

# The Effect of Tax Price on Donations: Evidence from Canada

Ross Hickey<sup>1,4</sup>   Bradley Minaker<sup>2</sup>   Joanne Roberts<sup>3</sup>   Abigail  
Payne<sup>1</sup>   Justin Smith<sup>5</sup>

<sup>1</sup>Melbourne Institute: Economic and Social Research  
University of Melbourne

<sup>2</sup>University of Guelph

<sup>3</sup>Yale-NUS College

<sup>4</sup>University of British Columbia Okanagan

<sup>5</sup>Wilfrid Laurier University

July 15, 2019

- Forgone tax revenue of tax expenditures is significant
- Governments are interested in whether tax incentives work
  - Do they encourage donations?
  - Do they encourage *enough* donations?
- Key parameter for policy is tax price elasticity  $\epsilon$ 
  - If  $\epsilon = -1$ , entire tax rebate donated
  - If  $\epsilon > -1$ , part of tax rebate donated
  - If  $\epsilon < -1$ , more than rebate donated

- Estimate tax price elasticity with taxfiler panels from Canada
- Several key contributions
  - Produce estimates across income distribution
    - Credit is available to anyone with taxes owing
  - Estimate extensive margin
- Find average elasticity of -1
  - Highest for low income filers
  - Some evidence of extensive margin response

- Randolph (1995), Bakija (2000): strong transitory effect
- Auten et. al. (2002), Bakija & Heim (2011): strong permanent effect
- Fack and Landais (2016): France elasticity about -0.4
- Almunia et al. (2017): UK elasticity = -1, with big extensive margin
- Adena (2014): German elasticity about -1, larger for high incomes
- Duquette (2016): estimates elasticity with charity revenues
- Hungerman & Ottoni-Wilhelm (2016): tax filer elasticity matches estimates from experiments
- Experiments

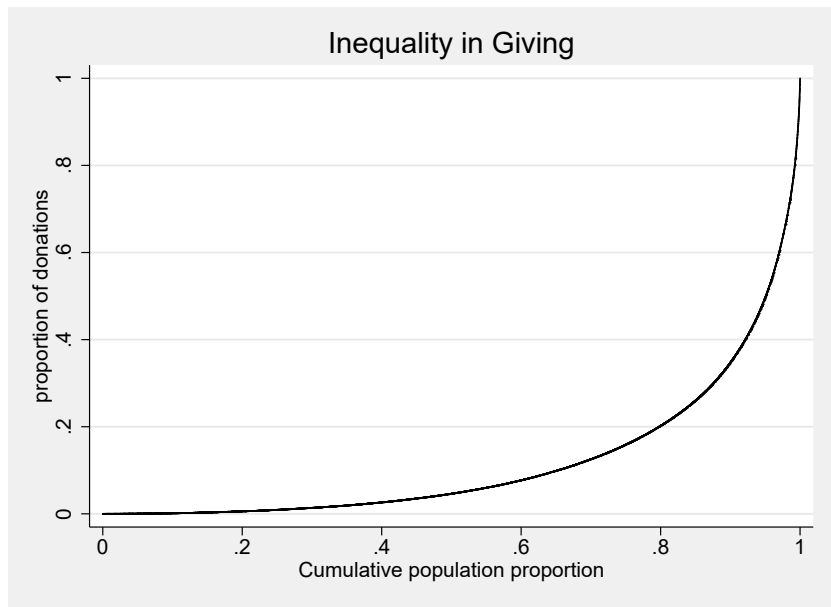
# Donation Tax Credit in Canada

- Canada has a 2-tier non-refundable credit for donations
  - One rate for donations  $< \$200$
  - *Higher* rate for donations  $> \$200$
  - Generally set at lowest and highest marginal tax rate
- Since 2001, separate federal and provincial rates
- Tax price of donating \$1 is therefore

$$price_{pt} = 1 - (cred_{pt} + cred_{ft})$$

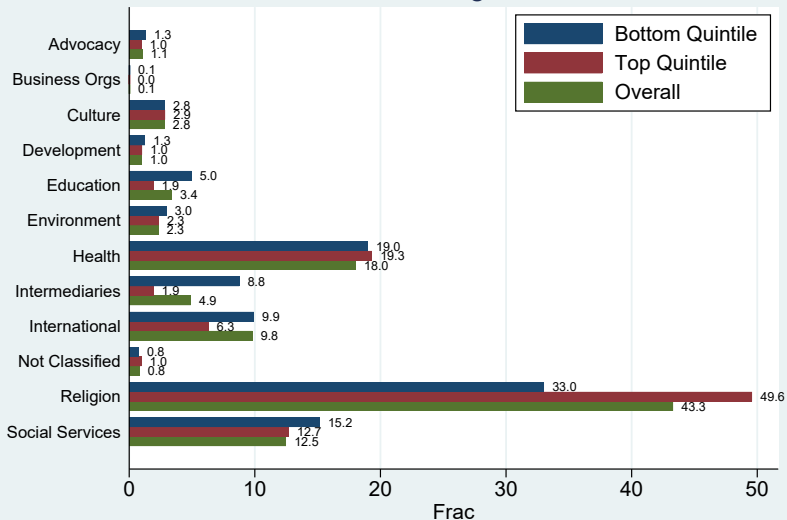
- Because credit is larger above \$200, price falls with more donations
  - Makes tax price endogenous, which we solve with instrument

# Distribution of Giving

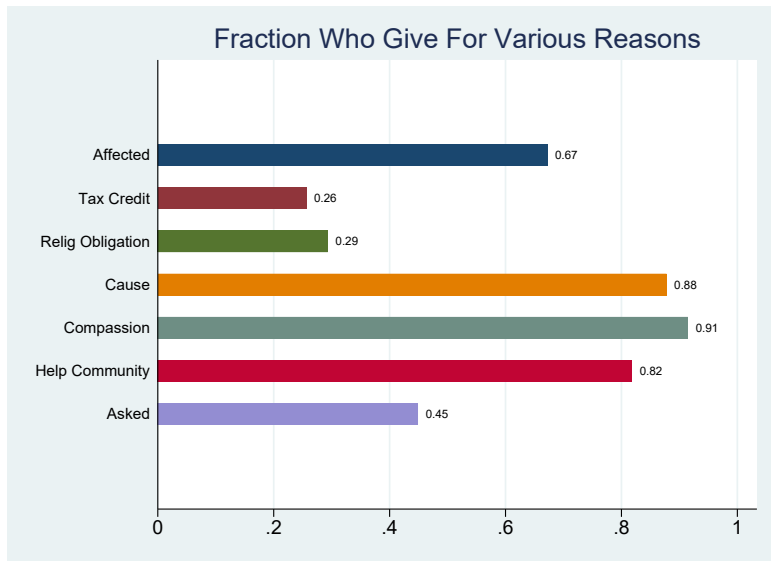


# Where do donations go?

## Distribution of Giving Across Causes



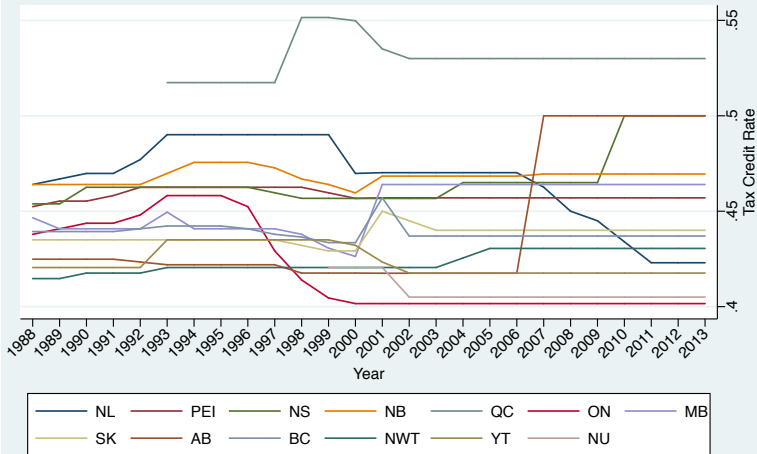
# Why do people give





# Tax Credits and Donations Over Time

## Combined Tax Credit for Donations Above Threshold Rate



# Other Details on Donation Tax Credit

- Taxable unit is the individual
  - Donation credit is claimed by the individual
- But, credit is transferable between spouses
  - Optimal for one spouse to claim all donations
  - We therefore study combined spousal donations
- Credit is non-refundable
  - Collect only if taxes owing
  - Price set to \$1 for filers with no tax liability
- Can carry forward donations for credit for up to 5 years
  - Do not know when donation is actually made

- Longitudinal Administrative Databank (LAD)
  - 20% simple random sample of taxfilers in Canada 1983-2013
  - Contains full tax records for all filers
  - Once in sample, kept until deceased or leave country
- Key information
  - Donations claimed for tax credit
  - Income
  - Detailed location information
  - Spousal information
- Other features
  - Can identify families
  - Linked with detailed immigrant database

- Adult filers between 2001-2015
  - Time period with “tax on income” system
- Exclude Quebec, interprovincial movers, duplicate spouses, deceased filers
  - Moves may be endogenous
  - Duplicate spouses occur because random sampling
  - Deceased filers complicated
- 50% random sample of LAD
  - Reduces computation time
  - Helps avoid residual disclosure issues
- Roughly 19.3 million obs (weighted)

- Main estimating equation

$$don_{it} = \beta_0 + \beta_1 pr_{p(i,t)t} + \beta_2 x_{it} + \omega_i + \gamma_t + \delta_{p(i,t)} \times trend_t + \varepsilon_{it}$$

- $\beta_1$  is tax price elasticity
- Key issue: feedback from donations to price
  - Instrument  $pr_{p(i,t)t}$  with legislated credit rates
  - Neither depends on donation amount
- First stage

$$pr_{p(i,t)t} = \alpha_0 + \alpha_1 cred_{p(i,t)t}^L + \alpha_2 cred_{p(i,t)t}^H + \alpha_2 x_{it} \\ + \theta_i + \mu_t + \pi_{p(i,t)} \times trend_t + \xi_{it}$$

# Donors Over Time

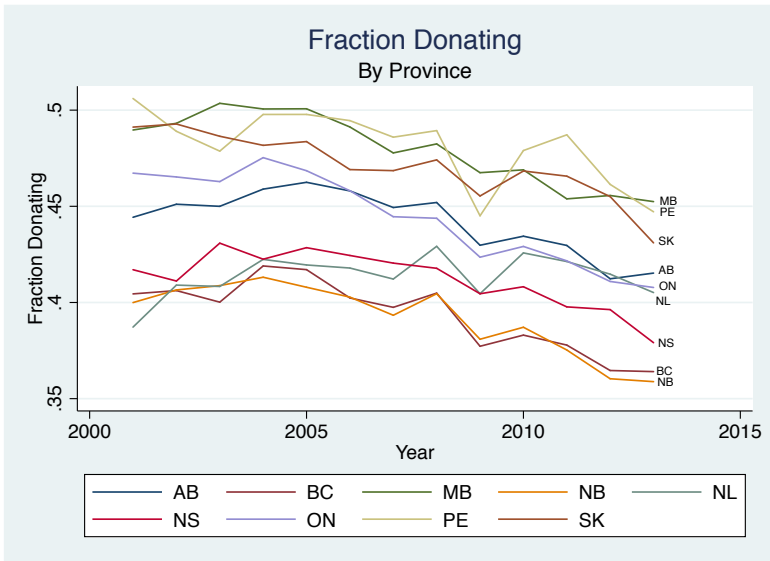


Table 3 - Estimates of Tax Price Elasticity of Donations

	OLSFE (1)	IVFE (2)	IVFECS (3)	IVFECS (4)
Log Tax Price	<b>-9.26</b> (0.40)	<b>-1.30</b> (0.56)	<b>-1.08</b> (0.35)	<b>-1.08</b> (0.57)
Age	0.01 (0.00)	0.02 (0.00)	0.03 (0.00)	0.03 (0.00)
Age Squared	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Log Pre-Tax Income	<b>-0.09</b> (0.01)	<b>0.25</b> (0.02)	<b>0.25</b> (0.02)	<b>0.25</b> (0.02)
Capital Gains/Losses	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
N (weighted)	227062725	227062725	227062725	227062725
R-Squared	0.71	0.72	0.71	0.71

All regressions include individual Fixed Effects, Time trends, number of children, indicator for marital status. Standard errors in parentheses. All standard errors estimated using CSD clusters in columns 1-3, column 4 estimates standard errors using provincial clusters

# Results: First Stage

Table A2 - First Stage and Reduced Form for Preferred IV Specification

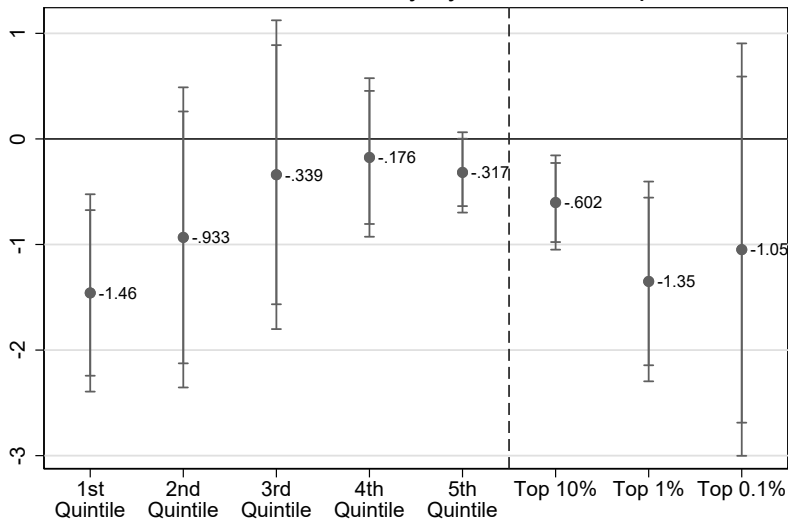
	First Stage (1)	Reduced Form (2)
Low Credit Rate	<b>-0.82</b> (0.03)	<b>0.71</b> (0.46)
High Credit Rate	<b>-0.48</b> (0.02)	<b>0.53</b> (0.19)
Age	0.00 (0.00)	0.02 (0.00)
Age Squared	0.00 (0.00)	0.00 (0.00)
Income	-0.04 (0.00)	<b>0.30</b> (0.01)
Capital Gains	0.00 (0.00)	0.00 (0.00)
N	227,062,725	227,062,725
R <sup>2</sup>	0.71	0.69
F-Stat on Excluded Instruments	777	

All regressions include individual Fixed Effects, Time trends, number of children, indicator for marital status. Standard errors in parentheses. All standard errors estimated using CSD clusters in columns 1-3, column 4 estimates standard errors using provincial clusters

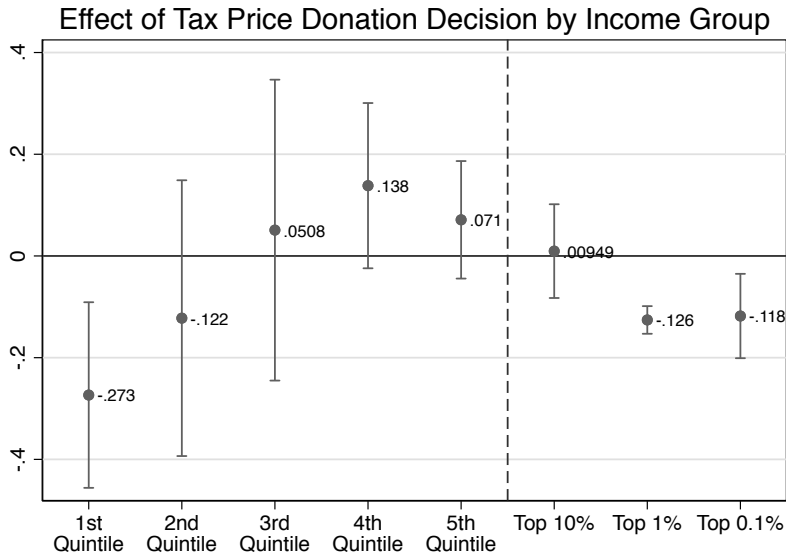


# Results: Income Distribution

## Tax Price Elasticity by Income Group

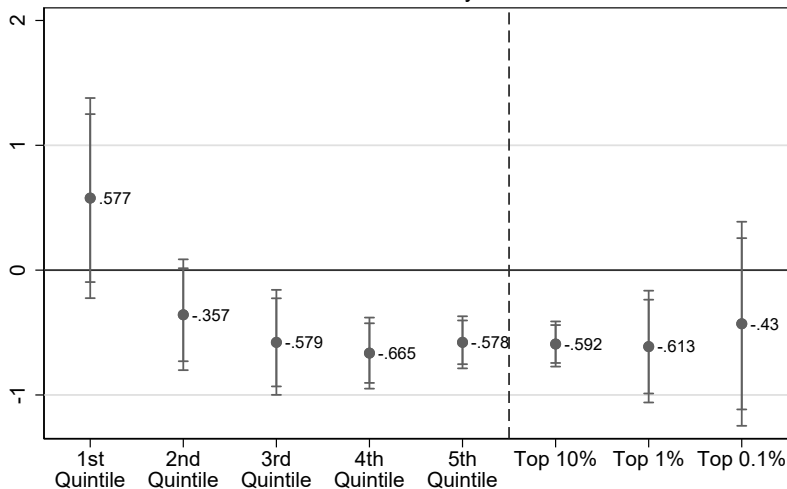


# Results: Extensive Margin



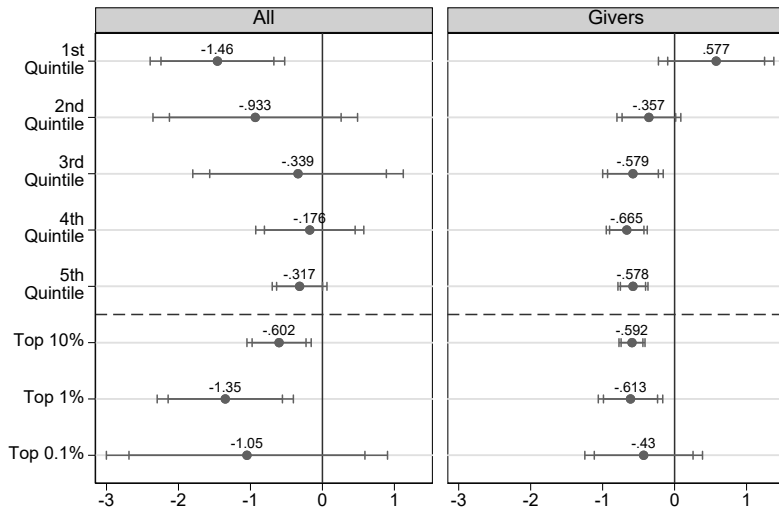
# Results: Intensive Margin

## Tax Price Elasticity by Income Group Givers Only



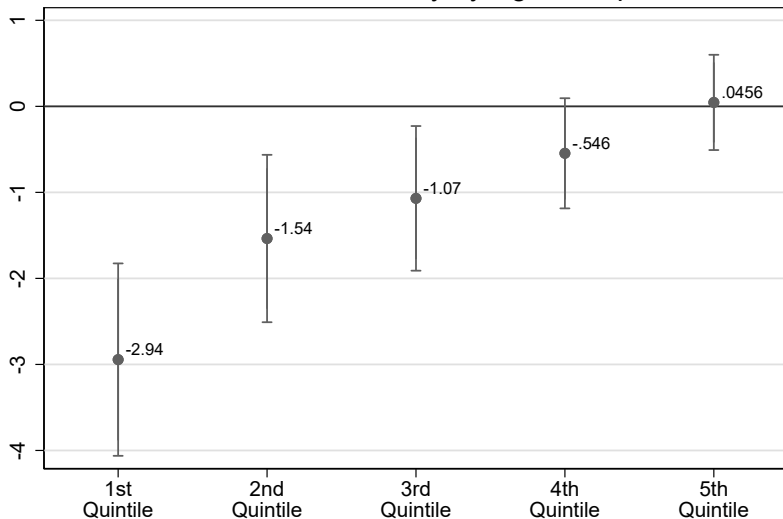
# Results: Comparing Margins

## Tax Price Elasticity by Income Group



# Results: Age Distribution

## Tax Price Elasticity by Age Group



- Is the tax treatment of donations revenue efficient?
  - On the whole it appears that the answer is yes
- Is the structure optimal?
  - Saez (2004), Diamond (2006) and earlier work suggest that tax expenditures for donations relax the ICC
- Other normative perspectives:
  - Heterogeneity of tax price (across incomes/age) response combined with heterogeneity over distribution of donations (across incomes/age) suggests some charities benefit more than others.
  - Future work on heterogeneity of crowd out would be very useful.

- Tax price elasticity of charitable donations in Canada is about **-1**
  - In line with rest of literature w.r.t. treasury efficiency
  - But substantial heterogeneity masked in terms of age and income
- Strongest effects for lowest income quintile
- Credit issued for donations  $> \$200$  has biggest impact
- Some evidence of extensive margin effect