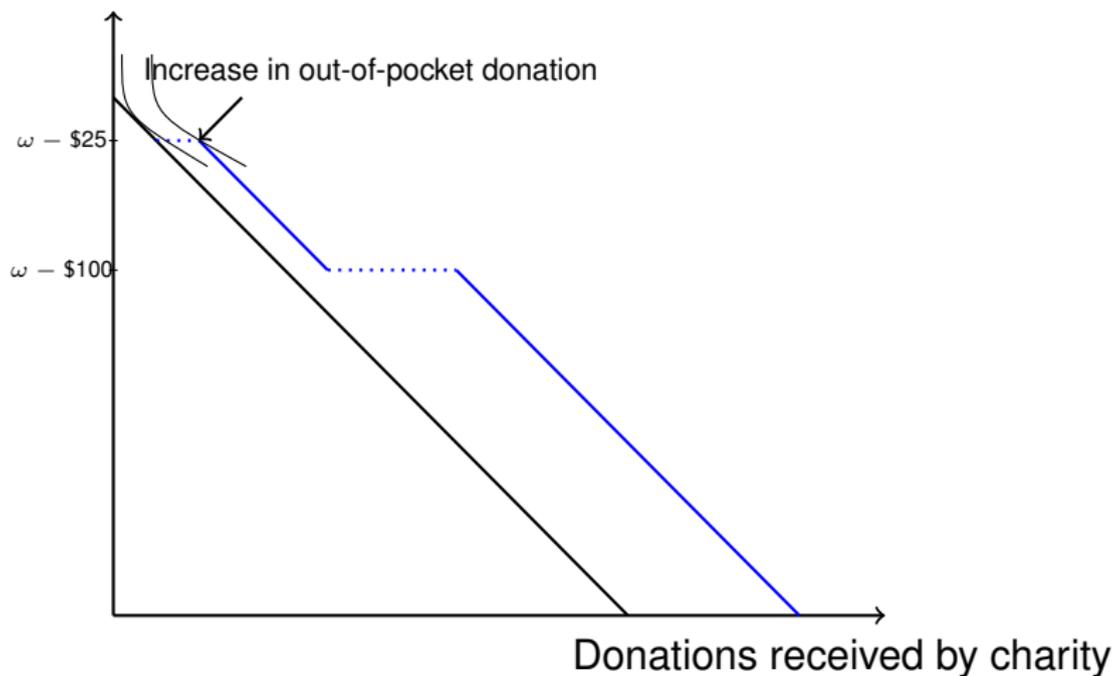
Consumption



“Donations between \$25-\$99 are matched at \$25. Donations of \$100 and above are matched at \$100.”

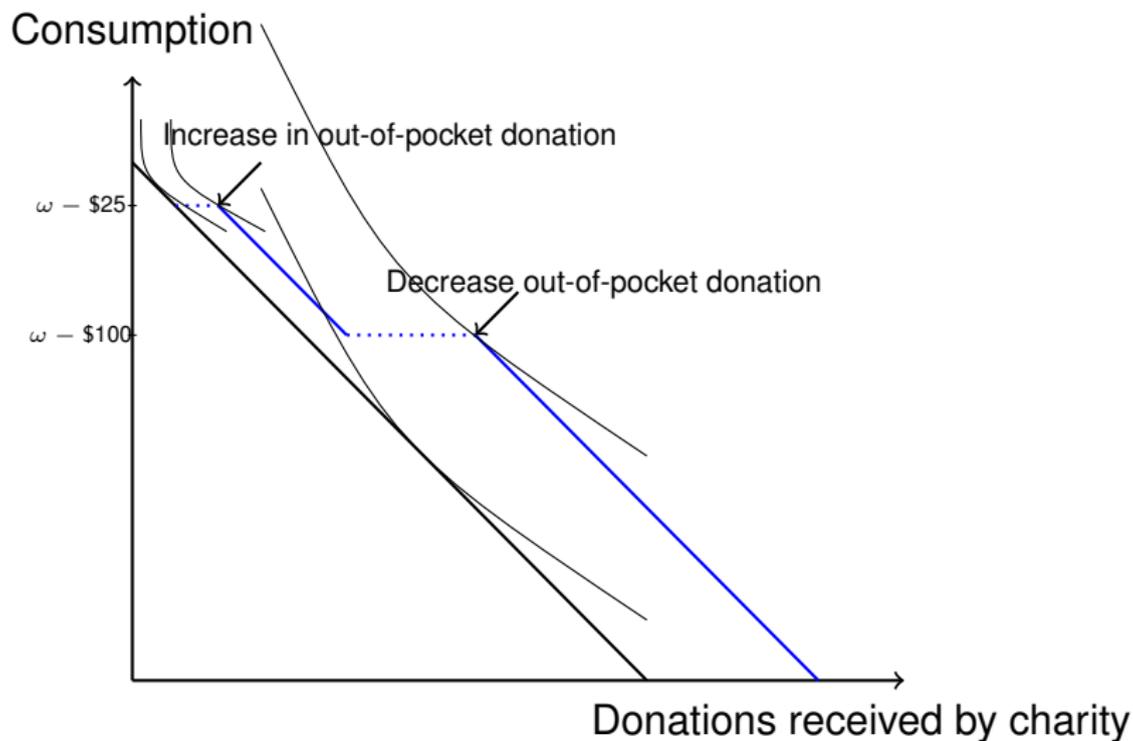
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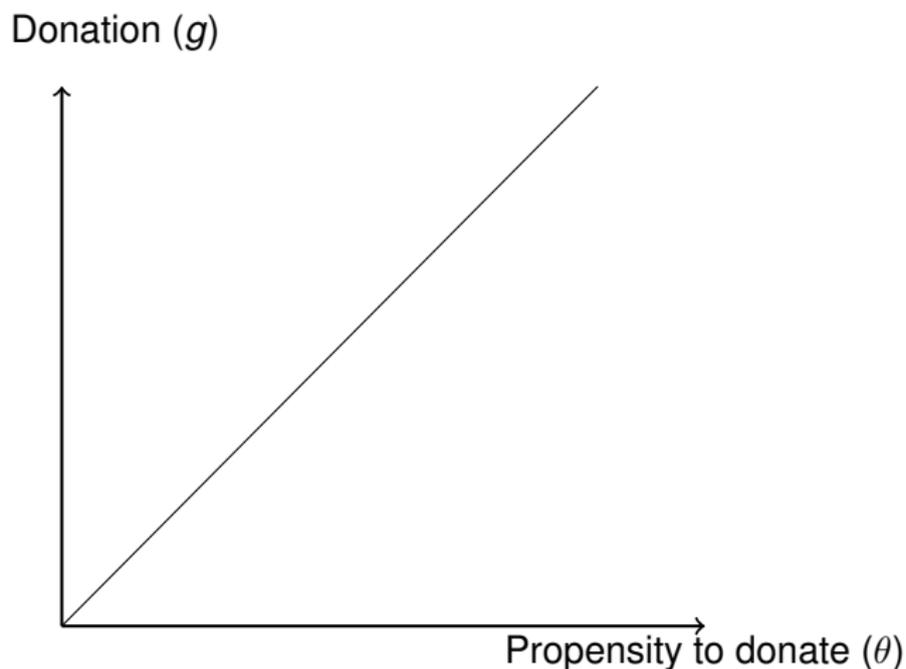
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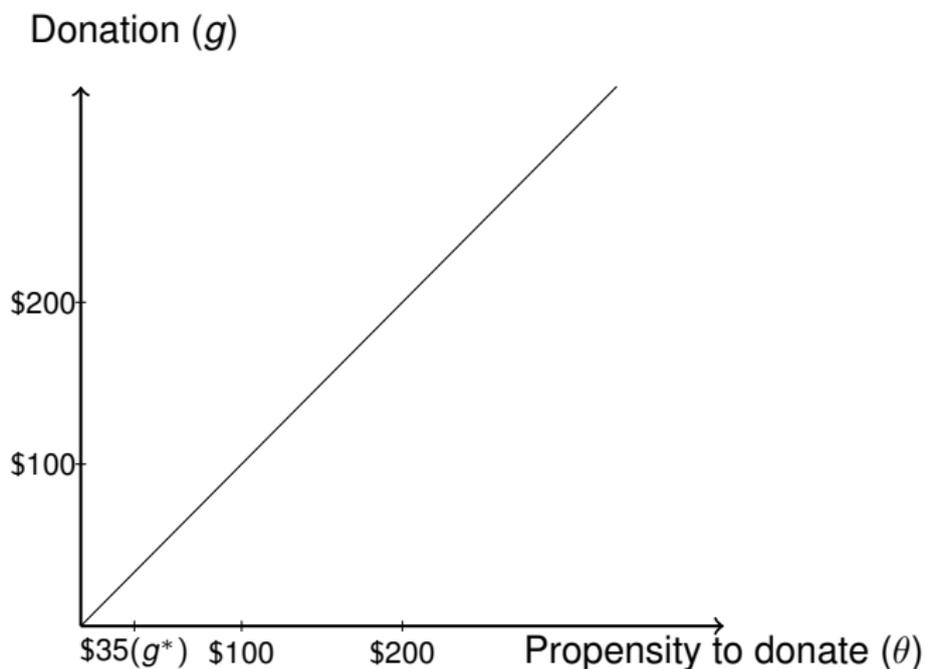
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Net effect on out-of-pocket donations



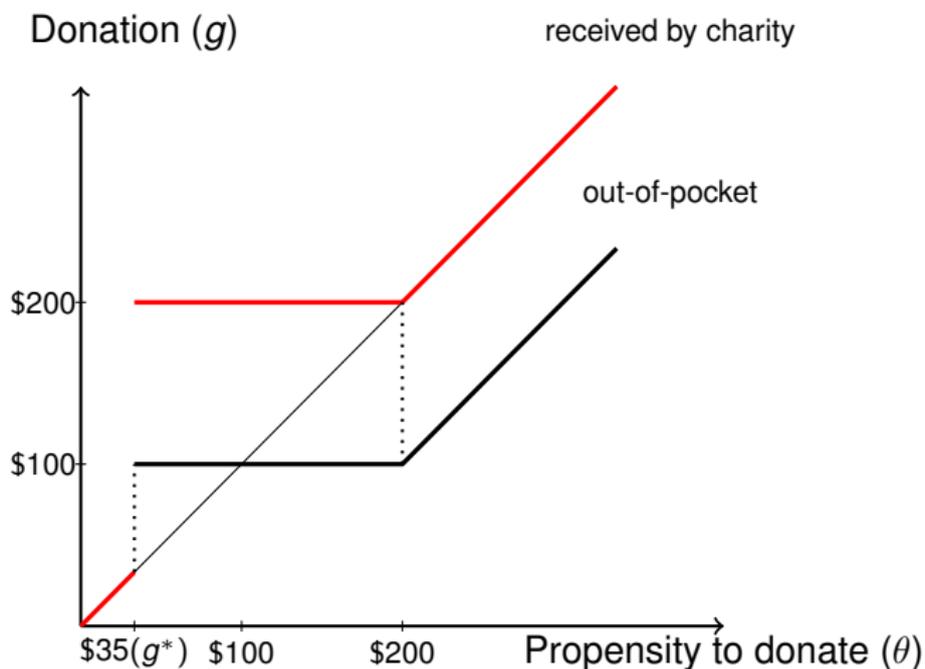
"Donations of \$100 or more are matched at \$100." $\$35 \leq \theta \leq \100 increase to \$100,
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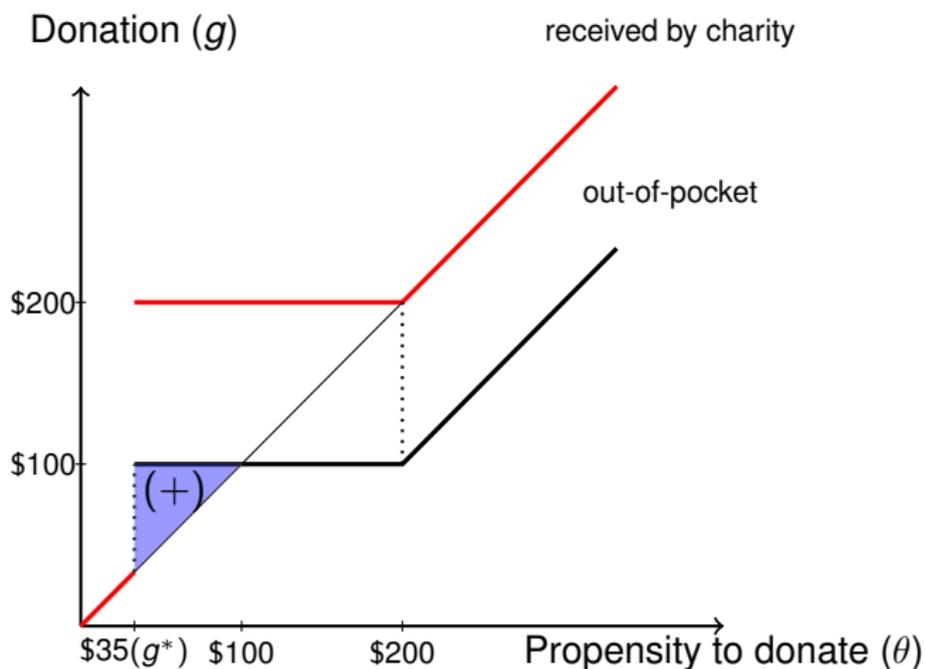
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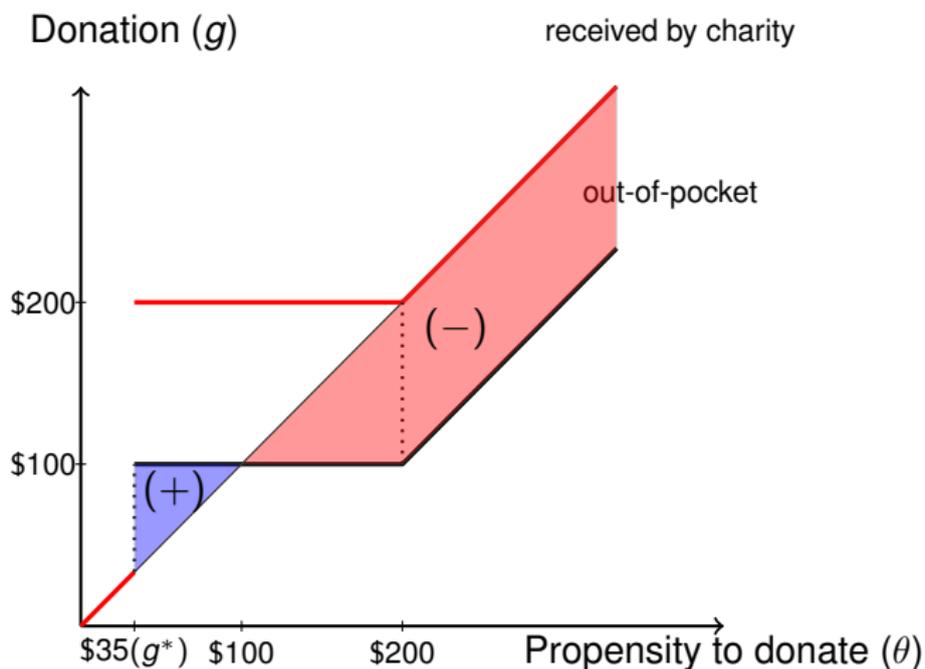
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Field Experiment: Optimal Incentives to Give

What incentives should charities offer to potential donors that lower the price of giving?

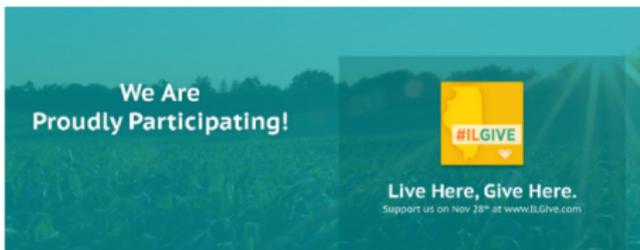
Field experiment

- ▶ Partnered with private foundation, 26 charities
- ▶ 112,000 supporters contacted with offer
- ▶ \$519,000 out-of-pocket donations raised
- ▶ over \$250,000 in matches (\$260,000 in potential matches, \$10,000 match cap)

Field experiment

- ▶ Randomly assigned threshold match incentives in November 2017 fundraising campaign
- ▶ Structural estimation of donor preferences
- ▶ Simulate optimal thresholds
- ▶ Field implementation of optimal thresholds in 2018 and 2019 campaigns

Example email



Your donation will be matched!

We have two great matching offers in November – one that starts today and one on Giving Tuesday (November 28).

Thanks to a generous supporter, any donation of at least \$50 between now and November 3 will be matched.* will receive a

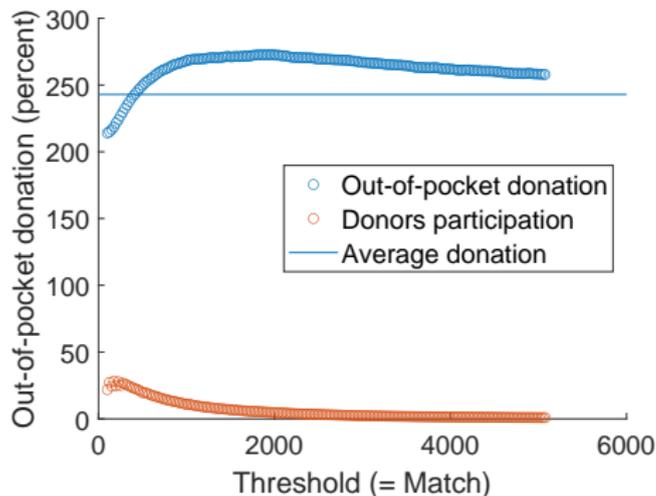
- \$50 match if your donation is between \$50 - \$149
- \$150 match if your donation is between \$150 - \$499
- \$500 match if your donation is \$500 or above

On Giving Tuesday, a donation between \$25-\$99 will receive a \$25 match, a donation between \$100-\$499 will receive a \$100 match, and a donation of \$500 or above will receive a \$500 match.

If you are able to give \$50 or more today, your gift will be matched, and any donation of \$25 or more on Giving Tuesday will still be matched.

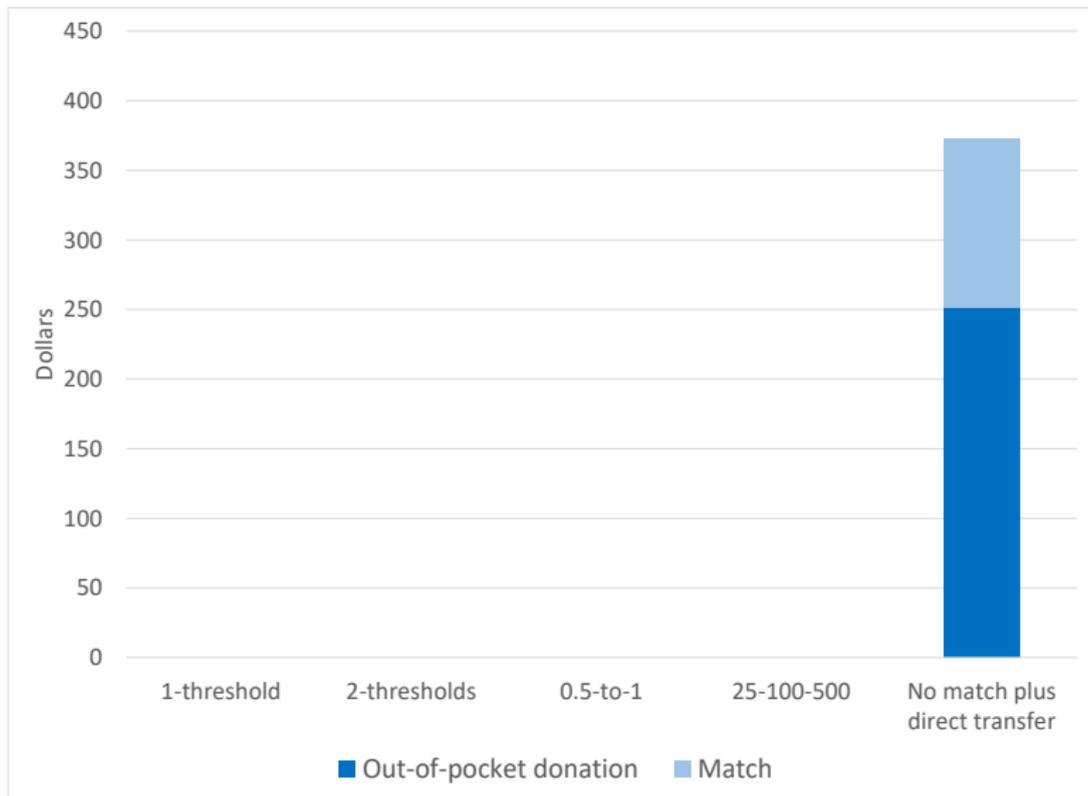
[Donate now](#)

Target large, not small donors

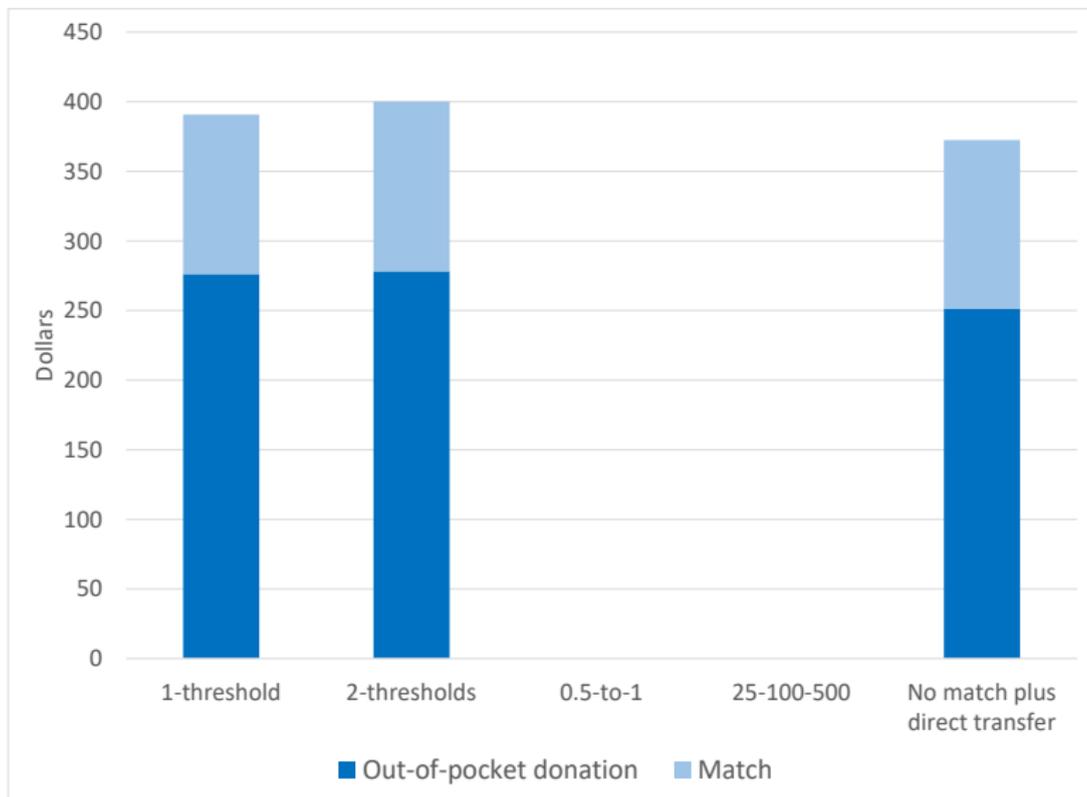


\$1,875 for max out-of-pocket (range of thresholds within 1.5% of the maximum donation is \$1,025 - \$2,800.); \$175 for donor participation.

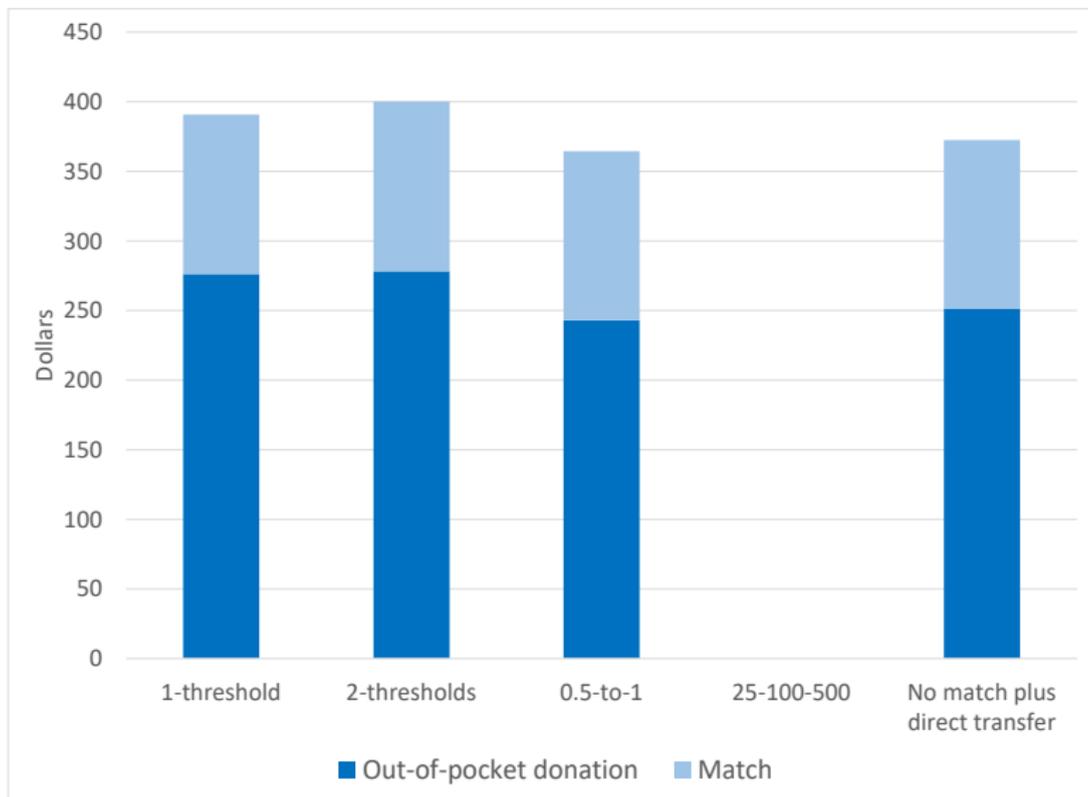
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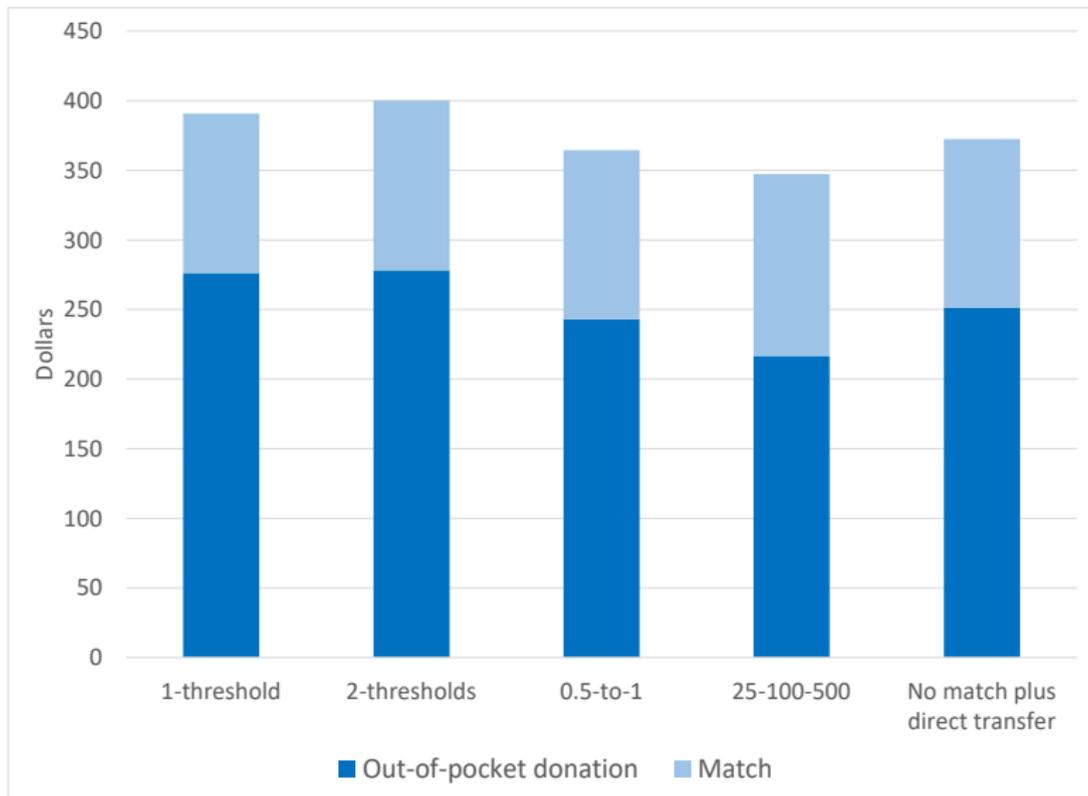
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Field implementation

- ▶ \$1,250 and \$175 predicted thresholds used in 2018 and 2019
- ▶ Charity chose
- ▶ Prediction is \$1,250 threshold will yield higher donations

Effect on fundraising - Diff-in-diff regression

	(1) Log Avg Donations	(2) Log Donations	(3) Log # Donors	(4) Log # Donors
\$1,250 threshold	0.450** (0.223)	0.055* (0.030)	0.155 (0.229)	0.088 (0.205)
Constant	5.444*** (0.101)	4.385*** (0.024)	4.602*** (0.104)	5.114*** (0.107)
Charity & year FE	yes	yes	yes	yes
Obs	98	22,253	98	56
# Charities	49	28	49	28
R^2	0.2623	0.0008	0.0347	0.0016

Note: *** < 0.01, ** < 0.05, * < 0.10. Standard errors in parentheses. Dependent variable for (1) is log of average donation (log(Total donations/number of donors)), (2) is log of individual-level donation, (3) and (4) are log(total number of donors). In (2), donations are restricted to be between \$5 and \$15,000. All regressions remove charities with few donors (<30). Only charities that used threshold matches are included.

11 charities switched between \$1,250 and \$175 thresholds.

Choosing higher threshold results in 5.5% increase in donations. No effect on number of donors.

Summary - optimal incentives field experiment

- ▶ Linear matches do worse than no match at all
- ▶ Optimal, higher, threshold-fixed match increases donations

Field Study: Advice

Do charities know how to choose incentives to maximize out-of-pocket donations?

Field study

- ▶ “revealed knowledge”
- ▶ Partnered with a private foundation and 90 charities in November 2020
- ▶ 562,524 supporters contacted
- ▶ 20,000 donors
- ▶ \$6.5 million out-of-pocket donations raised
- ▶ over \$895,000 in matches (\$1,125,000 potential matches)

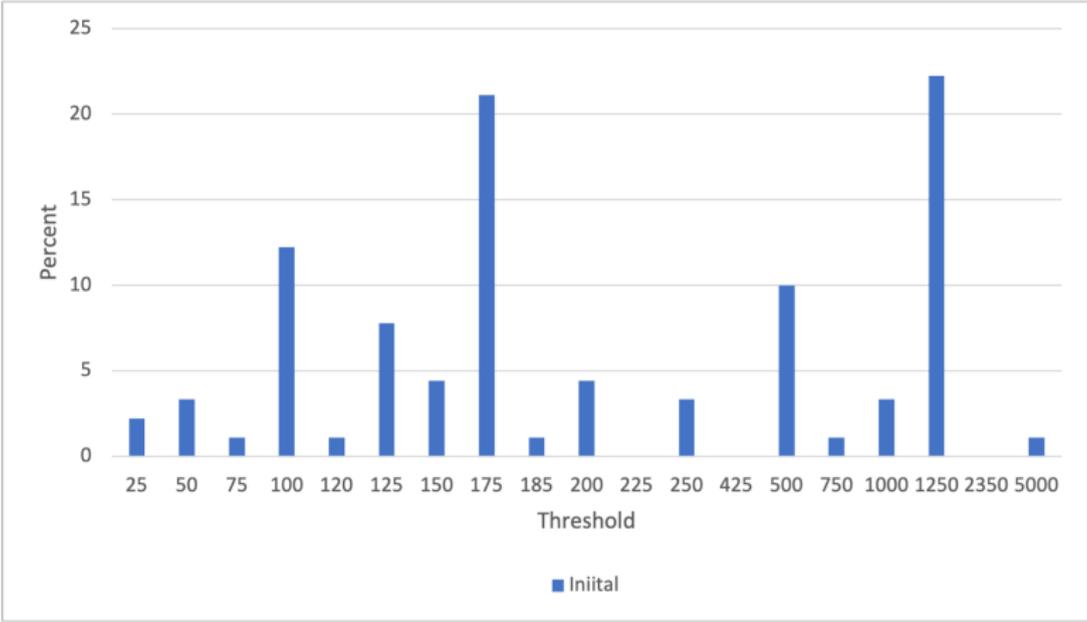
Field study

- ▶ Stage 1: Ask charities to choose a threshold (\$12,500 cap of matching funds), 2019 donations (binned)
- ▶ Stage 2: After committed to threshold, in a surprise, offered “guidance” on where to put the threshold. Charity opts into advice or not and provides 2 years previous donation data.
 - ▶ Researchers provide “tailored” advice.
 - ▶ Advice-takers submit final threshold. (non-advice-takers committed to Stage 1 choice)
- ▶ Stage 3: Get individual donation data (78 charities)

Charities

- ▶ 46 charities (51.1%) asked for advice
- ▶ Advice-takers and non-advice-takers balanced on most observables - including initial threshold
- ▶ Advice-takers have higher donations

Initial thresholds chosen



Advice given - Charity #17

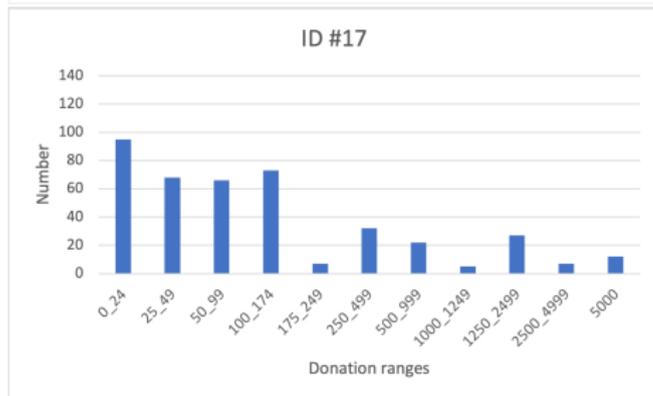


Chosen threshold

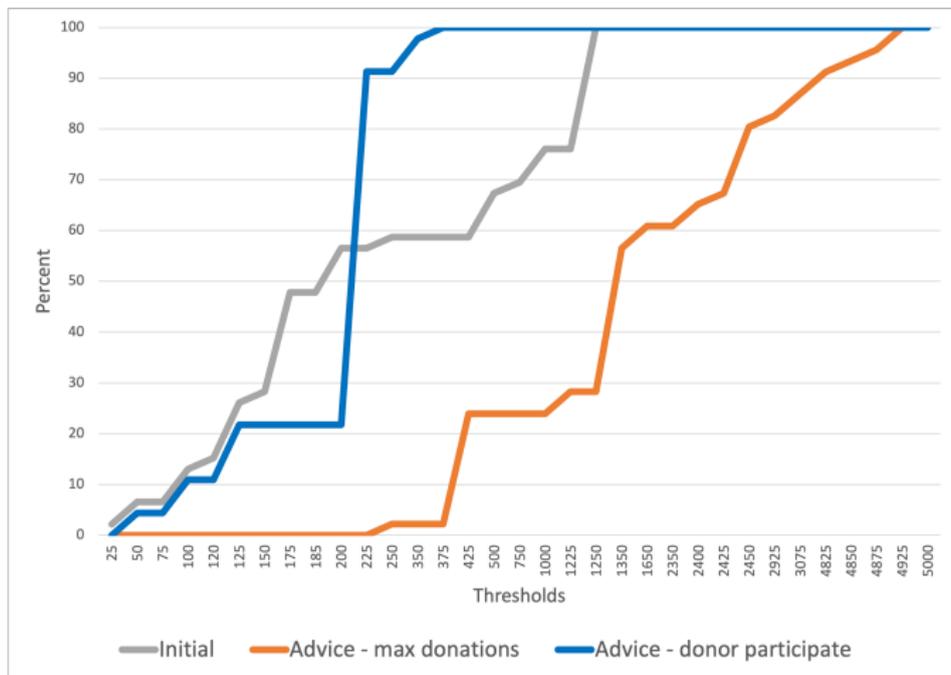
Strategy B: max out-of-pocket donations

Strategy A: max donor participation

Horizontal red line: donations absent match

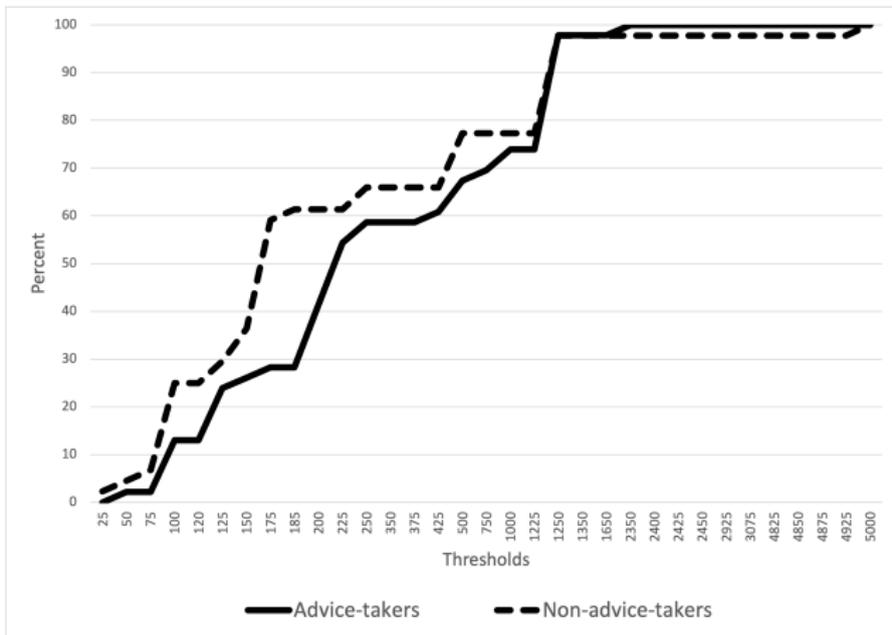


Advice takers - threshold chosen and advice



Charities choose thresholds that are lower than the advice if their objective is to maximize out-of-pocket donations.

Final thresholds of advice takers higher



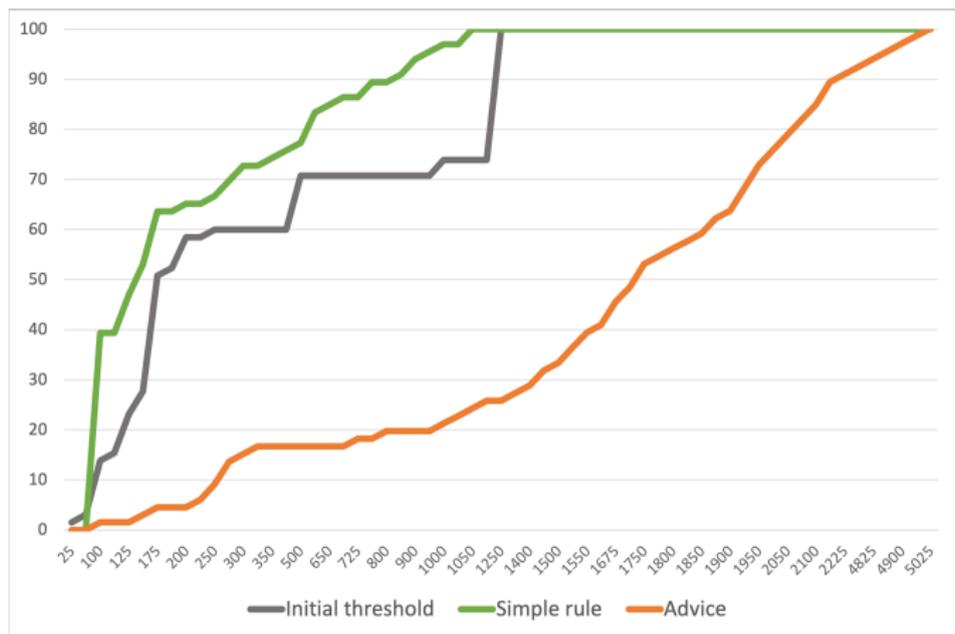
Of advice-takers, 61% kept same initial threshold for final threshold. 33% raised threshold, one charity took advice exactly.

Final threshold of advice-takers significantly higher than non-advice-takers (KS test p-value=0.014.)

Behavioral rules of charities

- ▶ Initial threshold lower than advice
- ▶ Compare simple rule to researcher advice for 90 charities
- ▶ Simple rule
 - ▶ Donors do not react to incentives
 - ▶ Distribution of donations same as 2019
 - ▶ Assess thresholds in \$25 increments
 - ▶ Add up match + out-of-pocket donation
- ▶ Researcher advice
 - ▶ Donors react to incentives
 - ▶ Binned 2019 data
 - ▶ Somewhat higher thresholds than full model (+ \$96)

Initial threshold, simple rule and advice



Initial threshold = $0.440 \cdot \text{Simple rule} + 0.181 \cdot \text{Advice}$ (obs=65, $R^2 = 0.554$.)

Simple rule explains larger share of initial threshold than researcher advice (p-value of same coefficients = 0.2605.)

Donations raised

- ▶ Data is incomplete (78 charities)
- ▶ 2020 was a generous year (or lots of COVID savings to spend)
- ▶ Donations were 18% higher than previous two years
- ▶ Swamped any effects from higher thresholds

Summary - advice field study

- ▶ Even restricting charities to choose a threshold-fixed match incentive, large gap between choice and researcher-derived threshold to maximize out-of-pocket donations

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- ▶ status quo bias is strong (i.e. 1:1 matches)
- ▶ may be few opportunities for charities to learn and experiment
 - ▶ good years may lead to confirmation bias about what works
- ▶ they may not be aware of better alternatives and, even made aware, unwilling to try

Thanks!