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Peace, Terrorism, or Civil Conflict? Understanding the Decision of an Opposition Group

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ABSTRACT

Peace, Terrorism, or Civil Conflict? Understanding the Decision of an Opposition Group*

When do opposition groups decide to mount a terrorism campaign and when do they enter an open civil conflict against the ruling government? This paper models an opposition group's choice between peace, terrorism, and open conflict. Terrorism emerges if executive constraints are intermediate and rents are sizeable. Open conflict is predicted to emerge under poor executive constraints. Analyzing country-level panel data firmly supports these hypotheses, even when relying on within-country variation only in a fixed-effects framework. In particular, both the incidence of terrorism and the likelihood of terrorism onset increase under intermediate executive constraints (following an inverted U-shape) and if large rents are available from natural resources, oil, or foreign development assistance. A one-standard-deviation increase in rents raises casualties by approximately 15 percentage points. Related to civil conflict, moving from an authoritarian regime to comprehensive executive constraints is associated with a decrease in the number of battle-related deaths by approximately 74 percentage points. These findings can help us to better understand and anticipate the underlying decision of opposition groups and their choice between peace, a terrorism campaign, and open conflict.

JEL Classification: D74, F35, O11, P47, Q34

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 an open insurgency against the state, and other times domestic terrorism emerges. These phenomena are usually analyzed separately.[1] In reality, however, an opposition group consciously decides about which (if any) form of organized violence to pursue against a ruling government. Then why do some groups choose an open insurgency against their government and others pursue a concealed strategy of domestic terrorism?

Understanding the underlying drivers of large-scale organized violence against the state has become more important than ever, as casualties are on the rise again. Figure 1 visualizes the number of annual deaths from domestic conflicts and terrorism – both cracked record-highs in 2014 surpassing 100,000 and 42,000 casualties, respectively.

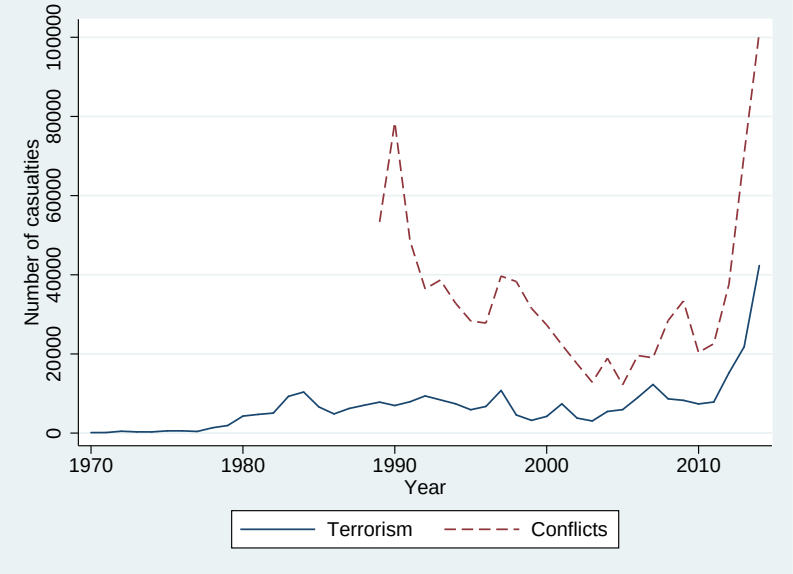

Figure 1: Worldwide casualties from terrorism and conflicts, using data from the Uppsala Conflict Data Program (UCDP) and the Global Terrorism Database (GTD).

The following pages first introduce a basic theoretical intuition about how an opposition group chooses its profit-maximizing strategy between (*i*) peace, (*ii*) terrorism, and (*iii*) open insurgency. Although terrorism and conflicts share a number of common characteristics, the

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

paper highlights an important distinction: whereas the potential gains and costs are large in open insurgencies, both are naturally limited in terrorist campaigns. Two testable results emerge, as the opposition's choice depends on constraints on the executive and the available rents (e.g., natural resource rents, oil, or foreign development assistance), among other, mostly country-specific parameters.

First, terrorism becomes likely if political constraints are intermediate and rents are sizeable. Intuitively, the opposition does not want to risk losing its non-trivial share of rents in open conflict, but the looming benefits from a terrorist campaign are more attractive than peace. In reality, we have observed such scenarios in Algeria (Armed Islamic Group and Al-Qa'ida in the lands of the Islamic Maghreb) over the past 20 years and in Nigeria (Boko Haram), for example.[2] Interestingly, terrorism can emerge even under near-perfect institutions if rents are particularly high.

Second, open conflict emerges 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). Finally, 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 irrelevant. Examples may be found in Scandinavian nations, Australia, or New Zealand, among many others.

To test these hypotheses, I analyze country-year level data on casualties from terrorism and domestic conflicts. Applying a two-way fixed-effects framework allows me to focus on within-country variation only, controlling for any unobservable heterogeneity across countries and time. Indeed, terrorism most likely occurs if a country exhibits an intermediate degree of executive constraints and high rents, measured as natural resources (in particular oil) and foreign development assistance. This quantitatively sizeable result holds for both the incidence and onset of terrorism. In terms of magnitude, moving from an authoritarian regime to intermediate political constraints translates to a 40 percentage point increase in casualties from terrorism.

[2] Algeria has maintained intermediate executive controls over the past 20 years with values ranging from three to five on the Polity IV variable *xconst* (scale ranging from one to seven). 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 sizeable oil exports.

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 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 and confirms previous results in the literature (see Hegre, 2014, for an overview).

The paper aims to contribute to two major streams in political science and political economy. First, it provides a basic unifying framework to study terrorism and domestic conflict jointly. 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 can become vulnerable to terrorism, namely if substantial rents are available. The simple theoretical intuition builds on foundations from Besley and Persson (2009, 2011), who analyze political violence from the government's perspective, whereas this paper focuses on the choice of the opposition group.

Second, the paper adds to empirical works on the determinants of terrorism and domestic conflict. 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 a dangerous combination. Related to the civil conflict/civil war literature, the corresponding findings highlight the overwhelming importance of institutional constraints, as previously argued by Hegre (2014). 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 a description of the literature, aimed at sorting this paper into existing theories and empirical findings. Section 3 introduces a simple 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

Domestic terrorism and open insurgencies 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. To clarify terminology, consider the respective definitions provided by the Merriam-Webster dictionary:

- **Terrorism:** the use of violent acts to frighten the people in an area as a way of trying to achieve a political goal.
- **Insurgency:** a usually violent attempt to take control of a government: a rebellion or uprising.[3]

The uniting theme across these concepts centers on the notion of 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 relevant dimensions. Most importantly, terrorism is motivated by achieving *a political goal* (generally speaking to obtain more political power), whereas the purpose of mounting an insurgency lies in overthrowing the government completely.[4]

In economic terms, the costs and benefits differ between the concepts of terrorism and insurgency. 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 legitimizes the government's persecution of all group members. As a consequence, the group may lose its institutional privileges (little as they may have been) and become outlaws.

[3]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."

[4]In practice, more political power may translate to regional independence, a more equal distribution of resources, or concessions in the country's institutional framework.

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 publicly identify with the organization's political goals and in the worst-case scenario those members conducting terrorist missions will lose their institutionally guaranteed rights or die. The secret character of terrorism produces a natural, manageable limit to campaign costs. These distinctions between an insurgency and terrorism will become important in section 3.

Previous works on the determinants of domestic conflicts usually distinguish between economic (e.g., income levels) and political drivers (e.g., political rights or democracy).[5] 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. In particular, the paper provides an explanation for the question why some groups may choose terrorism over peace or open conflict.

Similar to conflict studies, the terrorism literature has identified some key drivers, such as development levels (mostly GDP per capita) and political rights in several forms (e.g., democracy, political freedom, civil liberties, or the rule of law).[6] One particularly controversial observation suggests that *democratic* states can become targets of terrorism – a phenomenon we do not observe for domestic conflicts usually (see Hegre, 2014). Chenoweth (2013) writes that "transitioning democracies with internally inconsistent institutions were more likely to experience

[5]In a series of seminal papers, Paul Collier and Anke Hoeffler distinguish between *greed* and *grievance*, suggesting economic opportunity as the 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. 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; Esteban and Ray, 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.

[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. Note that the present paper focuses on *domestic* terrorism, not international terrorism. In reality, only 3.8 percent of the documented terrorist attacks in the GTD are categorized as international terrorism. These missions are excluded from the empirical analysis.

domestic terrorism than advanced democracies and authoritarian regimes."

This paper provides an intuitive explanation for this observation. If constraints on the executive are intermediate (as they are in countries moving from an authoritarian regime to democracy) terrorism may emerge as the profit-maximizing choice of the opposition group. In fact, even if institutional constraints are considerable, terrorism can be observed, but only if rents are particularly large. These hypotheses emerge directly from the cost-benefit distinctions between open conflict and concealed terrorism.

3 Modelling the Opposition's Choice

Assume an opposition group, normalized to the size of one. To keep things simple, the size of the opposition group equals the size of the ruling government group (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 between one of three strategies: peace, terrorism, or open insurgency. The decision process is modeled in its simplest form as one static period for a risk-neutral opposition group, in order to emphasize the basic underlying problem.

Following seminal models by Timothy Besley and Torsten Persson (2009 and 2011), the country's institutional foundations guarantee the opposition group a minimum share σ (with $0 \leq \sigma \leq \frac{1}{2}$) of the available rents, R. (It is straightforward to show that a ruling government will always choose the lowest σ possible in the following framework. See the appendix for details.) σ can be interpreted as constraints on the executive or, alternatively, as extractive (low σ) versus inclusive institutions (high σ), following the terminology used by Acemoglu et al. (2005). In the spirit of Besley and Persson (2009, 2011), R refers to natural resource rents or foreign aid inflows – both assets over which a ruling government maintains control.

In reality, we observe governments that extract parts of these available rents in many countries. In the given setup, $1 - \sigma$ represents the maximum share of R the ruling government can extract. If $\sigma = \frac{1}{2}$, then rents are shared equally between both equally-sized groups and institutions are completely inclusive, i.e., the ruling elite does not extract any rents beyond their

proportional share. Contemporary examples are provided by a number of largely democratic states, such as the majority of European states, North America, Australia, or New Zealand.

In the other extreme ($\sigma = 0$), the ruling group extracts all rents, leaving none for the opposition. Examples can be found in strict authoritarian regimes, such as North Korea, Fidel Castro's Cuba, or Robert Mugabe's Zimbabwe. In reality, most regimes fall somewhere in the middle with $0 < \sigma < \frac{1}{2}$.

3.1 Peace

The opposition group's first option is characterized by non-violence. In particular, maintaining peace will yield the opposition group a profit of

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

Notice that if constraints on the executive are optimal and $\sigma = \frac{1}{2}$, then both groups benefit equally from revenues, since the ruling group's revenue remains $(1-\sigma)R$ in this basic framework. If $\sigma = 0$, however, no institutional restraints are posed on the executive and the reigning group can reap all resource revenue, equivalent to R.

3.2 Terrorism

Now consider the second option: a terrorist campaign. The idea of forming a terrorist movement consists in 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 σ, such as territorial concessions (e.g., separatist groups) or improved political and economic power. However, it is *not* possible to take control of the government with terrorist tactics, naturally limiting the potential gains of a terrorist campaign.

In turn, the costs of terrorism are determined by a fixed non-negative amount c for two main reasons. First, mounting a terrorist campaign means that no fractional member of the opposition needs to openly declare herself as violently opposed to the government. Terrorism implies secrecy. Thus, accountability is limited by the concealed nature of terrorism. Second, in reality, conducting terrorist attacks can be as simple as one individual firing a gun in a highly

populated area. This aspect of terrorism drastically limits the associated costs, especially when compared to open insurgency.

Both of these characteristics capture the fundamental difference between terrorism and insurgencies. In general, the cost of terrorist attacks remains relatively small across countries and time, although country- and time-specific aspects are likely to influence c.[7] In the empirical framework, fixed effects will be introduced to capture such unobservable heterogeneity across countries and time. Further, if β (with $0 < \beta < 1$) represents the probability of success, the expected profit of mounting a terrorist campaign becomes[8]

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

In practice, β can include a number of country-specific aspects that may favor or complicate a successful campaign of violence against the government. For instance, if the state's institutions are weak, the 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 Abadie, 2006, for terrorism; Fearon and Laitin, 2003, Collier et al., 2009, Do and Iyer, 2010, Weidmann and Ward, 2010, or Schutte, 2015, for conflict).

3.3 Insurgency

Finally, the opposition group can consider a third option: open insurgency. In this case, potential gains are higher than from choosing a terrorist campaign, as the looming reward consists of taking over the government and reaping $(1 - \sigma)R$. However, the costs of mounting an insurgency are also non-trivial and amount to devoting all available resources into fighting (σR), as the group declares an *open* war on the ruling regime. 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 payoff from insurgency becomes

[7] For example, we can think of technological advancements over time, country-specific government surveillance, or even within-group coordination problems as drivers of c.

[8] To be entirely accurate, this payoff function is an *expected* payoff function. However, since I am assuming a risk-neutral opposition group this distinction between expected and actual profit becomes irrelevant in the present context.

$$\Pi_{war} = \sigma R + \beta(1-\sigma)R - \sigma R. \tag{3}$$

Note that this setup implies two simplifying assumptions. First, the probability of a successful terrorist campaign is equalized to the probability of a successful insurgency. In reality, of course, these odds may differ for several reasons and $\beta_{terror} = \beta_{war} = \beta$ is chosen for mathematical convenience. Second, an insurgency (and likely terrorism as well) may destroy rents, potentially reducing R. Nevertheless, altering either assumption would not change the derived qualitative implications, but would complicate calculations. The general intuition of this modeling is preserved for $\beta_{terror} \neq \beta_{war}$ and for introducing an additional cost term measuring destruction from war. In the empirical section, country- and time-fixed effects are employed to control for such heterogeneity within countries and time periods.

3.4 Optimal Choice of the Opposition

Which option will the opposition group choose? First, it is useful to review corner solutions, i.e., cases where institutional constraints are completely absent or ideal. In reality, it is highly unlikely that the group will choose insurgency if $\sigma \to \frac{1}{2}$, as we rarely observe attempts aimed at overthrowing the government in societies with inclusive institutions (see Hegre, 2014). Indeed, $\beta < 1$ is sufficient to ensure $\Pi_{peace} > \Pi_{war}$ for $\sigma = \frac{1}{2}$.

In addition, it is realistic to assume that at least one violent option dominates the peaceful scenario if $\sigma = 0$. Note that equation 3 by definition fulfills that restriction, whereas

$$R > \frac{2c}{\beta} \tag{4}$$

would be required for terrorism to even be considered. Intuitively, if available rents are sufficiently small, terrorism does not present itself as a lucrative option at all. Similarly, if the associated costs (c) of mounting a terrorist campaign are large, terrorism becomes a less desirable alternative. Finally, if the probability of success (β) approaches zero, terrorism loses its attractiveness for the opposition.[9]

[9] In fact, the idea of not negotiating with terrorists aims to reduce β_{terror} to zero, signaling that terrorist acts would by no means be considered in the political process. However, governments have frequently broken that ideal. For more detailed analyses, see Clutterbuck (1992), Neumann (2007), and Dolnik and Fitzgerald (2011).

Comparing payoffs, we can then derive the conditions under which each option is preferable. Figure 2 visualizes the potential scenarios, graphing the constraints on the executive (σ) to the available rents (R). In particular, we can establish the following optimal strategies of violence:

Proposition 1. If executive constraints are intermediate (with $\frac{c}{R} + \frac{1}{2}\beta < \sigma < \frac{1}{2} - \frac{c}{\beta R}$*) and rents are non-trivial (with* $R > \frac{2c(1+\beta)}{\beta(1-\beta)}$*), terrorism becomes an attractive option for the opposition group.*

Proof. Follows directly from comparing equation 2 to equations 1 and 3.

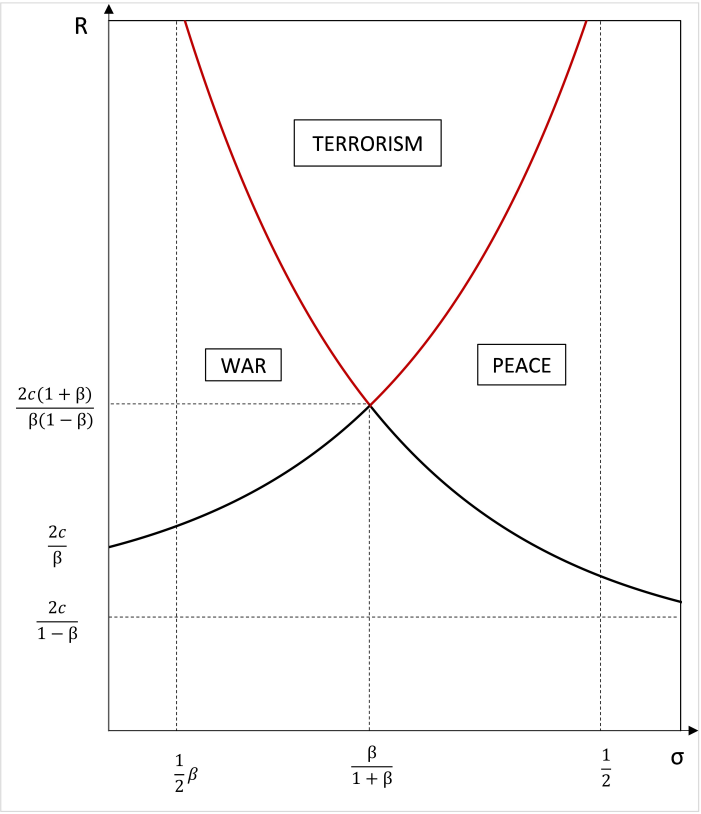

Figure 2: Predicted occurrence of war, terrorism, and peace under different combinations of executive constraints and available rents.

Comparing terrorism to peace, even if σ approaches $\frac{1}{2}$ an opposition may find it beneficial to promote terrorism, but only if rents are particularly large. This may explain why even relatively

advanced democracies can suffer from domestic terrorism. Comparing terrorism to an insurgency suggests that if constraints are exceptionally poor, then the opposition has little to lose from an open conflict. On the other hand, if σ is moderate already, then seeking a larger share of R via terrorist measures can prove to be more beneficial, as the potential losses from an open war loom too large.

Proposition 2. If executive constraints are small (with $\sigma < \frac{\beta}{1+\beta}$ *and* $\sigma < \frac{c}{R} + \frac{1}{2}\beta$*) insurgency becomes likely.*

Intuitively, the decision between peace and insurgency is simple: if the share of rents received is exceptionally low, then an opposition group has little to lose from mounting an insurgency. This becomes more likely if the state's power is weak (implying a high β). This explains why countries with weak institutions struggle to maintain peace – the chances for a successful revolution (β) are just too attractive and usually executive constraints are too weak (i.e., a small σ). These hypotheses have received firm support in the empirical literature (e.g., see Hegre and Sambanis, 2006, and Blattman and Miguel, 2010, for comprehensive summaries).

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, the provided 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 Propositions 1 and 2, I access the GTD (introduced by LaFree and Dugan, 2007) and the UCDP (UCDP, 2015) for detailed data on deaths from terrorist attacks and internal conflicts. 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." In particular, I will focus on the number of casualties from terrorism. (Nevertheless, 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 to 2014 and I aggregate that information 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. Both data sources have become standard in the respective literature. Table AII lists all sample countries with their respective number of observations for both samples.

Note that the literature generally refers to conflicts with more than 1,000 battle-related deaths in a given year as civil *wars* (e.g., see Blattman and Miguel, 2010). If a threshold of 25 battle-related deaths has been crossed, then researchers refer to civil *conflict*. Most datasets only offer binary indicators for civil conflict and civil war. 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 casualties. 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 AV in the appendix.

To measure σ, the institutional constraints on the executive, I access the Polity IV dataset, a common source for political variables (introduced by Marshall and Jaggers, 2002). In particular, I 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, I also employ the *polity*2 variable capturing a country's degree of democracy.

Further, measures for R (natural resource rents, foreign development assistance, and oil rents) are collected from the World Development Indicators (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

[10] The only missing year is 1993, in which the GTD does not provide data because of missing files. Note that I exclude international terrorism and inter-country conflicts, as these phenomena are likely following different dynamics than the domestic situation described in this paper.

AIII and AIV.

4.2 Empirical Methodology

4.2.1 The Incidence of Terrorism and Conflict

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

$$Ln(1+deaths) = \alpha_1 EXEC_{it} + \alpha_2 \big(EXEC\big)^2_{it} + \alpha_3 Rents_{it} + \boldsymbol{X_{it}}\alpha_4 + \delta_i + \rho_t + \kappa_{it} + \epsilon_{it}. \quad (5)$$

Note that the dependent variable is calculated as Ln(1+deaths), which conserves country-year observations where 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, I 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 the 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, I include GDP per capita, population 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.[11]

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-

[11] 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.

specific factors that could be associated with c and β. 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. Thus, 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 is imprecise, a fixed-effects framework would capture such shortcomings. In general, several topics of interest in the cross-country literature have encountered 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, Cotet and Tsui (2013) have shown the importance of using panel data with fixed effects. Continent-specific time trends incorporate the idea that developments related to conflict or terrorism can sometimes spill over into neighboring countries.[12] The Arab Spring provides a recent popular example. Finally, ϵ_{it} stands for the conventional error term, clustered on the country level.

Beyond the incidence measures, the empirical analysis then turns to analyzing the *onset* of terrorism and conflict. I 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 me to estimate the influence of executive constraints and rents on the likelihood of terrorism and conflict onset. As independent variables, I incorporate the same regressors as in equation 5, excluding fixed effects and time trends. In practice, the *onset* of both terrorism and conflict are (thankfully) much rarer within countries over time than the variation in the incidence variable of casualties. As a consequence, a fixed-effects framework would not leave sufficient statistical variation in the data to reveal the underlying relationships.

[12] In alternative estimations, I 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 time variation within a country is limited in a number of control variables. Thus, introducing country-specific time trends can absorb much of the underlying variation.

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 the theoretical intuition. 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 on a scale of one to seven.

Column (3) includes country-fixed effects, thereby controlling for individual particularities of each state. In the context of the basic model presented before, this controls for (but is not limited to) the cost of conducting a terrorist attack (c) and the probability of a successful campaign (β). 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.

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)
$(\text{EXEC})^2$		-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.

Column (4) incorporates further control variables, in particular GDP per capita, population size, the economic growth rate, and finally 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 with a maximum for intermediate ranges of institutional constraints, whereas higher natural resource rents are associated with more terrorism.

In terms of magnitude, both results are non-trivial, as visualized in Figure 3. In particular, 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 close to 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.

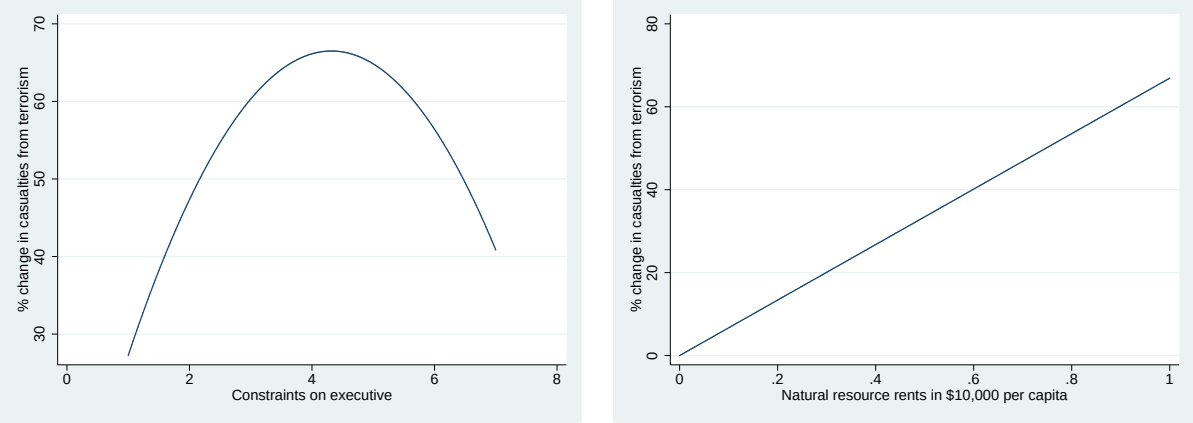

Figure 3: Effect of constraints on the executive and natural resource rents on the incidence of terrorism, plotting results from column (6) of Table 1.

5.2 Incidence of Terrorism: Extensions

From these baseline findings related to the incidence of terrorism, I now consider several extensions, 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 likely 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 terrorism casualties. 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. (Note that to avoid multicollinearity issues, I remove the measure for natural resource rents once oil rents are included. These variables are highly correlated with a coefficient of 0.97.) In this case, a one standard deviation increase (US$ 2,078) 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 close. Thus, a general relationship between R and terrorism appears likely, as suggested by Proposition 1. In addition, the non-linear result associated with institutional constraints remains robust to these alternative estimations.

Focusing on the measure of institutional constraints, column (3) introduces an alternative measure with the *polity*2 variable of democracy, provided by the Polity IV project. In order to properly estimate the quadratic effect, I 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, contributes to a more precise estimation of the underlying relationship. Note also that the corresponding results for development assistance and oil rents remain robust.[13]

[13] Incorporating natural resource rents instead of oil rents produces the same conclusion.

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.

Finally, I 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. The corresponding results are referred to the appendix Table AV.[14]

Finally, columns (4) to (6) display results from instrumental variable regressions, addressing 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.[15]

To alleviate such concerns, I 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; Mirestean and Tsangarides, 2016), as well as studies analyzing effects from democracy (Bhattacharyya and Hodler, 2010) and corruption (Arezki and Brückner, 2011). This IV-approach, in combination with the theoretical intuition provided in section 3 and the fixed-effects framework, should mitigate endogeneity concerns.

Note that the derived coefficients in columns (4) to (6) are largely in line with the benchmark OLS results from Table 1.[16] 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 to blame. 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 *polity*2

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

[15] Note 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 estimation.

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

variable produces a result that is consistent with the findings from OLS regressions. Overall, these IV estimations confirm the findings derived in Table 1.

5.3 Onset of Terrorism

From terrorist incidence, I now move to probit regressions, predicting terrorist onset in Table 3 (displaying marginal effects). As before, a linear term is not sufficient to accurately describe the underlying relationship, but column (2) produces the familiar nonlinearity 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.[17])

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, development assistance emerges as a positive predictor. Although the measure for natural resource rents barely misses the conventional hurdle of statistical significance (t-value of 1.61), a sizeable positive coefficient is established. In addition, the familiar inverted U-shape for the effect of institutional constraints on terrorism onset prevails.

Column (4) substitutes oil rents for overall natural resources, and we find the familiar positive relationship to terrorism. Further, column (5) turns to the alternative measure for institutional constraints by employing the *polity*2 variable. As before, the corresponding findings support all predictions related to σ and R.

Finally, columns (6) to (8) display results from IV regressions, following the same sequence as columns (4) to (6) in Table 2. It is reassuring to see that all suggested relationships receive strong support. Figure 4 plots the underlying relationships for executive constraints and development assistance, using the results from column (3) as a reference point. Compared to authoritarianism, terrorism becomes approximately seven percentage points more likely if con-

[17] When including country-fixed effects, $EXEC$ produces a coefficient of 0.210 (standard error 0.114), whereas $(EXEC)^2$ produces a coefficient of -0.022 (0.014). Natural resource rents produce a coefficient of 0.007 (0.004).

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

						IV[b]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable: Onset of terrorism								
EXEC	0.004	0.061***	0.042***	0.040**		0.214***	0.203***	
	(0.002)	(0.014)	(0.015)	(0.016)		(0.072)	(0.074)	
$(EXEC)^2$		-0.007***	-0.004**	-0.004**		-0.021**	-0.020**	
		(0.002)	(0.002)	(0.002)		(0.009)	(0.009)	
Natural resource rents in US$ 10,000/cap			0.061			0.305*		0.310**
			(0.038)			(0.175)		(0.131)
Development assistance in US$ 10,000/cap			1.379**	1.347**	1.674***	8.568***	7.934***	
			(0.538)	(0.552)	(0.559)	(2.670)	(2.737)	
Oil rents in US$ 10,000/cap				0.074*	0.102***		0.356*	
				(0.041)	(0.039)		(0.188)	
Polity IV					0.031***			0.148***
					(0.005)			(0.024)
$(\text{Polity IV})^2$					-0.001***			-0.006***
					(0.000)			(0.001)
Control variables[a]			yes	yes	yes	yes	yes	yes
# of countries	156	156	134	134	134	133	133	155
N	3,678	3,678	2,929	2,806	2,804	2,908	2,741	3,655
Pseudo R^2 (McFadden)	0.001	0.006	0.060	0.057	0.071			

Notes: Robust standard errors 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 $(\text{Polity IV})^2$. In all estimations, Shea's partial R^2 ranges between 0.55 and 0.78, leaving little concern about potentially weak instruments.

straints 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.

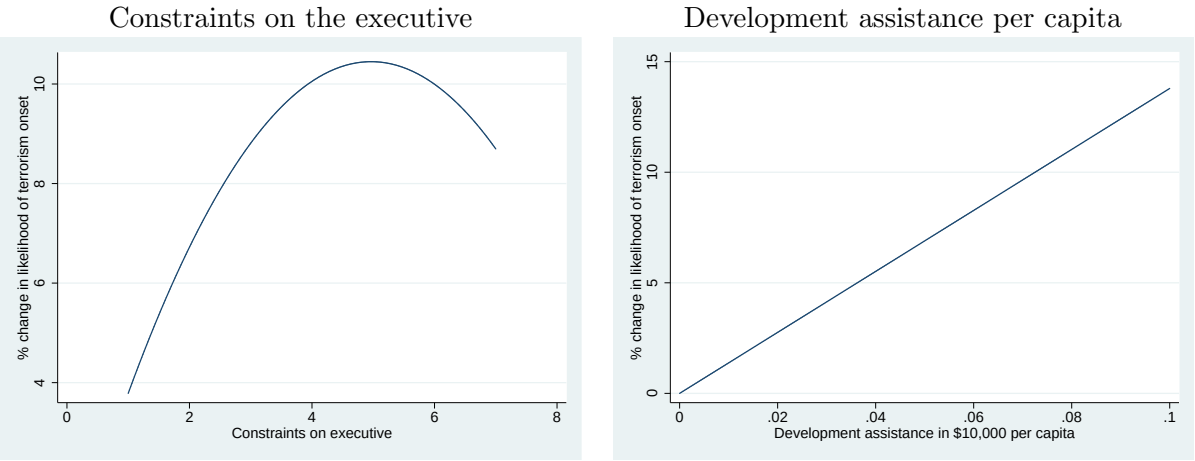

Figure 4: Effect of constraints on the executive and development assistance on the onset of terrorism, plotting results from column (3) in Table 3.

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.

6 Empirical Analysis of Conflicts

After terrorism, I now move to the analysis of domestic conflicts. Recall that the model predicts a linear negative relationship between constraints on the executive and the incidence and onset of civil 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 victims from internal conflicts. In terms of magnitude, raising executive constraints by one level (say, from two to three) is associated with a 12.6 percentage point decrease in

the number of conflict casualties. Column (2) shows that this relationship is not quadratic, in contrast 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. However, executive constraints remain a negative predictor of conflict incidence with the respective coefficient only fluctuating marginally between -0.11 and -0.15. In addition, natural resource rents do not play any role, 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 be the dominant factor.

6.2 Incidence of Conflicts: Extensions

As with the analysis of terrorism, I now move to several extensions, displayed in Table 5. Following the same sequence as in 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 national 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 initial 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, I also address the measurement of the dependent variable. In particular, all results are preserved 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 AV.[18]

Finally, columns (4) to (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 the 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 choose from Table 5. It is also noteworthy to point out that the corresponding regressions are able to explain approximately 60 percent of the observed variation in deaths from conflicts throughout the sample, as indicated by the respective adjusted

[18]Since all regressions are estimated in a fixed-effects framework, I refrain from using a logit or probit approach to estimate the binary outcome variable of conflict incidence, but rather employ a conventional OLS approach, as is common in the literature (see Greene, 2004).

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 in US$ 10,000/cap	1.264*			0.992		
	(0.709)			(0.794)		
Development assistance in US$ 10,000/cap	-2.787	-2.401	-7.307	5.584	5.929	-2.214
	(7.628)	(7.585)	(8.338)	(13.829)	(14.257)	(14.496)
Oil rents in US$ 10,000/cap		1.265	1.164		0.966	0.814
		(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.

R^2 values.

6.3 Onset of Conflicts

Finally, 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. In fact, (luckily) only 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)
EXEC	-0.010***	-0.007***	-0.006***		-0.066**	-0.060**	
	(0.002)	(0.002)	(0.002)		(0.029)	(0.029)	
Natural resource rents		0.027*			0.363*		0.139
in US$ 10,000/cap		(0.015)			(0.200)		(0.165)
Development assistance		0.453	0.507	0.133	4.804	6.012	
in US$ 10,000/cap		(0.654)	(0.655)	(0.663)	(11.158)	(11.101)	
Oil rents			0.039*	0.044**		0.508*	
in US$ 10,000/cap			(0.020)	(0.019)		(0.259)	
Polity IV				-0.001*			-0.012
				(0.001)			(0.008)
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: Robust standard errors 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 for inclusive institutions. This result is confirmed once additional control variables are included, but the related magnitude decreases to 0.007. Note that natural resource abun-

dance is associated with a higher likelihood of conflict onset, something that is not necessarily suggested by the model, but has been proposed by previous studies (Collier and Hoeffler, 1998, Koubi et al., 2014).[19] Thus, it is possible that further dynamics related to natural resources relate to civil conflicts.

Further, columns (3) and (4) explore different measures for σ and R. Concerning institutional constraints, the negative link to conflict is confirmed. Related to available rents, we do confirm the importance of oil rents in driving up the likelihood of conflict. Again, this indicates that natural resources could exhibit an additional dynamic when it comes to violent conflicts. In particular, the results related to natural resources and specifically oil confirm findings by Collier and Hoeffler (2004), Humphreys (2005), and Ross (2006).

Finally, columns (5) to (7) estimate the familiar sequence of IV regressions. Most importantly, executive controls remain a powerful predictor of conflict onset and the associated coefficient increases more than ten-fold, from -0.006 to -0.066. This indicates that applying a regular probit framework would 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.

In addition, increased oil rents continue to predict conflict onset, whereas foreign development assistance remains an irrelevant factor. Finally, employing the *Polity*2 variable as an alternative estimate for institutional controls confirms the negative impact on conflict onset, but the derived coefficient fails to clear the conventional levels of statistical significance. It is important to note that the coefficient becomes *stronger* in quantitative terms, but standard errors are inflated substantially (from 0.001 to 0.008). 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

[19] Nillesen and Bulte (2014) provide a recent summary of the link between natural resources and violent conflict. Also, van der Ploeg (2011) provides an overview of how natural resources can affect development in various ways.

emerges (96).

7 Conclusion

This paper analyzes the decision of an opposition group to pursue a campaign of organized violence against a ruling government. Depending on constraints on the executive (i.e., the inclusiveness of political institutions) and the availability of rents, the group can choose between peace, terrorism, and open civil conflict. An important distinction between open conflict and terrorism comes from comparing the associated costs and benefits. Contrary to civil conflict, both parameters are naturally limited for a terrorist campaign.

Analyzing the opposition group's optimal choice then reveals that terrorism becomes likely if executive constraints are intermediate and rents are high. In fact, even in largely inclusive institutions terrorism remains a viable option, but only if rents are considerable. Civil conflict emerges 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 terrorism and conflicts, respectively. Employing country- and year-fixed effects, continent-specific time trends, and the conventional time-variant control variables, the theoretical predictions receive firm support. Intermediate ranges of executive control increase the number of deaths from terrorism and the likelihood of terrorism onset. However, less constraints on the executive likely pushes the country into civil conflict.

Further, large available rents increase the incidence of terrorism, as well as the likelihood of terrorism onset. For all three rent measures (natural resource rents, oil rents, and development assistance), 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 several different estimations.

Related to domestic conflicts, tighter controls on the executive substantially decrease the number of casualties 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). Nevertheless, the corresponding coefficients consistently confirm the notion that executive constraints are negatively tied to conflict onset in a linear way.

To my 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. The theoretical motivation is basic and one could think of several extensions. Nevertheless, the empirical part of the paper shows that the model's simple predictions are consistently observed in global data, even when controlling for a number of potentially confounding factors and fixed effects. As such, the paper may serve as a starting point to better understand and anticipate the decisions of opposition groups, integrating the drivers of terrorism and national conflicts.

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Table AI: Payoff structure, modelling the incumbent's and opposition's options.

		Incumbent	
		σ_L	σ_H
Opposition	Civil conflict	$\beta R\big(1-\sigma_L\big)$, $\big(1-\sigma_L\big)\big(1-\beta\big)R$	$\beta R\big(1-\sigma_H\big)$, $\big(1-\sigma_H\big)\big(1-\beta\big)R$
	Terrorism	$\sigma_L R+\beta(\frac{1}{2}-\sigma_L)R-c$, $(1-\sigma_L)R-\beta(\frac{1}{2}-\sigma_L)R$	$\sigma_H R+\beta(\frac{1}{2}-\sigma_H)R-c$, $(1-\sigma_H)R-\beta(\frac{1}{2}-\sigma_H)R$
	Peace	$\sigma_L R$, $(1-\sigma_L)R$	$\sigma_H R$, $(1-\sigma_H)R$

Appendix

The Government's Choice

It is straightforward to show that the government always chooses the lowest value of σ possible, given constitutional constraints. To see this, suppose the incumbent group can choose between σ_L, the minimal share dedicated to the opposition as per institutional constraints, and σ_H (with $0 \leq \sigma_L < \sigma_H$). In that case, Table AI displays the corresponding payoff matrix.

From the incumbent's perspective, σ_L constitutes the dominant strategy. In the case of war, the incumbent's income is higher for σ_L, since $\sigma_L < \sigma_H$. In the case of terrorism, the corresponding payoff is larger for σ_L. Specifically, for terrorism: $(1-\sigma_L)R-\beta(\frac{1}{2}-\sigma_L)R > (1-\sigma_H)R-\beta(\frac{1}{2}-\sigma_H)R$, which, after collecting terms, produces $\sigma_H > \sigma_L$. Finally, in the peaceful scenario, the incumbent's income from setting σ_L also dominates, as comparing the respective payoffs again produces $\sigma_H > \sigma_L$.

Sample Countries

Table AII: 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			

Summary Statistics

Table AIII: 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), Polity IV, and the World Development Indicators provided by the World Bank (WDI).

Table AIV: 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, and the World Development Indicators provided by the World Bank (WDI).

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

Dependent variable:	(1) $Ln(\frac{1+deaths\ from\ terrorism}{population})$	(2) $Ln(\frac{1+deaths\ from\ terrorism}{population})$	(3) $\text{Ln}(\frac{1+deaths\ from\ domestic\ conflict}{population})$	(4) $\text{Ln}(\frac{1+deaths\ from\ domestic\ conflict}{population})$	(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.