

Foreign Opportunity and Local Revival: Evidence from the French Rust Belt

Antoine Levy Mathilde Munoz

UC Berkeley

Can Left-Behind Regions Recover?

- ▶ How regions adjust to shocks determines their economic & political consequences (Blanchard & Katz, 1992; Notowidigdo, 2020)
- ▶ Large literature on **persistent regional decline**
 - ▶ former industrial regions hit by repeated adverse shocks: import competition, automation
 - ▶ persistent employment losses & rising populism (Autor et al., 2013, 2020; Yagan, 2019; Choi et al., 2024; Rodrik, 2021)
- ▶ ...much less on **regional recovery**. Two views of persistent decline:
 - ▶ structural *frictions* prevent workers and places from adjusting
 - ▶ lack of *accessible opportunities*: no large new labor demand

Positive shocks rarely reach declining regions of developed economies

A rare opportunity to study regional recovery ► Literature

The shock: after late-1980s financial liberalization, Luxembourg becomes a booming services economy $\Rightarrow$ wages $\sim 65\%$ above neighboring France

This paper: Follow economic and political outcomes of French “rust belt” municipalities more or less exposed to the shock over 5 decades

A rare opportunity to study regional recovery ► Literature

The shock: after late-1980s financial liberalization, Luxembourg becomes a booming services economy $\Rightarrow$ wages $\sim 65\%$ above neighboring France

This paper: Follow economic and political outcomes of French “rust belt” municipalities more or less exposed to the shock over 5 decades

1 Identification: localized and exogenous shock

- ▶ origin abroad $\Rightarrow$ unrelated to local conditions
- ▶ incidence bounded by commuting feasibility $\Rightarrow$ sharp treatment/control

2 Opportunity arrives in a declining region

- ▶ treated & control share the same history of industrial decline
- ▶ compare left-behind places with vs. without a reversal of fortunes

3 Shock reveals the sequence of adjustment

- ▶ demand arises across the border $\Rightarrow$ margins respond one by one
- ▶ trace transition path, not just old vs. new spatial equilibrium

Roadmap

Setting & design: Luxembourg's divergence; spatial difference-in-differences (donut design)

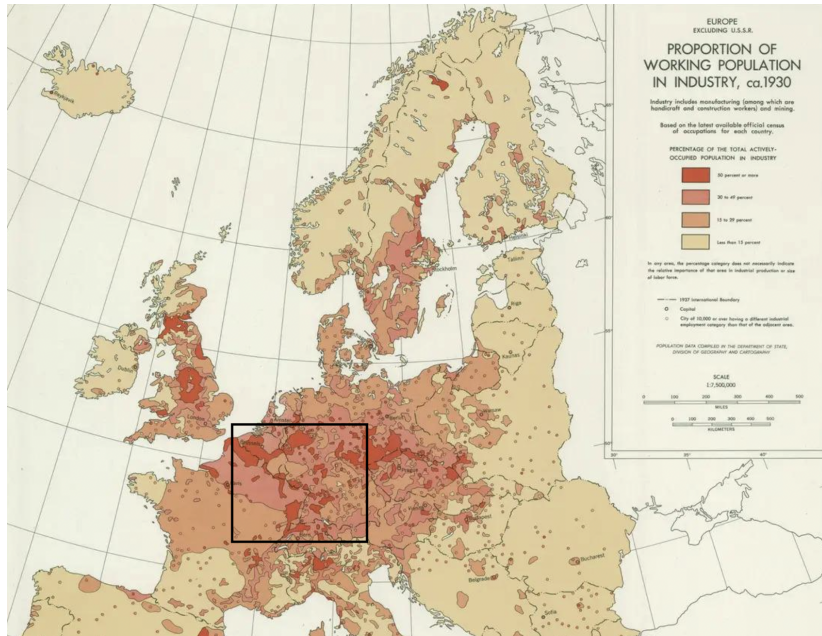
A three-stage process of local adjustment:

- ➊ **Worker reallocation:** incumbents commute to foreign jobs
first 5 years
- ➋ **Labor market revival:** participation expands local employment
5–15 years
- ➌ **Regional revitalization:** population, housing, services, incomes
15+ years

Consequences:

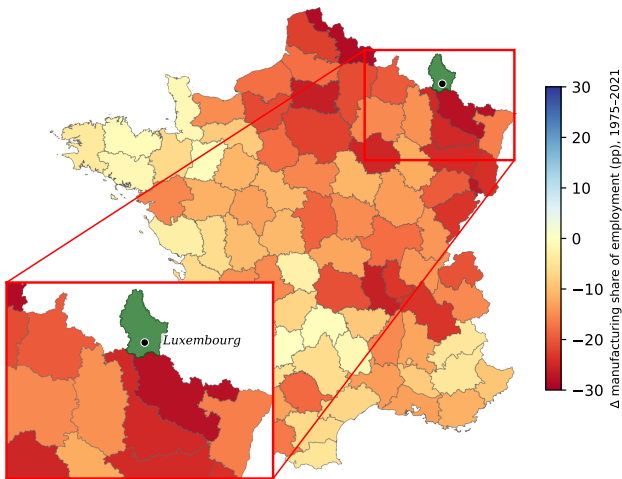
- ➍ **Unequal gains:** who benefits, who pays
- ➎ **Political realignment:** far-right decline, pro-EU shift

Northeastern France lies in Europe's old industrial core



French Northeast became France's "Rust Belt"

Change in manufacturing share, 1975–2021 (Luxembourg in green)



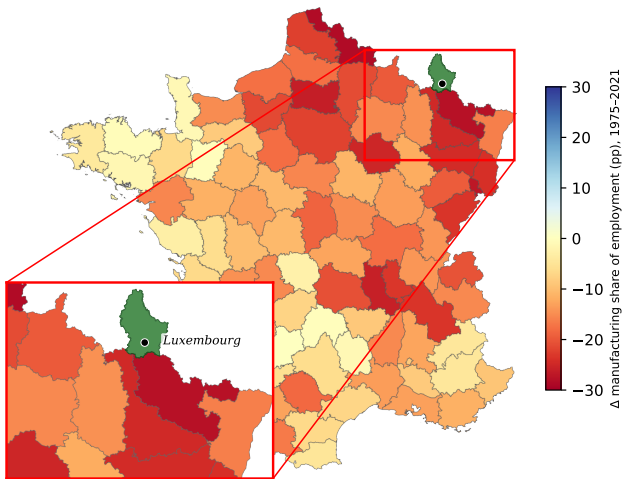
► Decline over time

► Commune-level

► Employment losses

French Northeast became France's "Rust Belt"

Manufacturing jobs -26.5% in border region vs. -0.7% in the rest of France, 1975–82.



► Decline over time

► Commune-level

► Employment losses

The origins of Luxembourg's economic transformation

1960s: an industrial economy

Manufacturing accounted for 40% of employment, similar to the French Northeast (39%).



1985–1988: European financial liberalization

Capital mobility directives and EU passporting allowed Luxembourg to leverage its pre-existing tax and legal advantages.



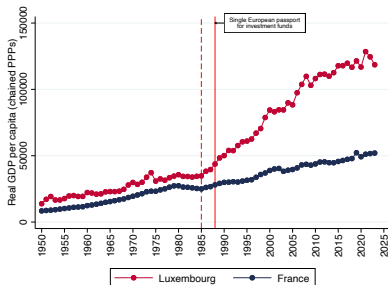
A booming service economy

Rapid expansion of finance and business services, followed by broad and diversified employment growth across the economy.

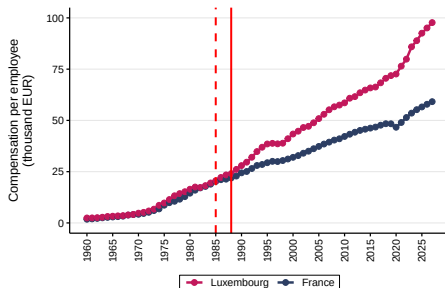
Luxembourg pulled far ahead of France after 1985

GDP per capita and worker compensation both diverged sharply

Real GDP per capita



Nominal worker compensation



► Real GDP per worker +35%

► Nominal GDP per cap. twice larger

Cross-border work pays more at every skill level

Cross-border workers earn 50–90% more than local workers across occupations (2022)



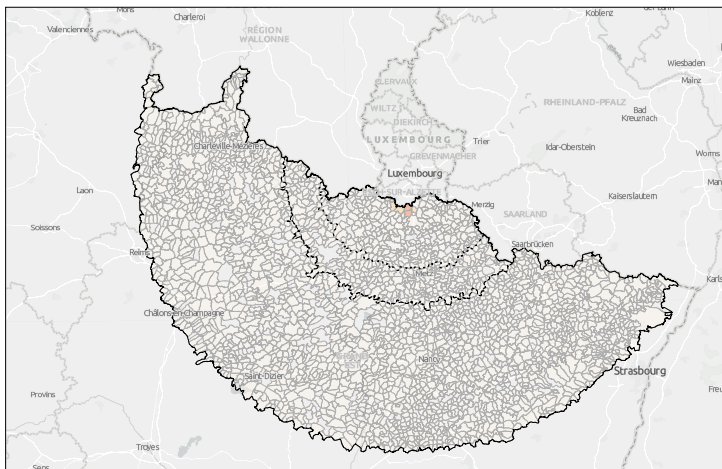
Notes: Annual gross wages, full-time workers. Wage ratios relative to non-cross-border workers in the same département.

Source: INSEE (match between census and tax data).

► Sector, Education

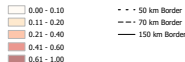
1968: no wage premium and no cross-border commuting

Circle: daily commuting range ($\sim 50\text{km}$), from *domestic* commutes



Share Working in Luxembourg in 1968

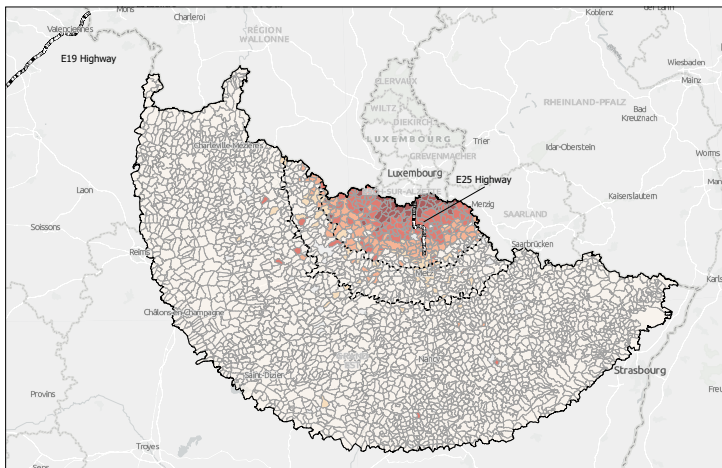
0 10 20 40 Kilometers



2022: the EU's largest cross-border commuting corridor

120,000 daily commuters, concentrated within the predetermined commuting range

► corridor facts



Share Working in Luxembourg in 2022

0 10 20 40 Kilometers

0.00 - 0.10
0.11 - 0.15
0.16 - 0.33
0.34 - 0.60
0.61 - 1.00

- - - 50 km Border
- - - 70 km Border
— 150 km Border

Identification: spatial exposure to economic opportunity

① Spatial difference-in-differences covering five decades

- ▶ treated: $T_m = 1$ if $\leq 50\text{km}$ of Luxembourg City vs.
control: $T_m = 0$ if 70–150km

$$Y_{mt} = \alpha_m + \gamma_t + \sum_{\substack{k=1968 \\ k \neq 1981}}^{2022} \beta_k \cdot \mathbb{1}(t = k) \times T_m + Z_m \delta_t + \epsilon_{mt}$$

m : municipality ($\approx 2,700$)

t : census year (1968–2022)

- ▶ β_k , $k \leq 1975$: **13-year pre-trend test** before the divergence
- ▶ $Z_m \times \text{year FE}$: initial manufacturing & college shares, distance to border
- ▶ **Belgium placebo**: same design without wage divergence [▶ Map](#)
 - ▶ Distance to Mons, largest French-speaking city connected to the border

Identification: spatial exposure to economic opportunity

① Spatial difference-in-differences covering five decades

② Kinked spatial gradient (cross-sectional)

- ▷ Commuting: steep distance gradient *within* feasible range, zero beyond
- ⇒ treatment effects generate a *kink* in outcomes at the boundary

$$Y_m = \alpha + \beta_1 d_m + \beta_2 \mathbb{1}[d_m \leq \bar{d}] + \beta_3 d_m \times \mathbb{1}[d_m \leq \bar{d}] + \varepsilon_m$$

d_m : distance to Luxembourg, $\bar{d}$: commuting boundary (50 or 70km)

- ▷ β_3 : **extra slope within commuting range** = exposure effect
- ▷ Identification: other distance effects *smooth* and independent of commuting feasibility:
 - testable: $\beta_1 \approx 0$ outside the range + Mons gradient as placebo
- ▷ No panel needed ⇒ rents, inequality, consumption

▷ distribution

▷ map

▷ commuting radius

▷ spatial gradient

▷ threats & robustness

Granular local economic and voting data spanning 1968-2022:

- ▶ Exhaustive decadal micro-census files at the commune-level ($\approx$ 35,000): commuting, employment, population, migration, housing.
- ▶ Array of higher-frequency administrative data (mostly post-1980): taxes, benefits, rents, amenities, consumption
- ▶ Exhaustive administrative vote data at the commune-level for each presidential election since 1962 + EU referendum
- ▶ Employer-employee panel data on French employment and earnings: 1980-2022

A declining industrial region with underutilized labor

Municipalities near the Luxembourg and Mons borders, 1982 (before the divergence)

	Luxembourg Border		Mons Border		Northeast	France
	Near	Comparison	Near	Comparison	region	National
A. Industrial structure and resident labor market						
Manufacturing share among employed residents (%)	38.7	27.7	34.9	25.9	29.0	23.0
Employment rate, residents aged 25–54 (%)	62.3	72.3	67.9	72.3	72.9	75.1
Labor-force participation, residents aged 25–54 (%)	66.1	75.6	72.3	76.3	76.5	78.8
B. Demography and prior growth						
Population density (per km ²)	238	78	298	117	132	136
Population growth, 1968–82 (%)	+2.2	+4.8	−1.4	+4.8	+8.0	+12.7
Net migration, 1975–82 (% of pop.)	−1.8	+0.7	−1.9	+0.4	+1.5	+4.5
Municipalities	298	2,407	276	2,864	8,780	34,172

→ **Whole area vs. France:** industrial, low employment & participation, net out-migration

→ **Treated vs. control:** treated places more industrial, more slack: no positive selection

→ **Mons border:** near-identical initial conditions ⇒ valid placebo

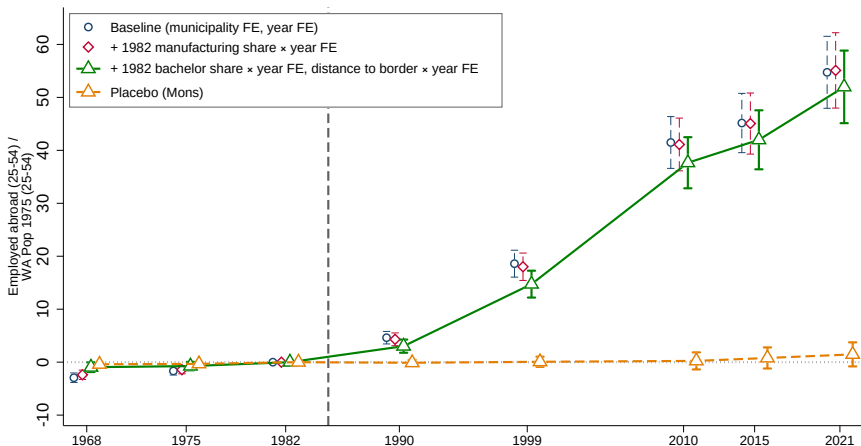
Stage 1: Worker reallocation

Luxembourg's boom was driven by financial and business services rather than manufacturing.

Can a declining industrial region benefit from such a shock?

The first response is worker reallocation

+50 residents employed in Luxembourg per 100 initial working-age residents



► No increase in overall long commuting

► Other borders

Who are the new cross-border workers?

- ▶ **Existing local residents:** only $\approx 1\%$ of early commuters had moved in since the previous census, and $\approx 80\%$ were natives of the Northeast (66% male, average age 32) ▶ First generation
- ▶ **Workers reallocated from France:** among exposed prime-age incumbents, the probability of remaining employed in France falls by ≈ 10 pp, reflecting permanent exits rather than unemployment ▶ Worker panel ▶ Who
- ▶ **Moving into services:** services account for $\approx 60\%$ of the cross-border employment response, while manufacturing accounts for only $\approx 12\%$ despite representing roughly half of local employment initially ▶ Sectoral

→ **The initial adjustment operates through incumbent worker reallocation.**

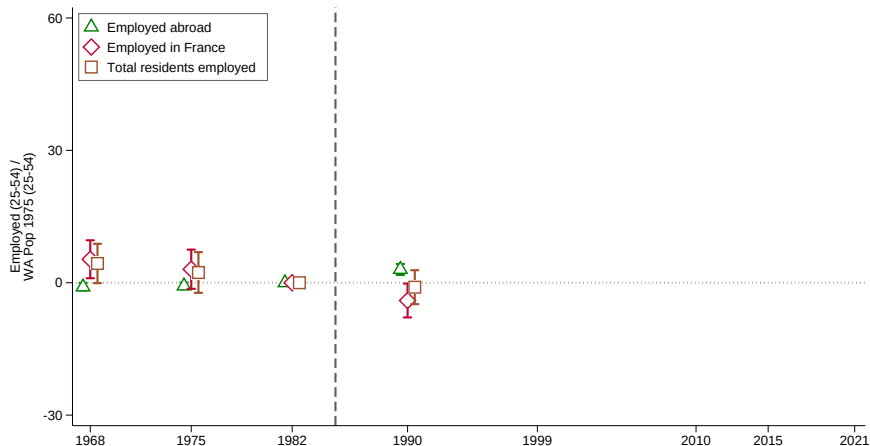
Stage 2: Employment expansion and labor-market revival

Worker reallocation shows that incumbent residents respond to new economic opportunities.

Does the adjustment stop there, or does it expand employment more broadly?

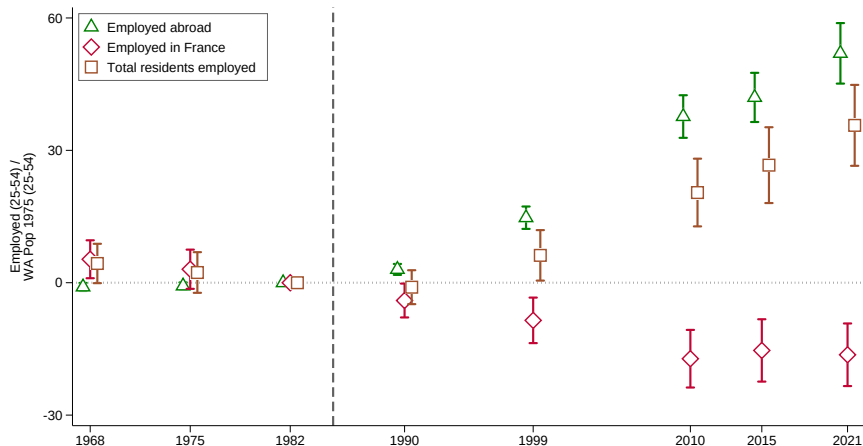
Worker reallocation leads to broader employment growth

Initially, jobs in Luxembourg fully replace jobs in France



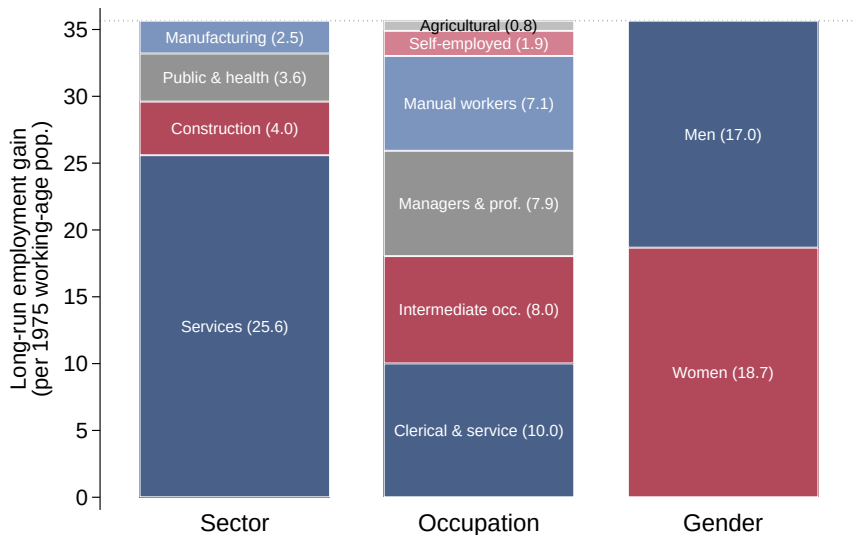
Worker reallocation leads to broader employment growth

Over time, total employment rises by 36 per 100 initial residents



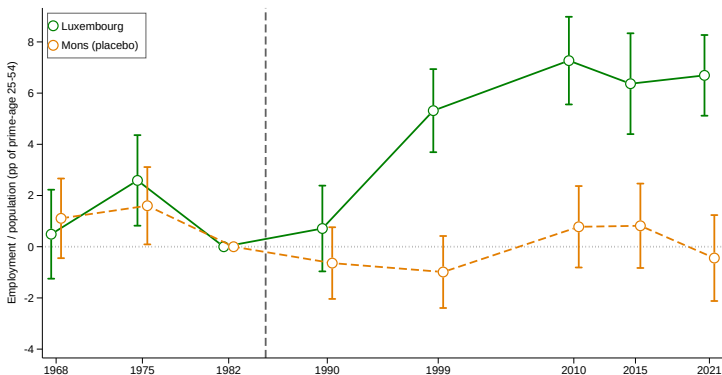
Employment gains are broadly shared

Services generate most new jobs, but gains are shared across occupations and gender.



The local labor market revives

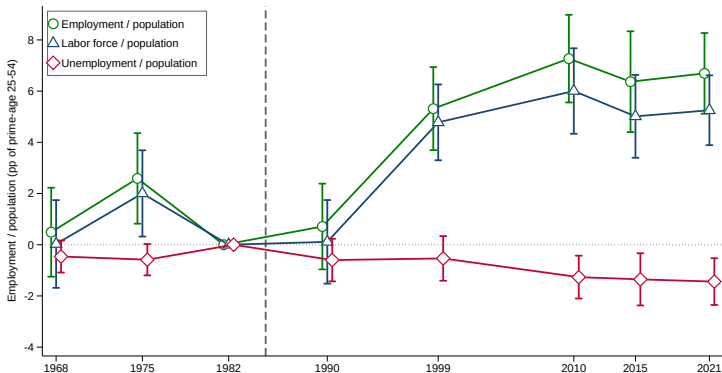
Employment-to-population ratio, residents aged 25–54



→ The employment rate rises by about 7pp, closing roughly half of the initial gap with the rest of France

The local labor market revives

Decomposition: participation leads, unemployment falls more gradually



→ Previously inactive residents enter the labor force first, while declining unemployment reinforces the recovery over time.

► participation and unemployment Mons placebo

► unemp./labor force

► over pop. 1975

Stage 3: Long-run regional revitalization

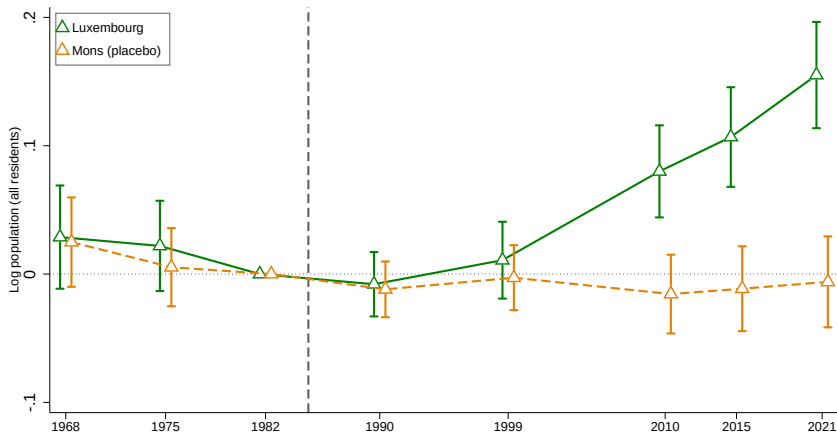
Employment expands first by drawing more incumbent residents into work.

Does this labor-market recovery eventually translate into broader regional revival?

The region eventually attracts back residents

► SUTVA

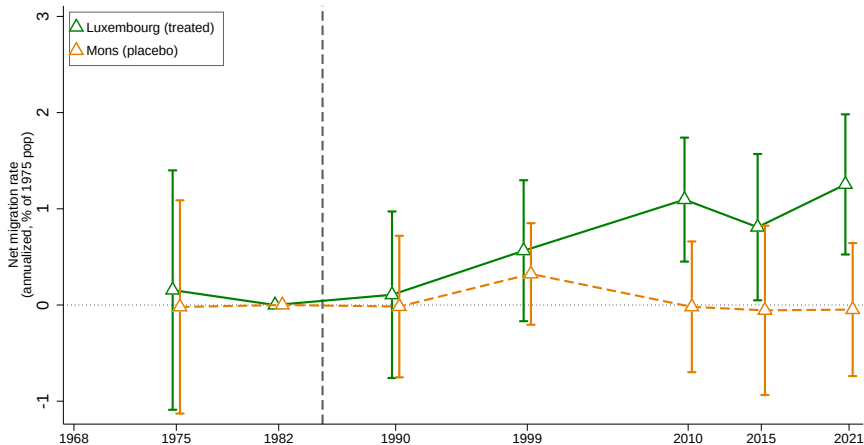
Population gains *follow* labor market recovery



→ **Population eventually increases by about 15%, reversing decades of demographic decline.**

Population recovery is driven by migration

Net migration increases steadily after labor-market opportunities improve



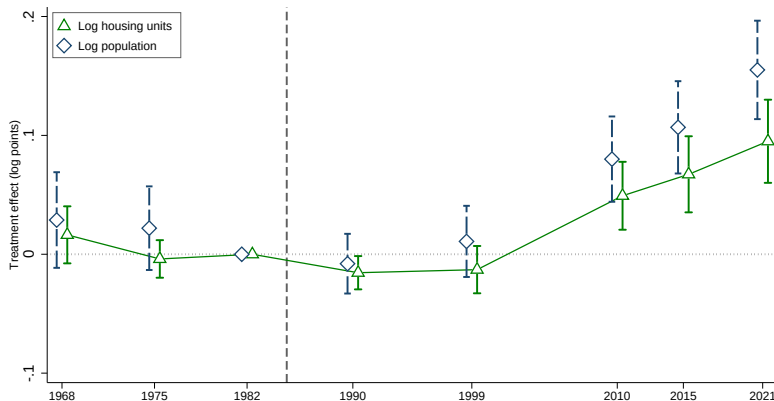
Migration starts later and unfolds in two stages

- ▶ **1. Retention.** ▶ Out-migration declines, and movers relocate over **40% shorter distances**, consistent with fewer long-distance moves.
- ▶ **2. Attraction.** By the 2010s, inflows rise (**1.2 pp/year**), drawing migrants from increasingly distant ▶ Origins.
- ▶ **Population renewal.** New arrivals are younger and more educated (**+5 pp** college share). ▶ Composition
- ▶ **Net gains.** Little evidence of ▶ Spillovers to control municipalities.

→ **The region first stops losing residents, then attracts a new generation of residents from increasingly distant locations.**

Housing markets accommodated the regional revival

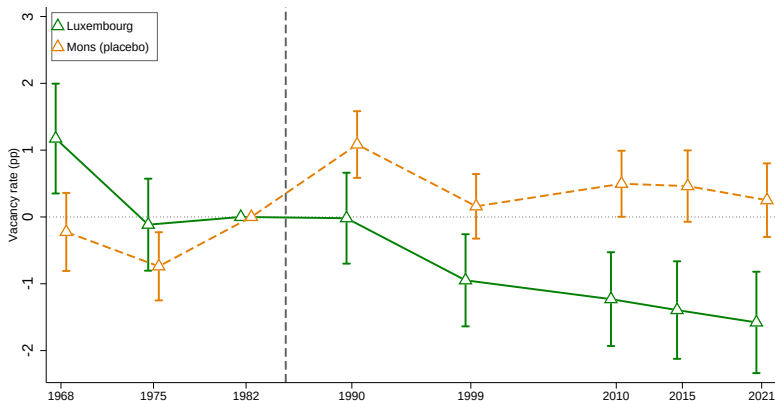
How did municipalities absorb the population inflow?



→ **New construction expands the housing stock (+10%), though by less than population.**

Housing markets accommodated the regional revival

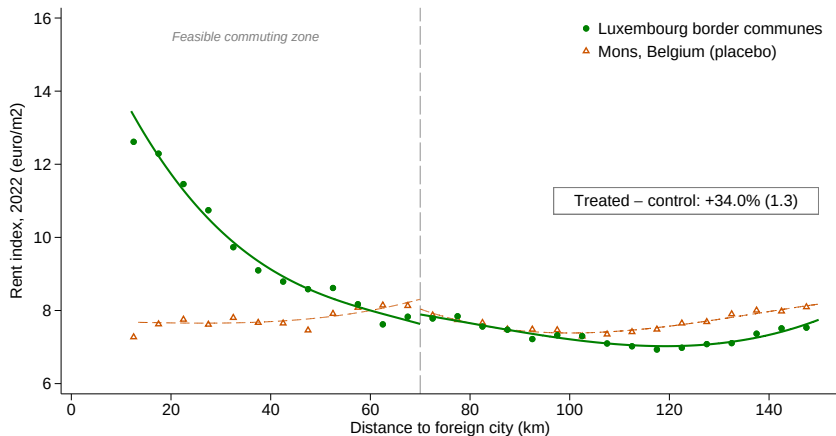
How did municipalities absorb the population inflow?



→ **New construction is not sufficient to absorb all new demand: vacancy rates fall (-2 pp).**

Housing markets accommodated the regional revival

How did municipalities absorb the population inflow?



→ Remaining scarcity is capitalized into higher rents (+34%).

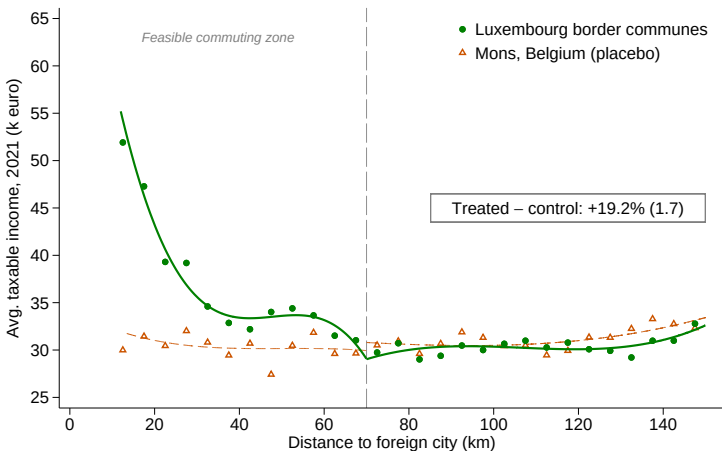
Population growth sustained the local economy

- ▶ **Local jobs.** Workplace employment rises, about **half** filled by in-commuters from the adjacent 50–70 km donut. Gains concentrate in local consumer and public services (**85%**: retail, health, education), with **no new firm entry**. ▶ Firms
- ▶ **Amenities.** Treated municipalities better preserve access to local services (doctors, pharmacies, shops, schools): +20% **per capita access** and closer on average. ▶ Amenities

→ **Higher foreign earnings generate modest local spillovers, supporting local service employment and the provision of amenities.**

Regional revival increased local prosperity

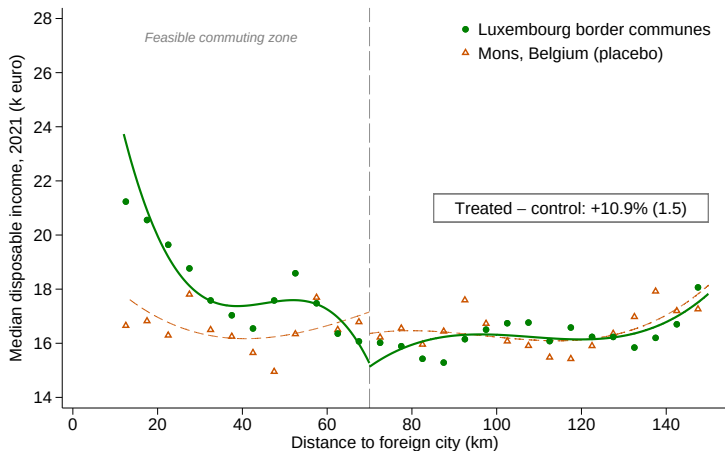
Did higher employment translate into higher living standards?



→ **Average taxable income is nearly 20% higher in municipalities close to Luxembourg.**

Regional revival increased local prosperity

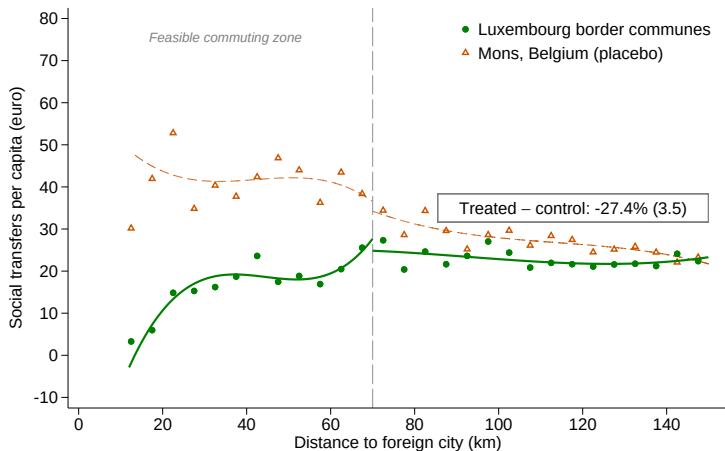
Did higher employment translate into higher living standards?



→ **These gains translate into higher living standards for the typical household.**

Regional revival increased local prosperity

Did higher employment translate into higher living standards?



→ **Economic distress declines as reliance on social transfers falls.**

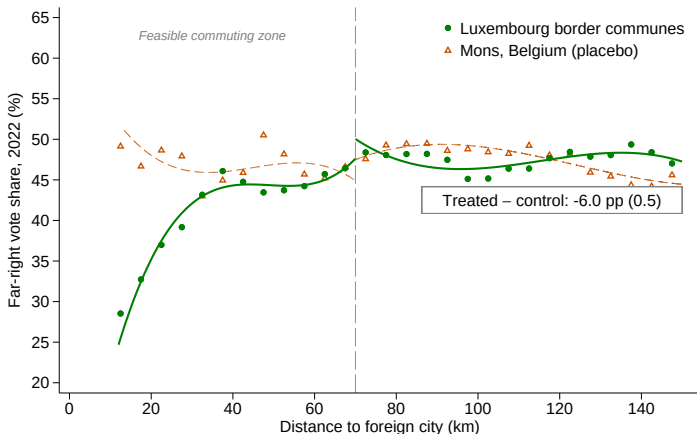
Unequal gains: large average gains, unevenly shared

- ▶ **Average income** rises ($\approx +19\%$ taxable), but access is rationed by commuting cost
- ▶ **Rising inequality:** the interdecile (D9/D1) ratio is $\approx 31\%$ higher; the pension/wage ratio falls (retirees fall behind) ▶ Inequality
- ▶ **Real incidence:** commuters consume more space and are more likely homeowners; non-commuters and renters are squeezed by higher non-tradable prices ▶ Consumption ▶ Rents
- ▶ **Fiscal externality:** lower reliance on transfers, but the income-tax base shifts abroad (*lex loci laboris*) ▶ Fiscal

→ **Commuters and real estate owners win; non-commuters and non-workers bear the congestion**

Regional revival and the far right

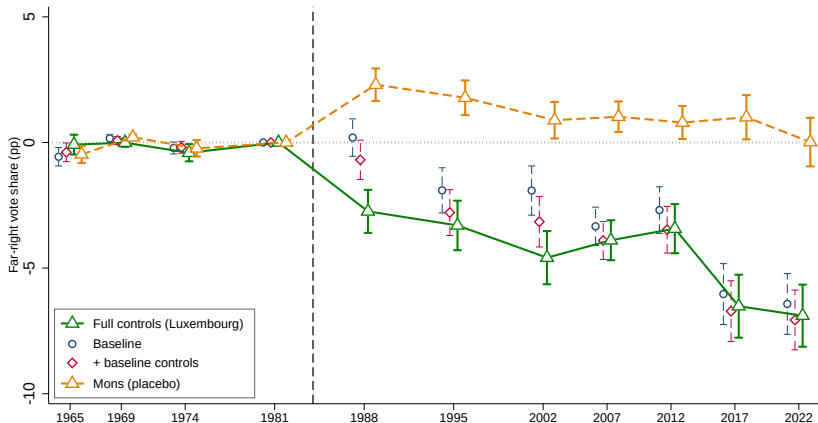
How does support for the far right vary across the French Rust Belt?



→ Across the French Rust Belt, first-round support for the far right is 6 pp lower in municipalities closer to Luxembourg.

The decline in far-right support follows regional revival

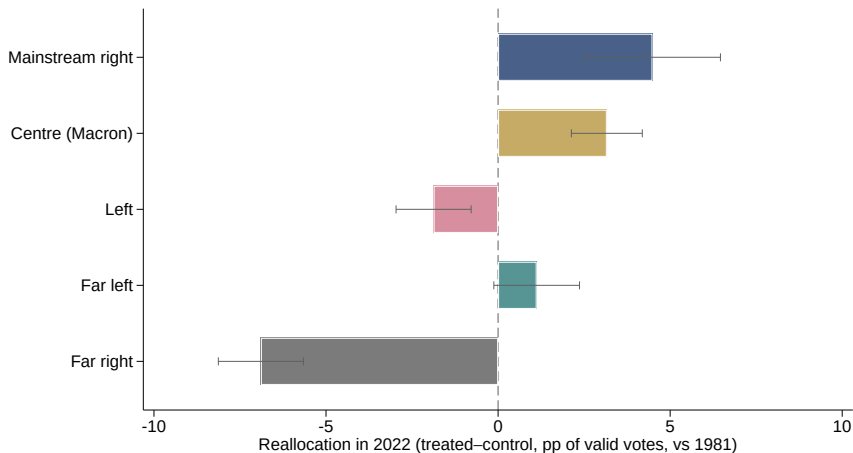
Support for the far right diverges only after new economic opportunities emerge.



→ **Support for the far right falls by about 7 percentage points, the divergence begins before the large population inflows.**

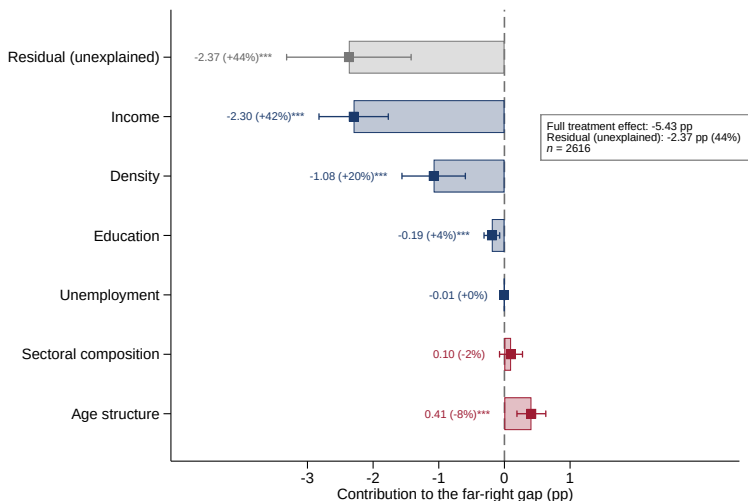
Reallocation of Votes

Regional revival shifted voters from the far right toward mainstream parties.



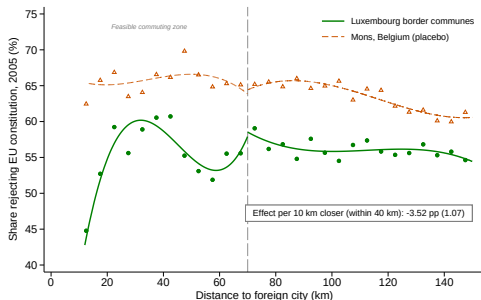
Accounting for the gap: observables explain about half

Order-invariant Gelbach (2016) decomposition of the treated-control gap.



A broader political realignment: toward Europe

2005 referendum on the EU Constitution: a direct vote on integration, mid-sample



- ▶ **Pro-integration voting:** pro-European vote share rises across six European Parliament elections ▶ EP 1999–2024
- ▶ **Political supply also shifts:** municipalities closer to Luxembourg elect more high-skilled mayors ($\approx 50\%$ vs. $\approx 35\%$ in control areas) ▶ mayors

Conclusion

Main message

- ▶ A large, persistent economic opportunity reversed decades of regional decline
- ▶ We trace the anatomy of adjustment: worker reallocation, employment expansion, then demographic renewal and regional revitalization.
- ▶ Recovery mutes the rise of populism visible elsewhere in former industrial regions of France

What is specific to our setting

- ▶ A very large shock; but responses scale with wage gaps at other borders
- ▶ Adjustment runs through commuting, not firm entry or relocation
- ▶ Politics may partly respond to the pro-integration nature of the shock

What is likely to generalize

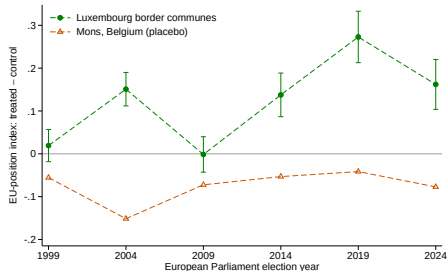
- ▶ Persistent decline need not reflect an inability of workers and places to adjust
- ▶ Connecting declining regions to expanding sectors may matter more than rebuilding historical industries

APPENDIX

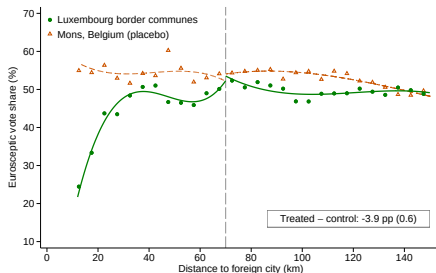
Pro-European vote share across six EP elections

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Pro-EU index, 1999–2024



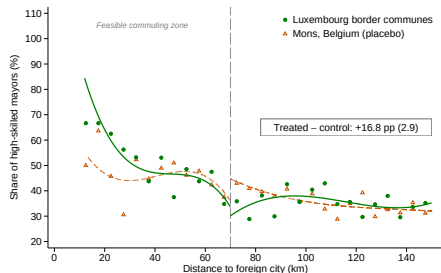
Euro-skeptic vote, 2019 EP



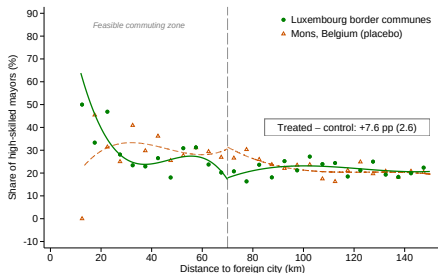
Share of high-skilled mayors, by distance to Luxembourg

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A. Occupation of origin (incl. retired former cadres)



B. Current occupation (active mayors only)

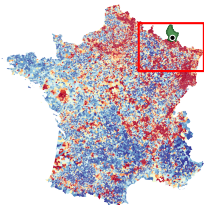


Mayors, Répertoire National des Élus (2026 cross-section). Panel A's Luxembourg excess is driven by retired former cadres; in Panel B the Mons placebo gradient is as large or larger, so the gradient there is not clearly Luxembourg-specific.

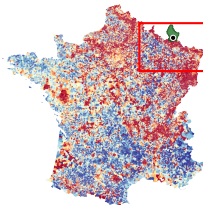
Manufacturing decline over time

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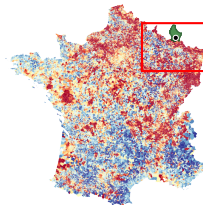
1968



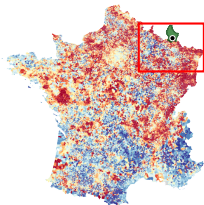
1975



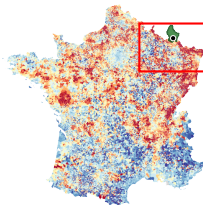
1982



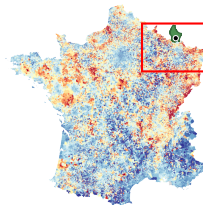
1990



1999



2010



2015

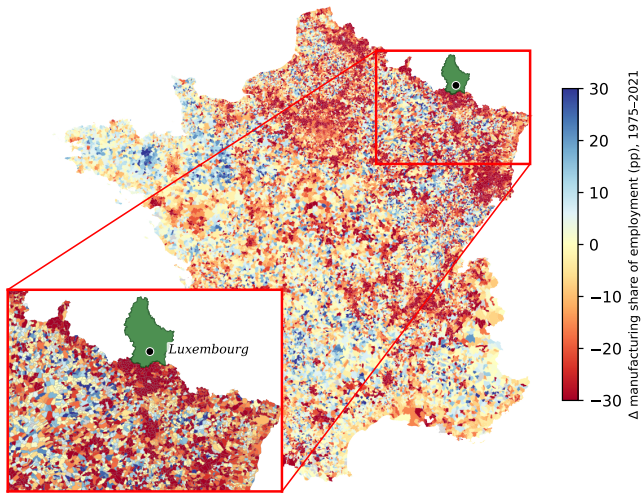


2021

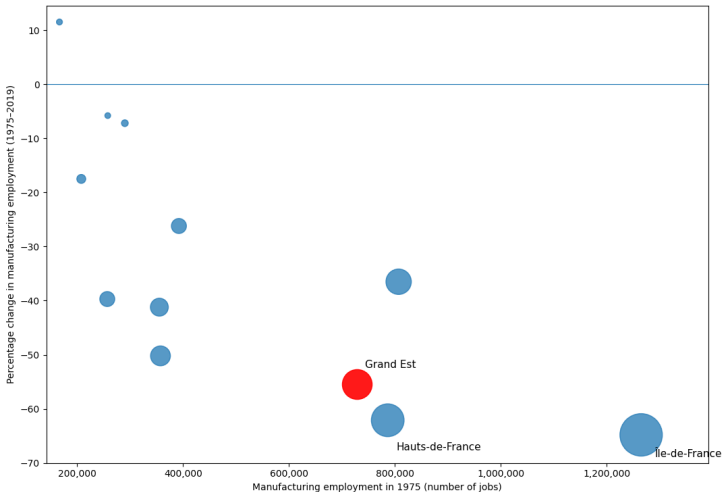


Manufacturing share decline, commune level

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Manufacturing employment losses, Grand-Est

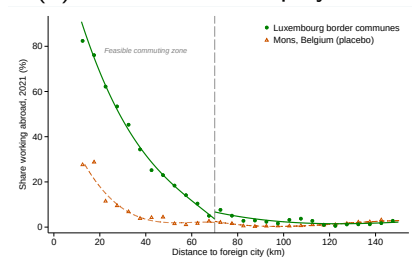
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- ▶ Largest cross-country commuting flow in the EU
 - ▶ 120,000 workers as of 2022, steady growth since the 1980s
 - ▶ Highly unbalanced flows (220:1, France → Luxembourg)
- ▶ Economically meaningful for France
 - ▶ Top-4 country worldwide by remittances received [▶ Go](#)
 - ▶ All CBW: $\approx 2.5\%$ of national private employment
 - ▶ Foreign wages on tax returns: $\approx 4\%$ of taxable wages
 - ▶ CBW: $\approx 8.5\%$ of all *Grand Est* employment
- ▶ Spatial concentration
 - ▶ 90% of commuters to Luxembourg drive daily
 - ▶ In France (outside CBW), 95% of commutes are under 50km

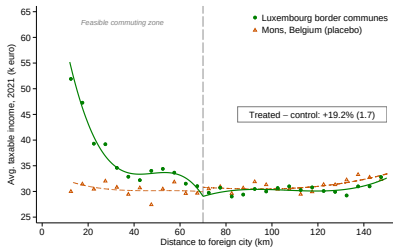
Cross-border access raises local incomes [▶ Back](#)

$\approx +19\%$ taxable income (treated vs. control); $\approx 7\%$ per 10 km closer

(a) Cross-border employment



(b) Taxable income (2021)

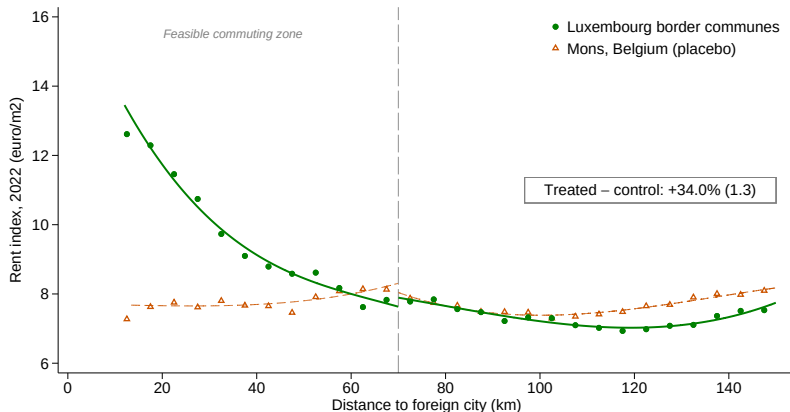


→ Consistent with censored gravity and the 60–65% foreign wage premium (≈ 0 in Belgium). [▶ Gradient approach](#)

Non-tradable price congestion: higher local rents

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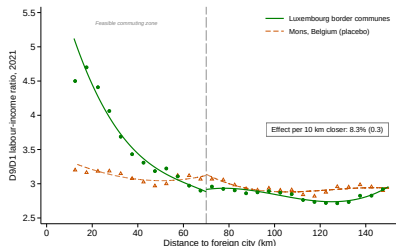
Rents $\approx 34\%$ higher within the commuting zone; no gradient near Mons



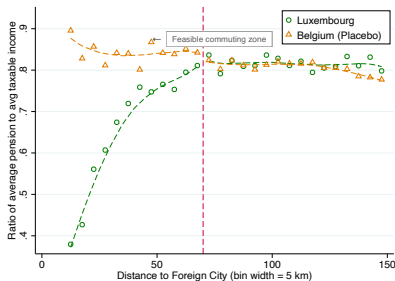
Rising income inequality [▶ Back](#)

D9/D1 ratio $\approx 31\%$ higher; pension/wage ratio falls (retirees fall behind)

(a) Interdecile ratio

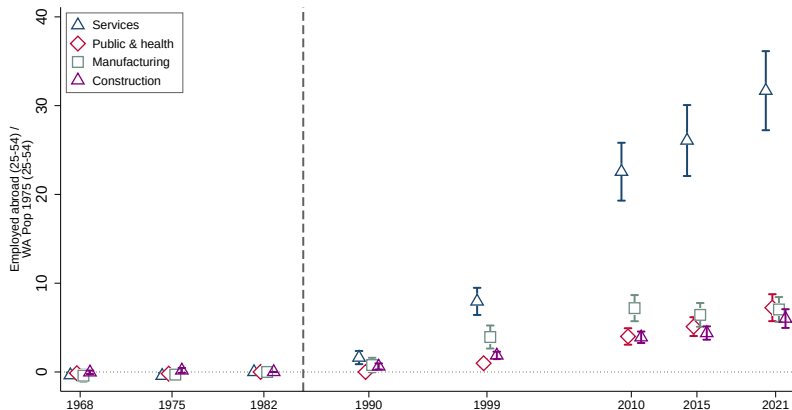


(b) Pension/Wages



Sectoral composition of the cross-border response [▶ Back](#)

≈60% services; manufacturing ≈12% long-run, against ≈half of baseline employment



The first generation of cross-border commuters (1990)

<i>Who they are</i>		
Male		66%
Northeast natives		≈80%
Moved in since last census		≈1%
Average age		32
Prime-age (25–54)		73%
<i>Sector of work in Luxembourg</i>		
Services		44%
Manufacturing	36%	(vs. ≈12% by 2021)
Construction		15%
Public, health & education		4%

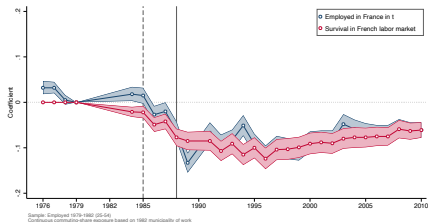
→ The first response came from incumbent residents already living in the region; the high early manufacturing share is consistent with take-up by local industrial workers.

Initial adjustment comes from incumbent workers

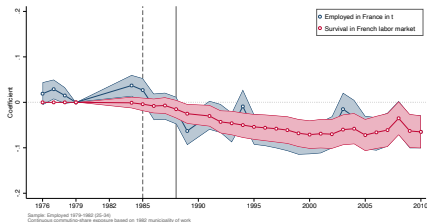
[▶ Back](#)

Probability of remaining in French employment, 1979–1982 cohort

A. Ages 25–54



B. Ages 25–34



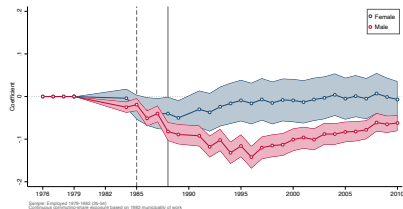
Who reallocates?

► Back

Heterogeneous reallocation dynamics among incumbent workers

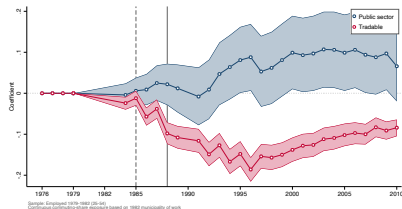
A. By gender

Survival in French labor market



B. By initial sector

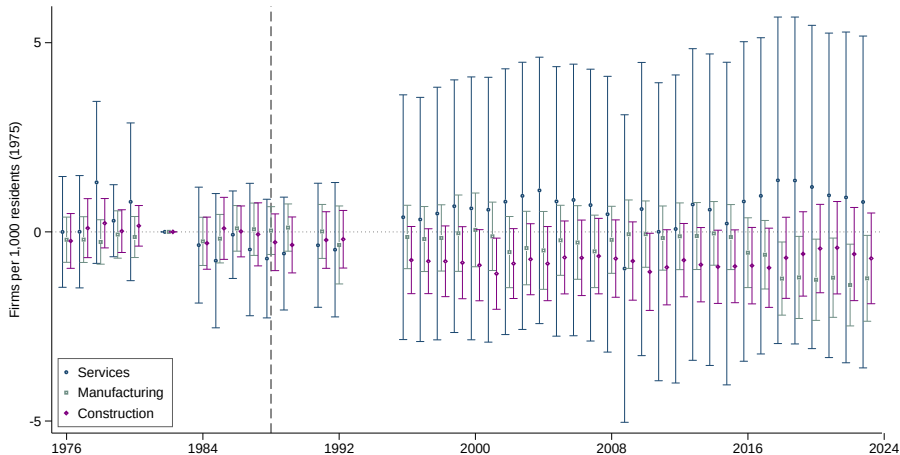
Survival in French labor market



→ Men employed in manufacturing in the 1980s explain most of the initial reallocation.

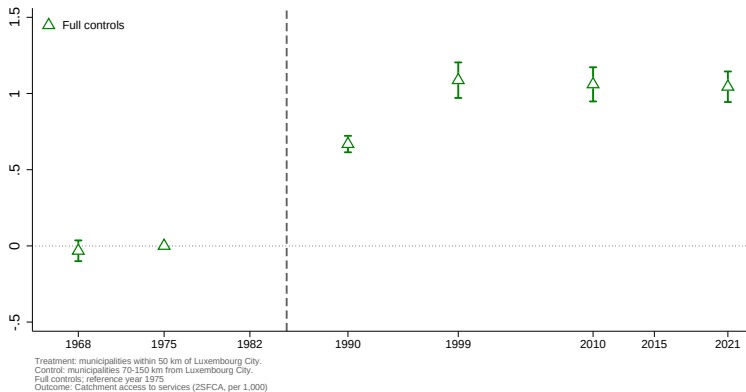
No increase in number of local firms [▶ Back](#)

No evidence of expansion of the local production base, manufacturing firms decline.



Access to local services [▶ Back](#)

Treated municipalities resist the region-wide decline in local amenities (2SFCA index)



→ ≈ 0.9 more services per 1,000 residents by 2022, and closer proximity, despite a broad regional decline in per-capita provision.

This paper's contribution

① Commuting responses to a foreign demand shock

- Foreign employment with residence fixed ($\approx 2\%$ of employment)

→ Shares features of out-migration (Khanna et al. 2026), domestic commuting (Monte et al. 2018) and export (Atkin 2017) shock, with highly granular spatial exposure.

This paper's contribution

① Commuting responses to a foreign demand shock

- ▷ Foreign employment with residence fixed ($\approx 2\%$ of employment)

② Labor-market expansion path over the long-run

- ▷ Higher wages abroad revive local labor markets, population, and housing in an otherwise declining region.

- Negative shocks literature: imports (Autor et al., 2013), immigration (Dustmann et al., 2017; Muñoz, 2024), cross-border workers (Beerli et al., 2021), recessions (Yagan, 2019).
- Migration responses are low in the medium-run (Autor et al. 2025), but population does adjust over the long-run (20-30y).

This paper's contribution

- ① **Commuting responses to a foreign demand shock**
 - ▷ Foreign employment with residence fixed ($\approx 2\%$ of employment)
 - ② **Labor-market expansion path over the long-run**
 - ▷ Higher wages abroad revive local labor markets, population, and housing in an otherwise declining region.
 - ③ **Unequal welfare consequences reflect uneven take-up of CBW**
 - ▷ Higher (real) income inequality, higher rents, lower welfare benefits, and lower taxes paid to the central government.
- Incidence of local labor demand shocks: (Feyrer et al. 2017, Notowidigdo, 2020)
- Foreign labor demand shocks have different incidence, fiscal implications, congestion effects, etc.

This paper's contribution

① Commuting responses to a foreign demand shock

- ▶ Foreign employment with residence fixed ($\approx 2\%$ of employment)

② Labor-market expansion path over the long-run

- ▶ Higher wages abroad revive local labor markets, population, and housing in an otherwise declining region.

③ Unequal welfare consequences reflect uneven take-up of CBW

- ▶ Higher (real) income inequality, higher rents, lower welfare benefits, and lower taxes paid to the central government.

④ Lower relative support for the far-right in presidential elections, and more pro-integration votes in EU-related referendums

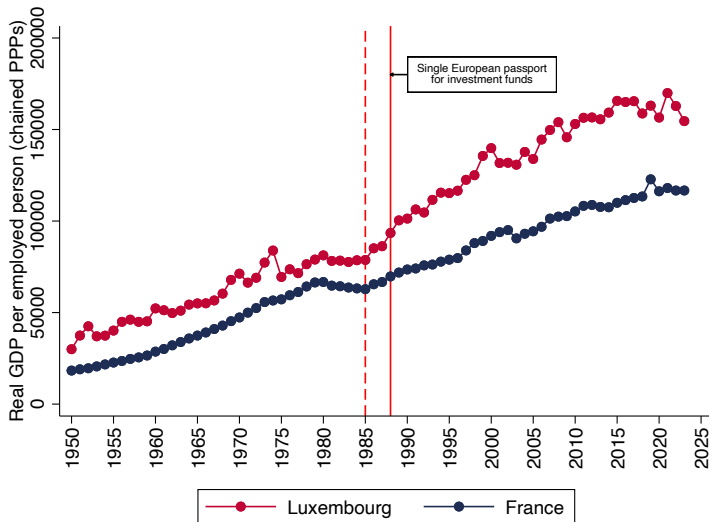
- Populist backlash caused by trade (Autor et al. 2020, Choi et al. 2024); immigration (Dustmann et al. 2019, Tabellini et al. 2020).
- Gains from integration can reduce far-right support, even in traditionally industrial, blue-collar regions.

Threats to identification

- ① Are places close to Luxembourg different?
 - Identification assumption requires them to be on similar *trends*
 - But $\neq$ initial characteristics might be correlated with future dynamics
 - We flexibly control for initial characteristics $\times$ census-year FE
- ② Effect of Luxembourg access or effect of a border?
 - Control for distance to border $\times$ census-year FE
 - Triple Diff: use municipalities 50km vs 70-150km of Mons (Belgium)
- ③ Spatially correlated shocks?
 - Granular exposure **within** narrowly defined, broadly declining region
 - No simultaneous in-migration shock or trade shocks [▸ Trade](#)
 - Spatial gradient approach exploiting "censored gravity"
 - Robustness to Conley standard-errors adjustment
- ④ SUTVA; 3 additional checks [▸ Summary](#)
 - [▸ Mons control](#)
 - [▸ Baseline excl. within 70km of treated](#)
 - [▸ More distant locations](#)

GDP per employed person

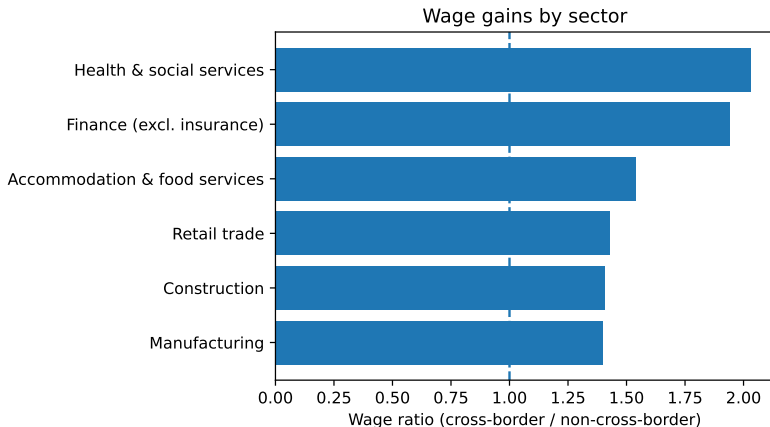
► Back



Cross-Border Employment Delivers Large Wage Gains

Wages of French Residents Employed in Luxembourg vs French Local Workers

[▶ Back](#)



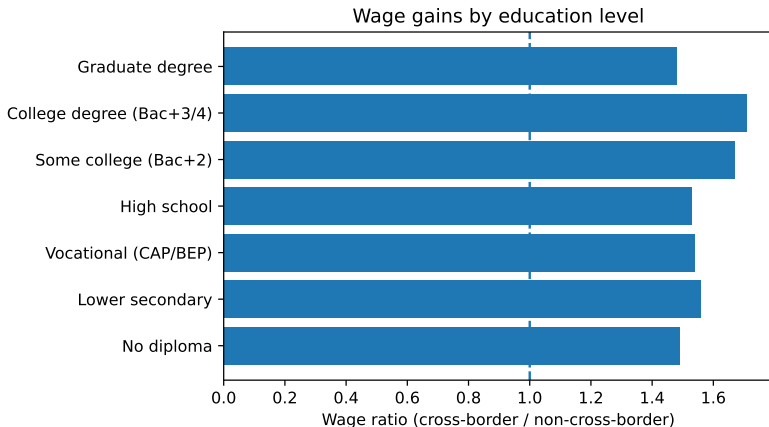
Notes: Annual gross wages, full-time workers. Wage ratios relative to non-cross-border workers in the same département.

Source: INSEE (match between census and tax data).

Cross-Border Employment Delivers Large Wage Gains

Wages of French Residents Employed in Luxembourg vs French Local Workers

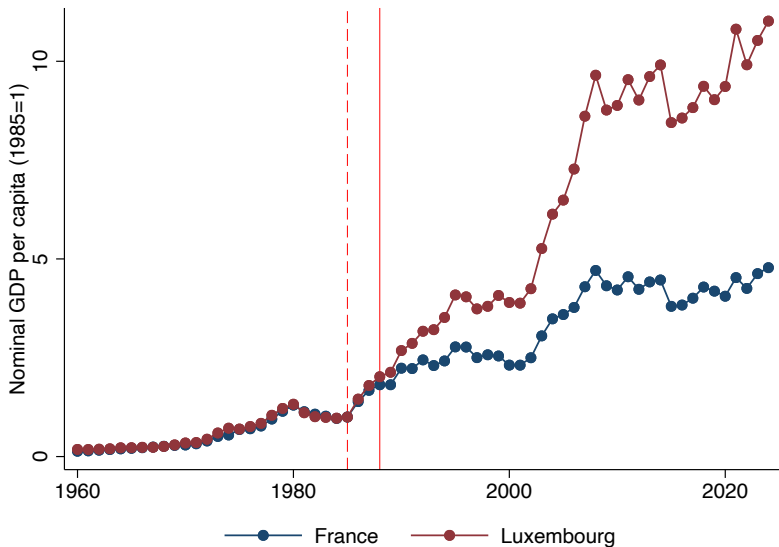
[▶ Back](#)



Notes: Annual gross wages, full-time workers. Wage ratios relative to non-cross-border workers in the same département.

Source: INSEE (match between census and tax data).

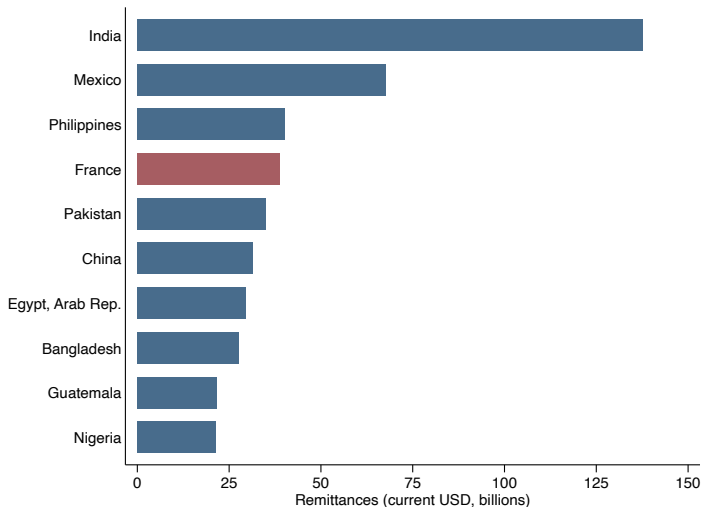
Nominal GDP per capita [▶ Back](#)



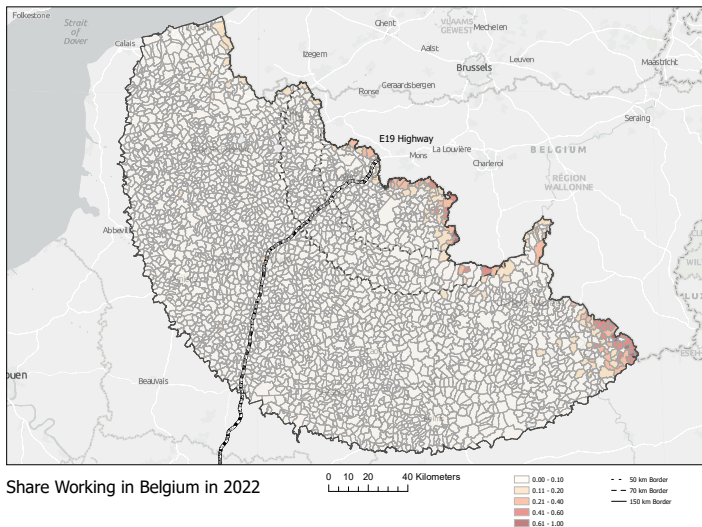
Countries by remittances

Remittances: foreign income received by residents

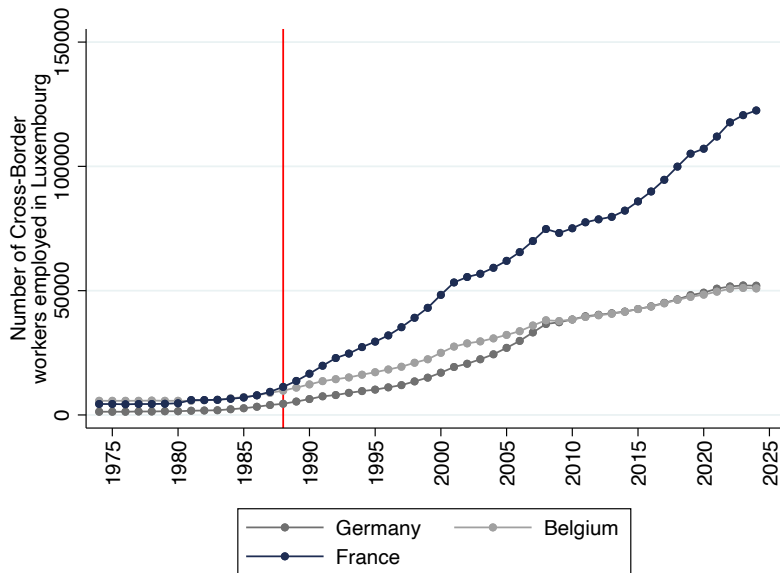
[▶ Back](#)



Distance to Belgium and Cross-Border Work, 2022

[▶ Back](#)

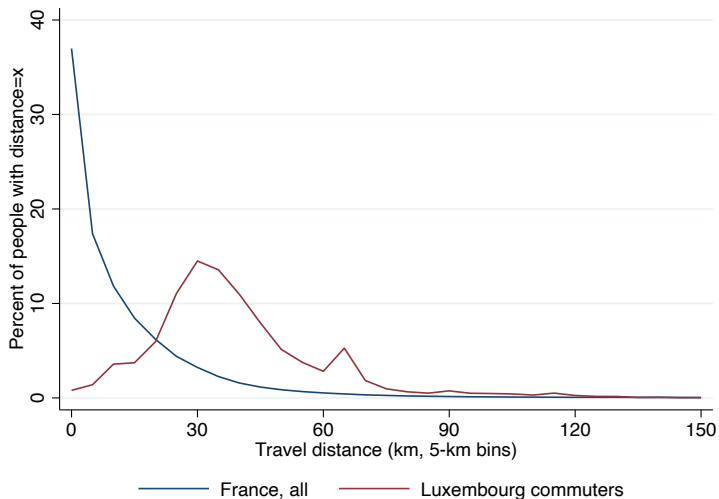
Surge in cross-border workers from France to Luxembourg



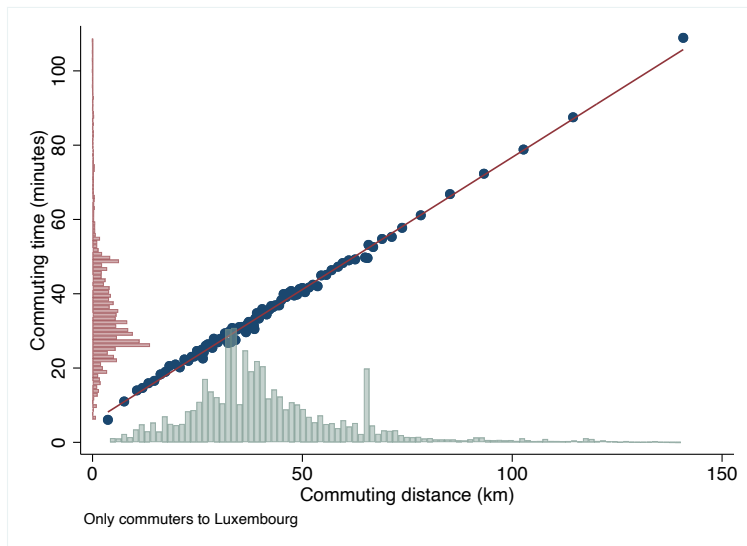
► Back



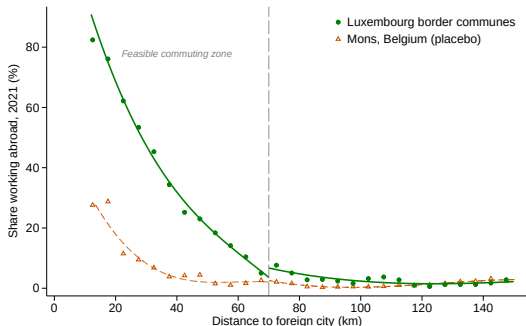
Distribution of Commuting Distance, 2022

[▶ Back](#)

Commuting Radius from France to Luxembourg: 2022

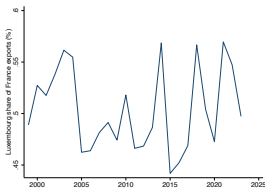


Idea. If exposure to Luxembourg's labor demand is mediated by commuting feasibility, outcomes should display a **steeper distance gradient within the feasible commuting zone** and little additional gradient beyond it.

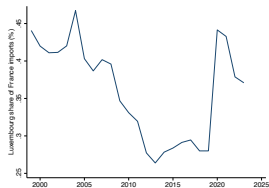


Trends in Trade Flows Between Luxembourg and France

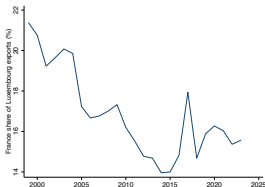
(a) LU in FR exports



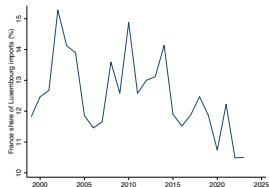
(b) LU in FR imports



(a) FR in LU exports

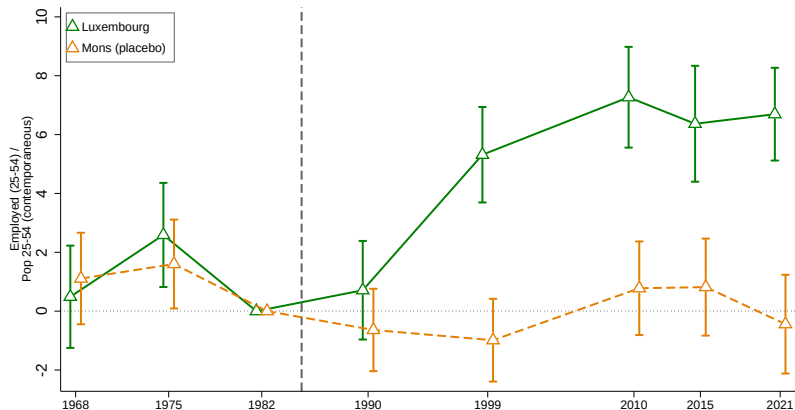


(b) FR in LU imports

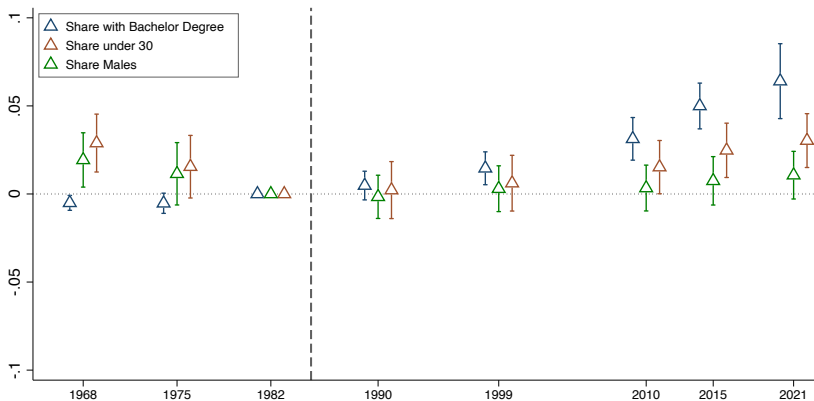


Employment-to-population rate [▶ Back](#)

Prime-age (25–54) employment rate; treated vs. control



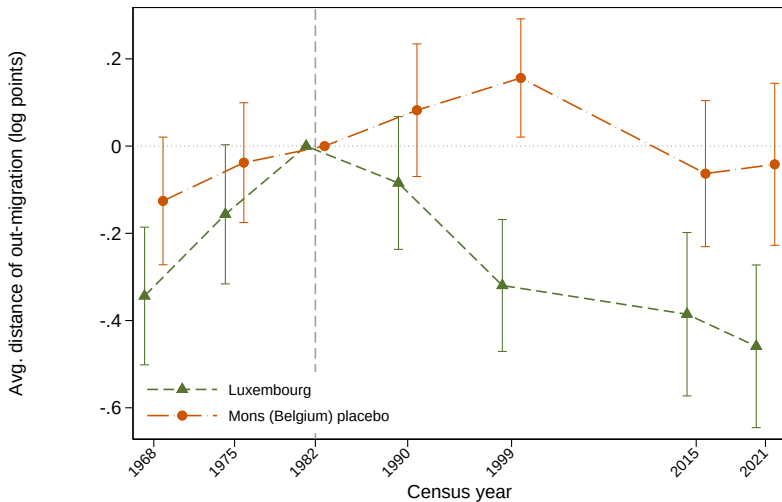
Composition Shifts

[▶ Back](#)

Treatment: municipalities within 50 km of Luxembourg City.
Control: municipalities 70–150 km from Luxembourg City.

Out-migration distance falls $\approx 40\%$ [▶ Back](#)

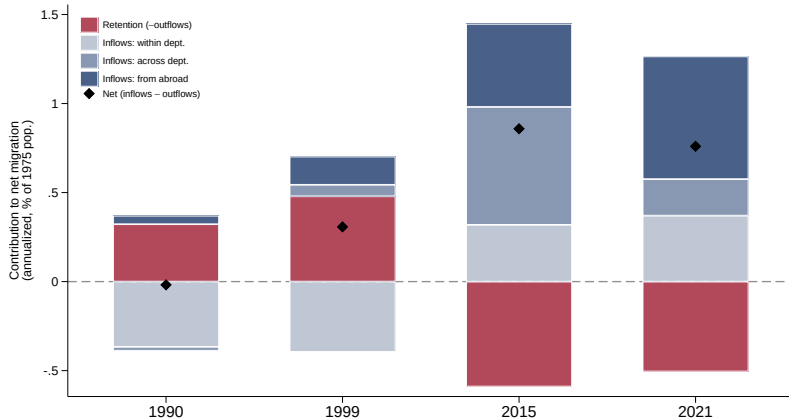
Among residents who leave, moves become shorter; flat at the placebo border



Net migration by origin of arrivals

[▶ Back](#)

Inflows accelerate after 2010 and are majority foreign



Limited population spillovers to control [▶ Back](#)

Gains are net, not a reshuffling of residents within the region

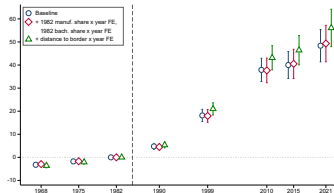
- ▶ **Super-control test:** treat the 70–150 km control band, compare to a super-control 150–200 km away. Employment stays stable; population declines only modestly (**below 2 pp**) and imprecisely, against the $\approx +15\%$ gain in treated municipalities [▶ graphs](#)
- ▶ **Origin of the inflows:** both margins draw little from the control band, new **in-commuters** come only $\approx 14\%$ from control (45% from the treated zone, 39% from the excluded 50–70 km donut), and new **in-migrants** only $\approx 7\%$, their smallest origin ring
- ▶ Results also hold under alternative controls (Mons placebo; excluding within-70 km commuting) [▶ Mons placebo](#) [▶ excl. within-70km of treated](#)

→ **The gains are geographically concentrated in-migration, not displacement or reshuffling of nearby residents**

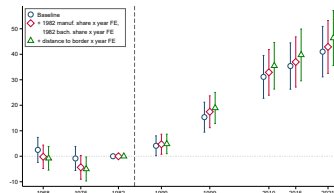
Alternative Controls: Municipalities 0-50 km from Mons

Treated: 0-50km from Luxembourg City

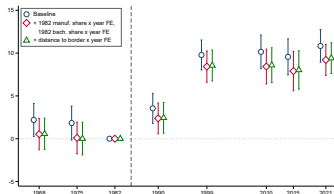
A. Employment Abroad



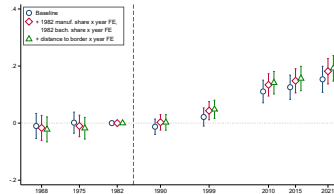
B. Employment Rate (Pop. 1975)



C. Employment Rate (Contemp. Pop.)



D. Log Population



▸ threats & robustness

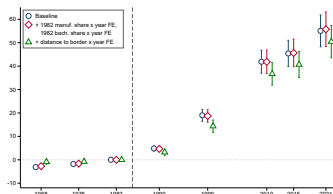
▸ pop. gains

▸ spillover

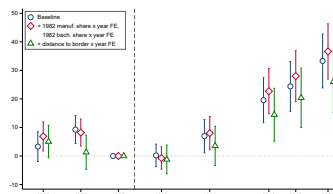
Alternative Controls: Excluding Municipalities within 70 km of Treated Areas

Treated: 0–50km from Luxembourg City; Control: 70-150km from Lux. with exclusion

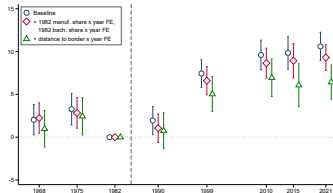
A. Employment Abroad



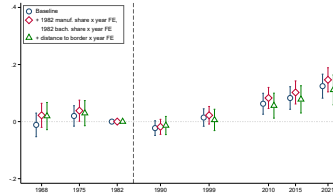
B. Employment Rate (Pop. 1975)



C. Employment Rate (Contemp. Pop.)



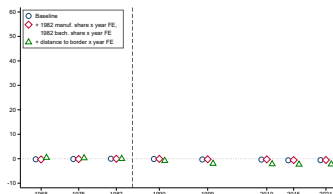
D. Log Population



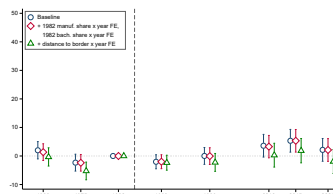
Alternative Test: Control Areas relative to More Distant Locations

Treated: 70–150km from Luxembourg City; Control: 150–200km from Luxembourg City

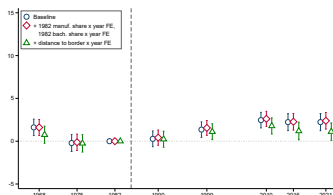
A. Employment Abroad



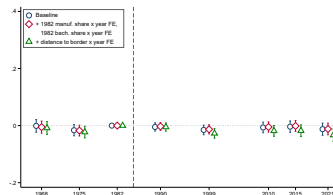
B. Employment Rate (Pop. 1975)



C. Employment Rate (Contemp. Pop.)

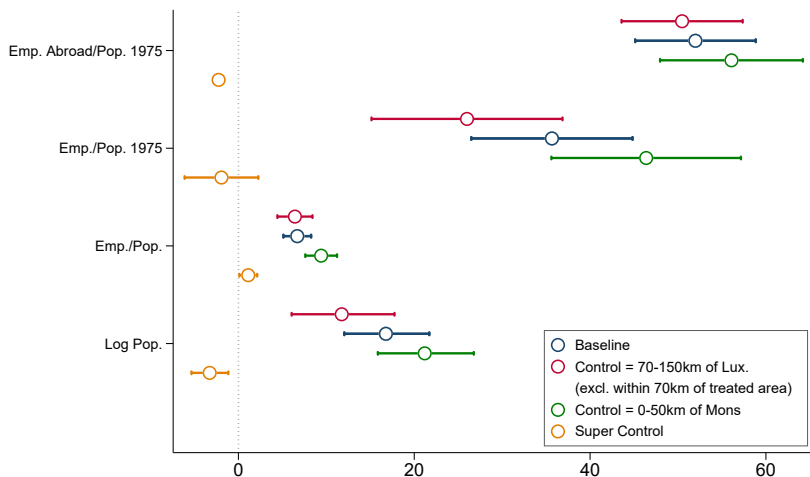


D. Log Population



Summary of Alternative Tests

Long-Run Estimate



Backup: commuter market access over time

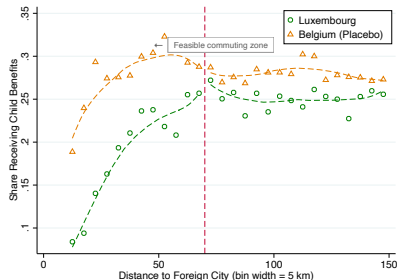
- ▶ A31–A3/E25 highway corridor: French junction 1981
- ▶ Schengen: removal of border controls, 1995
- ▶ Timing: wage divergence and commuting take off after 1985, not after 1981 or 1995 [▶ divergence timing](#)
- ▶ Change in overall accessibility captured by placebo at other borders
 - ▶ Schengen affects both Belgium and Luxembourg borders
 - ▶ A31 and A19 highways

[▶ back](#)

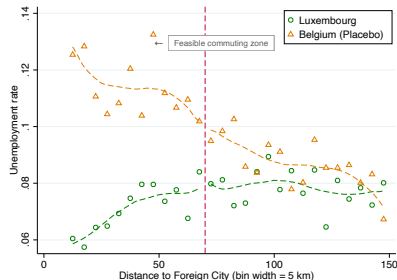
Reduced reliance on federal transfers

[▶ Back](#)

(a) Child allowance



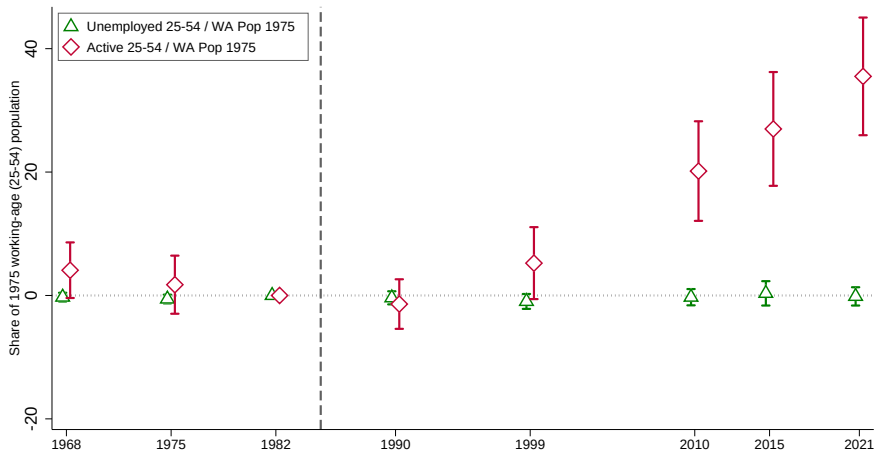
(b) Unemployment rate



Increased consumption inequality in exposed areas [▶ Back](#)

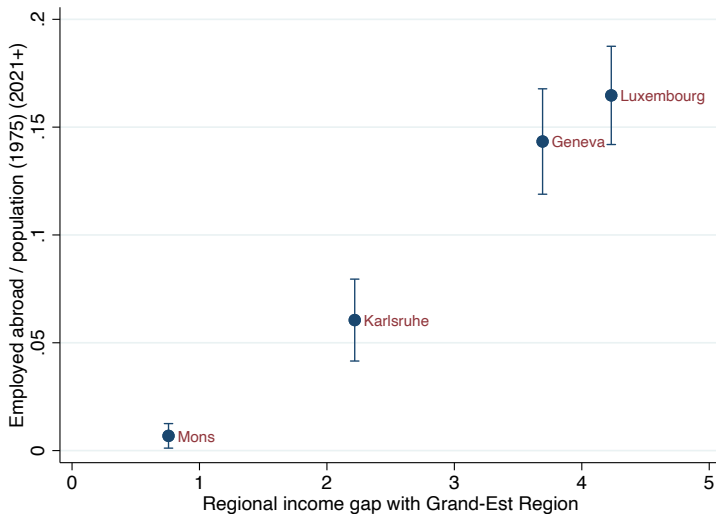
Unequal take-up divides workers; unequal exposure divides domestic residents

	Housing space		Cars	Tenure	
	(1)	(2)	(3)	(4)	(5)
	Sq.m. per cap.	Rooms per cap.	≥ 2 cars	Homeowner	Social housing
<i>Panel A: Cross-border commuter indicator (OLS)</i>					
<i>Sample: all employed workers within 70 km of Luxembourg</i>					
Cross-border worker	2.739*** (0.107)	0.086*** (0.005)	0.042*** (0.003)	0.094*** (0.003)	-0.073*** (0.002)
Observations	202,740	202,740	202,740	202,740	202,740
R^2	0.561	0.508	0.346	0.246	0.143
<i>Panel B: Share of cross-border commuters (IV)</i>					
<i>Sample: employed non-commuters within 70 km of Luxembourg; instrument: distance to Luxembourg</i>					
Share cross-border (IV)	-6.830*** (0.339)	-0.216*** (0.017)	0.036*** (0.008)	-0.013 (0.009)	0.027*** (0.007)
Observations	136,003	136,003	136,003	136,003	136,003
First-stage F	4.1e+05	4.1e+05	4.1e+05	4.1e+05	4.1e+05
Fixed effects	Municipality, education, age group, immigration status, household size				



Foreign Labor Market Integration and Income Differentials

Commuting Abroad and Foreign Income Gaps in Northeastern France



Accounting for the far-right gap: sequential controls

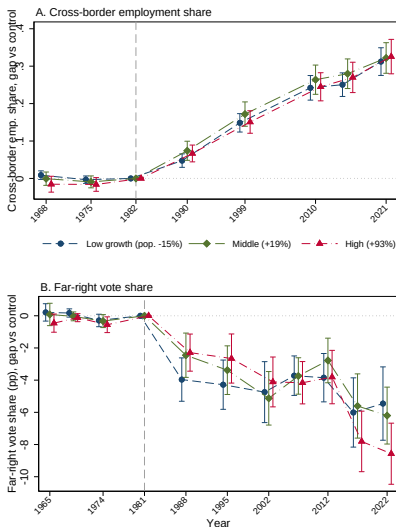
	(1)	(2)	(3)	(4)	(5)
Exposed to Luxembourg	-5.348*** (0.551)	-5.162*** (0.548)	-5.148*** (0.545)	-5.128*** (0.544)	-2.611*** (0.486)
Demographic controls		Y	Y	Y	Y
Manufacturing share			Y	Y	Y
Employment/Unemp.				Y	Y
Income control					Y
R^2	0.034	0.075	0.083	0.088	0.230
Observations	2659	2659	2659	2659	2165

→ The gap falls from -5.35 to -2.61 only once income is added; demographics and sectoral composition leave it unchanged.

Far-right decline by ex-post population growth

[▶ Back](#)

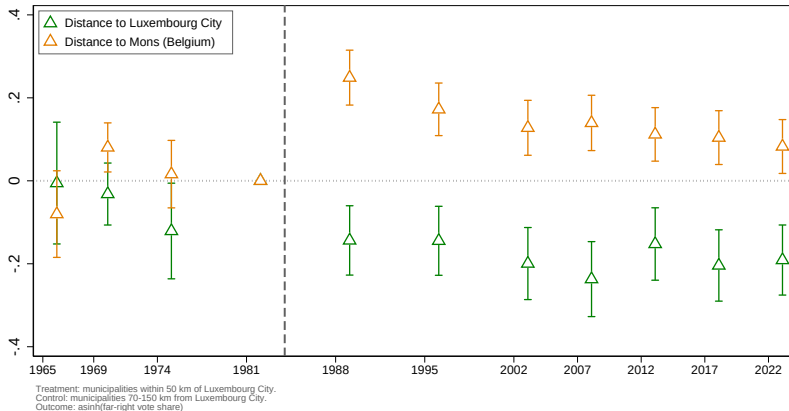
Event studies by tercile of 1975–2021 population change; CBW take-up (A) identical, far-right (B) falls in all



Far-right decline: arcsinh robustness

[▶ Back](#)

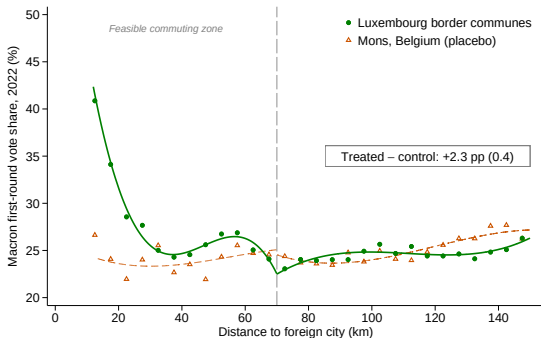
Event study of the inverse-hyperbolic-sine far-right vote



Macron vote rises with proximity to Luxembourg

[▶ Back](#)

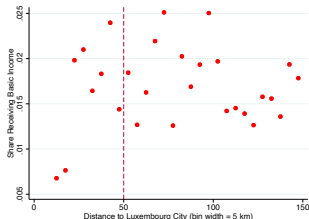
First-round Macron vote share, 2017: green = Luxembourg, orange = Mons placebo



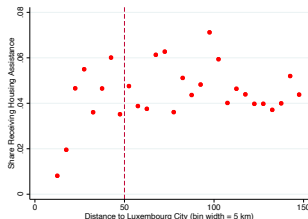
Fiscal externality I: Welfare benefits

Lower reliance on social benefits in exposed municipalities

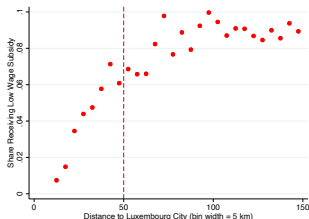
(a) Guaranteed Income



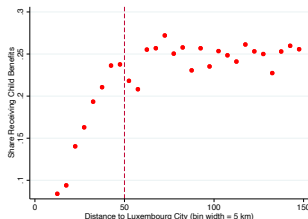
(b) Housing Allowances



(c) Earned Income Tax Credit



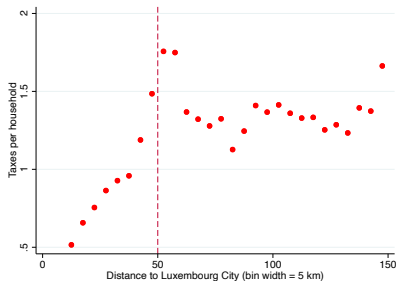
(d) Child Allowance



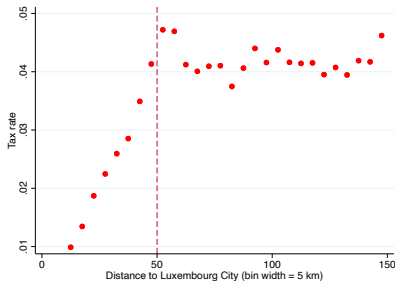
Fiscal externality II: Limited national taxable gains

Cross-border taxation rules imply small fiscal externalities

(a) Δ Income paid/household

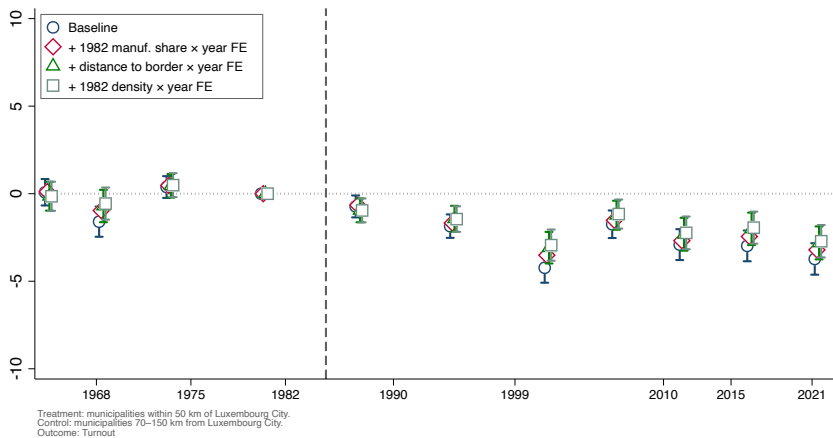


(b) Δ effective income tax rate



Turnout Changes Are Small

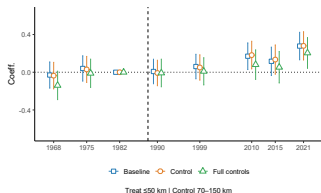
Small De-mobilization of the protest vote via lower (-2pp) overall turnout



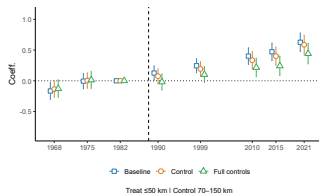
Sectoral reallocation behind local employment gains

Employment gains are concentrated in services and construction

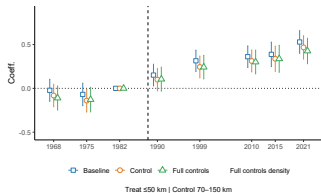
A. Retail occupations



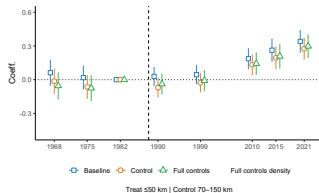
B. Business executives / professionals



C. Construction

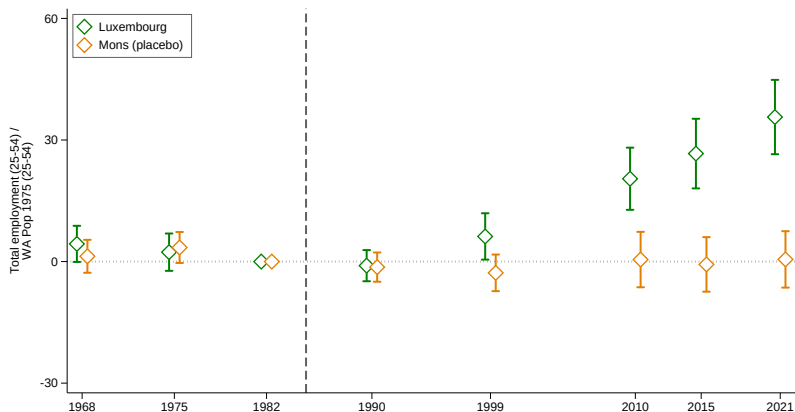


D. Services



Placebo: total employment is flat around Mons

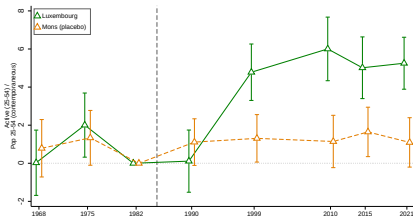
Total employment (25–54) per 1975 prime-age residents: Luxembourg vs Mons (Belgium)



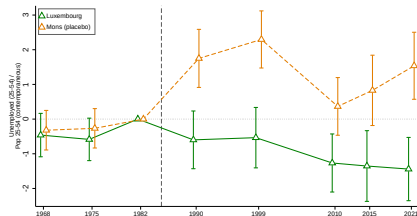
Participation and unemployment: Luxembourg vs Mons placebo

Per contemporaneous prime-age (25–54) population

A. Labor force participation



B. Unemployment-to-pop



Unemployment: Luxembourg vs Mons placebo

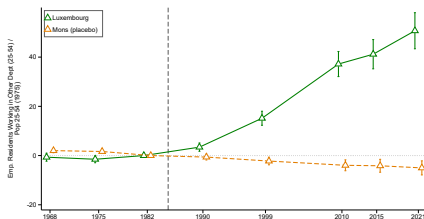
Per labor force (25–54)



Long-Distance Commuters

Share Working in Different Department (25–54)

A. Share of Pop. 1975



B. Share of Contemporaneous Pop.

