Some challenges for Spanish competitiveness in the long-run: economic geography and education

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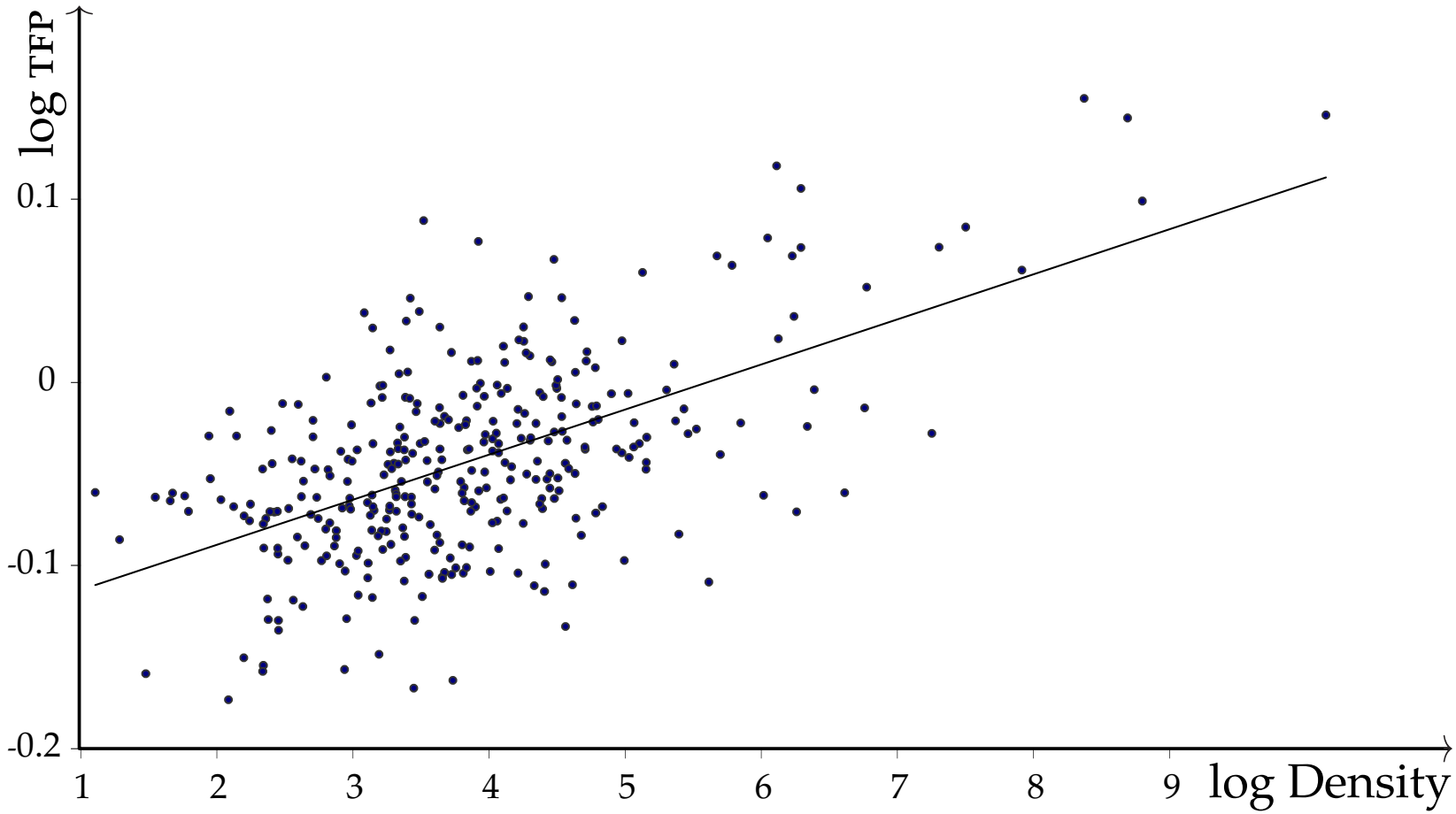
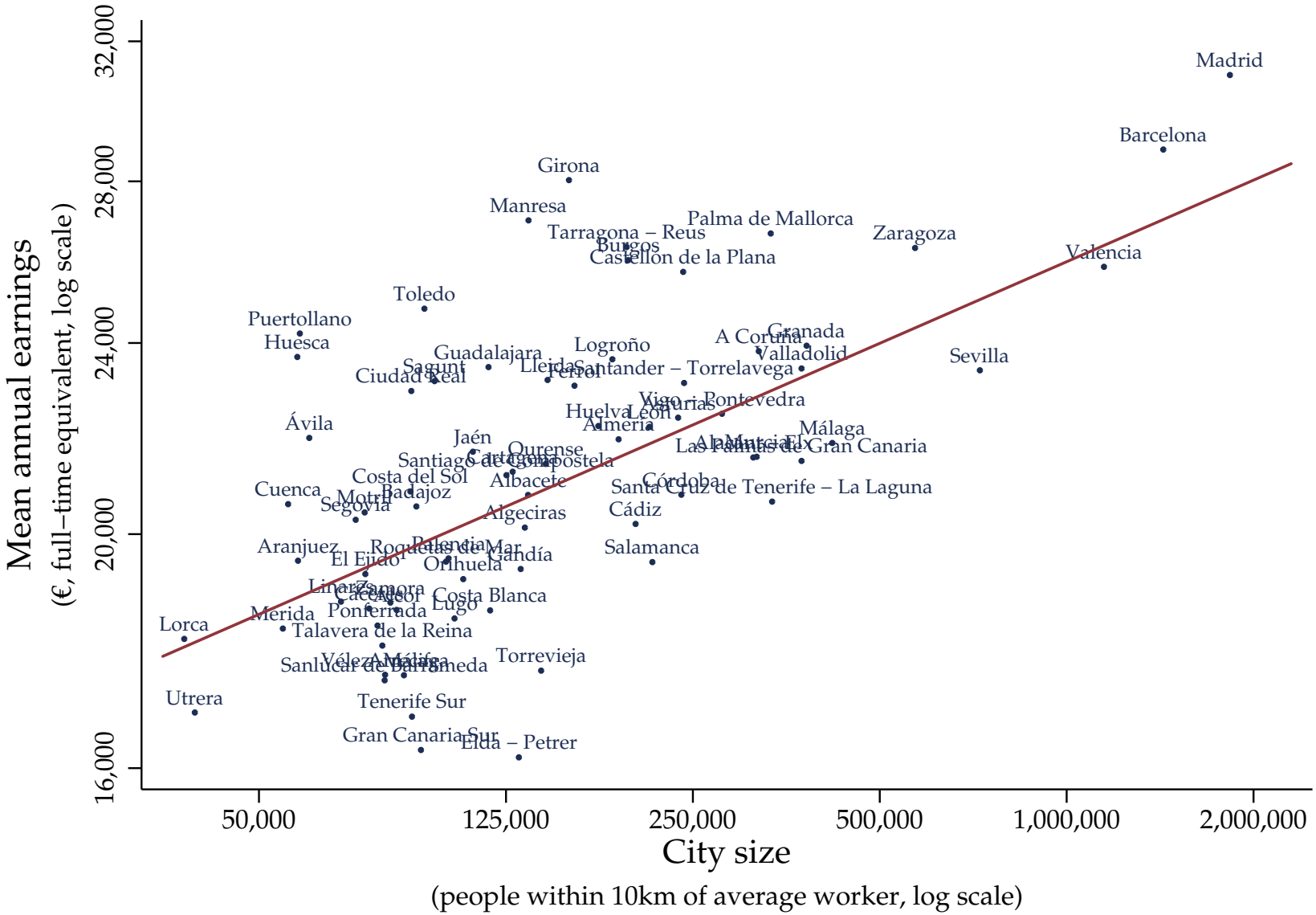
CEMFI

Average firm productivity is higher in bigger cities



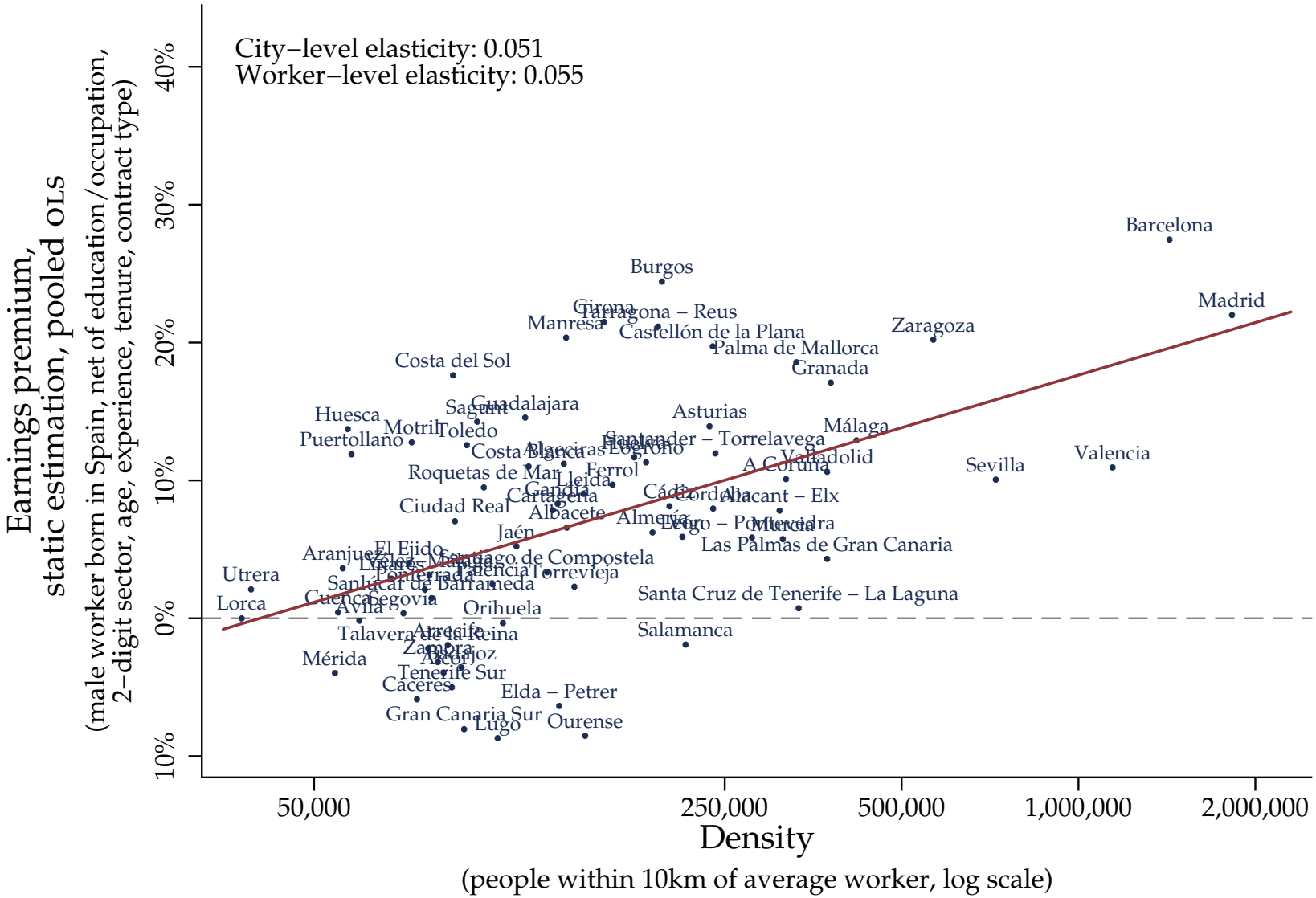
Source: Combes, Duranton, Gobillon, Puga, and Roux (2012)

This is also reflected in higher earnings for workers



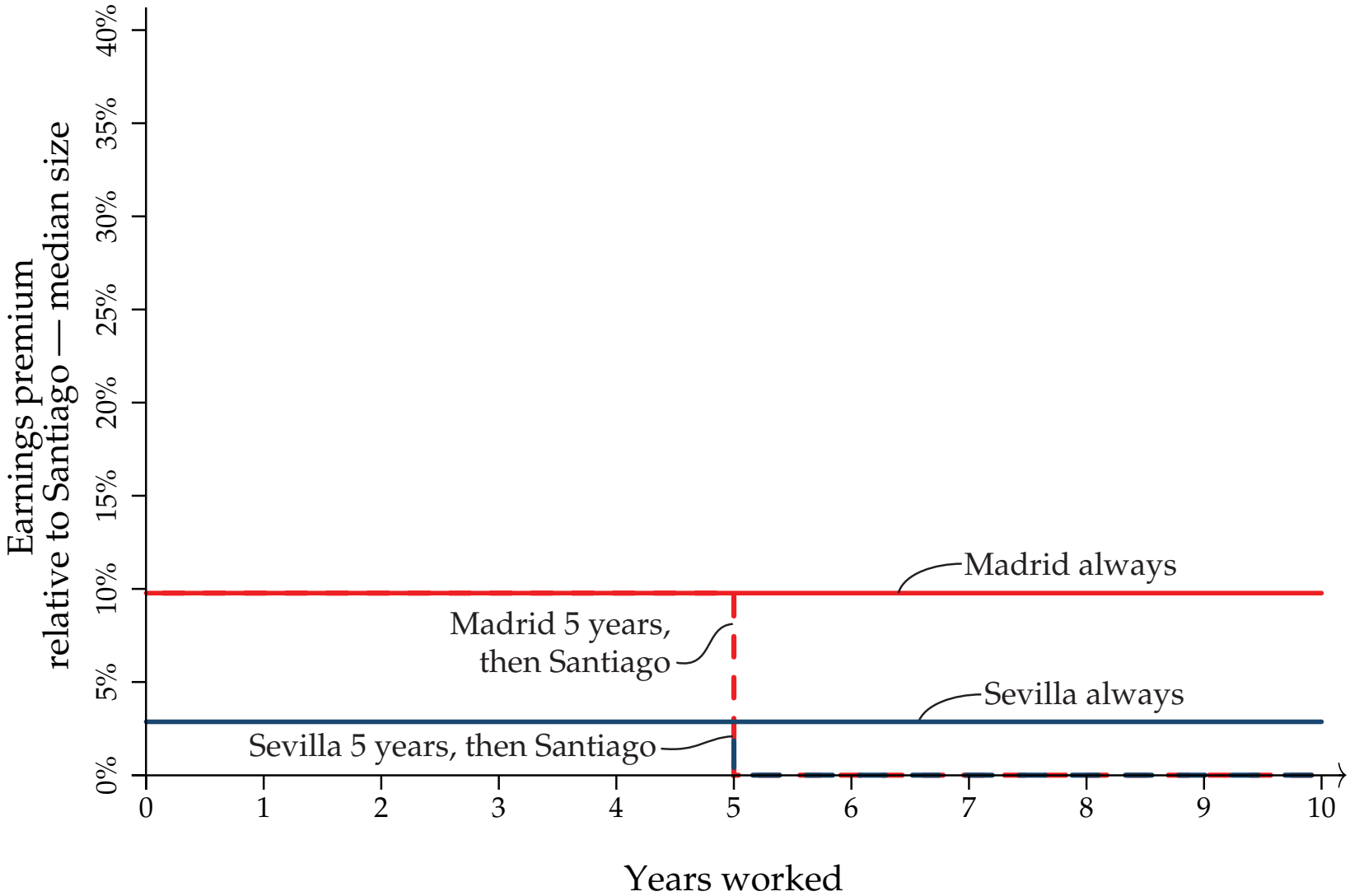
Source: De la Roca and Puga (2012)

Earnings premium and log city size



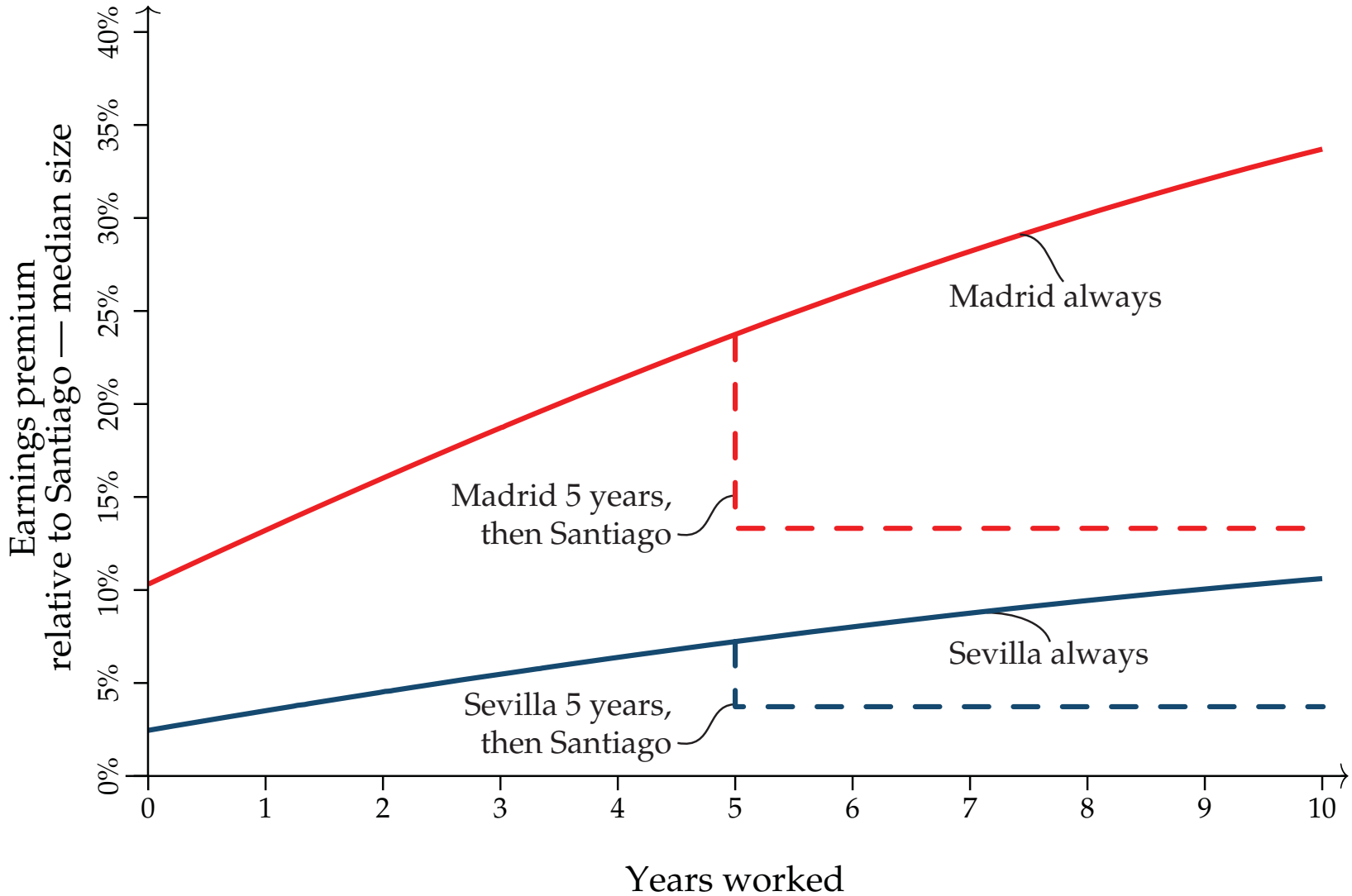
Source: De la Roca and Puga (2012)

Relative earnings profiles (only static benefits)



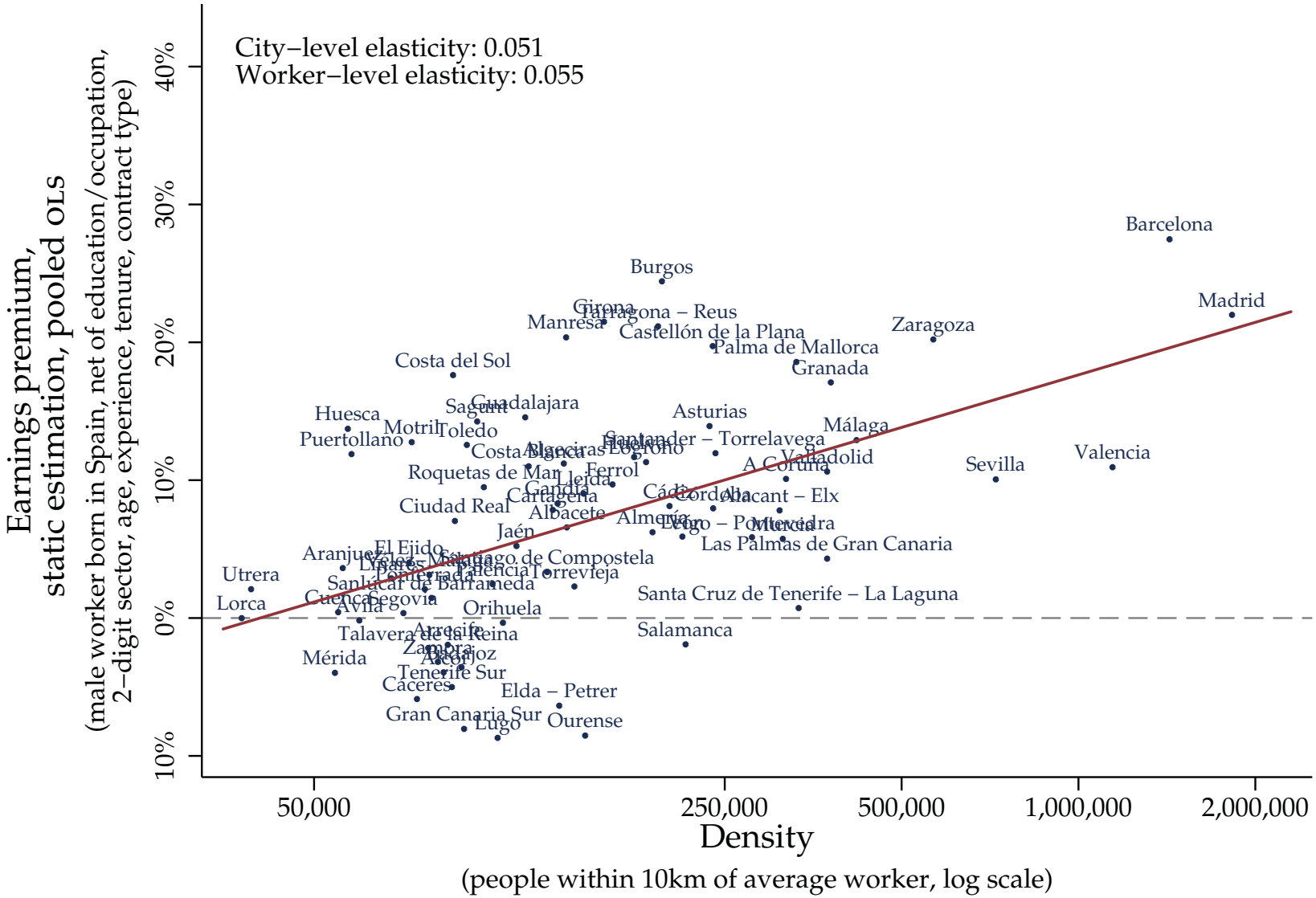
Source: De la Roca and Puga (2012)

Relative earnings profiles (allowing for dynamic benefits)



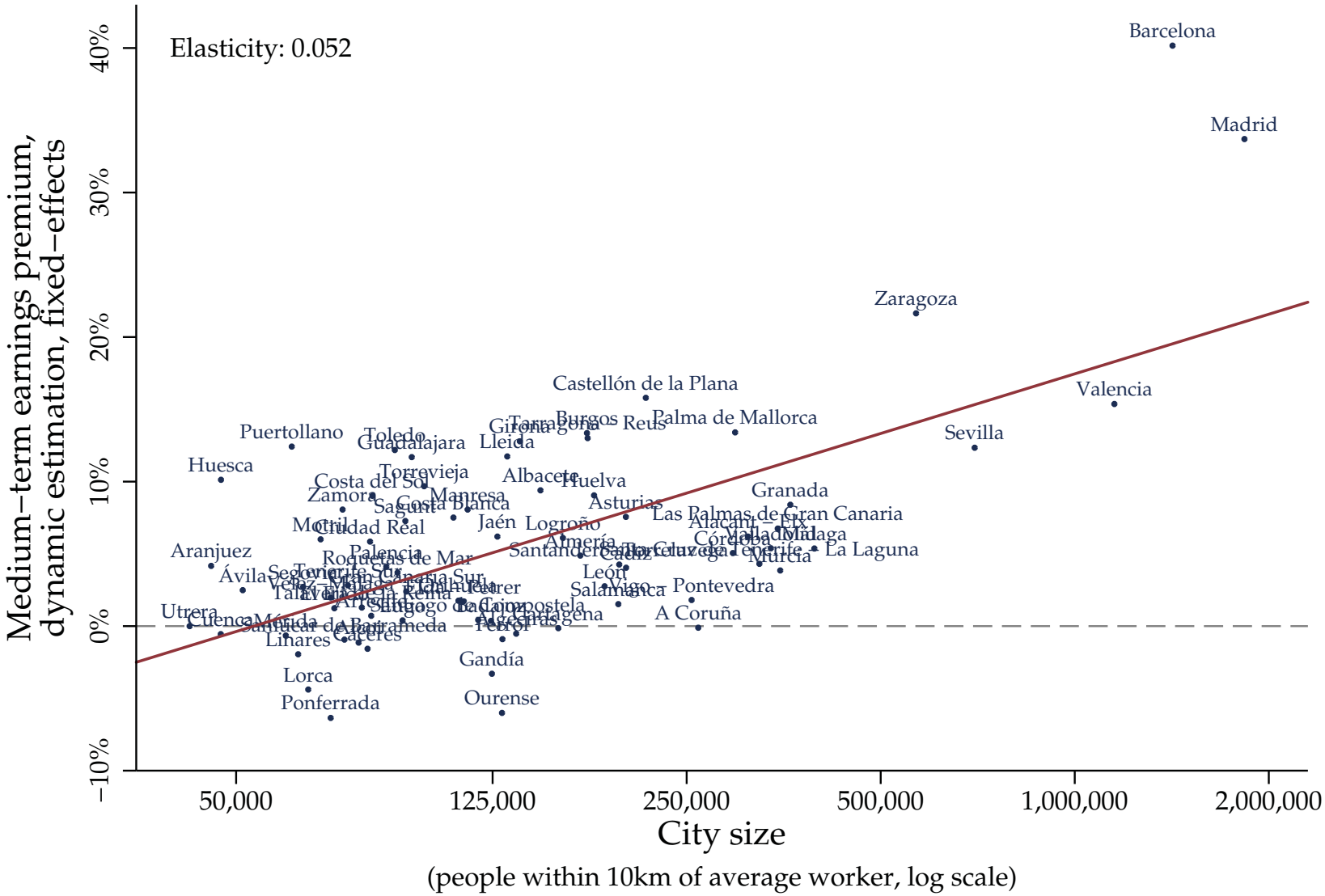
Source: De la Roca and Puga (2012)

Earnings premium and log city size (OLS)



Source: De la Roca and Puga (2012)

Earnings premium and log city size (calculating static and dynamic benefits)



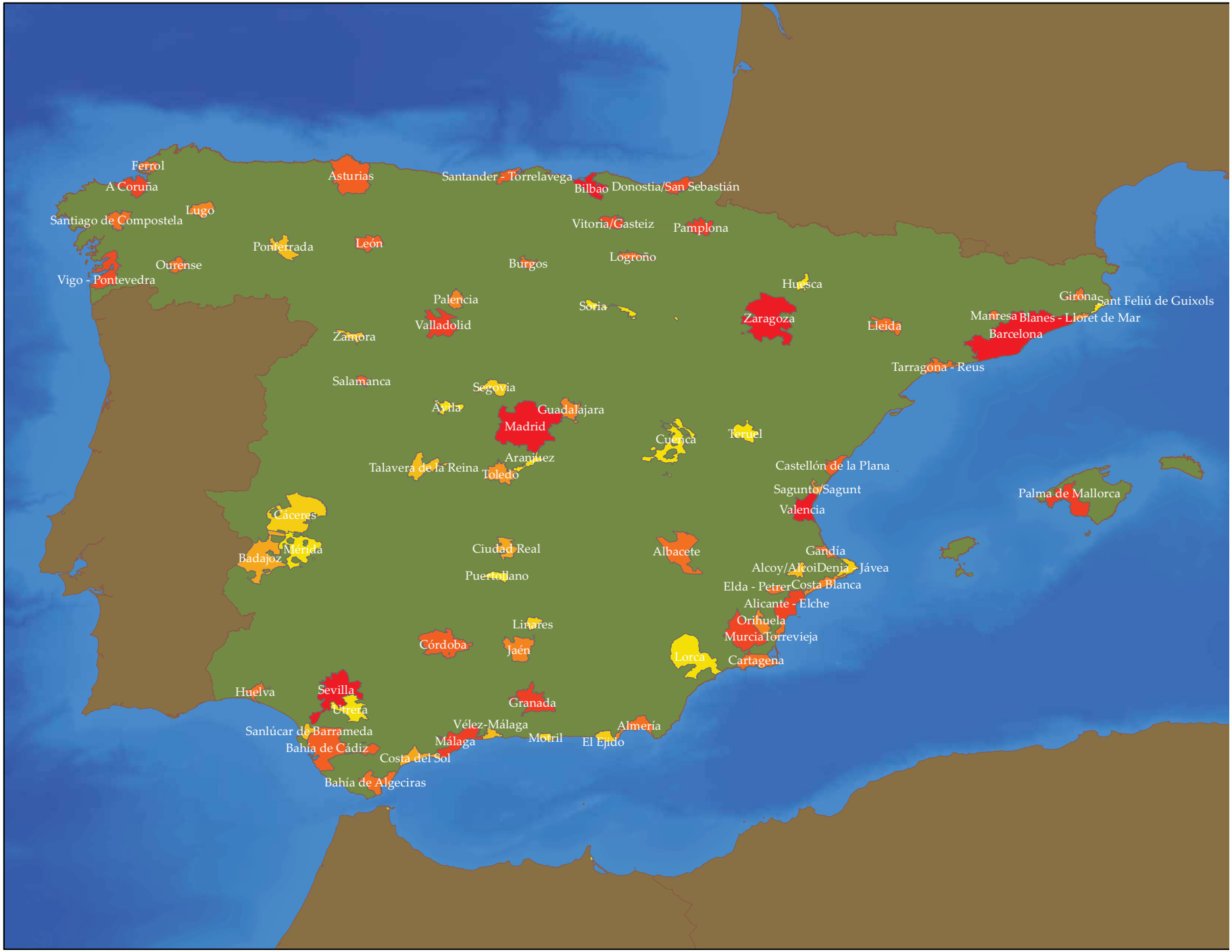
Source: De la Roca and Puga (2012)

	% of relocations from diversified to diversificadas specialized areas	Relocations as a % of the stock	Geographic concentration
R&D	93.0	8.1	0.023
Pharmaceuticals and cosmetics	88.3	6.4	0.020
IT and consultancy services	82.1	7.3	0.030
Business services	75.8	5.0	0.015
Printing and publishing	73.3	5.4	0.026
Aerospace, rail and naval equipment	71.6	3.3	0.026
Electrical and electronic equipment	69.1	4.2	0.011
Motor vehicles	62.5	2.7	0.020
Electrical and electronic components	60.9	5.9	0.007
Textiles	46.4	2.5	0.024
Chemical, rubber and plastic products	38.3	3.9	0.009
Metal products and machinery	37.6	3.2	0.005
Clothing and leather	36.3	3.4	0.013
Food and beverages	34.6	0.8	0.007
Furniture and fixtures	32.6	2.7	0.008
Wood, lumber, pulp and paper	30.6	1.7	0.009
Primary metals	30.0	2.5	0.009
Non-metallic mineral products	27.3	2.0	0.012
Aggregate	72.0	4.7	

Source: Duranton and Puga (2001).

Local population	Sectoral specialization			Functional specialization in management against production			
	1977	1987	1997	1950	1970	1980	1990
5,000,000–19,397,717	.377	.376	.374	+10.2%	+22.1%	+30.8%	+39.0%
1,500,000– 4,999,999	.366	.360	.362	+ 0.3%	+11.0%	+21.6%	+25.7%
500,000– 1,499,999	.397	.390	.382	–10.9%	– 7.8%	– 5.0%	– 2.1%
250,000– 499,999	.409	.389	.376	– 9.2%	– 9.5%	–10.9%	–14.2%
75,000– 249,999	.467	.442	.410	– 2.1%	– 7.9%	–12.7%	–20.7%
67– 75,000	.693	.683	.641	– 4.0%	–31.7%	–40.4%	–49.5%

Source: Duranton and Puga (2005).


Ferrol
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Bilbao
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Lugo
Santiago de Compostela
Vitoria/Gasteiz
Pamplona
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Logroño
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Huesca
Girona
Sant Feliú de Guixols
Palencia
Soria
Zaragoza
Manresa
Blanes - Lloret de Mar
Valladolid
Lleida
Barcelona
Zamora
Tarragona - Reus
Salamanca
Segovia
Ávila
Guadalajara
Madrid
Teruel
Cuenca
Aranjuez
Talavera de la Reina
Toledo
Castellón de la Plana
Sagunto/Sagunt
Palma de Mallorca
Valencia
Cáceres
Ciudad Real
Albacete
Gandía
Mérida
Badajoz
Alcoy/Alcoi
Denia - Jávea
Puertollano
Elda - Petrer
Costa Blanca
Alicante - Elche
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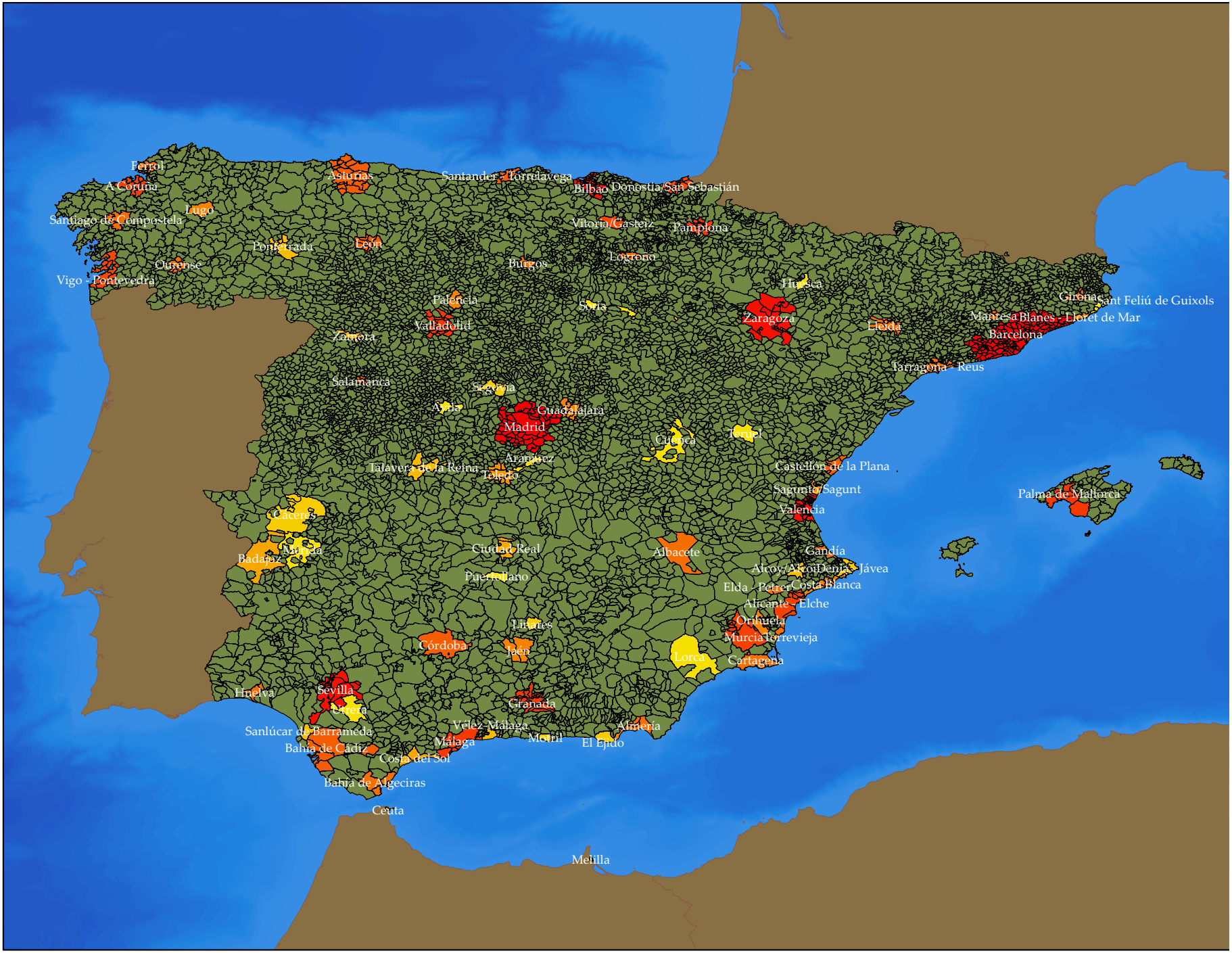
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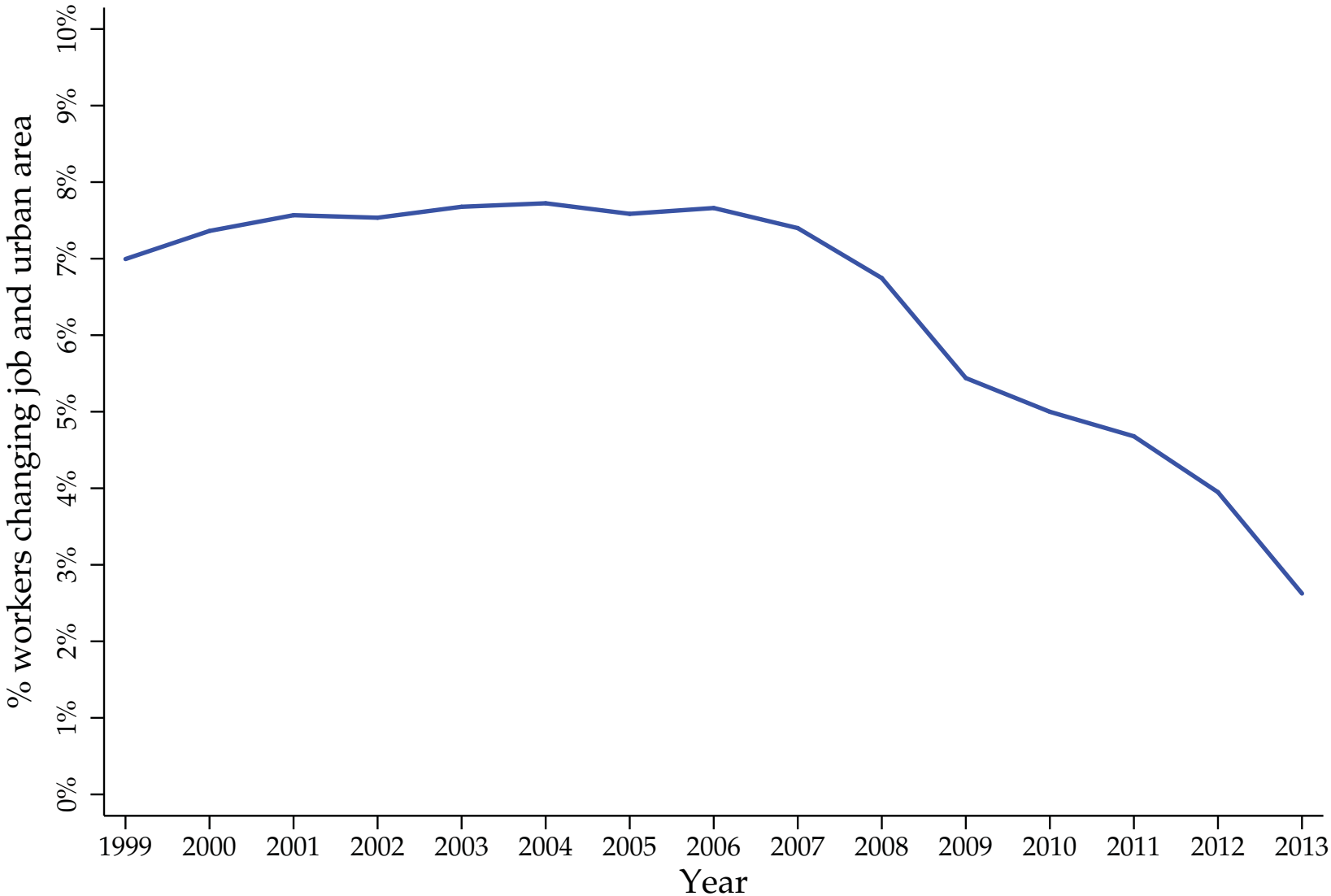
Mismatch between municipalities and economic units

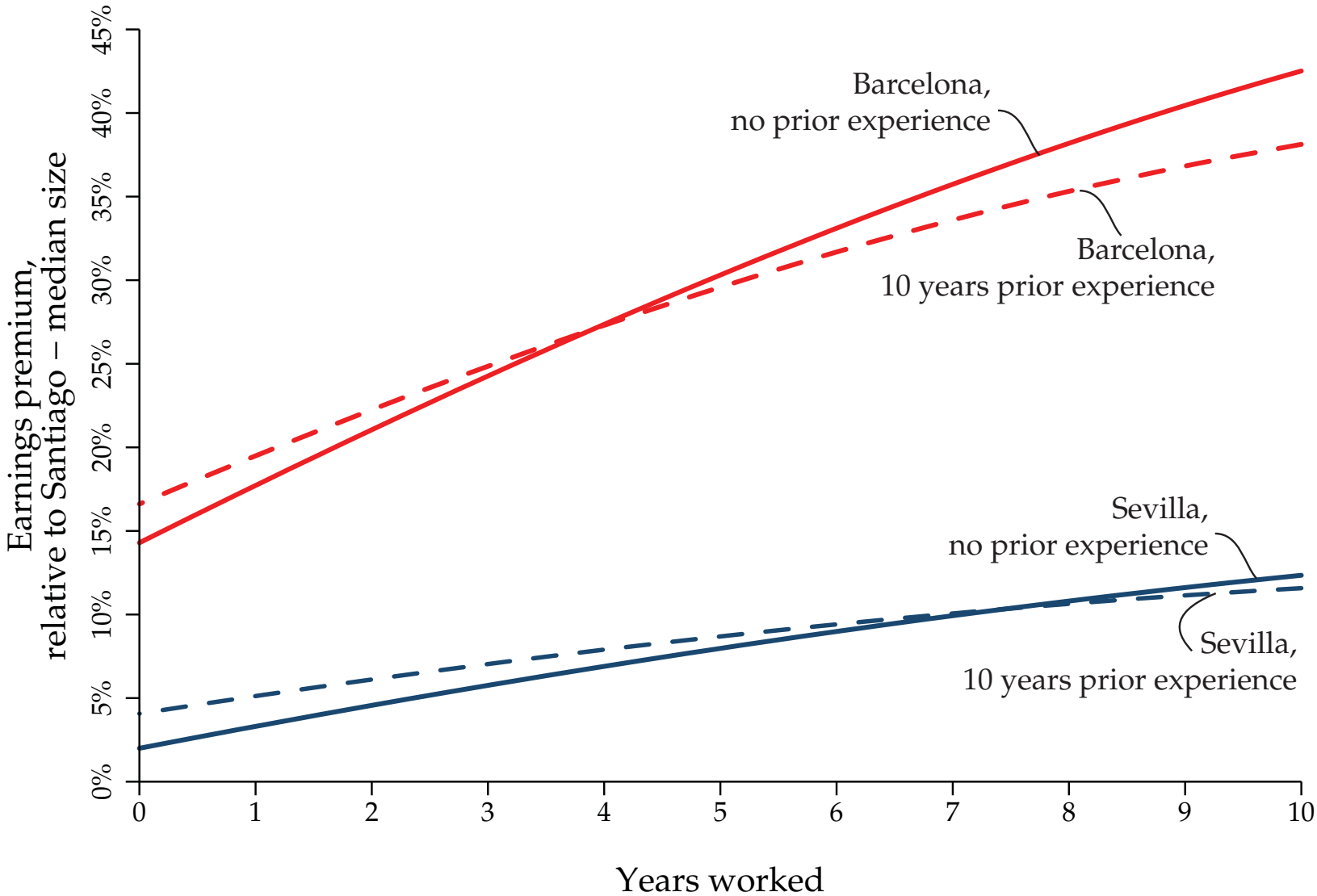
- 8,117 municipalities in Spain.
- Many are tiny:
  - Almost half (3,877 municipalities) have fewer than 500 inhabitants.
  - 15% (1,202 municipalities) have fewer than 100 inhabitants.
- Large urban areas are fragmented administratively:
  - The Barcelona Metropolitan Area has 36 municipalities.
  - The Barcelona urban area has 165 municipalities (Ministerio de Fomento definitions).

The drop in mobility across urban areas during the crisis



Source: De la Roca, Michelacci and Puga (2015)

Comparing younger and older workers



Source: De la Roca and Puga (2012)

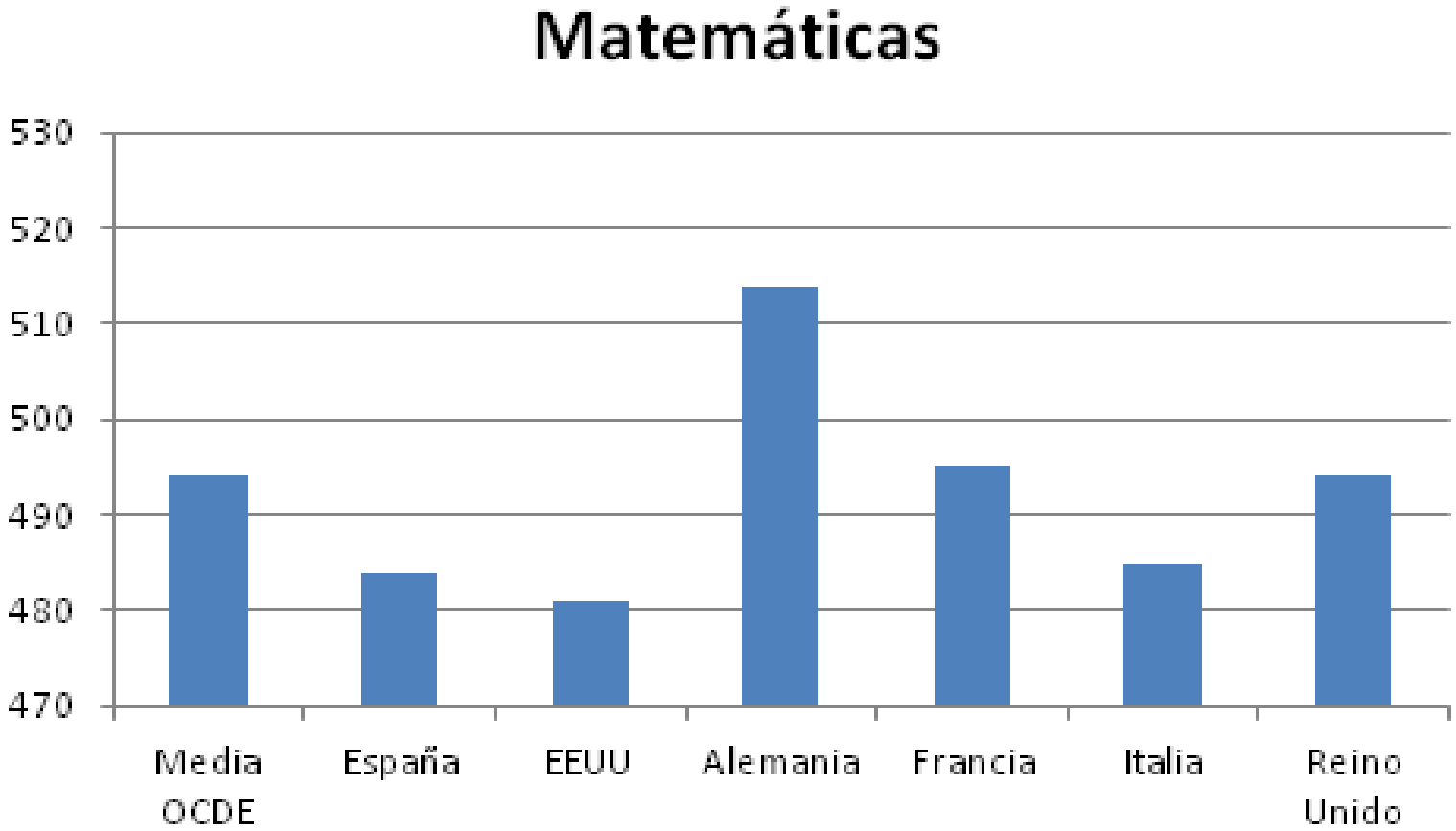
Important challenges in university education

- Little student mobility (70% stay in the region, those who study elsewhere tend to commute from parents' home).
- Few places of excellence (no incentives, if it arises nevertheless bureaucracy discourages it).
- Specific problems in science and engineering:
  - Declining share (over 20% drop in student registrations over last decade).
  - Particularly bright students face unusually high failure rates:
    - 40% failed credits.
    - 25% quit or change subject within first year.
    - Only 25% get a grade of 7/10 or higher (lowest, compared with 43% across fields).
  - Contrast with medicine where bright students tend to complete their studies and obtain particularly high grades (7.2 average)
- Excellence is built slowly, but destroyed rapidly.

Important challenges in pre-university education

- High dropout rate: over 30% of 18-24 year olds have not completed upper-secondary education but are no longer studying.
- Low performance.
- The system does reasonably well in teaching routine tasks to weak students.
- But does not make the most of the best students.
- It emphasises routine skills instead of creative skills.

Under-average performance of Spanish students in PISA tests



Source: Libertad González - NeG from PISA data

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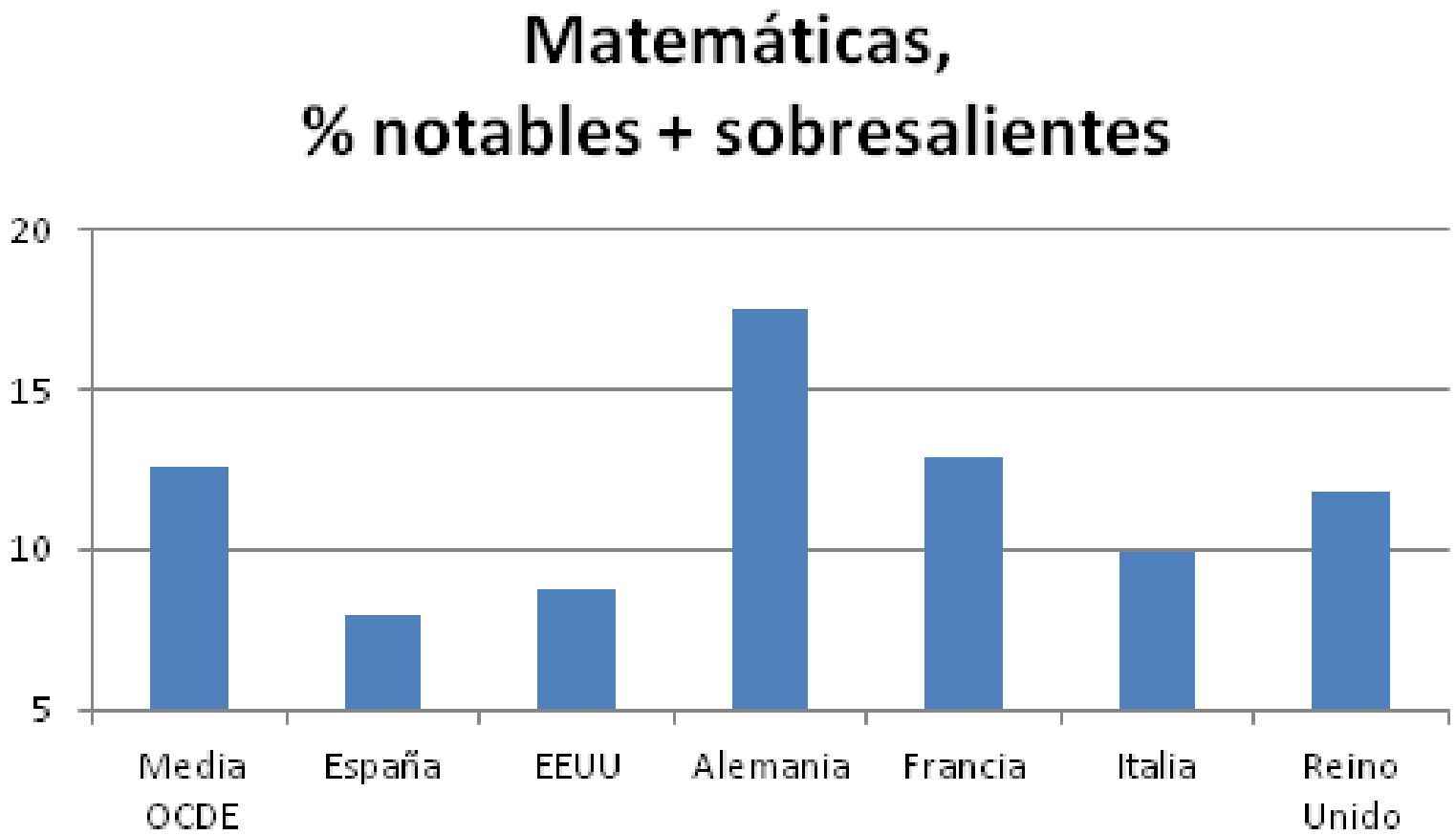
Few students with top grades



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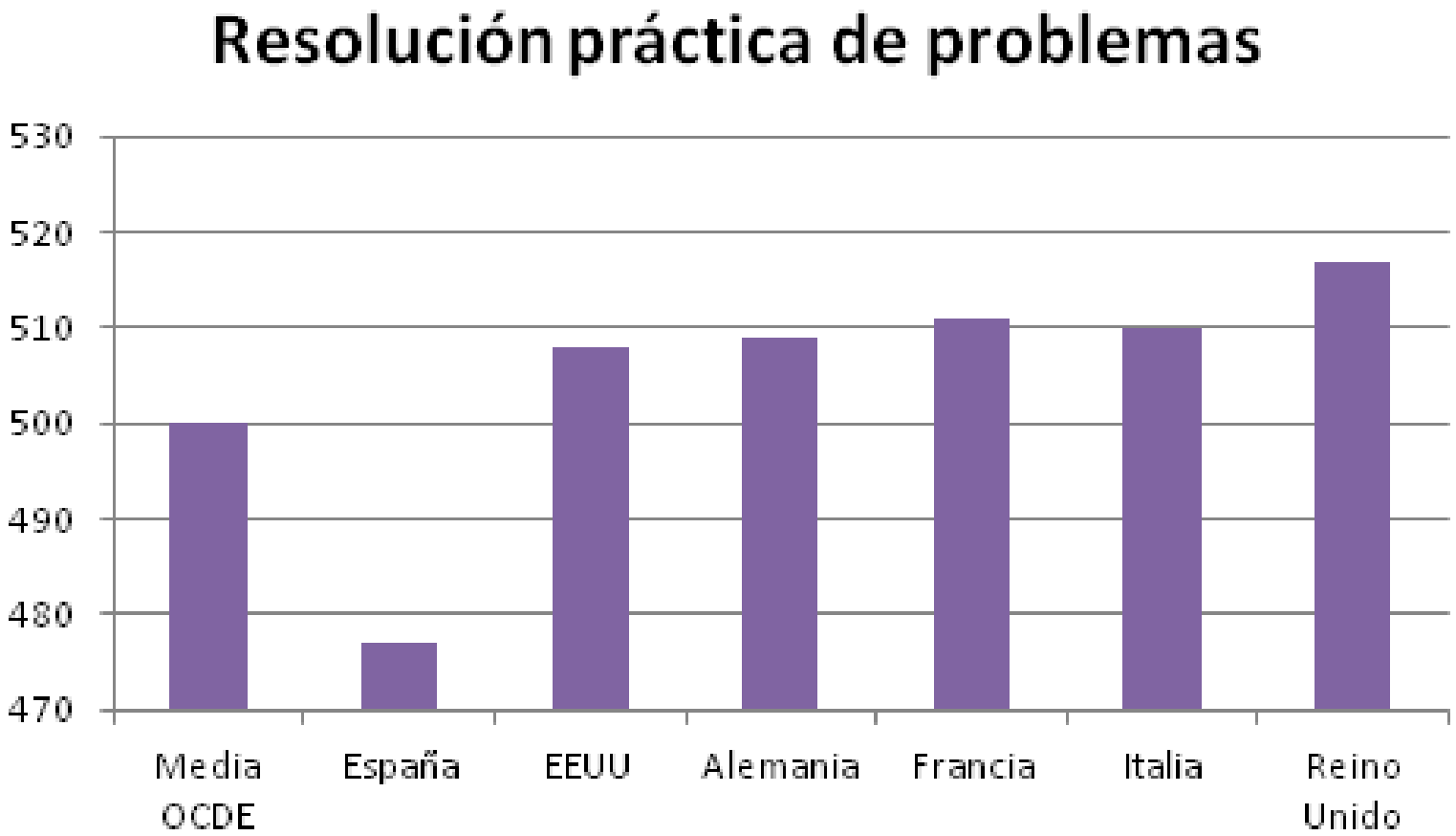
...but it is in problem solving where the difference is striking



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