

The political economy of freedom, democracy and terrorism

PETER KURRILD-KLITGAARD

MOGENS K. JUSTESEN

ROBERT KLEMMENSEN

Dept. of Political Science and Public Management

University of Southern Denmark

E-mail: kurrild@sam.sdu.dk; mju@sam.sdu.dk; rkl@sam.sdu.dk

Prepared for presentation at the conference
The Political Economy of Terrorism
George Mason University
24-25 May 2005

NB. This is a *very* preliminary draft.
Please do not quote or cite.
All comments are welcome.

The political economy of freedom, democracy and terrorism¹

PETER KURRILD-KLITGAARD, MOGENS K. JUSTESEN & ROBERT KLEMMENSEN

Dept. of Political Science and Public Management, University of Southern Denmark, Campusvej 55, DK-5230 Odense M, Denmark; E-mail: kurrild@sam.sdu.dk; mju@sam.sdu.dk; rkj@sam.sdu.dk

Abstract. Rational choice analysis has produced somewhat contradictory lines of explanation of the relationship between the nature of government and the extent of terrorism and political violence. One argues that a more powerful and less constrained government will be more capable of suppressing the illegal use of violence, while the other argues that concentrated power will stimulate the use of more radical means by dissident groups. We engage in an empirical analysis of data relating economic and political freedom to the occurrence of transnational terrorist events and domestic political violence in the late 1990s, including a number of alternative explanatory variables. There seems to be no consistent association of government power with terrorism: economic freedom has little association with terrorism but some with lower levels of political violence, while political freedom associates negatively with political violence but exhibits a non-linear relationship with terrorism. Simultaneously, a number of alternative explanations are disconfirmed: terrorism is unrelated to inequality, economic growth, etc., while a society's fractionalization has very mixed importance. However, more trade associates with less domestic political violence and occasionally with less probability of terrorism. As such the analysis carries mixed implications for the Bush administration's strategy.

For as long as whole regions of the world simmer in resentment and tyranny—prone to ideologies that feed hatred and excuse murder—violence will gather, and multiply in destructive power, and cross the most defended borders, and raise a mortal threat. There is only one force of history that can break the reign of hatred and resentment, and expose the pretensions of tyrants, and reward the hopes of the decent and tolerant, and that is the force of human freedom.

We are led, by events and common sense, to one conclusion: The survival of liberty in our land increasingly depends on the success of liberty in other lands. The best hope for peace in our world is the expansion of freedom in all the world.

George W. Bush, 2nd Inaugural Address, 20 January 2005

1. Introduction

Do terrorists act more like fanatical zealots moved by concerns of justice or more like rational actors pursuing rents? And does the extent of freedom in a country have any impact on the occurrence of terrorist acts? Such questions have become dramatically relevant in recent years. In the aftermath of 9/11 and all the havoc caused in the

¹ We owe thanks to Rudy Rummel, who kindly shared the dataset used for his own work (e.g. Rummel 2001) with us.

Middle East (and elsewhere) by Islamist terror groups (and others), it would be difficult not to see religion as a powerful force in the explanation. Yet other explanations have focused on the seemingly increased levels of anti-Western terrorism as the result of unequal distributions of wealth or as the result of simply a particularly bellicose and anti-western religion. In contrast, the view taken by the Bush administration, as well as some independent scholars and observers, is that ultimately the key to a world less marked by conflict—including terrorism—is one where regimes are characterized by individual liberty, free markets, democracy and rule of law.

The Bush administration's doctrine is a normative recommendation but it is one which may be seen as essentially based in a positive institutional analysis, i.e., an analysis proposing that institutional arrangements affect the decisions individuals make (cf., e.g., Ostrom 1986). Specifically, it is argued that more "freedom" (or "liberty") will lead to less terrorism and therefore that creating more freedom will lower the amounts of terrorism.² This reasoning has even gained recent support of an uninvited

² For statements of this reasoning see, e.g., Bush's "Forward Strategy of Freedom" (announced 6 Nov 2003), his 2nd Inaugural Address (20 Jan 2005), and his 2005 State of the Union speech (5 Feb 2005), and in particular his London speech (19 Nov 2003): "We're sometimes faulted for a naive faith that liberty can change the world. If that's an error, it began with reading too much John Locke and Adam Smith. ... We believe in open societies ordered by moral conviction. We believe in private markets humanized by compassionate government. We believe in economies that reward effort, communities that protect the weak and the duty of nations to respect the dignity and the rights of all. ... We seek the advance of freedom and the peace that freedom brings. ... On September the 11th, 2001, the terrorists left their mark of murder on my country ... These terrorists target the innocent and they kill by the thousands. And they would, if they gain the weapons they seek, kill by the millions and not be finished. The greatest threat of our age is nuclear, chemical or biological weapons in the hands of terrorists and the dictators who aid them. ... [A] pillar of security is our commitment to the global expansion of democracy and the hope and progress it brings as the alternative to instability and hatred and terror. We cannot rely exclusively on military power to assure our long-term security. Lasting peace is gained as justice and democracy advance. In democratic and successful societies, men and women do not swear allegiance to malcontents and murderers. They turn their hearts and labor to building better lives. And democratic governments do not shelter terrorist camps or attack their peaceful neighbors. They honor the aspirations and dignity of their own people. In our conflict with terror and tyranny, we have an unmatched advantage, a power that cannot be resisted, and that is the appeal of freedom to all mankind. As global powers, both our nations serve the cause of freedom in many ways in many places. ... By extending the reach of trade, we foster prosperity and the habits of liberty. And by advancing freedom in the greater Middle East, we help end a cycle of dictatorship and radicalism that brings millions of people to misery and brings danger to our own people. The stakes in that region could not be higher. If the Middle East remains a place where freedom does not flourish, it will remain a place of stagnation and anger and violence for export. And as we saw in the ruins of two towers, no distance on the map will protect our lives and way of life. If the greater Middle East joins the democratic revolution that has reached much of the world, the lives of millions in that region will be bettered, and a trend of conflict and fear will be ended at its source. The movement of history will not come about quickly. Because of our own democratic development, the fact that it was gradual and at times turbulent, we must be patient with others. And the Middle East countries have some distance to travel. Arab scholars speak of a freedom deficit that has separated whole nations from the progress of our time. The essentials of social and material progress—limited government, equal justice under law, religious and economic liberty, political participation, free press and respect for the rights of women—have been scarce across the region. Yet that has begun to change. ... They're finding, as others will find, that national progress and dignity are achieved when governments are just and people are free."

kind, namely in a number of terrorists declaring freedom and democracy as their stated targets.³

Now, can rational choice analysis contribute something to this issue? That is, are there any theoretical reasons why it should be the case that more freedom leads to less terror? And is there any empirical evidence to support such reasoning? The following analysis will consider these questions. We will first consider some alternative rational choice analyses looking at the possible relationships between the extent of freedom and terrorism/political violence and sketch two testable propositions (section 2). We will then consider various types of relevant data, including variables enabling us to make an examination of alternative explanations (section 3), and submit the hypotheses to tests (section 4). We will then interpret our results and compare them with some other recent studies (section 5).

2. Rational choice aspects of freedom and terrorism

The term “terrorism” is one of those controversial and essentially contested concepts within the discourse of politics and accordingly also in social science research. For the present purposes we may first and foremost note that however terrorism is defined, it must be seen as, in a sense, merely one sub-branch of “political violence” more broadly defined, i.e., the deliberate use of violence by individuals or groups as a means with which to achieve political goals (no matter the more specific contents of these). As such terrorism—as a form of political violence—is related to such other phenomena as coups, wars, civil wars, genocide, etc. (cf., e.g., Kotowski 1984; Finney 1987; Kurrild-Klitgaard 1997) as well as rebellion more broadly defined (cf. Kurrild-Klitgaard 2004). Terrorism may then more narrowly be seen as the deliberate use of violence against non-combatants for political purposes.⁴

How may rational choice theorists approach the study of terrorism and other forms of political violence? The obvious point is, of course, to describe the behavior of those engaging in such activities as a deliberate choice, involving costs, benefits and externalities, as well as strategic interaction with other actors, not least the governments or other political opponents against which such acts may be directed (cf. Lichbach 1995). Most scholars who have investigated the larger “causes” that may influence such decision-making have looked at the ideologies of the perpetrators or the socio-economic circumstances, yet it should be obvious that the types of political-institutional arrangements underlying the structure of the societies where political

³ Cf., e.g., Abu Musab al-Zarqawi’s message prior to the Iraq elections: “We have declared a bitter war against democracy and all those who seek to enact it ... Democracy is also based on the right to choose your religion ... [and that is] against the rule of God. ... [Americans] promote this lie that is called democracy ... You have to be careful of the enemy’s plots that involve applying democracy in your country and confront these plots ... Even now, the signs of infidelity and polytheism are on the rise. ... For all these issues, we declared war against, and whoever helps promote this and all those candidates, as well as the voters, are also part of this, and are considered enemies of God.” (internet recording, 23 January 2005).

⁴ Cf. McCormick, who defines it as “the deliberate use of symbolic violence or the threat of violence against non-combatants for political purposes.” (McCormick 2003: 474). We have found the inclusion of symbolic and of threats to be unnecessary and problematic to use for empirical studies.

violence take place might influence the behavior of both governments and dissidents alike. However, rational choice theorists and other scholars of political violence have so far not quite reached agreement on exactly what variables are important, or how they may encourage or discourage political violence (cf. Lichbach 1987). In the following we shall briefly present and survey some of those theories formulated in recent decades about the potential relationships between on the one hand economic and/or political freedom and on the other hand terrorism/political violence.

2.1. *Some theoretical models*

In an early application of rational choice theory to the study of terrorism Richard M. Kirk suggested that terrorists should be seen as rational actors, but that they should not be seen as pursuing what they hold to be public goods, since this would necessarily entail free-rider problems (Kirk 1983: 42f; cf. Tullock 1971; Tullock 1974; Kurrild-Klitgaard 2004). Rather, governments supply a number of private benefits, and terrorists should be seen as interest groups pursuing private benefits, i.e. as rent-seekers (cf. Tullock [1967] 2004; Buchanan 1980; Tullock 2005). Kirk's reasoning is this:

[The] operation of government results in the generation of financial residuals or rents. It is the existence of these rents that is the motivating force behind acts of political terrorism. Thus terrorist organizations, in an effort to capture some of these rents, will act so as to maximize the profits from their violent activities. ... Terrorist activity is considered to be a threat to the government's monopoly power over determination of the distribution of rents. ... [When] the cost of gaining conventional political influence is high enough, or some other explicit or implicit barrier to entry into the political sphere exists, the use of violence in the form of political terrorism can become a profitable method of rent seeking. (Kirk 1983: 43f)

In his analysis Kirk formulates a simple model of a process of rent-generating governments, which seek to avoid social losses while simultaneously "skimming" rents off government activities, and profit maximizing terrorists who seek to capture these rents through acts, which are either violent or non-violent, depending on what is most efficient relative. Kirk's analysis concludes that the equilibrium outcome always will be one, in which there is some terrorist activity, but also that there may be situations with two equilibria: one with a relatively large government and much rent-seeking by terrorists and one with a relatively smaller government with less terrorism (Kirk 1983: 44-48). While the relationship between the two variables—government size and terrorism—is not necessarily strictly linear (cf. Kirk 1983: 46), the model does indicate that a smaller, less intrusive government—which will constitute less of a prize to rent-seekers—will tend to associate with lower levels of terrorism, while a larger government should be associated with higher levels of terrorism.

Kirk's analysis is different from but essentially compatible with the hypothesis suggested and investigated by Rudolph J. Rummel. Rummel's analysis is informal but largely compatible with a rational choice analysis: He argues that free people are less likely to engage in violent acts against each other, for the simple reason that human interaction when free tends to be a plus-sum game, while concentration of power turns human interaction into zero-sum or negative-sum games:

A society that is characterized by personal, economic and political freedom “is a multi-dimensional field of diverse social forces—some intersecting, some opposing, some overlapping. The net-effect is to cross-pressure interests, to cross-cut status and classes, and thus inhibit the growth of societywide violence. As a society becomes more authoritarian or coercive, however, the spontaneity of a social field declines, social forces become polarized, the multidimensionality of interests is reduced. Interests and issues begin to revolve around a single dimension: one’s political power. The dividing line between the ‘ins’ and ‘outs’ becomes a conflict front across society along which extreme violence can occur. (Rummel 1985: 420)

Rummel thus argues that a condition of freedom, where people are left free to pursue their own desires, where the government is held responsible for its actions through elections, creates a “spontaneous social field” within which humans are most secure—violence is minimal, and human and economic development are best achieved. “That is, freedom predicts human security.” (Rummel 2001: Appendix). He has formulated this as a specific hypothesis, the “Freedom/Domestic Violence Proposition”: “Freedom inhibits domestic violence (that is, the more libertarian a state, the less internally violent it can and tends to become).” (Rummel 1985: 421; cf. Rummel 1984).

However, it should be noted that Rummel focuses on political violence more generally including the activities of the government and thus is different and broader in its scope and application from those that focus on terrorism (e.g. Kirk) and more similar to those that look at political violence broadly (e.g. Finney). Yet Quan Li has offered theoretical arguments and a hypothesis making a claim similar to what is implied by Rummel’s, namely that better possibilities for democratic participation will tend to reduce terrorism (Li 2005: 280f). The argument here is that democracy lowers the costs of expressing political preferences and of solving conflicts. Li, on the other hand, also argues that institutional constraints on governments in the form of liberties and other “negative” human rights will increase terrorism (Li 2005: 281ff; cf. below).

Other theorists, inside and outside the rational choice tradition, have taken a different view of the possible relationship between government size and terrorism. They have focused on the possibility that a more extensive and intrusive government will control more resources which it may devote to the suppression of dissent, including political violence, terrorist activities, etc. That is, that the power of government will be negatively related to violent conflicts. One example of this line of analysis is Louis Finney’s dissertation on the economics of revolution and political violence developed an alternative rational choice model of political violence, inspired by work by Mancur Olson, James DeNardo, Joe Frohlich and Norman Oppenheimer (Olson [1965] 1971; Frohlich and Oppenheimer 1974; DeNardo 1985), which he tested against empirical data (Finney 1987). Finney’s theoretical model is based on an assumption of strategic interaction between governments and rebels, and his theoretical conclusion is:

[The] level of government spending should be correlated with the level of development of a nation, because the greater the share of the income left over from subsistence levels for residual government spending. Thus, government spending should be negatively related with the amount of domestic political violence.

Another interpretation ... is that the level of government spending is an indication of the power and ability of the regime to expropriate and utilize resources from its citizenry. In this case, if a government increases its ability to collect revenue and spend them, that

government has more resources at its disposal to quell, control, and appease its citizenry. This view of government spending suggests that the higher the level of government spending, the lower the level of political violence. (Finney 1987: 196f)

But no matter which of the two interpretations is made, Finney's model suggests that we should expect government size (primarily measured by spending levels) and political violence to be negatively correlated. Finney's model deals with political violence broadly rather than terrorism, and it does not deal with government powers other than spending, but at some level his reasoning may be seen as similar to Li's previously mentioned hypothesis that larger institutional constraints on governments (e.g. in the form of civil liberties) will lead to increased terrorism (Li 2005: 281ff). Li argues that by restricting the use of government powers to fight terrorism, freedom of association, speech and movement may make it easier for terrorists to organize and operate, just as freedom of the press may increase coverage of terrorist acts and thereby encourage such.

Some years ago Mark I. Lichbach suggested that the relationship between how repressive a regime is and the levels of political violence might not at all be linear (Lichbach and Gurr 1981; Lichbach 1987). In a relatively recent theoretical model and empirical application quite similar to Lichbach's Gareth Davis has used rational choice theory to investigate the relationship between repression, relative deprivation and levels of political violence (Davis 2004). He models rational actors as interested in both political goods and non-political goods, and he too sees their behavior as one where they may choose between different types of political activities, including political violence so that when the costs (including opportunity costs) of political violence fall, or when the benefits of non-violent political activities fall, the individuals will devote more resources to violent political activities. Davis derives two possible cases. In the one he works from the presumption that repression by a government may be efficient in reducing traditional, non-violent political activities but that it often will be inefficient in reducing political violence. In that case, increased repression will actually lead to increased political violence, because it makes non-violent activities relatively less attractive (Davis 2004: 7f). In the other model, Davis assumes that repression will be effective in suppressing not only non-violent activities but eventually also political violence (Davis 2004: 8f). On this basis Davis hypothesizes a curve-linear relationship between the extent of repression and the level of political violence in the form of an inverted U, so that very repressive and very non-repressive societies have low levels of political violence, while the latter peaks for semi-repressive societies (Davis 2004: 9ff).

We may somewhat simplified illustrate the four possible causal claims made as done in Figure 1-Figure 4.

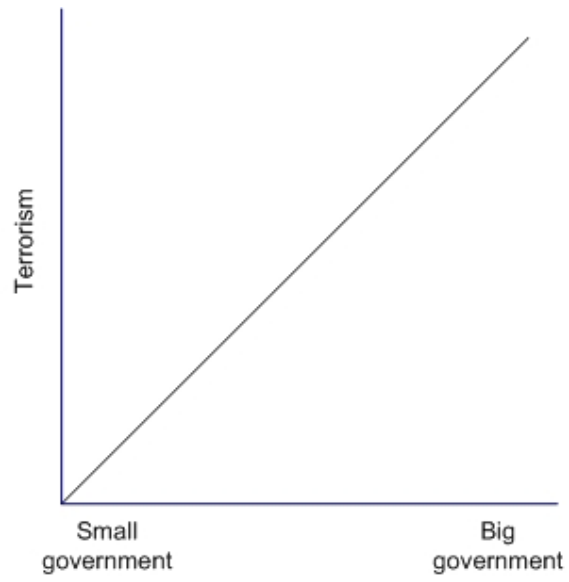


Figure 1. The Kirk model.

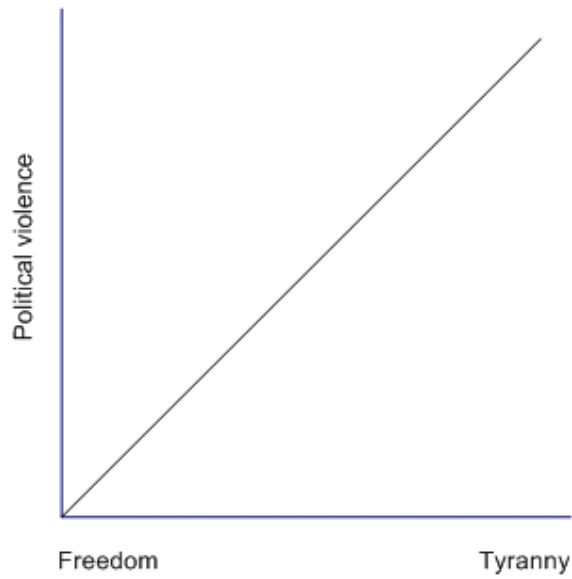


Figure 2. The Rummel model.

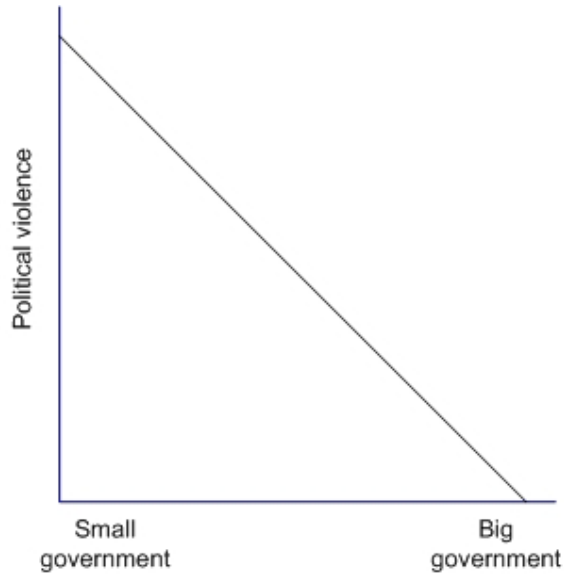


Figure 3. The Finney model.

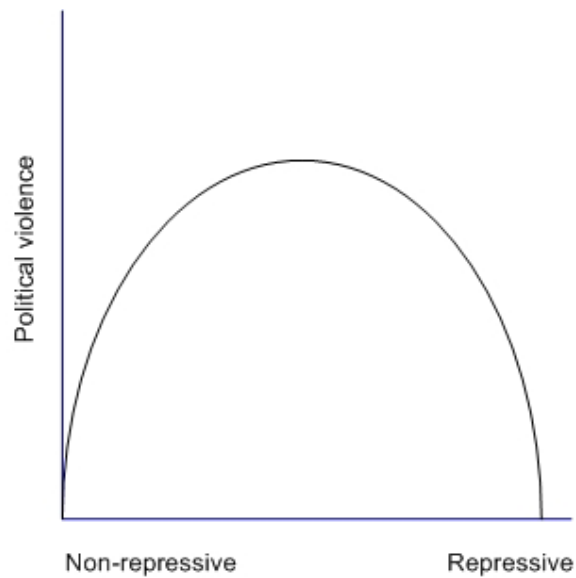


Figure 4. The Lichbach/Davis model.

2.2. Testable propositions

While the models of Rummel, Finney and Davis have been submitted to more or less extensive testing by the authors, this has been done on the basis of somewhat different and partly dated empirical data, and Kirk's model has never been explicitly tested. However, on the basis of the analysis summarized we may now suggest some hypotheses that conceivably might be tested.

The first proposition that we may try to test is the possible relationship between the extent of economic freedom and terrorism. Following the Kirk model, we may reason

that the more extensively the state intervenes in the economy, the higher are the potential rents to be reaped, and the higher the rent-value of possessing political power, the more attractive it will be for political groups to invest in seizing power. In other words, the more extensive the state's economic interference, the higher the level of domestic terrorism. But assuming that economic freedom and government intervention indeed are opposites, we may assume that the reverse relationship holds true too, i.e., that the more extensive economic freedom, the less terrorism. Accordingly, we might seek to test this hypothesis:

HYPOTHESIS 1. Higher degrees of economic freedom leads to less political violence/terrorism.

The second model we may try to test is the possible relationship between political freedom (including both political rights and civil liberties) and terrorism. Rummel's analysis, as well as the hypothesis of Li, suggests that if the costs of participating in traditional democratic politics are relatively low compared to rebellious/terrorist activities, there will be less terrorist activities, i.e., that the higher the level/amount of democracy, the lower the level/amount of terrorist activities and other forms of political violence. It is less clear whether the extent of democracy should have any effect for border-crossing terrorism; it might be argued along the lines of Finney, that a "weaker" authority might attract more terrorists.

Since these two propositions—that democracy will deter terrorism or that it will stimulate terrorism—are almost polar opposites, we may for practical purposes reasonably seek to test just one of them:

HYPOTHESIS 2. Higher degrees of political freedom lead to less terrorism.

Given these two hypotheses, we shall in the following statistical analysis develop equations to estimate the following type of function:

$$V = f(E, D) \tag{1}$$

where V is some measure of political violence/terrorism, E is a measure of economic freedom and D is one of political freedom (democracy). Specifically, we shall assume that as for the signs it will be the case, that

$$E, D > 0$$

3. Research design, data and methodology

In this section we outline the empirical research design used to test the hypotheses developed in the previous parts of the paper. We employ a cross-sectional design for between 80 and 188 countries during the period 1996-2002. We conduct statistical analyses for the period 1996-2002 as a whole and furthermore divide this period into two sub-periods (1996-99 and 2000-02) for which we perform the same tests.

3.1. *Data*

For the purpose of this paper we would—ideally—want a measure of domestic/national terrorism, i.e. terrorism performed by individuals or groups from country X directed at persons, groups, property or the government/state of country X , and which has consequences for domestic institutions, policies, property and citizens only (Rosendorff and Sandler 2005: 172).

However, to the best of our knowledge, a measure focusing narrowly on national/domestic terrorism has not yet been developed. Instead we rely on data from the ITERATE data set (Mickolous, Sandler and Murdock 2003). The ITERATE data set contains various measures of *transnational* terrorism, i.e. terrorism which involves and has consequences for two or more countries (Mickolous, Sandler and Murdock 2003; Rosendorff and Sandler 2005: 172, 174-75). However, in order to test the robustness of our results we also use data from the US State Department of State's Patterns of Global Terrorism report, which publishes yearly accounts of terror incidents in the world; we do so by estimating the exact same regressions just altering the dependent variable.⁵

Finally, since these data in reality do not measure how much domestically generated terrorism that takes place in a given country, we also use a variable measuring *domestic political violence* from a data set collected by Rummel (Rummel 2001). This is not a strict measure of terrorism as defined above (section 1) as it also includes incidents which would not normally be considered terrorist acts, namely when governments use political violence against its own citizens. Instead this variable is a proxy for what one might define as a particular kind of politically motivated terrorism, namely state terror conducted by the government/state against domestic civilians, individuals or groups for various reasons *and* the use of violence by the latter against the former. The data stems from Amnesty International and Human Rights Watch reports and similar sources and excludes foreign violence (see appendix 1 for further references).⁶

3.1.1. *Measuring terror and political violence: The dependent variables*

A host of measures have been proposed to assess and quantify the degree to which countries are plagued by terrorism (Frey and Luechinger 2003; Crain and Crain 2005). In this paper we measure terror simply by establishing whether or not a terror incident occurred in a given country during the period we are investigating. As a consequence we do not use standard measures of terrorism, e.g., the number of terrorist incidents,

⁵ The US State Department reports focus rather narrowly on international terror and does as such contain information on only a rather limited subset of overall terrorism in the world (Frey and Luechinger 2003: 6). The results using the State Department data are not reported here, but are available from the authors upon request.

⁶ A third measure of terrorism is the so-called Global Terrorism Index constructed by World Market Research Center (<http://www.worldmarketsanalysis.com/>), an international risk rating company. This variable is attractive in that it includes not only cross-national terrorism but also domestic terrorism, and its dataset includes data for 186 countries and territories. On the other hand, this measure is less useful, since it is not generally available and only exists for a single year of observations and seems not to be continued. For that reason we found the dataset (which has been used by Abadie 2004) to be of little value for more in-depth studies.

the number of deaths, or the total number of casualties caused by terror. The merit of such measures is that they aim to capture not only the presence of terrorism but also the intensity and severity of terrorist incidents. However, the number of terrorist incidents and the exact number of deaths and casualties caused by terror are often difficult to establish exactly—especially in less-developed countries. Since only some subset of all terrorist incidents are reported by the media and figure in official statistics, this makes both measures of terrorist incidents and measures of casualties vulnerable to bias in the reporting on terrorism (Frey and Luechinger 2003: 7). Secondly, it may be difficult to establish—and often depends on subjective opinions—whether a country experiencing few terror incidents causing many casualties is more plagued by terror than a country experiencing several terror incidents causing fewer casualties. For instance, even though the US by a measure of the number of terrorist incidents was not the most heavily affected country in 2001, by a measure of the number of deaths by terror—and the economic consequence thereof—it clearly was (cf. Shughart 2002; Rathbone and Rowley 2002: 8). Finally, it is also obvious that the number of casualties in terrorist accidents often is very random and unrelated to institutional or economic factors; a case in point is the attack on the World Trade Center, where the number of casualties might have been dramatically increased (or lowered) had any of the two planes hit a little lower (or higher).

On methodological grounds, moreover, using the number of persons killed or injured by terror incidents may cause some potentially severe problems. In linear regression models (e.g. OLS), for instance, one major problem with this approach is that outlying cases are likely to affect the parameter estimates disproportionately thereby creating a bias in the results. An obvious example of this is the 9/11 attacks in the US where more than 3,200 individuals were killed, according to US Department of State statistics (2001). Compare this to a 2001 average of 17.6 deaths by (international) terror per country in the world, or an average of 125 deaths by terror⁷ if we consider only countries that were exposed to (international) terrorism in 2001. Clearly, performing OLS regression in such a situation means that the 9/11 terror incident on American soil will exercise a disproportionate influence on the overall regression line and the β -estimates.

In order to create a measure of terrorism that does not suffer from the above weaknesses, we propose a solution according to which we divide the world into two types of countries: those that are plagued by terror and those that are not. This makes our dependent variable dichotomous, assuming the value 1 if a country has experienced a terrorist incident in the period and 0 if has not.⁸ Admittedly, this is a crude measure of terrorism and is by no means flawless (e.g. it does not discriminate between the intensity and severity of terrorist attacks), but at the very least it does avoid some of the methodological problems outlined above. Secondly, since we aim to analyze whether countries suffering from terror possess certain economic, political and

⁷ This number reduces to 14.2 if we exclude the US.

⁸ In the case of the ITERATE data we have used the “location end” variable as our dependent variable. In the case of the US State Department data we have given countries the code 1 if the *Patterns of Global Terrorism* publications reported a terrorist attack in a given country in a given period; and 0 otherwise. We have coded these reports from 1996 to 2003.

institutional characteristics, a variable separating terror-plagued countries from non-plagued countries will suffice.

3.1.2. *Methods*

As we have chosen a dichotomous dependent variable for the study of terrorism, we rely on a binary logistic regression model in order to assess the impact of political and economic factors on the probability that a terror incident occurs. Our model takes then takes the following form:

$$\text{logit}(Y_{i,j}) = \alpha + \beta_1 E + \beta_2 D + \beta_3 Z + \varepsilon \quad (2)$$

where Y is our measure of terrorism in country i at time j , E is a vector of economic and institutional variables, D is a measure of democracy, Z is a group of additional control variables, and ε denotes the error term.

However, for the study of the extent of political violence, where the dependent variable is a scale, we will utilize OLS regression analysis. We shall do so by estimating a model of the following form, fundamentally similar to equation (2):

$$Y_{i,j} = \alpha + \beta_1 E + \beta_2 D + \beta_3 Z + \varepsilon \quad (3)$$

where Y is our measure of domestic political violence in country i at time j , E is a vector of economic and institutional variables, D is a measure of democracy, Z is a group of additional control variables, and ε denotes the error term.

3.1.3. *Independent variables*

We use two groups of key explanatory variables. First, we use data from the *Economic Freedom of the World Index* developed by Fraser Institute and the Economic Freedom Network to measure the kind (and quality) of economic institutions in our sample countries.⁹ However, consistent with the argument put forward in the theoretical section, we recognize that the impact of state regulations and domestic (economic) institutions on terrorism may be divergent. Rather than employing the aggregate index of economic freedom we therefore use its separate components. The components of the index of economic freedom measure (the absence of) government intervention and the strength of domestic economic institutions in five areas of economic life: 1) the size of the government spending, taxes and state enterprises, 2) the protection of private property rights and legal structure, i.e. the independence of courts and the ability of courts to enforce property rights, 3) monetary and inflationary policies (“sound money”), 4) restrictions on free international trade, 4) state regulation of labor and credit markets and private business. In our analyses, we have isolated each of these components in order to assess what effect—if any—they have on the probability that a terror incident occurs.

Secondly, as a measure of democracy we use two indices: 1) the Freedom House index of democracy (Freedom House 2004), and 2) the Polity II variable from the Polity IV data set (Marshall and Jaggers 2002). The Freedom House index consists of

⁹ The most recent edition is Gwartney and Lawson 2004.

two broad measures of democracy: One measuring political rights, i.e. procedural aspects of democracy such as universal suffrage, electoral competition, etc., and another measuring civil liberties, i.e. more substantial aspects of democracy such as freedom of speech and organization.¹⁰ Partly because the effects of the various aspects of democracy may have contradictory effects on the likelihood of terror (cf. Davis 2004; Li 2005), and partly to check the robustness of our results, we use both the combined index of democracy (i.e. political rights plus civil liberties) as well as the separate measures of political rights and civil liberties. In addition and as a further robustness test we use the Polity II variable from the Polity IV data set as a measure of democracy.¹¹

Finally, we include twelve control variables in the analyses. These include the squared term of the democracy indices (in order to allow probabilities to increase/decrease and then decrease/increase), GDP per capita, economic inequality, economic openness/trade, and a series of fractionalization indices. Descriptions of the full set of control variables appear in Appendix 1.

4. Empirical results

Our empirical analyses proceed as follows. We first estimate a series of base line models including only the democracy variables (but not the square term), one by one, and the economic freedom variables. Subsequently we estimate an expanded series of regressions including the control variables. For reasons clarified below, we then exclude the economic freedom variables and concentrate on the democracy variables. Once again we estimate a base model using the different measures of democracy and subsequently include the control variables. These steps are followed for all three periods, i.e. 1996-99 and 2000-02 plus the full period (1996-2002). Finally, we estimate a base model and an expanded set of regressions using the political violence measure as the dependent variable.

4.1. *Freedom and transnational terrorism*

Table 1 shows the results from the base line models using democracy and the economic freedoms as independent variables.

¹⁰ The civil liberties component does, however, also contain more dubious aspects of democracy such as “freedom from gross economic inequality” (Munck and Verkuilen 2002: 9f). In fact, the entire Freedom House index’s primary value might seem to be that it is the measure of democracy most widely used by researchers (cf. Munck and Verkuilen 2002: 20f, 27f).

¹¹ The Polity II variable is the combined score of the “Democracy” and “Autocracy” variables from the Policy IV data set (Marshall and Jagers 2002). It contains information on aspects such as the competitiveness and openness of executive recruitment and political participation.

Table 1. Effects of democracy and economics freedoms on probability of transnational terrorism.

	1996-99	1996-99	2000-02	2000-02	1996-2002	1996-2002
Size of government	0.241 (1.294)	0.158 (0.828)	0.104 (0.654)	0.150 (0.946)	0.350 (1.722)+	0.257 (1.231)
Property rights and legal system	0.034 (0.147)	-0.170 (0.729)	0.332 (1.812)+	0.318 (1.736)+	0.335 (1.261)	0.103 (0.400)
Sound money	0.125 (1.208)	0.147 (1.409)	-0.084 (0.653)	-0.121 (0.949)	0.125 (0.919)	0.149 (1.107)
Freedom of trade	0.049 (0.224)	-0.079 (0.340)	0.127 (0.563)	-0.118 (0.494)	0.067 (0.249)	-0.162 (0.547)
Regulation	-0.072 (0.225)	0.106 (0.313)	0.131 (0.421)	0.043 (0.141)	-0.076 (0.201)	0.060 (0.153)
Democracy, Freedom House (pol.rights+civ.lib.)	-0.020 (1.972)*		-0.032 (3.215)**		-0.035 (2.639)**	
Democracy, Polity Index		-0.009 (1.095)		-0.014 (1.691)+		-0.015 (1.366)
Constant	-0.449 (0.308)	0.390 (0.271)	-1.741 (1.189)	-0.413 (0.301)	-1.630 (0.916)	-0.263 (0.155)
Observations	114	107	121	113	114	106
Log likelihood	-70.157	-66.205	-76.110	-74.904	-63.475	-
						60.620
Pseudo R ²	0.08	0.06	0.08	0.04	0.11	0.07

Absolute value of z statistics in parentheses. + significant at 10%; * significant at 5%; ** significant at 1%. Method: Binary logistic regression. Dependent variable: Dichotomous terror measure. Economic Freedom variables are measured in 1995 for regressions in 1996-99. Economic Freedom variables are measured in 2000 for the regressions in 2000-02. For the period 1996-2002, the average of economic freedoms in 1995 and 2000 is used. Democracy (both Freedom House and Polity) is measured in 1995 for regressions in 1996-99; and in 2000 for regressions in 2000-02. For the period 1996-2002, the average of democracy in 1995 and 2000 is used.

A number of observations are clear immediately from even a cursory glance at Table 1. First of all, the model over-all seems to have only limited explanatory value—i.e., it would not seem to be the case that the degrees of freedom in political or market relations have a considerable influence on the probability of terrorist attacks. Second, it is clear from the table that the economic freedom variables do not display any consistent patterns in relation to terrorism. Generally, the variables do not have any significant or robust effect on the probability that a country will experience terror. If anything, economic freedom would seem overall to be positively related to terrorism, i.e. to attract terrorists. This is a point to which we shall return later. In relation to democracy a different picture emerges. The Freedom House index, interestingly, is negative and significantly related to terrorism, whereas the Polity variable is also negative albeit significant in only two of the three periods.

In Table 2 we add the full set of control variables to the base models of Table 1.

Table 2. Expanded models: Effects of democracy and economic freedoms on probability of transnational terrorism

	1996-99	1996-99	2000-02	2000-02	1996-2002	1996-2002
Size of government	0.289 (0.911)	0.378 (1.147)	-0.439 (1.210)	-0.174 (0.621)	0.108 (0.259)	0.154 (0.414)
Property rights and legal system	-0.236 (0.549)	-0.402 (0.943)	0.187 (0.475)	0.141 (0.376)	0.505 (0.675)	-0.157 (0.276)
Sound money	0.322 (1.364)	0.344 (1.507)	-0.302 (1.249)	-0.409 (1.931)+	0.345 (0.986)	0.249 (0.874)
Freedom of trade	-0.221 (0.456)	-0.483 (0.953)	0.476 (0.850)	0.308 (0.575)	-0.155 (0.184)	-0.269 (0.362)
Regulation	0.626 (1.144)	0.586 (1.077)	1.472 (2.454)*	0.933 (1.782)+	1.463 (1.789)+	0.919 (1.334)
Democracy, Freedom House (pol.rights+civ.rights)	-0.024 (0.400)		0.141 (1.806)+		0.212 (1.892)+	
Sq. democracy, Freedom House	-0.000 (0.519)		-0.002 (2.610)**		-0.003 (2.599)**	
Democracy, Polity Index		-0.079 (0.969)		0.130 (1.299)		0.129 (1.097)
Sq. democracy, Polity Index		0.000 (0.559)		-0.002 (1.749)+		-0.002 (1.606)
Log GDP per cap.	-3.247 (1.447)	-4.363 (1.805)+	4.908 (2.146)*	4.517 (2.207)*	-0.153 (0.050)	-0.954 (0.387)
Economic growth	-0.038 (0.271)	-0.106 (0.764)	0.178 (1.209)	0.180 (1.378)	0.165 (0.705)	-0.094 (0.450)
Human poverty	-0.046 (0.648)	-0.066 (0.964)	-0.063 (0.757)	-0.004 (0.063)	-0.126 (1.222)	-0.054 (0.677)
Trade	-0.023 (2.146)*	-0.017 (1.513)	-0.041 (0.883)	-0.013 (0.318)	0.087 (1.374)	0.090 (1.532)
Equality	0.031 (0.676)	0.039 (0.831)	0.025 (0.831)	-0.007 (0.281)	-0.017 (0.540)	-0.037 (1.336)
Infant mortality	-0.014 (0.556)	-0.022 (0.843)	-1.829 (0.281)	-1.761 (0.301)	1.829 (0.227)	2.185 (0.320)
Education	9.253 (1.619)	7.899 (1.420)	-0.064 (1.404)	-0.072 (2.092)*	0.026 (0.481)	0.009 (0.186)
Latitude	0.043 (1.015)	0.047 (1.080)	-3.651 (1.571)	-2.939 (1.430)	-5.352 (1.667)+	-4.714 (1.683)+
Ethnic fractionalization	-1.150 (0.454)	-1.549 (0.619)	4.754 (2.308)*	4.473 (2.424)*	8.064 (2.354)*	6.566 (2.416)*
Linguistic fractionalization	5.152 (2.073)*	5.737 (2.314)*	-2.387 (1.340)	-2.110 (1.318)	-3.654 (1.854)+	-3.570 (2.055)*
Religious fractionalization	-3.468 (2.098)*	-3.551 (2.200)*	-0.034 (2.723)**	-0.029 (2.352)*	-0.033 (2.195)*	-0.022 (1.600)
Constant	5.807 (0.682)	13.834 (1.464)	-17.477 (1.907)+	-14.675 (1.695)+	-8.490 (0.823)	0.213 (0.023)
Observations	94	92	83	80	93	90
Log likelihood	-40.688	-40.962	-35.685	-40.322	-29.716	-35.048
Pseudo R ²	0.339	0.318	0.378	0.272	0.461	0.341

Absolute value of z statistics in parentheses. + significant at 10%; * significant at 5%; ** significant at 1%. Method: Binary logistic regression. Dependent variable: As in Table 1. Economic freedom and democracy variables enter models as explained in note to Table 1. As for the control variables, they are measured in the following years. For regressions 1996-99: GDP per cap.: 1995; Growth: average 1996-99; HPI: 1998; Trade: 1996; Gini; various years (see UNP 2004); Infant mortality: 1995; Education index: 1994; fractionalization indices: various years (see Alesina et al. 2003). For regressions 2000-02: GDP per cap.: 2000; Growth: average 2000-02; HPI: 1998; Trade; 2000; Gini; various years (see UNP 2004); Infant mortality: 2000; Education index: 1997; fractionalization indices: various years (see Alesina et al. 2003). For regressions 1996-02: GDP per cap.: average 1995-2000; Growth: average 1996-02; HPI:1998; Trade; average 1995-2000; Gini; various years (see UNP 2004); Infant mortality: average 1995-2000; Education index: average 1994-97; fractionalization indices: various years (see Alesina et al. 2003).

Table 2 displays a number of interesting results vis-à-vis Table 1. Most fundamentally, the overall explanation of the model increases significantly—although that is a well-known phenomenon in the case of regression models with many variables. Second, it is obvious that even when controlling for other relevant factors, the economic freedom variables still do not seem to have any significant or robust effect of the probability of experiencing terrorist attacks.

However, and thirdly: In relation to democracy an interesting pattern emerges. Except for the regressions for the late 1990s, both the democracy variables and their squared terms are significantly related to terrorism. The fact that the democracy variables are positive while their square terms are negative suggests that the probability of experiencing terrorist incidents is increasing with increasing degrees of democracy until a certain point after which the probability of terrorism decreases, i.e., there seems to be a non-linear relationship, one looking more like an inverse-shaped U. This is interesting for several reasons. First, it suggests that countries at intermediary levels of democracy are more liable to experience terrorism than purely authoritarian or purely democratic countries. Secondly, it might, but need not, suggest that countries in transition from autocracy to democracy (or the reverse) are more likely to be more liable to experience terrorism than purely authoritarian or purely democratic countries. The latter two regime forms seem to be the ones that are least likely to experience terrorism, *ceteris paribus*. This also tells us that there is nothing unusual about countries (such as Iraq) in transition from one regime type to another experiencing higher level of terrorism.

As for the other variables, higher ethnic fractionalization, for the most part, increases the probability of terrorism, while religious fractionalization is negatively related to the probability of experiencing terrorism. It is also interesting that the two indicators of living standards—GDP per capita and the Human Poverty Index (HPI)—do not have any significant or robust effect on the probability of experiencing terrorism. In fact, the HPI is never significant, whereas GDP is significant but—contrary to popular belief—positive only in the regressions for 2000-02. Thus, there is no or very little evidence of the thesis that poverty is what is causing some countries to experience more terrorism than others.

Overall, the results from Table 2 lead us to two preliminary conclusions. Firstly, the level of economic freedom does not seem to have any significant or consistent effect on the likelihood of experiencing terrorism. Secondly, that democracy and terrorism are related but non-linearly so: Going from low levels of democracy to an intermediary position increases the likelihood of terrorism, until some “point of no return” is reached after which the probability of terrorism decreases significantly.

4.2. *Freedom and transnational terrorism reconsidered*

On the basis of the preliminary results reported in Tables 1 and 2, we next exclude the economic freedom variables from the regressions since they have failed to show any significant or consistent association with terrorism. Instead we further investigate the association between democracy and terrorism and focus on testing the robustness of the apparent inverse U-like relationship between democracy and terrorism. In order to do so, Table 3 shows logistic regressions models in which we use four measures of

democracy as explanatory variables: The aggregate Freedom House index, the Political Rights component, the Civil Liberties component, and finally the Polity II variable from the Polity IV data set. The regressions in Table 3 show all the Freedom House measures of democracy to be significantly negative related to the likelihood of experiencing terror. However, the Polity variable does not display any significant relation to terrorism.

In Table 4 we expand the analysis again by reentering all the control variables from Table 2 once again. The overall power of the models is non-trivial, with pseudo R^2 being between 0.18 and 0.28. The results also show that there indeed is a strong curve-linear relationship between the extent of democracy and the probability of terrorism. As regards the Freedom House data, the signs of the coefficients are the same for both the two periods (1996-99, 2000-02) and for the period as a whole (i.e. positive for the measure and negative for its squared coefficient), albeit the relationship is not statistically significant for the first of the two periods. Exactly the same pattern is seen with regard to the Polity IV democracy measure. However, having also included squared coefficients for the two components of the Freedom House index, we may observe a pattern here too: Civil liberties and terrorism tends to exhibit an association that some times is negative, some times curve-like, but in either case insignificantly so. Political rights, on the other hand, in each of the three periods display a curve-like relationship, and with both coefficients being statistically significant for the period as a whole. Accordingly, there are quite strong grounds for believing that there is an inverse U-shaped, curve-like relationship between the extent of democracy (and perhaps specifically: political rights) and the probability of transnational terrorism.

The analysis also highlights some other interesting relationships. First and foremost, there is, no matter the specific operationalization of the models, a somewhat counterintuitive negative relationship between the degree of religious fractionalization and terrorism, and one which seems statistically significant. In other words, the more religiously diverse a society is, the less terror (although the coefficients indicate that the role played is rather modest). Two other measures of fractionalization—in terms of ethnicity and language—also display some statistically significant associations with terror, but the significance is far from robust and more alarmingly the signs change! Also, another problem may be that ethnic fractionalization and linguistic fractionalization—not surprisingly—are highly correlated ($r = 0.70$; $p < 0.000$) which may partly explain why ethnic fractionalization is negative and insignificant only in the models where linguistic fractionalization is positive and significant, and vice versa (cf. Alesina et al. 2003: 161ff).

These results must therefore lead to great caution with regard to interpretations; however, it bears noting that in all the instances where ethnic fractionalization displays a statistically significant relationship with terror, the sign is positive and with relatively large coefficients, which no doubt would correspond to the expectations of most observers. In other words: religious diversity (perhaps a sign of freedom) tends to associate with little terror, while ethnic diversity (something which might tend to reflect that individuals belong to groups they cannot “exit”) tends to associate with more terror.

Table 3. Democracy and the probability of transnational terrorism.

	1996-99	1996-99	1996-99	1996-99	2000-02	2000-02	2000-02	2000-02	1996-2002	1996-2002	1996-2002	1996-2002
Democracy, Freedom House 1995	-0.012 (2.754)**											
Political rights, Freedom House 1995		-0.010 (2.531)*										
Civil liberties, Freedom House 1995			-0.014 (2.903)**									
Polity Index 1995				-0.001 (0.142)								
Democracy, Freedom House 2000					-0.013 (2.872)**							
Political Rights, Freedom House 2000						-0.010 (2.407)*						
Civil Liberties, Freedom House 2000							-0.017 (3.302)**					
Democracy, Polity Index 2000								-0.001 (0.136)				
Democracy, Freedom House 1995-2000									-0.013 (2.794)**			
Political rights, Freedom House 1995-00										-0.010 (2.455)*		
Civil liberties, Freedom House 1995-00											-0.016 (3.093)**	
Democracy, Polity Index 1995-00												0 (0.000)
Constant	0.681 (2.353)*	0.585 (2.124)*	0.745 (2.504)*	0.311 (0.925)	0.239 (0.797)	0.045 (0.164)	0.442 (1.368)	-0.241 (0.680)	0.986 (3.161)**	0.839 (2.880)**	1.121 (3.416)**	0 (1.000)
Observations	188	188	188	157	188	188	188	156	188	188	188	188
Log likelihood	-126.382	-127.017	-125.907	-107.405	-119.854	-121.165	-118.348	-106.565	-124.952	-125.913	-123.968	-102.000
Pseudo R ²	0.030	0.025	0.034	0.000	0.034	0.024	0.046	0.000	0.032	0.024	0.039	0.000

Absolute value of z statistics in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%. Method: Binary logistic regression. For explanations on variables and measurement: See notes to table 1 and 2.

Table 4. Democracy and the probability of transnational terrorism, controlling for other variables.

	1996-99	1996-99	1996-99	1996-99	2000-02	2000-02	2000-02	2000-02	1996-2002	1996-2002	1996-2002	1996-2002
Democracy, Freedom House	0.014 (0.431)				0.066 (1.329)				0.079 (1.654)+			
Sq. democracy, Freedom House	-0.000 (1.092)				-0.001 (2.141)*				-0.001 (2.305)*			
Political rights, Freedom House		0.050 (1.581)				0.056 (1.526)				0.100 (2.420)*		
Sq. Political rights, Freedom House		-0.001 (2.141)*				-0.001 (2.345)*				-0.001 (2.992)**		
Civil liberties, Freedom House			-0.023 (0.656)				0.036 (0.613)				0.015 (0.289)	
Sq. Civil liberties, Freedom House			-0.000 (0.006)				-0.001 (1.498)				-0.000 (0.992)	
Democracy, Polity				0.009 (0.177)				0.163 (2.527)*				0.110 (1.940)
Sq. democracy, Polity				-0.000 (0.481)				-0.002 (2.787)**				-0.001 (2.221)
Log GDP per cap.	1.240 (1.011)	1.716 (1.402)	0.766 (0.629)	0.418 (0.364)	3.035 (2.341)*	2.943 (2.273)*	2.722 (2.181)*	2.958 (2.221)*	3.192 (2.325)*	3.396 (2.471)*	2.383 (1.833)+	2.268 (1.806)
Economic growth	-0.003 (0.028)	-0.001 (0.016)	-0.013 (0.149)	-0.039 (0.427)	-0.108 (1.065)	-0.103 (1.025)	-0.109 (1.092)	-0.083 (0.856)	0.002 (0.019)	-0.002 (0.013)	-0.014 (0.115)	-0.069 (0.549)
Human poverty	-0.089 (1.972)*	-0.093 (1.989)*	-0.089 (1.963)*	-0.094 (2.017)*	0.014 (0.313)	0.022 (0.495)	0.010 (0.219)	0.028 (0.650)	-0.110 (2.099)*	-0.113 (2.049)*	-0.109 (2.126)*	-0.087 (1.701)
Trade	-0.025 (3.773)**	-0.027 (3.924)**	-0.024 (3.642)**	-0.023 (3.408)**	-0.054 (1.555)	-0.051 (1.496)	-0.049 (1.425)	-0.031 (0.985)	0.012 (0.341)	0.008 (0.241)	0.023 (0.667)	0.028 (0.825)
Equality	0.004 (0.131)	-0.002 (0.063)	0.010 (0.352)	0.006 (0.220)	0.013 (0.715)	0.009 (0.506)	0.012 (0.654)	0.005 (0.277)	0.018 (0.979)	0.021 (1.104)	0.012 (0.668)	0.012 (0.673)
Infant mortality	0.024 (1.354)	0.031 (1.667)+	0.021 (1.172)	0.021 (1.189)	4.668 (1.439)	4.639 (1.456)	4.331 (1.348)	3.863 (1.243)	-0.898 (0.234)	-0.132 (0.033)	-1.471 (0.399)	-0.304 (0.083)
Education	3.038 (0.914)	3.614 (1.063)	2.917 (0.880)	2.730 (0.838)	-0.040 (1.493)	-0.044 (1.641)	-0.036 (1.353)	-0.038 (1.524)	-0.036 (1.266)	-0.044 (1.467)	-0.028 (1.052)	-0.033 (1.265)
Latitude	-0.024 (1.015)	-0.032 (1.320)	-0.020 (0.819)	-0.024 (1.022)	-1.661 (0.974)	-1.603 (0.936)	-1.607 (0.959)	-2.158 (1.231)	-2.907 (1.552)	-3.157 (1.631)	-2.401 (1.348)	-3.177 (1.759)
Ethnic fractionalization	-0.826 (0.501)	-1.063 (0.616)	-0.575 (0.357)	-1.098 (0.674)	2.922 (1.930)+	3.082 (2.031)*	2.846 (1.913)+	3.077 (2.020)*	4.402 (2.358)*	4.763 (2.442)*	4.031 (2.327)*	4.126 (2.351)
Linguistic fractionalization	3.028 (1.936)+	3.248 (1.962)*	2.921 (1.951)+	3.323 (2.119)*	-1.700 (1.432)	-1.671 (1.420)	-1.753 (1.468)	-2.014 (1.674)+	-1.811 (1.432)	-2.141 (1.638)	-1.652 (1.344)	-2.158 (1.726)
Religious fractionalization	-2.571 (2.141)*	-2.711 (2.202)*	-2.597 (2.179)*	-2.772 (2.347)*	-0.014 (2.242)*	-0.014 (2.282)*	-0.013 (2.127)*	-0.012 (1.795)+	-0.026 (3.448)**	-0.028 (3.549)**	-0.025 (3.376)**	-0.021 (2.874)
Constant	-1.695 (0.294)	-3.849 (0.665)	0.387 (0.067)	1.541 (0.255)	-10.171 (1.690)+	-9.803 (1.667)+	-8.345 (1.411)	-12.881 (2.018)*	-5.378 (0.840)	-6.258 (0.968)	-1.611 (0.256)	-4.643 (0.705)
Observations	114	114	114	112	102	102	102	98	113	113	113	110
Log likelihood	-60.533	-58.943	-61.035	-60.770	-54.660	-55.284	-55.019	-55.299	-53.911	-51.740	-56.078	-54.533
Pseudo R ²	0.213	0.233	0.206	0.195	0.219	0.210	0.214	0.18	0.253	0.283	0.223	0.224

Absolute value of z statistics in parentheses. + significant at 10%; * significant at 5%; ** significant at 1%. Method: Binary logistic regression. For explanations on variables and measurement: See notes to Tables 1 and 2.

Other variables come out with no or somewhat indeterminate effects. In a number of models higher levels of prosperity (log of GDP per cap.) and lower levels of poverty seem to associate with a higher probability of terrorism, while in contrast more trade seems to associate with less terror—together producing results that are a little difficult to explain. Geographical location in the world, equality, economic growth, education and infant mortality show no indications of associating with terror. Together these observations indicate that explanations of terror with reference to relative deprivation have little to support them.

Since the civil liberties index does not appear to have a significantly increasing/decreasing effect on the probability of terrorism, we have in Table 5 tested a model in which we exclude the squared terms of civil liberties but keep the remaining control variables in the model.

Table 5. Civil liberties and probability of transnational terrorism, 1996-2002.

	1996-99	1996-99	2000-02	2000-02	1996-2002	1996-2002
Civil liberties	-0.024 (1.807)+		-0.048 (3.403)**		-0.035 (2.266)*	
Log GDP per cap.	0.763 (0.678)	0.152 (0.151)	2.931 (2.354)*	1.371 (1.237)	1.830 (1.590)	1.022 (0.979)
Economic growth	-0.013 (0.153)	-0.038 (0.423)	-0.038 (0.401)	-0.054 (0.601)	-0.036 (0.305)	-0.056 (0.451)
Human poverty	-0.089 (1.965)*	-0.095 (2.045)*	-0.002 (0.057)	0.029 (0.725)	-0.113 (2.188)*	-0.099 (2.016)*
Trade	-0.024 (3.643)**	-0.023 (3.360)**	-0.030 (0.946)	-0.027 (0.881)	0.031 (0.928)	0.027 (0.829)
Equality	0.010 (0.361)	0.007 (0.235)	0.005 (0.320)	-0.002 (0.135)	0.007 (0.426)	0.004 (0.243)
Infant mortality	0.021 (1.192)	0.019 (1.101)	1.846 (0.617)	3.353 (1.158)	-2.111 (0.580)	-1.651 (0.473)
Education	2.915 (0.883)	2.532 (0.784)	-0.036 (1.414)	-0.043 (1.770)+	-0.022 (0.872)	-0.029 (1.178)
Latitude	-0.020 (0.826)	-0.023 (0.990)	-1.028 (0.656)	-1.503 (0.926)	-2.077 (1.218)	-2.655 (1.539)
Ethnic fractionalization	-0.574 (0.358)	-1.072 (0.665)	2.765 (1.951)+	2.833 (2.024)*	3.848 (2.324)*	4.375 (2.570)*
Linguistic fractionalization	2.921 (1.956)+	3.390 (2.182)*	-1.279 (1.119)	-1.744 (1.567)	-1.543 (1.283)	-1.847 (1.537)
Religious fractionalization	-2.597 (2.179)*	-2.744 (2.330)*	-0.013 (2.234)*	-0.007 (1.227)	-0.024 (3.357)**	-0.020 (2.847)**
Constant	0.402 (0.076)	3.114 (0.612)	-6.235 (1.171)	-3.928 (0.757)	1.667 (0.309)	3.281 (0.609)
Observations	114	112	103	98	113	110
Log likelihood	-61.035	-60.886	-57.298	-59.931	-56.565	-57.220
Pseudo R ²	0.206	0.193	0.188	0.111	0.216	0.185

Absolute value of z statistics in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%. Method: Binary logistic regression. For explanations on variables and measurement: See notes to table 1 and 2.

The results in Table 5 show that better protection of civil liberties tends to significantly decrease the likelihood of terrorism. Societies that protect freedom of speech, freedom of organization etc.—i.e. societies that we tend to see as open and

democratic—do not, as some critics would argue and as much anti-terror legislation implicitly assumes, have a higher probability of experiencing terrorism. On the contrary, countries that restrict and suppress civil liberties appear to be more exposed to risks of terrorist attacks. Furthermore, we may again observe the negative relationship between religious fractionalization and terror.

We may illustrate some of the established results with regard to the association between political freedom and terror by graphically considering the relationships between the political-institutional variables and the predicted probabilities of the occurrence of terror as done in figures 5-10, for the periods 1996-99 and 2000-02 with regard to Freedom House's overall measure of democracy and the sub-components of political rights and civil liberties. The figures show the same pattern for both periods. For civil liberties there is a more or less linear negative relationship between the extent of civil liberties and the probability of terrorism (figures 7 and 10), so that higher levels of civil liberties generally associate with lower probabilities of terrorism. In contrast the relationship between the extent of political rights and the probability of terrorism is something approaching a curved line in the shape of an inverted U (figures 6 and 9); a modest increase in political rights tends to associate with higher probabilities of terrorist attacks, while further increases beyond a certain point tends to lower it again. When the two measures are combined as democracy, there are still indications of an inverse U-like relationship (figures 5 and 8).

This ends the examination of the freedom/democracy—terrorism relationship. We next turn to a peculiar kind of terrorism: political violence conducted by regimes and their domestic opponents.

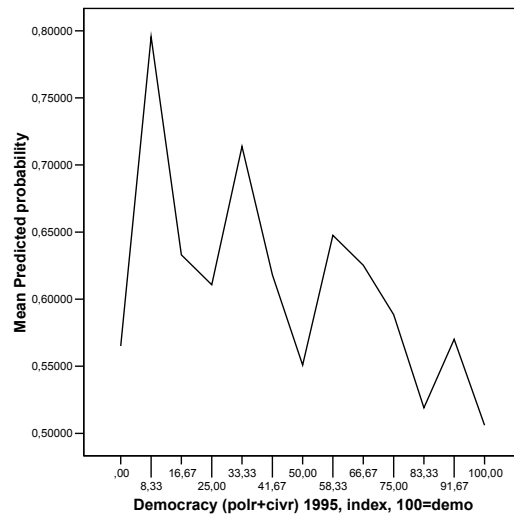


Figure 5. Democracy (political rights and civil liberties) and mean predicted probabilities of the occurrence of terrorist accidents, 1996-99.

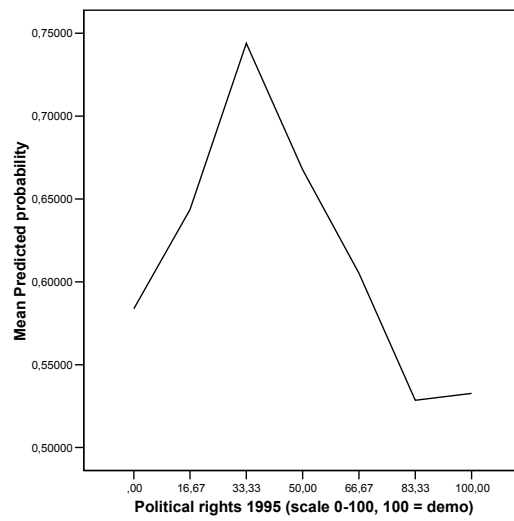


Figure 6. Political rights and mean predicted probabilities of the occurrence of terrorist accidents, 1996-99.

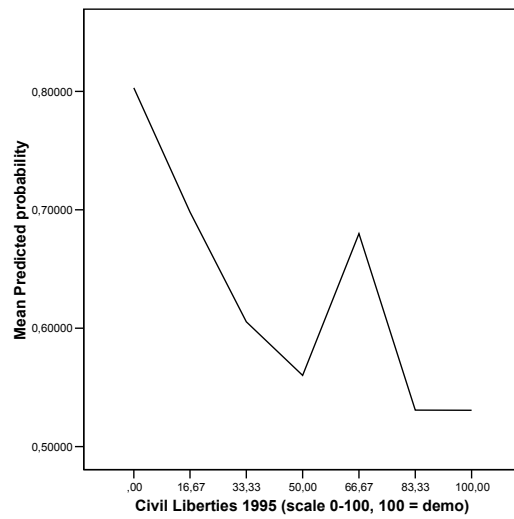


Figure 7. Civil liberties and mean predicted probabilities of the occurrence of terrorist accidents, 1996-99.

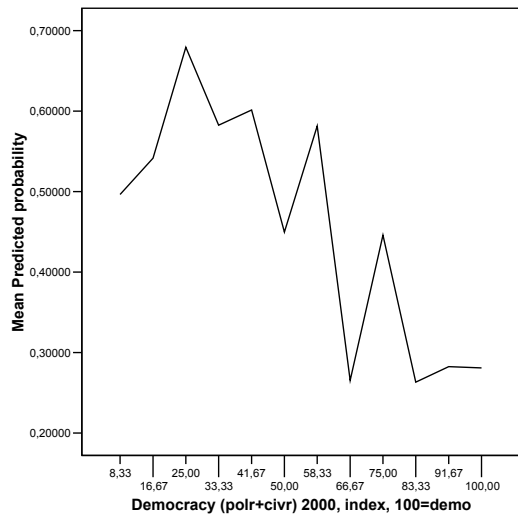


Figure 8. Democracy (political rights and civil liberties) and mean predicted probabilities of the occurrence of terrorist accidents, 2000-02.

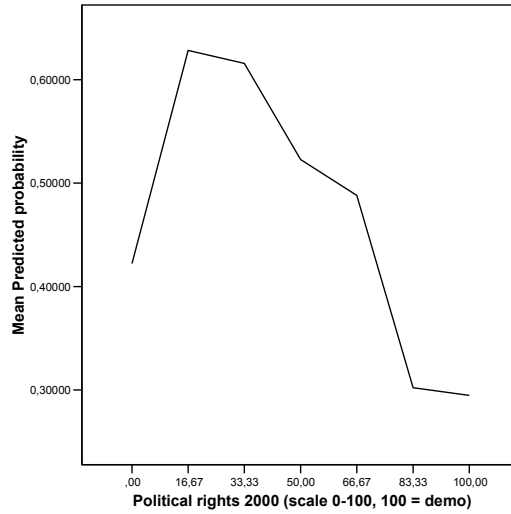


Figure 9. Political rights and mean predicted probabilities of the occurrence of terrorist accidents, 2000-02.

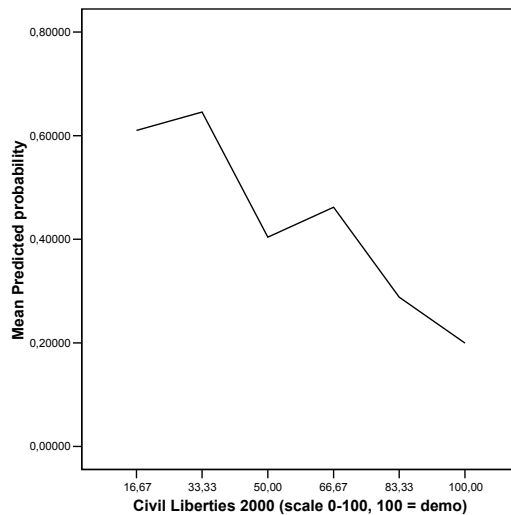


Figure 10. Civil liberties and mean predicted probabilities of the occurrence of terrorist accidents, 2000-02.

4.3. Empirical findings: Domestic political violence

The previous analysis has—for lack of better data—used instances of transnational terrorism as the dependent variable. However, an alternative—if imperfect—operationalization could be to look at the total levels of political violence within a state. The following analysis utilizes Rummel’s index of the extent of domestic political violence and “democide” and uses multiple regression analysis (OLS) to estimate the relationships.

In our first application, the base model, we use the economic freedom variables and then construct two models, one with the Freedom House aggregate measure and one with the Polity Index.

Table 6. Base models: Economic freedom, democracy and political violence.

	Domestic political violence 1998/99	Domestic political violence 1998/99
Size of government	0.027 (0.34)	0.030 (0.34)
Property rights and legal system	-0.242 (2.37)*	-0.403 (3.73)**
Sound money	-0.012 (0.27)	-0.006 (0.13)
Freedom of trade	-0.122 (1.31)	-0.246 (2.35)*
Regulation	0.020 (0.14)	0.113 (0.72)
Democracy, Freedom House (pol.rights+civ.lib.)	-0.017 (4.20)**	
Democracy, Polity Index		-0.006 (1.74)+
Constant	4.147 (6.69)**	4.771 (7.33)**
Observations	114	107
R ²	0.52	0.50

Absolute value of t statistics in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%. Method: OLS. Method: Dependent variable: Political violence, 1998/99, scale. Economic Freedom variables are measured in 1995. Democracy (both Freedom House and Polity) is measured in 1995.

The results display that the base model would seem to have considerable explanatory power and in quite similar directions: Both models explain approximately half the variation, and in both models the security of property rights is significantly and negatively related to the extent of political violence, just as they both show democracy to be significantly and negatively related to political violence (although the statistical significance is somewhat weaker in the case of the use of the Polity Index). Freedom of trade also associates negatively with political violence, when the Polity Index data are used as the dependent variable, while it has the same sign with the Freedom House data. Sound money also has the expected sign, but without statistical significance. Size of government and regulation have the wrong signs, perhaps indicating a falsification

of the rent-seeking model in favor of one suggesting that strong governments deter struggles—but the results are not statistically significant. Both models would thus seem to confirm the hypotheses of this paper: that more freedom—in markets and in politics—associates with less terror (or, in this case, political violence).

However, it is necessary to see whether the models keep up this preliminary confirmation, when other factors are controlled for. This is attempted in Table 7, using the same set of control variables as in the previous analysis of transnational terrorism.

Adding these increases the already considerable explanatory power of the models further ($R^2 = 0.62-0.69$); however this happens by taking out a lot of the punch of the primary elements of the models.

Property rights—one of the cornerstones in a free market economy—actually increase in importance, and democracy remains statistically significant and negative when the Freedom House data are used (and only with a slight indication of a curve-linear relationship). However, when the Polity Index is used as a measure of democracy, democracy has no statistically significant effect, while in contrast the absence of regulation becomes statistically significantly associated with political violence—but with an unexpected sign! In both models sound money and freedom of trade again have the expected signs but are not significant. These results must thus be seen as a halfhearted confirmation of the hypotheses: The freedom of a market—and especially security of property rights—generally associate with less political violence, and political freedom may too, but the relationship seems much less robust.

For the remaining control variables we find some of the same results as in the case of transnational terrorism—and some which are quite different. More extensive trade associates with less political violence, just as there were indications it might do with transnational terrorism, and again higher prosperity (log GDP per cap.) and lower poverty seems paradoxically to associate with higher levels of political violence. Yet here ethnic fractionalization exhibits the opposite (negative) relationship with political violence, while religious fractionalization is insignificant. However, the extent of linguistic fractionalization is positively and significantly associated with higher levels of political violence, perhaps reflecting separatist lines of combat. Two other relationships are indicated which did not seem to be present in the case of transnational terror: More equality associates with less political violence, while—unsurprisingly—infant mortality rates are lower when political violence is lower. Again, as in the case of transnational terrorism, education, geographical location and economic growth seems to have no systematic importance.

Table 7. Expanded models: Economic freedom, democracy and political violence, with control variables

	Domestic political violence 1998/99	Domestic political violence 1998/99
Size of government	0.018 (0.22)	0.033 (0.37)
Property rights and legal system	-0.430 (3.66)**	-0.523 (4.32)**
Sound money	-0.070 (1.16)	-0.070 (1.10)
Freedom of trade	-0.124 (0.93)	-0.176 (1.21)
Regulation	0.226 (1.56)	0.277 (1.80)+
Democracy, Freedom House	-0.031 (2.18)*	
Sq. Democracy, Freedom House	0.000 (0.67)	
Democracy, Polity Index		-0.000 (0.02)
Sq. Democracy, Polity Index		-0.000 (0.58)
Log GDP per cap.	1.522 (2.52)*	1.552 (2.35)*
Economic growth	-0.005 (0.14)	-0.010 (0.22)
Human poverty	-0.031 (1.62)	-0.044 (2.18)*
Trade	-0.006 (2.00)*	-0.007 (2.06)*
Equality	-0.024 (2.06)*	-0.028 (2.27)*
Infant mortality	0.024 (3.11)**	0.028 (3.31)**
Education	0.380 (0.25)	-0.085 (0.05)
Latitude	-0.000 (0.04)	-0.002 (0.14)
Ethnic fractionalization	-1.095 (1.95) +	-1.351 (2.24)*
Linguistic fractionalization	1.039 (2.22)*	1.202 (2.41)*
Religious fractionalization	-0.264 (0.60)	-0.227 (0.47)
Constant	0.333 (0.14)	0.844 (0.31)
Observations	94	92
R ²	0.69	0.66

Absolute value of t statistics in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%. Method: OLS. Method: Dependent variable: Political violence scale, 1998/99. Economic Freedom variables are measured in 1995. Democracy (both Freedom House and Polity) is measured in 1995. For regressions 1996-99: GDP per cap.: 1995; Growth: average 1996-99; HPI: 1998; Trade: 1996; Gini; various years (see UNP 2004); Infant mortality: 1995; Education index: 1994; fractionalization indices: various years (see Alesina et al. 2003).

5. Interpretations and comparisons

5.1. *Our findings*

The results of the preceding statistical analysis have mixed implications for how to interpret the importance of economic freedom and political freedom (democracy) with regard to stimulating or discouraging acts of terrorism or political violence.

Quite fundamentally, economic freedom (or its non-existence) seems to have little or no systematic impact on the occurrence of terrorist acts, at least not when these are in the form of transnational terrorism; on the other hand, economic freedom does seem, overall, to have some systematic, negative association with domestic political violence, in particular with regard to property rights and rule of law. This discrepancy between the two effects may however be a reflection of the fact that a number of transnational acts of terrorism by their very nature may take place against regimes with a different character than the countries they originate from. If, for example, transnational acts of terrorism primarily are directed against more modern, market-oriented societies, than this may be the key to the difference.

In the case of political freedom the results are similarly mixed, albeit in a different way. Political freedom seems almost consistently to be of importance for both transnational terrorism and domestic political violence. However, in the case of the former the relationship is curve-linear while for the latter the relationship tends to be negative. The analysis also indicates that when the components of democracy are broken down, it is political rights which exhibit a curve-linear relationship between democracy and terrorism, whereas civil liberties seems more systematically negatively associated with terrorism and political violence.¹² These results may interpreted as a partial confirmation of the one of the two hypotheses of the present paper—that democracy lowers the use of terror—and one of the possible inferences is that terrorism against the West or political violence within a society does not take place simply because the societies in question are liberal, open and more permissive than the more authoritarian societies.

But the curve-linear relationship may also be seen as a confirmation of those other theories which see the ability of a regime to suppress rebellions to be important, and that moving from a very authoritarian regime to a half-democratic society may actually unleash forces which previously were kept in control (cf. Tocqueville [1856] 1955; Davis 2004). Furthermore, the intermediate levels of political freedom may often be seen in periods of transition, when regimes are weak, and where opposing forces may come out of the closets.

It also suggests that the positive qualities usually associated with liberal democracies are not accomplished simply by having elections; other factors, such as civil liberties, free markets and rule of law, may be just as important or perhaps even more so. This

¹² The authors have undertaken a separate analysis of the relative importance of Freedom House's over-all democracy index and the components of political rights and civil liberties on Rummel's measure of political violence, and the results indicate a systematic negative relationship between civil liberties and the latter. These results may be obtained from the authors.

in turn suggests that the positive consequences of democracy may come somewhat later than some expect.

5.2. *Some other results*

The present findings must be compared with other, more or less similar results. The number of studies of the causes and consequences of terrorism is truly staggering, and it has been increasing further since 2001. However, only few studies have included measures of economic freedom, and as regards political freedom the results are not quite similar: Indeed, Li has recently concluded that “most empirical evidence shows that democracy encourages transnational terrorism” (Li 2005: 279).

The important possibility of an inverse U-shaped relationship between democracy and terrorism is however not one previously altogether overlooked by scholars: For some years it has been noted that there seems to be a non-linear relationship between how repressive (or coercive) a regime is, and how much dissent there is, and Mark Lichbach has provided an instructive survey of the debate and framed it in terms of the rational choice paradigm (cf. Lichbach 1987). In the following, we will briefly survey some work whose results relate to the present but point in several different directions.

5.2.1. *Rummel (2001)*

Using the very same dataset, which we have utilized here for the study of political violence, Rummel has sought to use a combination of different statistical techniques, including factor analysis and regression analysis, to analyze the possible effect of freedom on the occurrence of political violence, based on data from up to 190 countries for the years 1997-98.¹³ Yet rather than using the individual components of economic freedom and political freedom together or the aggregate indices together, Rummel used component analysis to construct measures of freedom, violence, human development and economic development. His finding was an overwhelming statistical confirmation of his basic postulate (see above section 2.1), i.e., “the amount of war, revolution, turmoil, and domestic unrest and instability experienced by a people depend fundamentally on the degree to which they are free. Free people have the least violence; the least free the most.” (Rummel 2001: Appendix). Rummel sees these results as consistent with his earlier results including data for democide for the period 1900-1987, which showed that the more free a people is, the less likely its government is to engage in genocide and mass murder (Rummel 1995; cf. also Rummel 1985).

5.2.2. *Finney (1987)*

Finney looked at data from a group of 70-102 countries and considered whether a number of variables could explain the amount of political violence (measured as average number of political deaths per million), and among these he included the level of government spending as a measure of “the effectiveness of a regime” and measured on a per capita basis in local prices as percentage of total per capita income (Finney 1987: 196). Using various regression techniques Finney’s findings were that extent of democracy is statistically insignificant for the level of political violence, whereas the

¹³ See Rummel 2001: Appendix: Testing whether freedom predicts human security and violence.

latter is negatively related to government size, thus indicating that “the greater the government control over an economy . . . , the less the prevalence of political violence” (Finney 1987: 206). Finney’s results are, however, somewhat handicapped by the fact that he omits the then Communist bloc countries from the models including democracy.

5.2.3. *Davis (2004) and Abadie (2004)*

Two recent studies using partly different datasets also find an inverse U-shaped relationship between democracy and political violence or terrorism.

Gareth Davis (2004) tests his model (*supra*, sect. 2.1) against data from 138 countries over the period 1970-85 (divided into three time periods) using standard regression techniques. The dependent variable is number of political assassinations per million population per year, while the independent variables include a number of standard variables derived from the Barro-Lee dataset, including real GDP per capita, economic growth rates, democracy (political rights and civil rights), as well as variables relating to war, government size, etc., and a number of interaction variables. Davis finds, among other results, that there indeed is a statistically significant inverted U-relationship between political rights and political violence—that is, a result which is consistent with the finding here of the relationship between democracy and the probability of the occurrence of terrorism.¹⁴

Some of our results here are quite similar to those made in a recent study by Alberto Abadie (Abadie 2004). Abadie used OLS multiple regression analysis to test for a number of alternative explanations of terrorism, including differences in living standards, democracy, human development, and measures of linguistic, religious and ethnic fractionalization as well as geographical factors. However, Abadie used a different measure for the dependent variable, i.e., he used data from the Global Terrorism Index of World Market Research Center, with the noted drawback that it only includes data for one year and is only commercially obtainable. Furthermore, we have included a larger number of control variables, including the economic freedom measures and civil liberties. Nonetheless, the findings seem to be generally consistent with each other. Abadie’s main result is an inverse U-shaped relationship between political rights and the risk of terrorism.¹⁵

5.2.4. *Li (2005)*

Li has studied the various ways in which democracy affects transnational terrorism and done so by using data from a sample of about 119 countries from 1975 to 1997, i.e. the years exactly prior to those considered here, and by also using ITERATE as a measure of transnational terrorism, the Polity Index and voter turnout for democracy, as well as number of other variables (including government constraints, press freedom, etc.), and by applying negative binominal regression analysis. Li’s results are that democratic

¹⁴ Davis also finds a statistically significant negative relationship between growth in real GDP per capita and political violence, cf. Davis 2004: 23f. However, just as in the present analysis, Davis fails to find a statistically significant relationship between the dependent variable and government consumption.

¹⁵ Abadie also finds that the risk of terrorism is not significantly higher for poorer countries, as soon as other variables are controlled for.

participation reduces transnational terrorist incidents in a country (something partly consistent with our results), while government constraints increase the number of those incidents, subsuming the effect of press freedom (which seems contradictory to our results regarding civil liberties more broadly) (Li 2005: 287f). Li also found that countries undergoing regime change are more vulnerable to terrorist attacks.¹⁶

6. Conclusion

We have investigated the possible relationships between on the one hand economic freedom and political freedom and on the other hand the occurrence of political violence, be it in the form of transnational terrorism or domestic political violence. The two hypotheses guiding the analysis have been that more of each of the two types of freedom will tend to be associated with less violence. Having done so, we have failed to find statistical confirmation of a number of the usually attributed explanations for terrorism, when a number of other characteristics of the particular countries are taken into account: The probability that a country will experience terrorist events or domestic political violence is not statistically significantly related to, e.g., the level of inequality or rapid changes (as in economic growth), etc.

In contrast, the results do seem to lend some support to the hypotheses offered here: There seems to be negative relationships between political freedom (in particular civil liberties) and terrorism and political violence, and there are also indications of negative relationships between types of economic freedom and political violence, albeit no observable negative relationship between economic freedom and transnational terror.

However, there seems to be a non-linear relationship between the extent of political freedom in a country and the probability of the occurrence of terrorist events: Increasing democracy from none to a little may actually increase terrorism, while increasing it to much higher levels eventually will lower terrorism. This observation may be seen as illustrated by cases of countries in the transition from autocracy to democracy (e.g., Iraq and Afghanistan) being marred by, at least in the short run, an increase in domestic political violence. And such, this and the other results also indicate that while democracy may play some role in influencing the occurrence of terrorism, it is not the only one and often far from the most important one.

The results are partly good news and partly bad news for the Bush administration and its policies. The bad news is that forcing regime change, whereby a country's political system is moved from non-democratic to somewhat democratic is actually likely to result in an *increase* in terrorism rather than the opposite, at least in the short term. The results also suggest that other components of liberal democracy—civil liberties, rule of law and free markets—may play a larger role as long-term deterrents than simply having free elections. In contrast, the good news is that if the country

¹⁶ Li also included electoral systems and found that the proportional representation system has fewer incidents of transnational terrorism than either the majoritarian or the mixed system.

goes all the way to a more complete liberal democracy, then it is likely to significantly decrease terrorism and political violence.

Appendices

Appendix A: Data description, variables and definitions

Variable Name	Variable Content	Source	Measurement	Year or period of measurement
Dependent variables:				
Terrorism	Occurrence of terrorist incidents	U.S. State Department and ITERATE common file (Mickolous, Sandler and Murdock 2003). U.S. State Department (various years)	Dichotomous: 1=if terrorist event occurred. 0=otherwise.	1996-2002 (ITERATE); 1996-2003 (State Dept.) 1998-99
Political violence	Extent of political violence. Political violence is defined as "The murder of any person or people by a government, including genocide, politicide, and mass murder." (reference: see source)	R.J. Rummel (excel data set), based in reports from Amnesty International, Human Rights Watch et al. For full variable description and definitions, see: http://www.mega.nu:8080/ampp/rummel/wf.appendix.htm http://www.mega.nu:8080/ampp/rummel/murder.htm	Scale: 0-5: 0=No political violence. 5=Widespread political violence.	
Independent variables:				
Democracy	Degree of democracy/autocracy. 1) Freedom House: Index (sum of political and civil rights) and separate component values used.	Freedom House 2004 (www.freedomhouse.org)	Recoded to scale from 0-100. High values indicate democracy	1995 and 2000
	2) Polity IV: Polity II variable: AUTO variable subtracted from the DEMOC variable.	Marshall and Jagers 2002. SPSS data set and codebook.	As above	1995 and 2000
Size of government	Size of government spending, taxes and state enterprises.	Gwartney, Lawson and Block 1996; Gwartney and Lawson 2003; Gwartney and Lawson 2004. Fraser Institute excel data (Fraser Institute 2002 and at www.freetheworld.com)	Scale from 1-10; high values indicating freedom	1995 and 2000
Property rights and legal system	Protection of property rights by independent courts. Rule of law and ability of courts to enforce property rights	As above	Scale from 1-10; high values indicating freedom	1995 and 2000
Sound money	Monetary and inflationary policies and access to foreign currency	As above	Scale from 1-10; high values indicating freedom	1995 and 2000
Freedom of trade	Regulation of international trade, i.e. tariffs, quotas, capital market controls etc.	As above	Scale from 1-10; high values indicating freedom	1995 and 2000
Regulation	Regulation of labor and capital markets and private business; e.g. extent of restrictions on entry and competition, interest rate control, price controls and government bureaucracy	As above	Scale from 1-10; high values indicating freedom	1995 and 2000
GDP per capita	GDP per capita (PPP, constant 1996 prices)	Penn World Tables, Mark 6.1. (Heston, Summers and Aten 2002).	Scale	1995 and 2000
Economic	Growth in GDP per capita.	Penn World Tables, Mark 6.1. (Heston, Summers	Scale	1996-99; 2000-

growth		and Aten 2002).		02; 1996-2002 (for ITERATE). 1996-2003 for State Dept. data 1998
Human poverty	Human Poverty Index	Rummel (xxxx), from UNDP reports.	Scale??	
Trade	Actual trade as share of GDP [(imports + exports)/GDP]	World Development Indicators (WDI), World Bank.	Scale	1995 and 2000
Equality	Gini coefficient	UNDP 2004	Scale	1995 and 2000
Infant mortality	Infant mortality rate per 1,000 live births	World Development Indicators (WDI), World Bank.	Scale	1995 and 2000
Education	UNDP Education Index	Human Development Report, various years (www.undp.org).	Scale. Index comprising measures of adult literacy and combined primary, secondary and tertiary enrolment	1994 and 1997
Latitude	Absolute latitude (distance from equator).	R.J. Rummel (excel data set from Rummel 2001).	Scale	Unknown
Ethnic fractionalization	Ethnic fractionalization	Alesina et al. 2003	Scale: 0=homogeneity; 1= heterogeneity. See Alesina et al. (2003) for details.	Various years, see source
Linguistic fractionalization	Linguistic fractionalization	Alesina et al. 2003	Scale: 0=homogeneity; 1= heterogeneity. See Alesina et al. (2003) for details.	Various years, see source
Religious fractionalization	Religious fractionalization	Alesina et al. 2003	Scale: 0=homogeneity; 1= heterogeneity. See Alesina et al. (2003) for details.	Various years, see source

Appendix B. Summary statistics: Independent variables

	N	Minimum	Maximum	Mean	Std. Deviation
Democracy 1995, Freedom House	188	0.0	100.00	55.6	34.1
Democracy 2000, Freedom House	188	0.0	100.00	58.3	33.2
Democracy, 1995-00 Freedom House	188	0.0	100.00	56.9	33.1
Democracy, Polity Index 1995	157	0.0	100.00	62.1	34.1
Democracy, Polity Index 2000	156	0.0	100.00	64.5	33.1
Democracy, Polity Index, average 1995-00	156	0.0	100.00	63.3	32.6
Political rights 1995, Freedom House	188	0.0	100.00	57.1	37.2
Political rights 1995-00, Freedom House	188	0.0	100.00	58.1	36.5
Political rights 2000, Freedom House	188	0.0	100.00	59.0	37.3
Civil liberties 1995	188	0.0	100.00	54.1	32.3

Civil liberties 1995-00	188	0.0	100.00	55.8	30.9
Civil liberties 2000	188	0.0	100.00	57.5	30.4
Size of government 1995 (Fraser)	121	1.8	9.50	5.6	1.7
Size of government 2000 (Fraser)	122	2.3	9.20	5.7	1.5
Size of government, 1995-00 (Fraser)	120	2.4	9.35	5.7	1.5
Property rights, 1995-00 (Fraser)	121	2.2	9.40	5.9	1.8
Property rights, 1995 (Fraser)	122	2.2	9.30	5.9	1.7
Property rights 2000 (Fraser)	122	2.0	9.60	5.8	1.9
Sound money 1995 (Fraser)	122	0.0	9.80	6.2	2.7
Sound money 2000 (Fraser)	122	1.5	9.70	7.4	2.0
Sound money 1995-00 (Fraser)	121	1.2	9.70	6.9	2.2
Freedom of trade 1995 (Fraser)	116	1.7	9.70	6.6	1.4
Freedom of trade 1995-00 (Fraser)	116	1.7	9.75	6.7	1.3
Freedom of trade 2000 (Fraser)	122	1.7	9.80	6.9	1.2
Regulation 1995 (Fraser)	122	2.8	8.80	5.6	1.2
Regulation 2000 (Fraser)	122	2.7	8.40	5.9	1.1
Regulation 1995-00 (Fraser)	121	2.8	8.55	5.7	1.1
Log GDP per cap. 1995	152	2.5	4.54	3.6	0.5
Log GDP per cap. 2000	147	2.5	4.64	3.7	0.5
Economic growth, 1996-99, annual average	148	-5.9	23.53	2.2	3.2
Economic growth 2000-2002, annual average	170	-15.1	18.50	2.7	3.4
Economic growth, 1996-02, annual average	146	-3.5	18.14	2.5	2.5
HPI 1998	187	-10.0	65.00	23.5	15.4
Trade 1996 (% of GDP)	172	2.6	328.1	82.4	47.5
Trade 2000 (% of GDP)	152	22.2	341.4	91.3	50.1
Trade 1995-2000	169	2.1	322.3	84.4	46.7
Absolute latitude	187	0.0	64.0	25.6	16.6
Education Index 1994	170	0.1	.99	0.7	0.2
Education Index 1997	173	0.0	.99	0.7	0.2
Education index, average 1994-97	169	0.1	.99	0.7	0.2
Equality (Gini coefficient)	127	24.4	70.70	40.2	10.3
Infant mortality rate 1995	193	3.9	177.00	43.56	39.42
Infant mortality rate 2000	191	2.9	162.60	39.3	37.4
Infant mortality rate, average 1995-2000	191	3.5	165.30	41.6	38.4
Ethnic fractionalization	185	0.0	.93	0.4	0.3
Linguistic fractionalization	189	0.0	.92	0.4	0.3
Religious fractionalization	200	0.0	.86	0.4	0.2

References

- Abadie, A. (2004). Poverty, political freedom, and the roots of terrorism. *NBER Working Paper* Cambridge: National Bureau of Economic Research, No. 10859.
- Alesina, A., Easterly, W., Devleeschauwer, A., Kurlat, S., and Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth* 8(2): 155-194.
- Buchanan, J.M. (1980). Rent-seeking and profit-seeking. In J.M. Buchanan, R.D. Tollison, and G. Tullock (Eds.), *Toward a theory of the rent-seeking society*, 3-15. College Station: Texas A&M University Press.
- Crain, N. and Crain, W.M. (2005). Terrorized economies. *Public Choice*, Special Issue on the Political Economy of Terrorism, forthcoming.
- Davis, G.G. (2004). Repression, rationality and relative deprivation: A theoretical and empirical examination of cross-national variations in political violence. Fairfax: Dept. of Economics, George Mason University, MS.
- DeNardo, J. (1985). *Powers in numbers: The political strategy of protest and rebellion*. Princeton: Princeton University Press.
- Finney, L.D. (1987). A rational choice theory of revolution and political violence. Unpublished dissertation. Ph.D. University of Maryland, College Park.
- Fraser Institute. (2002). *Economic freedom of the world 1975-2001*, Excel data set.
- Freedom House. (2004). Freedom in the world. Excel data set, <http://www.freedomhouse.org>.
- Frey, B.S. & Luechinger, S. (2003). Measuring terrorism. *IEW Working paper* 171. Zürich: Institute of Empirical Research in Economics, University of Zürich.
- Frohlich, N. and Oppenheimer, J.A. (1974). The carrot and the stick: Optimal program mixes for entrepreneurial political leaders. *Public Choice* 19(Fall): 43-61.
- Gwartney, J.D. and Lawson, R. (2003). The concept and measurement of economic freedom. *European Journal of Political Economy* 19: 405-430.
- Gwartney, J.D. and Lawson, R. (2004). *Economic freedom of the world: Annual report 2004*.
- Gwartney, J.D., Lawson, R., and Block, W. (1996). *Economic freedom of the World: 1975-95*. Vancouver: Fraser Institute.
- Heston, A., Summers, R., and Aten, B. (2002). *Penn World Table Version 6.1* Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002, excel data set + codebook.
- Kirk, R. (1983). Political terrorism and the size of government: A positive institutional analysis of violent political activity. *Public Choice* 40(1): 41-52.
- Kotowski, C.M. (1984). Revolution. In G. Sartori (Ed.), *Social science concepts: A systematic analysis*, 403-451. London: Sage.
- Kurrild-Klitgaard, P. (1997). *Rational choice, collective action and the paradox of rebellion*. Copenhagen: Institute of Political Science, University of Copenhagen & Copenhagen Political Studies Press.
- Kurrild-Klitgaard, P. (2004). The paradox of rebellion. In C.K. Rowley and F. Schneider (Eds.), *The encyclopedia of public choice*, vol. 2, 403-406. Dordrecht: Kluwer.
- Li, Q. (2005). Does democracy promote or reduce transnational terrorist incidents? *Journal of Conflict Resolution* 49(2): 278-297.
- Lichbach, M.I. (1987). Deterrence or escalation? The puzzle of aggregate studies of repression and dissent. *Journal of Conflict Resolution* 31(2): 266-297.
- Lichbach, M.I. (1995). *The rebel's dilemma*. Ann Arbor: University of Michigan Press.
- Lichbach, M.I. and Gurr, T.R. (1981). The conflict process: A formal model. *Journal of Conflict Resolution* 25: 3-29.
- Marshall, M.G. and Jaggers, K. (2002). Polity IV project: Political regime characteristics and transitions, 1800-2002. Data set and codebook, <http://www.cidcm.umd.edu/inscr/polity/>.
- McCormick, G.H. (2003). Terrorist decision making. *Annual Review of Political Science* 6: 473-507.
- Mickolous, E.F., Sandler, T., and Murdock, J.M. (2003). *International Terrorism: Attributes of Terrorist Events, 1968-2003 (ITERATE)*. Dunn Loring: Vinyard Software.
- Munck, G.L. and Verkuilen, J. (2002). Conceptualizing and measuring democracy: Evaluating alternative ideas. *Comparative Political Studies* 35(1): 5-34.

- Olson, M. (1971 [1965]). *The logic of collective action: Public goods and the theory of groups*, 2. ed. Cambridge: Harvard University Press.
- Ostrom, E. (1986). An agenda for the study of institutions. *Public Choice* 48: 3-25.
- Rathbone, A. and Rowley, C.K. (2002). Terrorism. *Public Choice* 111: 1-10.
- Rosendorff, B.P. and Sandler, T. (2005). The political economy of transnational terrorism. *Journal of Conflict Resolution* 49(2): 171-182.
- Rummel, R.J. (1984). Libertarianism, violence within states, and the polarity principle. *Comparative Politics* 16: 443-462.
- Rummel, R.J. (1985). Libertarian propositions on violence within and between nations: A test against published research results. *Journal of Conflict Resolution* 29(3): 419-455.
- Rummel, R.J. (1995). *Statistics of democide*. New Brunswick: Transaction.
- Rummel, R.J. (2001). *Saving lives, enriching life: Freedom as a right and a moral good*, manuscript.
- Shughart, W.F. (2002). September 11, 2001. *Public Choice* 111: 11-18.
- Tocqueville, A.d. (1955 [1856]). *The old regime and the French revolution*. New York: Doubleday.
- Tullock, G. (1971). The paradox of revolution. *Public Choice* 11: 89-100.
- Tullock, G. (1974). *The social dilemma: The economics of war and revolution*. Blacksburg: Center for Study of Public Choice.
- Tullock, G. (2004 [1967]). The welfare costs of tariffs, monopolies, and theft. In C.K. Rowley (Ed.), *Virginia political economy*, The selected works of Gordon Tullock, vol. 1, Ed. Rowley, Charles K. 169-179. Indianapolis: Liberty Fund.
- Tullock, G. (2005). *The rent-seeking society*, The selected works of Gordon Tullock, vol. 5, C.K. Rowley (Ed.). Indianapolis: Liberty Fund.
- UNDP (various years, 1996-2004): *Human Development Report*. www.undp.org
- U.S. State Department (various years, 1996-2003): *Patterns of Global Terrorism* (1996-2003). <http://www.state.gov/s/ct/rls/pgtrpt/>
- World Bank. *World Development Indicators*. CD-ROM and Online. Washington.