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A Gravity Model of Globalization, Democracy and Transnational Terrorism

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Abstract

This paper provides an original study into how democratization and globalization influence transnational terrorism — examining the motives of terrorists and how democratic institutions and international integration influence non-state economic actors. We employ a gravity model to investigate the relative importance of globalization and democratization on transnational terrorism and external conflict. We construct an original database of over 200,000 observations from 1968-2003 for 189 countries, to examine the extent to which economic, political and historical factors influence the likelihood of citizens from one country to engage in terrorist activities against another. We find that the advent of democratic institutions, high income and more openness in a source country significantly reduces conflict. However, the advent of these same positive developments in targeted countries actually increases conflict. *Ceteris paribus*, the impact of being a democracy or participating in the WTO/IMF for a source country decreases the number of terrorist strikes by about 2 to 3 per year, which is more than two standard deviations greater than the average number of strikes between any two countries in a given year.

INTRODUCTION

The "liberal peace" hypothesis alleges that democracies are less likely to engage in militarized disputes with each other, that they are less likely to initiate conflicts with other democracies, and when they do, they allocate significantly more resources to the conflict than other polities (Bueno de Mesquita et al.1999). Democracies trade more with each other, and are more cooperative with respect to multilateral trading arrangements by forming trade blocs and joining PTAs (Mansfield, Milner and Rosendorff 2002, Rosendorff 2006). Countries that trade more with each other are also less likely to engage in militarized disputes (Mansfield and Pevehouse 2000, Bearce et al. 1999). Conversely, countries that are conflict-prone deter trade and investment and experience slower growth (Blomberg et al 2004, Blomberg and Hess 2005a, 2005b). This association between trade, conflict and democracy has been a central concern of scholars in international relations, working to establish the precise causal processes and mechanisms. How these dynamics fit together has been a subject of significant dispute among scholars in the field.

In the recent period however, an alternative form of cross-border conflict has garnered closer attention – transnational terrorism[1]. While terrorism is not war waged between states per se, it has many of the similar features – it is a cross-national violent process that threatens people and property, with attendant political and economic consequences. Moreover, observers have argued that terrorism is responsive to changes in the same underlying variables: democracies are less prone to terrorism, and terrorism is a response to increased globalization. This paper investigates the links between democracy, commercial integration and terrorism in a systematic manner.

[1] See, for instance, the special issue of the *Journal of Conflict Resolution* on the Political Economy of Transnational Terrorism (Rosendorff and Sandler 2005).

These themes have dominated public debate with regards to current US foreign policy. The Bush administration for instance insists that the instillation of democracy in the Arab world will stem the flow of anti-American terrorism, and increase the security of US assets and people, both at home and abroad. President Bush's speech at the Veterans of Foreign Wars annual meeting in August 2005 explicitly equates "peace" with "freedom". Chuck Hagel (2004), Republican US senator from Nebraska, in an article in *Foreign Affairs* argues that the war on terrorism must be guided by principles that expand democracy abroad. While it is not clear where this hypothesis emerges from, one likely candidate is the administration's reading of the literature on the democratic peace. Similarly, the US National Intelligence Council's 2005 report argues that globalization is a source of insecurity for the US; the *New York Times*' columnist Thomas Friedman in his recent popular tract alleges that a "flatter" world (one without hurdles or barriers for the flow of resources) makes transnational terrorism more likely adds to the popular view that globalization and terrorism are linked (Friedman 2005).

The questions however remain – does democracy abroad reduce the flow of terrorism and does increased globalization make terrorism more likely? Key to an answer to this question is to realize there are two sets of issues at work – what are the characteristics relevant to a country as a target, and do democracy and commercial integration matter as characteristics of the source country?

In this paper we bring a methodology from the literature in international trade, and apply it to another flow across international borders – that of transnational terrorism. Using a dyadic approach akin to the gravity model of empirical international trade we simultaneously explore the determinants of terrorism in both source and target countries. We show that the effects of democracy and globalization differ depending on whether the country is a source or target state. Democracy in the source reduces the incidence of terrorism while in the target state, democracy raises terrorist inci-

dence. Commercial openness in source country reduces terrorism, while increases it in target countries.

Terrorism and Global Trends

World foreign direct investment flows (FDI), which amounted to less than $13 billion in 1970, quadrupled every 10 years, reaching $54 billion in 1980 and $209 billion in 1990. During the last half of the 1990s, however, FDI practically exploded, reaching a peak of $1.4 trillion in 2000. World wide trade also increased dramatically over the same time period. Trade as a percent of GDP grew from 27 percent in 1970 to 38 percent by 1980 to 45 percent by the year 2000.

During the latter half of the 20th century there has been an increase in democratization across the globe. The percent of countries that are non-democracies as calculated by Freedom House, starts at 46 percent in 1972. The percent falls to 35 percent by 1980 and steadily declines to 25 percent by the year 2000.

While the run-up of FDI, trade and democracy in the 1990s, and especially in the second half of that decade, has several explanations, it is strikingly correlated with a decline in transnational terrorism during that period. In the late 1980s and early 1990s, approximately 1.5 transnational terrorist events occurred every day. As globalization and democratization grew at an ever faster rate, the frequency of terrorist events declined sharply, reaching less than 0.5 events a day by 2000. Did this shift toward a more integrated and democratic world contribute to the large increase in peace during that same period?

In order to understand the effects that democracy and globalization might have on terrorist activity, we need an underlying view of the decision-theoretic mechanisms that determine terrorist choices. We define terrorism as the premeditated or threatened use of extra-normal violence to obtain a political, religious or ideological objective through the intimidation of a large audience. We assume that terrorists are

rational actors, choosing strategies to maximize the chance of success with respect to particular objectives, taking full account of the constraints under which they operate (Sandler et al.1983). The levels of activity undertaken, and the location in which they occur depend on the costs, benefits and resources available. Higher costs mean fewer activities; higher benefits and resources imply more activity.[2]

Enders and Sandler (1993) establish that terrorists respond to changes in incentives. An increase in the cost of one mode of operation across the international system (metal detectors in airports, for example) leads to changes in terrorist operations (fewer skyjackings), and an increase in other modes. Democracy and globalization work to influence terrorist activity through all three avenues – costs, benefits and resources.

Terrorism and Democracy

Democracy, it is often alleged, provides a set of rules that facilitate the peaceful resolution of political conflicts. It offers access to the powerful decision makers and political institutions for citizens to seek redress for their grievances. It makes political organization cheaper and lowers the costs of (legitimate) political action making illegal activities relatively more expensive, and therefore in expectation less terrorist violence.

On the other hand, key to the success of any terrorist act is recruitment and organization – both of which are made easier in environments with civil liberties, freedom of religion, association and movement. All these are characteristic of democracies, of course. Moreover the terrorist act must spread fear and anxiety through the population at large – facilitated by a free and well functioning press, freedom of speech; also characteristic of democracy.

[2] An additional concern for any terrorist organization is the effect of their actions on recruitment of future cadres (Rosendorff and Sandler 2004).

In an early paper, Eubank and Weinberg (1994) find that terrorist groups are more frequently hosted by democratic societies. Following Sandler (1995), Eubank and Weinberg (2001) find that terrorist events occur more frequently in stable democratic countries. Similarly, Li and Schaub (2004) find more incidents in democratic countries. It may not be democracy per se at work; the experience of less democratic or newly democratizing countries such as Afghanistan and Iraq suggests that the transitional period between authoritarianism and democracy is a particularly susceptible one for terrorist activity (Eubank and Weinberg 1998).

Other evidence associating the link between democracy and transnational terrorism is mixed. Li (2005) attempts to disaggregate the many dimensions "democracy"; he finds that voter turnout reduces terrorist incidents in that country, but that constraints on government authority increase incidents; press freedom raises incidents. Overall, the effect of democracy on terrorism is unclear.

Assessing the motives of terrorists leads little insight. While the targets of terrorism are more frequently democracies, rarely is the terrorist's manifesto one of installing democracy in their home countries; rather it is often about removing foreign military occupation and self-determination (Pape 2005).

The effects of democracy on a country's likelihood of being a source for transnational terrorism are not firmly established. Non-democracies create fewer outlets for political grievances to be addressed, making violent means of political action more likely. This might lead to increased domestic terrorism, but doesn't speak to the country as a source of transnational terrorism. When the autocratic government is perceived to have its authority bolstered by its foreign relations with democracies however, we might expect the terrorist group advocating the removal of the illegitimate autocrat may indeed target its foreign allies, some of whom may be democracies. We might expect therefore that non-democracy abroad could increase transnational terrorism at home.

As to what makes a country a source of terrorists, there is little evidence of any kind. Discussion in this regard has rarely distinguished between domestic and transnational terrorism. Where political conflict is domestic, the lack of outlets for political discontent make violent means of protest more likely. Where a wider variety of groups get to participate in the political process, non violent means are at least attempted first. Others have argued that in a more democratic regime more political action of all kinds, violent and non-violent alike, is likely. For transnational terrorism, Eubank and Weinberg (2001) surprisingly find that "terrorist events are more likely to be carried out by the citizens of stable democracies than the citizens of any other type of country, from absolutism to insecure democracy" But their approach is merely to look for modal categories without looking to explain observed variations in the data.

Overall, the lack of clarity on the issue stems, in our view, from treating the source and target countries in the same manner; when the effects of democracy are permitted to differ conditional on whether the observation is a source or target, allows a more precise view on the determinants of transnational terrorism.

Globalization and Terrorism

Globalization also affects the costs, benefits and resources available for terrorist activities. Firstly if terrorism emerges from a sense of relative deprivation, then globalization, in so far that it encourages economic growth, may mitigate terrorist tendencies. On the other hand, if globalization is associated with increased inequality across countries and groups, then we might expect globalization to lead to more violence. On the costs side of the equation, the lowered barriers to flows of goods, money, people and ideas, makes the networks of terrorist operations cheaper to operate. Terrorist themselves find it easier to move across increasingly permeable borders; resource flows across borders necessary to finance terrorist operations become more difficult to monitor by authorities overwhelmed by the growth of the international

financial system. Norms of privacy in international banking make information about these resource flows scarce. The fact that customs agents inspect only a small fraction of goods imported make the smuggling of terrorist materiel cheaper, while the freer flow of information make the knowledge and techniques of terrorist action more easily transferred. Globalization, like democracy, affects the costs, benefits and resources constrains of terrorists in many ways. The literature has focused on some of these mechanisms and the evidence has been substantially inconclusive.

The popular discourse seems to put some of the blame for transnational terrorism on "globalization" – this increased flow of goods, services, ideas, people and culture across international borders. *The Economist* suggests that the relative ease with which resources and people move around the world increases the risks associated with transnational terrorism (2002), while Paul Martin, as Canadian Finance Minister in 2002 claimed that the terrorists themselves are hostile to the process of globalization, witnessed by the choice of target by the 9/11 hijackers – a center of world trade and finance.

Krug and Reinmoeller (2004) argue that globalization is an important determinant of terrorism. In their paper, they build a model to explain the internationalization of terrorism as a natural response to a globalizing economies. As countries become more economically integrated and market-oriented, there is no discrimination between what certain terrorist groups might see as "bad" products and "good" products or investments. Moreover, the same advances in technology that allow for easy access of goods and services also allow for easy access to military hardware and technology. In short run, globalization may have the consequence of creating a series of winners and losers. These same losers will have easier access to retaliate in response to their loses thereby multiplying the effect of globalization on terrorism.

An alternative view put forth by Crenshaw (2001) is that it is naive to believe that globalization is encouraging international terrorism. So that while globalization and

terrorism may be seemingly impacting one another, there is something more complicated at work. Put differently, the latest incidence of terrorism is not necessarily driven by globalization. Instead, the latest wave of terrorism should be seen as a series of civil wars which may be motivated by a strategically unified reaction to American power, rather than directly to globalization.

In a pooled cross-section analysis of globalization and transnational terrorism Li and Schaub (2004) explore some of these links. On the one hand reduced transaction costs of international trade and finance make terracing terrorist funds a difficult task, and reducing the effective costs of financing terrorist activity. Likewise as trade accelerates, illegal smuggling becomes cheaper, permitting weapons to travel with a higher chance of not being intercepted. On the other hand, if globalization and growth are associated, terrorism, a problem of underdevelopment and poverty, will take care of itself. Li and Schaub use the ITERATE data set (Mickolus et al. 2002) of 112 countries from 1975-1997. They find that international trade and investment have little effect on the number of terrorist events.

Others argue that globalization encourages terrorism for yet further reasons. If globalization increases world inequality, then it will increase feelings of relative deprivation. These feelings produce political action, some of it violent. Or merely, globalization results in a kind of cultural imperialization significantly reducing the quality of life of people committed to a particular set of norms governing social behavior, norms that are broken by foreign influences.

Dyads and the Gravity Model

How then can we possibly make sense of these conflicting theoretical claims, and the even less satisfying empirical record? Here we make use of the concept of the "directed dyad" which differentiates explicitly between the characteristics of the state that is the source of the terrorist activity and the state that is the target. By separating

out the effects of democracy and globalization on the source and target states we generate much clearer and precise hypotheses and results than are available using standard panel regression techniques.

We start by focusing our attention on "transnational terrorism" and then to recognize that this type of terrorism is fundamentally dyadic in nature. Hence it is amenable to investigation using an approach similar to the gravity of model of international trade.

Our focus is on the determinants of transnational terrorism. Following the definition adopted by Mickolus et al (2002), a transnational terrorist event is defined as

> "the use, or threat of use, of anxiety-inducing, extra-normal violence for political purposes, by any individual or group, whether acting for or in opposition to established government authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators, its location, the nature of its institutional or human victims, or the mechanics of its resolution, its ramifications *transcend national boundaries*" (page 2, italics ours).

Transnational terrorism requires therefore, a flow of resources across international borders – whether it is foreign terrorists attacking domestic (and other foreign) targets, or domestic nationals attacking the property and lives of foreign nationals on domestic soil. As a result it seems appropriate in any investigation of the determinants of transnational terrorism, to consider the characteristics of both the source and target countries. Moreover, the characteristics of a country that might make it a likely target country may indeed be very different from the characteristics that make a country a likely source of international terrorism. The features of the polity that

make a country a terrorist-producer may be different from the political structures, institutions and environment that make a state terrorist target.

We adopt here an explicitly dyadic approach, and we follow the insights drawn from international economics. A country's willingness to engage in international trade – to import and export – depend on key features of both the underlying economies. Following Heckscher-Ohlin, a country's trading patterns (whether it is an importer or exporter of a particular good) depends crucially on its factor endowments, relative to its trading partner. A country relatively well endowed with a particular factor will export goods that use that factor intensively. We draw the obvious analogy when considering transnational terrorism – what matters are the underlying political conditions present in both the sending and receiving country, not just in the country in which the event took place, or the nationalities of the victims.

For several decades, the most frequently used empirical specification for linking trade volumes with underlying economic conditions is known as the gravity model – which is in turn an analogy borrowed from physics. When considering the flow of gravitational force between two bodies, it has long been understood that this depends on the mass of the two bodies and the distance between them. From international trade theory (Anderson and van Wincoop 2003a, 2003b, Deardorff 1984), the volume of trade between two countries depends on the size of their economies and physical distance between them. This specification has been further refined by adding variables such as income per capita, language differences, the regime types of the two countries. In this paper we claim that the flow of transnational terrorism between states similarly depends on the incomes of the two countries, the distance between them, language differences, the regime types of the two states, and a number of other variables that describe the underlying economic and political conditions of both states.[3]

[3]For examples in the trade literature, see among others, Anderson (1979) who championed use of the gravity equation in structural trade models, and Markusen and Maskus (1999) and Carr,

Our central hypotheses are these:

- H1: The effects of democracy and globalization on terrorism differ for source and target countries
- H2: Terrorism falls with democracy and globalization in the source countries
- H3: Terrorism rises with democracy and globalization in the target countries.

We find that differences in income, democracy and openness go a long way into explaining transnational terrorism. We find the advent of democratic institutions in a source country significantly reduces conflict. However, the advent of these same institutions in host countries actually increases conflict.

We also find that source-country openness has a negative and statistically significant impact on conflict. Once again, however, host-country openness often has a positive and statistically significant on conflict. *Ceteris paribus*, the impact of being a democracy or participating in the WTO for a source country decreases the number of terrorist strikes by about 2 to 3, which is more than two standard deviations greater than the average number of strikes between any two countries in a given year.

THE DATA AND EMPIRICAL REGULARITIES

Terrorism is adopted from the ITERATE data set – see Mickolus et al (1993). The ITERATE project began as an attempt to quantify characteristics, activities and impacts of transnational terrorist groups. The data set is grouped into four categories. First, there are incident characteristics which code the timing of each event. Second,

Markusen and Maskus (2001a,b) who investigated gravity models for FDI. Blomberg and Hess (2004) focus on trade, especially on comparing the costs of conflict to measures for trade promotion. Alternatively, Blomberg, Hess and Orphanides (2004) investigate the impact of various forms of conflict such as terrorism, internal wars and external wars on a country's economic growth.

the terrorist characteristics yield information about the number, makeup and groups involved in the incidents. Third, victim characteristics describe analogous information on the victims involved in the attacks. Finally, life and property losses attempt to quantify the damage of the attack.

A central contribution of our paper is to employ the data in a different manner than has been previously employed in the literature. We consider a *bilateral* definition of terrorism, which we measure in a number of ways. First, we measure terrorism, T, as the number of events in a host country, h, from attackers whose nationality comes from source country, s. Second, we define terrorism as the number of events perpetrated on individuals from host country, h, from attackers whose nationality comes from source country s. In addition, we measure T as the number of victims rather than number of incidents in a given year.

We present several caveats before we proceed. First, one may be concerned that the nationality of the source attacker may not represent the views of the country for which he is associated. While this is possibly true, this problem is no less severe than what we encounter when we try to measure any international variable. How do we properly account for a Mercedes manufactured in Alabama using parts imports from Asia, for example? Second, one may be concerned that there may be more than one nationality included in the attacking force. So, how does one decide which country responsible for the attack? While this is a serious consideration in theory, this turns out to be less of issue in practice as 98 percent of attacks are reported with only one source country. Finally, one may be concerned that we may be undercounting the number of incidents as not all attacks are identified with a particular group. Even so, the vast majority of attacks do have an identified source country, amounting to over 8,000 incidents.

For several decades, the gravity model has been the workhorse of empirical trade research and more recently empirical FDI literature. One reason is that the model

is relatively intuitive. The gravity equation simply states that there is a positive relationship between trade/financial flows and the sizes of countries and a negative relationship between trade/financial flows and distance.

A central contribution of this paper is to introduce transnational terrorism T as the dependent variable into these various gravity models. To include T in the aforementioned approaches, consider the following gravity equation for log trade (x_{hst}) for country pair h, s at time t and its determinants:

$$x_{hst} = f(Y_{hst}, Z_{hst}, p_{hst}) \tag{1}$$

where Y is log of real GDP, Z is a vector of observables to include trade costs τ (e.g. distance and language barriers), p are multilateral resistance terms such as prices, which refer to the bilateral barrier between countries relative to the average trade barrier each country faces with all trading partners. These multilateral resistance terms may be thought of as product variables that create wedges to trade.

For traditional trade gravity models, one representation of equation (1) is (suppressing time subscripts for convenience):

$$x_{hs} = \alpha_0 + \alpha_1 y_h + \alpha_2 y_s + \alpha_3 Y_h + \alpha_4 Y_s + \delta Z_{hs} + \varepsilon_{hs} \tag{2}$$

where y is the log of real GDP per capita, Z is a vector of variables including distance (both physical and technological measures) and language barriers and the error may be specified to control for random or time/country fixed effects. We modify equation (2) by specifying Z and redefining the left-hand-side variable as T, so that we have:

$$\begin{aligned} T_{hst} \;=\; & \alpha_0 + \alpha_1 \cdot y_{ht} + \alpha_2 \cdot y_{st} + \alpha_3 \cdot Y_{ht} + \alpha_4 \cdot Y_{st} + \alpha_5 \cdot logdistance_{hs} \\ & + \alpha_6 \cdot Comlang_{hs} + \alpha_7 \cdot area_{hs} + \alpha_8 \cdot DEM_{ht} \\ & + \alpha_9 \cdot DEM_{st} + \alpha_{10} \cdot GLO_{ht} + \alpha_{11} \cdot GLO_{st} + \varepsilon_{ijt} \end{aligned} \tag{3}$$

where h, s denote countries, t denotes time, and the variables are defined as: T is the number of a terrorist attacks on country h from group representing country s, Y is log of real Gross Domestic Product, y is the log of real GDP per capita, $logdistance$ is the natural log of distance between two countries, $Comlang$ is a dummy variable which is 1 if countries have a common language and 0 otherwise, $area$ is the natural log of the product of the size of the countries, DEM is defined both as an index of democratization from polity and as a dummy variable if the country is a democracy, GLO is defined both as trade/GDP and an index of integration such as trade or participation in the WTO.[4] The purpose of estimating the gravity equation would be to consider the importance of DEM and GLO in impacting the likelihood of terrorism and to compare the relative magnitude to other factors highlighted in Blomberg and Hess (2005b) as relevant in explaining terrorism e.g. GDP per capita.[5]

It is also worthwhile to note that many of the bilateral conflict observations are zero. To correctly estimate the elasticities, then, it is necessary to consider the bias on account of censoring. We employ the Tobit model that estimates the coefficients through a maximum likelihood procedure.

EMPIRICAL RESULTS

Cross-Country Empirical Motivation

We begin motivating our discussion by considering the link between conflict that occurs within a county's borders from outsiders and conflict that occurs by the citizens of a country in other countries. In a crude way we are examining terrorist imports and terrorist exports. The purpose of this preliminary exercise is to see if the same coun-

[4] We also considered measures of imports/GDP with little qualitative change in the results.

[5] All of the data reported is taken from sources in Blomberg and Hess (2005b), where a detailed discussion is provided.

tries that experience significant international conflict are those countries whose citizens are terrorizing abroad. This is useful, because it may shed some light into some of the causes of terror: whether conflict is driven by civil strife between countries who may have been given arbitrary borders by colonial powers; whether conflict is linked to particular countries such as the United States that may have very strong international policies; whether conflict is due to globalization/democratization/development such that those countries are more apt to be net importers than net exporters.

Figure 1 plots countries by the number of terrorist exports versus the number of terrorist imports and a line of best fit. If countries are just as likely to import conflict as they are to export it, we would expect the there to be a 45 degree line that relates each event. In fact, the line of best fit is measured at 43 degrees—in line with such a hypothesis.

FIGURE 1 ABOUT HERE

However, there are several important differences. First, there are notable net importers of conflict—they include Israel, the United States, France and Great Britain. There are also several notable net exporters of conflict—Ireland, Iran, and Cuba. While there may be many factors that shift countries away from the diagonal line, it is interesting to note that the net importers mentioned are clearly more democratic and developed than the net exporters. We denote the least democratic/developed/open countries with dots. Most appear to be net exporters of conflict. Hence, when developing our gravity model, it would appear that the traditional variables included in gravity models would also apply to conflict—namely income, trade and institutions.

This can be seen once we do the same experiment controlling for democracy, openness and income. In this case, there does not appear to be such a difference in estimated imports or exports from conflict. Figure 2 plots this conditional regression. Notice that in this case there are just as many dots below and above the estimated line. Interestingly, it is still estimated to be a 45 degree line.

FIGURE 2 ABOUT HERE

While these figures may be illuminating, they do not provide any direct evidence regarding the relationship between globalization, democratization and transnational terrorism. The problem we argue in this paper, is that this data conflates the characteristics of the host with the characteristics of the source country. As a gross first cut at the problem, we simply divide the data along source and host country lines. In Table 1, a clearer picture emerges. The number of terrorist incidents by source country is larger when the source is non-democratic and closed (especially after 1970); the number of incidents by host, conversely is larger in democracies and in open, globalized societies (although this association appears somewhat less strongly in the recent period). These observations of course, do not control for a number of factors that may be associated both with democracy and globalization. In the sections that follow, we add those controls and offer a more thorough analysis.

TABLE 1 ABOUT HERE

Baseline Results

We begin by explaining the results from estimating the gravity model, (3). In Table 2, terrorism is measured by the number of incidents by location; our globalization variable is $OPEN$ which is imports and exports as a percentage of GDP to and from all countries in columns 4, 6 and 8; we also use an alternative measure of globalization by examining participation in the WTO and the IMF as indicators of commercial integration (Columns 5, 7 and 8). DEM is a dummy variable that takes value 1 if the country's polity measure in that year is larger than 7, or the sum of legislative and executive veto points is larger than 14.[6]

[6]Both measures are conventional measures of democracy—polity is a 1-10 scale of democracy from the POLITY IV database and executive+legislative index is a 2-14 scale of electoral rules from the Keefer (2005) database.

TABLE 2 ABOUT HERE

Columns 1-7 include variables that do not change over time. These include distance, land mass, as well as dummy variables for language. Column 8 estimates the model to include controls for time. Column 9 estimates the model to control for random effects by country-pair. Each of these models are estimated using the Tobit estimator with standard errors clustered by the income level of each country-pair.

Consider, first, the traditional gravity variables. Greater distance between the source and host countries reduces conflict (as has been well documented for trade and FDI). Traditional barriers to trade such as borders and language also appear to increase conflict. In this sense, conflict appears to be more of a regional threat than a global one.

Larger country size (higher GDP) increases conflict. One way to interpret this result is that larger means more of everything—including conflict. Even so, conflict is significantly more responsive to country size at the host rather than from the source perspective.

But perhaps the most interesting and robust result is when analyzing differences in income. Richer host countries (higher per capita GDP) generate more conflict whereas richer source countries generate less conflict. This result is consistent across each specification with the impact from source income being slightly greater in magnitude than the impact from host income. Taken literally, the estimation results from Table 1 imply that a one percentage increase in a source countries income should decrease the number of terrorist events by 2 per year. A one percentage increase in host country income would invite about 1 more terrorist event per year.

This finding provides a segue into the thrust of our paper's main question. This result might mean that conflict is the unfortunate consequence of the divide between rich and poor countries. During a process of sweeping change over the past 20 years as countries have become more globalized and democratized, some countries have

been "left behind" while others have flourished. Perhaps, terrorists in these "left behind" economies has chosen to strike against those countries that have become more advantaged during the period in question.

We directly address this point as we consider the effect of these dynamic forces—globalization and democratization—on conflict. There are two main results from this estimation. First, the advent of democratic institutions in a source country significantly reduces conflict. However, the advent of these same institutions in host countries actually increases conflict, providing more support for our conjectures.

Second, source-country openness has a negative and statistically significant impact on conflict. Once again, however, host-country openness often has a positive and statistically significant on conflict. *Ceteris paribus*, the impact of being a democracy or participating in the WTO for a source country decreases the number of terrorist strikes by about 1 to 2, which is more than two standard deviations greater than the average number of strikes between any two countries in a given year.

Moreover, as the results in Table 3 demonstrate, our baseline estimates of the traditional gravity specification in (3) reported in Table 2 are generally robust across modifications to take into account region, time and income class. Columns 1 through 6 of Table 2 report the results from a gravity specification where we include dummy variables for globalization and democratization in each specification.[7]

TABLE 3 ABOUT HERE

Greater distance, borders and language appear to have similar statistically significant impacts in Table 3. In this way, conflict appears to be more regional than global. Larger country size continues to increase conflict. Richer host countries continue to generate more conflict in each case except when only rich countries are considered.[8]

[7]The regions we consider are, respectively, South East Asia, East Asia, the Middle East and North Africa, Latin America and the Caribbean, and High and Low Income countries. The latter classification is from Rose (2004) and is obtained from the World Bank Development Indicators.

[8]This may be due to the fact that rich countries are less like to commit terrorist acts.

Poorer source countries continue to generate more conflict.[9]

Finally, and most importantly, the impact on globalization and democratization continues to hold as well. As can be seen from the appropriate rows of the table, the estimate associated with host democracy is statistically significant at below the 0.01 level in most cases, and the coefficient estimates are positive in each case (except in sub Saharan Africa) varying between 0.8 in Asia countries to 1.3 in Latin America. The estimate associated with source democracy is statistically significant at below the 0.01 level in most cases, and the coefficient estimates vary between -0.6 in Latin America income countries to -1.3 in Asia.

The estimates associated with globalization continue to be positive for host countries, ranging from 0.5 in sub Saharan Africa to 1.4 in Asia. They are statistically significant at the 0.01 level in each case but one, in sub Saharan Africa. The impact from source country globalization remains negative. All of these effects are more pronounced in high income countries than in low income countries.

Columns 7 and 8 explore the impact when we split the sample in 1985. Interestingly, the estimated impact of the gap from globalization and democratization is much lower, though still statistically significant, for the 1985-2003 sub-sample. The coefficient is 2 times larger for the second half of the sample.

ROBUSTNESS ACROSS MEASURES OF TERRORIST ACTIVITY

In contrast to the previous section where we defined host conflict from the perspective of the location of the event, we now define host conflict by the nationality of the attacked victim. In national income accounting terms, we consider a nationality measure of host/source conflict rather than a location measure of host/source conflict described above. We employ the exact same specification as in Table 2. We find that

[9] Again, except for the low income sample, which may be less likely to strike against its poor counterparts.

in general, the coefficients have the same sign, of similar magnitude, and statistically significance as those in Table 1.

TABLE 4 ABOUT HERE

The remarkable similarity in results between Tables 4 and 2 also give us some information about possible measurement error. As discussed earlier, there may be some concerns that we are unable to capture the intent of the terrorist given the inherent challenges to using media-based measures of conflict. Yet, when we select a different way of measuring the target for conflict, namely by the nationality of the victim, we get precisely the same results. Obviously, this cannot account for all the possible problems associated with measuring conflict, but it is remarkable how similar are the results. Other possible measurement issues are analyzed in Tables 5 and 6.

TABLE 5 ABOUT HERE

In Table 5 , we consider a different measure of conflict to account for the intensity of the violence. In this case, we define conflict as the number of victims rather than the number of incidents.[10] The advantage to considering this measure is that it may better account for the actual damage of each attack inflicted on its country. The disadvantage would be that often terrorists may be less interested in targeting victims than in getting a response from its target. At the very least, it provides a robustness check to our early results.

The results in Table 5 continue to support the earlier findings. The sign and statistical significance of each relevant coefficient is similar to those discussed earlier. However, the magnitude of the coefficients associated with income per capita, globalization and democratization are slightly larger—on the order of 10 percent greater. Since the left-hand side variables in both Tables 3 and 4 have been scaled to be of similar magnitude, one can only conclude that the impact of these variables is greater

[10] For comparative purposes, we divide the left hand side variable by 10 so that the mean is similar to the mean of conflict in Tables 1 - 3

on the number of victims than it is on the number of incidents.

To place some magnitude on these results, a one percentage increase in income in a host country causes the number of victims to rise by about 1. A one percentage point increase in the income of the source country causes the number of victims to fall by approximately 2. The advent of a democracy or participation in the WTO in a host country causes the number of victims to double to 2. Participation in the WTO in a source country causes the number of victims to fall twofold or by about 2.

TABLE 6 ABOUT HERE

Finally, Table 6 considers the same measure as the number of victims but does this only for victims in the United States. This provides a final robustness check as both the United States may be the most likely target country and the media may be more likely to report terrorist attacks in the United States than in any other place in the world.

These results mirror those found in Table 5. However, the magnitudes are different. It appears that being a democracy for the source country has a greater effect than in the full sample. It also appears that United States creates a larger target due to its democratic policies. Finally, is appears that openness provides a greater hedge to terrorist attacks from source countries than in the previous regressions.

CONCLUSION

We construct a new database on bilateral conflict and estimate a gravity model for conflict. We find that development, democracy and openness are each positive influences in creating a more peaceful environment for an attacking country. We also find that these same factors in a target country can actually encourage conflict.

What do these results mean for policy-makers? Our paper is one of the first of its kind to document the need for development, democracy and openness in encouraging peace for terrorist nations. This means that policies that can encourage more liberal

institutions to facilitate political and economic freedom in countries that are traditionally sources for transnational terrorism will have a pacifying influence. This lends support to policy efforts designed to export democracy to terrorist states may be beneficial. This work also puts to rest the notion that arguments about globalization, in the form of globalization creating "relative deprivation" or "increased inequality" and hence a rich source for terrorist recruitment and export are not substantiated by the data. This work suggests an heretofore unheralded virtue of globalization, and more specifically, integration into the world economic community of terrorism-source states as having a beneficial impact on reducing exports of transnational terrorism.

Unfortunately, our paper also points to the fact that the countries that tend to be more politically and economically free are more likely to be targets of terrorists. Clearly, reducing the degree of democracy in these countries is not a policy option. Slowing the process of globalization, a topic that frequently emerges from those disadvantaged from openness, may not reduce terrorism in the importing countries - reductions in openness in those countries may reduce the degree of integration of the source countries too; the net effect is not clear.

More realistically, these countries must be prepared to invest more heavily in counter-terrorist measures for a defensive posture, and to engage in comprehensive cooperation to avoid simply shifting the incidence of the attacks from more secure to less secure globalized democracies.

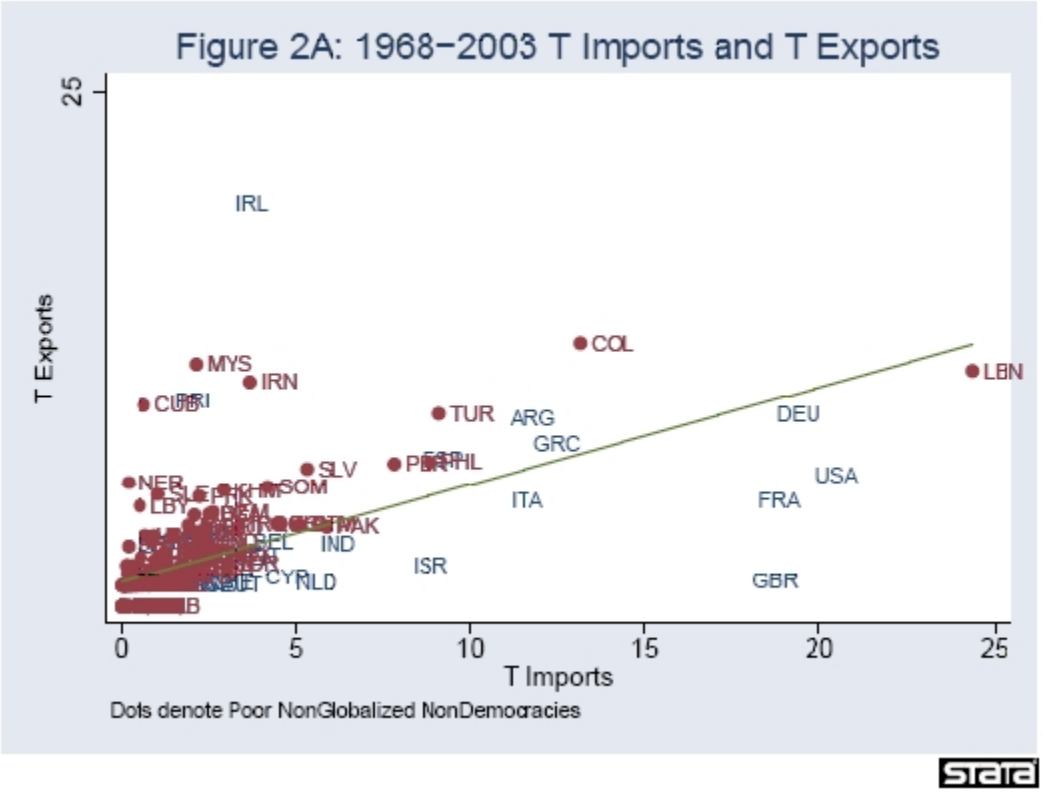

FIG. 1. Imports and Exports of Terrorist Events

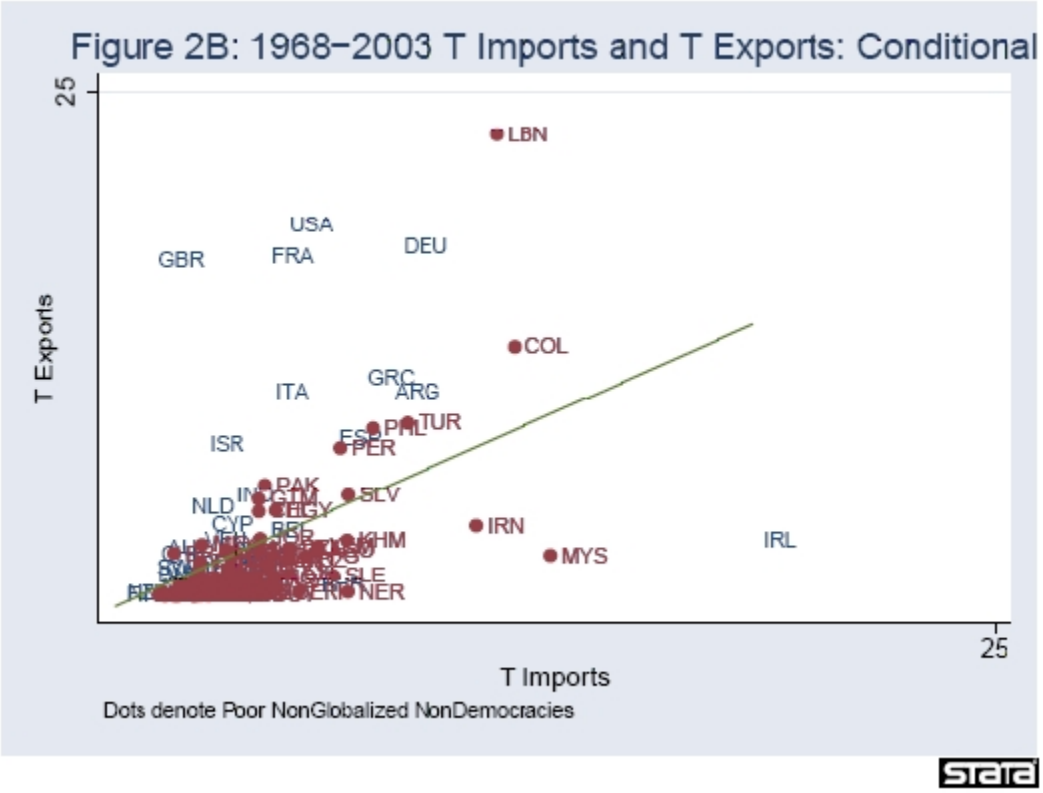

FIG. 2. Imports and Exports of Terrorist Events conditional on Democracy, Openness and Income.

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Table 1: Global Trends for Terrorism by Governance and Openness

		By Host Country				By Source Country			
	1	2	3	4	5	6	7	8	9
Decade	Average	DEM	NODEM	OPEN	CLOSED	DEM	NODEM	OPEN	CLOSED
1960s	0.719	0.716	0.719	0.402	2.643	0.716	0.712	0.705	0.775
1970s	1.694	2.476	1.139	1.250	6.230	1.528	1.776	1.598	2.550
1980s	2.143	3.632	0.718	1.971	4.309	1.671	2.475	1.930	4.135
1990s	1.546	1.938	1.036	1.503	2.244	1.005	2.374	1.527	1.329
2000s	0.725	0.754	0.662	0.715	0.948	0.622	0.930	0.725	0.500
Average	1.616	2.358	0.917	1.414	3.803	1.277	1.983	1.524	2.325

Each column provides the mean number of incidents for sub-sampled decades during 1968-2003. Column 1 provides the average across all countries during the sub-sampled time period. Columns 2 - 5 provide averages from the location of the incident or host country. Columns 6 - 9 provide the averages from the nationality of the terrorist or source country. Column 2,6 provides the averages for democracies (DEM is dummy variable which is 1 if $polity > 7$ or $executive + legislative\ veto\ points > 14$, 0 otherwise) and Column 3,7 provides the remaining non-democracies $NODEM$. Column 4,8 provides averages for more $OPEN$ countries ($OPEN$ is total trade/GDP > 30) and Column 5,9 provides the remaining closed economies ($CLOSED$).

Table 2: Gravity Model for Terrorist Incidents by Location: 1968-2003 Full Country Sample

	1	2	3	4	5	6	7	8
	Base	DEM	DEM	GLO	GLO	DEM&GLO	DEM&GLO	F.E.
y_h	1.146***	0.949***	0.880***	1.428***	0.958***	1.219***	0.788***	0.528***
	[0.159]	[0.181]	[0.167]	[0.182]	[0.166]	[0.210]	[0.172]	[0.173]
y_s	-1.860***	-1.754***	-1.741***	-2.068***	-1.916***	-2.021***	-1.817***	-2.071***
	[0.165]	[0.187]	[0.176]	[0.207]	[0.176]	[0.236]	[0.184]	[0.191]
Y_h	2.583***	2.749***	2.658***	2.445***	2.655***	2.618***	2.654***	2.730***
	[0.137]	[0.157]	[0.145]	[0.152]	[0.144]	[0.180]	[0.149]	[0.152]
Y_s	0.824***	0.708***	0.941***	0.914***	0.990***	0.850***	0.983***	1.079***
	[0.120]	[0.137]	[0.130]	[0.148]	[0.132]	[0.174]	[0.137]	[0.141]
distance	-3.674***	-3.312***	-3.386***	-3.416***	-3.479***	-3.160***	-3.388***	-3.376***
	[0.220]	[0.239]	[0.226]	[0.227]	[0.224]	[0.247]	[0.230]	[0.231]
comlang	2.842***	2.890***	3.002***	2.798***	3.051***	2.897***	3.139***	2.925***
	[0.352]	[0.391]	[0.363]	[0.367]	[0.362]	[0.409]	[0.371]	[0.373]
border	1.202**	1.825***	1.728***	1.609***	1.549***	2.105***	1.777***	1.879***
	[0.513]	[0.570]	[0.532]	[0.533]	[0.529]	[0.591]	[0.543]	[0.546]
area	0.039	-0.215**	-0.148*	-0.413***	-0.103	-0.540***	-0.155*	-0.277***
	[0.078]	[0.096]	[0.087]	[0.097]	[0.088]	[0.114]	[0.092]	[0.095]
$polity_h$		0.126***				0.108***		
		[0.022]				[0.022]		
$polity_s$		-0.037***				-0.037***		
		[0.011]				[0.011]		
DEM_h			2.089***				1.919***	2.947***
			[0.377]				[0.400]	[0.422]
DEM_s			-1.926***				-1.153***	-0.682
			[0.410]				[0.442]	[0.449]
$OPEN_h$				-0.038***		-0.028***		
				[0.006]		[0.008]		
$OPEN_s$				-0.024***		-0.012		
				[0.007]		[0.008]		
WTO_h					1.707***		1.409***	1.372***
					[0.445]		[0.471]	[0.469]
WTO_s					-2.305***		-2.042***	-2.138***
					[0.420]		[0.453]	[0.452]
IMF_h					0.438		0.375	0.628
					[0.384]		[0.393]	[0.400]
IMF_s					-1.260***		-1.356***	-1.331***
					[0.411]		[0.424]	[0.429]
Observations	209208	136963	183276	191368	200236	129543	179332	179332

Notes: clustered standard errors are presented in parentheses. ***, ** and * represent statistical significance at the .01, .05 and .10 levels, respectively. Each column is the basic gravity model estimated over full country sample 1968-2003. Columns 1-9 were estimated using the Tobit Method to allow for substantial number of zero value observations. Column 8 includes year fixed effects. Column 9 estimates the model using random effects by country-pair year income. Included in the regression are: Real GDP Y_i and Real GDP per capita y_i for host $i = h$ and source $i = s$ countries, log physical distance (distance), log physical area (area),dummy variable for language (Comlang), dummy variable for border (border), and measures of democracy (polity is index of democracy on 0 -10 scale with 10 being most democratic) (DEM is dummy variable which is 1 if polity>7 or executive+legislative veto points >14, 0 otherwise) and measures of globalization (OPEN is total trade/GDP) (GLO is dummy variable which is 1 if member of WTO/GATT, 0 otherwise).

Table 3: Robustness Checks: Gravity Model for Terrorist Incidents: 1968-2003 Full Country Sample

	1	2	3	4	5	6	7	8
	asia	ssafr	menaf	latca	highi	lowin	68-85	86-03
y_h	0.369*	0.575***	0.435***	0.379**	-0.494**	0.667***	0.767***	0.664***
	[0.191]	[0.219]	[0.119]	[0.180]	[0.243]	[0.161]	[0.253]	[0.237]
y_s	-0.554***	-0.104	-1.213***	-0.797***	-4.679***	-0.370***	-2.224***	-1.910***
	[0.159]	[0.205]	[0.183]	[0.224]	[0.339]	[0.129]	[0.299]	[0.251]
Y_h	0.658***	0.925***	1.055***	0.762***	3.397***	0.748***	3.271***	2.340***
	[0.146]	[0.219]	[0.137]	[0.128]	[0.229]	[0.109]	[0.248]	[0.192]
Y_s	0.675***	0.492**	1.163***	0.576***	-0.032	0.644***	0.752***	1.216***
	[0.158]	[0.195]	[0.174]	[0.144]	[0.194]	[0.112]	[0.206]	[0.191]
distance	-1.573***	-2.326***	-1.621***	-1.145***	-4.446***	-1.895***	-2.591***	-4.068***
	[0.317]	[0.520]	[0.219]	[0.201]	[0.335]	[0.281]	[0.315]	[0.342]
comlang	1.526***	1.649***	0.371	0.973***	3.673***	1.899***	1.631***	4.411***
	[0.377]	[0.463]	[0.322]	[0.299]	[0.577]	[0.330]	[0.575]	[0.507]
border	1.232*	-0.131	1.234***	1.948***	-1.17	1.206**	1.25	1.576**
	[0.669]	[0.670]	[0.415]	[0.409]	[0.941]	[0.469]	[0.869]	[0.704]
area	0.155	0.021	-0.048	-0.093	0.213	0.149*	-0.557***	0.109
	[0.109]	[0.114]	[0.086]	[0.075]	[0.130]	[0.088]	[0.136]	[0.132]
DEM_h	0.800**	0.343	1.173***	1.283***	3.247***	1.028***	2.510***	2.632***
	[0.355]	[0.418]	[0.284]	[0.305]	[0.646]	[0.293]	[0.592]	[0.582]
DEM_s	-0.307	-0.447	-0.553	-0.611**	0.311	-0.461	-0.92	-0.91
	[0.395]	[0.500]	[0.347]	[0.278]	[0.800]	[0.310]	[0.684]	[0.609]
WTO_h	1.481***	0.453	0.805***	-0.636**	3.242***	0.532	2.998***	0.006
	[0.533]	[0.603]	[0.300]	[0.258]	[0.924]	[0.353]	[0.730]	[0.617]
WTO_s	-0.394	-1.317***	-1.478***	-0.122	-2.807***	-0.259	-1.348**	-2.865***
	[0.505]	[0.502]	[0.332]	[0.302]	[0.924]	[0.342]	[0.680]	[0.621]
IMF_h	0.064	0.51	0.289	-0.157	1.439**	0.059	1.884***	-0.025
	[0.384]	[0.372]	[0.277]	[0.253]	[0.628]	[0.280]	[0.627]	[0.518]
IMF_s	-0.41	0.183	-0.507	-0.464*	-0.425	-0.273	-2.366***	-0.681
	[0.415]	[0.400]	[0.354]	[0.256]	[0.743]	[0.304]	[0.717]	[0.537]
Observations	44416	68713	27746	59508	90579	81922	67397	111935

Notes: clustered standard errors are presented in parentheses. $***$, $**$ and $*$ represent statistical significance at the .01, .05 and .10 levels, respectively. Each column is the basic gravity model estimated over sub-samples by region: asia, ssafr, menaf, latca; income: highi, lowin; and time: 1968-1985, 1986-2003. Columns 1-8 were estimated using the Tobit Method to allow for substantial number of zero value observations. Included in the regression are: Real GDP Y_i and Real GDP per capita y_i for host $i = h$ and source $i = s$ countries, log physical distance (distance), log physical area (area),dummy variable for language (Comlang), dummy variable for border (border), and measures of democracy (DEM is dummy variable which is 1 if polity>7 or executive+legislative veto points >14, 0 otherwise) and measures of globalization (GLO is dummy variable which is 1 if member of WTO/GATT, 0 otherwise).

Table 4: Gravity Model for Terrorist Incidents by Nationality: 1968-2003 Full Country Sample

	1	2	3	4	5	6	7	8
	Base	DEM	DEM	GLO	GLO	DEM&GLO	DEM&GLO	F.E.
y_h	1.722***	1.639***	1.514***	1.880***	1.689***	1.808***	1.525***	1.312***
	[0.088]	[0.102]	[0.092]	[0.098]	[0.092]	[0.116]	[0.095]	[0.094]
y_s	-1.592***	-1.544***	-1.533***	-1.617***	-1.640***	-1.489***	-1.560***	-1.792***
	[0.086]	[0.100]	[0.092]	[0.104]	[0.089]	[0.121]	[0.094]	[0.098]
Y_h	2.126***	2.151***	2.094***	1.952***	2.091***	2.027***	2.067***	2.132***
	[0.071]	[0.082]	[0.075]	[0.080]	[0.073]	[0.098]	[0.076]	[0.077]
Y_s	0.349***	0.289***	0.365***	0.300***	0.350***	0.161*	0.334***	0.399***
	[0.061]	[0.072]	[0.065]	[0.075]	[0.065]	[0.088]	[0.068]	[0.069]
distance	-1.619***	-1.357***	-1.416***	-1.475***	-1.485***	-1.325***	-1.410***	-1.361***
	[0.109]	[0.124]	[0.114]	[0.114]	[0.112]	[0.128]	[0.116]	[0.116]
comlang	2.303***	2.279***	2.320***	2.173***	2.289***	2.184***	2.292***	2.127***
	[0.186]	[0.211]	[0.191]	[0.193]	[0.187]	[0.219]	[0.192]	[0.192]
border	1.226***	1.859***	1.572***	1.473***	1.390***	1.914***	1.587***	1.664***
	[0.295]	[0.331]	[0.305]	[0.303]	[0.301]	[0.338]	[0.308]	[0.309]
area	0.362***	0.282***	0.287***	0.033	0.334***	0.05	0.317***	0.213***
	[0.040]	[0.051]	[0.045]	[0.049]	[0.045]	[0.058]	[0.047]	[0.048]
$polity_h$		0.074***				0.064***		
		[0.011]				[0.011]		
$polity_s$		-0.019***				-0.016***		
		[0.006]				[0.006]		
DEM_h			1.827***				1.600***	2.192***
			[0.212]				[0.226]	[0.237]
DEM_s			-0.778***				-0.729***	-0.234
			[0.205]				[0.214]	[0.218]
$OPEN_h$				-0.025***		-0.026***		
				[0.004]		[0.004]		
$OPEN_s$				-0.030***		-0.024***		
				[0.003]		[0.005]		
WTO_h					1.389***		0.963***	0.885***
					[0.243]		[0.262]	[0.262]
WTO_s					-0.549**		-0.342	-0.268
					[0.219]		[0.233]	[0.233]
IMF_h					0.591***		0.554***	0.708***
					[0.204]		[0.207]	[0.210]
IMF_s					-0.589***		-0.560***	-0.614***
					[0.198]		[0.203]	[0.205]
Observations	209208	136963	183276	191368	200236	129543	179332	179332

Notes: clustered standard errors are presented in parentheses. ***, ** and * represent statistical significance at the .01, .05 and .10 levels, respectively. Each column is the basic gravity model estimated over full country sample 1968-2003. Columns 1-9 were estimated using the Tobit Method to allow for substantial number of zero value observations. Column 8 includes year fixed effects. Column 9 estimates the model using random effects by country-pair year income. Included in the regression are: Real GDP Y_i and Real GDP per capita y_i for host $i = h$ and source $i = s$ countries, log physical distance (distance), log physical area (area),dummy variable for language (Comlang), dummy variable for border (border), and measures of democracy (polity is index of democracy on 0 -10 scale with 10 being most democratic) (DEM is dummy variable which is 1 if polity>7 or executive+legislative veto points >14, 0 otherwise) and measures of globalization (OPEN is total trade/GDP) (GLO is dummy variable which is 1 if member of WTO/GATT, 0 otherwise).

Table 5: Gravity Model for Victims of Terrorism: 1968-2003 Full Country Sample

	1	2	3	4	5	6	7	8
	Base	DEM	DEM	GLO	GLO	DEM&GLO	DEM&GLO	F.E.
y_h	1.279***	1.109***	1.001***	1.559***	1.080***	1.426***	0.907***	0.523***
	[0.173]	[0.196]	[0.180]	[0.191]	[0.179]	[0.221]	[0.185]	[0.172]
y_s	-2.082***	-1.968***	-1.912***	-2.178***	-2.129***	-2.130***	-2.001***	-2.231***
	[0.182]	[0.205]	[0.192]	[0.218]	[0.192]	[0.250]	[0.200]	[0.194]
Y_h	2.736***	2.925***	2.813***	2.466***	2.802***	2.644***	2.810***	2.758***
	[0.155]	[0.177]	[0.162]	[0.163]	[0.162]	[0.194]	[0.166]	[0.158]
Y_s	0.918***	0.816***	1.058***	0.929***	1.103***	0.871***	1.111***	1.172***
	[0.130]	[0.150]	[0.142]	[0.155]	[0.143]	[0.184]	[0.149]	[0.143]
distance	-3.890***	-3.509***	-3.554***	-3.453***	-3.653***	-3.242***	-3.544***	-3.292***
	[0.246]	[0.265]	[0.250]	[0.241]	[0.249]	[0.264]	[0.254]	[0.237]
comlang	2.803***	2.791***	2.930***	2.577***	2.994***	2.628***	3.067***	2.592***
	[0.389]	[0.433]	[0.399]	[0.388]	[0.398]	[0.438]	[0.408]	[0.380]
border	0.664	1.228*	1.234**	1.045*	1.023*	1.443**	1.277**	1.264**
	[0.570]	[0.634]	[0.587]	[0.566]	[0.584]	[0.635]	[0.599]	[0.560]
area	0.083	-0.176*	-0.118	-0.442***	-0.071	-0.561***	-0.127	-0.271***
	[0.085]	[0.104]	[0.094]	[0.101]	[0.096]	[0.120]	[0.100]	[0.095]
$polity_h$		0.122***				0.101***		
		[0.023]				[0.022]		
$polity_s$		-0.046***				-0.043***		
		[0.011]				[0.011]		
DEM_h			2.138***				1.955***	3.189***
			[0.405]				[0.429]	[0.423]
DEM_s			-2.372***				-1.539***	-0.827*
			[0.443]				[0.476]	[0.447]
$OPEN_h$				-0.046***		-0.038***		
				[0.007]		[0.008]		
$OPEN_s$				-0.033***		-0.022***		
				[0.007]		[0.008]		
WTO_h					1.735***		1.450***	1.380***
					[0.474]		[0.501]	[0.464]
WTO_s					-2.674***		-2.282***	-2.327***
					[0.454]		[0.487]	[0.451]
IMF_h					0.457		0.4	0.645
					[0.414]		[0.423]	[0.400]
IMF_s					-1.316***		-1.389***	-1.298***
					[0.442]		[0.456]	[0.428]
Observations	209208	136963	183276	191368	200236	129543	179332	179332

Notes: clustered standard errors are presented in parentheses. ***, ** and * represent statistical significance at the .01, .05 and .10 levels, respectively. Each column is the basic gravity model estimated over full country sample 1968-2003. Columns 1-9 were estimated using the Tobit Method to allow for substantial number of zero value observations. Column 8 includes year fixed effects. Column 9 estimates the model using random effects by country-pair year income. Included in the regression are: Real GDP Y_i and Real GDP per capita y_i for host $i = h$ and source $i = s$ countries, log physical distance (distance), log physical area (area),dummy variable for language (Comlang), dummy variable for border (border), and measures of democracy (polity is index of democracy on 0 -10 scale with 10 being most democratic) (DEM is dummy variable which is 1 if polity>7 or executive+legislative veto points >14, 0 otherwise) and measures of globalization (OPEN is total trade/GDP) (GLO is dummy variable which is 1 if member of WTO/GATT, 0 otherwise).

Table 6: Gravity Model for U.S. Terrorist Victims: 1968-2003 Full Country Sample

	1	2	3	4	5	6	7	8
	Base	DEM	DEM	GLO	GLO	DEM&GLO	DEM&GLO	F.E.
y_h	1.024**	0.866*	0.721*	1.133***	0.707*	0.723	0.522	0.156
	[0.399]	[0.480]	[0.417]	[0.431]	[0.409]	[0.524]	[0.425]	[0.403]
y_s	-1.827***	-1.384***	-1.454***	-1.582***	-1.946***	-0.962	-1.656***	-1.930***
	[0.428]	[0.520]	[0.461]	[0.499]	[0.453]	[0.622]	[0.480]	[0.474]
Y_h	2.968***	3.477***	3.059***	2.767***	3.080***	3.508***	3.067***	3.068***
	[0.367]	[0.460]	[0.387]	[0.386]	[0.385]	[0.517]	[0.397]	[0.386]
Y_s	1.000***	0.932**	1.284***	0.787**	1.374***	0.617	1.441***	1.535***
	[0.311]	[0.384]	[0.345]	[0.364]	[0.347]	[0.463]	[0.367]	[0.358]
distance	-3.841***	-3.413***	-3.403***	-3.329***	-3.533***	-3.016***	-3.341***	-3.166***
	[0.573]	[0.656]	[0.584]	[0.557]	[0.576]	[0.650]	[0.593]	[0.565]
comlang	3.266***	3.902***	3.376***	3.106***	3.543***	3.993***	3.590***	3.319***
	[0.939]	[1.129]	[0.969]	[0.925]	[0.962]	[1.130]	[0.992]	[0.944]
border	-0.143	0.259	0.734	0.394	0.467	0.667	0.987	0.904
	[1.441]	[1.754]	[1.490]	[1.411]	[1.464]	[1.741]	[1.515]	[1.443]
area	0.122	-0.265	-0.126	-0.442*	-0.129	-0.709**	-0.204	-0.337
	[0.203]	[0.262]	[0.224]	[0.235]	[0.227]	[0.300]	[0.238]	[0.232]
$polity_h$		0.056				0.042		
		[0.045]				[0.042]		
$polity_s$		-0.065**				-0.062**		
		[0.029]				[0.028]		
DEM_h			2.901***				2.996***	4.117***
			[0.987]				[1.049]	[1.052]
DEM_s			-4.615***				-3.521***	-2.584**
			[1.127]				[1.195]	[1.126]
$OPEN_h$				-0.041***		-0.015		
				[0.015]		[0.020]		
$OPEN_s$				-0.051***		-0.053**		
				[0.018]		[0.023]		
WTO_h					1.571		0.869	0.997
					[1.098]		[1.167]	[1.110]
WTO_s					-4.453***		-3.299***	-3.563***
					[1.122]		[1.199]	[1.143]
IMF_h					-0.796		-0.761	-0.634
					[1.043]		[1.069]	[1.025]
IMF_s					-2.078*		-2.222*	-1.955*
					[1.130]		[1.179]	[1.125]
Observations	209208	136963	183276	191368	200236	129543	179332	179332

Notes: clustered standard errors are presented in parentheses. ***, ** and * represent statistical significance at the .01, .05 and .10 levels, respectively. Each column is the basic gravity model estimated over full country sample 1968-2003. Columns 1-9 were estimated using the Tobit Method to allow for substantial number of zero value observations. Column 8 includes year fixed effects. Column 9 estimates the model using random effects by country-pair year income. Included in the regression are: Real GDP Y_i and Real GDP per capita y_i for host $i = h$ and source $i = s$ countries, log physical distance (distance), log physical area (area),dummy variable for language (Comlang), dummy variable for border (border), and measures of democracy (polity is index of democracy on 0 -10 scale with 10 being most democratic) (DEM is dummy variable which is 1 if polity>7 or executive+legislative veto points >14, 0 otherwise) and measures of globalization (OPEN is total trade/GDP) (GLO is dummy variable which is 1 if member of WTO/GATT, 0 otherwise).