Are Special Districts Strategic Complements or Strategic Substitutes?

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What happens to service delivery by general purpose local governments when a special district enters the public service marketplace?

Motivation

- Special districts and general purpose local governments (cities, counties, and towns/townships) exist in the same local governance ecosystem
  - Many of these governments do similar functions
- Are these local government actors independent?
  - Much evidence of interactions and collaborations among the same type of governments
  - Some evidence of interactions and trade-offs between vertically-aligned general purpose governments
  - Little empirical evidence of the role of special districts

Theoretical Propositions

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Which effect dominates, if any, is an empirical question.

Empirical Model

- Time Period: 1972 - 2017
- Unit of Analysis: County
- Data Sources:
  - Census of Governments
  - Bureau of Economic Analysis
  - U.S. Census Bureau
  - Surveillance, Epidemiology, and End Results program

Identification Strategy

$$\underbrace{\ln g_{it}^{\text{city}}}_{\text{general purpose government spending}} = \underbrace{\beta g_{it}^{\text{spdist}}}_{\text{special district spending}} + \underbrace{\delta X_{it}}_{\text{control variables}} + \underbrace{d_i}_{\text{unit fixed effects}} + \underbrace{d_t}_{\text{time fixed effects}} + \underbrace{d_{rt}}_{\text{MSA}\times\text{year fixed effects}} + \underbrace{\varepsilon_{it}}_{\text{composite error term}}$$

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- If special districts are strategic substitutes for general purpose governments, $\beta < 0$.
- If special districts are strategic complements for general purpose governments, $\beta > 0$.

Independent Variables

- Personal income per capita
- Population
- Population density
- Population growth (5-year CAGR)
- % 19 and younger
- % 65 and older
- Ethnic fractionalization

Methodology

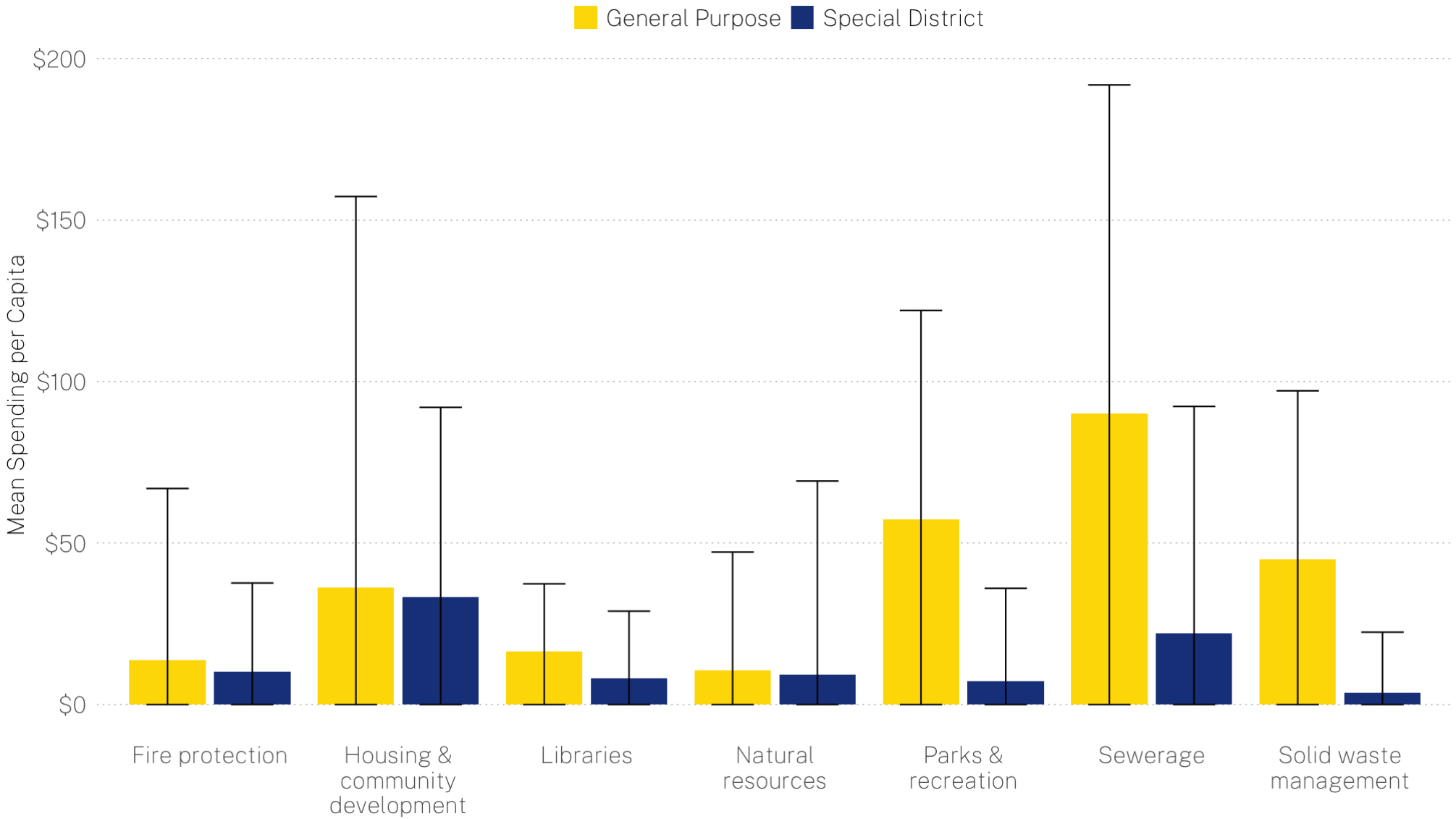
Multiple disaggregations

- By type of local government
  - Total general purpose, cities, counties
- By functional area of service delivery
  - Fire protection
  - Housing & community development
  - Libraries
  - Natural resources
  - Parks & recreation
  - Sewerage
  - Solid waste management

Empirics

- Estimated via OLS
- Standard errors clustered on the county

Summary Statistics



Summary Statistics

Variable	Mean	St. Dev.
Personal income, per capita	37.504	11.626
Population	229.355	395.082
Population density	0.644	2.758
Population growth	1.350	1.714
% 19 and younger	0.292	0.040
% 65 and older	0.125	0.037
Ethnic fractionalization	0.204	0.156

Results - All General Purpose Governents

Variable	All expenditures	Fire protection	Housing & community development	Libraries	Natural resources	Parks & recreation	Sewerage	Solid waste management
Per capita special district spending in same functional area	-0.0000	-0.0115*	-0.0053**	-0.0159+	0.0014	-0.0008	-0.0021	0.0041
	(0.0000)	(0.0046)	(0.0019)	(0.0083)	(0.0010)	(0.0010)	(0.0016)	(0.0027)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MSA-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5925	5925	5925	5925	5925	5925	5925	5925

Results - Subgroups

Variable	All expenditures	Fire protection	Housing & community development	Libraries	Natural resources	Parks & recreation	Sewerage	Solid waste management
Municipalities								
Per capita special district spending in same functional area	-0.0000	-0.0087+	-0.0038+	-0.0083	0.0006	-0.0018	-0.0005	0.0068*
	(0.0000)	(0.0048)	(0.0021)	(0.0053)	(0.0015)	(0.0014)	(0.0014)	(0.0032)
Counties								
Per capita special district spending in same functional area	-0.0001	-0.0190**	-0.0034	-0.0166*	0.0011	0.0002	-0.0053**	-0.0119*
	(0.0002)	(0.0059)	(0.0026)	(0.0084)	(0.0010)	(0.0073)	(0.0019)	(0.0054)
Controls								
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MSA-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	5925	5925	5925	5925	5925	5925	5925	5925

Discussion & Conclusions

- Reasonable evidence that special district spending in some functional areas is a strategic substitute for general purpose local government spending
  - A $1 per capita increase in special district spending is associated with a *0.5 to 1.5% decline* in county spending on the same function
- Suggests that special districts in these areas (fire, libraries, sewerage, solid waste) are, on average, of a regional nature
  - County areas are trading local services for more regional services

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Thanks!


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