Online Appendix to "Community Engagement with Law Enforcement after High-profile Acts of Police Violence"

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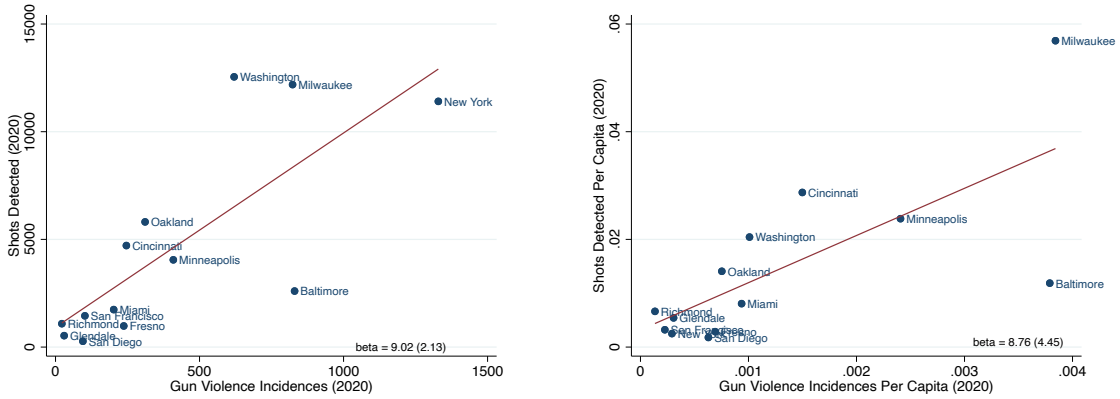
A Acoustically detected gunshot data and analysis sample of tracts and cities

Figure A.1 documents the correlation between gun violence incidents and shots detected. We find a strong correlation between the two measures, which suggests that acoustically detected gunshots data capture gunshot events.

Table A.1 compares the characteristics of our analysis sample of cities, which are those cities where we were able to obtain acoustically detected gunshots data during our period of analysis, to the national average for similarly sized cities (cities with 100,000 or more residents). We find that our sample cities are larger, have a lower share of white residents, have the same income, and have a higher rate of crime than large cities without the technology. These results are reported in Panel A. In Panel B of Table A.1, we compare our analysis tracts, which are those covered by acoustic gunshot detection technology, to all tracts within our sample set of cities. We use five-year estimates of tract-level characteristics from the American Community Survey from 2015-2019. Tracts in the analysis sample have a lower share of white residents and lower income than all tracts in the sample cities.



(a) Levels (b) Per-Capita

Figure A.1: Correlation Between Acoustically Detected Gunshots and Gun Violence Casualties

Notes: This figure plots the cross-city relationship between the number of acoustically detected gunshots and reported gun violence casualties. Panel (a) presents the relationship in levels. Panel (b) presents the relationship adjusting for population.

Table A.1: Sample Cities and Tracts Summary Statistics

Panel A: Sample Cities vs. All Cities With 100K+ Population		
	Sample Mean	National Mean
Total Population	1160301	304408
White Population Share	.349	.462
Hispanic Population Share	.272	.259
Black Population Share	.238	.161
Asian Population Share	.102	.08
Other Population Share	.039	.038
Median Household Income	68075	68023
Property Crime Rate (per 100k)	3919	2873
Violent Crime Rate (per 100k)	2079	1590
Panel B: Sample Tracts vs. All Tracts within Sample Cities		
	Sample Tracts	All Tracts
Total Population	3893	3952
White Population Share	.229	.344
Hispanic Population Share	.278	.249
Black Population Share	.377	.247
Asian Population Share	.083	.125
Other Population Share	.034	.04
Median Household Income	61009	71135

Note: Population, race, ethnicity, and income data come from the American Community Survey's (ACS) five-year estimates for 2015-2019 at the place level (Panel A) and tract level (Panel B). Crime rates in Panel A come from Uniform Crime Reporting (UCR) data for 2019, aggregated to the place level. We were able to obtain crime and demographics data for 303 out of 325 cities with a population over 100,000. The following list indicates the analysis sample cities: San Diego, CA; New York, NY; Baltimore, MD; Fresno, CA; Washington, DC; Milwaukee, WI; San Francisco, CA; Cincinnati, OH; Miami, FL; Minneapolis, MN; Oakland, CA; Richmond, CA; Glendale, AZ. To account for tracts that span city borders, results in Panel B are weighted by the share of each tract's 2010 population that resides within the analysis city's boundaries.

B Alternative inference

We provide alternative inference for the results in column (1) of Table 1 using permutation inference. More precisely, we sample 1,000 randomly chosen treatment dates from the year long time period prior to May 23, 2020, such that we can build a comparable pre-post time window, and then estimate our baseline model from column (1) of Table 1 using this sample. The results are plotted in appendix Figure B.1 below. The vertical red line plots the actual estimate from the true treatment date. We find that only 3.1% of dates in the pre-period exhibit drops as large or larger than the drop that occurred in the aftermath of the George Floyd murder, which suggests that our results are unlikely to be a product of sampling variation.

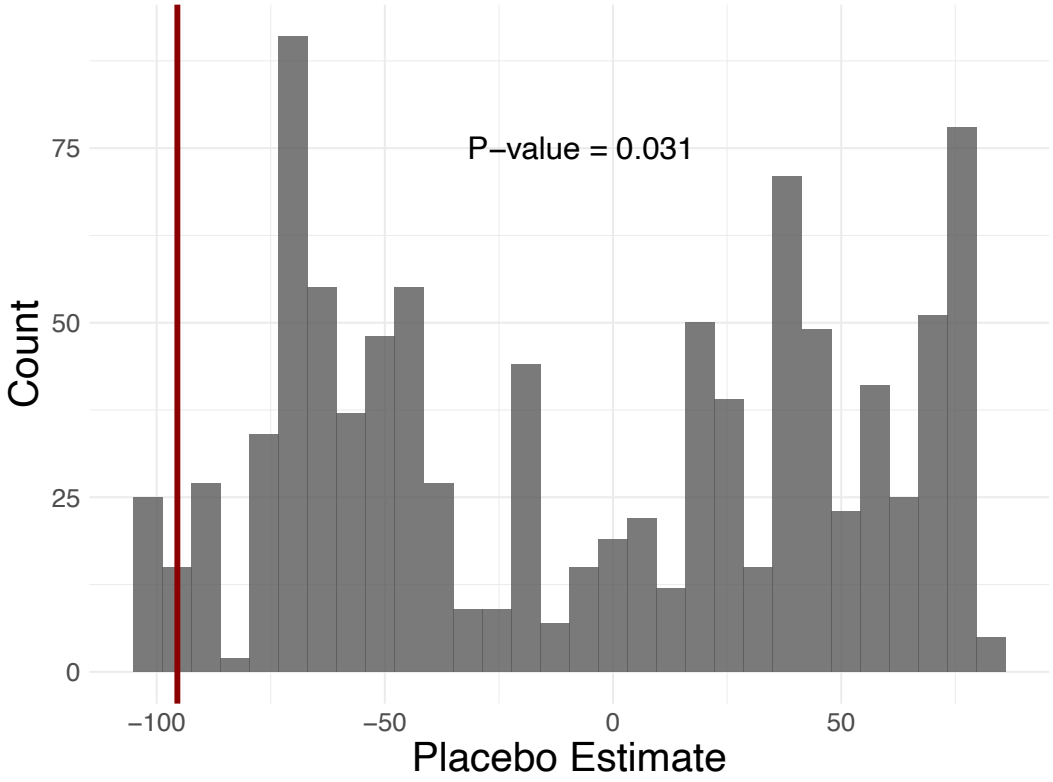


Figure B.1: Permutation inference

Notes: This figure plots the distribution of placebo estimates from randomly chosen treatment dates prior the murder of George Floyd. More precisely, we sample 1,000 randomly chosen treatment dates from the year long time period prior to May 23, 2020, such that we can build a comparable pre-post time window, and then estimate our baseline model from column (1) of Table 1 using this sample. The vertical red line plots the actual estimate from the true treatment date. We find that only 3.1% of dates in the pre-period exhibit drops as large or larger than the drop that occurred in the aftermath of the George Floyd murder, which suggests that our results are unlikely to be a product of sampling variation.

C Neighborhood-level racial composition

In this appendix, we document how the effects of George Floyd's murder on civilian crime reporting differed across racial groups.

To do so, we geo-code the 911 and gunshot micro-data to Census tracts, which we merge with 2015-2019 American Community Survey data to obtain area demographics. We then calculate call-to-shot rates specific to each tract by, for example, dividing the total number of 911 calls in majority-Black tracts by the total number of gunshots detected in those same areas.

Figure C.1 plots changes in weekly call rates by neighborhood racial composition, normalized to call rates the week prior to Floyd's killing. While trends in Asian American call rates are noisy due to the scarcity of majority-Asian-American neighborhoods, we find large dips in calls per shot in majority-white, majority-Black and majority-Hispanic areas. Notably, the relative decrease in white call rates is as large, if not larger, than that in Black and Hispanic neighborhoods.

Thus, we find that George Floyd's death significantly reduced crime reporting across a wide range of communities, even those with the highest existing trust and engagement with law enforcement. This is consistent with the trends in police favorability examined earlier as well as broader discussions about the racial reckoning that viral footage of George Floyd's murder sparked among many white Americans.

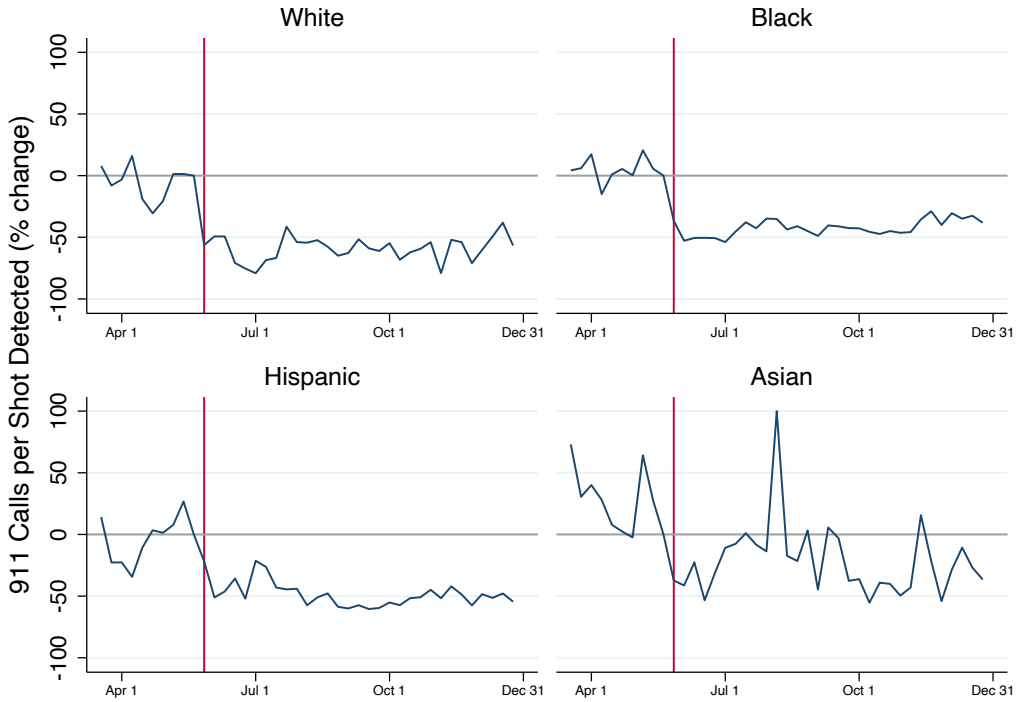


Figure C.1: Civilian Crime Reporting by Neighborhood Race

Notes: Figure plots the percent change in the ratio of 911 calls to acoustically detected gunshots over time by neighborhood racial composition. For example, the top-left figure aggregates 911 calls and gunshots across all majority-white neighborhoods in the sample (i.e., Census tracts with >50% white residents in 2015-2019 ACS). For each neighborhood type, percent change is calculated relative to the call-to-shot ratio during the week prior to George Floyd's death. Due to noise from the small number of majority-Asian tracts in our sample, we censor percent changes in call to shot ratio for those neighborhoods at 100% in order to display all subfigures on the same scale. Sample is limited to weeks after the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death.

D City-level variation

Figure D.1 disaggregates trends in call-to-shots ratios by city. We focus on the period after the national COVID-19 emergency declaration and plot deviations in call-to-shot ratios, relative to each city's call ratio during the week before George Floyd's murder.

We find a pronounced drop in call rates immediately following the incident date in nearly all cities. In Baltimore, Cincinnati, DC, Milwaukee, Minneapolis, New York, Oakland, Richmond and San Francisco, call rates drop nearly 50% in the weeks after George Floyd's death. Trends are least clear in Glendale, AZ, where the data are particularly noisy, and in San Diego, CA, which is likely due in part to the city's small acoustic gunshot detection coverage area, which introduces noise in the denominator (ex: 15% of weeks had 0 or 1 detected shots).

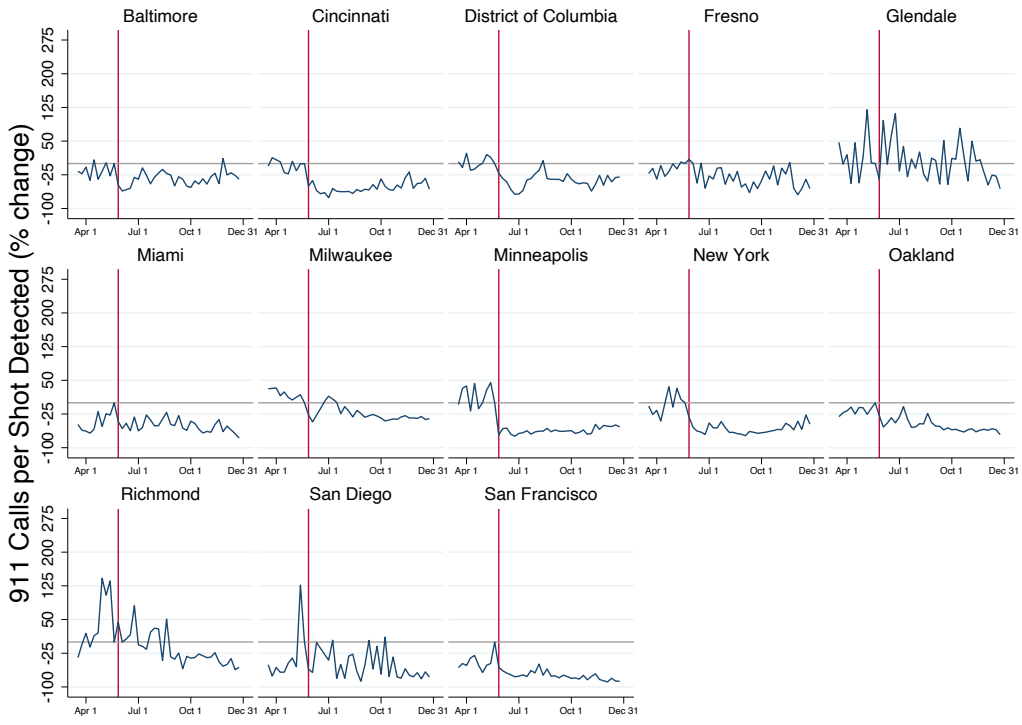
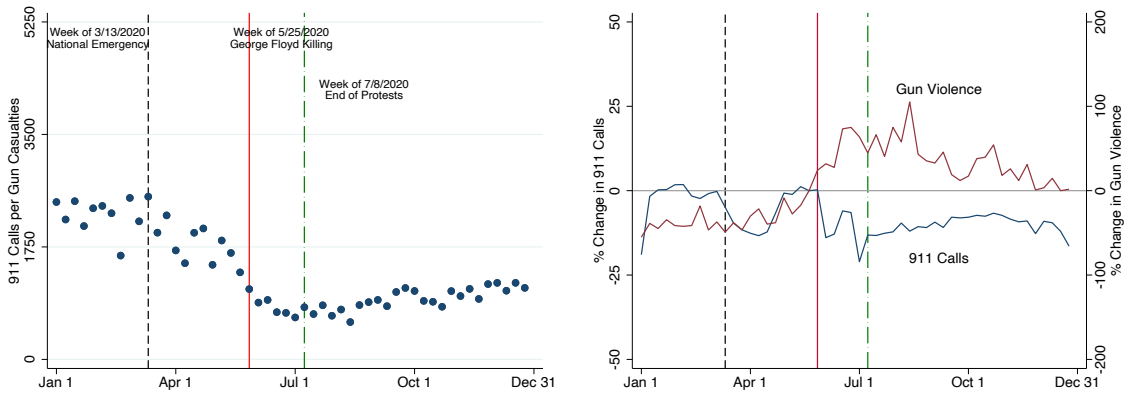


Figure D.1: Civilian Crime Reporting by City

Notes: Figure plots the percent change in the ratio of 911 calls to acoustically detected gunshots over time by city. For each city, percent change is calculated relative to the call-to-shot ratio during the week prior to George Floyd's death. Sample is limited to weeks after the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death.

E Robustness

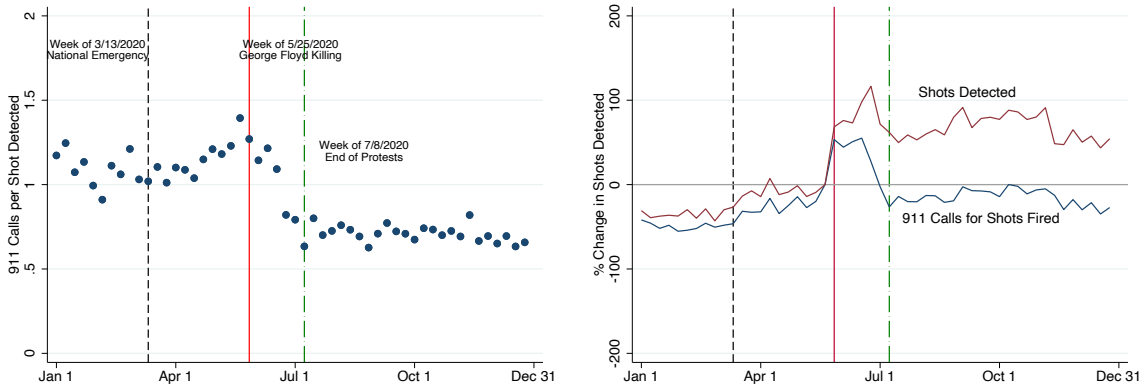


(a) Call-to-Casualty Ratio

(b) Calls and Casualties

Figure E.1: Civilian Crime Reporting over Time (911 Calls to Gun Violence Casualties)

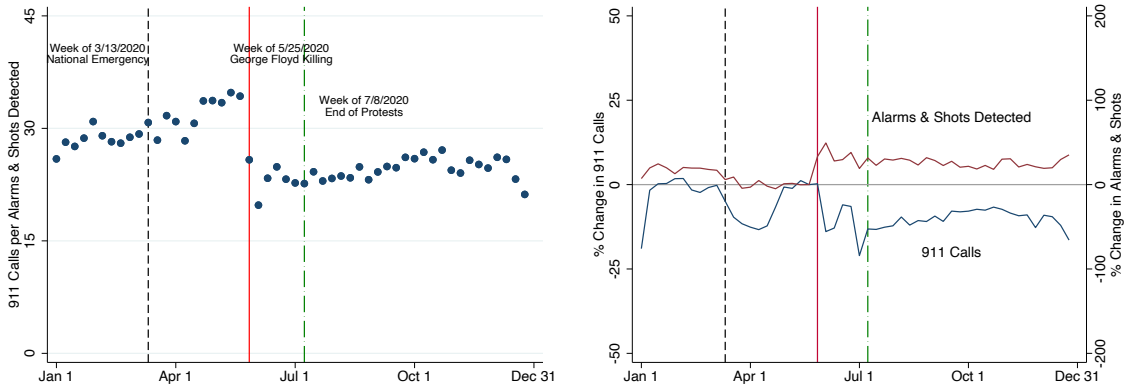
Notes: Panel A plots the ratio of 911 calls to gun violence casualties (i.e. deaths and injuries) over time. Data on gun violence casualties come from the Gun Violence Archive (gunviolencearchive.org). 911 calls and gun casualties are aggregated by week across acoustic gunshot detection coverage areas in all 13 sample cities. Panel B plots the percent change in 911 calls and gun violence casualties over time, relative to the value of each variable during the week prior to George Floyd's death. Dashed vertical line represents the week the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death. Dashed green line marks the end of rioting and Black Lives Matter protests which we date using information from the Armed Conflict Location and Event Data (ACLED) project (Raleigh, Kishi and Linke, 2023).



(a) "Shots Fired" Call-to-Shot Ratio (b) "Shots Fired" Calls and Shots Detected

Figure E.2: Civilian Crime Reporting over Time: "Shots Fired" Ratio

Notes: This figure is identical to Figure 3 from the main text except that we replace the numerator with 911 calls that we could specifically identify as relating to gunshots using the associated description string. Panel A plots the "Shots Fired" 911 call-to-shot over time. Panel B plots the percent change in "Shots Fired" 911 calls and shots over time, relative to the value of each variable during the week prior to George Floyd's death. Calls and shots are aggregated by week across gunshot coverage areas in our thirteen sample cities. Dashed vertical line represents the week the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death. Dashed green line marks the end of rioting and Black Lives Matter protests which we date using information from the Armed Conflict Location and Event Data (ACLED) project (Raleigh, Kishi and Linke, 2023).

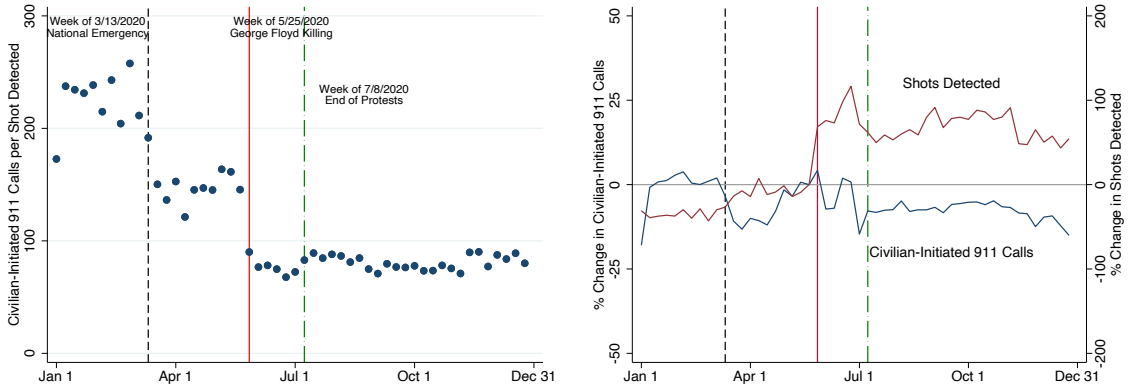


(a) 911 Calls to Shots Plus Alarms Ratio

(b) 911 Calls and Shots Plus Alarms

Figure E.3: Civilian Crime Reporting over Time (911 Calls to Shots Plus Alarms)

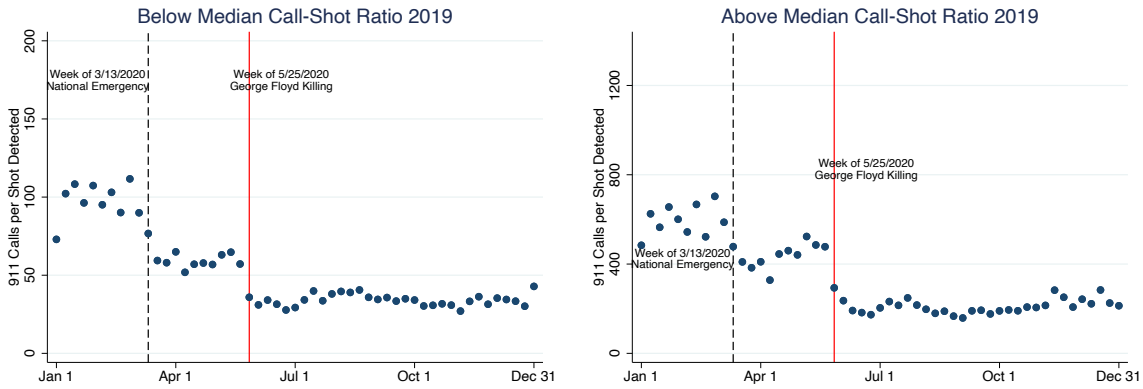
Notes: Panel A plots the ratio of 911 calls to the sum of acoustically detected gunshots and automated alarms over time. 911 calls and shots detected plus automated alarms are aggregated by week across acoustic gunshot detection coverage areas in all thirteen sample cities. Panel B plots the percent change in 911 calls and the sum of acoustically detected gunshots and automated alarms over time, relative to the value of each variable during the week prior to George Floyd's death. Dashed vertical line represents the week the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death. Dashed green line marks the end of rioting and Black Lives Matter protests which we date using information from the Armed Conflict Location and Event Data (ACLED) project (Raleigh, Kishi and Linke, 2023).



(a) Civilian-Initiated Call-to-Shot Ratio (b) Civilian-Initiated Calls and Shots Detected

Figure E.4: Civilian Crime Reporting over Time (Civilian-Initiated Calls to Shots Detected)

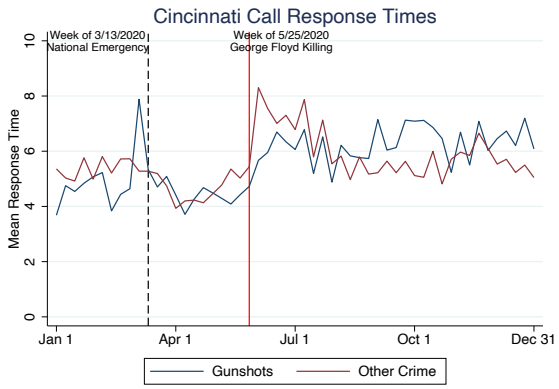
Notes: Panel A plots the ratio of civilian-initiated 911 calls to acoustically detected gunshots over time. To identify civilian-initiated 911 call volumes, we exclude calls with descriptions related to traffic stops and patrols, which may instead result from proactive policing encounters. Civilian-initiated 911 calls and shots detected are aggregated by week across acoustic gunshot detection coverage areas in all thirteen sample cities. Panel B plots the percent change in civilian-initiated 911 calls and acoustically detected gunshots over time, relative to the value of each variable during the week prior to George Floyd's death. Dashed vertical line represents the week the COVID-19 National Emergency was declared. Red vertical line represents the week of George Floyd's death. Dashed green line marks the end of rioting and Black Lives Matter protests which we date using information from the Armed Conflict Location and Event Data (ACLED) project (Raleigh, Kishi and Linke, 2023).



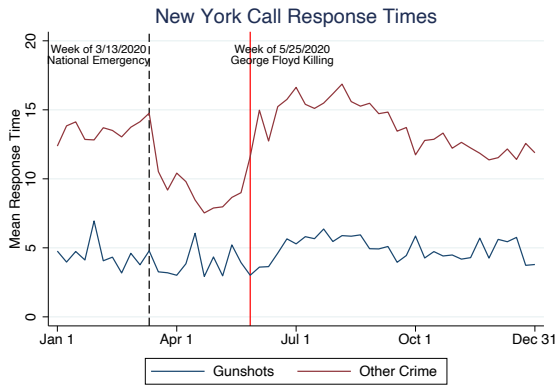
(a) Above median call-shot ratio 2019 (b) Below median call-shot ratio 2019

Figure E.5: Call-to-shot Declines by Baseline Reporting

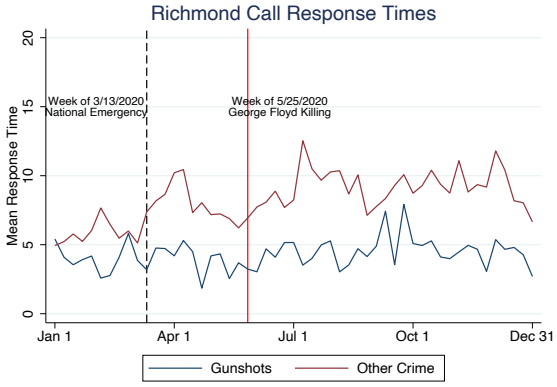
Notes: Both panels of this figure are identical to Panel (c) of Figure 3 from the main text except that we restrict to the sub-sample of census tracts which are above or below the median in the call-to-shot ratio at baseline.



(a) Cincinnati



(b) New York City



(c) Richmond

Figure E.6: Police Response Times

Notes: Figure plots the average police response at the weekly level during 2020 for Gunshots and all other crime for three cities in our data. Police response times are found in the 911 call logs for these three cities, but were not available in the public 911 call logs for the remaining cities in our data.

F National Crime Victimization Survey Analysis

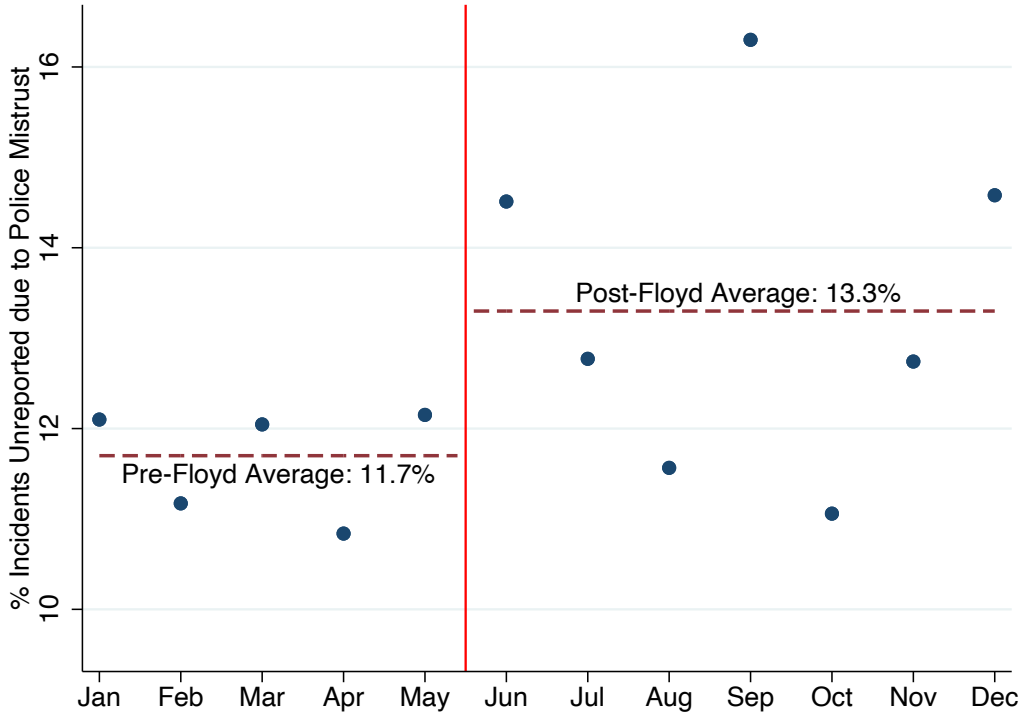


Figure F.1: Non-Reporting Due to Police Mistrust: National Crime Victimization Survey

Notes: Figure plots the monthly share of National Crime Victimization Survey incidents not reported to law enforcement due to mistrust of police. Police mistrust is identified by incidents for which the respondent stated the most important reason for not reporting to law enforcement was because "police wouldn't think it was important enough, wouldn't want to be bothered or get involved", "police would be inefficient, ineffective (they'd arrive late or not at all, wouldn't do a good job, etc.)" or "police would be biased, would harass/insult respondent, cause respondent trouble, etc." Dashed maroon lines represent the average non-reporting rate among incidents that occurred from January to May 2020 and among incidents that occurred from June to December 2020. Red vertical line represents the timing of George Floyd's death.