

Giving Price, Government Expenditure, and Political Trust

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Introduction

Price Effect of Tax Policy

Data

Results

Trust Index

The trust for politicians is time-varying variable because it depends on governments' policies. We make time-invariant trust index using the fixed effect model.

$$\text{Trust}_{ijt} = \text{Trustid}_i + c_j \cdot \lambda_t + \lambda_t + \epsilon_{ijt}.$$

- ▶ Trust_{ijt} : trust for politicians (5-Likert scale)
- ▶ Trustid_i : individual fixed effect (**Trust index**)
- ▶ $c_j \cdot \lambda_t$ captures local governments' policies effect
- ▶ λ_t captures the central government policies effect

We rescale the trust index to an interval $[0, 1]$.

Histogram of Trust Index

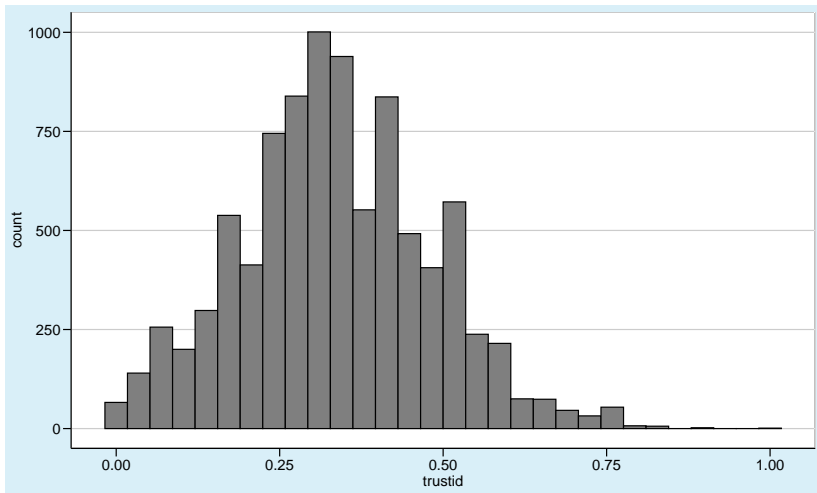


Figure 1: Histogram of Trust Index

Regression of Trust Index

Table 1: Regression of Trust Index (Year = 2018)

Variables	Coefficients	S.E.
gender	0.007**	(0.003)
age	-0.003***	(0.001)
$I((age/100)^2)$	0.311***	(0.055)
factor(educ)2	0.004	(0.005)
factor(educ)3	0.003	(0.006)
factor(political_pref)2	0.027**	(0.013)
factor(political_pref)3	0.033***	(0.012)
factor(political_pref)4	0.021*	(0.013)
factor(political_pref)5	-0.065***	(0.014)
Obs	7697	
Adjusted R-sq	0.0316	

Baseline Regressions

Our baseline regression equation is

$$\begin{aligned}\log(\text{Giving}_{ijt}) = & \alpha_i + \beta_1 \log(\text{Price}_{ijt}) + \beta_2 \log(\text{Expend}_{jt}) \\ & + \delta X_{ijt} + \lambda_t + \epsilon_{ijt}.\end{aligned}$$

- ▶ $\log(\text{Giving}_{ijt})$ is logarithm of individual i 's charitable giving in year t .
- ▶ $\log(\text{Price}_{ijt})$ is logarithm of individual i 's giving price in year t .
- ▶ $\log(\text{Expend}_{jt})$ is local government j 's expenditure for social welfare in year t .
- ▶ β_1 represents the price elasticity of giving.
- ▶ β_2 represents the local government expenditure elasticity of giving.
- ▶ α_i and λ_t are individual and time fixed effect, respectively.

Result of Baseline Regressions

Table 2: Baseline Regressions

	(1)	(2)	(3)
$\ln(\text{Social Welfare}+1)$	0.124** (0.053)	0.101* (0.055)	0.839*** (0.278)
$\ln(\text{giving price})$	-1.089*** (0.201)	-1.066*** (0.226)	-1.083*** (0.226)
Logarithm of income	Y	Y	Y
Age	N	Y	Y
Year X Educ	N	Y	Y
Year X Gender	N	Y	Y
Living Dummy	N	N	Y
Obs	54213	54211	54211

Interpretations of Baseline Regression

- ▶ We found the **price effect** of giving (1% price increase leads to about 1.1% giving decrease)
- ▶ We found the **crowd-in effect** of local government expenditure (1% expenditure increase leads to 0.8% increase giving)
 - ▶ This effect is heterogenous by the level of government expenditure. As local government expenditure increases, the crowd-in effect vanishes, and the crowd-out effect emerges.

Subgroup Regressions

We estimate the baseline regression equation, using sample grouped by the trust index.

- ▶ Lowest: 0 ~ 20% quantile of trust index
- ▶ Lower: 20 ~ 40% quantile of trust index
- ▶ Neutral: 40 ~ 60% quantile of trust index
- ▶ Higher: 60 ~ 80% quantile of trust index
- ▶ Highest: 80 ~ 100% quantile of trust index

We include the logarithm of income, age, interactions b/w year and education, interactions b/w year and gender, and living are dummy into covariates.

Results of Subgroup Regressions

Table 3: Subgroup Regressions

	Lowest	Lower	Neutral	Higher	Highest
ln(Social Welfare+1)	0.371 (0.669)	0.472 (0.636)	1.090* (0.653)	1.471** (0.621)	0.817 (0.554)
ln(giving price)	-0.682 (0.556)	-0.482 (0.460)	-1.629*** (0.480)	-1.277** (0.529)	-1.211** (0.503)
Obs	10239	10358	10367	10368	12879

Interpretations of Subgroup Regressions

- ▶ We could **NOT** find the crowd-in (crowd-out) effect for respondents whose trust is very low and very high.
 - ▶ We found the crowd-in effect for middle group.
 - ▶ If the trust for politicians is low, respondents have a willingness to provide public goods without government help.
 - ▶ If the trust for politicians is very high, respondents take a strategy of free-rides.
- ▶ We could **NOT** find the price effect for respondents whose trust is very low.
 - ▶ If the trust is very low, respondents do not want to use a tax benefit policies.

Heterogeneity By Political Trust

To capture heterogeneity precisely, we estimate the following regression equations:

$$\begin{aligned}\log(\text{Giving}_{ijt}) = & \alpha_i + \beta_0 \text{Trust}_{ij} \\ & + \beta_1 \log(\text{Price}_{ijt}) + \beta_2 \log(\text{Price}_{ijt}) \cdot \text{Trust}_{ij} \\ & + \beta_3 \log(\text{Expend}_{jt}) + \beta_4 \log(\text{Expend}_{ijt}) \cdot \text{Trust}_{ij} \\ & + \delta X_{ijt} + \lambda_t + \epsilon_{ijt}.\end{aligned}$$

- ▶ Price elasticity is obtained by $\beta_1 + \beta_2 \cdot \text{Trust}_{ij}$.
- ▶ Government expenditure elasticity is obtained by $\beta_3 + \beta_4 \cdot \text{Trust}_{ij}$.

Result of Heterogeneity By Political Trust (1)

Table 4: Heterogeneity of Political Trust

Variables	Coefficients	S.E.
ln(Social Welfare+1)	0.836***	(0.296)
X Trust index	-0.064	(0.252)
ln(giving price)	-0.268	(0.503)
X Trust index	-2.558*	(1.319)
Obs	51306	

Result of Heterogeneity of Political Trust (2)

Table 5: Heterogeneity of Political Trust (include squared term)

Variables	Coefficients	S.E.
ln(Social Welfare+1)	0.522	(0.327)
X Trust index	2.064**	(0.986)
X Squared trust index	-3.032**	(1.324)
ln(giving price)	0.190	(0.886)
X Trust index	-5.783	(4.815)
X Squared trust index	4.625	(6.302)
Obs	51306	

Graphical Representation of Heterogeneity Effect

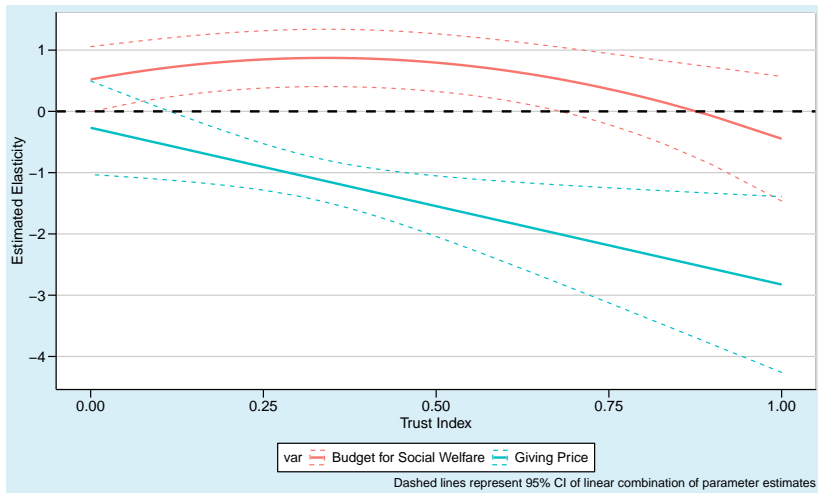


Figure 2: Relationship between Trust Index and Predicted Elasticity

Conclusions

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