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

Hiroki Kato [1] Tsuyoshi Goto [2] Yong-Rok Kim [3]

[1]Osaka University

[2]Chiba University

[3]Kobe University

2021/08/10

Our reseach 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 creit system.
  - The extant reseach 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 chariable giving irrespective of declarations.
- We take two approach 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 declare 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.

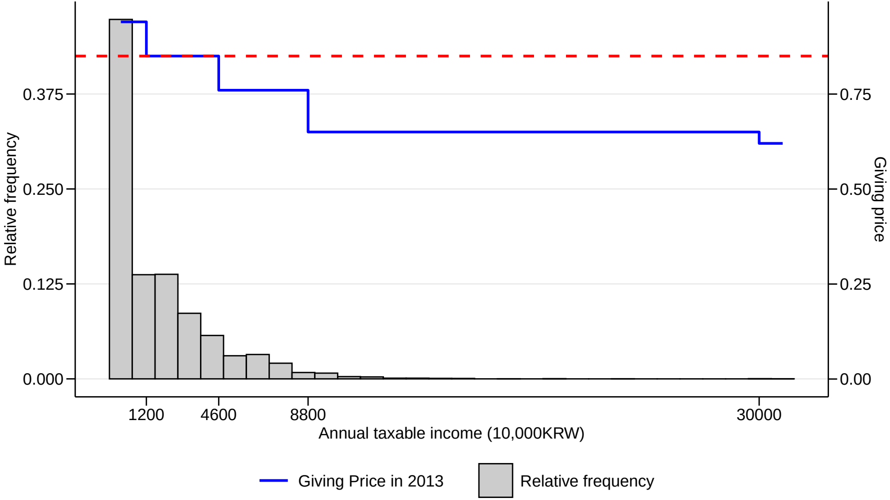
- R_{it} is a dummy of declaration of tax relief, and $\tau(\cdot)$ is the income tax rate.
- Tax deduction system (until 2013): $T(y_{it}, g_{it}) = \tau(y_{it} - R_{it}g_{it})(y_{it} - R_{it}g_{it})$
  - In 2012 and 2013, the system of $\tau(\cdot)$ is same.
  - The logged relative giving price is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



Red dashed line is the giving price after the 2014 tax reform.

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 emplyed dummy as IV, we estimate the following model:

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

- 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***	-0.904***	
	(0.227)	(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***	-0.987***	
	(0.466)	(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

Conclusions

Main message

- Both ITT approach and IV approach show that the giving price elasticity in Korea is around -1.
- It implies that the effect from the declaration cost, which has been ignored, is not so large in South Korea.

References

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