Attitudes towards ethnic diversity and provision of public goods

Dedyukhin Ivan[1]

New Economic School

April 27, 2022

[1]Advisor: Shlomo Weber

Introduction

- Ethnic diversity is a determinant of economic performance (**?**, **?**)

Introduction

- Ethnic diversity is a determinant of economic performance (?, ?)
- Ethnic diversity is a determinant of public good provision (?, ?, ?, ?)

Introduction

- Ethnic diversity is a determinant of economic performance (?, ?)
- Ethnic diversity is a determinant of public good provision (?, ?, ?, ?)
- There is no consensus about mechanism (?, ?, ?)

Introduction

- Ethnic diversity is a determinant of economic performance (?, ?)
- Ethnic diversity is a determinant of public good provision (?, ?, ?, ?)
- There is no consensus about mechanism (?, ?, ?)
- The attitude towards ethnic diversity matters (?)

Introduction

- Ethnic diversity is a determinant of economic performance (?, ?)
- Ethnic diversity is a determinant of public good provision (?, ?, ?, ?)
- There is no consensus about mechanism (?, ?, ?)
- The attitude towards ethnic diversity matters (?)
- **Does attitude towards ethnic diversity influence public good provision?**

Model setup

- Utility $u(x(I), g(I), H(I))$
  1. private consumption (x) of agent in group I
  2. public goods consumption (g) of agent in group I
  3. ethnic heterogeneity (H) of agent in group I

Model setup

- Utility $u(x(I), g(I), H(I))$
  1. private consumption (x) of agent in group I
  2. public goods consumption (g) of agent in group I
  3. ethnic heterogeneity (H) of agent in group I
     - ethnic heterogeneity reduces the utility an agent derives from consuming the public good g
     - **Consumption of public good requires interaction with other ethnicities**
     - Determinants of heterogeneity are fractionalization and attitude

Model setup

- Utility $u(x(I), g(I), H(I))$
  1. private consumption (x) of agent in group I
  2. public goods consumption (g) of agent in group I
  3. ethnic heterogeneity (H) of agent in group I
     - ethnic heterogeneity reduces the utility an agent derives from consuming the public good g
     - **Consumption of public good requires interaction with other ethnicities**
     - Determinants of heterogeneity are fractionalization and attitude
- $U = x + \gamma((1 - H)g)^{\beta}$

Model setup

- Utility $u(x(I), g(I), H(I))$
  1. private consumption (x) of agent in group I
  2. public goods consumption (g) of agent in group I
  3. ethnic heterogeneity (H) of agent in group I
     - ethnic heterogeneity reduces the utility an agent derives from consuming the public good g
     - **Consumption of public good requires interaction with other ethnicities**
     - Determinants of heterogeneity are fractionalization and attitude
- $U = x + \gamma((1 - H)g)^{\beta}$
- First best provision is

$$g^{FB} = \left(\gamma\beta \sum_{I} p(I)(1 - H(I))^{\beta} \right)^{\frac{1}{1-\beta}}$$

Private provision

- Suppose that public goods are financed through private provision
- Budget constraint is

$$x(I) + g_i(I) \leq w(I)$$

- Utility is

$$U = w_i(I) - g_i(I) + \gamma((1 - H(I))g)^{\beta}$$

Private provision

- Suppose that public goods are financed through private provision
- Budget constraint is

$$x(I) + g_i(I) \leq w(I)$$

- Utility is

$$U = w_i(I) - g_i(I) + \gamma((1 - H(I))g)^{\beta}$$

- Equilibrium is

$$g^{PP} = (\beta\gamma(1 - \min_I H(I)))^{\frac{\beta}{1-\beta}}$$

Private provision

- Suppose that public goods are financed through private provision
- Budget constraint is

$$x(I) + g_i(I) \leq w(I)$$

- Utility is

$$U = w_i(I) - g_i(I) + \gamma((1 - H(I))g)^{\beta}$$

- Equilibrium is

$$g^{PP} = (\beta\gamma(1 - \min_I H(I)))^{\frac{\beta}{1-\beta}}$$

Proposition

Worse attitude (higher heteregoneity) means lower amount of public good if it is provided voluntary

State provision I

- Suppose that public goods are financed from taxes by benevolent government
- Government maximization problem is

$$\max_{t\in[0,1],g\geq 0} \sum_I p(I)((1-t)w_i(I) + \gamma((1-H(I))g)^{\beta})$$

$$\text{s.t. } g \leq t \sum_I p(I)w_i(I)$$

State provision II

- Equilibrium is

$$g^{SP} = \min \left\{ \left(\gamma\beta \sum_{I} p(I)(1 - H(I))^{\beta} \right)^{\frac{1}{1-\beta}} ; W \right\}$$

Proposition

Worse attitude (higher heteregoneity) means lower amount of public good if it is provided by state

Data sources

- 97 U.S. cities for the period 2006 - 2017

Data sources

- 97 U.S. cities for the period 2006 - 2017
- Individual data from IPUMS USA project
  - FRAC measures the probability that two randomly drawn people from a city belong to different ethnic groups

Data sources

- 97 U.S. cities for the period 2006 - 2017
- Individual data from IPUMS USA project
  - FRAC measures the probability that two randomly drawn people from a city belong to different ethnic groups
  - The attitude towards diversity index (INDEX)
    - **the share of co-racial marriages in a city's total number of marriages**

Data sources

- 97 U.S. cities for the period 2006 - 2017
- Individual data from IPUMS USA project
  - FRAC measures the probability that two randomly drawn people from a city belong to different ethnic groups
  - The attitude towards diversity index (INDEX)
    - **the share of co-racial marriages in a city's total number of marriages**
- The Fiscally Standardized Cities (FiSC) database from Lincoln Institute of Land Policy
  - This database makes it possible to compare cities' finances
  - Fiscal variables are calculated per capita in 2017 USD.
  - Dependent variables are share of total spending by aim

Descriptive statistics

	(1)			
	Mean	S.D.	Min	Max
City Population	557022.8	1060585	80215	8475976
Log of city population	12.68124	.8683314	11.29247	15.95275
Taxes collected	2198.987	1221.208	732.71	11223.87
General expenditures	5952.036	2291.052	2033.46	21446.74
Secondary education expenditures	2007.007	644.0921	544.84	4811.56
Libraries expenditures	51.92246	34.49064	0	585.74
Public welfare expenditures	268.4206	604.8267	0	5725.41
Hospital expenditures	282.1485	582.429	0	4432.26
Health expenditures	217.3635	228.5996	0	2198.96
Highways expenditures	232.4785	133.0477	6.21	1067.75
Public safety expenditures	773.3932	265.9719	268.43	2312.49
Sewerage expenditures	245.4629	160.8913	0	1070.79
Administration expenditures	308.1253	168.1048	56.07	1698.06
Parks and recreation expenditures	178.9966	136.8253	1.03	1410.71
Ethnic fractionalization	.4420603	.1377596	.0853811	.6934802
Ethnic fractionalization among married	.4580479	.1321692	.0917879	.6981086
Reynal-Querol polarization	.6988702	.1972032	.140374	.9807938
Alienation	.189907	.0825309	.0536585	.4158192
Mean HH income	634356.8	404314.1	88548.67	2851736
Inequality	11.32726	7.060934	1.225278	47.1012
Observations	900			

Table: Descriptive statistic for US cities 2006 - 2017

Alienation and fractionalization

I have an alienation variation for fixed fractionalization

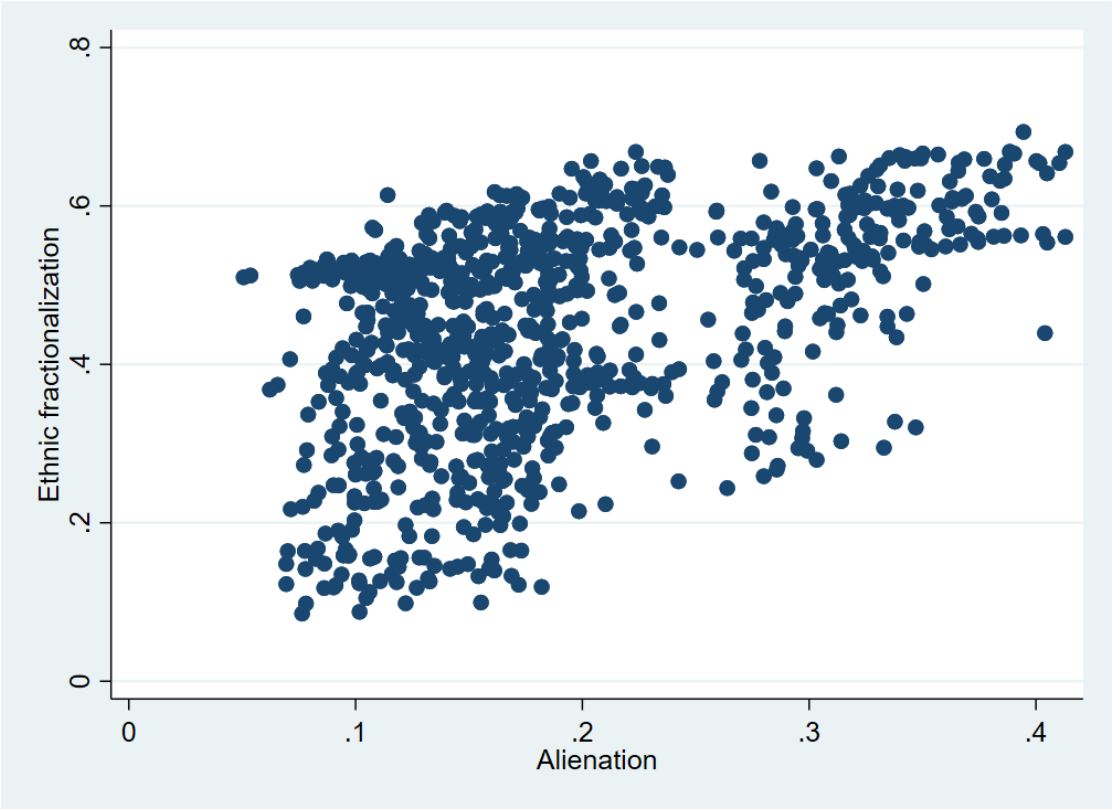

Figure: Scatter plot for attitude index and ethnic fractionalization

Different fractionalizations

Total fractionalization and fractionalization among married are the same

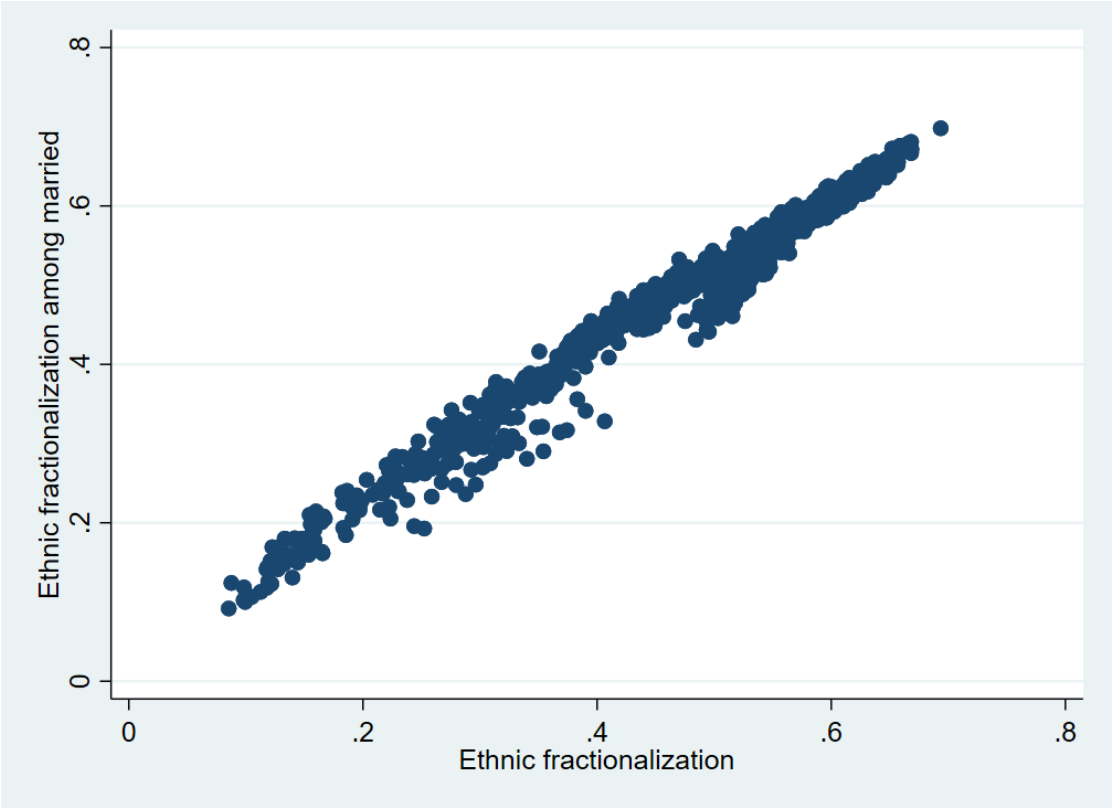

Figure: Scatter plot for general fractionalization and fractionalization among married

Geographical variation

Lack of geographical variation for big cities

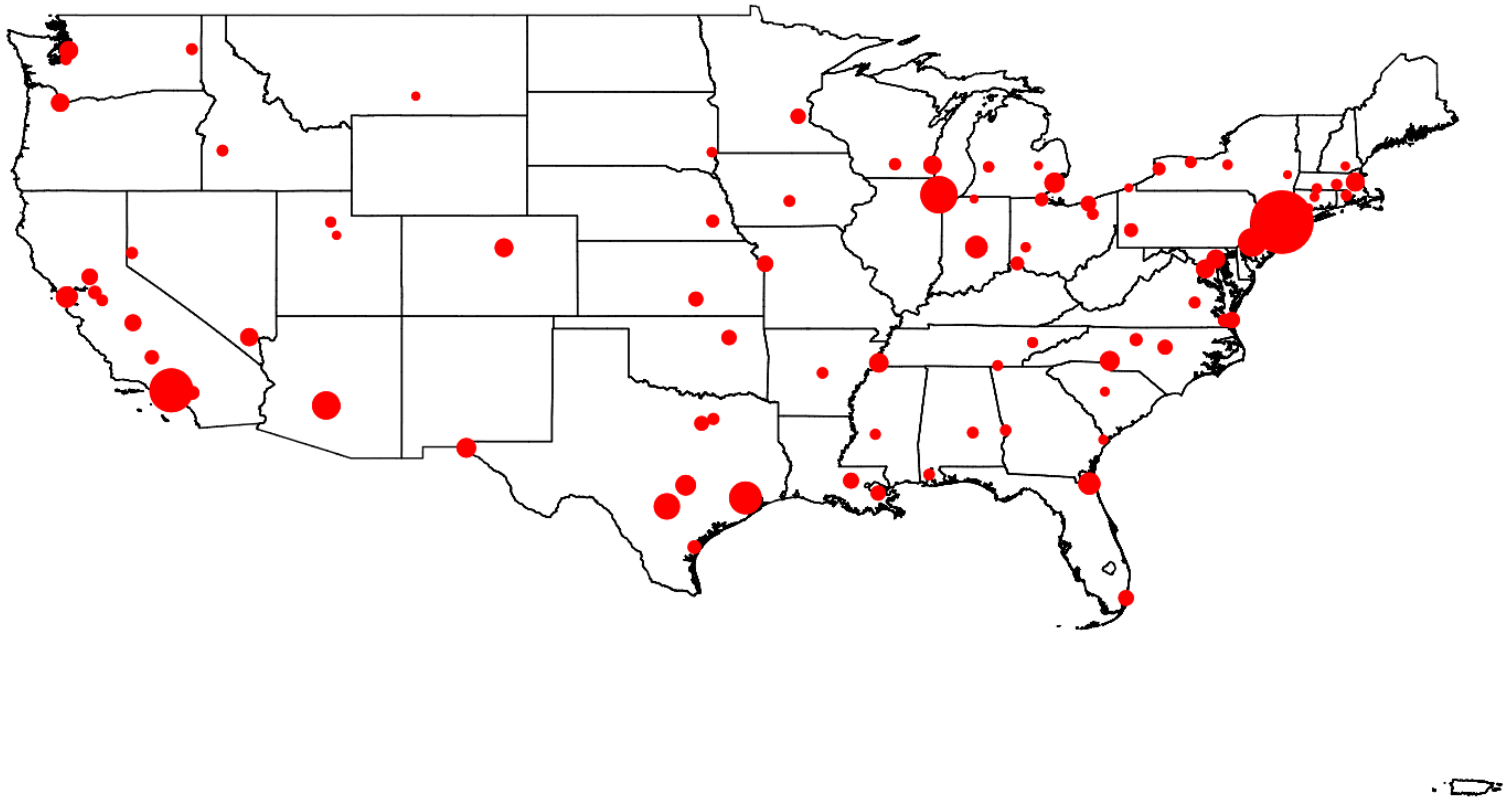

Figure: The map of U.S. cities in dataset. The size of the points is proportional to the population.

Identification strategy

- **I believe in exogeneity**

Identification strategy

- **I believe in exogeneity**
- Possible multicollinearity

Identification strategy

- **I believe in exogeneity**
- Possible multicollinearity
- Propensity-score-matching and dose-response function (**?**, **?**)

Identification strategy

- **I believe in exogeneity**
- Possible multicollinearity
- Propensity-score-matching and dose-response function (**?**, **?**)
- Generalized propensity score:

$$r(t, x) = f_{INDEX|X}(t \mid x)$$

$$GPS = r(INDEX, X)$$

Identification strategy

- **I believe in exogeneity**
- Possible multicollinearity
- Propensity-score-matching and dose-response function (**?**, **?**)
- Generalized propensity score:

$$r(t, x) = f_{INDEX|X}(t \mid x)$$

$$GPS = r(INDEX, X)$$

- Conditional expectation of the outcome

$$\beta(t, r) = E(Y \mid T = t, R = r)$$

$$Fiscal_{it} = \alpha + \beta_1 \times INDEX_{it} + \beta_2 \times GPS_{it} + \beta_3 \times INDEX_{it} \times GPS_{it}$$

Identification strategy

- **I believe in exogeneity**
- Possible multicollinearity
- Propensity-score-matching and dose-response function (**?**, **?**)
- Generalized propensity score:

$$r(t, x) = f_{INDEX|X}(t \mid x)$$

$$GPS = r(INDEX, X)$$

- Conditional expectation of the outcome

$$\beta(t, r) = E(Y \mid T = t, R = r)$$

$$Fiscal_{it} = \alpha + \beta_1 \times INDEX_{it} + \beta_2 \times GPS_{it} + \beta_3 \times INDEX_{it} \times GPS_{it}$$

- Dose-response function:

$$\mu(t) = E[\beta\{t, r(t, X)\}]$$

Results

Results

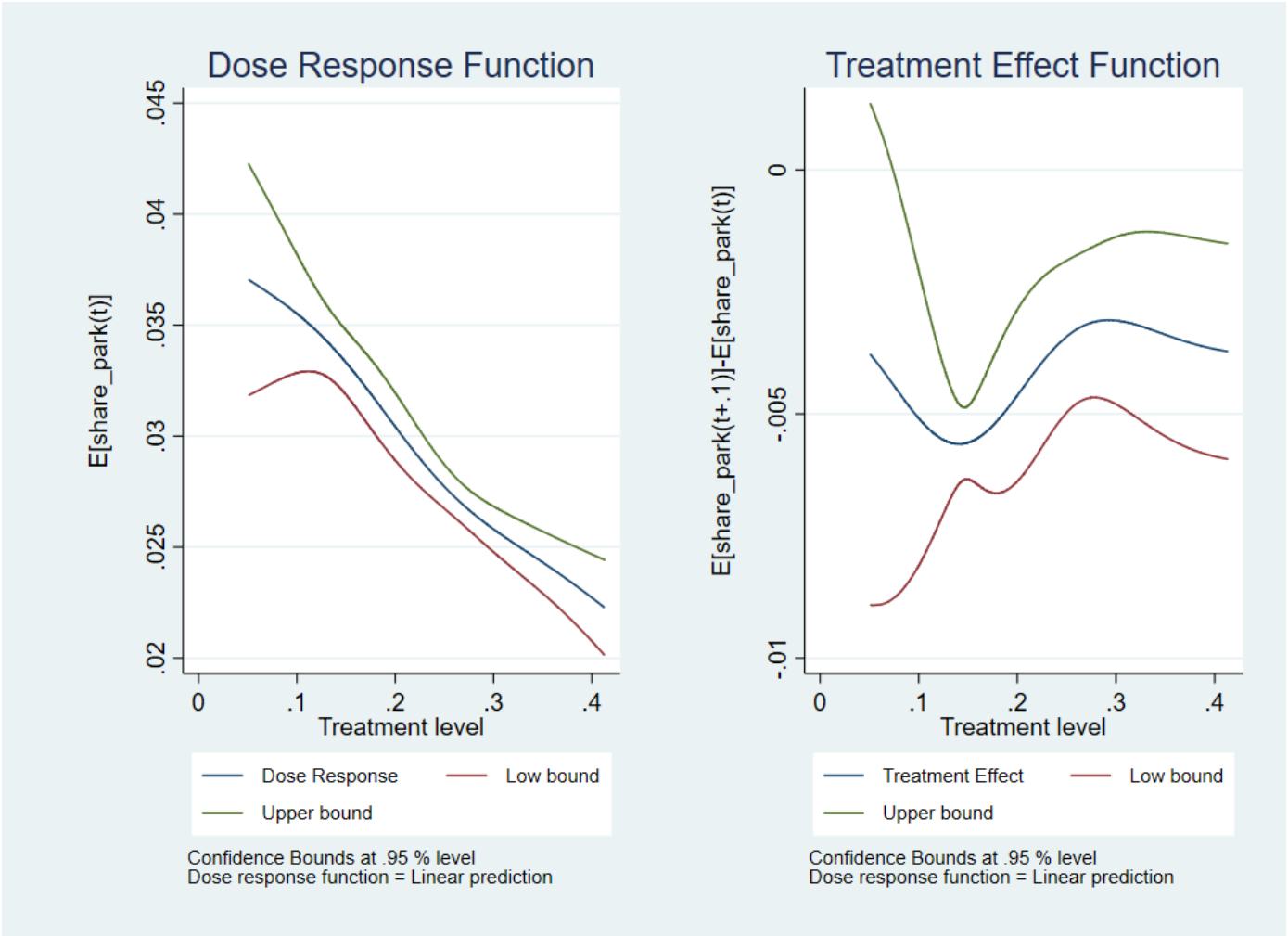

Figure: Dose-response function (left) and its derivative (right) for parks and recreational spending

Results

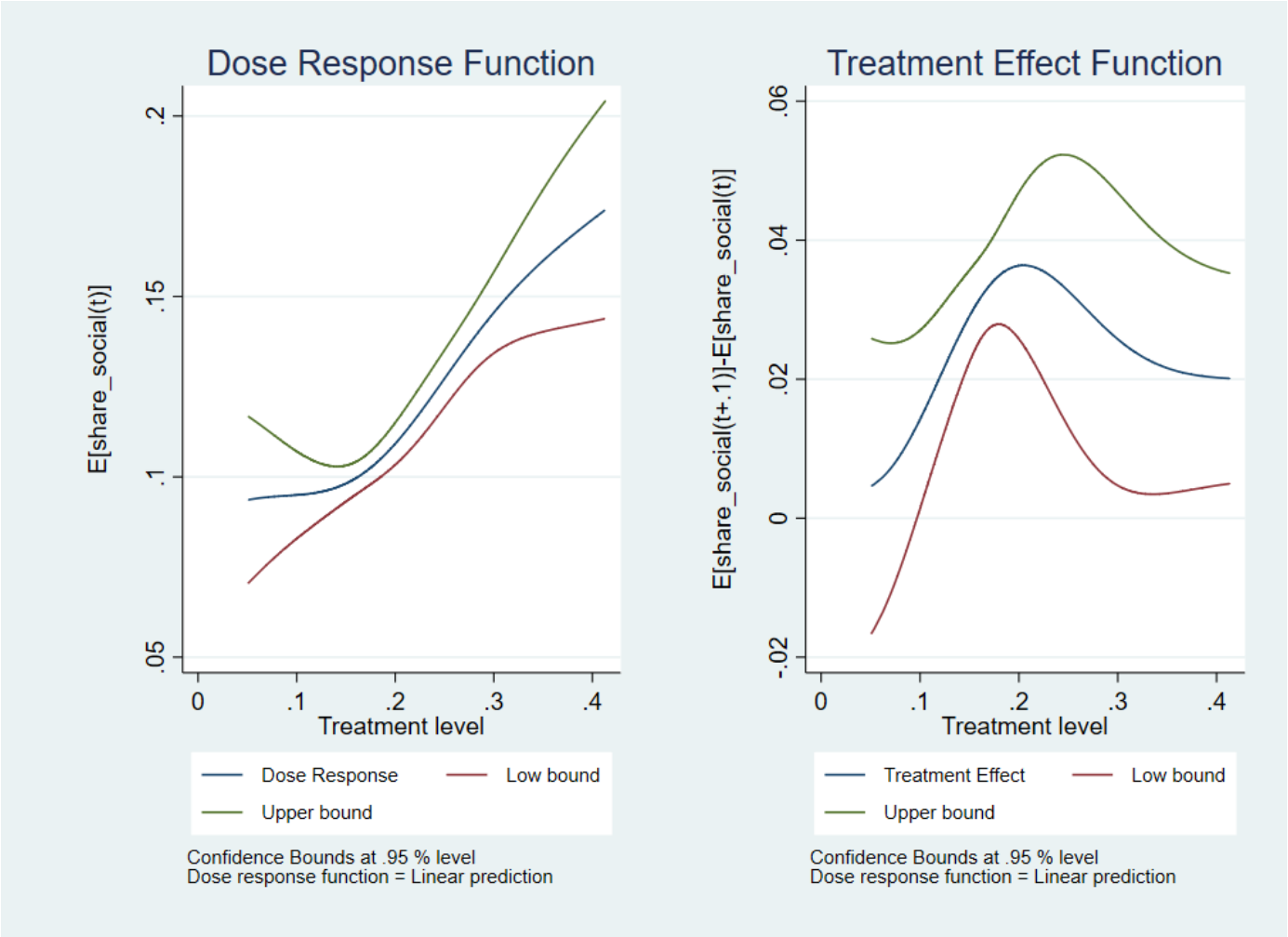

Figure: Dose-response function (left) and its derivative (right) for social spending

Conclusion

- I have found that worse attitude towards ethnic diversity decrease provision of parks and recreational facilities and secondary education
  - This public goods are based in interaction of people

Conclusion

- I have found that worse attitude towards ethnic diversity decrease provision of parks and recreational facilities and secondary education
  - This public goods are based in interaction of people
- I have found that worse attitude towards ethnic diversity increase welfare and social services spending
  - Worse attitude may cause lower economic performance and greater criminality
  - More people needs help

Conclusion

- I have found that worse attitude towards ethnic diversity decrease provision of parks and recreational facilities and secondary education
  - This public goods are based in interaction of people
- I have found that worse attitude towards ethnic diversity increase welfare and social services spending
  - Worse attitude may cause lower economic performance and greater criminality
  - More people needs help
- Possible drawbacks of the paper:
  - Lack of geographical variation
  - Lack of observations
  - Different levels have different incentives
  - Inappropriate proxy for Alienation
- Further research is required

References I