

# International Terrorism, Domestic Political Instability and The Escalation Effect

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September 2012

**Abstract:** What are the main causes of international terrorism? Despite the meticulous examination of various candidate explanations, existing estimates still diverge in sign, size, and significance. This paper puts forward a novel explanation and supporting evidence. We argue that domestic political instability provides the learning environment needed to successfully execute international terror attacks. Using a yearly panel of 123 countries over 1973-2003, we find that the occurrence of civil wars increases fatalities and the number of international terrorist acts by 45%. These results hold for alternative indicators of political instability, estimators, sub-samples, sub-periods and accounting for competing explanations.

Keywords: terror, international terrorism, political instability, escalation  
JEL Codes: C25, D72, F59, H56, P48

\* We would like to thank Brock Blomberg, Antonio Ciccone, Fabrizio Coricelli, Martha Crenshaw, Jakob de Haan, Benjamin Jones, Simon Luechinger, Thierry Mayer, Maria Petrova, James Robinson, Colin Rowat, Friedrich Schneider, Mathias Thoenig, two anonymous referees and seminar participants at the 17th Silvaplana Workshop in Political Economy, University of Innsbruck, Royal Economic Society Meetings (Surrey) and CEPR Workshop on Conflict and Globalisation (Paris) for valuable comments on earlier versions. All remaining errors are entirely our own.

## 1. Introduction

More than ten years have now passed since the 9/11 terrorist attack. These have been followed not only by the Madrid and London bombings, which were equally hideous, but also by a wave of increasingly sophisticated terrorist attacks all over the world. Such atrocities have not only caused extensive loss of human life, but also have had perverse economic consequences in terms of increased uncertainty, reduced productive investment and larger shares of national output spent on anti-terror activities (see, e.g., Sandler et al., 2008). Figure 1 illustrates these points.<sup>1</sup> It shows transnational terror attacks per country from different regions in the world. Note that, firstly, international terrorism attacks are distributed widely across countries and regions. Secondly, while the average yearly number of terror attacks has decreased, their sophistication increased as shown by the rising number of fatalities over the last 40 years.<sup>2</sup> Thirdly, the most lethal attacks are from African, Asian and Middle Eastern countries.

The objective of this paper is to examine the causes of international terrorism across countries and over time. This is an important question because there are still considerable disagreements. Recent research has made great strides in furthering our understanding of the aggregate behavior of terrorism over time, its economic and political costs and micro-foundations, but the debate lingers about its root causes.<sup>3</sup> The literature has produced a detailed investigation of the relative roles of economic conditions (GDP levels and growth rates, poverty, income inequality) and of political rights and democracy, among other factors. Yet the resulting estimates still diverge in size, statistical significance and even sign. In this debate, little to no

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<sup>1</sup> The data for Figure 1 and for the following econometric analysis is from the ITERATE database (see Mikolous et al. 2006). Section 3 below provides further details on data sources and features. On the distribution of transnational terrorism see also Enders and Sandler (2006).

<sup>2</sup> This is still true if 9/11, which is the most lethal attack in history, is excluded.

<sup>3</sup> Llussá and Tavares (2008) survey this literature and argue that “comprehensive studies that address the long-run determinants of terrorism are scarce.”

attention has been paid to the role of domestic political instability. The latter may play an important role in that domestic political instability may *escalate* into international terrorist acts.

Terrorism is defined as premeditated political violence against civilians with the objective of maximizing media exposure to the act and, ultimately, to the terror group and/or to its “cause.”<sup>4</sup> Terrorist acts differ from civil wars, guerrilla warfare and riots because, among other reasons, they mainly target non-military facilities and/or personnel (that is, because the focus of terrorist activities are “civilian” targets). Because the aim is to raise the profile of the “cause,” one main objective of terrorism is to maximize media exposure so as to further the atmosphere of fear. As the relative importance of exposure vis-à-vis the terror act itself increases (the propaganda eclipsing the deed), planning and required skills become relatively more important. Attacks become fewer, but deadlier.

This paper puts forward a novel explanation for international terrorism: the escalation effect. It also presents supporting econometric evidence. The escalation effect focuses on domestic political instability. The intuition is that (domestic) political instability provides the “learning environment” required to carry out increasingly sophisticated terror attacks. Using a yearly panel of 123 countries over 1973-2003 and data on various aspects of international terrorism, our main findings are that (1) civil wars, guerrilla warfare and riots robustly predict the origin of international terrorism, while demonstrations and strikes do less so, (2) the data offers less support for the role of per capita GDP and democracy in explaining international terrorism, and (3) there are important differences in the strength of the escalation effect across levels of economic development, with the effect weaker in richer and stronger in poorer countries. These

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<sup>4</sup> The definition we use in this paper is from Krueger and Maleckova (2003, p.120): “terrorism means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience. The term ‘international terrorism’ means terrorism involving citizens or the territory of more than one country.”

results hold for various indicators of domestic political instability, estimators, sub-samples, sub-periods, and the presence of alternative explanations.

The paper is organized as follows. Section 2 elaborates on the escalation effect and contrasts it with the alternative explanations. Section 3 introduces the econometric methodology and data. Section 4 presents the econometric estimates and the various robustness tests to which these were subjected. Section 5 discusses these main results and the mechanisms through which they seem to work. Section 6 provides suggestions for future research as well as some implications for policy.

## **2. The Escalation Effect as an Alternative Explanation for International Terrorism**

What do we know about the root causes of international terrorism? There is a large body of evidence comprising quantitative studies whose objective is to identify the main causes of international terrorism, across large samples of countries and over time. There are various surveys of the existing econometric work on the causes of international terrorism. They show that the majority of studies consider as causes of terrorism, democracy, poverty, country size, and conflict.<sup>5</sup> We discuss each of these factors in turn.

One first deep cause of international terrorism is democracy. The intuition is that societies lacking democratic liberties constrain political protest into clandestine and often violent forms, among them terrorism. There are a few important qualifications, such as the notion of a non-linear relationship between political rights and terror, that political rights seem more closely associated with terrorism than civil liberties, and the finding that freedom of press does not seem to play as major a role as other political considerations. As noted, existing estimates diverge so

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<sup>5</sup> For comprehensive reviews of the economic literature on terrorism, see Enders (2007), Frey et al. (2007), Llussá and Tavares (2008), Campos and Gassebner (2009, esp. Table 1), Kis-Katos et al. (2011), and Gassebner and Luechinger (2011).

discrepancies with respect to the role of democracy are not the exception but the rule. For instance, while Abadie (2006) offers econometric evidence supporting the view that political rights are a crucial factor, Tavares (2004) reports results which suggest that political factors do not play a significant role in explaining the variation of terrorism across countries and over time.

A second reason for international terrorism highlighted by the empirical literature is poverty (or low levels of per capita GDP). This has been a very contentious issue. Different studies have examined different aspects such as levels of per capita GDP, growth rates, and the role of recessions.<sup>6</sup> Again, there are various papers which report estimates suggesting that per capita GDP or growth rates of GDP are important determinants of international terrorism (e.g., Blomberg et al., 2004), and other papers in which the econometric estimates suggest that poverty is not an important determinant (e.g., Krueger and Maleckova, 2003).<sup>7</sup> Burgoon (2006) and Azam and Thelen (2008) show that government expenditures (on health and education) and foreign aid, respectively, tend to reduce the incidence of terrorist attacks.

A third commonly investigated reason is country size, often measured as total population and/or as percentage of the total population living in urban areas. The justification is that larger fractions of population in urban centers make terror attacks more deadly, all else equal. Most papers incorporate population and find that this to be an important determinant of terrorist attacks. This is basically a scale effect.

Another important reason for international terrorism found in the empirical literature is

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<sup>6</sup> Gini coefficients, the Human Development Index, various measures of government expenditures on health and education as well as foreign aid inflows have been used.

<sup>7</sup> Bueno de Mesquita (2005) develops a theoretical framework which helps to explain why individual terrorists can be relatively well educated and economically well off but still poor economic situations can be conducive to terrorism. Benmelech et al. (2012) provide evidence supporting this argument.

conflict.<sup>8</sup> Various studies examine the role of interstate conflicts, wars, and regime durability on the occurrence of international terrorism. Some find that whether a country has participated in a war matters (e.g., Lai, 2007), others find that it is not important vis-à-vis international terrorism, (e.g., Burgoon, 2006). Enders et al. (2011) examines the effects of domestic terrorism events on transnational events. They show that domestic terrorism events Granger-cause subsequent transnational events and that this relationship is unidirectional, in the sense that they find international terrorism events do not Granger-cause domestic terror events.

Because our focus is on the role of violent domestic political instability, we discuss in detail three studies that deal with this matter to some extent. These are Li (2005), Lai (2007) and Krueger and Laitin (2008). Li (2005) shows that less durable regimes tend to attract more international terrorism. Yet, not only is there no justification for this inclusion (other than “the variable is too important to exclude,” Li, 2005, p. 286) but the coefficient on regime durability is neither mentioned nor discussed anywhere in the paper. Lai (2007) presents results for the role of civil wars in explaining terrorism and justifies the use of civil wars as an explanatory variable as a proxy for “state failure.”<sup>9</sup> The hypothesis is that the “number of terrorist incidents originating from a state is likely to be higher as the operating costs within that state decrease” (Lai, 2007, p. 300), with five variables used to proxy for those costs (including civil war, inter-state wars and telephone lines). Krueger and Laitin (2008) also use domestic political instability variables to explain international terrorism. They find that “fast growing, stable countries are more likely to

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<sup>8</sup> This list of potential reasons is not intended to be exhaustive. For instance, the recent paper by Berrebi and Ostwald (2011) offers an original alternative reason, namely the role of natural disasters as fuelling international terrorism.

<sup>9</sup> “Governments involved in a civil war are not likely to have the resources available to effectively control their territory, allowing groups to organize without fear of government reprisals [...]. In addition to a civil war, states involved in an interstate war are also likely to have less ability to control their own borders. Similar to the effects of involvement in a civil war, interstate conflict can potentially create a situation where a government’s resources are unavailable to address internal problems” (Lai, 2007, p.302).

be the origin and target of suicide attacks,” where political stability is a dummy variable capturing whether or not the country is stable (from the World Bank’s Governance Matters dataset).

This brief review of the literature leads us to conclude that political and economic factors seem to be the two main reasons studied in the empirical literature, and that this literature has by and large ignored the importance of the escalation effect and the role of domestic political instability for international terrorism.

One explanation that combines political and economic development reasons, namely the “failed states hypothesis,” seems now dominant in political science as well as in policy circles. The idea is simple: weak states produce international terrorists. But what are weak or failed states? The influential Brookings index is a composite of 20 indicators (5 in each “basket”: economic, political, security and social welfare). Under security one finds incidence of coups, territory affected by conflict, political stability, human rights abuses and conflict intensity.<sup>10</sup> Thus, countries in which there is domestic or international terrorism are more likely to be classified as weak states.<sup>11</sup>

There are shortcomings in the “failed states view as a major cause of international terrorism.” Failed states produce terrorism because they are weak states and their weakness shows in their inability to contain terrorism. This is clearly problematic: we cannot identify well which states are weak before a terror attack occurs because states will be classified as weak by

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<sup>10</sup> See Rice and Patrick (2008) for a detailed discussion of each of these components and “baskets.” They also provide an excellent review of various other indexes of state failure. We should note that our contention is exclusively with state failure as a cause of international terrorism as we view state failure as a very useful concept in other contexts.

<sup>11</sup> See also Foreign Policy’s Failed States Index (Foreign Policy, 2008).

the occurrence of terror.<sup>12</sup> Further, the “failed states view” mixes economic and political concerns. Finally, it is not surprising that a composite index that includes the occurrence of terrorism does a good job empirically in explaining terrorism across countries and over time.

In this paper we introduce the escalation effect. It posits that domestic political instability is a deep cause of international terrorism, across countries and over time. More specifically, we formulate this hypothesis as follows:

- (1) domestic political instability is a root cause of international terrorism: it has a first-order effect on the production of terrorist attacks (that is, domestic instability escalates into international terrorism), while the various alternative explanations (e.g., low levels of political and economic development) offered in the literature tend not to exhibit similar first-order effects;
- (2) the escalation effect is stronger for severe political instability phenomena (i.e., violent acts such as guerrilla warfare, civil wars and riots) than for milder forms of domestic political instability (such as anti-government demonstrations and strikes);
- (3) the escalation effect is independent of state-sponsored terrorism: the end of the Cold War helps assessing its significance in that the importance of domestic political instability should not decrease over time and, in particular, after 1989 (see O’Kane, 2007 on state-sponsored terrorism); and
- (4) if such skills do indeed accumulate across countries and over time, one shall expect that the severity of terror attacks (proxied by the number of resulting casualties) will increase over time even if the numbers of attacks do not.

In this paper we focus solely on international terrorism (that is, we exclude domestic

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<sup>12</sup> Both the mechanisms through which political instability can economically “weaken” a state and whether or not this weakening actually takes place are unclear (Campos and Nugent, 2002).



terrorism from our analysis). International terrorism is defined as terrorist acts involving citizens and/or territory of more than one country. One reason for this focus is that it “stacks the cards” against the escalation effect. We claim that domestic political instability drives international terrorism. Naturally, if these spillover effects are substantial, they will be larger for domestic than for international terrorism. This is because civil wars and guerrilla warfare may (although not necessarily do) involve acts of *domestic* terrorism. If this is correct, the effects we estimate for, say civil wars, risk being substantially larger for domestic than for international terrorism.<sup>13</sup> Hence, focusing on international terrorism provides conservative estimates of the roles of different forms of domestic political instability.

### **3. Empirical Methodology and Data**

The objective of this section is to present the dataset used to evaluate the empirical relevance of the escalation effect and discuss the econometric methodology to carry out this assessment. We test whether the escalation effect has empirical support using a panel data set with more than 120 countries yearly since 1973. Our preferred estimates are those from maximum likelihood negative binomial regressions.

We use two different measures of international terrorism as dependent variables. The first is the absolute number of attacks, the second is the absolute number of fatalities (deaths) caused by these attacks. Both measures are generated for each country-year pair. The data source for the

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<sup>13</sup> Unsurprisingly, we find that the effect of the domestic political instability variables is substantially larger when accounting for both domestic and international terrorism. This is despite international terrorist events being a fraction of the total number of terrorist attacks. Domestic terrorism outnumbers transnational terrorism approximately 8:1 (see, e.g., Savun and Phillips, 2009).

terror indicators is ITERATE (Mickolus et al., 2006).<sup>14</sup> The data used in the majority of studies reviewed above is ITERATE or MIPT, with most using the number of terror attacks and about half focusing on target as opposed to origin countries.<sup>15</sup> Here we use the origin and not the target definition because it provides a better match with our hypothesis of the escalation effect (although we find support for this hypothesis using the two definitions).

The resulting count variables show a distribution which is strongly skewed. Moreover, both indicators exhibit significant over-dispersion, i.e., the variance is larger than the mean (see Table 1 for sources and summary statistics). Over-dispersion makes the use of standard estimation methods (e.g. Poisson regression) somewhat problematic. In order to take into account this feature of the data we use maximum-likelihood negative binomial regressions. And to address the panel structure of our data, we use the conditional fixed effects negative binomial model. Let the expected value and the variance be given by:

$$E(y_{it}) = e^{(\alpha_i + \beta' X_{it})} = \lambda_{it} \quad (1)$$

$$Var(y_{it}) = \lambda_{it} (1 + \delta_i), \quad (2)$$

where  $y_{it}$  is the count of the respective terror measure (total attacks or total fatalities) originating from country  $i$  in year  $t$ ,  $\alpha_i$  are the country specific effects and  $X_{it}$  is the vector of explanatory variables. The dispersion (i.e., variance divided by the mean) is given by  $(1 + \delta_i)$  and is constant over time for each country. Following Hausman et al. (1984), if the joint probability is

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<sup>14</sup> ITERATE defines terrorism as “the use, or threat of use, of anxiety-inducing, extra normal violence for political purposes by any individual or group, whether acting for or in opposition to established governmental authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators, its location, the nature of its institutional or human victims, or the mechanics of its resolution, its ramifications transcend national boundaries.” (Mickolus et al., 2006)

<sup>15</sup> See Sandler and Enders (2007) for a thorough discussion of the measurement of terrorism activity, in general. Each country-year combination without entry, that is, in which no terrorist event is recorded, is coded as zero. Enders et al. (2011) provide a detailed comparison between the main datasets used in this literature.

conditioned on the observed sum of counts for each country (i.e., conditional on all  $y_i = \sum_{t=1}^{T_i} y_{it}$ )

then the conditional log likelihood function takes the following form:<sup>16</sup>

$$\ln L = \sum_{i=1}^n \left[ \ln \Gamma \left( \sum_{t=1}^{T_i} e^{(\beta' X_{it})} \right) + \ln \Gamma \left( \sum_{t=1}^{T_i} y_{it} + 1 \right) - \ln \Gamma \left( \sum_{t=1}^{T_i} e^{(\beta' X_{it})} + \sum_{t=1}^{T_i} y_{it} \right) + \sum_{t=1}^{T_i} \left\{ \ln \Gamma \left( e^{(\beta' X_{it})} + y_{it} \right) - \ln \Gamma \left( e^{(\beta' X_{it})} \right) - \ln \Gamma \left( y_{it} + 1 \right) \right\} \right], \quad (3)$$

where  $\Gamma$  is the gamma distribution. Notice that  $\alpha_i$  drops out by conditioning on the sum of the counts of the dependent variable. The coefficients can be obtained by standard maximization of the log likelihood.

While our dependent variable is available for all country-year observations, this is not true for some of our explanatory variables. Thus our panel dataset is unbalanced and the number of observations also depends on the choice of explanatory variables. In order to minimize potential endogeneity problems, we lag all explanatory variables by one year. To account for common shocks, we include yearly time dummies in all specifications.

The key variables are the measures of domestic political instability and political violence that account for the escalation effect. These include a dummy variable for the occurrence of civil war and a count variable for instances of guerrilla warfare. The sources are the standard ones used in this literature: Gleditsch et al. (2002) for the former and, for the latter, Databanks International (2005). Civil war takes on the value of one for years in which at least 1,000 deaths occur in battles between the government's armed forces and opposition groups (without foreign intervention). Guerrilla warfare reflects the number of cases in which violence is used against the government by civilians aiming at the overthrow of the current regime.

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<sup>16</sup> For a discussion of the fixed effects negative binomial model, see also Cameron and Trivedi (1998) and Guimarães (2008).

Other indicators of domestic political instability are riots, strikes and demonstrations (all from Databanks International, 2005). Demonstrations are peaceful gatherings of at least 100 people voicing their disagreement with government policies, while riots are defined as demonstrations which involve the use of force and violence. Finally, the definition of general strikes require the involvement of a minimum of 1000 industrial workers of more than one employer and are aimed at national policies and/or authorities. Additionally, we include regime duration which is measured as the number of years that the current political regime is in place. This data is available from Marshall and Jaggers (*Polity IV*, 2002).

As noted, the empirical literature on the causes of terrorism has highlighted the importance of the political system. One important possibility we want to account for is that of a non-linear relationship between political rights and terrorism. Yet the interpretation of the magnitude and significance of squared terms in non-linear estimations such as the negative binomial is not straightforward (see, e.g., Ai and Norton, 2003). Moreover, the standard measures for political systems are ordinal indices which complicate the interpretation of a squared term. Hence, we follow Gassebner and Luechinger (2011) and model the potential non-linearity by including dummy variables for democracies (i.e., “free” countries) and partial democracies (i.e., “partly free” countries) based on the political freedom score. Political freedom is the average of the two indicators “political rights” and “civil liberties” provided by Freedom House (2005).<sup>17</sup> The omitted reference group in our analysis is thus autocracies (i.e., “not free” countries).

Economic conditions have also received a great deal of attention in the empirical literature on the causes of terrorism. All specifications have real GDP per capita while we also include

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<sup>17</sup> Freedom House reports the thresholds as follows: 1.0-2.5 free; 3.0-5.0 partly free; 5.5-7.0 not free. Also note that the Freedom House democracy indices start in 1972. Using Polity IV measures instead (which contains data from 1968 onwards) also does not affect the results. These are available from the authors' upon request.

economic growth (both measures are taken from World Bank, 2006). We address the hypothesis that the size of the country might determine how often terrorists strike by including population size, also taken from World Bank (2006).

Five additional control variables are used to assess the sensitivity of the baseline results. The first is political proximity to the United States. Dreher and Gassebner (2008) show that being “close” to the U.S. triggers additional terror attacks. Proximity is measured from voting in the UN General Assembly and is taken from Strezhnev and Voeten (2012). Thacker (1999) suggests that votes in line with the U.S. are coded 1, abstentions/absences are coded 0.5 and votes in opposition to the U.S. are coded 0. We obtain the proximity measure by dividing the resulting sums by the total number of votes for each country in each year. Hence, the variable ranges from zero to one, with one showing total agreement with the U.S. and zero, total disagreement.

As can be seen from the plots of our terrorism measures (Figure 1), the occurrence of terror varies across regions. We take this into account by including an OECD membership dummy in our regressions (data taken from the OECD webpage) and by conducting several sample splits which are detailed below.

From the discussion on the role of poverty comes the notion that foreign aid might also be an important determinant of terror. However, the sign of the relationship is not straightforward. If poverty is a source of terrorism then (poverty-reducing) aid might be one way to counter terrorism. Azam and Delacroix (2006) point out that aid could end up breeding additional terror attacks if it increases the ranks of the middle class.<sup>18</sup> Aid data are from the World Bank (2006).

Country characteristics may play an important role. Thus we also include the urbanization

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<sup>18</sup> Krueger and Maleckova (2003) and Krueger and Laitin (2008) present evidence that terrorists are recruited from the middle classes. Azam and Delacroix argue that “[s]ome use this as an argument against aid, which should be cut because it would increase the probability of terrorist attacks, by increasing the supply of better off and educated people” (2006, p.330).

rate (data are from World Bank, 2006). Recruiting might be easier in urban areas due to higher population density and greater anonymity.

The fifth and final additional control variable is trade openness, measured as imports plus exports divided by GDP (from World Bank, 2006). As a proxy for globalization, the role of openness is ambiguous a priori (e.g., Blomberg and Rosendorff, 2009). On the one hand, strong ties to the world economy might provide incentives for national governments to engage in counter-terrorism activity as not to jeopardize its role in the world economy. On the other hand, increased exposure to foreign products, values and ideas might trigger hatred which could be channeled into terrorist activity.

#### **4. Empirical Results**

This section presents and discusses the main econometric results. Table 2 shows our results for the absolute number of transnational terror events originating from a given country and year as the dependent variable. The first column of Table 2 shows a parsimonious specification, while columns 2 to 7 each adds one control variable and column 8 contains the full model, including all variables simultaneously. Recall we lag the explanatory variables one period to minimize endogeneity concerns. The coefficients are reported as incidence-rate ratios for easiness of interpretation: a one unit change in X represents an expected change in the terror variable of the value of the coefficient, minus 1, times 100 percent (so that values above 1 indicate a terror-increasing relationship while the reverse holds for values below 1).

Overall, the estimates in Table 2 provide strong support for the escalation effect. Civil wars, guerrilla warfare and riots all exhibit the hypothesized positive relationship and are all statistically highly significant. Moving from a situation of no civil war to a situation of civil war would result in an increase in terror attacks originating from that country by approximately 43

percent (e.g., for column 1:  $(1.4344 - 1) \times 100 = 43.44$  percent). The magnitude of the effect of guerrilla warfare is almost identical: all else equal, increasing the number of guerrilla incidences by 1 results in roughly 47 percent more international terror events. The effect of riots is considerably smaller. One additional riot results in an increase of terror events by approximately 4.6 percent, while an increase by one standard deviation (1.74) predicts a 8 percent increase in terror events. Equally important, the results show that relatively milder forms of political violence, strikes and demonstrations, do not seem to help explaining the occurrence of international terrorism which is in line with our hypothesis. To put the magnitude of these results in perspective, consider the number of events the model predicts. Setting the country fixed effects to zero, the average predicted number of international terror events for the estimation sample of column 1 is 0.55 as compared to the observed sample average of 1.67.

Regarding the main control variables, the results show that per capita GDP is statistically insignificant in all specifications. Attacks seem to originate from more populous countries. In the full specification, in column 8, however, population size does not seem to matter. We find some support for a non-linear relationship between political freedoms and terror. Relative to autocratic countries, partial democracies produce approximately 20 percent less terror events. Democratic countries are most often not statistically different than autocracies, however. For the full specification in column 8 both coefficients are significant and of equal size. Political stability, measured as the number of years the current regime is in place, seems to have a dampening effect on terror. The effect of one additional year of regime life is rather small (especially when compared to, say, civil wars) and an increase by one standard deviation (30 years) reduces attacks by 24 percent.

Finally, turning to the additional covariates, there seems to be evidence on the role of political proximity to the U.S. and to a lesser extent the urbanization rate. Both variables have the

expected effects: changing the voting behavior from completely against the U.S. to completely in line would lead to almost a tripling of terror attacks. An increase of the urbanization rate by one standard deviation would result in a 24 percent increase (not according to the full specification, however). The growth rate of per capita GDP, OECD membership, foreign aid and trade openness do not exhibit a statistically significant relationship to terror attacks according to these results.<sup>19</sup>

Table 3 assesses the importance of regional differences. It reports substantial differences in terms of which forms of domestic political instability play major roles in explaining the number of international terror acts across different regions and per capita income levels. The results show that in Asia riots are the main determinants of international terrorism acts, in the Americas that role is played by guerrilla warfare and riots while in Africa it is played by civil wars and demonstrations, and for the Middle East there seems to be a combination of civil wars, guerrilla warfare and riots.<sup>20</sup> In the case of Europe, although we find a small terror increasing effect for riots, a decreasing effect of equal magnitude of demonstrations seems to run counter to that effect. Also note that these results support similar differential effects among the various political instability variables above. In particular, the effects of riots tend to be much smaller than those from civil wars and guerrilla warfare. Although one additional riot generates seven percent more international terrorist acts in Asia and 21 percent more in the Middle East, these pale in comparison to the effects of the other variables reflecting severe political instability (for instance, we estimate that civil war occurrence in Africa increase the number of terror acts by approximately 80 percent.)

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<sup>19</sup> Aid might be endogenous (see, e.g., Azam and Thelen, 2008). Hence, we reproduced all results presented in this article without aid which leaves the results unchanged.

<sup>20</sup> Notice that some variables are not applicable for some of the sub-samples (for instance, for the Africa and Middle East regressions the dummy for OECD membership is dropped).



Table 3 further investigates whether such differences can also be observed in terms of levels of economic development. Columns 6 to 9 report similar specifications but now splitting the sample according to level of per capita GDP. This is based on the World Bank classification into high, upper-middle, lower-middle and low income groups (source is Easterly and Sewadeh, 2001). This is an important exercise because of the well-known difficulties of interpreting interactions and non-linear terms within the binomial negative model. Among others, Ai and Norton (2003) show that their interpretation is quite cumbersome in such non-linear models.<sup>21</sup> By splitting the sample in income categories, it is possible to investigate the importance of non-linearities in the effects of the variables reflecting escalation. Indeed, the results show that guerrilla warfare seems to reach a maximum with the low-middle income countries, while civil war reaches a minimum in this group of countries thus suggesting that non-linearities and interactions do matter. Again in this case the results reveal some interesting differences. We find that guerrilla warfare is a consistently important predictor of the number of terror acts in the lower, lower-middle, upper-middle and high income per capita groups, with the larger effects observed for the upper-middle group. We also estimate that the effects of civil wars tend to be significant for low and lower-middle income countries. For high income countries, domestic political instability in terms of shorter regime duration is associated with an (relatively small but statistically significant) increase in the number of international terror events.

Table 4 furthers this analysis by focusing on fatalities caused by international terrorism, instead of the absolute number of terror attacks (that is, the severity of terror rather than its occurrence). With respect to the main variables, the overall pattern remains. Both the occurrence of civil war and guerrilla warfare robustly increases the number of international terror casualties. Indeed, the magnitude of these two effects is higher than for the occurrence of terror: the number

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<sup>21</sup> Enders and Hover (2012) examine non-linearities between GDP and terrorism explicitly.

of terror fatalities increases by roughly 45 percent due to the presence of civil war and more than 65 percent for one (additional) act of guerrilla warfare.<sup>22</sup> None of the other political instability variables are statistically significant at conventional levels (the one exception is regime stability, which has a comparable effect when significant as in Table 2).

As for our other covariates, most previous findings remain. Thus, the determinants of terrorism as such (the intensive margin) also seem to matter in determining its severity. There are a few exceptions worth noting. It seems that richer countries produce more fatal attacks (despite not producing more terror overall) because in 6 out of the 8 regressions GDP per capita is positive and significant. Further examination reveals that this effect seems driven by urbanization rates: in the specifications where urbanization is included this per capita GDP effect vanishes. Moreover, the magnitude of the proximity to the U.S. effect is larger for terror fatalities: moving entirely towards the U.S. from an initial situation of complete objection would increase the number of victims by a factor of 5.5, yet it turns marginally insignificant in the full specification.<sup>23</sup>

To ensure that our results are not driven by specific time periods we reproduce our analysis taking two special periods into account. First of all, we have to ensure that our results are not driven by the Cold War era in which state sponsorship of terrorism features prominently. We thus run specification (8) of Tables 2 and 4 for the time period 1990-2003. The results are

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<sup>22</sup> If we include civil war or guerrilla warfare as the only escalation variable, the respective coefficient increases both in size and significance. We have also experimented with a principal component constructed from civil war, guerrilla warfare, riots, demonstrations and strike variables. Two components exhibit eigenvalues greater than one: the first where all five variables have a positive loading could be described as “general civil unrest,” while on the second only civil war and guerrilla warfare have positive loadings while the others load negatively. This could be called the “escalation” block which is inline with our theory. If we include these two in our regression we see that while both are positive and significant the escalation component exhibits a much larger magnitude. These results are not presented for the sake of space and are available upon request.

<sup>23</sup> While this effect might seem large, it is important to keep in mind that maximum and minimum of the variable are 0.06 and 0.84 while the standard deviation is 0.14.

presented in the first two columns of Table 5. As we see, the results are not driven by the Cold War. They are comparable with the results reported so far with the exception of the role of civil wars and fatalities. Note, however, that the sample is getting very small (less than 1/3 of our original sample). Extending the sample to the mid 1980s, so as to ensure more than 1000 observations, yields qualitatively identical results to the initial estimates reported above. Secondly, we must ensure that our results are not driven by extraordinary events in history. The most obvious candidate that comes to mind is 9/11. We thus re-estimate our models but only up to the year 2000. The results are presented in the last two columns of Table 5. We see that 9/11 does not seem to be causing our reported findings.<sup>24</sup>

The results presented so far were subjected to various sensitivity checks. As the main conclusion from these is that they do not change our findings, the estimates are not presented for the sake of space but are available upon request. First, while we are convinced that due to our set-up endogeneity of our main variables is not a major issue we dwell a bit deeper by running “falsification tests”. In particular we check whether lagged terrorism predicts occurrences of civil war and guerrilla warfare. We find little evidence for such a reverse relationship. Second, given the attention paid to the role of democracy in driving terror, we test whether the results are affected by the use of different measures. As an alternative to the Freedom House indicators, we employ the Polity IV score from Marshall and Jaggers (2002). This leaves all main findings unchanged despite also changing the beginning of the sample to 1968. Third, in order to further assess how the results above are affected by outliers, we construct a dummy variable taking on the value 1 for positive outcomes of each of our terror indicators and estimate conditional fixed effects logit regressions (Chamberlain, 1980). We find the escalation effect also holds strong in

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<sup>24</sup>This “non-break” in the data after 9/11 is not uncommon the literature, e.g., Enders and Sandler (2006) and Brandt and Sandler (2010).

such a less rich empirical setup. Fourth, in order to address potential measurement error concerns in terms of using the perpetrators nationality (an arguably difficult task), we re-run all our regressions using the destination definition of terrorism instead (i.e., we number of terror attacks and fatalities materializing in a given country and year). While this might seem to be a totally different concept, it is important to know that most international attacks are “local”. As Krueger (2007, p.71) documents 88% of all international terror attacks occur in the perpetrator’s country of origin. Doing so yields comparable results.

## **5. Discussion**

The objective of this paper is to examine the causes of international terrorism across countries and over time. The results presented above strongly suggest that domestic political instability plays a central role in accounting for these differences. One important question is what are the mechanisms through which domestic political instability exerts such strong influence, across countries and over time, on various key aspects of international terrorism (such as the absolute number of events and fatalities). In other words: how are, say, guerrilla warfare and civil wars able to escalate into acts of international terrorism? We conjecture that a reasonable explanation would be that domestic political instability (specially in its more violent forms) provides an unique opportunity to hone the various the skills and training needed for international terror acts.

The main mechanism at work may have to do with learning-by-doing and the accumulation of terrorist human capital. Terror requires schooling and sophisticated training. Politically unstable countries offer propitious conditions. It has been correctly noted that terrorist groups operate human resources policies which favor better educated and/or economically well-off individuals (Krueger and Maleckova, 2003, Benmelech and Berrebi, 2007). A related aspect that has received less attention is that the human capital required for terrorism is specific and

involves a complex mix of skills which are costly to acquire and maintain.<sup>25</sup> Terrorist skills have a high rate of obsolescence and are not easily transferable across occupations. Moreover, certain forms of domestic political instability (say, guerrilla warfare, riots and civil war) provide for the honing of military, tactical, and organizational skills needed to carry out terrorist acts, while other forms (such as anti-government demonstrations and strikes) should not provide for the same level or types of skills.

Admittedly, this mechanism can not be identified using existing empirical data, yet we present two arguments in defence of this mechanism, one based on anecdotal evidence and the other on our choice of identification strategy. The first argument is based on the large body of anecdotal evidence on the importance of training for international terrorism. Smith (2008) reviews a number of case studies and concludes that the “cases of McVeigh, the Sept. 11 hijackers and Rudolph are actually unusual. In fact, we found that most terrorists live close to their selected targets, and they engage in a great deal of preparation — some over the course of months or even years — that has the potential of coming to the attention of local law enforcement [...]. [W]e found that the average planning cycle for international terrorists was 92 days [...].” (Smith, 2008, p. 3-5). Chivers and Rohde (2002) provide a detailed discussion of what and how terrorist training involves based on training manuals from various international terrorists groups. They report on the vast array of skills embodied in what they call the “core curriculum,” skills such as casing and targeting, planning and finances, codes and secure communication, map reading, celestial and advanced land navigation, demolition techniques, first aid, internal security, combat techniques, manufacturing of bombs and improvised explosive devices, use of firearms and weapons (such as Kalashnikov and M16 rifles, PK machine guns, 82-milimeter mortars,

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<sup>25</sup> Training may turn out to be the major component of the costs of a terrorist operation: “Very cheap terrorist attacks can create significant anxiety – the material cost of a suicide attack may be as little as \$150 and on average kills twelve people” (Sandler et al., 2008, p. 3).

shoulder-fired rockets and portable anti-aircraft missiles), assassination techniques as well as escape and evasion tactics (the latter including methods for resisting interrogation). It is also worth mentioning that Chivers and Rohde (2002) interviewed various military instructors who expressed surprise not only with the depth and range of the skills being taught, but even more so with how the curriculum has been carefully put together, in independent modules or packages.<sup>26</sup>

The second argument for the skills and training mechanism rests on the choice of identification strategy. Guerrilla warfare and civil wars (and, to a lesser extent, riots) are forms of domestic instability which provide the skills — military, tactical, and organizational — required to carry out international terrorist acts. Equally importantly, we hypothesize that demonstrations and strikes play much smaller roles because they are non-violent forms of domestic instability and, therefore, do not support the acquisition of the key skills necessary for international terrorism attacks. A second feature is that we also argue that the importance of the escalation effect has remained constant over time despite the fact that state sponsored terrorism has become much less prevalent since the end of the Cold War, thereby curtailing foreign-supported training opportunities and related terror skills acquisition activities, and by the same token expanding the equivalent domestically-supported opportunities and activities.<sup>27</sup>

## **6. Conclusions**

Using data on various aspects of international terrorist events covering more than 120 countries, yearly from 1973 onwards, the main finding of this paper is that the escalation effect is central to

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<sup>26</sup> As an example for the importance of training take the two London bombings in July 2005. The first, on July 7, unfortunately succeeded but the other, two weeks later (July 21), failed. There are many differences between the two events but an examination of the biographies of the two teams of perpetrators reveals one important distinction: the members of the first group seem to have received substantially more training and have received it much closer in time to the attack than those in the second group (Krueger, 2007, p.48).

<sup>27</sup> See Brandt and Sandler (2010) on the different phases of transnational terrorism.

understand the origin of international terrorism across countries and over time. That is, the results show that civil wars, riots and guerrilla warfare are robustly associated with international terror, while demonstrations and strikes are not, and this association is stronger for fatalities than for the number of attacks (i.e., we find strong support for the escalation effect).

On the basis of these results, we argue for the importance of the escalation effect in understanding international terrorism and suggest for future research more efforts to uncover the main mechanisms through which it operates. One conjecture is that domestic instability escalates into international terrorism because it provides and perfects the skills (military, strategic and organizational) required to carry out international terrorist acts.

In terms of policy implications, it follows that one crucial goal of anti-terrorism policy should be the containment of violent conflict around the globe (Collier et al., 2009). However, recent experience suggests that direct military intervention can be counter-productive,<sup>28</sup> while foreign aid might be effective in the medium- to long-term.<sup>29</sup> Moreover, from the conflict literature we learn that factors such as inequality, political rights, ethnic polarization and religious fractionalization are not good predictors of civil wars and hence can not be counted on to counter transnational terrorism (Collier and Hoeffler, 2004). However, one of the main factors identified as causing conflict is the availability of finance. Collier and Hoeffler (2004) find that income from commodity exports is one of the main determinants of conflict. In this light, a medium to long-term policy implication would be to diversify the economy so that there is less dependence on basic commodities. The close monitoring of world wide financing operations might also be an important way to counter terrorism. Another, unrelated, policy suggestion is for further investments in technology (Enders and Sandler, 1993; Cragin et al., 2007; Crenshaw, 2010).

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<sup>28</sup> See Axelrod and Borzutzky (2006).

<sup>29</sup> See also Frey and Luechinger (2003, 2004) for a discussion on alternatives to deterrence as a way to fight terrorism.

Investment is needed to close the gap between what is technologically feasible and the effective disruption and containment of the activities of terrorist groups worldwide. In this light, we take inspiration from the effects of Ronald Reagan 1983's "Strategic Defense Initiative" (the "Star Wars" program) on subsequent Cold War events and recommend a similar containment tool: frontier technological investment that aim at yielding innovations that facilitate international coordination and are able to minimize the probability of further and more sophisticated international terror attacks.



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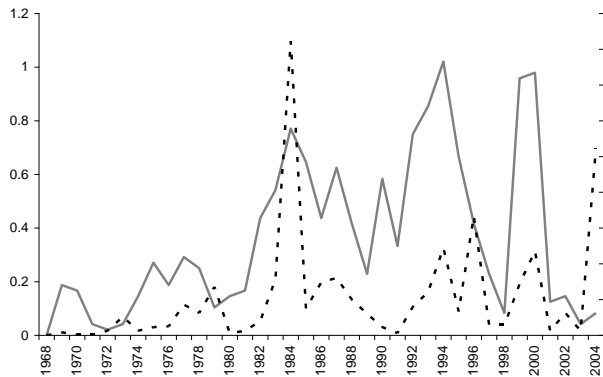
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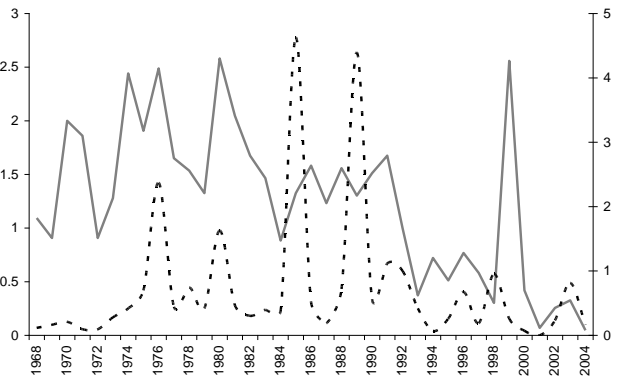
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Figure 1: Average Number of Terrorist Events and Fatalities by region of origin

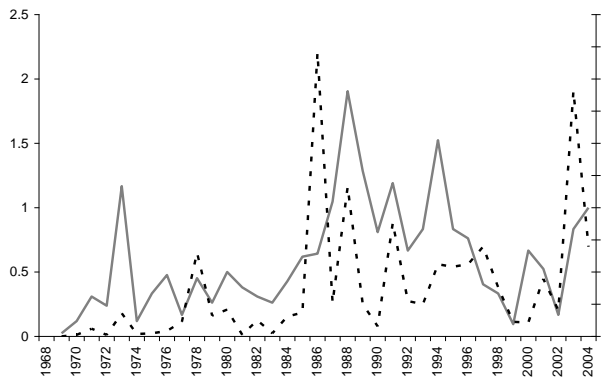
a) Africa



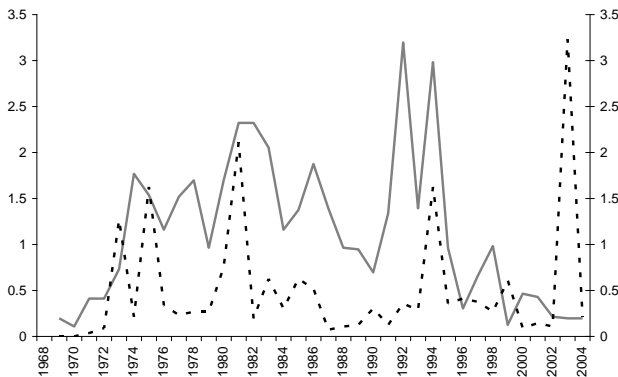
b) Americas



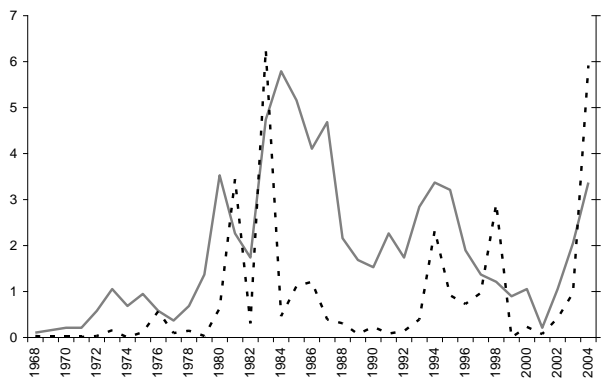
c) Asia



d) Europe



e) Middle East



Notes: The figure depicts the annual per country average of transnational terror attacks (solid line, left axis) and fatalities (dashed line, right axis) originating from the different regions in the world.

Table 1: Summary Statistics and Sources

<b>Variable</b>	<b>Source</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Terror Events	Mickolus et al. (2006)	1.67	5.50	0	110
Terror Fatalities	Mickolus et al. (2006)	1.88	13.08	0	332
Democracy	Freedom House (2005)	0.36	0.48	0	1
Partial democracy	Freedom House (2005)	0.32	0.47	0	1
GDP p.c., log	World Bank (2006)	7.50	1.60	4.03	10.8
Population, log	World Bank (2006)	16.21	1.52	12.80	21.0
Regime duration	Maeshall and Jagers (2002)	23.16	29.64	0	193
Civil War	Gleditsch et al. (2002)	0.06	0.24	0	1
Strikes	Databanks International (2005)	0.19	0.61	0	7
Guerrilla Warfare	Databanks International (2005)	0.17	0.43	0	3
Riots	Databanks International (2005)	0.48	1.74	0	26
Demonstrations	Databanks International (2005)	0.72	1.84	0	26
Political proximity to U.S.	Voeten (2004)	0.29	0.13	0.06	0.84
GDP growth p.c	World Bank (2006)	1.36	6.16	-50.5	89.8
Aid	World Bank (2006)	4.51	7.51	-0.69	98.5
OECD dummy	OECD webpage	0.20	0.40	0	1
Urbanization	World Bank (2006)	50.17	24.39	2.88	100.0
Openness	World Bank (2006)	67.15	38.25	6.32	398.8

Notes: The summary statistics were calculated base on the estimation sample of Table 2 column 1, with a maximum of 3274 observations.

Table 2: Determinants of International Terror Events (Absolute Number)  
Fixed-Effects Negative Binomial Panel Estimates, 1973-2003

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democracy, t-1	0.8584 (1.34)	0.7023 (2.88)***	0.8516 (1.40)	0.8492 (1.41)	0.9167 (0.74)	0.8619 (1.31)	0.9053 (0.85)	0.7856 (1.90)*
Partial democracy, t-1	0.8093 (2.36)**	0.7383 (3.28)***	0.7959 (2.53)**	0.8068 (2.39)**	0.8451 (1.80)*	0.8059 (2.41)**	0.8559 (1.68)*	0.7775 (2.52)**
GDP p.c., log t-1	1.0700 (1.47)	1.0183 (0.32)	1.0707 (1.48)	1.0501 (0.87)	1.0802 (1.55)	0.9500 (0.74)	1.0606 (1.26)	0.9220 (0.68)
Population, log t-1	1.0879 (1.95)*	1.0529 (1.06)	1.0937 (2.05)**	1.0793 (1.69)*	1.0967 (2.05)**	1.0918 (2.03)**	1.0796 (1.56)	1.0415 (0.67)
Regime duration, t-1	0.9973 (1.64)	0.9918 (2.88)***	0.9973 (1.63)	0.9973 (1.64)	0.9972 (1.63)	0.9978 (1.27)	0.9982 (1.02)	0.9919 (2.24)**
Civil War, t-1	1.4344 (3.54)***	1.4063 (3.30)***	1.4154 (3.35)***	1.4335 (3.53)***	1.5046 (3.85)***	1.4342 (3.54)***	1.4963 (3.88)***	1.4887 (3.62)***
Strikes, t-1	0.9987 (0.03)	0.9898 (0.23)	0.9873 (0.31)	0.9996 (0.01)	0.9746 (0.60)	0.9915 (0.21)	1.0051 (0.13)	0.9527 (0.97)
Guerrilla Warfare, t-1	1.4658 (6.74)***	1.4550 (6.07)***	1.4759 (6.84)***	1.4611 (6.65)***	1.4738 (6.74)***	1.4612 (6.70)***	1.4478 (6.41)***	1.4795 (6.09)***
Riots, t-1	1.0463 (3.36)***	1.0805 (4.55)***	1.0447 (3.20)***	1.0462 (3.35)***	1.0514 (3.59)***	1.0433 (3.14)***	1.0444 (3.18)***	1.0920 (4.78)***
Demonstrations, t-1	1.0115 (0.75)	0.9768 (1.27)	1.0110 (0.72)	1.0116 (0.76)	1.0055 (0.33)	1.0123 (0.81)	1.0106 (0.69)	0.9610 (1.91)*
Political proximity to U.S.		3.8588 (2.77)***						3.9243 (2.47)**
GDP growth p.c , t-1			0.9960 (0.79)					0.9968 (0.57)
OECD dummy, t-1				1.1025 (0.58)				0.9142 (0.43)
Aid, t-1					1.0047 (0.85)			0.9989 (0.17)
Urbanization, t-1						1.0100 (2.30)**		1.0065 (1.13)
Openness, t-1							1.0004 (0.21)	0.9998 (0.12)
Observations	3274	2879	3232	3274	3140	3274	3162	2664
Countries	123	114	122	123	119	123	121	109

Notes: The table has conditional fixed-effects negative binomial estimates. The dependent variable is the absolute number of international terrorist events originating from a country in a given year. All specifications include year dummies. The coefficients given in the table are incidence-rate ratios, i.e., values greater than 1 indicate an expected increase in terror events due to an increase in the respective variable while values smaller than 1 indicate a reduction. All explanatory variables are lagged one period to deal with endogeneity concerns. Openness refers to trade openness (exports plus imports divided by GDP), aid refers to foreign aid received by a country as a share of GDP. Urbanization is the share of the country's population living in urban areas. Political proximity to the U.S. is measured as percentage of votes in the U.N. Security Council that are aligned with the U.S. vote. \*/\*\*/\*\* denotes statistical significance at the 10/5/1 percent level. The absolute value of z-statistic is given in parentheses.

Table 3: Determinants of International Terror Events (Absolute Number)  
By Region and Income Groups, Fixed-Effects Negative Binomial Panel Estimates, 1973-2003

Region / Income Group	Asia (1)	Europe (2)	Americas (3)	Middle East (4)	Africa (5)	low (6)	lwr middle (7)	upr middle (8)	high (9)
Democracy, t-1	1.0351 (0.09)	0.5711 (0.81)	0.9576 (0.19)	422.4754 (1.88)*	0.1978 (1.57)	0.6386 (1.51)	0.6499 (2.05)**	1.1250 (0.35)	1.0589 (0.07)
Partial democracy, t-1	1.2045 (0.58)	0.3937 (1.33)	0.9614 (0.18)	0.6307 (2.09)**	0.5553 (2.63)***	0.7911 (1.49)	0.4293 (5.00)***	1.4144 (0.97)	1.8450 (1.00)
GDP p.c., log t-1	0.4369 (1.78)*	2.2016 (1.46)	1.3031 (0.78)	0.6257 (1.54)	0.5184 (1.23)	1.4989 (1.38)	0.7679 (0.93)	0.4688 (2.12)**	0.3127 (1.35)
Population, log t-1	0.5628 (2.28)**	2.9724 (2.79)***	1.2168 (0.92)	1.0134 (0.06)	1.8249 (0.87)	1.1672 (1.55)	1.2996 (1.91)*	1.1088 (0.35)	5.4286 (2.37)**
Regime duration, t-1	0.9983 (0.12)	0.9924 (0.66)	1.0004 (0.06)	1.0032 (0.34)	0.9665 (2.13)**	0.9695 (3.55)***	0.9929 (1.11)	1.0328 (3.54)***	0.9767 (2.08)**
Civil War, t-1	1.5061 (1.25)	1.3311 (0.83)	1.2536 (1.21)	1.7640 (1.77)*	1.7967 (1.86)*	1.3949 (1.66)*	1.8839 (4.42)***	0.9306 (0.14)	
Strikes, t-1	1.0065 (0.05)	0.8752 (0.91)	0.8880 (1.51)	0.8912 (0.87)	0.7571 (1.13)	1.1388 (1.28)	1.0103 (0.13)	0.9281 (0.53)	0.6495 (4.33)***
Guerrilla Warfare, t-1	0.9819 (-0.12)	1.2229 (1.06)	2.0917 (6.68)***	2.3922 (4.35)***	0.9822 (0.08)	1.3834 (2.73)***	1.6054 (4.77)***	2.2941 (4.57)***	1.5306 (2.14)**
Riots, t-1	1.0775 (2.38)**	1.0913 (1.92)*	1.1727 (2.64)***	1.2119 (3.52)***	1.0417 (0.33)	1.0317 (1.00)	1.1568 (4.22)***	1.0540 (0.94)	1.1121 (2.19)**
Demonstrations, t-1	1.0066 (0.17)	0.9074 (1.70)*	1.0249 (0.48)	0.8701 (2.69)***	1.4347 (2.33)**	1.0289 (0.99)	0.9177 (2.90)***	0.9582 (0.54)	0.9780 (0.51)
Political proximity to U.S.	10.2697 (0.93)	7.7926 (1.31)	2.3229 (0.68)	0.0007 (3.80)***	4.5045 (0.79)	11.2683 (2.23)**	2.7104 (0.87)	0.5054 (0.38)	20.5141 (1.82)*
GDP growth p.c , t-1	1.0118 (0.39)	1.0134 (1.32)	0.9971 (0.21)	0.9907 (0.91)	0.9934 (0.57)	0.9806 (2.08)**	1.0016 (0.16)	1.0018 (0.16)	0.9848 (0.56)
OECD dummy, t-1	0.2603 (1.16)	0.0121 (2.22)**	0.1291 (1.84)*					0.5104 (0.93)	0.7084 (0.15)
Aid, t-1	0.9773 (0.42)	1.0150 (0.77)	1.0007 (0.04)	1.0586 (3.00)***	0.9966 (0.30)	0.9931 (0.80)	1.0027 (0.21)	1.4479 (3.08)***	
Urbanization, t-1	1.0486 (2.05)**	0.9773 (1.07)	0.9615 (2.49)**	1.0051 (0.38)	1.0415 (1.00)	0.9763 (1.38)	0.9997 (0.03)	0.9616 (1.99)**	1.0469 (0.87)
Openness, t-1	0.9787 (2.06)**	0.9979 (0.42)	0.9967 (0.64)	0.9940 (1.11)	0.9993 (0.11)	1.0021 (0.55)	1.0022 (0.64)	0.9851 (1.92)*	1.0255 (2.80)***
Observations	411	500	652	396	705	951	820	457	436
Countries	16	27	22	16	28	39	36	19	15

Notes: The table has conditional fixed-effects negative binomial estimates. The dependent variable is the absolute number of international terrorist events originating from a country in a given year. All specifications include year dummies. The coefficients given in the table are incidence-rate ratios, i.e., values greater than 1 indicate an expected increase in terror events due to an increase in the respective variable while values smaller than 1 indicate a reduction. All explanatory variables are lagged one period to deal with endogeneity concerns. Openness refers to trade openness (exports plus imports divided by GDP), aid refers to foreign aid received by a country as a share of GDP. Urbanization is the share of the country's population living in urban areas. Political proximity to the U.S. is measured as percentage of votes in the U.N. Security Council that are aligned with the U.S. vote. The region and income group classification is taken from Easterly and Sewadeh (2001). This table reports our attempts to fit the full specification from column 8 in Table 3 to various split samples. The variables for which no coefficients are reported (e.g., OECD dummy for the Middle East in column 4) were dropped as they do not apply to the specific sub-sample. \*/\*\*/\*\* denotes statistical significance at the 10/5/1 percent level. The absolute value of z-statistic is given in parentheses



Table 4: Determinants of International Terror Events (Number of Fatalities)  
Fixed-Effects Negative Binomial Panel Estimates, 1973-2003

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democracy, t-1	0.7134 (2.10)**	0.5389 (3.39)***	0.6927 (2.27)**	0.6491 (2.52)**	0.7029 (2.10)**	0.7291 (1.99)**	0.7167 (2.03)**	0.5736 (2.90)***
Partial democracy, t-1	0.8782 (1.04)	0.7417 (2.29)**	0.8518 (1.28)	0.8627 (1.18)	0.9045 (0.78)	0.8506 (1.30)	0.9182 (0.67)	0.7475 (2.09)**
GDP p.c., log t-1	1.3391 (5.81)***	1.3687 (5.20)***	1.3406 (5.81)***	1.2707 (4.15)***	1.3647 (5.50)***	0.9885 (0.14)	1.3362 (5.64)***	1.1827 (1.25)
Population, log t-1	1.1453 (3.22)***	1.2094 (3.94)***	1.1695 (3.63)***	1.1203 (2.58)***	1.1479 (2.96)***	1.1640 (3.54)***	1.0779 (1.44)	1.1463 (2.14)**
Regime duration, t-1	0.9965 (1.49)	0.9803 (5.29)***	0.9965 (1.45)	0.9963 (1.55)	0.9981 (0.75)	0.9980 (0.82)	0.9983 (0.66)	0.9841 (3.43)***
Civil War, t-1	1.4427 (2.48)**	1.4553 (2.51)**	1.3584 (2.07)**	1.4542 (2.53)**	1.4729 (2.51)**	1.4568 (2.54)**	1.4520 (2.47)**	1.3868 (2.04)**
Strikes, t-1	1.0054 (0.08)	1.0269 (0.38)	1.0157 (0.23)	1.0129 (0.20)	0.9861 (0.20)	0.9823 (0.27)	1.0018 (0.03)	0.9791 (0.26)
Guerrilla Warfare, t-1	1.7386 (6.63)***	1.6668 (5.68)***	1.7516 (6.66)***	1.7330 (6.57)***	1.7146 (6.25)***	1.6968 (6.37)***	1.7087 (6.34)***	1.6593 (5.41)***
Riots, t-1	0.9950 (0.21)	1.0147 (0.54)	0.9948 (0.22)	0.9978 (0.09)	1.0131 (0.54)	0.9951 (0.21)	0.9984 (0.07)	1.0353 (1.26)
Demonstrations, t-1	1.0316 (1.31)	1.0081 (0.29)	1.0258 (1.08)	1.0328 (1.36)	1.0271 (1.08)	1.0255 (1.05)	1.0268 (1.09)	0.9939 (0.21)
Political proximity to U.S.		6.6135 (3.03)***						2.9337 (1.50)
GDP growth p.c , t-1			0.9802 (2.88)***					0.9848 (2.07)**
OECD dummy, t-1				1.4996 (1.86)*				1.3353 (1.01)
Aid, t-1					1.0108 (1.36)			1.0062 (0.77)
Urbanization, t-1						1.0237 (4.59)***		1.0107 (1.57)
Openness, t-1							0.9950 (1.99)**	0.9951 (1.81)*
Observations	2540	2222	2518	2540	2429	2540	2446	2083
Countries	94	86	94	94	91	94	91	84

Notes: The table has conditional fixed-effects negative binomial estimates. The dependent variable is the absolute number of fatalities from international terrorist acts originating from a country in a given year. All specifications include year dummies. The coefficients given in the table are incidence-rate ratios, i.e., values greater than 1 indicate an expected increase in terror events due to an increase in the respective variable while values smaller than 1 indicate a reduction. All explanatory variables are lagged one period to deal with endogeneity concerns. Openness refers to trade openness (exports plus imports divided by GDP), aid refers to foreign aid received by a country as a share of GDP. Urbanization is the share of the country's population living in urban areas. Political proximity to the U.S. is measured as percentage of votes in the U.N. Security Council that are aligned with the U.S. vote. \*/\*\*/\*\* denotes statistical significance at the 10/5/1 percent level. The absolute value of z-statistic is given in parentheses.

Table 5: Determinants of International Terror Events  
By time-subsamples, Fixed-Effects Negative Binomial Panel Estimates

	(1)	(2)	(3)	(4)
	Incidents	Fatalities	Incidents	Fatalities
Democracy, t-1	0.8109 (0.91)	0.6774 (1.08)	0.8006 (1.70)*	0.4971 (3.49)***
Partial democracy, t-1	0.7875 (1.54)	0.9261 (0.37)	0.8057 (2.10)**	0.7738 (1.79)*
GDP p.c., log t-1	0.8682 (0.67)	1.0877 (0.41)	0.8893 (0.93)	1.0922 (0.63)
Population, log t-1	1.1221 (1.32)	1.1361 (1.47)	0.9857 (0.23)	1.1547 (2.09)**
Regime duration, t-1	0.9904 (1.75)*	0.9874 (1.91)*	0.9914 (2.22)**	0.9851 (3.00)***
Civil War, t-1	1.3250 (1.80)*	1.1819 (0.73)	1.4132 (3.06)***	1.3863 (1.97)**
Strikes, t-1	0.9042 (1.14)	0.9508 (0.37)	0.9545 (0.93)	0.9855 (0.18)
Guerrilla Warfare, t-1	1.3284 (2.99)***	1.4877 (2.78)***	1.4936 (6.01)***	1.5889 (4.70)***
Riots, t-1	1.0566 (1.79)*	0.9893 (0.21)	1.0939 (4.79)***	1.0392 (1.37)
Demonstrations, t-1	0.9572 (1.05)	0.9842 (0.30)	0.9637 (1.74)*	1.0089 (0.30)
Political proximity to U.S.	10.8571 (2.61)***	0.7835 (0.22)	3.9248 (2.38)**	4.6528 (2.06)**
GDP growth p.c , t-1	0.9954 (0.61)	0.9781 (2.20)**	0.9983 (0.29)	0.9855 (1.95)*
OECD dummy, t-1	0.7321 (0.85)	1.4638 (0.71)	0.9895 (0.05)	1.3425 (1.01)
Aid, t-1	0.9975 (0.30)	0.9893 (0.95)	1.0007 (0.12)	1.0051 (0.63)
Urbanization, t-1	1.0064 (0.64)	0.9998 (0.02)	1.0085 (1.39)	1.0153 (2.10)**
Openness, t-1	1.0008 (0.31)	0.9979 (0.61)	0.9981 (0.90)	0.9949 (1.79)*
Observations	1239	817	2400	1923
Countries	96	64	107	84
Period	1990-2003	1990-2003	1973-2000	1973-2000

Notes: The table has conditional fixed-effects negative binomial estimates. The dependent variable is either the absolute number of international terrorist acts originating from a country in a given year or the fatalities caused by these attacks. All specifications include year dummies. The coefficients given in the table are incidence-rate ratios, i.e., values greater than 1 indicate an expected increase in terror events due to an increase in the respective variable while values smaller than 1 indicate a reduction. All explanatory variables are lagged one period to deal with endogeneity concerns. Openness refers to trade openness (exports plus imports divided by GDP), aid refers to foreign aid received by a country as a share of GDP. Urbanization is the share of the country's population living in urban areas. Political proximity to the U.S. is measured as percentage of votes in the U.N. Security Council that are aligned with the U.S. vote. The first two columns refer to the post-Cold War period while the last two refer to the pre 9/11 period. \*/\*\*/\*\* denotes statistical significance at the 10/5/1 percent level. The absolute value of z-statistic is given in parentheses.