A Online Appendix

A.1 Additional Descriptive Statistics

Our dataset has the structure of a panel with information for all counties in the United States over several election years. It is a balanced panel. Table A.1 presents descriptive statistics pertaining to the variables used in our models. The unit of analysis is the county-year, which means that for all county-years in the dataset, 0.4% had a shooting and 0.2% had a fatal shooting. The average number of total votes in a county was approximately 35,000 with an average population of 88,200 people. Table A.2 depicts partisan vote share statistics broken down by election.

Table A.1: Sources Used to Compile Dataset and Basic Descriptive Statistics

Variable	Observations (County - Years)	Mean	Std. Dev.	Min	Max	Data Sources
Shooting	31047.00	0.00	0.06	0.00	1.00	Compiled from Wikipedia entries that were validated using local news outlets, the Gun Violence Archive, and the Mass Shooting Tracker.
Fatal Shooting	31047.00	0.00	0.05	0.00	1.00	
Total Number of Votes	31047.00	34900.53	102701.80	64.00	3318248.00	1980 - 2012: Data from Dave Leip's county-level presidential election results, accessed through the Harvard Dataverse. 2016: Data from county-level election results compiled and made publicly available by Townhall.com, accessible via https://github.com/tonmcg/US_County_Level_Election_Results_08-20
Percent Votes Republican	31047.00	55.38	14.20	4.12	95.86	
Percent Votes Democrats	31047.00	39.47	12.88	3.14	93.39	
Turnout	31042.00	54.02	11.84	1.08	300.00	
Population Total	31042.00	88181.00	287474.60	55.00	10100000.00	Data from the U.S. Census Bureau (U.S. Intercensal County Population Data)
Percent Population Non White	31042.00	12.15	15.61	0.00	97.08	
Percent Population Age to Vote	31042.00	78.39	9.23	50.12	96.20	
Change Unemployment Rate	18627.00	-0.39	2.32	-19.60	9.70	Data from the U.S. Department of Labor

Note: The table contains descriptive statistics (mean, standard deviation, and minimum and maximum values) pertaining to the main independent, dependent and control variables, as well as information about the sources from which they were derived.

To build the dataset, we began with a list compiled by Wikipedia of school shootings in

Table A.2: Average County-Level Vote Share by Party Over Time (Unweighted)

Year	Democratic Vote Share (%)	Republican Vote Share (%)
1980	40.79	53.60
1984	36.88	62.42
1988	43.12	55.92
1992	39.71	39.78
1996	43.94	44.72
2000	39.83	56.95
2004	38.72	60.28
2008	41.52	56.82
2012	38.46	59.70
2016	31.71	63.61

Note: The table shows the average county-level vote share for each party over time.

the US between 1990 and 2018. We then refined this list by locating newspaper articles for each of the shootings, coding several details of each attack, and keeping only those that meet our definition of rampage shootings and that took place in K to 12 institutions, colleges, or universities. Because of our interest in rampage school shootings, we excluded gang-related shootings, suicides, shootings that occurred as part of a fight, and incidents in which both the victim and perpetrator of the shooting were adults and had a connection beyond the school. There are other sources that also compile lists of mass and school shootings. However, these sources only have data for recent years (2013 and on), include cases of targeted violence, or lack enough details about each event. For example, the *Washington Post* recently published a list of shootings, but it includes cases where the shooting was classified as targeted, contains fewer details about each attack, and offers no information regarding sources and coding rules. We corroborated our data on 2013-2016 with the Gun Violence Archive and the Mass Shooting Tracker.

Covariate Balance Tests: We included additional demographic characteristics as control variables at the county-level because they could be correlated with party vote share. These include the total population, the percentage of the population of voting age, and the percentage of the population categorized as non-white. They are considered balanced so long as the variance ratio (the ratio of the variance of the propensity score in the treated group and the variance of the propensity score in the control group) lies between 0.5 and 2. This is the case for all of our control variables, as Table A.3 shows.

Table A.3: Covariate Balance Tests

	Treated			Control			Balance	
	Mean	Var	Skewness	Mean	Var	Skewness	Std-diff	Var-ratio
Population Total	269238.3	2.39e+11	6.2	186212.8	8.81e+11	9.56	.11	.27
% Population Non White	61553.44	2.20e+10	6.03	45024.59	7.21e+10	9.44	.08	.30
% Population Voting Age	194769.5	1.22e+11	6.08	135972.3	4.74e+11	9.58	.11	.26
Change Unemployment Rate	-.16	4.17	-.81	-.38	6.04	-.42	.10	.69

Note: The table presents the mean, variance, and skewness of covariates for both the treatment and the control group. The standardized difference as well as the variance ratio do not indicate important differences between the two groups.

A.2 Estimated Models and Figures with Turnout

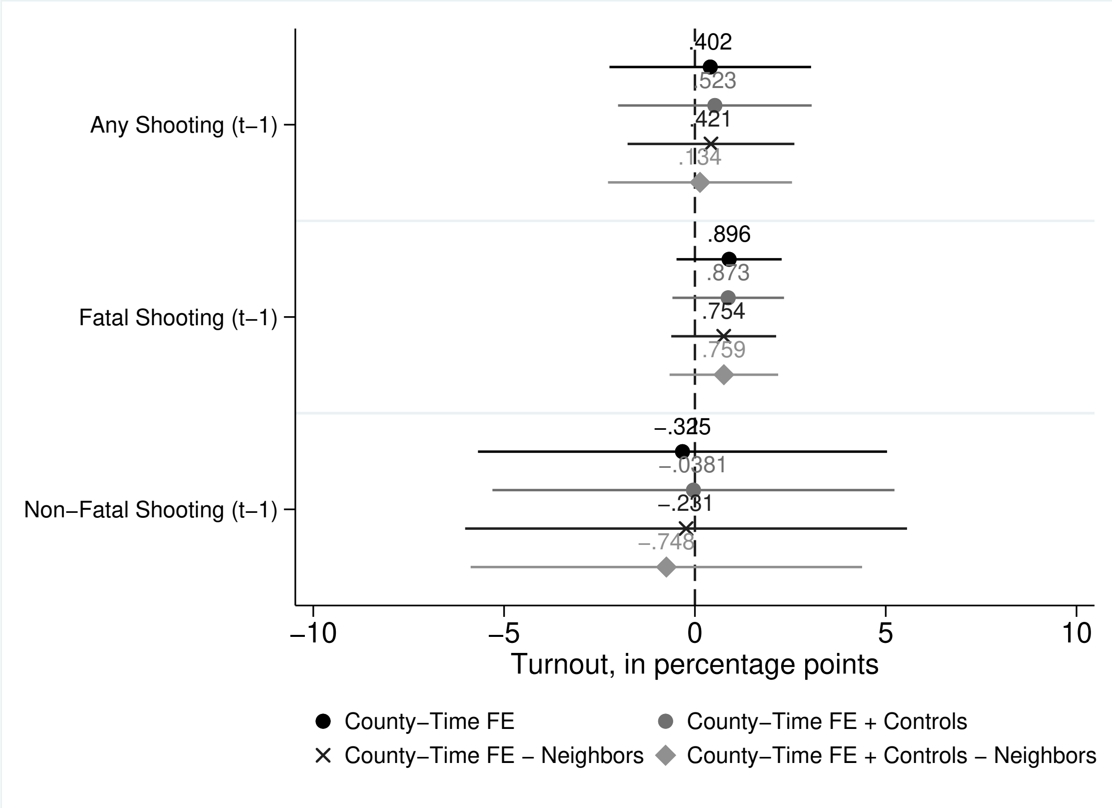
Table A.4: Main Estimated Effects of School Shootings on Turnout and Democratic Vote Share

	Vote Share of Democratic Candidate				Turnout			
	Full Sample		Restricted Sample		Full Sample		Restricted Sample	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Any Shooting (t-1)	4.513***	2.364***	3.633***	2.316***	-0.521	-0.710	-0.402	-0.400
	(8.07e-07)	(0.000956)	(4.46e-06)	(0.00123)	(0.381)	(0.218)	(0.456)	(0.474)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	18,627	18,627	4,588	2,753	18,627	18,627	4,585	2,753
R-squared	0.392	0.454	0.157	0.335	0.288	0.300	0.744	0.355
Number of counties	3,111	3,111	459	459	3,111	3,111	459	459
	Full Sample		Restricted Sample		Full Sample		Restricted Sample	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fatal Shooting (t-1)	4.404***	1.782**	2.787***	2.061**	-0.678	-0.918	-0.578	-0.488
	(5.48e-05)	(0.0237)	(0.00169)	(0.0121)	(0.236)	(0.133)	(0.276)	(0.386)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	18,627	18,627	4,588	2,753	18,627	18,627	4,585	2,753
R-squared	0.391	0.453	0.153	0.333	0.288	0.300	0.744	0.355
Number of counties	3,111	3,111	459	459	3,111	3,111	459	459
	Full Sample		Restricted Sample		Full Sample		Restricted Sample	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Non-Fatal Shooting (t-1)	4.217***	2.930***	4.517***	2.382**	-0.239	-0.327	0.0916	-0.222
	(0.000838)	(0.00325)	(0.00158)	(0.0181)	(0.812)	(0.756)	(0.933)	(0.821)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	18,627	18,627	4,587	2,753	18,627	18,627	4,584	2,753
R-squared	0.391	0.453	0.154	0.333	0.288	0.300	0.744	0.355
Number of counties	3,111	3,111	459	459	3,111	3,111	459	459

*** p<0.01, ** p<0.05, * p<0.1

Note: p-values in parentheses. The full sample includes all observations. The restricted sample includes only neighboring counties as the control group. "Fatal shootings" include those resulting in at least one death, "non-fatal shootings" include those that did not cause any deaths, and "any shooting" includes both types of events.

Figure A.1: Average Effect of a School Shooting on County-Level Turnout in Swing States



Note: The figure depicts the estimated average effects of school shootings in swing states, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. All model specifications use county and election fixed effects. Within states classified as swing states, models are estimated using both the full and restricted (which includes only neighboring counties as the control group) samples, and with and without controls. "Fatal shootings" include those resulting in at least one death, "non-fatal shootings" include those that did not cause any deaths, and "any shooting" includes both types of events.

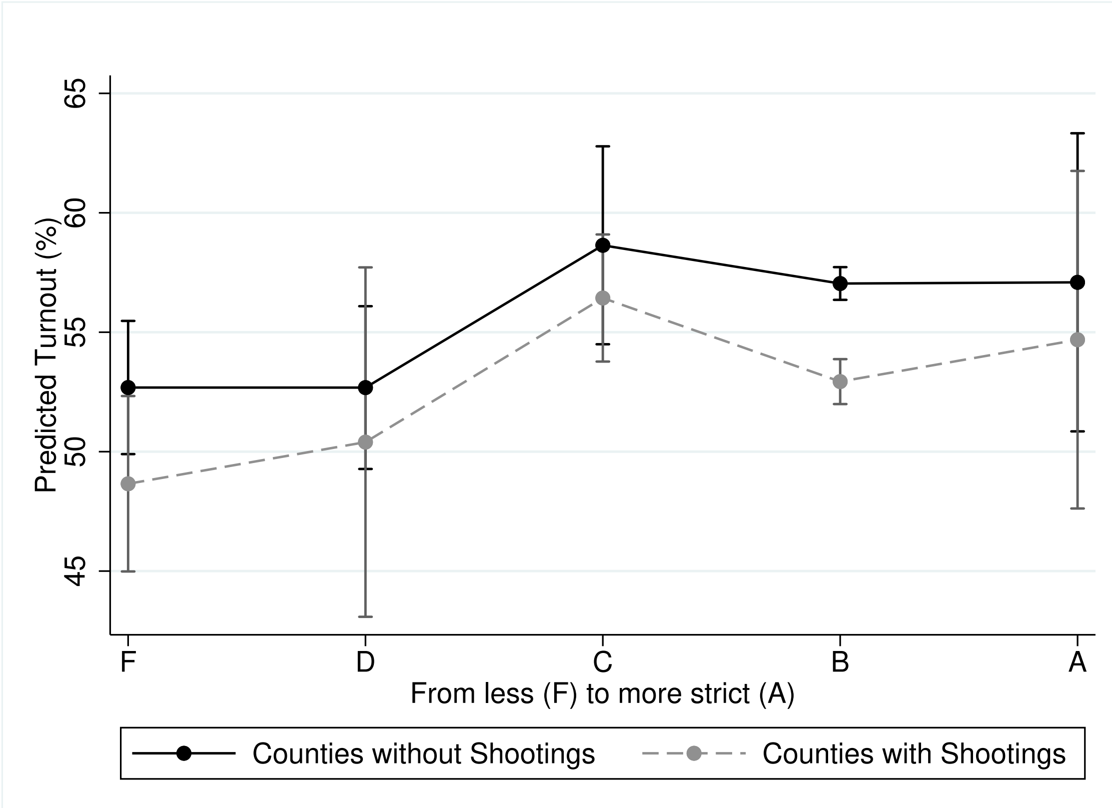
A.3 Additional Tests and Robustness Checks

In addition to what appears in the main text, we also conducted several other robustness checks and analyses. We briefly explain them here.

1. State fixed effects: We re-estimated our models using state fixed effects rather than county fixed effects. See Figure A.5, which shows that our results are consistent under this alternative specification.

2. Decade fixed effects: We re-estimated our models using decade rather than year as the

Figure A.2: Effects of School Shootings on County-Level Turnout by State Gun Law Strictness



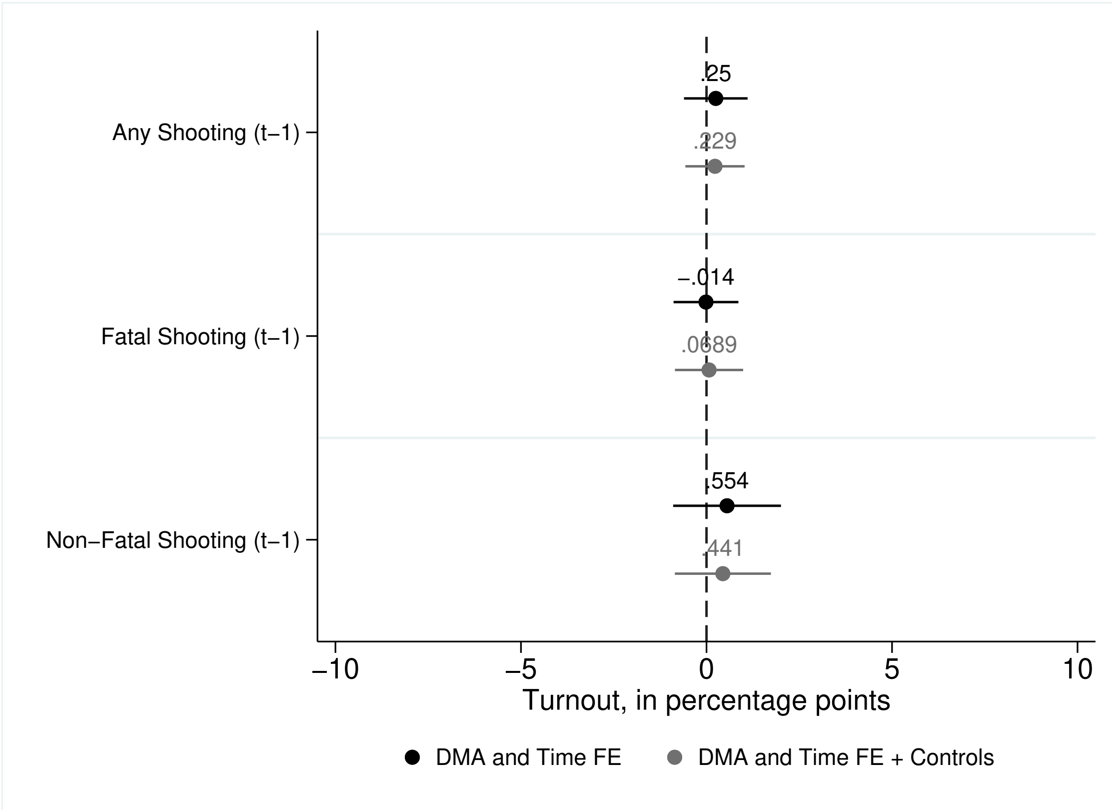
Note: The figure depicts difference-in-differences estimates by state gun law strictness of Turnout (expressed in terms of county-level percentage) based on whether a county did or did not experience a school shooting (either fatal or non-fatal) in the time since the previous presidential election. Gun law strictness, based on the Giffords Law Center's scorecard, ranges from F (less strict) to A (more strict). The figure includes 95% confidence intervals.

basis of time fixed effects. Figures A.7 and A.6 shows the estimated coefficients, and demonstrate that our results remain stable under this alternative specification.

3. Home state advantage as an additional control: Figures A.9 and A.8 shows the results for our primary models when including variables capturing the home states of presidential and vice-presidential candidates from each party as additional controls. Our results are stable to the inclusion of this additional set of controls.

4. Mass shootings: Figure A.10 shows the effect of a mass school shooting on Democratic vote share. Mass shootings are defined as those with more than two fatal victims. The

Figure A.3: Average Effect of a School Shooting on DMA-Level Turnout



Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, on the DMA-level across different model specifications. The figure includes 95% confidence intervals. All model specifications use DMA and election fixed effects, and are estimated with and without controls.

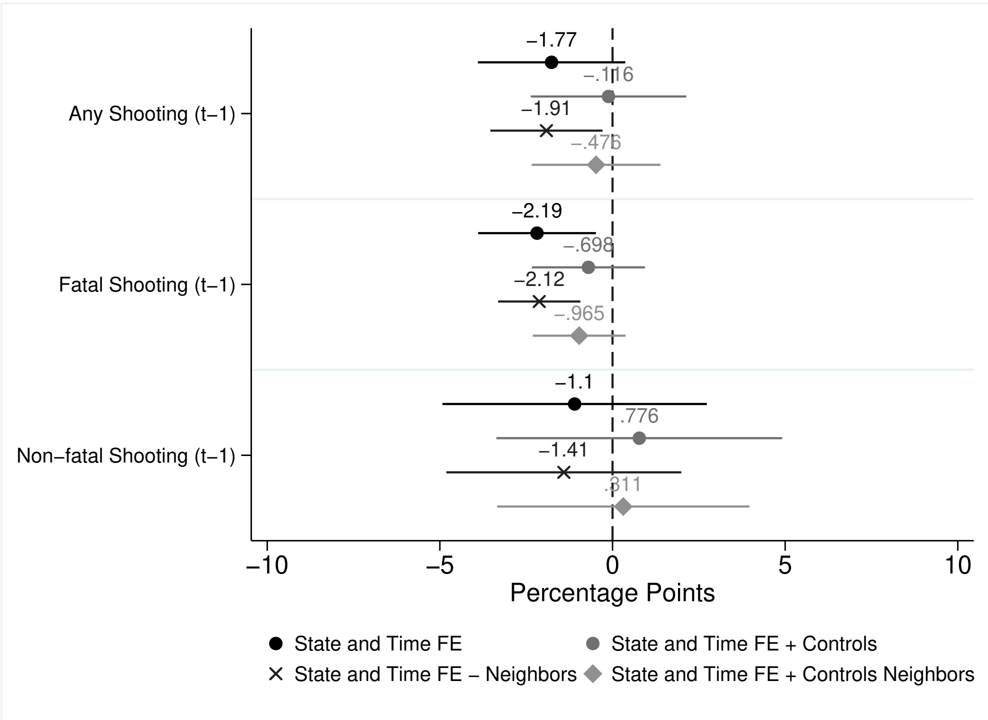
smaller number of observations does not allow us to estimate the full set of models. Instead, we estimate a simple version of our models; somewhat surprisingly, we find that the effects of mass shootings are smaller than those of other shootings, although the substantive difference is not large.

5. Distance to closest shooting: To account for potential spillover effects, this analysis tests whether the distance (measured in standard deviations) to the nearest shooting is related to our dependent variables. This analysis provides evidence for the presence of spillover effects, which—as discussed in the text—bias our coefficients toward zero, thus increasing confidence in our findings. See Figure A.11.

6. Competitive elections: We re-estimated our models with a "competitive elections" variable, coded 1 for elections in which the difference in party vote share was less than 15 percentage points, which we interacted with the shootings variable. Table A.5 shows that the coefficient of the interaction is not statistically different from 0, suggesting that the effect of shootings is not different in counties with competitive elections.

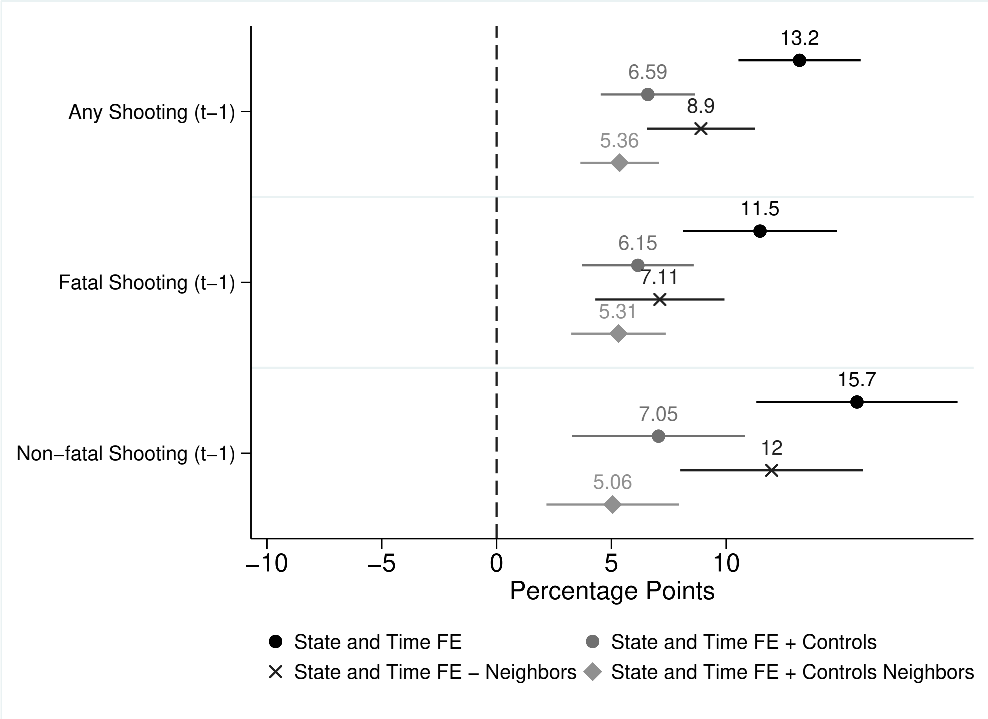
7. Temporal proximity: We conducted additional analyses to test whether the temporal proximity of shootings to elections impacts their effects on electoral outcomes. Figure A.12 shows the results when we use continuous number of days between the shooting and the next election as an independent variable; it does not statistically significant impact vote share or turnout. In addition, we also estimated a model in which we included an interaction term of our shootings variable with a dummy capturing whether the shooting was before or after the midterm election; the non-significance of the interaction term indicates that the effects of pre- and post-midterm shootings are not statistically different from each other. Table A.6 depicts these results.

Figure A.4: Average Effect of a School Shooting on County-Level Turnout (Estimated with State Fixed Effects)



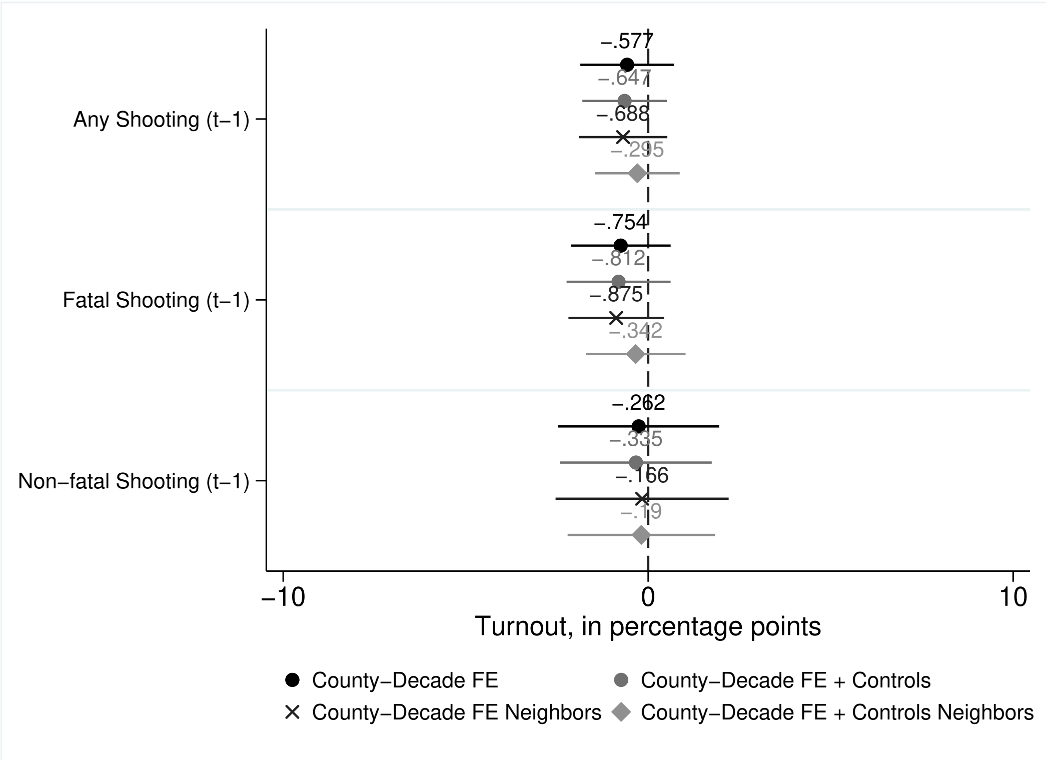
Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses election and state (rather than county) fixed effects.

Figure A.5: Average Effect of a School Shooting on County-Level Democratic Vote Share (Estimated with State Fixed Effects)



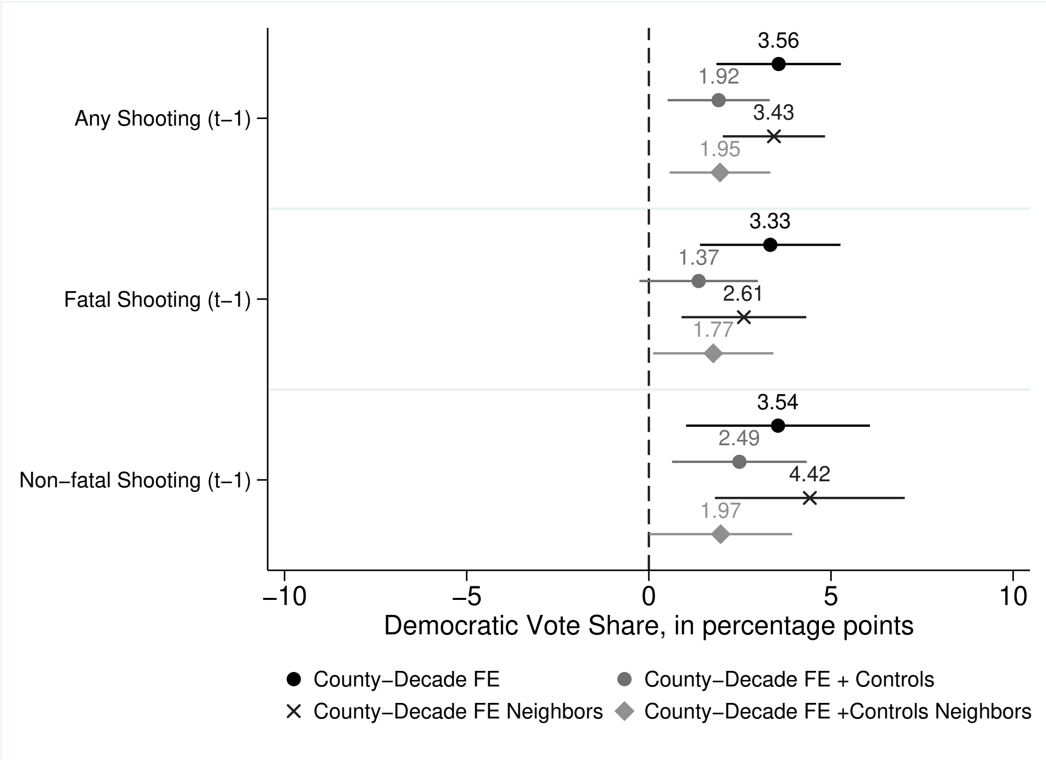
Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses election and state (rather than county) fixed effects.

Figure A.6: Average Effect of a School Shooting on County-Level Turnout (Estimated with Decade Time Effects)



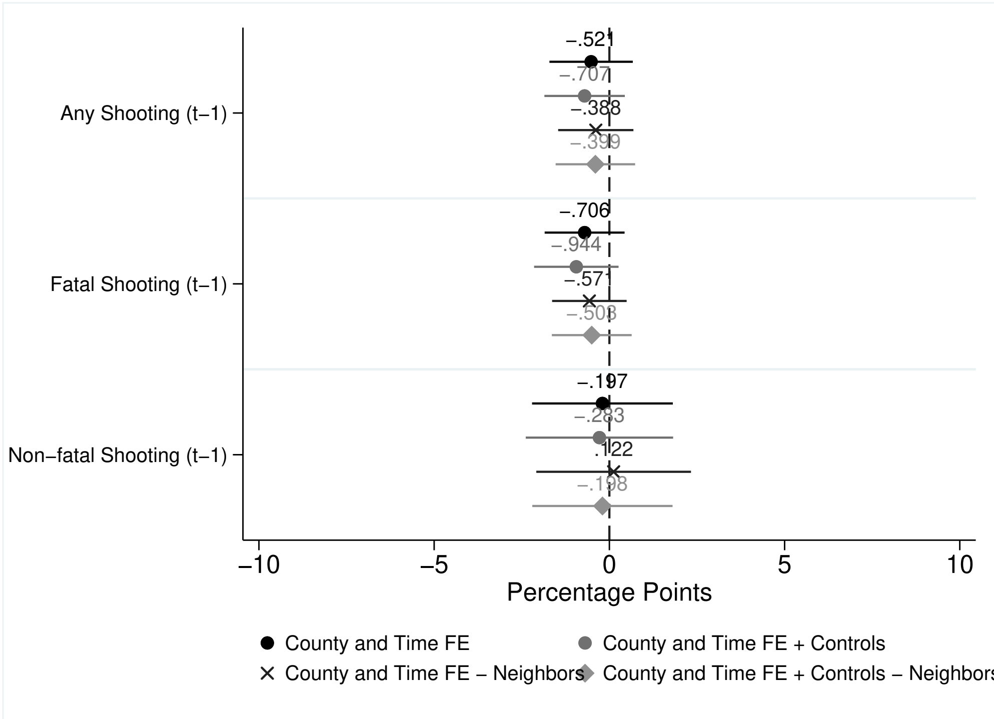
Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses decade (rather than election) and county fixed effects.

Figure A.7: Average Effect of a School Shooting on County-Level Democratic Vote Share (Estimated with Decade Time Effects)



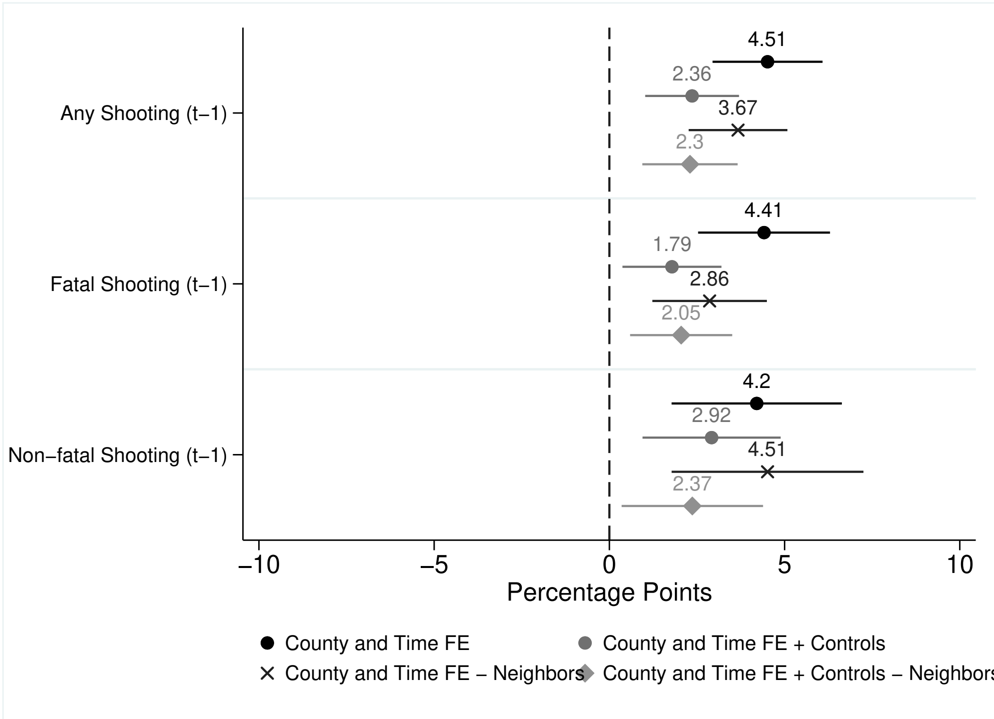
Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses decade (rather than election) and county fixed effects.

Figure A.8: Average Effect of a School Shooting on County-Level Turnout When Controlling for Home State Advantage



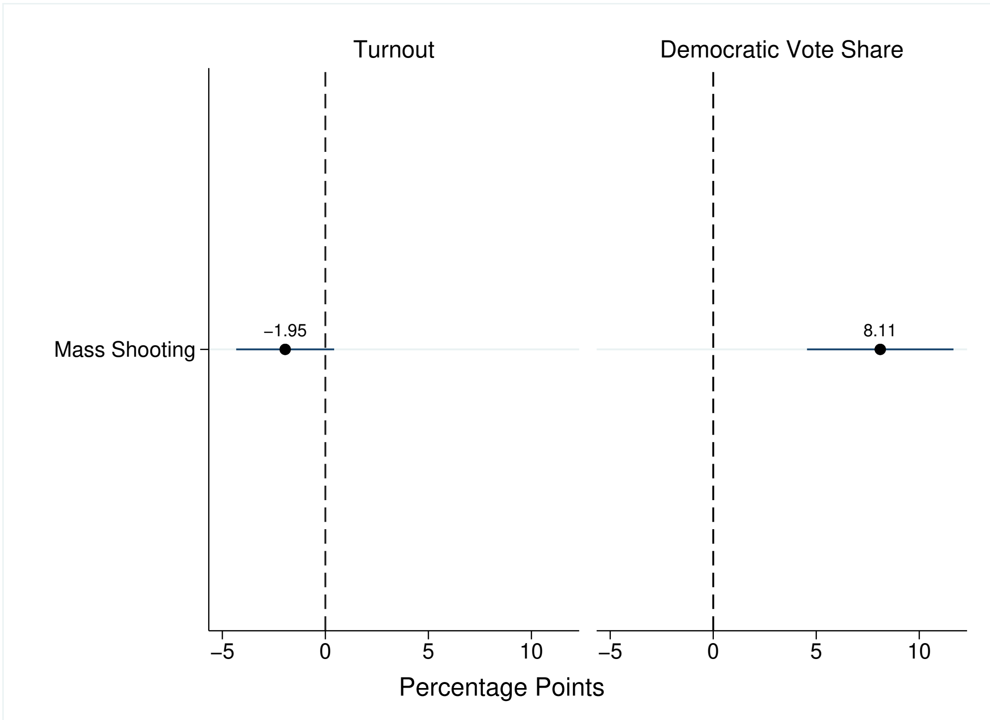
Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses election and county fixed effects, and includes a variable accounting for the home states of presidential and vice-presidential candidates.

Figure A.9: Average Effect of a School Shooting on County-Level Democratic Vote Share When Controlling for Home State Advantage



Note: The figure depicts the estimated average effects of school shootings, expressed in terms of percentage point shifts, across different model specifications. The figure includes 95% confidence intervals. This model specification uses election and county fixed effects, and includes a variable accounting for the home states of presidential and vice-presidential candidates.

Figure A.10: Average Effect of a *Mass* School Shooting on County-Level Turnout and Democratic Vote Share



Note: The figure depicts the estimated average effects of a mass shooting (i.e. those involving more than two fatalities), expressed in terms of percentage point shifts, on turnout and democratic vote share, and and includes the 95% confidence interval. The effect of a mass shooting on turnout is not significantly different from 0 at the 99% threshold.

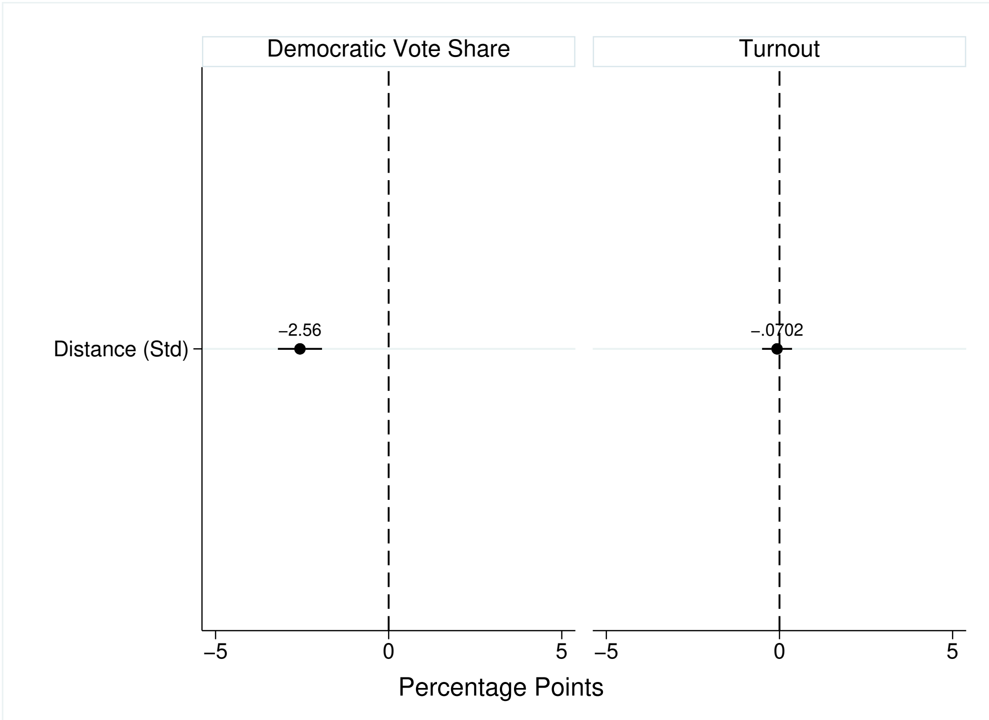
Table A.5: Conditional Treatment Effects of Competitive Elections and School Shooting on Turnout and Democratic Vote Share

	Vote Share of Democratic Candidate				Turnout			
	Full Sample		Restricted Control		Full Sample		Restricted Control	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Any Shooting (t-1)	5.339***	3.564***	3.581***	2.943***	-0.884	-1.007	-0.747	-0.918
	(1.09e-06)	(6.49e-05)	(0.000325)	(0.000348)	(0.274)	(0.222)	(0.307)	(0.240)
Shooting *(Competitive Elections)	-0.269	-2.291	-1.113	-1.431	1.632	1.328	1.120	1.536
	(0.864)	(0.138)	(0.485)	(0.213)	(0.130)	(0.266)	(0.269)	(0.119)
Observations	21,720	21,720	4,128	3,211	21,720	21,720	4,128	3,211
R-squared	0.323	0.399	0.193	0.327	0.323	0.399	0.193	0.327
Number of counties	3,104	3,104	459	459	3,104	3,104	459	459
Fatal Shooting (t-1)	5.046***	2.753**	2.610**	2.548**	-1.143	-1.354	-0.881	-1.080
	(0.000696)	(0.0287)	(0.0433)	(0.0283)	(0.156)	(0.112)	(0.253)	(0.149)
Fatal Shooting * (Competitive Elections)	-0.675	-1.633	-0.709	-0.946	1.414	1.115	1.092	1.336
	(0.742)	(0.378)	(0.722)	(0.526)	(0.202)	(0.375)	(0.313)	(0.184)
Observations	21,720	21,720	4,128	3,211	21,720	21,720	4,126	3,211
R-squared	0.322	0.398	0.189	0.325	0.278	0.306	0.722	0.341
Number of counties	3,104	3,104	459	459	3,104	3,104	459	459
Non-Fatal Shooting (t-1)	5.410***	4.356***	4.986***	3.211***	-0.512	-0.522	-0.483	-0.656
	(0.00216)	(9.12e-05)	(0.00137)	(0.00309)	(0.724)	(0.719)	(0.736)	(0.647)
Fatal Shooting * (Competitive Elections)	0.438	-3.019	-2.971	-2.236	2.216	2.044	1.529	1.975
	(0.834)	(0.154)	(0.226)	(0.165)	(0.233)	(0.297)	(0.409)	(0.275)
Observations	21,720	21,720	4,128	3,211	21,720	21,720	4,126	3,211
R-squared	0.322	0.398	0.191	0.325	0.278	0.306	0.722	0.341
Number of counties	3,104	3,104	459	459	3,104	3,104	459	459
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

*** p<0.01, ** p<0.05, * p<0.1

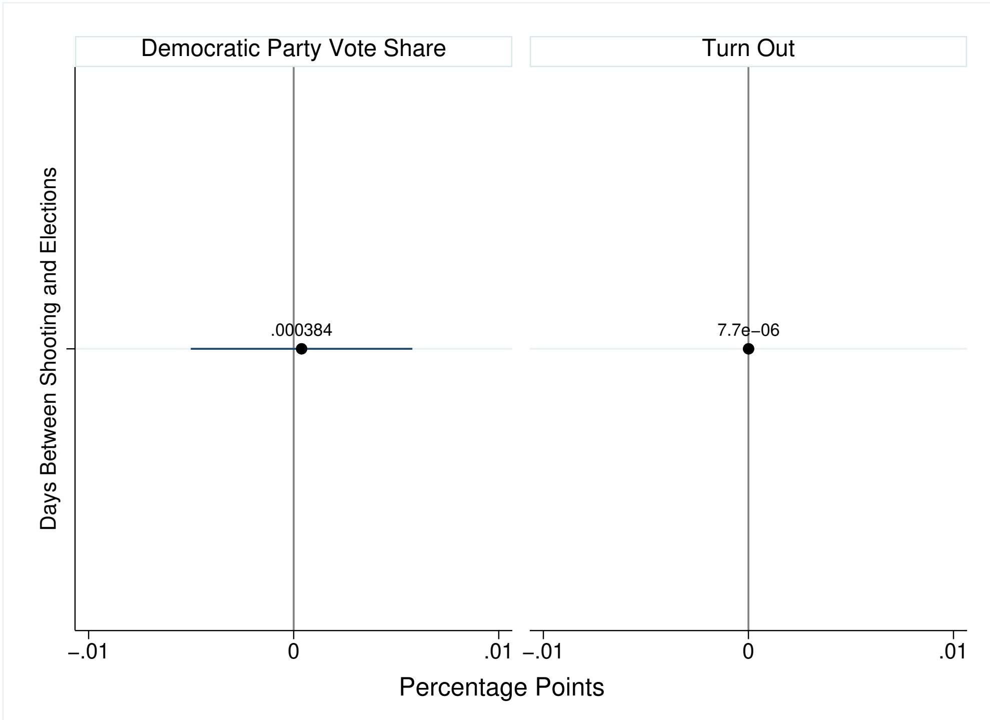
Note: p-values in parentheses

Figure A.11: Effect of Distance to Nearest Shooting on County-Level Democratic Vote Share and Turnout



Note: The figure depicts the effect of a one standard deviation change in distance to the nearest shooting on Democratic vote share and turnout, measured in percentage points with 95% confidence intervals. The models include county and election year fixed effects and no control variables.

Figure A.12: Impact of Temporal Proximity to Election Day on the Effects of Shootings



Note: The figure depicts the impact of temporal proximity to an election on the effects of shootings, measured as the number of days between a shooting and the following election day on Democratic vote share and turnout and expressed in percentage points with 95% confidence intervals.

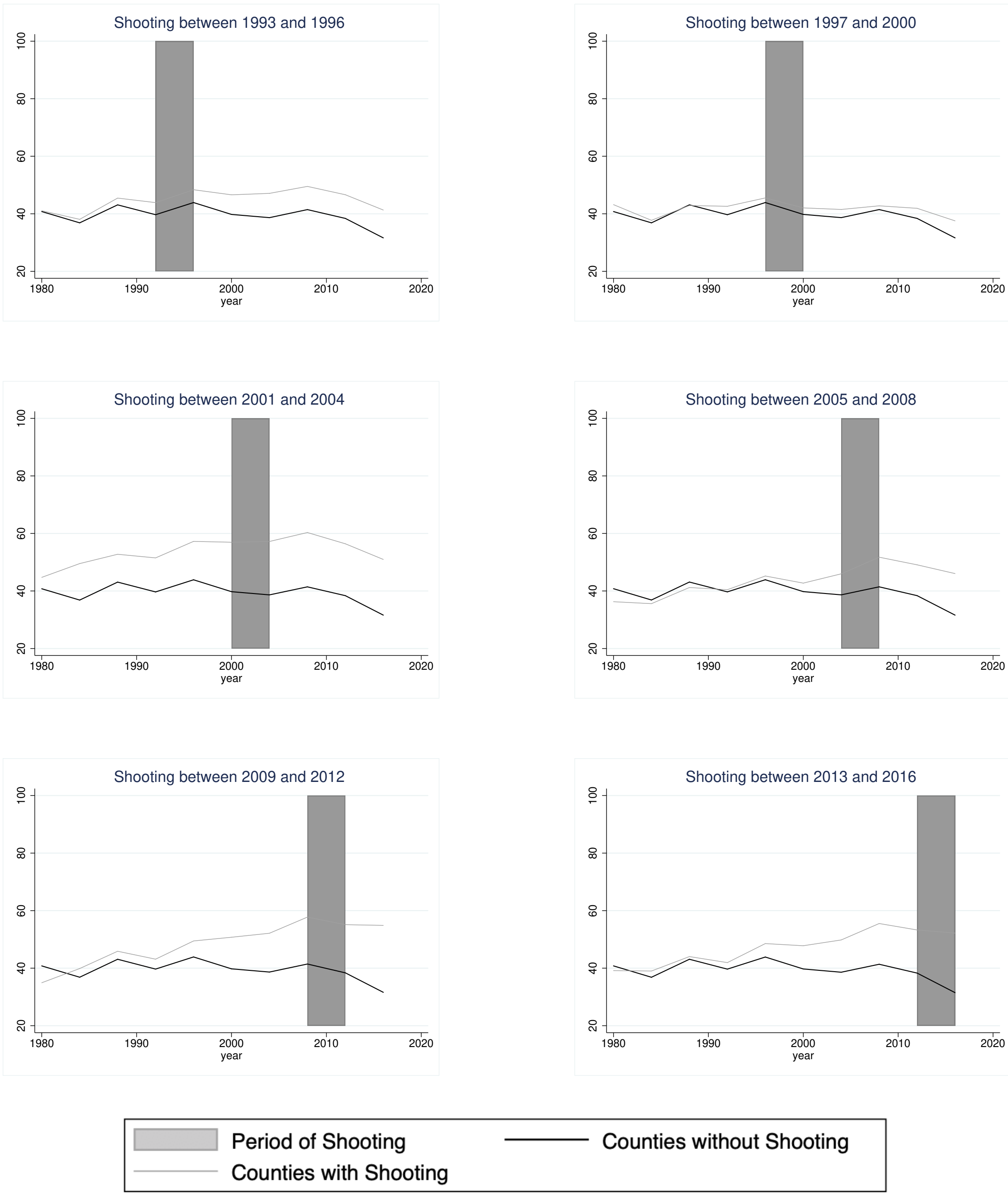
Table A.6: Conditional Treatment Effects of a School Shooting Before and After Midterm Elections

	Effect on Turnout		Effect on Democratic Vote Share	
	(1)	(2)	(3)	(4)
Any Shooting (t-1)	-0.855	-0.983	5.445***	3.189***
	(0.328)	(0.220)	(2.27e-06)	(0.000397)
Shooting *(After Midterm)	0.35	-0.04	-1.986	-1.765
	(0.654)	(0.959)	(0.227)	(0.127)
Observations	21,730	21,730	18,627	18,627
R-squared	0.277	0.305	0.392	0.454
Number of counties	3,111	3,111	3,111	3,111
Time Effects	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

*** p<0.01, ** p<0.05, * p<0.1

Note: p-values in parentheses

A.4 Additional Tests of Conditional Parallel Trends Assumption



A.5 Examples of Shootings Excluded from Dataset

The following are examples of excluded shootings that did not meet our inclusion criteria:

1. December 5, 2014 Claremore, Oklahoma: 38-year-old Thomas Floyd Fees, a former Tulsa police officer, fired two gunshots on the campus of Rogers State University during an attempt to enter a university building, before committing suicide. He had previously been arrested the day before for entering a female student's dormitory room with observable intent to commit a sexual assault.

2. March 6, 2012 Jacksonville, Florida: At the Episcopal School of Jacksonville, fired Spanish teacher Shane Schumerth, 28, shot and killed head of school Dale Regan before committing suicide. Schumerth, who had been struggling with depression, was fired for incompetence around 8:30 a.m. on March 6, 2012 and escorted off school grounds. He returned to the campus at 1:15 p.m. with an AK-47 assault rifle concealed in a guitar case. He entered Regan's office and shot her multiple times before turning the gun on himself.

3. September 26, 2012 Stillwater, Oklahoma: Cade Poulos, 13, fatally shot himself in the head shortly before classes started at Stillwater Junior High School.

4. August 16, 2010 Memphis, Tennessee: Two Hamilton High School students were shot and wounded in the parking lot of the school. The attack was believed to be gang-related.

A.6 Heterogeneous Treatment Effects Across Time and Counties

A very recent literature in econometrics has documented potential issues with two-way fixed effects models like the ones we used to produce the results depicted in Figures 3 and 4. This work demonstrates that such models produce weighted average treatment effects, with weights that can be negative; when treatment effects are heterogeneous across time and/or place, these negative weights are problematic because they can lead to biased estimates (Goodman-Bacon, 2021; de Chaisemartin and D'Haultfœuille, 2020).

To examine whether this issue impacts our findings, we used the *twowayfeweights* Stata package (de Chaisemartin and D'Haultfœuille, 2020) to compute the weights assigned in our models. We find no evidence of negative weights (i.e., the sum of negative weights equals zero, which indicates that no such weights are present). This gives us confidence in the robustness of our findings, as it indicates that our models should not suffer from the recently identified problems with two-way fixed effects models discussed above.

Although the lack of negative weights indicates that our modeling strategy is sound, we nonetheless also used the *did_multiplegt* Stata package de Chaisemartin and D'Haultfœuille (2020). This estimator (DIDM) is "valid even if the treatment effect is heterogeneous over time or across groups. " (de Chaisemartin and D'Haultfœuille, 2020, p. 2965)

As Table A.7 shows, the estimated effects of school shootings produced by this alternative modeling strategy are close to our main findings. In the models that do not include controls, the estimated coefficients are substantively similar to our initial results, and they are statistically significant. When including controls, the direction and magnitude of our coefficients remain steady, but the standard errors become much larger. We believe that this is most likely a result of the intensive data demands and conservative nature of this modeling approach.

Together, the confirmatory and null results of the additional tests described in this section suggest that our findings are robust.

Table A.7: Treatment Effects of a School Shooting on Turnout and Democratic Vote Share (Robust to Heterogeneous Treatment Effects)

	Estimate	SE	[LB CI - UB CI]	N	Switchers
1a. Effect of Shooting on Turnout (without controls)	-.02	0.01	[-.04 , -0.00]	15482	100
1b. Effect of Shooting on Turnout (with controls)	-.01	0.07	[-.14 , 0.12]	15482	100
2a. Effect of Shooting on Democratic Vote Share (without controls)	2.82	0.51	[1.82 , 3.82]	15482	100
2b. Effect of Shooting on Democratic Vote Share (with controls)	2.31	3.95	[-5.44 , 10.06]	15482	100

Note: The table presents alternative treatment effects estimated using a procedure that is robust to the potential for heterogeneous treatment effects. It uses *did_multiplegt* Stata package (de Chaisemartin and D'Haultfœuille, 2020)