

ONLINE DATA APPENDIX FOR COLLECTIVE BARGAINING RIGHTS, POLICING, AND CIVILIAN DEATHS

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A. DATA APPENDIX

We use several data sources in our analysis. Below we describe the data we use and how we construct the final dataset.

A.A1 Vital Statistics Data

Our measurement of police-related fatalities comes from the 1959 to 1988 Vital Statistics Multiple Cause of Death Files. The 1959-1988 files are publicly available at the ICPSR at the University of Michigan. A major shortcoming of using Vital Statistics files to measure police-related fatalities is the severe underreporting of police-caused deaths. Ideally, we would use newer, crowd-sourced data such as Fatal Encounters to capture police-related fatalities, but those data series begin well after locations are treated. Despite the under-count, the Vital Statistics does well with capturing national trends. Below, Appendix Figure B5 shows that the Vital Statistics and Fatal Encounters series on police-related fatalities mirror each other over time.

The Vital Statistics files cover several decades with many changes to coding police-related fatalities. For 1968 to 1988, we use the following ICD-9 and ICD-8 codes: E970-E977. Finally, for 1959 to 1967, we use the following ICD-7 code: E984.

A.A2 UCR Data

Data on arrests and police employment come from the Uniform Crime Report Data Series, which is publicly available at the ICPSR at the University of Michigan.

A.A2.1 Police Employment

The Uniform Crime Reporting (UCR): Law Enforcement Officers Killed or Assaulted UCR Law Enforcement Officers Killed or Assaulted (LEOKA) contains monthly counts of law enforcement officers killed and assaulted as well as annual law enforcement employment. The UCR reports the number of civilian officers and sworn officers as of October 31st of the reporting year. The UCR LEOKA is available publicly at the ICPSR website for years after 1974. For the years spanning from 1960 to 1974, data are manually entered from hard copies of UCR LEOKA reports.

A.A2.2 Arrest Data

The UCR Arrests by Age, Sex, and Race dataset is publicly available at the Inter-University Consortium for Political and Social Research (ICPSR). It provides information on the number of arrests reported by local and state law enforcement agencies to the Federal Bureau of Investigation (FBI). The data compiled for the UCR are submitted voluntarily by city, county, and state enforcement agencies. The FBI or state law agencies directly provide survey forms to local law agencies or state collecting programs, which are collected on a monthly basis. The data

on arrests include yearly information on the number of arrests within 43 categories, including property and violent crime as well as drug-related offenses; they also include information on the age, sex, and race of arrestees.

A.A3 Unionization, Pay, and Equipment

The Law Enforcement Management and Administrative Statistics (LEMAS) is publicly available at the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan. LEMAS provides detailed survey data from police agencies on their equipment, personnel, and capabilities. The survey is conducted every three years and includes most large law enforcement agencies. The survey contains information on the demographic composition of law enforcement officers.

We use the Law Enforcement Management and Administrative Statistics (LEMAS) ICPSR 9222 database in 1987 to investigate how our results vary by actual unionization and to provide descriptive evidence on salary, overtime pay, minimum and maximum entry pay, the number of sworn officers, capital outlay on equipment, the use of any form of computers, soft body armor and whether officers were issued automatic firearms. We normalize the expenditure on salaries, overtime pay and equipment by population. These data contain 861 counties in our sample with 429 of them treated. The data can be downloaded from ICPSR here: <https://www.icpsr.umich.edu/web/NACJD/studies/9222>.

A.A4 Demographic Information

The County and City Data Books provide information on city demographics and local government expenditures for counties, cities, and incorporated areas of 25,000 inhabitants or more in the United States. Data on population counts as well as demographic information are from the decennial census conducted in the beginning of each decade. Data on local government operations, revenue, and expenditures are from the Annual Survey of Governments, which is conducted for a sample of governments by the Census Bureau. We use the County and City Data Books for 1962 and 1967. We obtain yearly population counts from the 1960 Census (Haines et al., 2010) and the Surveillance, Epidemiology, and End Results (SEER) annual data, which begin in 1968 (interpolated between 1960 and 1968).

A.A5 Uprising Data

The data for uprisings was provided by Collins and Margo (2007) and was originally collected by Carter (1986). The data consist of detailed information on arrests, injuries, and deaths caused by riots in each city where rioting occurred. Using this information, we create a dummy variable to identify the year and county in which rioting occurred. We also create an index of severity by summing the number of arrests, injuries, arsons, and deaths in the year and dividing them by the total sum of injuries, deaths, arsons, and arrests due to rioting. The severity index is similar to other rioting measures used in research that analyzes the impact of rioting.

A.A6 Bargaining Rights and Duty to Bargain

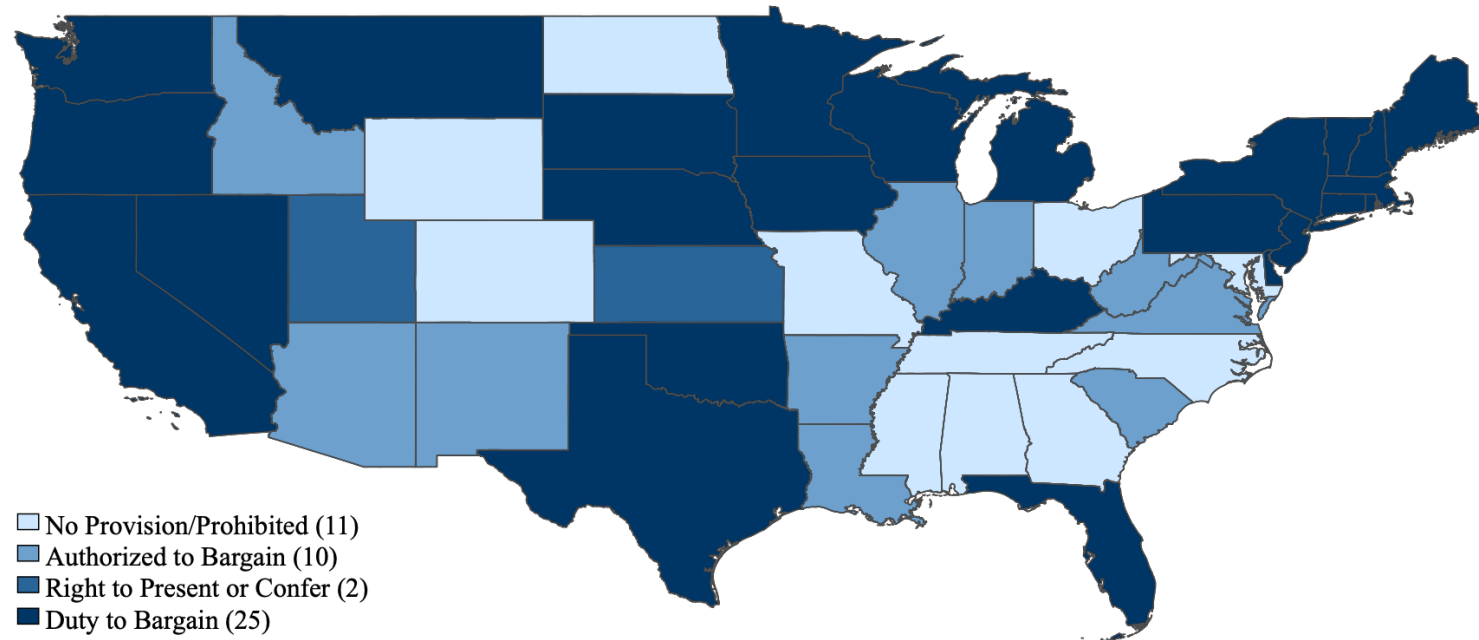
Information on collective bargaining rights is from the NBER Public Sector Collective Bargaining Law Data Set (Valletta and Freeman, 1988). The data set consists of observations for five state and local government employee groups in 50 states from 1955-1985, one of which is law enforcement. For each group-state-year, the status of the state bargaining law is summarized by 14 numerical variables, which Valletta and Freeman (1988) judge to be most relevant for union activity. These variables are divided into five categories: contract negotiation, union recognition, union security, impasse procedures, and strike policy. The data distinguish between no provisions around collective bargaining rights, collective bargaining rights being prohibited, the employer being authorized but not required to bargain with a union, the right to present proposals, the right to meet and confer, and the implicit or explicit duty to bargain. We code the treatment as the first year a state adopts the “duty to bargain.” The data and further documentation can be found here: <https://www.nber.org/research/data/nber-public-sector-collective-bargaining-law-data-set>.

A.A7 Final Sample

To compile our final sample we merge data at the county level with our treatment data at the state level. Treated counties belong to states that adopted duty to bargain provisions between 1959 and 1988. The control group consists of counties belonging to states where the duty to bargain with law enforcement unions is not introduced or explicitly rejected. We focus specifically on collective bargaining rights in the lower 48 contiguous states. Note, all counties are identified by their 1960 definition.

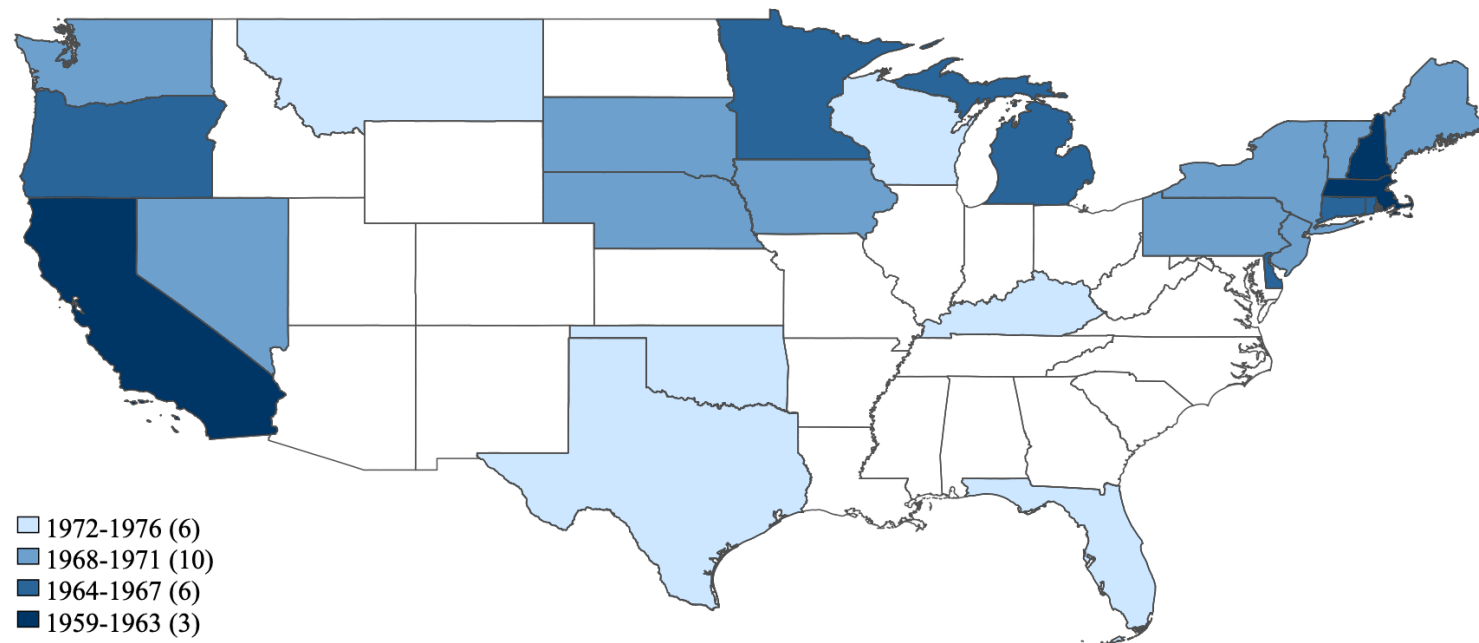
B. APPENDIX FIGURES

Figure B1: Police Union Bargaining Rights Adoption, 1959-1979



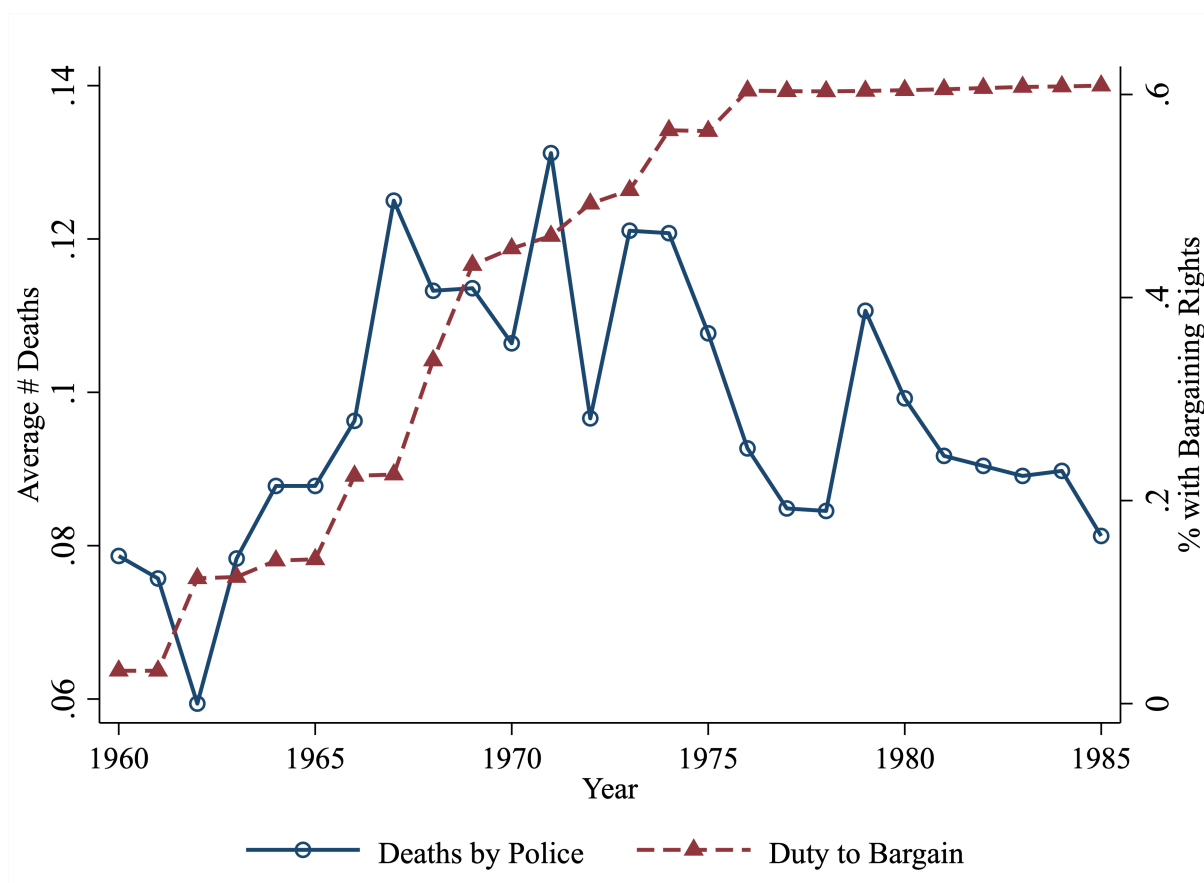
Notes: Information on bargaining rights comes courtesy of the NBER Public Sector Collective Bargaining Law Data Set ([Valletta and Freeman, 1988](#)).

Figure B2: Timing - Duty to Bargain



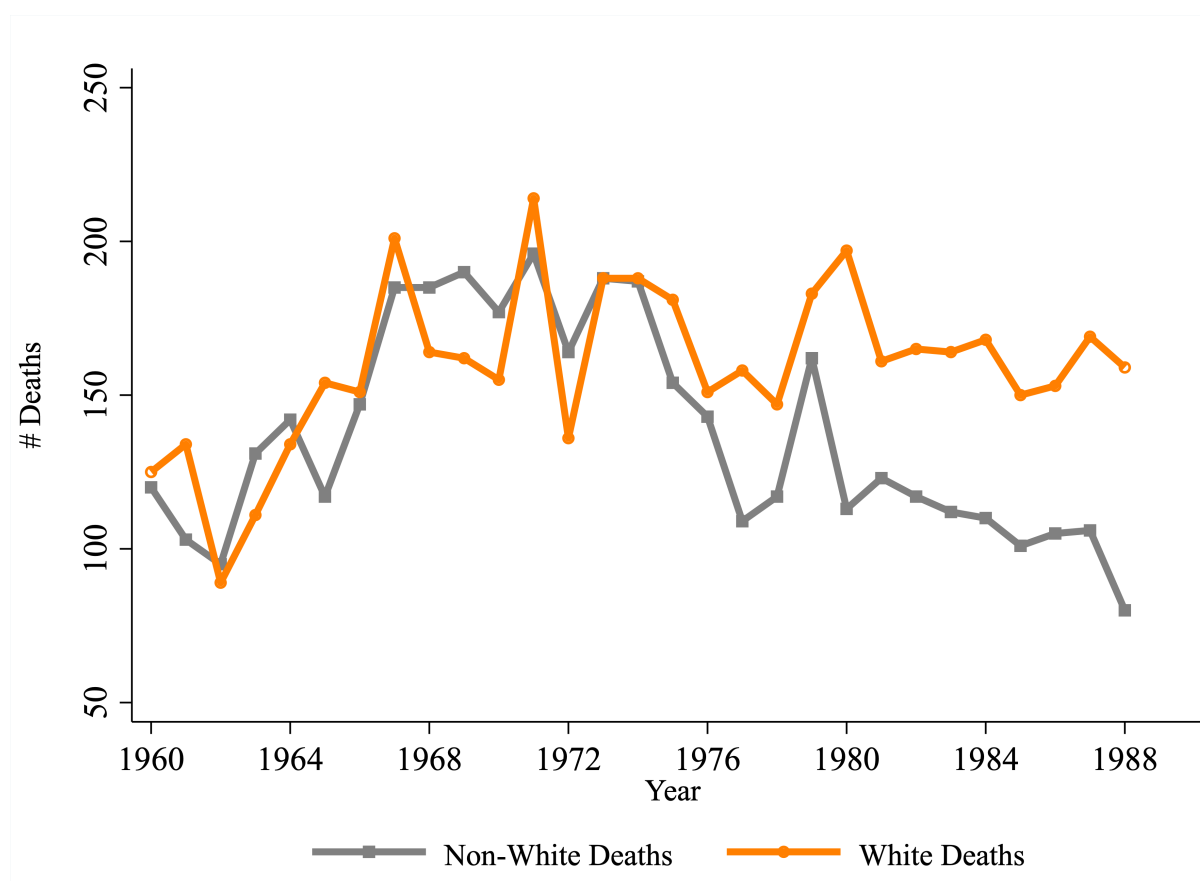
Notes: Information on bargaining rights comes courtesy of the NBER Public Sector Collective Bargaining Law Data Set ([Valletta and Freeman, 1988](#)).

Figure B3: Police-Related Fatalities and Duty to Bargain Provisions Over Time



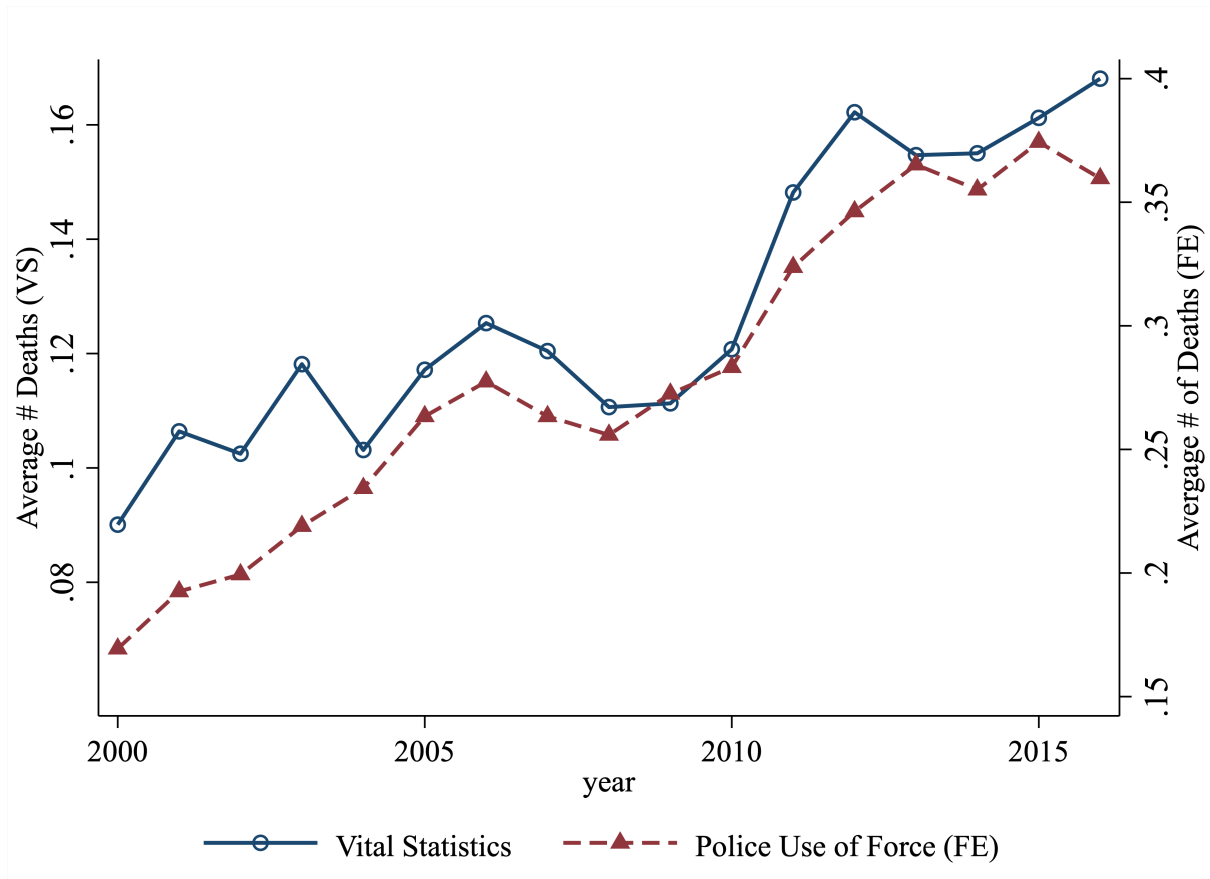
Notes: Data sources are from the 1959 to 1988 Vital Statistics Multiple Cause of Death Files (US DHHS and ICPSR 2007) and the NBER Public Sector Collective Bargaining Law Data Set ([Valletta and Freeman, 1988](#)).

Figure B4: Total Police-Related Fatalities Over Time by Race



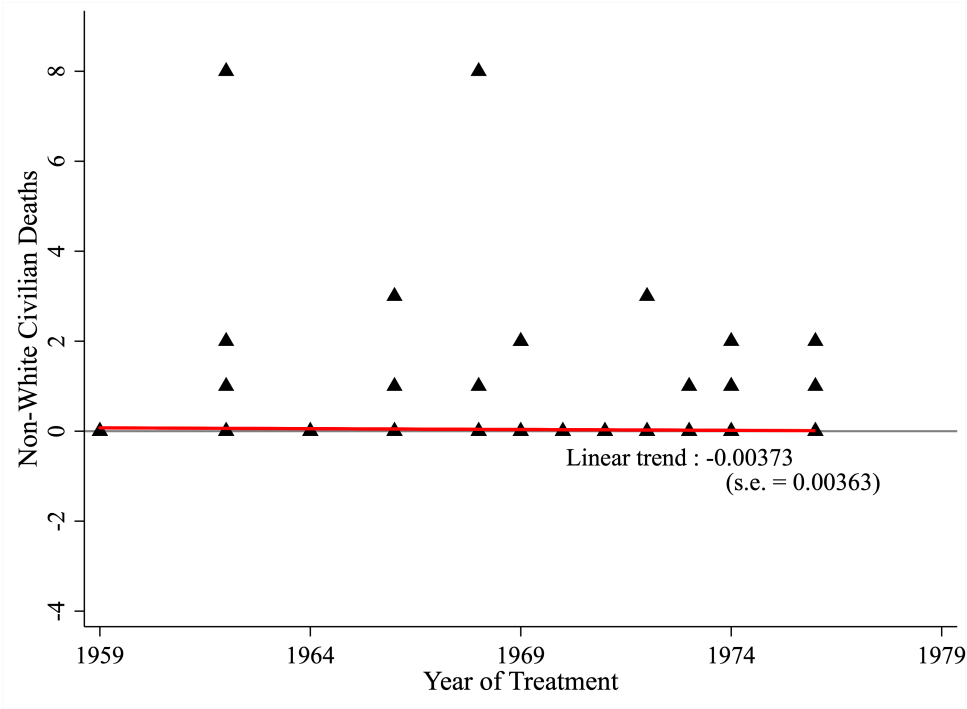
Notes: Data sources are from the 1959 to 1988 Vital Statistics Multiple Cause of Death Files (US DHHS and ICPSR 2007).

Figure B5: Police-Related Fatalities, 2000-2016



Notes: Data sources are from the 1998 to 2016 Vital Statistics Multiple Cause of Death Files and the Fatal Encounters Data (see [Fatal Encounters Website](#)).

Figure B6: Variation in Timing and Location of Duty to Bargain Provisions and Non-White Deaths



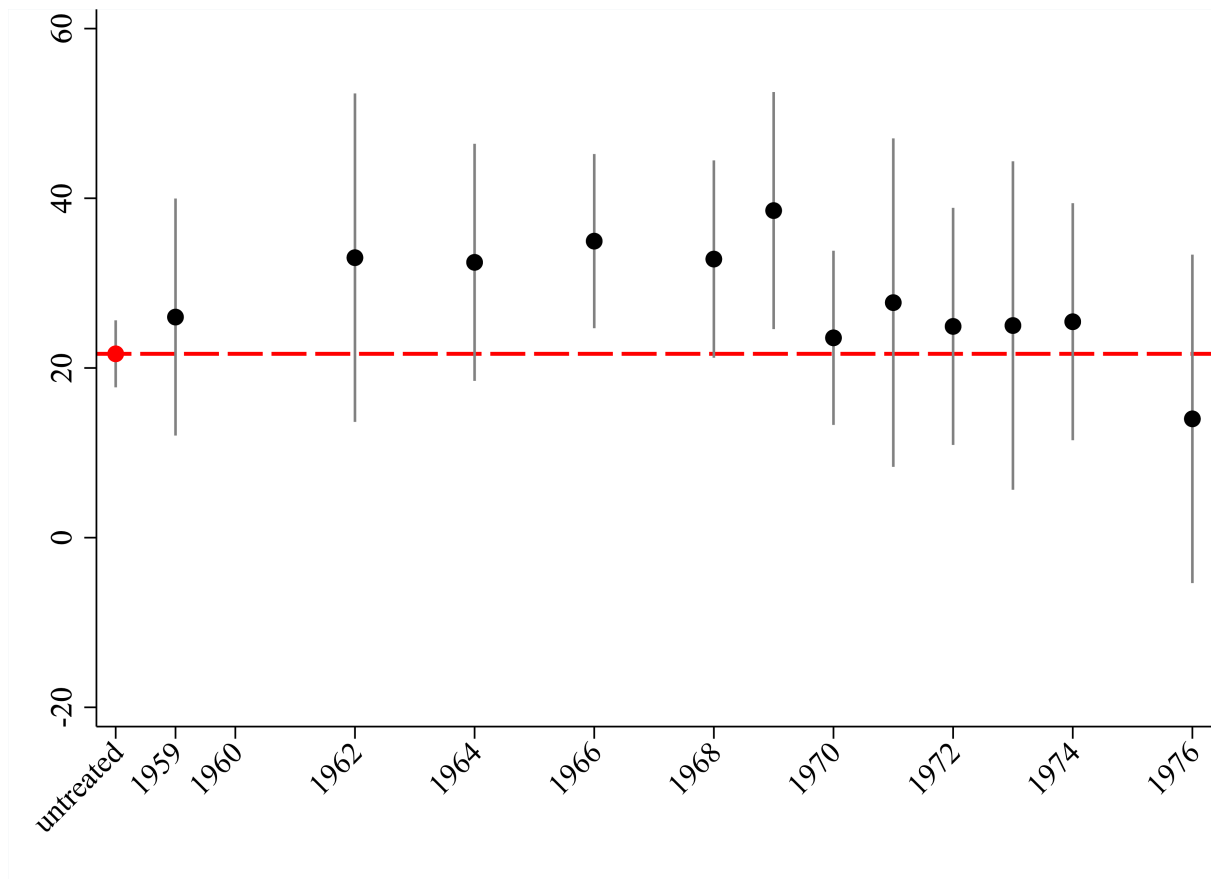
(a) Variation in Timing



(b) Variation in Location

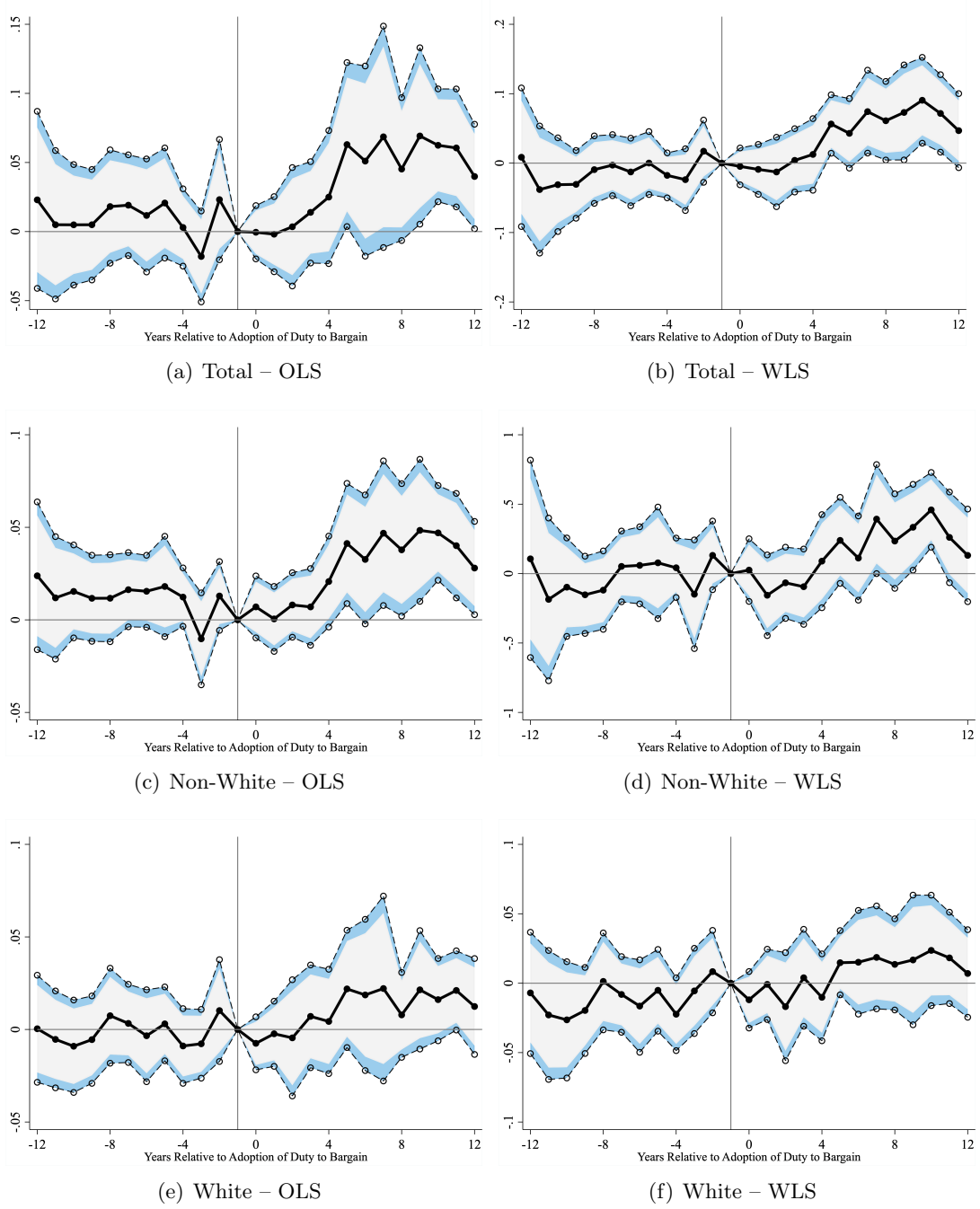
Notes: Panel (a) displays regression coefficients and predicted values are from an univariate regression of the dependent variable is non-White deaths due to legal intervention in 1960 on the year collective bargaining rights are adopted. Panel (b) plots the average difference in pre-period non-White deaths due to policing in treated counties relative to untreated counties prior to 1964.

Figure B7: Private Sector Union Membership and Duty to Bargain Provisions



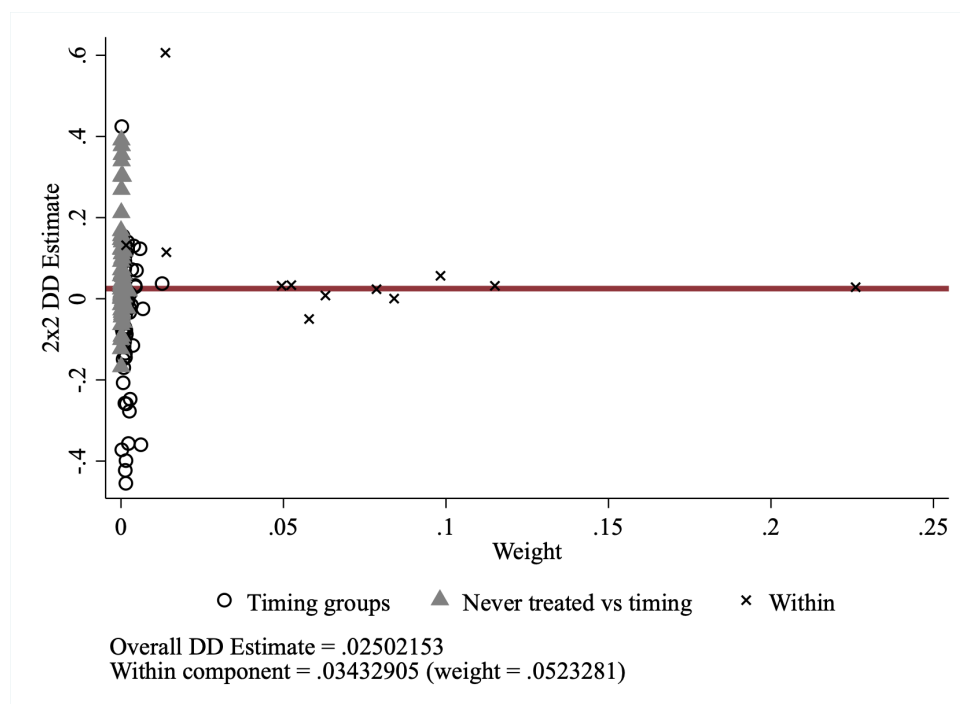
Notes: Figure plot average 1964 private union membership rates for each treatment-timing group. The red dash line captures the average private union membership rate for untreated states.

Figure B8: Duty to Bargain Event Study: Specification Check

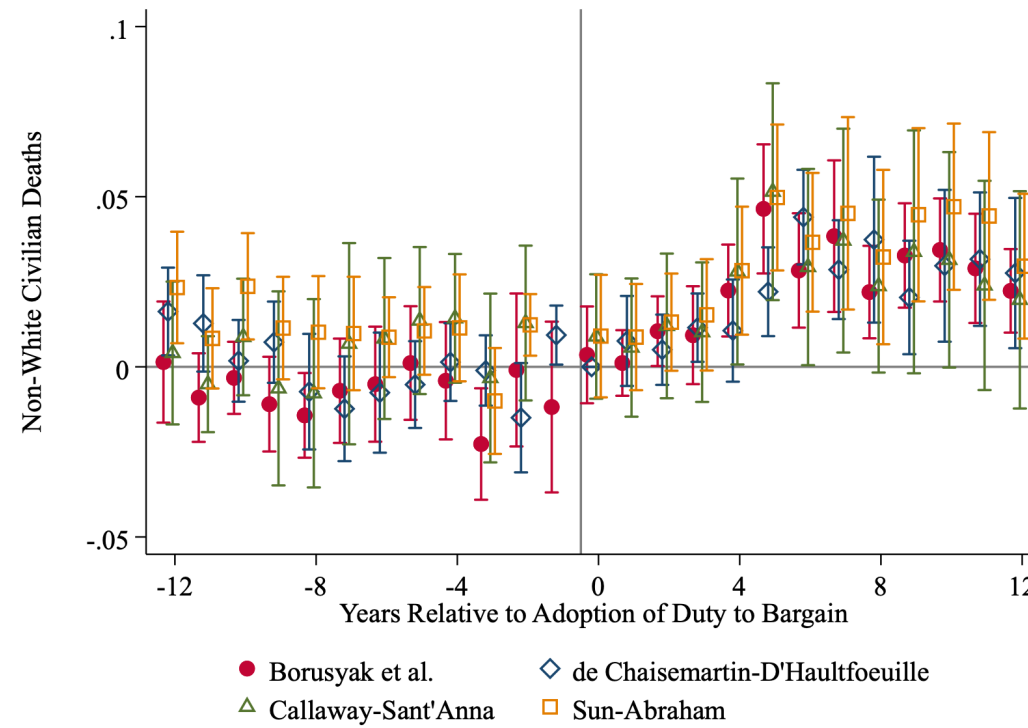


Notes: Panel (a), (c), & (e) display coefficients from a ordinary least squares regression for the relationship between establishment of collective bargaining rights on police-related fatalities (by race). Regressions include log population (by race) as an independent variable. Panel (b), (d) & (f) display weighted least square coefficients for impact on deaths per 100,000 residents. 1960 population for (by race) are used as weights. The 95% and 90% confidence intervals are estimated using robust standard errors and are presented in blue and gray.

Figure B9: Difference-in-Difference Decomposition: Non-White Deaths

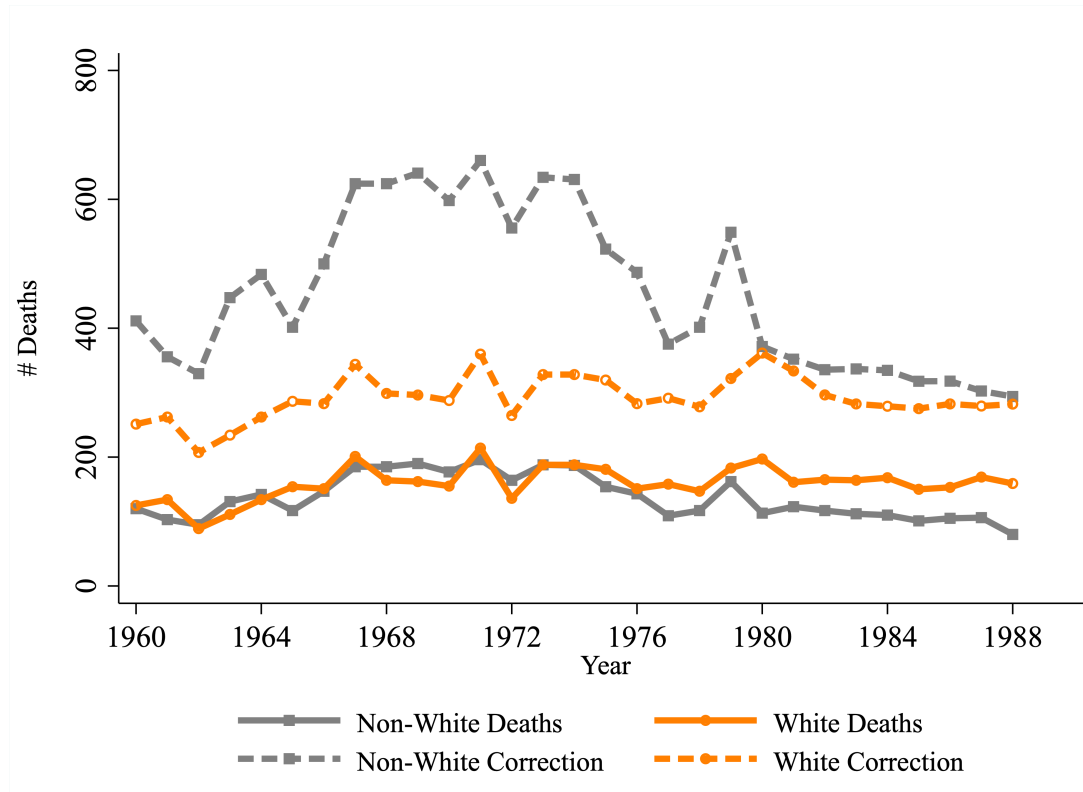


Notes: The DiD estimate is 0.025.

Figure B10: Duty to Bargain Event Study: Alternatives to OLS

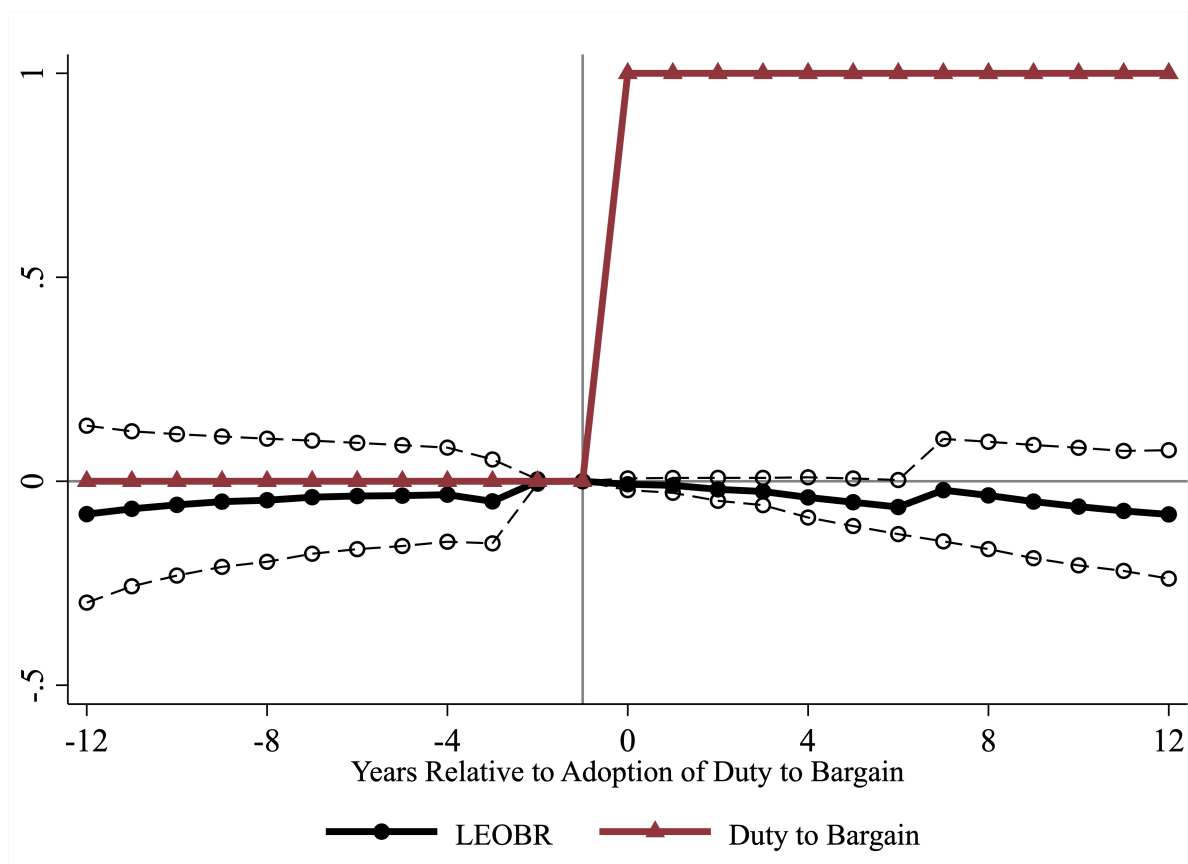
Notes: The figure displays pre- and post-treatment effects from [Callaway and Sant'Anna \(2021\)](#) Estimator, [Borusyak et al. \(2021\)](#) Estimator, [Sun and Abraham \(2020\)](#) Estimator, and [de Chaisemartin and D'Haultfoeuille \(2020\)](#) Estimator.

Figure B11: Bias Corrected Police-Related Fatalities



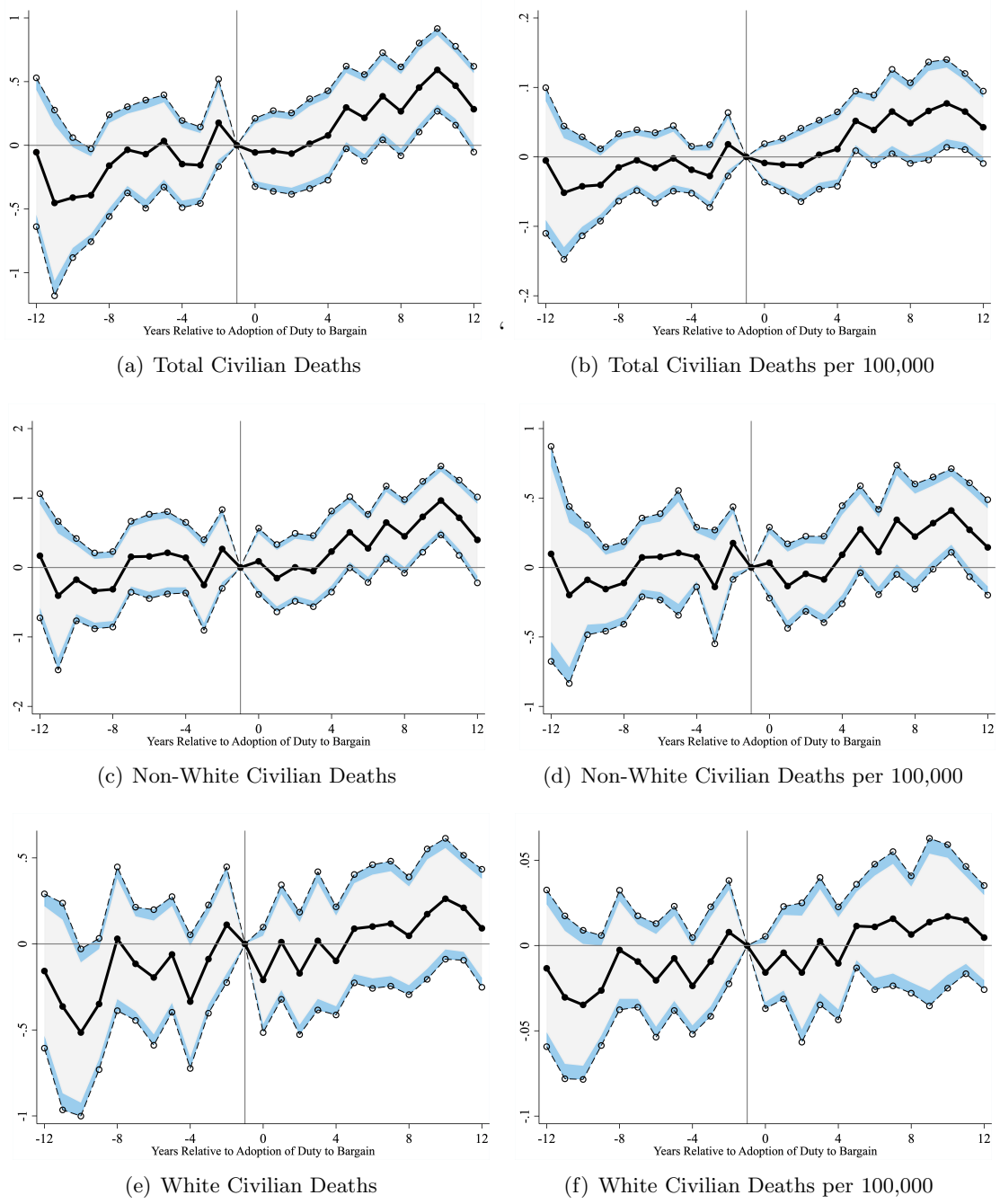
Notes: Data sources are from the 1959 to 1988 Vital Statistics Multiple Cause of Death Files (US DHHS and ICPSR 2007). We compute deaths from 1959 to 1979 as a function of reported deaths, bias in reporting, and state-and-year fixed effects. We use [Collaborators et al. \(2021\)](#) calculation of police-related fatalities from 1980 to 1988. The [Collaborators et al. \(2021\)](#) conducts a network meta-analysis to compare police-related fatality counts from Vital Statistics to non-governmental sources such as Fatal Encounters, The Counted, and Mapping Police Violence. Their analysis examines police killing counts between two datasets at a time, aiming to estimate reporting bias, with The Counted identified as the trusted source. The regression analysis evaluates the extent of under-reporting in Vital Statistics based on state, race, sex, and age, which we use to produce bias-corrected estimates of police-related fatalities by race. To achieve this, we first obtain bias-corrected estimates of police-related fatalities from 1980 to 2016 and project them back to 1959, utilizing year-to-year variations in police-related fatalities by race and state within the Vital Statistics. The resulting time-series data is presented in Appendix Figure B11. To avoid including deaths from counties that have never reported police-related fatalities, we assume each county's contribution to the bias in such fatalities remains constant over time and is based on the total number of deaths reported from 1959 to 2016 in relation to the state's total death count during the same period.

Figure B12: Relative Timing of Law Enforcement Officers' Bill of Rights Adoption with Duty to Bargain Adoption



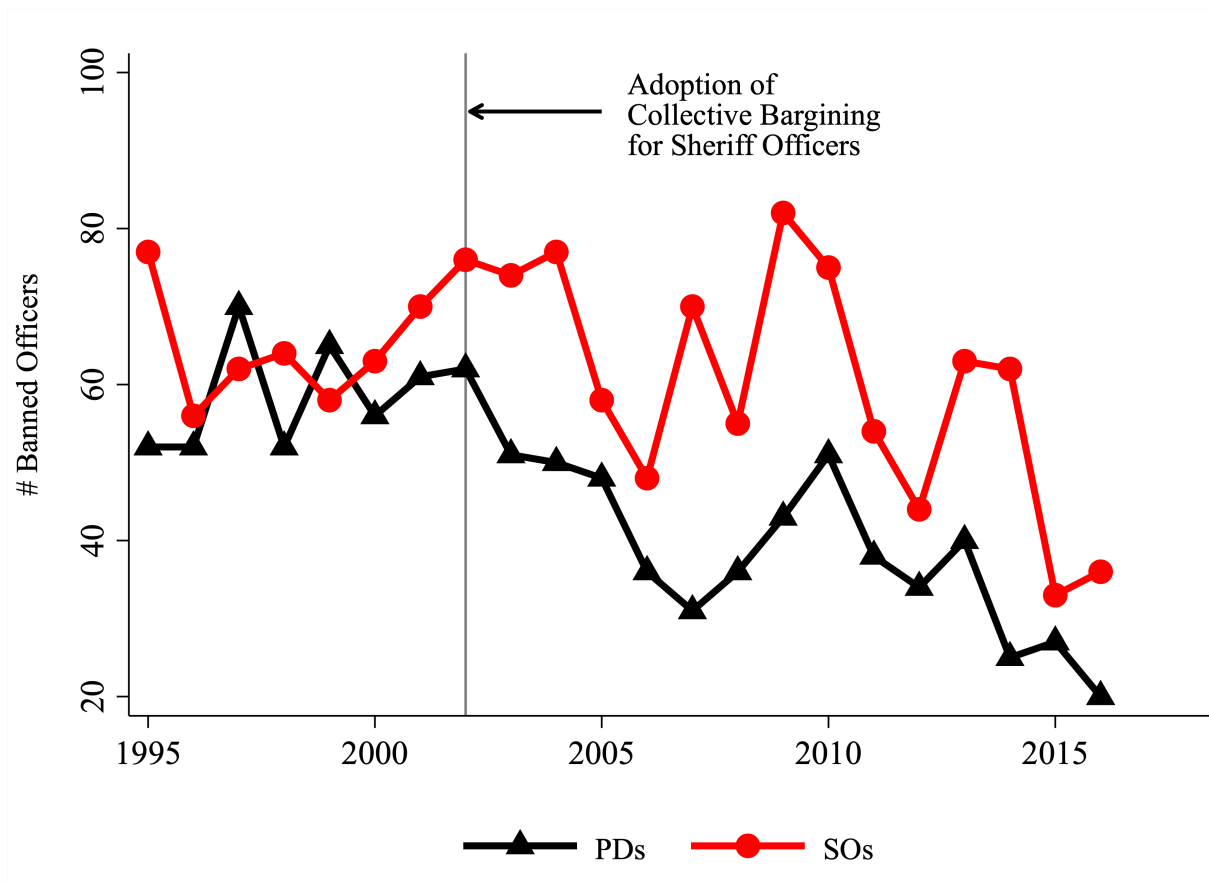
Notes: The dependent variable is an indicator variable for the adoption of collective bargaining rights with the duty to bargain (triangle marker) or the adoption of a LEOBR (circle marker).

Figure B13: Duty to Bargain Event Study: State-Level Analysis



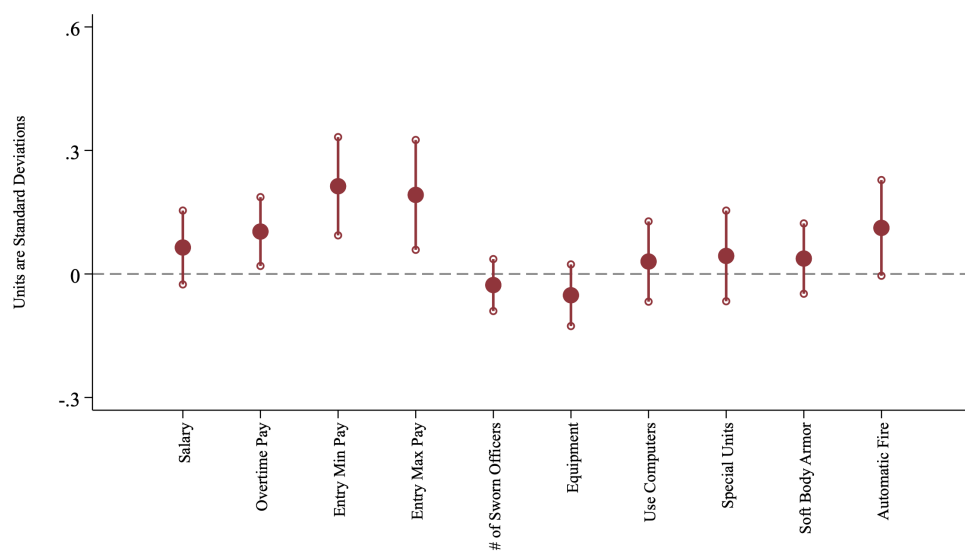
Notes: The regression specification includes state, S , effects, and region-by-year, R , effects. Panels (a), (c), and (e) report coefficients from a Poisson regression that accounts for exposure with population (by race). Panels (b), (d), and (f) report weighted least squares coefficients for the impact on deaths per 100,000 civilians (by race). 1960 population (by race) is used as weights. The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors clustered by state and are presented in blue and gray.

Figure B14: Number of Banned Officers in Florida



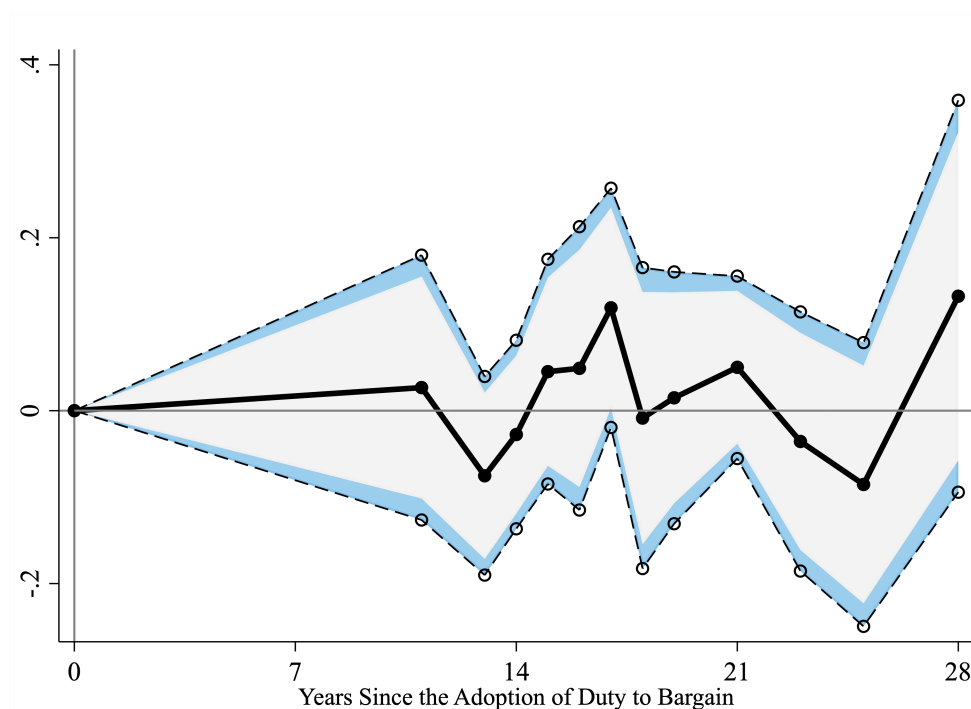
Notes: Data of banned officers is publicly available data from USA Today. Sheriff officers obtained the right to collectively bargain in 2002. Police officer obtained the right to bargain in 1976.

Figure B15: Differences between Unionized and Non-Unionized Departments in 1987



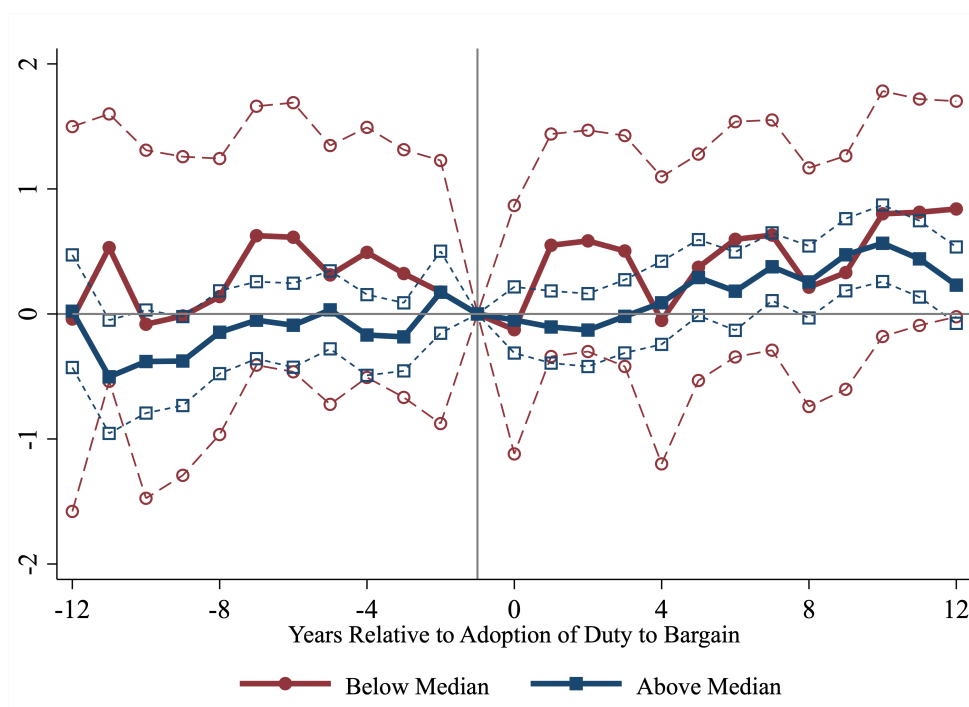
Notes: Data from LEMAs 1987. The 95% confidence intervals are estimated using heteroskedasticity-robust standard errors, clustered by state, and are presented in blue and gray.

Figure B16: Unions Status in 1987 by Treatment Status and Timing

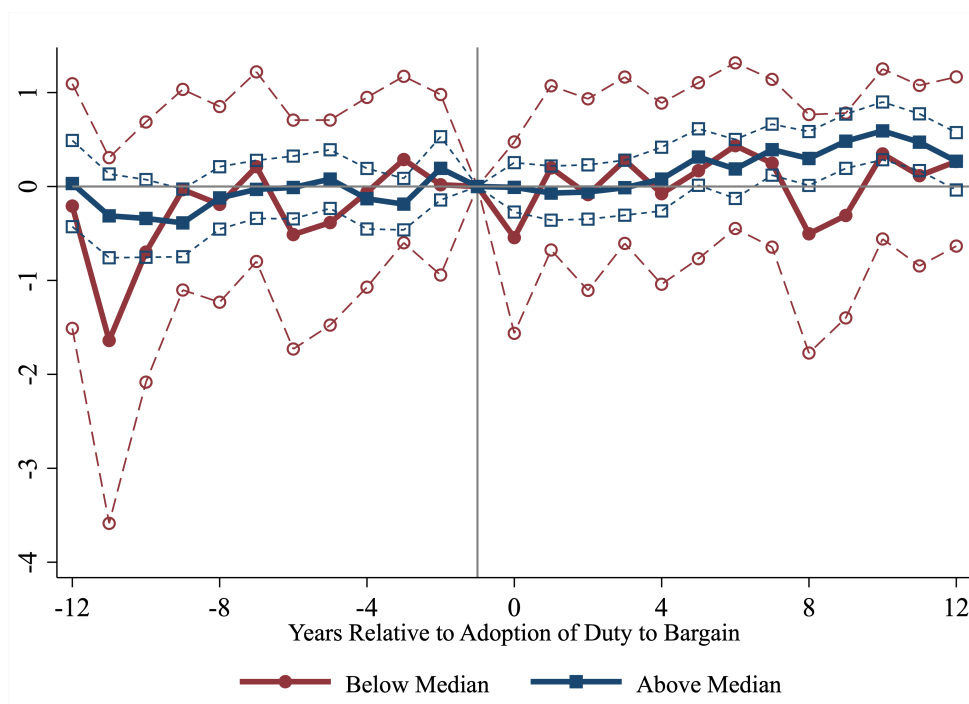


Notes: Data from LEMAs 1987. Figure plot regression coefficients from the union status in 1987 on treatment timing (Collective Bargaining Rights for Duty to Bargain States) relative to the control group (0). The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors are presented in blue and gray. See **AEJP_Figure_7_Union.do**

Figure B17: Duty to Bargain Event Study: Heterogeneous Effects



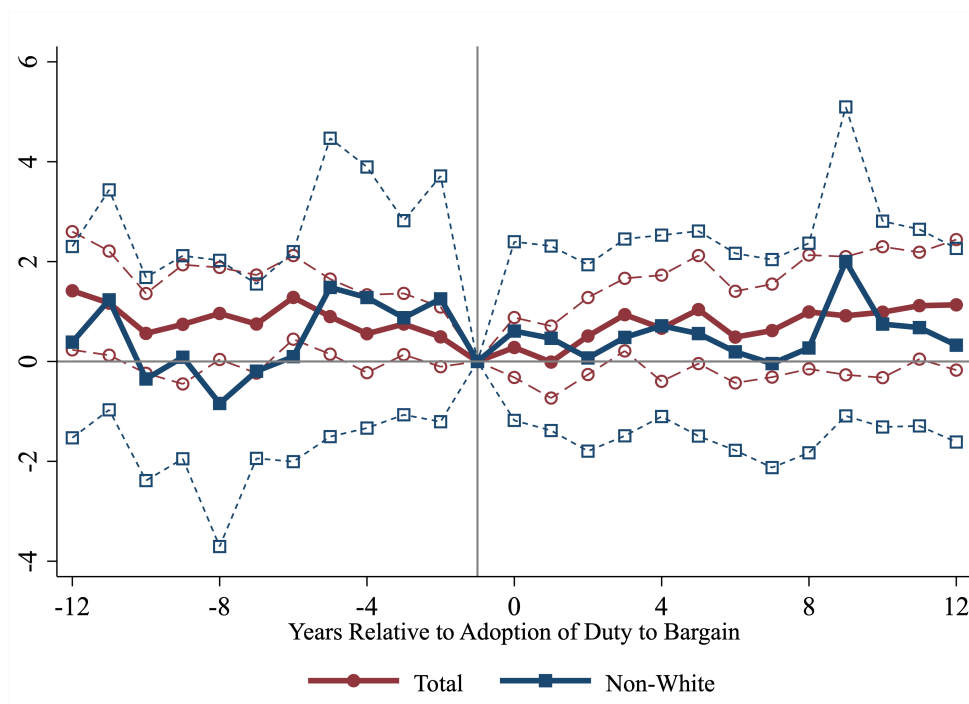
(a) Above/ Below: 1960 Non-White Share



(b) Above/Below: 1960 Homicide Rate

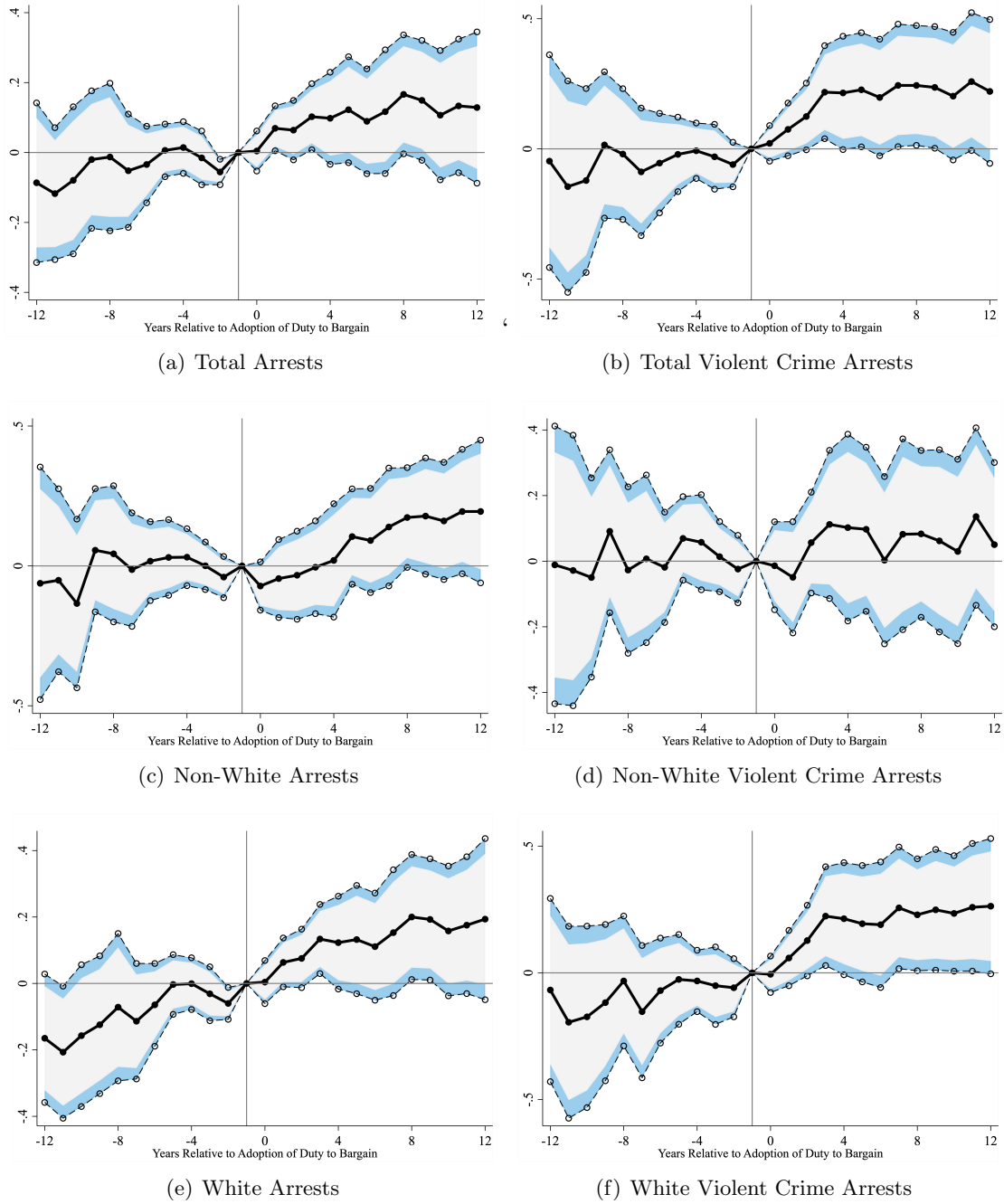
Notes: Figure reports pre- and post-treatment effects when the treatment group is stratified by below or above median 1960 non-White population share [panel (a)] and 1960 homicide rates [panel (b)]. The control group is the same in all regressions - counties in states that do not adopt Duty to Bargain during our sample period.

Figure B18: Duty to Bargain Event Study: Homicide Victimization



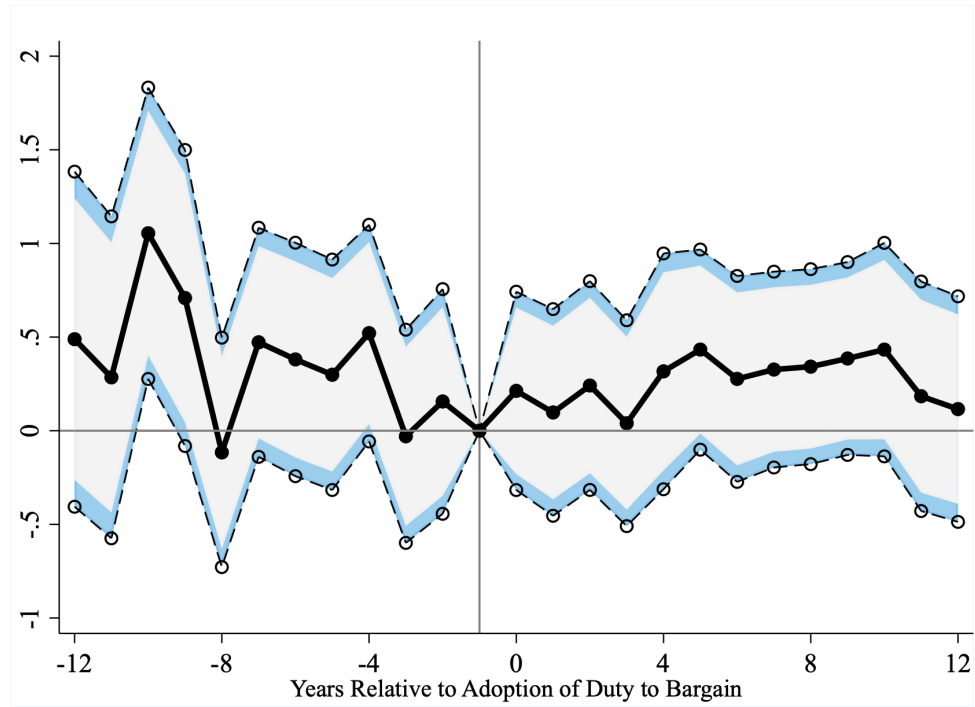
Notes: Figure reports pre- and post-treatment effects when the impact of Duty to Bargain on Homicide Victimization Rates. The maroon line with circle marker refers to homicides per 100,000 residents while the navy line with square marker refers to non-White homicides per 10,000 non-White residents. Homicide victimization data comes from Vital Statistics Multiple Cause of Death Files.

Figure B19: Duty to Bargain Event Study: Arrests by Race and Type



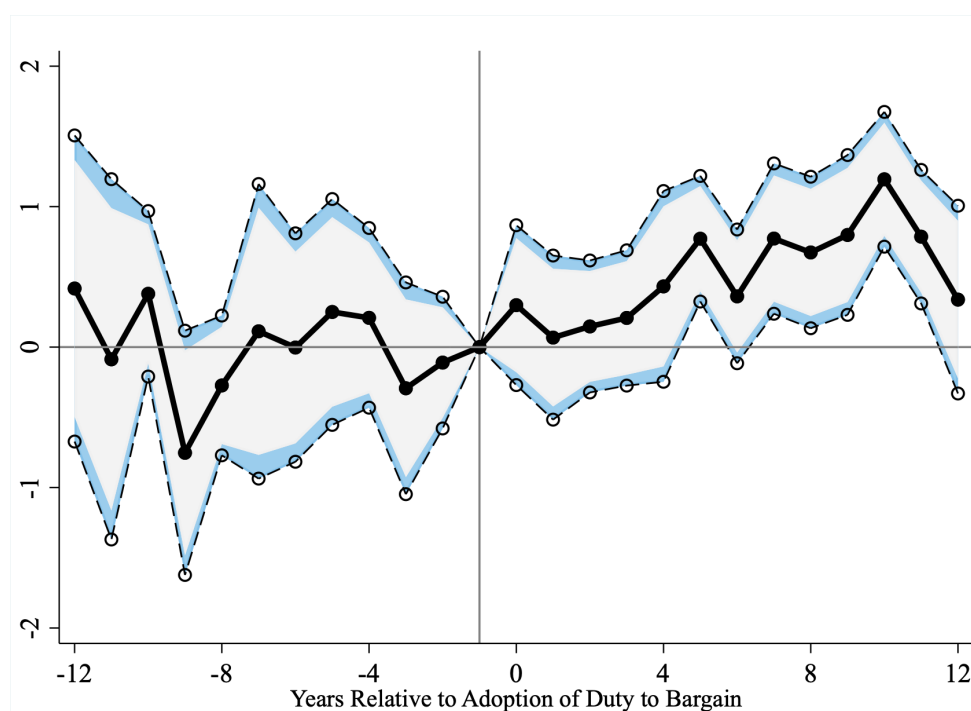
Notes: The regression specification includes city, C , effects, city-size-by-year, S , effects, region-by-year, R , effects, and log population (by race). Population by race are computed by interpolating the percentage of the population by race across census years to multiply the population counts provided in the UCR data. The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors clustered by state and are presented in blue and gray.

Figure B20: Triple Difference: Racial Disparities in Deaths Due to Duty to Bargain

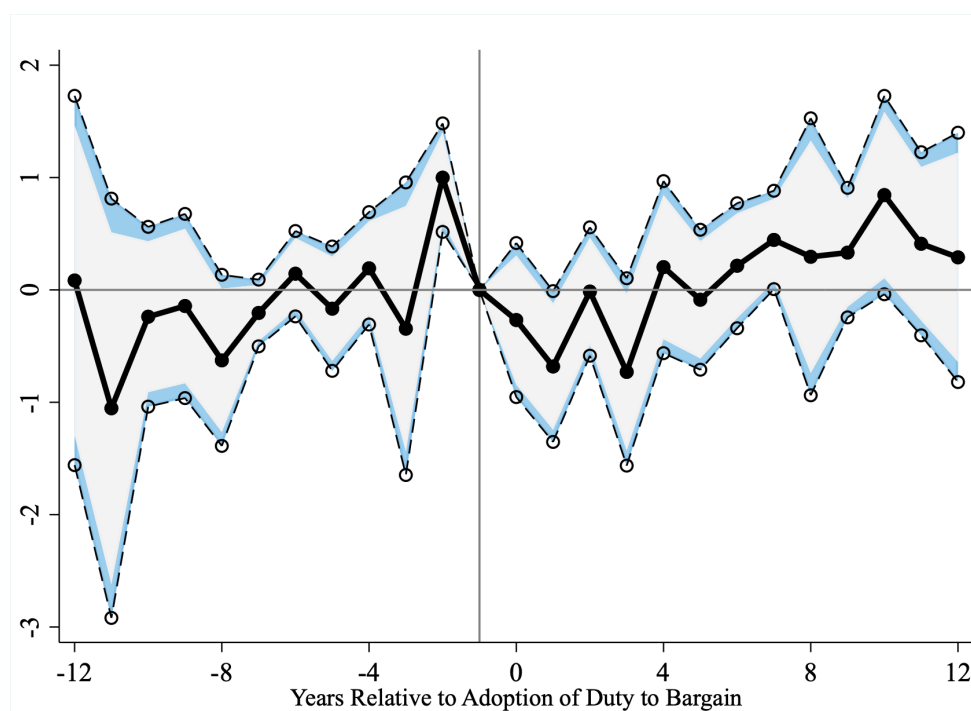


Notes: Figure reports pre- and post-treatment effects for the disparity in policing-related civilian fatalities. The coefficients are estimated from a Difference-in-Difference-in-Difference model (see (Cox and Cunningham, 2021)). Marginal effects show the relative change in non-White deaths relative to White deaths in treated counties. The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors clustered by state and are presented in blue and gray.

Figure B21: Duty to Bargain Event Study: Union Status in 1987 in Duty to Bargain States



(a) At least One Union – Duty to Bargain



(b) No Unions – Duty to Bargain

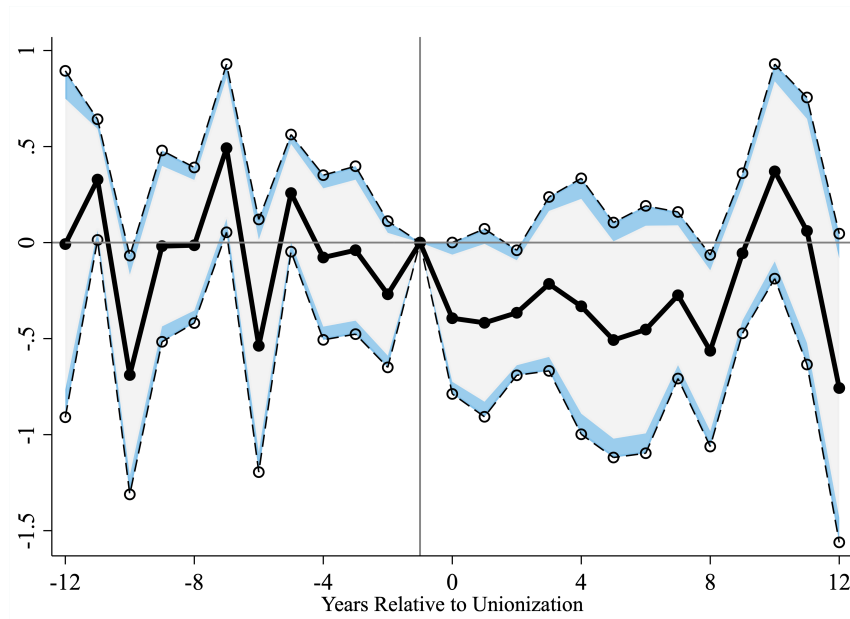
Notes: Figure reports pre- and post-treatment effects for the impact of duty to bargain on Non-White police-related fatalities. Panel (a) reports the estimated effects of the duty to bargain where the treatment group consists only of counties with at least one law enforcement officers' union in 1987 and is in a state with duty to bargain provisions. Panel (b) reports the estimated effects of the duty to bargain where the treatment group consists only of counties with no law enforcement officer union membership in 1987 and is in a state with duty to bargain provisions. The comparison group for both panels (a) and (b) consist of all counties in states with limited bargaining rights regardless of local union status.

Figure B22: Duty to Bargain Event Study: Other Related Outcomes

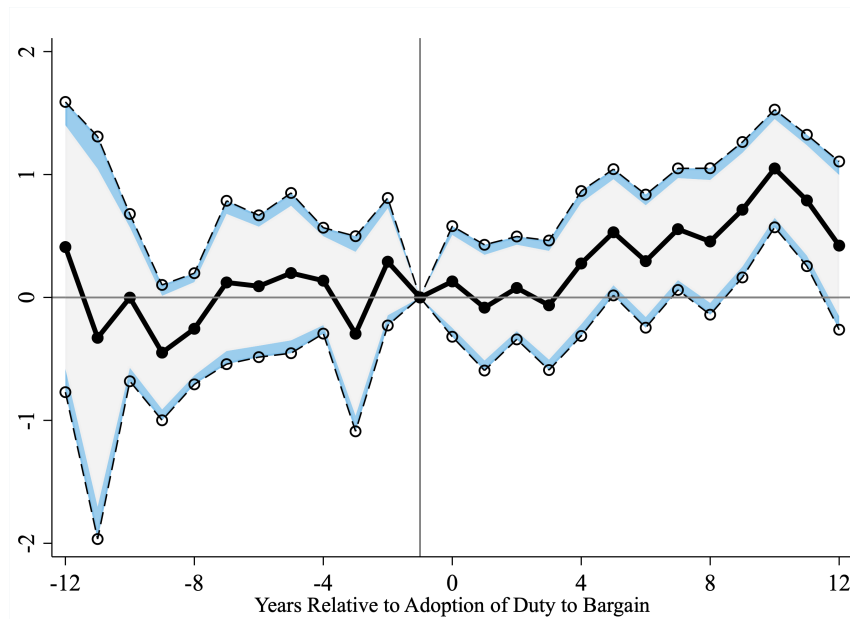


Notes: All regression specification includes city, C , effects, city-size-by-year, S , effects, and region-by-year, R , effects. In panel (a), the dependent variable is the natural log of police employment per 100,000 residents. In panel (b), the dependent variable is the natural log of police expenditures per capita. In panel (c), the dependent variable is the natural log of fire safety expenditures per capita. In panel (d), the dependent variable is the number of officers assaulted and injured in the line of duty. Crime and police injury data come from UCR Reports. Employment and expenditure data comes from the Annual Survey of Governments. The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors clustered by state and are presented in blue and gray.

Figure B23: Replication of [Goncalves \(2021\)](#)



(a) Unionization: 1987-2013



(b) Duty to Bargain: 1959-1988

Notes: All panels report estimate from a Poisson regression that include county, C , region-by-year, $R-Y$, and accounts for exposure with population. Panel (a) examines actual unionization between 1987 to 2013 following [Goncalves \(2020\)](#) on non-White civilian policing-related fatalities. The sample contains 725 agencies—152 treated, 195 never-treated, and 378 always treated. The analysis removes the always treated agencies. Panel (b) report the impact of Duty to Bargain for the counties in Panel (a)'s sample for the years 1959 to 1988 on non-White policing-related fatalities. Data on unionization are obtained from the Law Enforcement Management and Administrative Statistics (LEMAS). The 95% and 90% confidence intervals are estimated using heteroskedasticity-robust standard errors clustered by state and are presented in blue and gray.

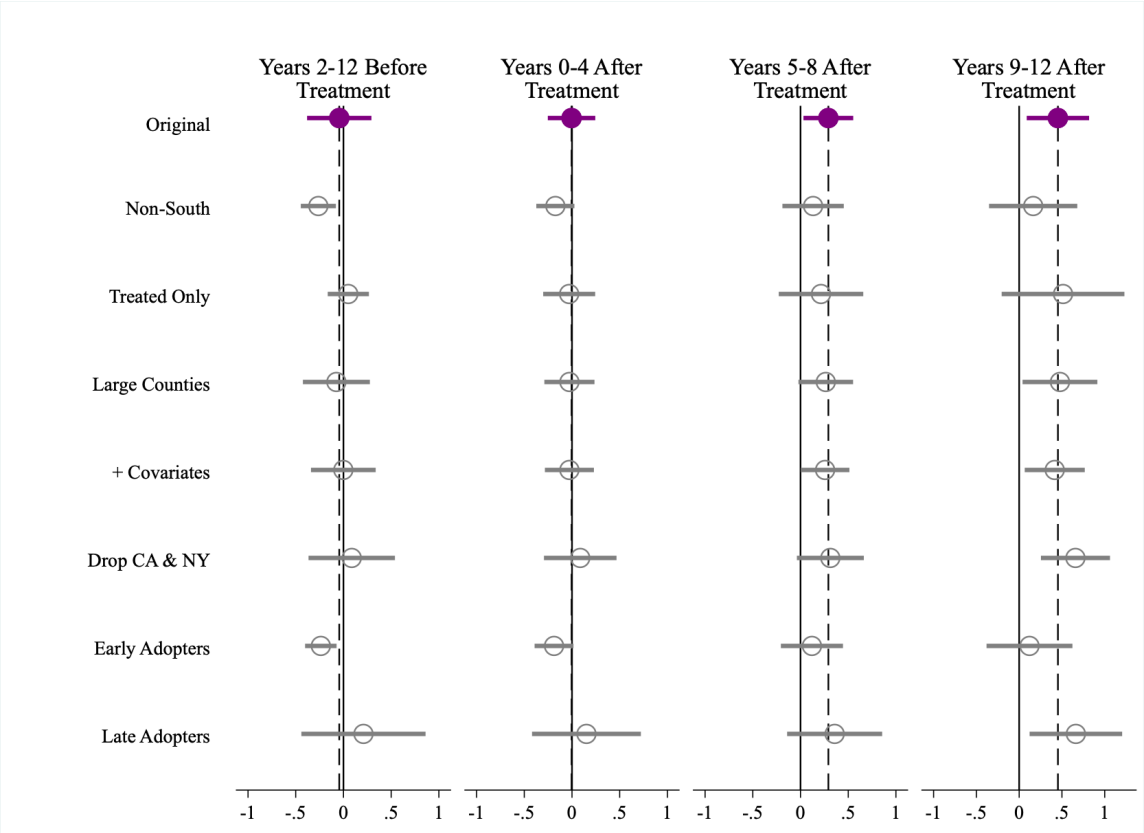
Table B1: Duty to Bargain Event Study: 0/1 at least One Police Killing

	(1) All	(2) Non-White	(3) White
Pre-Period (Event Years -12 to -2)	-0.00333 [0.00748]	0.00197 [0.00554]	-0.0042 [0.00626]
Shorter-Run Effect (Event Years 0 to 4)	0.00000568 [0.00541]	0.00474 [0.00459]	-0.00294 [0.00571]
Medium-Run Effect (Event Years 5 to 8)	0.00732 [0.00690]	0.0115** [0.00565]	-0.000796 [0.00601]
Longer-Run Effect (Event Years 9 to 12)	0.0118* [0.00685]	0.0163*** [0.00540]	0.00154 [0.00738]
Observations	89820	89820	89820
Mean DV	0.0526	0.0173	0.0433
Number of Counties	2,994	2,994	2,994

Notes: the table report ordinary least squares estimates for the impact of duty to bargain on the likelihood of any police-related fatality by race. The dependent variable in each column is 0/1 at least one death occurred. All regressions include county and year fixed effects. Robust standard errors are clustered by state. *** p<.01, ** p<.05, * p<0.1.

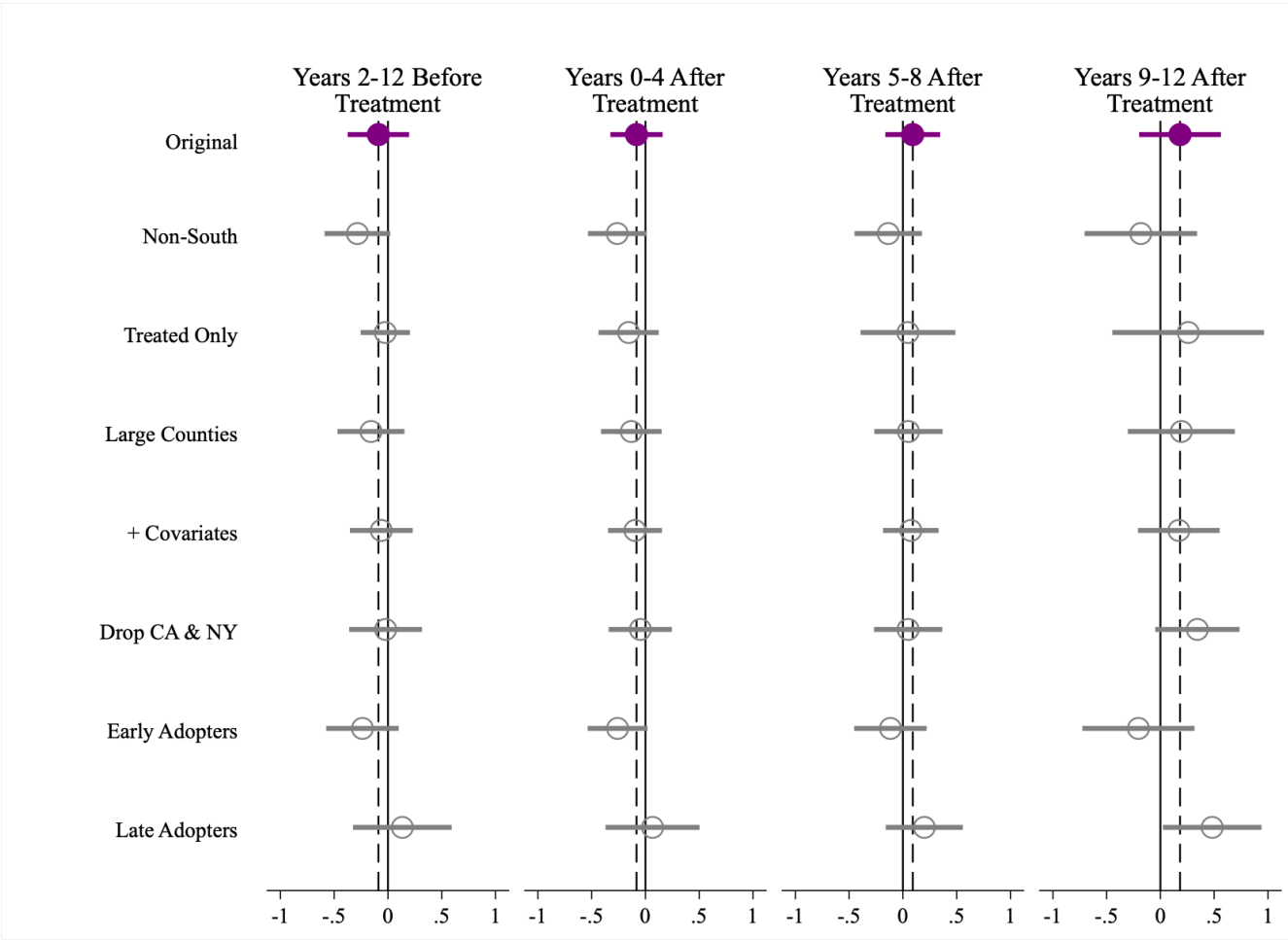
C. APPENDIX ADDITIONAL FIGURES & TABLES

Figure C1: Duty to Bargain: Robustness Checks – Total Deaths



Notes: All rows include county, C, region-by-year, R-Y, and accounts for exposure with population. The 95% confidence intervals estimated using the heteroskedasticity-robust standard errors clustered by state are presented by bold line. Joint least-squares coefficients are presented by the circle marker. “+ Covariates” includes population per square mile, White median income, Black median income, public assistant recipients, the % of families with income <\$3,000, the % of the population using public transportation, the % of the civilian labor force, unemployed, the % of the population that is non-White and the % of homes owner occupied that are non-White.

Figure C2: Duty to Bargain: Robustness Checks – White Deaths



Notes: All rows include county, C, region-by-year, R-Y, and accounts for exposure with White population. The 95% confidence intervals estimated using the heteroskedasticity-robust standard errors clustered by state are presented by bold line. Joint least-squares coefficients are presented by the circle marker. “+ Covariates” includes population per square mile, White median income, Black median income, public assistant recipients, the % of families with income <\$3,000, the % of the population using public transportation, the % of the civilian labor force, unemployed, the % of the population that is non-White and the % of homes owner occupied that are non-White.

Table C1: State Adoptions of Collective Bargaining Rights for Law Enforcement Officers by Year

Treatment Status	Number of Counties	Percent of Counties	Percent of 1960 Population
Treated	1,387	46.3	58.5
Year Treated			
1962	58	1.9	9.2
1964	41	3.3	10.7
1966	181	9.4	19.0
1968	110	13.0	30.6
1969	88	16.0	40.7
1970	176	21.8	42.7
1971	99	25.2	44.3
1972	147	30.1	47.9
1973	118	34.0	49.7
1974	302	44.1	55.6
1976	67	46.3	58.5
Untreated	1,607	53.7	41.5

Notes: Data sources are from the 1960 Census of population and the NBER Public Sector Collective Bargaining Law Data Set ([Valletta and Freeman, 1988](#)). Sample removes New Hampshire and Massachusetts (treated in 1959) and counties that ever report zero non-White residents in any year between 1960 and 1988.

Table C2: Duty to Bargain Event Study: Main Results

	(1) Total	(2) Non-White	(3) White		(4) Total	(5) Non-White	(6) White
Years Before Treatment				Years After Treatment			
-12	0.0082 [0.4081] (1.0000)	0.1916 [0.6098] (1.0000)	-0.1090 [0.2708] (1.0000)	0	-0.0581 [0.1117] (1.0000)	0.0877 [0.2099] (1.0000)	-0.2110 [0.1439] (1.0000)
-11	-0.3941 [0.4763] (0.9340)	-0.3816 [0.6993] (1.0000)	-0.3168 [0.3526] (1.0000)	1	-0.0492 [0.1527] (1.0000)	-0.1518 [0.2570] (1.0000)	0.0083 [0.1536] (1.0000)
-10	-0.3664 [0.3157] (0.7840)	-0.1643 [0.3652] (1.0000)	-0.4700 [0.3163] (1.0000)	2	-0.0652 [0.1842] (1.0000)	0.0057 [0.2208] (1.0000)	-0.1650 [0.2032] (1.0000)
-9	-0.3534 [0.2264] (0.6010)	-0.3261 [0.2755] (0.8930)	-0.3202 [0.2163] (1.0000)	3	0.0064 [0.1746] (1.0000)	-0.0476 [0.2691] (1.0000)	0.0130 [0.1855] (1.0000)
-8	-0.1278 [0.2296] (1.0000)	-0.3052 [0.2774] (0.8930)	0.0563 [0.2258] (1.0000)	4	0.0701 [0.2011] (1.0000)	0.2328 [0.3041] (1.0000)	-0.1030 [0.1834] (1.0000)
-7	-0.0152 [0.1958] (1.0000)	0.1589 [0.2560] (1.0000)	-0.1026 [0.1774] (1.0000)	5	0.2896* [0.1555] (0.3570)	0.5098* [0.2692] (0.3050)	0.0831 [0.1307] (1.0000)
-6	-0.0545 [0.2236] (1.0000)	0.1619 [0.2515] (1.0000)	-0.1807 [0.2097] (1.0000)	6	0.2074 [0.1740] (0.7840)	0.2788 [0.2544] (0.8930)	0.0958 [0.1839] (1.0000)
-5	0.0448 [0.1944] (1.0000)	0.2118 [0.3299] (1.0000)	-0.0523 [0.1571] (1.0000)	7	0.3759** [0.1706] (0.2540)	0.6512** [0.2556] (0.0900)	0.1114 [0.1805] (1.0000)
-4	-0.1366 [0.1203] (0.7840)	0.1416 [0.1900] (1.0000)	-0.3275** [0.1597] (1.0000)	8	0.2576 [0.1825] (0.6190)	0.4510 [0.2992] (0.7160)	0.0400 [0.1788] (1.0000)
-3	-0.1505 [0.1813] (0.9340)	-0.2525 [0.3964] (1.0000)	-0.0836 [0.1741] (1.0000)	9	0.4432* [0.2338] (0.3570)	0.7318*** [0.2778] (0.0900)	0.1654 [0.2591] (1.0000)
-2	0.1813 [0.1669] (0.7840)	0.2660 [0.2206] (0.8930)	0.1154 [0.1716] (1.0000)	10	0.5814*** [0.1991] (0.0920)	0.9649*** [0.2454] (0.0030)	0.2534 [0.2206] (1.0000)
				11	0.4568** [0.1877] (0.2080)	0.7156** [0.2920] (0.0900)	0.2002 [0.1749] (1.0000)
				12	0.2716 [0.1937] (0.6190)	0.3973 [0.3553] (0.8930)	0.0793 [0.1767] (1.0000)
Observations	41,280	19,380	34,380		41,280	19,380	34,380
Mean DV	0.111	0.041	0.070		0.111	0.041	0.070
Number of Counties	1,376	646	1,146		1,376	646	1,146

Notes: the table report Poisson coefficients from a regression that includes county, C, region-by-year, R, effects, and account for exposure with population (by race). Robust standard errors are clustered by state are shown in brackets. Q-values to account for false discoveries are presented in parentheses. *** p<.01, ** p<.05, * p<0.1.

Table C3: Duty to Bargain Event Study: Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Original	Non-South	Treated Only	Large Counties	+Covariates	Drop NY & CA	Adopters Early	Adopters Late
A: Total Police-Related Fatalities								
Pre-Period (Event Years -12 to -2)	-0.0440 [0.172]	-0.263*** [0.0939]	0.0510 [0.110]	-0.0741 [0.179]	-0.00116 [0.173]	0.0867 [0.231]	-0.237*** [0.0842]	0.210 [0.332]
Shorter-Run Effect (Event Years 0 to 4)	-0.00447 [0.127]	-0.174* [0.102]	-0.0292 [0.139]	-0.0267 [0.134]	-0.0269 [0.131]	0.0868 [0.194]	-0.188* [0.104]	0.152 [0.291]
Medium-Run Effect (Event Years 5 to 8)	0.292** [0.133]	0.132 [0.164]	0.215 [0.226]	0.265* [0.146]	0.258** [0.130]	0.313* [0.179]	0.120 [0.166]	0.358 [0.254]
Longer-Run Effect (Event Years 9 to 12)	0.453** [0.186]	0.164 [0.263]	0.513 [0.366]	0.477** [0.223]	0.416** [0.179]	0.658*** [0.206]	0.121 [0.256]	0.663** [0.276]
Observations	41,280	18,570	16,890	12,210	41,280	38,910	31,800	33,737
Mean DV	0.110	0.123	0.110	0.534	0.110	0.0755	0.213	0.0550
Number of Counties	1,376	589	563	407	1,376	1,297	1,060	1,110
B: Non-White Police-Related Fatalities								
Pre-Period (Event Years -12 to -2)	0.0702 [0.244]	-0.206* [0.123]	0.105 [0.206]	0.0645 [0.236]	0.113 [0.245]	0.296 [0.395]	-0.211 [0.154]	0.340 [0.515]
Shorter-Run Effect (Event Years 0 to 4)	0.0637 [0.194]	-0.0361 [0.169]	0.167 [0.182]	0.0892 [0.183]	0.0386 [0.197]	0.230 [0.356]	-0.0884 [0.200]	0.231 [0.457]
Medium-Run Effect (Event Years 5 to 8)	0.491** [0.225]	0.487** [0.220]	0.393 [0.206]	0.475** [0.206]	0.457** [0.221]	0.625* [0.364]	0.401* [0.213]	0.548 [0.478]
Longer-Run Effect (Event Years 9 to 12)	0.743*** [0.247]	0.657** [0.270]	0.824** [0.396]	0.761*** [0.239]	0.700*** [0.233]	0.997*** [0.364]	0.550** [0.239]	0.855* [0.481]
Observations	19,380	6,330	7,020	8,340	19,380	18,117	15,510	16,106
Mean DV	0.0505	0.0607	0.0505	0.259	0.0505	0.0338	0.109	0.0198
Number of Counties	646	181	234	278	646	605	517	507
C: White Police-Related Fatalities								
Pre-Period (Event Years -12 to -2)	-0.0886 [0.146]	-0.284* [0.156]	-0.0245 [0.117]	-0.158 [0.159]	-0.0617 [0.149]	-0.0213 [0.173]	-0.237 [0.172]	0.134 [0.234]
Shorter-Run Effect (Event Years 0 to 4)	-0.0828 [0.124]	-0.262* [0.139]	-0.156 [0.143]	-0.131 [0.144]	-0.0970 [0.128]	-0.0473 [0.150]	-0.259* [0.142]	0.0663 [0.223]
Medium-Run Effect (Event Years 5 to 8)	0.0914 [0.130]	-0.136 [0.160]	0.0470 [0.225]	0.0516 [0.162]	0.0742 [0.132]	0.0485 [0.162]	-0.116 [0.172]	0.199 [0.183]
Longer-Run Effect (Event Years 9 to 12)	0.183 [0.194]	-0.182 [0.267]	0.259 [0.360]	0.195 [0.254]	0.172 [0.194]	0.344* [0.200]	-0.204 [0.266]	0.482** [0.234]
Observations	34,380	17,370	15,210	11,670	34,380	32,040	26,160	27,257
Mean DV	0.0591	0.0619	0.0591	0.275	0.0591	0.0417	0.105	0.0352
Number of Counties	1,146	549	507	389	1,146	1,068	872	894

Notes: All columns include county, C, region-by-year, R-Y, urban-group-by-year, and accounts for exposure with population (by race). Column 2 drop southern states, column 3 included duty to bargain states only, column 4 include counties with a population greater than 100K, column 5 add covariates, column 6 drops California and New York from the sample, column 7 and 8 stratify the treatment group by those treated before and after 1970. “+ Covariates” includes population per square mile, White median income, Black median income, public assistant recipients, the % of families with income <\$3,000, the % of the population using public transportation, the % of the civilian labor force, unemployed, the % of the population that is non-White and the % of homes owner occupied that are non-White. *** p<.01, ** p<.05, * p<.1.

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Table C4: Duty to Bargain and Unionization as of 1987

	(1) 1(Union)	(2) 1-1(Union)
Years Before Treatment		
-12	0.411 [0.564]	0.240 [0.854]
-11	-0.0316 [0.660]	-0.934 [0.937]
-10	0.361 [0.307]	-0.104 [0.439]
-9	-0.789* [0.451]	-0.132 [0.462]
-8	-0.301 [0.257]	-0.427 [0.346]
-7	0.102 [0.546]	-0.178 [0.192]
-6	-0.0330 [0.411]	0.394* [0.232]
-5	0.282 [0.407]	-0.0952 [0.311]
-4	0.264 [0.342]	0.384 [0.256]
-3	-0.239 [0.398]	-0.244 [0.618]
-2	-0.105 [0.252]	0.959*** [0.338]
Years After Treatment		
0	0.324 [0.286]	-0.256 [0.360]
1	0.134 [0.304]	-0.532 [0.336]
2	0.203 [0.236]	0.0385 [0.331]
3	0.255 [0.254]	-0.681 [0.430]
4	0.437 [0.361]	0.498 [0.349]
5	0.849*** [0.254]	0.116 [0.250]
6	0.424 [0.270]	0.301 [0.297]
7	0.813*** [0.275]	0.310 [0.261]
8	0.843*** [0.276]	0.151 [0.575]
9	0.996*** [0.341]	0.218 [0.281]
10	1.480*** [0.264]	0.675* [0.376]
11	1.088*** [0.210]	0.171 [0.483]
12	0.529 [0.345]	0.159 [0.597]
Observations	3,322	5,716
Mean DV	0.120	0.0351
Number of Counties	122	213

Notes: Report estimates from Figure 6. ***
p<.01, ** p<.05, * p<0.1.

Table C5: Duty to Bargain Event Study: Other Related Outcomes

	(1)	(2)	(3)	(4)
	Police	Expenditures		Officers
	Employment	Police	Fire	Killed on
				Duty
Years Before Treatment				
-12	-0.0191 [0.0762]	-0.0376 [0.103]	-0.00654 [0.103]	-0.0161 [0.102]
-11	-0.00444 [0.0647]	-0.0252 [0.0846]	0.0416 [0.0913]	0.0135 [0.0564]
-10	-0.0127 [0.0679]	-0.0180 [0.0807]	0.0198 [0.0926]	0.0366 [0.0729]
-9	-0.0227 [0.0487]	-0.0119 [0.0711]	0.0448 [0.0729]	0.0419 [0.0839]
-8	0.00475 [0.0207]	0.00429 [0.0366]	0.0795** [0.0375]	-0.0643 [0.0729]
-7	0.00467 [0.0200]	0.00624 [0.0274]	0.0752** [0.0322]	-0.0457 [0.0630]
-6	0.00356 [0.0181]	-0.0121 [0.0277]	0.0364 [0.0242]	0.00465 [0.0695]
-5	0.00933 [0.0166]	-0.00855 [0.0255]	0.0436* [0.0236]	-0.108* [0.0597]
-4	0.00277 [0.0144]	0.00895 [0.0217]	0.0315* [0.0185]	0.0151 [0.0639]
-3	0.00920 [0.0124]	-0.0122 [0.0178]	0.0164 [0.0176]	-0.0687 [0.0709]
-2	-0.00261 [0.00892]	-0.00190 [0.0137]	0.0282* [0.0147]	-0.0283 [0.0520]
Years After Treatment				
0	-0.00519 [0.00927]	-0.0138 [0.0187]	-0.00774 [0.0127]	-0.0250 [0.0793]
1	-0.0229** [0.0102]	-0.00265 [0.0274]	0.00874 [0.0260]	-0.0182 [0.0559]
2	-0.000298 [0.0138]	0.0307 [0.0279]	0.00780 [0.0215]	-0.0324 [0.0453]
3	-0.0159 [0.0109]	0.0183 [0.0269]	9.42e-05 [0.0246]	0.0144 [0.0686]
4	-0.00787 [0.0129]	0.0445* [0.0255]	-0.0336 [0.0306]	0.00515 [0.0590]
5	0.0274 [0.0324]	0.0578 [0.0461]	0.0454 [0.0363]	0.0182 [0.0841]
6	-0.0278 [0.0573]	0.0671* [0.0345]	0.0495 [0.0368]	-0.0141 [0.0528]
7	-0.00624 [0.0274]	0.101*** [0.0375]	0.0676* [0.0388]	-0.00275 [0.0742]
8	-0.0715 [0.0536]	0.0788** [0.0345]	0.0639 [0.0399]	0.000301 [0.0891]
9	-0.0257 [0.0543]	0.0560 [0.0343]	0.0659 [0.0406]	0.171 [0.106]
10	-0.0703** [0.0306]	0.0690* [0.0371]	0.0772* [0.0394]	-0.0257 [0.0646]
11	-0.0595*** [0.0206]	0.0941** [0.0389]	0.0960** [0.0426]	0.220 [0.234]
12	-0.0413 [0.0390]	0.109** [0.0414]	0.0996** [0.0427]	-0.0233 [0.0760]
Observations	6,461	7,207	7,206	7,505
Mean DV	0.643	-2.507	-2.795	0.184
Number of Cities	225	249	249	259

Notes: Report estimates from Figure 7. *** p<.01, ** p<.05, * p<0.1.