The Effect of Migrant Regularization on Working Conditions

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Introduction

- Migrant workers often face **poor working conditions**, e.g. health risks, low safety, long hours
- **Undocumented migrants** exposed because they **cannot access formal labor markets**
- Does providing **work permits improve working conditions?**
- Answering this question **empirically** is challenging:
  - Lack of data to identify undocumented migrants
  - Hard to proxy for working conditions
  - Need exogenous variation

Many examples from the news

La muerte de un temporero en Murcia: jornadas de 11 horas a más de 40 grados y sin agua

El fallecimiento de Eleazar Blandón, un jornalero abandonado en un centro de salud de Murcia, rompe a una familia y expone la vulnerabilidad de los migrantes en el campo

Scorching Heat Is Contributing to Migrant Deaths

Amid a relentless heat wave, some migrants are succumbing to heat exhaustion. More than 500 people have died of various causes this year while trying to cross from Mexico.

Caldo record e morti sul lavoro: due vittime nel bresciano e una a Jesi

a cura di Redazione Cronaca

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This paper

- Study an amnesty program in Spain in 2005 which regularized about 600,000 immigrants
- Data on number undocumented migrants in each province
- Proxy working conditions by heat-related discharges (HRD). Relevant because:
  - Working outdoors in agriculture and/or construction
  - High temperatures
  - Long hours
- Use extremely hot days (conditional on province and year-month FE) as additional random variation
- Measure the effect of a very hot day (>35C) on HRDs before vs. after the reform, and in provinces with a high vs. low share of undocumented migrants over total population

Preview

- After the reform, **one extra day > 35C** causes:
  - 2.2 p.p lower probability of at least one HRD in high-share regions vs. low-share regions
    - The dependent variable (DV) is a dummy (0 no HRD, $\geq$1 HRD)
    - Baseline mean=0.095 $\implies$ effect 23.2%
    - No effect for low-share regions
- Effect is very robust
- Overall effect on total discharges is non-negative so these are likely to be **lower bounds**

Literature

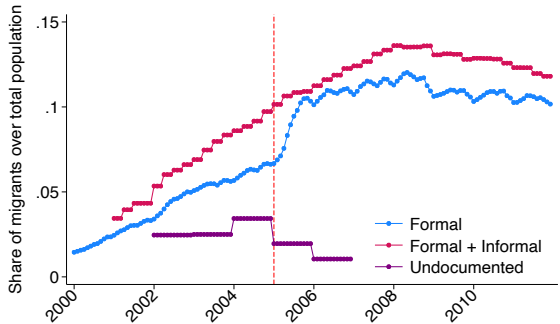
1. **Effects of amnesty programs:** (Kossoudji and Cobb-Clark, 2002; Devillanova et al., 2018; Cascio and Lewis, 2019; Bahar et al., 2021; Elias et al., 2022)

2. **Undocumented migration and labor exploitation:** (Comino et al., 2020; Dipoppa, 2024)

3. **Health and climate:** (Barreca et al., 2016; Carleton et al., 2022; Ballester et al., 2023)

2005 Amnesty Program

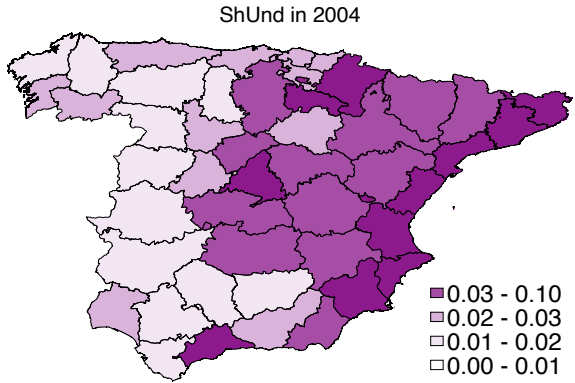
- In February, the government granted work permits to undocumented migrants if:
  - The person was in the Municipal Registry of Population (Padrón) prior to August 2004
  - They were offered a working contract of at least 6 months
- Unexpected and did not have magnet effects (Montalvo, 2011; Elias et al., 2022)



By undocumented share

Measuring Undocumented Migrants

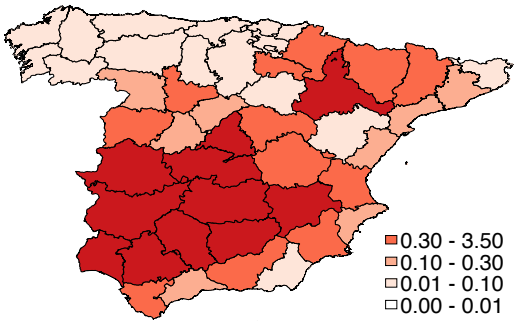
- Usually, undocumented migrants are not registered in admin. data
- In Spain, they can register in Padrón (and have incentive to do so)
- $\text{ShareUnd}_p = (\text{Migrants}_p - \text{Work Permits}_p)/\text{Population}_p$
- HiUnd=1 if province has above median share (dark and very dark purple)



Non-EU undocumented migrants share | Share over migrant population | Share of migrants over total population

Temperature Data

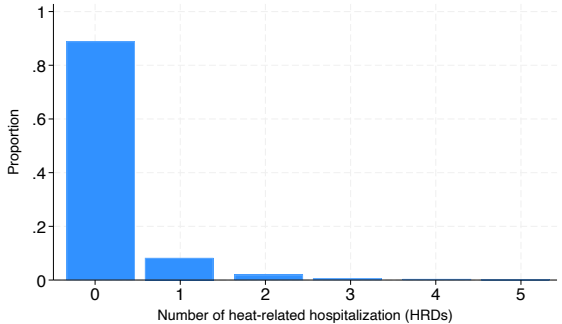
- Daily maximum temperature for 5km$\times$5km cells from STEAD (Serrano-Notivoli et al., 2019)
- Aggregate cells at the province level weighting by population (Carleton et al., 2022): $T_{p,d} = \sum_{m \in p} \frac{pop_m}{pop_p} \sum_{c \in p} \frac{T_c}{N_c}$
- Dd>35$_{pym}$= count $T_{p,d} > 35$ in province p in year-month ym



Average number of days > 35C per month

Heat-related Discharges

- Data from Hospital Registers (CMBD), near-universe of hospital discharges
- Focus on working-age population (age 16-64)
- In most province-months, there are no heat-related discharges (HRDs)
- Main dependent variable: Y_{pym} = 1 if there is at least 1 HRD, 0 otherwise



Data recap

- Municipal Registry and Work Permits:
  - Stock of residents by nationality and by province
  - Stock of work permits by province
- Hospital Registers (CMBD):
  - Universe of hospital admissions (2000-2015)
  - Variables: diagnosis, age, sex, type of financing, entry and exit date.
- Gridded daily climate data for Spain: (STEAD and SPREAD)
  - Maximum and minimum temperatures (1900-2014), precipitation (1950-2012)
  - Daily observations for 5km$\times$5km cells (approx. 300 cells per province)
- Spanish Social Security Sample (MCVL):
  - Random sample of 4% of formal workers (2000-2015)
  - Variables: wages, type of contract, sector, demographics
- Labor Force Survey (EPA):
  - Proportion of migrant to native workers (formal and informal)

Summary statistics at baseline (2000-2004)

	Mean	S.d.	Min	Max	Obs.
Dummy HRD	0.095	0.294	0.000	1.000	2820
Dummy HRD (May-Sep)	0.201	0.401	0.000	1.000	1175
HRDs	0.170	0.695	0.000	11.547	2820
Dd>35	0.492	2.170	0.000	21.000	2820
Dd>35 (May-Sep)	1.180	3.239	0.000	21.000	1175
Undocumented	0.021	0.019	0.001	0.100	1128
Migrant	0.048	0.034	0.011	0.157	1128

Observations represent a month in a province in the period 2000-2004.
HRDs are heat-related discharges.

By year

Empirical Approach

Triple Difference-in-Difference

$$Y_{pym} = \beta_1\big(Dd > 35_{pym}\big) + \beta_2\big(Dd > 35_{pym} \times Post_{ym}\big) + \beta_3\big(Dd > 35_{pym} \times Post_{ym} \times HiUnd_p\big) + \beta_4\big(Dd > 35_{pym} \times HiUnd_p\big) + \beta_5\big(Post_{ym} \times HiUnd_p\big) + \beta_6 X_{pym} + \eta_{pm} + \alpha_{ym} + \varepsilon_{pym} \quad (1)$$

- $Dd > 35_{pym}$: # days where maximum temperature is above 35C
- $Post_{ym}$ equals 1 after June 2005
- $HiUnd_p$ equals 1 if province p has above median share of undocumented migrants
- X_{pym}: 5-degree temperature bins, precipitations and controls, interacted with main regressors
- η_{pm} are province-month FE and α_{ym} are year-month FE

Triple DiD Results

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) Logit
Dd>35	0.020***	0.009	0.009	0.012	0.081
	(0.006)	(0.011)	(0.011)	(0.015)	(0.064)
Dd>35 × Post	0.005	0.010	0.010	-0.001	0.049
	(0.006)	(0.008)	(0.008)	(0.014)	(0.077)
Dd>35 × Post × HiUnd	-0.022**	-0.022*	-0.022*	-0.033**	-0.176**
	(0.011)	(0.012)	(0.012)	(0.016)	(0.085)
Year×Month FE		✓	✓	✓	✓
Prov×Month FE		✓	✓	✓	
Full Controls			✓	✓	✓
May-Sep only				✓	
R2	0.187	0.343	0.347	0.252	
Obs.	6768	6768	6768	2820	6624

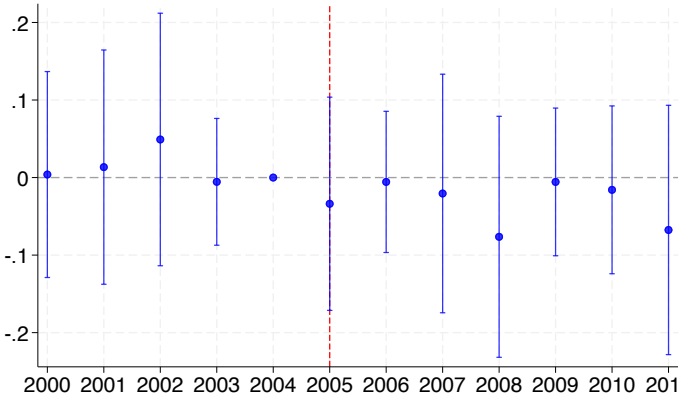
Note: specifications (2)-(4) control for province linear and quadratic trends. Full controls include population (total and migrant) in 2003 and 2004, unemployment rate, employment in part-time, permanent, public, agricultural and hospitality jobs, average wage, days worked and a coastal dummy. Standard errors are clustered at the province level.

Results recap

- 1 more hot day is 2.2p.p. (baseline mean .095) **less likely** to result in a hospitalization in regions with a high share of undocumented migrants
- No effect for provinces with a low share of undocumented migrants
- Robustness:
  - Definition of undocumented share: Continuous share | Top 25% | Donut specification | Quartiles
  - Standard errors: Province-level clustering | Bootstrap
  - Others: Count DV | Excluding 2008 | Placebo Outcomes | Leave out province | Leave out year
- Are the results driven at all by the reform, or just following a trend? No evidence of a trend from an event study

No evidence of pre-amnesty trends

- Triple DiD coefficients replacing $Post_{ym}$ with year dummies



No controls | Fewer controls | Only summer | Only summer + controls | Continuous measure of und. migrants | Monthly event study

Simple DiD Results - Other discharges

$$Y_{pym} = \gamma_1 \left(Post_{ym} \times HiUnd_p \right) + \gamma_2 X_{pym} + \eta_p + \alpha_{ym} + u_{pym} \quad (2)$$

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × HiUnd	-0.051	-0.017	0.030	0.054	0.122	-0.456***	0.025
	(0.151)	(0.054)	(0.042)	(0.067)	(0.081)	(0.092)	(0.035)
Full Controls	✓	✓	✓	✓	✓	✓	✓
Mean DV	0.324	4.883	5.020	5.011	5.104	1.728	7.762
R2	0.387	0.975	0.971	0.968	0.956	0.741	0.995
Obs.	739	6767	6768	6768	6768	6073	6768

Note: controls include population (total and migrant) in 2003 and 2004, unemployment rate, employment in part-time, permanent, public, agricultural and hospitality jobs, average wage, days worked and a coastal dummy. Standard errors are clustered at the province and year-month level.

No controls | With controls | With full controls + continuous share of undocumented migrants | Asinh DVs | Event study

Conclusion

- We investigate the impact of work permits on working conditions
- After the amnesty in 2005, very hot days are less dangerous
- One additional hot day causes 25% lower probability of a hospitalization due to heat stroke in highly-exposed vs low-exposed provinces

Thank you!

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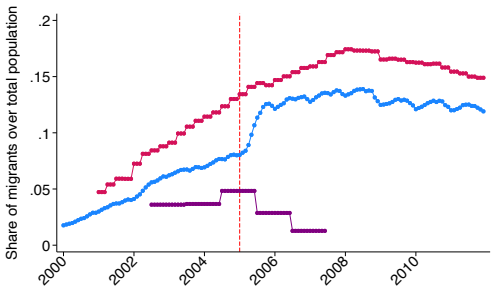
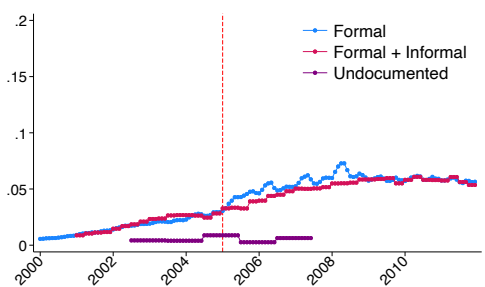
2005 Amnesty Program

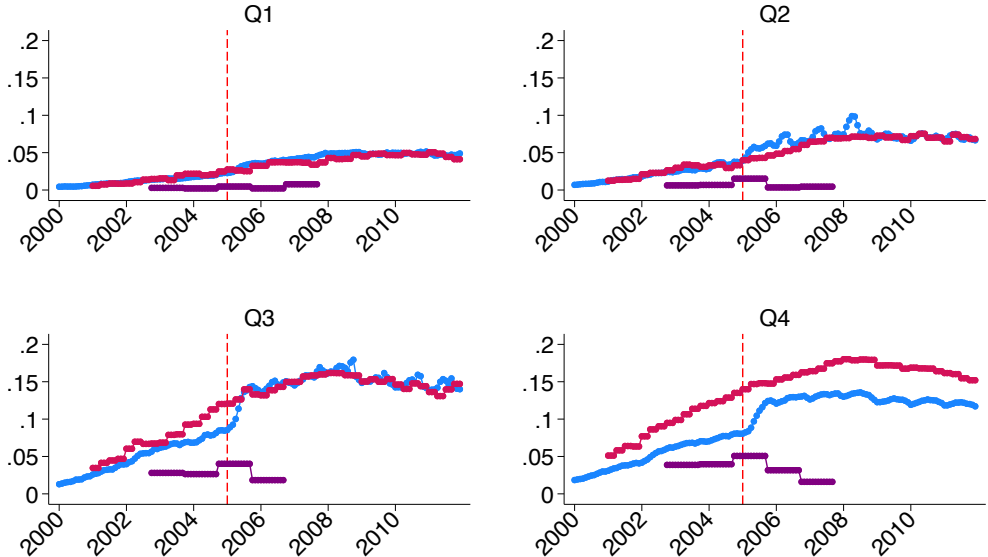
Return





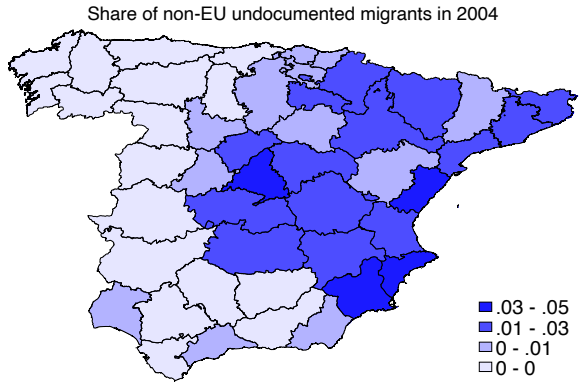
2005 Amnesty Program by Quartile

Return



Non-EU Undocumented Migrants

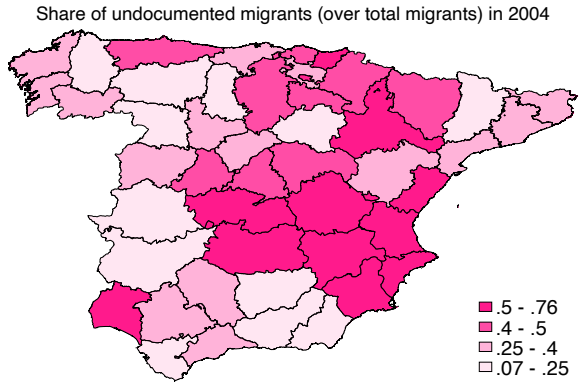
- ShareUndnonEU$_p$ = (Non-EU Migrants$_p$ − Work Permits$_p$)/Migrants$_p$
- Correlation with ShareUnd= .93



Return

Measuring Undocumented Migrants

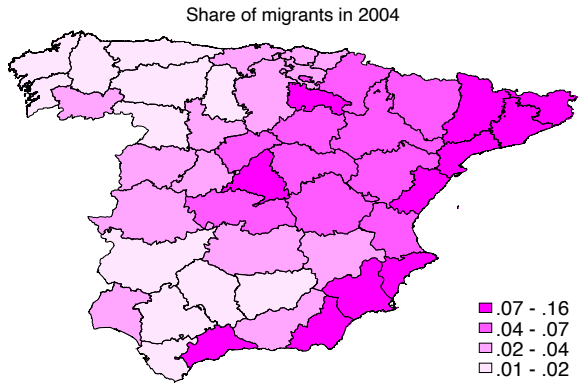
- ShareUndMig$_p$ = (Migrants$_p$ − Work Permits$_p$)/Migrants$_p$
- Correlation with ShareUnd= .60



Return

Measuring Undocumented Migrants

- ShareMig$_p$ = Migrants$_p$/Population$_p$
- Correlation with ShareUnd = .90



Return

Summary statistics for HRD Dummy

Graph Return

	All prov.		High share		Low share	
	Mean	S.d.	Mean	S.d.	Mean	S.d.
2000	0.066	0.248	0.080	0.272	0.051	0.220
2001	0.076	0.266	0.104	0.306	0.047	0.212
2002	0.078	0.268	0.097	0.297	0.058	0.234
2003	0.137	0.344	0.167	0.373	0.105	0.307
2004	0.121	0.326	0.153	0.360	0.087	0.282
2005	0.145	0.353	0.153	0.360	0.138	0.345
2006	0.131	0.338	0.160	0.367	0.101	0.302
2007	0.110	0.313	0.125	0.331	0.094	0.293
2008	0.112	0.315	0.146	0.354	0.076	0.266
2009	0.140	0.347	0.188	0.391	0.091	0.288
2010	0.151	0.358	0.170	0.376	0.130	0.337
2011	0.131	0.338	0.153	0.360	0.109	0.312
Total	0.116	0.321	0.141	0.348	0.091	0.287

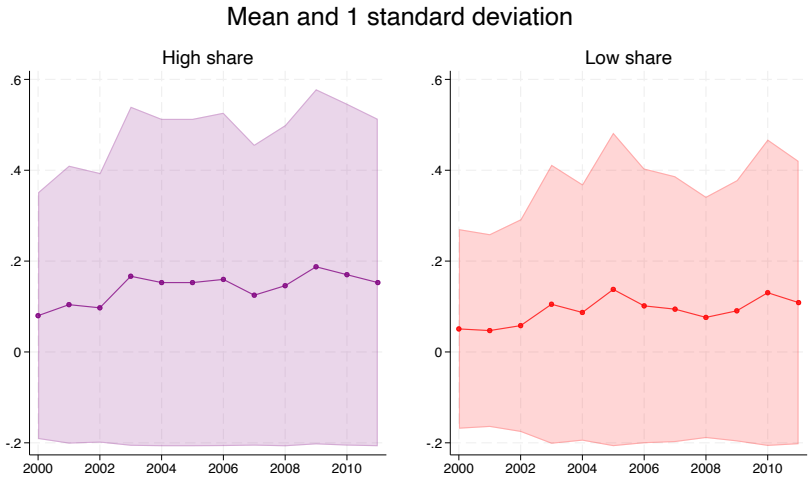
Summary statistics for Dd>35

Graph Return

	All prov.		High share		Low share	
	Mean	S.d.	Mean	S.d.	Mean	S.d.
2000	0.394	1.812	0.247	1.212	0.547	2.268
2001	0.433	1.810	0.347	1.467	0.522	2.109
2002	0.220	1.251	0.153	0.993	0.290	1.471
2003	0.926	3.242	0.858	2.936	0.996	3.538
2004	0.488	2.159	0.312	1.562	0.670	2.633
2005	0.589	2.486	0.389	1.693	0.797	3.095
2006	0.695	3.002	0.469	2.244	0.931	3.617
2007	0.353	1.813	0.243	1.164	0.467	2.300
2008	0.335	1.669	0.188	0.899	0.489	2.193
2009	0.684	2.898	0.514	2.240	0.862	3.450
2010	0.645	3.134	0.413	2.014	0.888	3.971
2011	0.397	1.778	0.271	1.256	0.529	2.188
Total	0.513	2.350	0.367	1.748	0.666	2.838

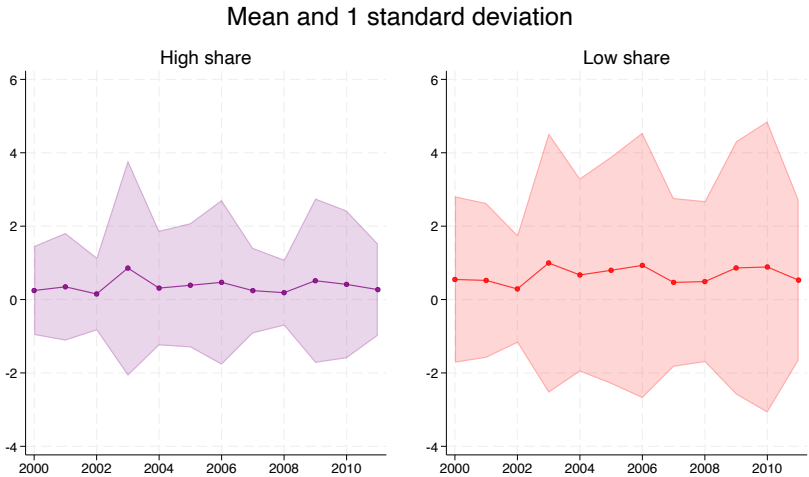
Summary statistics for HRD Dummy

Return



Summary statistics for Dd>35

Return



Triple DiD Results - Dummy DV + Share of Undocumented Migrants

Return

	(1) OLS	(2) OLS	(3) OLS	(4) Logit
Days>35	0.017	-0.000	-0.004	0.067
	(0.015)	(0.011)	(0.023)	(0.061)
Days>35 × Post	0.009	0.014	0.010	0.050
	(0.015)	(0.010)	(0.018)	(0.066)
Days>35 × Post × ShareUnd	-0.995**	-0.858**	-1.145*	-4.844*
	(0.404)	(0.422)	(0.580)	(2.511)
Year×Month FE		✓	✓	✓
Controls	✓	✓	✓	✓
May-Sep only			✓	
R2	0.254	0.305	0.295	
Obs.	6768	6768	2820	6624

Triple DiD - Top 25% Undocumented Migrant Share

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Dd>35	0.022***	0.005	0.008	0.007
	(0.007)	(0.008)	(0.008)	(0.013)
Dd>35 × Post	0.001	0.009	0.004	-0.008
	(0.008)	(0.008)	(0.008)	(0.011)
Dd>35 × Post × Top25%	0.006	0.007	0.006	-0.002
	(0.017)	(0.016)	(0.021)	(0.029)
Year×Month FE		✓	✓	✓
Full controls			✓	✓
May-Sep only				✓
R2	0.213	0.299	0.306	0.297
Obs.	6768	6768	6768	2820

Return

Triple DiD - Donut Specification

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Dd>35	-0.003	-0.003	-0.001	-0.006
	(0.008)	(0.008)	(0.012)	(0.019)
Dd>35 × Post	0.015*	0.015*	0.011	0.003
	(0.008)	(0.008)	(0.010)	(0.020)
Dd>35 × Post × Top33%	-0.021	-0.021	-0.022	-0.028
	(0.015)	(0.015)	(0.027)	(0.028)
Year×Month FE	✓	✓	✓	✓
Full controls			✓	✓
May-Sep only				✓
R2	0.342	0.342	0.352	0.344
Obs.	4464	4464	4464	1860

Return

Triple DiD - Quartiles

	(1) OLS	(2) OLS	(3) OLS
ShUndQ=2 × Dd>35 × Post	-0.028**	-0.031**	-0.036**
	(0.014)	(0.013)	(0.015)
ShUndQ=3 × Dd>35 × Post	-0.020*	-0.024**	-0.026
	(0.011)	(0.011)	(0.017)
ShUndQ=4 × Dd>35 × Post	0.001	-0.002	-0.012
	(0.019)	(0.020)	(0.026)
Year×Month FE	✓	✓	✓
Full controls		✓	✓
May-Sep only			✓
R2	0.303	0.247	0.306
Obs.	6768	6768	2820

Standard errors are clustered at the province level

Return

Triple DiD - Clustering at the province level

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Dd>35	0.020***	0.001	0.002	0.001
	(0.006)	(0.007)	(0.007)	(0.009)
Dd>35 × Post	0.005	0.012*	0.010	0.004
	(0.006)	(0.007)	(0.007)	(0.009)
Dd>35 × Post × HiUnd	-0.021*	-0.020*	-0.024**	-0.035**
	(0.011)	(0.012)	(0.011)	(0.014)
Year×Month FE		✓	✓	✓
Full controls			✓	✓
May-Sep only				✓
R2	0.190	0.294	0.236	0.141
Obs.	6768	6768	6768	2820

Standard errors are clustered at the province level

Return

Triple DiD - Bootstrap S.E.

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Dd>35	0.020***	0.001	0.002	0.001
	(0.007)	(0.008)	(0.007)	(0.010)
Dd>35 × Post	0.005	0.012	0.010	0.004
	(0.007)	(0.008)	(0.007)	(0.010)
Dd>35 × Post × HiUnd	-0.021	-0.020	-0.024*	-0.035**
	(0.016)	(0.015)	(0.014)	(0.016)
Year×Month FE		✓	✓	✓
Full controls			✓	✓
May-Sep only				✓
R2	0.190	0.294	0.301	0.298
Obs.	6768	6768	6768	2820

Standard errors from 200 bootstrap reps. clustered at the province level

Return

Triple DiD Results - with Province X Post FE

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Dd>35	0.001	0.001	-0.001	-0.000
	(0.007)	(0.007)	(0.010)	(0.008)
Dd>35 × Post	0.011	0.011	0.006	0.014**
	(0.007)	(0.007)	(0.011)	(0.007)
Dd>35 × Post × HiUnd	-0.023**	-0.023**	-0.033**	
	(0.011)	(0.011)	(0.015)	
Dd>35 × Post × ShareUnd				-0.766*
				(0.387)
Year×Month FE	✓	✓	✓	✓
Prov×Post FE	✓	✓	✓	✓
Full Controls		✓	✓	✓
May-Sep only			✓	
R2	0.303	0.303	0.300	0.308
Obs.	6768	6768	2820	6768

Note: controls include population (total and migrant) in 2003 and 2004, unemployment rate, employment in part-time, permanent, public, agricultural and hospitality jobs, average wage, days worked and a coastal dummy. Standard errors are clustered at the province level.

Triple DiD - Count DV

	(1) Linear	(2) Linear	(3) Neg. Bin.	(4) Poisson
Dd>35	0.015*	0.042	0.195***	0.196***
	(0.008)	(0.037)	(0.038)	(0.038)
Dd>35 × Post	0.005	-0.020	-0.060*	-0.072**
	(0.008)	(0.034)	(0.031)	(0.028)
Dd>35 × Post × HiUnd	-0.021**	0.008	0.000	0.006
	(0.008)	(0.030)	(0.040)	(0.040)
Year FE	Yes		Yes	Yes
Month FE	Yes		Yes	Yes
R2	0.268	0.295	0.280	
Obs.	6768	6768	6768	6624

Return

Triple DiD Results - Intensive Margin (Log DV)

	(1) Linear	(2) Linear	(3) Log+1	(4) Summer
Days>35	0.066***	0.037	0.010	0.029
	(0.016)	(0.022)	(0.012)	(0.027)
Days>35 × Post	-0.048***	-0.045**	0.003	-0.058**
	(0.016)	(0.021)	(0.012)	(0.022)
Days>35 × Post × HiUnd	0.026**	0.051*	-0.008	0.045
	(0.013)	(0.026)	(0.012)	(0.028)
Year ×Month FE	No	Yes	Yes	Yes
R2	0.168	0.437	0.334	0.426
Obs.	788	763	6768	670

Return

Triple DiD Results - Excluding 2008 Return

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) Logit
Dd>35	0.020**	0.001	0.002	0.001	0.082
	(0.008)	(0.008)	(0.011)	(0.013)	(0.064)
Dd>35 × Post	0.003	0.011	0.009	0.002	0.040
	(0.008)	(0.008)	(0.010)	(0.012)	(0.077)
Dd>35 × Post × HiUnd	-0.018**	-0.017*	-0.021*	-0.027	-0.169*
	(0.009)	(0.010)	(0.013)	(0.017)	(0.086)
Year×Month FE		✓	✓	✓	✓
Full controls			✓	✓	✓
May-Sep only				✓	
R2	0.187	0.293	0.302	0.300	
Obs.	6204	6204	6204	2585	6072

Triple DiD Results - Placebo Outcomes

Return

	(1) Cardio	(2) Resp.	(3) G.u.	(4) Inj.	(5) Intox.	(6) Total
Dd>35	-0.006*	-0.010	-0.007	-0.001	0.024***	-0.003**
	(0.003)	(0.007)	(0.004)	(0.005)	(0.005)	(0.002)
Dd>35 × Post	0.007	0.009	0.001	-0.003	-0.028***	0.003
	(0.005)	(0.007)	(0.005)	(0.005)	(0.008)	(0.002)
Dd>35 × Post × HiUnd	-0.006	-0.009	-0.003	0.000	-0.010	-0.002
	(0.005)	(0.008)	(0.005)	(0.005)	(0.021)	(0.002)
Year×Month FE	✓	✓	✓	✓	✓	✓
R2	0.974	0.971	0.967	0.956	0.740	0.994
Obs.	6767	6768	6768	6768	6075	6768

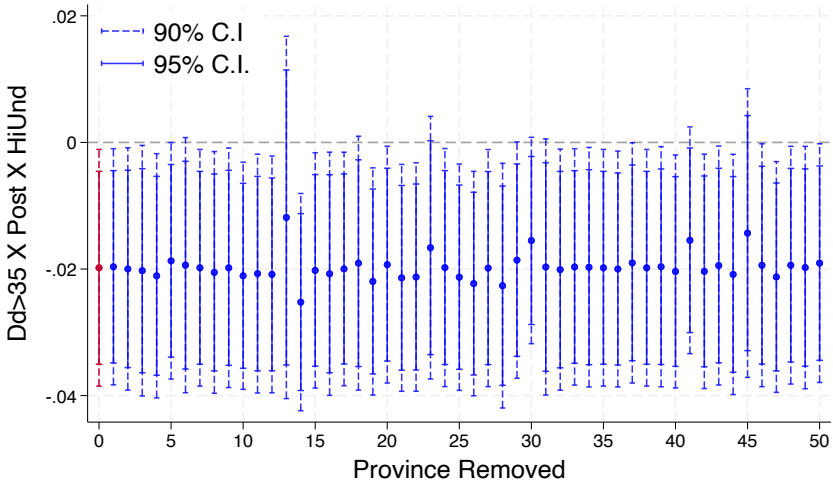
Triple DiD Results - Placebo Outcomes with Controls

Return

	(1) Cardio	(2) Resp.	(3) G.u.	(4) Inj.	(5) Intox.	(6) Total
Dd>35	0.002	-0.008	-0.009**	-0.002	0.019**	-0.003**
	(0.003)	(0.006)	(0.004)	(0.005)	(0.009)	(0.001)
Dd>35 × Post	-0.007*	0.007	0.008*	-0.001	-0.022*	0.003
	(0.004)	(0.006)	(0.004)	(0.005)	(0.013)	(0.002)
Dd>35 × Post × HiUnd	0.002	-0.011	-0.008*	-0.006	0.001	-0.003*
	(0.004)	(0.006)	(0.005)	(0.006)	(0.017)	(0.002)
Year×Month FE	✓	✓	✓	✓	✓	✓
Full Controls	✓	✓	✓	✓	✓	✓
R2	0.976	0.972	0.969	0.958	0.747	0.995
Obs.	6767	6768	6768	6768	6075	6768

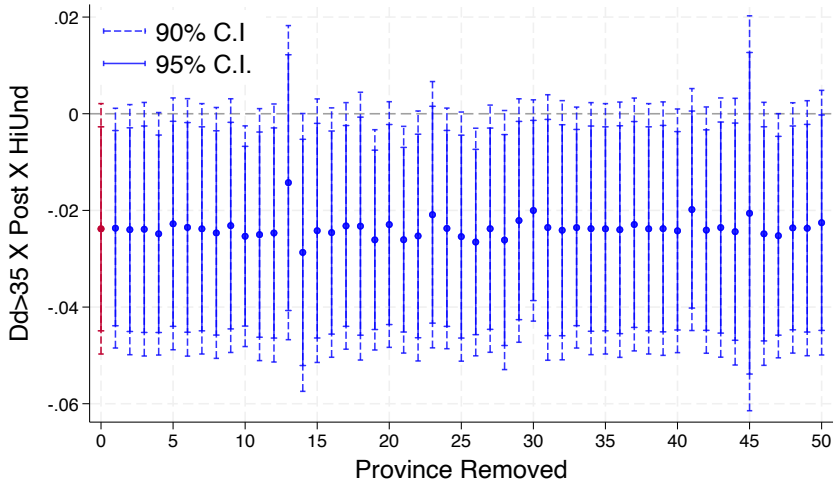
Triple DiD Results - Leave Out Provinces

Return



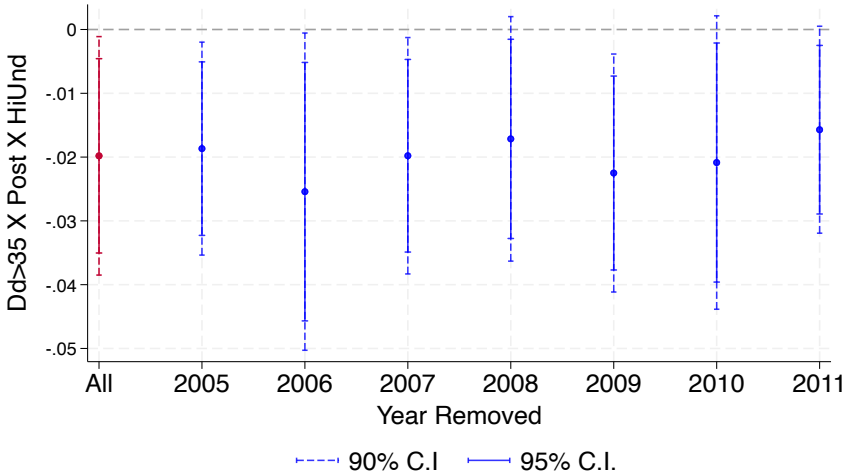
Triple DiD Results - Leave Out Provinces with Controls

Return



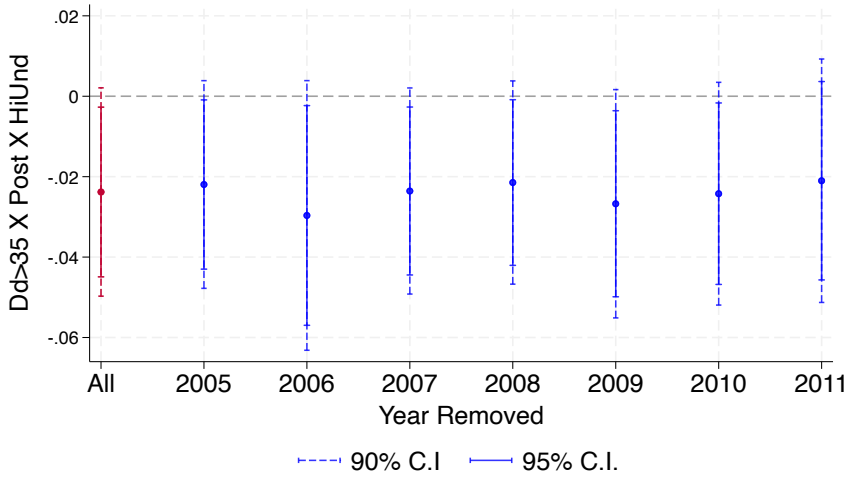
Triple DiD Results - Leave Out Years

Return

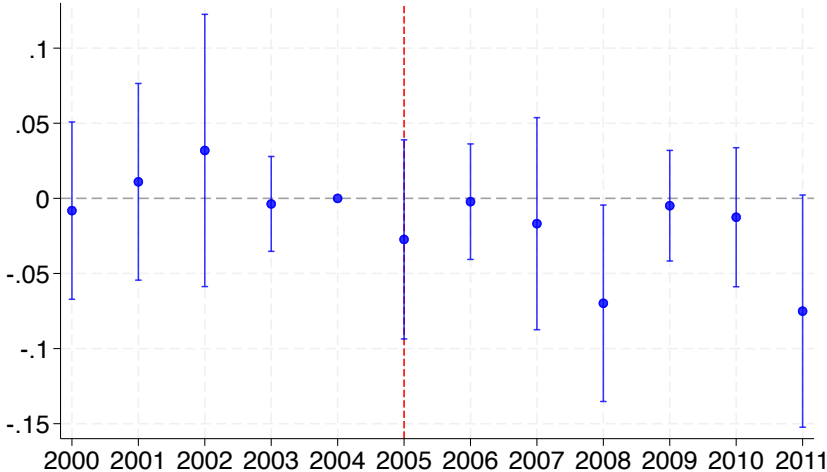


Triple DiD Results - Leave Out Years with Controls

Return

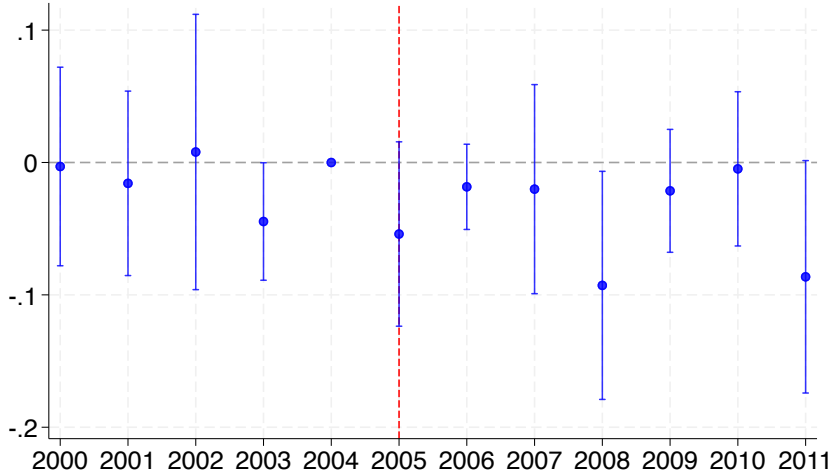


3DiD coefficients w/ dummy DV - No controls



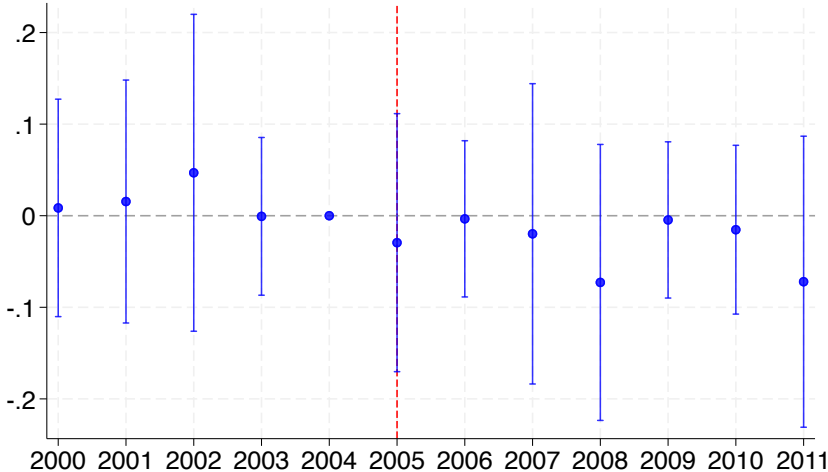
Return

3DiD coefficients w/ dummy DV - Only summer



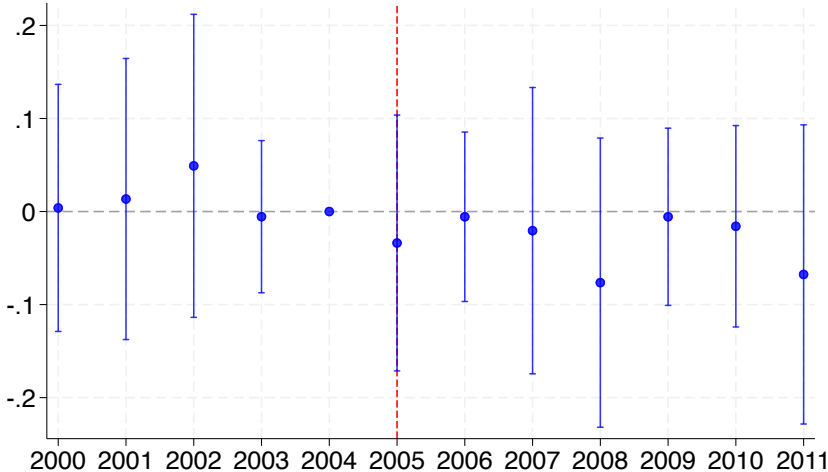
Return

3DiD coefficients w/ dummy DV - With controls



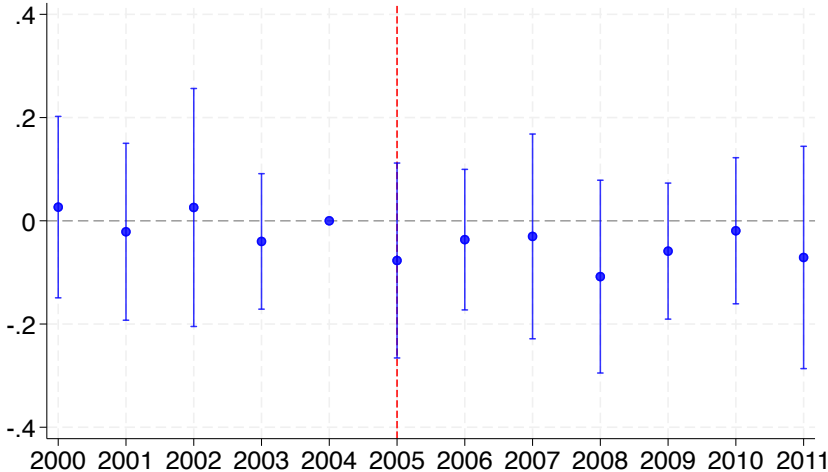
Return

3DiD coefficients w/ dummy DV - With full controls



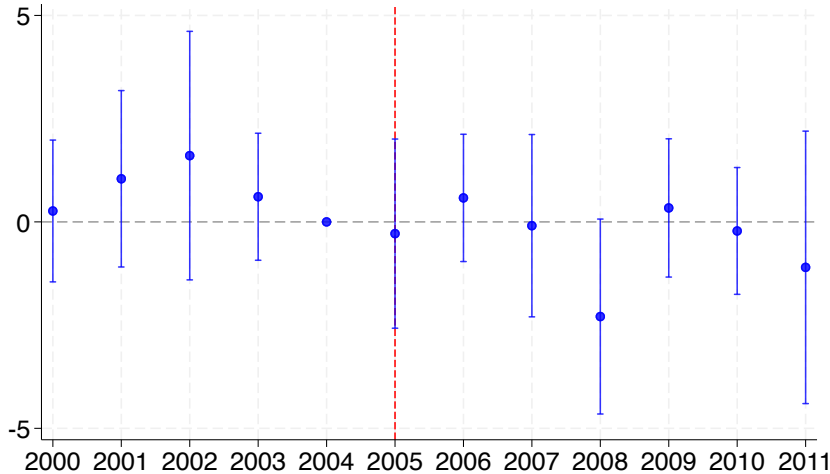
Return

3DiD coefficients w/ dummy DV - Only summer + controls



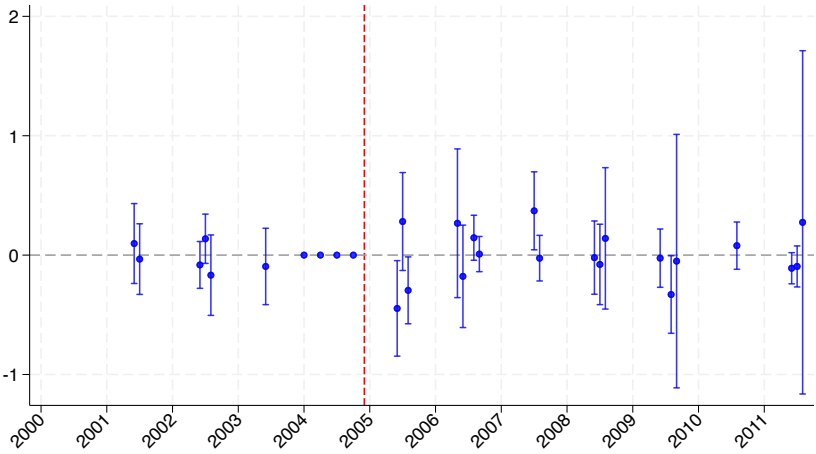
Return

3DiD coefficients w/ dummy DV - With continuous measure of undocumented migrants



Return

3DiD coefficients w/ dummy DV



Coefficients larger than |1| are omitted for visual clarity.

Return

Simple DiD Results - Other discharges

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × HiUnd	0.116	0.027	0.054*	0.136***	0.130***	-0.212***	0.084***
	(0.070)	(0.038)	(0.027)	(0.035)	(0.046)	(0.066)	(0.018)
Mean DV	0.324	4.883	5.020	5.011	5.104	1.728	7.762
R2	0.293	0.117	0.503	0.379	0.383	0.048	0.505
Obs.	764	6767	6768	6768	6768	6073	6768

Standard errors are clustered at the province level
* p<.1, ** p<.05, *** p<.01

Return

Simple DiD Results - Other discharges with controls

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × HiUnd	0.037	-0.008	0.040	0.065	0.166*	-0.458***	0.042
	(0.182)	(0.056)	(0.046)	(0.076)	(0.088)	(0.107)	(0.036)
Controls	✓	✓	✓	✓	✓	✓	✓
Mean DV	0.324	4.883	5.020	5.011	5.104	1.728	7.762
R2	0.382	0.975	0.971	0.967	0.955	0.738	0.994
Obs.	739	6767	6768	6768	6768	6073	6768

Standard errors are clustered at the province level
* p<.1, ** p<.05, *** p<.01

Return

Simple DiD Results - Other discharges with full controls

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × HiUnd	-0.051	-0.017	0.030	0.054	0.122	-0.456***	0.025
	(0.151)	(0.054)	(0.042)	(0.067)	(0.081)	(0.092)	(0.035)
Full Controls	✓	✓	✓	✓	✓	✓	✓
Mean DV	0.324	4.883	5.020	5.011	5.104	1.728	7.762
R2	0.387	0.975	0.971	0.968	0.956	0.741	0.995
Obs.	739	6767	6768	6768	6768	6073	6768

Note: controls include population (total and migrant) in 2003 and 2004, unemployment rate, employment in part-time, permanent, public, agricultural and hospitality jobs, average wage, days worked and a coastal dummy. Standard errors are clustered at the province and year-month level.

Return

Simple DiD Results - Other discharges with full controls and continuous share of undocumented migrants

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × ShareUnd	-2.655	2.088*	2.278*	3.899***	2.254	0.545	2.656***
	(2.057)	(1.124)	(1.133)	(1.336)	(2.458)	(4.437)	(0.677)
Full Controls	✓	✓	✓	✓	✓	✓	✓
Mean DV	0.324	4.883	5.020	5.011	5.104	1.728	7.762
R2	0.387	0.975	0.971	0.968	0.956	0.739	0.995
Obs.	739	6767	6768	6768	6768	6073	6768

Standard errors are clustered at the province level
* p<.1, ** p<.05, *** p<.01

Return

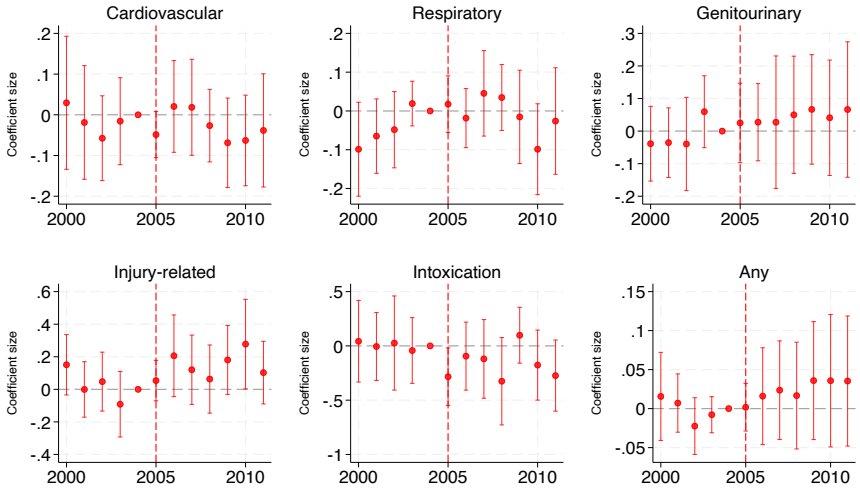
Simple DiD Results - Other discharges, inverse hyperbolic sine transformation on DVs with full controls

	(1) HRD	(2) Cardio	(3) Resp.	(4) G.u.	(5) Inj.	(6) Intox.	(7) Total
Post × HiUnd	0.005	-0.016	0.030	0.054	0.122	-0.259*	0.025
	(0.023)	(0.054)	(0.042)	(0.067)	(0.081)	(0.132)	(0.035)
Full Controls	✓	✓	✓	✓	✓	✓	✓
Mean DV	0.130	5.575	5.714	5.704	5.797	2.202	8.455
R2	0.279	0.973	0.971	0.968	0.956	0.720	0.995
Obs.	6768	6768	6768	6768	6768	6768	6768

Standard errors are clustered at the province level
* p<.1, ** p<.05, *** p<.01

Return

Simple DiD Results - Event study



Return