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

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Introduction

- In many countries, tax incentives on chariable giving are implemented
- Many papers investigate elasticities of the tax incentive based on tax return data (e.g. Almunia et al. (2020); Auten et al. (2002); Bakija and Heim (2011))
- However, the tax return data record only the declared charitable giving
  - Tax payers decide an amount of donation and whether to declare tax relief based on the size of tax incentive and declration cost.
  - Because of this declration cost, the estimations (especially for extensive margins) may be biased.
  - Moreover, actual donations is different from declared donations (Fack and Landais (2016); Gillitzer and Skov (2018))
- We investigate the elasticities about both declared and non-declared charitable giving, using the financial panel survey data in South Korea

Introduction

To take price variation due to declaration into account, we estimate two price elasticities:

- *Applicable* price elasticity: giving price when tax payers declare tax relief regardless of actual declaration
  - The major variation of this giving price comes from the 2014 tax reform
- *Effective* price elasticity: giving price based on information of declaration
  - We estimate this considering the existence of the declaration cost
- 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.

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 $R_{it} \ln(1 - 0.15) = R_{it} \ln 0.85$.

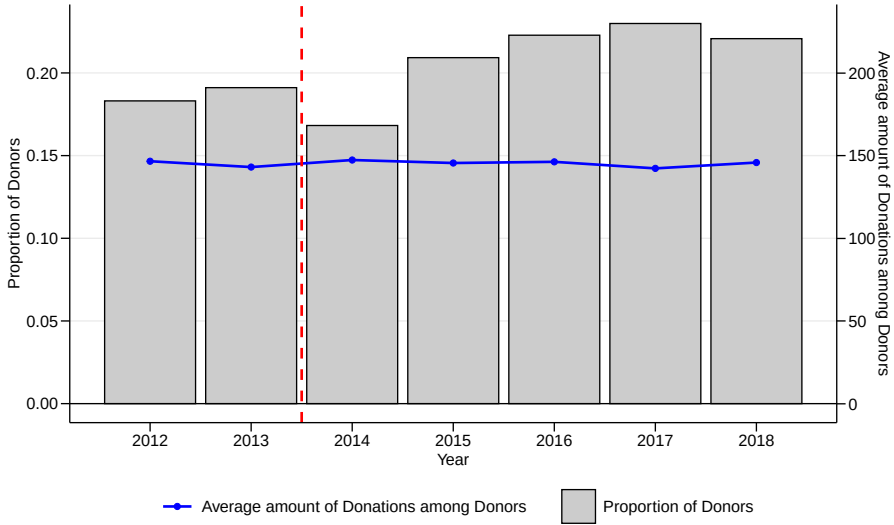
Data: National Survey of Tax and Benefit

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

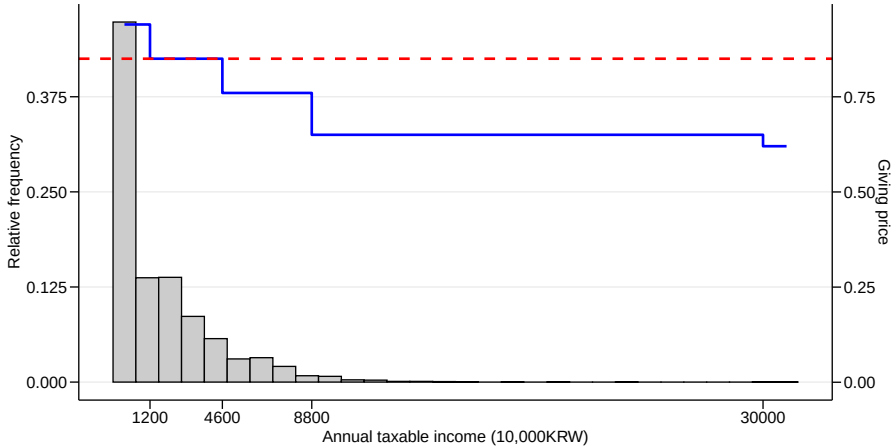
- The subjects of this survey are general household and household members living in 15 cities and provinces nationwide.
- We use data from 2013 to 2019 to focus on the 2014 tax reform.
  - the giving price before 2014 was changed frequently and incorporating the data before 2012 captures the effects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

Summary Statistics of Charitable Giving

Proportion of donors is slightly decreased just after tax reform



Income Distribution and Giving Price in 2013



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

Estimation of Price Elasicities

We estimate following price elasticities:

1. Applicable price elasticities
   - Intensive-margin one
   - Extensive-margin one
2. Effective price elasticities
   - Intensive-margin one
   - Extensive-margin one

Intensive-Margin Price Elasicity

How much do donors additionally donate reacting to the marginal increase of giving price?

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

- We restrict data to those who donated.

Extensive-Margin Price 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 does not represent elasticity directly ($\hat{\hat{\delta}} = \frac{\partial D_{it}}{\partial p_{it}} p_{it}$).
- the implied extensive-margin price elastcity 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
  - In the treatment effect literature, this approach is sometimes called "intention-to-treat (ITT)"
- $R_{it} = 1$ 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

Extensive-margin price elascitiy is more elastic than intensive-margin price elasticity

	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. Effective extensive-margin 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.

References

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