

Charitable Giving, Tax Reform, and Self-selection of Tax Report: Evidence from South Korea

Hiroki Kato ¹ Tsuyoshi Goto ² Yong-Rok Kim ³

¹Osaka University

²Chiba University

³Kobe University

2021/08/10

Our research evaluate the effect of tax relief on charitable giving in South Korea

- We utilize the South Korean (Korea hereafter) tax reform in 2014 which has changed from tax deduction system to tax credit system.
 - The extant research mainly focuses on the tax reform within the regime of tax deduction (Almunia et al., 2020; Auten et al., 2002; Bakija and Heim, 2011; Randolph, 1995) or tax credit (Fack and Landais, 2010).
- We use the Korean panel survey data (NaSTaB).
 - We could consider the sample of low-income household.
 - Our data contains charitable giving irrespective of declarations.
- We take two approaches to estimate the effect of tax relief
 1. ITT Approach: we assume that the donors can automatically enjoy tax relief.
 2. IV Approach: we use an “effective” giving price considering whether each tax payer declares tax relief or not (self-selection).

2014 Tax Reform in South Korea

Consider allocation problem b/w private consumption (x_{it}) and giving (g_{it}).

- The budget constraint is $x_{it} + g_{it} = y_{it} - T(y_{it}, g_{it})$ where y_{it} is pre-tax total income, and $T(y_{it}, g_{it})$ is tax amount.

In 2014, the Korean government reformed tax system $T(y_{it}, g_{it})$, where the tax credit was introduced instead of tax deduction.

- R_{it} is a dummy of declaration of tax relief, and $\tau(\cdot)$ is the income tax rate.
- Tax deduction system (until 2013): $T(y_{it}, g_{it}) = \tau(y_{it} - R_{it}g_{it})(y_{it} - R_{it}g_{it})$
 - In 2012 and 2013, the system of $\tau(\cdot)$ is same.
 - The logged relative giving price is $R_{it} \ln(1 - \tau(y_{it} - g_{it})) = R_{it} \ln p_{it}^d$.
- Tax credit system (from 2014): $T(y_{it}, g_{it}) = \tau(y_{it}) \cdot y_{it} - R_{it}mg_{it}$
 - $m = 0.15$
 - The logged relative giving price is $R_{it} \ln(1 - m) = R_{it} \ln p_{it}^c$.

About NaSTaB

An annual financial panel survey implemented by The Korea Institute of Taxation and Finance

- The subjects of this survey are general household and household members living in 15 cities and provinces nationwide.
- We use data from 2013 to 2019 to focus on the 2014 tax reform.
 - the giving price before 2014 was changed frequently and incorporating the data before 2012 captures the effects of another tax reform than the reform in 2014.
 - NaSTaB asks the amount of donation and the annual labor income last year.

Income and Giving Price

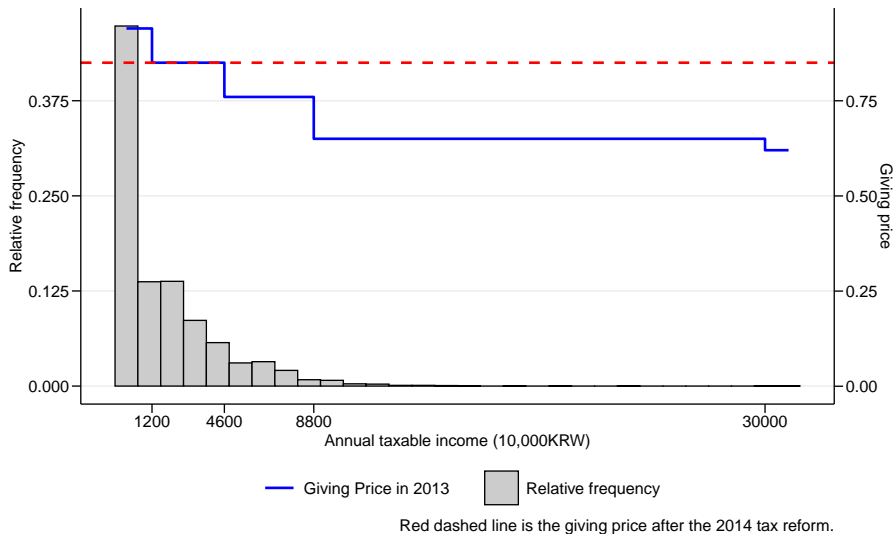


Figure 1: Income Distribution and Giving Price in 2013

Fixed Effect Model

The intensive-margin elasticity

$$\ln g_{it} = \varepsilon_p^{int} R_{it} \ln p_{it} + \varepsilon_y^{int} \ln y_{it} + X_{it} \beta + \mu_i + \iota_t + u_{it}. \quad (1)$$

The extensive-margin elasticity

$$D_{it} = \delta R_{it} \ln p_{it} + \gamma \ln y_{it} + X_{it} \beta + \mu_i + \iota_t + v_{it}. \quad (2)$$

- Since we use the linear probability model, the estimated coefficient δ represents $\hat{\delta} = \frac{\partial D_{it}}{\partial p_{it}} p_{it}$.
- the implied extensive-margin price are calculated by $\hat{\delta} / \bar{D}$ where \bar{D} is sample average of outcome variable D_{it} .

ITT approach and IV approach

ITT approach = True price effect + Effect of self-selection of a tax relief

- We assume that $R_{it} = 1$ for all i and t .

IV approach = True price effect

- First, using the employed dummy as IV, we estimate the following model:

$$R_{it} = \alpha_{1i} + \lambda \text{Employed}_{it} + X_{it}\beta_1 + \mu_{i1} + \iota_{t1} + \eta_{it} \quad (3)$$

- There is a difference of declaration cost of tax relief since self-employed workers have to retain the certificate until they submit tax return although wage earners can submit the certificate at any time.
- Second, we obtain the fitted value of R_{it} (\hat{R}_{it}) and replace R_{it} with \hat{R}_{it} .

Results: ITT Approach

	Overall	Intensive	Extensive
$\hat{\varepsilon}_p^{int}$	-1.241*** (0.227)	-0.904*** (0.249)	
$\hat{\delta}$			-0.267*** (0.051)
$\hat{\delta}/\bar{D}$			-1.221*** (0.235)
Individual FE	Y	Y	Y
Time FE	Y	Y	Y
Age	Y	Y	Y
Year x Education	Y	Y	Y
Year x Gender	Y	Y	Y
Year x Resident Area	Y	Y	Y
N	53267	11637	53267
Adjusted R-squared	0.530	0.678	0.462

Results: IV Approach

	Overall	Intensive	Extensive
$\hat{\varepsilon}_p^{int}$	-1.603*** (0.466)	-0.987*** (0.342)	
$\hat{\delta}$			-0.319*** (0.110)
$\hat{\delta}/\bar{D}$			-0.926*** (0.320)
Individual and time FE	Y	Y	Y
log(income)	Y	Y	Y
Age	Y	Y	Y
Year x Education	Y	Y	Y
Year x Gender	Y	Y	Y
Year x Resident Area	Y	Y	Y
Year x Dummy of industry	Y	Y	Y
N	16946	5840	16946
Adjusted R-squared	0.514	0.697	0.428

References

References I

- Almunia, M., Guceri, I., Lockwood, B., Scharf, K., 2020. More giving or more givers? The effects of tax incentives on charitable donations in the UK. *Journal of Public Economics* 183. doi:10.1016/j.jpubeco.2019.104114
- Auten, G.E., Sieg, H., Clotfelter, C.T., 2002. Charitable giving, income, and taxes: An analysis of panel data. *American Economic Review* 92, 371–382.
- Bakija, J., Heim, B.T., 2011. How does charitable giving respond to incentives and income? New estimates from panel data. *National Tax Journal* 64, 615–650. doi:10.17310/ntj.2011.2S.08
- Fack, G., Landais, C., 2010. Are tax incentives for charitable giving efficient? Evidence from france. *American Economic Journal - Economic Policy* 2, 117–141. doi:10.1257/pol.2.2.117
- Randolph, W.C., 1995. Dynamic income, progressive taxes, and the timing of charitable contributions. *Journal of Political Economy* 103, 709–738. doi:10.1086/262000