

Deterring Worker Complaints Worsens Workplace Safety: Evidence from Immigration Enforcement

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 - Occupational Safety and Health Administration (OSHA) ($\sim 25\%$) of inspections
 - OSHA inspects $< 1\%$ of establishments each year

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 - Workers know better than government where hazardous or illegal conditions are
 - But the **cost** to complain (knowledge, language, retaliation), hazards, might be correlated
- Might this regulatory approach affect the actual hazards workers face?
 - Workers' **threat** of complaining serves as deterrent for employers

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¹Hispanic/Latino/LatinX. Includes Mexican, Puerto Rican, Cuban, other. Term based on ACS.

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 - Work-related injuries are pervasive; cost **\$250 billion/year** (Leigh 2011)
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- We examine effect of immigration enforcement on workplace complaints and injuries
 - **Secure Communities**: localized enforcement program rolled out 2008–2013
 - Data on worker complaints and injuries from FOIA requests; inspection occurrences
 - **Triple-difference** research design to isolate causal effect

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- (Why) did ↓ threat of complaining lead to ↑ injuries? Secure Communities. . .
 - lowered **employer inputs** into safety (compliance with safety regulations)
 - Effects are absent for **unionized workers**

This Paper Summarized in One Tweet . . .



David Michaels ✓

@drdavidmichaels



A sure fire way to endanger the safety and health of all workers: terrify undocumented workers so they won't raise concerns about job site safety hazards.



Jacob Remes @jacremes · Oct 19, 2019

"One of the workers injured in the deadly collapse Oct. 12 of the unfinished Hard Rock Hotel in New Orleans has been detained for deportation by immigration authorities after he spoke about his experience with a television station"
nola.com/news/courts/ar...

10:29 AM · Oct 20, 2019 · [Twitter Web App](#)

Background and Conceptual Framework

So You Want to File a Complaint with OSHA...

- Workers have legal right to complain to OSHA under Section 11(c) of 1970 OSH Act

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osha.gov/workers/file_complaint.html



UNITED STATES
DEPARTMENT OF LABOR



How to File a Safety and Health Complaint

Occupational Safety and Health Administration

You (or your representative) have the right to file a confidential safety and health complaint and request an OSHA inspection of your workplace if you believe there is a serious hazard or if you think your employer is not following OSHA standards. The complaint should be filed as soon as possible after noticing the hazard. A signed complaint is more likely to result in an onsite inspection.



Online - Use the Online Complaint Form

Submit your complaint online to OSHA.



Fax/Mail/Email - Complete the [OSHA Complaint Form \[En Español\]](#), or Send a Letter Describing Your Complaint

Complete the complaint form or letter, and then fax, mail, or email it back to your [local OSHA office](#).



Telephone - Call Your [Local OSHA Office](#) or 800-321-6742 (OSHA)

OSHA staff can discuss your complaint with you and respond to any questions you may have.



In Person - [Visit Your Local OSHA Office](#)

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Why (or Why Not) Complain? (Weil and Pyles 2005; Yang 2019)

- Benefits:

- Complain → OSHA inspection → fewer injuries (Levine et al (2012); Johnson et al. (2022); Li & Singleton (2019))

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 - Retaliation is common in other domains (Dahl and Knepper 2022)

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- **Immigration enforcement** raises undocumented workers' costs of complaining

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- **Immigration enforcement** raises undocumented workers' costs of complaining
- “Chilling effect” extends to citizen and legal Hispanic workers (Alsan and Yang 2019)
 - *“You don't want to be the family member that because you signed up for coverage you're getting your grandmother your uncle, or your parent deported”* (PBS News Hour 2015)

Would a Lower $\Pr(\text{Complain})$ Cause Workers to Face Worse Workplace Hazards?

- If Workers' $\Pr(\text{Complain} \mid \text{hazard})$ falls. . .
 - . . . Employers' expected benefits of remediating hazards is lower (less scrutiny, publicity)
 - . . . Less incentive for employers to remediate safety hazards (Becker 1968)

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- But wait...don't employers already have incentives to minimize injuries?

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- But wait...don't employers already have incentives to minimize injuries?
 - Many eligible injuries do not get reported to workers' compensation (Biddle and Roberts 2003)
 - Frictions, monopsony, dampen discipline of competition (Lavetti and Schmutte 2018)

Data

Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries
2. Workforce demographics
3. Local immigration enforcement

▶ Roll-out

▶ Correlates

▶ Deportations

Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries

- **Complaints:**

1.1 All complaints received by OSHA (obtained through FOIA request)

1.2 OSHA inspections triggered by worker complaint

- **Injuries:** OSHA inspections triggered by serious accident

2. Workforce demographics

3. Local immigration enforcement

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Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries
2. Workforce demographics
 - Ideal: share of Hispanic workers by workplace
 - Our proxy: share of Hispanic workers at county-industry level
 - American Community Survey 2005–2007
 - Industries: ~ 2-digit NAICS codes (Ag, Construction, Manufacturing...)
3. Local immigration enforcement

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Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries
2. Workforce demographics
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 - County participation in **Secure Communities**
 - Local law enforcement agencies automatically share arrestees' fingerprints with ICE
 - Mandatory participation, rolled out across counties 2008 – 2013

▶ Roll-out

▶ Correlates

▶ Deportations

Summary Stats by Industry

industry	Share Hispanic workers	total # complaints	# formal complaints	# complaint inspections	# injury inspections
Agriculture, forestry, fishing	0.42 (0.29)	5.30 (11.66)	1.84 (3.90)	3.38 (8.28)	3.16 (6.28)
Construction	0.19 (0.19)	14.73 (27.14)	3.27 (7.20)	8.97 (16.08)	3.91 (12.45)
Manufacturing	0.11 (0.13)	14.84 (25.47)	4.22 (7.88)	6.43 (10.37)	1.53 (9.30)
Wholesale trade	0.12 (0.15)	5.26 (8.80)	1.26 (2.32)	2.08 (3.20)	0.58 (2.42)
Retail trade	0.09 (0.14)	8.31 (15.56)	1.68 (3.73)	2.20 (4.42)	0.37 (1.86)
Transportation/ warehousing	0.11 (0.15)	13.25 (22.87)	3.43 (6.24)	3.81 (6.11)	1.04 (3.71)
Technical Services	0.07 (0.10)	6.41 (14.21)	1.27 (3.07)	1.50 (3.29)	0.34 (1.78)
Admin and Support Services	0.18 (0.17)	6.12 (9.58)	1.45 (3.05)	1.95 (3.48)	1.08 (3.89)
Education Services	0.09 (0.11)	5.94 (15.54)	2.21 (5.18)	0.55 (1.39)	0.14 (0.70)
Health Care and Social Assistance	0.08 (0.13)	7.65 (15.50)	1.64 (3.66)	1.50 (3.13)	0.11 (0.60)
Arts, Entertainment, Recreation	0.10 (0.12)	3.38 (7.22)	0.69 (1.66)	0.69 (1.49)	0.36 (1.37)
Accomodation and Food Services	0.16 (0.16)	4.97 (12.13)	0.89 (2.89)	1.23 (5.15)	0.17 (0.81)
Repair Services	0.17 (0.19)	5.36 (8.84)	1.13 (2.15)	1.74 (2.96)	0.51 (1.74)
Other Services	0.13 (0.15)	3.92 (7.14)	0.86 (1.77)	1.05 (2.01)	0.16 (0.66)
Total	0.12 (0.16)	8.51 (17.68)	2.00 (4.84)	2.97 (7.30)	0.86 (5.35)

Effect of immigration enforcement on complaints to OSHA and workplace injuries

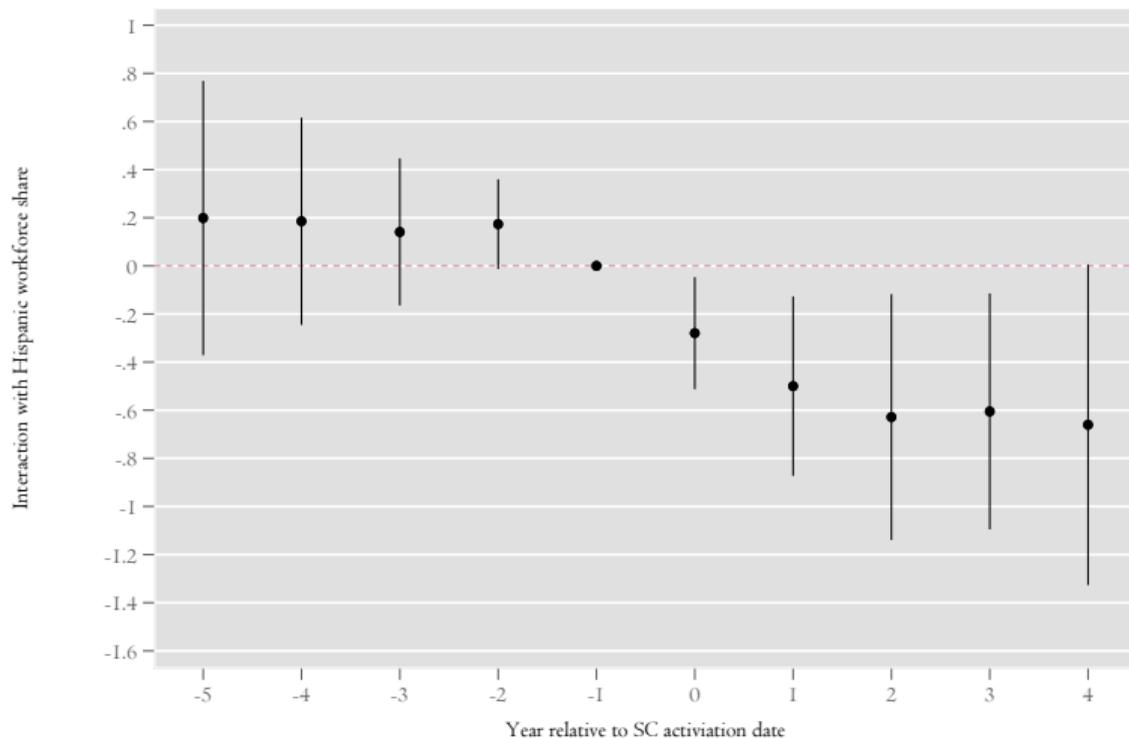
Event study Regression Specification

For county c , industry i and year t :

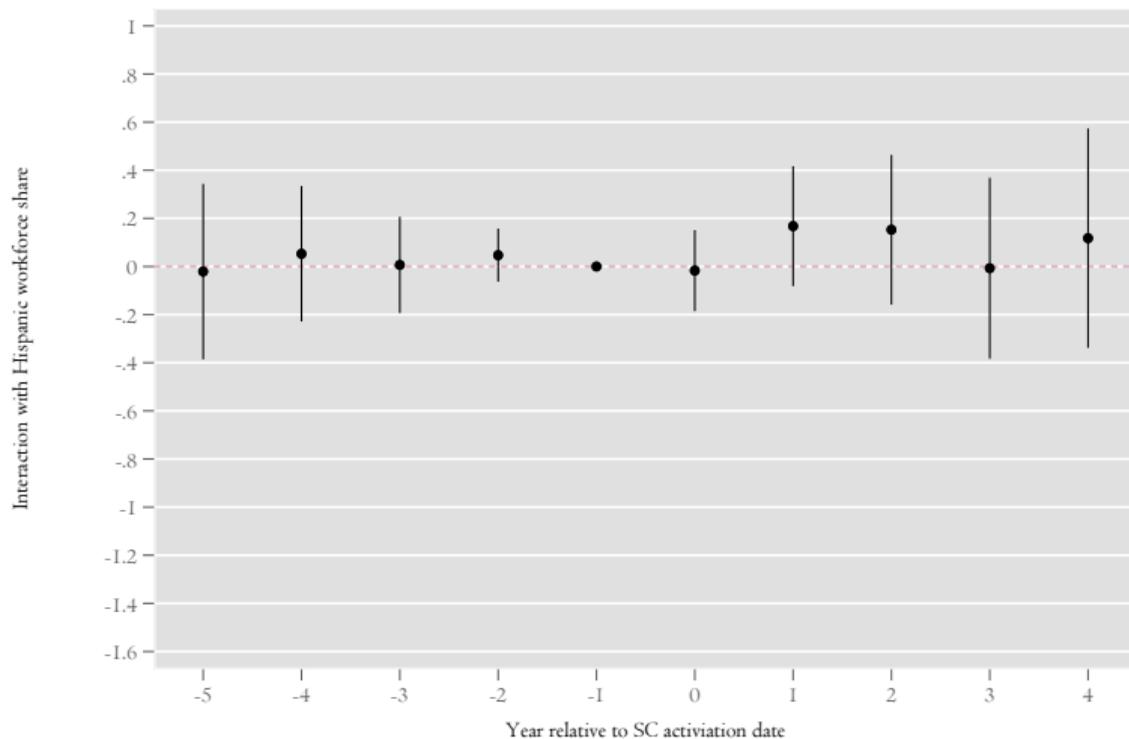
$$\begin{aligned} \text{asinh}(Y_{cit}) &= \sum_{k \neq -1} \beta_1^k (I_{c,t=k}) + \sum_{k \neq -1} \beta_2^k (I_{c,t=k} \times \text{Hispanic}_{ci}) \\ &+ \Gamma \times X_{cit} \\ &+ \zeta_{ci} + \eta_{it} + \theta_{rt} + \text{Hispanic}_{ci} \times \delta_t + \epsilon_{cit} \end{aligned}$$

- Y_{cit} = Number of complaints or number of injuries
- $I_{c,t=k}$ = Indicator for year k relative to Secure Communities activation in county c
- Hispanic_{ci} = Hispanic workforce share [0,1]
- X_{cit} : { asinh(employment) + asinh(programmed inspections) }
- SEs clustered by county, regression weighted by 2005–2007 employment

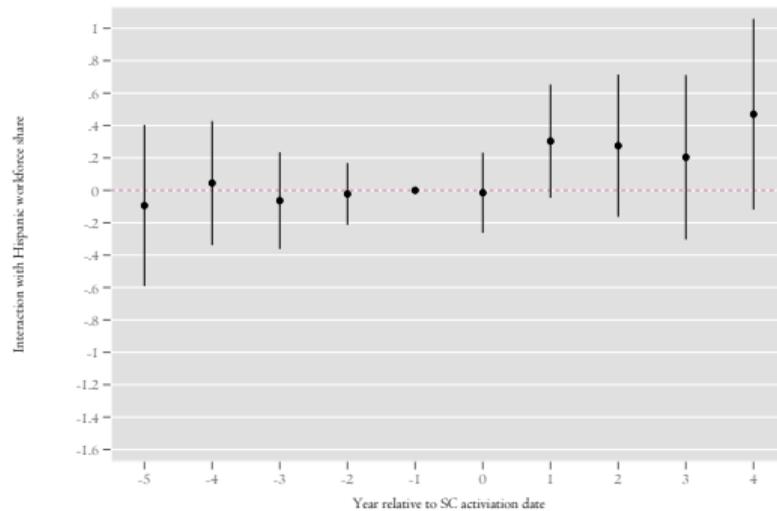
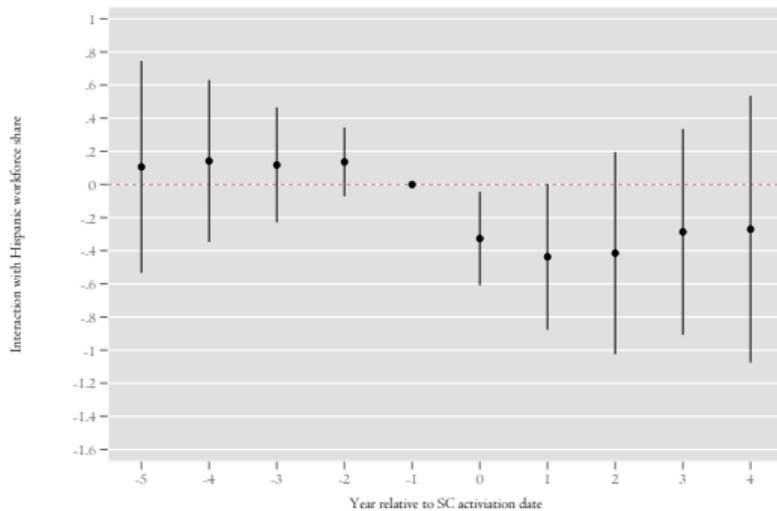
Immigration enforcement leads to immediate & persistent drop in **complaints** in workplaces with Hispanic workers



... But Immigration enforcement leads to **More** workplace injuries



Effects on Complaints and Injuries: Excluding Services



Effect of immigration enforcement on complaints and injuries: Regression estimates

Dependent variable:	Inverse hyperbolic sine of			
	Total complaints (1)	Formal complaints (2)	Complaint-driven inspections (3)	Injury-driven inspections (4)
SC	0.099*** (0.036)	0.019 (0.035)	0.113*** (0.031)	-0.020 (0.014)
SC×Hispanic share	-0.64** (0.26)	-0.48*** (0.17)	-0.40** (0.16)	0.19** (0.08)
Mean Dep Var (in levels)	8.51	2.00	2.97	0.86
Mean share Hispanic if high-Hispanic share=1	0.38	0.38	0.38	0.38
# Observations	472,164	472,164	472,164	472,164

Interpreting the magnitudes

- If we assume that:
 - Immigration enforcement has zero effect on non-Hispanic workers
 - The effect on Hispanic workers is independent of demographics of co-workers

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- If we assume that:
 - Immigration enforcement has zero effect on non-Hispanic workers
 - The effect on Hispanic workers is independent of demographics of co-workers
- Then Secure Communities
 - Reduced **complaints** by Hispanic workers by **40–50%**
 - Increased risk of **injury** among Hispanic workers by **17%**

Results are robust to...

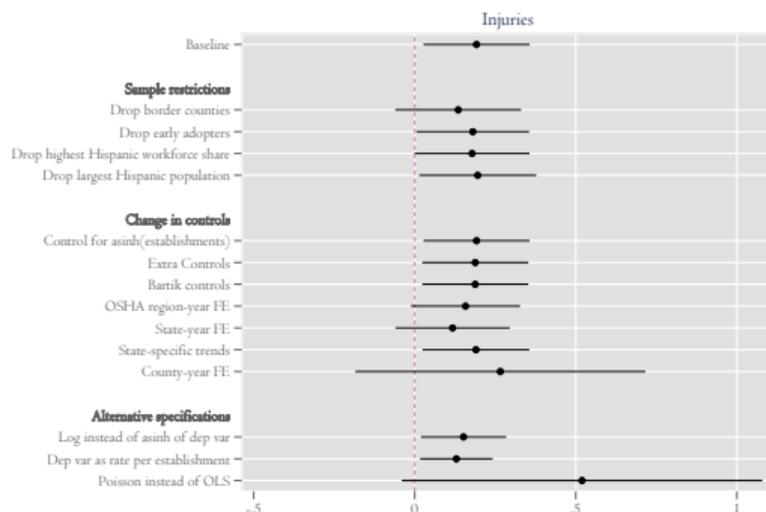
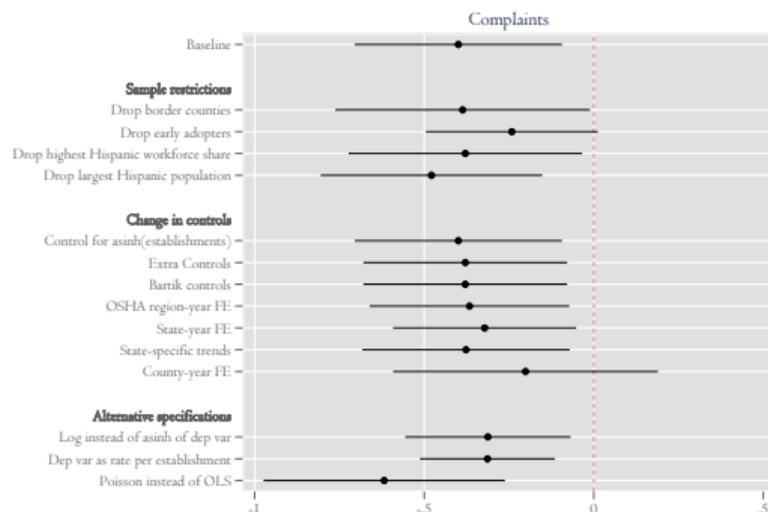
- Alternative exposure measures: non-citizens, Hispanic non-citizens [▶ Show](#)
- Alternative measure of Hispanic share from QWI instead of ACS [▶ IV](#)
- Bias from heterogeneous treatment effects (Goodman-Bacon 2021) [▶ Bacon](#)

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- Lots of other stuff ...

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(Why) Does a Lower $\Pr(\text{Complain})$
Lead to More Injuries?

Why Did Secure Communities Lead to More Workplace Injuries?

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Secure Communities ...

1. ... reduced **compliance** with OSHA regulations at workplaces with Hispanic workers

Why Did Secure Communities Lead to More Workplace Injuries?

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2. . . . Had no effect on complaints or injuries at **unionized workplaces**

Why Did Secure Communities Lead to More Workplace Injuries?

Secure Communities . . .

1. . . . reduced **compliance** with OSHA regulations at workplaces with Hispanic workers
2. . . . Had no effect on complaints or injuries at **unionized workplaces**
3. . . . also increased **minimum wage violations** for Hispanic workers
4. . . . led to **tiny** changes in worker composition (quits, turnover)

Measuring the Effect on Compliance with safety regulations

- One of employers' safety inputs is compliance with government safety+health regulations
- OSHA's inspection database (IMIS) includes number of various categories of **violations** detected in each inspection
- Restrict attention to violations in “programmed inspections” (which are exogenous to immigration enforcement)

Immigration enforcement leads to worse OSHA compliance at workplaces with more Hispanic workers

Dep Var = # of	Overall violations (1)	Serious violations (2)	Repeat or Willful violations (3)
SC	-0.08 (0.07)	-0.10 (0.07)	-0.01 (0.01)
SC×Hispanic share	0.60* (0.31)	0.71** (0.28)	0.05 (0.03)
Exposure measure × year	✓	✓	✓
County × industry FE	✓	✓	✓
Industry × year FE	✓	✓	✓
OSHA region × year FE	✓	✓	✓

Labor Unions and the Costs/Benefits of Complaining

- Labor unions:
 - solve “public goods” problem by filing complaints directly (Weil and Pyles 2005)
 - Keep identity of worker anonymous after complaint (Morantz 2018)
 - Include safety-specific provision in contract agreements (Hirsch et al. 1997)

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 - Include safety-specific provision in contract agreements (Hirsch et al. 1997)
- Hispanic workers’ union membership rates very similar to national average (BLS)
- Unionized workplaces with Hispanic workers should be **unaffected** by Secure Communities

WORKPLACE PROTECTIONS FOR IMMIGRANT WORKERS



HERE ARE SOME OF THE SAFEGUARDS OUR IMMIGRANT MEMBERS ENJOY THROUGH THE STRONG CONTRACT LANGUAGE MANY OF OUR LOCALS HAVE WON IN BARGAINING:

- Employers can't discriminate against a worker because of their national origin, immigration status, or in the event their work authorization changes.
- Workers get a paid holiday to attend their citizenship swearing-in ceremony without losing compensation for that time off.
- Employers contribute to a joint fund with workers for legal assistance on immigration and naturalization proceedings.
- If a worker is fired or resigns because of an issue in their work authorization, they get 12 months to provide proof of work authorization for immediate rehire without loss of seniority.
- Employers must contact the Union immediately in the event of an inquiry into a worker from the Department of Homeland Security.
- The employers are also expected to refuse ICE agents entrance to the workplace or inspection of worker documents with the exception of individual investigations.

Labor Unions mitigate the chilling effect of immigration enforcement

	Non-unionized (1)	Unionized (2)	Non-Unionized (3)	Unionized (4)
Dependent variable = inverse hyperbolic sine of . . .				
	Complaint-Driven Inspections		Injury-Driven Inspections	
SC	0.088*** (0.033)	0.032 (0.023)	-0.055*** (0.021)	-0.007 (0.011)
SC×Hispanic share	-0.53*** (0.18)	-0.05 (0.15)	0.29** (0.12)	0.10 (0.09)
p-value on difference:	0.02		0.07	
Asinh(programmed inspections)	✓	✓	✓	✓
Asinh(employment)	✓	✓	✓	✓
Hispanic share × year	✓	✓	✓	✓
County × industry FE	✓	✓	✓	✓
Industry × year FE	✓	✓	✓	✓
OSHA region × year FE	✓	✓	✓	✓
OSHA jurisdiction × year FE	✓	✓	✓	✓
Mean Dep Var (in levels)	3.80	0.84	1.17	0.25
# Observations	216,411	216,411	216,411	216,411

Conclusion

- The threat of complaining has a meaningful effect on workers' safety and health
- Hispanic (esp. immigrant) workers face especially large barriers to complain
- Going forward: how to design a system for vulnerable workers to speak up about safety hazards?

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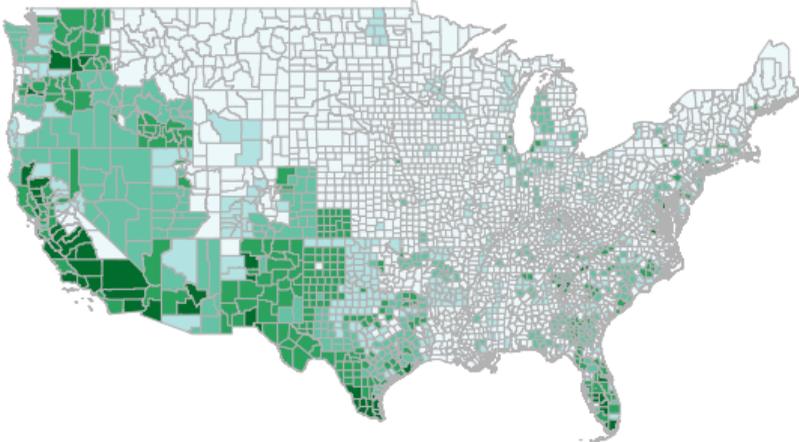
Appendix

Measuring worker complaints and workplace injuries

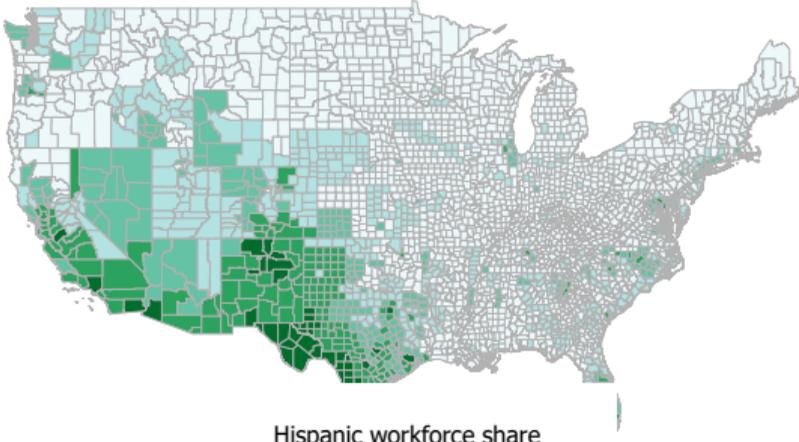
- Source: OSHA's Integrated Management Information Systems (IMIS)
 - Each inspection: date, reason, employer location/industry/name/etc.
- Among inspections 2003–2016 (~ 100,000 / year):
 - ~ 20% triggered by **worker complaint**
 - ~ 5% triggered by **serious accident**
 - Most of rest: “programmed” (exogenous, conditional on industry etc.)

Spatial distribution of Hispanic workforce share

Agriculture



Construction



Hispanic workforce share

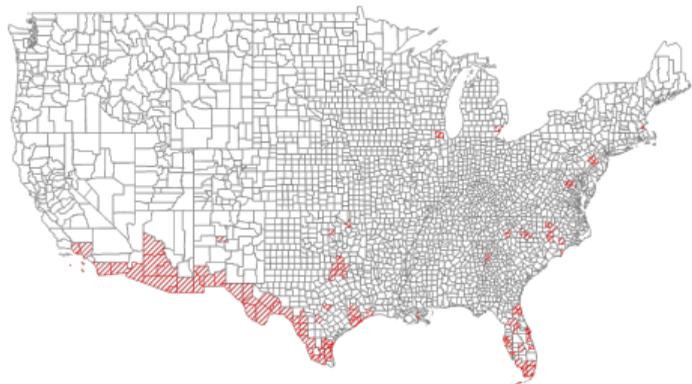


≤ 0.07
0.07-0.17
0.17-0.32
0.32-0.56
0.56-1

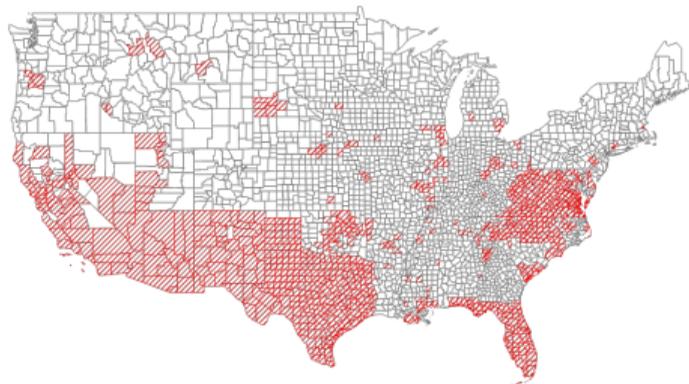
◀ Data

Roll-out of Secure Communities

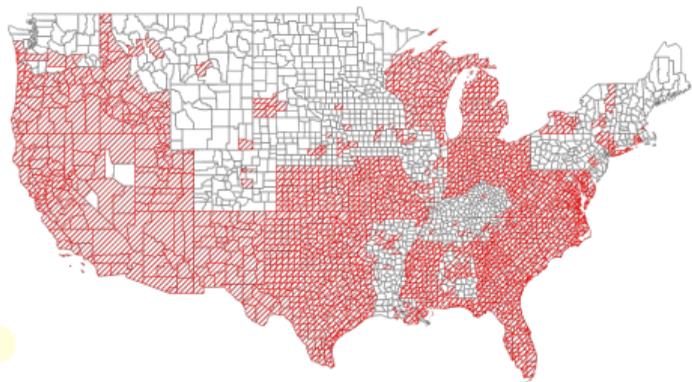
2009



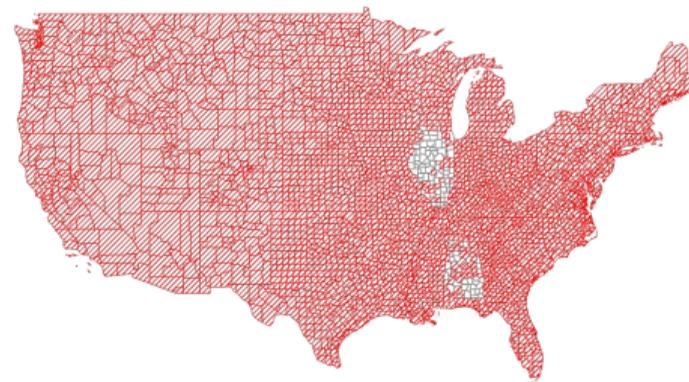
2010



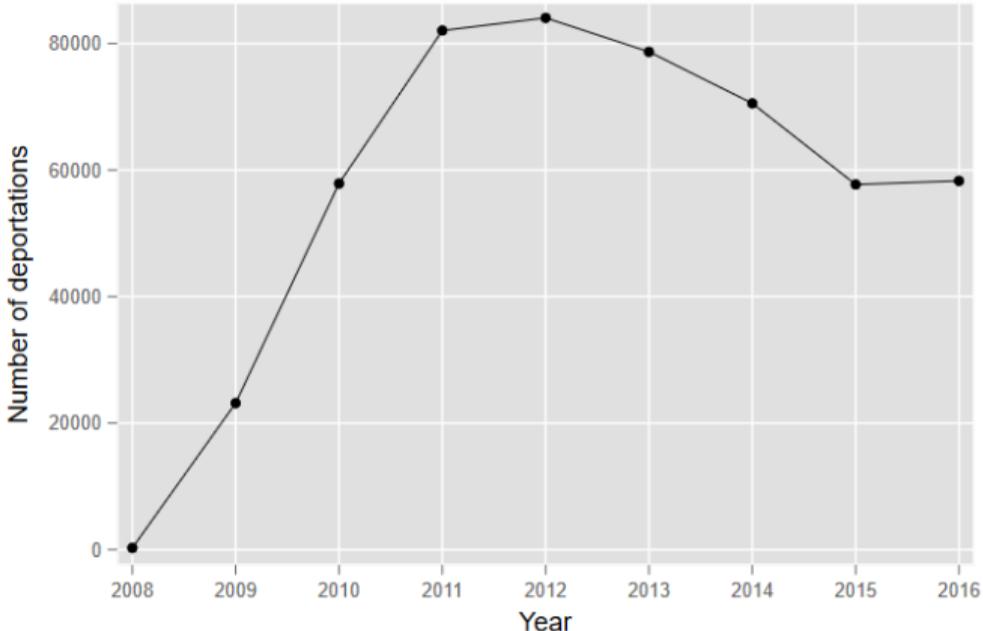
2011



2012



Secure Communities-related deportations over time

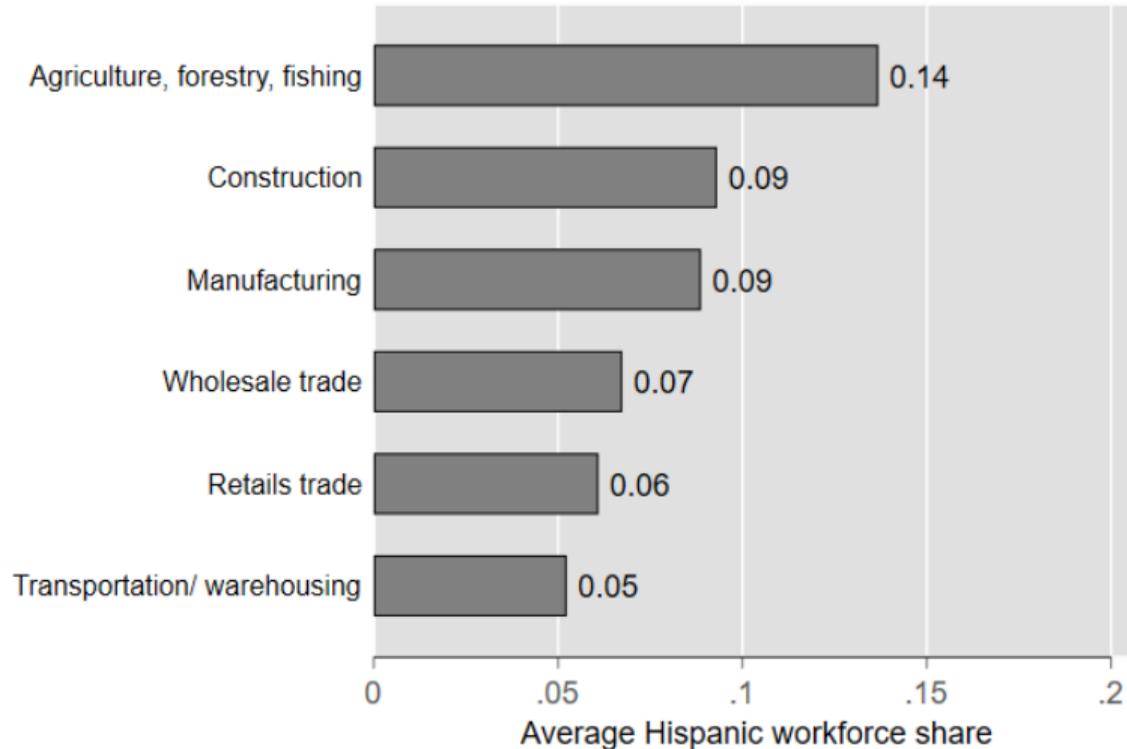


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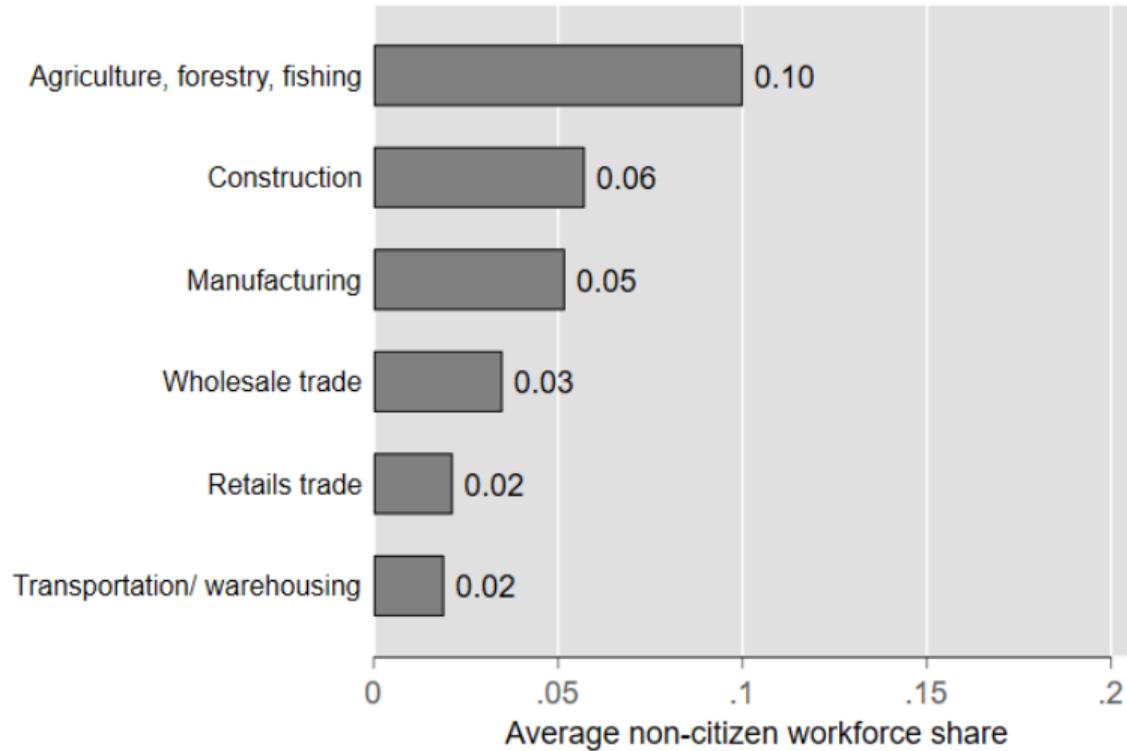
Sample

- 48 contiguous U.S. states + DC
- Years: 2003–2016
- Agriculture, construction, manufacturing industries (consider all industries in robustness checks)
- County-industries with at least 96 employees on average
- 103,488 county-industry-year observations

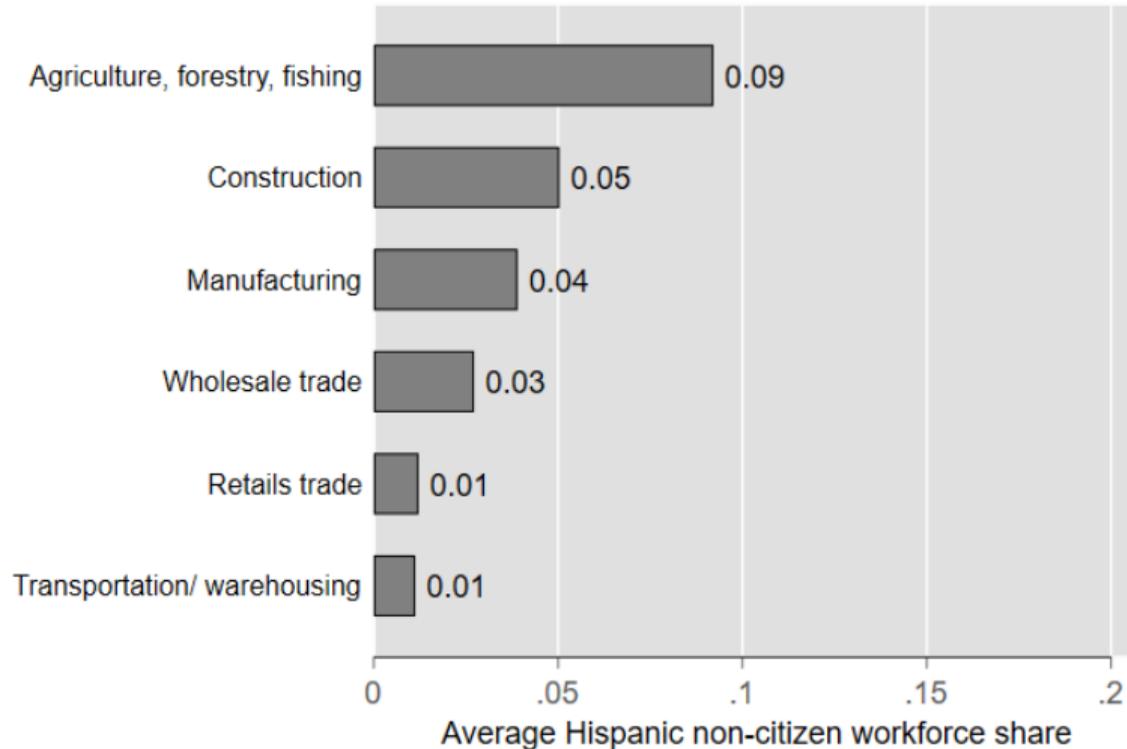
Hispanic workforce share by industry



Non-citizen workforce share by industry

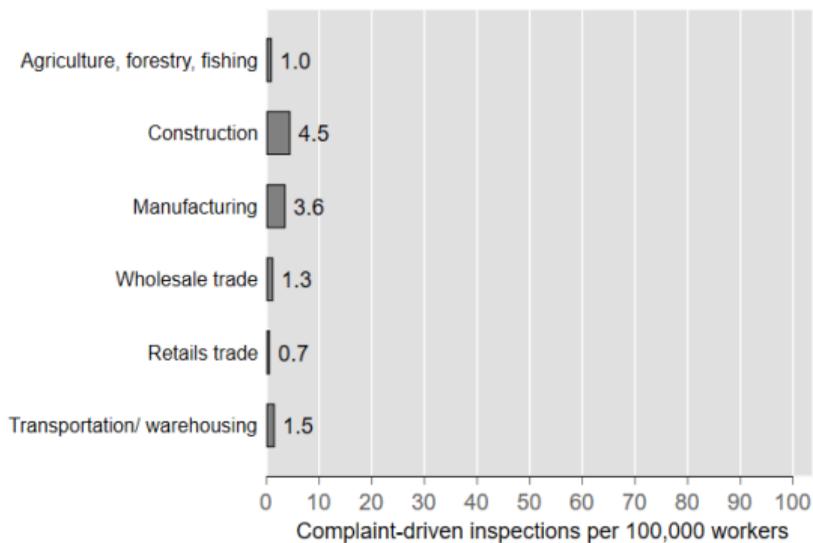


Hispanic non-citizen workforce share by industry

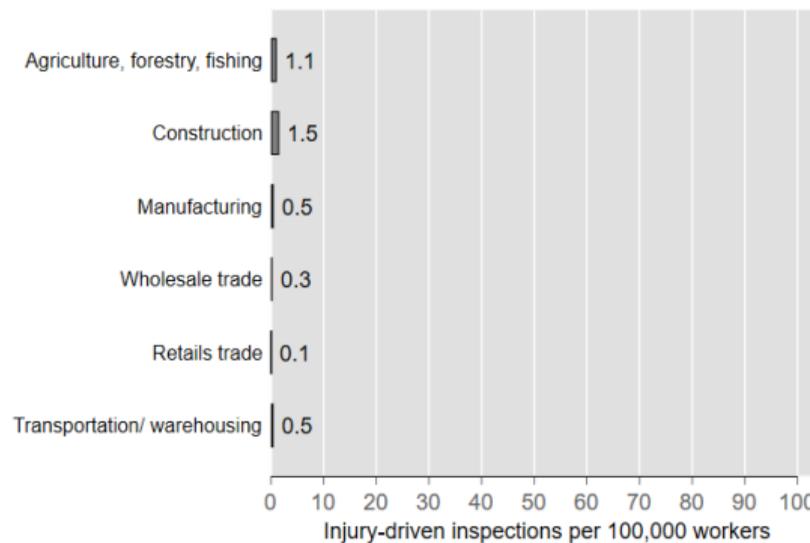


Worker complaints and workplace injury rates by industry

Worker complaints



Workplace injuries



◀ Sample

Robustness checks: alternative exposure measure

Exposure measure:	(1) Hispanic	(2) Non-citizen	(3) Hispanic non-citizen
Dependent variable:	asinh(complaint-driven inspections)		
SC	0.099*** (0.036)	0.094*** (0.035)	0.082*** (0.029)
SC×Hispanic share	-0.64** (0.26)		
SC×non-citizen share		-0.83** (0.42)	
SC×Hispanic non-citizen share			-1.07** (0.45)
Dependent variable:	asinh(injury-driven inspections)		
SC	-0.02 (0.01)	-0.02 (0.01)	-0.01 (0.01)
SC×Hispanic share	0.19** (0.08)		
SC×non-citizen share		0.31** (0.13)	
SC×Hispanic non-citizen share			0.36** (0.17)

Significance codes: * $p < .1$, ** $p < .05$, *** $p < .01$. Heteroskedasticity-robust standard errors clustered at the county in parentheses.

Accounting for measurement error with IV

IV = Hispanic workforce share from Quarterly Workforce Indicators (QWI)

Dependent variable:	Inverse Hyperbolic Sine of the Number of:			
	Complaint Inspections		Injury Inspections	
Model:	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
SC	0.098*** (0.036)	0.099*** (0.036)	-0.022 (0.017)	-0.021 (0.017)
SC×Hispanic share [QWI]	-0.78*** (0.30)		0.19* (0.11)	
SC × Share Hispanic workers		-0.71*** (0.26)		0.18* (0.10)
Asinh(programmed inspections)	✓	✓	✓	✓
Asinh(employment)	✓	✓	✓	✓
Hispanic workforce share × year	✓	✓	✓	✓
County × industry FE	✓	✓	✓	✓
Industry × year FE	✓	✓	✓	✓
OSHA region × year FE				
OSHA jurisdiction × year FE	✓	✓	✓	✓
# Observations	400,283	400,283	400,283	400,283

Unionized workers as a “placebo group”

- Labor unions:
 - solve “public goods” problem by filing complaints directly (Weil and Pyles 2005)
 - Keep identity of worker anonymous after complaint (Morantz 2018)
 - Include safety-specific provision in contract agreements (Hirsch et al. 1997)

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- Labor unions:
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- Hispanic workers’ union membership rates very similar to national average (BLS)
- Unionized workplaces with Hispanic workers should be **placebo group**

WORKPLACE PROTECTIONS FOR IMMIGRANT WORKERS



HERE ARE SOME OF THE SAFEGUARDS OUR IMMIGRANT MEMBERS ENJOY THROUGH THE STRONG CONTRACT LANGUAGE MANY OF OUR LOCALS HAVE WON IN BARGAINING:

- Employers can't discriminate against a worker because of their national origin, immigration status, or in the event their work authorization changes.
- Workers get a paid holiday to attend their citizenship swearing-in ceremony without losing compensation for that time off.
- Employers contribute to a joint fund with workers for legal assistance on immigration and naturalization proceedings.
- If a worker is fired or resigns because of an issue in their work authorization, they get 12 months to provide proof of work authorization for immediate rehire without loss of seniority.
- Employers must contact the Union immediately in the event of an inquiry into a worker from the Department of Homeland Security.
- The employers are also expected to refuse ICE agents entrance to the workplace or inspection of worker documents with the exception of individual investigations.

Unions mitigate the chilling effect of immigration enforcement

	Non-unionized (1)	Unionized (2)	Non-Unionized (3)	Unionized (4)
Dependent variable = inverse hyperbolic sine of . . .				
	Complaint-Driven Inspections		Injury-Driven Inspections	
SC	0.088*** (0.033)	0.032 (0.023)	-0.055*** (0.021)	-0.007 (0.011)
SC×Hispanic share	-0.53*** (0.18)	-0.05 (0.15)	0.29** (0.12)	0.10 (0.09)
p-value on difference:	0.02		0.07	
Asinh(programmed inspections)	✓	✓	✓	✓
Asinh(employment)	✓	✓	✓	✓
Hispanic share × year	✓	✓	✓	✓
County × industry FE	✓	✓	✓	✓
Industry × year FE	✓	✓	✓	✓
OSHA region × year FE	✓	✓	✓	✓
OSHA jurisdiction × year FE	✓	✓	✓	✓
Mean Dep Var (in levels)	3.80	0.84	1.17	0.25
# Observations	216,411	216,411	216,411	216,411

Effect of immigration enforcement on complaints and injuries: States under Federal OSHA jurisdiction

Dependent variable:	Inverse hyperbolic sine of			
	Total complaints (1)	Formal complaints (2)	Complaint-driven inspections (3)	Injury-driven inspections (4)
SC	0.045 (0.038)	0.059 (0.040)	0.067** (0.031)	-0.019 (0.017)
SC×Hispanic share	-0.85** (0.33)	-0.78*** (0.23)	-0.61*** (0.18)	0.21*** (0.08)
Mean Dep Var (in levels)	8.51	2.00	2.97	0.86
Mean share Hispanic if high-Hispanic share=1	0.38	0.38	0.38	0.38
# Observations	472,164	472,164	472,164	472,164

Immigration Enforcement and Compliance with the Minimum Wage

- Imperfect enforcement \Rightarrow imperfect compliance with minimum wage laws (Ashenfelter and Smith 1979; Clemens and Strain 2020)
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Immigration Enforcement and Compliance with the Minimum Wage

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- Like OSHA, Wage&Hour relies on worker complaints to target enforcement
- Did Secure Communities **increase minimum wage violations** for Hispanic workers?
 - **IPUMS: CPS-MORG** data on hourly wage, worker ethnicity, other demographics
 - \sim 40% of respondents have county of residence in IPUMS
 - Merge with state-year effective minimum wage rate
 - Sample: workers in bottom quintile of wage distribution (Fine et al. 2020)

Effect of Secure Communities on Minimum Wage Violations

$$\mathit{Below}_{ict} = \beta_1 \mathit{SC}_{ct} + \beta_2 \mathit{SC}_{ct} \times \mathit{Hispanic}_i + \beta_3 \mathit{MW}_{c(s)t} + \Gamma \mathbf{X}_i + \zeta_c + \theta_{rt} + \epsilon_{ict}$$

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Sample Dependent variable:	All workers		Hourly workers	
	Wage < Min Wage (1)	Wage < (Min Wage - 0.25) (2)	Wage < Min Wage (3)	Wage < (Min Wage - 0.25) (4)
SC	-0.001 (0.002)	0.000 (0.002)	-0.002 (0.003)	-0.001 (0.003)
Hispanic=1 × SC	0.008*** (0.002)	0.007*** (0.001)	0.006*** (0.002)	0.005*** (0.001)
County FE	✓	✓	✓	✓
Census region × year × quarter FE	✓	✓	✓	✓
Mean Dep Var	0.04	0.03	0.04	0.03
# Observations	850,997	850,997	475,761	475,761

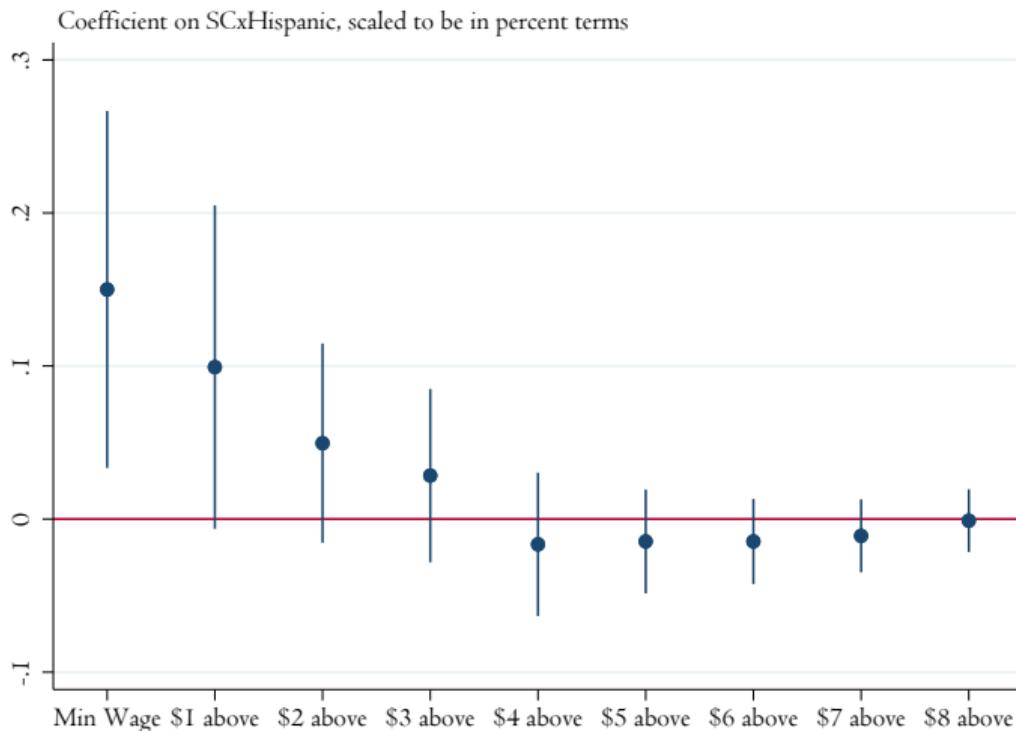
Significance codes: * $p < .1$, ** $p < .05$, *** $p < .01$. Heteroskedasticity-robust standard errors clustered at the county in parentheses.

Is the Mechanism Truly due to Lower Pr(Complain)?

- Is the effect of Secure Communities on safety, minimum wage violations, due to \downarrow Pr(complain), or general reduction in bargaining power?

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- Implies elasticity of injuries w.r.t. $\Pr(\text{complain})$ of 0.45!
 - Shouldn't labor market competition, other forces, mute the role of complaints?

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 - Verify low magnitude of “exit” option using data from QWI

▶ Exit results

Secure Communities Had Only a Tiny Effect on Hispanic workers' Separation rate

Dependent variable:	asinh(employment), Hispanic workers (1)	separation rate, ^a Hispanic workers, (2)	stable turnover rate, ^b Hispanic workers (3)
SC	-0.020*** (0.004)	0.010*** (0.002)	-0.000 (0.000)
County × industry FE	✓	✓	✓
Industry × year FE	✓	✓	✓
OSHA region × year FE	✓	✓	✓
Mean Dep Var (in levels)	4271.05	0.27	0.13
# Observations	422,184	341,777	289,229

Significance codes: * $p < .1$, ** $p < .05$, *** $p < .01$. Heteroskedasticity-robust standard errors clustered at the county in parentheses.