

# Housing Voucher Discrimination and Deaths of Despair

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# Motivation

- Ongoing opioid crisis
  - CDC (2022) estimates that 564,000 people died between 1999-2020 from an overdose involving any opioid
- Further explore relationship between housing and deaths of despair
  - Bradford and Bradford (2020, HSR)
    - Higher levels of eviction rates associated with higher rates of mortality across six of nine substance categories at the county level between 2003-2016
- Section 8 housing voucher discrimination legalized by Texas and Indiana in 2015

# Focus and Contribution

- Evaluate the impact of source of income discrimination on deaths of despair using a quasi-experimental method
- Apply approach similar to Bradford and Bradford (2020, HSR) to publicly available state-level data
  - Use difference-in-differences approach with legalized discrimination laws as a natural experiment

# Key Result

- Voucher discrimination increased the prescription opioid mortality rate by 2.438 deaths per 100,000 people during 2016-2018

# Housing Choice Program, Subsidized Private Housing

- The Housing Choice Program (Section 8) Federal Housing Assistance Program
  - Designed as a free market voucher alternative to Government housing, plagued by poor reputations
  - Ideally seeks to allow poorer people to seamlessly integrate into richer neighborhoods, improving their opportunities, with the most dramatical results for their children
  - Federally funded but locally administered by Public Housing Authorities
  - X% are minority and 70% of voucher recipients are families with children

# Landlords Lack Incentives to Accept Vouchers

- Landlords receive same amount of cash for the property, but incur additional requirements
  - Must pass housing inspections that vary from municipality to municipality with vague requirements and high first time failure rates leading to loss in revenue
  - Concerns that voucher holders may cause significant property damage, concerns which may be racially motivated as they are most prevalent in areas experiencing racial or ethnic transition
  - Not Federally required to accept vouchers
  - **Law regarding voucher discrimination is determined at the state, municipal, and even HOA level**
  - Main benefit to landlords is the sustainable nature of the income

# Background

- Section 8 housing voucher discrimination legalized by Texas and Indiana in 2015
  - Texas Tribune (2018)
    - One in four families in Houston who receive voucher assistance cannot use it
    - Majority of Houston families who successfully use their voucher end up doing so in poorer neighborhoods
    - Apartment owners argue Section 8 program is full of bureaucratic problems while affordable housing advocates argue that legalized discrimination causes harm

# Better Housing can Reduce Deaths of Despair

- Deaths of despair are deaths from opioid overdoses, suicide, and alcohol that have contributed to rising midlife mortality rates
- Socioeconomic factors contribute to deaths of despair and housing choice vouchers improve those same socioeconomic factors
  - Jou et al. (2020) found higher household wealth was correlated with higher self-reported health scores.
  - Fischer (2015) and (2019) find housing choice vouchers have a significant impact on reducing homelessness and housing stability.
  - Findings reveal vouchers result in 80% reduction in homelessness and improvements in well being, child health, development, and education,
- Multiple substance use, Houston Cocktail
  - Benzodiazepines, opioids, and muscle relaxant



# Data

- CDC WONDER online database of public health data
  - State level data on number of substance-related deaths
  - Panel data
- State laws for voucher discrimination allowed
- Eviction rate data from The Eviction Lab at Princeton University
- Health Resources and Services Administration area health resources data
- Prescription drug monitoring program data from the Prescription Drug Abuse Policy System at Temple University

Table 1: Descriptive Statistics, 2010-2018

	Mean	Standard Deviation
Mortality Rates (per 100,000 state residents)		
Opioid Mortality Rate	11.811	6.370
Prescription Opioid Rate	5.909	2.930
Synthetic Opioid Mortality Rate	4.054	5.667
Heroin Mortality Rate	3.519	2.756
Cocaine Mortality Rate	2.546	2.306
Stimulant Mortality Rate	2.578	2.540
Benzodiazepine Mortality Rate	3.227	2.129
Antidepressant Mortality Rate	1.817	1.150
Alcohol Poisoning Mortality Rate	4.051	1.866

Notes: Data on all states with measured eviction rates and mortality rates from 2010 to 2018.  
Each substance-related mortality rate is deaths involving each substance per 100,000 people in the state.

Table 1 (cont.): Descriptive Statistics, 2010-2018

	Mean	Standard Deviation
Independent Variables		
Eviction Rate	0.808	1.127
Total State Population (in 1,000,000's)	8.204	7.461
Percent Population that is Male	49.329	0.616
Percent Population Aged 18-64	60.384	1.269
Percent Population White Only	67.518	13.741
State Income Per Capita (in \$1,000's)	48.881	7.482
Poverty Rate	14.377	2.861
Percent of Population with No Health Insurance	10.999	4.526
Unemployment Rate	6.214	2.237
Active Physicians per 1,000 Persons in State	2.913	0.599
State has Must-Access PDMP	0.321	0.468

Notes: Eviction rate is number of judgements per 100 renting households.  
PDMP is an electronic prescription drug monitoring program.

# Econometric Approach

- $Y_{st} = \alpha + \beta VDA_{st} + \delta X_{st} + s_s + d_t + \varepsilon_{st} \quad (1)$
- $Y_{st}$  denotes dependent variables for each state  $s$  at time  $t$
- $VDA_{st}$  is a dummy variable whose binary measure equals 1 for years a state has voucher discrimination allowed and 0 if it does not
- $X_{st}$  includes our controls such as eviction rate, state pop, etc..
- $s_s$  is state dummy variable
- $d_t$  is a year dummy variable
- $\varepsilon_{st}$  represents standard errors clustered by state as errors are likely to be dependent within states over time

# Figure 1: States with Voucher Discrimination Allowed (VDA), 2010-2018

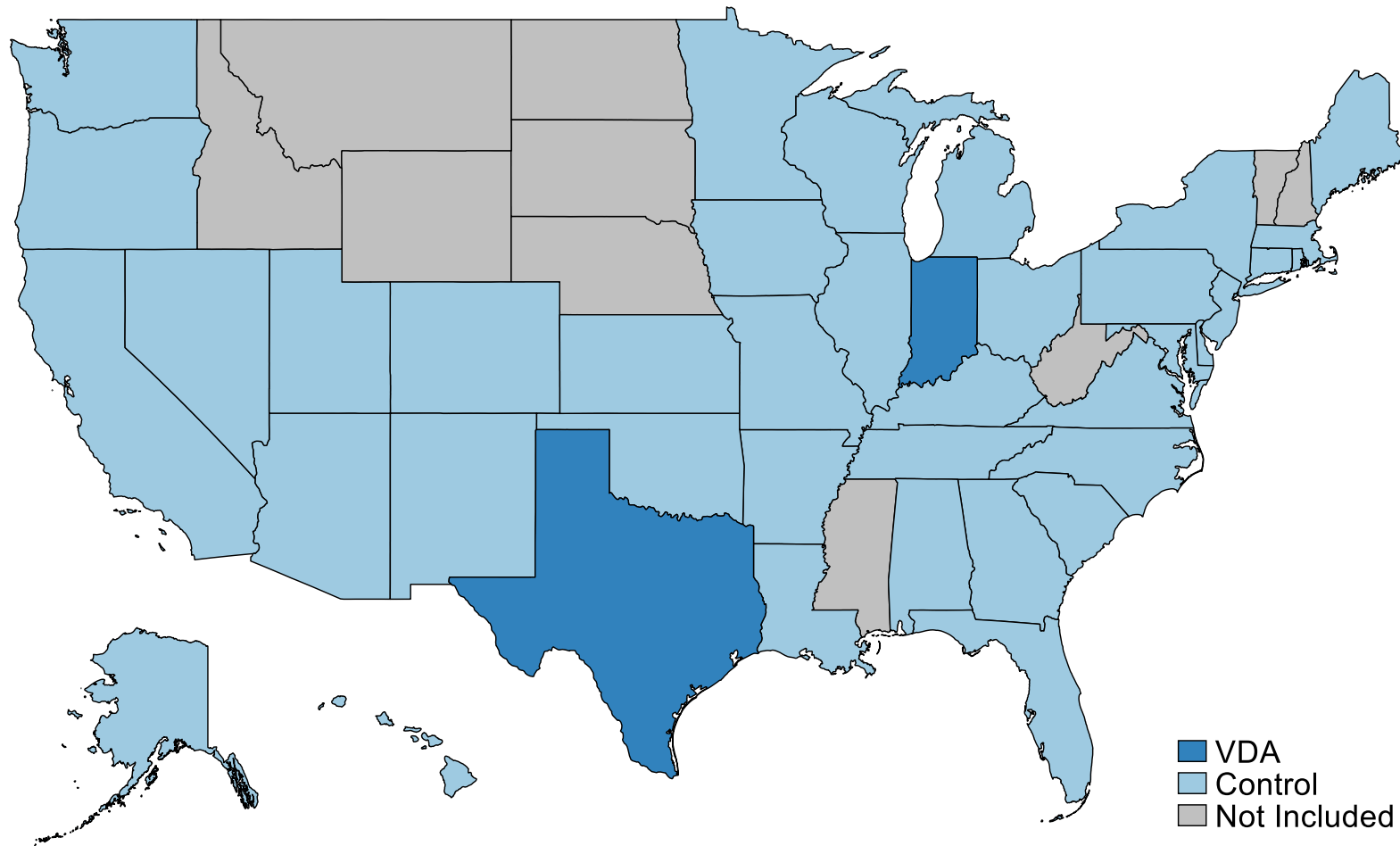


Table 2: Difference-in-Differences Results for Substance-Related Mortality Rates, 2010-2018

Variable	All Opioids	Prescription Opioids	Synthetic Opioids	Heroin	Cocaine	Stimulants	Benzodia-zepines	Antidepressants	Alcohol Poisoning
VDA	2.444 (2.071)	2.438*** (0.813)	0.051 (1.489)	0.052 (0.523)	-0.161 (0.596)	0.526 (0.723)	1.872*** (0.650)	1.063*** (0.346)	0.976** (0.371)
Observations	277	277	277	277	277	277	277	277	277
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

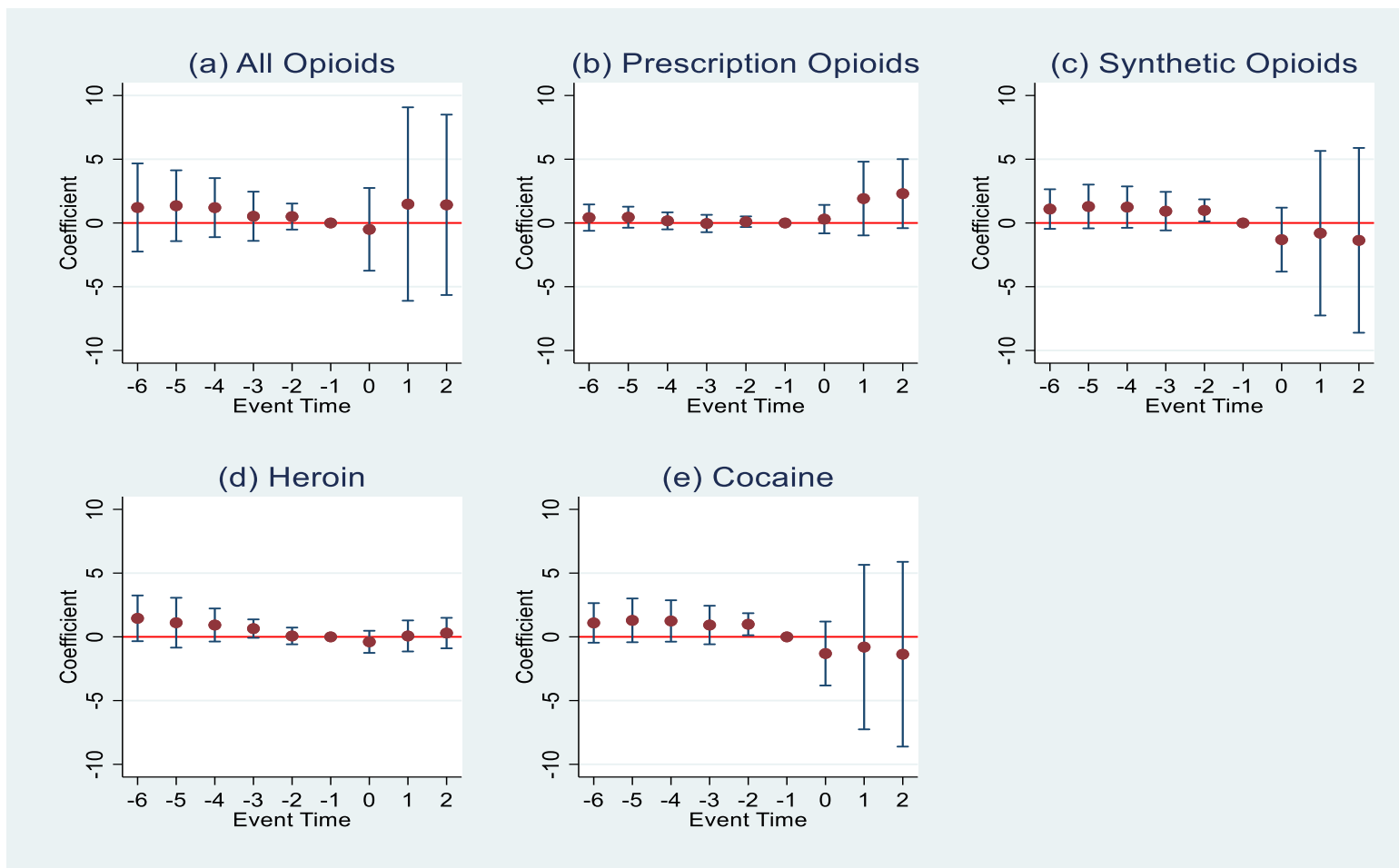
Clustered by state robust standard errors in parentheses.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Control Variables include: Eviction Rate, State Population, Percent Population that is Male, Percent Population Aged 18-64 Years, Percent Population that is White, State Income Per Capita, Percent Population in Poverty, Percent Population with no Health Insurance, Unemployment Rate, Active Physicians Rate, State has must-access Prescriptive Drug Monitoring Program.

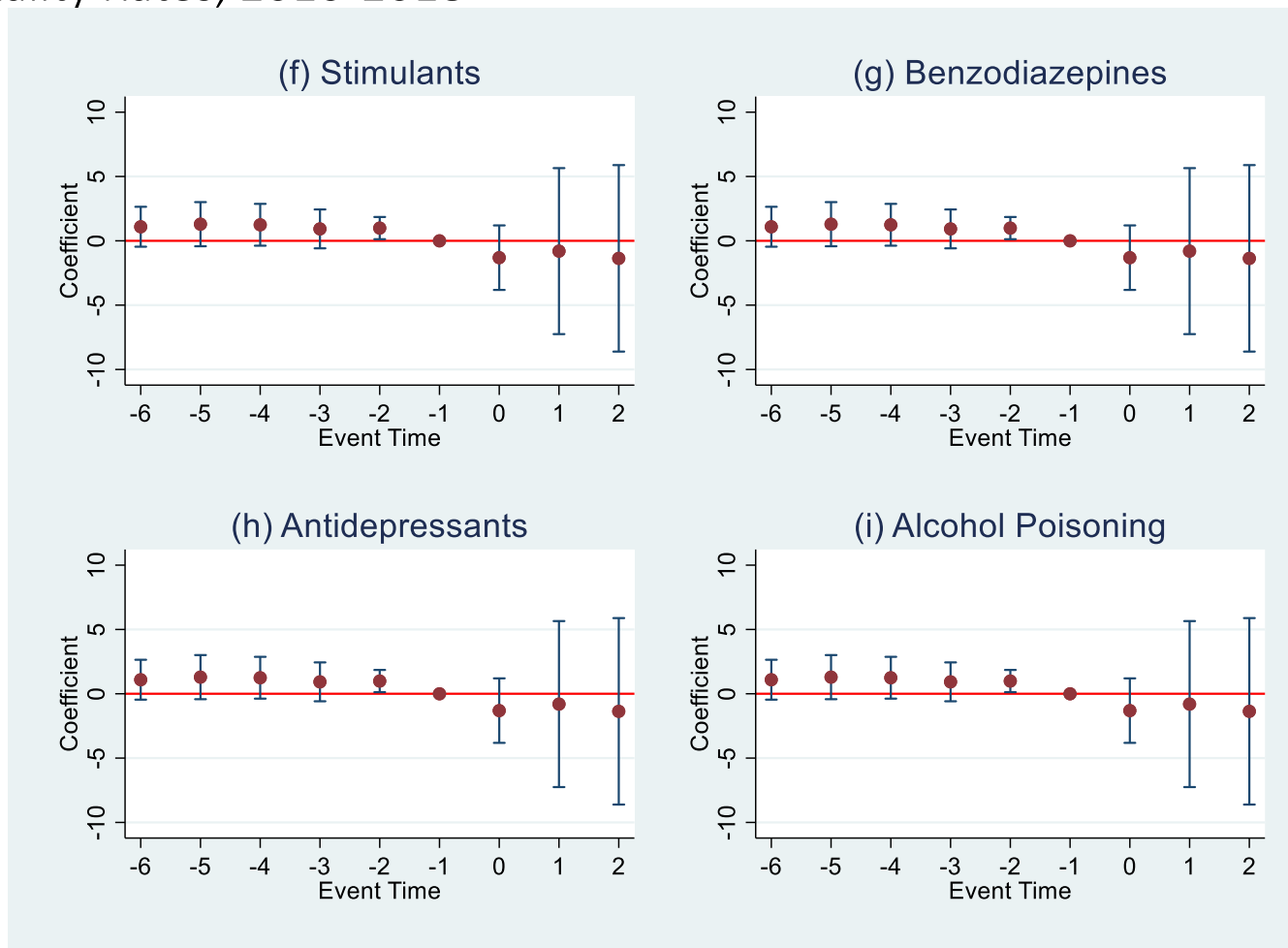
Each substance-related mortality rate is deaths involving each substance per 100,000 people.

Figure 2: Event Study Estimates of the Effects of Voucher Discrimination Allowed on Substance-Related Mortality Rates, 2010-2018



Notes: The figure displays results from a regression-based study analysis. We use vertical bars to show the 95% confidence range around each estimate. We set the year before the policy goes into effect (i.e. event time -1) as the omitted category.

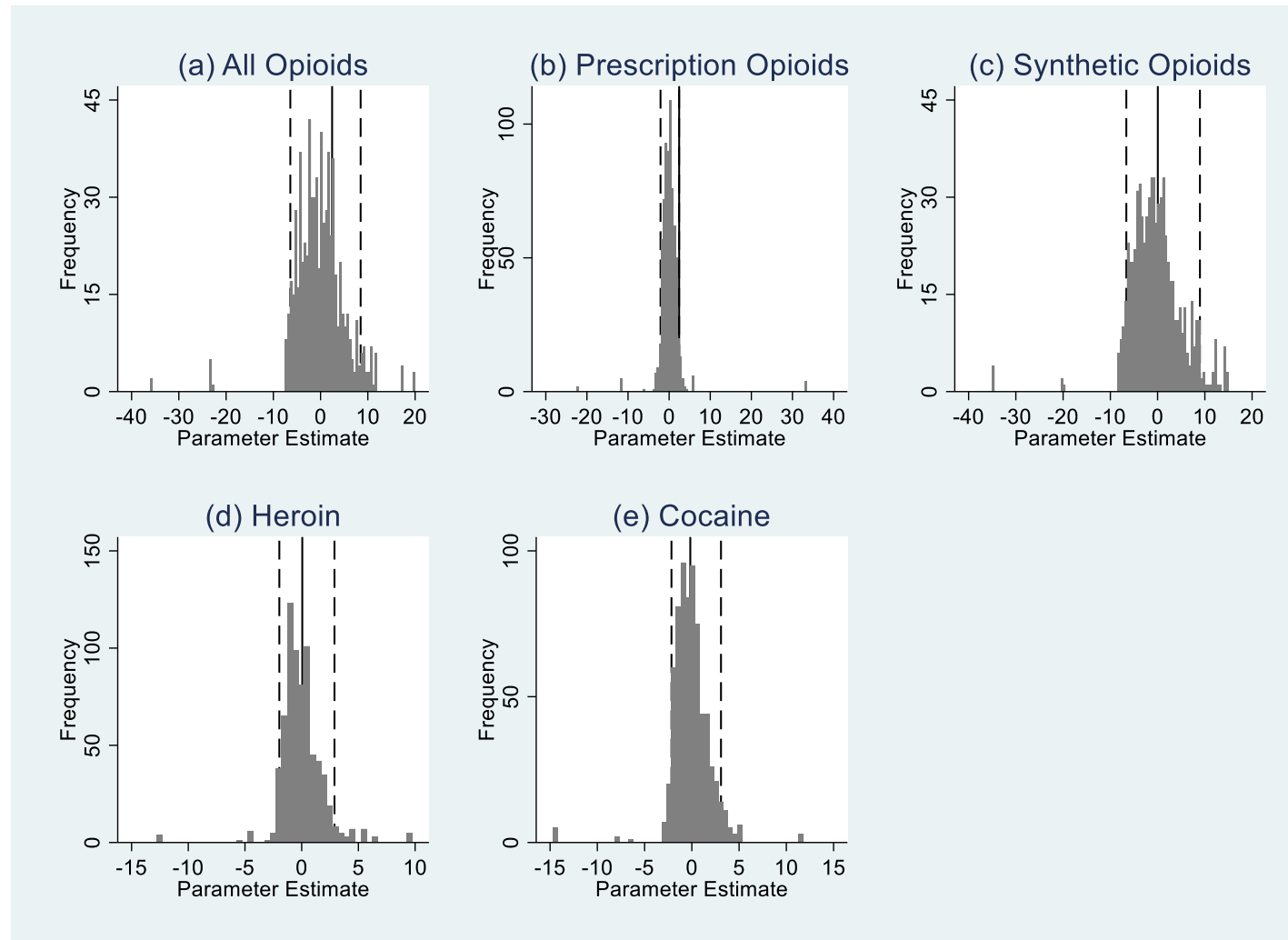
Figure 2(cont.): Event Study Estimates of the Effects of Voucher Discrimination Allowed on Substance-Related Mortality Rates, 2010-2018



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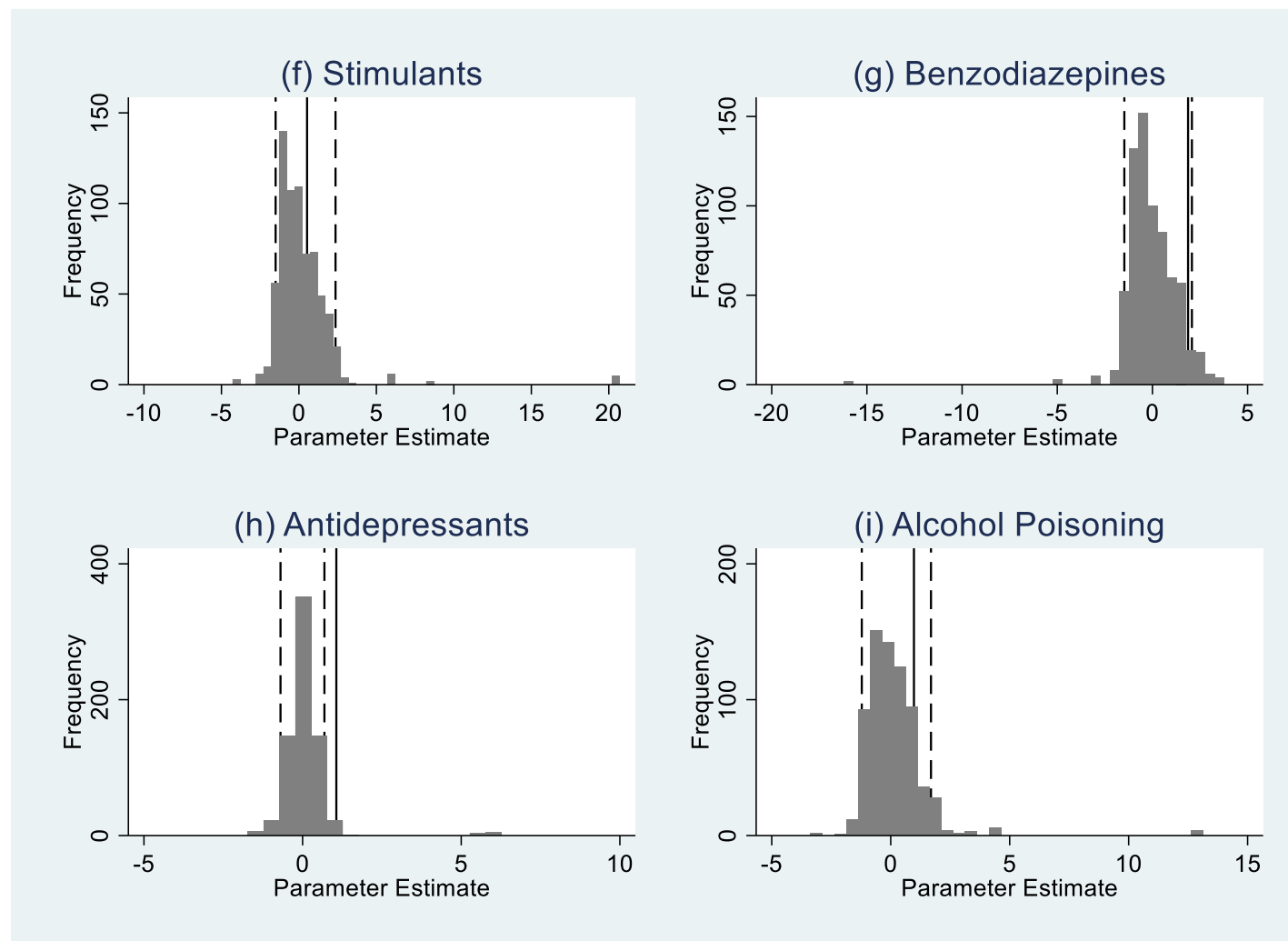


Figure 3: Placebo Estimates of the Effects of Voucher Discrimination Allowed on Substance-Related Mortality Rates, 2010-2018



Notes: The histograms show the results of our falsification tests. We compare our voucher discrimination allowed treatment effect coefficients for Texas and Indiana to 703 additional coefficient estimates where we designate placebo treatment status to 2 of the 38 states in our control group that do not explicitly allow voucher discrimination. We mark the 95th and 5th percentile critical values for the placebo coefficients using dashed lines. The solid lines denote our coefficient estimates for Texas and Indiana.

Figure 3 (cont.): Placebo Estimates of the Effects of Voucher Discrimination Allowed on Substance-Related Mortality Rates, 2010-2018



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# Robustness Checks

- Control variables dropped
- Treatment-straddling years dropped (i.e. 2015 and 2016)
- Eviction rate dropped
- Results remain consistent for all of our robustness checks

# Discussion

- Evidence of an increase in prescription opioid deaths in response to a VDA policy
- Essential to reconsider and reevaluate housing policy
- Without a viable alternative program, our evidence shows that source of income discrimination worsens the opioid crisis by increasing prescription opioid-related deaths
- Policymakers can undo the discrimination law
- Policymakers could modify the current Section 8 program to address concerns from landlords relating to administration and implementation
- Prevent fatal unintended consequences

# Conclusions

- Source of income discrimination results in an unintended consequence of higher mortality from prescription opioids
- Limitations
  1. Conduct our study at the state level using publicly available data
    - a. Restrictions make a county analysis difficult
    - b. State-level analysis also precludes exploration of whether empirical results vary by urban, suburban, or rural setting
  2. Our study only considers the U.S. and may not generalize to other countries
- Use the state-level results and publication to apply for a grant and access to restricted county-level data