Strategic Protection, Pro-Government Interventions, and Violence against Civilians in Civil Wars

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1 Introduction

Since the end of World War II, there have been more than 100 civil wars, many of which have involved third-party military interventions. While much literature on civil wars contributes to an explanation of how external interventions affect onset, duration, or termination of conflicts, there has been little attention given to how external interveners affect the level of violence against civilians. There are few studies that examine the impact of third party interventions on the severity of conflict (Lacina (2006); Krain (2005); Regan (2002)) and on violence against civilians (Wood, Kathman and Gent (2012)).

However, existing research has largely focused on how the relationship between interventions and domestic combatants affects civil war violence, but seldom considered the strategic interaction between civilians and combatants and its impact on violence against civilians. We argue in this paper that civilian casualties in civil war are strategically structured. First, civilians can play a significant role in shaping the outcome of the conflict. This prompts governments to deliberately install incentives to solicit cooperation from civilians. Second, in choosing whether to cooperate with the government, civilians face a vital risk-return trade-off. Although begetting rewards, putting effort into cooperating with the government may expose civilians to greater risks of being harmed in civil conflict, depending on the elasticity of the incentives provided by the government. By capturing the need for civilian cooperation for combatants and how they provide incentives for cooperation, we develop a formal model to examine how third-party interventions alter the patterns of strategic interactions between combatants and civilians, which in turn shapes the levels of violence in civil war. We present a strategic argument, suggesting that increases in the government’s power as a result of the presence of pro-government interventions will result in higher level of violence against civilians if exogenous bias toward the government is higher. The rationale behind this argument is that as the government becomes stronger with the support of external interventions, cooperation from civilians becomes less important for the government.

The paper is organized in the following manner. The first section develops a formal model of violence against civilians and generates comparative statistics. The paper then tests the model’s empirical implications by employing negative binomial regres-
sion analysis using the Uppsala Conflict Data Program (UCDP) dataset on one-sided violence from 1989-2012. Overall, our findings support our argument. The presence of government-biased interventions increases the total number of civilian deaths with increases in exogenous bias toward the government.

2 A Model of Violence against Civilians

There are two strategic actors in the model, namely the government (G) and civilians (C). The government and rebels are competing for the control of a piece of territory. Due to the peculiarity of civil conflict, the government often needs cooperation from civilians in order to fight against rebels more effectively. However, cooperating with the government also exposes civilians to great risk of being harmed or killed in the battle. The outcome of the conflict between the government and the rebel force can be represented by a function, \( f_G(r, e) \), where \( r \) indicates the relative power of the rebel vis-a-vis the government, and \( e \) is the effort made by civilians to cooperate with the government in fighting the rebel.

The expected gain of the government from the conflict decreases in \( r \) and increases in \( e \). To work a more specific function form, let \( f_G = 1 - r^e \) provide the government’s control of the territory and \( \bar{f}_G = 1 - f_G \) provide the rebel’s control of the territory. It is easy to see \( e = 1 \) indicates that civilians choose to remain neutral in the conflict, and not act in favor of either party.

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1 The rebels are not strategically modeled in the model.

2 Governments need civilian support to win a civil war. While incumbents are capable of maintaining their logistical supply, they often lack local knowledge in fighting against guerrilla forces. Thus, governments rely on civilians to acquire information on the identification of rebels, rebel movements, and rebel supporters, as well as offer assistance navigating the local geography. Civilian support and controlling information within a territory also would reduce the risk of military operations in local areas.

3 Previous research has suggested that civilians who remain neutral by not taking a side may be the most vulnerable (Blattman and Miguel (2010); Kalyvas and Kocher (2007)). The rationale behind this is that if civilians chose to join either side, they are able to obtain protection by the chosen side, regardless of the side chosen. Thus, the model highlights the costly and risky nature of taking a side, which is understudied in previous research.

4 \( r \in (0, 1/2) \). Specifically, let \( \frac{\partial f_G}{\partial r} < 0 \), \( \frac{\partial f_G}{\partial e} > 0 \), and \( \frac{\partial^2 f_G}{\partial r \partial e} < 0 \). The second derivatives are all negative to indicate diminishing marginal return in the production function.
Civilian’s utility function is provided by:

\[ u_C = g(e) - \theta(e, r) + p(e) \]  

(1)

where \( g(e) = \beta f_G + (1 - \beta) \bar{f}_G \). \( \beta \in (0, 1) \) represents the exogenous bias of the \( i \)-th civilian.\(^5\) \( \beta = .5 \) indicates neutrality.

\( \theta(e) \) provides the function of the costs of cooperating with the government. \( \theta(0) = 0, \theta'(0) > 0, \theta'' = \tau > 0 \).\(^6\) \( \tau \) represents the marginal rate of increase in the cost of cooperating with the government. For greater \( \tau \), the cost rises more rapidly as their efforts increase.

\( p(e) \) is the selective incentive provided by the government, which is assumed to be always greater than zero. \( p(0) = 0, p'(0) > 0 \), and \( p'' = \lambda < 0 \).\(^7\) Civilians could potentially be rewarded by the government as a function of \( e \). In the specific context of civil war, protection from being harmed or the possibility of being killed in the battle field constitute the primary contents of such rewards. Indeed, protection is most important to civilians as a survival maximizer. Civilians are willing to choose to join either side to obtain protection by taking the risk of being involved in conflict and combatants strategically provide selective incentives in terms of protection to induce civilian cooperation. The strengths of such rewards are indicated by \( \lambda \). Given that \( \lambda \) is negative, greater \( \lambda \) indicates a slower decay in the marginal utility from the incentive reward. At this point, it is assumed that the rebels are unable to institute such incentives, due to the difficulties of commitment.\(^8\)

\(^5\)In particular, exogenous bias is included to capture the intrinsic preferences of civilians with regard to whether the government or the rebel group should control a region.

\(^6\)Most obviously \( \theta \) could take the form of \( \theta(e) = \tau e^2 \). In a more complicated assumption, the marginal cost of cooperating with government forces could increase the power of the rebels, \( r \).

\(^7\)With these restrictions, \( p(e) \) most conveniently takes the form of: \( p(e) = \lambda e(e - n) \).

\(^8\)Rebels are often disadvantaged in soliciting cooperation from civilians, as they face enormous difficulties in stabilizing the expectations of civilians due to the strategic and tactical shortcomings of the rebel forces (Kalyvas (2006)). The influence of rebels, however, is still present in the model. Rebels may have some intrinsic appeal to civilians as \( \beta \) indicates. Rebels may also affect the marginal cost of cooperating with the government.
2.1 Characterizing the Optimal Response

2.1.1 Civilians

For civilians, the optimal level of effort in cooperating with the government is provided by the following first order condition given the equation (1):

\[ g'(e) - \theta'(e) + p'(e) = 0 \] (2)

or

\[ f'_G \cdot (2\beta - 1) - m(e, \tau) + n(e, \lambda) = 0, \] (3)

where \( f'_G = \frac{\partial f_G}{\partial e} \). Equation (3) implicitly defines the best response function of the optimal level of effort of cooperating with the government, \( e^{BR} \). Several observations are in order.

First, with everything else kept constant, \( e^{BR} \) increases in \( \beta \), the exogenous bias toward the government. To see this, note \( f''_G < 0, m'(e) > 0, \) and \( n'(e) < 0 \). Greater weight of \( f'_G \), indicated by increases in \( \beta \), would shift \( e^{BR} \) to the right to balance the value increase.\(^9\)

**Lemma 1.** \( e^{BR} \) increases in \( \beta \).

Secondly, \( e^{BR} \) increases in \( \lambda \), the magnitude of the incentive reward. Note this claim is to be checked under two scenarios, where \( \beta < 1/2 \) and \( \beta > 1/2 \).\(^{10}\) Also, \( e^{BR} \) decreases the magnitude of the cost of cooperation, \( \tau \).\(^{11}\)

**Lemma 2.** \( e^{BR} \) increases in \( \lambda \) and \( \frac{\partial^2 e^{BR}}{\partial \lambda \partial \beta} < 0 \).

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\(^9\)This is true for both \( \beta \leq 1/2 \) and \( \beta > 1/2 \). When \( \beta < 1/2 \), the conclusion may be different (\( e^{BR} \) could decrease in \( \beta \)) if the marginal impact of \( e \) on the outcome is significant.

\(^{10}\)When \( \beta > 1/2 \), it is easy to see greater incentive, \( \lambda \), leads to a shift of \( e^{BR} \) to the right. When \( \beta < 1/2 \), while the case that \( e^{BR} \) increases in \( \lambda \) is generally true, there could be exceptions where greater \( \lambda \) decreases \( e^{BR} \), as \( \beta \) is close to zero, and the marginal impact of \( e \) on the territory is significant.

\(^{11}\)When \( \beta < 0 \), particular situations where \( e^{BR} \) increases in \( \tau \) could potentially exist.
2.1.2 The Government

The government’s net payoff is given by

\[ u_G = f_G - \kappa(\lambda, k) \]  \hspace{1cm} (4)

\( f_G \) provides the government’s share of the territory. \( \kappa(\lambda, k) \) is the cost to the government in providing selective incentives, which are increasing in \( \lambda \), i.e. \( \kappa'(\lambda) > 0 \).

The first order condition provides:

\[ \frac{\partial f_G}{\partial e} \cdot \frac{\partial e}{\partial \lambda} = \kappa'(\lambda|k) \]  \hspace{1cm} (5)

Furthermore, \( \frac{\partial e}{\partial \lambda} \) decreases in \( \beta \) indicating that civilians who favor the government are less sensitive to the reward offered by the government. Given this best response function, the following observations are obtained.

- \( \kappa^{BR} \) increases in the strategic importance of civilian support, \( \frac{\partial f_G}{\partial e} \), and the responsiveness of civilian support to the government reward, \( \frac{\partial e}{\partial \lambda} \).
- \( \kappa^{BR} \) decreases in the cooperation efforts made by civilian, \( e \), as \( \frac{\partial^2 f_G}{\partial e^2} < 0 \)
- \( \kappa^{BR} \) decreases in the exogenous bias of civilians’ toward the government, \( \beta \).

An equilibrium of the game would be a stable combination of civilian’s cooperation efforts and the government’s scale of reward, \( e^E; \lambda^E \) which are mutual best response to each other. The equilibrium captures the cost of wars for civilians. First, civilians making a lot of effort to cooperate with the government in the process of civil war are more likely to be killed, and such risks also increase as the power of the rebels increases. Secondly, the government could protect civilians from being killed in several ways, such that it is not costly to cooperate with the government. So the incentives provided by the government, \( \lambda \), should have the effect of reducing civilian death tolls. A possible equilibrium scenario of interest is one in which civilians put in a lot of effort fighting against rebels without obtaining protection from the government side, which would lead to greater levels of civilian deaths.

\[ ^{12} \text{Additionally, } \kappa(0) = 0 \text{ and } \kappa'' = k > 0. \text{ Also, } \partial \kappa(\lambda, k) / \partial k > 0 \]
\[ ^{13} \text{It is easy to see from } \frac{\partial^2 e}{\partial \lambda \partial \beta} < 0 \text{ that } \kappa^{BR} \text{ drops as } \beta \text{ increases.} \]
The model helps to identify several scenarios in the equilibria that lead to various levels of civilian deaths. Equilibria in the model are stable combinations of $e^E$, the optimal effort of cooperation, and $\lambda^E$, the optimal strength of the incentive provided by the government. This would allow for comparative statics to be found, so we could know the range in which the parameters of such an outcome to take place.\textsuperscript{14} Let $d = e^E/\kappa^E$ define the levels of violence against civilians.

**Proposition 1.** The levels of violence against civilians in equilibrium, $d^E$, increase in exogenous bias, $\beta$.

Proof. $e^{BR}$ increases in $\beta$ and $\partial f_G/\partial e$ decreases in $e$ thus decreases in $\beta$. Also $\partial e/\partial \lambda$ increases in $\beta$. Given that the best response function in the equation (5), $e^E$ increases in $\beta$. Also, $\lambda^E$ decreases in $\beta$ as $\partial e/\partial \lambda$ decreases in $\beta$ in equation 5. Thus $d^E = e^E/\lambda^E$ increases in $\beta$. \qed

The basic intuition of the proposition is easy to grasp. Greater $\beta$ would lead to greater $e^E$ that attains the parity of marginal returns and marginal gains. Similarly, the greater $\kappa$ shifts the optimal $\lambda$ downward, and contributes to greater risks that cooperating civilians are exposed to, leading to greater levels of casualties.

Two specific scenarios warrant comparison. In the first scenario, civilians have strong preferences toward the government, whereas the cost of rewarding cooperation is very high for the government. In this case, higher levels of violence against civilians should be expected. In the second scenario, civilians have strong preferences toward rebels, and the cost of rewarding cooperation is very low for the government. The level of one-sided violence should be low in such a situation. Empirically, this shows how interactions between exogenous bias toward the government and the distribution of power between the government and the rebels shape the level of violence against civilians.

There are several ways in which third party interventions can be incorporated into the model. For example, third party interventions could shift the balance of power and

\textsuperscript{14}In this particular model, perpetrators of violence against civilians are rebels, and civilians are only allowed to cooperate with the government. The model is developed this way to get a hold on the basic rationale of the model. However, the model can be modified to identify both scenarios.
change the value of $r$.

**Proposition 2.** *Increases in government power will be more likely to lead to greater civilian death tolls if exogenous bias toward the government is great, i.e. $\frac{\partial^2 d}{\partial r \partial \beta} > 0$*

**Proof.** It is known from the assumption that $\frac{\partial f^G}{\partial e}$ decreases in $r$. By the best response function in the equation (5), $\lambda^{BR}$ also decreases in $r$. Given the strategic complementarity between $e$ and $\lambda$ in the game, both $e^E$ and $\lambda^E$ decreases in $r$. The relative size of the decrease in $e^E$ to $\lambda^E$ due to the growth in $r$ depends on $\frac{\partial e^{BR}}{\partial \lambda}$, which decreases in $\beta$ as established in Lemma 2. $e^E$ would thus decrease at a lower rate than $\lambda$ given large $\beta$, resulting in greater civilian casualties.

The key implication from the proposition is that pro-government interventions have the effects on increases in the government’s power on the battlefield and altering the strategic incentives of the government to reward cooperative civilians. Following the logic of Proposition 2, pro-government interventions would increase civilian casualty given substantial exogenous bias toward the government, but could also decrease the number of civilians deaths given substantial bias against the government.

## 3 Research Design

### 3.1 Data and the dependent variable

We employ the Uppsala Conflict Data Program (UCDP) one-sided violence dataset, which is coded from 1989-2012, to examine one-sided violence against civilians in civil war. This data defines one-sided violence as “deliberate” and “direct” killings of civilians killed by governments or non-state groups. The dependent variable is thus the number of civilians killed by combatants in civil war in a given year, and there is a total of 300,887 civilian deaths recorded in this period.\(^{15}\) Given that the dependent variable is the count variable, we use negative binomial regression analysis with robust standard errors adjusted for clustering by the country.\(^{16}\) The unit of analysis is thus county-year.

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\(^{15}\)This figure excludes the Rwandan genocide in 1994, which is an outlier with the respect to the number of civilian deaths.

\(^{16}\)Compared to Poisson regression, which assumes that the mean and variance are relatively equal, the negative binomial model is more properly employed to analyze count data that displays over-
3.2 Explanatory variables

(1) Government- and rebel-biased interventions: To measure government- and rebel-biased interventions, we rely on the UCDP External Support dataset. This data differentiates between warring support and non-warring support. In particular, warring support indicates supporting countries sending troops to assist in a conflict on behalf either the governments or rebels.\textsuperscript{17} Given that we are interested in how third party interventions change the balance of power between the government and rebels, we only examine cases where a third party actively participates in an intrastate conflict. Based on this operationalization, we have created two binary variables: (i) government-biased and (ii) rebel-biased interventions. Government-biased intervention is coded as “1” if there is any third party actively supporting the government with troops in a given year, and otherwise coded as “0”. Likewise, rebel-biased intervention is coded as “1” when any third party’s military support is present, assisting the rebels in a given year, otherwise coded as “0”.

(2) Exogenous bias toward the government: While measuring exogenous bias toward the government is difficult in part, because preferences are unobservable, there are potential ways to measure civilians’ exogenous bias toward government. One potential way is to consider ethnic heterogeneity and regime type of a country. One might expect that civilians in ethnically homogenous democracies may have strong preferences toward the government, rather than toward rebels. Conversely, one may anticipate that civilians in ethnically heterogeneous non-democracies are more likely to be against the government. However, with this operationalization, we should only examine cases of ethnic civil war, because in non-ethnic civil war, ethnic heterogeneity may be irrelevant, and it is thus inaccurate to measure preferences toward the government using ethnic heterogeneity. However, excluding non-ethnic civil war cases results in the loss of approximately 56 percent of observations based on Sambanis (2001), thus significantly decreasing N. In addition, one may consider income inequality as a proxy for bias toward the government. However, given that most countries in the dataset are

\textsuperscript{17}According to the UCDP External Support Project codebook (Croicu, Högladh, Pettersson and Themnér (2011)), non-warring support includes “the provision of sanctuary, financial assistance, logistic and military support short of troops” (p.4).
war-torn, the Gini index is not available for many countries, thus involves many missing variables. Accordingly, we use democracy as a proxy for exogenous bias toward the government. We assume that civilians in democracies are more likely to have strong preferences toward the government, rather than toward rebels. Given that a binary measure of exogenous bias toward the government produces all zero values with the interaction of rebel-biased interventions, we use an ordinal measure. Exogenous bias toward the government is thus coded as “3” if the polity score is greater than or equal to or higher than 7, coded as “2” if the polity score is between 0 and 6, and coded as “1” if the polity score is less than 0.

3.3 Control variables

(1) Domestic combatants’ relative capabilities: We measure relative capabilities between the government and rebels as the natural log of the ratio of the number of all rebels’ troops in the country to the total number of government troops.

(2) Conflict severity: civilians are more likely to be killed in more intense conflicts (Hultman (2007)). Conflict Severity is measured as the natural log of the total number of battlefield deaths in the country in a given year.

(3) Regime type: Democracies are more likely to experience violence against civilians (Salehyan, Siroky and Wood (2014); Raleigh (2012); Pape (2005)). However, other research also has shown that democracies eschew civilian abuse with respect for human rights and legal constraints (Valentino, Huth and Balch-Lindsay (2004)). Regime type is measured using the Polity IV dataset.

(4) Economic development: In rich countries, incumbents may have more security resources, and are thus better equipped than incumbents in poor countries. Theoretically, this should enhance the regime’s ability to protect civilians. A country’s economic development is operationalized as the natural log of GDP per capita.

(5) Population size: Given that we can reasonably assume that violence against civilians is more likely to increase when there are more people to be killed, we include the size of countries’ total population.
4 Statistical Analysis

The results of negative binominal regression are presented below in Table 2. Overall, the statistical findings support our theoretical argument. First, the coefficient of government-biased interventions represents the effect of government-biased interventions when biased toward the government is set to its lowest value. However, given that the lowest value of the variable is 1, the interpretation of the coefficient of government-biased interventions is not straightforward. Accordingly, we calculate the marginal effects of government-biased interventions (Table 3). In particular, the marginal effects of government-biased interventions with the absence of exogenous bias are negative but insignificant at the 95 percent significance level, indicating that pro-government interventions do not have significant impact on the level of one-sided violence. Table 3 presents the marginal effects of government-biased interventions at three different values of exogenous bias toward the government, showing that one-unit increases in exogenous bias increases the impact of government-interventions on violence against civilians.

Interactions between pro-government interventions and civilian bias toward the government, which is of primary interest, shows how the effect of government-interventions on violence against civilians changes as exogenous bias toward the government increases. Consistent with the model’s prediction, the government has positive and statistically significant effects on civilian death tolls. This suggests that the presence of government-biased interventions increases the number of civilian deaths with increases in exogenous bias toward the government. Figure 1 shows that as exogenous bias increases, the marginal effects of pro-government interventions turn positive from negative, suggesting civilians with stronger bias toward the government are to suffer more from external interventions. Specifically, when the bias is against the government (civilian bias = 1), pro-government interventions will decrease civilian death tolls (marginal effects = −0.547). However, when the bias toward the government intensifies, pro-government interventions will increase the number of civilian deaths (marginal effects = 0.881 and 2.309 when civilian bias = 2 and 3).

The coefficient of exogenous bias represents the effect of civilians’ bias toward the government when government interventions are set to 0, thus showing the absence of government-biased interventions. With the absence of government-biased interven-
tions, countries where civilians have strong preferences toward the government are more likely to experience low levels of violence. The marginal effects of exogenous bias are presented in Table 4. One-unit increase in pro-government intervention results in an increase in exogenous bias toward the government, and the marginal effects of government-biased interventions on the level of one-sided violence become statistically insignificant. To further examine the impact of exogenous bias on civilian deaths, we additionally estimate the rebel violence and government violence models (columns 3 and 4 in Table 2, respectively). In column 3, the coefficient of exogenous bias toward government is negative and significant, suggesting that with the absence of government-biased interventions, countries where civilians have strong preferences toward the government are less likely to experience violence against civilians perpetrated by rebels. Moreover, the magnitude of the coefficient of the interaction term of pro-government intervention and civilian bias is greater in column 3 than that in column 1. This suggests that the presence of pro-government interventions will increase the risk for pro-government civilians to be killed by rebels to a greater degree. However, in column 4, the coefficient of exogenous bias is statistically insignificant, indicating that without pro-government interventions, exogenous bias toward the government does not have significant impact on the level of violence perpetrated by the government. Overall, these findings may suggest that exogenous bias affects the level of one-sided violence differently, depending on who commits such violence.

However, in the rebel interventions model, the coefficients of rebel-biased interventions, exogenous bias toward the government, and interactions for rebel-biased interventions and bias are insignificant, suggesting that these variables do not have significant impact on the number of civilian deaths. In addition, the severity of the conflict is positively related to violence against civilians, suggesting that combatants are more likely to kill civilians in more intense conflicts. In the government-biased interventions model, economic development has negative and significant impact on civilian death tolls, indicating that civilians are less likely to be killed in economically developed countries. However, in the rebel-biased model, the coefficient of economic development is statistically insignificant, controlling for the effects of other variables in the model. Another interesting finding is that, while in the rebel violence model the coefficient of economic development is negative and significant, economic development is insignificant in the government violence model. This shows that rebels are less likely to target
civilians in more economically developed countries. Democracy is also significant with a sign, showing that combatants are more likely to target civilians in democracies. In particular, the coefficient of democracy in the rebel violence model is significant and positive. Consistent with previous research, this result shows that rebels are more likely to target civilians in democracy. However, the coefficient of democracy in the government violence model is insignificant, indicating that democracy does not have a significant impact on governments’ violence against civilians.

5 Conclusion

This paper develops a formal model to examine how external biased interventions alter the patterns of strategic interactions between combatants and civilians, which affects one-sided violence in intrastate war. The main statistical finding suggests that the presence of pro-government interventions increases civilian death tolls with increases in exogenous bias toward the government.

In addition, we sum up by suggesting implications for future research. There are several ways to expand the model developed in this paper. First, one could develop a model with asymmetric information between the government and civilians. Also, rebels could be incorporated as a strategic actor in the model. In addition, while we measure combatants’ power based on the number of troops, future research could involve measuring power based on the area of territory each combatant controls, thus disaggregating the unit of analysis into regions at the subnational level. Finally, exogenous bias toward the government can be measured in terms of civilians’ co-ethnicity with the government. One may expect that civilians co-ethnic with the government have strong preferences toward the government rather than toward rebels. This will require measuring the size of the population of co-ethnic civilians in each area. All of this could be done using geo-referenced conflict site data.
# A Tables and Figures

<table>
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<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
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<td>Total Civilian Deaths</td>
<td>499.813</td>
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<td>602</td>
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<td>Civilian Deaths by Government</td>
<td>342.042</td>
<td>6160.605</td>
<td>602</td>
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<td>Civilian Deaths by Rebels</td>
<td>157.237</td>
<td>1199.573</td>
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<td>Total Battle Deaths</td>
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<td>Polity IV</td>
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Table 2: Determinants of Violence against Civilians

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<td>Total</td>
<td>Total</td>
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<td>by Govern’t</td>
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<td></td>
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<td>(1.71)</td>
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<td>Bias toward Gov.</td>
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<td>-1.514**</td>
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<td>(-2.29)</td>
<td>(-1.89)</td>
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<td></td>
<td>(4.08)</td>
<td>(4.02)</td>
<td>(1.31)</td>
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<td>(-1.75)</td>
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<td>0.495***</td>
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<td>(1.67)</td>
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<tr>
<td></td>
<td>(-3.24)</td>
<td>(-1.73)</td>
<td>(-3.45)</td>
<td>(-0.76)</td>
</tr>
<tr>
<td>Combatants’ Relative Power</td>
<td>0.0938</td>
<td>0.0869</td>
<td>0.130</td>
<td>-0.273</td>
</tr>
<tr>
<td></td>
<td>(0.95)</td>
<td>(0.81)</td>
<td>(0.91)</td>
<td>(-1.74)</td>
</tr>
<tr>
<td>Polity IV (t-1)</td>
<td>0.109*</td>
<td>0.102</td>
<td>0.273***</td>
<td>-0.0566</td>
</tr>
<tr>
<td></td>
<td>(2.08)</td>
<td>(1.71)</td>
<td>(3.39)</td>
<td>(-0.77)</td>
</tr>
<tr>
<td>Constant</td>
<td>7.093***</td>
<td>4.975**</td>
<td>9.241***</td>
<td>4.384</td>
</tr>
<tr>
<td></td>
<td>(4.18)</td>
<td>(2.65)</td>
<td>(3.58)</td>
<td>(1.52)</td>
</tr>
<tr>
<td>lnalpha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.789***</td>
<td>1.809***</td>
<td>2.266***</td>
<td>2.845***</td>
</tr>
<tr>
<td></td>
<td>(12.67)</td>
<td>(12.66)</td>
<td>(12.33)</td>
<td>(13.68)</td>
</tr>
<tr>
<td>Observations</td>
<td>479</td>
<td>479</td>
<td>479</td>
<td>479</td>
</tr>
</tbody>
</table>

* t statistics in parentheses
* * p < 0.05, ** p < 0.01, *** p < 0.001
Table 3: Marginal Effects of Pro-Government Intervention

<table>
<thead>
<tr>
<th>Civilian Bias</th>
<th>Marginal Effects</th>
<th>95% Conf. Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.547</td>
<td>(-1.104 0.009)</td>
</tr>
<tr>
<td>2</td>
<td>0.881</td>
<td>(0.193 1.569)</td>
</tr>
<tr>
<td>3</td>
<td>2.309</td>
<td>(1.052 3.567)</td>
</tr>
</tbody>
</table>

Figure 1: Marginal Effect of Pro-Government Intervention
Table 4: Marginal Effects of Exogenous Bias

<table>
<thead>
<tr>
<th>Pro-Gov. Intervention</th>
<th>Marginal Effects</th>
<th>95% Conf. Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-0.949</td>
<td>(-1.761 -0.137)</td>
</tr>
<tr>
<td>1</td>
<td>0.480</td>
<td>(-0.584 1.543)</td>
</tr>
</tbody>
</table>

Figure 2: Marginal Effect of Civilian Bias
References


