Supplementary Materials

"From Victims to Dissidents: Legacies of Violence and Popular Mobilization in Iraq (2003-2018)," *American Political Science Review*

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Note: An expanded version of our Supplementary Materials, including qualitative reference materials, may be found on our dataverse page.

SM1. Description of datasets

Here, we provide further description of the three quantitative datasets used in this project: 1) our original dataset of Iraqi protest events (2010-2012); 2) the ESOC dataset of conflict events in Iraq (2004-2009); and 3) the 2018-2019 Arab Barometer survey of Iraq. This additional information should help the reader to better evaluate our design and statistical claims.

Protest event data (dependent variable, event analyses)

We collected daily protest event data for the period July 2010 – June 2012 from three Arabic-language Iraqi newspapers: *Ila Al-Ammam, Al-Mada,* and *Tariq Ash-shaab*. Al-Mada is an independent national newspaper, while Ila Al-Ammam is the newspaper of the Workers' Communist Party of Iraq, and Tariq Ash-shaab is the newspaper of the Iraqi Communist Party. We included leftist parties' publications for two main reasons: first, these are usually more inclined to cover protest events, including smaller events that do not always make it to national news agencies; second, these newspapers were consistent in their availability, and were made accessible to us in digital format for the whole period we are researching, while other sources were either inaccessible or did not have full archives of the period. In addition, we opted not to use regional newspapers, as we would have needed to include such sources for all Iraqi regions to avoid over-representation, a task that was impossible given problems of access and time/resources needed. Therefore, the three sources we used cover national news, and are attuned to protest. Although two of our sources have clear leftist political inclination, we did not find major bias in protest coverage in comparison with Mada. These newspapers covered Islamist, pro-regime, and non-leftist protests, as well as labor and social protests. Local-language domestic news sources are generally preferred to English-language, international sources when collecting local event data, as these sources tend to capture a wider and less biased range of protest activity (Beissinger 1998; Oliver and Myers 1999; Davenport 2010; Rucht and Niedhart 1999; Berman 2020; Majed 2020b). Further, while many protest catalogs leverage a single journalistic source, our strategy of triangulation between multiple news sources is well-suited to post-war Iraq, where individual papers may have been constrained in their ability to cover a wide range of protest events (Beissinger 2002).

The dataset captures all protests reported in these newspapers from July 2010 to June 2012, a period that encompasses the full protest wave in Iraq in the wake of the Arab Uprisings, which was the first major episode of mass mobilization after the civil war. We considered a protest to be any event involving more than one participant mobilizing with clear demands that target an authority. Protest events are delimited in time and space: (1) events over multiple days are coded as one event, (2) events in separate locations within the same city or district coded as separate events, and (3) events in same location with different demands coded as separate events.

Events were geocoded and aggregated at the district level. For each event we coded the governorate, the district, and the GPS coordinates. In total, we captured 815 protest events across this period. In addition to being valuable for the purposes of studying conflict legacies, these data contribute to a growing trend in Middle East politics research, where scholars have used detailed event catalogs to analyze trends in popular contention during and beyond the Arab Uprisings (Ketchley 2017, Barrie and Ketchley 2019, Kadivar 2017, Grimm and Harders 2018, Anderson forthcoming, Majed 2020b, Berman 2020, Clarke forthcoming.)

Conflict and casualty data (independent variable)

To capture violence during the 2004 – 2009 period, we use data collected by the Empirical Studies of Conflict (ESOC) project, which has collated a variety of types of data on Iraq's armed conflict.

Our main independent variable captures the number of civilian casualties in a district during the war. ESOC sources these data from the Iraq Body Count project (IBC), which has catalogued 59,245 violent civilian deaths from news reports, hospital data, and morgue data. Moreover, ESOC disaggregates these civilian casualties data by perpetrator, providing district-level civilian death tolls in four categories: casualties inflicted by the US-led Coalition; casualties inflicted by insurgents in conflict with Coalition forces; casualties inflicted by a clearly identified sectarian militia occurring not in the context of conflict with Coalition forces (and mostly involving the killing of non-coethnics); and "unknown" killings, where claims of responsibility were not made and/or a clear perpetrator could not be identified. This final category includes violence associated with, for example, ethnic cleansing and reprisal killings, where bodies were often left by the side of the road.

Furthermore, we also use ESOC's data on conflict events, which are drawn from the Multi-National Forces Iraq (MNF-I) SIGACT III database and reflect "executed enemy attacks targeted against coalition, Iraqi Security Forces (ISF), civilians, Iraqi infrastructure and government organizations." Importantly, as Berman, Shapiro, and Felter (2011) have noted, these data account for inter- and intra- sectarian violence only when Coalition forces were present, and therefore likely undercount incidents in which Coalition and government forces were not involved. All-in-all, though, the SIGACT data provide a good measure of local-level conflict intensity over the civil war.

Survey data (dependent variable)

Wave V of the Arab Barometer was fielded in Iraq from December 24, 2018 to January 27, 2019. It included a nationally representative sample of 2,462 participants, randomly selected from stratified sampling units covering sixteen of Iraq's eighteen governorates. We also received a proprietary version of the survey with the district locations of each respondent, which allows us to conduct the analyses below.[1]

The Arab Barometer asks a range of questions about political behaviors, including their past experience with protest and contention. The question is constructed as follows: "During the past three years, did you participate in a protest, march or sit-in?" We constructed a binary variable from answers to this question, with those claiming to have participated in protest "once" or "more than once" given the value of 1 and those who said they had never participated in a protest given a value of 0. In total 341 respondents, or 14 percent of the sample, claimed to have protested over the previous three years. As noted in Section 3, there were multiple waves of mass mobilization over the last decade in Iraq, including a major one in late 2018. Because this protest wave occurred right before the survey was fielded, we would not expect there to be serious issues of recall bias in respondents' answers and the question should capture fairly accurately whether they participated in that recent episode of mobilization. Of course, any use of survey data to study behavior comes with the issue of having to take respondents' reports of past behavior at face value; indeed, as we have noted, this is a shortcoming of much of the past legacies of violence literature. That is why we treat these analyses as a complement to those above, which used actual observed protest behavior as the dependent variable.

As noted above, this survey was fielded nearly a decade after the war ended. This passage of time is, on the one hand, helpful, as it allows us to probe the duration of any legacy effects. However, it also presents certain empirical challenges.[2] Specifically, there was a tremendous amount of mobility in Iraq during this decade, meaning that many respondents in the survey were likely living in different districts than ones they were living in during the war. Luckily, the Arab Barometer asks

[1]We thank Amaney Jamal and Michael Robbins for sharing this version of the survey with us.

[2]There was also an Iraq battery in Wave III of the Arab Barometer, which was fielded in June 2013. Unfortunately this survey did not record the district locations of its respondents.

respondents how long they have been living in their current location. And, indeed, fully 26 percent of respondents claimed to have been living in a different location at the end of the war in 2009. To address these mobility issues, we excluded all these respondents from the analyses below, focusing only on those individuals who at the time of the survey were living in the same locations that they had been in at the end of the war.

SM2. Descriptive statistics

Table A1: Descriptive statistics for variables in event analysis

Statistic	Mean	St. Dev.	Min	Max
Dependent Variable				
Protest Count	0.332	1.253	0	26
Independent Variables				
Civilian casualties (per capita)	18.186	27.676	0.000	141.169
Coalition-inflicted civilian casualties (per capita)	3.134	7.349	0.000	59.975
Insurgent-inflicted civilian casualties (per capita)	3.160	5.161	0.000	27.243
Sectarian-inflicted civilian casualties (per capita)	11.683	18.926	0.000	102.768
Unknown-inflicted civilian casualties (per capita)	0.941	2.387	0	17
Control Variables				
SIGACT (per capita)	106.499	282.963	0.000	2,382.364
Population (log)	2.590	1.180	−0.617	5.016
Shia population %	0.453	0.461	0	1
Kurdish population %	0.295	0.421	0	1
Unemployment rate	0.095	0.063	0.009	0.408
Total oil volume (bn)	778.968	1,656.865	0.000	9,075.957
Feb 2011	0.043	0.204	0	1
Nov 2011	0.043	0.204	0	1
Lagged protest count	0.333	1.257	0	26
Nearest city (log)	3.460	1.209	0.000	4.941
Urban %	0.168	0.203	0.000	0.890
Lowest income quintile %	21.394	12.908	0	56
Highest income quintile	17.577	10.140	1	48
Illiterate %	22.392	10.730	0.700	51.800
Continuous power access %	20.250	32.015	0	100

Table A2: Descriptive statistics for variables in survey analysis

	Mean	SD	Min	Max
Dependent Variable				
Protest participation	0.150	0.360	0	1
Independent Variables				
Civilian casualties (per capita)	28.930	30.100	0	141.170
Coalition-inflicted civilian casualties (per capita)	5.270	11.020	0	59.980
Insurgent-inflicted civilian casualties (per capita)	4.810	5.110	0	16.060
Sectarian-inflicted civilian casualties (per capita)	18.380	19.510	0	102.770
Unknown-inflicted civilian casualties (per capita)	1.740	2.800	0	17.490
Control Variables				
SIGACT (per capita)	75.690	90.960	0.130	314.100
Population (log)	3.790	0.870	1.700	5.020
Shia population %	0.560	0.410	0	1
Kurdish population %	0.150	0.280	0	1
Unemployment rate	0.100	0.040	0.020	0.180
Total oil volume (bn)	890.350	1,559.450	0	9,075.960
Urban %	0.390	0.270	0.020	0.890
Nearest city (log)	2.410	1.710	0	4.690
Illiterate %	15.360	7.370	3.100	38.400
Lowest income quintile %	16.520	10.120	0	35
Highest income quintile %	21.120	10.890	3	48
Continuous power access %	17.430	30.080	0	100
Female	0.450	0.500	0	1
College	0.150	0.360	0	1
Age	35.750	14.340	18	86
Low income	0.470	0.500	0	1
Unemployed	0.120	0.330	0	1
Religious	0.490	0.500	0	1
City-based	0.730	0.440	0	1
Student	0.140	0.340	0	1
Shia	0.480	0.500	0	1

SM3. Full regression results from survey analysis

Table A3: Civilian casualties and protest participation

	Dependent variable:			
	protest			
	(1)	(2)	(3)	(4)
Civilian casualties (per capita)	0.004	0.012^{***}		
	(0.003)	(0.004)		
Coalition-inflicted civilian casualties (per capita)			0.021	0.018^{**}
			(0.013)	(0.008)
Insurgent-inflicted civilian casualties (per capita)			-0.088^{*}	0.033
			(0.046)	(0.052)
Sectarian-inflicted civilian casualties (per capita)			0.024^{**}	0.042^{***}
			(0.011)	(0.008)
Unknown-inflicted civilian casualties (per capita)			−0.062	-0.190^{***}
			(0.059)	(0.056)
SIGACT (per capita)	-0.010^{***}	-0.004^{**}	-0.008^{***}	-0.005^{***}
	(0.002)	(0.002)	(0.002)	(0.001)
Female		-1.816^{***}		-1.825^{***}
		(0.293)		(0.291)
College		0.389^{*}		0.420^{**}
		(0.203)		(0.200)
Age		0.011		0.013
		(0.037)		(0.038)
I(age ∗age)		−0.0002		−0.0003
		(0.0004)		(0.0004)
Lower income		0.064		0.091
		(0.154)		(0.153)
Unemployed		−0.077		−0.051
		(0.276)		(0.283)
Religious		-0.373^{**}		-0.389^{**}
		(0.160)		(0.160)
Urban		0.461^{**}		0.382^{*}
		(0.206)		(0.213)
Student		0.155		0.202
		(0.317)		(0.323)
Shia		0.096		0.049
		(0.259)		(0.254)
Population (log)		0.113		0.048
		(0.242)		(0.258)
Shia population		3.376^{***}		3.536^{***}
		(1.020)		(1.186)
Kurdish population		4.064^{***}		4.447^{***}
		(1.524)		(1.601)
Urban %		-0.985^{*}		−0.804
		(0.588)		(0.599)
Total oil volume (bn)		-0.0002^{***}		-0.0002^{***}
		(0.00005)		(0.00005)
Nearest city (log)		0.147		0.229^{**}
		(0.100)		(0.102)
Illiterate		−0.028		−0.026
		(0.030)		(0.026)

Cont'd

Lowest income quintile %		0.014		0.017
		(0.021)		(0.019)
Highest income quintile %		0.041**		0.049***
		(0.017)		(0.018)
Unemployment rate		0.672		0.821
		(2.375)		(2.428)
Continuous power access %		0.0003		0.004
		(0.004)		(0.004)
Constant	−1.283***	−5.350***	−1.323***	−6.108***
	(0.164)	(0.929)	(0.171)	(1.341)
Observations	1,739	1,722	1,739	1,722
Log Likelihood	−701.325	−594.716	−693.490	−590.506
Akaike Inf. Crit.	1,408.650	1,237.431	1,398.979	1,235.011

Note: *p<0.1; **p<0.05; ***p<0.01

SM4. Analysis of Protest pre-2003

One concern with the analyses in the main paper is that the wave of protests in Iraq in the wake of the Arab Uprisings may simply have emerged in the places where Iraqis were always most used to protesting. Though we tried to control for socio-economic and demographic factors that typically are related to protest (like GDP per capita, sectarian composition, and distance to the capital) there may still be unobserved or unmeasurable characteristics of certain locations that make them more likely sites of protest. Moreover, if these same locations also attracted more violence and were the sites of more civilian casualties during the war, the relationships we identified in the main text would be spurious. Though it is not entirely clear why, once controlling for underlying levels of violence (i.e., SIGACT), protest-prone districts would be the site of more civilian casualties, we cannot rule this possibility out.

In an ideal world, we would have controlled for the level of protest in a district during the period before the US invasion and subsequent civil war (i.e., the pre-treatment period). However, we lack high-quality district-level protest data for the end of the Saddam Hussein era. In fact, as noted in Section 3 of the paper, there was very little contentious mobilization during Saddam Hussein's reign, in large part because of the brutally repressive nature of the regime. Nevertheless, in this section of the appendix we seek to identify, using the best data available, whether protest after the war generally seemed to be taking place in the same locations that it did during the final years of Hussein's rule.

To do this, we use data from the GDELT project, which scrapes data from publicly available news sources on protest and conflict events. As far as we know, GDELT's is the only data available on protest in Iraq before 2003. One downside to GDELT's data is that most events cannot be

Table A4: Protests by Governorate, 2010-2012 vs 1992-2002 (including Baghdad)

	2010-2012 (Our data)		1992-2002 (GDELT)	
Governorate	Total	Percent	Total	Percent
Anbar	36	4%	0	0%
Babylon	52	6%	0	0%
Baghdad	198	24%	75	66%
Basrah	96	12%	7	6%
Dahuk	7	1%	2	2%
Diyala	28	3%	2	2%
Erbil	23	3%	6	5%
Kerbala	32	4%	0	0%
Kirkuk	34	4%	2	2%
Missan	18	2%	3	3%
Muthanna	14	2%	1	1%
Najaf	58	7%	2	2%
Ninewa	34	4%	1	1%
Qadissiya	38	5%	0	0%
SalahalDin	7	1%	0	0%
Sulaymaniyah	25	3%	4	4%
ThiQar	84	10%	8	7%
Wassit	31	4%	0	0%

Table A5: Protests by Governorate, 2010-2012 vs 1992-2002 (excluding Baghdad)

	2010-2012 (Our data)		1992-2002 (GDELT)	
Governorate	Total	Percent	Total	Percent
Anbar	36	6%	0	0%
Babylon	52	8%	0	0%
Basrah	96	16%	7	18%
Dahuk	7	1%	2	5%
Diyala	28	5%	2	5%
Erbil	23	4%	6	16%
Kerbala	32	5%	0	0%
Kirkuk	34	6%	2	5%
Missan	18	3%	3	8%
Muthanna	14	2%	1	3%
Najaf	58	9%	2	5%
Ninewa	34	6%	1	3%
Qadissiya	38	6%	0	0%
SalahalDin	7	1%	0	0%
Sulaymaniyah	25	4%	4	11%
ThiQar	84	14%	8	21%
Wassit	31	5%	0	0%

accurately assigned to districts, which is why they could not be used to construct control variables in our analyses. Instead, in this appendix we simply conduct a governorate-level comparison of our data and GDELT's data. We selected all the protest events in GDELT from the decade prior to the war (1992-2002); there were 206 events in this period (reinforcing the idea that protest was infrequent under Hussein). We were able to determine the governorate locations for 113 of these events. Below we show the distribution of these events by governorate, compared to the distribution of events in our dataset. The first column includes the number of events and the second column the proportion of events. The first table shows the distribution of events including the capital city of Baghdad. However, as this table reveals, most of GDELT's events are located in Baghdad, reflecting a common source of coverage bias in datasets based primarily on English language sources. To more accurately compare the distribution of events outside of Baghdad, we therefore include a second table that excludes Baghdad.

As these comparisons make clear, though there are some governorates with a large proportion of protests in both datasets (e.g., ThiQar and Basrah) there are also some major discrepancies in the distributions. GDELT's data is more skewed toward northern Kurdish-majority governorates, like Erbil and Sulaymaniyah. Our data, in contrast reports a larger proportion of protests in the southern governorates of Najaf, Babylon, and Qadissiya (the latter two saw no protests during the late Hussein period, according to GDELT). The correlations between these distributions is 0.88 when Baghdad is included, however it falls to 0.57 when the capital is excluded. All-in-all then, we do not have much evidence to support the idea that the geographic distribution of protest in the post-2003 period reflected the distribution in the pre-2003 period.

SM5. Cross-sectional models of protest events

Here we repeat the analyses in Tables 1 and 2 using only the cross-sectional dataset of 104 districts (i.e., without introducing temporal variation in protest). This analysis helps to assuage concerns that our predictive power may rest on the greater number of observations inherent to the structure of the panel dataset. In these regressions, we remove temporal controls but retain our district-level controls. Standard errors remain clustered at the governorate level. Our main relationship of interest – between wartime civilian casualties and 2010-2012 protest levels – persists and remains significant at the $p < 0.1$ (pooled) and $p < 0.05$ (coalition-inflicted) levels.

Table A6: Civilian casualties and protest levels (perpetrators pooled)

	Dependent variable:		
	number of protests		
	(1)	(2)	(3)
Civilian casualties (per capita)	0.039***	0.012**	0.009*
	(0.007)	(0.006)	(0.006)
SIGACT (per capita)	−0.006***	−0.001*	−0.001
	(0.001)	(0.001)	(0.001)
Population (log)		0.755***	0.675***
		(0.191)	(0.202)
Shia population %		0.167	0.491
		(0.522)	(0.655)
Kurdish population %		−0.421	0.057
		(0.608)	(0.808)
Urban %		2.670***	2.397***
		(0.514)	(0.645)
Total oil volume (bn)		0.000	−0.000
		(0.000)	(0.000)
Nearest city (log)		−0.144	−0.072
		(0.109)	(0.117)
Illiterate %			−0.035
			(0.024)
Lowest income quintile %			0.015
			(0.016)
Highest income quintile %			0.030*
			(0.016)
Unemployment rate			1.052
			(2.481)
Continuous power access %			0.004
			(0.003)
Constant	1.639***	−1.020	−1.532
	(0.202)	(0.999)	(0.999)
Observations	104	104	104
Log Likelihood	−278.245	−234.936	−231.389
θ	0.335*** (0.053)	1.330*** (0.313)	1.510*** (0.370)
Akaike Inf. Crit.	562.489	487.873	490.778
Note:			*p<0.1; **p<0.05; ***p<0.01
Note:		Standard errors are clustered at the governorate level.	

Table A7: Civilian casualties and protest levels (perpetrators disaggregated)

	Dependent variable:	
	(1)	(2)
Coalition-inflicted civilian casualties (per capita)	0.024**	0.026**
	(0.011)	(0.010)
Insurgent-inflicted civilian casualties (per capita)	−0.003	−0.012
	(0.050)	(0.051)
Sectarian-inflicted civilian casualties (per capita)	0.028**	0.026*
	(0.013)	(0.013)
Unknown-inflicted civilian casualties (per capita)	−0.131	−0.133*
	(0.086)	(0.071)
SIGACT (per capita)	−0.002**	−0.002**
	(0.001)	(0.001)
Population (log)	0.732***	0.666***
	(0.177)	(0.190)
Shia population %	0.029	0.289
	(0.688)	(0.869)
Kurdish population %	−0.519	0.019
	(0.744)	(0.945)
Urban %	2.750***	2.369***
	(0.513)	(0.646)
Total oil volume (bn)	0.000	−0.000
	(0.000)	(0.000)
Nearest city (log)	−0.134	−0.048
	(0.104)	(0.107)
Illiterate %		−0.038*
		(0.022)
Lowest income quintile %		0.004
		(0.016)
Highest income quintile %		0.019
		(0.017)
Unemployment rate		1.731
		(2.294)
Continuous power access %		0.004
		(0.003)
Constant	−0.954	−1.042
	(0.962)	(1.129)
Observations	104	104
Log Likelihood	−232.773	−229.143
θ	1.426*** (0.340)	1.659*** (0.419)
Akaike Inf. Crit.	489.546	492.286
Note:		*p<0.1; **p<0.05; ***p<0.01
Note:	Standard errors are clustered at the governorate level.	

SM6. Models with civilian casualties and SIGACT entered independently

Here we repeat the analyses in the main paper, entering our civilian casualties and SIGACT variables independently. In the protest event analysis, the pooled civilian casualty variable experiences some attenuation in significance (p = .11), while in the disaggregated model coalition-inflicted casualties remain positive and highly significant, while unknown-inflicted casualties remain negative and significant. In the survey analyses, the aggregated civilian casualty variable remains highly significant. These results demonstrate the importance of controlling for underlying levels of conflict in a district (SIGACT) when examining the effect of civilian casualties. Again, as noted in the manuscript, and as described in more detail in Condra and Shapiro (2012), these two variables are only weakly correlated (cor = 0.4).

Table A8: Event models with civilian casualty and SIGACT entered independently

	Dependent variable:					
	number of protests					
	(1)	(2)	(3)	(4)	(5)	(6)
Civilian casualties (per capita)	0.005	0.012***				
	(0.003)	(0.001)				
Coalition-inflicted casualties			0.051***	0.017***		
			(0.007)	(0.006)		
Insurgent-inflicted casualties			0.0002	0.008		
			(0.011)	(0.025)		
Sectarian-inflicted casualties			0.031***	0.010		
			(0.004)	(0.007)		
Unknown-inflicted casualties			−0.213***	−0.088*		
			(0.035)	(0.049)		
SIGACT (per capita)					−0.0005	−0.002***
					(0.001)	(0.0004)
Population (log)	0.685***			0.686***	0.661***	
	(0.111)			(0.114)	(0.113)	
Shia population %	1.191***			1.144**	0.930***	
	(0.356)			(0.454)	(0.351)	
Kurdish population %	0.926*			0.976*	0.596	
	(0.507)			(0.562)	(0.525)	
Urban %	1.728***			1.761***	1.674***	
	(0.314)			(0.334)	(0.303)	
Total oil volume (bn)	−0.000			−0.000	−0.000	
	(0.000)			(0.000)	(0.000)	
earest city (log)	−0.0005			0.001	−0.008	
	(0.052)			(0.055)	(0.051)	
Feb 2011	2.110***			2.113***	2.104***	
	(0.137)			(0.136)	(0.135)	
Nov 2010	−0.929**			−0.934**	−0.933**	
	(0.436)			(0.437)	(0.434)	
Lagged protest count	0.204***			0.191***	0.202***	
	(0.019)			(0.019)	(0.020)	
Illiterate %	−0.045***			−0.044***	−0.051***	
	(0.013)			(0.013)	(0.013)	
Lowest income quintile %	0.003			−0.001	0.001	
	(0.008)			(0.008)	(0.008)	
Highest income quintile %	0.017*			0.012	0.012	
	(0.009)			(0.011)	(0.008)	
Unemployment rate	2.990**			3.016**	3.247**	
	(1.297)			(1.296)	(1.287)	
Continuous power access %	0.002			0.002	0.001	
	(0.002)			(0.002)	(0.002)	
Constant	−5.233***	−1.348***	−1.516***	−5.095***	−4.547***	−0.955***
	(0.606)	(0.079)	(0.080)	(0.707)	(0.540)	(0.084)
Observations	2,392	2,392	2,392	2,392	2,392	2,392
Log Likelihood	−1,123.049	−1,541.729	−1,527.611	−1,119.498	−1,123.995	−1,537.767
θ	1.355*** (0.205)	0.132*** (0.011)	0.139*** (0.011)	1.434*** (0.224)	1.368*** (0.209)	0.134*** (0.011)
Akaike Inf. Crit.	2,278.097	3,087.459	3,065.222	2,276.995	2,279.991	3,079.534

Note: *p<0.1; **p<0.05; ***p<0.01
Note: Standard errors are clustered at the district level.

Table A9: Survey models with civilian casualty and SIGACT entered independently

	Dependent variable:	
	number of protests	
	(1)	(2)
SIGACT (per capita)	−0.002	
	(0.002)	
Civilian casualties (per capita)		0.009***
		(0.003)
Female	−1.822***	−1.827***
	(0.294)	(0.297)
College	0.384*	0.391*
	(0.204)	(0.203)
Age	0.010	0.007
	(0.037)	(0.037)
I(age ∗age)	−0.0002	−0.0002
	(0.0004)	(0.0004)
Lower income	0.068	0.065
	(0.156)	(0.156)
Unemployed	−0.100	−0.106
	(0.272)	(0.274)
Religious	−0.370**	−0.382**
	(0.158)	(0.160)
City	0.491**	0.448**
	(0.211)	(0.209)
Student	0.179	0.139
	(0.318)	(0.318)
Shia	0.135	0.170
	(0.264)	(0.266)
Population (log)	0.066	0.094
	(0.236)	(0.236)
Shia population %	2.917***	4.141***
	(1.072)	(0.807)
Kurdish population %	3.589**	5.046***
	(1.556)	(1.228)
Urban %	−1.027*	−0.845
	(0.600)	(0.551)
Total oil volume (bn)	−0.0001***	−0.0002***
	(0.0001)	(0.00004)
Nearest city (log)	0.128	0.140
	(0.103)	(0.101)
Illiterate %	−0.039	−0.031
	(0.032)	(0.030)
Lowest income quintile %	0.013	0.007
	(0.022)	(0.021)
Highest income quintile %	0.032*	0.045***
	(0.017)	(0.017)
Unemployment rate	1.495	1.317
	(2.424)	(2.356)
Continuous power access %	−0.0003	−0.002
	(0.004)	(0.004)
Constant	−4.310***	−5.946***
	(0.885)	(0.941)
Observations	1,722	1,722
Log Likelihood	−597.181	−596.193
Akaike Inf. Crit.	1,240.362	1,238.387
Note:	*p<0.1; **p<0.05; ***p<0.01	

SM7. Analysis of outliers

In our database, three districts (Nassriya, Basrah, and Al Resafa) account for significantly higher levels of protest. Figure 8 presents the frequency of protest levels by district, showing that these three districts are outside of the prevailing distribution. As a robustness check, we present our main time-series models omitting these three districts. We note that our main results persist.

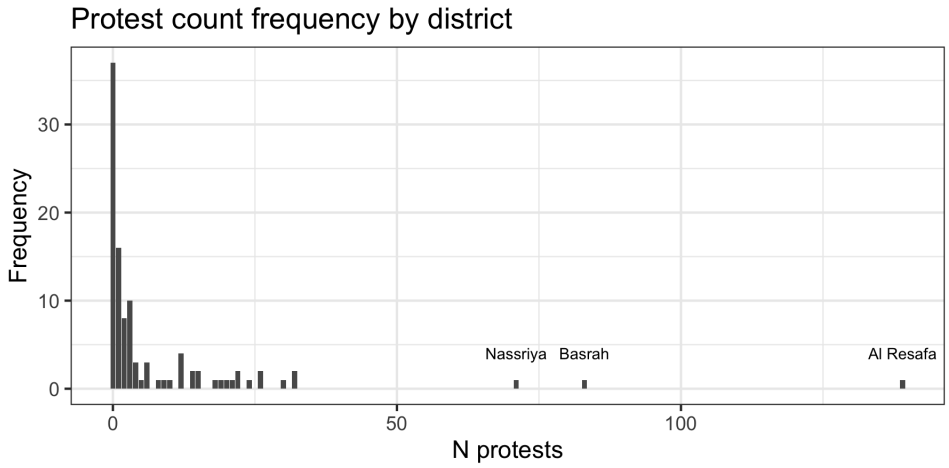

Figure A1: Frequency plot of protest levels by district

Table A10: Main models with outlier districts removed (Nassriya, Basrah, and Al Resafa)

	Dependent variable:	
	number of protests	
	(1)	(2)
Civilian casualties (per capita)	0.006*	
	(0.004)	
Coalition-inflicted civilian casualties (per capita)		0.023***
		(0.006)
Insurgent-inflicted civilian casualties (per capita)		0.016
		(0.027)
Sectarian-inflicted civilian casualties (per capita)		0.014
		(0.009)
Unknown-inflicted civilian casualties (per capita)		−0.106**
		(0.053)
SIGACT (per capita)	−0.001	−0.002*
	(0.001)	(0.001)
Population (log)	0.668***	0.644***
	(0.115)	(0.123)
Shia population %	1.001***	0.897**
	(0.371)	(0.441)
Kurdish population %	0.701	0.688
	(0.539)	(0.555)
Urban %	1.644***	1.688***
	(0.316)	(0.355)
Total oil volume (bn)	−0.000	−0.000
	(0.000)	(0.000)
Nearest city (log)	0.019	0.021
	(0.052)	(0.056)
Feb 2011	2.086***	2.102***
	(0.147)	(0.146)
Nov 2010	−0.911**	−0.921**
	(0.435)	(0.435)
Lagged protest count	0.209***	0.189***
	(0.021)	(0.021)
Illiterate %	−0.043***	−0.042***
	(0.013)	(0.014)
Lowest income quintile %	0.003	−0.003
	(0.008)	(0.008)
Highest income quintile %	0.016	0.010
	(0.010)	(0.011)
Unemployment rate	2.747**	2.728**
	(1.283)	(1.240)
Continuous power access %	0.001	0.002
	(0.002)	(0.002)
Constant	−5.009***	−4.714***
	(0.640)	(0.727)
Observations	2,386	2,386
Log Likelihood	−1,093.913	−1,088.767
θ	1.462*** (0.242)	1.601*** (0.280)
Akaike Inf. Crit.	2,221.827	2,217.534
Note:		*p<0.1; **p<0.05; ***p<0.01
Note:	Standard errors are clustered at the district level.	

SM8. Models without Baghdad and Kurdish-majority districts

To ensure that our results are not an artifact of unique dynamics in Iraq's capital, Baghdad, or the predominantly Kurdish regions in the north of the country, below we run our main analyses with these districts, respectively, removed.

Table A11: Main models without Baghdad

	Dependent variable:	
	number of protests	
	(1)	(2)
Civilian casualties (per capita)	0.005	
	(0.004)	
Coalition-inflicted civilian casualties (per capita)		0.022***
		(0.006)
Insurgent-inflicted civilian casualties (per capita)		−0.064*
		(0.037)
Sectarian-inflicted civilian casualties (per capita)		0.034***
		(0.009)
Unknown-inflicted civilian casualties (per capita)		−0.148***
		(0.048)
SIGACT (per capita)	0.001	0.0004
	(0.0005)	(0.0005)
Population (log)	0.750***	0.812***
	(0.131)	(0.134)
Shia population %	1.499***	0.841*
	(0.403)	(0.493)
Kurdish population %	1.151**	0.515
	(0.566)	(0.609)
Urban %	1.437***	1.370***
	(0.380)	(0.387)
Total oil volume (bn)	−0.000	−0.000
	(0.000)	(0.000)
Nearest city (log)	0.028	0.019
	(0.060)	(0.059)
Feb 2011	2.058***	2.074***
	(0.143)	(0.142)
Nov 2010	−0.985**	−0.999**
	(0.500)	(0.495)
Lagged protest count	0.192***	0.163***
	(0.028)	(0.028)
Illiterate %	−0.045***	−0.042***
	(0.013)	(0.013)
Lowest income quintile %	0.0003	−0.015
	(0.009)	(0.009)
Highest income quintile %	0.014	0.001
	(0.009)	(0.011)
Unemployment rate	0.953	1.914
	(1.349)	(1.369)
Continuous power access %	0.001	0.001
	(0.003)	(0.003)
Constant	−5.358***	−4.543***
	(0.716)	(0.815)
Observations	2,185	2,185
Log Likelihood	−956.409	−946.527
θ	1.565*** (0.292)	1.756*** (0.352)
Akaike Inf. Crit.	1,946.818	1,933.054
Note:		*p<0.1; **p<0.05; ***p<0.01
Note:	Standard errors are clustered at the district level.	

Table A12: Main models without Kurdish-majority districts

	Dependent variable:	
	number of protests	
	(1)	(2)
Civilian casualties (per capita)	0.007*	
	(0.004)	
Coalition-inflicted civilian casualties (per capita)		0.026***
		(0.006)
Insurgent-inflicted civilian casualties (per capita)		0.030
		(0.027)
Sectarian-inflicted civilian casualties (per capita)		0.014
		(0.009)
Unknown-inflicted civilian casualties (per capita)		−0.118**
		(0.051)
SIGACT (per capita)	−0.001	−0.002*
	(0.001)	(0.001)
Population (log)	0.676***	0.638***
	(0.116)	(0.120)
Shia population %	1.214***	1.268**
	(0.432)	(0.530)
Kurdish population %	1.259*	1.413*
	(0.729)	(0.762)
Urban %	1.582***	1.555***
	(0.321)	(0.357)
Total oil volume (bn)	−0.000	−0.000
	(0.000)	(0.000)
Nearest city (log)	0.035	0.031
	(0.058)	(0.061)
Feb 2011	2.130***	2.130***
	(0.142)	(0.141)
Nov 2011	−1.725***	−1.737***
	(0.574)	(0.568)
Lagged protest count	0.202***	0.177***
	(0.020)	(0.020)
Illiterate %	−0.047***	−0.048***
	(0.013)	(0.014)
Lowest income quintile %	0.002	−0.005
	(0.008)	(0.008)
Highest income quintile %	0.021*	0.013
	(0.011)	(0.012)
Unemployment rate	2.790**	2.728**
	(1.298)	(1.258)
Continuous power access %	0.002	0.002
	(0.002)	(0.002)
Constant	−5.277***	−4.897***
	(0.710)	(0.775)
Observations	1,909	1,909
Log Likelihood	−1,002.836	−996.489
θ	1.439*** (0.229)	1.615*** (0.275)
Akaike Inf. Crit.	2,039.671	2,032.978
Note:		*p<0.1; **p<0.05; ***p<0.01
Note:	Standard errors are clustered at the district level.	

SM9. Maps showing distribution of independent and dependent variables

Because the argument and analyses in our article are spatial – i.e., that networks form in particular localities in response to violence and then subsequently provide the basis for protests in those same localities – we provide spatial representations of our independent and dependent variables. The first map shows spatial distribution of protests in Iraq by district. The subsequent five maps show the spatial distribution of civilian casualties, pooled and disaggregated according to the four types of perpetrators.

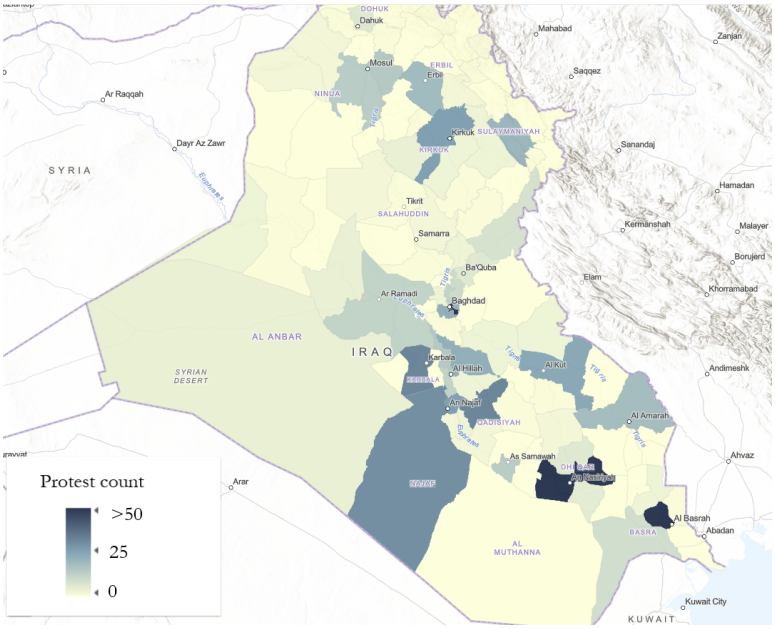

Figure A2: Map of protests

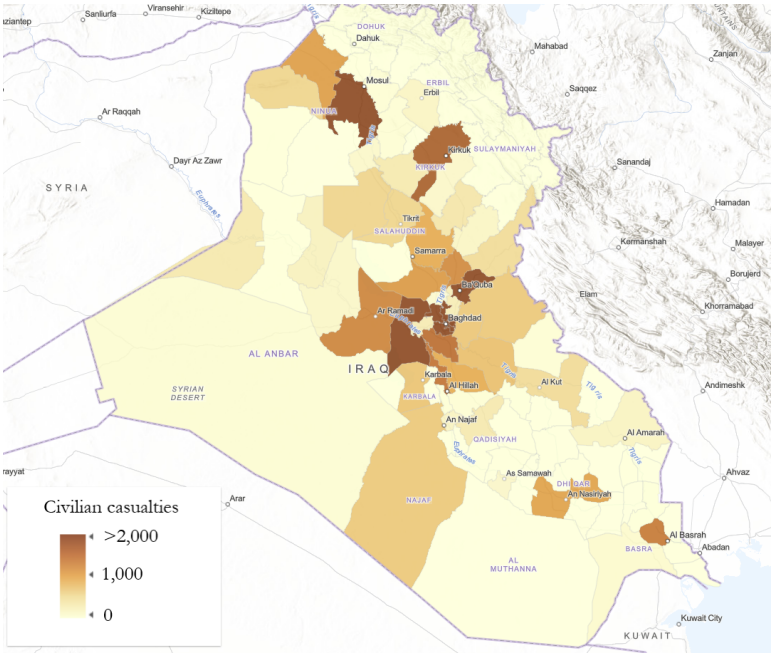

Figure A3: Map of civilian casualties per capita (pooled).

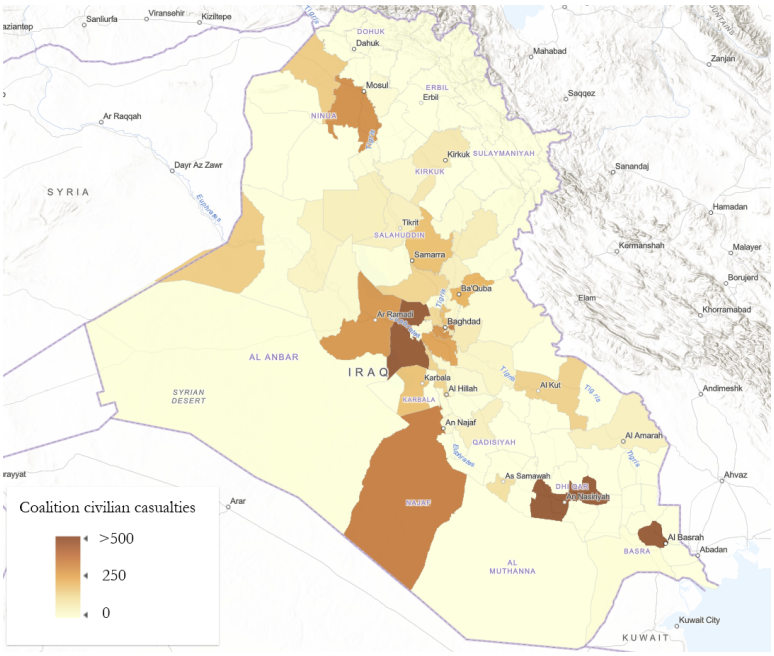

Figure A4: Map of coalition-inflicted casualties per capita.

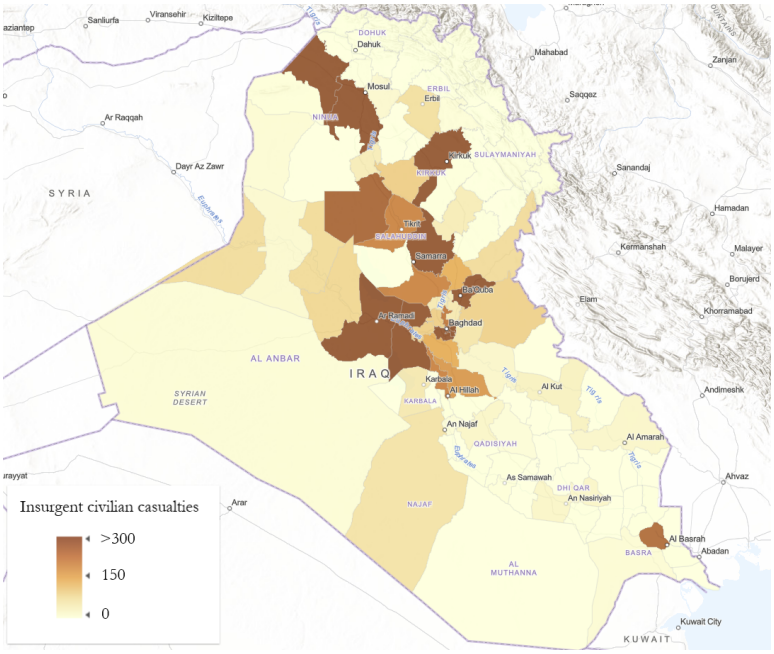

Figure A5: Map of insurgent-inflicted casualties per capita.

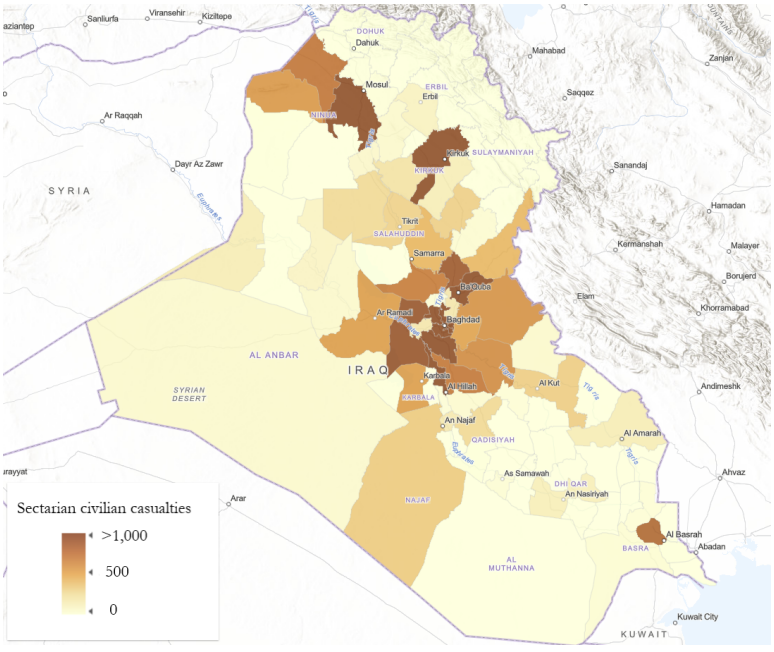

Figure A6: Map of sectarian-inflicted casualties per capita.

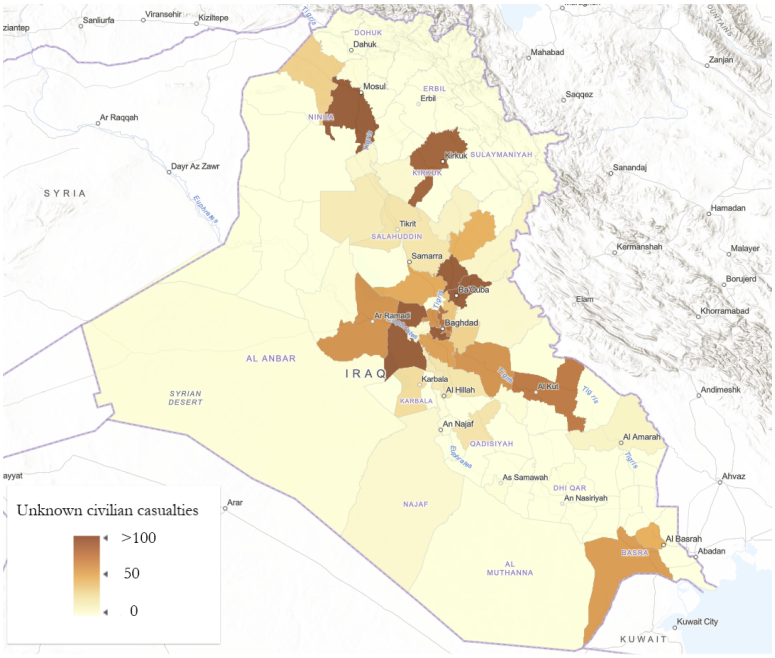

Figure A7: Map of unknown-inflicted casualties per capita.

SM10. Models controlling for US airstrikes

The main models in our paper control for underlying levels of conflict in a district during Iraq's war using ESOC's SIGACT variable, which counts the number of conflict events that occurred in a district. In the paper we argue, following Condra and Shapiro (2012), that controlling for these conflict events allows us mitigate some of the most serious concerns about endogeneity in our results and rules out a number potential alternative causal pathways connecting violence to protest.

However, one issue with the SIGACT data is that it does not distinguish between the *types* of conflict events that occur. For example, certain types of attacks could be much more damaging than others, resulting in higher levels of civilian casualties as well as more infrastructure damage, physical destruction of property, and debilitation to local security forces. Or certain types of communities could have been targeted with especially debilitating attacks, designed to inflict maximal casualties. In order to assess whether our results are sensitive to controlling for other types of conflict events, with different levels of intensity, in this appendix we substitute our SIGACT control variable for a variable capturing the number of US airstrikes in a district over the war. We source these data from Papadogeorgou et al (2022), who in turn collected them from declassified US Air Force data. The variable captures the per capita count of airstrikes in a district from 2004 to 2009. An airstrike was counted whenever at least one weapon was released or a strafing run was conducted, i.e., the counts do not include shows of force or simulated airstrikes.

As the models below demonstrate, our results are not particularly sensitive to inclusion of this alternative measure of conflict intensity. In the protest results, coalition-inflicted casualties continues to be strongly associated with protest, and casualties from unknown actors are negatively associated with protest. In the survey results, civilian casualties continues to be strongly associated with the probability hat an individual will report having joined a protest. Moreover, sectarian-inflicted civilian casualties remain strongly and positively associated with this outcome, and insurgent-inflicted civilian casualties remain negatively associated. Coalition-inflicted civilian casualties continues to be positively associated with this outcome though it is no longer statistically significant at conventional levels. These robustness analyses, using an alternative control of underlying conflict, should add further credence to our claim in the article that higher protest levels are causally connected to civilian casualties experienced during the war.

Table A13: Civilian casualties and protest levels, controlling for airstrikes per capita

	Dependent variable:	
	number of protests	
	(1)	(2)
Civilian casualties (per capita)	0.005	
	(0.004)	
Coalition-inflicted civilian casualties (per capita)		0.018***
		(0.006)
Insurgent-inflicted civilian casualties (per capita)		0.007
		(0.025)
Sectarian-inflicted civilian casualties (per capita)		0.012
		(0.009)
Unknown-inflicted civilian casualties (per capita)		−0.093*
		(0.052)
Airstrikes per capita	−0.001	−0.010
	(0.014)	(0.015)
Population (log)	0.684***	0.673***
	(0.114)	(0.120)
Shia population %	1.191***	1.136**
	(0.356)	(0.455)
Kurdish population %	0.926*	0.961*
	(0.508)	(0.561)
Urban %	1.729***	1.784***
	(0.317)	(0.349)
Total oil volume (bn)	−0.00004	−0.00005
	(0.00004)	(0.00004)
Nearest city (log)	−0.001	0.00000
	(0.052)	(0.056)
Feb 2011	2.110***	2.113***
	(0.137)	(0.136)
Nov 2010	−0.929**	−0.935**
	(0.436)	(0.437)
Lagged protest count	0.204***	0.190***
	(0.019)	(0.019)
Illiterate %	−0.045***	−0.043***
	(0.013)	(0.014)
Lowest income quintile %	0.003	−0.002
	(0.008)	(0.008)
Highest income quintile %	0.017*	0.011
	(0.009)	(0.011)
Unemployment rate	2.979**	2.915**
	(1.325)	(1.306)
Continuous power access %	0.002	0.003
	(0.002)	(0.002)
Constant	−5.229***	−5.048***
	(0.604)	(0.713)
Observations	2,392	2,392
Log Likelihood	−1,123.047	−1,119.307
θ	1.356*** (0.205)	1.439*** (0.226)
Akaike Inf. Crit.	2,280.094	2,278.614
Note:		*p<0.1; **p<0.05; ***p<0.01
Note:	Standard errors are clustered at the district level.	

Table A14: Civilian casualties and protest participation, controlling for airstrikes per capita

	Dependent variable:	
	protest	
	(1)	(2)
Civilian casualties (per capita)	0.007^{*}	
	(0.004)	
Coalition-inflicted civilian casualties (per capita)		0.001
		(0.007)
Insurgent-inflicted civilian casualties (per capita)		−0.004
		(0.056)
Sectarian-inflicted civilian casualties (per capita)		0.035^{***}
		(0.009)
Unknown-inflicted civilian casualties (per capita)		-0.146^{**}
		(0.062)
Airstrikes (per capita)	0.053	0.055
	(0.065)	(0.068)
Female	-1.830^{***}	-1.838^{***}
	(0.296)	(0.294)
College	0.393^{*}	0.427^{**}
	(0.203)	(0.202)
Age	0.007	0.011
	(0.037)	(0.038)
I(age ∗age)	−0.0002	−0.0002
	(0.0004)	(0.0004)
Lower income	0.063	0.103
	(0.156)	(0.155)
Unemployed	−0.112	−0.085
	(0.274)	(0.276)
Religious	-0.383^{**}	-0.409^{**}
	(0.161)	(0.163)
City	0.450^{**}	0.402^{*}
	(0.208)	(0.215)
Student	0.138	0.180
	(0.319)	(0.322)
Shia	0.191	0.124
	(0.267)	(0.257)
Population (log)	0.129	0.104
	(0.250)	(0.268)
Shia population %	4.235^{***}	4.333^{***}
	(0.774)	(1.168)
Kurdish population %	5.227^{***}	5.473^{***}
	(1.188)	(1.632)
Unemployment rate	1.814	2.702
	(2.354)	(2.636)
Total oil volume (bn)	-0.0002^{***}	-0.0002^{***}
	(0.00004)	(0.00004)
Nearest city (log)	0.148	0.209^{*}
	(0.103)	(0.108)
Illiterate %	−0.034	−0.027
	(0.029)	(0.029)
Lowest income quintile %	0.005	0.008
	(0.021)	(0.020)
Highest income quintile %	0.045^{***}	0.053^{***}
	(0.016)	(0.017)
Urban %	−0.873	−0.545
	(0.558)	(0.595)
Continuous power access %	−0.002	0.001
	(0.004)	(0.004)
Constant	-6.133^{***}	-7.112^{***}
	(1.017)	(1.386)
Observations	1,722	1,722
Log Likelihood	−595.946	−591.990
Akaike Inf. Crit.	1,239.891	1,237.979
Note:	*p<0.1; **p<0.05; ***p<0.01	