

Charitable Giving, Tax Reform, and Political Trust

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Introduction

Background of South Korea Tax Reform

To investigate the price effect, we use the 2014 tax reform in the South Korea.

- ▶ Before 2014, tax deduction was adopted to subsidize charitable donation behavior.
- ▶ After 2014, tax credit have been adopted.

The main difference is that tax credits reduce taxes directly, while tax deductions indirectly lower the tax burden by decreasing the taxpayer's marginal tax rate, which increases with gross income

Data

National Survey of Tax and Benefit (NaSTaB)

- ▶ The Korea Institute of Taxation and Finance implements the financial panel survey to study the tax burden of households and the benefits that households receive from government.
- ▶ The subjects of this survey are general household and household members living in 15 cities and provinces nationwide.
- ▶ This survey is based on a face-to-face interview. If it is difficult for investigators to meet subjects, another family member answers on behalf of him.
- ▶ Survey items: Annual taxable income (last year), charitable donations (last year), trust for politicians (5-Likert scale), and other covariates (age, education, gender etc.).
- ▶ Survey period: 2008 ~ 2019
 - ▶ We use survey data after 2013 to focus on tax policy change in 2014.

Time Series of Charitable Giving

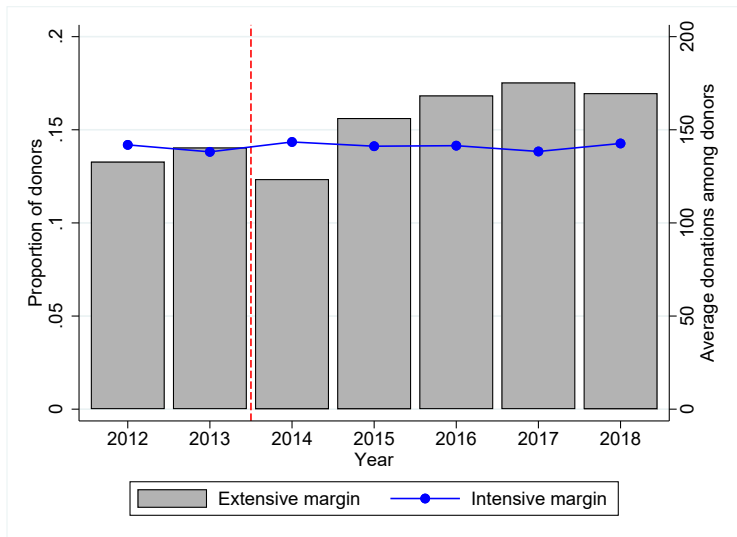


Figure 1: Proportion of Donors and Average Donations among Donors

Summary Statistics of Covariates

Table 1: Summary Statistics of Covariates

| | 2012 | 2013 | 2014 | 2015 |
|-----------------------|---------|---------|---------|---------|
| Female | 0.51 | 0.51 | 0.52 | 0.52 |
| Age | 38.39 | 39.10 | 39.67 | 40.51 |
| Annual taxable income | 1699.86 | 1764.04 | 1838.76 | 1872.54 |
| University graduate | 0.28 | 0.28 | 0.29 | 0.30 |
| High school graduate | 0.30 | 0.30 | 0.31 | 0.31 |
| #.Respondents | 14138 | 13984 | 13787 | 13524 |
| #.Households | 4756 | 4807 | 4819 | 4832 |

Summary Statistics of Covariates (Cont'd)

Table 2: Summary Statistics of Covariates (Continued)

| | 2016 | 2017 | 2018 |
|-----------------------|---------|---------|---------|
| Female | 0.52 | 0.52 | 0.52 |
| Age | 41.07 | 41.89 | 42.55 |
| Annual taxable income | 1906.91 | 1951.55 | 2039.47 |
| University graduate | 0.31 | 0.33 | 0.34 |
| High school graduate | 0.31 | 0.31 | 0.31 |
| #.Respondents | 13238 | 12963 | 12795 |
| #.Households | 4790 | 4770 | 4765 |

What is Giving Price?

Consider allocation between private consumptions (x_i) and charitable giving (g_i). Let y_i be pre-tax total income. Then, the budget constraint is

$$x_i + g_i = y_i - T_i(y_i, g_i),$$

where T_i is tax amount depending on the pre-tax income and charitable giving.

Determination of Tax Amount

Tax deduction reduces taxable income by giving, that is,

$$T_i = \tau(y_i - g_i) \cdot (y_i - g_i),$$

where $\tau(\cdot)$ is the marginal income tax rate which is determined by $y_i - g_i$.

Tax credit reduces tax amount directly, that is,

$$T_i = \tau(y_i) \cdot y_i - mg_i,$$

where $m \in [0, 1]$ is the tax credit rate.

Derive Giving Price

Under the tax deduction system, the budget constraint is

$$x_i + [1 - \tau(y_i - g_i)]g_i = [1 - \tau(y_i - g_i)]y_i.$$

Thus, the giving price of tax deduction system is

$$p_i^d = 1 - \tau(y_i - g_i).$$

Under the tax credit system, the budget constraint is

$$x_i + (1 - m)g_i = [1 - \tau(y_i)]y_i.$$

Thus, the giving price of tax credit system is $p_i^c = 1 - m$.

Construct Giving Price

In the South Korea, the tax policy about charitable giving drastically changed in 2014.

- ▶ tax deduction (before 2014): $\text{Price}_i = 1 - \tau(y_i - g_i)$
 - ▶ the giving price is endogenous because people can manipulate $\tau(y_i - g_i)$ using the charitable giving g_i . Since this problem is caused by *last* donations, we use the giving price applying to the *first* donations (**first price**). The first price is calculate by $\tau(y_i)$ where y_i is the annual taxable income reported in the NaSTaB.
- ▶ tax credit (after 2014): $\text{Price}_i = 1 - m$
 - ▶ In the South Korea, the tax credit rate determines exogeneity, $m = 0.15$.

Income Distribution and Giving Price

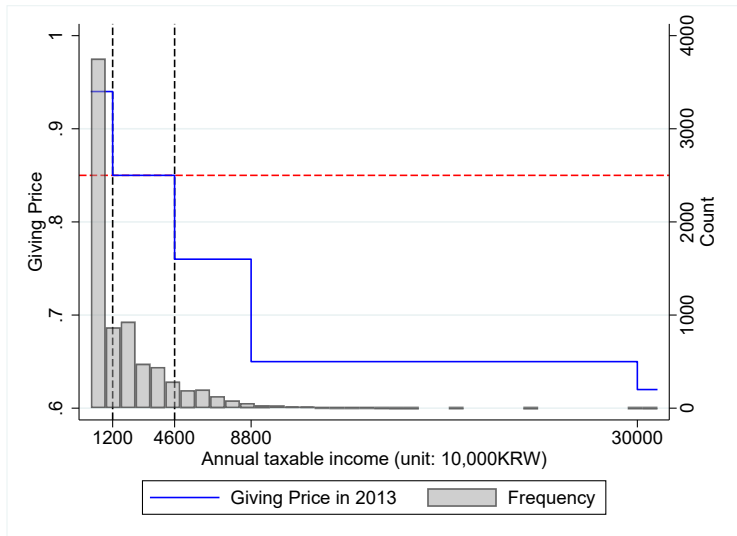


Figure 2: Income Distribution and Giving Price in 2013

Price Elasticity

Baseline Regressions

Our baseline regression equation is

$$\log(\text{Giving}_{ijt}) = \alpha_i + \beta_1 \log(\text{Price}_{ijt}) + \delta X_{ijt} + \lambda_t + \epsilon_{ijt}.$$

- ▶ $\log(\text{Giving}_{ijt})$ is logarithm of individual i 's charitable giving in year t .
- ▶ $\log(\text{Price}_{ijt})$ is logarithm of individual i 's giving price in year t .
- ▶ β_1 represents the price elasticity of giving.
- ▶ α_i and λ_t are individual and time fixed effect, respectively.

Result of Baseline Regressions

We found the **price effect** of giving (1% price increase leads to about 1.1% giving decrease)

Table 3: Baseline Regressions

| | (1) | (2) | (3) | (4) | (5) |
|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| ln(giving price) | -1.071*** (0.201) | -1.071*** (0.201) | -1.229*** (0.227) | -1.059*** (0.226) | -1.062*** (0.226) |
| Logged Income | Y | Y | Y | Y | Y |
| Age | N | Y | Y | Y | Y |
| Year X Educ | N | N | Y | Y | Y |
| Year X Gender | N | N | N | Y | Y |
| Resident Area | N | N | N | N | Y |
| N | 54213 | 54213 | 54211 | 54211 | 54211 |

Robustness Check

We addressed the following two potential concerns:

1. Income and donations are determined simultaneously
 - ▶ This causes both a change of giving price and a change of an amount of donations
 - ▶ Gruber and Saez (2002) provided that we should use $\log(\text{Price}_{ijt}/\text{Price}_{ij(t-k)})$ as an instrument.
 - ▶ Following Alumina et al. (2020), we estimated the model (5) in the previous slide, using the panel IV model for $k = 1, 2, 3, 4$.
2. The effect of presidential transition on donations
 - ▶ The presidential transition is one of our major omitted factor to affect both political trust and charitable giving.
 - ▶ To shed light on this concern, we used data in 2013 and 2014 (President was Park Geun-hye in both years), and estimated the model (5) in the previous slide, using the fixed effect model and the panel IV model for $k = 1, 2, 3, 4$.

Result of Robustness Check 1

We obtained similar value of price elasticity to baseline results (1% price increase leads to about 1.1% giving decrease)

Table 4: Panel IV Regressions

| | k = 1 | k = 2 | k = 3 | k = 4 |
|------------------|----------------------|----------------------|----------------------|----------------------|
| ln(giving price) | -1.279*** (0.478) | -1.155*** (0.414) | -1.150*** (0.369) | -0.962*** (0.340) |
| F-stat of IV | 10315.94 | 11506.64 | 11569.61 | 9651.75 |
| N | 51548 | 49217 | 46399 | 43301 |

Result of Robustness Check 2

We obtained **stronger** price effect than baseline (1% price increase leads to about 1.2 ~ 1.6% giving decrease)

Table 5: Results with data in 2013 and 2014

| | FE | Panel IV with FE | | | |
|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | k = 1 | k = 2 | k = 3 | k = 4 |
| ln(giving price) | -1.466*** (0.327) | -1.535*** (0.360) | -1.683*** (0.378) | -1.151*** (0.385) | -1.259*** (0.400) |
| F-stat of IV | | 7420.10 | 4490.74 | 5034.58 | 4990.94 |
| N | 15134 | 13727 | 12902 | 12420 | 11676 |