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Article

Narrow Incumbent Victories and Post-Election Conflict: Evidence from the Philippines

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Abstract

Post-election violence is a common form of conflict, but its underlying mechanisms are not well understood. Using data from the 2007 Philippine mayoral elections, this paper provides evidence that post-election violence is particularly intense after narrow victories by incumbents. Using a density test, the study shows that incumbents were substantially more likely to win narrow victories than their challengers, a pattern consistent with electoral manipulation. There is no evidence that the increase in post-election violence is related to the incumbents' political platform or their performance in past elections. These results provide support for the notion that post-election violence is triggered by election fraud or by the failure of democratic ways of removing unpopular incumbents from office.

JEL classification: D72, D73, D74

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> The anti-communist propaganda is calculated to pave the way for cheating the progressive forces and their allies and cutting down their votes. The impending electoral fraud at their expense will only further discredit the ruling system and will further justify the people's determination to intensify the revolutionary armed struggle.
>
> – *Prof. Jose Maria Sison, Chief Political Consultant, National Democratic Front of the Philippines*

1. Introduction

Election-related violence has long been associated with civil conflict and is believed to be responsible for a substantial number of casualties worldwide in the wake of competitive national and local elections. In the past decade alone, there are numerous cases in which election outcomes allegedly incited post-election violence. Some examples include the January 2007 elections in Bangladesh where the discovery of 12 million voters illegally listed on the electoral roll precipitated violence and civil unrest; the December 2007 elections in Kenya where violence erupted after the Orange Democratic Movement, a popular political party, accused the Election Commission of Kenya (ECK) of large-scale vote rigging; and the 2009 elections

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in Iran where scores of people were injured or killed as they protested the suspected fraudulent reelection of President Mahmoud Ahmadinejad.

A growing literature attempts to explain the relationship between elections and violence. Callen and Long (2015) argue that fraudulent elections can exacerbate civil conflict by undermining democratic processes and increasing popular support for nondemocratic, and potentially violent, political actors. A World Bank report notes that "leaders lacking trust in 'winner-take-all' scenarios may manipulate [election] outcomes, which can trigger serious violence" (World Bank 2012). Several recent papers find that the likelihood of post-election violence increases when international observers denounce elections as fraudulent (Daxecker 2012; Hyde and Marinov 2014; Borzyskowski 2019).

More generally, a number of political scientists argue that bad governance, abuse of power, and grievances stemming from political suppression are the principal causes of civil conflict (Schock 1966; Hegre et al. 2001; Henderson and Singer 2000; Tucker 2007).[1] While there is strong evidence of a positive association between elections and civil conflict (Weidmann and Callen 2013), this association could potentially be due to cultural, historical, or institutional factors. Nevertheless, international donors spend substantial amounts on election monitoring and related programs in an effort to dampen civil conflict and its attendant ills (Kelley 2008).

Understanding whether and how elections can lead to violence is thus an important issue relevant to development policy. Civil conflict is a major impediment to development and poverty-reduction (World Bank 2012). Its effects include reductions in economic growth (Abadie and Gardeazabal 2003), educational attainment (Leon 2012), height-for-age Z-scores (Akresh, Lucchetti, and Thirumurthy 2012), and birth weight (Mansour and Rees 2012). According to the World Bank (2012), "[p]overty reduction in countries affected by major violence is on average nearly a percentage point slower per year than in countries not affected by violence" (p. 59). The enormous potential gains from ending or preventing civil conflict have led development researchers and practitioners to renew their focus on better understanding its causes and developing prescriptions for effectively addressing it.[2]

This study examines whether elections that were narrowly won by incumbents are associated with post-election violence in an existing civil conflict between government security forces and insurgents.[3] The analysis is based on data from the 2007 Philippine mayoral elections, the last to be counted manually. The empirical analysis begins by showing that incumbent mayors were more likely to win tightly contested elections than their challengers. This could be an indication that the election outcomes were manipulated (McCrary 2008; Grimmer et al. 2011; Blakeslee 2018), and is consistent with the observation that incumbents in developing countries are typically better positioned to manipulate close elections (Pastor 1999; Schedler 2002; Kulkarni 2012; Weidmann and Callen 2013). It is also consistent with anecdotal evidence from the Philippines that incumbent mayors can exert a fair amount of influence on local election commissions (Arnaiz et al. 2013). Incumbents may also win narrowly if they have better information about their standing in the race, and, using this information calibrate their campaigning efforts to secure a narrow victory (Grimmer et al. 2011).

Next, the study shows that narrow incumbent victories in the 2007 elections were associated with a substantial increase in post-election conflict-related casualties and violent incidents but were essentially unrelated to pre-election levels of violence. Narrow incumbent victories could have led to post-election conflict through a number of channels. For instance, if voters believed that incumbents won the

1 For instance, Tucker (2007) argued that election fraud galvanized the public, triggered protests, and eventually led to the so-called colored revolutions' in Eastern Europe.

2 See Blattman and Miguel (2010) for a review of the extensive literature on civil conflict.

3 The fact that this study examines organized violence in an already existing conflict sets it apart from most previous papers in the literature on the relationship between electoral manipulation and violence, which have tended to focus on less organized forms of violence such as riots and protests.

elections fraudulently, this could have increased support for violent insurgent groups and emboldened them to intensify their operations (Berman, Shapiro, and Felter 2011a; World Bank 2012). There is, in fact, anecdotal evidence that the New People's Army (NPA), one of the main insurgency groups operating in the Philippines, actively uses allegations of fraud to recruit members and to gain popular support (see section 2 for more details). Alternatively, it is possible that incumbents who were involved in closely fought elections (perhaps due to perceptions of corruption or the actual abuse of power) were able to secure victory through technically legal means, but the opposition turned to violence because the election outcome was not to their liking.

A number of analyses are conducted in an effort to better understand what drove the observed relationship between narrow incumbent victories and post-election violence. First, the study shows that narrow incumbent victories are associated with more conflict in the poorer half of Philippine municipalities, where incumbents appear to have had the advantage. In wealthier municipalities, where incumbents and their challengers were equally likely to win, narrow incumbent victories are not associated with post-election violence. Second, the study shows that decisive incumbent victories are not associated with an increase in post-election violence. This latter result suggests that the estimates do not simply reflect the effect of incumbent victories per se. Third, the study shows that the relationship between narrow incumbent victories and post-election violence does not depend on party affiliation or family connections to previous incumbents, suggesting that insurgents were not reacting to the candidate's political platform or out of a distaste for political dynasties.

In addition to providing evidence that narrow incumbent wins are associated with an increase in post-election conflict, this paper adds to a growing literature on forensic measurements of corruption and institutional weaknesses.[4] Contributions to this literature recognize that observer reports of corruption cannot always be trusted because, "the agents engaged in a particular behavior prefer to keep it hidden" (Zitzewitz 2012), and that measures of institutional weaknesses may be systematically influenced by unobserved variables (Olken 2009). Researchers have therefore devised methods to detect corruption and institutional weaknesses without relying on observer reports. Examples of the forensic approach applied to the measurement of corruption include Olken (2007) and Bertrand et al. (2007). Olken (2007) measured corruption by observing the amount of building materials used in the construction of roads in Indonesia. Bertrand et al. (2007) indirectly observed corruption by experimentally varying incentives for rapidly obtaining driver's licenses in India.[5] The paper adopts a forensic approach because election irregularities are committed in secret and because other institutional failures may be systematically present in areas prone to post-election violence. This approach facilitates the identification of electoral irregularities and other possible governing failures without relying on potentially biased reports from election observers.

2. Background: Elections and Armed Conflict in the Philippines

The Philippines is a constitutional republic with a population of more than 90 million. The presidential elections are scheduled every 6 years, while congressional, provincial and municipal elections are held every 3 years. The focus of this paper is on the midterm elections held on May 14, 2007. Although the presidency was not in contention, 1,598 mayors were elected, 755 of whom were incumbents.[6] The

4 See Zitzewitz (2012) for an overview of forensic methods in economics.

5 See also Fisman and Miguel (2007), who measure corruption by observing the number of unpaid parking violations by diplomats in New York City.

6 Although there are 1,630 municipalities in the Philippines, the study only uses election results from the 1,598 races where the election outcomes were approved by the Philippine Commission on Elections (COMELEC). The remaining 32 elections were declared as failed and were re-scheduled for a later date.

mayoral candidates belonged to over 40 different parties, most of which were affiliated with one of the two major political camps: the center-right governing coalition around then-president Gloria Macapagal-Arroyo's KAMPI party, and the opposition led by the center-left Liberal Party.

The 2007 Philippine elections were the last to be counted manually (USAID 2008). According to a report by USAID (2008), voters had to indicate the candidates they supported on ballots, which typically entailed writing between 20 and 30 names by hand. At the end of the voting process, the ballots were read aloud at each polling station by the Board of Election Inspectors and recorded on a tally sheet or blackboard. The results from each polling station were sent to the local Board of Canvassers for tabulation and then on to the Philippine Commission on Elections (COMELEC).

There is ample anecdotal evidence of widespread vote manipulation in the 2007 elections in the form of ballot stuffing, miscounting of votes at the polling station, and mistabulation of votes by the Board of Canvassers (USAID 2008). In fact, election fraud through miscounting/mistabulation of votes is so common in the Philippines that a specific term has developed for it: "dagdag-bawas," which is literally translated as "subtract-add."[7] International election observers of the 2007 election noted that ballots were tallied by hand and characterized the counting process as "prone to fraud and misuse." One observer reported "a general feeling among voters that their votes would not be counted, a sentiment provoked by acts of fraud and violence allegedly committed by politicians, election officials, and armed groups" (Solidarity Philippines Australia Network 2007). A report by USAID (2008) stated that the antiquated method of vote counting in the Philippines opened the door for various fraudulent activities such as substitution of ballots at the precinct level and tampering with returns. These types of fraud are common in developing countries and were also documented during the most recent Afghan elections (Callen and Long 2015).

There is also evidence that many local election offices were understaffed, underfunded, and relied on financial support from the municipal government (Arnaiz et al. 2013). Moreover, the municipal treasurer and the school district supervisor, both of whom answered to the mayor, typically held two out of the three seats on the Municipal Board of Canvassers. Arnaiz et al. (2013) and others have argued that incumbent mayors were, as a consequence, well positioned to influence the outcome of closely contested elections.

During the 2007 elections, there were two major organized armed groups active in the Philippines: the New People's Army (NPA) and the Moro Islamic Liberation Front (MILF). Formed in 1981, the MILF is a separatist movement fighting for an independent Muslim state in the Bangsamoro area of the island of Mindanao. Because of its narrow geographic focus, no MILF-related incidents are included in the data used for the study.[8] The NPA is the armed wing of the Philippine communist movement. Since taking up arms in 1969, the NPA has relied on selective ambushes and harassment tactics rather than larger-scale conventional battlefield confrontations against government forces. It operates in rural areas across most of the country and extorts considerable sums of money from businesses and private citizens (Rabasa et al. 2011). The NPA's political wing is the Communist Party of the Philippines (CPP), which is not recognized by the government and therefore cannot participate in elections. While a number of parties affiliated with the CPP fielded candidates for the House of Representatives in 2007, none fielded mayoral candidates.[9] The only far-left party that fielded mayoral candidates was Akbayan, which is a rival to the CPP. However, only two of their mayoral candidates were incumbents, and neither of them were involved in tightly contested elections.

7 Other mechanisms of fraud include vote buying and intimidation. However, these methods are unlikely to be responsible for the results in this paper since they take place before the votes are counted. Incumbents would therefore need extremely precise polling information to calibrate their vote-buying efforts in order to ensure victories with very narrow margins.

8 The data also do not contain any incidents involving the Abu-Sayyaf Group, a smaller Islamist terrorist group.

9 These parties are Bayan Muna, Anakbayan, Gabriela, Migrante, Anakpawis, and Sura (Holden 2009).

Many experts believe that vote manipulation decreases trust in democracy and leads to increased support for nondemocratic and potentially violent actors (World Bank 2012; Donno 2013; Norris 2014; Hall, Hyde, and Wellman 2017). In the case of the Philippines, the NPA specifically uses allegations of fraud in their propaganda material and when recruiting. For instance, a statement published on the NPA website (philippinerevolution.net) less than a week before the 2007 elections read:

> [Philippine] elections has [sic] always been rotten, bloody and dirty which is but a result and extension of a degenerating rotten system beset by a chronic and worsening social, political and economic crisis. But to stand up and fight for truth, for justice and the democratic rights of the people will always be truly liberating, patriotic and noble (Madlos 2007).

A statement released ten days after the election read:

> [T]he people must remain firmly united, vigilant and militant against the continuing manipulation of the real election results to favor the regime .... The protests against the violent and fraudulent elections will surely continue as part of the struggle to bring to account the corrupt, fascist and puppet regime (Salas 2007).

Anecdotal evidence that propaganda based on allegations of election fraud was successful comes from an interview conducted by the Armed Forces of the Philippines (AFP) with an anonymous former high-ranking NPA commander following his voluntary surrender to government forces. Describing the process through which he was recruited, he said:

> [The NPA organizers] frequently visited me and briefed me on how rotten our government was. I believed that they were telling the truth because during the election in 1969, it was publicized that it's prohibited to buy and sell votes. However, the Barangay Captain himself, went to see me and gave me money [to buy my vote]. That's why I believed that the organizers were telling the truth that the government is rotten.[10]

This anecdotal evidence is consistent with the argument that election fraud and underlying perceptions of fraud are associated with an increase in conflict by decreasing trust in the government and increasing support for the NPA; as increased support for insurgent movements facilitates recruitment and makes the population less likely to share information with the government forces (Berman, Shapiro, and Felter 2011a). This evidence is also consistent with the notion that other social and political factors such as bad governance and/or corruption could have encouraged vulnerable incumbents to engage in vote manipulation and also led to post-election violent incidents.

3. Empirical Analysis

Narrow Incumbent Victories

Several papers in the literature on electoral manipulation and civil conflict examine the role of election observers and find that if international observers publicly declare that an election was manipulated, the number of post-election violent incidents increased substantially (Daxecker 2012; Hyde and Marinov 2014; Borzyskowski 2019). Although this result is consistent with the hypothesis that election fraud leads to post-election unrest and violence, international observers are not randomly assigned to elections. If international observers were more likely to have been assigned to countries that were prone to post-election violence, the association between election fraud and post-election violence would overstate the true, causal relationship.[11]

10 From an interview conducted by an AFP intelligence unit after this individual voluntarily surrendered to government forces.

11 It is, of course, also possible that international organizations avoid elections in violence-prone countries in an effort to protect observers. In that case, the result would underestimate the effect of election fraud on violence.

One method of addressing this issue would be to use so-called "forensic" measures of fraud. The most often-used forensic test compares the distribution of digits found in vote counts to the distribution predicted by Benford's Law (Mebane 2006).[12] An alternative method focuses on vote counts ending in 0 or 5, suggesting rounding (Weidmann and Callen 2013; Beber and Scacco 2012). While these approaches have the advantage of being independent of whether election observers were assigned to a particular polling station, they require detailed polling-level vote counts, which in many countries are hard to obtain. Instead of relying on observer reports or digit-based forensic evidence, the analysis below uses the density test developed by McCrary (2008) to detect evidence for vote manipulation. Specifically, the test examines the probability density function of the incumbent's vote margin – that is, the difference between the incumbent's vote share and that of the most successful challenger. If this difference is greater than zero, the incumbent won the election; if it is smaller than zero, the incumbent lost. In the absence of manipulation, the winner of a close election should have been, in effect, randomly assigned and therefore the probability of an incumbent victory should be equal to the probability of an incumbent loss. More precisely, the probability density function of the incumbent's vote margin should be smooth across the threshold of zero, so that (in the limit) the incumbent was equally likely to win or lose close elections.

There are other possible reasons aside from fraud for why incumbents might have an advantage in close elections. An alternative explanation is that incumbents have a resource advantage over their challengers and, given accurate polling information, can expend precisely enough effort campaigning to secure a narrow victory. Consistent with this explanation, Grimmer et al. (2011) found that resource-advantaged candidates in races for the U.S. House of Representatives were about 10 percent more likely to win elections decided by margins of between 0 and 5 percentage points. However, aside from elections to the U.S. House of Representatives, there is little evidence that incumbents (or other candidates with a resource advantage) can target campaigning effort in this fashion. Eggers et al. (2015) who analyzed over 40,000 tightly contested mayoral and legislative races in the United States and seven other countries, found no evidence that incumbents were more likely to win closely contested elections. Consistent with this result, this paper finds no evidence that narrow incumbent victories were associated with higher turnout, a plausible proxy for campaigning effort.[13]

The analysis follows the method developed by McCrary (2008) to explore whether incumbents were more likely to win closely fought elections. Specifically, observations are grouped into bins of equal width and the following regression is estimated:

$$Y_b = \gamma_0 + \gamma_1 D_b + \gamma_2 X_b + \gamma_3 (D_b \times X_b) + \eta_b. \quad (1)$$

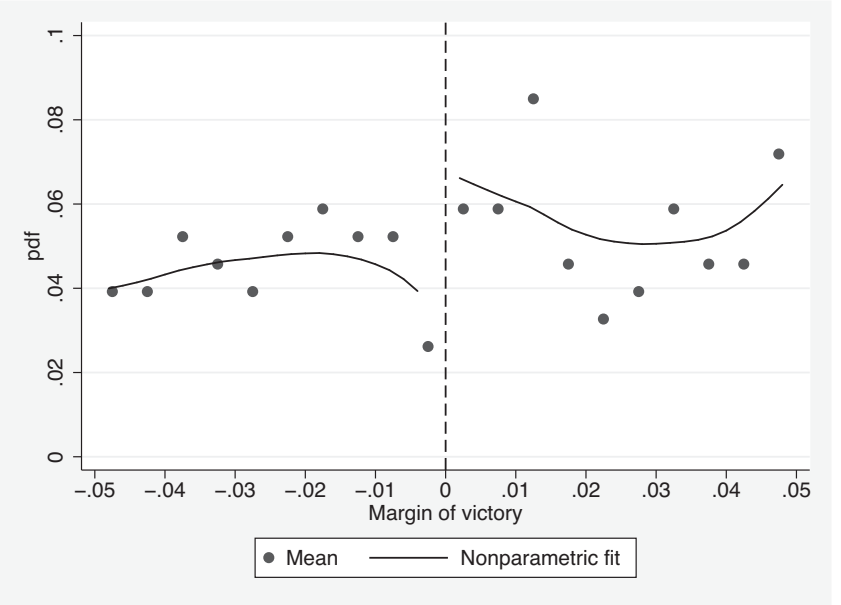
Here, Y_b is the fraction of observations in bin b, X_b is the incumbent's victory/loss margin (in percentage points) at the bin's midpoint, and D_b is an indicator for whether the bin is above the incumbent's victory threshold (all bins have to be either entirely above or entirely below zero). If the density of the incumbent's vote margin is smooth across the threshold of zero, the bins just above the threshold should contain as many observations as those just below the threshold and the parameter γ_1 will not be statistically distinguishable from zero.

The election data are publicly available and were obtained from the Republic of the Philippines Commission on Elections (COMELEC). Mayoral election results from 2007 were used to identify winners/losers in each municipality and to calculate margins of victories/losses; returns from the 2004

12 In addition, this approach requires detailed data on election returns at the polling station level, which the study does not have access to in the present context.

13 Results available from authors on request.

Figure 1. Did Incumbents Manipulate Close Elections?



Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The figure presents the probability density of incumbent mayors' margin of victory in the 2007 election. Municipalities were grouped into 20 bins of equal width according to the incumbent's margin of victory. Each scatter dot represents one bin. Its horizontal coordinate represents the midpoint of the bin, and its vertical coordinate represents the fraction of municipalities for which the incumbent's margin of victory was within the bin. Dashed lines are linear fits, separately estimated on both sides of the eligibility threshold. Solid lines are nonparametric fits from a local linear regression that uses triangular kernels with a bandwidth of 5 percentage points, separately estimated on both sides of the eligibility threshold.

election were used to identify incumbents.[14] The sample is limited to municipalities in which the incumbent mayor's vote margin was within a 5 percentage–point bandwidth of the zero threshold. This resulted in a sample of 153 municipalities. The incumbent won reelection in 81 of these municipalities and lost in the remaining 72.

Figure 1 plots the probability that a municipality falls into a particular bin against the margin of victory at the midpoint of the bin, and provides evidence that incumbent mayors were more likely to win elections decided by a margin of between 0 and 1.5 percentage points. Table 1 reports McCrary test results—i.e., estimates of equation (1), based on 30 bins, 15 on each side of the threshold. The constant term represents the height at which the pdf intercepts the threshold of zero from below, which is an estimate of how likely incumbents were to lose tightly contested elections. The coefficient of the incumbent victory indicator reflects the discontinuous change in the pdf at the zero threshold. For the entire sample, the analysis estimates a constant of 0.028 and a discontinuous increase of 0.016, which is statistically significant at the 5 percent level. Thus, incumbents were approximately 57 percent (0.016/0.028) more likely to win tightly contested elections than to lose them. This constitutes evidence that incumbents were able to manipulate tightly contested elections in order to secure victory. In the next subsection, the paper shows that this pattern of close incumbent electoral wins closely corresponds to the pattern of violence observed after the election.

14 The majority of mayors elected in 2004 were matched with the 2007 election results using an automated process. Unmatched observations were mostly due to the fact that not all mayors elected in 2004 ran for re-election and to spelling errors. In the latter case, incumbent mayors were matched manually.

Table 1. McCrary Test for Election Manipulation by Incumbent Mayors in the 2007 Elections

	OLS estimates Dependent variable: Fraction of municipalities within bin		
	Full sample (1)	Poor municipalities (2)	Rich municipalities (3)
Incumbent victory	0.016**	0.025*	−0.0061
	(0.0079)	(0.013)	(0.013)
Margin	−0.17	−0.22	0.46
	(0.27)	(0.46)	(0.48)
Margin× incumbent victory	−0.24	−0.56	−0.62
	(0.39)	(0.65)	(0.61)
Constant	0.028***	0.027***	0.044***
	(0.0056)	(0.0094)	(0.010)
Municipalities	153	75	78
Observations (bins)	30	30	30

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: Results from a probability density test for manipulation of the running variable (McCrary 2008) are reported. The running variable is the incumbent margin of victory in the 2007 mayoral elections. All regressions are weighted by a triangular kernel with a bandwidth of 0.05. Observations are 30 bins of equal width. The dependent variable is the fraction of municipalities with an incumbent margin of victory that falls within the bin. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

The results presented in table 1 are based on a bandwidth of 5 percentage points. In general, estimates with smaller bandwidths should be closer to the true value since they are more strongly informed by observations closer to the threshold (McCrary 2008). However, reducing the bandwidth also decreases the effective sample size and therefore leads to less precision. The results in table S2.1 of the supplementary online appendix provide evidence that the estimates are robust to limiting the bandwidth to 3 or 4 percentage points around the zero threshold.

Previous evidence suggests that poorer regions tend to be more corrupt and are more likely to have weak institutions (Olken and Pande 2012; Ferraz and Finan 2008; Besley and Burgess 2002). The paper explores whether incumbents are more likely to win in poorer versus richer municipalities. The classification of municipalities as rich or poor is based on the 2006 municipal-level poverty estimates provided by the Philippine Statistics Authority.[15]

If a municipality's poverty estimate was below the median, it is designated as poor; if the poverty estimate was above the median, it is designated as rich. The results in columns (2) and (3) of table 1 suggest that incumbents were more likely to win close elections primarily in poor municipalities. Specifically, when the sample is restricted to the poorer half of municipalities, a constant of 0.027 is obtained, and there is a discontinuous increase of 0.025 in the pdf at the zero threshold, indicating that incumbents were about twice as likely to win tightly contested elections than to lose them. In the richer half of municipalities, the discontinuous decrease of 0.0061 is small relative to the constant of 0.044 and is not statistically significant at conventional levels. In the subsection exploring heterogeneous effects, the paper shows that the pattern of violence observed after the election is also concentrated in poor municipalities.

Narrow Incumbent Victories and Civil Conflict

The data on conflict violence come from incident reports collected by the Armed Forces of the Philippines (AFP); they include information on insurgents, government forces, and civilian casualties. These incident-level data have been used to analyze the impact of aid and the impact of economic conditions on conflict

15 These data are available at HDX (2019).

intensity (Crost, Felter, and Johnston 2014; Berman et al. 2011b) and are similar to SIGACTS – the U.S. incident-level military data, which have been used to study the insurgency activities in Afghanistan and Iraq (Berman, Shapiro, and Felter 2011a; Iyengar, Monten, and Hanson 2011; Beath, Christia, and Enikolopov 2011). The data also contain information on the date and the location of the incident, and identify the insurgent group involved. During the period under study (November 2006 through November 2007), 2,745 conflict incidents leading to 1,045 casualties were reported by units belonging to the Armed Forces of the Philippines deployed throughout the country. The focus of this paper is on the number of casualties and the number of violent incidents that occurred in the 153 municipalities in which the incumbent's vote margin was within a 5 percentage-point bandwidth of the zero threshold.[16] In these municipalities, a total of 521 incidents occurred, leading to 315 casualties.[17] Information on the other municipality characteristics included in the estimation were obtained from the 2000 Philippines Census, available from the National Statistics Office of the Philippines.

Descriptive statistics for the variables used in the analysis by whether incumbents won a tightly contested election are provided in table 2. The descriptive statistics show that the number of casualties and violent incidents in the pre-election period was similar in municipalities in which incumbents went on to win and municipalities in which the incumbent went on to lose. To further test the validity of the empirical approach, a test for differences in a number of municipality characteristics by whether incumbents won a tightly contested election is provided in column (3). As shown in table 2 there are no statistically significant differences between the two types of municipalities in population, area size, poverty rate, the incumbent vote share in the 2004 election, the presence of insurgent groups, whether the incumbent is associated with the national governing coalition, or the region in which they are located. There is some evidence that municipalities in which incumbents won had better access to infrastructure, although the only statistically significant difference is for share of households with electricity and share of buildings with roofs made of strong materials.

The second step in the analysis is to test whether conflict increased when incumbents won close elections. Specifically, the following equation is estimated, based on a regression discontinuity (RD) design, for a subsample of municipalities within a small bandwidth around the incumbent's victory threshold:

$$Y_i = \beta_0 + \beta_1 D_i + \beta_2 X_i + \beta_3 (D_i \times X_i) + Z_i + \varepsilon_i. \quad (2)$$

Here, Y_i is the number of conflict casualties or the number of violent incidents in municipality i experienced in the 12 months after the 2007 elections, X_i is the incumbent's vote margin, D_i is an indicator for whether the incumbent won the election, and Z_i is a vector of municipality characteristics. The parameter β_1 represents the difference in casualties between municipalities in which the incumbent won a tightly contested election and municipalities in which the incumbent narrowly lost.

The discontinuous jump in the probability of an incumbent victory at the zero threshold documented in the previous section is a clear violation of the standard RD assumption that unobserved variables are continuous across the threshold and would bias the estimate of β_1 upwards if incumbents were more likely to win narrow elections in municipalities especially prone to violence. Two tests are conducted in an effort to explore this possibility. First, equation (2) is estimated using the number of casualties that occurred in the 12 months prior to the 2007 election as the outcome. If municipalities above the zero threshold were more violent for reasons unrelated to the incumbent's victory, it is expected they would

16 A violent incident is defined as an incident that leads to at least one casualty.

17 As Crost, Felter, and Johnston (2014) noted, it is possible that the AFP troops misreported the number of casualties related to an incident. This type of misreporting, however, is likely to be limited since the field data were originally collected to be used internally by the AFP for intelligence purposes and for the planning of future operations. Moreover, casualties are typically easy to verify, which makes misreporting more difficult, even if individual AFP units had an incentive to do so.

Table 2. Summary Statistics

	Incumbent victory (1)	Incumbent loss (2)	RD balance test (3)
Casualties in 12 months before election	0.70	0.74	0.29
	[1.92]	[1.79]	(0.69)
Violent incidents in 12 months before election	0.33	0.40	0.12
	[0.68]	[0.84]	(0.27)
At least 1 casualty in 12 months before election	0.12	0.24	0.12
	[0.32]	[0.43]	(0.20)
At least 3 casualties in 12 months before election	0.072	0.098	–0.093
	[0.26]	[0.30]	(0.14)
At least 5 casualties in 12 months before election	0.026	0.039	0.050
	[0.16]	[0.19]	(0.042)
Casualties in 12 months after election	0.61	0.35	1.61
	[2.28]	[1.34]	(0.98)
Violent incidents in 12 months after election	0.20	0.18	0.44*
	[0.62]	[0.62]	(0.25)
At least 1 casualty in 12 months after election	0.13	0.1	0.20**
	[0.34]	[0.30]	(0.10)
At least 3 casualties in 12 months after election	0.084	0.057	0.21**
	[0.28]	[0.23]	(0.09)
At least 5 casualties in 12 months after election	0.024	0.029	0.08
	[0.15]	[0.17]	(0.06)
Population	40594	32265	−1742
	[62379]	[20504]	(8165)
Area (km^2)	210	220	77
	[267]	[260]	(74)
Poverty rate	32.8	35.0	3.0
	[16.0]	[16.7]	(5.1)
Incumbent vote share in 2004 election	0.536	0.534	−0.025
	[0.146]	[0.133]	(0.049)
Affiliated with national governing coalition	0.90	0.77	0.18
	[0.30]	[0.42]	(0.14)
Insurgent presence	0.265	0.271	0.056
	[0.44]	[0.45]	(0.18)
Share of households with electricity	0.57	0.55	−0.18
	[0.26]	[0.25]	(0.081)**
Share of households with piped water	0.44	0.36	0.012
	[0.27]	[0.27]	(0.085)
Share of households with indoor plumbing	0.66	0.61	−0.095
	[0.21]	[0.24]	(0.072)
Share of buildings with walls made of "strong" materials	0.69	0.67	−0.069
	[0.19]	[0.17]	(0.062)
Share of buildings with roofs made of "strong" materials	0.64	0.59	−0.18
	[0.24]	[0.24]	(0.072)**
Located in Luzon	0.52	0.64	−0.045
	[0.50]	[0.48]	(0.18)
Located in Visayas	0.25	0.15	0.095
	[0.44]	[0.37]	(0.14)

Table 2. Continued

	Incumbent victory (1)	Incumbent loss (2)	RD balance test (3)
Located in Mindanao	0.23	0.20	−0.049
	[0.42]	[0.40]	(0.15)
Located in ARMM	0.036	0.029	0.028
	[0.19]	[0.17]	(0.022)
Municipalities	83	70	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: Summary statistics for the sample of 153 municipalities in which incumbents won or lost the 2007 election by a margin of 5 percentage points or less. Following the classification of the 2000 Census of the Philippines, "strong" building materials for walls are defined as concrete, brick, stone, wood, galvanized iron or aluminum, asbestos, and glass. "Strong" building materials for roofs are defined as concrete, galvanized iron or aluminum, clay tiles, and asbestos. Standard deviations are reported in brackets. Column (3) reports results of RD regressions using the municipality characteristics as outcomes. Standard errors of these regression estimates are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

have experienced more casualties before the election took place, not just afterwards. Second, the analysis estimates a panel regression model that explicitly controls for unobserved municipality characteristics.

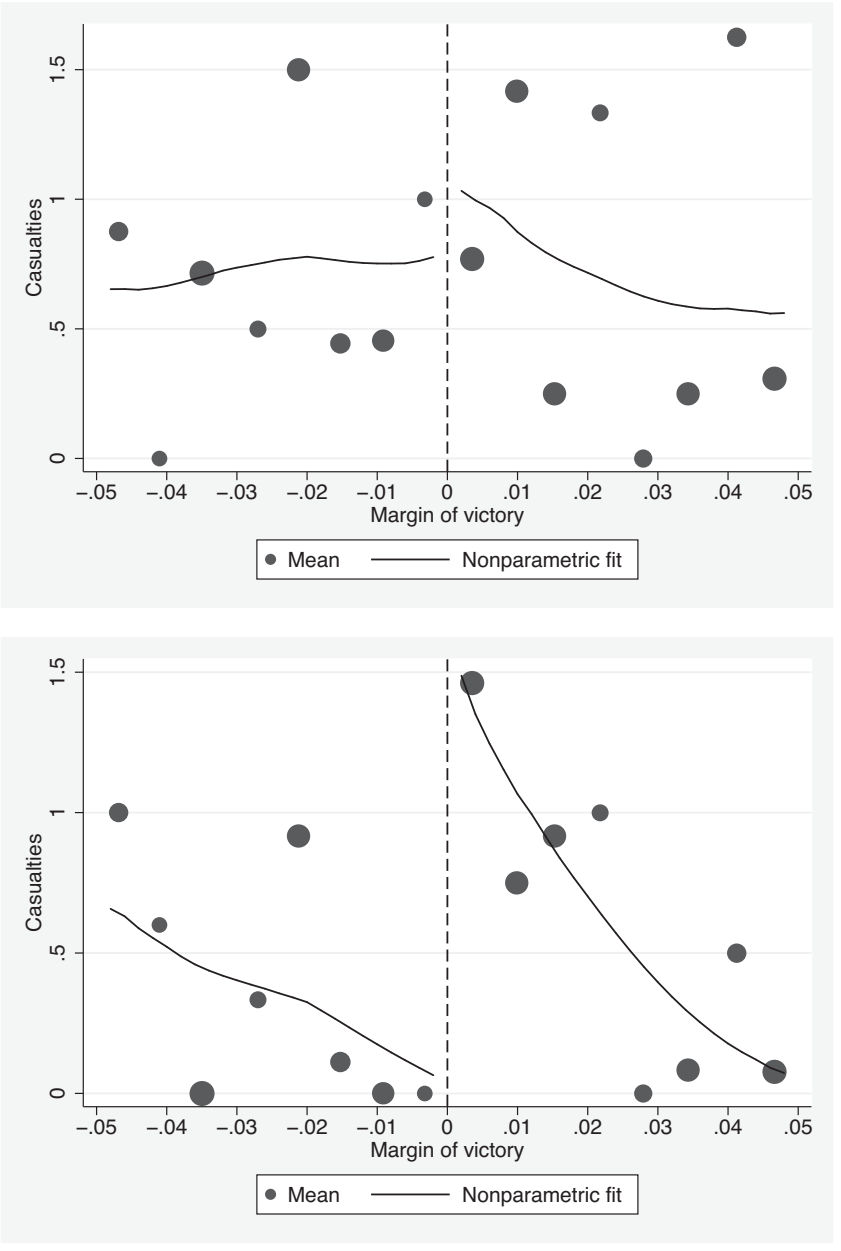
Figure 2 plots casualties during the 12 months before and the 12 months after the 2007 election against the incumbent's margin of victory. Scatter dots represent the mean of casualties in bins of equal width and are sized to reflect the number of municipalities in each bin. The top panel shows that municipalities experienced substantially more casualties after the incumbent won an election by a margin of between 0 and 1.5 percentage points than after losing by a similar margin. The bottom panel shows that casualties in the 12 months *before* the election were essentially unrelated to incumbent victories.

The results in table 3 report Poisson estimates of the regression discontinuity (RD) described by equation (2). The coefficient associated with incumbent victories represents the discontinuous increase in casualties across the incumbent's victory threshold. The results in columns (1) and (2) suggest that municipalities experienced between 0.89 and 1.22 additional casualties in the 12 months after a narrow incumbent victory as compared to a narrow loss. These estimates are quite large as compared to the average of 0.50 casualties in the 12 months after the election and are statistically significant at the 1 percent level. Similarly, the results in columns (3) and (4) indicate that in the 12 months after a narrow incumbent victory, municipalities experienced between 0.31 and 0.40 additional violent incidents. The results in columns (5)–(8) provide no evidence of a statistically significant relationship between narrow incumbent victories and pre-election casualties or violent incidents. Table S2.2 of the supplementary online appendix shows that the results are robust to limiting the bandwidth to 3 or 4 percentage points around the threshold.[18]

One potential concern with the results reported in table 3 is that the estimated effect of incumbent victories decreases when controls for observable municipal characteristics are added in columns (2) and (4). This raises the possibility that the results are driven by unobserved differences between municipalities in which incumbents won narrowly and municipalities in which they did not. In an effort to explore this hypothesis, the paper estimates a panel regression model that explicitly controls for systematic differences in unobserved characteristics. Specifically, the following equation is estimated based on observations from

18 The paper also estimates a Probit model based on equation (2) where the dependent variable is an indicator for having experienced 1 or more casualties, 3 or more casualties, and 5 or more casualties. The results, reported in table S2.9 of the supplementary online appendix, show that a narrow incumbent victory increases the likelihood of having 1 or more casualties and 3 or more casualties.

Figure 2. Did Narrow Incumbent Victories Cause Conflict?



Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The figure presents the relationship between the incumbent's margin of victory and casualties experienced in the 12 months before and after the 2007 election. Scatter dots represent the mean of casualties per month and are sized to reflect the number of municipalities in each bin. Dashed lines are linear fits, separately estimated on both sides of the eligibility threshold. Solid lines are nonparametric fits from a local linear regression that uses triangular kernels with a bandwidth of 5 percentage points, separately estimated on both sides of the eligibility threshold.

Table 3. Incumbent Victories and Conflict Casualties: RD Design

	Post-election period				Pre-election period			
	Casualties		Violent incidents		Casualties		Violent incidents	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Incumbent victory	1.22***	0.89***	0.40**	0.31***	0.29	0.059	0.023	−0.057
	(0.44)	(0.29)	(0.16)	(0.12)	(0.62)	(0.44)	(0.24)	(0.19)
Margin	−17.3***	−10.1	−7.95***	−5.67**	1.24	4.73	−0.77	1.96
	(6.52)	(6.56)	(2.79)	(2.45)	(16.8)	(11.0)	(7.53)	(6.09)
Margin × incumbent victory	−17.5	−13.2	−0.43	−0.43	−22.4	−27.8	−5.66	−9.85
	(26.4)	(16.9)	(7.95)	(6.30)	(26.8)	(20.1)	(10.6)	(8.59)
Mean of dep. var.	0.50	0.50	0.20	0.20	0.72	0.72	0.36	0.36
Control variables	No	Yes	No	Yes	No	Yes	No	Yes
No. of municipalities	153	153	153	153	153	153	153	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The running variable of the RD design is the incumbent margin of victory. All regressions are weighted by a triangular kernel with a bandwidth of 0.05. Reported values are marginal effects from Poisson regressions, calculated at the sample means. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels. Control variables are: population, area, as well as share of households with electricity, piped water, indoor plumbing, roof made of strong building material, and wall made of strong building material. Following the classification of the 2000 Census of the Philippines, "strong" building materials for walls are defined as concrete, brick, stone, wood, galvanized iron or aluminum, asbestos, and glass. "Strong" building materials for roofs are defined as concrete, galvanized iron or aluminum, clay tiles, and asbestos.

the 12 months before and the 12 months after the 2007 election:

$$Y_{it} = \beta_0 + \beta_1 D_i + \beta_2 X_i + \beta_3 (D_i \times X_i) + \beta_4 (Post_t) + \gamma_1 (D_i \times Post_t) + \gamma_2 (X_i \times Post_t) + \gamma_3 (D_i \times X_i \times Post_t) + \varepsilon_{it}. \quad (3)$$

Here, Y_{it} is the number of conflict casualties or violent incidents that municipality i experienced in month t, X_i is the incumbent's vote margin, and D_i is an indicator for whether the incumbent won the election. $Post_t$ is an indicator for whether the observation was made in the post-election period. The parameter β_1 represents the difference in pre-election casualties between municipalities in which incumbents narrowly won and municipalities in which incumbents narrowly lost. The parameter γ_1 represents the increase in casualties following a narrow incumbent victory.

Results from estimating equation (3) are presented in table 4. Those reported in the first column show that narrow incumbent victories are associated with 0.123 additional post-election casualties per month (or 1.48 per year). Including the control variables reduces this estimate to 0.103 casualties per month (or 1.24 per year). Both of these estimates are statistically significant at the 5 percent level. Similarly, the first two columns of table 5 show that narrow incumbent victories lead to a 0.046–0.052 increase in the number of violent incidents (or 0.55–0.62 per year).

While the panel models in columns (1) and (2) of tables 4 and 5 control for unobserved differences between municipalities in which incumbents won/lost a narrow election, a remaining concern is that the two groups of municipalities were on nonparallel time trends. To explore this possibility, controls for group-specific linear and quadratic time-trends are added to the model. The estimates in columns (3) and (4) of table 4 are robust to controlling for group-specific trends. While the estimate in column (3) of table 5 is only marginally significant, the results controlling for quadratic time trends in column (4) are similar to those in columns (2) and are statistically significant at the 5 percent level. Specifically, the results indicate that an incumbent victory is associated with 0.126 additional casualties per month (or 1.51 additional casualties per year) and 0.045 additional violent incidents (or 0.54 additional casualties per year).

Table 4. Incumbent Victories and Conflict Casualties: Panel Regressions

	Poisson estimates Dependent variable: Casualties				
	(1)	(2)	(3)	(4)	(5)
Incumbent victory × post-election	0.12**	0.10**	0.10**	0.13**	0.14**
	(0.055)	(0.047)	(0.052)	(0.055)	(0.065)
Incumbent victory	0.017	0.0046	0.0039	0.0077	−0.052
	(0.037)	(0.028)	(0.027)	(0.025)	(0.043)
Margin × post-election	−2.07*	−1.81*	−1.81*	−1.76*	−1.58*
	(1.26)	(1.03)	(1.02)	(1.01)	(0.88)
Margin	0.074	0.29	0.29	0.28	0.30
	(1.01)	(0.76)	(0.75)	(0.73)	(0.64)
Margin × incumbent victory × post-election	−0.68	−0.25	−0.25	−0.25	−0.22
	(3.16)	(2.35)	(2.35)	(2.28)	(2.04)
Margin × incumbent victory	−1.35	−1.47	−1.47	−1.43	−1.26
	(1.57)	(1.27)	(1.26)	(1.22)	(1.08)
Post-election period (12 months)	−0.091**	−0.078**	−0.071**	−0.095***	−0.11***
	(0.043)	(0.037)	(0.028)	(0.032)	(0.040)
Time trend (months)			−0.00047	0.0013	
			(0.0022)	(0.0016)	
Time trend squared (months)				0.00026**	
				(0.00012)	
Time trend × incumbent victory			−0.000094	−0.0018	
			(0.0038)	(0.0036)	
Time trend squared × incumbent victory				−0.00026	
				(0.00019)	
Gov. coalition × inc. victory × post-election					−0.061
					(0.068)
Governing coalition × incumbent victory					0.057
					(0.039)
Governing coalition × post-election					0.057
					(0.045)
Governing coalition					0.0034
					(0.019)
Mean of dep. var.	0.051	0.051	0.051	0.051	0.051
Control variables	No	Yes	Yes	Yes	Yes
No. of municipalities					
No. of observations	3672	3672	3672	3672	3672

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: All regressions are weighted by a triangular kernel with a bandwidth of 0.05. The unit of observation is the municipality-month. The sample is restricted to observations within 12 months of the 2007 election (the month of the election is dropped). Marginal effects calculated at the sample means are reported. Standard errors, clustered at the municipality level, are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels. Control variables are the same as in table 3.

Heterogeneous Effects and Sources of Violence

This section examines different margins of heterogeneity to better understand the relationship between narrow incumbent victories and post-election violence. First, the paper estimates the relationship between incumbent victories and post-election conflict-related casualties in poor and rich municipalities (measured using the 2006 municipal-level poverty estimates provided by the Philippine Statistics Authority as described in section 3). The results in columns (2) and (3) of table 1 provided evidence that narrow incumbent victories were concentrated in poor municipalities. If narrow incumbent victories are associated with

Table 5. Incumbent Victories and Violent Incidents: Panel Regressions

	Poisson estimates Dependent variable: Violent incidents				
	(1)	(2)	(3)	(4)	(5)
Incumbent victory × post-election	0.052**	0.046**	0.031	0.045**	0.060*
	(0.022)	(0.019)	(0.020)	(0.021)	(0.035)
Incumbent victory	0.0012	−0.0034	0.0034	0.0038	−0.013
	(0.012)	(0.010)	(0.011)	(0.011)	(0.021)
Margin × post-election	−1.01*	−0.93**	−0.92**	−0.89*	−0.86**
	(0.54)	(0.46)	(0.46)	(0.45)	(0.43)
Margin	−0.040	0.10	0.10	0.097	0.12
	(0.40)	(0.32)	(0.31)	(0.30)	(0.29)
Margin × incumbent victory × post-election	0.24	0.35	0.35	0.33	0.31
	(1.08)	(0.85)	(0.84)	(0.81)	(0.74)
Margin × incumbent victory	−0.30	−0.46	−0.46	−0.44	−0.41
	(0.56)	(0.45)	(0.45)	(0.43)	(0.41)
Post-election period (12 months)	−0.049***	−0.044***	−0.043***	−0.057***	−0.063***
	(0.017)	(0.015)	(0.014)	(0.016)	(0.022)
Time trend (months)			−0.000054	0.00097	
			(0.00091)	(0.00090)	
Time trend squared (months)				0.00013**	
				(0.000062)	
Time trend × incumbent victory			0.0011	0.000039	
			(0.0013)	(0.0012)	
Time trend squared × incumbent victory				−0.00013	
				(0.000078)	
Gov. coalition × inc. victory × post-election					−0.021
					(0.030)
Governing coalition × incumbent victory					0.017
					(0.018)
Governing coalition × post-election					0.012
					(0.019)
Governing coalition					0.0021
					(0.0083)
Mean of dep. var.	0.023	0.023	0.023	0.023	0.023
Control variables	No	Yes	Yes	Yes	Yes
No. of municipalities					
No. of observations	3672	3672	3672	3672	3672

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: All regressions are weighted by a triangular kernel with a bandwidth of 0.05. The unit of observation is the municipality-month. The sample is restricted to observations within 12 months of the 2007 election (the month of the election is dropped). Marginal effects calculated at the sample means are reported. Standard errors, clustered at the municipality level, are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels. Control variables are the same as in table 3.

increased civil conflict, it would be expected that post-election violence to be highest in these municipalities. The RD estimates in column (1) and (2) of table 6 suggest that an incumbent victory in a poor municipality was, on average, associated with 1.65 additional casualties and 0.56 additional violent incidents during the 12 months after the election (panel C). By contrast, the estimates in columns (3) and (4) provide little evidence that incumbent victories in poor municipalities were related to pre-election violence. In rich municipalities there is no statistically significant relationship between incumbent victories and violence in either the pre- or the post-election period (panel B).

Table 6. Incumbent Victories and Conflict: Rich vs. Poor Municipalities

	Poisson RD estimates			
	Post-election period		Pre-election period	
Dependent variable:	Casualties (1)	Violent incidents (2)	Casualties (3)	Violent incidents (4)
Panel A: All municipalities (153 municipalities)				
Effect of incumbent victory	0.89**	0.31***	0.059	−0.057
	(0.29)	(0.12)	(0.44)	(0.19)
Mean of dep. var.	0.50	0.20	0.72	0.36
Panel B: Rich municipalities (78 municipalities)				
Effect of incumbent victory	0.40	0.12	−0.77	−0.26
	(0.36)	(0.15)	(0.73)	(0.37)
Mean of dep. var.	0.17	0.09	0.46	0.28
Panel C: Poor municipalities (75 municipalities)				
Effect of incumbent victory	1.65**	0.56**	–0.38	−0.15
	(0.79)	(0.27)	(0.25)	(0.18)
Mean of dep. var.	0.84	0.31	0.99	0.44

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: Regressions are based on the 2007 Philippine mayoral elections. All models flexibly control for incumbent margin of victory on both sides of the threshold. Specifications are identical to those reported in columns 2, 4, 6, and 8 of table 3. All regressions are weighted by a triangular kernel with a bandwidth of 0.05. Marginal effects calculated at the sample means are reported. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels. Standard errors in column (3) are clustered at the municipality level. All specifications include the same control variables that were used in tables 3 and 4.

Second, the results in table 7 provide evidence that narrow incumbent victories are associated with a larger increase in the number of post-election casualties in areas with active insurgency presence.[19] Specifically, the results in column (2) suggest that narrow incumbent victories in areas with no active insurgency presence are associated with a statistically insignificant 0.21 increase in the number of post-election casualties. By contrast, the effect in areas where insurgents are active suggests an additional increase of 0.53, significant at the 5 percent level. Reassuringly, there is no relationship between narrow incumbent victories and post-election violence in areas with or without insurgency presence. The data also allow the analysis to distinguish between violent incidents involving the NPA or other lawless elements. The results in table 8 indicate that the increase in violence after an incumbent's narrow victory involves both insurgents belonging to the NPA as well as other lawless elements. There is no such relationship in the pre-election period. The results of estimating the relationship between narrow incumbent victories and violence based on the group who initiated the violent incidents are reported in table 9. The analysis distinguishes between incidents initiated by AFP or rebel groups. The results in columns (1)–(4) indicate that both the AFP and rebel groups initiate incidents of violence after a narrow incumbent victory. However, as shown in table 10, the AFP is the group that suffers most of the casualties after a narrow incumbent win.

19 Based on an intelligence assessment conducted in 2001, the AFP assigned villages into three categories of rebel activity: threatened, influenced, and infiltrated. Insurgent presence is defined as having at least one village in the municipality in any of the three categories.

Table 7. Heterogeneous Effects by Insurgent Presence

	Post-election		Pre-election	
	(1)	(2)	(3)	(4)
Incumbent victory	0.37	0.21	0.11	0.0024
	(0.42)	(0.33)	(0.89)	(0.63)
Insurgent presence × incumbent victory	0.84**	0.53**	0.22	0.19
	(0.36)	(0.23)	(0.82)	(0.61)
Margin	0.70	7.38	14.8	11.5
	(17.0)	(15.2)	(22.0)	(13.7)
Insurgent presence × margin	−22.4	−22.7*	−28.3	−17.9
	(16.8)	(12.8)	(18.4)	(14.9)
Margin × incumbent victory	−4.30	−12.5	−32.7	−37.8
	(19.6)	(15.9)	(39.6)	(30.1)
Insurgent presence × margin × incumbent victory	−19.7	11.6	27.3	29.5
	(50.3)	(21.6)	(46.4)	(33.9)
Mean of dep. var.	0.50	0.50	0.72	0.72
Control variables	No	Yes	No	Yes
No. of municipalities	153	153	153	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The running variable of the RD design is the incumbent margin of victory. All regressions are weighted by a triangular kernel with a bandwidth of 0.05. Reported values are marginal effects, calculated at the sample means. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels. Control variables are the same as in table 3.

Table 8. Conflict by Insurgent Group

	Post-election period				Pre-election period			
	Casualties		Violent incidents		Casualties		Violent incidents	
	NPA (1)	LE (2)	NPA (3)	LE (4)	NPA (5)	LE (6)	NPA (7)	LE (8)
Incumbent victory	0.30**	0.24*	0.18**	0.095**	0.017	0.010	−0.11	0.055
	(0.14)	(0.12)	(0.072)	(0.038)	(0.19)	(0.34)	(0.11)	(0.12)
Margin	−0.60	−4.12	−2.42	−1.90**	−3.84	11.8	1.03	0.83
	(2.32)	(2.60)	(1.58)	(0.93)	(3.68)	(12.9)	(3.59)	(4.46)
Margin × incumbent victory	−3.62	−11.6	0.47	−2.26	−5.37	−26.6*	−5.13	−4.85
	(3.81)	(7.21)	(2.92)	(3.20)	(10.4)	(15.7)	(5.59)	(5.33)
Mean of dep. var.	0.25	0.25	0.11	0.08	0.30	0.42	0.19	0.17
No. of municipalities	153	153	153	153	153	153	153	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The running variable of the RD design is the incumbent margin of victory. All regressions are weighted by a triangular kernel with a bandwidth of 0.05 and include the same control variables as in table 3. Reported values are marginal effects, calculated at the sample means. The dependent variables in columns marked "NPA" are based on conflict involving the New People's Army. The dependent variables in columns marked "LE" are based on conflict with other lawless elements. This sample does not contain any casualties in incidents with the Moro-Islamic Liberation Front or Abu Sayyaf Group. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

Table 9. Who Initiates the Incidents?

	Post-election period				Pre-election period			
	Casualties		Violent incidents		Casualties		Violent incidents	
	AFP (1)	Rebel (2)	AFP (3)	Rebel (4)	AFP (5)	Rebel (6)	AFP (7)	Rebel (8)
Incumbent victory	0.24*	0.30**	0.16***	0.15**	0.010	0.017	−0.025	−0.036
	(0.12)	(0.14)	(0.053)	(0.075)	(0.34)	(0.19)	(0.16)	(0.12)
Margin	−4.12	−0.60	−2.92**	−1.79	11.8	−3.84	3.60	−0.94
	(2.60)	(2.32)	(1.37)	(1.45)	(12.9)	(3.68)	(6.51)	(3.20)
Margin × incumbent victory	−11.6	−3.62	−1.45	0.19	−26.6*	−5.37	−7.95	−2.91
	(7.21)	(3.81)	(3.38)	(2.90)	(15.7)	(10.4)	(7.21)	(5.23)
Mean of dep. var.	0.25	0.25	0.11	0.12	0.42	0.30	0.18	0.18
No. of municipalities	153	153	153	153	153	153	153	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The running variable of the RD design is the incumbent margin of victory. All regressions are weighted by a triangular kernel with a bandwidth of 0.05 and include the same control variables as in table 3. Reported values are marginal effects, calculated at the sample means. The dependent variables in columns marked "AFP" are based on incidents initiated by the Armed Forces of the Philippines. The dependent variables in columns marked "Rebel" are based on incidents initiated by insurgent groups. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

Mechanisms and Robustness Tests

There appears to be a strong, positive association between narrow incumbent victories and post-election violent incidents and casualties from civil conflict. One explanation for this association is that aggrieved voters, believing that incumbents won fraudulently, increase their support for insurgent groups (Berman, Shapiro, and Felter 2011a). Alternatively, narrow incumbent victories may have led to post-election violence for reasons unrelated to fraud. For example, underlying social triggers (e.g., underlying perceptions of corruption or the abuse of power) may become more salient when incumbents win narrowly, leading

Table 10. Who Suffers the Casualties?

	Post-election period Casualties suffered by:		Pre-election period Casualties suffered by:	
	AFP (1)	Rebel (2)	AFP (3)	Rebel (4)
Incumbent victory	0.61**	0.10	−0.012	0.14
	(0.30)	(0.071)	(0.33)	(0.11)
Margin	−9.37*	−1.89	5.53	−2.25
	(4.98)	(1.33)	(9.46)	(3.24)
Margin × incumbent victory	−2.98	0.33	−24.5	−1.92
	(12.9)	(1.36)	(15.6)	(4.39)
Mean of dep. var.	0.38	0.08	0.50	0.10
No. of municipalities	153	153	153	153

Source: Data for the study come from field reports of the Armed Forces of the Philippines (AFP) and election returns from the Philippines Commission on Elections (COMELEC).

Note: The running variable of the RD design is the incumbent margin of victory. All regressions are weighted by a triangular kernel with a bandwidth of 0.05 and include the same control variables as in table 3. Reported values are marginal effects, calculated at the sample means. The dependent variable in columns marked "AFP" is the number of casualties suffered by the Armed Forces of the Philippines. The dependent variable in columns marked "Rebel" is the number of casualties suffered by insurgent groups. Standard errors are in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent levels.

to an increase in violence. It is also possible that insurgents might have typically preferred the challenger's political platform to the incumbent's and reacted with violence when their candidate lost. In what follows, the paper describes several additional analyses aimed at gaining a better understanding of the mechanisms behind the results reported thus far.

First, the paper tests whether the relationship between narrow incumbent victories and violence was driven by the political platform of the incumbent by interacting an indicator for whether the incumbent was affiliated with the governing coalition of President Arroyo with the other variables in the panel regression. The results are presented in column (5) of tables 4 and 5.[20] Out of the 153 incumbents in the sample, 116 were affiliated with the governing coalition. The results suggest that the insurgent reaction did not depend upon the incumbent's political affiliation. Specifically, none of the interactions between the governing coalition indicator and the variables in the panel regressions are statistically significant at conventional levels.

A number of additional robustness tests are conducted in the supplementary online appendix. First, equations (1) and (2) are re-estimated after redefining X_b to equal the victory/loss margin between the most successful candidate from the governing coalition and the most successful candidate from the opposition party. The results of this analysis, figs. S1.1–S2.2 and tables S2.3–S2.4 in the supplementary online appendix show no evidence that coalition candidates are more likely to win close elections or that narrow victories by coalition candidates lead to increased conflict.

Second, the paper examines the effect of decisive incumbent victories on civil conflict. As noted above, the evidence for conflict comes from municipalities in which the incumbent won by a margin of victory between 0 and 1.5 percentage points. When these municipalities are excluded, the results of the McCrary test show no evidence that incumbents are more likely to win narrow elections (table S2.5 of the supplementary online appendix). If violence is due to incumbents who won narrowly and not to incumbent victories in general, then incumbent victories should have no effect on post-election violence when these municipalities are excluded. Table S2.6 of the supplementary online appendix shows that this the case: the estimates of γ_1 become small, negative and statistically insignificant when victories decided by a margin of between 0 and 1.5 percentage points are excluded.[21] The results of this robustness test suggest incumbents winning close elections, not incumbent victories per se, drove the increase in post-election violence documented in tables 3 and 4.

Third, the paper examines the role of political dynasties. Mayors in the Philippines are term-limited after three elections, and there is evidence that incumbency has a causal effect on the probability that a direct relative will run in their place once the term limits have been reached (Querubin 2016). To examine the role of family dynasties, equation (1) is estimated on a sample of closely fought elections in which one of the top-two candidates is a relative of the incumbent mayor.[22]

The results, reported in column (1) of table S2.7 in the supplementary online appendix, provide no evidence that the relatives of incumbent mayors were more likely to win closely contested elections.

20 As discussed in section 2, the governing coalition consisted of center-right parties, while the opposition mostly consisted of center-left parties. Only two incumbents in the 2007 mayoral elections were members of a far left party and neither of them was involved in a tightly contested election.

21 Similar results are obtained when using the sample of all municipalities in which the margin of victory was outside of the range of 0 to 1.5 percentage points (including those municipalities in which incumbents won with margins of victory above 5 and below –5 percentage points). When the sample is restricted to municipalities *within* a bandwidth of 0 to 1.5 percentage points, the effect of incumbent victories is large and statistically significant.

22 After limiting the sample to elections won with a bandwidth of 5 percentage points, relatives are identified by manually comparing the last names of candidates to that of the incumbent mayor. This procedure detects 49 municipalities in which one of the candidates is a relative of the incumbent mayor. Limiting the sample to a bandwidth of 3 percentage points reduces the number of such municipalities to 38.

Restricting the sample to elections decided by 3 percentage points or fewer does not change this basic conclusion. In columns (3) and (4), closely fought elections involving a relative are added to the main sample. Their inclusion reduces the magnitude of the discontinuity from 0.016 (reported in column (1) of table 1) to 0.008 and the estimate becomes statistically insignificant. However, the estimate based on a bandwidth of 3 percentage points, reported in column (4), is very similar in both magnitude and significance to the estimate reported in column (3) of table S2.1 in the supplementary online appendix. The analysis then relates the narrow victory of relatives to the number of post-election casualties using a sample of narrow incumbent victories which also includes relatives. The results in columns (1) and (2) of table S2.8 in the supplementary online appendix are similar to the results reported in table 3 and table S2.2 in the supplementary online appendix. This analysis suggests that narrow victories of incumbent relatives are not associated with post-election violence.

4. Conclusion

There is a widespread belief among academics and practitioners that elections perceived as fraudulent can increase support for nondemocratic actors and serve as a catalyst for civil conflict (World Bank 2012; Donno 2013; Norris 2014; Hall, Hyde, and Wellman 2017). Over the past few decades, international donors and the World Bank have intensified their efforts to ensure that elections in fragile democracies are conducted fairly (Daxecker 2012) and have spent substantial amounts on election monitoring and other related programs (Kelley 2008).

This study examines the association between narrow incumbent victories and civil conflict using data from the 2007 mayoral elections held in the Philippines. With a forensic approach, this paper finds that incumbent mayors were more likely to win tightly contested elections compared to their challengers, an indication of election fraud (McCrary 2008) or the presence of other institutional failures that lead to violence following a contested race. In addition, the results indicate that municipalities in which incumbent mayors were narrowly elected experienced between 0.89 and 1.22 additional post-election casualties from civil conflict during the 12 month period after the election as compared to municipalities in which the challenger won. However, there is no evidence of an association between narrow incumbent victories and pre-election violence.

This paper conducted several tests in an effort to better understand the mechanisms underpinning the relationship between narrow incumbent victories and post-election violence. For instance, the analysis showed that narrow incumbent victories were associated with post-election violence only in poor municipalities. In richer municipalities, where there is little evidence that incumbents disproportionately win narrow elections, there was essentially no relationship between post-election violence and narrow incumbent victories. The paper also showed that decisive incumbent victories do not lead to an increase in post-election violence. Finally, the paper showed that the increase in post-election violence was unrelated to the party affiliation of the incumbent, suggesting that the increase in violence does not simply reflect dissatisfaction with the incumbent's political platform.

Although it is difficult to determine the exact mechanism at work, anecdotal evidence suggests that electoral fraud (or the perception of it) and other institutional weaknesses such as corruption or the abuse of power may increase support for insurgents and make it easier for them to recruit, which is consistent with a "hearts-and-minds" model of insurgency (Berman, Shapiro, and Felter 2011a). The results support the argument that elections held during (and potentially immediately after) civil conflicts can have unanticipated negative consequences Flores and Nooruddin (2012); Brancati and Snyder (2011); Matanock (2017) and that election monitoring and automated vote counting could help to dampen post-election unrest. In addition, they suggest that future election monitoring should not focus on presidential and congressional races to the exclusion of local races if the goal is to reduce post-election violence.

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