Intergenerational mobility across origins in France: The role of residential segregation

Louis SIRUGUE

London School of Economics
International Inequalities Institute

2nd LIS/III Comparative Economic Inequality Conference 27/02/2025

Parents' immigration background:

→ ***Inherited*** *individual characteristic*

→ *Among the* ***strongest determinants*** *of economic outcomes*

Parents' immigration background:

→ ***Inherited*** *individual characteristic*

→ *Among the* ***strongest determinants*** *of economic outcomes*

In France, like other Western countries:

→ ***Immigrants and their children earn less*** *on average*

→ ***Hiring discrimination*** *toward muslim sounding names*

Parents' immigration background:

→ ***Inherited*** *individual characteristic*

→ *Among the* ***strongest determinants*** *of economic outcomes*

In France, like other Western countries:

→ ***Immigrants and their children earn less*** *on average*

→ ***Hiring discrimination*** *toward muslim sounding names*

Remaining questions:

→ *Do 2nd gen. earn less* ***only due to intergenerational persistance?***

→ *Or do they still earn less* ***conditional on parents' income****?*

→ *If so, could* ***residential segregation*** *be at play?*

Overview

Use a combination of **census and tax data** (French EDP)

$\rightarrow$ *Obtain parents' income ranks using TSIV* robustness

Overview

Use a combination of **census and tax data** (French EDP)

→ *Obtain parents' income ranks using TSIV* robustness

Much lower **income gaps** in the 2nd generation: **convergence**

→ *Yet, significant conditional gap for sons of North Afr. parents*

Overview

Use a combination of **census and tax data** (French EDP)

→ *Obtain parents' income ranks using TSIV* robustness

Much lower **income gaps** in the 2nd generation: **convergence**

→ *Yet, significant conditional gap for sons of North Afr. parents*

Investigate the **role of residential segregation** in an IV setting

→ *How geographic barriers divide urban units*

Overview

Use a combination of **census and tax data** (French EDP)

→ *Obtain parents' income ranks using TSIV* robustness

Much lower **income gaps** in the 2nd generation: **convergence**

→ *Yet, significant conditional gap for sons of North Afr. parents*

Investigate the **role of residential segregation** in an IV setting

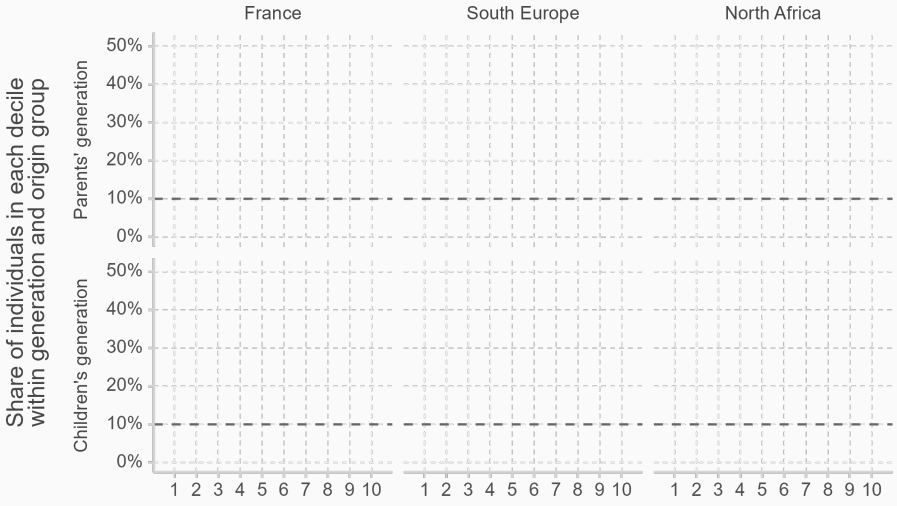
→ *How geographic barriers divide urban units*

- effect on sons of natives, larger on sons of North Afr. parents

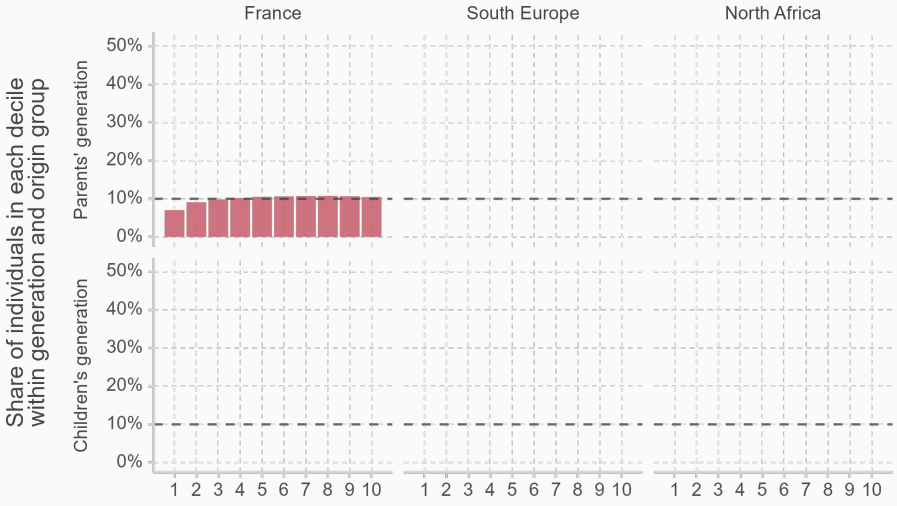
→ *Hence contributing to the conditional income gap*

Intergenerational mobility across origins

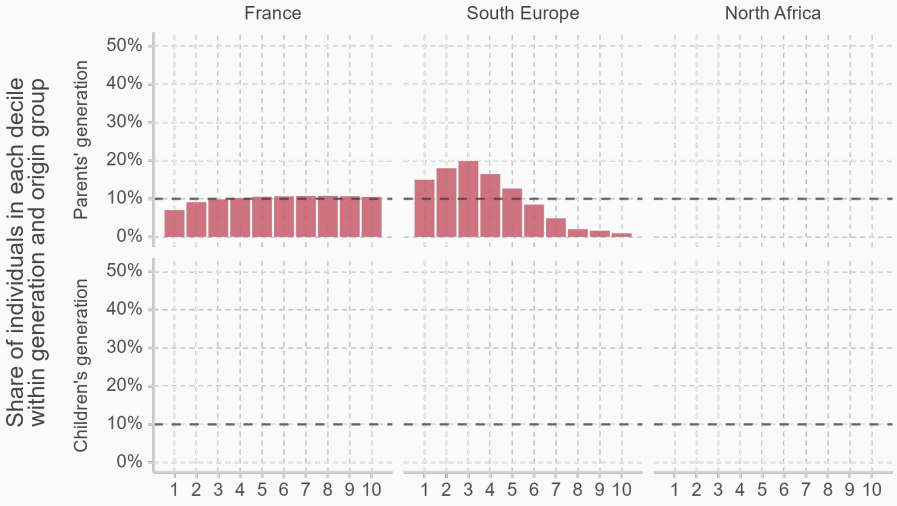
Income distributions across origins origins mixed



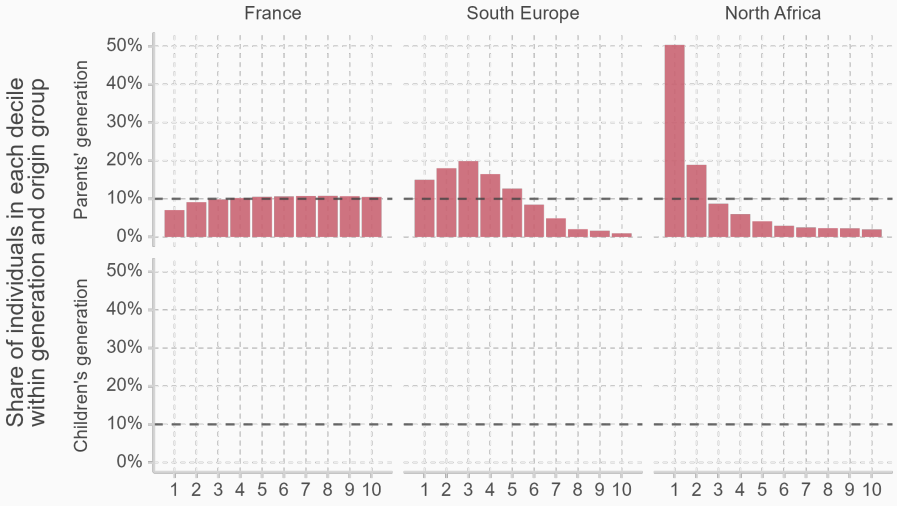
Income distributions across origins origins mixed



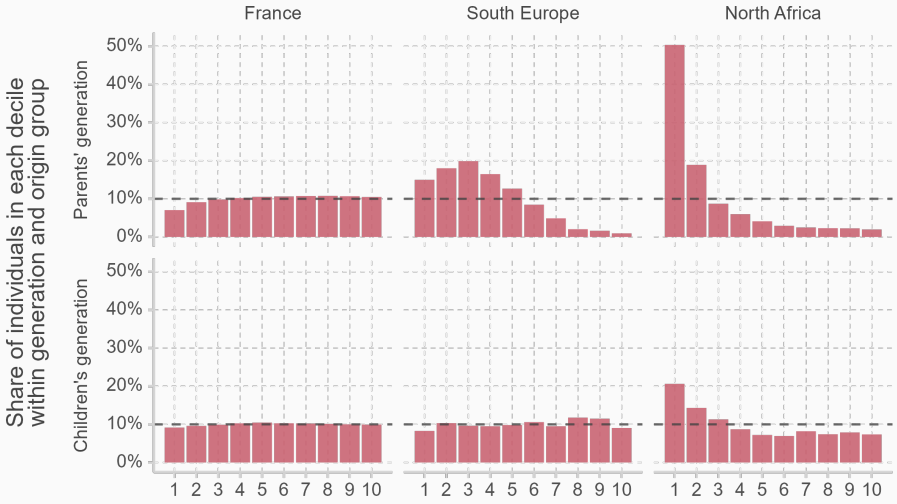
Income distributions across origins origins mixed



Income distributions across origins origins mixed

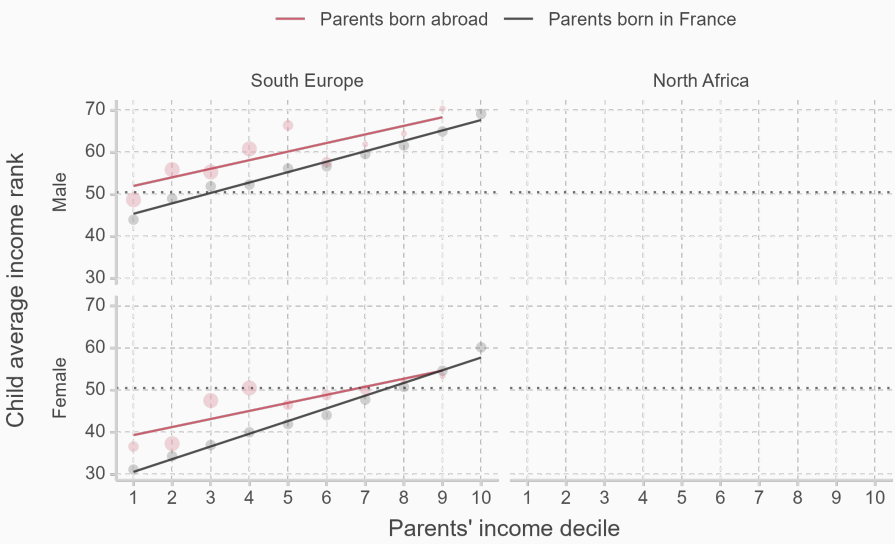


Income distributions across origins origins mixed



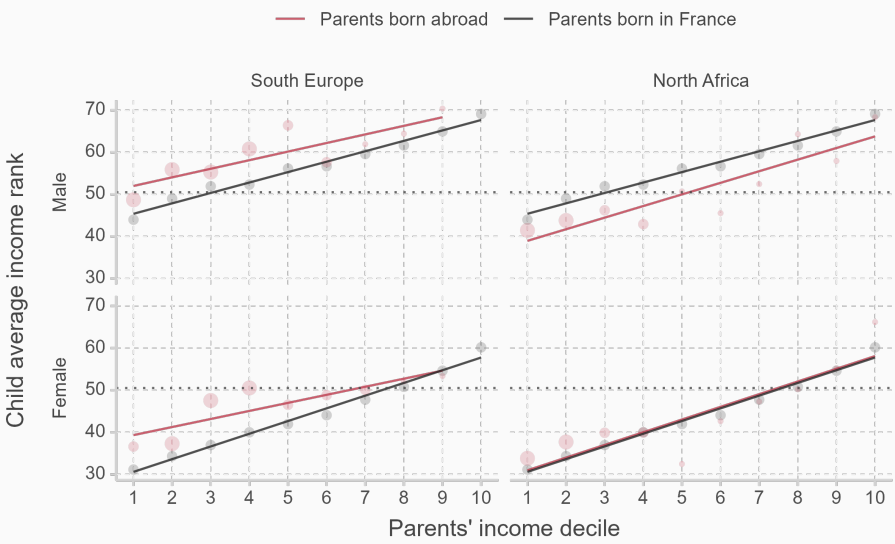
Conditional income ranks

lifecycle attenuation

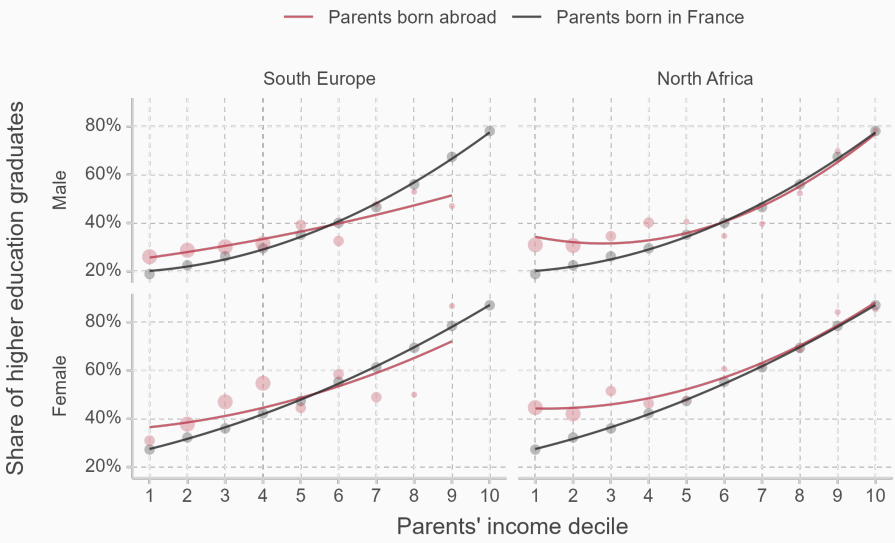


Conditional income ranks

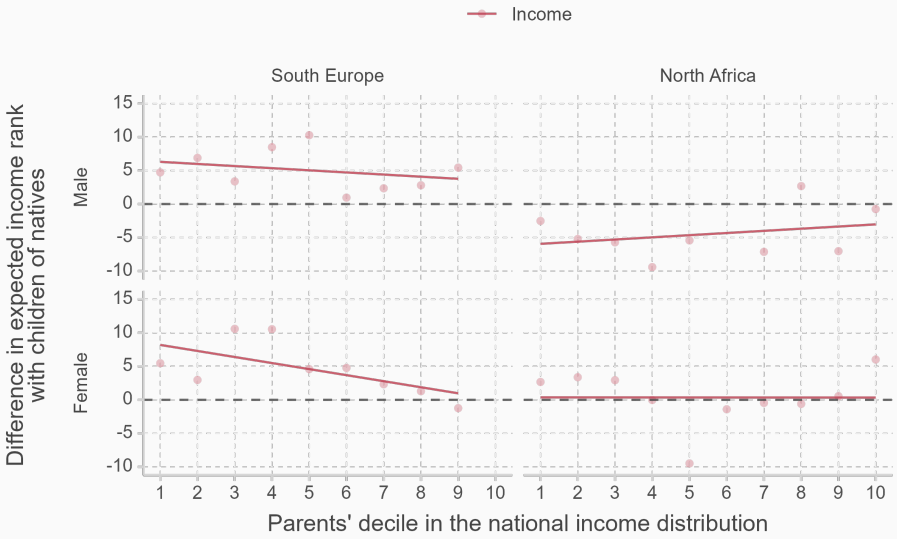
lifecycle attenuation



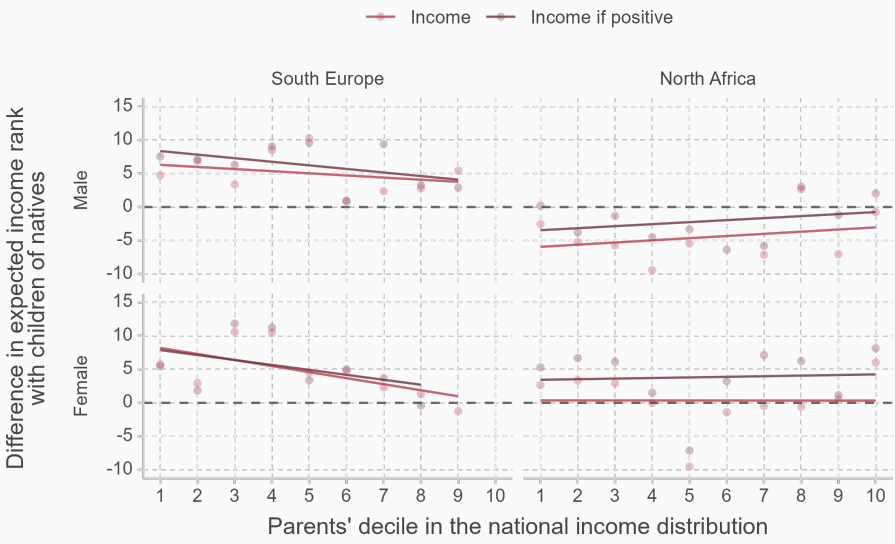
Conditional educational attainment masters



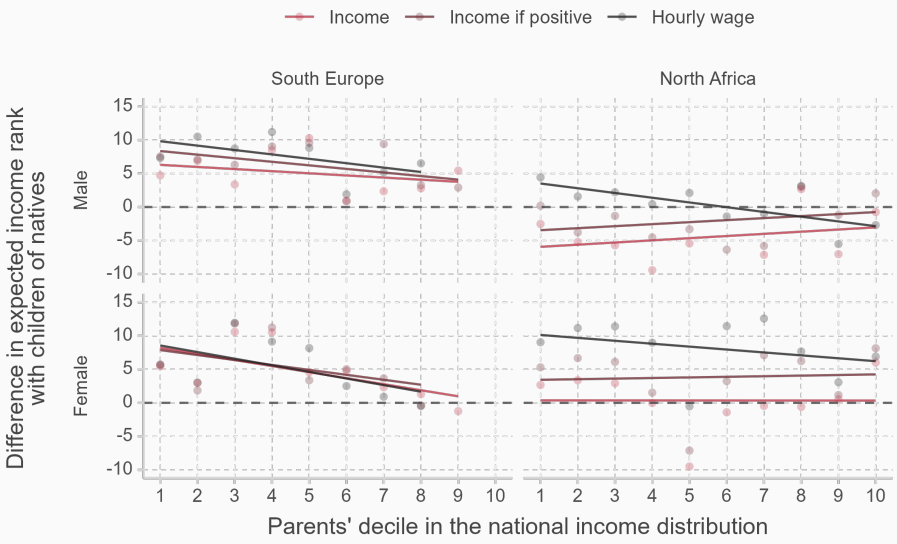
Conditional income difference



Conditional income difference



Conditional income difference



Takeaways

Doesn't seem to be at play:

$\rightarrow$ Education (quantity)

$\rightarrow$ Hourly wage

Takeaways

Doesn't seem to be at play:

→ Education (quantity)

→ Hourly wage

Does seem to be at play:

→ Unemployment

→ Part-time employment

Takeaways

Doesn't seem to be at play:

→ Education (quantity)

→ Hourly wage

Does seem to be at play:

→ Unemployment

→ Part-time employment

Potential reasons:

Hiring discrimination:

- *Well documented by correspondence testing*
- *Hard to measure, and hence, to act on*

Takeaways

Doesn't seem to be at play:

→ Education (quantity)

→ Hourly wage

Does seem to be at play:

→ Unemployment

→ Part-time employment

Potential reasons:

Hiring discrimination:

- *Well documented by correspondence testing*
- *Hard to measure, and hence, to act on*

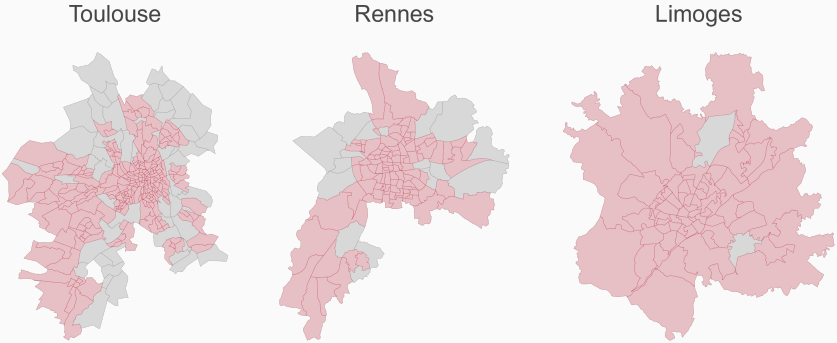
Residential segregation:

- *Less diversified network + feeling of exclusion*
- *Much easier to measure, and hence, to act on*

Residential Segregation

Spatial units

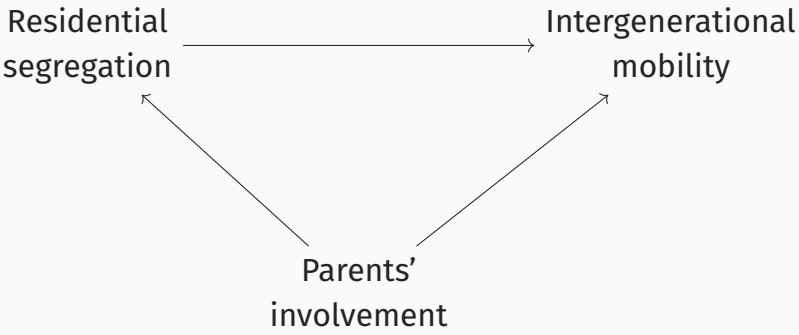
distributions measurement



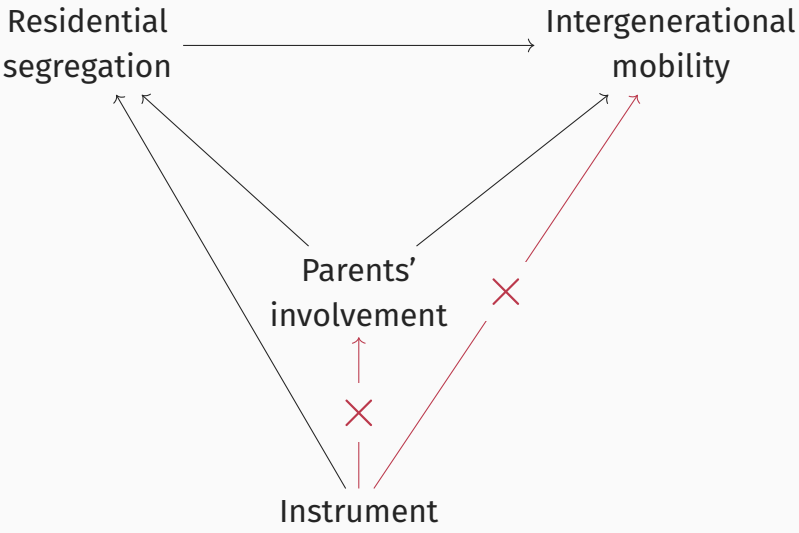
Identification strategy

Residential segregation $\longrightarrow$ Intergenerational mobility

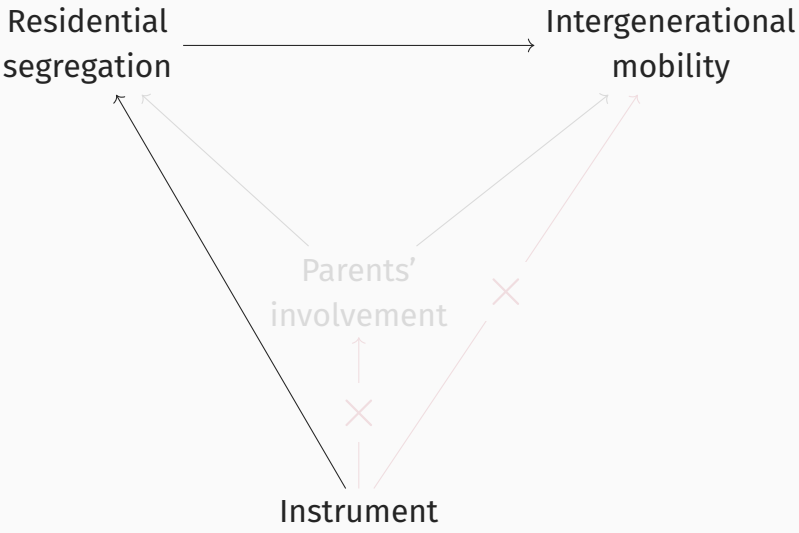
Identification strategy



Identification strategy



Identification strategy



Geographic barriers

national index distribution

Toulouse

Rennes

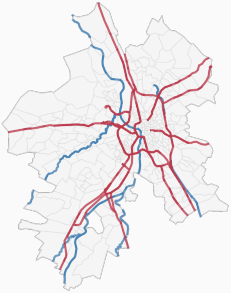
Limoges

Waterway

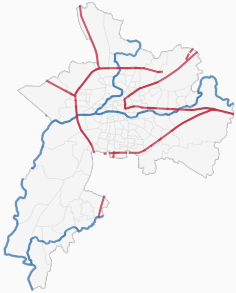
Geographic barriers

national index distribution

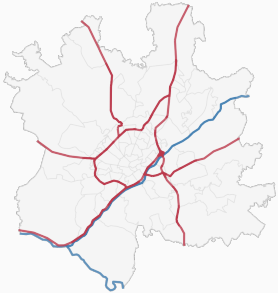
Toulouse



Rennes



Limoges

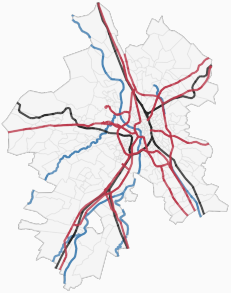


Waterway Roadway

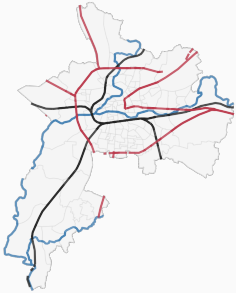
Geographic barriers

national index distribution

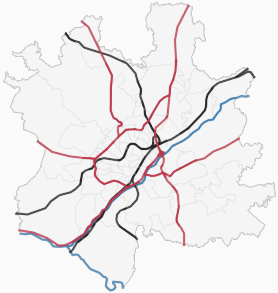
Toulouse



Rennes



Limoges



Waterway Roadway Railway

Exclusion restriction

Connectivity $\Rightarrow$ Economic opportunities

Exclusion restriction

Connectivity $\Rightarrow$ Economic opportunities

Presence of such features

$\rightarrow$ No variation: *Virtually all urban units have rails, roads and rivers*

Exclusion restriction

Connectivity $\Rightarrow$ Economic opportunities

Presence of such features

$\rightarrow$ No variation: *Virtually all urban units have rails, roads and rivers*

Amount/density of such features

$\rightarrow$ Some variation: *Control for the total length of each feature* robustness

Exclusion restriction

Connectivity $\Rightarrow$ Economic opportunities

Presence of such features

$\rightarrow$ No variation: *Virtually all urban units have rails, roads and rivers*

Amount/density of such features

$\rightarrow$ Some variation: *Control for the total length of each feature* robustness

What's left:

- ✗ **Neither whether or not** the urban units has rails or rivers
- ✗ **Nor how much** of these they have
- ✓ **Only how** unevenly these features divide the area

First stage graph

	Segregation index				
Spatial division index	0.088***	0.072***	0.082***	0.082***	0.072***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	0.157***	0.158***	0.158***	0.158***	0.157***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Waterway length		✓			✓
Railway length			✓		✓
Roadway length				✓	✓
Obs. (Urban units)	1,891	1,891	1,891	1,891	1,891
R^2	0.07	0.08	0.07	0.07	0.08
F-stat.	136.6	82.2	72.9	72.4	41.6

Second stage (males) naive threshold

	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	−1.40	−0.88	2.90	1.68*	5.16**	−1.19
	(1.323)	(1.964)	(2.844)	(0.967)	(2.533)	(2.514)
$\widehat{\text{Segregation}}$	−11.33	1.39	49.21	4.91	44.94*	−6.32
	(13.666)	(14.665)	(30.384)	(3.806)	(23.573)	(15.312)
$\widehat{\%\text{Imm.} \times \text{Seg.}}$	0.39	0.29	−1.14	−0.68**	−1.90**	0.39
	(0.401)	(0.645)	(0.983)	(0.349)	(0.905)	(0.946)
Parents' rank	0.26***	0.29**	0.13	0.25***	0.27***	0.17***
	(0.017)	(0.135)	(0.166)	(0.011)	(0.065)	(0.056)
Constant	70.67**	43.88	−51.95	29.44**	−88.38	70.91
	(31.396)	(33.813)	(67.250)	(12.217)	(70.344)	(44.893)
Geo. vars length	✓	✓	✓	✓	✓	✓
Observations	8,529	476	271	15,120	1,750	708
F-stat. Seg.	31.61	3.17	3.63	440.80	24.17	21.56
F-stat. Seg. × Imm.	420.21	3.91	14.97	265.55	24.19	13.33

Second stage (females) naive threshold

	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	−3.23	−1.87	−2.09	1.03	1.15	−8.58
	(2.814)	(1.372)	(4.343)	(0.848)	(2.448)	(7.493)
$\widehat{\text{Segregation}}$	−43.84	−20.62	14.96	4.28	7.03	−28.76
	(34.780)	(14.908)	(27.972)	(3.753)	(22.194)	(38.264)
$\widehat{\%\text{Imm.} \times \text{Seg.}}$	0.78	0.67	0.45	−0.42	−0.49	3.12
	(0.782)	(0.504)	(1.425)	(0.299)	(0.877)	(2.780)
Parents' rank	0.24***	0.15*	0.37***	0.31***	0.22***	0.07
	(0.039)	(0.085)	(0.109)	(0.010)	(0.056)	(0.073)
Constant	130.97	81.40**	15.67	14.12	14.14	114.12
	(80.114)	(33.665)	(64.503)	(12.202)	(65.931)	(105.231)
Geo. vars	✓	✓	✓	✓	✓	✓
Observations	8,392	445	241	14,896	1,699	605
F-stat. Seg.	31.61	3.17	3.63	440.80	24.17	21.56
F-stat. Seg. × Imm.	420.21	3.91	14.97	265.55	24.19	13.33

Conclusion

Wrap up

Large income gaps among **1st generation** immigrants

→ *50% of parents born in North Africa in the 1st decile*

Wrap up

Large income gaps among **1st generation** immigrants

→ *50% of parents born in North Africa in the 1st decile*

Much lower income gaps among **2nd generation** immigrants

→ *Complete catch up of children of South European origins*

Wrap up

Large income gaps among **1st generation** immigrants

→ *50% of parents born in North Africa in the 1st decile*

Much lower income gaps among **2nd generation** immigrants

→ *Complete catch up of children of South European origins*

Conditional income gap only for **males of North African origin**

→ *Not driven by conditional education differences*

→ *Disappears in terms of hourly wage*

Wrap up

Large income gaps among **1st generation** immigrants

→ *50% of parents born in North Africa in the 1st decile*

Much lower income gaps among **2nd generation** immigrants

→ *Complete catch up of children of South European origins*

Conditional income gap only for **males of North African origin**

→ *Not driven by conditional education differences*

→ *Disappears in terms of hourly wage*

Negative effect of segregation on conditional income rank

→ *Only in **large urban units** (i.e., ≥50k inhab.) and among **sons***

→ ***Larger for North Afr.** than native origins → ↗gap*

Intergenerational mobility across origins in France: The role of residential segregation

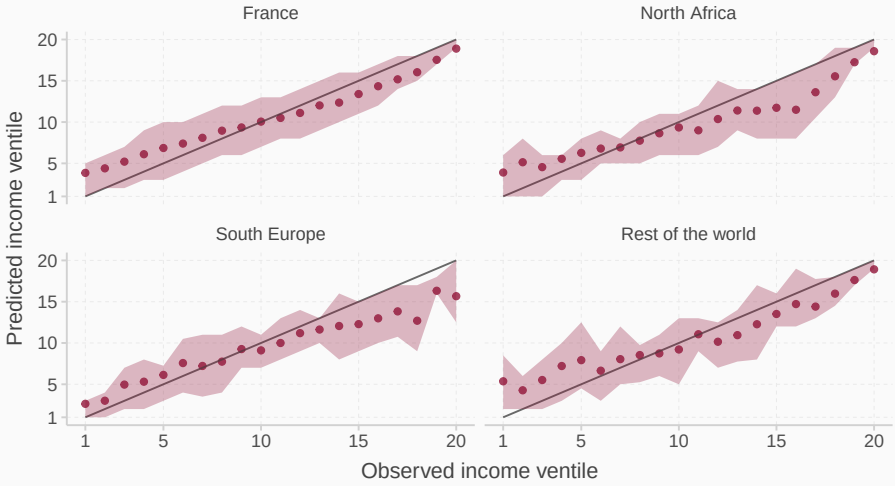
Louis SIRUGUE

London School of Economics
International Inequalities Institute

2nd LIS/III Comparative Economic Inequality Conference 27/02/2025

Out of sample predictions of income rank

back



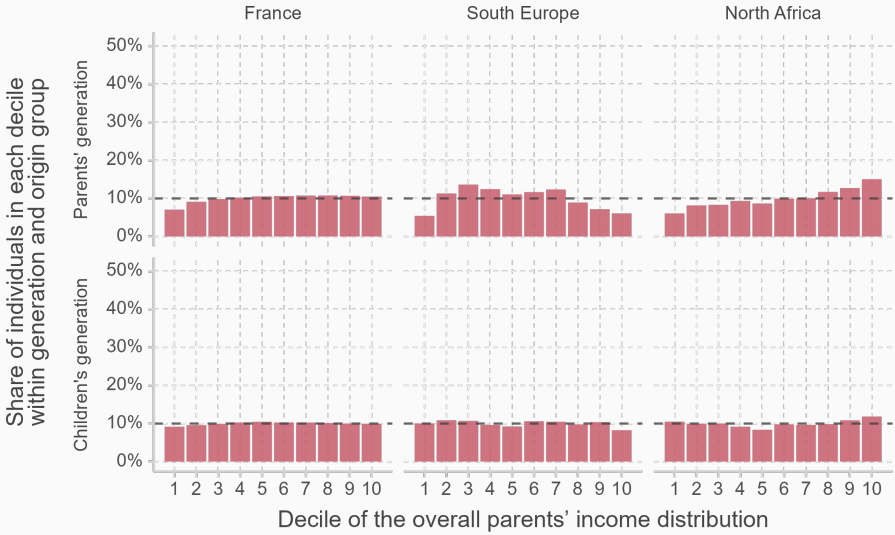
Distribution of origins

back

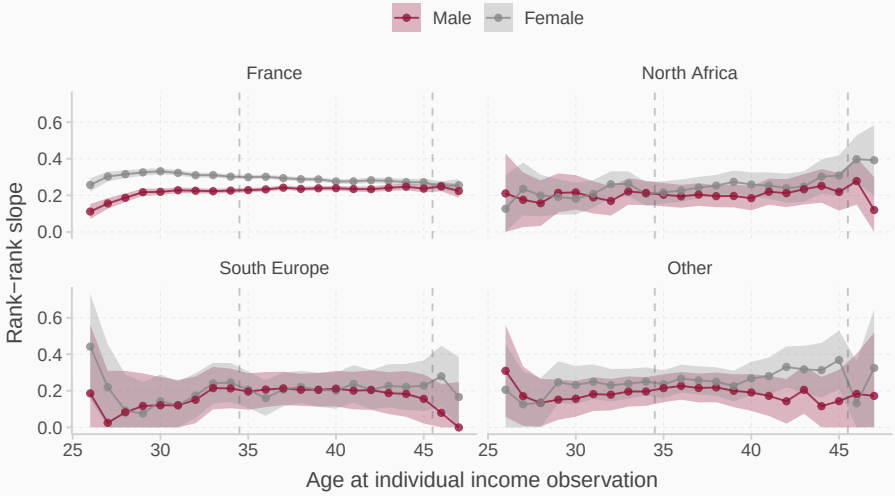
	Mother's place of birth					
↓ Father's	France	North Africa	South Europe	Other	Absent	Total
France	70.14	1.98	1.05	1.23	1.03	75.43
North Afr.	2.92	4.83	0.12	0.08	0.10	8.05
South Eu.	1.49	0.10	2.30	0.04	0.04	3.96
Other	1.23	0.08	0.03	1.35	0.04	2.73
Absent	8.56	0.69	0.25	0.33	-	9.83
Total	84.34	7.68	3.74	3.04	1.20	100

Income distributions across origins

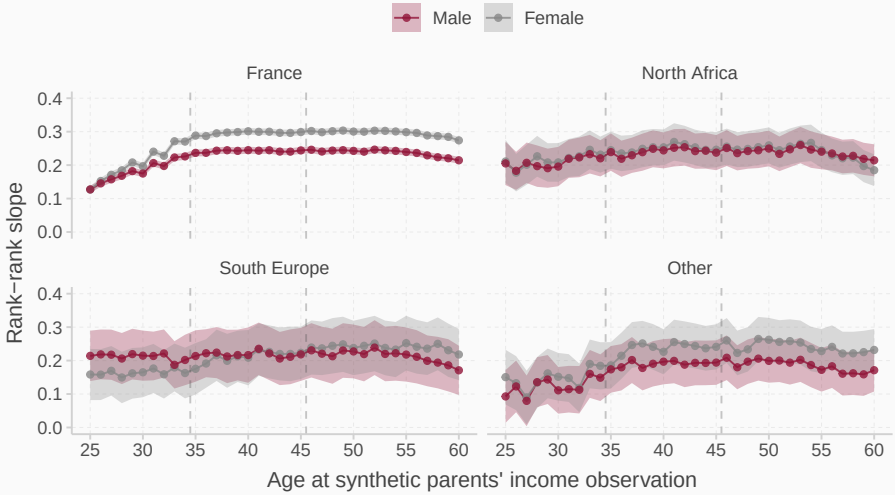
back



Lifecycle bias (children) back

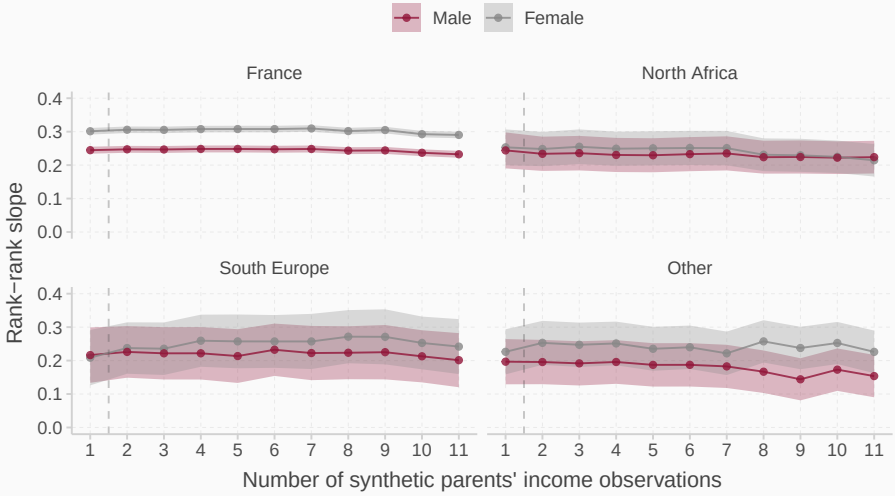


Lifecycle bias (parents) back



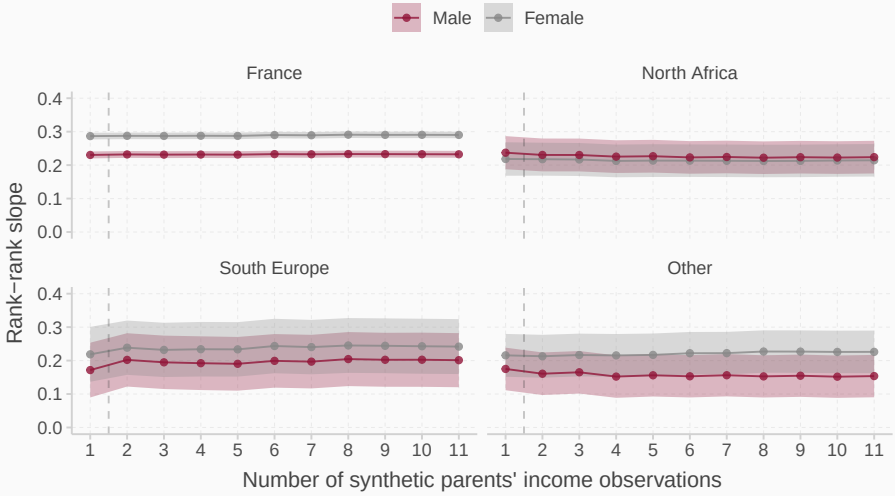
Attenuation bias

back



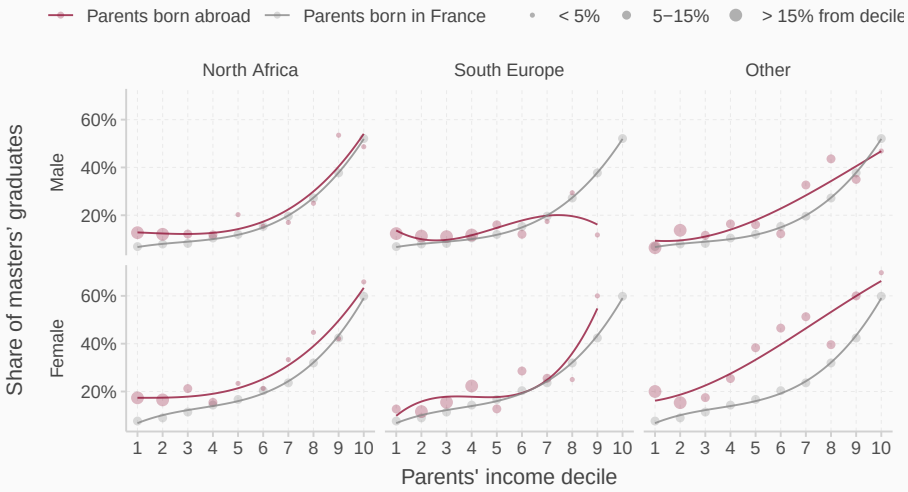
Attenuation bias (constant sample)

back



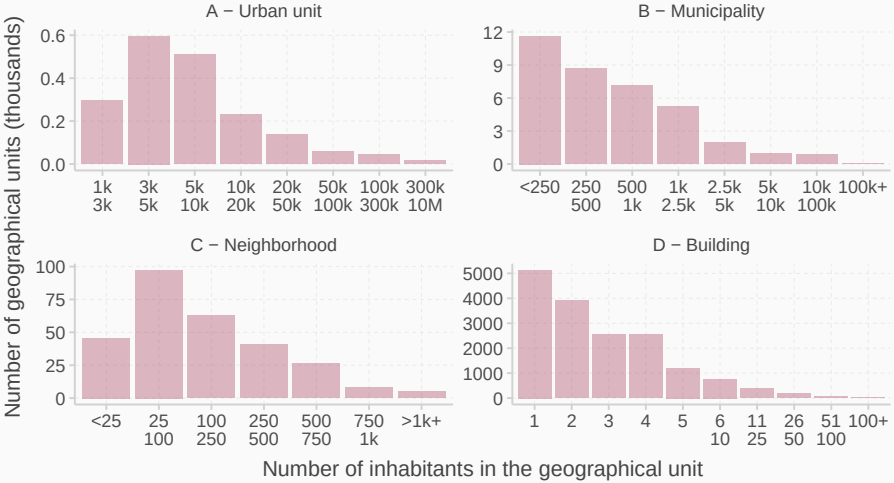
Conditional educational attainment (masters)

back



Population distribution across zonings

back



Measurement back

U: Urban unit map

→ *Contiguously built-up area of at least 2k inhabitants*

→ *≈2,000 UU, 74% of population, 15% of municipalities*

n: Neighborhood map

→ *Statistical units in municipalities ≥5k inhabitants*

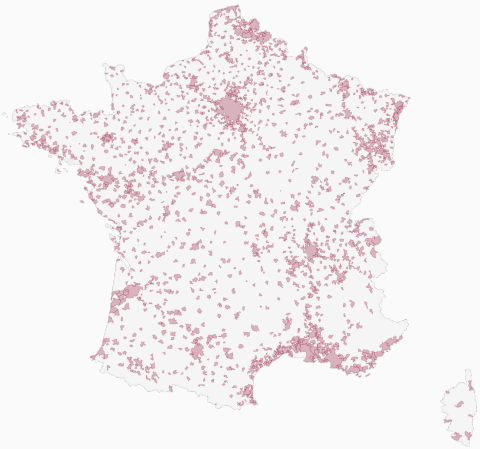
→ *From few 100s to few 1,000s inhabitants*

Duncan Dissimilarity Index: map

$$S_U = \frac{1}{2} \sum_{n=1}^{N} \left| \frac{\text{Imm}_n}{\text{Imm}_U} - \frac{\text{Nat}_n}{\text{Nat}_U} \right| \in [0, 1]$$

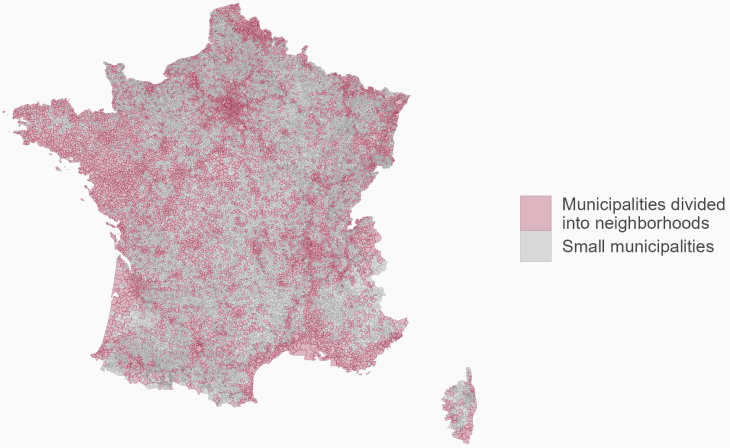
Urban units

back



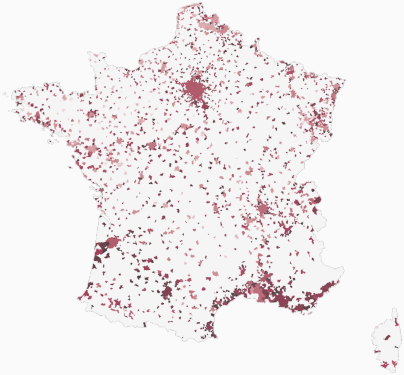
Neighborhoods

back



Residential segregation

back

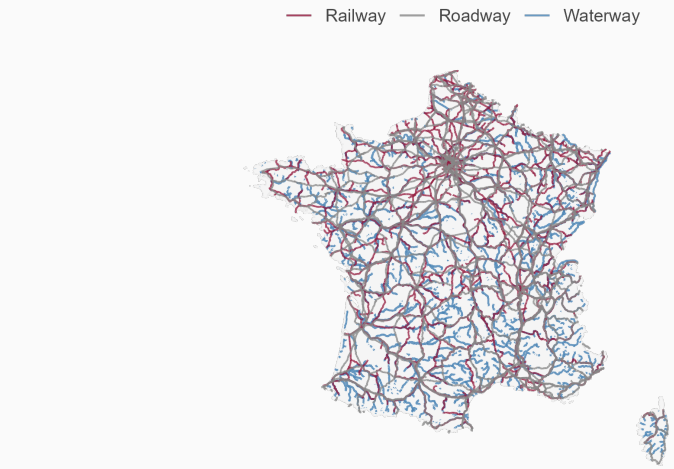


Duncan dissimilarity index between neighborhoods

0.1 0.2 0.3 0.4 0.5

Geographic barriers

back



Instrument variable back

$$\text{Division index}_U = 1 - \sum_{s=1}^{S} \left(\frac{\text{area}_s}{\text{area}_U} \right)^2 \in [0, 1]$$

$$\text{with} \sum_{s=1}^{S} \text{area}_s = \text{area}_U$$

Higher index if:

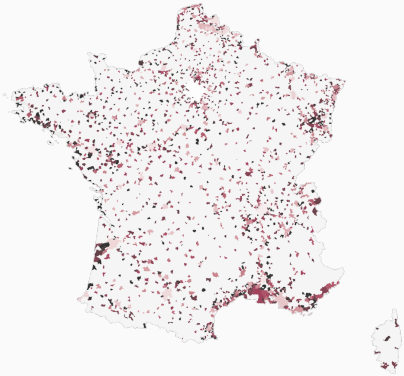
→ *More subdivisions*

→ *More unequal distribution of area across subdivisions*

Control for the length of each geographic feature in the urban unit

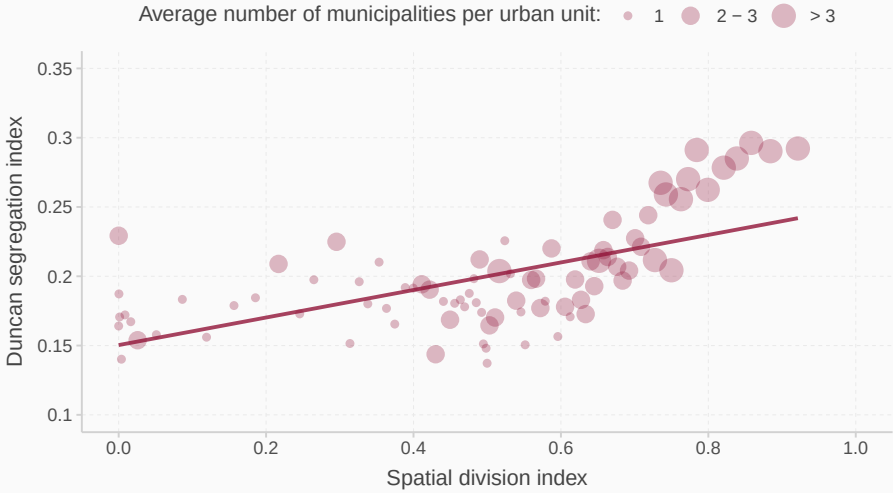
Instrument spatial distribution

back



First stage relationship

back



Second stage - naive regression (males) back

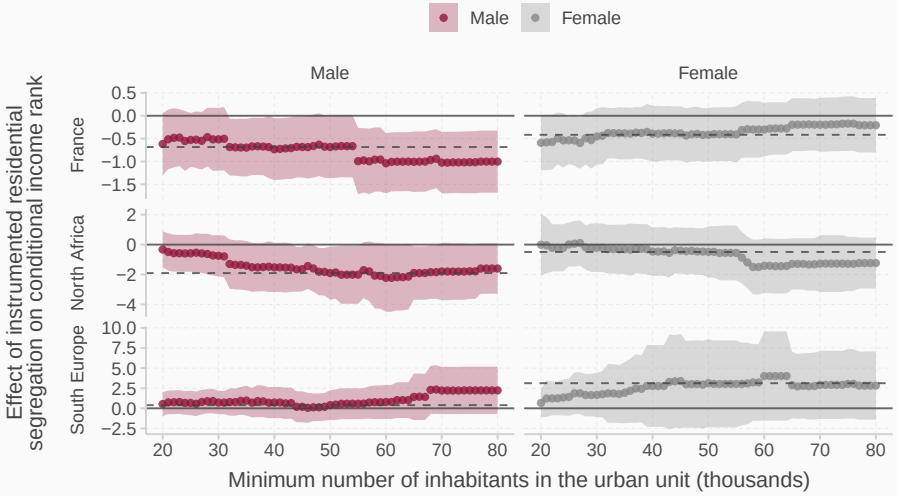
	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	−0.17	−0.18	−0.73	0.14	0.04	−0.31
	(0.119)	(0.421)	(0.649)	(0.135)	(0.318)	(0.670)
Segregation	0.10	−0.86	−0.38	−0.52	0.03	−6.02
	(0.410)	(2.738)	(3.230)	(0.649)	(2.800)	(4.748)
%Imm. × Seg.	0.01	0.07	0.17	−0.12**	−0.06	0.07
	(0.043)	(0.137)	(0.208)	(0.047)	(0.112)	(0.246)
Parents' rank	0.27***	0.26***	0.26***	0.26***	0.23***	0.18***
	(0.011)	(0.071)	(0.095)	(0.008)	(0.034)	(0.052)
Constant	44.26***	41.09***	55.13***	45.59***	42.57***	72.02***
	(1.262)	(8.136)	(9.817)	(2.256)	(8.461)	(13.739)
Observations	8,529	476	271	15,120	1,750	708
R^2	0.067	0.029	0.038	0.071	0.033	0.027

Second stage - naive regression (females) back

	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	−0.17	−0.18	−0.73	0.14	0.04	−0.31
	(0.119)	(0.421)	(0.649)	(0.135)	(0.318)	(0.670)
Segregation	0.10	−0.86	−0.38	−0.52	0.03	−6.02
	(0.410)	(2.738)	(3.230)	(0.649)	(2.800)	(4.748)
%Imm. × Seg.	0.01	0.07	0.17	−0.12**	−0.06	0.07
	(0.043)	(0.137)	(0.208)	(0.047)	(0.112)	(0.246)
Parents' rank	0.27***	0.26***	0.26***	0.26***	0.23***	0.18***
	(0.011)	(0.071)	(0.095)	(0.008)	(0.034)	(0.052)
Constant	44.26***	41.09***	55.13***	45.59***	42.57***	72.02***
	(1.262)	(8.136)	(9.817)	(2.256)	(8.461)	(13.739)
Observations	8,529	476	271	15,120	1,750	708
R^2	0.067	0.029	0.038	0.071	0.033	0.027

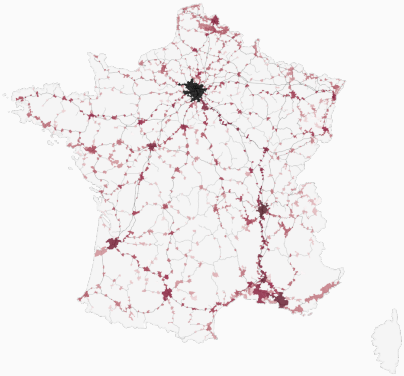
Second stage relationship

back



Wage potential

back



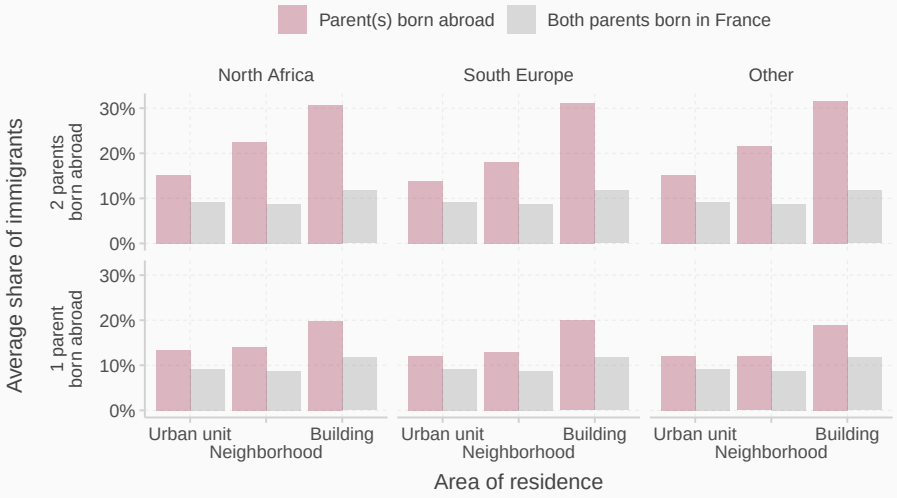
Second stage (male) back

	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	−220.90	6.43	7.73	2.12*	5.14**	1.52
	(7846.415)	(7.644)	(9.109)	(1.090)	(2.395)	(2.799)
$\widehat{\text{Segregation}}$	−2093.08	27.64	98.13	5.23	36.48*	−8.19
	(74350.871)	(37.041)	(111.057)	(4.004)	(20.666)	(15.371)
%Imm. $\times$ $\widehat{\text{Seg.}}$	69.83	−2.06	−2.89	−0.86**	−1.92**	−0.65
	(2482.162)	(2.468)	(3.285)	(0.395)	(0.860)	(1.067)
Parents' rank	−1.14	0.15	0.15	0.25***	0.23***	0.15***
	(49.777)	(0.151)	(0.310)	(0.011)	(0.060)	(0.058)
Constant	5101.03	−41.40	−193.21	27.17*	−64.95	63.93
	(179583.275)	(107.983)	(277.914)	(13.929)	(65.005)	(51.191)
Geo. vars	✓	✓	✓	✓	✓	✓
Wage potential	✓	✓	✓	✓	✓	✓
Observations	6,571	402	218	15,054	1,741	705
F-stat. Seg.	23.78	3.22	1.18	523.59	29.58	15.02
F-stat. Seg. $\times$ Imm.	230.12	1.73	5.99	259.96	24.58	7.22

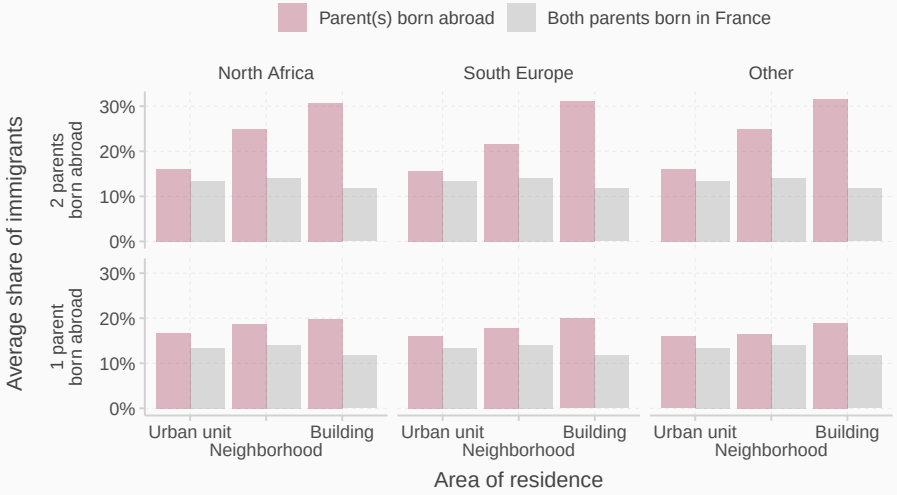
Second stage (female) back

	Small urban units			Large urban units		
	France	North Afr.	South Eu.	France	North Afr.	South Eu.
%Immigrants	11.88	−1.36	0.34	1.78*	1.62	−8.30
	(19.444)	(2.610)	(3.498)	(0.970)	(2.657)	(6.615)
$\widehat{\text{Segregation}}$	120.80	−8.20	20.05	6.71*	11.19	−24.69
	(222.680)	(18.845)	(19.973)	(3.939)	(23.116)	(29.477)
$\widehat{\%\text{Imm.} \times \text{Seg.}}$	−3.70	0.43	−0.28	−0.69**	−0.66	3.02
	(5.765)	(0.888)	(1.143)	(0.344)	(0.953)	(2.467)
Parents' rank	0.37*	0.13	0.34***	0.31***	0.22***	0.07
	(0.209)	(0.096)	(0.107)	(0.010)	(0.052)	(0.073)
Constant	−266.41	51.47	−10.26	1.80	2.31	105.13
	(540.100)	(48.864)	(52.660)	(13.835)	(73.217)	(81.542)
Geo. vars length	✓	✓	✓	✓	✓	✓
Wage potential	✓	✓	✓	✓	✓	✓
Observations	6,492	357	204	14,832	1,694	602
F-stat. Seg.	23.78	3.22	1.18	523.59	29.58	15.02
F-stat. Seg. × Imm.	230.12	1.73	5.99	259.96	24.58	7.22

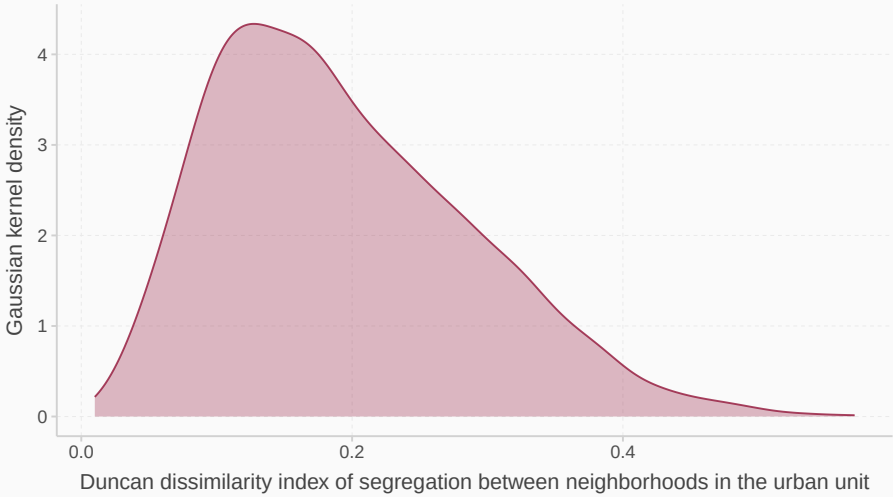
Share of immigrants in area of residence



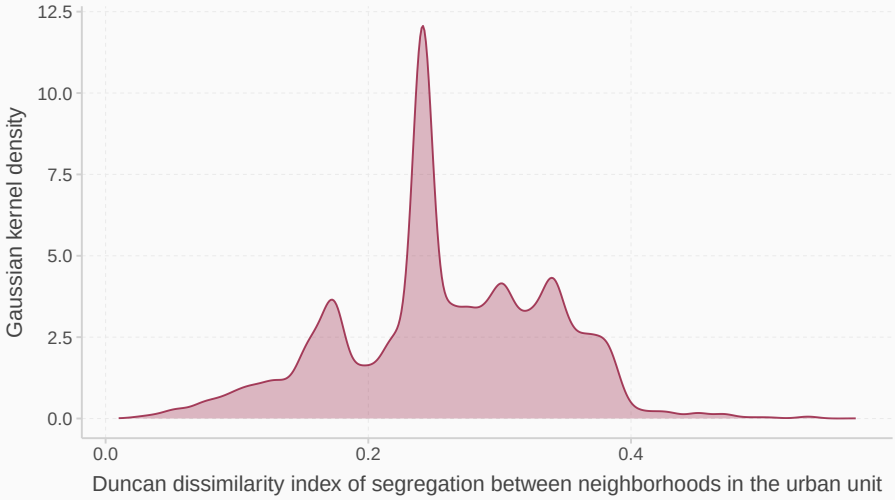
Share of immigrants in area of residence (constant)



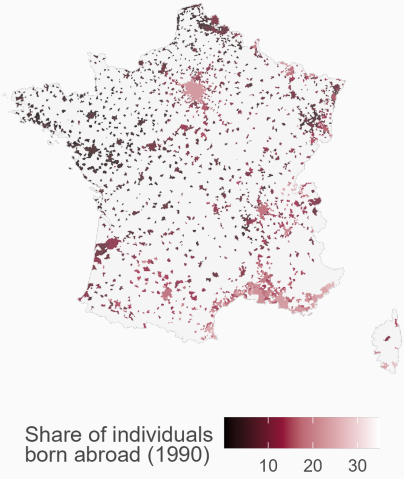
Density of residential segregation index



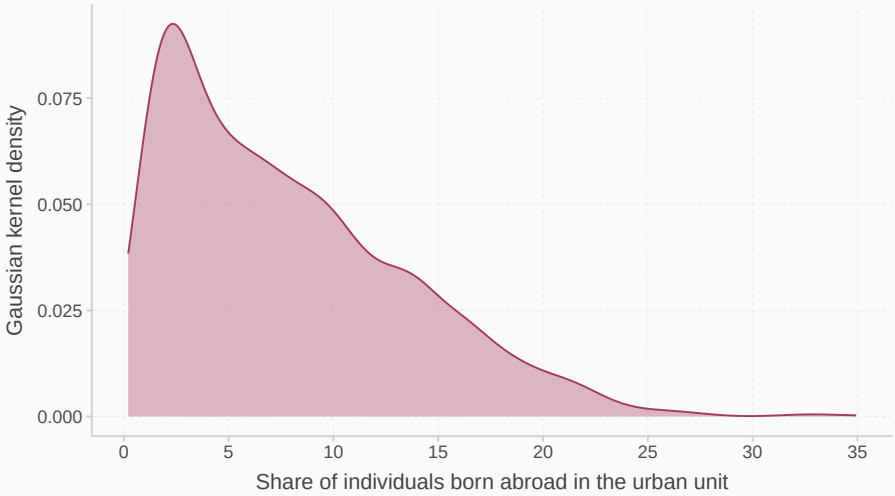
Density of residential segregation index (pop. weighted)



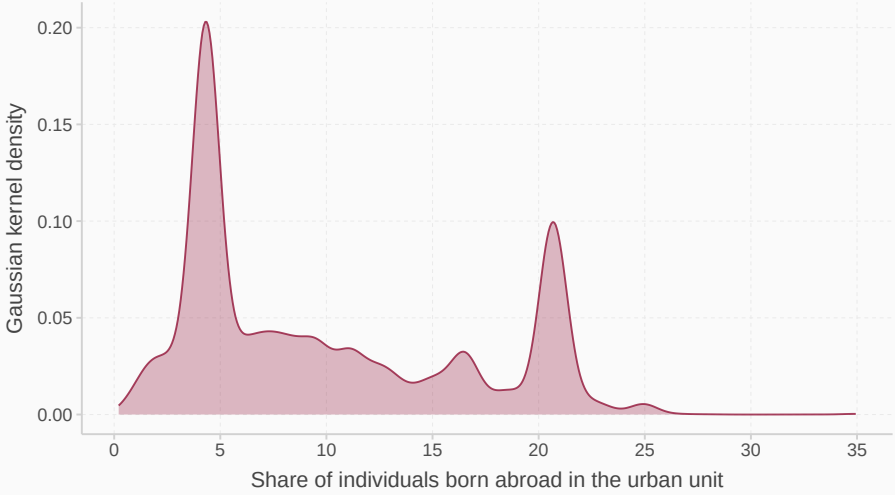
Share of immigrants



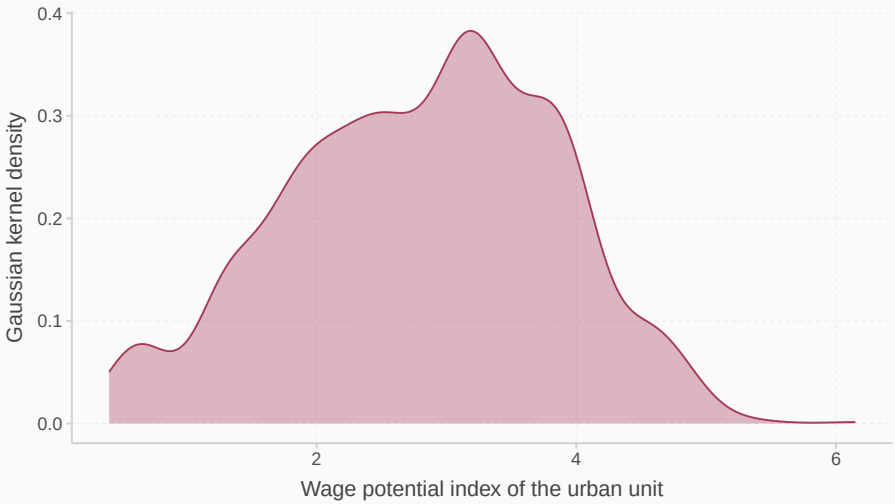
Density of share of immigrants



Density of share of immigrants (pop. weighted)



Density of wage potential



Density of wage potential (pop. weighted)