

Dreher, Axel; Gassebner, Martin; Siemers, Lars-H. R.

Working Paper

Does terror threaten human rights? Evidence from panel data

KOF Working Papers, No. 156

Provided in Cooperation with:

KOF Swiss Economic Institute, ETH Zurich

Suggested Citation: Dreher, Axel; Gassebner, Martin; Siemers, Lars-H. R. (2007) : Does terror threaten human rights? Evidence from panel data, KOF Working Papers, No. 156, ETH Zurich, KOF Swiss Economic Institute, Zurich, <https://doi.org/10.3929/ethz-a-005381958>

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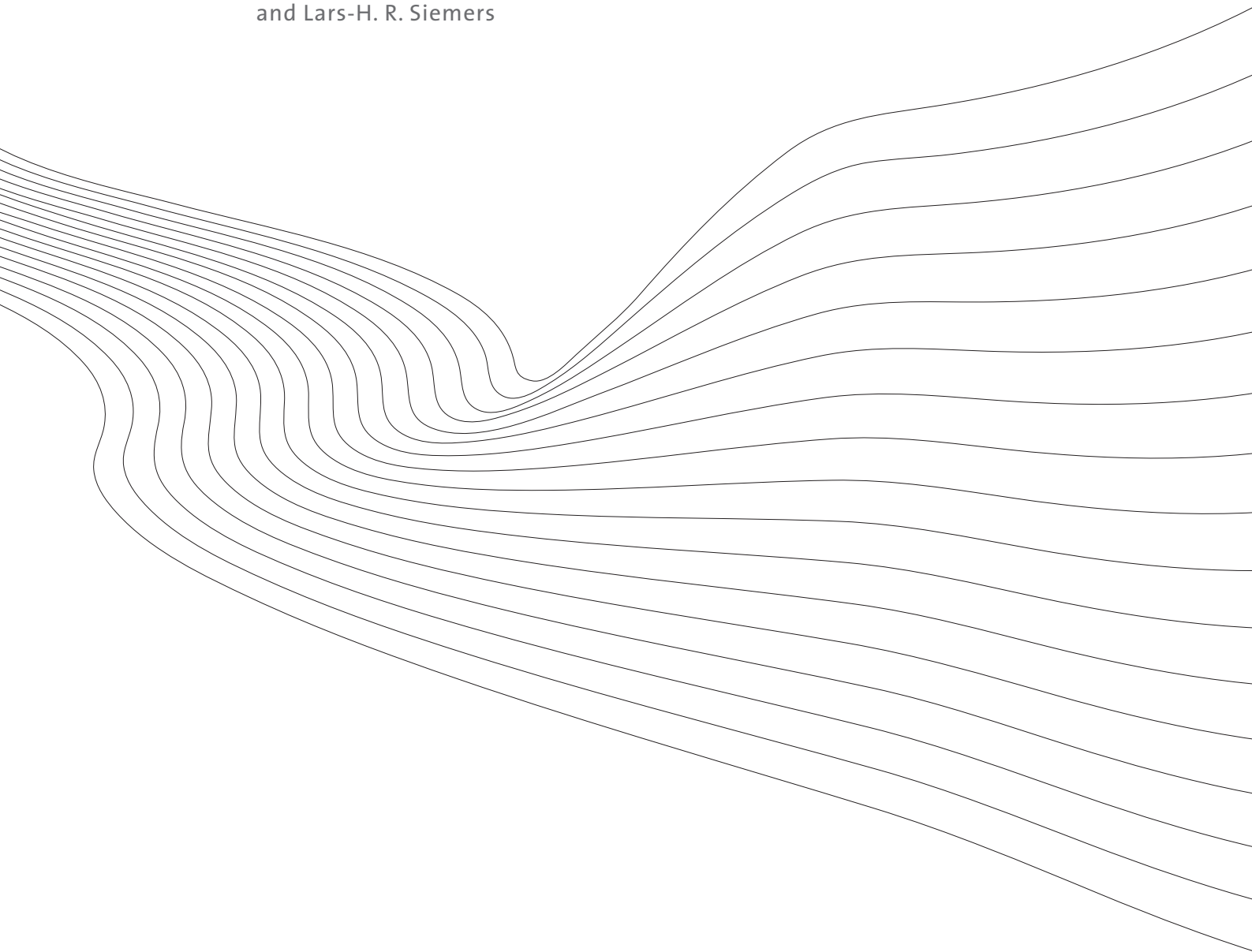
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KOF Working Papers

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Axel Dreher, Martin Gassebner
and Lars-H. R. Siemers



KOF

ETH Zurich
KOF Swiss Economic Institute
WEH D4
Weinbergstrasse 35
8092 Zurich
Switzerland

Phone +41 44 632 42 39
Fax +41 44 632 12 18
www.kof.ethz.ch
kof@kof.ethz.ch

Does Terror Threaten Human Rights? Evidence from Panel Data

Axel Dreher^a

Martin Gassebner^a

Lars-H. R. Siemers^b

February 2007

Abstract

The paper presents a political economy model linking terror and governments' respect for human rights. Using panel data for 111 countries over the period 1973-2002, we then empirically analyze whether and to what extent terror affects human rights – measured by three indices covering a wide variety of human rights aspects. According to our results, terror substantially diminishes governments' respect for basic human rights such as absence of extrajudicial killings, political imprisonment, and torture. To some extent, civil rights are also restricted as a consequence of terrorism, while we find no effect of terrorism on empowerment rights.

Keywords: Terrorism, Human Rights, Civil Liberties, Suicide Attacks
JEL-Codes: D74; F52; P48

^a KOF Swiss Economic Institute, ETH Zurich, 8092 Zurich, Switzerland, mail@axel-dreher.de (Dreher); gassebner@kof.ethz.ch (Gassebner).

^b RWI Essen, Hohenzollernstraße 1-3, 45128 Essen, Germany, siemers@rwi-essen.de

Acknowledgements: We thank Ivo Bischoff, Christian Bjørnskov, Christian Conrad, Justina Fischer, Simon Luechinger, Jan-Egbert Sturm and participants at the KOF research seminar for helpful comments on an earlier draft.

1. Introduction

Governments' respect for human rights has opposing effects on national security. On the positive side, granting inalienable rights such as the freedom of speech, freedom of religion, the guarantee of impartial treatment in court, the protection from invasion of privacy and – even more importantly – the absence of torture, extrajudicial killings and political imprisonment enables citizens to live in freedom and safety, and to express potential political critique in non-violent form. But on the negative side, greater human rights increase a country's vulnerability to external and internal threats. Consequently, the net effect of human rights on national security is not obvious.

In Western democracies, the majority of leading politicians seem to endorse the negative view on the consequences of human rights, at least concerning the threat of fundamentalist religious terror. U.S. President Bush, for instance, explicitly formulated objections against a legislation in 2005 which prohibits torture and inhumane treatment of detainees anywhere in the world, as this would hamper the ability of U.S. authorities to obtain information (Amnesty International 2006). Until the U.S. Supreme Court rendered this practice unconstitutional, prisoners in Guantánamo Bay, Cuba, were neither treated as prisoners of war nor as “ordinary” prisoners.¹ They were denied all basic human rights as well as treatment according to the Geneva Convention. Furthermore, as reported by Risen and Lichtblau (2005), President Bush authorized the National Security Agency to eavesdrop telephone and email communication between the U.S. and abroad without warrants starting in 2002, severely violating basic human rights.

In the U.K., the Prevention of Terrorism Act 2005 allows government ministers to issue control orders restricting the liberty, movement and activities of people purportedly suspected of terrorism-related activity. In Australia, similar legislations have recently been enacted. Thus, anecdotal evidence suggests that countries respond to terrorism and threat to their Western values by diminishing those very rights they wanted to protect in the first place.²

¹ Hamdan v. Rumsfeld, U.S. Supreme Court, June 29, 2006; 548 U.S.____, 126 S.Ct. 2749(2006).

² Restrictive anti-terror laws have been passed not only in Western societies. According to Amnesty International (2006), for instance, China and India have recently passed even stricter human rights-restricting anti-terrorism laws.

However, though anecdotal evidence abounds, systematic analysis is lacking.³ The question whether terrorism systematically reduces human rights is yet unsettled. This is the question our paper addresses. Specifically, we employ panel data for 111 countries over the period 1973-2002 to analyze whether and to what extent terror does – on average – reduce human rights.

To anticipate our main results, we find that terror diminishes governments' respect for basic human rights such as the principle of absence of extrajudicial killings, political imprisonment, and torture. To some extent, civil rights are also restricted as a consequence of terrorism. Our basic results are extremely robust as to how we specify our model, as Extreme Bounds Analysis with almost 23,000 regressions shows. We find no effect of terror on empowerment rights, i.e. "positive rights," such as political participation and freedom of movement or religion.

We continue as follows. The next section presents our theoretical motivation. We introduce our hypotheses in section three and our measures of human rights and terror in section four. In section five we explain our method of estimation; section six presents the results, while we test the robustness of these results in section seven. The final section concludes.

2. Model

Let there be a continuum of citizens normalized to (a mass of) unity in every country, indexed by c . Citizens in every country c are of different types, indexed by i . Every type i has the same basic and quasi-linear preferences over the publicly provided goods "security," labeled s , and "human rights," labeled h , which is given by

$$u_c^i = s_c^i + H_c(h_c), \quad (1)$$

where $H_c(\cdot)$ is a country-specific concave and increasing function. Citizens differ in their perception regarding the link between human rights and security. Therefore, the types i differ in the level of perceived security s_c^i . We assume that every type of citizen develops beliefs $s_c^i = s_c^i(h_c)$. As long as h_c represents domestic human rights,

it is plausible to assume that most citizens believe that $\frac{\partial s_c^i(h_c)}{\partial h_c} < 0$, where the security

³ This seems to be true for the literature on human rights in general. In the words of Kaufmann (2004: 2) "the literature on human rights is overwhelmingly prose-rich and data-poor." For a recent exception see Dreher and Siemers (2006).

perception monotonously decreases with increasing h_c , that is, if $h_c > 0$, citizens are willing to pay a prize in terms of lower security to enjoy greater human rights.⁴ However, regarding human rights abuses abroad, it is also plausible that disrespect of human rights reduces security at home (an example is the human rights disaster at Abu Ghraib). We assume that the distribution of beliefs $s_c^i(h_c)$ is such that the cumulative distribution function is continuous. With these preliminaries settled it is easy to find that type i 's bliss point is determined by the level of human rights h_c :

$$\frac{\partial H_c(h_c)}{\partial h_c} = -\frac{\partial s_c^i(h_c)}{\partial h_c} \quad (2)$$

We assume that governments want to remain in power. In order to achieve this goal, the government of a country c has to win the support of a fraction $\pi \in (0,1]$ of the society. We assume that providing human rights respect involves costs, so that the government has no incentive to provide more human rights than the level required to win the support of that fraction π of society that demands the lowest level of human rights respect. Therefore, the level of human rights in our model society, denoted h_c^* , is determined by the belief referring to the correlation between security and human rights of the pivotal citizen who completes the critical mass of citizens, π .⁵

Obviously the perception of security is, *ceteris paribus*, negatively influenced by factors like “number of terror attacks” and “number of persons killed in terror attacks.” Let all these aspects of terror which decrease the perception of security be represented by the exogenously given vector $\vec{t}^c = (t_1^c, \dots, t_n^c)$. Then, we have to extend our model such that the individual beliefs become modified toward $s_c^i = s_c^i(h_c, \vec{t}^c)$ with $\frac{\partial s_c^i(\cdot)}{\partial t_j^c} < 0$, for all $i \in [0,1]$ and $j = 1, \dots, n$. Given a particular level of human rights, terror attacks decrease the level of security and hence the (marginal) prize of human rights in terms of security rises:

⁴ Of course, not all types of human rights are likely to reduce national security, some may even improve it. However, considering the aggregate level of governments' respect for human rights, our assumption appears plausible.

⁵ Suppose, for instance, belief $s_c^i(h_c) = (\sigma_c^i h_c)^{-1}$ and $\pi = 1/2$. Then the pivotal citizen is determined by the median σ_c^m .

$$\frac{\partial^2 s_c^i(\cdot)}{\partial h_c \partial t_j^c} < 0 \quad (3)$$

for all $i \in [0,1]$ and $j = 1, \dots, n$. It directly follows that the equilibrium level of human rights decreases in the aftermath of terror attacks, because condition (3) also holds for the pivotal citizen in the aftermath of terror attacks. The pivotal citizen balances between people who believe that the prize of human rights in terms of security is too high, and thus demand a lower level of h , and the group of people who believe that this prize of human rights is so low that an increase in the level of human rights is optimal.

We assume decreasing marginal utilities. Therefore, in countries with higher levels of human rights, a massive decrease in the perceived national security via terror attacks will, all other things equal, cause stronger decreases as in countries with lower levels of human rights, because human rights are not scarce and the marginal utility loss per unit, i.e. the price, is lower. Terror attacks change the perceived security of the pivotal citizen, who changes her or his beliefs on the link between security and human rights respect; as a consequence, the political equilibrium level of human rights respect decreases.

Note that our model covers the median-voter model (Black 1948; Downs 1957; Persson and Tabellini 2000, Chap. 3) as a subcase. In the median-voter model we have $\pi = 1/2$ and the government competes with the opposition in electoral competition.⁶ In nondemocratic regimes, the governments also compete with the opposition for the support of the citizens, as it is threatened by potential revolution and uprisings (Acemoglu and Robinson 2001). In order to stay in power, that is to prevent uprisings and revolution, it has to please a critical mass of the society, which can be, depending on the specific country, any fraction $\pi \in (0,1]$.

The governing groups in all countries are mainly interested to remain in power. In a nondemocratic regime, most part of society is excluded from political power. Still, the government depends on the support of the majority or at least a powerful minority. While in democracies parties compete for election, in nondemocratic regimes, the government to some extent must please parts of the

⁶ Applied to the median-voter model, there are (at least) two competing parties: one party prefers a low level of human rights and higher human rights involve costs, and another party, which prefers high levels of human rights and lower levels of human rights involve costs.

citizenry in order to stay in power. In our model, we therefore refer to the “pivotal individual,” which is the marginal individual the government has to win in order to stay in power, for instance the median voter in a democracy.

Applied to U.S. policy in the aftermath of September 11, 2001 (9/11), for instance, U.S. citizens were shocked by the attack. Their security perception was basically extinguished and they were willing to accept, or demanded, a lower level of human rights to increase security. In polls, president Bush received approval rates of 60 to 90 percent in the times when his administration “engineered the biggest expansion in executive power since the days of Franklin Roosevelt” with the Patriot Act, comprising, e.g., the right of monitoring telephone calls without explicit approval from the courts, reading private e-mails, prying into library records and establishing military tribunals (The Economist 2006a: 20-21). The threat of terror led to a situation in which national security became the major political topic in elections. Similar developments can be observed all over the Western World – though only few countries, such as Great Britain, acted as strictly as the US. One has to bear in mind that this pattern of behavior already existed in pre-9/11 years. After the 1993 bombings of the World Trade Center and the federal building in Oklahoma City the Antiterrorism Act of 1996 was passed. Cole and Dempsey (2002: 117) rank the Act as “some of the worst assaults on civil liberties [prior to the 2001 antiterrorism measures].”

However, considering the threat of terror in the context of the Basque or Northern Ireland conflict, the Spanish and British governments eventually decided to improve the human rights situation after a period of confrontation, because they – or rather the majority of the voters – realized that what occurred was a vicious circle of violence. That is, it is also possible that the median voter believes greater human rights to increase security. The Palestinian issue saw both developments, human rights improvements and more frequent human rights violations.

Note that the trade-off relevant for political outcome is the subjectively perceived link between human rights and terror, and not necessarily the “actual” trade-off between respect for human rights and terrorism.⁷ In the US, for instance, not a single terrorist was found by rounding up hundreds of foreigners, most of them

⁷ Empirical research suggests an inverted U-shape relationship between political rights and terrorism (Eubank and Weinberg 2001; Abadie 2006).

Muslims, after 9/11 and holding them without charge, sometimes for months (The Economist 2006b). Hence, citizens may have adaptive expectations and learn that at least some anti-terrorist measures do not improve national security.⁸ In the next section, we explicitly formulate three major hypotheses derived from our model, which we are going to confront with data further below.

3. Hypotheses

Overall, it seems reasonable to expect that the relationship between terrorism and human rights is negative. Governments seem to react to an increase in terrorism by constraining the freedom and privileges of their citizens, and our model suggests that this reaction may be based on the demand for security of the majority of citizens. Stricter surveillance and control makes it harder to exchange secret information and (radical) ideas. As stricter controls impair terrorists' ability to plan attacks, the public is more willing to accept them in times of increased threat. Citizens may correct their beliefs about the probability of a terror attack in their country upwards when the country experienced an attack. Consequently, they are more willing to accept a decrease in the level of human rights in order to enhance security. Moreover, terrorists might take attacks as indicator of the government's weakness, in turn improving their confidence to be able to successfully threaten or even overthrow the government. Consequently, the government has an incentive to decrease human rights respect in order to be better able to monitor terrorist movements. The illustrative example of President Bush initially objecting to a bill prohibiting the torture and inhumane treatment of detainees anywhere in the world because it would negatively affect the possibility of obtaining information (Amnesty International, 2006) demonstrates that even fundamental human rights and values are put into perspective if they are expected to reduce national security. Based on this reasoning we expect:

Hypothesis 1: An increase in the level of terrorist activity leads to a reduction in the level of human rights.

Given the decreasing marginal utilities in our model, we do not expect, however, this reduction to be linear. In countries with high levels of human rights the marginal price

⁸ However, recent polls in Britain and the US suggest that most voters still feel their governments are not doing enough to counter terrorism (The Economist 2006b).

of security in terms of human rights is low as human rights are not scarce. We therefore expect:

Hypothesis 2: An increase in the level of terrorist activity leads to a sharper reduction in the level of human rights in countries with high levels of human rights.

Although this reasoning appears straight forward, one can also argue, however, in the opposite direction. In our model, it is equally possible that the pivotal citizen believes the increase in human rights to improve national security. Terror attacks might be perceived as reactions to bad human rights situations (all over the world).⁹ Governments thus might give in to terrorism that pretendedly aims at improving the human rights situation. Of course, giving in to kidnapping and other forms of blackmailing may be time-inconsistent, as one becomes vulnerable to further attempts. However, states did give in to kidnapping events in the past. In October 1972, for instance, Germany released the three Palestine survivors of the terror attacks at the Olympic Games in Munich after an airplane had been hijacked. In March 1975, Germany released five prisoners from the terror scene after the politician Peter Lorenz had been kidnapped. Although the German government does not give in to political demands anymore, it is still willing to pay money in exchange for the release of kidnapped citizens – and other countries do the same. Therefore, the probability of states giving in to political demands is greater than zero. Consequently, Krueger and Malečková (2003) find, analyzing a survey conducted by the Palestinian Center for Policy Research in 2001, that a majority of Palestinians living in the West Banks and Gaza Strip believe that their achieved rights could not have been possible by negotiations alone. Our examples regarding the Basque and Northern Ireland conflict also suggest that terror is a means that might, eventually, improve human rights levels at particular places. In our model, it is equally well possible that the pivotal citizen believes that human rights respect improves national security. Hence, we state the counter-hypothesis:

⁹ For a discussion of unilateral vs. multilateral actions of terrorists and states see Sandler (2005).

Hypothesis 3: An increase in terrorist activity leads to an increase in the level of human rights.

Obviously, hypotheses 1 and 3 might to some extent be valid at the same time, especially taking into account that every terrorism problem has its own specific origin. While we cannot empirically distinguish between them, what we can do is estimating which of those effects dominates. In other words, what we estimate is the average net effect resulting from the two opposing effects. This is what we turn to below.

4. Measuring Human Rights and Terror

Our definition of citizens' human rights follows Cingranelli and Richards (1999). Their Human Rights Dataset (CIRI, Cingranelli and Richards 2006) provides quantitative information on government respect for 13 internationally recognized human rights, on an annual basis and for almost all countries of the world. Cingranelli and Richards focus on actual human rights-related actions of governments, including all government agents such as police and military. Their database draws from two sources, the U.S. Department of State's Country Reports on Human Rights Practices, and from the Amnesty International Report, offering detailed descriptions of human rights practices.

In particular, the CIRI data refer to extrajudicial killings, people who have disappeared for political reasons, torture, political imprisonment, freedom of speech, freedom of religion, freedom of movement, freedom of assembly and association, political participation, worker's rights, women's political rights, women's economic rights, and women's social rights. Each variable is coded on an ordinal scale, ranging between 0-2 and, depending on the variable considered, 0-4, where higher values reflect better ratings in the respective human rights dimension.

In this paper we mainly focus on two composite indicators proposed in Cingranelli and Richards (1999) and Richards, Gelleny and Sacko (2001). The first composite index refers to physical integrity rights – it is the additive of absence of torture, extrajudicial killings, political imprisonments, and disappearance, on a scale from 0-8 (so-called “negative rights”). The second composite refers to empowerment rights and comprises the freedom of movements, freedom of speech, workers' rights, political participation, and freedom of religion indicators, ranging from 0-10 (“positive rights”).

Figure 1: Development of Physical Integrity over time



The upper line in Figure 1 shows the time path of the unweighted average of the physical integrity index for the OECD countries over the years 1981-2004. The lower line represents the average for low income countries,¹⁰ while the unweighted world average is shown in the middle. The number of countries covered rises from 125 in 1981 to 179 in 2004. The figure shows that the mean of the world index was fairly constant over time at a value of around 5 with, however, a substantial drop around 1990. The average for the OECD countries is also rather constant over time, at a higher level of around 7. Figure 1 shows that there is some variation in physical integrity for developing countries, with a substantial negative trend. The level of physical integrity peaked in 1981 at 5, fell to a low point of 3.2 in 1990, rose to 4 in 1995, and after declining again until 2000 is slightly below 4 in 2004.

Figure 2: Development of Empowerment Rights over time

¹⁰ Countries with low income are those with 2004 GNI per capita of a maximum of 825 US\$, according to the definition of the World Bank (2006).



Figure 2 shows the development of empowerment rights. As can be seen, the average level of empowerment rose steadily over the period of observation, with similar developments in developing and OECD countries. The most substantial increase in empowerment was experienced in 1990, in particular in low income countries.¹¹ The index mean is 4.6 for low income countries, more than 9 in OECD countries, and 5.9 for the world sample. Since 1996 we observe a negative trend in low-income countries. The world sample contains 130 countries in 1981, and 181 in 2004.

As a third proxy for human rights we employ the civil liberties indicator provided by Freedom House (2005). The survey based index combines four subcategories: freedom of expression and belief, associational and organizational rights, rule of law, and personal and individual rights. The rule of law subcategory measures whether equal treatment, police control and absence of torture prevails. To some extent, the index thus combines empowerment and physical integrity rights.¹²

¹¹ The apparent increase in low income countries from 1990 to 1991 is mainly driven by Mali, Democratic Republic of Congo and Togo (increases of 4, 5 and 9 points, respectively).

¹² The correlation between physical integrity and empowerment is 0.51, while it is 0.59 between integrity and civil liberties, and 0.82 between empowerment and civil liberties.

We rescale the original index so that a value of seven indicates greatest freedom while one is the lowest score.

Figure 3: Development of Civil Liberties over time

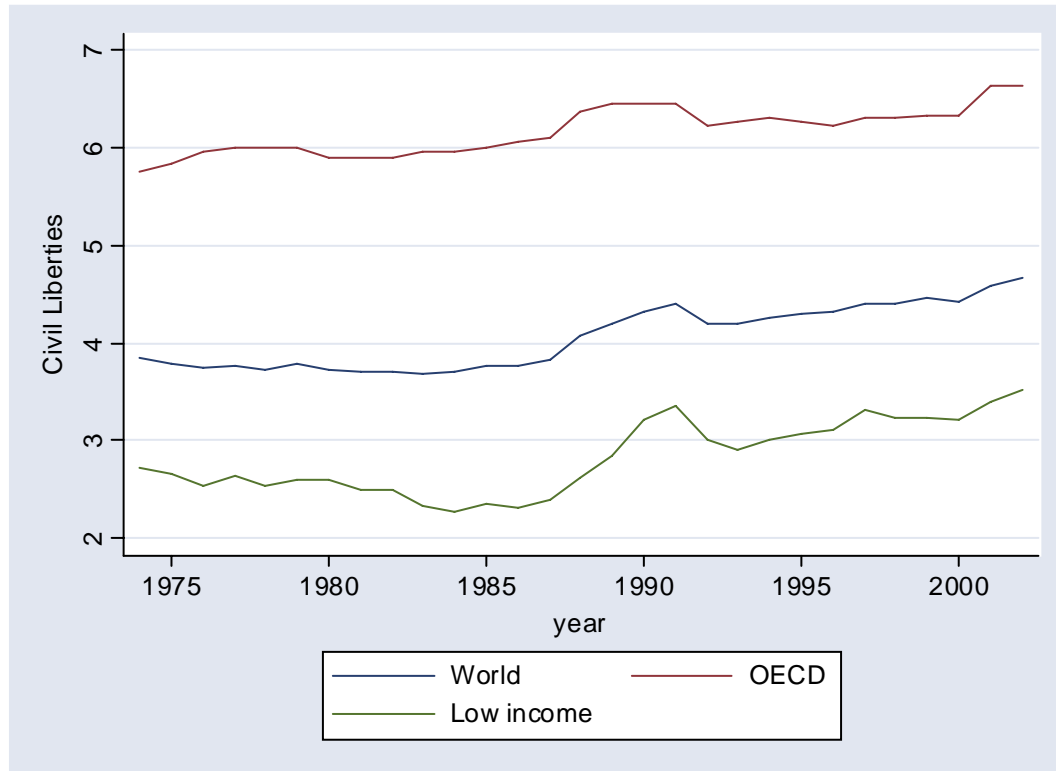


Figure 3 shows the development of civil liberties over time. Clearly, all three groups of countries display a positive trend. In the early 1990s, the index peaks, in particular in low-income countries. In these countries, the increase has been particularly pronounced over the years 1987 to 1992, with an index score of roughly 4.5. In 1993, in all three groups the civil rights index returned to its longer term trend.

Turning to our measure of terrorist activity, we employ data provided in the MIPT Terrorism Knowledge Base.¹³ The Terrorism Knowledge Base integrates data from the RAND Terrorism Chronology and RAND-MIPT Terrorism Incident databases, the Terrorism Indictment database, and DFI International's research on terrorist organizations.¹⁴

¹³ Available at: <http://www.tkb.org/>.

¹⁴ There are also different sources for terrorism data. We choose MIPT because it combines various sources. For a detailed discussion on measurement of terrorism we refer to Frey and Luechinger (2005).

The Terrorism Knowledge Base defines terror as “violence, or the threat of violence, calculated to create an atmosphere of fear and alarm.” The focus of terror is to discourage the opposition from acting at their free will. The motives for engaging in terror are political while the acts themselves are generally conducted in a way that will achieve maximum publicity. Moreover, terrorist acts are mostly intended to create more than immediate physical damage – a long-time situation of fear and intimidation. For an extensive summary on the various effects of terrorism see Frey et al. (2007). For a theoretical model of the macroeconomic effects and an empirical application see Eckstein and Tsiddon (2004).

We extract the number of terror events for each country and year as our variable of main interest.¹⁵ We also employ the number of suicide attacks and the number of people killed in a certain year and country. Suicide attacks are likely to be perceived as particularly threatening. They might be more effective from the terrorists’ point of view as it is hard to fight someone who is explicitly willing to sacrifice the own life. Suicide attacks might thus provoke particularly harsh reactions by the government concerned.¹⁶ The same is likely to be true when the attacks are more severe, i.e., when more people are killed. Given that the database covers the whole world, we assign zeros to all countries and years without data.

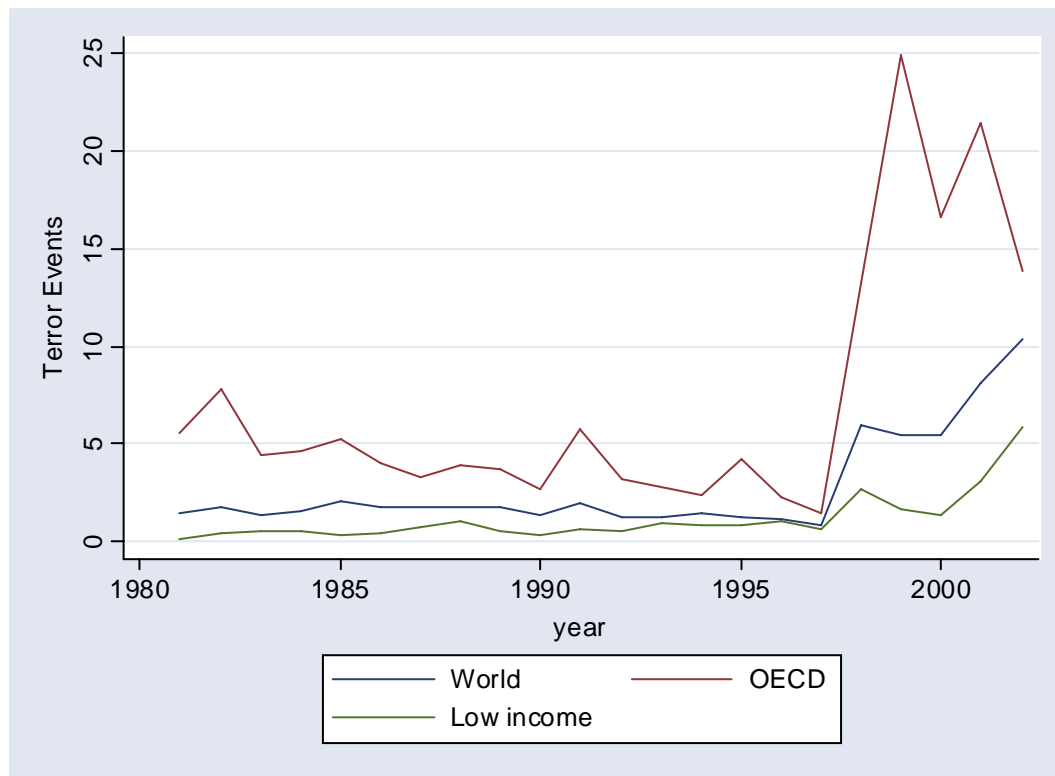
Figure 4 shows how terror has evolved over time. OECD countries experience the highest amount of terror while low income countries encounter the lowest value.¹⁷ Particularly noteworthy is the rise across all country groups in the recent past.¹⁸

¹⁵ Territories are assigned to the country formally governing the territory. Kashmir and the Persian Gulf are excluded as it is not obvious to which country they should be assigned to.

¹⁶ For a summary of studies on suicide bombing see, e.g., Sandler (2003).

¹⁷ For time-series studies on the occurrence and distribution of terrorism see Enders and Sandler (2005, 2006).

¹⁸ The increase is driven in part by the explicit inclusion of domestic terror in the dataset from 1998 onward. We discuss this issue in section 7.

Figure 4: Development of Terror over time

5. Method

We estimate pooled time-series cross-section (panel data) regressions. The data extend to a maximum of 111 countries and cover the years 1973-2002. Since some of the data are not available for all countries or years, the panel data are unbalanced and the number of observations depends on the choice of explanatory variables.

To test our hypotheses we estimate equations of the following form:

$$RIGHTS_{i,t} = \alpha RIGHTS_{i,t-1} + \beta Terror_{i,t} + \gamma Z_{i,t-1} + u_{i,t}, \quad (4)$$

where $RIGHTS_{i,t}$ represents our measure of human rights, and $Terror_{i,t}$ is the respective measure of terrorist attacks in country i at year t (i.e., the number of events, the number of suicide attacks and, respectively, the number of people killed). Z is a vector of control variables as introduced below. Note that we also include the lagged dependent variable, as human rights develop only slowly over time and the lagged dependent variable turns out to be highly significant (see e.g. Dreher and Siemers 2006). Following the previous literature, we estimate our model employing ordered probit, with clustering at the country level and robust standard errors. All regressions include dummies for each year, which are highly significant.

In selecting our control variables, we follow the robustness analysis in Dreher and Siemers (2006). Based on a general-to-specific approach and extensive robustness tests employing Extreme Bounds Analysis, Dreher and Siemers suggest the following variables as robust predictors of a country's level of physical integrity rights: the logarithm of a countries' population, its degree of democracy, dummies for income, and dummies for legal origin.

Our measure of democracy is from the Polity IV database as provided by Gurr et al. (2003). It represents the difference between a country's democracy and autocracy score running from -10 to 10 with higher numbers indicating higher levels of democracy.¹⁹ Population is taken from the World Bank's (2006) World Development Indicators, legal origin follows Easterly and Sewadeh (2001), while the income classification is according to the World Bank (2006). The next section reports the results.

6. Results

Column 1 of Table 1 replicates the baseline model of Dreher and Siemers (2006) for the physical integrity index. As can be seen, the quantitative variables are significant at the one percent level. The sets of dummy variables indicating income and, respectively, legal origin, are both jointly significant at the one percent level. According to the results, government respect for human rights is higher with smaller population and greater democracy. The former finding is consistent with the notion that lower surveillance costs, e.g. because of a smaller population, allow the government to allocate more human rights. Moreover, higher levels of democracy reduce the government's possibility to increase security by restraining rights.

Relative to Scandinavian legal origin – the omitted variable – respect for human rights is smaller among all other categories – it is lowest in countries with German legal origin. As compared to low income countries, respect for human rights is greater in countries with upper middle income and in high income OECD countries.

Columns 2 and 3 report the same specification for the other two dependent variables, generally confirming the previous results. The exception is the dummies for legal origin which are not jointly significant at conventional levels.

¹⁹ The index is based on competitiveness and openness of executive recruitment, competitiveness and regulation of political participation, and constraints on chief executives.

Columns 4 to 6 add the number of terror events in a particular year and country. As the results show, physical integrity rights are restricted as a consequence of terror, strongly supporting our Hypothesis 1, and the same is true for civil rights measured by the Freedom House index. The former coefficient is significant at the one percent level, while the latter is significant at the five percent level. Empowerment rights do not seem to be affected by the number of terror events.

Table 2 replicates the analysis substituting the number of terror events by the number of suicide attacks, and respectively, the number of people killed in a certain country and year. Again, the results show some impact of terror on human rights. At the one percent level of significance, suicide attacks restrict human rights as measured by the physical integrity index (column 1) and the civil liberties index (column 3). Empowerment rights, to the contrary, are not significantly affected by suicide attacks (column 2). Turning to the number of people killed, there is a highly significant (and negative) impact on physical integrity rights (column 4), while empowerment rights and civil liberties are not significantly affected.

As our dependent variables are ordinal, quantitative interpretation of these results is not straightforward. Still, for the significant coefficients of the terror variables of Tables 1 and 2 we calculate the marginal effects (at the mean of all independent variables), as shown in Table 3.²⁰ According to the results, an additional terror event reduces the physical integrity index by 0.003 at the expected mean of the dependent variable of 5.2. While this number is far from being negligible, the result also implies that the reduction in human rights is not dramatic. To get a better understanding of the importance of terror, Table 3 also shows the marginal effects for the different levels of physical integrity. It becomes obvious that the effect of terror strongly depends on the level of human rights. For low levels of physical integrity terror increases human rights, while terror reduces rights when governments' respect for physical integrity rights is high. As can be seen, the marginal effects are always significant at the one percent level. These results are in line with our hypotheses. Overall, terror reduces human rights (hypothesis 1). However, the impact becomes generally stronger when human rights are a priori more prevalent (hypothesis 2).

²⁰ The rows "probability at mean" represent the expected probabilities of obtaining a given index score when all independent variables are assigned their mean value. Note that the mean value is the same (up to three digits behind the comma) for all terror measures employed.

Terror even increases human rights when hitting countries with initially low respect for human rights (hypothesis 3).

Table 3 also shows the marginal effects of suicide attacks and the number of persons killed. According to the results, the pattern is quite similar as compared to those of the number of events. As anticipated, the magnitude of the marginal effect of suicide attacks is substantially larger than those of a “normal” terror event (almost tenfold). One person killed reduces the level of human rights by almost 0.001.

Regarding civil liberties, an additional terror event causes a reduction of 0.001 at the expected mean of the dependent variable of 4.4. However, three marginal effects are not significant at conventional levels, while five are significant at the five percent level. An additional suicide attack reduces civil liberties by almost 0.007. Again, the pattern of the marginal effects is generally in line with our hypotheses.

Table 4, finally, presents the results of our investigation of the individual components of physical integrity – the dimension that turned out to be robustly affected by terror attacks. As the individual dimensions vary from 0-2 only, variation among high income countries is extremely low. As a consequence, the results for those countries are completely determined in the ordered probit regressions, and some of the regressions do not converge. We therefore opted to exclude high income countries from the regressions. The dummy for legal German origin also had to be omitted. Note, however, that the main results are unchanged by the omission of high income countries.

Which dimensions drive the results? According to Table 4, almost all individual dimensions of physical integrity rights are negatively affected by terror. At least at the ten percent level of significance, the number of terror events increases the number of people disappearing, extrajudicial killings, and tortures. Governments restrict physical integrity rights among all dimensions as a consequence of suicide attacks, also at least at the ten percent level of significance. Again, the magnitude of the effect is much larger for suicide attacks. The number of people killed by terrorists increases the number of people disappearing, with a coefficient significant at the five percent level.

To summarize, there is clear evidence that – on average – governments respond to terrorism by restricting those very rights they want to protect in the first place. The next section tests whether the impact of our main variables of interest – physical integrity rights and civil liberties – is robust to the inclusion of additional variables, the method of estimation, and sample period.

7. Tests for robustness

We pursue various strategies to test the robustness of the impact of terror events on physical integrity rights and civil liberties. First, we replicate the regression with a dummy for the occurrence of terror in a given country and year in place of the number of terror events. Our results might be driven by the linear relationship we impose for the effect of the number of terror events on physical integrity rights. By assigning the value of one in cases when at least one terror event occurred we circumvent this problem. This comes at the cost of reduced information, however.

As our second test for robustness, we exclude those terror events that can be considered to be marginal. We excluded all events in which no person was physically harmed. More precisely, we excluded events in which the number of persons killed and the number of persons injured were both zero and/or missing. Of course, it is debatable which threshold constitutes a severe event. We choose the lowest threshold possible. While this is the most objective threshold from our point of view, we are clearly aware that events in which no one is physically harmed may still have a major impact, e.g. the London bombings of July 21, 2005.

Third, we distinguish between domestic and international terror. A domestic incident is defined as an event in which both the target and the attackers are domestic. To some extent, the consequences of these forms of terrorism might be different. A priori, domestic terror might be more likely to increase governments' respect for human rights (Hypothesis 3), while there is no reason to expect the same for international terror. To the contrary, when it comes to international terrorism, Hypothesis 1 seems more likely to hold.

Fourth, we split our sample in two sub-periods and investigate whether the negative impact of terror events holds. As Figure 4 shows, terrorism increased markedly after 1997. We choose this year as cut-off. The increase is to some extent driven by the explicit inclusion of domestic events from 1998 onwards as noted in the definitions of

the MIPT Terrorism Knowledge Base. However, domestic terror events are also reported for several cases prior to 1998.

To some extent, fifth, our result might be due to reversed causality. When people engage in terrorist activities as a consequence of the human rights situation in their country, low human rights might not be the consequence of terror, but its cause. Tests for endogeneity show, however, that the exogeneity of terror can not be rejected at conventional levels of significance. In choosing instruments for terror, we follow Dreher and Gassebner (2006) showing that countries voting in line with the US in the United Nations General Assembly and countries with more fractionalized governments are more frequently the target of terrorist attacks. When we lag terror events by one year instead of using contemporaneous values, the results also remain unchanged. Still, we deal with the issue of potential endogeneity in some detail and report results estimated with 2SLS (where terror is instrumented with voting behaviour in the General Assembly and government fractionalization) below.

Given that our estimation setup includes the lagged dependent variable, 2SLS estimations may, however, suffer from dynamic panel bias. Therefore, we employ the GMM estimator as suggested by Arellano and Bond (1991), Arellano and Bover (1995), as well as Blundell and Bond (1998) in addition. We present results employing the two-step estimator implemented by Roodman (2006) in Stata, including Windmeijer's (2005) finite sample correction. We treat the lagged dependent variable and the terror events as endogenous and the additional covariates as strictly exogenous. As before, we include time dummies in the regression. We report results of the Hansen test on the validity of the instruments used (amounting to a test for the exogeneity of the covariates), and the Arellano-Bond test of first and second order autocorrelation. While autocorrelation of first order has to be present in order for the estimator to be consistent, second-order autocorrelation must be absent. In order to minimize the number of instruments in the regressions we collapse the instruments as suggested in Roodman (2006). Doing so reduces the instruments to 85 (physical integrity) and, respectively, 94 (civil liberties).

In empirical research, an important difficulty is that several models may all seem reasonable given the data, but yield different conclusions about the parameters of interest. Hence, as our final test for robustness, we employ the so-called Extreme Bounds Analysis (EBA) to examine to what extent the number of terror events in a country is a robust determinant of physical human rights. The EBA has been widely

used in the economic growth literature and became recently one of the standard tools for robustness analysis in the political economy literature.²¹ The EBA aims to examine how sensitive the estimation results are to the inclusion of additional variables. We estimate equations of the following general form:

$$RIGHTS_{i,t} = \alpha M_{i,t} + \beta F_{i,t} + \gamma Z_{i,t} + u_{i,t} \quad (5)$$

where M is a vector of ‘standard’ explanatory variables; F is the variable of interest; Z is a vector of up to three (here we follow Levine and Renelt, 1992) possible additional explanatory variables, which according to the literature may be related to the dependent variable; and u is an error term. The extreme bounds test as suggested by Leamer (1983) for variable F states that if the lower extreme bound for β – i.e. the lowest value for β minus two standard deviations – is negative, while the upper extreme bound for β – i.e. the highest value for β plus two standard deviations – is positive, the variable F is not robustly related to Y . In our case, the variable of interest is the number of terror events in a certain year and country. The M vector contains the base variables as introduced above. In the Z vector, we include the 52 variables suggested in the robustness analysis of Dreher and Siemers (2006). Among them is a dummy for years of war, political variables like the ICRG indicator of political risk, and economic variables like trade and government revenue. Appendix A lists all variables with their definitions and sources.

It is rare in empirical research that we can say with certainty that some model dominates all others in all possible dimensions. In these circumstances, it makes sense to check how sensitive the findings are to alternative modelling choices. The EBA provides a relatively simple means of doing exactly this.²² We report the percentage of the regressions in which the coefficient of the variable F is significantly different from zero at the 5 percent level as well as the outcomes of the cumulative distribution function (CDF) test. The CDF test as proposed by Sala-i-Martin (1997) is based on the fraction of the cumulative distribution function lying on each side of zero. CDF(0) indicates the larger of the areas under the density function either above or below zero;

²¹ For instance, de Haan and Sturm (2000), Inklaar et al. (2005), and Sturm et al. (2005).

²² Still, the EBA has been criticized. Sala-i-Martin (1997) rightly argues that the test applied is too strict. If the distribution of β has some positive and some negative support, then one is bound to find at least one regression for which the estimated coefficient changes sign if enough regressions are run. Sala-i-Martin therefore suggests to analyze the entire distribution of the estimated β coefficients.

in other words, regardless of whether this is CDF(0) or 1-CDF(0). So CDF(0) will always be a number between 0.5 and 1.0. We consider a variable to be robust if the CDF(0) test statistic > 0.95 , following Sturm and de Haan (2005).²³

Turning to the results of our robustness tests, Table 5 shows that the impact of terror on physical integrity rights is extremely robust as to how terror events are measured, and the same is true regarding the choice of sample period. In all cases terror reduces governments' respect for human rights at the one percent level of significance (columns 1 to 6). We see that splitting among the time dimension and differentiating between domestic and international terror does not qualitatively change the previous results. Furthermore, the significantly smaller (at the 1 percent level) coefficient of domestic terror gives mild support to our conjecture that hypothesis 3 is "more" valid for domestic forms of terror. Note, however, that the net effect is still negative.

Column 7 shows the 2SLS results. Our instruments – voting in line with the US in the United Nations General Assembly and government fractionalization – are not rejected by the Sargan test at the five percent level of significance (while they are at the ten percent level). The first stage F-test indicates the power of these instruments, as they easily pass the threshold of 10 proposed by Staiger and Stock (1997). As can be seen, the (negative) impact of terror on human rights remains marginally significant.

Column 8 reports results from the GMM estimator. Again, the results remain qualitatively unchanged, with the impact of terror being significant at the one percent level.²⁴ Both the Hansen test and the Arellano-Bond test do clearly not reject the specification. We take this as evidence that endogeneity is not an issue here and that our previous results are valid.

²³ Recently, Sala-i-Martin *et al.* (2004) proposed a so-called Bayesian Averaging of Classical Estimates (BACE) approach to check the robustness of different explanatory variables in growth regressions. This approach builds upon the approach as suggested by Sala-i-Martin (1997) in the sense that different specifications are estimated (by OLS) to check the sensitivity of the coefficient estimate of the variable of interest. The major innovation of BACE as compared to Sala-i-Martin's approach is that there is no set of fixed variables included and the number of explanatory variables in the specifications is flexible. The biggest disadvantages of the BACE approach are the need of having a balanced data set, i.e. an equal number of observations for all regressions (due to the chosen weighting scheme), the restriction of limiting the list of potential variables to be less than the number of observations and the computational burden. For a recent application see Lamla (2006).

²⁴ We also estimated the GMM setup for the number of suicide attacks and the number of people killed. All previous findings remain unchanged.

Table 6 replicates the analysis for civil liberties. According to the estimates, the impact of terror on civil liberties is less robust as compared to those on physical integrity rights. Still, the impact stays significant in the two sub-samples. The same is true when we focus on severe terrorism only, and distinguish domestic from international terror. In the instrumental variables and GMM regressions, and when employing a dummy for terror events, however, the impact of terror is no longer significant at conventional levels. To some extent this is not surprising. The civil liberties index is sometimes used as an indicator of democracy. As we already control for democracy by including the Polity IV index, part of the explanatory power of civil liberties is absorbed. To some extent our results also support Abadie (2006) showing democracy to influence terror. If civil liberties to some extent capture democracy and causality runs from democracy to terror, it is not surprising that the correlation between terror and civil liberties does not hold in the instrumental variables regression.

Table 7 reports the results of the Extreme Bounds Analysis. As can be seen in the upper part of the table, the CDF(0) of the three base variables easily exceeds the threshold of 0.95 when we focus on physical integrity rights. Lagged physical integrity and population size have a CDF(0) of almost one, while that of democracy is 0.97. The former two variables are significant at the five percent level in all of the more than 23,000 regressions run; democracy is significant in 86 percent of these regressions. Turning to our variable of main interest – the number of terror events in a given country and year – the table shows that the CDF(0) also easily exceeds the critical threshold of 0.95 (and is in fact close to one). At the five percent level of significance, the number of terror events is significant in 94 percent of the regressions run. We conclude that our result is indeed robust to the inclusion of other variables suggested in the human rights literature.

Turning to civil liberties, the lower part of the table shows that there is no robust impact of terror. While the results for the other variables are more or less similar to those described above, the number of terror events exert a significant impact on civil liberties in only 77 percent of the regressions run. The CDF(0) of 0.93 confirms that the impact of terror events on civil liberties can not be considered to be completely robust according to standard criteria.

8. Conclusion

Our analysis suggests a rise in the level of terror to significantly reduce governments' respect for basic human rights. According to our results, terror substantially increases the probability of extrajudicial killings, political imprisonment, and torture, especially in countries with a high level of human rights. This result is extremely robust, as Extreme Bounds Analysis for more than 23,000 regressions shows. To some extent, civil liberties (measured by the Freedom House index) are also restricted as a consequence of terrorism. However, these results are not completely robust to the specification of the model. We find no effect of terror on “positive rights” such as political participation, freedom of religion, freedom of speech, or freedom of movement.²⁵

Our results also show that the effect of terror strongly depends on the level of human rights. For low levels of physical integrity terror increases human rights, while terror reduces rights when governments' respect for physical integrity rights is high. As can be seen, the marginal effects are always significant at the one percent level. These results are in line with our hypotheses. Overall, terror reduces human rights. However, the impact becomes generally stronger when human rights are a priori more prevalent. Terror even increases human rights when hitting countries with initially low respect for human rights.

Our theoretical model points to the trade off between security and human rights, namely, that, experiencing a threat of terror, citizens demand more security at the expense of human rights. The empirical results indeed indicate that governments' answer to terror is – on average – to restrict freedom. Our study supports anecdotal evidence suggesting that governments – under the threat of terror – violate those very rights they want to protect from terror in the first place. Which policy conclusions do arise from this? Clearly, if human rights restrictions really increase security, people might be willing to trade some of their rights for greater security. However, whether and to what extent human rights violations increase security is indeed not at all obvious. This is even more true, as our analysis shows that governments reduce physical human rights as a consequence of terror, rather than civil liberties or empowerment rights. Following Frey and Luechinger (2003) and Freytag et al.

²⁵ Note that our data do not cover the major time of the “war against terror” in the aftermath of 9/11. The results do thus not depend on this exceptional event.

(2006), restricting human rights respect in reaction to terror attacks may reduce the individual opportunity costs of potential terrorists, and thus rather increase terrorism. Frey and Luechinger argue that there may be superior strategies than deterrence in fighting terrorism. The same could hold true for restricting human rights as an answer to terrorism.

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Table 1: Human rights and terror events, ordered probit, 111 countries

	(1)	(2)	(3)	(4)	(5)	(6)
	physical	empowerment	civil	physical	empowerment	civil
Lagged endogenous	0.540 (23.67)***	0.538 (20.54)***	1.827 (17.38)***	0.536 (23.44)***	0.538 (20.56)***	1.825 (17.33)***
Income lower middle	-0.034 (0.42)	-0.067 (0.83)	0.094 (1.37)	-0.033 (0.39)	-0.067 (0.83)	0.097 (1.42)
Income upper middle	0.249 (2.32)**	0.016 (0.15)	0.296 (2.99)***	0.256 (2.36)**	0.016 (0.15)	0.300 (3.03)***
Income high OECD	1.102 (6.68)***	0.580 (2.74)***	1.398 (7.80)***	1.134 (6.91)***	0.580 (2.75)***	1.419 (7.96)***
Income high	0.031 (0.20)	-0.377 (3.47)***	-0.017 (0.15)	0.078 (0.56)	-0.377 (3.37)***	0.007 (0.06)
Legal origin British	-0.909 (4.80)***	-0.359 (1.04)	-0.285 (0.73)	-0.887 (4.70)***	-0.359 (1.04)	-0.270 (0.69)
Legal origin French	-1.009 (5.04)***	-0.316 (0.90)	-0.400 (1.03)	-0.979 (4.92)***	-0.316 (0.90)	-0.379 (0.97)
Legal origin Socialist	-0.704 (3.08)***	-0.464 (1.22)	-0.413 (1.01)	-0.682 (3.00)***	-0.464 (1.22)	-0.402 (0.98)
Legal origin German	-1.135 (3.71)***	-0.490 (1.22)	-0.572 (1.33)	-1.141 (3.71)***	-0.490 (1.22)	-0.571 (1.32)
Population (log)	-0.202 (9.16)***	-0.101 (4.04)***	-0.080 (4.37)***	-0.198 (8.99)***	-0.101 (3.98)***	-0.076 (4.18)***
Democracy	0.016 (2.79)***	0.076 (10.23)***	0.045 (5.27)***	0.018 (3.09)***	0.076 (10.22)***	0.046 (5.34)***
Number of terror events				-0.003 (4.73)***	-0.000 (0.05)	-0.002 (2.43)**
Observations	2217	2219	3218	2217	2219	3218
Years	1982-2002	1982-2002	1973-2002	1982-2002	1982-2002	1973-2002
Pseudo R ²	0.31	0.37	0.65	0.31	0.37	0.65

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Dummy for each year included.

Table 2: Human rights and terror, ordered probit, 111 countries

	(1)	(2)	(3)	(4)	(5)	(6)
	physical	empowerment	civil	physical	empowerment	civil
Lagged endogenous	0.539 (23.63)***	0.538 (20.55)***	1.826 (17.37)***	0.540 (23.57)***	0.538 (20.54)***	1.827 (17.37)***
Income lower middle	-0.036 (0.44)	-0.067 (0.83)	0.094 (1.37)	-0.033 (0.40)	-0.067 (0.83)	0.094 (1.38)
Income upper middle	0.249 (2.31)**	0.016 (0.15)	0.296 (2.99)***	0.252 (2.33)**	0.016 (0.15)	0.296 (2.99)***
Income high OECD	1.102 (6.66)***	0.581 (2.75)***	1.398 (7.80)***	1.113 (6.66)***	0.579 (2.74)***	1.399 (7.81)***
Income high	0.057 (0.39)	-0.382 (3.41)***	-0.010 (0.08)	0.039 (0.26)	-0.375 (3.41)***	-0.015 (0.13)
Legal origin British	-0.910 (4.79)***	-0.359 (1.04)	-0.285 (0.73)	-0.899 (4.71)***	-0.359 (1.04)	-0.284 (0.73)
Legal origin French	-1.010 (5.04)***	-0.316 (0.90)	-0.401 (1.03)	-1.004 (4.98)***	-0.317 (0.90)	-0.399 (1.03)
Legal origin Socialist	-0.705 (3.07)***	-0.464 (1.22)	-0.414 (1.01)	-0.700 (3.05)***	-0.465 (1.22)	-0.413 (1.01)
Legal origin German	-1.137 (3.71)***	-0.490 (1.22)	-0.573 (1.33)	-1.141 (3.72)***	-0.491 (1.22)	-0.573 (1.33)
Population (log)	-0.202 (9.10)***	-0.101 (4.04)***	-0.080 (4.35)***	-0.199 (9.01)***	-0.100 (3.96)***	-0.079 (4.37)***
Democracy	0.017 (2.92)***	0.076 (10.21)***	0.046 (5.27)***	0.017 (2.84)***	0.076 (10.26)***	0.045 (5.27)***
Number of suicide attacks	-0.031 (3.31)***	0.006 (0.73)	-0.013 (3.35)***			
Number of people killed				-0.001 (4.47)***	-0.000 (0.32)	-0.000 (0.74)
Observations	2217	2219	3218	2217	2219	3218
Years	1982-2002	1982-2002	1973-2002	1982-2002	1982-2002	1973-2002
Pseudo R ²	0.31	0.37	0.65	0.31	0.37	0.65

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Dummy for each year included.

Table 3: Human rights and number of terror events, marginal effects

Threshold	0	1	2	3	4	5	6	7	8	E[y]
Physical integrity rights										
Probability at mean	0.0004	0.0032	0.0175	0.0587	0.1962	0.2972	0.2669	0.1427	0.0171	5.22
Number of terror events										
Marginal effect	3.66E-06	2.63E-05	0.0001	0.0003	0.0005	0.0002	-0.0004	-0.0006	-0.0001	-0.0034
p-value	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0100
Number of suicide attacks										
Marginal effect	4.08E-05	0.0003	0.0012	0.0030	0.0058	0.0018	-0.0046	-0.0062	-0.0013	-0.0379
p-value	0.03	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Number of persons killed										
Marginal effect	9.77E-07	7.02E-06	2.99E-05	0.0001	0.0001	4.35E-05	-0.0001	-0.0001	-3.16E-05	-0.0009
p-value	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Civil liberties										
Probability at mean		1.10E-09	0.0001	0.0438	0.5179	0.4309	0.0073	1.12E-07		4.40
Number of terror events										
Marginal effect		1.28E-11	4.15E-07	0.0002	0.0006	-0.0007	-3.83E-05	-1.14E-09		-0.0010
p-value		0.57	0.22	0.03	0.02	0.02	0.08	0.45		0.02
Number of suicide attacks										
Marginal effect		8.88E-11	2.87E-06	0.0012	0.0039	-0.0049	-0.0003	-7.92E-09		-0.0066
p-value		0.56	0.19	0.01	0.00	0.00	0.04	0.43		0.00

Notes: The marginal effects correspond to the significant coefficients of Tables 1 and 2.

Table 4: Physical integrity rights and terror, ordered probit, 83 countries, 1982-2002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	disappearances	kills	imprisonment	torture	disappearances	kills	imprisonment	torture	disappearances	kills	imprisonment	torture
Lagged endogenous	1.061 (15.04)***	1.121 (17.47)***	1.108 (16.10)***	0.904 (15.17)***	1.076 (15.06)***	1.133 (17.93)***	1.106 (16.01)***	0.914 (15.49)***	1.070 (15.06)***	1.131 (17.92)***	1.108 (16.04)***	0.915 (15.45)***
Income lower middle	-0.071 (0.60)	0.053 (0.50)	-0.102 (0.92)	-0.104 (0.84)	-0.074 (0.64)	0.039 (0.37)	-0.100 (0.91)	-0.133 (1.06)	-0.073 (0.62)	0.040 (0.38)	-0.101 (0.91)	-0.124 (0.99)
Income upper middle	0.248 (2.01)**	0.353 (2.62)***	0.127 (1.08)	0.253 (1.64)	0.239 (2.00)**	0.334 (2.53)**	0.135 (1.14)	0.234 (1.49)	0.231 (1.90)*	0.330 (2.50)**	0.128 (1.07)	0.232 (1.48)
Legal origin British	-0.224 (1.07)	-0.235 (1.49)	-0.290 (1.51)	0.009 (0.05)		-0.238 (1.51)	-0.285 (1.50)			-0.240 (1.51)	-0.289 (1.50)	0.005 (0.03)
Legal origin French	-0.404 (2.16)**	-0.354 (2.48)**	-0.391 (2.07)**	-0.059 (0.38)	-0.196 (1.75)*	-0.375 (2.60)***	-0.396 (2.09)**	-0.093 (0.83)	-0.196 (1.69)*	-0.373 (2.59)***	-0.393 (2.07)**	-0.084 (0.53)
Legal origin Socialist					0.223 (1.08)			-0.000 (0.00)	0.223 (1.07)			
Population (log)	-0.177 (5.58)***	-0.190 (7.70)***	-0.264 (5.54)***	-0.198 (6.16)***	-0.184 (5.89)***	-0.200 (8.42)***	-0.263 (5.57)***	-0.211 (6.52)***	-0.178 (5.70)***	-0.198 (8.14)***	-0.262 (5.49)***	-0.208 (6.47)***
Democracy	-0.001 (0.16)	-0.007 (1.05)	0.050 (6.77)***	0.016 (2.06)**	-0.002 (0.30)	-0.008 (1.19)	0.051 (6.77)***	0.015 (1.85)*	-0.002 (0.29)	-0.008 (1.20)	0.050 (6.74)***	0.014 (1.85)*
Number of terror events	-0.006 (1.76)*	-0.008 (3.30)***	-0.001 (0.28)	-0.017 (2.42)**								
Number of suicide attacks					-0.141 (1.96)*	-0.131 (2.66)***	-0.183 (2.86)***	-1.020 (1.80)*				
Number of people killed									-0.003 (2.47)**	-0.002 (1.35)	-0.001 (0.94)	-0.004 (1.28)
Observations	1650	1641	1646	1648	1650	1641	1646	1648	1650	1641	1646	1648
Pseudo R ²	0.27	0.30	0.37	0.24	0.27	0.30	0.37	0.24	0.27	0.30	0.37	0.24

Robust z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Dummy for each year included.

Table 5: Physical integrity rights and terror, 111 countries, test for robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged endogenous	0.532 (23.17)***	0.536 (23.41)***	0.538 (23.60)***	0.531 (22.98)***	0.532 (22.02)***	0.495 (9.77)***	0.644 (27.59)***	0.306 (6.29)***
Income lower middle	0.001 (0.02)	-0.033 (0.40)	-0.034 (0.41)	-0.028 (0.34)	-0.008 (0.09)	-0.034 (0.24)	-0.019 (0.24)	-0.128 (0.50)
Income upper middle	0.280 (2.70)***	0.252 (2.31)**	0.253 (2.35)**	0.257 (2.31)**	0.226 (1.94)*	0.466 (2.65)***	0.252 (2.60)***	0.483 (1.65)
Income high OECD	1.170 (7.30)***	1.112 (6.76)***	1.118 (6.75)***	1.172 (7.42)***	1.158 (6.57)***	1.501 (5.96)***	1.024 (6.84)***	2.060 (7.64)***
Income high	0.125 (0.86)	0.077 (0.56)	0.051 (0.35)	0.165 (1.27)	0.143 (1.22)	0.267 (1.39)	0.370 (1.77)*	0.352 (1.14)
Legal origin British	-0.897 (5.02)***	-0.903 (4.76)***	-0.898 (4.74)***	-0.859 (4.66)***	-0.782 (3.36)***	-0.999 (3.61)***	0.046 (0.26)	0.299 (1.70)*
Legal origin French	-0.979 (5.16)***	-1.002 (5.01)***	-0.996 (4.96)***	-0.929 (4.81)***	-0.835 (3.44)***	-1.074 (3.82)***	0.035 (0.20)	0.035 (0.19)
Legal origin Socialist	-0.695 (3.21)***	-0.701 (3.07)***	-0.694 (3.03)***	-0.650 (2.93)***	-0.603 (2.25)**	-0.711 (2.26)**	0.387 (1.94)*	0.837 (2.53)**
Legal origin German	-1.126 (3.65)***	-1.143 (3.72)***	-1.140 (3.71)***	-1.133 (3.68)***	-1.040 (3.16)***	-1.496 (3.40)***	-0.387 (1.55)	-0.403 (1.16)
Population (log)	-0.186 (8.49)***	-0.198 (8.97)***	-0.200 (9.08)***	-0.195 (8.74)***	-0.177 (7.55)***	-0.270 (6.71)***	-0.229 (8.75)***	-0.446 (8.22)***
Democracy	0.020 (3.34)***	0.018 (3.09)***	0.017 (2.92)***	0.021 (3.61)***	0.023 (4.10)***	0.016 (1.80)*	0.020 (3.19)***	0.033 (2.81)***
Terror events, dummy	-0.188 (2.80)***							
Number of severe terror events		-0.007 (3.69)***						
Number of domestic terror events			-0.002 (2.99)***					
Number of international terror events				-0.019 (4.86)***				
Number of terror events					-0.025 (5.62)***	-0.003 (4.73)***	-0.014 (1.80)*	-0.005 (4.58)***
Method	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	2SLS	GMM
Observations	2217	2217	2217	2217	1676	541	1846	2217
Years	1982-2002	1982-2002	1982-2002	1982-2002	1982-1997	1998-2002	1982-2002	1982-2002
Pseudo R2	0.31	0.32	0.31	0.31	0.31	0.33	0.72	
Sargan test (p-value)							0.07	0.55
First stage F-statistic							24.87	
AR(1) test (p-value)								0.00
AR(2) test (p-value)								0.33

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Dummy for each year included.

Table 6: Civil liberties and terror, 111 countries, test for robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged endogenous	1.827 (17.41)***	1.825 (17.34)***	1.826 (17.35)***	1.825 (17.33)***	1.724 (15.86)***	2.779 (296.03)***	0.836 (61.57)***	0.819 (8.28)***
Income lower middle	0.088 (1.25)	0.097 (1.41)	0.095 (1.39)	0.101 (1.48)	0.103 (1.44)	0.172 (5.27)***	0.030 (1.10)	0.084 (1.28)
Income upper middle	0.292 (2.95)***	0.298 (3.01)***	0.298 (3.01)***	0.303 (3.03)***	0.281 (2.68)***	0.481 (12.64)***	0.092 (2.73)***	0.157 (1.62)
Income high OECD	1.390 (7.61)***	1.404 (7.85)***	1.405 (7.81)***	1.452 (8.42)***	1.416 (7.82)***	1.687 (34.30)***	0.262 (5.33)***	0.407 (2.28)**
Income high	-0.030 (0.26)	0.007 (0.06)	-0.010 (0.08)	0.053 (0.43)	0.037 (0.30)	0.330 (9.32)***	-0.018 (0.25)	-0.029 (0.34)
Legal origin British	-0.293 (0.76)	-0.280 (0.72)	-0.281 (0.72)	-0.233 (0.60)	-0.201 (0.49)	-4.502 (147.31)***	-0.009 (0.16)	0.046 (1.17)
Legal origin French	-0.412 (1.07)	-0.393 (1.01)	-0.395 (1.01)	-0.324 (0.83)	-0.285 (0.70)	-4.618 (124.02)***	-0.035 (0.60)	0.010 (0.25)
Legal origin Socialist	-0.419 (1.03)	-0.414 (1.01)	-0.410 (1.00)	-0.370 (0.91)	-0.386 (0.89)	-4.619 (134.42)***	0.011 (0.16)	0.024 (0.22)
Legal origin German	-0.580 (1.35)	-0.575 (1.33)	-0.575 (1.33)	-0.535 (1.24)	-0.473 (1.03)	-5.101 (111.43)***	0.031 (0.36)	-0.003 (0.05)
Population (log)	-0.083 (4.45)***	-0.076 (4.16)***	-0.079 (4.31)***	-0.070 (3.88)***	-0.064 (3.33)***	-0.064 (25.01)***	-0.039 (4.27)***	-0.029 (1.62)
Democracy	0.045 (5.22)***	0.046 (5.32)***	0.046 (5.28)***	0.048 (5.47)***	0.047 (4.99)***	0.073 (19.70)***	0.023 (6.86)***	0.023 (1.33)
Terror events, dummy	0.027 (0.54)							
Number of severe terror events		-0.005 (2.23)**						
Number of domestic terror events			-0.001 (1.68)*					
Number of international terror events				-0.012 (2.57)**				
Number of terror events					-0.013 (2.83)***	-0.002 (11.46)***	0.002 (0.78)	-0.000 (0.51)
Method	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit	2SLS	GMM
Observations	3218	3218	3218	3218	2671	547	2325	3218
Years	1973-2002	1973-2002	1973-2002	1973-2002	1973-1997	1998-2002	1973-2002	1973-2003
Pseudo R2	0.65	0.65	0.65	0.65	0.63	0.78	0.93	
Sargan test (p-value)							0.37	0.13
First stage F-statistic							30.60	
AR(1) test (p-value)								0.00
AR(2) test (p-value)								0.10

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Dummy for each year included.

Table 7: Human rights and terror, Extreme Bounds Analysis

	Avg. Beta	Avg.Std.Err	% Sign.	CDF(0)	lower Bound	upper Bound
Physical integrity						
Physical integrity (lagged)	0.545	0.039	1.000	1.000	-16.425	57.761
Population (log)	-0.260	0.045	0.999	0.999	-32.177	27.984
Democracy	0.032	0.011	0.863	0.971	-28.559	16.393
Number of terror events	-0.008	0.003	0.937	0.985	-23.343	16.507
Civil liberties						
Civil liberties (lagged)	3.329	0.149	1.000	1.000	-24.515	685.185
Population (log)	-0.112	0.036	0.949	0.968	-39.301	96.045
Democracy	0.059	0.017	0.840	0.931	-33.347	16.109
Number of terror events	-0.017	0.002	0.768	0.934	-5.451	0.635

Notes:

Results for physical integrity (civil liberties) are based on 22724 (16877) combinations with 1140 (1771) observations, on average.

Dummies for income, legal origin and years included in all regressions.

Appendix A contains the 52 variables included in the EBA.

Appendix A: Definitions and data sources

Variable	Description	Source
Number of terror events	Number of terror events in respective country and year.	MIPT Terrorism Knowledge Base
Number of suicide attacks	Number of suicide attacks in respective country and year.	MIPT Terrorism Knowledge Base
Number of people killed	Number of people killed in respective country and year.	MIPT Terrorism Knowledge Base
Terror events, dummy	1 if at least on terror event occurred in respective country and year.	MIPT Terrorism Knowledge Base
Number of severe terror events	Number of terror events in which at least one person was killed or injured in respective country and year.	MIPT Terrorism Knowledge Base
Number of domestic terror events	Number of terror events in which both the attacker and the target was domestic in respective country and year.	MIPT Terrorism Knowledge Base
Number of international terror events	Number of terror events in which either the attacker or the target was from abroad in respective country and year.	MIPT Terrorism Knowledge Base
Physical integrity	The composite index of physical integrity rights is the additive of torture, extrajudicial killings, political imprisonments, and disappearance, ranging from 0-8.	Cingranelli and Richards (2006)
Empowerment index	The composite index of empowerment rights is the additive of freedom of movements, freedom of speech, workers' rights, political participation, and freedom of religion indicators, ranging from 0-10.	Cingranelli and Richards (2006)
Civil liberties	The survey based index combines four subcategories: (a) Freedom of Expression and Belief, (b) Associational and Organizational Rights, (c) Rule of Law, and (d) Personal and Individual Rights.	Freedom House (2005)
Imprisonment	Subindex of physical integrity: number of political imprisonments.	Cingranelli and Richards (2006)
Torture	Subindex of physical integrity: number of tortures.	Cingranelli and Richards (2006)
Disappearances	Subindex of physical integrity: number of disappearances.	Cingranelli and Richards (2006)
Kills	Subindex of physical integrity: number of extrajudicial killings.	Cingranelli and Richards (2006)
Democracy	Measures the general openness of political institutions on the scale -10-10 (-10 = low; 10 = high).	Marshall and Jagers (2000)
Population (log)	Natural logarithm of a country's population.	World Bank (2006)
Income, dummies	Dummies for income. The groups are: low \$825 or less; lower middle, \$826–3,255; upper middle, \$3,256–10,065; and high (OECD), \$10,066 or more.	World Bank (2006)
Legal origin, dummies	Dummies for British, French, Socialist, and German legal origin.	Easterly and Sewadeh (2001)

Variables used in Extreme Bounds Analysis

Political risk	Political Risk Rating, annual averages, ranging from 0-100.	International Country Risk Guide
Number of wars	Number of wars/conflicts in specific year and country.	Ghosn et al. (2004)
Years of independence	Ranging from 0 to 250 (the latter value is used for all non-colonized countries).	Persson and Tabellini (2003)
Age of democracy	Defined as: $AGE = (2000 - DEM_AGE)/200$ and varying between 0 and 1, with US being the oldest democracy (value of 1).	Persson and Tabellini (2003)
New state, dummy	Dummy for new states.	Gallup et al. (2001)

Variable	Description	Source
Government Fractionalization	The probability that two deputies picked at random from among the government parties will be of different parties.	Beck et al. (2001)
Federalism, dummy	Dummy for federal states.	Elazar (1996)
Years in office	Indicates the number of years the government chief executive has been in office.	Beck et al. (2001)
Constituency	Indicates whether the constituencies of the senators are states/provinces.	Beck et al. (2001)
Left government, dummy	Indicates whether the main government party is left-wing.	Beck et al. (2001)
Vertical imbalance	Intergovernmental transfers as a share of sub-national expenditures.	IMF's Government Finance Statistics
Tiers	Number of government tiers.	Treisman (2000)
Tiers, average	Average area first tier units (thousands square kilometers per unit).	Treisman (2000)
Revenue decentralization	Sub-national Revenues (% of total revenues)	IMF's Government Finance Statistics
Government transfers	Transfers to sub-national from other levels of Government (% of total sub-national revenues and grants).	IMF's Government Finance Statistics
Government employees	Share of government employees in total employment. Sub-national Tax Revenue (% of total sub-national revenues and grants).	World Bank (2001)
Special interests	Dummy for special interest executive parties.	Beck et al. (2001)
Pre-election, legislature	Share of the year within 12 months of a legislative election.	Dreher and Vaubel (2005)
Pre-election, executive	Share of the year within 12 months of an executive election.	Dreher and Vaubel (2005)
Post election, legislature	Share of the year within after 12 months of a legislative election.	Dreher and Vaubel (2005)
Post election, executive	Share of the year within after 12 months of an executive election.	Dreher and Vaubel (2005)
Election year, legislative	Dummy for legislative elections.	Beck et al. (2001)
Age of parties	Average age of political parties.	Beck et al. (2001)
Years left	Number of years the government chief executive remains in office.	Beck et al. (2001)
GDP per capita	Real GDP per capita in constant dollars (in international prices, base 1985).	Heston, Summers and Aten (2002)
GDP	GDP in current US\$.	World Bank (2006)
Investment	Gross capital formation (percent of GDP).	World Bank (2006)
Investment growth	Gross capital formation (annual percent growth).	World Bank (2006)
Debt service	Public and publicly guaranteed debt service (percent of GNI).	World Bank (2006)
FDI	Foreign direct investment, net inflows (percent of GDP).	World Bank (2006)
Trade	Exports and Imports (in percent of GDP).	World Bank (2006)
Growth	GDP growth (annual, percent).	World Bank (2006)
Urban population	Urban population (percent of total).	World Bank (2006)
Infant mortality	Mortality rate, infant (per 1,000 live births).	World Bank (2006)
Human Development Indicator	Composite index based on measures of life expectancy, literacy, education, and standards of living.	UNDP (2005)
IMF program, dummy	IMF program is at least five months in effect in a given year.	Dreher (2006)
World Bank projects	Number of World Bank projects at least five months in effect in a given year.	Boockmann and Dreher (2003)
Urban population	Urban population (percent of total).	World Bank (2006)
Area	Land area (square kilometer).	World Bank (2006)
Government debt	Central government debt, total (percent of GDP).	World Bank (2006)
Life expectancy	Life expectancy at birth, total (years).	World Bank (2006)
Number of human rights organizations	Number of human rights related NGOs being represented in a country.	Union of International Associations (2000)
Gap in schooling	Difference between years of schooling male and years of schooling female.	Barro and Lee (2000)
Primary schooling	Average years of primary schooling in the total population.	Barro and Lee (2000)
Protestant share	Share of protestants in population.	Persson and Tabellini (2003)
Catholic Share	Share of catholics in population.	Persson and Tabellini (2003)
Fractionalization	Index of ethnolinguistic fractionalization, approximating the level of lack of ethnic and linguistic cohesion within a country, ranging from 0 (homogeneous) to 1 (strongly fractionalized) and averaging 5 different indexes.	Persson and Tabellini (2003)
Ethnic fractionalization	Index of ethnic fractionalization.	Alesina et al. (2003)
Language	Index of language fractionalization.	Alesina et al. (2003)
Religious fractionalization	Index of religious fractionalization.	Alesina et al. (2003)
Dominant religion	Percent of dominant religion.	Alesina et al. (2003)

Appendix B: Descriptive Statistics

Variable	Mean	Minimum	Maximum	Standard Deviation
Number of terror events	2.68	0.00	858	18.44
Number of suicide attacks	0.05	0.00	72	1.23
Number of people killed	3.49	0.00	2987	50.32
Terror events, dummy	0.27	0.00	1.00	0.44
Number of severe terror events	0.97	0.00	551	8.68
Number of domestic terror events	1.39	0.00	611	15.09
Number of international terror events	1.29	0.00	247	5.62
Physical integrity	4.86	0.00	8.00	2.37
Empowerment index	5.88	0.00	10.00	3.28
Civil liberties	4.10	1.00	7.00	1.95
Imprisonment	1.09	0.00	2.00	0.85
Torture	0.80	0.00	2.00	0.75
Disappearances	1.65	0.00	2.00	0.65
Kills	1.32	0.00	2.00	0.78
Democracy, index	0.22	-10.00	10.00	7.58
Population size (log)	15.15	9.89	20.98	2.10
Lower middle income, dummy	0.26	0.00	1.00	0.44
Higher middle income, dummy	0.19	0.00	1.00	0.39
High income OECD, dummy	0.12	0.00	1.00	0.32
High income, dummy	0.15	0.00	1.00	0.36
British legal origin, dummy	0.34	0.00	1.00	0.47
French legal origin, dummy	0.48	0.00	1.00	0.50
Socialist legal origin, dummy	0.10	0.00	1.00	0.30
German legal origin, dummy	0.04	0.00	1.00	0.20