

Supplemental Online Appendix

The following material provides supplemental detail supporting the discussion and analysis in the main manuscript. This Supplemental Online Appendix includes two sections. The first section documents differential trends in violent conflict by ceasefire status, thereby documenting an alternative dimension of heterogeneity. The second section provides additional country case studies that either compare or contrast with the primary case studies in the main manuscript.

A1 Heterogeneity by Ceasefire Status

In this section, we restrict our analysis to countries categorized as “high-conflict” based on the Global Peace Index (GPI) produced by the Institute for Economics and Peace. We specifically use the GPI’s 2019 country-level scores for “ongoing domestic and international conflict.” We identify all countries with a score of 2.5 or higher based on a 1 to 4 scale (with 4 being the highest degree of ongoing conflict). We then drop those countries that were engaged in proxy wars (e.g., Saudi Arabia, Russia). The resulting list covers 22 countries located predominately in Asia and Africa. We then further divide countries based on the presence of a ceasefire.

Table A1 lists the countries included in our “high-violent conflict” category and identifies whether we classified them as having a ceasefire or not. We used this information to create Figures A1, A2, and A3. In Cameroon, the Central African Republic, and Yemen, state and nonstate actors have agreed to a ceasefire in response to COVID-19. But other recently high-conflict countries established ceasefires prior to the UN Secretary General’s appeal for a global ceasefire in response to COVID-19 on March 23rd. For Syria and South Sudan, there is no evidence that the current ceasefires were COVID-19 motivated. Sudan’s current ceasefire began in October of 2019, months before COVID-19 became a known threat for the country. While Palestine and Lebanon do not have official ceasefires, analysts have noted what appears to be an “informal truce” between Israel, Hezbollah, and Hamas.

Figure A1 contrasts the daily count of battles in high-conflict countries with and without ceasefires motivated by the spread of COVID-19. The trendline for ceasefire countries show a sharp reduction in conflict frequency in early March of 2020. This trend suggests, therefore, that the ceasefires may have been moderately successful in reducing conflict frequency. Countries without ceasefires do not exhibit this discontinuity, but it is important to note that conflict frequency fell gradually across these countries in the later months of 2020.

We observe a similar trend with respect to remote violence and bombings, as shown in Figure A2. The trendline for high-conflict countries with a full or partial ceasefire exhibits a sudden drop in conflict frequency in March 2020. The reduction in bombings and remote violence for non-ceasefire countries was more gradual, with a sudden drop in July of 2020. This discontinuity corresponds with the drop in remote violence and bombings in Libya, hence that country’s trends may be driving the non-ceasefire trendline to some extent.

The time series for violence against civilians in these high-conflict countries (Figure A3) shows no clear decline in response to COVID-19, ceasefire or not. In fact, in countries with no ceasefire, it appears that violence against citizens marginally increased around March 11th. Even in countries with ceasefires, the trendline has remained quite flat, suggesting no reduction in violent events targeting citizens in response to ceasefires.

These time series suggest that in high-conflict states, ceasefires reduced certain types of conflict frequency in the short run, though the non-ceasefire countries also exhibit a declining trend following March of 2020. As in the trend for all ACLED countries (Figure 2, violence against civilians remains relatively constant.

A2 Additional Country Case Study Figures

Supplemental country case studies include:

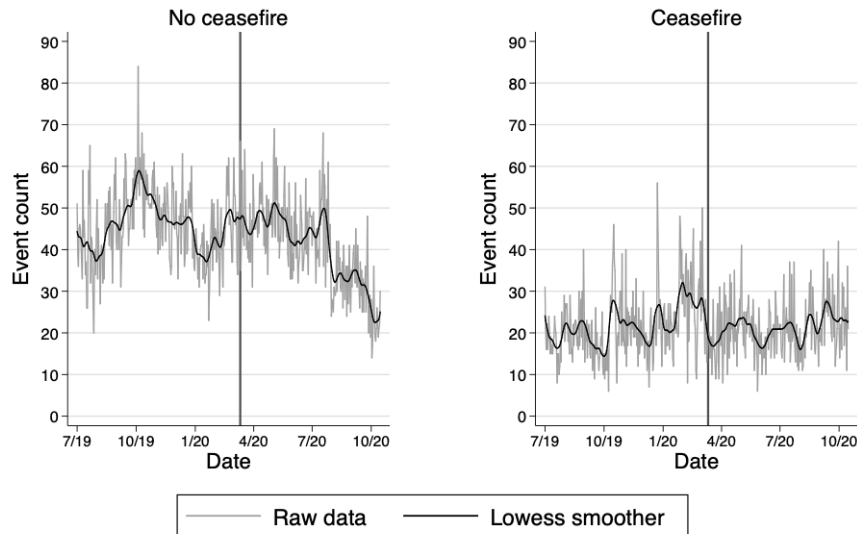
- The Philippines in Figure A4, with community quarantines implemented across the country on March 16 and a ceasefire negotiated between the central government and rebel groups on March 24.
- Uganda in Figure A5, with bans on public transportation and non-food markets implemented on March 25.
- Yemen in Figure A6, with a ceasefire arrangement from April 9 through May 23.
- South Africa in Figure A7, with a national lockdown implemented on March 26.
- Venezuela in Figure A8, with a national lockdown implemented on March 30.
- Nigeria in Figure A9, with state-specific lockdowns. We show Borno state’s lockdown implemented on April 20.
- Iraq in Figure A10, with a national lockdown on March 22.
- Algeria in Figure A11, where the government banned street protests in response to COVID-19 on March 17th.

Table A1: **High violent conflict countries and current ceasefire status**

Country	Recent ceasefire?	Ceasefire start date	Ceasefire end date	Ceasefire initially motivated by COVID-19?
Afghanistan	No			
Azerbaijan	No			
Cameroon	Partly	3/29/20	Unclear	Yes
Central Afr. Rep.	Partly	4/22/20	Unclear	Yes
Dem. Rep. Congo	No			
Ethiopia	No			
India	No			
Iraq	No			
Lebanon	Informal truce	Unclear	Unclear	Yes
Libya	No			
Mali	No			
Myanmar	No			
Nigeria	No			
Pakistan	No			
Palestine	Informal truce	Unclear	Unclear	Yes
Philippines	Yes	3/19/20	4/30/20	Yes
Somalia	No			
South Sudan	Yes	2/22/20	Unclear	No
Sudan	Yes	10/21/19	Unclear	No
Syria	Partly	3/6/20	Unclear	No
Ukraine	No			
Yemen	Yes	4/9/20	5/23/20	Yes

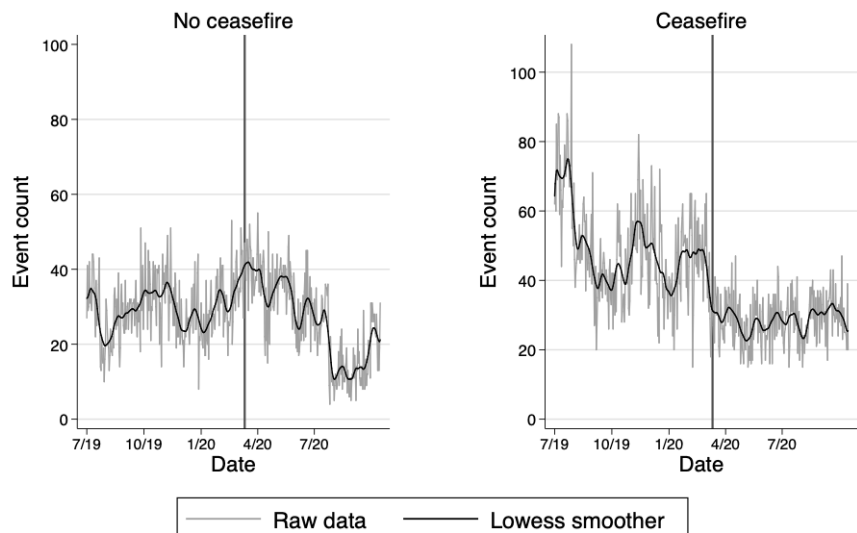
Source: Authors' determination. The countries included on this list were selected based on the Global Peace Index. We selected high violent conflict countries as those with an "ongoing domestic and international conflict" index score of 2.5 or higher, then dropping all countries that made the list because of ongoing proxy warfare (Iran, Turkey, Saudi Arabia, Iran) as well as North Korea. We determine ceasefire data based on various sources, including updates from the UN Secretary General ([UN Security Council, 2020b](#)).

Figure A1: Count of battles by date and national ceasefire, high-conflict ACLED countries



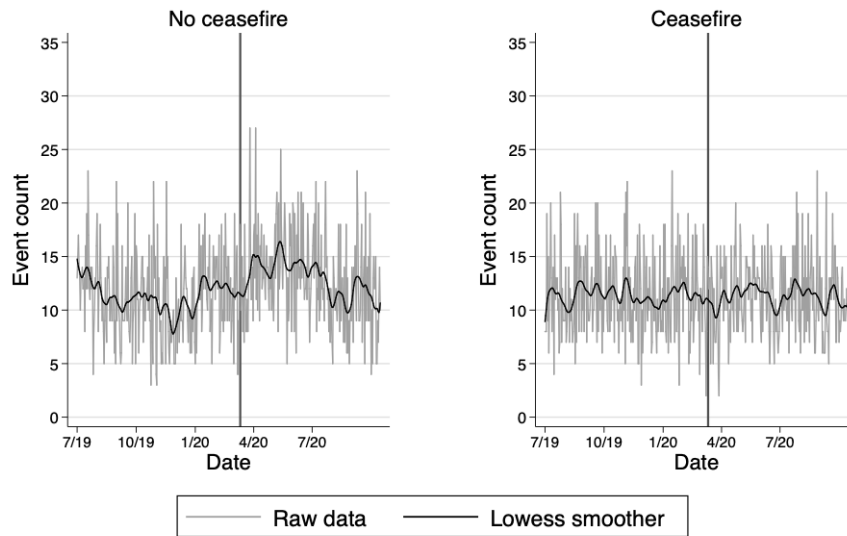
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for March 11th, the day on which the World Health Organization declared a pandemic. We classify high-conflict countries based on the GPI, specifically a country having a 2019 “ongoing domestic or international conflict” score of 2.5 or higher.

Figure A2: Count of remote violence and bombings by date and national ceasefire, high-conflict ACLED countries



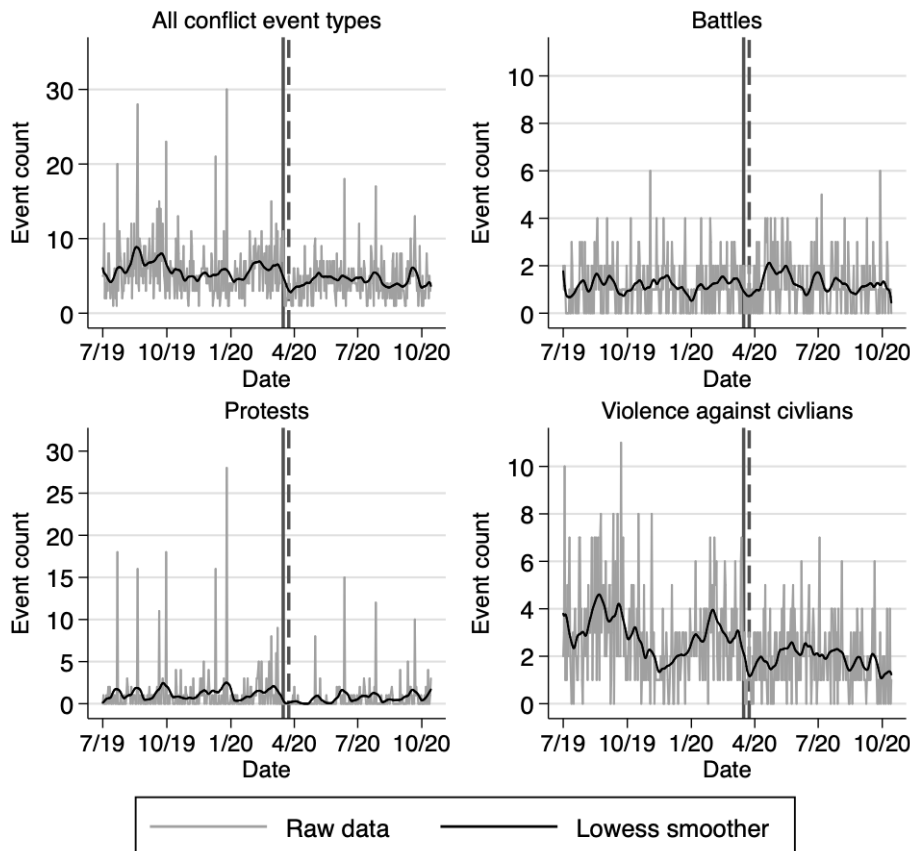
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for March 11th, the day on which the World Health Organization declared a pandemic. We classify high-conflict countries based on the GPI, specifically a country having a 2019 “ongoing domestic or international conflict” score of 2.5 or higher. The Lowess smoother uses a bandwidth of 0.5.

Figure A3: Count of violence against civilians by date and national ceasefire, high-conflict ACLED countries



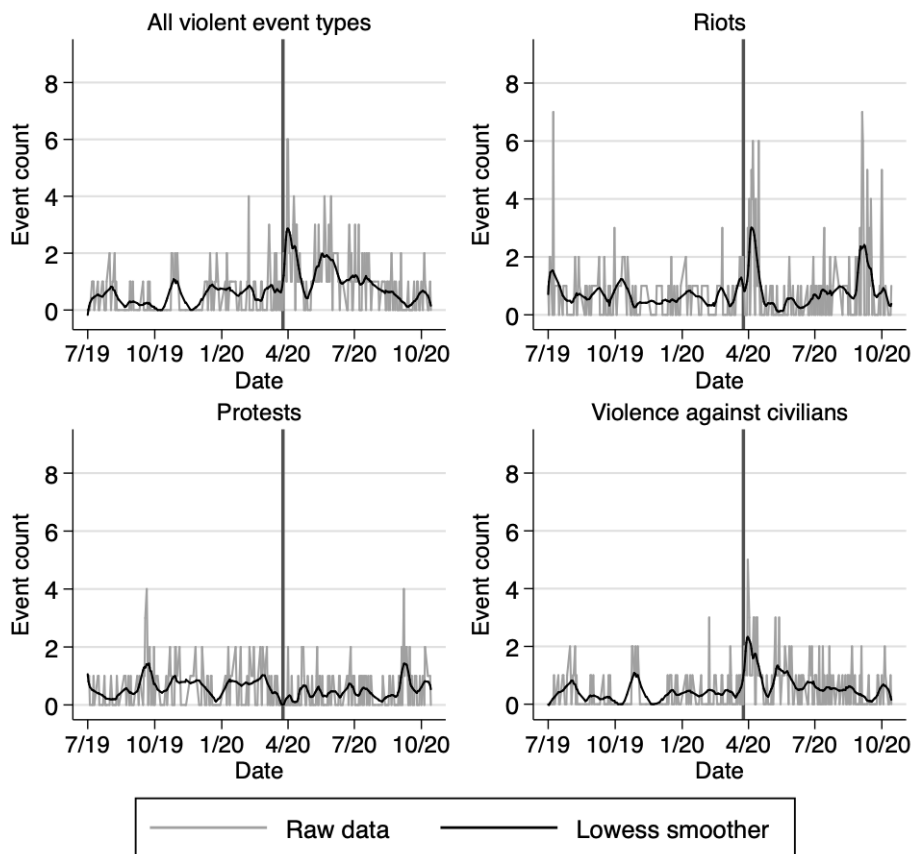
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for March 11th, the day on which the World Health Organization declared a pandemic. We classify high-conflict countries based on the GPI, specifically a country having a 2019 “ongoing domestic or international conflict” score of 2.5 or higher. The Lowess smoother uses a bandwidth of 0.5.

Figure A4: Conflict events by date and type, Philippines



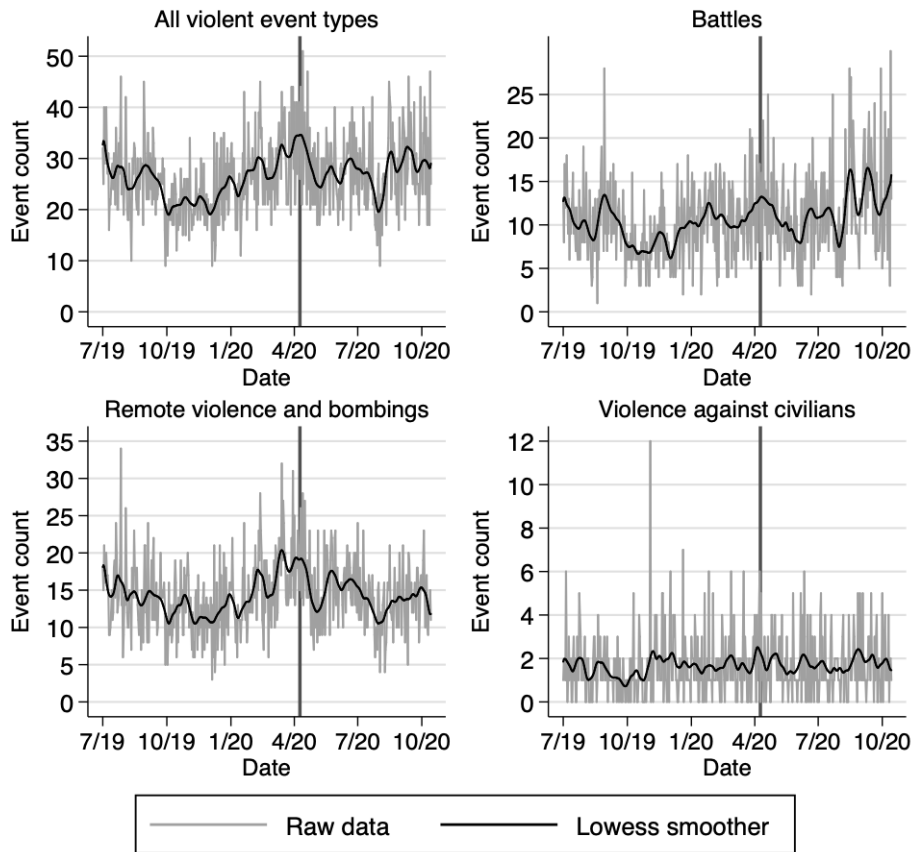
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. Community quarantines implemented across the Philippines, marked by a solid vertical line, began on March 16th. On March 24, marked by a dashed vertical line, rebel groups within the Philippines committed to a temporary ceasefire. The Lowess smoother uses a bandwidth of 0.5.

Figure A5: Conflict events by date and type, Uganda



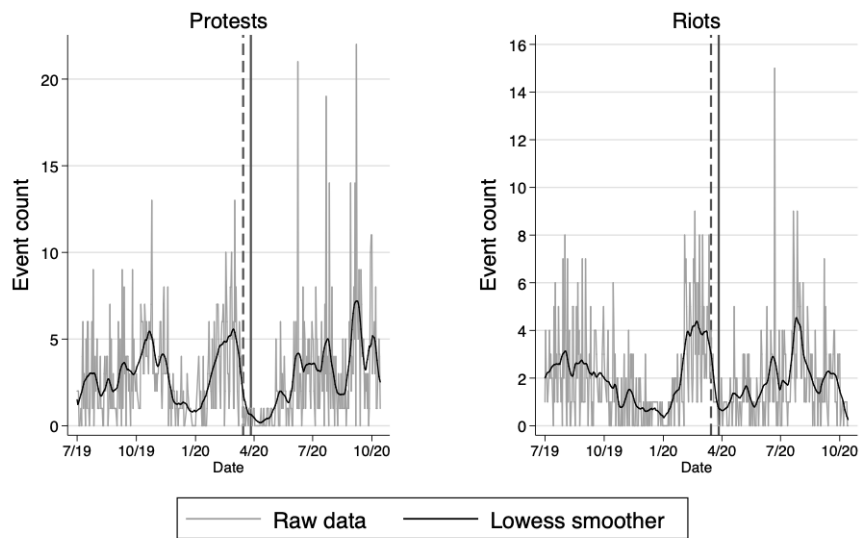
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. Bans on public transportation and non-food markets, marked by a solid vertical line, began on March 25th. The Lowess smoother uses a bandwidth of 0.5.

Figure A6: Violent conflict events by date and type, Yemen



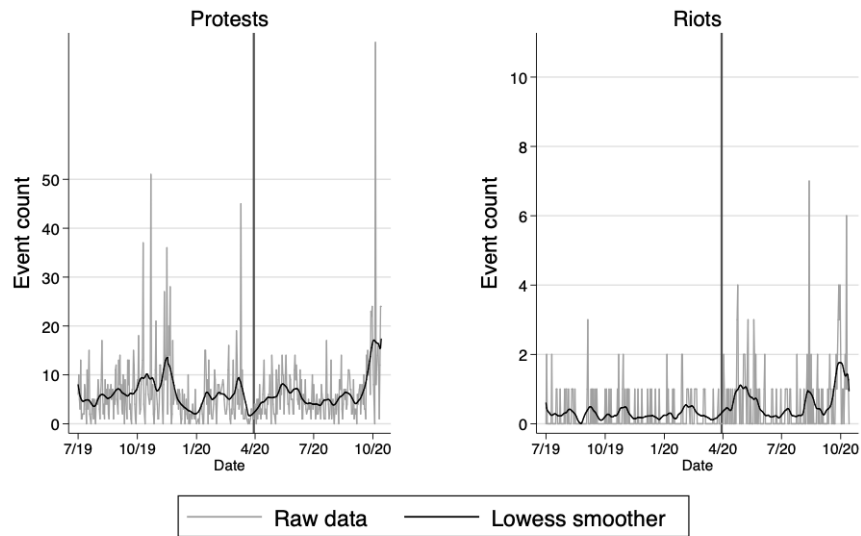
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for April 9th, the beginning of a recognized ceasefire. The Lowess smoother uses a bandwidth of 0.5.

Figure A7: Demonstration events by date and type, South Africa



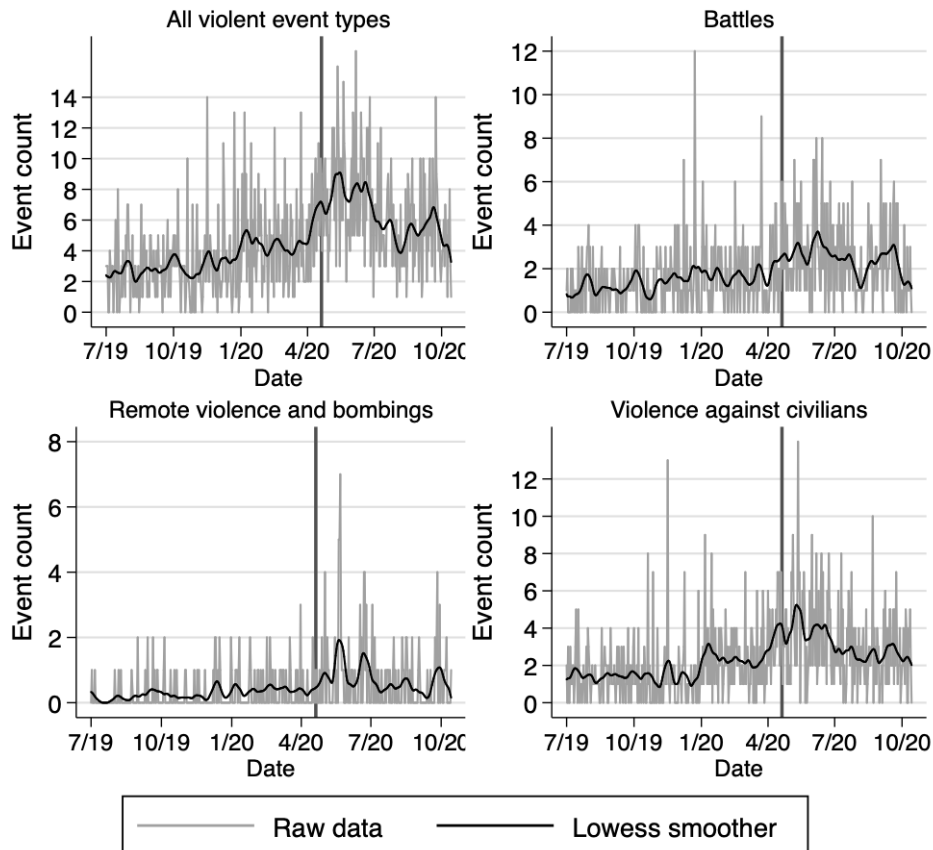
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for March 26, the beginning of the national lockdown. The Lowess smoother uses a bandwidth of 0.5.

Figure A8: Demonstration events by date and type, Venezuela



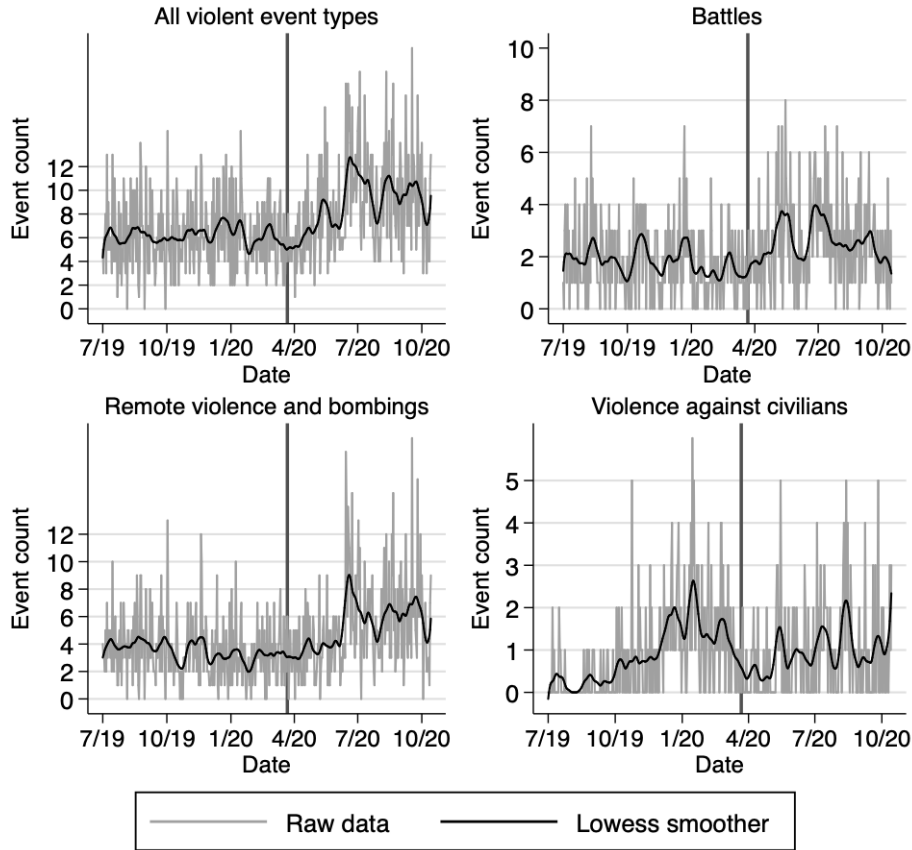
Source: Authors' calculations using ACLED data from July 1st, 2019 to mid-May 2020. The vertical reference line is for March 30, the beginning of the national lockdown. The Lowess smoother uses a bandwidth of 0.5.

Figure A9: Violent conflict events by date and type, Nigeria



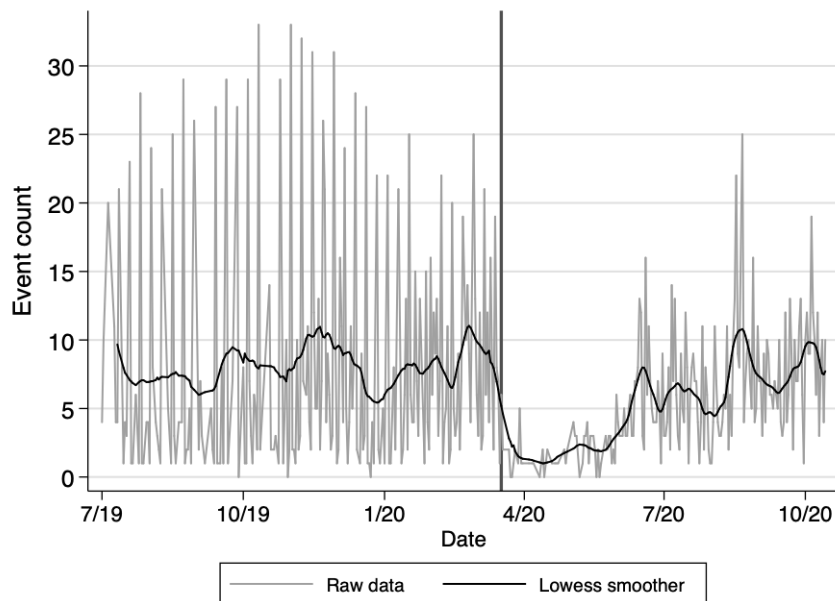
Source: Authors' calculations using ACLED data from April 1st, 2019 to mid-May 2020. States across Nigeria implemented lockdowns at different times. The vertical reference line is for April 20, the beginning of Borno state's lockdown. Borno state is home to a relatively high level of Boko Haram activity. The Lowess smoother uses a bandwidth of 0.5.

Figure A10: Violent conflict events by date and type, Iraq



Source: Authors' calculations using ACLED data from April 1st, 2019 to mid-May 2020. The vertical reference line is for March 22, the beginning of Iraq's national lockdown. The Lowess smoother uses a bandwidth of 0.5.

Figure A11: Protest events by date, Algeria



Source: Authors' calculations using ACLED data from April 1st, 2019 to mid-May 2020. The vertical reference line is for March 17th, the date the Algerian government banned street protests in response to COVID-19. In response, the leading opposition group, al-Hirak, has encouraged its followers to suspend protest activity (BBC, 2020a). The Lowess smoother uses a bandwidth of 0.5.