Competition and Pass-Through:
Evidence from the Greek Islands

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- An empirical regularity is slowly emerging. . .

Two contributions on conduct and number of firms
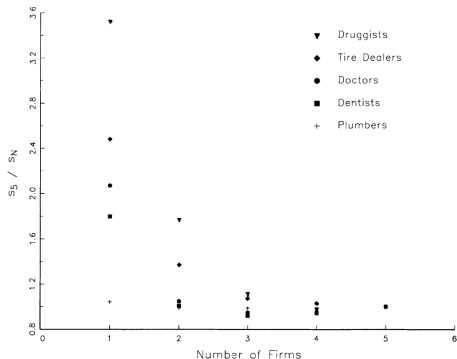
Bresnahan and Reiss (1991)
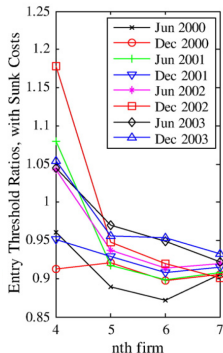
Xiao and Orazem (2011)

- Three-four competitors seem to ensure competition

- Key insight: firms with more market power extract more surplus and thus requires less market size $\rightarrow$ with competition the ratio $S_{n+1}/S_n \rightarrow 1$

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- This paper informs about competition exploiting the supply-side
  equation: write the price equation as a function of input prices to
  estimate pass-through ρ which in turn is related to the conduct
  parameter θ

$$\rho = \frac{1}{1 + \frac{\theta}{\epsilon_\theta} + \frac{\epsilon_D - \theta}{\epsilon_S} + \frac{\theta}{\epsilon_{ms}}} \qquad \rightarrow \qquad \rho = \frac{1}{1 + \theta}$$

with $\theta = 0$ with perfect competition and $\theta = 1$ with monopoly

Identification

- Reduced form DiD approach to estimate ρ, that exploits:
  - ▶ Exogeneity of the tax increase + control group
  - ▶ Exclusion restriction for the number of stations in each island
- Model taken to data:

$$P_{kist} = \beta_0 + \rho(n_i, Z_i) Tax_{kt} + \beta_{ks} + \beta_t + \varepsilon_{kist} \tag{1}$$

  - ▶ β_0: intercept price oil products
  - ▶ β_{ks}: station/product shock (capturing different input costs, parent oil group etc.)
  - ▶ β_t: time shock
  - ▶ $\rho(n_i, Z_i) Tax_{kt}$: pass-through as function of local characteristics and number of competitors, times the time-varying Tax on product k

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- Paper can provide more information, especially about **ownership** of gas stations
  - ▶ Are monopolists in small islands belonging to a specific group?
  - ▶ Should we also include controls for ownership in the regression?

- If gas stations in small islands are owned by old national champion (several historical reasons), low pass-through might be driven by other factors

- Political economy argument: can the be pass-through in very concentrated markets lower because of political reasons?
  - ▶ Prices already high in these islands
  - ▶ Economic crisis with possibly cuts on transfers, might lead to protest, government pressure etc.
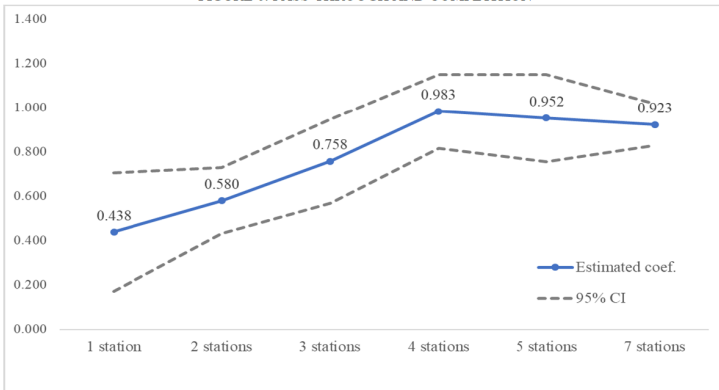
Results

TABLE 4 - PASS-THROUGH AND COMPETITION

	(1)	(2)	(3)	(4)	(5)	(6)
Estimation method	FE	FE	IV	FE	FE	IV
Dependent variable	Price$_{int}$	Price$_{int}$	Price$_{int}$	Price$_{int}$	Price$_{int}$	Price$_{int}$
Sample	All excise episodes	All excise episodes	All excise episodes	All excise episodes	All excise episodes	All excise episodes
Tax$_{it}$	0.449***	-0.833	0.464***	0.139	-0.601	-0.702
	(0.091)	(0.689)	(0.104)	(0.186)	(0.897)	(0.466)
Tax$_{it}$ × Number of competitors$_s$	0.086***	0.083**	0.082***	0.289***	0.265	0.821***
	(0.020)	(0.031)	(0.020)	(0.100)	(0.172)	(0.294)
Tax$_{it}$ × Number of competitors$_s^2$				-0.025**	-0.023	-0.090**
				(0.011)	(0.018)	(0.037)
		Additional controls include interactions with income, education, number of ports, and airports, distance from Piraeus and tourist arrivals.			Additional controls include interactions with income, education, number of ports, and airports, distance from Piraeus and tourist arrivals.	

- Demographics seem to matter when interacted with prices, further reason to include them in the specification

- IV results in line with FE but coefficients move substantially

- Instrument based on population size is credible, think about something related to ownership and distance?

Results

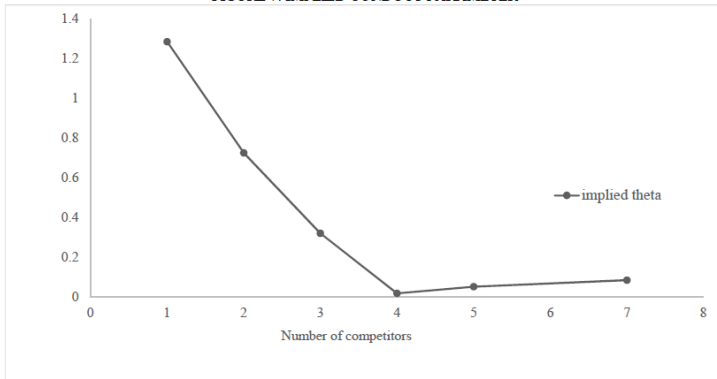FIGURE 6: PASS-THROUGH AND COMPETITION

Notes: The figure plots the estimated coefficients from Table 5, column 1, together with the 95% confidence interval.
Source: Authors' calculations based on data from the Greek Ministry of Development.

Results

FIGURE 7: IMPLIED CONDUCT PARAMETER

Notes: The figure plots the conduct parameter implied by our estimates (assuming constant marginal cost and linear demand).
Source: Authors' calculations based on estimated results.

Conclusions

- Great contribution on the role of **market structure on pass-through**, both regarding the level and the speed of adjustment

- Also, important contribution on the crucial aspect of **market definition** in competition policy