Political Power and Population Health: Heterogeneous Effects of the U.S. Voting Rights Act

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Political power and health

- Empowering marginalized groups can improve health (Lynch 2023; Bambra, Lynch, Smith 2025)
  - Public goods, agenda setting, aspirations, accountability (e.g., Miller 2008; Beaman et al 2012; Bhalotra et al 2023)

- Impacts on non-targeted groups *ex ante* not clear:
  - Everyone may benefit from increases in health-promoting public goods
  - But may be zero-sum redistribution of other resources (e.g., jobs)
  - Relative decline in power can induce stress responses (Siddiqi et al 2019; Metzl 2019)

This paper

- Investigates effects of extending political power to minority groups on mortality by race

- Case study 1975 Extension of VRA
  - Occurred during era of deindustrialization, ascendance of women and nonwhite groups → alienation, threat, and stress among Whites (e.g. Hochschild et 2016)

This paper

- Core findings
  - Gradual relative *decrease* in under 5 mortality for all races
  - *Immediate* relative *increase* in white adult mortality

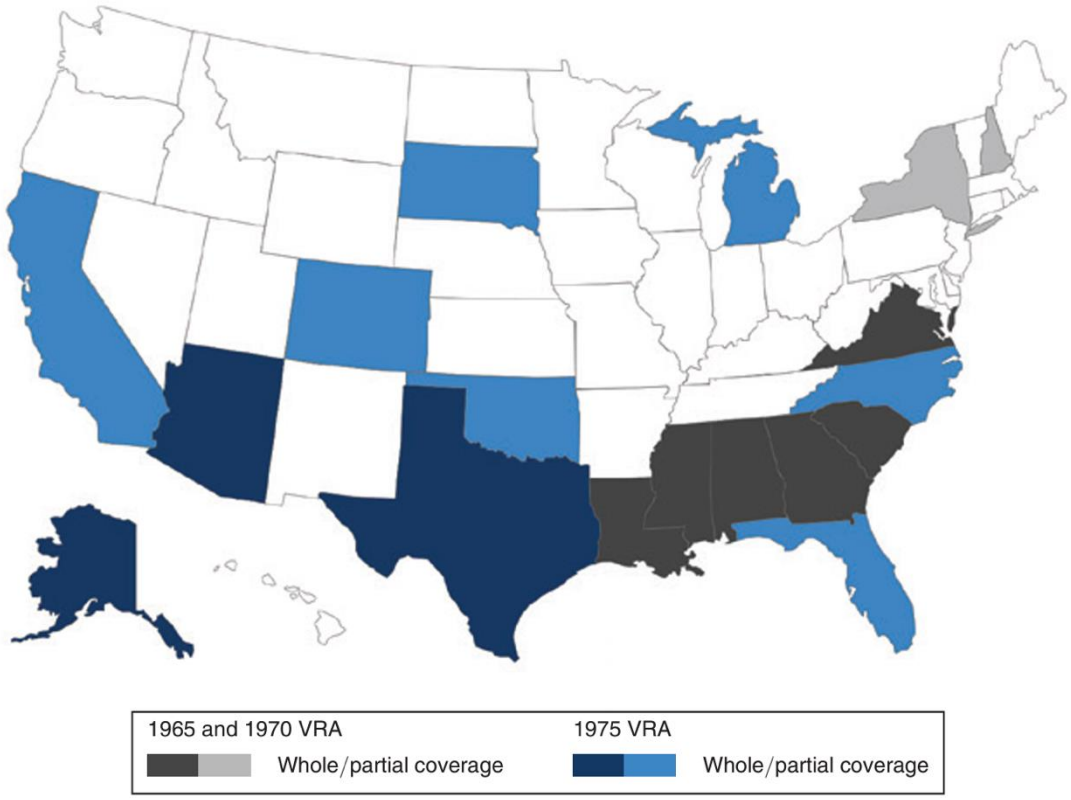
- Potential mechanisms
  - Mortality for young children (and younger non-white adults) likely driven by improvements in material resources
  - Increases for white adults driven by most consistent with acute stress responses

Background

Voting Rights Act

- Passed in 1965 and extended in 1970, 1975

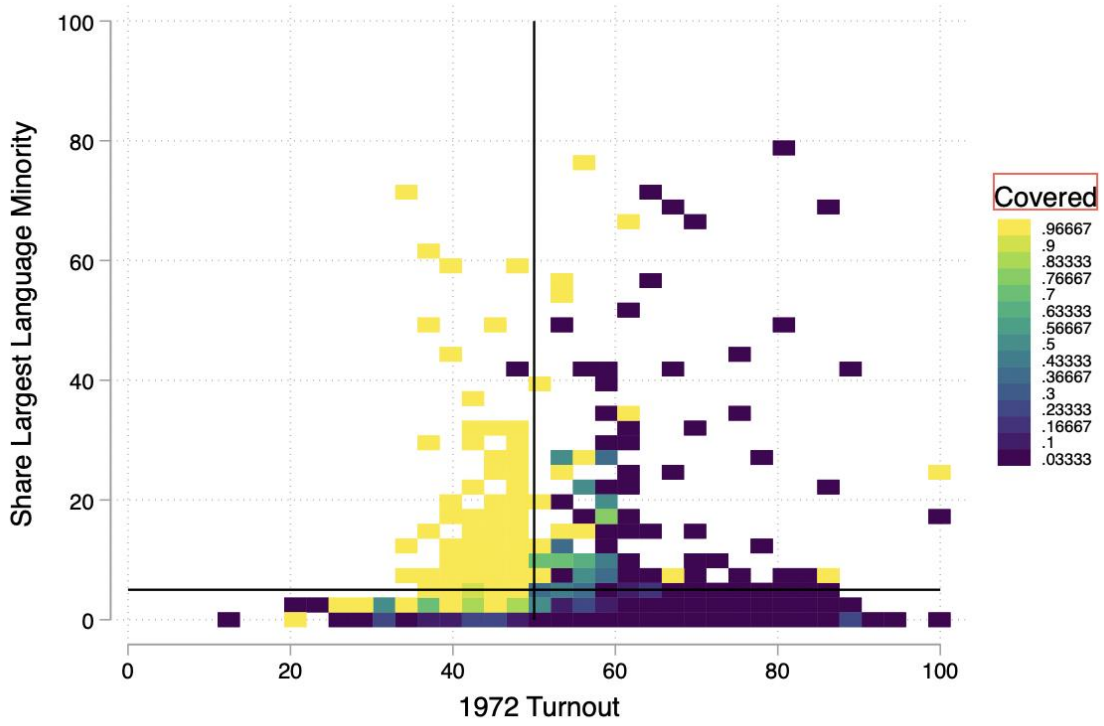
- Two main goals
  - Outlaw discriminatory practices
  - Pre-clearance



Ang (2019)

Voting Rights Act

- 1975 extension coverage:
  - Counties with >5% language minorities (higher than median illiteracy rates among these groups)
  - <50% voter turnout in 1972 election
- Identification:
  - Came as surprise, with data used in coverage formula not known
  - No other major policies implemented around same time



Impacts

- Effects on targeted groups (Pildes 2000; Cascio and Washington 2013; Fresh 2018; Ang 2019; LaCroix 2023; Bernini et al 2023a,b; Aneja; Rushovich et al 2024; and Avenacio-Leon 2025)
  - Increases in voter turnout, political representation, and public goods investments in minority areas
  - reduction in political violence
  - increases in wages/labor market opportunities for non-white individuals
  - reductions in Black infant mortality

- Effects/responses by non-targeted groups (Fresh 2018; Ang 2019; Ewbank and Fresh 2022; Bernini et al 2023; Chaudry 2025)
  - Numerous legal challenges
  - Reactionary mobilization + shift to conservative politicians
  - Political fragmentation to retain control over public goods
  - Increased Black incarceration rates

Research design

Empirical setup

- Estimate event study/DID model by race-age group

$$M_{ct} = \delta_c + \lambda_t + \sum_{\tau \neq -1} \pi_\tau \left(Covered_c \times 1\{t - t_0 = \tau\} \right) + \epsilon_{ct}$$

- Interpretation follows from simple health capital model where VRA affects health through:
  - Resource pathways (accumulate slowly)
  - Stress pathways (acute and chronic components)

- Dynamics: Immediate effects more indicative of stress; later effects combine stress *and* resources

Implementation

- Prior work addresses parallel trends assumption by:
  - Covariate adjustment
  - Sample restrictions (bordering counties)
  - Triple differences approach

- Challenges in our setting:
  - Researcher degrees of freedom
  - Statistical power
  - Assumptions about spillover effects

Implementation

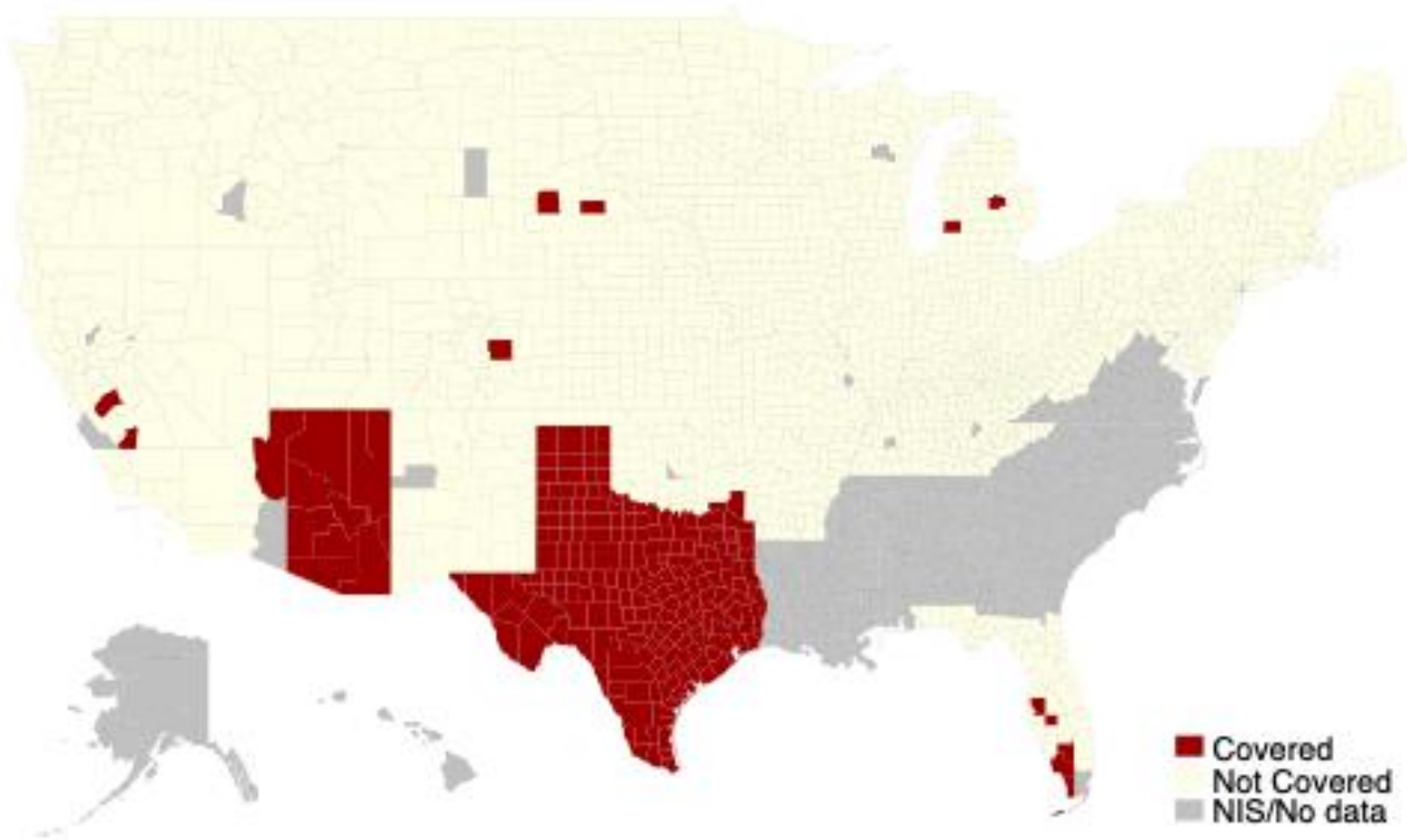
- Synthetic DID approach (Arkhangelsky et al 2021, Clarke et al 2024)
  - Unit and time weights chosen to reproduce pre-treatment trends → proxy for (unobserved) latent factors
  - Limits research degrees of freedom

- To strengthen identification:
  - Adjust for oil boom in 1970s and roll out of CHCs
  - Robustness checks using "close controls" (donor pool consists of counties meeting VRA coverage formula)

Data

- Vital Statistics death certificate data for 1970-1988
  - (Winsorized) county-year mortality rates by age (0-4, 5-19, 20-49, 50+)-race-(sex)
  - Age-standardize using 1970 population
- Death certificates do not identify language minorities
  - ~98% of "Spanish Origin" individuals in 1970 Census classified as white
  - Robustness checks restricting sample counties with baseline language minority shares below treatment group median

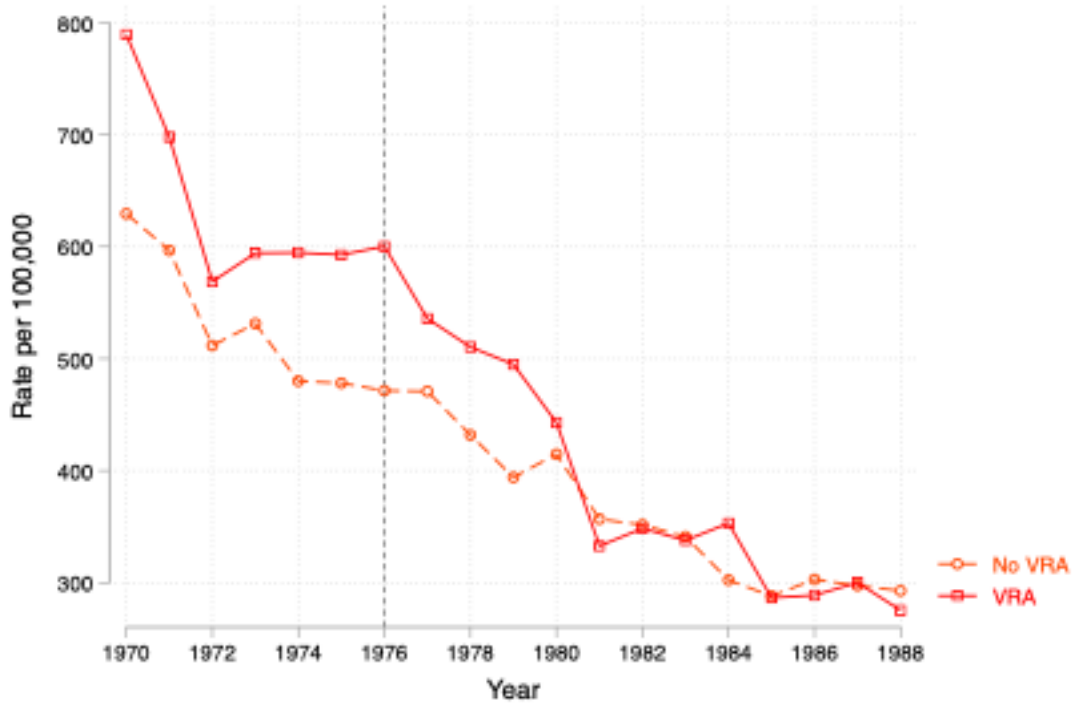
Sample and descriptives



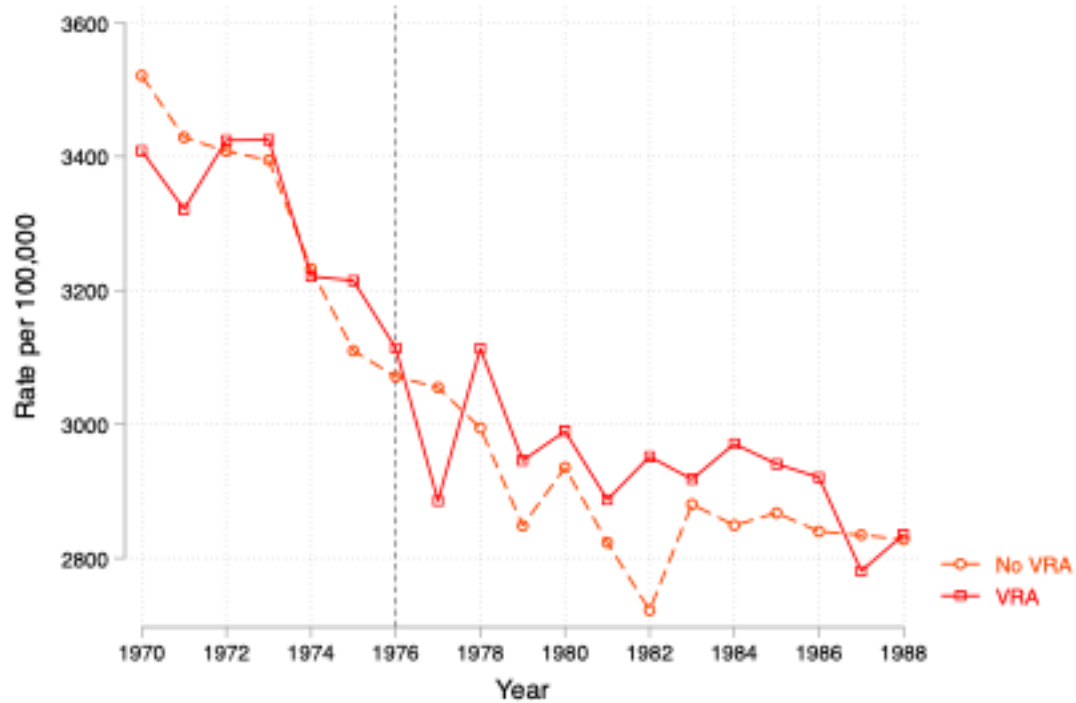
Other comparison groups

	Not Covered		Covered	
	Mean	SD	Mean	SD
Total Population	22184.4	21702.2	18120.5	18761.5
% White	96.1	8.1	90.3	12.0
% Non-White	3.9	8.1	9.7	12.0
% College	6.9	3.3	7.5	3.4
% Language Minority	2.4	7.7	9.9	13.1
Per Capita Income	10205.5	2118.0	9851.7	2326.6
% Low Income	23.4	10.1	29.0	9.7
% Employed	50.9	6.2	50.6	5.5
Hospitals per 100,000 capita	8.0	8.7	11.2	11.9
N	1862		256	

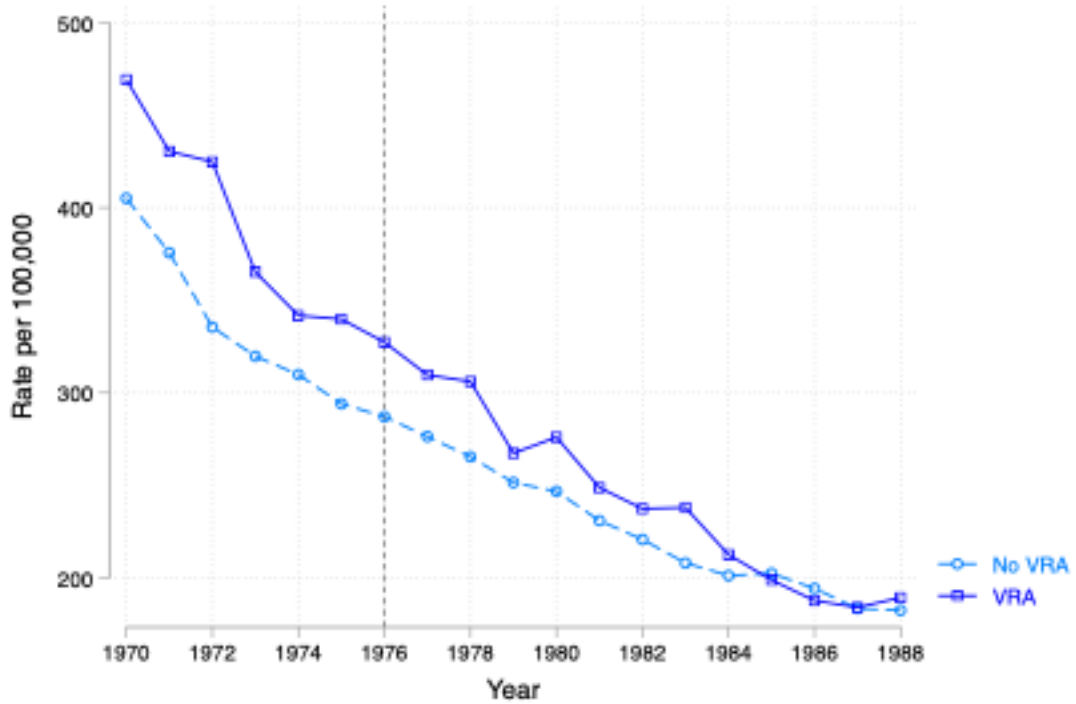
Non-White, Under 5



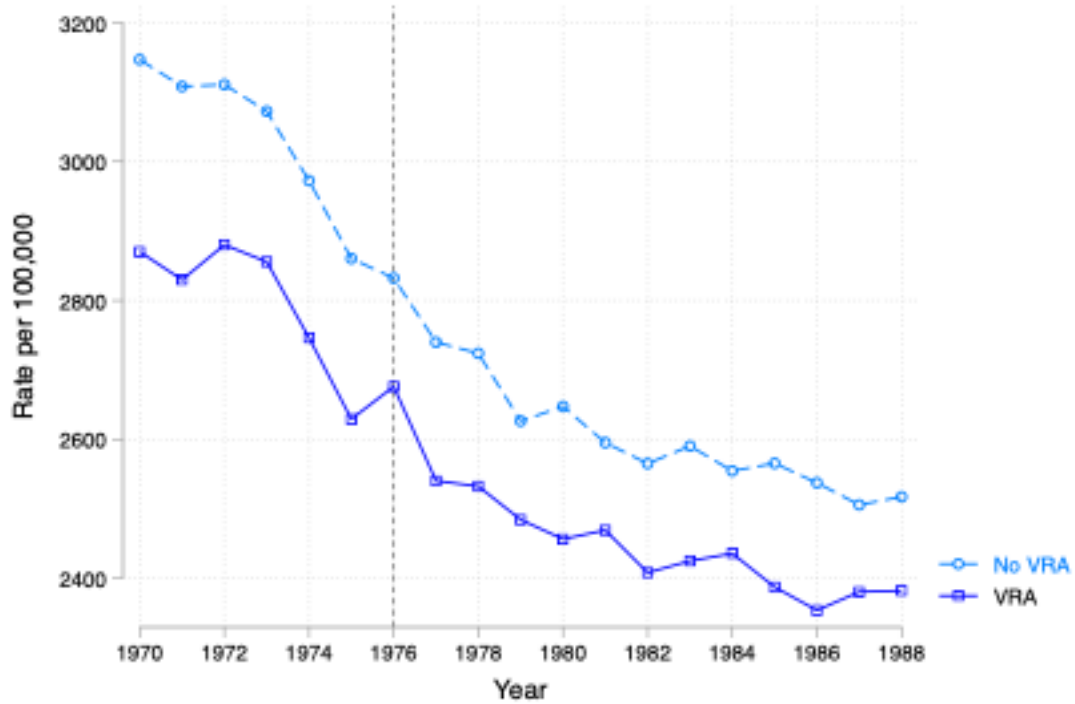
Non-white, 50+



White, Under 5



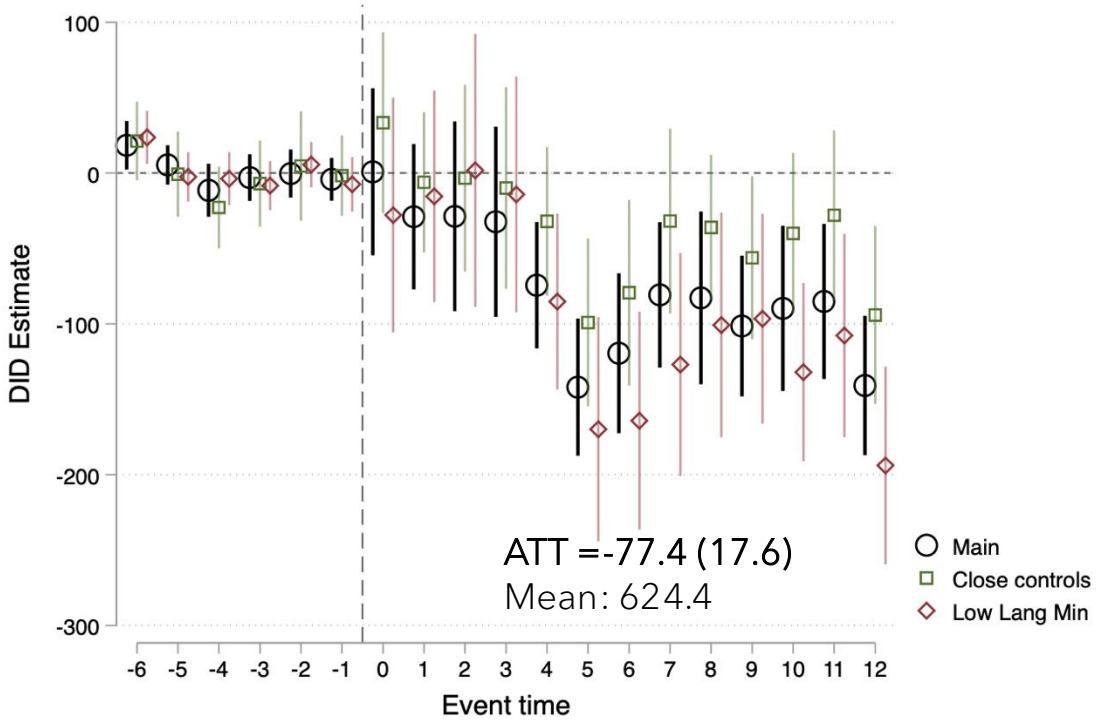
White, 50+



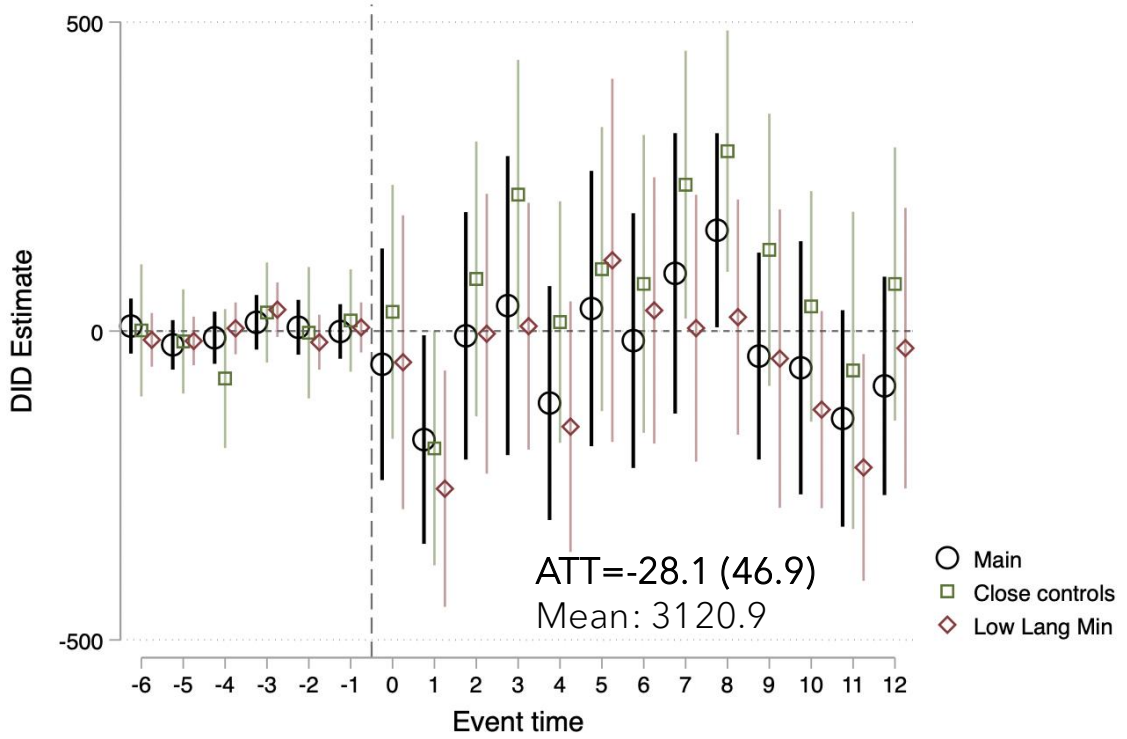
Results

Non-white

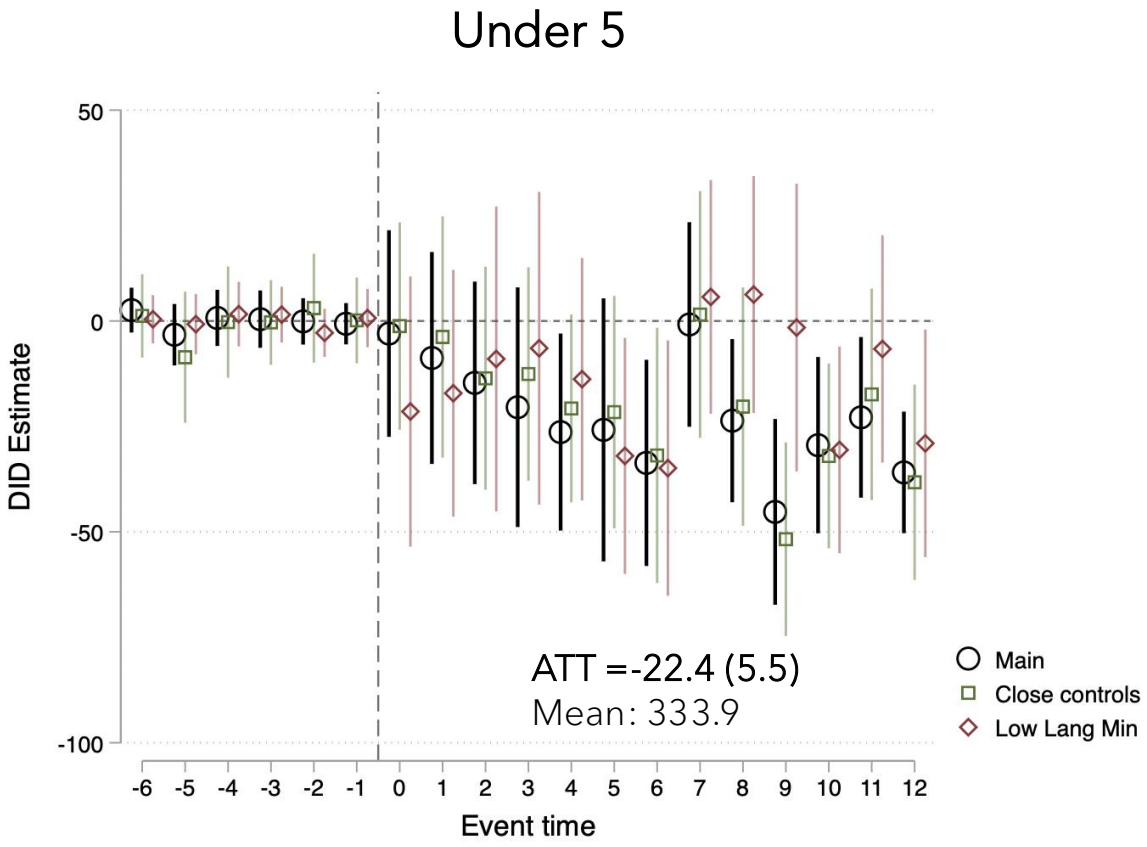
Under 5

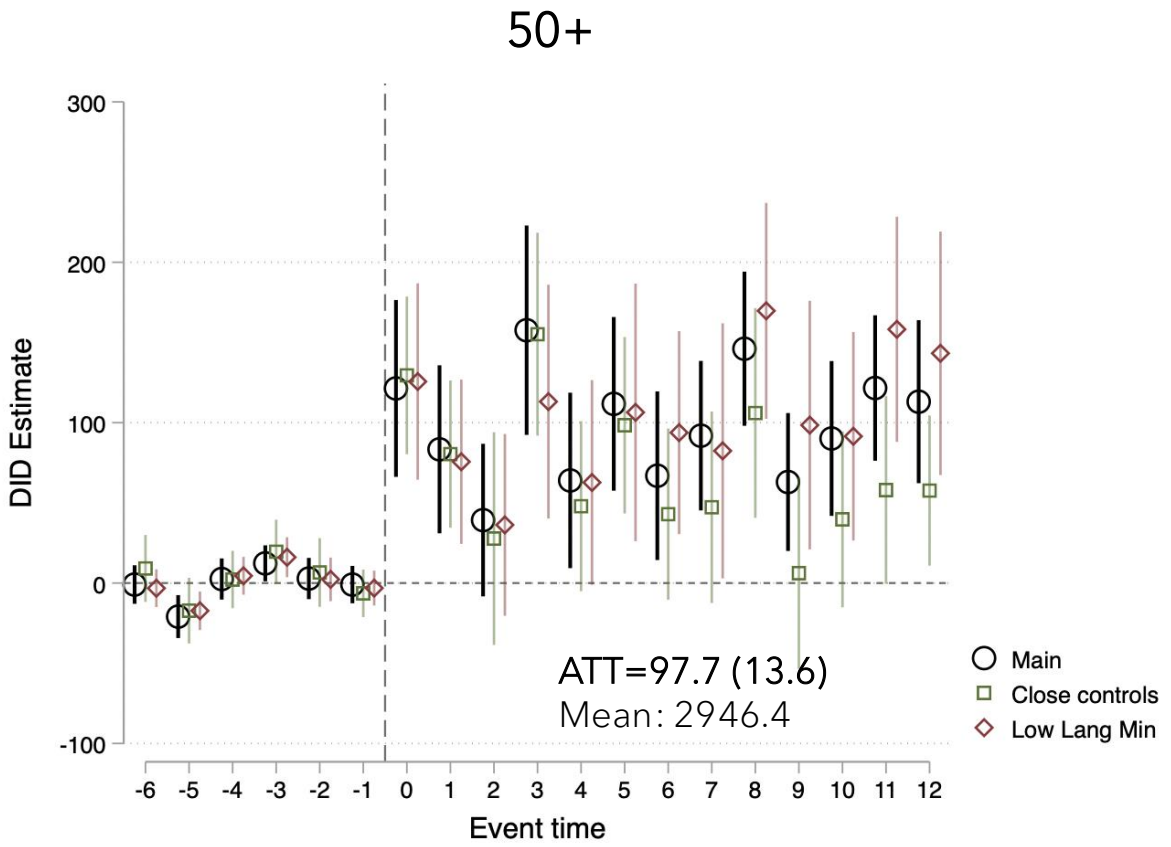


50+



White


Under 5
DID Estimate
50
0
-50
-100
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12
Event time
ATT =-22.4 (5.5)
Mean: 333.9
Main
Close controls
Low Lang Min


50+
DID Estimate
300
200
100
0
-100
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12
Event time
ATT=97.7 (13.6)
Mean: 2946.4
Main
Close controls
Low Lang Min

SDID estimates

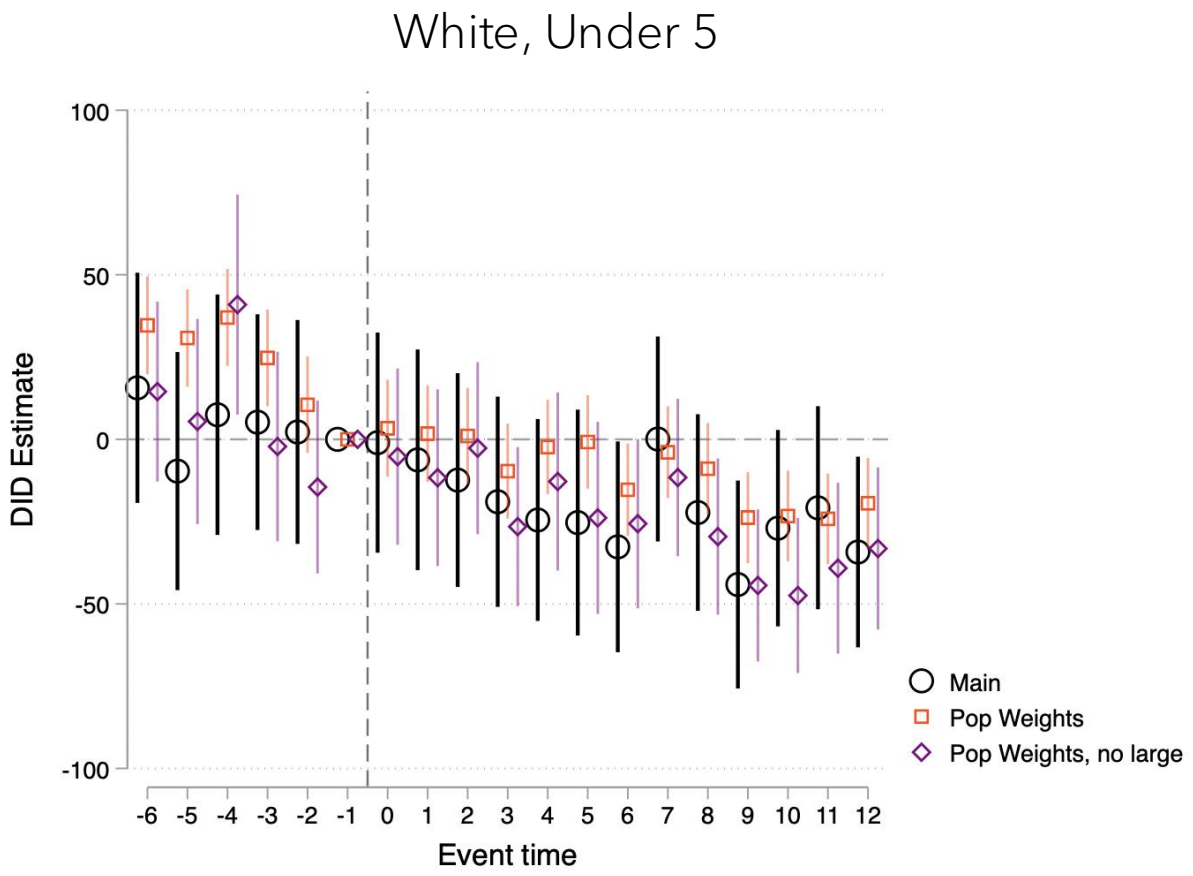
- Estimates for 5-19 and 20-49 year olds:
  - Relative declines for non-white sample
  - Relative increases for white sample

- Estimates generally robust, especially for white sample

- Triple difference estimates suggest substantial relative improvements for non-whites

TWFE models

- Point estimates and dynamics similar
  - Evidence of violations of parallel trends assumption for some groups
- Population weighted-estimates similar once heterogeneity is taken into account (Solon et al 2015)



Mechanisms

Potential mechanisms

- Changes in population composition (selective migration/fertility)
- Differential changes in resources
- Psychosocial stress

Population composition

- Total population grew in VRA areas relative to non-VRA areas
  - Mainly driven by non-white persons

- Share of high school and college educated adults:
  - Increase for whites
  - Decrease non-white

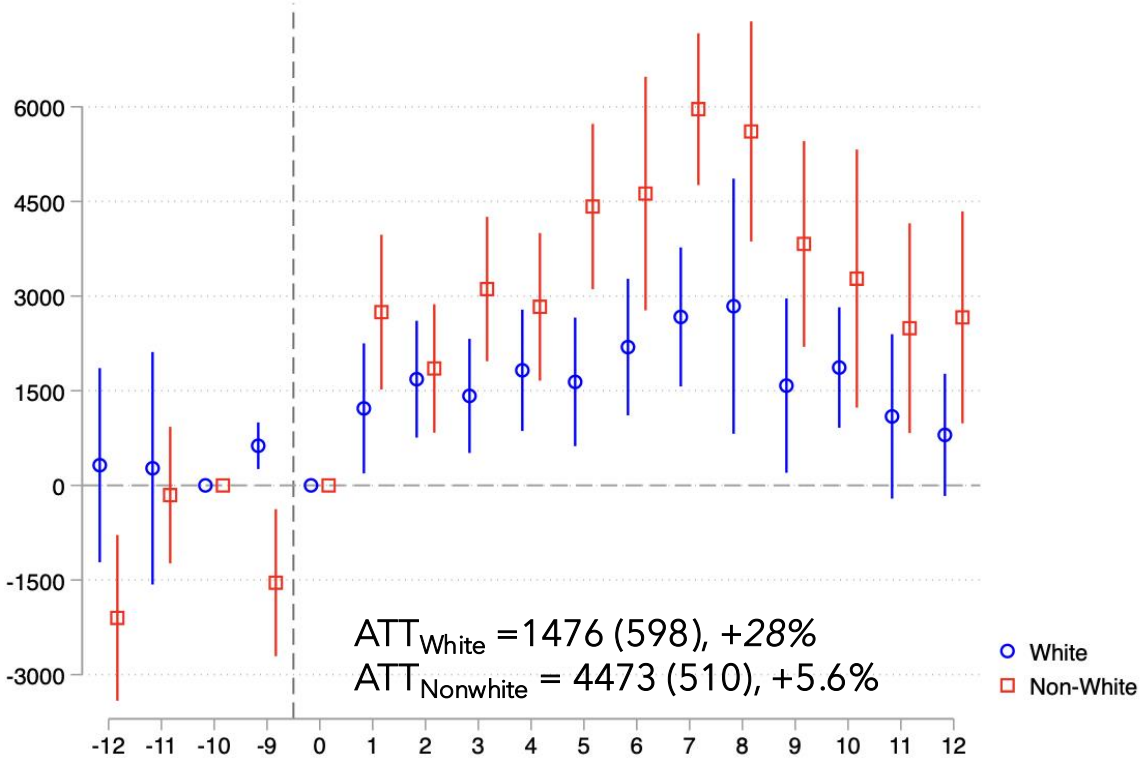
May explain some (~1/3) of under-5 mortality decline in white population, but discordant with all other patterns.

Resources

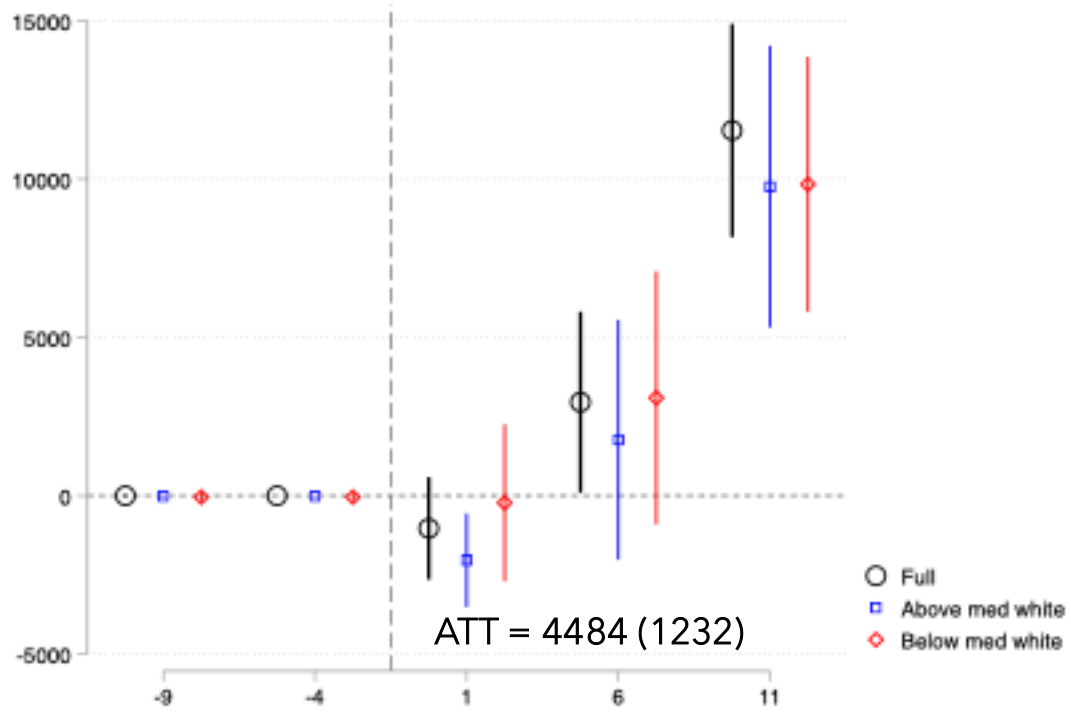
- Zero-sum redistribution of resources may explain opposing mortality findings by race

- Literature is mixed:
  - Increases in state transfers to non-white counties (Cascio and Washington 2014)
  - Increased wages for Black workers + modest decreases for white workers (Aneja and Avenacio-Leon 2025)
  - Decreased overall spending in non-white areas + political fragmentation (Chaundry 2025)

Household Income (CPS)



Direct Exp/Cap (Census of Governments)



Resources may explain gradual mortality improvements for non-white persons.

Cannot explain immediate increases for white persons.

Health care crowd–out also unlikely to explain findings.

Psychosocial stress

- Basic idea: VRA may have shifted perceptions of current status and expectations about the future, resulting in stress
  (Metzl 2019, Siddiqi et al 2019, Efrid et al 2023)

- Consistent with:
  - Immediate relative mortality increases for whites in event studies
  - Known backlash to the VRA
  - Historical context (decline of working class, cultural change)

Psychosocial stress

- Difficult to directly investigate this channel

- Our strategy:

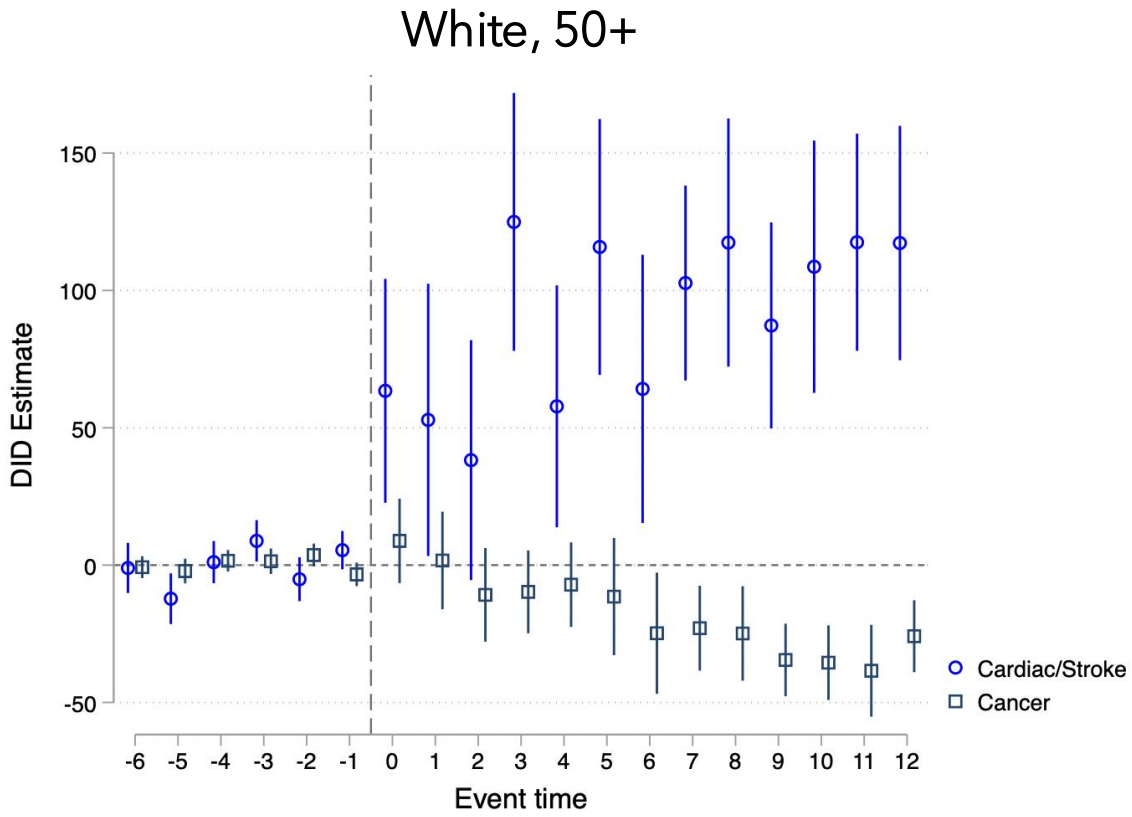
  - Examine causes of death that are more vs. less responsive to stress

  - Examine heterogeneity by SES (Kuziemko et al 2014; Reeping et al 2024)

  - Assess evidence of retaliation

Psychosocial stress – causes of death

- Cardiovascular diseases:
  - Immediately responsive to stress (catecholamine surge → plaque rupture)
  - Risk also increases over time (HPA, chronic inflammation → hypertension, metabolic syndrome, atherosclerosis) (Brotman et al 2007)
- Cancer:
  - More resource than stress sensitive (van Tuijl et al 2026)

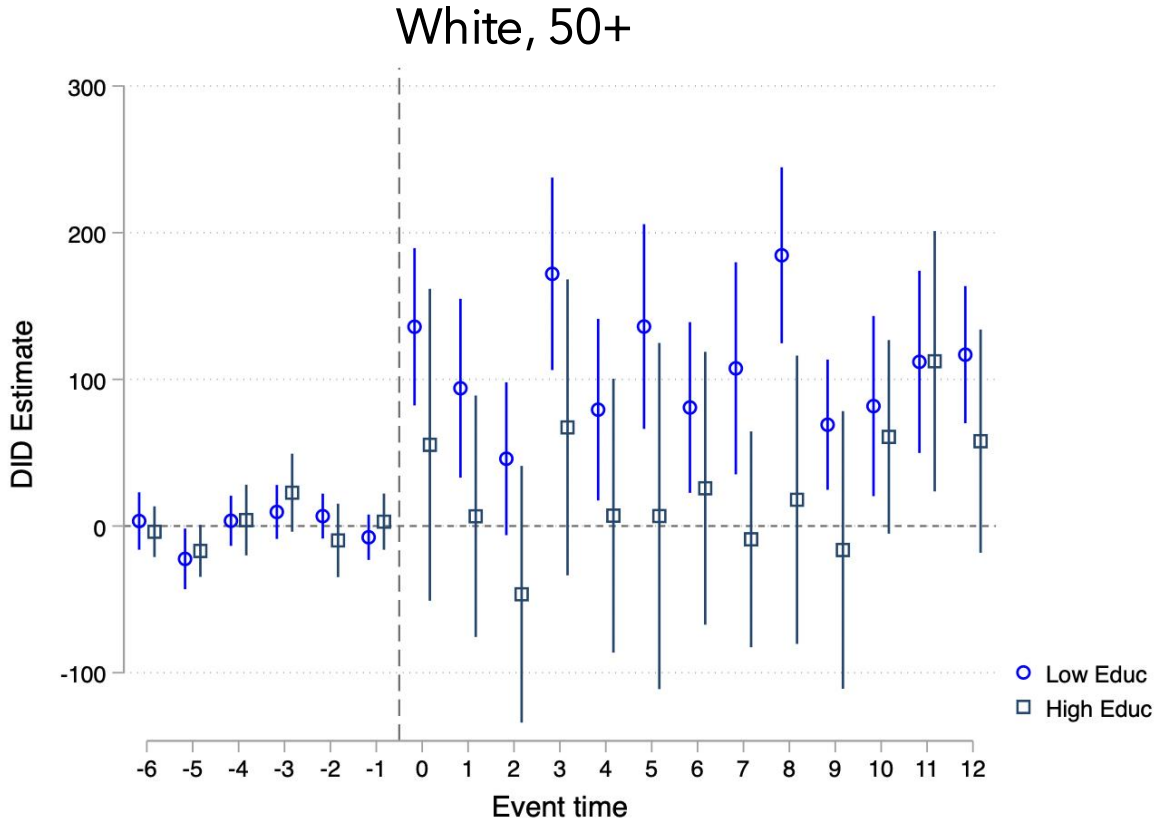


ATT_{CVD} = 89.9 (15.4), *+4.9%*
ATT_{Cancer} = -18.2 (4.7), *-4.2%*

Psychosocial stress - SES

- Stress from perceived loss of power greater among lower SES groups (Kuziemko et al 2014; Reeping et al 2024)

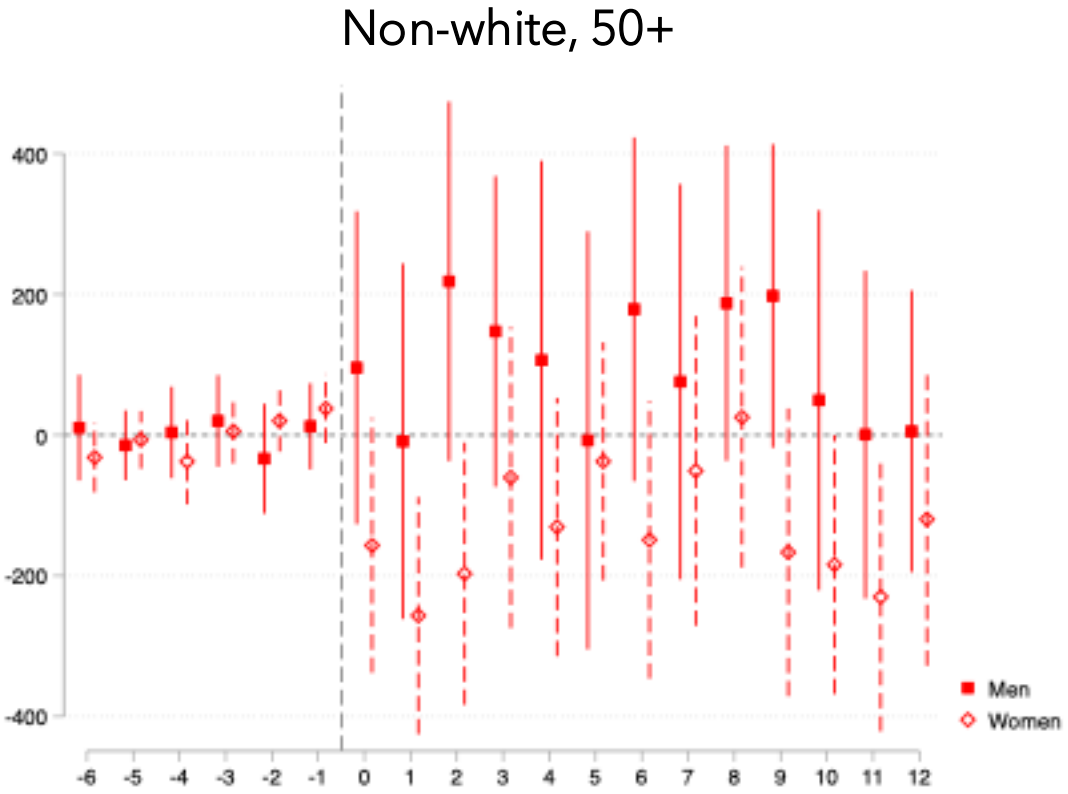
- Stratify sample by share of white adults with HS degree



$ATT_{>MedianHS}$ = 26.6 (28.8), *+0.9%*
$ATT_{<MedianHS}$ = 108.9 (17.8), *+3.3%*

Psychosocial stress - retaliation

- Stress may precipitate backlash against marginalized group.
- Non-white men have been targets (Beck and Tolnay 1990, Williams et al 2021, Derenoncourt 2022)
- Increases in 50+ mortality for non-white men concentrated in areas with lower white educational attainment



ATT_{Men} = 95.9 (55.5), +*2.5%*
ATT_{Women} = -131.9 (53.4), *-4.9%*

Discussion

Summary

- 1975 extension of the VRA led to:
  - Relative declines in under-5 mortality for all races and for younger non-white adults
  - Relative increases in white adult mortality

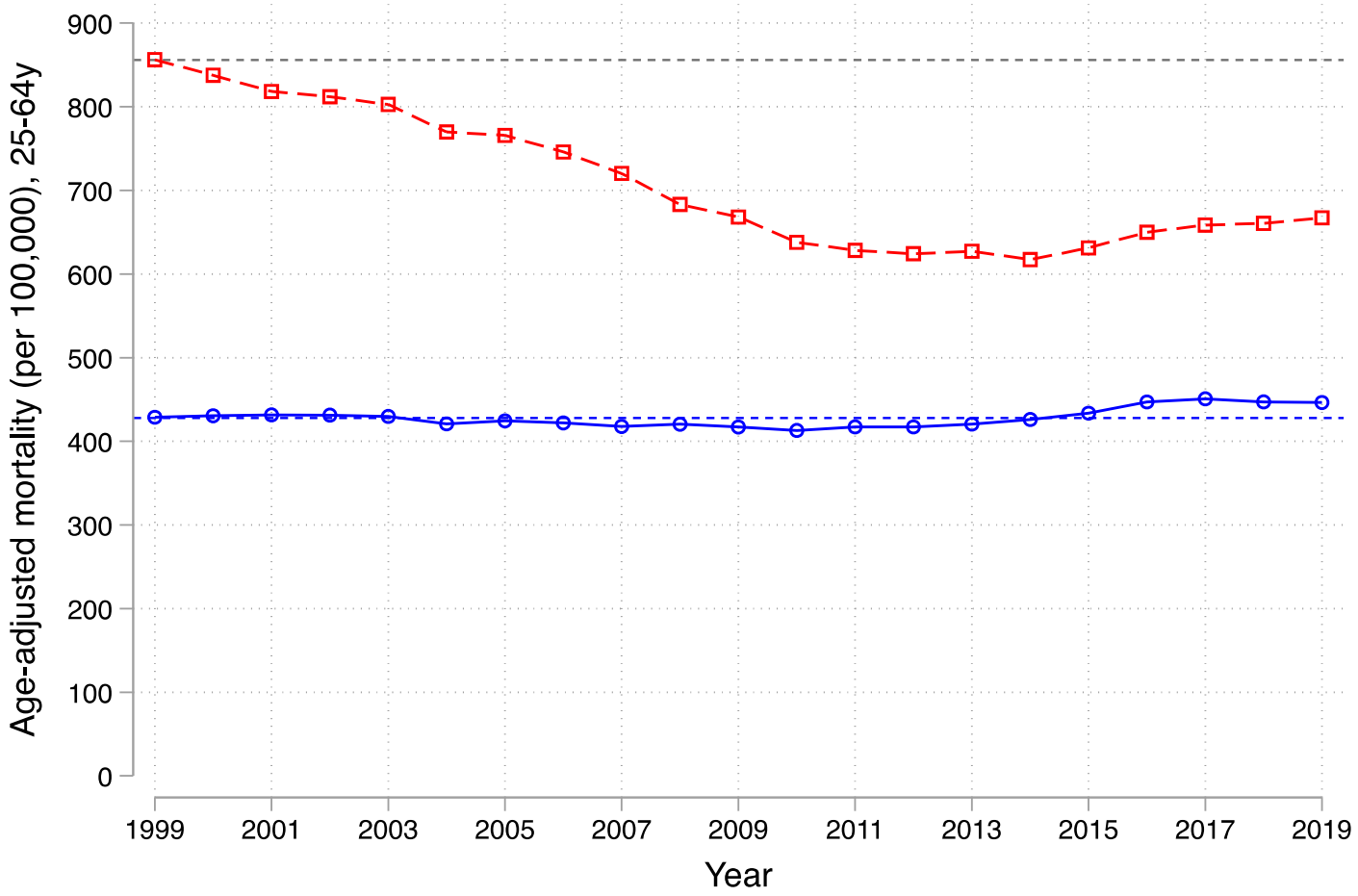
- Potential mechanisms:
  - Resources: gradual decreases in mortality seen for non-white people
  - Psychosocial stress: immediate increases in mortality for white adults

Implications

- Policies that extend political power to disenfranchised may not always have uniformly positive effects on health

- Psychosocial stress – particularly threats to status -- may play an important role in contemporary population health
  - May help explain distinct trajectory of group-specific mortality patterns (Malat et al 2018; Siddiqi et al 2019)
  - May help explain growing relationship between health outcomes and partisanship in U.S. (e.g., Bor 2017; Karas Montez et al 2020; Wallace et al 2023)

Current relevance?



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Model and empirical interpretation

- Start with production function that includes stress:

$$H_{t+1} = (1-\delta)H_t + f(X_t) - \phi S_t,$$

$$M_t = g(H_t), \qquad g'(H) < 0.$$

- VRA affects health (mortality) through two channels:
  - Resources (slow): $X_t = X_0 + \sum_{\tau \geq 0} \beta_\tau V_{t-\tau}$
  - Stress (fast): $S_t = S_0 + \theta V_t$

Model and empirical interpretation

- VRA effects on mortality: $$\pi_\tau = \frac{\partial M_t}{\partial V_{t-\tau}} = \underbrace{g'(H)\frac{\partial H}{\partial X}\beta_\tau}_{\text{resource channel}} - \underbrace{g'(H)\phi\theta}_{\text{stress channel}}$$

- Event study/DID model and interpretation:

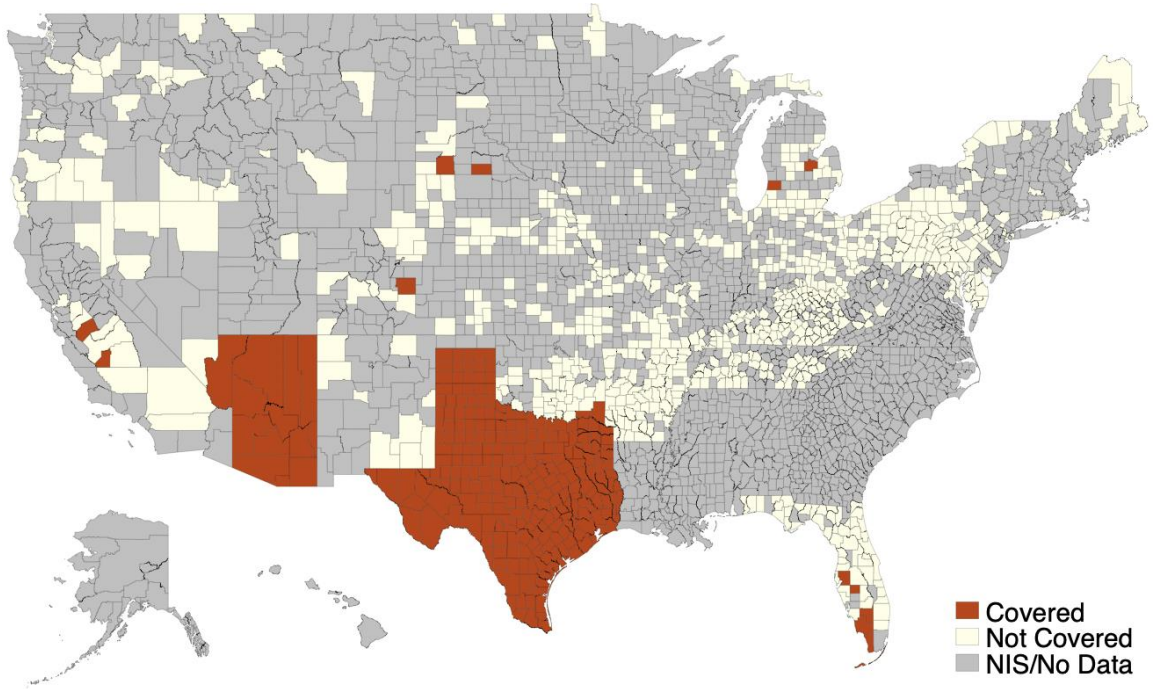
$$M_{ct} = \delta_c + \lambda_t + \sum_{\tau \neq -1} \pi_\tau \left(Covered_c \times 1\{t - t_0 = \tau\}\right) + \epsilon_{ct}$$

Early coefs more reflective of stress pathway
Later coefs reflect resource + stress pathways

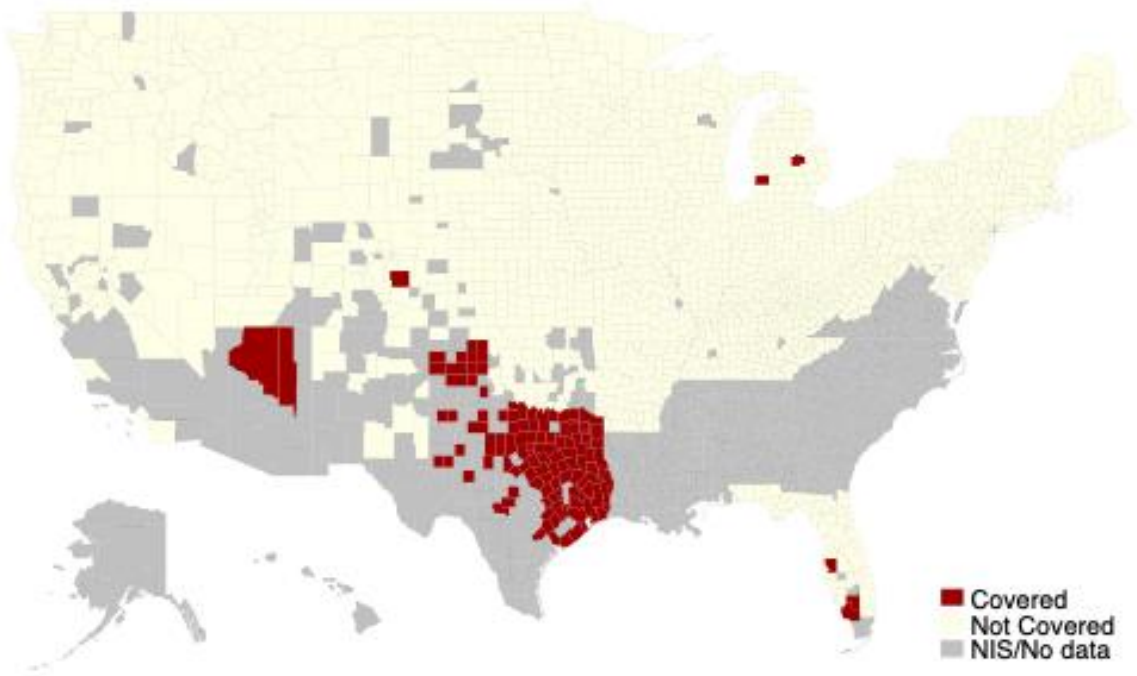
Opportunity for Health

Penn Medical Ethics & Health Policy

Close controls



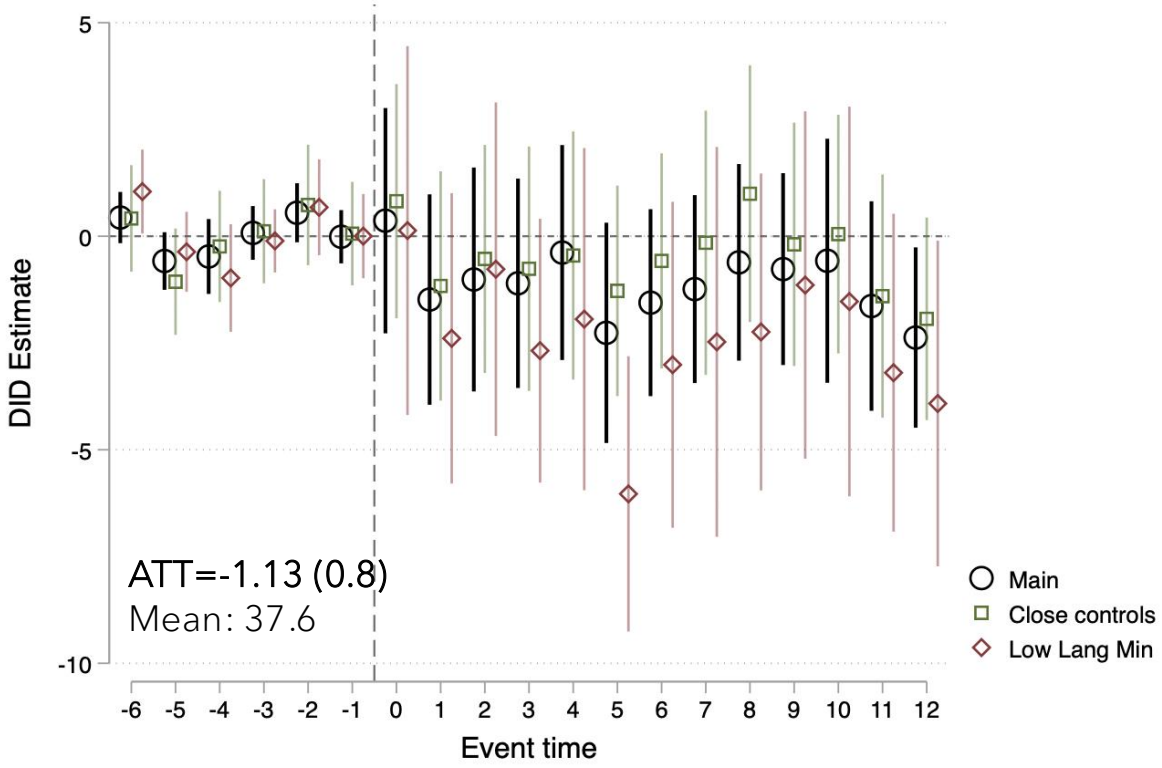
Low Share Language Minorities



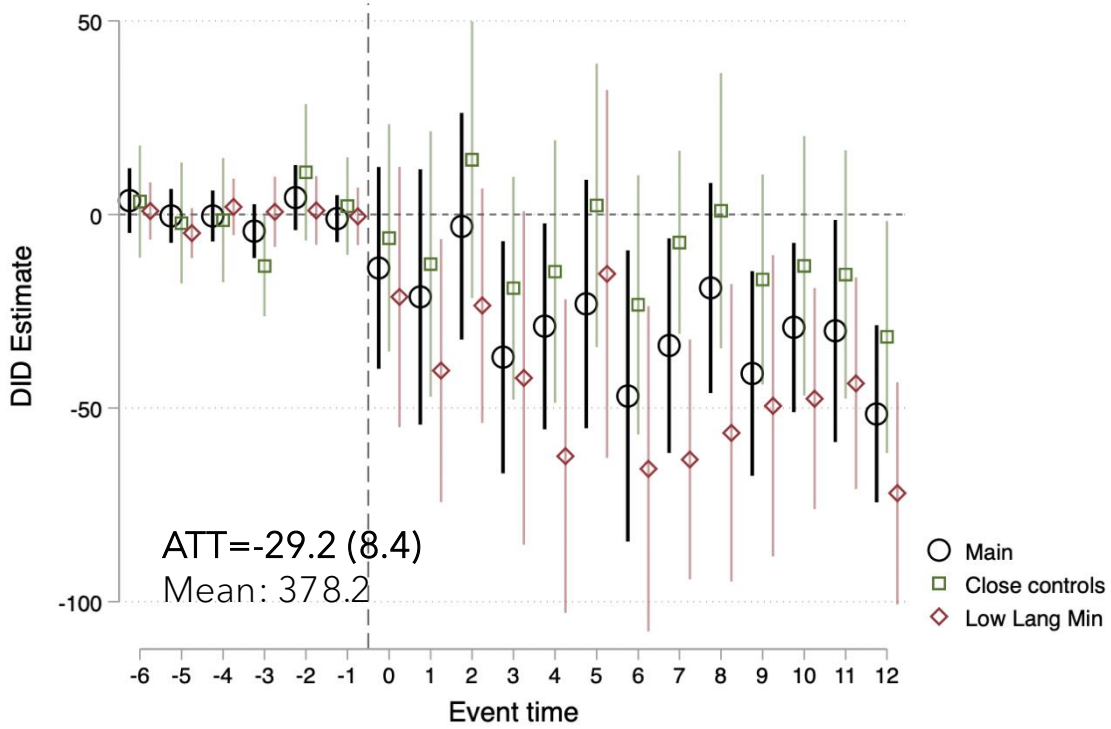
Main comparison

Non-white – other age groups

5-19 y.

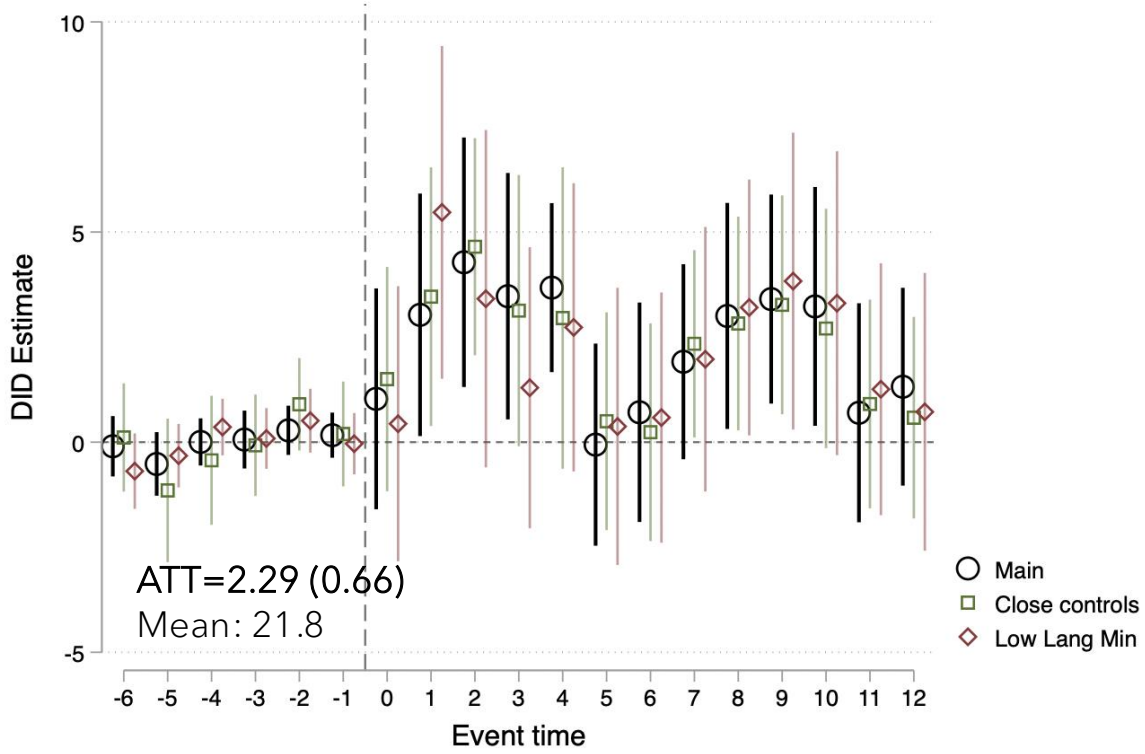


20-49 y.

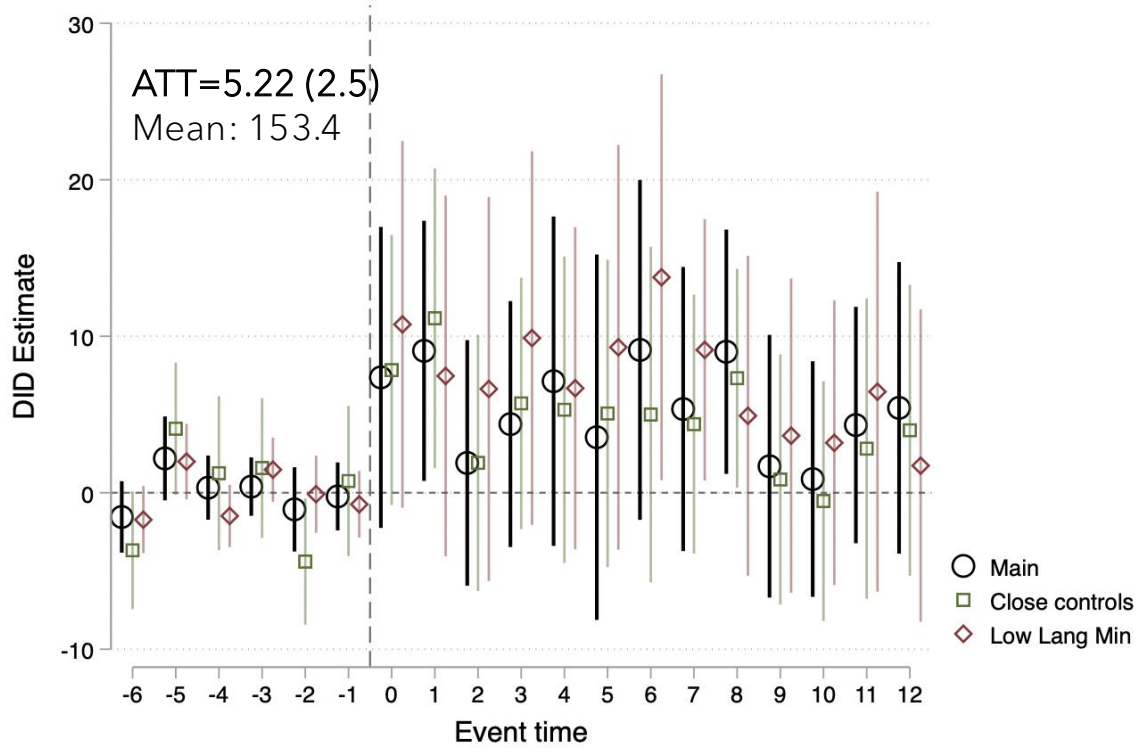


White – other age groups

5-19 y.



20-49 y.



Non-white men 50+, by SES