

Estimating Effect of Tax Incentives on Charitable Giving Considering Self-Selection of Tax Relief in South Korea

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Tax Incentives on Donations

- Governments set a tax relief for charitable giving
 - if subsidizing charitable giving induces a large increase in donations, it is desirable for public good provision.
- Key parameter to evaluate social welfare: the price elasticity of charitable donations (Saez, 2004)
 - giving price: relative price to the private consumption

Literatures: Price Elasticity of Giving

- Large empirical literatures examining the giving price elasticity estimate log-log demand function to derive the giving price elasticity
- Two types of data
 1. tax filing data: Randolph, 1995; Auten et al., 2002; Fack and Landaïs, 2010; Bakija and Heim, 2011; Almunia et al., 2020
 2. panel survey data: Rehavi and Shack, 2013; Yoruk, 2013; Zampelli and Yen, 2016; Backus and Grant, 2019
- Issue: Although many of these papers consider the endogeneity issue such as the endogenous change of the marginal tax rate by the amount of giving, they pay less attention to the problems caused by the fact that **tax payers have to declare their charitable giving to receive tax relief on charitable giving.**

Literatures: Tax Compliance

- Existence of compliance costs to apply measures of tax relives because everyone will apply the measures if there is no compliance cost.
 - tax payers apply the measures of tax relives only if their benefits from the measures exceed the compliance costs.
- Recent papers insist this point and suggest that the measures of tax relives may not work as the policy makers expected
- They also suggest compliance costs (e.g. record-keeping cost and a fee for accountants) are considerably high.
 - individual income tax (Benzarti, 2020); corporate income tax (Zwick, 2021); charitable giving (Fack and Landais, 2016; Gillitzer and Skov, 2018; Almunia et al., 2020)

What Our Paper Did

- We bridge price elasticity of giving and self-selection of tax incentive
 - As long as we know, there is no paper in the literature of giving price elasticity consider the self selection problem
- We estimate the giving price elasticity using the South Korean (Korea, hereafter) survey panel data called the National Survey of Tax and Benefit (NaSTaB)
- Why South Korea?
 1. Compliance costs for wage earners and self-employed workers are different (IV)
 2. We could consider the sample of low-income households, which are sometimes omitted from the tax filer data.
 3. We can exploit the South Korean tax reform in 2014 as a main identification strategy of price change (income deduction \rightarrow tax credit)

What Our Paper Found

Using the IV representing the compliance cost,

1. Intensive-margin price elasticities are in the range between XXX and XXX
 - FE model w/o IV: XXX (similar value to the estimates in the existing literature)
2. Extensive-margin price elasticities are in the range between YYY and YYY
 - FE model w/o IV: YYY

We examine well-known issues in the robustness check

- intensive-margin tax-price elasticities are in the range of -2 and -1.5
- extensive-margin tax-price elasticities are in the range of -5 and -1.7

Institutional background and Sources of Endogeneity

Framework

Consider that a household with pre-tax income y_i has a choice between private consumption x_i and charitable giving g_i .

Their budget constraint can be shown as

$$x_i + g_i = y_i - R_i K_i - R_i T(y_i, g_i) - (1 - R_i) T(y_i). \quad (1)$$

- T is tax amount which depends on the pre-tax income and charitable giving. Assume $T_y(\cdot) > 0$ and $T_{yy}(\cdot) > 0$.
- R_i is the dummy which takes 1 if i declares the tax relief and 0 otherwise.
- K_i is a fixed compliance cost for the declaration of charitable giving.
 - In the literature about the giving price elasticity, most of papers implicitly assume $R_i = 1$ and $K_i = 0$.

Decision Rule of Tax Relief

$$R_i = \begin{cases} 1 & \text{if } T(y_i, g_i) + K_i < T(y_i) \\ 0 & \text{if } T(y_i, g_i) + K_i \geq T(y_i). \end{cases} \quad (2)$$

where

$$T(y_i, g_i) = \begin{cases} T(y_i - g_i) & \text{if tax relief is applied by income deduction.} \\ T(y_i) - mg_i & \text{if tax relief is applied by tax credit.} \end{cases} \quad (3)$$

Giving Price

Let us differentiate the budget constraint (1) by x_i and g_i . Then, it derives that the giving price (relative to the private consumption) is $\frac{dx_i}{dg_i} = 1 + R_i T_g(y_i, g_i)$, which we denote p .

$$p = \begin{cases} 1 - R_i T'(y_i - g_i) & \text{if tax relief is applied by income deduction.} \\ 1 - R_i m & \text{if tax relief is applied by tax credit.} \end{cases} \quad (4)$$

Hereafter, let us q to show the amount of tax relief for each declared giving (i.e. $p = 1 - R_i q$ and $q = -T_g(y_i, g_i)$). The government can change q by the tax reform.

Marginal Tax Rate

Table 1: Marginal Income Tax Rate

Income/Year	2008	2009	2010 ~ 2011	2012 ~ 2013	2014 ~ 2016	2017	2018
(A) ~ 1200	8%	6%	6%	6%	6%	6%	6%
(B) 1200 ~ 4600	17%	16%	15%	15%	15%	15%	15%
(C) 4600 ~ 8800	26%	25%	24%	24%	24%	24%	24%
(D) 8800 ~ 15000					35%		35%
(E) 15000 ~ 30000				35%		35%	38%
(F) 30000 ~ 50000	35%	35%	35%		38%	38%	40%
(G) 50000 ~				38%		40%	42%

Notes: Marginal income tax rates applied from 2008 to 2018 are summarized. The income level is shown in terms of 10,000 KRW, which is approximately 10 United States dollars (USD) at an exchange rate of 1,000 KRW to one USD.

Korean Tax System (1)

- To mitigate the administrative cost, the Korean National Tax Service introduce different taxation methods and different ways of giving declaration for wage earners and self-employed workers.
- There is a difference of compliance cost of tax relief between self-employed and wage earners
 - self-employed workers have to understand tax system to precisely populate tax return and retain the certificate until they submit tax return
 - wage earners need not to understand tax system and can submit the certificate at any time.

Korean Tax System (2)

Wage earners:

- Wage earners pay income tax by tax withholding and can declare their giving via their company at anytime
- Instead of them, their company is supposed to close the comprehensive income tax return including giving declaration through year-end settlement

Self-employed workers:

- Self-employed workers have to calculate the amount of income earned during a year and pay income tax through tax return by May of the following year.
- To receive tax relief on charitable giving, they have to submit the certificate of donations when they submit tax return.

2014 Tax Reform (1)

- Before 2014, tax relief on charitable giving is conducted by income deduction in Korea.
 - tax payer facing the higher marginal income tax rate can enjoy the lower giving price for each 1 KRW of donation
- In 2014, aiming at the relaxation of regressivity of giving price, the Korean government reformed tax system, where the tax credit was introduced instead of income deduction.
 - 15% of the total amount of charitable giving has been allowed as a tax credit,

2014 Tax Reform (2)

- Compared to tax credit system, the high income household, whose (average) income tax rate is more than 15%, get benefit from charitable giving under the income deduction system.
- However, middle or low income households would enjoy tax relief in tax credit system more than income deduction system.
- We exploit the variation of giving price brought from the policy change as a main identification source to estimate the giving price elasticity.