

Cracking Down, Pricing Up: Housing Supply in the Wake of Mass Deportation

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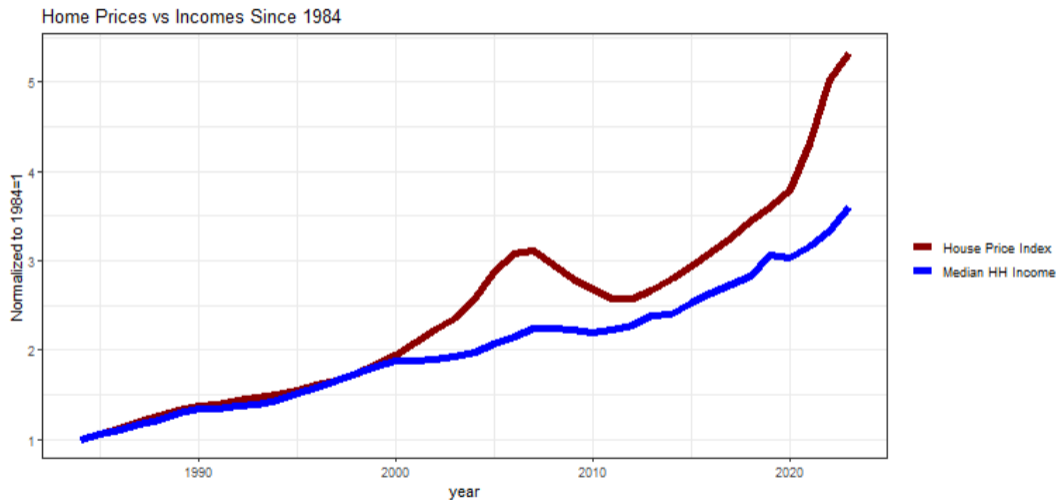
Mengqi Wang
Amherst College

Dayin Zhang
UW-Madison

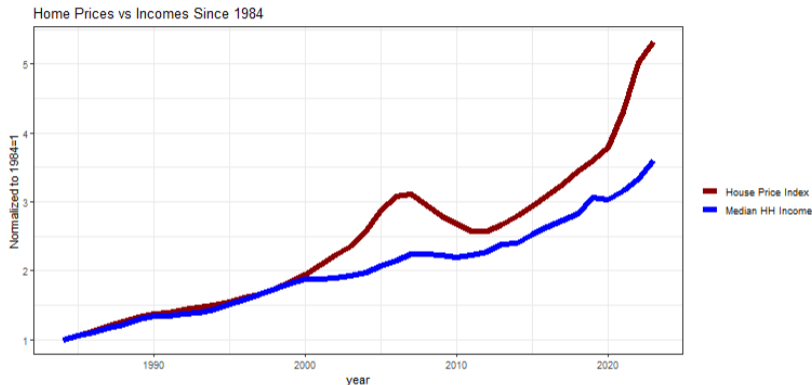
ABFER, Singapore

May 2025

Housing Affordability Concerns Becoming Pervasive



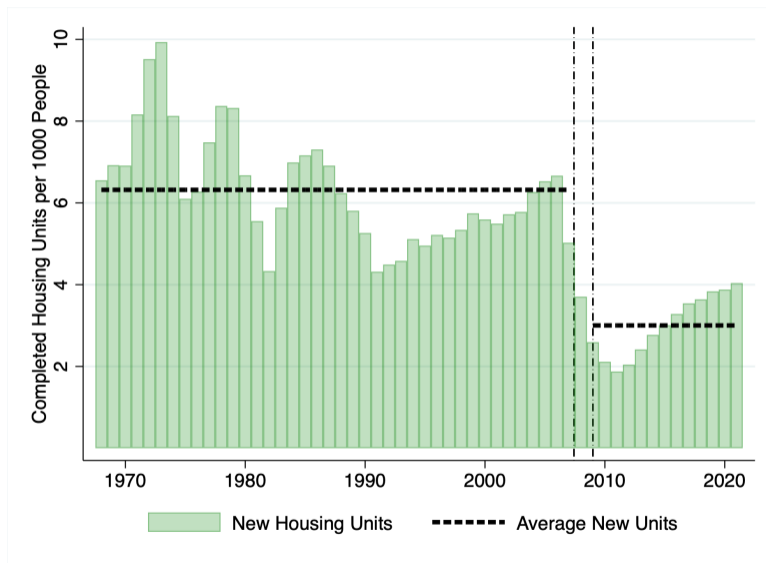
Housing Affordability Concerns Becoming Pervasive



“The primary and persistent challenge of the housing market in 2023 is a lack of attainable, affordable housing in the single-family and multifamily markets...**The fundamental cause of this housing challenge is a lack of construction [since approx. 2010].**”

--Chief Economist, National Association of Home Builders
Testimony before US Senate Committee on Banking, Housing, and Urban Affairs

Home Building Since 1970 (Flow)



Multiple Drivers of Reduced Homebuilding

Common explanations:

► Literature

- Restrictive zoning policies
- Administrative & regulatory burden
- Geographic constraints
- Rising input costs

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Less explored (within academia): labor/workforce

- This paper: How sensitive is homebuilding to construction labor supply, *esp.* by foreign-born workers?

Mass Departations Will Begin “Very Quickly”—Donald Trump, Jan 18, 2025

- Trump 2.0 has set an unprecedented goal of deporting 1 million immigrants per year
- Established new daily arrest quotas of 1,200 to 1,500.

Key Actions:

- 1 Make the border a military priority
- 2 Increased interior enforcement activities, including growing numbers of collateral arrests of bystanders and family members
- 3 Expanded expedited removal authority nationwide
- 4 Permitted ICE officers to conduct enforcement operations at sensitive locations
- 5 Seeks to end birthright citizenship
- 6 End Biden-era humanitarian programs at the border
- 7 End and claw back funding from organizations that support migrants

Solution to the Housing Unaffordability Issues?



JD Vance "...you have got housing that is totally unaffordable because we brought in millions of illegal immigrants to compete with Americans for scarce homes."

Empirical Setting: Secure Communities Program

Under SC: automatic information sharing between local law enforcement and DHS

- $\uparrow\uparrow \text{prob}(\text{deportation})$ pursuant to arrest for undocumented individuals
- ICE attributes 25% of removals to SC: at scale, $\sim 80\text{k}/\text{year}$
- Staggered rollout of increased immigration enforcement, 2008-2013

Resource/logistical constraints prohibited simultaneous rollout

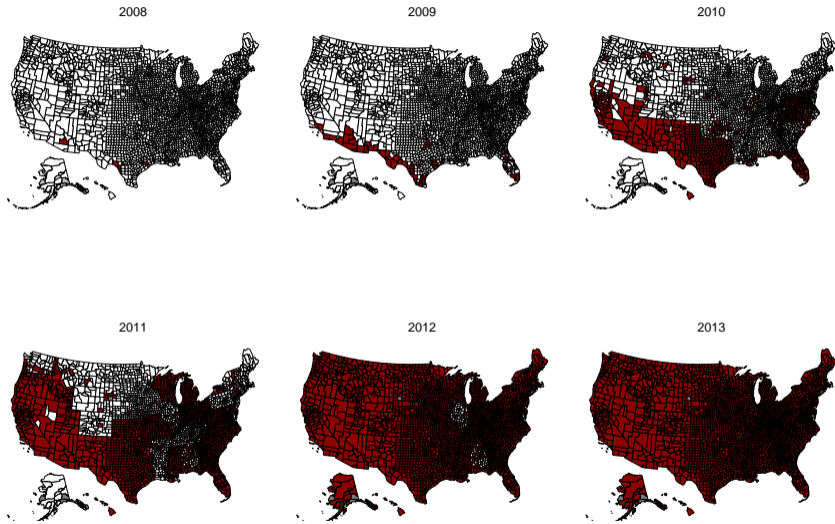
- ICE assumption of custody requires transportation, bed space, meals
- 31,000 booking locations nationwide

Plausibly exogenous shock to regional construction workforce

- 30% of construction workers foreign-born; \sim half undocumented¹

¹National Association of American Homebuilders using BLS data and Pew Research Center

Secure Communities Rollout



► In Event Time (req 6mo treatment)

► Detailed Timeline

► Rollout Predictability

Empirical Strategy

Standard staggered rollout DiD/Event Study design:

$$y_{it} = \beta \text{Event Time}_{it} + \alpha_i + \gamma_{rt} + \varepsilon_{it}$$

However:

- No untreated units after 2013
- Likely time-varying effect of treatment
 - ▶ In such a setting, we strongly expect bias in TWFE design [▶ More](#)
 - ▶ All results use bias-corrected DiD estimators; this matters
 - ▶ Preferred approach follows Gardner (2021); results not sensitive to estimator [▶ More](#)
 - ▶ γ_{rt} : Census region-by-year FEs to control for different pop trends [▶ Growth by Region](#)

Data

Secure Communities: rollout date by county as per East, et al. (2022)

Labor supply: ACS microdata aggregated to county-level ($\Rightarrow \sim 50\%$ of U.S. pop)

New construction and sales prices: county records compiled by CoreLogic

Housing permits: Building Permits Survey (Census)

Wages: RSMMeans and ACS

Findings

- 1) First stage county-level impact (document reduction in workers)

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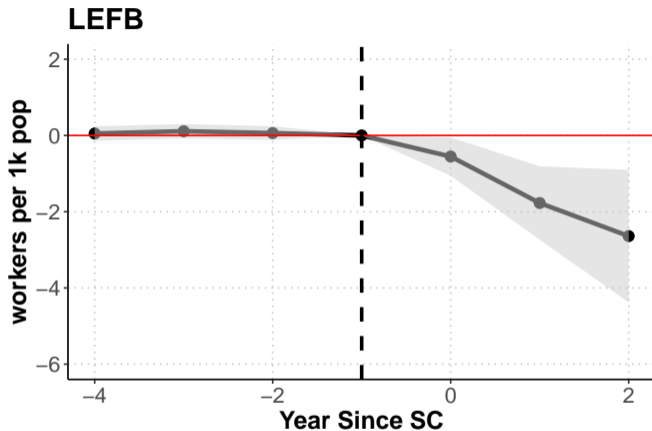
- Standard proxy in ACS data is low-education, foreign born (LEFB)
- Clean PUMA \leftrightarrow county mapping: 331 counties (*~50% of US population*)
- SC \rightarrow total population no change \Rightarrow agg. demand unlikely to explain $\downarrow\downarrow$ homebuilding

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- Standard proxy in ACS data is low-education, foreign born (LEFB)
- Clean PUMA ↔ county mapping: 331 counties (*~50% of US population*)
- SC → total population no change ⇒ agg. demand unlikely to explain ↓↓ homebuilding
- Significant reductions in **CONSTRUCTION** workforce

SC Reduces Construction Workforce: LEFB



Peak magnitude: 1,296 fewer LEFB construction workers (median county)
Represents approximately 15% reduction in labor supply

▸ Non-Citizen and Hispanic

▸ By Cohort

▸ By Cohort - Alternate Control Group

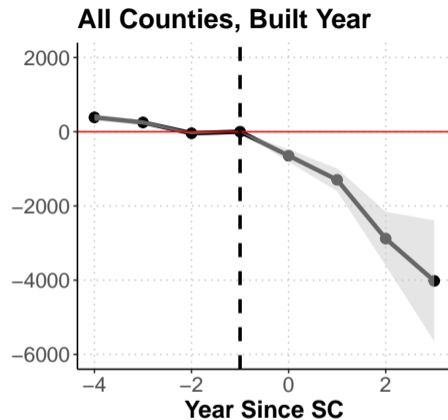
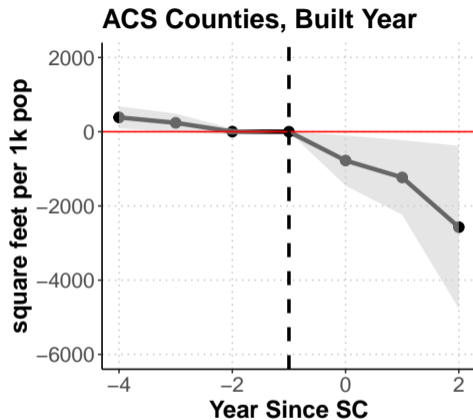
▸ Total Population

Findings

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2) Large, persistent declines in homebuilding

Reduced Flow of New Construction Completed

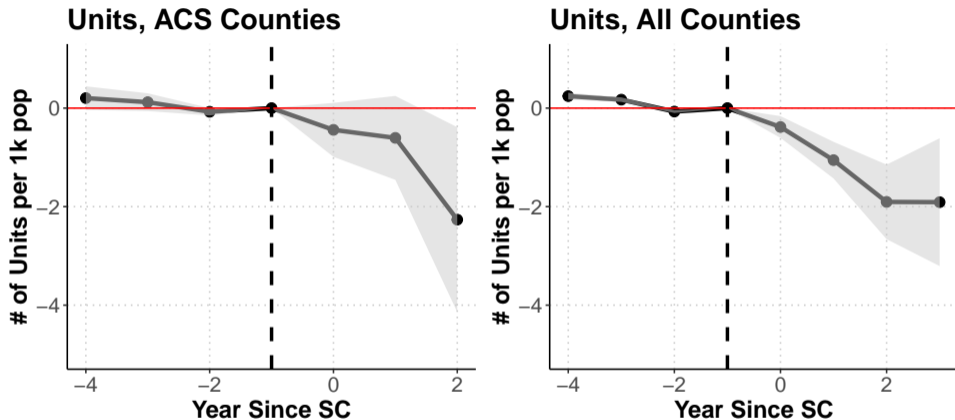


ACS sample (left): three-year reduction equivalent to ~1,000 new SFHs

National sample (right): four-year reduction equivalent to ~1,900 new SFHs

► Sale Year vs Built Year

Reduction in Permitting



ACS sample (left): three-year reduction of ~1,600 units

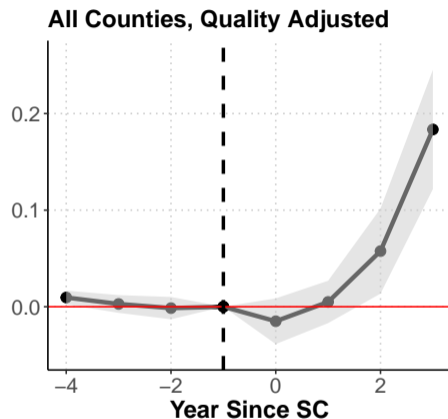
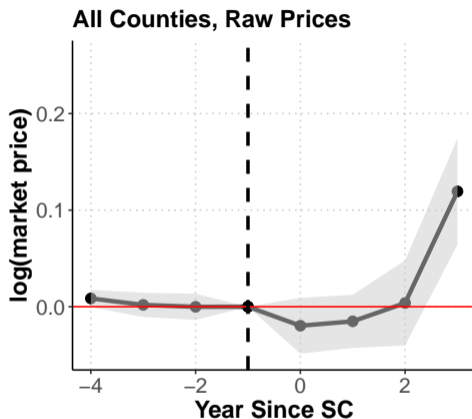
National sample (right): four-year reduction of ~2,600 units

► By Building Size

Findings

- 1) First stage county-level impact (document reduction in workers)
- 2) Large, persistent declines in homebuilding
- 3) Increase in price of new construction and existing housing stock**

New Construction Prices

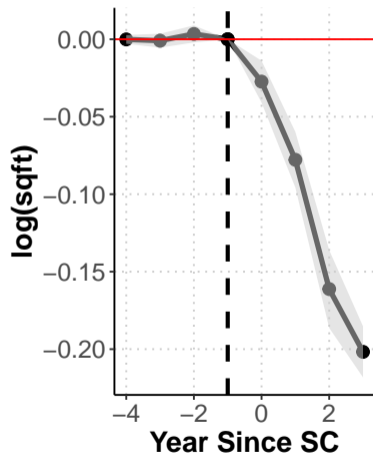


Peak (national): quality-adjusted price increase of 18.5%

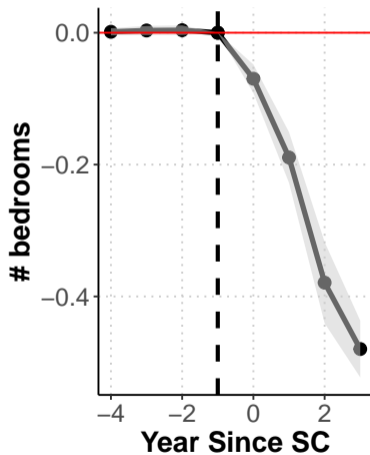
► Without Hedonic Controls

Endogenous Changes in Housing Characteristics

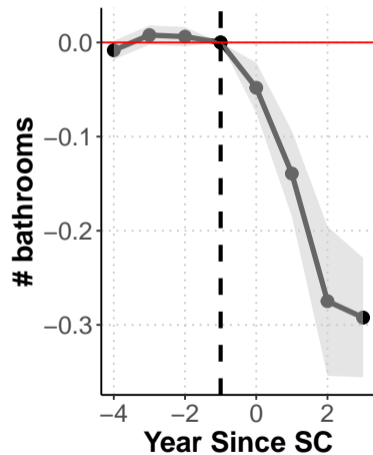
Square Footage



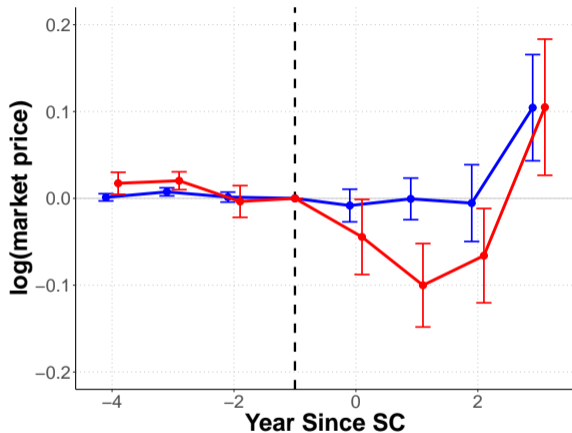
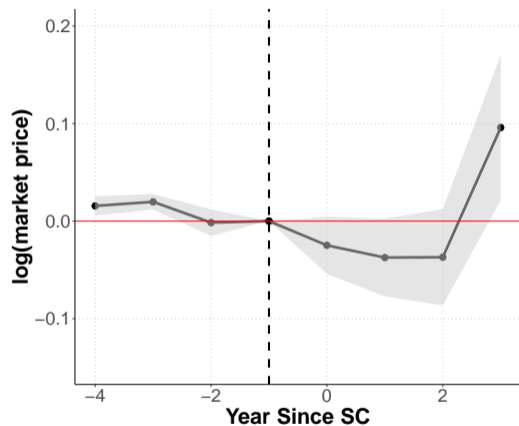
Bedrooms



Bathrooms



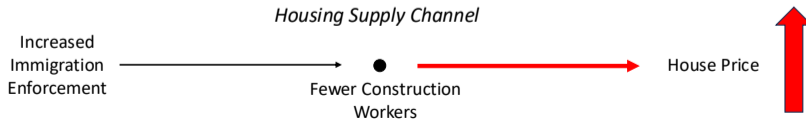
House Resale Prices



- ◆ Non-LEFB Tract
- ◆ LEFB Share Above Median (mean=5.7%)

Findings

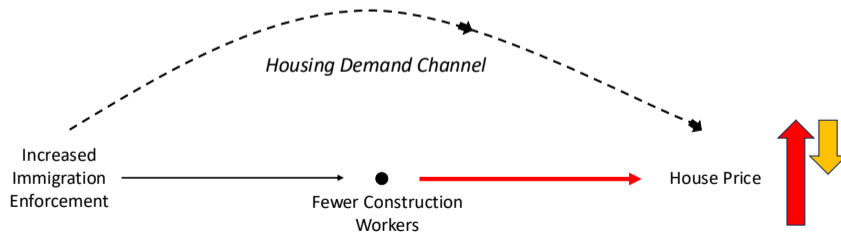
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Findings

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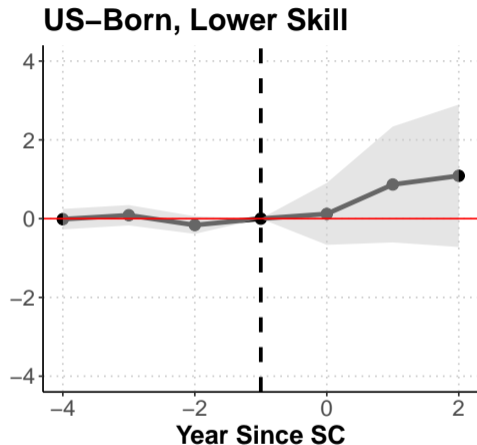
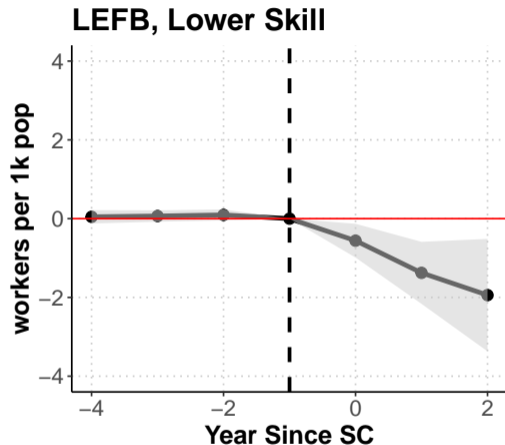
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Findings

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- 4) Inelastic domestic inflows to construction sector**

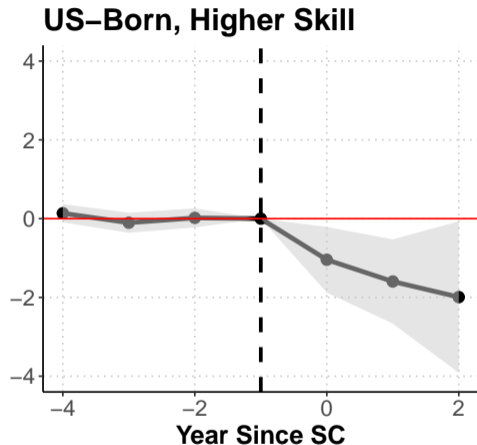
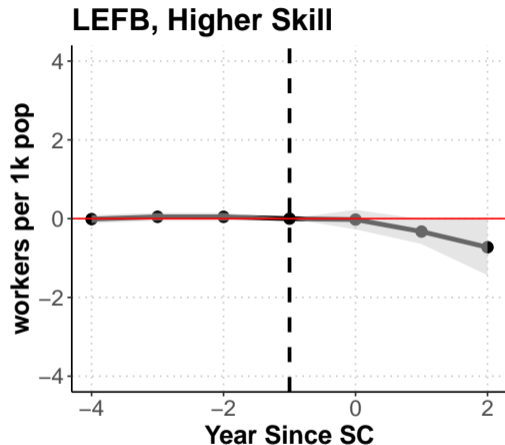
Domestic Replacement Varies By Skill



Domestic replacement rate: 20-60% over three-year period

► Underlying Classification

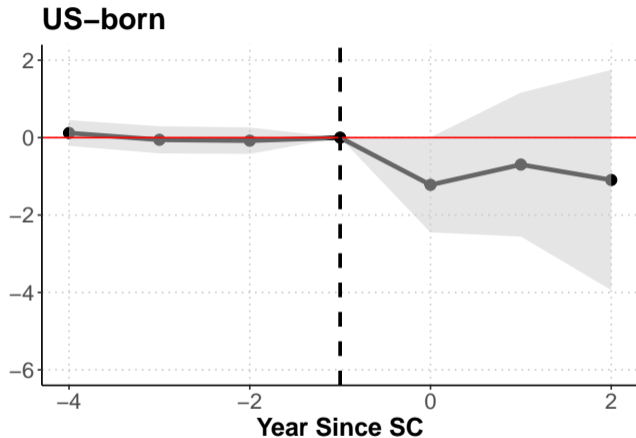
Domestic Replacement Varies By Skill



Consistent with skilled labor being a compliment to less-skilled

► Underlying Classification

Net Reductions for US Born Construction Workforce



Peak effect: 600 fewer US born workers

► Reduction in Total Labor Supplied

► No Intensive Margin Change

Findings

- 1) First stage county-level impact (document reduction in workers)
- 2) Large, persistent declines in homebuilding
- 3) Increase in price of new construction and existing housing stock
- 4) Inelastic domestic inflows to construction sector
- 5) Evidence of moderate wage increases**

Wage Measures

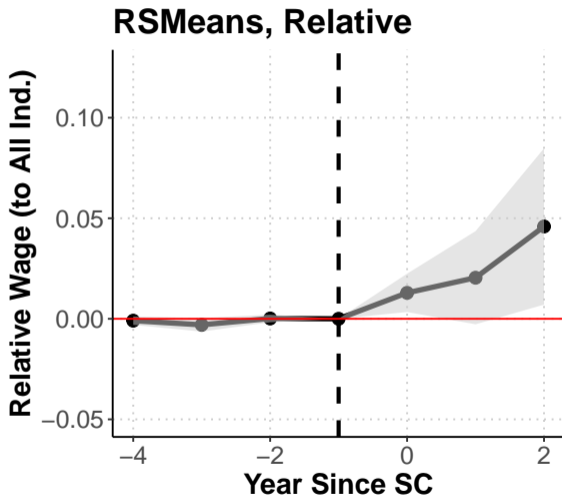
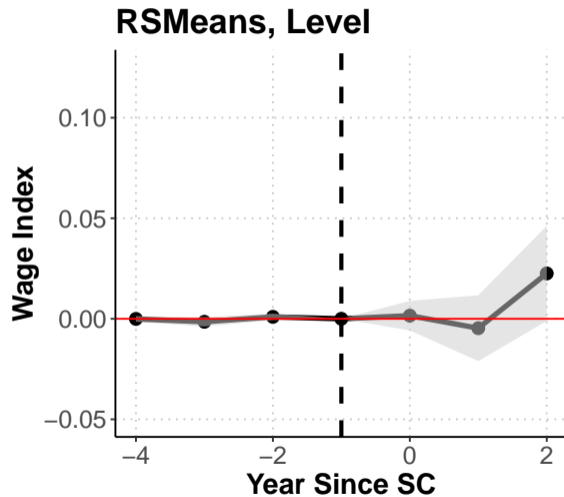
RSMMeans: industry leader in cost-modeling tools

- Direct solicitation of journeyman rates in 731 markets, annually from 2007
- Labor cost measure aggregated from 16 occupation sub-groups

ACS: can construct averages by subgroup from microdata

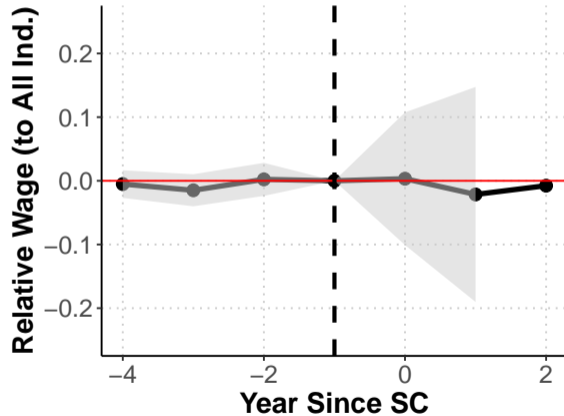
- Total pay / (average hours per week * weeks worked last year)
- Weeks worked binned \implies downward bias from unobserved intensive margin shifts

RSMeans Wages:

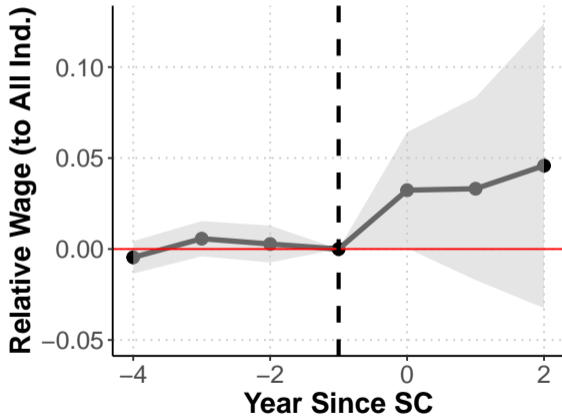


ACS Wages:

**ACS Const., LEFB
(note different scale)**



ACS Const., US-born

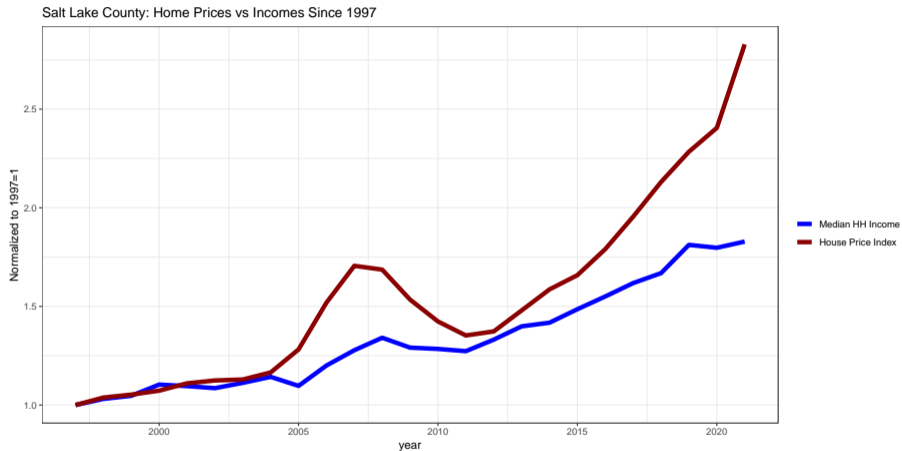


Conclusion

- ① Negative shocks to construction workforce appear to be highly persistent
 - Partial replacement by domestic labor in lower-skilled occupations
- ① Sharp reductions in residential homebuilding: both anticipated & completed
- ② Within two years: large increase in price of quality-adjusted new construction
- ③ Only moderate wage adjustments to attract additional workers

Thank you!

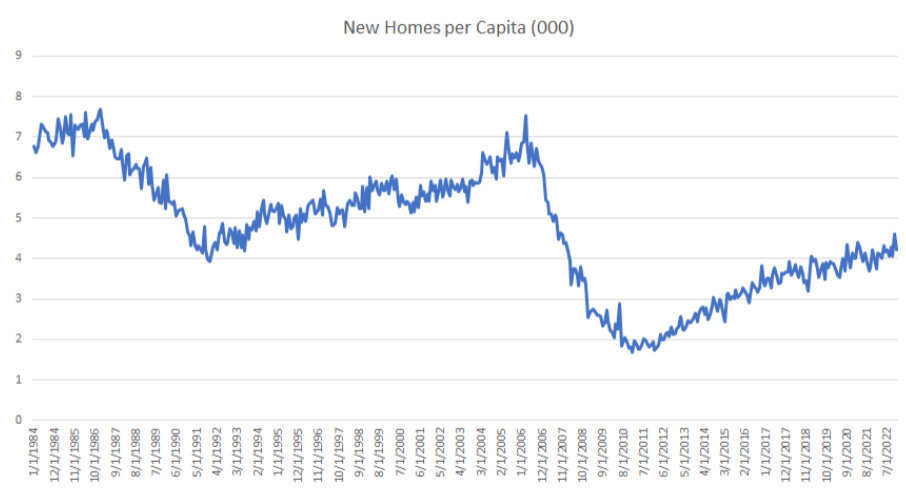
Homes vs Incomes: Salt Lake County Since 1997



◀ Back

Data: FRED at St. Louis Fed

New Homes Constructed Per Capita



Contribution to the Literature

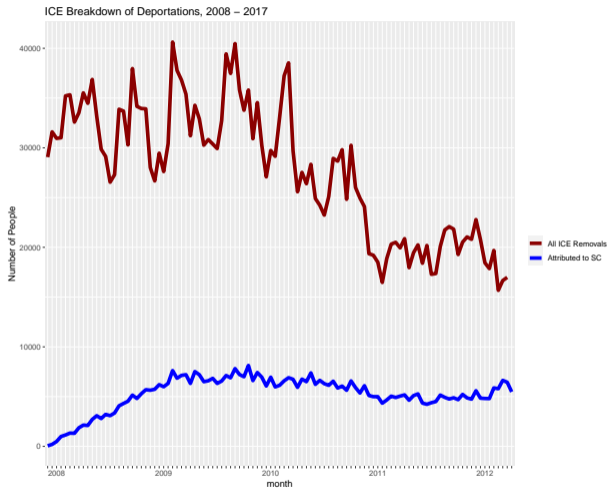
Drivers of Housing Supply

- Regulation & Land Use: Molloy, Nathanson & Paciorek (2022), Malloy (2020); Glaeser and Gyourko (2017, 2002); Gyourko & Malloy (2015); Saiz (2010); Gyourko, Saiz & Summers (2008); Ihlanfeldt (2007); Gyourko & Saiz (2006); Glaeser, Gyourko & Saks (2005a; 2005b)
- Here: Labor supply rather than local policy/regulations

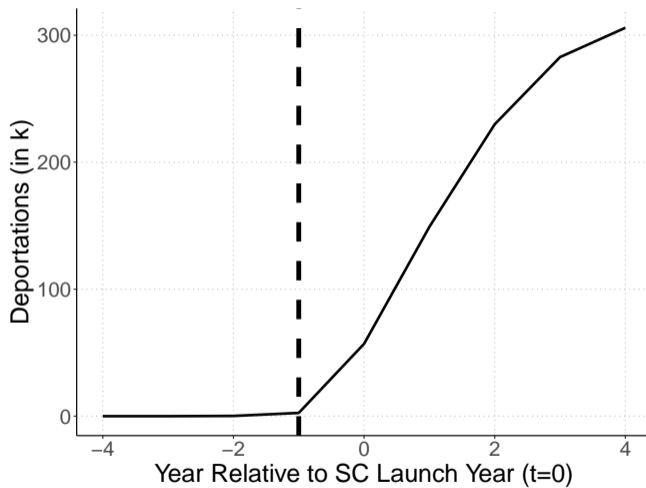
Regional Economic Effects of Immigration Enforcement

- Secure Communities: East, et al (2022), East & Velasquez (2022), Alsan & Yang (2022); JÃ¡come (2022); Hines & Peri (2019); Cox & Miles (2013)
- Other related settings: Allen, Dobben & Morten (2018); Saiz & Wachter (2011); Saiz (2007); Saez (2003)
- Here: Impact on construction labor supply and building activity

SC Share of Overall “Removals”



SC Removals In Event Time



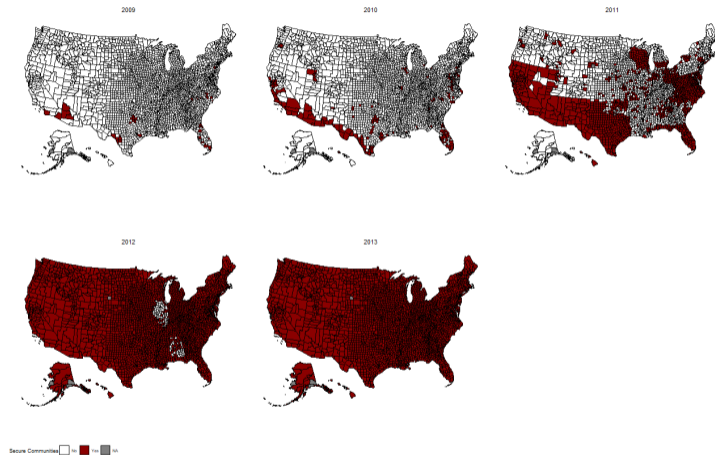
Overview of Arrests (FBI UCR Stats)

10.08M arrests in 2019

- Alcohol-Related: 1.85M
- Drug Abuses: 1.56M
- Property Crime: 1.07M
- Simple Assault: 1.03M
- Violent Crime: 500k

- “All other”: 3.32M
(Likely includes: minor drug charges, traffic violations, local ordinances)

SC Treatment, By Regression Event-Time



Is SC Rollout Predictable?

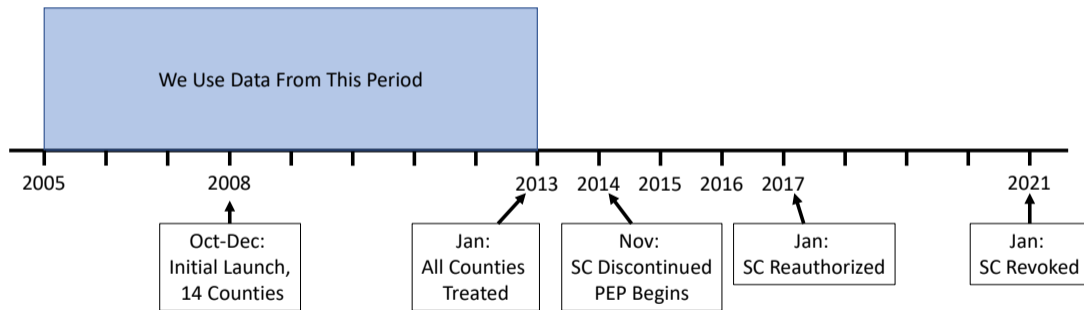
	Binary for Rollout						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hispanic Share	0.6143*** (0.1503)	0.5678*** (0.1509)	0.6186*** (0.1498)	0.6015*** (0.1506)	0.6155*** (0.1502)	0.6232*** (0.1506)	0.5904*** (0.1512)
Total Pop (M)		0.0325 (0.0312)					
3Yr Pop Growth, US			-0.6105 (0.4432)				
3Yr Pop Growth, Hisp				-0.0391* (0.0237)			
3Yr Pop Growth, LEFB					0.0100 (0.0338)		
3Yr NC Growth						-0.0028 (0.0026)	
01-07 Price Runup							0.1035 (0.0710)
Observations	962	962	962	962	962	934	962
R ²	0.4971	0.4993	0.4982	0.4978	0.4972	0.4900	0.4987

Note:

*p<0.1; **p<0.05; ***p<0.01

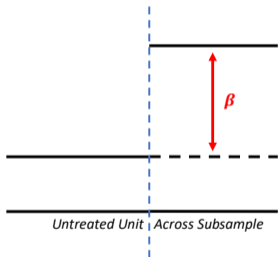
◀ Back

Secure Communities Timeline

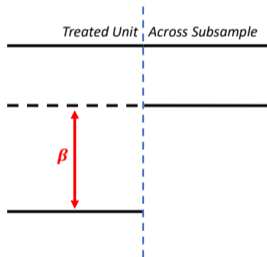


TWFE Is a Weighted Average of Two Comparisons

Canonical Case

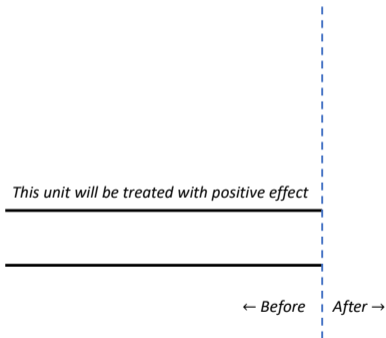


Using Always Treated Units as Control

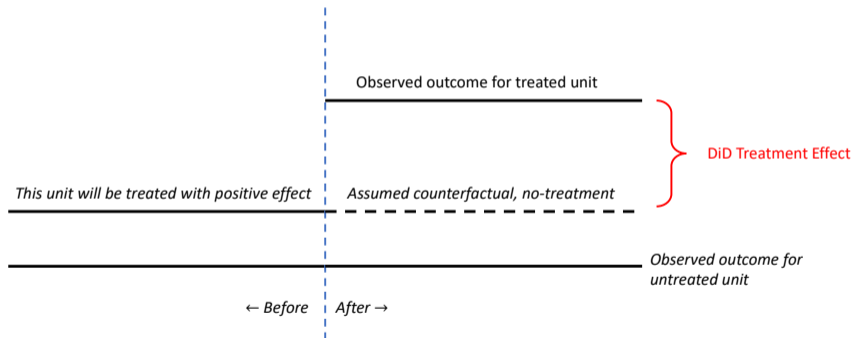


This one is problematic

Standard Difference-In-Differences Estimator

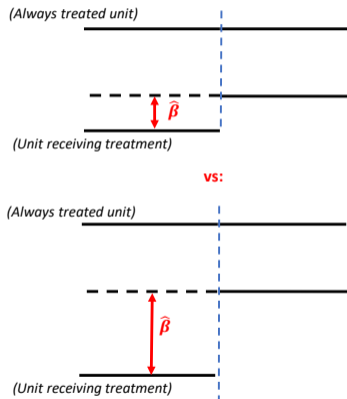


Standard Difference-In-Differences Estimator



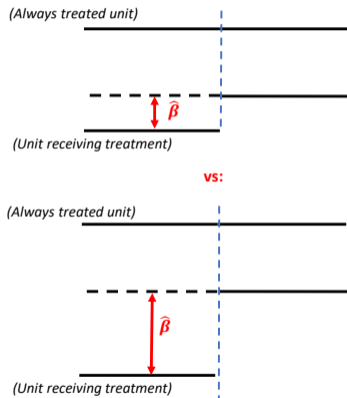
TWFE Can Fail to Recover Even a Convex Combination of TEs

...if treatment effect changes in time

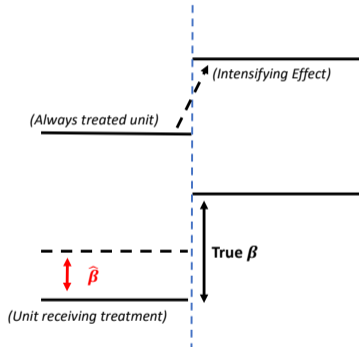


TWFE Can Fail to Recover Even a Convex Combination of TEs

...if treatment effect changes in time



...or if treatment effect intensifies



Bias Robust DiD Estimation

All solutions proposed in growing literature: don't use “bad” comparison

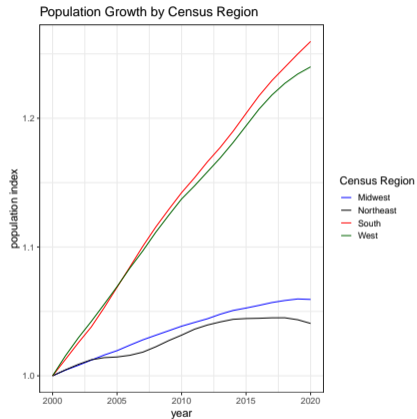
Gardner (2021):

- Problem: heterogeneity &/or drift in T.E. biases FEs
- So: estimate FE only from untreated units
- Researcher has no control over selection of control group
- All units become treated by 2013 \implies (T+3) is max horizon

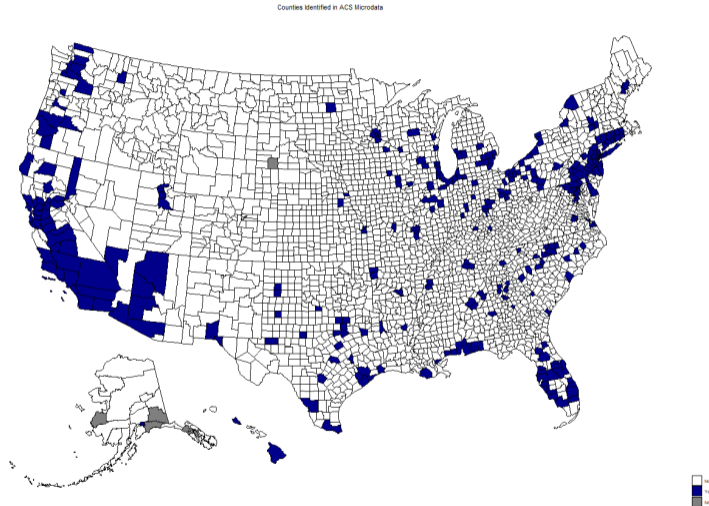
► Details

◀ Back

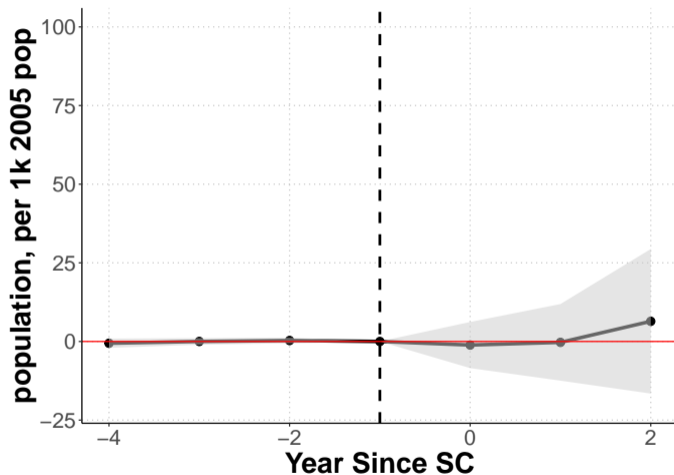
Important to control region-year fixed effects



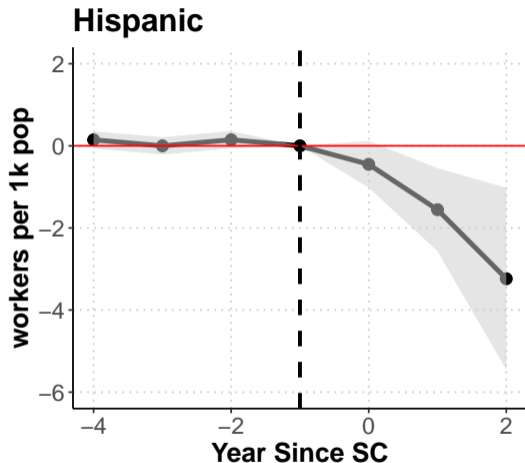
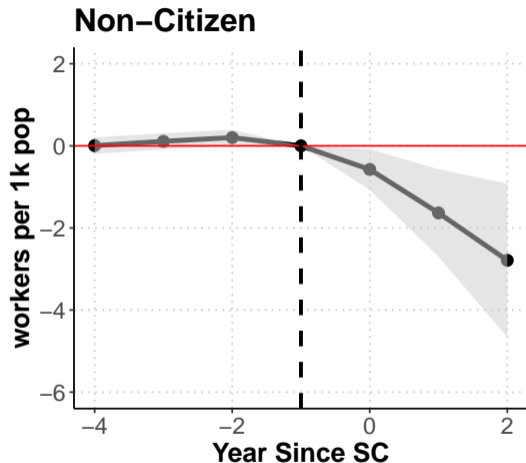
Counties Identified in ACS Microdata



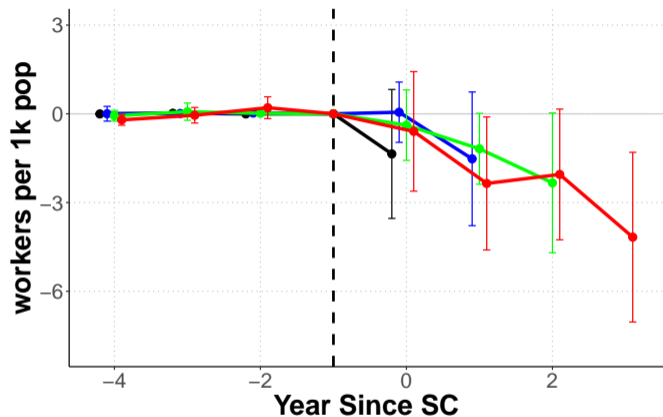
SC Does Not Decrease Total Population



SC Construction Impact: Non-Citizen and Hispanic



Reductions Across All Cohorts



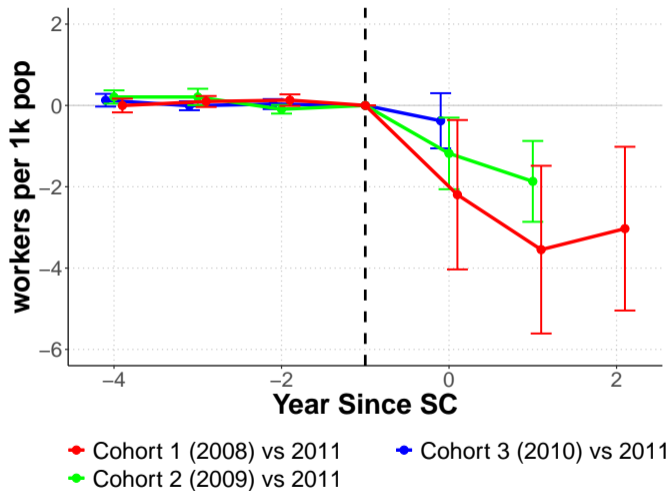
● Cohort 1 (2008) vs 2012

● Cohort 3 (2010) vs 2012

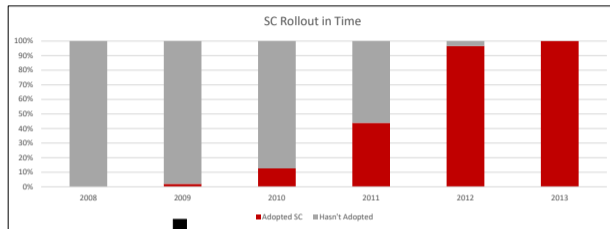
● Cohort 2 (2009) vs 2012

● Cohort 4 (2011) vs 2012

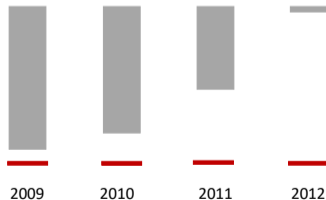
Reductions Across All Cohorts



Gardner: Which Comparisons Are Being Made?



Comparisons for Cohort 1:
(treated in 2009)



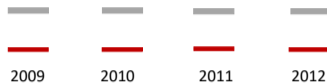
Gardner event study estimates
are weighted averages of all
possible cohort comparisons for
each event-time.

[← Back to Empirical Design](#)

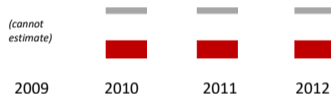
[← Back to Workforce Results](#)

Comparisons in Cohort Analysis

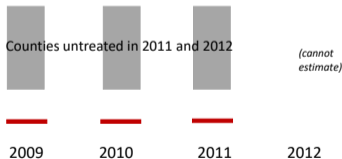
Cohort 1:
(treated in 2009)



Cohort 2:
(treated in 2010)



Alternatively:
expanded control group:
(using Cohort 1 as example)



Skill Classification

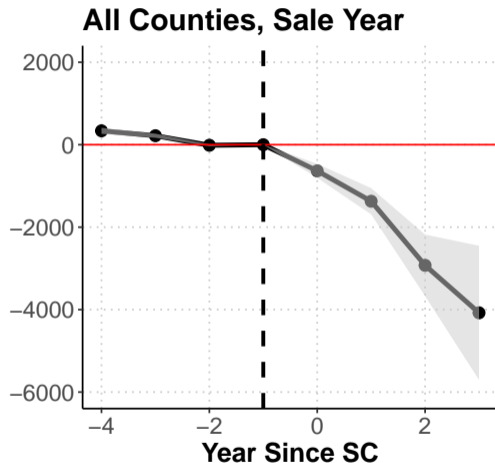
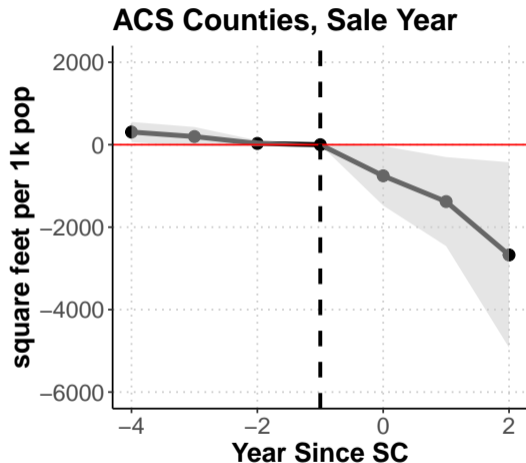
Lower skill occupations:

- Construction laborers
- Drywall installers
- Painters, construction & maintenance
- Helpers, construction trades
- Roofers
- Carpenters

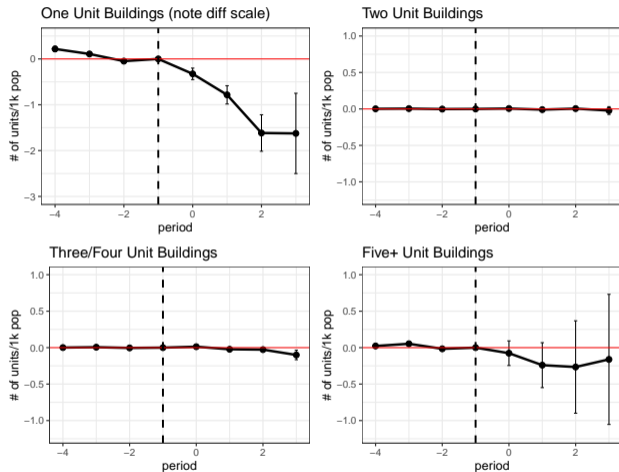
Higher skill – all others, including:

- Supervisors
- Electricians
- Brickmasons, stonemasons, tile installers
- Glaziers
- Sheet metal workers
- Heavy equipment operators

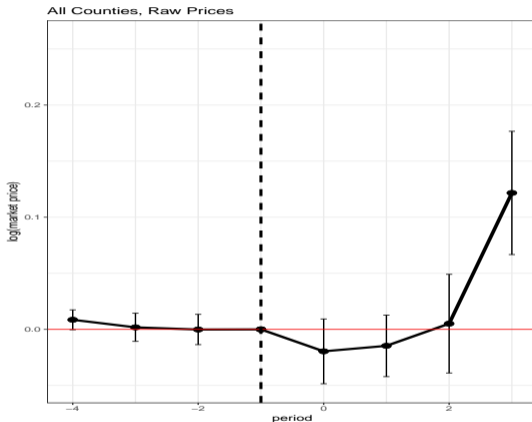
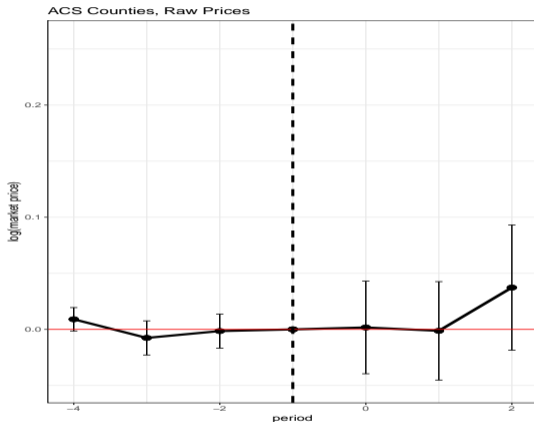
New Construction Sales (All Counties)



Permitting Slowdown Driven by Single Family Homes

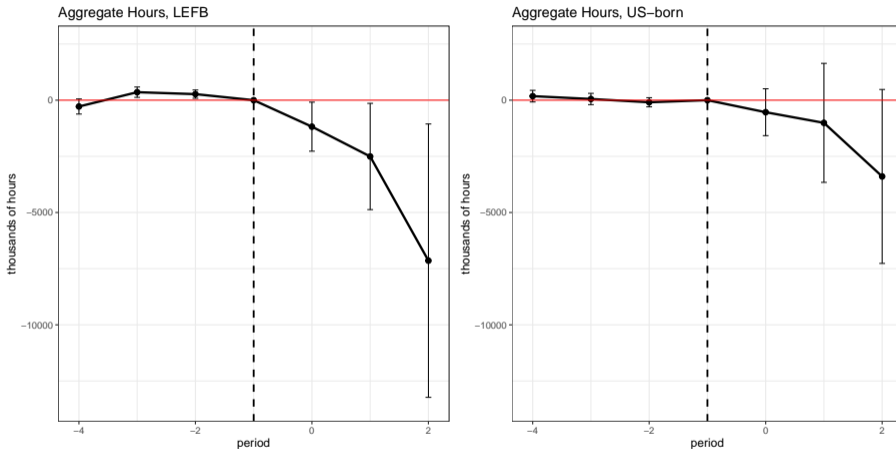


NC Prices - No Hedonic Controls



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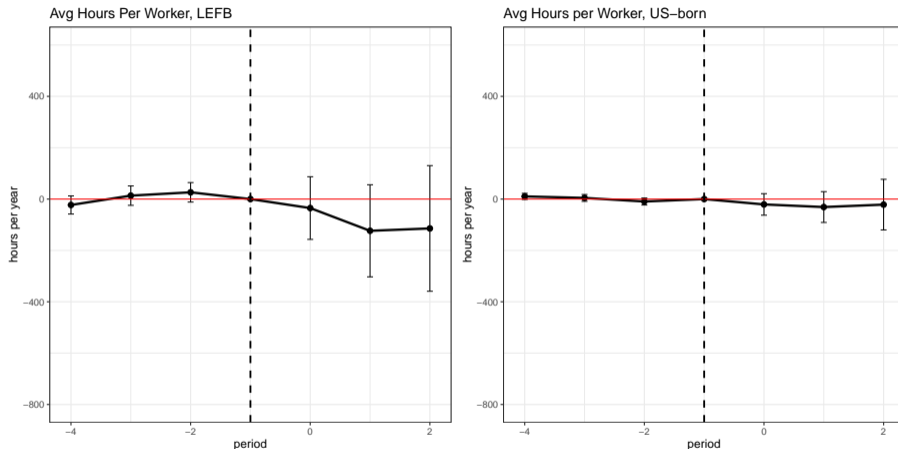
Total Hours: Consistent With Large Slowdown



For US workers at $T=2$: 24% reduction in total labor supplied (in equilibrium)

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Reduction in Labor Supply Not Coming from Intensive Margin



Average hours worked for remaining residents

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