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The Political Economy of Opposition Groups: Peace, Terrorism, or Civil Conflict?

Abstract

This paper proposes a simple framework to better understand an opposition group's choice between peace, terrorism, and open civil conflict against the government. Our model implies that terrorism emerges if constraints on the ruling executive group are intermediate and rents are sizeable, whereas conflict looms under poor executive constraints. Analyzing annual data for up to 158 countries in a panel setting provides evidence consistent with these hypotheses. The results emerge both when considering the incidence and onset of terrorism and conflict. The corresponding magnitudes are economically sizeable. Overall, these findings can help us understand and anticipate the choices of opposition groups.

JEL-Codes: D740, F350, O110, P470, P480, Q340.

Keywords: conflict, executive constraints, foreign aid, natural resource rents, oil rents, political institutions, rents, terrorism.

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1 Introduction

We continue to observe large-scale organized violence against ruling governments in many countries around the world. Sometimes, discontent materializes in open insurgency against the state, and other times domestic terrorism emerges. In 2013, 25 countries experienced deaths from civil conflict and 62 countries experienced deaths from terrorism (data from UCDP, 2015, and START, 2015). Surprisingly, these phenomena of civil conflict (or civil war) and terrorism are analyzed separately in the majority of the associated literature.[1] In reality, however, it is likely that an opposition group consciously decides about which (if any) form of organized violence to pursue against a ruling government. Unfortunately, we still know little about such decisions, as outbreaks of insurgencies and terrorism remain difficult to predict. The following pages present a simple framework that may help us to better understand when and why we may witness an insurgency, terrorism, or neither.

We begin by introducing a basic theoretical model that sketches how an opposition group may select its profit-maximizing strategy between the options of (*i*) peace, (*ii*) terrorism, and (*iii*) open insurgency. Although terrorism and conflicts share a number of common characteristics, our model is based on two simple distinctions: Both the potential gains and costs are large in open insurgencies, but are typically limited in terrorist campaigns. In the model, the opposition's situation in society depends on the constitutional constraints faced by the executive and the available rents (e.g., natural resources or foreign development assistance), holding other, country-specific parameters constant (similar to the setup in Besley and Persson, 2009, 2011).

Three testable hypotheses emerge. First, the model predicts terrorism to become more likely if executive constraints are intermediate and rents are sizeable. Intuitively, in this equilibrium the opposition does not want to risk losing its non-trivial share of rents in a full-blown open conflict, but the looming benefits from a terrorist campaign are more attractive than remaining completely peaceful. Conceptually, such scenarios may correspond to the situation in Algeria (the Armed Islamic Group and Al-Qaeda in the lands of the Islamic Maghreb) over the past 20

[1] One notable exception is provided by Findley and Young (2012).

years or in Nigeria (Boko Haram), for example.[2] Our model implies that terrorism can emerge even under near-perfect institutions if rents are particularly high.

Second, open conflict materializes if constraints on the executive are poor. In this case, the opposition has little to lose from mounting an open insurgency and rewards from a victorious uprising are looming large. As examples, one may consider a number of domestic conflicts in Africa, such as the Ethiopian civil war (1974 – 1991). Third and final, peace prevails if (i) executive constraints are sufficiently large and rents are moderate or (ii) executive constraints are well developed, in which case the size of rents becomes less relevant. Common examples for the latter scenario may be found in Scandinavian nations, Australia, or New Zealand, among many others.

To test these hypotheses, we analyze country-year level data on deaths from terrorism and domestic conflicts. We focus on both the incidence and onset of terrorism and civil conflict, as our theoretical predictions offer themselves to both of these interpretations that are common in the respective literature.[3] Applying a two-way fixed-effects framework allows us to focus on within-country variation only, controlling for any unobservable heterogeneity across countries and time. Indeed, terrorism most frequently occurs when rents are high and executive constraints are intermediate, but less so at the extreme ends of institutional constraints. In terms of magnitude, moving from an authoritarian regime to intermediate political constraints translates to a 40 percentage point increase in casualties from terrorism; similarly, the likelihood of terrorism onset increases by approximately seven percentage points.

Consistent with the model, conflict intensity decreases linearly as institutional constraints on the ruling elite improve. Moving from a completely authoritarian regime to coherent, inclusive institutions is associated with a decrease in the number of deaths from domestic conflict by more than 74 percentage points. This relationship remains linear, as predicted by the model

[2] Algeria has maintained intermediate executive controls with values ranging from three to five on the Polity IV variable *xconst* (scale ranging from one to seven) over the past 20 years. The country also enjoys rents from large oil and gas reserves, which it exports (see CIA, 2016). A similar scenario applies to Nigeria with executive constraints equivalent to a value of five since 1999 and substantial oil exports.

[3] A third branch of the associated literature considers the duration of conflict and our model may be less suitable to explain that aspect of conflicts or terrorism. For the corresponding literature, we refer to Acemoglu et al. (2010), Blattman and Miguel (2010), and Acemoglu and Wolitzky (2014), among others.

and confirms previous results in the literature (see Hegre, 2014, for an overview). Finally, the combination of these results provide evidence supporting the idea that domestic peace becomes most likely under well-developed executive constraints and when available rents are moderate at best.

Our paper aims to connect two streams of literature in political science and political economy: The determinants of terrorism and civil conflict. As such, our paper offers three contributions. First, it provides a unifying framework to *jointly* study the occurrence of terrorism and domestic conflict. This can help us understand (and potentially anticipate) why we observe terrorism in some countries and open insurgency in others. It also explains why transitioning democracies (i.e., moving from little or no executive constraints to better institutional boundaries for the incumbent) can become vulnerable to terrorism (e.g., see Chenoweth, 2013), namely if substantial rents are available. Our theoretical intuition builds on foundations from Besley and Persson (2009, 2011), who analyze political violence from the government's perspective – however, our focus lies on the opposition group. As such, our paper should not be regarded as a comprehensive explanation of why and when organized violence occurs; rather, it provides a first intuition of how the decision-making process of opposition groups may play out under given circumstances, namely the existing political institutions and available rents.

Second, the paper adds to empirical works on the determinants of terrorism. Our model produces a rational explanation for the empirical observation that terrorism can indeed be more likely in relatively democratic societies, as pointed out by Chenoweth (2013), even after country-specific heterogeneity is accounted for. When it comes to terrorism, intermediate constraints on the executive and sizeable rents can prove an explosive combination. Third, related to the civil conflict/civil war literature, our findings highlight the overwhelming importance of institutional constraints, as previously argued by Hegre (2014), among many others (also see Blattman and Miguel, 2010, for a summary). The qualitative and quantitative interpretations of the derived findings are considerable, both for the incidence and onset of terrorism and conflict.

The paper proceeds with an intuitive motivation of our hypothesis, relating our work to the existing theories and empirical findings. Section 3 introduces a theoretical model of a profit-

maximizing opposition group, whereas section 4 presents the data and empirical methodology. Sections 5 and 6 analyze the empirical implications of the underlying hypotheses for terrorism and civil conflict. Finally, section 7 concludes.

2 Background

2.1 Defining Concepts

Domestic terrorism and civil conflicts share many similarities as organized forms of political violence. Blattman and Miguel (2010, p.6) point out that "the distinction between civil wars and other forms of political instability has largely been assumed rather than demonstrated." More specifically, Lessing (2015) highlights the need to distinguish between forms of organized violence that are intended to take control of the government, as opposed to those that carry other goals. The following pages will focus on the distinction between a terrorist campaign and civil conflict, but one could of course emphasize other, potentially related forms of organized violence. Further, we do not model a dynamic game between the opposition group and the incumbent, but rather embark from a simple static situation in which domestic conditions are exogenous to the opposition group's decision.

To lay out the concepts of terrorism and civil conflict and to clarify terminology, consider the respective definitions provided by the Merriam-Webster dictionary for terrorism and insurgencies:

- **Terrorism:** "the use of violent acts to frighten the people in an area as a way of trying to achieve a political goal."[4]
- **Insurgency:** "a usually violent attempt to take control of a government: a rebellion or uprising."[5]

[4] Alternatively, and consistent with this definition for our purposes, Google defines terrorism as "the unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims."

[5] Another term, virtually analogous to an insurgency relates to a political coup (or coup d'état), defined as "a sudden, violent, and illegal seizure of power from a government."

The uniting theme across these concepts centers on the notion of large-scale organized violence, usually against a ruling government. At its roots, both concepts constitute expressions of a group's deep dissatisfaction with the status quo, leading them to choose violent means with the goal of changing political institutions.

However, a terrorist campaign and an open insurgency differ along some important dimensions. Most importantly, terrorism is motivated by achieving *a political goal*, which can translate to regional independence, a more equal distribution of resources, or concessions in the country's institutional framework, for instance. The purpose of mounting an insurgency, however, lies in overthrowing the government entirely and seizing control. Throughout the paper, we will use the terms insurgency and (open civil) conflict interchangeably.

In economic terms, the associated costs and benefits differ. The benefits from an open insurgency are larger (control of the government), but so are the associated costs as an insurgency consists in open fighting against a ruling government. This openness is expressed as a group's public declaration of violent government opposition, which in turn usually legitimizes the government's persecution of all group members. As a consequence, the group may lose its institutional privileges and become outlaws.

In terrorism, on the other hand, resistance is usually organized underground. Actors are hidden and the costs associated with terrorist attacks can be manageable, especially when compared to mounting an insurgency. Usually, group members do not need to publicly identify with the organization's political goals and in the worst-case scenario those members conducting terrorist missions (but not unidentified members) will lose their institutionally guaranteed rights or die. However, the secretive character of terrorism produces a natural and manageable limit to the group's campaign costs without risking everything the group possesses. In turn, the best-case scenario of a successful terrorist campaign constitutes achieving *a political goal* – but not seizing complete control of the government. These conceptual distinctions are at the heart of our theoretical model and the subsequent empirical analysis.

2.2 Related Literature

Previous works on the determinants of domestic conflicts generally distinguish between economic (e.g., income levels) and political drivers (e.g., political rights or democracy). In a series of seminal papers, Paul Collier and Anke Hoeffler distinguish between greed and grievances, suggesting economic opportunity as a key driver of civil wars (Collier and Hoeffler, 1998, 2004; Collier et al., 2009). Miguel et al. (2004) show that higher income can alleviate conflict, using an instrumental variable approach based on rainfall in Africa. Fearon and Laitin (2003), Cotet and Tsui (2013), and Conconi et al. (2014), among many others, suggest democratic countries are less prone to conflict. Blattman and Miguel (2010) provide a comprehensive overview of the existing literature on civil war. Dixon (2009) focuses on summarizing the empirical literature on the determinants of civil war *onset*. Further, the demographic composition of society, in particular ethnic fractionalization and polarization, has been highlighted in a number of influential papers, in particular by Fearon and Laitin (2003), Reynal-Querol and Montalvo (2005), and Joan Esteban and Debraj Ray (Esteban and Ray, 2008, 2011; Esteban et al., 2012). In the present paper, ethnic components will not be the focus and will be assumed to remain constant within a country over time.

Some studies have identified the presence of natural resources as a potential factor (e.g., see Collier and Hoeffler, 1998, and Cotet and Tsui, 2013), as well as foreign aid inflows (e.g., see Nielsen et al., 2011, and Nunn and Qian, 2014). The present article adds to these studies in highlighting the importance of political constraints and rents from resources or international assistance in explaining organized violence, particularly distinguishing between terrorism and civil conflict.

Similar to conflict studies, the terrorism literature has identified some key drivers, such as development levels (e.g., GDP per capita) and political rights in several forms (e.g., democracy, political freedom, civil liberties, or the rule of law).[6] Comprehensive summaries of the literature on terrorism determinants are provided by Gassebner and Luechinger (2011) and Sandler (2014,

[6]The potential link between income levels and terrorism has received mixed evidence. Krueger and Malečková (2003), Blomberg et al. (2004), Abadie (2006), and Enders and Hoover (2012) provide important studies.

2015). Note that the present paper focuses on *domestic* terrorism, not international terrorism and, in reality, only 3.8 percent of the documented terrorist attacks in the Global Terrorism Database are categorized as international terrorism. These missions are excluded from our analysis.

One particularly controversial observation suggests that *democratic* states can be more likely to become targets of terrorism – a phenomenon we do not observe for domestic conflicts usually (see Hegre, 2014). For example, Chenoweth (2013) writes that "transitioning democracies with internally inconsistent institutions were more likely to experience domestic terrorism than advanced democracies and authoritarian regimes." Our paper offers one intuitive explanation for this observation that emerges directly from the cost-benefit distinctions between open conflict and concealed terrorism, which is fully captured by a simple and tractable model in the next section.

3 The Model

3.1 Basic Framework

Assume an economy consisting of two organized groups: A ruling government and an opposition group. To keep things simple, the size of the opposition group is identical to the size of the ruling government and is normalized to one (akin to Besley and Persson, 2009, 2011). Similarly, no within-group coordination problems are permitted, although one could amend the decision process with such dynamics without loss of generality. Given the status quo, which will be introduced shortly, the opposition can choose to pursue one of three strategies: Peace, terrorism, or open insurgency. We will use the concepts of civil conflict (defined empirically as exhibiting at least 25 battle-related deaths per year) and insurgency interchangeably throughout the paper. For conflict, the opposition invests its entire stake in mounting an open insurgency against the incumbent government and seeks to overthrow it. For a terrorism campaign, only a portion of the group's resources is invested with the goal of increasing their share of economic rents, equivalent to the definition of gaining more political power.

We realize that, in reality, both forms of violence (terrorism and conflict) can sometimes appear simultaneously or one can transition into the other. However, we restrict ourselves to a simple choice in a static model in this paper to illustrate the conceptual differences between both types of organized violence and to provide a basic intuition about when terrorism or conflict might emerge.

In our setting, the probability of winning a terrorism campaign or an open insurgency is described by a Contest Success Function (CSF) used in the existing theoretical literature on conflicts and rent-seeking (e.g., see Buchanan et al., 1980; Skaperdas, 1996; Jia and Skaperdas, 2012).[7] As in Besley and Persson (2011), the conventional way of modeling a scenario of two-sided conflict is via a CSF which takes into account both parties' investment in violence. In this paper, we adopt a special version of a CSF where each party's probability of winning is a function of the ratio of the respective resource commitment.[8] For the opposition, we assume the chance of winning a terrorist campaign or an open insurgency only depends on the proportion of available resources invested into violence (while taking the incumbent group's investment in combating terrorism and insurgencies as fixed). Again, this conceptual simplification facilitates the model's focus on the opposition group's choice between a terrorist campaign and an insurgency, highlighting their respective similarities and differences along the lines of costs and benefits.

Moreover, the respective technologies characterizing terrorism and insurgency only differ by a discount coefficient attached to the insurgency technology, reflecting the idea that mounting an insurgency generally involves larger risk and features a lower chance of winning than mounting a terrorism campaign, given the same level of investment. To emphasize the basic underlying mechanism, the decision process is modeled in its simplest form as one static period for a risk-neutral opposition group.

Following Besley and Persson (2009, 2011), the country's institutional foundations guarantee

[7]The Contest Success Function has been applied to analyze a broad category of conflict interactions including military combat, election campaigns, lobbying, rent-seeking, and sports.

[8]Under the logit specification of a CSF, the probability of winning becomes a function of the difference between the parties' commitments to the contest. However, this specification does not fit into the assumptions we will impose on the terrorism or conflict technology in this paper.

a σ-sharing rule in distributing the available economy-wide rents, R. The latter parameter refers to natural resource rents or foreign aid inflows – both assets over which a ruling government maintains control in this model (see Besley and Persson, 2009, 2011, for more detail). Under constitutional rule, the incumbent must allocate a share $\sigma \in (0, \frac{1}{2}]$ of R to the opposition group and retains the rest, $(1-\sigma)R$. Thus, σ can be interpreted as constraints on the executive or, alternatively, as weak and extractive (low σ) versus strong and inclusive institutions (high σ), following the terminology used by Acemoglu et al. (2005). Note that the extreme case of perfect autocracy with $\sigma = 0$ is ruled out in this paper for analytical convenience. In the following, we first introduce the corresponding payoffs for each of the opposition group's options (peace, terrorism, or insurgency), followed by describing their optimal decision.

3.2 Peace

The first option is characterized by non-violence. In particular, maintaining peace yields the opposition group a payoff of

$$\Pi_{peace} = \sigma R. \tag{1}$$

For notational convenience, define $P(\sigma) \equiv \sigma$, hence $\Pi_{peace} = P(\sigma)R$. Notice that if institutional constraints on the executive are extremely strong and $\sigma = \frac{1}{2}$, then both groups benefit equally from revenues, since the ruling group's revenue remains $(1-\sigma)R$. If $\sigma \to 0$, however, very few institutional restraints are imposed on the executive and the reigning group can reap almost all of the available resource revenue, R.

3.3 Terrorism

Now consider the second option: A terrorist campaign. The idea of forming a terrorist movement is associated with using organized violence to enforce better institutional terms, i.e., an even distribution of the available rents, corresponding to $\sigma = \frac{1}{2}$. We can think of a number of potential demands that can be summarized under an increase of σ, such as territorial concessions (e.g., separatist groups) or improved political and economic power. However, even if the campaign

proves to be successful, it is not possible to take control of the government with terrorist tactics, thereby naturally limiting the potential gains.

In turn, the total cost of engaging in terrorism consists of two parts: (1) A fixed setup cost component, c, constituting the cost of secretly forming, operating, and coordinating the group, which does not directly enhance the chance of winning any particular terrorist campaign; and (2) a variable cost representing the group's investment in deploying any particular terrorist attack, which is equivalent to $\tau\sigma R$, where $\tau \in (0, 1)$ denotes the fraction of the opposition's rents devoted to any terrorist attack. Allowing τ to change within its valid range captures variable costs associated with a wide range of terrorist campaigns with varying scale and intensity. However, τ is strictly bounded below 1 and above 0 since the regime switches abruptly to peace at $\tau = 0$ and to insurgency at $\tau = 1$.

By definition, mounting a terrorist campaign means that no fractional member of the opposition needs to openly declare themselves as violently opposed to the government. This concealed nature of terrorism implies limited accountability captured by an upper bound of τ ($\tau < 1$). This aspect of terrorism limits the associated costs, especially when compared to the concept of open insurgency, which will be introduced shortly.

Both of these characteristics fundamentally differentiate terrorism from insurgencies. In general, the fixed cost component of terrorism remains relatively small across countries and time, although country- and time-specific aspects are likely to influence c. In the empirical section, fixed effects will be introduced to capture such unobservable heterogeneity across countries and over time.

The expected payoff of mounting a terrorist campaign can be written as

$$\Pi_{terror} = (1 - \tau)\sigma R + \beta(\tau\sigma)(\frac{1}{2} - \sigma)R - c, \tag{2}$$

where the probability of a successful terrorist campaign, $\beta(\tau\sigma)$, depends on the proportion of overall resources devoted to terrorism, $\tau\sigma$, which is the product of the investment, τ, and the institutionally determined share of rents, σ. In this model, $\beta(\sigma\tau) = 1$ refers to a fully successful

terrorist campaign achieving the targeting outcome for the opposition: An even split of rents with the ruling party. In practice, β may vary between 0 and 1 and capture the extent of success in striving for a larger share of rents from the ruler's hands via terrorism.

We impose a few basic assumptions on the properties of the terrorism technology $\beta(\cdot)$. First, $\beta(0) = 0$ and $\beta(\sigma) < 1$. For the opposition, failure is assured when nothing is invested in terrorism. In addition, success can never be guaranteed no matter how much investment is made. Second, $\beta(\cdot)$ is increasing and concave with $\beta'(\cdot) > 0$ and $\beta''(\cdot) < 0$, i.e., given the incumbent government's efforts in combating terrorism, the opposition's investment in terrorism always carries positive returns, albeit at a decreasing rate. Third, $lim_{x\to 0}\beta'(x) = \infty$, as the marginal returns to investing in terrorism approach infinity when investment goes to zero. The terrorism technology $\beta(\cdot)$ falls below a broader category of the contest success function in the literature where each party's success depends on the ratio of the respective resource commitments (e.g., Buchanan et al., 1980; Skaperdas, 1996; Jia and Skaperdas, 2012). These assumptions are consistent with the ratio form of a contest success function once the incumbent party's efforts in combating terrorism are taken as given.[9]

Once deciding to undertake terrorist activities to increase their share of rents, the opposition chooses the optimal level of investment in violence, τ, to maximize their expected payoff as:

$$\tau = \arg\max_{0<\tau<1} \Big[(1-\tau)\sigma R + \beta(\tau\sigma)\big(\frac{1}{2} - \sigma\big)R - c\Big]. \tag{3}$$

We can state the policy solution within the option of terrorism as:

PROPOSITION 1. *For $\sigma \in (\tilde{\sigma}_T, \frac{1}{2})$, the optimal investment in terrorism is $\hat{\tau}(\sigma)$ satisfying $\beta'(\tau\sigma) = (\frac{1}{2} - \sigma)^{-1}$ and $\frac{\partial\hat{\tau}}{\partial\sigma} < 0$*

Proof: see appendix A.1.

[9]For example, in case of two-party conflict, the most commonly used ratio form of CSF is $p_1(x_1, x_2) = \frac{x_1^\mu}{x_1^\mu + x_2^\mu} = \frac{\left(\frac{x_1}{x_2}\right)^\mu}{\left(\frac{x_1}{x_2}\right)^\mu + 1}$, $0 < \mu < 1$, indicating player 1's winning probability depends on the ratio of player 1 and 2's efforts. Treating player 2's efforts as given, $x_2 = \overline{x_2}$, it is straightforward to show $p_1(0, \overline{x_2}) = 0$, $\frac{\partial p_1(x_1, \overline{x}_2)}{\partial x_1} > 0$, $\frac{\partial^2 p_1(x_1, \overline{x}_2)}{\partial x_1^2} < 0$, $lim_{x_1\to 0}\frac{\partial p_1(x_1, \overline{x}_2)}{\partial x_1} = \infty$. The terrorism technology $\beta(x_1)$ is a special version of $p_1(x_1, x_2)$ if the two players refer to the opposition and ruling parties with the incumbent's investment in combating terrorism, x_2, taken as given.

It is worth noting the optimal investment in terrorism is defined on a subset of an entire set of institutional constraints $(\tilde{\sigma}_T, \frac{1}{2}) \subset (0, \frac{1}{2}]$. By definition, in the regime of terrorism, τ is strictly bounded from below by 0 and from above by 1, $0 < \tau < 1$. For $\sigma \in (0, \tilde{\sigma}_T]$, the upper bound of $\hat{\tau}$ becomes binding with the marginal benefit of terrorism investment always exceeding its marginal cost, so that the optimal investment hits its upper bound of 1. For $\sigma = \frac{1}{2}$, with the marginal benefit turning zero, the lower bound of $\hat{\tau}$ becomes binding with the optimal investment reaching zero. We exclude these corner solutions from our discussion of terrorism (as they correspond to the regimes of insurgency and peace) and focus on the interior solution characterized in *Proposition 1*. Intuitively, within the regime of terrorism, the opposition's optimal investment in terrorism is inversely related to the soundness of political institutions. Stronger (weaker) institutional constraints on the executive induce less (more) investment from the opposition to terrorist activities. In the extreme cases, under sufficiently weak (strong) executive constraints as stated in the corner solutions, the opposition tends to invest everything (nothing) in terrorism, which corresponds to the limiting scenario of conflict (peace). We will proceed to integrate all three regimes in Section 3.5.

Thus, under a valid domain of institutional constraints, the opposition chooses the optimal allocation to violence in the form of terrorism according to *Proposition 1* and obtains the maximized level of expected payoff. Let $\hat{\Pi}_{terror}$ denote the value function associated with $\hat{\tau}(\sigma)$ and define $\hat{\Pi}_{terror} \equiv T(\sigma)R$, where

$$T(\sigma) = [1 - \hat{\tau}(\sigma)]\sigma + \beta[\hat{\tau}(\sigma)\sigma]\left(\frac{1}{2} - \sigma\right) - \frac{c}{R} \tag{4}$$

for $\sigma \in \left(\tilde{\sigma}_T, \frac{1}{2}\right)$.

3.4 Insurgency

Finally, the opposition group can consider a third option: Open insurgency. In this case, potential gains are higher than from a terrorist campaign, as the looming reward consists of taking over the government and reaping the ruling party's share of the available rents, $(1 - \sigma)R$. How-

ever, launching an open insurgency is also more costly than launching a secretive terrorist attack. As the opposition declares an open conflict on the ruling regime, it puts all available resources into fighting (σR). Another interpretation of the associated costs amounting to σR relates to the notion that once a group declares war on the government, it is not eligible to receive its institutional share of rents anymore. Thus, the expected payoff from insurgency becomes

$$\Pi_{conflict} = \sigma R + \rho\beta(\sigma)(1-\sigma)R - \sigma R = \rho\beta(\sigma)(1-\sigma)R. \tag{5}$$

Specifically, let $C(\sigma) \equiv \rho\beta(\sigma)(1-\sigma)$, hence $\Pi_{conflict} = C(\sigma)R$.

Note that this setup implies two simplifying assumptions. First, the same type of terrorism technology $\beta(\cdot)$ is used here to relate the probability of winning the conflict to investment in violence. The nature of open insurgency requires $\tau = 1$, thus, unlike terrorism, the opposition commits every cent to mounting an insurgency, and the winning probability only depends on the opposition's institutionally guaranteed share of rents.

To capture the fact that more risk is involved in an open insurgency than in a concealed terrorism campaign, a fixed discount factor $\rho \in (0,1)$ is introduced to decrease the odds of winning an insurgency compared to winning a terrorism campaign. In practice, ρ likely also includes a number of country-specific aspects that may favor or complicate a successful rebellion against the government. For instance, if the ruling government's military is weak, chances of a successful revolution increase (e.g., see discussion in Besley and Persson, 2011). As another example, geographical aspects could facilitate or complicate the chances of a successful revolution (e.g., see Fearon and Laitin, 2003, Collier et al., 2009, Do and Iyer, 2010, Weidmann and Ward, 2010, or Schutte, 2015).

3.5 The Optimal Choice

Given institutional constraints σ, the size of economy-wide rents R, the terrorism technology $\beta(\cdot)$, and the insurgency technology $\rho\beta(\cdot)$, the opposition group chooses how much to invest in political violence (via terrorism or insurgency) from its allocated share of rents to maximize its

expected payoff as described in equations (1), (2), and (5). Essentially, we can integrate the above three options in this unified model by treating the regimes of peace and conflict as special corner solutions with $\tau = 0$ and $\tau = 1$ and by treating the regime of terrorism as an interior solution with a continuous choice of $\tau \in (0, 1)$.

3.5.1 The Choice Between Peace and Conflict

We start with considering the two limiting cases only and allow the opposition to choose between the two discrete options of peace ($\tau = 0$) and conflict ($\tau = 1$). As will be seen, this helps to lay out the basic framework and derive a single threshold of the institutional variable distinguishing the two regimes of peace and conflict.

We first state a simple result from comparing the payoff associated with conflict and peace and relegate the proof to appendix A.2:

PROPOSITION 2. *With two available options of peace and conflict, given positive rents, $R > 0$, there exists one threshold $\sigma_1 \in (0, \frac{1}{2})$ with $\frac{\partial \sigma_1}{\partial \rho} > 0$ such that:*

i) For $0 < \sigma \leq \sigma_1$, there is conflict with $\tau = 1$ and

ii) For $\sigma_1 < \sigma \leq \frac{1}{2}$, there is peace with $\tau = 0$.

The proposition describes two equilibrium outcomes of peace and conflict. When σ is above σ_1, the opposition finds it optimal not to invest in violence and accepts the institutionally guaranteed share of rents. When σ is below σ_1, however, the opposition devotes all its available resources to fighting because the allocated share of rents is so low that the group has little to lose from declaring an open insurgency on the ruling regime. Hence, the critical value of institutional constraints, σ_1, divides the equilibrium outcome into conflict and peace regimes. Not surprisingly, σ_1 is increasing with the discount parameter ρ. A higher ρ translates to a higher probability of winning the conflict and can expand (shrink) the conflict (peace) regime.

This proposition highlights the crucial role of institutional constraints in influencing the emergence of conflicts, as opposed to peace as the opposition's reaction. Weak institutional constraints make it more likely for σ to stay below its threshold of σ_1, enhancing the chance

of conflict. Hence, in this basic model with two options, *Proposition 2* predicts a negative relationship between constraints on the executive and the incidence of conflict.

3.5.2 The Choice between Peace, Terrorism, and Conflict

Based on the simple two-option framework laid out in the last subsection, we now introduce the third option of terrorism. With all three options at hand, the opposition compares the expected payoffs generated in equations (1), (2), and (5), choosing the optimal investment in violence, τ^*, to maximize its expected payoff. Given positive economic rents, $R > 0$, this optimization problem can be written as:

$$\tau^*(\sigma) = \arg\max_{0 \leq \tau \leq 1} \big\{C(\sigma), T(\sigma), P(\sigma)\big\}. \tag{6}$$

To study the equilibrium strategies for the opposition, we make the following assumption on the terrorism technology:

Assumption 1. At $\sigma = \tilde{\sigma}_T$, the contest function satisfies $\beta(\tilde{\sigma}_T) > \frac{\tilde{\sigma}_T}{(\frac{1}{2} - \tilde{\sigma}_T)}$.

This assumption sets a variable minimum value for the probability of a successful terrorism campaign at the lower bound of its domain, $\tilde{\sigma}_T$, if the opposition invests almost every cent in terrorism (as τ approaches 1). In addition, this minimum value is determined by an increasing function in $\tilde{\sigma}_T$. Essentially, it is used to ensure that the expected payoff derived under terrorism always dominates that of maintaining peace as $\sigma \to \tilde{\sigma}_T$ for any non-trivial level of rents.

Using *Assumption 1*, we have the following characterization of the opposition's optimal strategy in the following propositions with the proof relegated to Appendix A.3 and A.4.

PROPOSITION 3. *For* $\rho \in \big[\frac{\frac{1}{2} - \tilde{\sigma}_T}{1 - \tilde{\sigma}_T}, 1\big)$ *and* $R \in \big[\underline{R}, \infty\big)$*, there exist two thresholds* $\sigma_2 \in [\underline{\sigma}_2, \sigma_1]$ *and* $\sigma_3 \in [\sigma_1, \frac{1}{2}]$ *with* $\frac{\partial \sigma_2}{\partial R} < 0$ *and* $\frac{\partial \sigma_3}{\partial R} > 0$*, such that:*

i) For $\sigma \in (0, \sigma_2)$*, there is conflict with* $\tau^* = 1$*,*

ii) For $\sigma \in [\sigma_2, \sigma_3]$*, there is terrorism with* $\tau^* = \hat{\tau}(\sigma)$*, and*

iii) For $\sigma \in [\sigma_3, \frac{1}{2}]$, there is peace with $\tau^* = 0$.

PROPOSITION 4. *For $\rho \in \left[\frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}, \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}\right)$ and $R \in [R_T, \infty)$, there exist two thresholds $\sigma_2 = \tilde{\sigma}_T$ and $\sigma_3 \in [\sigma_1, \frac{1}{2}]$ with $\frac{\partial \sigma_3}{\partial R} > 0$ such that:*

i) For $\sigma \in (0, \sigma_2]$, there is conflict with $\tau^* = 1$,

ii) For $\sigma \in (\sigma_2, \sigma_3)$, there is terrorism with $\tau^* = \hat{\tau}(\sigma)$, and

iii) For $\sigma \in [\sigma_3, \frac{1}{2}]$, there is peace with $\tau^* = 0$.

3.5.3 Interpretation

Propositions 3 and *4* predict three equilibrium outcomes of conflict, terrorism, and peace as the optimal response of the opposition group, conditional on the location of the institutional constraints variable σ. If rents are non-trivial, three regimes featuring conflict, terrorism, and peace are ordered sequentially along the σ axis and are distinguished by two thresholds of σ_2 and σ_3. When σ is below σ_2, it is in the opposition's best interest to invest its entire stake in mounting an open insurgency against the government and civil conflict arises ($\tau^* = 1$).

When σ locates in its intermediate range between σ_2 and σ_3, the opposition's institutional status improves with a larger share of rents being allocated and protected by more inclusive institutions. So, the opposition is no longer willing to risk losing its entire benefits in an open uprising and would opt for a less costly secretive terrorism campaign instead. Within the regime of terrorism, the opposition's optimal investment in terrorism is monotonically decreasing in σ, as stated in *Proposition 1* ($\frac{\partial \hat{\tau}}{\partial \sigma} < 0$). Finally, when σ rises above σ_3, with a significant share of rents at its disposal, the opposition is satisfied with the status quo and peace prevails ($\tau^* = 0$).

Interestingly, the two trigger points σ_2 and σ_3, which divide the opposition's actions into three distinct regimes (and set the boundaries of different regimes), respond to the size of economic rents asymmetrically. The higher trigger point σ_3, delineating terrorism from peace, ranges between σ_1 and $\frac{1}{2}$ and is strictly increasing with rents. However, as far as the lower trigger point σ_2 (which separates terrorism from conflict) is concerned, the discount coefficient associated with the conflict technology ρ plays a crucial role in determining its behavior. On one

hand, as stated in *Proposition 3*, when the conflict coefficient is sufficiently large $\frac{(\frac{1}{2}-\tilde{\sigma}_T)}{(1-\tilde{\sigma}_T)} \leq \rho < 1$ (implying just a marginally lower likelihood of winning insurgencies compared with terrorism), σ_2 ranges between $\underline{\sigma}_2$ and σ_1 and is decreasing with rents. As shown in Figure 1, increasing rents from $\underline{R}$ to infinity can simultaneously pull down σ_2 (toward σ_1) and push up σ_3 (toward $\frac{1}{2}$), enlarging the terrorism set at the cost of shrinking both conflict and peace sets. As rents approach infinity, the set of terrorism is maximized to $[\underline{\sigma}_2, \frac{1}{2})$, while the sets of conflict and peace contract to $(0, \underline{\sigma}_2)$ and a singleton $\{\frac{1}{2}\}$, respectively.

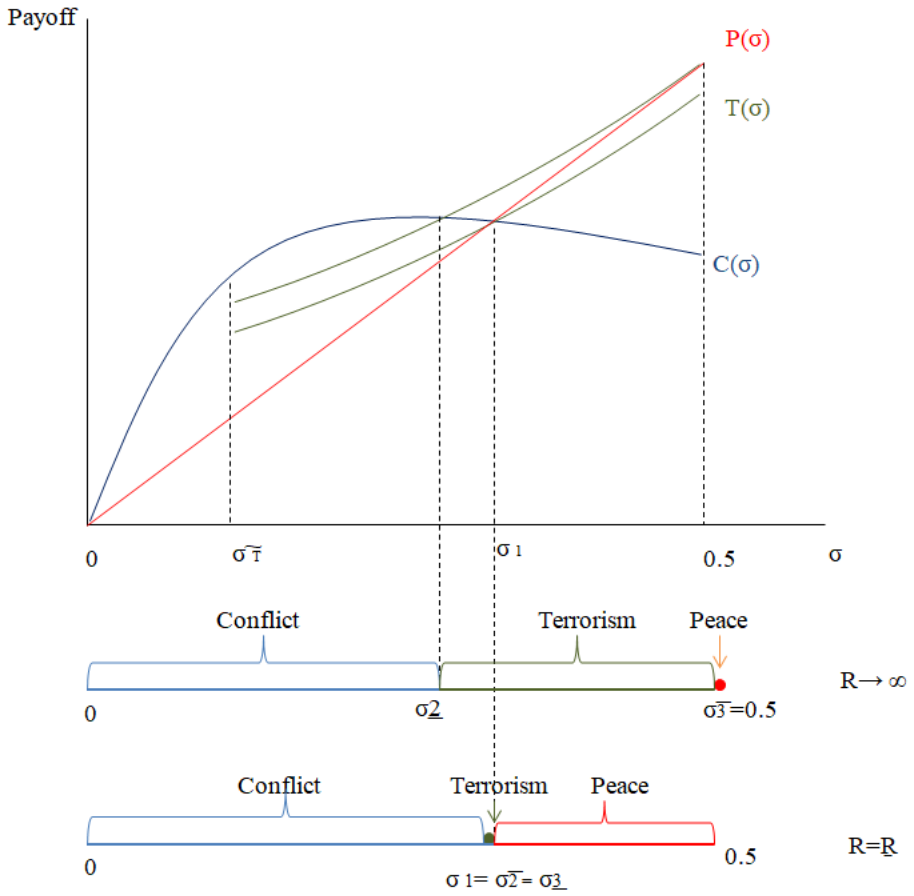

Figure 1: Regimes of conflict, terrorism, and peace with $\frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T} \leq \rho < 1$ and $\underline{R} \leq R < \infty$.

On the other hand, as stated in *Proposition 4*, when the discount coefficient attached to conflict is relatively lower with $\frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)} < \rho < \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}$ (indicating a substantially lower likelihood of winning insurgencies compared with terrorism), σ_2 stays fixed at a single point of $\tilde{\sigma}_T$ while σ_3

responds positively with rents. As shown in Figure 2, starting with R_T (when $C(\sigma)$ is tangent with $T(\sigma)$ at σ_T), raising rents only pushes up the higher trigger point σ_3 without affecting its lower trigger point σ_2 at all. Therefore, the set of conflict $(0, \tilde{\sigma}_T]$ is fixed throughout and does not respond to any change in rents. However, the set of terrorism $(\tilde{\sigma}_T, \sigma_3)$ expands with higher rents via the free adjustment of the higher trigger point σ_3. As rents approach infinity, the set of terrorism is maximized to $(\tilde{\sigma}_T, \frac{1}{2})$. Meanwhile, the set of peace contracts all the way to a singleton of $\{\frac{1}{2}\}$. Figure 3 illustrates the limiting case for $\rho = \frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}$, when $\sigma_1 = \tilde{\sigma}_T$, and the higher trigger point σ_3 may vary in the full range of $[\sigma_1, \frac{1}{2}]$ with rents.

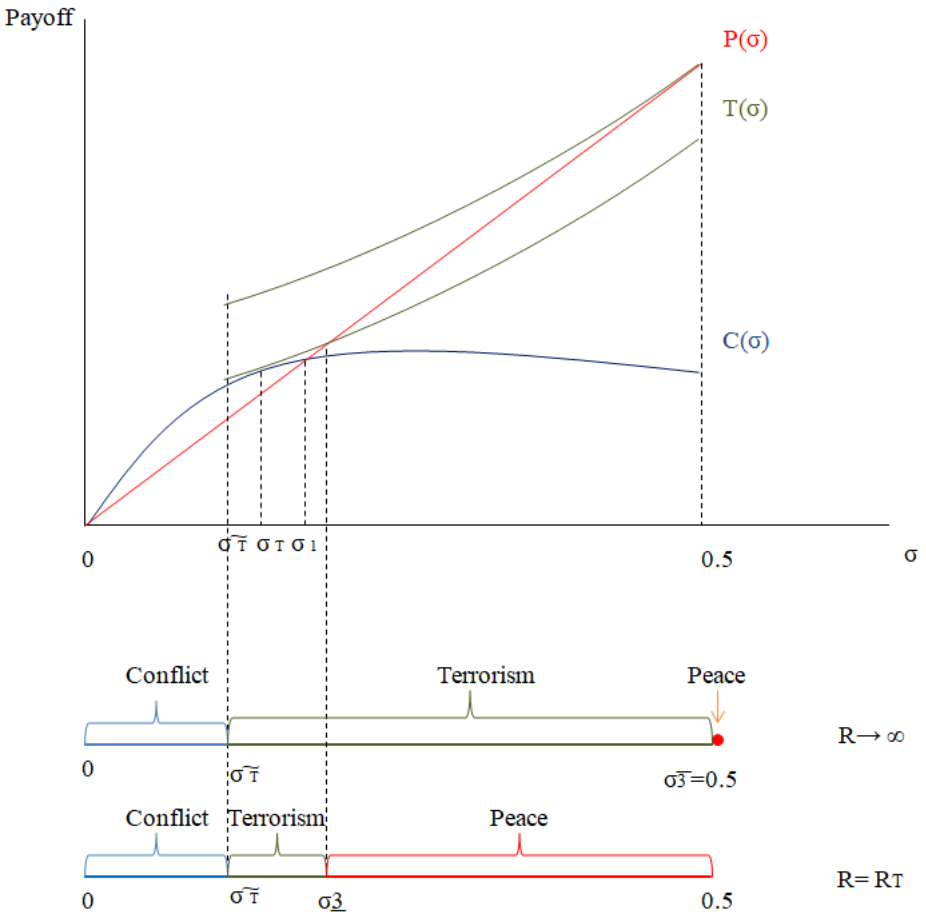

Figure 2: Regimes of conflict, terrorism, and peace with $\frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)} < \rho < \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}$ and $R_T \leq R < \infty$.

In reality, the risks involved in mounting an open insurgency are in general believed to be

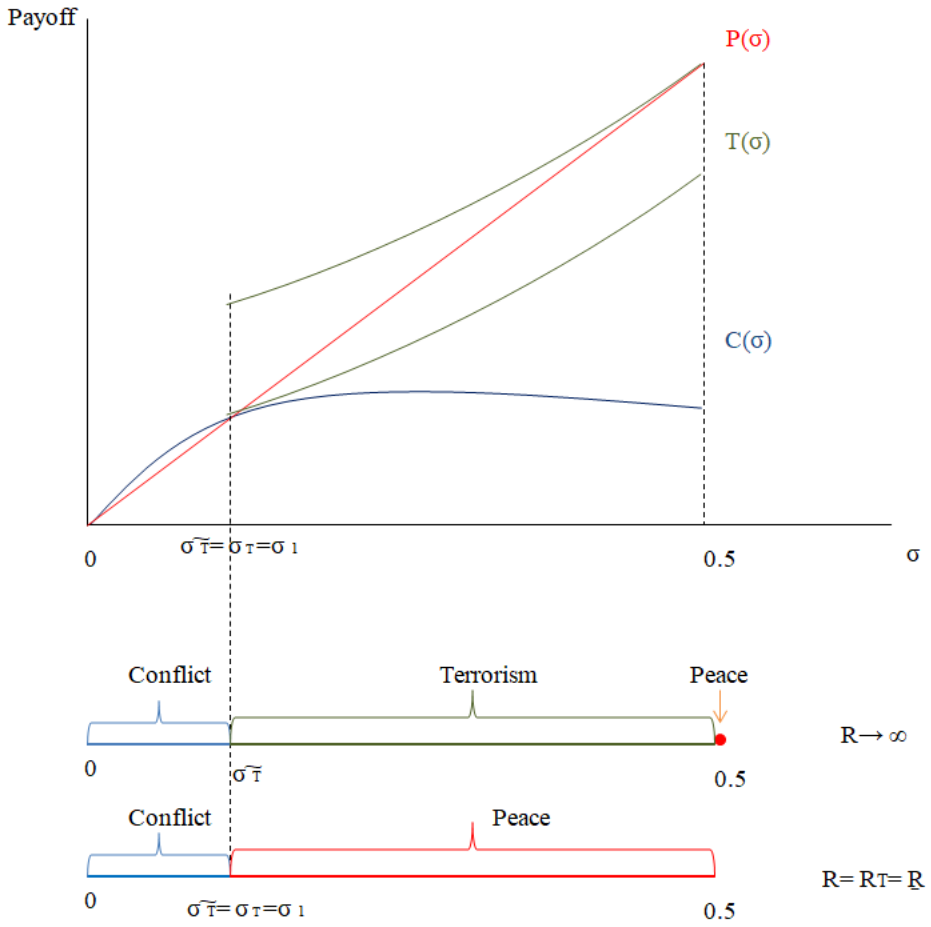

Figure 3: Regimes of conflict, terrorism, and peace with $\rho = \frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}$ and $R_T \leq R < \infty$.

much higher than deploying a terrorist campaign, indicating a much lower probability of winning insurgencies compared with terrorism. Hence, although *Proposition 3* could be encompassed as a theoretical possibility in our model, we find it plausible to follow *Proposition 4* and formulate three testable hypotheses based on the reasonable assumption on the value of the discount coefficient associated with the insurgency technology, $\rho \in \left[\frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}, \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}\right)$. First, the full-fledged three-regime model predicts an inverted U-shape between executive constraints and the incidence of terrorism, as terrorism becomes most likely when political constraints are intermediate. Second, via only affecting the higher trigger point which delineates the regime of peace from terrorism, higher rents are predicted to expand the terrorism regime (shrink the regime of peace) and enhance the likelihood and incidence of terrorism. Finally, the location of the conflict regime on the σ-axis and the fixture of the lower trigger point which separates terrorism from conflict predict conflict is more likely to occur under weak executive constraints regardless of the size of rents. With these predictions in mind, we now introduce the empirical setting, followed by the corresponding analysis.

4 Data and Empirical Methodology

4.1 Data

The literature generally considers three aspects of violent conflicts: Incidence, onset, and duration (see Blattman and Miguel, 2010, for a detailed discussion). Naturally, our theoretical intuition is most applicable to the incidence and onset of terrorism and conflict, as studies on the duration of such events are likely to follow different dynamics (e.g., see Acemoglu et al., 2010, and Acemoglu and Wolitzky, 2014, for recent theoretical works). Thus, the empirical section will focus on studying incidence and onset of terrorism, followed by the same sequence for civil conflict.

To test the hypotheses proposed in Section 3.5.3, we access the Global Terrorism Database (GTD, introduced by LaFree and Dugan, 2007) and the Uppsala Conflict Data Program (UCDP, 2015) for detailed data on deaths from terrorist attacks and internal conflicts. Both data sources

have become standard in the respective literature. The GTD (START, 2015) defines terrorism as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." We focus on the number of deaths from terrorism, although all derived results are consistent when using the number of attacks. In turn, the UCDP (UCDP, 2015) defines armed conflict as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths."

The GTD contains information on terrorist attacks from 1970 – 2014 and we aggregate information on domestic terrorist attacks to the country-year level.[10] The UCDP battle-related deaths dataset provides information on the number of casualties from internal and internationalized internal conflicts on the country-year level from 1989 to 2014. Appendix Table B1 lists all sample countries.

Note that the literature generally refers to conflicts with more than 25 battle-related deaths in a given year as civil *conflicts* (e.g., see Blattman and Miguel, 2010) and most data sets only offer a binary indicator for civil conflict.[11] However, the UCDP battle-related deaths dataset allows for a much more continuous measure of an open and violent opposition to the government, providing the number of deaths. Nevertheless, all results are consistent when using a binary indicator for more than 25 casualties as the dependent variable for terrorism and conflict. The corresponding findings are referred to Table D1 in the appendix.

To measure σ, the institutional constraints on the executive, we access the Polity IV dataset, a common source for political variables (introduced by Marshall and Jaggers, 2002). In particular, we use the variable *xconst* (executive constraints, labeled $EXEC$ from hereon), ranging from one to seven, where larger values symbolize tighter constraints on the executive. In alternative estimations, we also employ the *polity*2 variable capturing a country's degree of democracy

[10] As is well known in the associated literature, data from 1993 is not provided in the GTD because of missing files. Further, we exclude international terrorism and inter-country conflicts, as these phenomena are likely following different dynamics than the domestic situation described in this paper.

[11] In turn, if a threshold of 1,000 battle-related deaths has been crossed, researchers refer to civil *war*.

as a proxy for institutional constraints.

Further, measures for R (natural resource rents, foreign development assistance, and oil rents) are collected from the World Development Indicators (World Bank Group, 2012). Finally, additional control variables are taken from conventional sources for country-level data and will be introduced in the upcoming subsection. Summary statistics of all variables are referred to the appendix Tables C1 and C2.

4.2 Empirical Methodology

4.2.1 The Incidence of Terrorism and Conflict

Analyzing the incidence of terrorism, we estimate the following regression for country i and year t, before employing the same structure to estimate the incidence of conflicts.

$$Ln(1 + deaths)_{it} = \alpha_1 EXEC_{it} + \alpha_2 \big(EXEC\big)^2_{it} + \alpha_3 Rents_{it} + \boldsymbol{X_{it}}\alpha_4 + \delta_i + \rho_t + \kappa_{it} + \epsilon_{it}. \quad (7)$$

Note that the dependent variable is calculated as Ln(1+deaths), which conserves country-year observations in which no deaths occurred. In the case of terrorism, we would expect α_1 to exhibit a positive coefficient, whereas α_2 is predicted to be negative, corresponding to the notion that terrorism is most likely to occur in societies with intermediate controls on the executive. For conflicts, we would expect α_1 to exhibit a negative coefficient and α_2 should be statistically irrelevant.

The effect of available rents is captured by α_3 and in the case of terrorism we predict a positive relationship. In particular, we will consider natural resource rents, oil rents, and foreign development assistance as measures for the available rents, akin to Besley and Persson (2009, 2011). Following our theoretical motivation, resource rents are expected to be less of a factor in driving conflict.

To control for potentially confounding characteristics that may independently influence the occurrence of large-scale organized violence against the state, the vector $\boldsymbol{X_{it}}$ incorporates the conventional time-variant control variables. In particular, we include GDP per capita, popula-

tion size (employing the natural logarithm for both), and the rate of economic growth. These factors have emerged as likely drivers of organized violence in the associated literature.[12]

δ_i and ρ_t constitute country- and year-fixed effects, whereas κ_{it} incorporates continent-specific time trends. Note that country-fixed effects are absorbing any time-invariant country-specific factors that could be associated with c and ρ from the model (c = fixed costs of terrorism; ρ = discount factor associated with a successful insurgency). This captures geographical aspects, colonial origin, individual history, and other time-invariant heterogeneity on the country level. Fixed effects also reasonably control for characteristics that only change slowly over time, such as ethnic shares or religious distributions. More generally, fixed effects are alleviating concerns about omitted variables.

In addition, fixed effects provide a reasonable assurance against endogeneity concerns from measurement error. For example, if data quality in certain (potentially less developed) countries or specific timeframes was imprecise, a fixed-effects framework would capture such shortcomings. Several closely related topics of research in the cross-country literature have recognized the importance of using a fixed-effects framework to contain endogeneity concerns in a powerful way. Examples can be found in the analysis of economic growth (see Islam, 1995) or democracy (see Acemoglu et al., 2008, and Cervellati et al., 2014). In the case of understanding conflict drivers, Besley and Persson (2011, p.18) and Cotet and Tsui (2013) have shown the importance of analyzing within-country variation via panel data, rather than focusing on cross-country variation.

Further, continent-specific time trends incorporate the idea that developments related to conflict or terrorism can sometimes spill over into neighboring countries.[13] The Arab Spring provides a recent popular example. Finally, ϵ_{it} stands for the conventional error term, clustered

[12]For the importance of income and population size in explaining conflicts, see Collier and Hoeffler (1998), Fearon and Laitin (2003), or Cotet and Tsui (2013). Blomberg et al. (2004) and Enders and Hoover (2012) highlight the role of income levels in explaining terrorism. Blomberg et al. (2004) and Miguel et al. (2004) find growth rates to matter for terrorism and conflicts, respectively.

[13]In alternative estimations, we also incorporate country-specific time trends, producing a much tighter econometric framework. In these estimations, results are consistent with the displayed results in terms of suggested signs and magnitudes. In few estimations, the level of statistical significance decreases for some covariates. However, this is to be expected, as variation within a country over time is limited in a number of control variables and the dependent variable of terrorism or conflict incidence.

on the country level. To ensure consistency and comparability across specifications, we only employ country-year observations for which all variables are available from the respective terrorism and conflict samples. Nevertheless, employing all potentially available observations in each regression produces results that are consistent with our benchmark findings.

4.2.2 The Onset of Terrorism and Conflict

Beyond the incidence measures, the empirical analysis then turns to analyzing the *onset* of terrorism and conflict. We first calculate a binary dependent variable that takes on the value of one if a country suffers deaths from terrorism in a given year, but has not experienced such deaths in the previous year. Measuring conflict onset follows the same logic.

Applying probit regressions allows us to estimate the influence of executive constraints and rents on the likelihood of terrorism and conflict onset. As independent variables, we incorporate the same regressors as in equation (7). However, we exclude fixed effects and time trends since, in practice, an *onset* of terrorism or conflict is much rarer within countries over time than the within-country variation in the incidence variable of casualties. As a consequence, a fixed-effects framework does not leave sufficient statistical variation in the data to reveal the underlying relationships. In fact, the average sample country incurs approximately 3.5 terrorism onset years and 0.64 conflict onset years. These aspects will be discussed in more detail as the corresponding results are presented. Finally, results from several alternative specifications will be presented for each estimation, focusing on alternative measures for the key variables, as well as addressing potential endogeneity concerns.

5 Empirical Analysis of Terrorism

This section discusses the empirical findings related to the incidence and onset of terrorism, including alternative estimations. The same structure follows for the incidence and onset of conflicts.

5.1 Incidence of Terrorism: Main Results

Table 1 considers the incidence of terrorism, measured by the number of casualties from terrorism in country i and year t. In the first column, only a linear term of institutional constraints is used as an explanatory variable. The derived coefficient is positive, but not relevant on any conventional level of statistical significance. Were we to stop here, we would conclude that executive constraints are unrelated to the incidence of terrorism.

Column (2) then acknowledges the nonlinearity suggested by our theoretical framework. Indeed, we find strong evidence for a quadratic shape and the respective coefficients are both significant on the one percent level. As constraints on the executive strengthen, terrorism is suggested to rise at first and then fall after peaking at a value of 4.3 for executive constraints on a scale of one to seven.

Column (3) includes country-fixed effects, thereby controlling for individual particularities of each nation. In the context of the theoretical model presented before, this controls for (but is not limited to) the fixed cost of conducting a terrorist attack (c) and the discounting factor associated with the probability of a successful insurgency (ρ). It is interesting to see that the coefficients associated with institutional constraints only change marginally, even though the explanatory power of the model increases substantially from an adjusted R^2 of 0.015 to explaining over 45 percent of the variation in the occurrence of terrorism. This points to a general non-linear link between $EXEC$ and terrorism incidence that transcends country-specific characteristics.

Column (4) incorporates further control variables, in particular GDP per capita, population size, the economic growth rate, and natural resource rents. Recall that natural resource rents correspond to R in the model and we would expect a positive coefficient here. Indeed, this hypothesis is supported. Finally, adding year-fixed effects and continent-specific time trends provides a much tighter econometric framework. In the most complete estimation, both underlying hypotheses are confirmed: Constraints on the executive remain non-linear in predicting terrorism, following an inverted U-shape, whereas higher natural resource rents are associated with more terrorism.

In terms of magnitude, both results are non-trivial, as visualized in Figure 4. In particular,

Table 1: OLS regression results, estimating the number of deaths from terrorism in country i and year t.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Ln(1+deaths from terrorism)						
EXEC	0.017	0.508***	0.588***	0.372**	0.366**	0.308*
	(0.033)	(0.166)	(0.187)	(0.178)	(0.176)	(0.164)
$(EXEC)^2$		-0.059***	-0.066***	-0.047**	-0.045**	-0.036*
		(0.021)	(0.023)	(0.023)	(0.022)	(0.020)
Natural resource rents in US$ 10,000/cap				0.485**	0.507**	0.669***
				(0.236)	(0.214)	(0.233)
Country-fixed effects			yes	yes	yes	yes
Control variables[a]				yes	yes	yes
Year-fixed effects					yes	yes
Continent-specific time trends						yes
# of countries	158	158	158	158	158	158
N	5,400	5,400	5,400	5,400	5,400	5,400
Adjusted R^2	0.000	0.015	0.452	0.467	0.498	0.530

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate.

terrorism peaks at a value of 4.3 on the scale of executive constraints. Relative to a completely authoritarian regime (value of one), the average number of deaths from terrorism is approximately 40 percentage points higher in the case of intermediate institutional constraints. Note that terrorism in largely inclusive institutions, corresponding to a value of σ approaching 0.5, still remains more prevalent than in authoritarian regimes. This finding is consistent with the model's predictions. Related to R, increasing natural resource rents by one standard deviation (US$2,426 per capita) corresponds to a 16.2 percentage point increase in the casualties from terrorism.

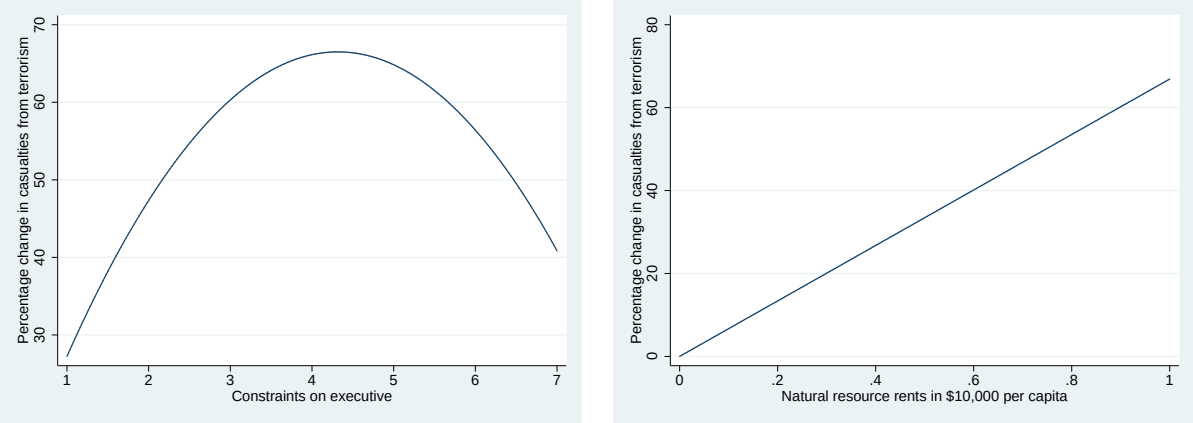

Figure 4: Effect of constraints on the executive (left) and natural resource rents (right) on the incidence of terrorism, plotting results from column (6) of Table 1.

5.2 Incidence of Terrorism: Extensions

From these baseline findings related to the incidence of terrorism, we now consider several extensions, with the corresponding results displayed in Table 2. Columns (1) and (2) turn to alternative measures for rents, namely foreign development assistance and oil rents. In the spirit of Besley and Persson (2009, 2011), rents may relate to natural resources or foreign assistance – both of which are often at the disposal of a ruling government. First, including development assistance produces the expected result, as larger inflows are associated with more terrorism. In terms of magnitude, a one standard deviation increase in foreign assistance (US$117 per capita) corresponds to a 14.9 percentage point increase in the number of deaths from terrorism.

Throughout the additional estimations in Table 2, this result remains remarkably stable.

Second, with respect to specific natural resources, column (2) supports the idea that larger oil revenues directly correspond to more terrorism.[14] In this case, a one standard deviation increase (US$2,078 per capita) is associated with a 15.8 percentage point increase in the number of deaths from terrorism. Reminding ourselves of the previous coefficients associated with a one standard deviation increase in natural resources (16.2 percentage points) or development assistance (14.9 percentage points), these estimates are remarkably similar in magnitude. Thus, a general relationship between R and terrorism appears likely. In addition, the non-linear result associated with institutional constraints remains robust in these alternative estimations.

Focusing on the measure of institutional constraints, column (3) introduces an alternative definition with the *polity*2 variable, provided by the Polity IV project. In order to properly estimate the quadratic effect, we re-scale the initial *polity*2 variable to all positive values ranging from zero (corresponding to total autocracy) to 20 (total democracy). It is interesting to see that the derived result remains consistent and, if anything, statistical precision increases. It is likely that a more detailed measure of institutional constraints, in which 20 degrees of democracy are possible (rather than seven in $EXEC$), contributes to a more precise estimation of the underlying relationship. Note also that the corresponding results for development assistance and oil rents remain robust. (Incorporating natural resource rents instead of oil rents produces the same conclusion.)

Further, we conduct robustness checks using alternative measures for the dependent variable. In particular, the benchmark results are consistent when employing a measure of deaths *per capita* or estimating a more traditional binary indicator of 25 or more casualties.[15] The corresponding results are referred to the appendix Table D1.[16]

Finally, columns (4) to (6) display results from instrumental variable regressions, aiming to

[14] Note that to avoid multicollinearity issues, we remove the measure for natural resource rents once oil rents are included. These variables are highly correlated with a coefficient of 0.97.

[15] Jetter and Stadelmann (2017) suggest estimating terrorism in per capita terms as an alternative measure for terrorism incidence.

[16] As regressions are estimated in a fixed-effects framework, we refrain from using a logit or probit approach to estimate the binary outcome variable of terrorism incidence, but rather employ a conventional OLS approach, as is common in the literature (see Greene, 2004, for example).

Table 2: OLS regression results from extensions, estimating the number of deaths from terrorism in country i and year t.

				IV regressions[b]		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Ln(1+deaths from terrorism)						
EXEC	0.318*	0.298*		0.377*	0.355	
	(0.172)	(0.175)		(0.212)	(0.221)	
$(EXEC)^2$	-0.040*	-0.038*		-0.052*	-0.051*	
	(0.021)	(0.022)		(0.027)	(0.028)	
Natural resource rents in US$ 10,000/cap	0.761***			0.522*		
	(0.279)			(0.304)		
Development assistance in US$ 10,000/cap	12.701**	12.729**	10.450**	15.266*	16.049*	13.056**
	(6.082)	(6.146)	(4.777)	(8.879)	(9.174)	(6.404)
Oil rents in US$ 10,000/cap		0.761**	0.619**		0.648**	0.355
		(0.299)	(0.252)		(0.290)	(0.290)
Polity IV			0.149**			0.247***
			(0.065)			(0.086)
$(Polity\ IV)^2$			-0.007**			-0.012***
			(0.003)			(0.004)
Control variables[a]	yes	yes	yes	yes	yes	yes
Country-fixed effects	yes	yes	yes	yes	yes	yes
Year-fixed effects	yes	yes	yes	yes	yes	yes
Continent-specific time trends	yes	yes	yes			
# of countries	136	136	135	135	135	134
N	4,333	4,190	4,157	4,229	4,049	4,014
Adjusted R^2	0.532	0.537	0.524	0.498	0.501	0.493

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate. [b]In column (4), EXEC, $(EXEC)^2$, natural resource rents, and development assistance are instrumented by their respective lagged values in the previous year. Columns (5) and (6) apply the same logic for EXEC, $(EXEC)^2$, oil rents, development assistance, Polity IV and $(Polity\ IV)^2$. In all estimations, Shea's partial R^2 ranges between 0.55 and 0.78, leaving little concern about potentially weak instruments.

alleviate potential reverse causality concerns. For example, it is possible that pressure from terrorism in turn affects the institutional equilibrium of a country, the degree of resource extraction, or the level of international assistance. If that were the case, the coefficients derived in Table 1 could be biased. In terms of potential instrumental variables, it is well understood that finding an instrumental variable for any given country on the yearly level provides a difficult task. Large country-specific shocks, such as colonialism or geography, are unsuitable candidates in a panel framework, as they provide no within-country variation. Other prominent candidates, such as natural disasters, have been shown to directly affect income levels and conflict incidence, rendering them invalid for the present setting. Nevertheless, to take a step toward addressing such endogeneity concerns, we follow recent macroeconomic studies in using lagged values of the variables of interest as instruments. In particular, the growth literature has resorted to this technique (e.g., Temple, 1999; Schularick and Steger, 2010; Jetter, 2014; Mirestean and Tsangarides, 2016), as well as studies analyzing effects from democracy (Bhattacharyya and Hodler, 2010; Jetter et al., 2015) and corruption (Arezki and Brückner, 2011). Thus, in columns (4) to (6), the respective variables of interest related to executive constraints and available rents are instrumented by their lagged values in year $t-1$.

Note that the derived coefficients in columns (4) to (6) are largely in line with the benchmark OLS results from Table 1.[17] In terms of statistical power, executive constraints turn marginally insignificant on conventional levels (t-statistic of 1.61) in column (5), yet inflated standard errors are likely responsible. In terms of magnitude, the coefficient associated with $EXEC$ remains strong and even rises, from 0.308 in column (6), Table 1, to 0.355.

Further, the importance of R prevails throughout the IV-estimations, with the exception of oil rents in column (6). Nevertheless, a quantitative interpretation of the derived coefficient still suggests a positive relationship between oil rents and terrorism. Finally, employing the $polity2$ variable produces a result that is consistent with those from OLS regressions.

[17] Testing for weak instruments confirms their, as Shea's partial R^2 statistic produces values between 0.55 and 0.78 (see Shea, 1997).

5.3 Onset of Terrorism

From terrorism incidence, we now move to probit regressions, predicting terrorist onset in Table 3 and displaying marginal effects. Note that data from 1994 are excluded since the GTD features no information for 1993, thus making it uncertain whether terrorism *onset* (i.e., a year with deaths from terrorism following a year without) has occurred in 1994. All results are virtually identical when including data for 1994 and using 1992 as a reference point.

As before, a linear term is not sufficient to accurately describe the underlying role of $EXEC$, but column (2) produces the familiar inverted U-shape once a quadratic term is added. Note that the entire sample "only" produces 560 country-year observations in which terrorism occurs, but has not occurred the year before. On average, this corresponds to approximately 3.6 observations per country, indicating that incorporating fixed effects may not leave sufficient statistical variation to reveal the underlying dynamics. Nevertheless, a fixed-effects framework produces the same quantitative conclusions, consistent with the results displayed in Table 3. When including country-fixed effects, $EXEC$ produces a coefficient of 0.210 (standard error of 0.114), whereas $(EXEC)^2$ produces a coefficient of -0.022 (0.014). Natural resource rents produce a coefficient of 0.007 (0.004).

The regression shown in column (3) includes the familiar control variables, in addition to natural resource rents and development assistance. Consistent with the findings related to terrorism incidence, natural resource rents and development assistance emerge as positive predictors. In addition, the familiar non-linearity for the effect of institutional constraints on terrorism onset prevails. Column (4) substitutes oil rents for overall natural resource rents, and we recover the familiar positive link to terrorism. Further, column (5) turns to the alternative measure for institutional constraints by employing the $polity2$ variable. As before, the corresponding findings support all predictions related to σ and R.

Finally, columns (6) – (8) display results from IV regressions, following the same sequence as columns (4) – (6) in Table 2. It is reassuring to see that all suggested relationships receive firm support. Figure 5 plots the underlying relationships for executive constraints and development assistance, using the results from column (3) as a reference point. Compared to authoritarian-

Table 3: Results from probit regression, estimating the onset of terrorism in country i and year t. Displaying marginal effects.

						IV regressions[b]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable: Onset of terrorism								
EXEC	0.003	0.054***	0.041**	0.039**		0.209**	0.198**	
	(0.003)	(0.020)	(0.019)	(0.019)		(0.095)	(0.095)	
$(EXEC)^2$		-0.006***	-0.004*	-0.004*		-0.022*	-0.020*	
		(0.002)	(0.002)	(0.002)		(0.012)	(0.012)	
Natural resource rents in US$ 10,000/cap			0.059			0.315*		0.297**
			(0.036)			(0.180)		(0.127)
Development assistance in US$ 10,000/cap			1.309**	1.274*	1.553**	8.727***	8.077**	
			(0.635)	(0.651)	(0.690)	(3.300)	(3.344)	
Oil rents in US$ 10,000/cap				0.071*	0.093**		0.363*	
				(0.041)	(0.039)		(0.197)	
Polity IV					0.027***			0.136***
					(0.007)			(0.033)
$(Polity\ IV)^2$					-0.001***			-0.006***
					(0.000)			(0.002)
Control variables[a]			yes	yes	yes	yes	yes	yes
# of countries	156	156	134	134	134	133	133	155
N	3,546	3,546	2,817	2,695	2,694	2,797	2,631	3,525
Pseudo R^2 (McFadden)	0.001	0.006	0.054	0.051	0.062			

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate. [b]In column (4), EXEC, $(EXEC)^2$, natural resource rents, and development assistance are instrumented by their respective lagged values in the previous year. Columns (5) and (6) apply the same logic for EXEC, $(EXEC)^2$, development assistance, oil rents, Polity IV and $(Polity\ IV)^2$. In all estimations, Shea's partial R^2 ranges between 0.55 and 0.78, leaving little concern about potentially weak instruments.

ism, terrorism becomes approximately seven percentage points more likely if constraints on the executive are measured at a value of 4.8. Further, even perfect democracies are more likely to suffer from terrorism – a result that is consistent with the theoretical priors and the empirical results from considering the incidence of terrorism.

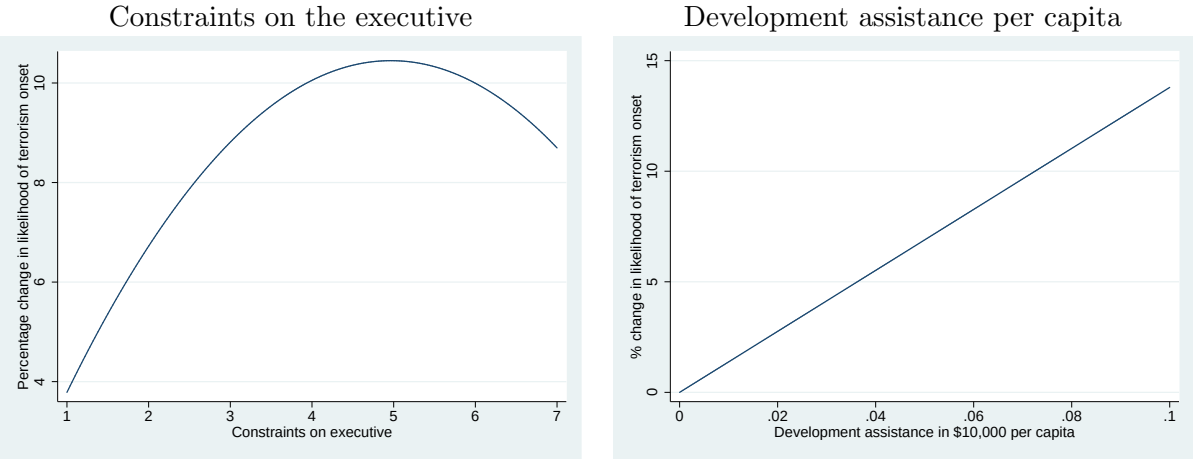

Figure 5: Effect of constraints on the executive (left) and development assistance (right) on the onset of terrorism, plotting results from column (3) in Table 3.

Related to development assistance per capita, a one standard deviation increase (US$117 per capita) relates to a 1.6 percentage point rise in the probability of experiencing terrorism. In the extreme case, moving from US$0 to US$1,845 (Jordan in 1979), the onset of terrorism becomes 25.4 percentage points more likely. With these results in mind, we now move to analyzing the drivers of civil conflict.

6 Empirical Analysis of Conflict

6.1 Incidence of Conflicts: Main Results

Table 4 follows the same sequence as analyzing the incidence of terrorism, beginning with a univariate regression. Indeed, we find a negative link between institutional constraints and the number of deaths from internal conflicts. In terms of magnitude, raising executive constraints by one level (say, from two to three) relates to a 12.6 percentage point decrease in the number of

casualties from civil conflict. Column (2) shows that this relationship is not quadratic, contrary to the relationship with terrorism – a result that is consistent with the theoretical predictions.

Table 4: OLS regression results, estimating the number of deaths from conflicts in country i and year t.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Ln(1+deaths from internal conflict)						
EXEC	-0.126**	0.054	-0.145**	-0.108*	-0.109*	-0.112*
	(0.061)	(0.301)	(0.062)	(0.058)	(0.062)	(0.062)
$(EXEC)^2$		-0.021				
		(0.034)				
Natural resource rents in US$ 10,000/cap				0.456	0.507	0.519
				(0.322)	(0.363)	(0.423)
Country-fixed effects			yes	yes	yes	yes
Control variables[a]				yes	yes	yes
Year-fixed effects					yes	yes
Continent-specific time trends						yes
# of countries	158	158	158	158	158	158
N	3,586	3,586	3,586	3,586	3,586	3,586
Adjusted R^2	0.015	0.015	0.612	0.614	0.613	0.618

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate.

Columns (3) to (6) then incorporate country-fixed effects, natural resource rents, the familiar control variables, year-fixed effects, and continent-specific time trends. Throughout, executive constraints remain a negative predictor of conflict incidence with the respective coefficient fluctuating marginally between -0.11 and -0.15. In addition, natural resource rents do not play any role, in line with our theoretical predictions and consistent with findings from Elbadawi and Sambanis (2002) or Fearon and Laitin (2003). Remember that according to the profit-maximizing decision by the opposition group modeled in Section 3 we should not expect a particularly strong

relationship between R and conflicts, but rather executive constraints should play a dominant role.

6.2 Incidence of Conflicts: Extensions

As with the analysis of terrorism, we now move to several extensions, with the corresponding results displayed in Table 5. Following the same sequence as Table 3, columns (1) and (2) consider alternative definitions of R by incorporating foreign development assistance and oil rents. However, none of these aspects are closely related to the incidence of domestic conflict. The negative effect from $EXEC$, however, prevails.

Column (3) switches to the *polity*2 variable as an alternative measure for institutional controls and, as with the analysis of terrorism, the baseline result is confirmed. As before, the more flexible measure of the *polity*2 variable brings out the underlying relationship with more statistical precision, as the associated level of statistical significance increases to five percent. Nevertheless, development assistance and oil rents remain largely irrelevant. In alternative estimations, we also addressed the measurement of the dependent variable. In particular, all results are consistent when employing a measure for deaths *per capita* or using a binary indicator for experiencing 25 or more deaths, which represents a more traditional way of measuring conflict incidence. These results are referred to the appendix Table D1.

Finally, columns (4) – (6) re-estimate the corresponding regressions in the familiar IV setting, where executive constraints, natural resource rents, development assistance, oil rents, and the *polity*2 variable are instrumented by their lagged values from the previous year. The results further support our hypotheses, as institutional constraints remain important, but measures for R do not. In terms of magnitude, an increase in the level of executive constraints by one point is associated with a decrease in the number of deaths from conflict by 11 to 13.6 percentage points, depending on which regression we consider from Table 5. It is also noteworthy to point out that the corresponding regressions are able to explain a relatively large share of approximately 60 percent of the observed variation in deaths from conflicts throughout the sample, as indicated by the respective adjusted R^2 values.

Table 5: OLS regression results from extensions, estimating the number of deaths from conflicts in country i and year t.

				IV regressions[b]		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Ln(1+deaths from internal conflict)						
EXEC	-0.115*	-0.112*		-0.136**	-0.135**	
	(0.063)	(0.063)		(0.068)	(0.066)	
Natural resource rents	1.264*			0.992		
in US$ 10,000/cap	(0.709)			(0.794)		
Development assistance	-2.787	-2.401	-7.307	5.584	5.929	-2.214
in US$ 10,000/cap	(7.628)	(7.585)	(8.338)	(13.829)	(14.257)	(14.496)
Oil rents		1.265	1.164		0.966	0.814
in US$ 10,000/cap		(0.858)	(0.827)		(0.908)	(0.878)
Polity IV			-0.050**			-0.056**
			(0.023)			(0.025)
Control variables[a]	yes	yes	yes	yes	yes	yes
Country-fixed effects	yes	yes	yes	yes	yes	yes
Year-fixed effects	yes	yes	yes	yes	yes	yes
Continent-specific time trends	yes	yes	yes			
# of countries	136	136	135	135	135	134
N	2,880	2,815	2,781	2,847	2,794	2,759
Adjusted R^2	0.609	0.611	0.593	0.606	0.605	0.586

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate. [b]In column (4), EXEC, natural resource rents, and development assistance are instrumented by their respective lagged values in the previous year. Columns (5) and (6) apply the same logic for EXEC, oil rents, development assistance, and Polity IV. In all estimations, Shea's partial R^2 ranges between 0.27 and 0.78, leaving little concern about potentially weak instruments.

6.3 Onset of Conflicts

In our final setting, Table 6 turns to the onset of domestic conflicts. For this measure, the statistical variation throughout the sample diminishes substantially, as conflict has begun in "only" 96 country-year observations, where the respective country has not suffered from conflict in the preceding year. Overall, 51 countries appear on this list.

Table 6: Results from probit regressions, estimating the onset of conflict in country i and year t. Displaying marginal effects.

					IV regressions[b]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable: Onset of internal conflict							
EXEC	-0.010***	-0.007**	-0.006**		-0.066*	-0.060*	
	(0.002)	(0.003)	(0.003)		(0.034)	(0.034)	
Natural resource rents		0.027			0.363		0.139
in US$ 10,000/cap		(0.023)			(0.295)		(0.232)
Development assistance		0.453	0.507	0.133	4.804	6.012	
in US$ 10,000/cap		(0.798)	(0.800)	(0.821)	(13.352)	(13.289)	
Oil rents			0.039	0.044		0.508	
in US$ 10,000/cap			(0.031)	(0.030)		(0.399)	
Polity IV				-0.001			-0.012
				(0.001)			(0.011)
Control variables[a]		yes	yes	yes	yes	yes	
# of countries	151	129	129	128	127	127	150
N	2,918	2,268	2,220	2,205	2,239	2,200	2,873
Pseudo R^2 (McFadden)	0.046	0.093	0.092	0.088			

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate. [b]In column (5), EXEC, natural resource rents, and development assistance are instrumented by their respective lagged values in the previous year. Columns (6) and (7) apply the same logic for EXEC, oil rents, development assistance, Polity IV, and natural resource rents. In all estimations, Shea's partial R^2 ranges between 0.65 and 0.93, leaving little concern about potentially weak instruments.

Column (1) displays results from a univariate regression, suggesting that the onset of conflict is less likely when inclusive institutions are prevalent. This result is confirmed once additional control variables are included, but the related magnitude diminishes to -0.007. Note that natural

resource rents are less relevant in statistical terms when explaining the onset of conflict. Further, columns (3) and (4) explore different measures for σ and R. Concerning institutional constraints, employing the *polity*2 variable confirms the negative link to conflict, although the respective coefficient remains indistinguishable from zero on conventional levels of statistical significance. Related to available rents, we find no evidence for the importance of oil rents in driving up the likelihood of conflict.

Columns (5) – (7) estimate the familiar sequence of IV regressions. Most importantly, executive controls remain a negative and statistically meaningful predictor of conflict onset and the associated coefficient increases by a factor of eleven, from -0.006 to -0.066. This indicates that applying a regular probit framework could underestimate the effect of executive constraints on the onset of conflict. Intuitively, it is possible that an outbreak of open conflict leads to a tightening of institutional controls, as the ruling government tries to maintain control. Such dynamics would make it difficult to isolate the true effect of institutional controls on the onset of conflict in a standard OLS framework. However, employing executive constraints in the preceding (peaceful) year as an instrument for contemporaneous executive controls circumvents this problem and is likely better able to reveal the underlying effect of executive constraints on conflict onset.

Note that we are not arguing for lagged values of the potentially endogenous variables to be *perfect* instruments, likely because political institutions can display inertia. Rather, the point of our IV estimations is to take one step toward alleviating endogeneity concerns as past values in year $t-1$ (of executive constraints, for example) are less likely to be influenced by contemporary conflict onset in year t.

Finally, employing the *polity*2 variable as an alternative estimate for institutional controls confirms the negative relationship with conflict onset, but the derived coefficient fails to clear the conventional levels of statistical significance. It is important to note that the coefficient actually becomes *stronger* in quantitative terms, but standard errors are inflated substantially (from 0.001 to 0.011). In fact, we observe substantially elevated standard errors for all derived coefficients in the IV regressions – a result that is likely driven by less statistical variation in the

employed instruments and the limited number of observations in which conflict emerges (96).

7 Conclusion

This paper proposes a simple theoretical framework to analyze the decision of one representative opposition group between peace, terrorism, and open civil conflict. We propose this underlying decision to depend on constraints on the executive (i.e., the inclusiveness of political institutions) and the availability of rents, in addition to other country-specific parameters. Two key assumptions that distinguish open conflict from terrorism come from comparing the respective costs and benefits. Contrary to civil conflict, both parameters are naturally limited for a terrorist campaign.

Analyzing the opposition group's optimal choice then suggests terrorism to become more likely if executive constraints are intermediate and rents are high. In fact, even under largely inclusive institutions terrorism can remain a viable option, but only if rents are considerable. In turn, civil conflict is predicted to emerge as the dominant option if executive constraints are particularly poor, whereas peace becomes the likely outcome under high executive constraints and a modest to low availability of rents.

Taking these hypotheses to the data, the paper analyzes 5,400 and 3,586 country-year observations for domestic terrorism and conflicts, respectively. Employing country- and year-fixed effects, continent-specific time trends, and the conventional time-variant control variables, we produce evidence that is consistent with our theoretical predictions. Intermediate ranges of executive controls increase the number of deaths from terrorism and the likelihood of terrorism onset. Further, terrorism is more severe and more likely when substantial rents from natural resources, oil, or foreign development assistance are available. For all these three rent measures, a one standard deviation increase in per capita revenue is suggested to increase the number of deaths from terrorism by approximately 15 to 16 percentage points. It is remarkable how consistent this magnitude remains for all three measures and across different estimations.

Related to domestic conflict, tighter controls on the executive decrease the number of ca-

sualties in a linear fashion. Moving from a totally authoritarian regime to perfectly inclusive institutions is associated with a decrease in the number of battle-related deaths by approximately 74 percentage points. Considering conflict onset, results are less precise in statistical terms – an artifact that becomes less surprising once we are reminded of the rare occurrence of conflict onset (96 observations in 51 countries), i.e., conflict occurrence after a peaceful year. Nevertheless, the corresponding coefficients consistently confirm the notion that executive constraints are negatively tied to conflict onset in a linear way.

To our knowledge, this paper is among the first to *jointly* analyze the profit-maximizing decision of an opposition group between peace, terrorism, and open civil conflict. Our theoretical model is basic and one could think of several extensions, such as allowing for a dynamic interaction between the incumbent and opposition groups. Nevertheless, this paper may serve as a starting point to further analyze the underlying drivers of terrorism and conflict in a unified theoretical framework. The empirical part of the paper shows that the model's simple predictions are systematically observed in global data, even when controlling for a number of potentially confounding factors and fixed effects. Overall, our goal is to enrich our understanding of how opposition groups decide over organized violence in a rational fashion, which may help us to predict the outbreak of different types of large-scale organized violence against a ruling government in the future.

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A Theoretical Proofs

A.1 Proof of Proposition 1

The optimization problem faced by the opposition becomes

$$max_{0<\tau<1}[(1-\tau)\sigma R + \beta(\tau\sigma)(\frac{1}{2}-\sigma)R - c], R > 0, \sigma \in (0, \frac{1}{2}]. \tag{8}$$

i) If the marginal benefit of terrorism investment exceeds the marginal cost, i.e., $\sigma R[\beta'(\sigma)(\frac{1}{2}-\sigma)-1] > 0$ ($\beta'(\tau\sigma)(\frac{1}{2}-\sigma) > 1$ with $\sigma R > 0$), $\hat{\tau} \to 1$ and $\tau < 1$ is binding. The assumptions of $\beta''(\cdot) < 0$ and $lim_{x\to 0}\beta'(x) = \infty$ guarantee the existence of a positive $\tilde{\sigma}_T$ with $\beta'(\tilde{\sigma}_T) = (\frac{1}{2}-\tilde{\sigma}_T)^{-1}$, below which ($0 < \sigma < \tilde{\sigma}_T$), $\beta'(\sigma) > (\frac{1}{2}-\sigma)^{-1}$ holds (clearly, as $\sigma \to 0$, we have $lim_{x\to 0}\beta'(x) > 2$). Therefore, if $\sigma \in (0, \tilde{\sigma}_T], \hat{\tau}(\sigma) \to 1$.

ii) If $\sigma \in (\tilde{\sigma}_T, \frac{1}{2})$, the marginal benefit of terrorism investment equals the marginal cost, i.e., $\sigma R[\beta'(\tau\sigma)(\frac{1}{2}-\sigma)-1] = 0$, which implies $\beta'(\tau\sigma)(\frac{1}{2}-\sigma) = 1$ with $\sigma R > 0$. Differentiating this interior solution with respect to σ yields $\frac{\partial\hat{\tau}}{\partial\sigma} = \frac{\beta'(\hat{\tau}\sigma)-\beta''(\hat{\tau}\sigma)\hat{\tau}(\frac{1}{2}-\sigma)}{\beta''(\hat{\tau}\sigma)\sigma(\frac{1}{2}-\sigma)} < 0$, with $\beta'(\cdot) > 0$ and $\beta''(\cdot) < 0$.

iii) If $\sigma = \frac{1}{2}$, the marginal benefit of terrorism investment becomes zero and falls below the positive marginal cost; $\hat{\tau} \to 0$ and $\tau > 0$ is binding.

Finally, we exclude the corner solutions in (i) and (iii) from our discussion of terrorism and define the optimal choice $\hat{\tau}(\sigma)$ on a valid domain for $\hat{\tau} \in (\tilde{\sigma}_T, \frac{1}{2})$.

Q.E.D.

A.2 Proof of Proposition 2

Given equations (1) and (5), let $f(\sigma) = C(\sigma) - P(\sigma) = \rho\beta(\sigma)(1-\sigma) - \sigma$, we have $\Pi_{conflict} - \Pi_{peace} = f(\sigma)R$. With $R > 0$, $\Pi_{conflict} \lesseqgtr \Pi_{peace}$ if $f(\sigma) \lesseqgtr 0$. The opposition will choose the optimal regime of conflict (peace) if $f(\sigma) > 0$ ($f(\sigma) < 0$). We need to prove the existence of a threshold value of $\sigma_1 \in (0, \frac{1}{2})$ with $f(\sigma_1) = 0$ when the opposition is indifferent between conflict and peace. And for $0 < \sigma \leq \sigma_1$, $f(\sigma) \geq 0$; for $\sigma_1 < \sigma \leq \frac{1}{2}$, $f(\sigma) < 0$.

First, it is easy to check the value of $f(\sigma)$ at its lower and upper bound: $f(0) = 0$, $f(\frac{1}{2}) = \frac{1}{2}[\rho\beta(\frac{1}{2}) - 1] < 0$ with $0 < \rho\beta(\frac{1}{2}) < 1$. The trivial solution ($\sigma = 0$) is ruled out of the discussion for ease of analysis. Next, the first- and second-order derivatives of $f(\sigma)$ are derived as $f'(\sigma) = \rho[\beta'(\sigma)(1-\sigma) - \beta(\sigma)] - 1$ and $f''(\sigma) = \rho[\beta''(\sigma)(1-\sigma) - 2\beta'(\sigma)] < 0$, guarantee the concavity of $f(\sigma)$. In addition, the assumption of $\beta'(0) \to \infty$ ensures $f'(0) > 0$, which means a global maximum is attained at σ_1^* with $f'(\sigma_1^*) = 0$ and $f(\sigma_1^*) > 0$. Hence, $f'(\sigma) > 0$ for $\sigma \in (0, \sigma_1^*)$ and $f'(\sigma) < 0$ for $\sigma \in \left(\sigma_1^*, \frac{1}{2}\right)$. Then there must exist a $\sigma_1 \in \left(\sigma_1^*, \frac{1}{2}\right)$ with $f(\sigma_1) = 0$. Moreover, we must have $f(\sigma) > 0$ for $\sigma \in (0, \sigma_1)$ and $f(\sigma) < 0$ for $\sigma \in \left(\sigma_1, \frac{1}{2}\right)$. See Figure 1 for an illustration of the properties of $f(\sigma)$. In the second part, we prove $\frac{\partial \sigma_1}{\partial \rho} > 0$. Note that $f(\sigma_1) = \rho\beta(\sigma_1)(1-\sigma_1) - \sigma_1 = 0$. Taking the total derivative gives $[\rho\beta'(\sigma_1)(1-\sigma_1) - \rho\beta(\sigma_1) - 1]\partial\sigma_1 + \beta(\sigma_1)(1-\sigma_1)\partial\rho = 0 \longrightarrow \frac{\partial \sigma_1}{\partial \rho} = \frac{\beta(\sigma_1)(1-\sigma_1)}{1+\rho\beta(\sigma_1)-\rho\beta'(\sigma_1)(1-\sigma_1)}$. For $\sigma_1 \in \left(\sigma_1^*, \frac{1}{2}\right)$, $f'(\sigma_1) < 0 \longrightarrow \rho[\beta'(\sigma_1)(1-\sigma_1) - \beta(\sigma_1)] - 1 < 0$. Thus, $\frac{\partial \sigma_1}{\partial \rho} > 0$.

Q.E.D.

A.3 Proof of Proposition 3

First, we examine the property of the value function $T(\sigma)$ on its domain $\left(\tilde{\sigma}_T, \frac{1}{2}\right)$. Differentiating $T(\sigma)$ twice with respect to σ and substituting the optimal conditions $\beta'[\hat{\tau}(\sigma)\sigma] = \left(\frac{1}{2} - \sigma\right)^{-1}$ and $\hat{\tau}'(\sigma) = \frac{\beta'(\hat{\tau}\sigma) - \beta''(\hat{\tau}\sigma)\hat{\tau}(\frac{1}{2}-\sigma)}{\beta''(\hat{\tau}\sigma)\sigma(\frac{1}{2}-\sigma)}$, we obtain $T'(\sigma) = 1 - \beta[\hat{\tau}(\sigma)\sigma] > 0$, $T''(\sigma) = -\frac{\beta'(\hat{\tau}\sigma)}{(\frac{1}{2}-\sigma)^2\beta''(\hat{\tau}\sigma)} > 0$. Hence, $T(\sigma)$ is strictly increasing and convex on $\left(\tilde{\sigma}_T, \frac{1}{2}\right)$.

Now we are ready to show the existence of two trigger points σ_2 and σ_3. First, consider σ_2 that distinguishes the regime of terrorism from conflict. If $\rho > \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}$ and $R > R_{min1} = \frac{2c}{1-\rho\beta(\frac{1}{2})}$, we have $C(\tilde{\sigma}_T) = \rho\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T) > \beta(\tilde{\sigma}_T)\left(\frac{1}{2} - \tilde{\sigma}_T\right) > \beta(\tilde{\sigma}_T)\left(\frac{1}{2} - \tilde{\sigma}_T\right) - \frac{c}{R} = lim_{\sigma \to \tilde{\sigma}_T} T(\sigma)$ and $C(\frac{1}{2}) = \rho\beta(\frac{1}{2})\frac{1}{2} < \lim_{\sigma \to \frac{1}{2}} T(\sigma) = \frac{1}{2} - \frac{c}{R}$. Given an increasing and convex function $T(\sigma)$ and a concave function $C(\sigma)$, there must exist a unique $\sigma_2 \in \left(\tilde{\sigma}_T, \frac{1}{2}\right)$ such that $C(\sigma_2) = T(\sigma_2)$. As shown in Figure 1, the $T(\sigma)$ function must cross $C(\sigma)$ once from below, which implies $C'(\sigma_2) < T'(\sigma_2) \longrightarrow \rho[\beta'(\sigma_2)(1-\sigma_2) - \beta(\sigma_2)] < 1 - \beta[\hat{\tau}(\sigma_2)\sigma_2]$. To examine the property of trigger point σ_2, we take the total derivative of $C(\sigma_2) - T(\sigma_2) = 0$, which implies that $\{\rho[\beta'(\sigma_2)(1-\sigma_2) - \beta(\sigma_2)] - 1 + \beta[\hat{\tau}(\sigma_2)\sigma_2]\}\partial\sigma_2 - \frac{c}{R^2}\partial R = 0 \longrightarrow \frac{\partial \sigma_2}{\partial R} = \frac{\frac{c}{R^2}}{\rho[\beta'(\sigma_2)(1-\sigma_2) - \beta(\sigma_2)] - 1 + \beta[\hat{\tau}(\sigma_2)\sigma_2]} < 0$.

Therefore, for $R \to \infty$, $\sigma_2 \to \underline{\sigma}_2$ and for $R \to R_{min1}$, $\sigma_2 \to \frac{1}{2}$.

Next, consider σ_3 that delineates the regime between terrorism and peace. If $R > R_{min2} = \frac{c}{\beta(\tilde{\sigma}_T)(\frac{1}{2}-\tilde{\sigma}_T)-\tilde{\sigma}_T}$, we have $\lim_{\sigma \to \tilde{\sigma}_T} T(\sigma) > P(\tilde{\sigma}_T)$ and $\lim_{\sigma \to \frac{1}{2}} T(\sigma) = \frac{1}{2} - \frac{c}{R} < \frac{1}{2} = P(\frac{1}{2})$, there must exist a unique $\sigma_3 \in \left(\tilde{\sigma}_T, \frac{1}{2}\right)$ such that $T(\sigma_3) = P(\sigma_3)$. As shown in Figure 1, $T(\sigma)$ must cross $P(\sigma)$ once from above, implying $T'(\sigma_3) < P'(\sigma_3) = 1$. In fact, this is true for any $\sigma_3 \in \left(\tilde{\sigma}_T, \frac{1}{2}\right)$, $T'(\sigma) = 1 - \beta[\hat{\tau}(\sigma)\sigma] < 1 = P'(\sigma)$. Taking the total derivative of $T(\sigma_3) - P(\sigma_3) = 0$ gives $\frac{\partial \sigma_3}{\partial R} = \frac{\frac{c}{R^2}}{\beta[\hat{\tau}(\sigma_3)\sigma_3]} > 0$. Therefore, if $R \to \infty$, $\sigma_3 \to \frac{1}{2}$; and if $R \to R_{min2}$, $\sigma_3 \to \tilde{\sigma}_T$.

Finally, denoting the maximum (minimum) of σ_i as $\overline{\sigma}_i(\underline{\sigma}_i)$, $i = 2, 3$. Starting with $R \to \infty$, we have $\sigma_2 \to \underline{\sigma}_2$, $\sigma_3 \to \overline{\sigma}_3 = \frac{1}{2}$. Now we start to reduce R, with $\frac{\partial \sigma_2}{\partial R} < 0$ and $\frac{\partial \sigma_3}{\partial R} > 0$, there must exist a unique $\underline{R}$ under which σ_2 coincides with σ_3 satisfying $C(\sigma) = T(\sigma) = P(\sigma)$. Before reaching $\underline{R}(R > \underline{R})$, we have $\sigma_2 < \sigma_1 < \sigma_3$ such that the set of conflict is $\{\sigma | C(\sigma) > max\{P(\sigma), T(\sigma)\}\} = (0, \sigma_2)$, the set of terrorism is $\{\sigma | T(\sigma) > max\{P(\sigma), C(\sigma)\}\} = (\sigma_2, \sigma_3)$, and the set of peace is $\{\sigma | P(\sigma) > max\{T(\sigma), C(\sigma)\}\} = (\sigma_3, \frac{1}{2}]$. According to *Proposition 2*, under $R = \underline{R} = c\{\beta[\hat{\tau}(\sigma_1)\sigma_1](\frac{1}{2} - \sigma_1) - \sigma_1\hat{\tau}(\sigma_1)\}^{-1}$, we have $\sigma_2 = \sigma_3 = \sigma_1$ and $\underline{R} > max\{R_{min1}, R_{min2}\}$. If we further reduce R to any value below $\underline{R}(R < \underline{R})$, we would have $\sigma_3 < \sigma_1 < \sigma_2$ and the set of terrorism $\{\sigma | T(\sigma) > max\{P(\sigma), C(\sigma)\}\} = \emptyset$ because $C(\sigma) > T(\sigma)$ on $(0, \sigma_1)$ and $P(\sigma) > T(\sigma)$ on $[\sigma_1, \frac{1}{2}]$. Therefore, the model collapses to its two-regime version as in *Proposition 2*.

Q.E.D.

A.4 Proof of Proposition 4

The proof concerning the property of the value function $T(\sigma)$ on its domain $(\tilde{\sigma}_T, \frac{1}{2})$ and the property of the higher trigger point σ_3 remains the same as in Section A.3. However, if $\rho \in \left[\frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}, \frac{\frac{1}{2}-\tilde{\sigma}_T}{1-\tilde{\sigma}_T}\right)$, for $R \to \infty$, at $\sigma = \tilde{\sigma}_T$, we have $\lim_{\sigma \to \tilde{\sigma}_T} T(\sigma) > C(\tilde{\sigma}_T) > P(\tilde{\sigma}_T)$. Now we start to reduce R until $R = R_T$, $\{\sigma | T(\sigma) = C(\sigma)\} = \{\sigma_T\}$, where $T(\sigma)$ and $C(\sigma)$ are tangent at $\sigma = \sigma_T$. It is straightforward to pin down the value of σ_T according to the tangency condition $T'(\sigma_T) = C'(\sigma_T)$, i.e., $1 - \beta[\hat{\tau}(\sigma_T)\sigma_T] = \rho[\beta'(\sigma_T)(1 - \sigma_T) - \beta(\sigma_T)]$. Therefore, $R_T = c\{\sigma_T[1 - \hat{\tau}(\sigma_T)] + \beta[\hat{\tau}(\sigma_T)\sigma_T](\frac{1}{2} - \sigma_T) - \rho\beta(\sigma_T)(1 - \sigma_T)\}^{-1}$. Obviously, for $R \in (R_T, \infty)$,

$T(\sigma) > C(\sigma)$ for $\sigma \in (\tilde{\sigma}_T, \frac{1}{2})$ and $\{\sigma | T(\sigma) = C(\sigma)\} = \emptyset$. Furthermore, $\sigma_T < \sigma_1$ ensures $R_T > \underline{R}$ (as show in Figure 2). Therefore, for $R \in [R_T, \infty)$, we have $\frac{\partial \sigma_3}{\partial R} > 0$, so that the minimum of σ_3 is obtained when $T(\sigma) = C(\sigma)$ at $R = R_T$ and $\underline{\sigma}_3$ satisfies $\beta[\hat{\tau}(\underline{\sigma}_3)\underline{\sigma}_3](\frac{1}{2} - \underline{\sigma}_3) - \underline{\sigma}_3\hat{\tau}(\sigma_3) = \frac{c}{R_T}$.

To summarize, for $R \in [R_T, \infty)$, the set of conflict is $\{\sigma | C(\sigma) > max\{P(\sigma), T(\sigma)\}\} = (0, \tilde{\sigma}_T]$, the set of terrorism is $\{\sigma | T(\sigma) \geq max\{P(\sigma), C(\sigma)\}\} = (\tilde{\sigma}_T, \sigma_3)$, and the set of peace is $\{\sigma | P(\sigma) \geq max\{T(\sigma), C(\sigma)\}\} = [\sigma_3, \frac{1}{2}]$.

If $R \in [\underline{R}, R_T)$, for $\sigma \in (\tilde{\sigma}_T, \sigma_1)$, $C(\sigma)$ may dominate $T(\sigma)$ and sequential ordering of regimes may be disrupted. If $R \leq \underline{R}$, the model collapses to its two-regime version as in *Proposition 2*. Finally, we consider the extreme case of $\rho = \frac{\tilde{\sigma}_T}{\beta(\tilde{\sigma}_T)(1-\tilde{\sigma}_T)}$, we must have $C(\sigma)$ and $P(\sigma)$ intersecting at $\tilde{\sigma}_T$, $\sigma_1 = \tilde{\sigma}_T = \sigma_T = \underline{\sigma}_3$ and $R_T = \underline{R}$.

Q.E.D.

B Sample Countries

Table B1: Countries included in terrorism and conflict sample with respective number of annual observations.

Country	Terrorism Sample	Conflict Sample	Country	Terrorism Sample	Conflict Sample	Country	Terrorism Sample	Conflict Sample	Country	Terrorism Sample	Conflict Sample
Afghanistan	11	11	Dominican Republic	43	25	Latvia	18	18	Rwanda	43	25
Albania	29	25	Ecuador	43	25	Lebanon	24	25	Saudi Arabia	42	25
Algeria	43	25	Egypt, Arab Rep.	43	25	Lesotho	43	25	Senegal	43	25
Argentina	43	25	El Salvador	43	25	Liberia	43	25	Serbia	8	8
Armenia	17	17	Equatorial Guinea	22	15	Libya	14	14	Sierra Leone	43	25
Australia	43	25	Eritrea	18	19	Lithuania	10	10	Slovak Republic	20	21
Austria	43	25	Estonia	18	18	Luxembourg	14	14	Slovenia	18	18
Azerbaijan	16	16	Ethiopia	31	25	Macedonia, FYR	20	21	Solomon Islands	22	23
Bahrain	32	25	Fiji	43	25	Madagascar	43	25	South Africa	43	25
Bangladesh	41	25	Finland	43	25	Malawi	43	25	Spain	43	25
Belarus	21	22	France	43	25	Malaysia	43	25	Sri Lanka	43	25
Belgium	14	14	Gabon	43	25	Mali	43	25	Sudan	3	3
Benin	43	25	Gambia, The	43	25	Mauritania	43	25	Suriname	37	25
Bhutan	32	25	Georgia	16	16	Mauritius	36	25	Swaziland	42	25
Bolivia	43	25	Germany	23	24	Mexico	43	25	Sweden	43	25
Botswana	43	25	Ghana	43	25	Moldova	19	19	Switzerland	32	25
Brazil	43	25	Greece	43	25	Mongolia	31	25	Syrian Arab Republic	37	19
Bulgaria	32	25	Guatemala	43	25	Montenegro	8	8	Tajikistan	16	16
Burkina Faso	43	25	Guinea	26	25	Morocco	43	25	Tanzania	24	25
Burundi	43	25	Guinea-Bissau	39	25	Mozambique	32	25	Thailand	43	25
Cabo Verde	32	25	Guyana	43	25	Namibia	23	24	Timor-Leste	2	2
Cambodia	20	20	Haiti	15	15	Nepal	43	25	Togo	43	25
Cameroon	43	25	Honduras	43	25	Netherlands	43	25	Trinidad and Tobago	43	25
Canada	43	25	Hungary	21	22	New Zealand	35	25	Tunisia	43	25
Central African Republic	43	25	India	43	25	Nicaragua	43	25	Turkey	43	25
Chad	43	25	Indonesia	43	25	Niger	43	25	Turkmenistan	7	7
Chile	43	25	Iran, Islamic Rep.	41	23	Nigeria	43	25	Uganda	30	25
China	43	25	Iraq	30	12	Norway	43	25	Ukraine	19	19
Colombia	43	25	Ireland	42	25	Oman	43	25	United Arab Emirates	37	25
Comoros	32	25	Israel	43	25	Pakistan	43	25	United Kingdom	43	25
Congo, Dem. Rep.	41	22	Italy	43	25	Panama	43	25	United States	43	25
Congo, Rep.	43	25	Jamaica	43	25	Papua New Guinea	38	25	Uruguay	43	25
Costa Rica	43	25	Japan	43	25	Paraguay	43	25	Uzbekistan	15	15
Cote d'Ivoire	43	25	Jordan	37	25	Peru	43	25	Venezuela, RB	43	25
Croatia	18	18	Kazakhstan	21	22	Philippines	43	25	Vietnam	28	25
Cuba	42	25	Kenya	43	25	Poland	22	23	Yemen, Rep.	20	21
Cyprus	37	25	Korea, Rep.	43	25	Portugal	43	25	Zambia	43	25
Czech Republic	20	21	Kuwait	18	18	Qatar	13	13	Zimbabwe	43	25
Denmark	43	25	Kyrgyz Republic	17	17	Romania	22	23			
Djibouti	22	23	Lao PDR	28	25	Russian Federation	21	22			

C Summary Statistics

Table C1: Summary statistics for terrorism sample (1970 – 2014, excluding 1993 because of data unavailability). 5,400 observations unless indicated otherwise.

Variable	Mean (Std. Dev.)	Min. (Max.)	Source[a]	Description
Deaths from terrorism	43.79 (261.29)	0 (7,038)	GTD	Number of deaths from terrorist attacks in country i and year t; applying ln(1+deaths)
EXEC	4.38 (2.31)	1 (7)	Polity IV	Variable $EXCONST$, executive constraints, ranging from 1 to 7
Natural resource rents in US$ 10,000/cap	0.06 (0.24)	0 (4.63)	WDI	Total natural resource rents in US$ 10,000 per capita (adjusted by GDP in constant 2005 prices and population size); initially natural resource rents in % of GDP
GDP/capita	7,823 (12,750)	70 (87,773)	WDI	GDP per capita in constant 2005 US$; applying Ln(GDP/capita)
Population size in 10,000	3,909 (13,370)	23.29 (135,738)	WDI	Total population size; applying Ln(GDP/capita)
Growth rate	2.03 (5.76)	-62.21 (104.66)	WDI	GDP per capita growth
Polity IV	11.88 (7.28)	0 (20)	Polity IV	Variable $POLITY2$, re-scaled to run between 0 (total autocracy) and 20 (total democracy); 5,366 observations
Development assistance in US$ 10,000/cap	0.01 (0.01)	0 (0.18)	WDI	Net official development assistance and official aid received (constant US$2005) in US$ 10,000 per capita (adjusted by population size); 4,333 observations
Oil rents in US$ 10,000/cap	0.04 (0.19)	0 (4.53)	WDI	Oil rents in US$ 10,000 per capita (adjusted by GDP in constant 2005 prices and population size); initially oil rents in % of GDP; 4,190 observations

Notes: [a]Data come from the Global Terrorism Database (GTD, following LaFree and Dugan, 2007), Polity IV (following Marshall and Jaggers, 2002), and the World Development Indicators provided by the World Bank (WDI, see World Bank Group, 2012, for documentation).

Table C2: Summary statistics for conflict sample (1989 – 2014). 3,586 observations unless indicated otherwise.

Variable	Mean (Std. Dev.)	Min. (Max.)	Source[a]	Description
Deaths from internal conflict	149.13 (1,123)	0 (49,698)	UCDP	Number of deaths from internal and internationalized internal conflicts in country i and year t; applying ln(1+deaths)
EXEC	4.84 (2.09)	1 (7)	Polity IV	Variable $EXCONST$, executive constraints, ranging from 1 to 7
Natural resource rents in US$ 10,000/cap	0.07 (0.24)	0 (3.29)	WDI	Total natural resource rents in US$ 10,000 per capita (adjusted by GDP in constant 2005 prices and population size); initially natural resource rents in % of GDP
GDP/capita	8,710 (13,911)	70 (87,773)	WDI	GDP per capita in constant 2005 US$; applying Ln(GDP/capita)
Population size in 10,000	4,102 (14,107)	32 (135,738)	WDI	Total population size; applying Ln(population size)
Growth rate	2.18 (5.81)	-62.21 (104.66)	WDI	GDP per capita growth
Polity IV	13.44 (6.54)	0 (20)	Polity IV	Variable $POLITY2$, re-scaled to run between 0 (total autocracy) and 20 (total democracy); 3,551 observations
Development assistance in US$ 10,000/cap	0.01 (0.01)	0 (0.09)	WDI	Net official development assistance and official aid received (constant US$2005) in US$ 10,000 per capita (adjusted by population size); 2,880 observations
Oil rents in US$ 10,000/cap	0.04 (0.14)	0 (1.91)	WDI	Oil rents in US$ 10,000 per capita (adjusted by GDP in constant 2005 prices and population size); initially oil rents in % of GDP; 2,815 observations

Notes: [a]Data come from the UCDP Battle-Related Deaths Dataset version 5.0-2015 (available under http://www.pcr.uu.se/research/ucdp/datasets/ucdp_battle-related_deaths_dataset/), Polity IV (following Marshall and Jaggers, 2002), and the World Development Indicators provided by the World Bank (WDI, see World Bank Group, 2012, for documentation).

D Additional Robustness Checks and Extensions

Table D1: OLS regression results from extensions, estimating the number of deaths from terrorism and domestic conflict in country i and year t. Columns (1) – (4) use deaths per capita and columns (5) – (8) use a binary indicator for 25 or more deaths as the dependent variable.

Dependent variable:	(1) $Ln\left(\frac{1+deaths\ from\ terrorism}{population}\right)$	(2) $Ln\left(\frac{1+deaths\ from\ terrorism}{population}\right)$	(3) $\text{Ln}\left(\frac{1+deaths\ from\ domestic\ conflict}{population}\right)$	(4) $\text{Ln}\left(\frac{1+deaths\ from\ domestic\ conflict}{population}\right)$	(5) 25+ terrorism deaths (0/1)	(6) 25+ terrorism deaths (0/1)	(7) 25+ conflict deaths (0/1)	(8) 25+ conflict deaths (0/1)
EXEC	0.318*	0.298*	-0.115*	-0.112*	0.061*	0.059*	-0.021**	-0.021**
	(0.172)	(0.175)	(0.063)	(0.063)	(0.032)	(0.032)	(0.011)	(0.011)
$(EXEC)^2$	-0.040*	-0.038*			-0.008**	-0.008**		
	(0.021)	(0.022)			(0.004)	(0.004)		
Natural resource rents in US$ 10,000/cap	0.761***		1.264*		0.078*		0.139	
	(0.279)		(0.709)		(0.045)		(0.111)	
Development assistance in US$ 10,000/cap	12.701**	12.729**	-2.787	-2.401	1.977**	1.989**	-0.455	-0.393
	(6.082)	(6.146)	(7.628)	(7.585)	(0.851)	(0.862)	(1.377)	(1.371)
Oil rents in US$ 10,000/cap		0.761**		1.265		0.076		0.118
		(0.299)		(0.858)		(0.048)		(0.134)
Control variables[a]	yes	yes	yes	yes	yes	yes	yes	yes
Country-fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Year-fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Continent-specific time trends	yes	yes	yes	yes	yes	yes	yes	yes
# of countries	136	136	136	136	136	136	136	136
N	4,333	4,190	2,880	2,815	4,333	4,190	2,880	2,815
Adjusted R^2	0.551	0.555	0.616	0.618	0.413	0.419	0.559	0.558

Notes: Standard errors clustered on the country level are displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. [a]Includes GDP/capita, population size, and growth rate.