

Introducing and enhancing competition to improve delivery of local services of solid waste collection

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The Problem to be Studied

- This study analyzes and evaluates the creation of lots as a tool of competition with monthly observations of costs and outputs between 2015 and 2019

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- This study analyzes and evaluates the creation of lots as a tool of competition with monthly observations of costs and outputs between 2015 and 2019
- Did waste collection costs converge between the different service-zones (as competition would make to expect)?

Motivation

- Cost reduction is a widely studied topic
- Privatization and its alternatives
- Many cities operate at large scales without economies of scale

Contributions of this Paper

- 1 Alternatives to privatization: Regulation by competition
- 2 Waste collection
- 3 Economies of scale

Institutional Context



Figure: Waste Collection in Barcelona

The Models

$$\begin{aligned} \text{TotalCosts}_{it} = & \\ & \beta_0 + \beta_1 \text{Disposal}_{it} + \beta_2 \text{Organic}_{it} + \beta_3 \text{Paper}_{it} + \\ & \beta_4 \text{Packaging}_{it} + \beta_5 \text{Voluminous}_{it} + \beta_6 \text{Glass}_{it} + \\ & \beta_7 \text{Firm}_i + \beta_8 \text{August}_t + \epsilon_{it} \end{aligned} \quad (1)$$

$$\begin{aligned} \text{AverageCosts}_{it} = & \\ & \beta_0 + \beta_1 \text{Disposal}_{it} + \beta_2 \text{Organic}_{it} + \beta_3 \text{Paper}_{it} + \\ & \beta_4 \text{Packaging}_{it} + \beta_5 \text{Voluminous}_{it} + \beta_6 \text{Glass}_{it} + \\ & \beta_7 \text{Firm}_i + \beta_8 \text{VolxFirm}_{it} + \beta_9 \text{August}_t + \epsilon_{it} \end{aligned} \quad (2)$$

Main Results

	FCC	Cespa	Urbaser	CLD
FCC	-84,799			
Cespa		175,034*		
Urbaser			-491,742***	
CLD				83,500
R2	0.9582	0.9589	0.9604	0.9582
Wald chi2	3,965.64***	4,036.99***	4,191.79***	3,967.26***
Prob F	0.0000	0.0000	0.0000	0.0000

Main Results

	FCC	Cespa	Urbaser	CLD
Volume	1.578e-4***	7.64e-5*	1.271e-4**	9.98e-5**
FCC	0.675			
VolxFCC	-6.32e-4			
Cespa		-0.044		
VolxCespa		3.68e-5		
Urbaser			-1.59	
VolxUrbaser			2.44e-5	
CLD				-0.063
VolxCLD				1.89e-5
R2	0.9281	0.9295	0.9316	0.9267
Wald chi2	2,218.87***	2,268.11***	1,748.33***	2,268.11*
Prob F	0.0000	0.0000	0.0000	0.0000

Discussion and Policy Implications

Costs have not converged between concessions

- 1 More competition for the contracts could be advisable
- 2 None of the zones operates under increasing returns to scale
- 3 Increased fragmentation, additional lot possibly municipal

Limitations & Further Research

Limitations due to data

Further research questions

Do firms deliver different quality levels according to the distance from their competitors?

Further Research

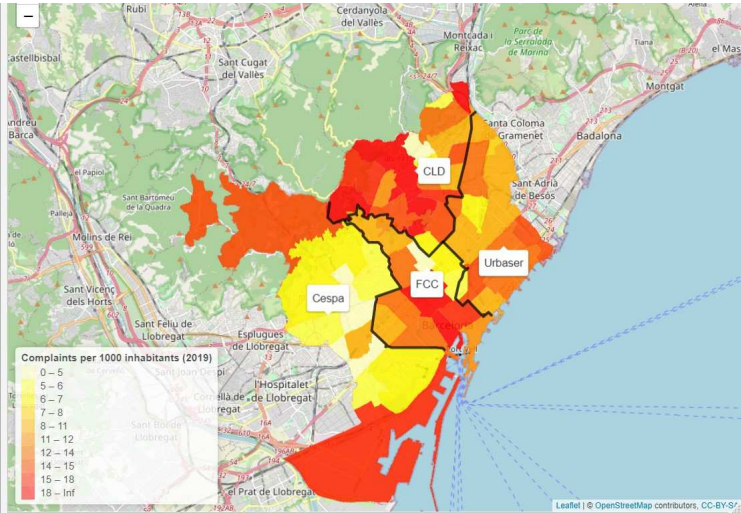


Figure: Fragmentation of Waste Collection

A photograph of a classical courtyard with a checkered floor, columns, and arches. The text "Thank you!" is overlaid in orange. The courtyard features a floor of alternating light and dark blue-grey tiles. A balustrade with decorative balusters runs along the edge. Several tall, dark grey columns support a series of arches. In the background, a large, light-colored building with multiple stories and arched windows is visible. A tall, thin cypress tree stands prominently in the center background, and other greenery is scattered throughout the courtyard.

Thank you!