

**Online Appendix for “The cost of exposing cheating: International election monitoring, fraud, and post-election violence in Africa.”** Forthcoming in *Journal of Peace Research*.

***Appendix 1: Robustness Tests, Part I***

Table A1 presents results for five robustness tests on matched and unmatched samples. The first two models in table 4 include alternative variable operationalizations of the pre-election violence measure. First, rather than dichotomizing the occurrence of pre-election violence, I count the actual number of pre-election violent events in ACLED. Results are very similar to the ones presented in earlier models. The coefficient for the product term is positive and significant at the 95% confidence level ( $z=2.03$ ), supporting the main hypothesis. The number of pre-election violent events is also positive and significant, indicating that pre-election violence increases the number of post-election violent events. Second, I include a measure for post-election violence in previous elections rather than violence preceding a current election. It may be that some countries have a history of violence after elections. I created a variable for violence following previous elections to pre-process the data for matching analysis, and use the same variable in model 2 in table 4. The positive and significant coefficient ( $z=2.33$ ) confirms the hypothesized relationship between election fraud, international observers, and post-election violence. Interestingly, violence in previous elections is not a significant predictor of post-election violence.

The third and fourth model evaluate whether the inclusion of certain cases influences results. The third model in table 4 excludes elections in North African countries. As is common among Africa specialists, Lindberg (2006) includes only elections in Sub-Saharan Africa, and I therefore exclude North African cases to evaluate the robustness of results. Results confirm the hypothesis, showing that the combined presence of fraud and international observers increases

the risk of post-election violence in Sub-Saharan elections. The fourth model in table 4 excludes post-election violence following Kenya's disputed 2007 elections to ensure that this observation does not unduly influence the results. With 481 conflict events, the 2007 elections account for the largest number of conflict events in the data. The product term in this model is again positive and significant (albeit only at the 90% confidence level), thus confirming that results hold even when this potentially influential observation is excluded. Results for control variables are similar to the ones presented in table 2.

Model 5 in table A1 presents results for an alternative operationalization of the election observer variable. Kelley (2009) points out that the credibility of some observer organizations, such as the Commonwealth, EISA, or the EU has been challenged. To ensure that the inclusion of specific observer organizations does not influence the findings, I create a measure that counts the number of high-quality observer organizations present for an election. If the results show that fraudulent elections observed by larger numbers of high-quality observer organizations are more likely to experience post-election violence, it is less likely that findings are driven by the inclusion of a particular organization whose credibility has been questioned. The variable ranges empirically from 0 to 5 with a mean of 0.25 and I interact it with the fraud variable to analyze the combined effect of the number of observer organizations and fraud on violence. Model 5 in table A1 shows that the interaction effect is positive and significant, meaning that fraudulent elections observed by a large number of organizations are more likely to experience post-election violence.

Models 6-10 in table A1 present results for the same robustness tests on the matched sample. In all but one of the models, the interaction is positive and significant. The only model in which the interaction is positive but fails to achieve conventional levels of significance ( $z=1.33$ )

is the model containing the number of violent pre-election events (rather than a dichotomous measure of pre-election violence). It is possible that including the number of violent events reduces the statistical significance of other variables because it is similar to including a lagged dependent variable on the right-hand side, which can soak much of the variance explained by other covariates. In addition, there may be a confounding relationship between the pre-election violence measure and the presence of observers. It may be that elections in which observers are present are more likely to experience pre-election violence because domestic actors strategically shift manipulation such as violent intimidation to less supervised parts of the election process. In such cases, it is recommended to leave out independent variables that have an effect on other covariates in the model (Ray, 2003). Removing the pre-election violence measure results in a positive and significant coefficient for the interaction.

**Table A1: Robustness Tests, Part I**

<i>Variables</i>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 7</b>	<b>Model 8</b>	<b>Model 9</b>	<b>Model 10</b>
<i>Election Fraud</i>	-.228 (.269)	.307 (.340)	.307 (.423)	.252 (.346)	.524 (.340)	-.179 (.378)	.354 (.429)	.228 (.458)	.037 (.390)	.235 (.393)
<i>International Observers</i>	-.200 (.261)	-.009 (.331)	.006 (.324)	-.055 (.315)	-	-.429 (.359)	-.419 (.350)	-.448 (.366)	-.494 (.347)	-
<i>Fraud*Observers</i>	.941* (.464)	1.473* (.631)	1.445* (.646)	1.045† (.608)	-	.754 (.565)	1.740* (.681)	1.992** (.701)	1.459† (.750)	-
<i>Pre-Election Violence</i>	-	-	1.494* (.650)	1.459* (.606)	1.539* (.632)	-	-	.922 (.858)	1.029 (.855)	1.011 (.898)
<i>Number of Conflict Events</i>	.015** (.004)	-	-	-	-	.016** (.005)	-	-	-	-
<i>Previous Violent Election</i>	-	.155 (.285)	-	-	-	-	-.096 (.341)	-	-	-
<i>Number of Observers</i>	-	-	-	-	.002 (.106)	-	-	-	-	-.083** (.143)
<i>Fraud*Number of Observers</i>	-	-	-	-	.431† (.246)	-	-	-	-	.855 (.301)
<i>Democracy<sup>t-1</sup></i>	-.032 (.024)	-.041 (.031)	-.0104 (.032)	-.0313 (.029)	-.019 (.031)	-.012 (.032)	-.003 (.038)	.042 (.039)	-.017 (.039)	-.002 (.037)
<i>Stability, logged<sup>t-1</sup></i>	-.186 (.121)	-.128 (.151)	.0455 (.169)	-.084 (.148)	-.048 (.161)	-.139 (.170)	-.128 (.194)	-.002 (.177)	-.038 (.193)	.046 (.225)
<i>Government Effectiveness<sup>t-1</sup></i>	.003 (.007)	.007 (.008)	.008 (.009)	.006 (.008)	.006 (.009)	.007 (.011)	.0105 (.012)	.0129 (.012)	.008 (.011)	.007 (.011)
<i>GDP per capita, logged<sup>t-1</sup></i>	.011 (.122)	-.242 (.152)	-.338† (.174)	-.290* (.139)	-.321* (.150)	-.172 (.223)	-.546* (.226)	-.874** (.238)	-.587 (.221)	-.633 (.212)
<i>Ethnic Fractionalization</i>	.404 (.473)	.765 (.567)	.422 (.800)	.528 (.549)	.559 (.586)	.277 (.553)	.468 (.638)	1.123 (1.009)	.188 (.638)	.288** (.655)
<i>Population Size, logged<sup>t-1</sup></i>	.542** (.099)	.640** (.112)	.536** (.135)	.562** (.097)	.547** (.105)	.618** (.133)	.730** (.122)	.450** (.158)	.577** (.130)	.565** (.141)
<i>Constant</i>	-3.637** (1.260)	-2.951 (1.525)	-2.738 (1.874)	-2.99* (1.382)	-2.815† (1.495)	-3.023 (1.441)	-1.341 (1.709)	1.755 (2.247)	-.436** (1.689)	-.298 (1.795)
<i>N</i>	189	186	169	188	189	136	136	123	135	136

\*\*  $p < 0.01$  \*  $p < 0.05$  †  $p < 0.1$

## ***Appendix 2: Robustness Tests, Part II***

A final set of robustness tests removes control variables one by one to ensure that results are not influenced by the inclusion of control variables. Model 1 includes all control variables and is identical to model 2 in table 2. Control variables are removed one by one in models 2-8 in table A2 to evaluate the robustness of results. Removing control variables does not affect the positive and significant effect of the interaction on post-election violence. The coefficient for the interaction between serious fraud and the presence of international observers is statistically significant at the 95% confidence level in all eight models. Among control variables, the only change is that the GDP per capita variable attains statistical significance when population size is excluded from the model.

**Table A2: Robustness Tests, Part II**

<i>Variables</i>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 7</b>	<b>Model 8</b>
<i>Election Fraud</i>	.333 (.355)	.749* (.360)	.610 (.357)	.695 (.408)	.650 (.399)	.656 (.408)	.500 (.388)	.580 (.427)
<i>International Observers</i>	-.129 (.312)	.053 (.357)	.026 (.364)	-.107 (.361)	-.109 (.359)	-.046 (.361)	.144 (.359)	.258 (.388)
<i>Fraud*Observers</i>	1.403* (.598)	1.228* (.550)	1.344* (.556)	1.491* (.604)	1.496* (.595)	1.482* (.596)	1.484* (.613)	1.517* (.657)
<i>Pre-Election Violence</i>	1.539* (.598)	2.494** (.494)	2.635** (.491)	2.745** (.455)	2.780** (.456)	2.831** (.449)	2.663** (.440)	-
<i>Democracy<sup>t-1</sup></i>	-.010 (.030)	.022 (.035)	.0302 (.036)	.026 (.038)	.035 (.033)	.046 (.030)	-	-
<i>Stability, logged<sup>t-1</sup></i>	-.071 (.145)	-.026 (.161)	-.035 (.163)	-.227 (.175)	-.164 (.139)	-	-	-
<i>Government Effectiveness<sup>t-1</sup></i>	.004 (.008)	.0120 (.009)	.013 (.009)	.005 (.009)	-	-	-	-
<i>GDP per capita, logged<sup>t-1</sup></i>	-.242 (.143)	-.349* (.138)	-.386** (.134)	-	-	-	-	-
<i>Ethnic Fractionalization</i>	.648 (.551)	.729 (.499)	-	-	-	-	-	-
<i>Population Size, logged<sup>t-1</sup></i>	.564** (.098)	-	-	-	-	-	-	-
<i>Constant</i>	-3.458* (1.397)	1.265 (.987)	1.900* (.901)	-.296 (.586)	-.300 (.577)	-.666 (.479)	-.529 (.468)	1.870** (.234)
<i>N</i>	189	189	189	189	189	189		

\*\*  $p < 0.01$  \*  $p < 0.05$

### Appendix 3: Summary Statistics

**Table A3: Summary Statistics for Dependent and Independent Variables, 1997-2009**

<i>Variable</i>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Description</b>	<b>Source</b>
<i># of Conflict Events</i>	15.2	50.1	Number of post-election conflict events (3 months after election)	ACLED
<i>Presence of Credible Observer Mission</i>	.37	.48	=1 if credible international election observer mission present	Reports filed by organizations listed on p. 15
<i>Election Fraud</i>	.33	.47	=1 if serious fraud is indicated in U.S. State Department election assessment	U.S. State Department Human Rights reports
<i>Pre-Election Violence</i>	.81	.39	=1 if pre-election violence is present (6 months prior to election)	ACLED
<i>Democracy</i>	.02	5.04	Polity Score, -10 to +10	Polity IV data
<i>Stability, logged</i>	1.9	1.1	Years without change in regime authority	Polity IV data
<i>Government Effectiveness</i>	27.0	19.4	Government effectiveness percentile rank	World Bank Governance Indicators
<i>GDP per capita, logged</i>	7.1	1.02	GDP per capita, annual statistics	Penn World Tables
<i>Ethnic Fractionalization</i>	0.59	0.25	Ethnic fractionalization index	Roeder (2001)
<i>Population Size, logged</i>	8.94	1.45	Population size in thousands	Penn World Tables

Note: Means rather than medians are presented for dichotomous variables because means provide information on the proportion of cases in the respective categories.