ONLINE APPENDIX

The Logic of Insurgent Electoral Violence
Condra, Long, Shaver, Wright

A Data Appendix

A.1 Insurgent Violence: Significant Activities (SIGACTS)

Data on insurgent violence are taken from the U.S. Defense Department's Significant Activities (SIGACTs) dataset for Operation Enduring Freedom. These data were released to authors Shaver and Wright. We describe the data here, but these two authors offer a more complete description in Shaver and Wright (2017). The data are available upon request from these authors.

The dataset includes individual incidents of insurgent attacks perpetrated against security forces in Afghanistan as well as other meaningful counterinsurgent events like the discovery of improvised explosive devices and weapons caches. These data were jointly collected by Afghanistan's military and police forces and multinational forces of the North Atlantic Treaty Organization's (NATO) International Security Assistance Force (ISAF).[37] Our version of the data cover the period from 2002 through the beginning of 2015.

During this period, the U.S. Defense Department kept records of more than 200,000 incidents of insurgent violence. These include 119,908, 28,678, and 38,004 individual instances of direct fire (DF), indirect fire (IDF), and improvised explosive device (IED) attacks, respectively. Incidents were reported in the dataset following "well-established military protocol and with the use of advanced georeferencing and collation technologies, ensuring that many report details were both objectively measured and captured with a high degree of precision" (Shaver and Wright, 2017). Specifically, each reported incident is associated with military grid reference system coordinates. As such, their location can be determined with a high degree of spatial accuracy. Furthermore, each incident includes a time stamp. Incidents are often specific to the minute, and, when they are not, they are typically rounded to the nearest fifth minute.[38] Additionally, our review of these military records suggests that a very small number of events (less than one half of one percent) may have been duplicated due to bureaucratic errors. When we exclude these events, our findings are unaffected.

The tremendous advantage of these data for empirical analysis and causal inference is that they comprise systematically recorded incidents in which insurgents engaged counterinsurgents through violence or potential violence (e.g., incidents of improvised explosive device neutralization). Data of this nature contrast sharply in its coverage with more common micro-level violence datasets

[37] ISAF was formally dissolved in December of 2014. Multinational forces that remained in Afghanistan beyond this date fell under NATO's Operation Resolute Support.

[38] Although each incident of insurgent violence in the data is time stamped, exploration of the data reveal two important characteristics. First, a disproportionately large number of observations are coded as taking place at exactly midnight. We suspect that a midnight designation was given to incidents for which an actual event time was not reported. Thus, we drop all incidents of insurgent attacks reported as taking place at exactly midnight. (We retain all observations reported as taking place at any other time during that hour (e.g., 12:24 AM).) Second, the plots show that although attack times were often recorded down to the minute (e.g., 12:34 PM), they are skewed toward natural rounding numbers—thus, for instance, there tend to be more listed on the 45th minute of an hour (e.g., 12:45 PM) than on, say, the 43rd minute (e.g., 12:43 PM). Because we are concerned with the hour (rather than the minute) in which attacks occurred, we round all attacks for a given hour to the hour in which they occurred.

compiled by scholars drawn from media reports, which have been shown to be biased (Weidmann, 2016).

Our version of the SIGACTS also includes previously unreleased intelligence reports, which we use briefly as a robustness check.

In addition to capturing the time and location of each incident, the SIGACTs data provide corresponding information on a range of details, including the weaponry used and whether, for any given event, one or more civilian casualties occurred. In our analysis, we examine three main types of insurgent attacks from these records: IEDs, direct fire, and indirect fire.

A.2 ANQAR Survey

Our survey evidence relies on the Afghanistan Nationwide Quarterly Assessment Research (ANQAR) platform. ANQAR tracks civilian attitudes toward government, anti-government entities, and coalition partners. Survey responses are collected on a quarterly basis. ANQAR survey data were collected by the Afghan Center for Socio-Economic and Opinion Research (ACSOR). Within district, surveyed villages were randomly sampled and ten households were subsequently surveyed using a grid-based random walk method. When ACSOR could not access sampled villages, intercept interviews were used to collect information from residents traveling in neighboring areas (Child, 2017). Data for the survey wave used in this paper's analysis were secured by author [Wright] under a restricted agreement with NATO.

A.3 Climate

Our climatic data are drawn from the National Centers for Environmental Prediction (NCEP) and the Department of Energy, which prepared the baseline climate reanalysis by using state-of-the-art assimilation techniques. These data are derived from reanalysis (climate modeling) of underlying meteorological data. These techniques and the data generation processes are fully described in Saha et al. (2010), to which we direct interested readers. These data are available here: `https://rda.ucar.edu`. We calculate our measures from the raw netCDF raster files using the Empirical Studies of Conflict digital map of Afghan districts and OSM road network repository.[39] Our wind conditions calculations are listed by their initialization time (e.g., 10:30 PM), which is the starting point for a six hour forecast. Winds within each six hour interval are correlated, which allows us to identify the impact of wind conditions within each block of time on combat and voter turnout. Our rainfall and temperature measures are calculated similarly, although rainfall is the accumulation of precipitation within each interval. Our cloud cover measure is the monthly average of nighttime cloud cover (10:30 PM to 4:30 AM), extracted at the road segment level. We thank Bob Dattore from the National Center for Atmospheric Research for support in acquiring and interpreting these data.

A.4 Population and settlement locations

We calculate administrative district populations (2010) using WorldPop data files. These files are accessible here: `http://www.worldpop.org.uk/data/methods/`. Supplemental population data used in our analysis is based on 2012-2013 estimates from Afghanistan's Central Statistics Organization (`http://cso.gov.af/en`). Village locations and composition were compiled by the

[39]The district map is available here: `https://esoc.princeton.edu/country/afghanistan`.

Afghanistan Information Management Service, Central Statistics Office, United States Agency for International, and Yale University.

A.5 Turnout

Data on turnout and vote choice for the 2014 Afghan presidential election at the polling station level is available here: `http://2014.afghanistanelectiondata.org/about/`. The polling center list was made available by the Independent Election Commission of Afghanistan and is available at the same site.

A.6 Road Networks

Our road network data are gathered from Open Street Map repositories (`http://wiki.openstreetmap.org/wiki/WikiProject_Afghanistan`). Publicly available data on the road network in Afghanistan are sparse and generally incomplete. The OSM data we use contain roughly ten times as many road segments as the data available through the Afghanistan Information Management System (AIMS) and nearly one hundred times more than the primary and secondary network data curated by the World Bank. We compare these data below in Figure SI-1, focusing on an identical spatial extent which covers the national capital, Kabul.

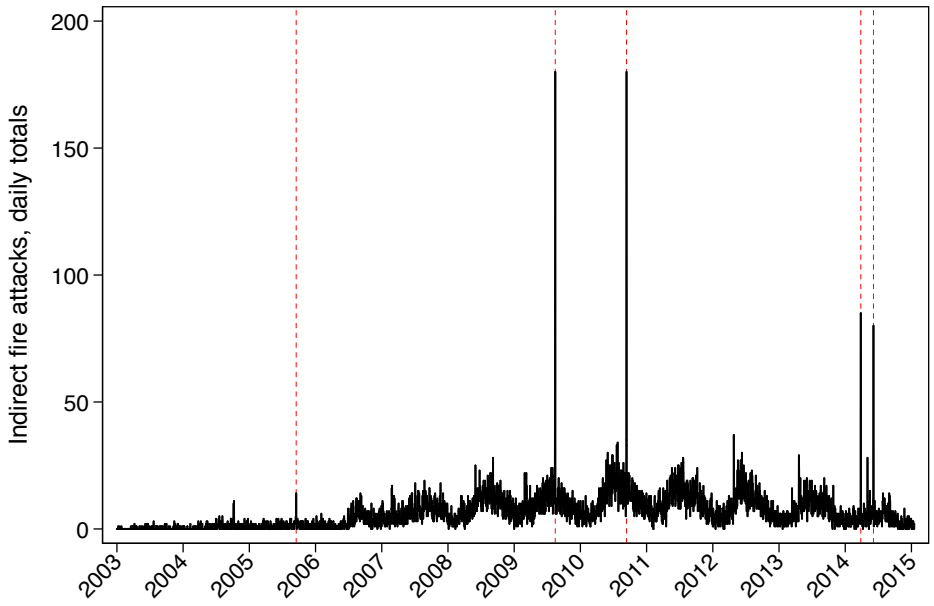
Figure SI-1: Comparing road network maps of Kabul

(a) World Bank (b) AIMS (c) Open Street

Notes: road network coverage is compared for identical spatial extents including Kabul, Afghanistan, and outer regions surrounding the capital. World Bank network has limited to actual road infrastructure (as opposed to planned government expansion). All road segments in AIMS and OSM are shown.

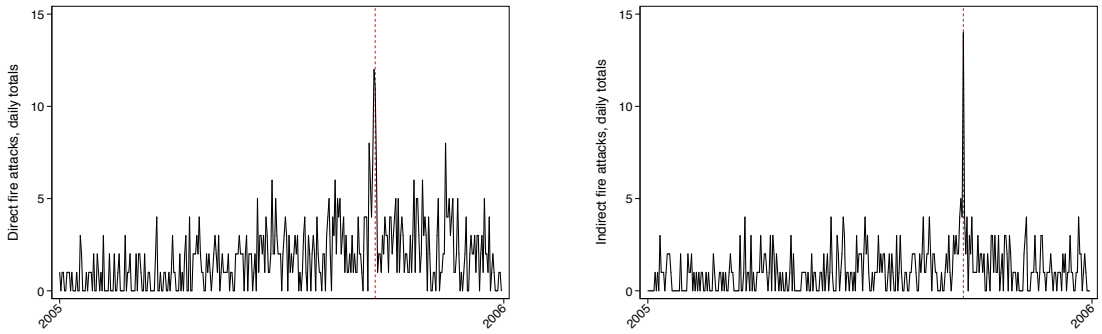
B Supplemental Time Series Plots

Figure SI-1: Daily indirect fire attacks, 2003 to 2015. Dashed red lines represent election dates.



Notes: A daily time series of indirect fire attacks is reported from 2003 to 2015. The daily totals are plotted. Competitive national election days are represented with dashed red lines. Events were recorded in the Significant Activities (SIGACTS) system. Additional data details provided in Supporting Information.

Figure SI-2: Daily direct and indirect fire attacks, 2005. Dashed red line represents the election date.



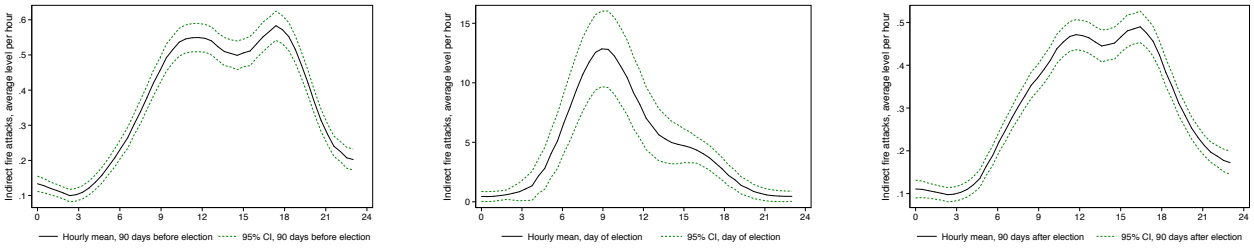
(a) Direct fire attacks, daily total

(b) Indirect fire attacks, daily total

Notes: A daily time series of direct and indirect fire attacks is reported for 2005. The daily totals are plotted. The election day is represented with a dashed red line. Events were recorded in the Significant Activities (SIGACTS) system. Additional data details provided in Supporting Information.

C Descriptive Results: Timing

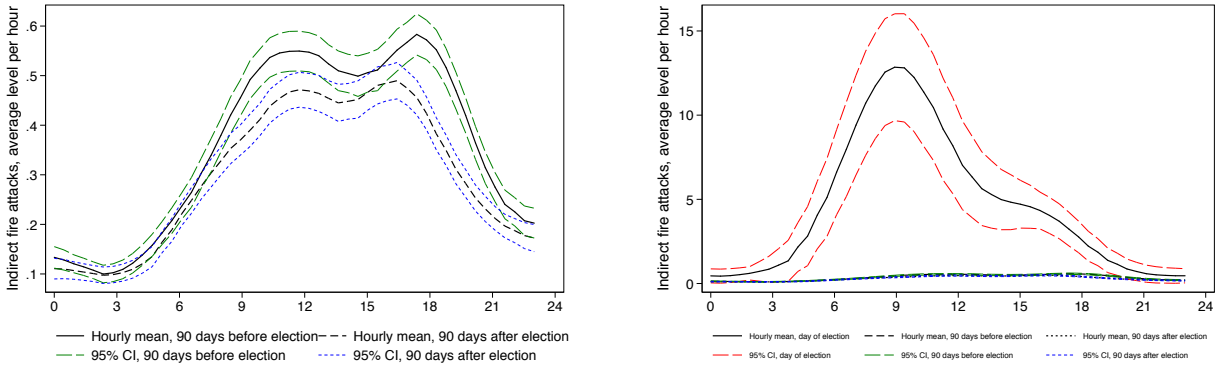
Figure SI-3: Indirect fire attacks, by hour of day, before, on, and after election days



(a) 90 days before election (b) Election day (c) 90 days after election

Notes: The hour-by-hour distribution of indirect fire attacks is presented using a local polynomial fit line with corresponding 95% confidence intervals. The reference period is noted (90-day).

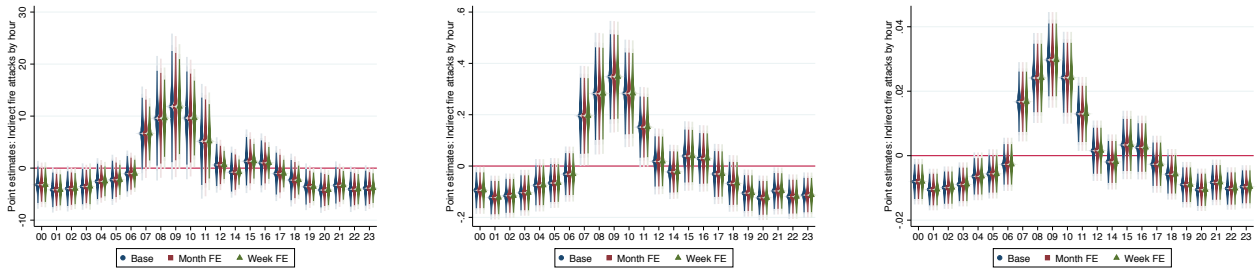
Figure SI-4: Comparing trends in indirect fire attacks, by hour of the day



(a) 90 days before vs. 90 days after election (b) Pre/post trends with election day

Notes: The hour-by-hour distribution of indirect fire attacks is presented using a local polynomial fit line with corresponding 95% confidence intervals. The reference period is noted (90-day). Note that the outcome axis scales are not equivalent across subfigures (a) and (b).

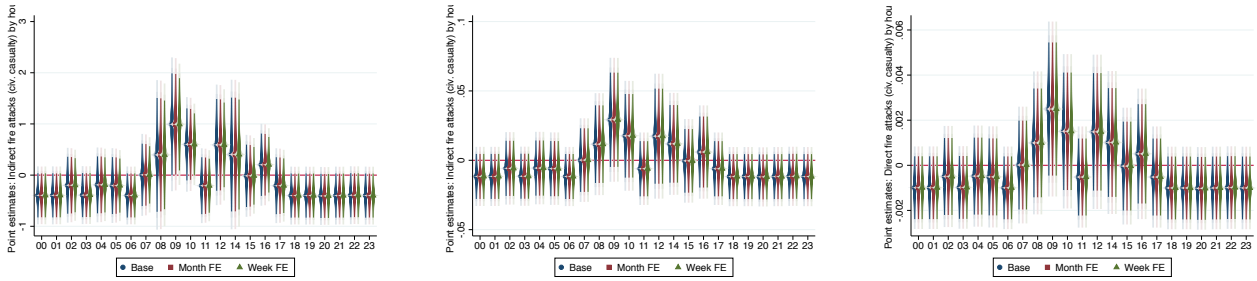
Figure SI-5: Indirect fire attacks by hour, election day vs. non-election day using 90-day window (national, province, district)



(a) National (b) Province (c) District

Notes: Coefficient estimates (centered on hour of interest) and 95% confidence intervals for α_i in equation 1 are reported, where the outcome of interest is indirect fire attacks by hour. From left to right within each subfigure are point estimates from (1) base model, (2) base model including month fixed effects, and (3) base model including week fixed effects. The counterfactual period is the 90-day window prior to each election. Heteroskedasticity robust standard errors are used to calculate confidence intervals.

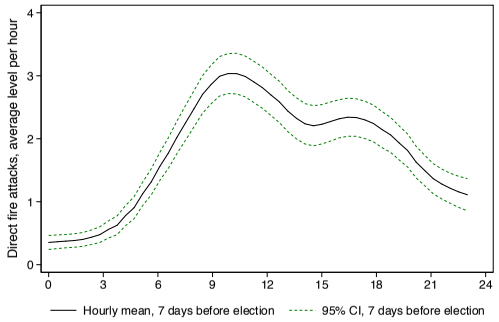
Figure SI-6: Indirect fire attacks causing civilian casualties by the hour, election day vs. non-election day, using 90-day window (national, province, district)



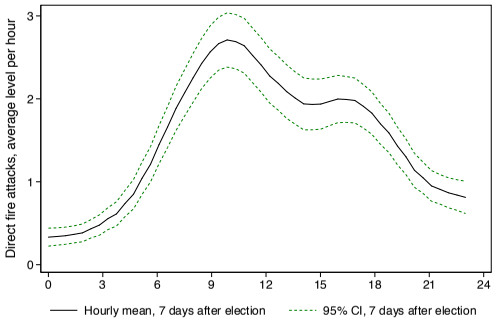
(a) National (b) Province (c) District

Notes: Coefficient estimates (centered on hour of interest) and 95% confidence intervals for α_i in equation 1 are reported, where the outcome of interest is indirect fire attacks that caused civilian casualties. From left to right within each subfigure are point estimates from (1) base model, (2) base model including month fixed effects, and (3) base model including week fixed effects. The counterfactual period is the 90-day window prior to each election. Heteroskedasticity robust standard errors are used to calculate confidence intervals.

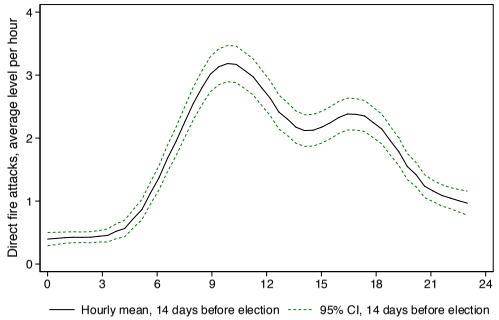
Figure SI-7: Direct fire attacks, by the hour of day, before, on, and after election days



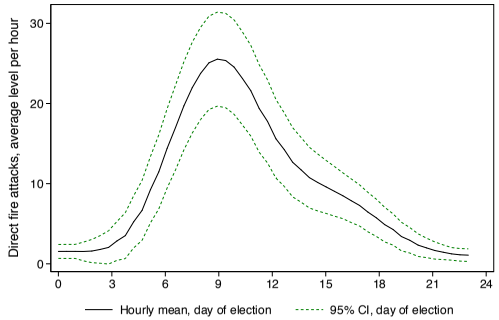
(a) 7 days before election



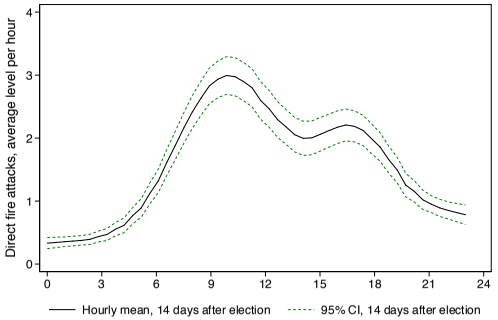
(b) 7 days after election



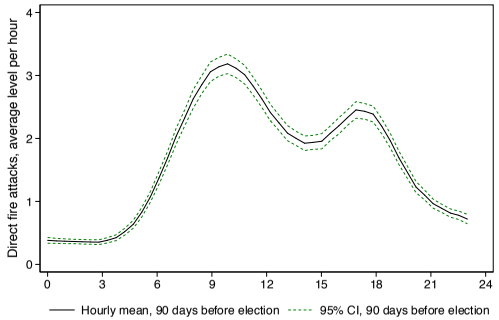
(c) 14 days before election



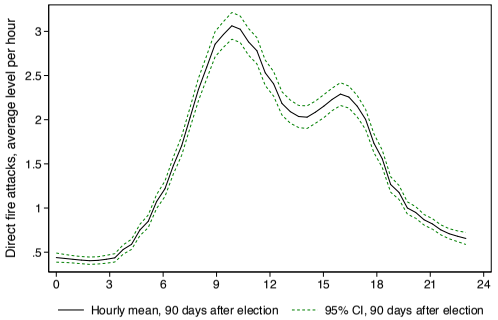
(d) Election day



(e) 14 days after election



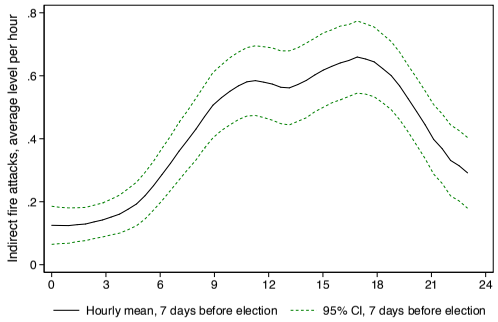
(f) 90 days before election



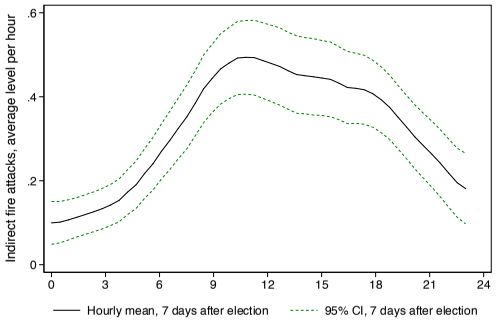
(g) 90 days after election

Notes: The hour-by-hour distribution of direct fire attacks is presented using a local polynomial fit line with corresponding 95% confidence intervals. The reference period is noted (7-day, 14-day, 90-day).

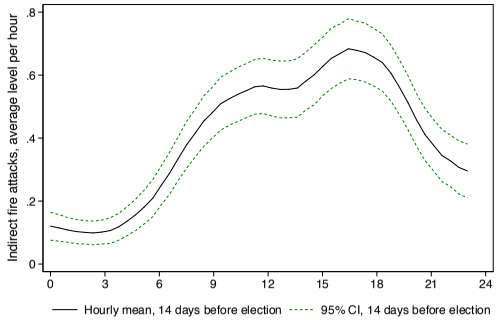
Figure SI-8: Indirect fire attacks, by the hour of day, before, on, and after election days



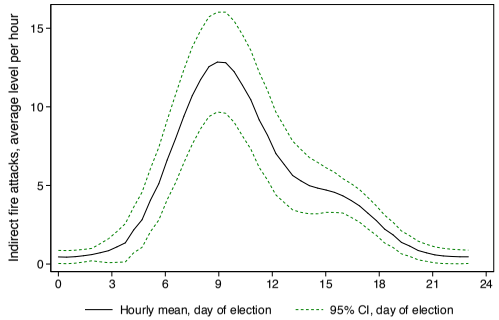
(a) 7 days before election



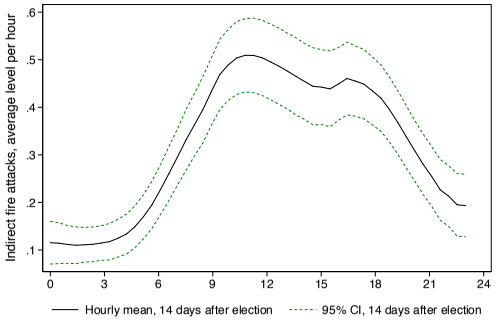
(b) 7 days after election



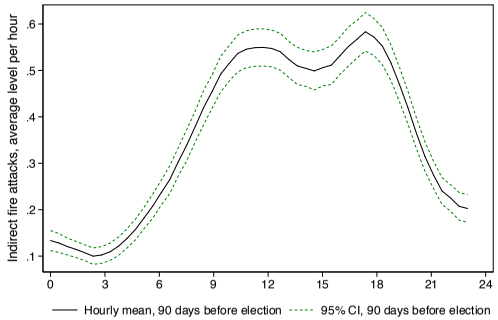
(c) 14 days before election



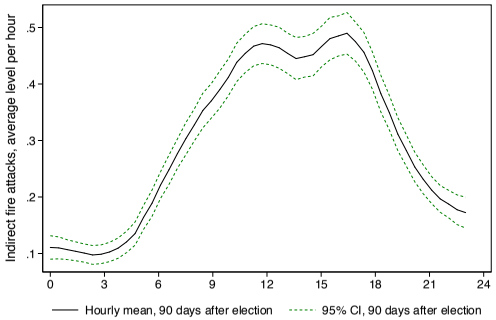
(d) Election day



(e) 14 days after election



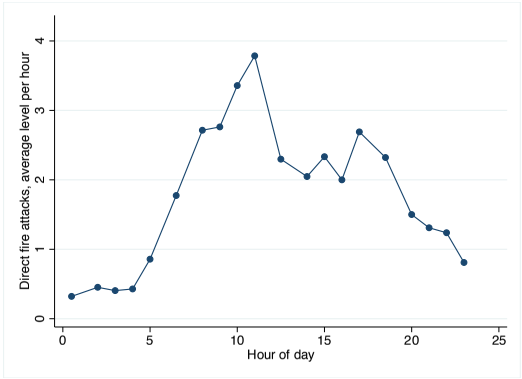
(f) 90 days before election



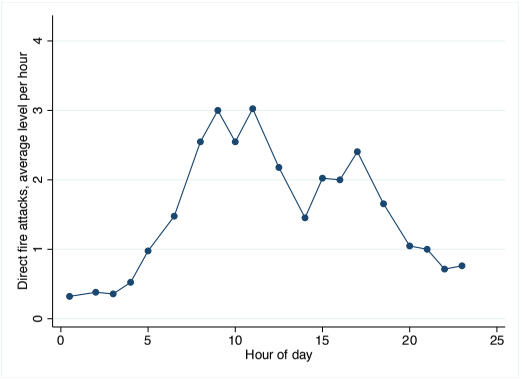
(g) 90 days after election

Notes: The hour-by-hour distribution of indirect fire attacks is presented using a local polynomial fit line with corresponding 95% confidence intervals. The reference period is noted (7-day, 14-day, 90-day).

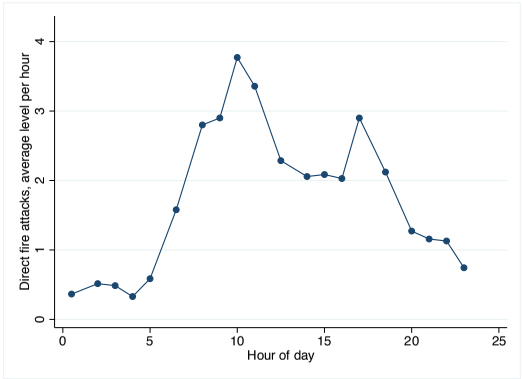
Figure SI-9: Direct fire attacks, by the hour of day, before, on, and after election days using binned scatter plots.



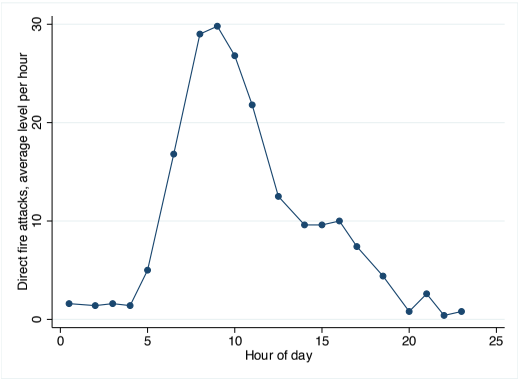
(a) 7 days before election



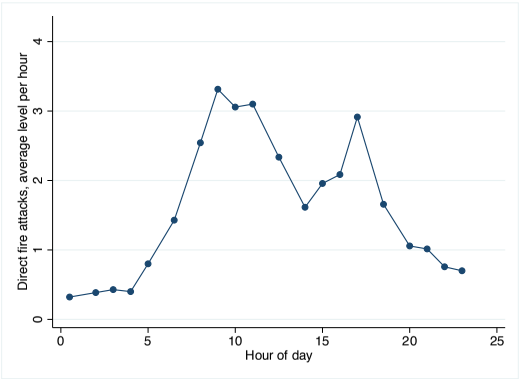
(b) 7 days after election



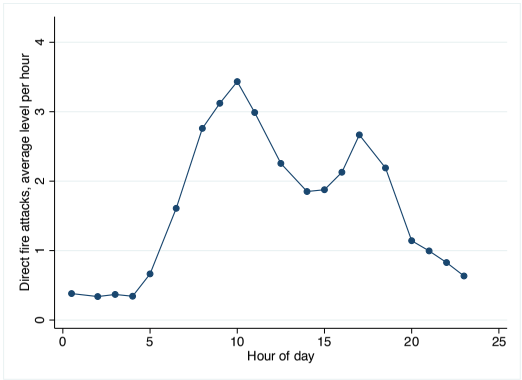
(c) 14 days before election



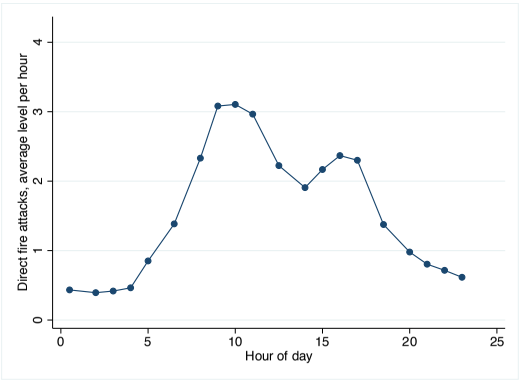
(d) Election day



(e) 14 days after election



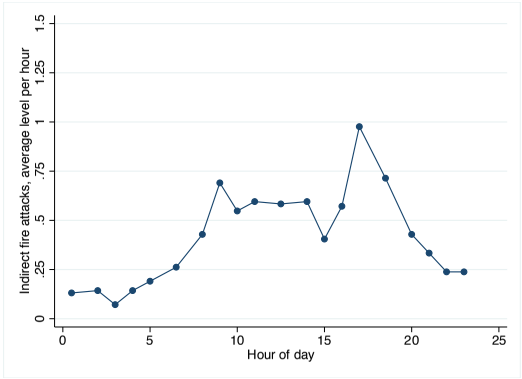
(f) 90 days before election



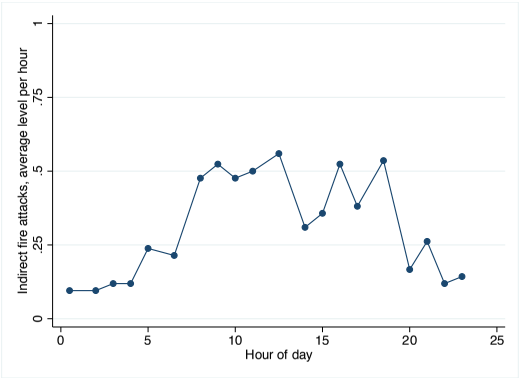
(g) 90 days after election

Notes: The hour-by-hour distribution of direct fire attacks is presented using the binned scatterplot method introduced in Chetty et al. (2014). The reference period is noted (7-day, 14-day, 90-day).

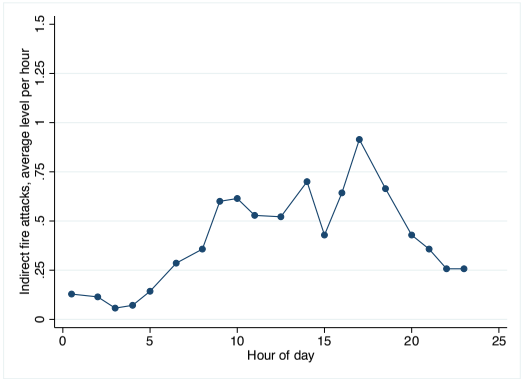
Figure SI-10: Indirect fire attacks, by the hour of day, before, on, and after election days using binned scatter plots



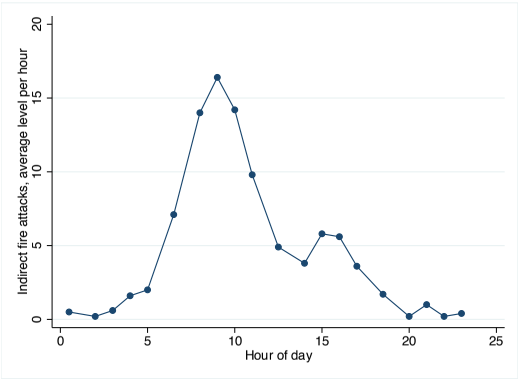
(a) 7 days before election



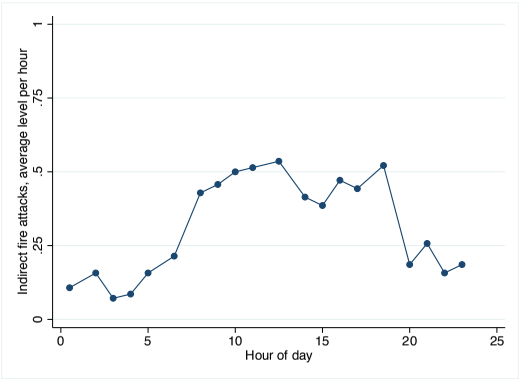
(b) 7 days after election



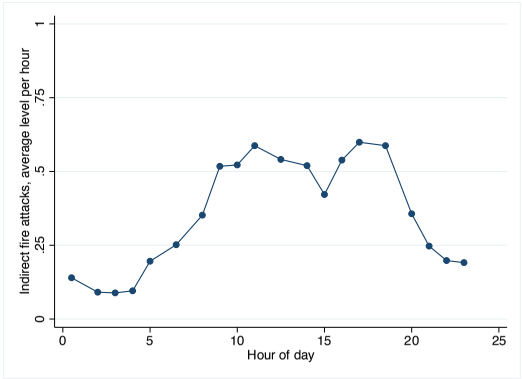
(c) 14 days before election



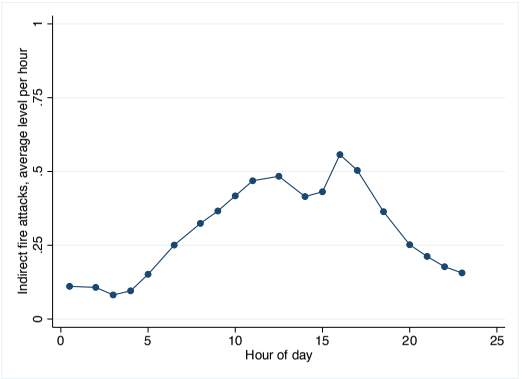
(d) Election day



(e) 14 days after election



(f) 90 days before election



(g) 90 days after election

Notes: The hour-by-hour distribution of indirect fire attacks is presented using the binned scatterplot method introduced in Chetty et al. (2014). The reference period is noted (7-day, 14-day, 90-day).

C.1 Non-election days of national significance

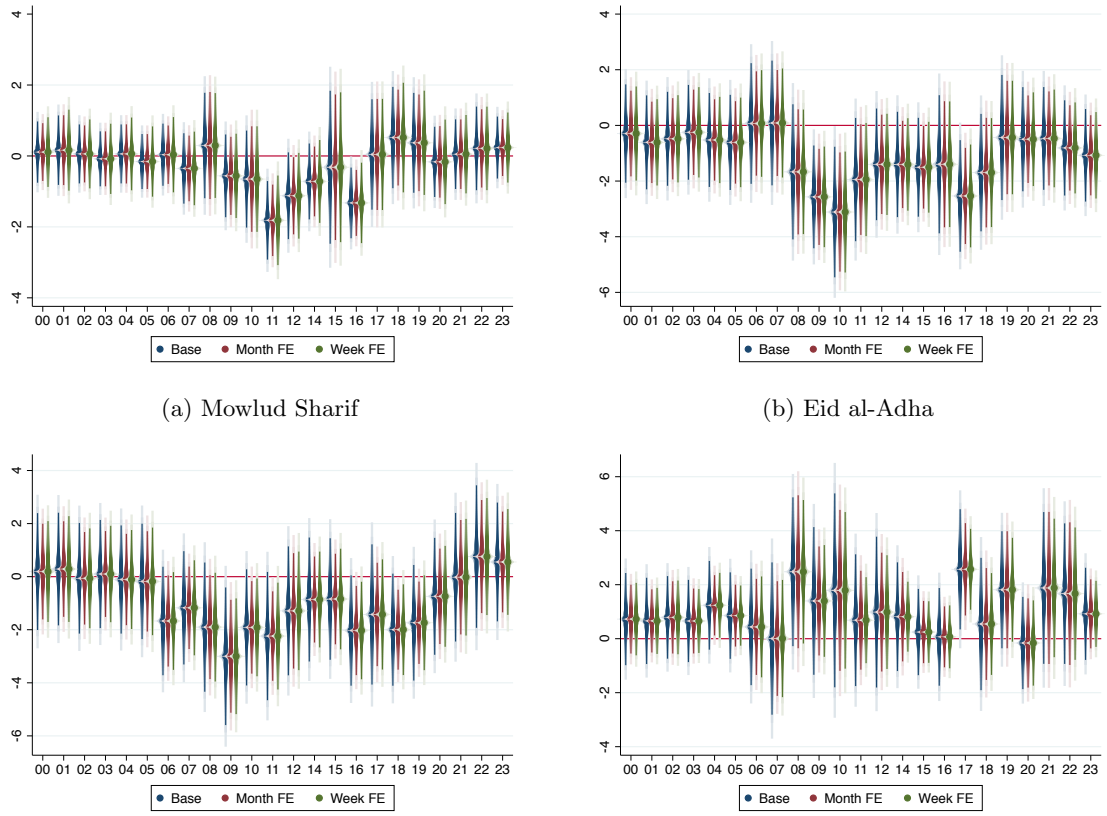
We investigate patterns of violence on four other days comparable to elections in their national significance, in that they similarly are characterized by public celebration, congregations of large groups, and travel on roads. The first three are annual religious festivals and celebrations. Eid al-Fitr marks the end of Ramadan and the month of fasting, and Eid al-Adha commemorates Abraham's obedience to God demonstrated through willingness to sacrifice his son in the Old Testament. These are among the holiest days on the Islamic calendar and people may travel to visit friends and family to celebrate, as well as go to mosque for prayer. Mowlud Sharif commemorates the birth of the Prophet Mohammad and features public celebrations and processions. Finally, and because these festivals are religiously significant in a way that elections are not, we examine patterns of violence on Afghanistan's Independence Day, celebrated on August 19.[40] Independence Day commemorates the formal end of Anglo-Afghan hostilities in 1919. It is not only a long-standing holiday in Afghan society, but also predates the Taliban's rule and the formal fusion of religion and politics that came with it. Thus, its secular nature and national significance likely make the Afghan Independence Day the closest direct comparison to election days.

For each of these events, we replicate our analysis of direct fire attacks shown in Figure 4, which compares the national intensity of direct fire attacks on election and non-election days by the hour. In Figure SI-11, we plot the distribution of attacks for each of the events from 2009 to 2014.[41] These plots highlight two important observations. First, there is no consistent pattern in the violence distributions across holidays. Second, while Figure 4a reveals a highly statistically significant and substantial uptick in violence concentrated in the early hours of election day, no such uptick is discernible in the within-day distribution of violence for any of these other salient public events.

[40] The other festivals and holy days are celebrated on different days each year, as they run on a lunar calendar. We take this into account in our empirical analysis.

[41] The results are consistent if we study the entire period, as we present, or only election years.

Figure SI-11: Direct fire attacks by hour, holiday vs. non-holiday day using 90-day window (national, 2009–2014)



(a) Mowlud Sharif

(b) Eid al-Adha

(c) Eid al-Fitr

(d) Afghan Independence Day

Notes: Coefficient estimates (centered on hour of interest) and 95% confidence intervals for α_i in equation 1 are reported, with the important distinction that the interaction terms are calculated with respect to each holiday rather than election days. From left to right within each subfigure are point estimates from (1) base model, (2) base model including month fixed effects, and (3) base model including week fixed effects. The counterfactual period is the 90-day window prior to each holiday. Heteroskedasticity robust standard errors are used to calculate confidence intervals.

D Descriptive Results: IED Deployment

In Table SI-1, we introduce several robustness checks. In Columns (1) through (3), we substitute the six-month road-specific violence trend for three-, four-, and five-month trends, respectively. Our main results are unaffected. In Column (4) we show results from a simple quasi-falsification test, leveraged from the fact that the government released the map of polling station locations in February 2014 (two months before the election). If it is true that insurgents targeted these roads with IEDs because they connected villagers to polling stations and not because of some other (unobserved) feature, then before these roads were revealed to have a connection to polling stations, insurgents may not have targeted them at a higher rate. This intuition, however, is complicated by the fact that a substantial number of polling station sites were carried over from previous elections and, therefore, might have shaped insurgent strategy. To partially address this, we interact our measure of election-day routes with high traffic roadways. We expect that the interaction term will capture some of the repeated routes. In Column (5), we repeat this exercise for the preelection period for completeness. Notice that, in Column (4), we find only weak evidence of insurgent targeting of election day routes that are not also high traffic roadways, which disappears when we calculate standard errors clustered by polling center catchment areas. During the preelection period, Column (5), election day routes that are not also high traffic roadways see a large increase in the likelihood of being targeted and our estimate is much more precise.

Table SI-1: IED deployment along the Afghan road network ahead of the 2014 election, additional robustness checks

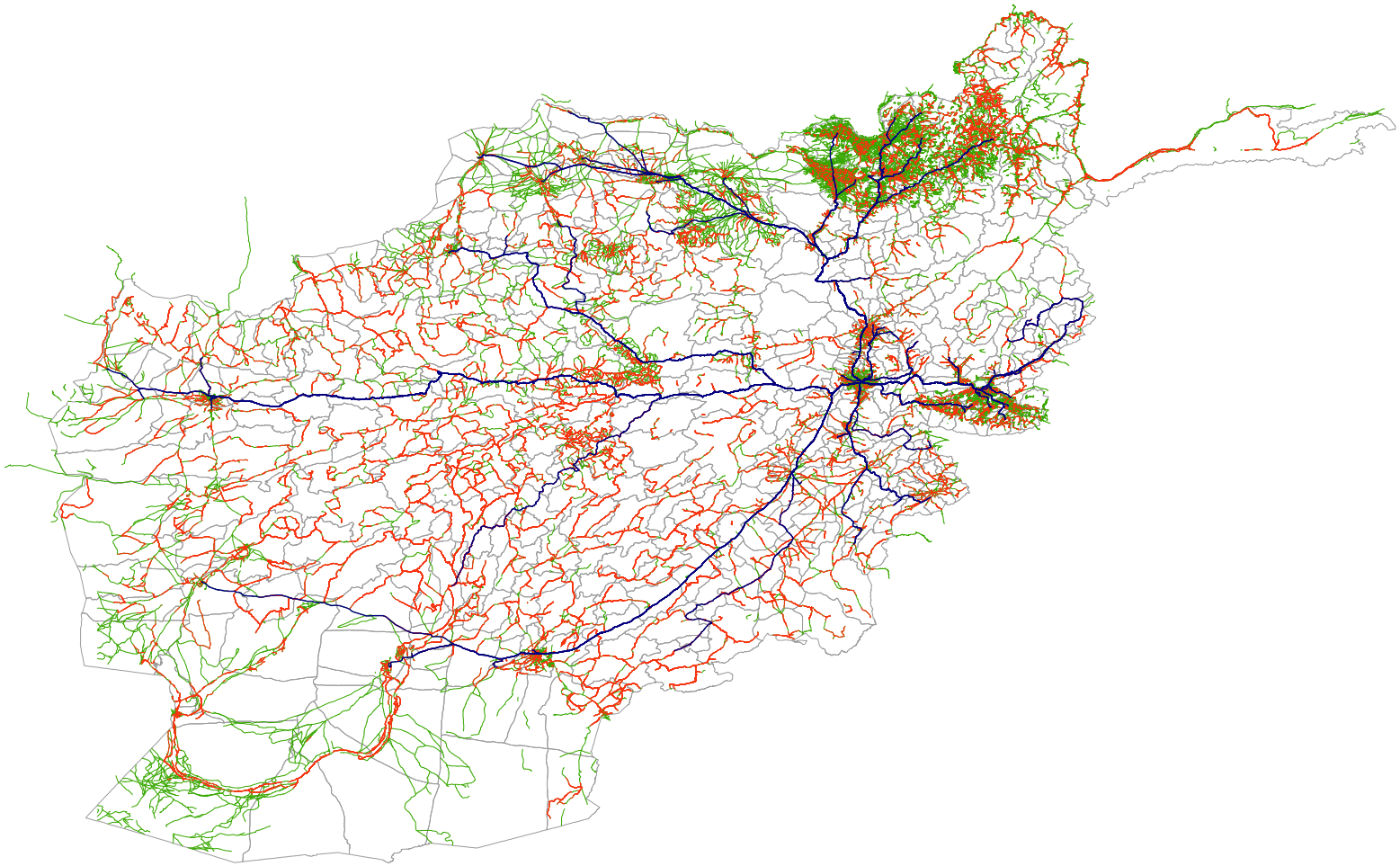
	(1)	(2)	(3)	(4)	(5)
	Deployment	Deployment	Deployment	Preannounce Dep.	Deployment
Election-day route	0.00458	0.00433	0.00405	0.00208	0.00294
	(0.00113)	(0.00113)	(0.00113)	(0.00119)	(0.00111)
	[0.00154]	[0.00154]	[0.00154]	[0.00186]	[0.00153]
High traffic road				0.00632	0.0210
				(0.00630)	(0.00736)
				[0.00717]	[0.0101]
E-day × high traffic				0.0159	0.00664
				(0.00914)	(0.01000)
				[0.00958]	[0.0117]
N	72862	72862	72862	72862	72862
Clusters	4577	4577	4577	4577	4577

Notes: The outcome of interest is a binary indicator of IED deployment along the road during the preelection period (March 1 until April 4, 2014). All models include district fixed effects, and control for road length and a pretrend in IED deployment. The pretrend window varies by model. In Column (4), the outcome is a binary indicator of IED deployment along the road during January 2014, prior to the formal announcement of the location of polling stations. A substantial percentage of polling stations were used during previous election. High traffic routes are calculated using the top 100 population centers as described in main text. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets.

Table SI-2: Summary statistics at road level

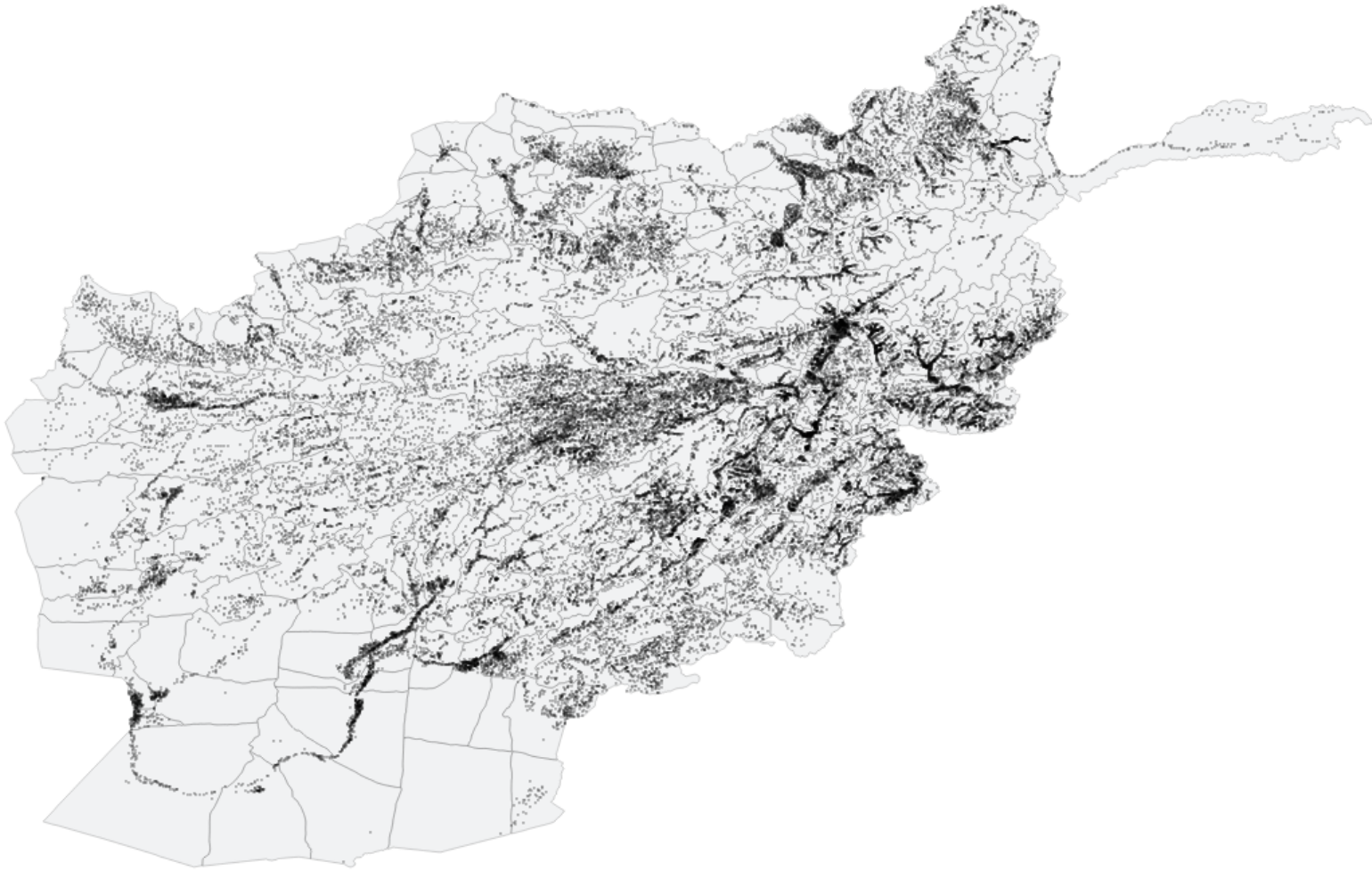
Variable	Mean	Std. Dev.	Min.	Max.
Election day route (=1)	0.237	0.425	0	1
High traffic road (=1)	0.025	0.156	0	1
Preelection IED deployment (=1)	0.014	0.115	0	1
Preelection IED deployment (count)	0.018	0.196	0	12
Preelection IED deployment trend (6 month)	0.082	0.4	0	6
Preannouncement IED deployment (=1)	0.016	0.125	0	1
Preannouncement IED deployment trend (6 month)	0.082	0.401	0	6
Road length (degrees)	0.017	0.056	0	2.072
N		72862		

Figure SI-12: Traffic routes calculated using path optima



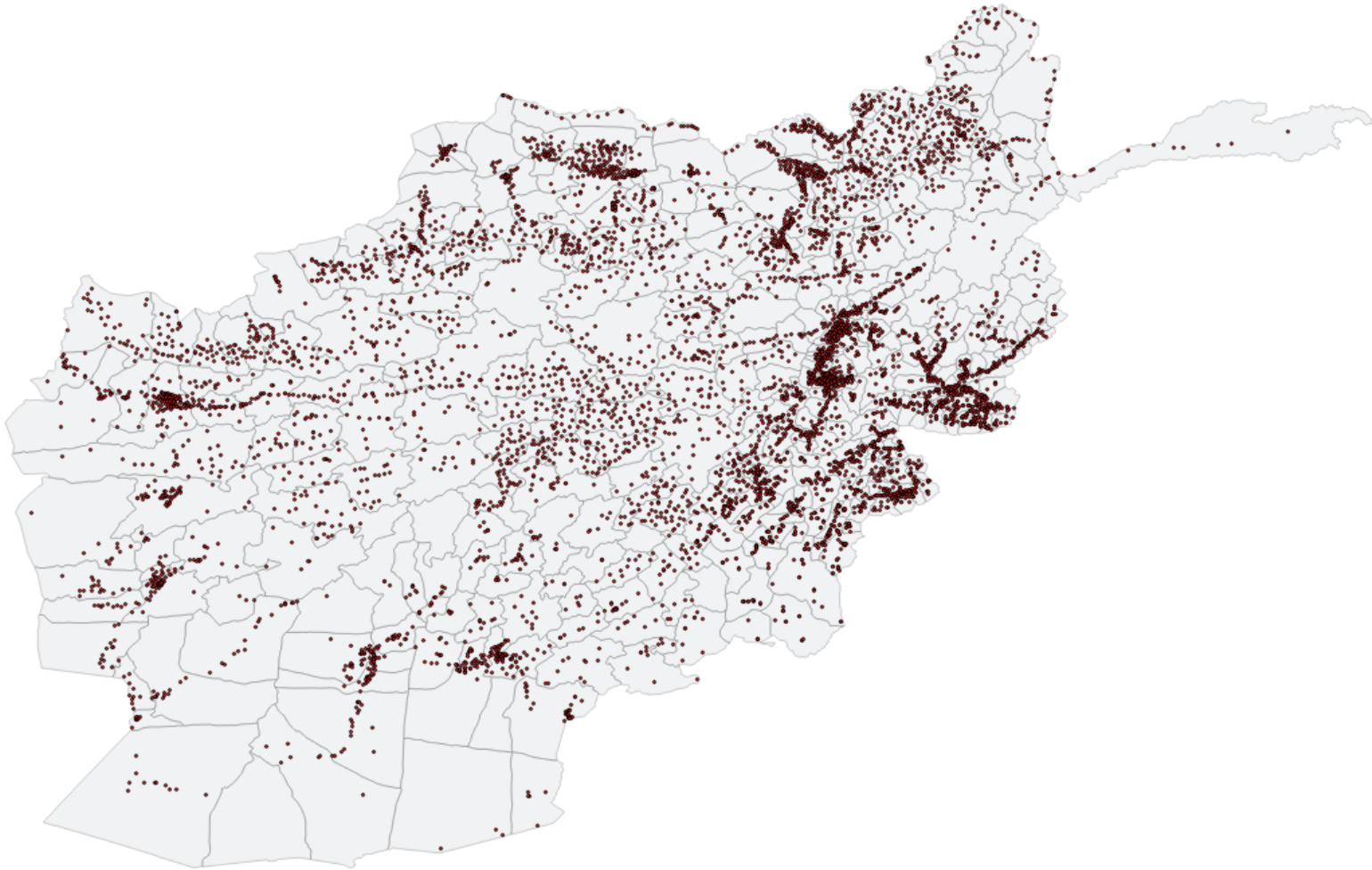
Notes: Equilibrium path optima are calculated using the least cost (distance) method described in the text. Traffic routes in red indicate roads we estimate were likely to be employed for election day traffic during the first round of the 2014 election. Blue routes are high traffic routes we estimate using the top 100 population centers. Green road segments are neither strategic election day routes nor high traffic routes.

Figure SI-13: Population settlements



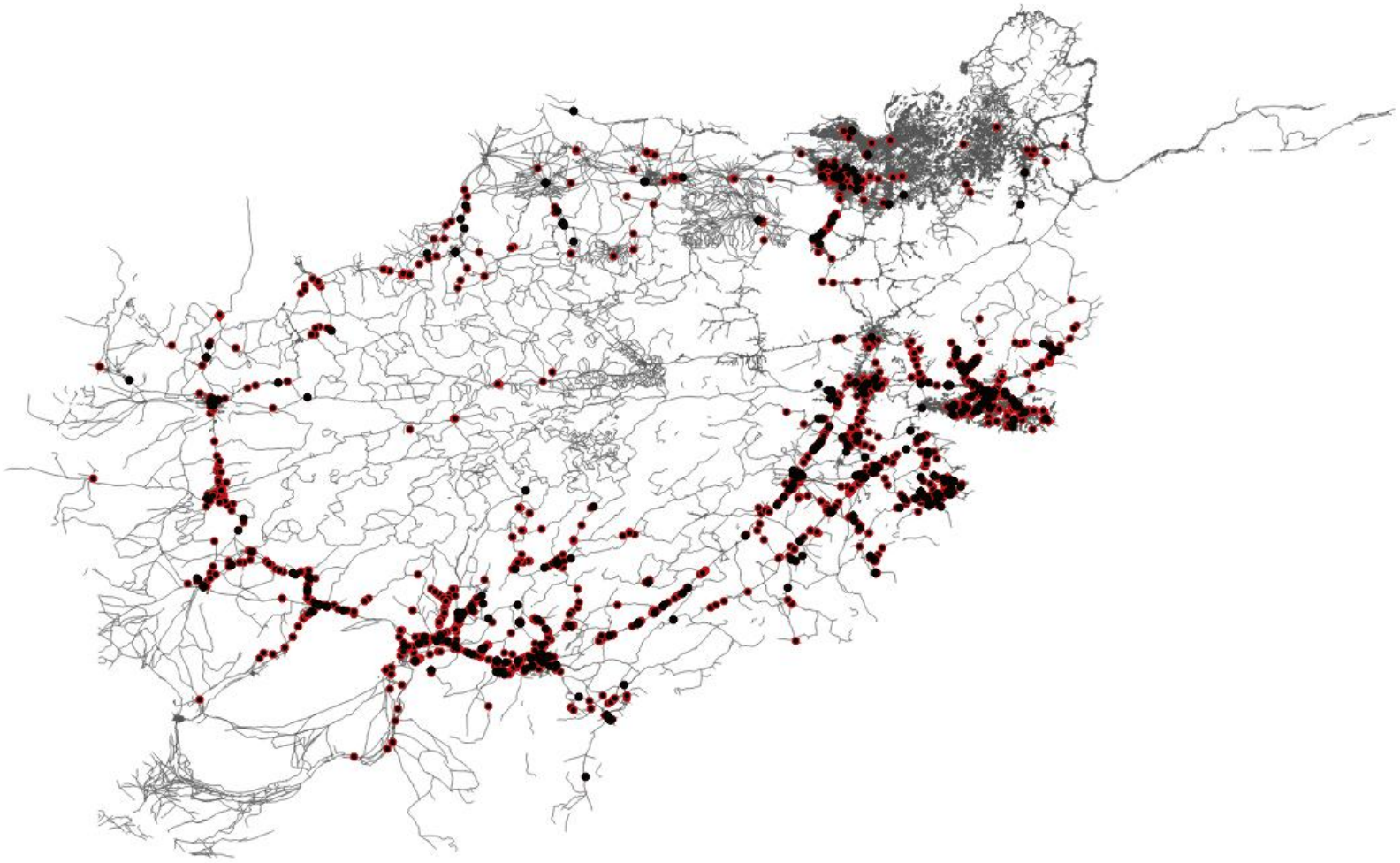
Notes: The location of population settlements. Additional details on source material can be found in Supporting Information.

Figure SI-14: Announced polling centers, 2014 presidential election (first round)



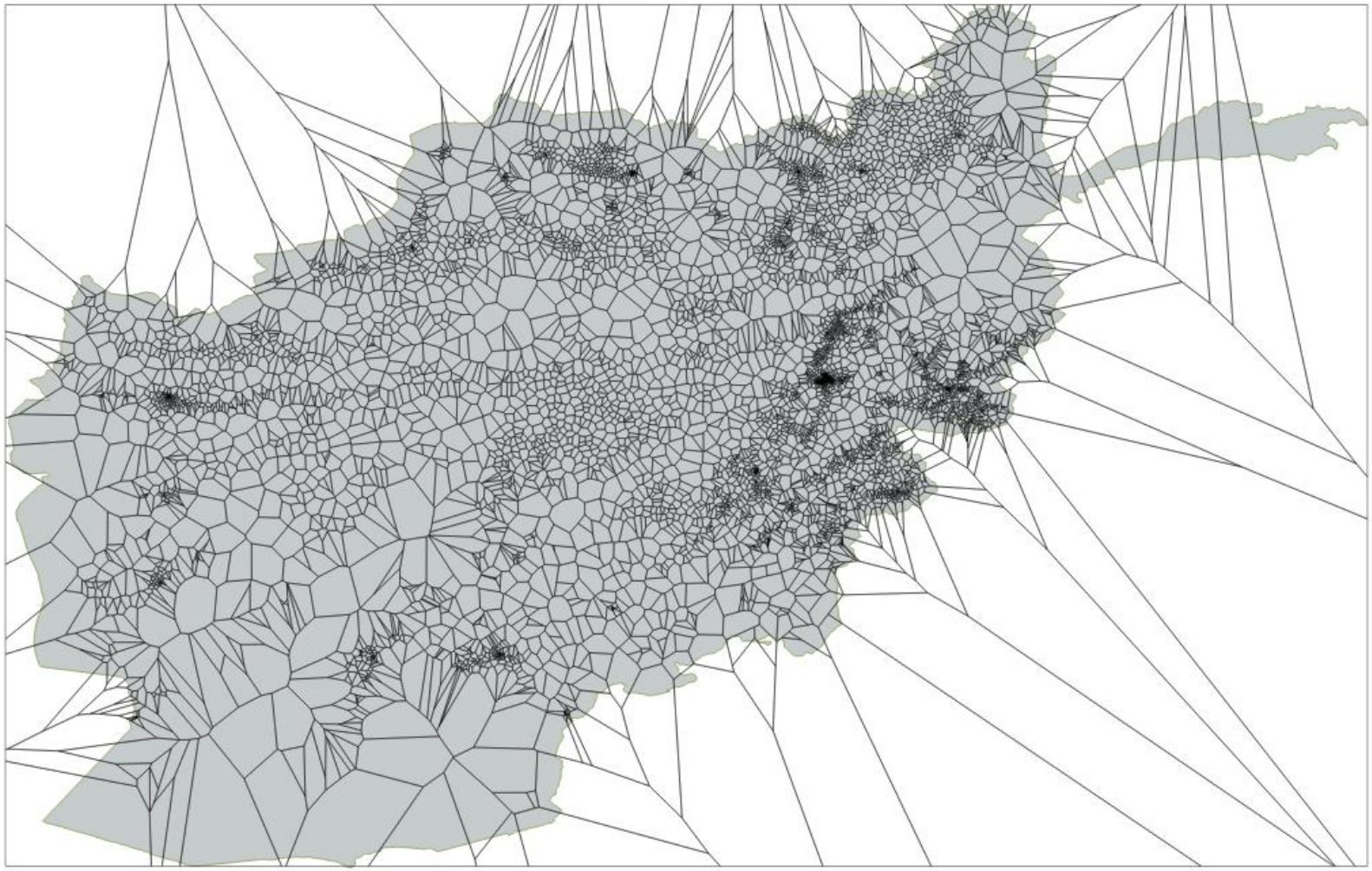
Notes: The location of polling centers announced in February 2014. Additional details on source material can be found in Supporting Information.

Figure SI-15: IED deployments, snapped to the road network



Notes: The location of deployed improvised explosive devices (IEDs) along the road network during the 2014 preelection period (preelection period of study are black; six month pretrend period are black with red outlines). Additional details on source material can be found in Supporting Information.

Figure SI-16: Polling center catchment areas, 2014 presidential election (first round)



Notes: The location of polling centers is drawn from administrative data. The Voronoi polygons (otherwise known as Thiessen polygons) are calculated using the Euclidean distance metric. This is the catchment calculation method used by Development Seed, a firm that worked with Afghan election commission, to evaluate the location of polling centers during the 2014 presidential election (first round). National boundaries are plotted for illustration. Additional details on source material can be found in Supporting Information.

E IV Results: Timing (District-level)

We perform additional robustness checks, listed in the main text.

First, previous Afghan elections were severely undermined by voter fraud, and especially ballot stuffing. Recent findings suggest that there may be a link between insurgent violence and opportunities to commit election fraud (Weidmann and Callen, 2013). If such fraud, especially ballot stuffing, benefited one candidate more than another, it would be difficult to convincingly estimate the impact of violence on actual voter behavior. Fortunately, our ballot box level returns data allow us to conduct some exploratory analysis to alleviate this concern. We use a standard employed by election auditors and previous academic research: fraudulent boxes are often stuffed with 590 or more ballots (of a maximum of 600) (Callen and Long, 2015). We then calculate the percentage of total ballot boxes that would have been audited by election officials per round, and estimate a reduced form relationship between our instrument and this measure of fraud (Table SI-7). We find no relationship between our instrument and fraud. We consider another measure of potentially fraudulent turnout: turnout above 100% of the district population. We observe these outcomes in less than 1% of our sample. In Table SI-6, we show that our instrument is orthogonal to this measure. Our results are also robust to excluding these districts.

Second, our primary measure of early morning attacks is the count of direct fire attacks that occur from 5 AM to 11 AM on election day. Given that the size of districts varies significantly, we reproduce our main results using a per capita measure of early morning attacks. For ease of interpretation, we state this measure as per 60K residents. These results are in Table SI-9 and are consistent with our main findings. Third, we confirm robustness to varying time windows for classifying early morning attacks. Our initial choice to instrument direct fire attacks from 5 AM to 11 AM was motivated by the regression results plotted in Figure 4. In Tables SI-10, SI-11, and SI-12, we vary the upper window from 7 AM to 12 PM hours and the results confirm our main findings. These results also suggest that attacks earlier in the morning (e.g., from 5 AM to 7 AM) are particularly disruptive.

Fourth, we recalculate our turnout measure using administrative population data from 2012. Although we believe these data may not have been systematically collected, it is useful for assessing the gridded data we use for the main analysis. These results are in Table SI-13. Using the administrative data, we find results consistent in precision with our main findings, but even larger in magnitude. In the main results, we estimate a negative effect of roughly 9-14% on overall turnout, compared to the administrative records of between 11-17%.

Fifth, to account for the possibility that our effects are influenced by the ethnic composition of districts, we account for the percentage of district settlements which are classified as Pashto speaking (i.e., Pashtuns). Here, we are particularly concerned that evidence of differential turnout losses for Ghani might be influenced by the presence of large Pashtun populations within the targeted districts. These results are in Table SI-14. Our point estimate for turnout losses for Ghani is 11%, with no meaningful variation in the point estimate for overall turnout or turnout for Abdullah.

Sixth, because insurgent operations, voter access, and weather conditions may be affected by geographic and terrain features, we follow Carter et al. (2017), and calculate terrain variability for each Afghan district. We add this measure to Table SI-15. Our instrument weakens slightly, but our main effects are consistent in magnitude.

Seventh, we estimate our main effects with a preelection direct fire trend (28 days) as an included

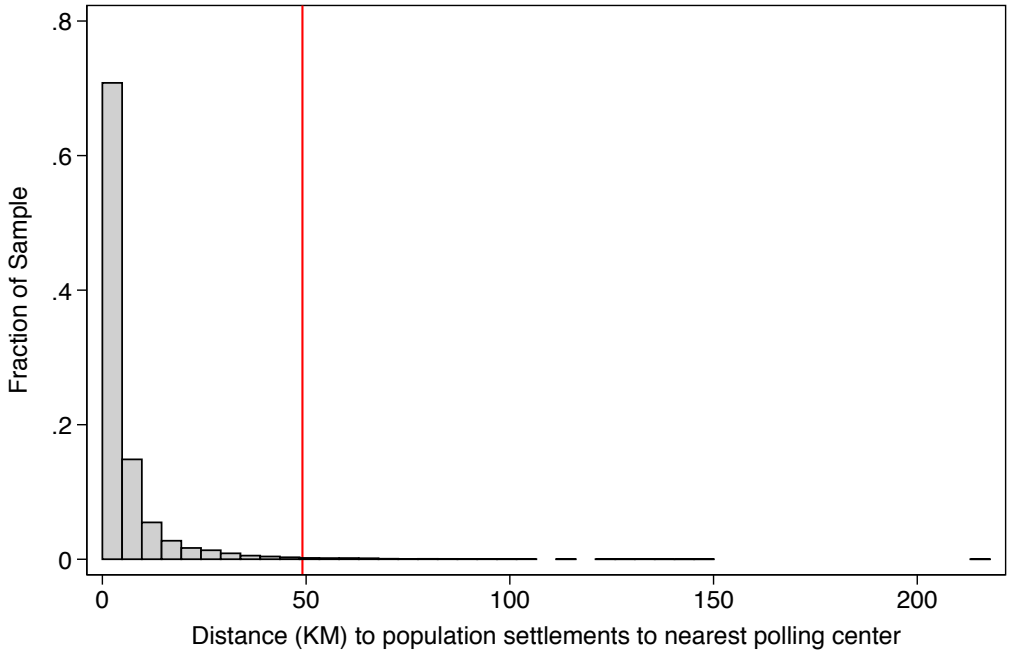
instrument in Table SI-16. Although our excluded instrument weakens, the magnitude of our main effects is consistent.

Eight, in Tables SI-17 and SI-18 we add measures of preelection insurgent intimidation (public threats) and nighttime rebel movement, which help us address potential concerns about the use of 'night letters' to influence voter turnout. Our main results are unaffected. We thank an anonymous referee for this suggestion.

Ninth, we reconsider our measurement of preelection early morning wind conditions. In the main analysis, we focus on the 14 days prior to each election round. In Table SI-19, we replicate the main model specifications with 7- and 28-day preelection wind measures. Our results are highly consistent.

Tenth, we conclude by introducing two additional instruments for early morning attacks. The first is wind conditions excluding the predawn staging period (i.e., using only the 4:30 AM calculation). This version of the instrument implies that the process of planning attacks begins nearer in time to actual deployment of violence on election day. The second additional instrument is the greatest magnitude (absolute value) of either wind component (N-S vs. E-W), again using only the early morning (4:30 AM) calculation. The intuition here is as follows. We argue that wind affects violence because it kicks up dust that hampers counterinsurgents' visibility and ability to respond to insurgents. This implies that we are agnostic about the direction of wind patterns. We therefore calculate the wind direction of the greatest magnitude (in absolute terms) and use that as a supplemental instrument. Results from these two additional instruments are in Table SI-20 and SI-21. These instruments, although marginally weaker, produce results consistent with our preferred instrument, which incorporates the predawn staging period.

Figure SI-17: Distance from settlements to nearest polling center



Notes: The election day route distances are calculated using the method described in the main text. To simplify the interpretation, we use a lower bound on the rate of travel possible on most roads: 40 kilometers per hour. The 99th percentile of route length is marked with a red line.

Table SI-3: Impact of early morning wind conditions on whether rebels disrupted 2014 election process in district (extensive margin)

	(1) Disrupt election	(2) Disrupt	(3) Disrupt
Surface winds	0.0276	0.0203	0.0137
	(0.0176)	(0.0186)	(0.0195)
Election FE	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes
Temperature	Yes	Yes	Yes
Control squares		Yes	Yes
Preelec. winds			Yes
N	782	782	782
Clusters	391	391	391

Notes: The outcome of interest is an indicator of election day disruption by insurgents. The regressor of interest is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM) as well as rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. A district population measure is included in all models as a control.

Table SI-4: Impact of early morning attacks on voter turnout during 2014 election, accounting for extensive margin of rebel presence and election disruption

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Turnout
Attacks, 5-11 AM	-0.0207	-0.170	-0.117	-0.131	-0.118
	(0.00661)	(0.119)	(0.0630)	(0.0604)	(0.0557)
Election FE	Yes	Yes	Yes	Yes	Yes
Disrupted	Mixed	Mixed	Mixed	Mixed	Mixed
Surface winds		Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes
Control squares		Yes	Yes	Yes	Yes
Preelec. winds		Yes	Yes	Yes	Yes
Viol. interaction			6 Month	1 Month	E-Day
N	782	782	782	782	782
Clusters	391	391	391	391	391
K-P F-stat (cluster robust)		8.563	15.90	22.23	30.86

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument varies: the average of two six hour intervals (predawn and early morning on election day) is interacted with a series of rebel presence measures. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. A district population measure is included in all models as a control.

Table SI-5: Impact of early morning wind conditions on voting in areas with no direct fire combat operations in six months prior to the 2014 election

	(1) False RF Turnout	(2) False RF Turnout	(3) False RF Turnout	(4) False RF Ghani TO	(5) False RF Abdullah TO
Surface winds	0.0199	0.0214	0.0316	0.00922	0.0203
	(0.0254)	(0.0242)	(0.0349)	(0.0270)	(0.0116)
Election FE	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes
Control squares		Yes	Yes	Yes	Yes
Preelec. winds			Yes	Yes	Yes
N	182	182	182	182	182
Clusters	91	91	91	91	91

Notes: The outcome of interest is voter turnout as a percentage of district population in areas without direct fire operations in six months prior to the 2014 election. The regressor of interest is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM) as well as rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. A district population measure is included in all models as a control.

Table SI-6: Impact of early morning wind conditions on suspicious voter turnout

	(1) Susp. turnout	(2) Susp. turnout	(3) Susp. turnout
Surface winds	-0.00692	-0.00787	-0.00558
	(0.00515)	(0.00482)	(0.00377)
Election FE	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes
Temperature	Yes	Yes	Yes
Control squares		Yes	Yes
Preelec. winds			Yes
N	410	410	410
Clusters	205	205	205

Notes: The outcome of interest is an indicator of suspicious election day voter turnout (exceeding district populations). The regressor of interest is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. Standard errors clustered by district. All models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM) as well as rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-7: Impact of early morning wind conditions on the percentage of potentially invalid ballot boxes

	(1) Corruption	(2) Corruption	(3) Corruption
Surface winds	-0.00297	-0.00360	-0.0148
	(0.0114)	(0.0140)	(0.0136)
Election FE	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes
Temperature	Yes	Yes	Yes
Control squares		Yes	Yes
Preelec. winds			Yes
N	410	410	410
Clusters	205	205	205

Notes: The outcome of interest is the percentage of potentially invalid ballot boxes by district and round. The regressor of interest is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. Standard errors clustered by district. All models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM) as well as rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-8: Impact of early morning attacks on voter turnout during 2014 election after eliminating potentially fraudulent votes

Panel A: Impact of morning attacks on voting

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.00721	-0.0420	-0.0490	-0.0758	-0.0503	-0.0296
	(0.00290)	(0.0329)	(0.0278)	(0.0392)	(0.0226)	(0.0220)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Clean ballots only	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.261	10.62	10.57	10.57	10.57

Panel B: Reduced form results

	(1) RF Turnout	(2) RF Turnout	(3) RF Turnout	(4) RF Ghani TO	(5) RF Abdullah TO
Surface winds	-0.0106	-0.0168	-0.0213	-0.0141	-0.00830
	(0.00759)	(0.00808)	(0.00947)	(0.00494)	(0.00582)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Panel C: First stage results

	(1) FS Attacks	(2) FS Attacks	(3) FS Attacks	(4) FS Attacks	(5) FS Attacks
Surface winds	0.253	0.344	0.281	0.281	0.281
	(0.0937)	(0.105)	(0.0863)	(0.0863)	(0.0863)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Notes: The outcome of interest is voter turnout as a percentage of district population. In this specification, we purge all potentially invalid ballots from overstuffed ballot boxes. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-9: Impact of early morning attacks on voter turnout during 2014 election using a per capita (60K) measure of combat

Panel A: Impact of morning attacks on voting

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks per 60K, 5-11 AM	-0.00167	-0.0331	-0.0442	-0.0763	-0.0662	-0.00896
	(0.00335)	(0.0225)	(0.0228)	(0.0308)	(0.0237)	(0.0127)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Per capita violence (60K)	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		9.505	11.38	13.58	13.58	13.58

Panel B: Reduced form results

	(1) RF Turnout	(2) RF Turnout	(3) RF Turnout	(4) RF Ghani TO	(5) RF Abdullah TO
Surface winds	-0.0195	-0.0316	-0.0407	-0.0353	-0.00478
	(0.0121)	(0.0132)	(0.0129)	(0.00863)	(0.00673)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Panel C: First stage results

	(1) FS Attacks	(2) FS Attacks	(3) FS Attacks	(4) FS Attacks	(5) FS Attacks
Surface winds	0.589	0.716	0.533	0.533	0.533
	(0.191)	(0.212)	(0.145)	(0.145)	(0.145)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day, standardized by district population and stated in per 60K terms. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-10: Impact of early morning attacks on overall voter turnout during 2014 election using varying time window classifications of early morning events

	(1) 2SLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Turnout	(6) 2SLS Turnout
Attacks, varying windows	-0.211	-0.207	-0.167	-0.159	-0.145	-0.144
	(0.0861)	(0.0929)	(0.0714)	(0.0683)	(0.0607)	(0.0611)
Time window	5-7AM	5-8AM	5-9AM	5-10AM	5-11AM	5-12PM
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes	Yes
Control squares	Yes	Yes	Yes	Yes	Yes	Yes
Preelec. winds	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)	13.66	9.012	9.964	9.920	10.57	10.61

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to varying upper times on election day. Each column specifies the time window. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-11: Impact of early morning attacks on voter turnout in favor of Ghani during 2014 election using varying time window classifications of early morning events

	(1) 2SLS Ghani TO	(2) 2SLS Ghani TO	(3) 2SLS Ghani TO	(4) 2SLS Ghani TO	(5) 2SLS Ghani TO	(6) 2SLS Ghani TO
Attacks, varying windows	-0.183	-0.180	-0.145	-0.138	-0.126	-0.125
	(0.0657)	(0.0740)	(0.0564)	(0.0538)	(0.0477)	(0.0474)
Time window	5-7AM	5-8AM	5-9AM	5-10AM	5-11AM	5-12PM
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes	Yes
Control squares	Yes	Yes	Yes	Yes	Yes	Yes
Preelec. winds	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)	13.66	9.012	9.964	9.920	10.57	10.61

Notes: The outcome of interest is voter turnout in favor of Ghani as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to varying upper times on election day. Each column specifies the time window. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-12: Impact of early morning attacks on voter turnout in favor of Abdullah during 2014 election using varying time window classifications of early morning events

	(1) 2SLS Abdullah TO	(2) 2SLS Abdullah TO	(3) 2SLS Abdullah TO	(4) 2SLS Abdullah TO	(5) 2SLS Abdullah TO	(6) 2SLS Abdullah TO
Attacks, varying windows	-0.0248	-0.0244	-0.0196	-0.0187	-0.0170	-0.0169
	(0.0353)	(0.0347)	(0.0278)	(0.0264)	(0.0240)	(0.0241)
Time window	5-7AM	5-8AM	5-9AM	5-10AM	5-11AM	5-12PM
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes	Yes
Control squares	Yes	Yes	Yes	Yes	Yes	Yes
Preelec. winds	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)	13.66	9.012	9.964	9.920	10.57	10.61

Notes: The outcome of interest is voter turnout in favor of Abdullah as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to varying upper times on election day. Each column specifies the time window. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-13: Impact of early morning attacks on voter turnout during 2014 election using alternative district population measure

Panel A: Impact of morning attacks on voting

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.0111	-0.0900	-0.113	-0.170	-0.152	-0.0130
	(0.00849)	(0.0664)	(0.0611)	(0.0755)	(0.0597)	(0.0289)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Admin pop. data	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.257	10.61	10.56	10.56	10.56

Panel B: Reduced form results

	(1) RF Turnout	(2) RF Turnout	(3) RF Turnout	(4) RF Ghani TO	(5) RF Abdullah TO
Surface winds	-0.0227	-0.0389	-0.0476	-0.0426	-0.00365
	(0.0151)	(0.0171)	(0.0165)	(0.0111)	(0.00811)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Panel C: First stage results

	(1) FS Attacks	(2) FS Attacks	(3) FS Attacks	(4) FS Attacks	(5) FS Attacks
Surface winds	0.252	0.343	0.280	0.280	0.280
	(0.0937)	(0.105)	(0.0863)	(0.0863)	(0.0863)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Notes: The outcome of interest is voter turnout as a percentage of district population calculated using administrative data. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-14: Impact of early morning attacks on voter turnout during 2014 election accounting for ethnic composition of districts

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.0108	-0.0753	-0.0915	-0.143	-0.119	-0.0214
	(0.00691)	(0.0530)	(0.0476)	(0.0592)	(0.0427)	(0.0227)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Pashto measure	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.896	11.19	11.34	11.34	11.34

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). All model specifications include a control for the percentage of settlements classified as Pashto.

Table SI-15: Impact of early morning attacks on voter turnout during 2014 election accounting for terrain variability of districts

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.00974	-0.0758	-0.0887	-0.149	-0.136	-0.0113
	(0.00657)	(0.0555)	(0.0518)	(0.0721)	(0.0575)	(0.0287)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Terrain variability	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.174	9.314	8.886	8.886	8.886

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). All model specifications include a control for the variance of terrain ruggedness, used to capture variation in geographic conditions that may be ideal for insurgent combat.

Table SI-16: Impact of early morning attacks on voter turnout during 2014 election accounting for four week pretrend in direct fire activity

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	0.000381	-0.0851	-0.0981	-0.147	-0.127	-0.0171
	(0.00719)	(0.0704)	(0.0554)	(0.0609)	(0.0475)	(0.0245)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
DF pretrend	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		6.505	10.75	12.03	12.03	12.03

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). All model specifications include a four week (28 day) preelection trend in direct fire attacks (prior to election day).

Table SI-17: Impact of early morning attacks on voter turnout during 2014 election accounting for four week pretrend in reports of insurgent intimidation

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.0104	-0.0772	-0.0922	-0.143	-0.124	-0.0171
	(0.00647)	(0.0533)	(0.0472)	(0.0585)	(0.0458)	(0.0231)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Intimidation pretrend	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.610	11.16	11.28	11.28	11.28

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). All model specifications include a four week (28 day) preelection trend in reports of insurgent intimidation (prior to election day). This is a measure that draws from previously unreleased intelligence records collected by counterinsurgent forces.

Table SI-18: Impact of early morning attacks on voter turnout during 2014 election accounting for four week pretrend in reports of nighttime insurgent movement

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.00868	-0.0774	-0.0921	-0.145	-0.126	-0.0170
	(0.00638)	(0.0525)	(0.0484)	(0.0615)	(0.0484)	(0.0243)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
NT ins. movt. pretrend	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		7.980	10.40	10.80	10.80	10.80

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the two week (14 day) period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). All model specifications include a four week (28 day) preelection trend in reports of nighttime insurgent movement (prior to election day). If insurgents are observed using their forces to deliver 'night letters' it is likely to be captured by this measure (if these movements are reported by civilians). This is a measure that draws from previously unreleased intelligence records collected by counterinsurgent forces.

Table SI-19: Impact of early morning attacks on voter turnout during 2014 election accounting for varying calculations of preelection early morning wind conditions

	(1) 2SLS Turnout	(2) 2SLS Ghani TO	(3) 2SLS Abdullah TO	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO	(7) 2SLS Turnout	(8) 2SLS Ghani TO	(9) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.149	-0.123	-0.0227	-0.154	-0.130	-0.0199	-0.143	-0.112	-0.0249
	(0.0677)	(0.0518)	(0.0244)	(0.0681)	(0.0520)	(0.0272)	(0.0661)	(0.0466)	(0.0283)
Preelec. winds	7 days	7 days	7 days	14 days	14 days	14 days	28 days	28 days	28 days
Election FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control squares	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preelec. winds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410	410	410	410
Clusters	205	205	205	205	205	205	205	205	205
K-P F-stat (cluster robust)	9.280	9.280	9.280	8.979	8.979	8.979	9.332	9.332	9.332

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is the average of two six hour intervals: predawn (start: 10:30 PM, prior day) and early morning (start: 4:30 AM) wind speed on election day. All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (average of predawn and early morning) are calculated using the designated period before each election round. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one insurgent attack during either election round (areas where insurgents used attacks to disrupt election day operations). We vary the preelection early morning wind conditions by 7, 14, and 28 days. This is noted in each column.

Table SI-20: Impact of early morning attacks on voter turnout during 2014 election using an alternative instrumental variable specification

Panel A: Impact of morning attacks on voting

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.0107	-0.0980	-0.125	-0.213	-0.149	-0.0559
	(0.00651)	(0.0603)	(0.0637)	(0.0989)	(0.0699)	(0.0379)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Alt. IV: no staging period	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		8.579	9.871	7.727	7.727	7.727

Panel B: Reduced form results

	(1) RF Turnout	(2) RF Turnout	(3) RF Turnout	(4) RF Ghani TO	(5) RF Abdullah TO
Surface winds	-0.0192	-0.0289	-0.0345	-0.0241	-0.00905
	(0.00994)	(0.0116)	(0.0112)	(0.00745)	(0.00566)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Panel C: First stage results

	(1) FS Attacks	(2) FS Attacks	(3) FS Attacks	(4) FS Attacks	(5) FS Attacks
Surface winds	0.196	0.232	0.162	0.162	0.162
	(0.0669)	(0.0738)	(0.0582)	(0.0582)	(0.0582)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is wind conditions at 4:30AM, omitting the staging period (prior 6 hours). All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions are calculated using the two week (14 day) period before each election round at 4:30AM. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-21: Impact of early morning attacks on voter turnout during 2014 election using an alternative instrumental variable specification

Panel A: Impact of morning attacks on voting

	(1) OLS Turnout	(2) 2SLS Turnout	(3) 2SLS Turnout	(4) 2SLS Turnout	(5) 2SLS Ghani TO	(6) 2SLS Abdullah TO
Attacks, 5-11 AM	-0.0107	-0.0826	-0.104	-0.176	-0.122	-0.0479
	(0.00651)	(0.0482)	(0.0510)	(0.0826)	(0.0597)	(0.0297)
Election FE	Yes	Yes	Yes	Yes	Yes	Yes
Disrupted	Yes	Yes	Yes	Yes	Yes	Yes
Surface winds		Yes	Yes	Yes	Yes	Yes
Rainfall		Yes	Yes	Yes	Yes	Yes
Temperature		Yes	Yes	Yes	Yes	Yes
Control squares			Yes	Yes	Yes	Yes
Preelec. winds				Yes	Yes	Yes
Alt. IV: Greatest magnitude comp.	Yes	Yes	Yes	Yes	Yes	Yes
N	410	410	410	410	410	410
Clusters	205	205	205	205	205	205
K-P F-stat (cluster robust)		11.35	12.58	9.025	9.025	9.025

Panel B: Reduced form results

	(1) RF Turnout	(2) RF Turnout	(3) RF Turnout	(4) RF Ghani TO	(5) RF Abdullah TO
Surface winds	-0.0209	-0.0311	-0.0333	-0.0230	-0.00906
	(0.0105)	(0.0126)	(0.0120)	(0.00871)	(0.00509)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Panel C: First stage results

	(1) FS Attacks	(2) FS Attacks	(3) FS Attacks	(4) FS Attacks	(5) FS Attacks
Surface winds	0.253	0.299	0.189	0.189	0.189
	(0.0751)	(0.0844)	(0.0630)	(0.0630)	(0.0630)
N	410	410	410	410	410
Clusters	205	205	205	205	205

Notes: The outcome of interest is voter turnout as a percentage of district population. The endogenous regressor is the number of direct fire attacks from 5AM to 11AM on election day. The instrument is absolute value of greatest wind component at 4:30AM, omitting the staging period (prior 6 hours). All models include election round fixed effects. Standard errors clustered by district. All IV models include controls for surface wind conditions during hours of open voting (10:30AM and 4:30PM). Models with rainfall and temperature controls include measures calculated at 4:30AM, 10:30AM, and 4:30PM. Square terms of these measures are also included in designated models. Preelection wind conditions (greatest wind component, abs.) are calculated using the two week (14 day) period before each election round at 4:30AM. Candidate specific turnout measures are calculated as a percentage of district population. A district population measure is included in all models as a control. The main sample includes districts where ballots were recorded in both rounds of voting and which were disrupted by at least one attack during either election round (areas where insurgents used attacks to disrupt election day operations).

Table SI-22: Summary statistics at district level, disrupted districts

Variable	Mean	Std. Dev.	Min.	Max.	N
Voter turnout (%), all ballots	0.262	0.269	0.001	3.522	410
Ghani turnout (%), all ballots	0.161	0.24	0	3.298	410
Abdullah turnout (%), all ballots	0.07	0.098	0	0.801	410
Voter turnout (%), non-audited ballots	0.151	0.125	0	1.09	410
Ghani turnout (%), non-audited ballots	0.084	0.093	0	0.831	410
Abdullah turnout (%), non-audited ballots	0.046	0.067	0	0.748	410
Election day wind conditions (staging), 430 AM	2.639	1.379	0.354	11.895	410
Election day wind conditions, 1030 AM	3.448	2.332	0.076	14.455	410
Election day wind conditions, 430 PM	3.658	2.021	0.185	14.463	410
Election day wind conditions, 430 AM	2.806	1.826	0.1	13.411	410
Election day wind conditions (greater comp.), 430 AM	2.567	1.687	0.08	11.923	410
Election day temperature (Kelvin), 430 AM	284.006	7.082	260.735	301.323	410
Election day temperature (Kelvin), 1030 AM	297.258	13.773	270.267	322.992	410
Election day temperature (Kelvin), 430 PM	296.311	12.845	267.111	321.486	410
Election day rainfall (MM), 430 AM	2.267	4.027	0	31.6	410
Election day rainfall (MM), 1030 AM	2.325	4.015	0	17.9	410
Election day rainfall (MM), 430 PM	0.716	1.349	0	10.2	410
Preelection wind conditions (staging), 430 AM (7 days prior)	3.038	1.051	0.862	6.88	410
Preelection wind conditions (staging), 430 AM (14 days prior)	2.75	0.9	1.086	6.01	410
Preelection wind conditions (staging), 430 AM (28 days prior)	2.731	0.759	1.411	5.824	410
Audited ballot boxes (%)	0.216	0.283	0	1	410
Suspicious turnout	0.007	0.085	0	1	410
Election day direct fire attacks, 5 to 7 AM	0.327	0.957	0	10	410
Election day direct fire attacks, 5 to 8 AM	0.554	1.27	0	10	410
Election day direct fire attacks, 5 to 9 AM	0.741	1.449	0	10	410
Election day direct fire attacks, 5 to 10 AM	0.876	1.578	0	10	410
Election day direct fire attacks, 5 to 11 AM	0.976	1.68	0	10	410
Election day direct fire attacks, 5 to 12 PM	1.027	1.699	0	10	410
Election day direct fire attacks, 5 to 11 AM (per 60K)	1.305	2.658	0	22.629	410
Preelection direct fire trends (28 days prior)	5.839	8.689	0	68	410
District population, gridded data (2010)	96702.759	274984.14	9511.183	3875003.75	410
District population, administrative records (2012)	78.874	233.108	7.600	3289	410
Variability in terrain ruggedness	161.935	77.680	3.621	385.559	410
Pashto population (%)	0.655	0.385	0	1	410

F IV Results: IED Deployment (Road-level)

We discuss additional robustness checks listed in the main text.

First, we investigate potential manipulation of our outcome of interest, cast ballots. We repeat the exercise discussed above, and identify polling stations with ballot boxes (nearly) at capacity (590/600 or above). We first test if there is a reduced form relationship between our instrument and ballot stuffing. Results, presented in Table SI-24, find a weak positive relationship between nighttime cloud cover and the percentage of ballot boxes classified as "suspicious" at connected polling locations. This suggests that our main results may be lower bounds on the true effect if fraud is more likely to occur at stations connected by roads that insurgents target. We evaluate this further by purging our ballot counts of potentially fraudulent votes and repeat the main analysis. These results are presented in Table SI-25. As expected, our point estimates for overall turnout increase substantially. Our findings for Ghani are comparable to the main effects, and the point estimate for Abdullah is still weakly negative and imprecise. Eliminating questionable ballots also significantly increases the precision of our second stage estimates. Our weak-instrument-robust tests are also strengthened.[42]

Second, we consider two alternative outcome variables. Rather than winsorizing the vote totals associated with each road, we standardize this count by the number of voting centers connected by each road (i.e., ballots cast per route). Because 87% of all election day routes only connect one polling center and 96% connect two or fewer, this outcome is very similarly scaled to our main outcome, but may be preferable. Next, we use the number of ballot boxes to calculate the total number of ballots that could have been cast if all were used (600 per box). The government has no formal rules for allocating boxes and an exercise conducted by a firm that worked with the Afghan election commission confirms that boxes were poorly distributed to meet demand among potential voters.[43] However, this measure helps us think about voter turnout in terms comparable to the district level analysis above. We present these results in Tables SI-28 and SI-29. Our results are largely consistent. For the ballots per route measure, we find more precise evidence of a negative impact on overall turnout and turnout for Ghani. The point estimate for Abdullah is larger in magnitude and more precisely estimated than in the main results, but still fails our weak-instrument-robust tests. For the ballot box turnout measure, we find evidence of a large overall effect and strong (in magnitude) negative effect for Ghani, but lose precision relative to the other measures.

Third, it is possible that IED deployment may have caused positive spillovers to nearby polling stations that were not directly impacted by insurgent activity. Although we cannot causally identify these spillovers, we produce spillover buffers of 5 and 10 kilometer scales to confirm that our primary results are insensitive to accounting for spatial reallocation of voting. These results are presented in Tables SI-30 and SI-31. Our main results decline marginally. We do not report the unidentified coefficients on the spillover measures, but they are positive and consistent in magnitude with the reductions in our main coefficient estimates. This suggests some small spatial spillovers, consistent with relatively few voters finding alternative stations to cast their ballots.

Fourth, to address potential concerns about influential observations in our data, we calculate the Cook's Distance statistic and leverage point values for our main sample. Although we find no

[42] In Tables SI-26 and SI-27 we provide even clearer evidence of ballot stuffing in favor of Abdullah. In these analyses, we limit our sample to only roads in districts directly affected by preelection IED deployment.

[43] This report was published by Development Seed immediately following the first round: `https://developmentseed.org/blog/2014/04/09/polling-coverage-analysis/`.

cases of significant outliers on either dimension, we still exclude them from the sample and replicate the main analysis. These results are in Tables SI-32 and SI-33. Our main results are unaffected.

Fifth, in the main analysis, we focus primarily on the potential correlation between nighttime cloud cover and rainfall as a potential violation of the exclusion restriction. We do this because previous research suggests that rainfall may deter voter turnout and, in our case, may have lingering effects on voter access to the polls by road if flooding occurs. In Tables SI-34, SI-35, and SI-36, we introduce several other potential channels. Snow depth along roads, in particular, may deter voters from accessing the polls. Although after accounting for snow depth there is no clear channel through which ambient temperature in the month prior to the election would influence turnout, we add two measures to our main specification. One is an indicator of whether a particular road's temperature was in the 95th percentile or above, which we consider a temperature shock. Another is to include a continuous measure of temperature. However, including cloud cover, precipitation, and temperature in the same model, when all are measured as monthly averages, raises concerns about multicollinearity.[44] We therefore caution against putting much emphasis on this final measure. We find that the main effect on overall turnout is reduced by snow depth, unaffected by temperature shocks, and consistent in scale when accounting for the continuous measure of ambient temperature. For Ghani, we find largely consistent results in terms of magnitude and precision with the exception of the continuous measure of temperature. For Abdullah, we find attenuated effects, except for the continuous measure of temperature, which increases the magnitude of the point estimate.

Sixth, we extend the intuition of our supplemental wind instrument, and calculate the percentage change in nighttime cloud density between the preelection period and six months prior. Although cloud cover (measured by month) does not vary with as much frequency as within-day wind conditions, this instrument is helpful in confirming the practical validity (in terms of insurgent strategy) of the main instrument. We then replicate the main analysis. These results are presented in Table SI-37. The magnitude and precision of our main effects increase markedly. These results suggest that overall turnout declined by at least 50% more than our main effects suggest. The ballots lost by Ghani and Abdullah also increase, and the losses for Abdullah increase in precision.

[44] One partial solution, which we use, is to include a measure of daytime cloud cover (our measure of temperature is a daytime calculation).

Table SI-23: Impact of nighttime cloud cover on voting in areas with no IED deployment in six months prior to the 2014 election

	(1) False RF Total Votes	(2) False RF Total Votes	(3) False RF Ghani	(4) False RF Abdullah
Nighttime cloud cover	-6.109	-5.613	-1.259	0.968
	(2.884)	(3.096)	(1.065)	(2.269)
	[6.213]	[6.768]	[2.204]	[5.086]
District FE	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month
Rainfall		Yes	Yes	Yes
Number of obs.	5010	5010	5010	5010
Number of clusters	1210	1210	1210	1210

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election in areas with no IED deployment in six months prior. The regressor of interest is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-24: Impact of nighttime cloud cover on the percentage of potentially invalid ballot boxes at connected stations

	(1) Corruption	(2) Corruption
Nighttime cloud cover	0.00114	0.000753
	(0.000577)	(0.000573)
	[0.00132]	[0.00131]
District FE	Yes	Yes
Violence trend	6 Month	6 Month
Rainfall		Yes
Number of obs.	15056	15056
Number of clusters	3536	3536

Notes: The outcome of interest is the percentage of potentially invalid ballot boxes at connected polling stations during the first round of the 2014 election. The regressor of interest is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-25: Impact of IED deployment on voter turnout during the first round of the 2014 election after eliminating potentially fraudulent votes

Panel A: Impact of IED deployment on voting

	(1) OLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS
	Total Votes (Clean)	Total Votes (Clean)	Total Votes (Clean)	Ghani (Clean)	Abdullah (Clean)
IED Deployment	118.9	-8009.6	-9729.4	-4741.0	-1431.7
	(60.34)	(2855.9)	(3278.1)	(1568.7)	(1168.7)
	[69.11]	[5066.5]	[5666.6]	[2692.5]	[2352.7]
Clean ballots only	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		12.07	12.28	12.28	12.28
Number of clusters	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)		4.343	4.715	4.715	4.715
Weak IV robust p-value		0.0202	0.00720	0.00410	0.522

Panel B: Reduced-form results

	(1) RF	(2) RF	(3) RF	(4) RF
	Total Votes (Clean)	Total Votes (Clean)	Ghani (Clean)	Abdullah (Clean)
Nighttime cloud cover	-9.863	-12.07	-5.884	-1.777
	(2.066)	(2.128)	(0.977)	(1.350)
	[4.223]	[4.462]	[2.101]	[2.804]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Panel C: First-stage results

	(1) FS	(2) FS	(3) FS	(4) FS
	IED Deploy.	IED Deploy.	IED Deploy.	IED Deploy.
Nighttime cloud cover	0.00123	0.00124	0.00124	0.00124
	(0.000354)	(0.000354)	(0.000354)	(0.000354)
	[0.000591]	[0.000572]	[0.000572]	[0.000572]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. This specification purges all potentially invalid ballots from the count. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-26: Impact of IED deployment on voter turnout during the first round of the 2014 election using only roads in districts with preelection IED deployment

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Total Votes	(4) 2SLS Ghani	(5) 2SLS Abdullah
IED Deployment	147.5	-319.0	-715.8	-1633.7	50.79
	(67.02)	(933.2)	(973.3)	(577.4)	(589.6)
	[74.84]	[1628.6]	[1704.7]	[955.3]	[1064.6]
Disrupted Dist.	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	6598	6598	6598	6598	6598
K-P F-stat (robust)		15.16	15.15	15.15	15.15
Number of clusters	1620	1620	1620	1620	1620
K-P F-stat (cluster robust)		5.583	5.743	5.743	5.743
Weak IV robust p-value		0.844	0.672	0.0272	0.962

Panel B: Reduced-form results

	(1) RF Total Votes	(2) RF Total Votes	(3) RF Ghani	(4) RF Abdullah
Nighttime cloud cover	-1.629	-3.620	-8.261	0.257
	(4.744)	(4.829)	(2.104)	(2.984)
	[8.337]	[8.598]	[3.773]	[5.384]
Number of obs.	6598	6598	6598	6598
Number of clusters	1620	1620	1620	1620

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Nighttime cloud cover	0.00510	0.00506	0.00506	0.00506
	(0.00131)	(0.00130)	(0.00130)	(0.00130)
	[0.00216]	[0.00211]	[0.00211]	[0.00211]
Number of obs.	6598	6598	6598	6598
Number of clusters	1620	1620	1620	1620

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round in districts with at least one preelection IED deployment.

Table SI-27: Impact of IED deployment on voter turnout during the first round of the 2014 election using only roads in districts with preelection IED deployment after eliminating potentially fraudulent votes

Panel A: Impact of IED deployment on voting

	(1) OLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS
	Total Votes (Clean)	Total Votes (Clean)	Total Votes (Clean)	Ghani (Clean)	Abdullah (Clean)
IED Deployment	175.6	-2584.6	-2940.2	-2216.0	-442.7
	(60.63)	(1105.2)	(1184.8)	(692.9)	(565.0)
	[69.78	[1851.4]	[1983.8]	[1131.7]	[1016.0]
Clean ballots only	Yes	Yes	Yes	Yes	Yes
Disrupted Dist.	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	6598	6598	6598	6598	6598
K-P F-stat (robust)		15.16	15.15	15.15	15.15
Number of clusters	1620	1620	1620	1620	1620
K-P F-stat (cluster robust)		5.583	5.743	5.743	5.743
Weak IV robust p-value		0.0984	0.0719	0.00251	0.654

Panel B: Reduced-form results

	(1) RF	(2) RF	(3) RF	(4) RF
	Total Votes (Clean)	Total Votes (Clean)	Ghani (Clean)	Abdullah (Clean)
Nighttime cloud cover	-13.19	-14.87	-11.21	-2.239
	(4.398)	(4.485)	(2.024)	(2.757)
	[7.838]	[8.110]	[3.621]	[5.026]
Number of obs.	6598	6598	6598	6598
Number of clusters	1620	1620	1620	1620

Panel C: First-stage results

	(1) FS	(2) FS	(3) FS	(4) FS
	IED Deploy.	IED Deploy.	IED Deploy.	IED Deploy.
Nighttime cloud cover	0.00510	0.00506	0.00506	0.00506
	(0.00131)	(0.00130)	(0.00130)	(0.00130)
	[0.00216]	[0.00211]	[0.00211]	[0.00211]
Number of obs.	6598	6598	6598	6598
Number of clusters	1620	1620	1620	1620

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. This specification purges all potentially invalid ballots from the count. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round in districts with at least one preelection IED deployment.

Table SI-28: Impact of IED deployment on voter turnout during the first round of the 2014 election using ballots cast per connected voting center

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes P/R	(2) 2SLS Total Votes P/R	(3) 2SLS Total Votes P/R	(4) 2SLS Ghani P/R	(5) 2SLS Abdullah P/R
IED Deployment	97.11	-6237.4	-8400.3	-4146.6	-2189.4
	(49.88)	(2358.2)	(2884.5)	(1393.2)	(1217.6)
	[58.75]	[4546.7]	[5308.9]	[2699.5]	[2523.7]
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		12.07	12.28	12.28	12.28
Number of clusters	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)		[4.343]	[4.715]	[4.715]	[4.715]
Weak IV robust p-value		0.0722	0.0221	0.0327	0.336

Panel B: Reduced-form results

	(1) RF Total Votes P/R	(2) RF Total Votes P/R	(3) RF Ghani P/R	(4) RF Abdullah P/R
Nighttime cloud cover	-7.681	-10.43	-5.146	-2.717
	(1.857)	(1.932)	(0.940)	(1.267)
	[4.220]	[4.485]	[2.460]	[2.842]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Nighttime cloud cover	0.00123	0.00124	0.00124	0.00124
	(0.000354)	(0.000354)	(0.000354)	(0.000354)
	[0.000591]	[0.000572]	[0.000572]	[0.000572]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Notes: The outcome of interest is ballots cast at connected polling stations standardized by the number of voting centers connected by the road (ballots per route), during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-29: Impact of IED deployment on voter turnout during the first round of the 2014 election using ballots cast relative the total ballots available at connected stations

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes (%)	(2) 2SLS Total Votes (%)	(3) 2SLS Total Votes (%)	(4) 2SLS Ghani (%)	(5) 2SLS Abdullah (%)
IED Deployment	0.00534	-1.734	-2.003	-0.626	-0.261
	(0.0114)	(0.685)	(0.743)	(0.342)	(0.368)
	[0.0149]	[1.355]	[1.437]	[0.741]	[0.845]
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		12.07	12.28	12.28	12.28
Number of clusters	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)		4.343	4.715	4.715	4.715
Weak IV robust p-value		0.114	0.0735	0.357	0.753

Panel B: Reduced-form results

	(1) RF Total Votes (%)	(2) RF Total Votes (%)	(3) RF Ghani (%)	(4) RF Abdullah (%)
Nighttime cloud cover	-0.00214	-0.00249	-0.000777	-0.000324
	(0.000586)	(0.000590)	(0.000367)	(0.000446)
	[0.00132]	[0.00136]	[0.000861]	[0.00104]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Nighttime cloud cover	0.00123	0.00124	0.00124	0.00124
	(0.000354)	(0.000354)	(0.000354)	(0.000354)
	[0.000591]	[0.000572]	[0.000572]	[0.000572]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Notes: The outcome of interest is ballots cast at connected polling stations stated as a percentage of available ballots at those stations (600 per box), during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-30: Impact of IED deployment on voter turnout during the first round of the 2014 election accounting for spatial spillovers in IED deployment (5 kilometers)

	(1) 2SLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Ghani	(4) 2SLS Ghani	(5) 2SLS Abdullah	(6) 2SLS Abdullah
IED Deployment	-7434.7	-6931.4	-3951.4	-3645.5	-1299.0	-1208.0
	(2768.5)	(2490.0)	(1415.1)	(1261.0)	(1247.4)	(1159.6)
	[5056.7]	[4606.6]	[2593.0]	[2350.2]	[2474.2]	[2306.7]
IED spillover, 5KM		Yes		Yes		Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056	15056
K-P F-stat (robust)	12.28	14.04	12.28	14.04	12.28	14.04
Number of clusters	3536	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)	4.715	5.367	4.715	5.367	4.715	5.367
Weak IV robust p-value	0.0496	0.0505	0.0349	0.0380	0.584	0.587

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. This specification includes an indicatory of IED deployment within 5 kilometers of the road during the preelection period (by column).

Table SI-31: Impact of IED deployment on voter turnout during the first round of the 2014 election accounting for spatial spillovers in IED deployment (10 kilometers)

	(1) 2SLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Ghani	(4) 2SLS Ghani	(5) 2SLS Abdullah	(6) 2SLS Abdullah
IED Deployment	-7434.7	-6949.9	-3951.4	-3858.4	-1299.0	-980.2
	(2768.5)	(2557.5)	(1415.1)	(1340.5)	(1247.4)	(1169.6)
	[5056.7]	[4741.1]	[2593.0]	[2476.2]	[2474.2]	[2344.6]
IED spillover, 10KM		Yes		Yes		Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056	15056
K-P F-stat (robust)	12.28	13.30	12.28	13.30	12.28	13.30
Number of clusters	3536	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)	4.715	5.105	4.715	5.105	4.715	5.105
Weak IV robust p-value	0.0496	0.0571	0.0349	0.0326	0.584	0.667

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. This specification includes an indicatory of IED deployment within 10 kilometers of the road during the preelection period (by column).

Table SI-32: Impact of IED deployment on voter turnout during the first round of the 2014 election with and without potentially influential observations (Cook's Distance)

Panel A: Impact of IED deployment on voting

	(1) 2SLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Ghani	(4) 2SLS Ghani	(5) 2SLS Abdullah	(6) 2SLS Abdullah
IED Deployment	-7434.7	-7803.8	-3951.4	-4149.8	-1299.0	-1369.5
	(2768.5)	(2988.4)	(1415.1)	(1532.1)	(1247.4)	(1318.2)
	[5056.7]	[5434.6]	[2593.0]	[2792.7]	[2474.2]	[2611.7]
Exclude Cook's D ¿.025		Yes		Yes		Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	15056	15046	15056	15046	15056	15046
K-P F-stat (robust)	12.28	11.20	12.28	11.20	12.28	11.20
Number of clusters	3536	3526	3536	3526	3536	3526
K-P F-stat (cluster robust)	4.715	4.277	4.715	4.277	4.715	4.277
Weak IV robust p-value	0.0496	0.0503	0.0349	0.0353	0.584	0.584

Panel B: Reduced-form results

	(1) RF Total Votes	(2) RF Total Votes	(3) RF Ghani	(4) RF Ghani	(5) RF Abdullah	(6) RF Abdullah
Nighttime cloud cover	-9.227	-9.204	-4.904	-4.894	-1.612	-1.615
	(2.222)	(2.223)	(1.065)	(1.065)	(1.476)	(1.476)
	[4.633]	[4.634]	[2.375]	[2.375]	[2.972]	[2.972]
Number of obs.	15056	15046	15056	15046	15056	15046
Number of clusters	3536	3526	3536	3526	3536	3526

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.	(5) FS IED Deploy.	(6) FS IED Deploy.
Nighttime cloud cover	0.00124	0.00118	0.00124	0.00118	0.00124	0.00118
	(0.000354)	(0.000352)	(0.000354)	(0.000352)	(0.000354)	(0.000352)
	[0.000572]	[0.000570]	[0.000572]	[0.000570]	[0.000572]	[0.000570]
Number of obs.	15056	15046	15056	15046	15056	15046
Number of clusters	3536	3526	3536	3526	3536	3526

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. This specification excludes all observations with a Cook's Distance statistic above .025 (by column).

Table SI-33: Impact of IED deployment on voter turnout during the first round of the 2014 election with and without potentially influential observations (Leverage Points)

Panel A: Impact of IED deployment on voting

	(1) 2SLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Ghani	(4) 2SLS Ghani	(5) 2SLS Abdullah	(6) 2SLS Abdullah
IED Deployment	-7434.7	-7518.4	-3951.4	-3989.9	-1299.0	-1350.7
	(2768.5)	(2803.3)	(1415.1)	(1431.8)	(1247.4)	(1259.3)
	[5056.7]	[5118.1]	[2593.0]	[2624.4]	[2474.2]	[2498.3]
Exclude Leverage Score ¿.25		Yes		Yes		Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	15056	14906	15056	14906	15056	14906
K-P F-stat (robust)	12.28	12.13	12.28	12.13	12.28	12.13
Number of clusters	3536	3421	3536	3421	3536	3421
K-P F-stat (cluster robust)	4.715	4.651	4.715	4.651	4.715	4.651
Weak IV robust p-value	0.0496	0.0492	0.0349	0.0350	0.584	0.573

Panel B: Reduced-form results

	(1) RF Total Votes	(2) RF Total Votes	(3) RF Ghani	(4) RF Ghani	(5) RF Abdullah	(6) RF Abdullah
Nighttime cloud cover	-9.227	-9.284	-4.904	-4.927	-1.612	-1.668
	(2.222)	(2.226)	(1.065)	(1.067)	(1.476)	(1.477)
	[4.633]	[4.646]	[2.375]	[2.384]	[2.972]	[2.978]
Number of obs.	15056	14906	15056	14906	15056	14906
Number of clusters	3536	3421	3536	3421	3536	3421

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.	(5) FS IED Deploy.	(6) FS IED Deploy.
Nighttime cloud cover	0.00124	0.00123	0.00124	0.00123	0.00124	0.00123
	(0.000354)	(0.000355)	(0.000354)	(0.000355)	(0.000354)	(0.000355)
	[0.000572]	[0.000573]	[0.000572]	[0.000573]	[0.000572]	[0.000573]
Number of obs.	15056	14906	15056	14906	15056	14906
Number of clusters	3536	3421	3536	3421	3536	3421

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. This specification excludes all observations with a leverage point score above .25 (by column).

Table SI-34: Impact of IED deployment on overall voter turnout during the first round of the 2014 election accounting for additional weather covariates

	(1) 2SLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Total Votes	(4) 2SLS Total Votes
IED Deployment	-7434.7	-4299.2	-4425.0	-6769.0
	(2768.5)	(1976.1)	(2029.9)	(2403.2)
	[5056.7]	[3811.5]	[3909.0]	[4577.9]
District FE	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes
Snow depth		Yes	Yes	Yes
Preelection temperature, 95% and above (=1)			Yes	
Preelection temperature, cont.				Yes
Preelection daytime cloud cover				Yes
Number of obs.	15056	15056	15056	15056
K-P F-stat (robust)	12.28	13.91	13.49	13.08
Number of clusters	3536	3536	3536	3536
K-P F-stat (cluster robust)	4.715	5.168	4.987	4.603
Weak IV robust p-value	0.0496	0.199	0.194	0.0511

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. Additional controls for snow depth, temperature shocks, and a continuous measure of temperature are noted. A daytime cloud cover measure is used to partially address potential concerns about multicollinearity.

Table SI-35: Impact of IED deployment on voter turnout in favor of Ghani during the first round of the 2014 election accounting for additional weather covariates

	(1) 2SLS Ghani	(2) 2SLS Ghani	(3) 2SLS Ghani	(4) 2SLS Ghani
IED Deployment	-3951.4	-3149.5	-3221.5	-798.5
	(1415.1)	(1158.3)	(1192.1)	(836.0)
	[2593.0]	[2214.8]	[2275.4]	[1863.6]
District FE	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes
Snow depth		Yes	Yes	Yes
Preelection temperature, 95% and above (=1)			Yes	
Preelection temperature, cont.				Yes
Preelection daytime cloud cover				Yes
Number of obs.	15056	15056	15056	15056
K-P F-stat (robust)	12.28	13.91	13.49	13.08
Number of clusters	3536	3536	3536	3536
K-P F-stat (cluster robust)	4.715	5.168	4.987	4.603
Weak IV robust p-value	0.0349	0.0713	0.0701	0.656

Notes: The outcome of interest is ballots cast in favor of Ghani at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. Additional controls for snow depth, temperature shocks, and a continuous measure of temperature are noted. A daytime cloud cover measure is used to partially address potential concerns about multicollinearity.

Table SI-36: Impact of IED deployment on voter turnout in favor of Abdullah during the first round of the 2014 election accounting for additional weather covariates

	(1) 2SLS Abdullah	(2) 2SLS Abdullah	(3) 2SLS Abdullah	(4) 2SLS Abdullah
IED Deployment	-1299.0	-641.4	-660.3	-4275.4
	(1247.4)	(1090.8)	(1112.2)	(1485.8)
	[2474.2]	[2193.1]	[2235.6]	[2689.5]
District FE	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month
Rainfall	Yes	Yes	Yes	Yes
Snow depth		Yes	Yes	Yes
Preelection temperature, 95% and above (=1)			Yes	
Preelection temperature, cont.				Yes
Preelection daytime cloud cover				Yes
Number of obs.	15056	15056	15056	15056
K-P F-stat (robust)	12.28	13.91	13.49	13.08
Number of clusters	3536	3536	3536	3536
K-P F-stat (cluster robust)	4.715	5.168	4.987	4.603
Weak IV robust p-value	0.584	0.766	0.763	0.0309

Notes: The outcome of interest is ballots cast in favor of Abdullah at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round. Additional controls for snow depth, temperature shocks, and a continuous measure of temperature are noted. A daytime cloud cover measure is used to partially address potential concerns about multicollinearity.

Table SI-37: Impact of IED deployment on overall voter turnout during the first round of the 2014 election using an alternative instrumental variable specification

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Total Votes	(4) 2SLS Ghani	(5) 2SLS Abdullah
IED Deployment	80.78	-11297.4	-12079.0	-6039.3	-4702.4
	(67.45)	(3305.2)	(3469.9)	(1758.9)	(1523.7)
	[75.23]	[6220.3]	[6495.8]	[3355.7]	[2991.3]
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Alt. IV: Δ cloud cover		Yes	Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		13.96	14.22	14.22	14.22
Number of clusters	3536	3536	3536	3536	3536
K-P F-stat (cluster robust)		4.342	4.445	4.445	4.445
Weak IV robust p-value		0.000890	0.000502	0.00157	0.0235

Panel B: Reduced-form results

	(1) RF Total Votes	(2) RF Total Votes	(3) RF Ghani	(4) RF Abdullah
Δ cloud cover	-35.77	-37.83	-18.91	-14.73
	(4.543)	(4.541)	(2.514)	(2.819)
	[10.17]	[10.20]	[6.068]	[6.381]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Δ cloud cover	0.00317	0.00313	0.00313	0.00313
	(0.000847)	(0.000830)	(0.000830)	(0.000830)
	[0.00152]	[0.00149]	[0.00149]	[0.00149]
Number of obs.	15056	15056	15056	15056
Number of clusters	3536	3536	3536	3536

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the change in average density of nighttime cloud cover during March 2014 relative six months prior. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by polling center catchment areas are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-38: Impact of IED deployment on voter turnout during the first round of the 2014 election, with district level clustering

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes	(2) 2SLS Total Votes	(3) 2SLS Total Votes	(4) 2SLS Ghani	(5) 2SLS Abdullah
IED Deployment	80.78	-5078.5	-7434.7	-3951.4	-1299.0
	(67.45)	(2265.4)	(2768.5)	(1415.1)	(1247.4)
	[78.15]	[6012.3]	[7032.3]	[3065.3]	[4330.8]
District clusters	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		12.07	12.28	12.28	12.28
Number of clusters	367	367	367	367	367
K-P F-stat (cluster robust)		3.634	3.889	3.889	3.889
Weak IV robust p-value		0.349	0.219	0.104	0.763

Panel B: Reduced-form results

	(1) RF Total Votes	(2) RF Total Votes	(3) RF Ghani	(4) RF Abdullah
Nighttime cloud cover	-6.254	-9.227	-4.904	-1.612
	(2.159)	(2.222)	(1.065)	(1.476)
	[6.488]	[7.235]	[3.051]	[5.343]
Number of obs.	15056	15056	15056	15056
Number of clusters	367	367	367	367

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Nighttime cloud cover	0.00123	0.00124	0.00124	0.00124
	(0.000354)	(0.000354)	(0.000354)	(0.000354)
	[0.000646]	[0.000629]	[0.000629]	[0.000629]
Number of obs.	15056	15056	15056	15056
Number of clusters	367	367	367	367

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by administrative district are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-39: Impact of IED deployment on voter turnout during the first round of the 2014 election after eliminating potentially fraudulent votes, with district level clustering

Panel A: Impact of IED deployment on voting

	(1) OLS Total Votes (Clean)	(2) 2SLS Total Votes (Clean)	(3) 2SLS Total Votes (Clean)	(4) 2SLS Ghani (Clean)	(5) 2SLS Abdullah (Clean)
IED Deployment	118.9	-8009.6	-9729.4	-4741.0	-1431.7
	(60.34)	(2855.9)	(3278.1)	(1568.7)	(1168.7)
	[70.33]	[6492.9]	[7400.0]	[3110.4]	[4151.9]
Clean ballots only	Yes	Yes	Yes	Yes	Yes
District clusters	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Violence trend	6 Month	6 Month	6 Month	6 Month	6 Month
Rainfall			Yes	Yes	Yes
Number of obs.	15056	15056	15056	15056	15056
K-P F-stat (robust)		12.07	12.28	12.28	12.28
Number of clusters	367	367	367	367	367
K-P F-stat (cluster robust)		3.634	3.889	3.889	3.889
Weak IV robust p-value		0.113	0.0871	0.0261	0.727

Panel B: Reduced-form results

	(1) RF Total Votes (Clean)	(2) RF Total Votes (Clean)	(3) RF Ghani (Clean)	(4) RF Abdullah (Clean)
Nighttime cloud cover	-9.863	-12.07	-5.884	-1.777
	(2.066)	(2.128)	(0.977)	(1.350)
	[6.071]	[6.867]	[2.686]	[5.112]
Number of obs.	15056	15056	15056	15056
Number of clusters	367	367	367	367

Panel C: First-stage results

	(1) FS IED Deploy.	(2) FS IED Deploy.	(3) FS IED Deploy.	(4) FS IED Deploy.
Nighttime cloud cover	0.00123	0.00124	0.00124	0.00124
	(0.000354)	(0.000354)	(0.000354)	(0.000354)
	[0.000646]	[0.000629]	[0.000629]	[0.000629]
Number of obs.	15056	15056	15056	15056
Number of clusters	367	367	367	367

Notes: The outcome of interest is ballots cast at connected polling stations, winsorized at the 99th percentile, during the first round of the 2014 election, after eliminating potentially fraudulent votes. The endogenous regressor is a binary indicator of IED deployment along the road from March 1 until April 4, 2014. The instrument is the average density of nighttime cloud cover during March 2014. All models include district fixed effects. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by administrative district are reported in brackets. All models control for high traffic routes, the number of connected voting centers, connected village population size as reported in the settlement data, and road length. All models also include a six month pretrend in IED deployment. Models incorporating rainfall include the base and square term. The main sample includes roads that connected potential voters to polling stations where ballots were recorded during the first round.

Table SI-40: Summary statistics at road level

Variable	Mean	Std. Dev.	Min.	Max.	N
All votes cast at downstream stations (winsorized)	1480.854	1096	0	6107	15056
Ghani votes cast at downstream stations (winsorized)	520.39	631.883	0	3459	15056
Abdullah votes cast at downstream stations (winsorized)	634.648	705.815	0	3682	15056
All votes per connected center	1269.691	831.489	0	6846	15056
Ghani votes per connected center	456.165	547.26	0	4414	15056
Abdullah votes per connected center	543.028	571.201	0	4609	15056
Voter turnout (% of available ballots)	0.612	0.249	0	1.163	15056
Ghani turnout (% of available ballots)	0.208	0.206	0	0.978	15056
Abdullah turnout (% of available ballots)	0.269	0.238	0	0.972	15056
All non-audited votes cast at downstream stations (winsorized)	1316.256	989.411	0	5371	15056
Non-audited Ghani votes cast at downstream stations (winsorized)	477.468	576.996	0	2915	15056
Non-audited Abdullah votes cast at downstream stations (winsorized)	562.827	630.184	0	3349	15056
Audited ballot boxes (%)	0.072	0.196	0	1	15056
Preelection IED deployment (=1)	0.023	0.15	0	1	15056
Preelection IED deployment trend (6 month)	0.128	0.545	0	6	15056
Preelection IED deployment, 5KM buffer (=1)	0.304	0.46	0	1	15056
Preelection IED deployment, 10KM buffer (=1)	0.452	0.498	0	1	15056
Preelection nighttime cloud cover (%)	55.941	10.619	29.033	93.400	15056
Preelection rainfall (MM)	0.942	0.525	0.16	3.55	15056
Δ nighttime cloud cover	22.249	5.124	11.783	39.933	15056
Snow depth (M)	0.035	0.093	0	0.985	15056
Preelection temperature, 95% and above (=1)	0.034	0.182	0	1	15056
Preelection temperature (Kelvin)	282.786	6.732	263.058	298.614	15056
Preelection daytime cloud cover (%)	60.031	13.154	25.032	95.624	15056
Road length (degrees)	0.044	0.097	0	1.896	15056
High traffic road (=1)	0.065	0.247	0	1	15056
Connected voting centers	1.234	0.883	1	25	15056
Population (sum, 10K), connected villages	0.268	2.299	0	259.657	15056

G Counterfactual Analysis: Survey Results

In the eight months between the first round election and the political compromise that split power between Ghani as president and Abdullah as chief executive, the security situation across the country worsened (Forugh, 2017; Ahmadzai, 2016), and sectarian divisions intensified (ICG, 2017). The Taliban took advantage of the uncertainty surrounding the election results, launching more offensives and killing more Afghan soldiers and police over the first six months of the Afghan year than any other prior similar period (Nordland, 2014). The economy suffered markedly: the country experienced rising unemployment, declining investment, and negative net income, as tax and customs collection costs were greater than incoming revenue (Nordland, 2014). The government was forced to ask for hundreds of millions of dollars to cover these shortfalls and to avoid not paying teachers and other public workers.

G.1 Tipping the election

In the main text we estimate that the Taliban would have needed between 340 and 670 additional IEDs to have tipped the election in favor of Abdullah in the first round (or between 660-975 for a more decisive win). But would additional investments of violence of this scale have been plausible for the Taliban? During the preelection period, we observe 984 IED deployment events (extensive margin) of which 396 were along election day routes. Had the Taliban reallocated their IED deployments along roads used by voters, it is possible the second round would not have occurred, and the insurgents would have achieved a powerful symbolic victory. If, on the other hand, the Taliban had more strategically deployed their bombs *and* also increased the overall deployment of IEDs by roughly half, it is plausible that Abdullah would have been able to more credibly claim a clear victory with 55% of ballots cast (5% above the necessary threshold for victory).

G.2 Increasing voter turnout

In the main text we estimate how much violence reduction would have been necessary to boost turnout in favor of Ghani. We estimate that a reduction in early morning attacks of 163 events would have been needed for Ghani to have accrued a 5% increase in turnout, and that a complete elimination of early morning direct fire events would have led to a 12.3% increase in turnout for Ghani.

But how might the Afghan government have achieved such reductions? It is unclear how many individual army units (*Toli*, made up of about 100 soldiers) are needed to thwart a single insurgent attack. We consider two possibilities: one unit per event and five units per event. Sources suggest that roughly 195,000 Afghan troops were deployed to secure the 2014 election (Tolo, 2014). However, the number of trained and potentially deployed soldiers was closer to 350,000 (NATO, 2014). If we assume that a single unit can prevent only one early morning attack, between 16,300 and 40,100 additional soldiers would have been needed to observe the 5% and 12.3% average increases in turnout for Ghani discussed above. At most, this would have required a 26% increase in deployment of contracted—but not active—troops. If, on the other hand, deterring a single attack requires five *Toli* (or about 500 soldiers), the gains in turnout discussed above would have required a complete deployment of all troops on election day. Based on feedback received from military personnel, we expect the unit-to-event ratio is much closer to 1 than 5, but anticipate that a deployment of this scale might be logistically complex. At first glance, this might appear to be

a difficult and expensive undertaking to achieve such a result. However, given the economic and political stakes of the eventual election impasse, the Afghan government and counterinsurgency efforts could have easily justified the returns from increased deployment.

G.3 Eroding government legitimacy

The theory of competitive governance on which we draw in this article posits that governments and insurgents try to minimize damage they inflict on the civilian population even as they attack each other, in part because this affects civilian perceptions of the armed actor's legitimacy. Here, we directly explore this theoretical implication.

We use proprietary survey data recently shared with the authors by NATO to investigate the link between violence, security provision, and electoral legitimacy. This survey data, part of the Afghanistan Nationwide Quarterly Assessment Report (ANQAR), is collected quarterly and includes responses from thousands of respondents during each wave (see SI-A). We focus our attention on the third survey round of 2014, which was implemented after the second round of voting occurred. This is the only survey round during which ANQAR measured the level of legitimacy that citizens associate with the election process. This provides us with a unique opportunity to link respondents' self-reported exposure to insurgent violence and insecurity to how satisfied they are with the democratic process.[45] The richness of the individual-level data allow us to account for an extensive set of demographic, economic, and political factors that might otherwise influence the subject's perceived legitimacy of the election. These data also enable us to account for the subject's reported voting behavior.

In the main text we estimate that increasing ANSF patrol frequency to at least once per month (from none) reduces subjects' deep frustration with the election process by roughly 5%. How plausible is it that Afghan forces could deploy enough troops to patrol villages at least monthly? To assess this question, we note that nearly 76% of all respondents reported troop patrols as at least monthly. If we assume that all active troops were deployed to these villages, a roughly 24% increase in deployed force levels could achieve monthly patrols in the remaining villages.[46] This would require a deployed force of roughly 257,000, which is well below NATO's estimates of the overall size of the Afghan security forces. If these soldiers were not already part of the Afghan security forces, annual deployment of this scale would require an additional 1.03 billion USD. Even if the remaining villages required twice as many troops to achieve monthly patrols, the total force levels in 2014 would have been able to accommodate this increase in required security labor with no additional investment in soldier salaries.

[45] To account for non-responses, we construct an indicator variable for each substantive response question that takes the value 1 if there is no response and 0 otherwise.

[46] This relies on the assumption that all villages are equally accessible.

Table SI-41: Impact of exposure to insurgent activity on citizens' satisfaction with the 2014 election process using only baseline covariates

	(1)	(2)	(3)	(4)	(5)	(6)
	Very unsatisfied with election process (=1)					
Village security, bad (= 1)	0.145					
	(0.0137)					
	[0.0223]					
Village security, got worse in 6M (= 1)		0.0796				
		(0.0105)				
		[0.0148]				
Directly affected by ins. violence (= 1)			0.0457			
			(0.0106)			
			[0.0165]			
Ring road unsafe in area (= 1)				0.167		
				(0.0132)		
				[0.0159]		
Local roads unsafe (= 1)					0.160	
					(0.0136)	
					[0.0212]	
Taliban stronger in 6M (= 1)						0.107
						(0.00992)
						[0.0138]
N	11020	11020	11020	11020	11020	11020
Clusters	293	293	293	293	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The measure of insurgent operations varies by column and reported in the left panel of the table. All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. A non-response indicator is added for each variable to ensure sample consistency. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-42: Impact of exposure to insurgent activity on citizens' satisfaction with the 2014 election process using baseline and economic covariates

	(1)	(2)	(3)	(4)	(5)	(6)
	Very unsatisfied with election process (=1)					
Village security, bad (= 1)	0.112					
	(0.0137)					
	[0.0202]					
Village security, got worse in 6M (= 1)		0.0445				
		(0.0106)				
		[0.0134]				
Directly affected by ins. violence (= 1)			0.0349			
			(0.0105)			
			[0.0149]			
Ring road unsafe in area (= 1)				0.142		
				(0.0132)		
				[0.0154]		
Local roads unsafe (= 1)					0.133	
					(0.0137)	
					[0.0204]	
Taliban stronger in 6M (= 1)						0.0854
						(0.00996)
						[0.0130]
N	11020	11020	11020	11020	11020	11020
Clusters	293	293	293	293	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The measure of insurgent operations varies by column and reported in the left panel of the table. All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. Additional controls include exposure to corruption, food scarcity, family economic status, and improper police behavior. A non-response indicator is added for each variable to ensure sample consistency. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-43: Impact of exposure to insurgent activity on citizens' satisfaction with the 2014 election process using only baseline covariates while excluding main instrument non-responses

	(1)	(2)	(3)	(4)	(5)	(6)
	Very unsatisfied with election process (=1)					
Village security, bad (= 1)	0.145					
	(0.0137)					
	[0.0223]					
Village security, got worse in 6M (= 1)		0.0800				
		(0.0105)				
		[0.0149]				
Directly affected by ins. violence (= 1)			0.0481			
			(0.0106)			
			[0.0168]			
Ring road unsafe in area (= 1)				0.169		
				(0.0134)		
				[0.0160]		
Local roads unsafe (= 1)					0.164	
					(0.0137)	
					[0.0215]	
Taliban stronger in 6M (= 1)						0.109
						(0.00994)
						[0.0140]
N	10984	10939	10559	9187	10254	10770
Clusters	293	293	292	287	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The measure of insurgent operations varies by column and reported in the left panel of the table. All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. For the main instruments, non-responses are dropped. A non-response indicator is added for each other variable to ensure sample consistency. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-44: Impact of exposure to insurgent activity on citizens' satisfaction with the 2014 election process using baseline and economic covariates while excluding main instrument non-responses

	(1)	(2)	(3)	(4)	(5)	(6)
	Very unsatisfied with election process (=1)					
Village security, bad (= 1)	0.111					
	(0.0137)					
	[0.0202]					
Village security, got worse in 6M (= 1)		0.0448				
		(0.0106)				
		[0.0135]				
Directly affected by ins. violence (= 1)			0.0369			
			(0.0105)			
			[0.0151]			
Ring road unsafe in area (= 1)				0.144		
				(0.0134)		
				[0.0157]		
Local roads unsafe (= 1)					0.138	
					(0.0138)	
					[0.0208]	
Taliban stronger in 6M (= 1)						0.0871
						(0.00999)
						[0.0132]
N	10984	10939	10559	9187	10254	10770
Clusters	293	293	292	287	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The measure of insurgent operations varies by column and reported in the left panel of the table. All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. Additional controls include exposure to corruption, food scarcity, family economic status, and improper police behavior. For the main instruments, non-responses are dropped. A non-response indicator is added for each other variable to ensure sample consistency. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-45: Impact of exposure to insurgent activity on citizens' satisfaction with the 2014 election process using all covariates while excluding main instrument non-responses

	(1)	(2)	(3)	(4)	(5)	(6)
	Very unsatisfied with election process (=1)					
Village security, bad (= 1)	0.0832					
	(0.0142)					
	[0.0209]					
Village security, got worse in 6M (= 1)		0.0287				
		(0.0108)				
		[0.0127]				
Directly affected by ins. violence (= 1)			0.0324			
			(0.0104)			
			[0.0144]			
Ring road unsafe in area (= 1)				0.122		
				(0.0137)		
				[0.0153]		
Local roads unsafe (= 1)					0.110	
					(0.0143)	
					[0.0191]	
Taliban stronger in 6M (= 1)						0.0768
						(0.0101)
						[0.0127]
N	10984	10939	10559	9187	10254	10770
Clusters	293	293	292	287	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The measure of insurgent operations varies by column and reported in the left panel of the table. All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. Additional controls include exposure to corruption, food scarcity, family economic status, and improper police behavior. Supplemental controls include perceived capacity of the Afghan military, rate of troop patrols, district police effectiveness, local police effectiveness, and the frequency of local police patrols. For the main instruments, non-responses are dropped. A non-response indicator is added for each other variable to ensure sample consistency. Models without these controls are reported in Supporting Information. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-46: Impact of exposure to Afghan patrol activity on citizens' satisfaction with the 2014 election process while excluding main instrument non-responses

	(1)	(2)	(3)
	Very unsatisfied with election process (=1)		
Afghan security force patrol in village, at least once a month (= 1)	-0.0763	-0.0769	-0.0521
	(0.0138)	(0.0136)	(0.0137)
	[0.0199]	[0.0202]	[0.0187]
N	10959	10959	10959
Clusters	293	293	293

Notes: The outcome of interest is whether the respondent reported they were 'very unsatisfied' with the election process. Responses were recorded in the quarterly wave immediately following the second round of the 2014 election. The source of this data is the Afghanistan Nationwide Quarterly Assessment Report (ANQAR). The intervention of interest is the self-reported frequency of Afghan troop patrols in the respondent's mantaqa (local area or village). All models include district fixed effects, and account for the respondent's voting history (first and second round of the 2014 election), age, socio-economic status, employment status, gender, and ethnicity. Survey weights are used during estimation. Additional controls include exposure to corruption, food scarcity, family economic status, and improper police behavior. Supplemental controls include perceived village insecurity, direct exposure to insurgency violence, road safety, and Taliban strength. For the main instruments, non-responses are dropped. A non-response indicator is added for each other variable to ensure sample consistency. Heteroskedasticity robust standard errors are reported in parentheses; standard errors clustered by district are reported in brackets.

Table SI-47: Summary statistics at the individual level (among respondents)

Variable	Mean	Std. Dev.	Min.	Max.	N
Election process, very unsatisfied (= 1)	0.318	0.466	0	1	11021
Village security, bad (= 1)	0.154	0.361	0	1	11085
Village security, gotten worse in 6M (= 1)	0.301	0.459	0	1	11041
Directly affected by ins. violence (= 1)	0.317	0.465	0	1	10657
Ring road unsafe in area (= 1)	0.209	0.406	0	1	9267
Local roads unsafe (= 1)	0.168	0.374	0	1	10341
Taliban stronger in 6M (= 1)	0.372	0.483	0	1	10860
Voted in first round (= 1)	0.717	0.45	0	1	11100
Voted in second round (= 1)	0.672	0.47	0	1	11096
Corruption affects daily life (= 1)	0.812	0.39	0	1	11019
Food scarcity in past 12m (= 1)	0.4	0.49	0	1	10958
Family income, gotten worse in 12m (= 1)	0.38	0.485	0	1	11088
Observed improper policing (= 1)	0.237	0.425	0	1	11002
Afghan Army needs foreign backing (= 1)	0.192	0.394	0	1	10940
Afghan Army patrols, rare (= 1)	0.237	0.425	0	1	11060
Police chief, performing poorly (= 1)	0.459	0.498	0	1	10923
District police, gotten worse in 6M (= 1)	0.121	0.326	0	1	11044
Local police, incapable of providing security (= 1)	0.277	0.448	0	1	11054
Local police patrols, rare (= 1)	0.093	0.29	0	1	11071

H Heterogeneity within the Taliban

Here, we address potential concerns about varying tactics across Taliban subunits. There is qualitative evidence of subnational heterogeneity in Taliban strategies and preferences, specifically across shuras. Most notably, the Haqqani network (of the Miran Shah Shura) is documented to be particularly vocal about, and likely to use, violence as a strategy to disrupt elections (Giustozzi and Mangal, 2014). Whether other shuras behave similarly is less clear. While we are unable to adequately map all of the shuras' territorial areas of control and operations during 2014, we have quality military reports on the location of the Haqqani network prior to the election (DOD, 2014). Haqqani areas were particularly violent, but most disrupted districts were outside of Haqqani control (83%), suggesting that other Taliban shuras similarly used violence. We also investigate Haqqani operations in our road-level analysis. Again, while road networks located within mapped Haqqani-held areas are more likely to be targeted with a preelection IED, the majority of roads targeted lie outside the Haqqani area of control (77%).