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

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2021/08/20

Evaluate Effect of Tax Incentive on Charitable Giving

- We estimate price effect on both *declared* and *non-declared* chariable giving, using the financial panel data survey including those who did not declare tax relief
- To take price variation due to declaration into account, we estimate two price elasticities:
  - *Applicable* price elasticity: we use giving price when tax payers declare tax relief regardless of actual declaration
  - *Effective* price elasticity: we construct giving price based on information of declaration
  - By comparing two price elasticities, we can infer price effect through declration
- **Result**: Both price elasticities are around -1, which implies that the price effect through declaration is not so large.

Positioning of Our Research

Extant research mainly uses the tax return data

- This data consists on those who declared tax relief
- Thus, extant research estimates the applicable price elasticity of declared donations

However, non-declared tax payers also decide an amount of donation and whether to declare tax relief based on tax incentive.

- Our research uses the financial panel data survey including those who did not declare tax relief
- Thus, we can estimate the price effect, taking this fact into consideration

2014 tax reform in South Korea

Our major price variation comes from the 2014 tax reform, which has changed from the tax deduction system to the tax credit system

- 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.
- Let R_{it} be a dummy of declaration of tax relief, and let $\tau(\cdot)$ be the income tax rate.

2014 tax reform in South Korea (Cont'd)

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)

$$T(y_{it}, g_{it}) = \tau(y_{it}) \cdot y_{it} - R_{it} m g_{it}$$

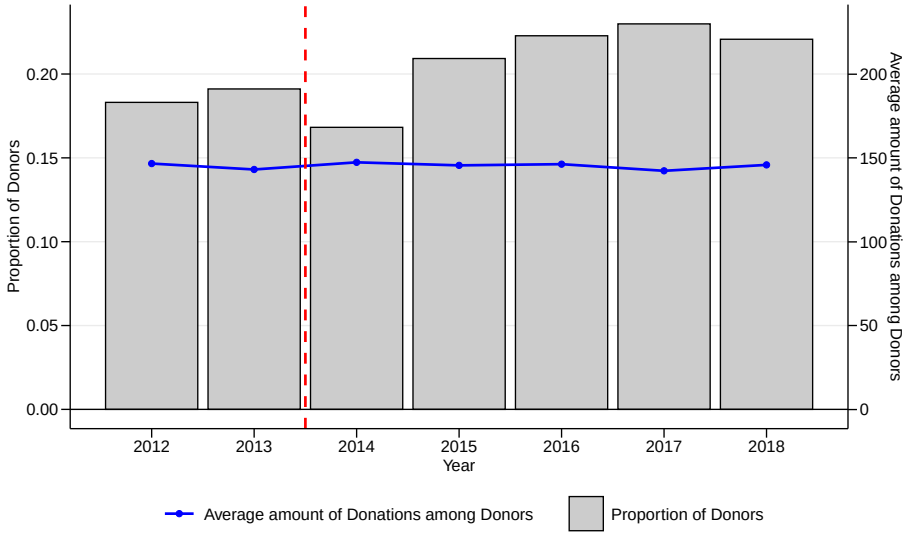
- $m = 0.15$
- The logged relative giving price is $R_{it} \ln(1 - 0.15) = R_{it} \ln 0.85$.

About NaSTaB

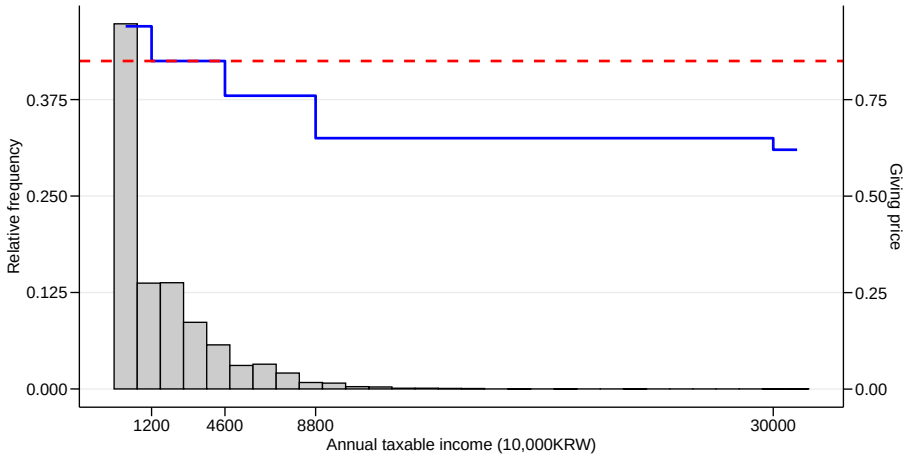
An annual financial panel survey implemented by The Korea Institute of Taxation and Finance

- 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.

Proportion of donors is slightly decreased just after tax reform



2014 tax reform made increasing price group and decreasing price group



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

Fixed Effect Model

Intensive-margin elasticity: how much do donors additionally donate reacting to the marginal increase of giving price?

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

Extensive-margin elasticity: how much does the probability to donate change reacting to marginal increase of giving price?

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

- 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}.

Applicable Price Elasticity (ITT Approach)

- We use giving price when tax payers declare tax relief regardless of actual declaration
- Non-declrared tax payers are treated as if they have declrared tax relief
- $R_{it} = 1$ for any i and t in equation (1) and (2)

Effective Price Elasticity (IV approach)

- Declaration affects both giving price and charitable giving
- We took the panel IV model, using the employed dummy as instrument.
  - 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.
- First, we estimate the following model:

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

- Second, we obtain the fitted value of R_{it} (denoted by $\hat{R}_{it}$) and replace R_{it} with $\hat{R}_{it}$.

Result of Applicable Peice Elasticitiy

Overall elasticity is that we do not distinguish intensive and extensive margin

	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

Result of Effective Price Elasticity

Overall effective price elasticity is slightly more elastic than applicable one.

Extensive-margin effective price elasticity is slightly less elastic than applicable one.

	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.

Some robustness

- Alothough we focus on price variation coming from tax reform and declaration of tax relief, price variation is also caused by a manipulation of giving and income.
- We take other empirical methodologies to control these problemes, and obtain similar results.