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Oppressive governments, dependence on the USA, and anti-American terrorism

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Abstract

We study the nexus between US economic and military aid, human rights conditions, and the emergence of anti-American transnational terrorism in aid-receiving countries. Using data from 126 countries for the period 1984–2008, we show that a combination of local repression and military or economic dependence on the USA results in more anti-American terrorism. This relationship only breaks down at high levels of dependence. There is no evidence that the USA is made any safer by providing foreign assistance, even if this assistance is substantial or is channeled to highly oppressive regimes which might be less restricted in terms of their instruments of fighting terrorism. Our findings also hold true when we account for the potential endogeneity of US aid and human rights conditions to anti-American terrorism.

JEL classifications: D74, F35, F51

1. Introduction

The terrorist attacks of 11 September 2011 (9/11) have drawn worldwide attention to the phenomenon of anti-American transnational terrorism.[1] To draw a comparison with other global powers, the USA is the most prominent target of transnational terrorism, having been attacked by transnational terrorist organizations between 1984 and 2008 four times more often than France, six times more often than the UK, and nine times more often than Germany (Mickolus *et al.*, 2009). Anti-American terrorism damages the US economy—the 9/11 attacks were associated with direct costs of approximately $50 billion (Enders and Sandler, 2012, p.205). It may also prove destabilizing to economic and political conditions in the source countries of anti-American terrorism, be it a consequence of US military

1 We consider anti-American terrorism as attacks by autonomous nonstate and non-US actors against US interests.

actions, international sanctions, or declining international flows of tourism, goods and services, and capital.

Given the frequency of and dangers associated with anti-American terrorism, the US government attempts to protect the nation through the use of foreign assistance to the countries from which anti-American aggression originates. For instance, President Barack Obama (2013) described the motivations behind US aid as follows:

> Foreign assistance . . . is fundamental to our national security. And it's fundamental to any sensible long-term strategy to battle extremism . . . . [US aid may be spent on] training security forces in Libya, maintaining peace agreements between Israel and its neighbors, feeding the hungry in Yemen, building schools in Pakistan, and creating reservoirs of goodwill that marginalize extremists.

Thus, the official purpose of US aid is to reduce US vulnerability to transnational terrorism by delegating the fight against a common enemy (i.e., terrorist organizations) to the source country of terrorism. Indeed, to the extent that foreign aid contributes to better security outcomes, it may reduce transnational terrorist activity (e.g., Bandyopadhyay *et al.*, 2011).

Previous contributions, however, offer little evidence to support the notion that the USA may actually become safer through interventionist policies such as aid-giving. Rather, the active role that the USA plays in globalization (Mousseau, 2002–2003; Lizardo, 2006), its dominance in the international system (Sobek and Braithwaite, 2005), and its active involvement in external conflicts (e.g., through the direct support of foreign governments) seem to incite anti-American terrorism (Pape, 2003; Savun and Phillips, 2009). Of most importance to our contribution, Neumayer and Plümper (2011) find that the USA is targeted more frequently by terrorists from countries whose governments it supports militarily.

Why could the USA, the country giving the most development aid in the world, become more vulnerable to terrorism originating from the country receiving the aid? We argue that the eventual effect of US support on anti-USA terrorism is contingent on local conditions in the aid-receiving country. The influence of local conditions on the nexus between aid and anti-American terrorism has not been in the center of empirical research to date. In this contribution we study how local human rights violations may affect the aid–terrorism nexus. This analytical focus is motivated by the fact that many terrorist attacks against US interests have been conducted by perpetrators hailing from the Middle East and northern Africa, a trend which has been particularly apparent since the end of the Cold War (Enders and Sandler, 2012). Many countries in this part of the world receive substantial US aid and also feature repressive regimes (e.g., Egypt, Iraq). Indeed, critical voices argue that US aid all too often—and deliberately—falls into the hands of oppressive governments. For instance, in a 2001 interview Noam Chomsky, an outspoken critic of US foreign policy, drew such conclusions to explain the motivations behind the 9/11 attacks (Monthly Review, 2001):

> The bin Laden network and others like them draw a lot of their support from the desperation and anger and resentment of the [Middle Eastern] people . . . . [People in the Middle East] are very angry about US support for undemocratic, repressive regimes in the region . . . There is the fact that the US has supported oppressive, authoritarian, harsh regimes, and blocked democratic initiatives. For example, . . . in Algeria. Or in Turkey. Or throughout the Arabian Peninsula . . . . When bin Laden makes that charge, . . . people know what he is talking about.

By studying the interaction between US aid, human rights, and anti-American terrorism, we add to the existing literature in several ways. First, we develop further theoretical ideas (most prominently by Neumayer and Plümper, 2011) on the relationship between US aid and anti-American terrorism by also considering the role of local human rights conditions. Here, we build on earlier research by Walsh and Piazza (2010) who analyse the effect of human rights violations on terrorism. Second, in our empirical analysis of 126 countries for the period 1984–2008, we model the potentially complex nexus between US aid, human rights, and anti-American terrorism by means of interaction effects. We carefully study how this nexus behaves for various combinations of aid and human rights violations. Third, we control for endogeneity by means of system-GMM estimations. That is, we account for the fact that terrorism may also determine external US support and human rights violations. Endogeneity bias has often been neglected in past research. Finally, our contribution studies not only the effects of US military aid (as in Neumayer and Plümper, 2011) but also economic assistance.

The remainder of this article is organized as follows. After discussing the relevant literature in Section 2, we introduce our data and empirical methodology in Section 3. Section 4 presents and discusses our empirical findings. Section 5 concludes.

2. US aid, human rights, and anti-American terrorism

2.1 US support and anti-American terrorism

In the introduction we already alluded to the fact that existing research strongly suggests that activist US foreign policy behavior is associated with more anti-American terrorism. The augmentative effect of US military aid on anti-American terrorism may be due to the idea that 'the friend of my enemy is my enemy'. For instance, Neumayer and Plümper (2011) argue that it may be attractive for terrorist groups to internationalize a domestic conflict by targeting foreign allies that stabilize the government they oppose. Even though these terrorist groups ultimately have domestic ambitions, attacking the USA as a foreign sponsor may stir up domestic support for their cause and improve terrorist mobilization. It may also weaken the local government that is militarily dependent on the USA, given that US support is likely to decrease with terrorism directed against it because anti-American terrorism ought to raise the costs of military supporting a foreign country.

Although the ideas of Neumayer and Plümper (2011) relate anti-American terrorism to military support, economic aid may be a different matter. Several studies find that foreign assistance that emphasizes health, education, and conflict prevention is negatively associated with terrorism (Azam and Thelen, 2008, 2010; Young and Findley, 2011). Why would local insurgents attack a foreign country that tries to improve their living conditions? Arguably, this only makes sense if the assistance provided by the eventual target country of transnational terrorism (in our case, the USA) is closely associated with local (economic, political, and cultural) developments that cause discontent and lead to resentment directed against the aid-giving country (in our case, anti-American resentment).

Indeed, the empirical evidence suggests that foreign assistance is used as a means to buy political support from recipient countries (Alesina and Dollar, 2000; Kuziemko and Werker, 2006; Dreher *et al.*, 2008; de Mesquita and Smith, 2009). For example, Dreher *et al.* (2008) show that US aid affects the voting behavior of aid recipients in the UN General Assembly, benefiting the USA. To the extent that US (economic and military) aid buys influence, it may also serve as a facilitator of socio-economic and cultural change.

For instance, aid may help increase US penetration of foreign markets, which in turn may coincide with, for example, increased economic pressures from external competition, the inflow of capitalist and liberal ideas, and the spread of American culture in the aid-receiving country (Mousseau, 2002–2003; Lizardo, 2006). Such changes are likely to cause resentment among traditionalists in affected societies, which may be another root cause of anti-Americanism (Mousseau, 2002–2003; Lizardo, 2006). Alternatively, US aid may buy influence to help *freeze* local politico-economic developments if this is in the interest of the USA. This may be another source of anti-American resentment.

2.2 The role of local repression

Crucial to our contribution is the idea that there must be a second factor that interacts with US aid to explain the patterns of anti-American terrorism. The interacting variable we focus on in this contribution is human rights conditions in the aid-receiving country. As we argue, local repression coupled with US aid may explain why this aid is unwelcome and thus results in additional grievances and anti-American terrorism. As an alternative, we also discuss the possibility that local repression may actually counter the terror-augmenting effect of US aid by over-proportionally strengthening local counterterrorism capacity.

2.2.1 Why the interaction of local repression and aid may lead to more anti-US terrorism

Disrespect for human rights alone may lead to increased terrorist activity. As argued by Walsh and Piazza (2010), human rights violations undermine government legitimacy and reduce domestic and international support for a government, all of which may give rise to and facilitate terrorist activity.[2] Indeed, Walsh and Piazza (2010) find that states that violate their citizens' physical integrity rights experience terrorism more frequently than countries that respect them. To the extent that respect for human rights correlates with democratic institutions, the evidence by, for example, Krueger and Laitin (2008) that democracy leads to less terrorism points in the same direction.

Human rights violations in combination with US aid may also matter to the specific case of transnational anti-American terrorism. Arguably, the combination of US aid and local repression creates additional grievances that are specifically directed against the USA. Indeed, in response to the question as to why Al Qaeda fights America, in his 'Letter to America' bin Laden (2002) states:

> You [i.e., the USA] attacked us [i.e., the Muslims] in Somalia; you supported the Russian atrocities against us in Chechnya, the Indian oppression against us in Kashmir, and the Jewish aggression against us in Lebanon. Under your supervision, consent and orders, the governments of our countries which act as your agents, attack us on a daily basis .... The freedom and democracy that you call to is for yourselves ... only; as for the rest of the world, you impose upon them your monstrous, destructive policies and governments, which you call the 'American friends' .... When the Islamic party in Algeria wanted to practice democracy and they won the election, you unleashed your agents in the Algerian army onto them, and to attack them with tanks and guns, to imprison them and torture them.

2 Besides being a cause of conflict in itself, repression indicates local conflicts that arise due to other factors. For instance, a government is likely to violate human rights when enforcing policies not accepted by some (consequently oppressed) groups. Hence, any violation of physical integrity rights ought to be a clear indicator of local conflict.

Here, the argument is that the USA deliberately uses aid to freeze local political developments (i.e., democratization), instead supporting local repression. Aid is purposely given by the USA and used by the (dependent) local government to uphold local repression, which serves both the interests of the USA and the local government.

When a repressive government receives US aid, this is expected to further bolster its repressive capacity. At the same time, it means that due to its support, the USA becomes associated with—tainted by—local repression. Rosendorff and Sandler (2004) show that harsh proactive counterterrorism measures (e.g., in the form of military aid/interventions supporting foreign governments) may actually lead to a backlash that encourages terrorist activity. With respect to the USA, this implies that support from the US government for an unpopular—oppressive—local regime may correlate with an increased discontent projected onto the USA. In other words, while military-economic aid given by the USA and local repression may already by themselves cause (anti-American) resentment, the combination of both creates further incentives for local terrorists to attack the USA. In sum, this means that we may find support for the following hypothesis:

Hypothesis 1 A combination of strong local repression and high military/economic dependence on the USA generates more anti-American terrorism in an aid-receiving country.

2.2.2 Why the interaction of local repression and aid may lead to less anti-US terrorism

In contrast to this hypothesis, it is sometimes argued that countries may be more vulnerable to terrorism due to their very respect for human rights (e.g., Walsh and Piazza, 2010, p.552). This respect may constrain counterterrorism efforts, for example, by limiting the coercive interrogation of terrorist suspects. Repression, on the other hand, may reduce opportunities to conduct terrorism. Daxecker and Hess (2013) show that government repression may contribute to a more rapid termination of terrorist campaigns, particularly in nondemocratic settings. Potentially, then, local repression may indeed increase the material costs of conducting terrorism. Some studies (for a review see Krieger and Meierrieks, 2011) also suggest that democratic countries are more likely to witness terrorism. This vulnerability of democracies to terrorism in turn may be partly determined by their inherent respect for human rights and a politico-legal system designed to protect them. For instance, Li (2005, p.283) argues that countries with constrained executives (meaning the existence of more veto players that can politically constrain the restriction of civil liberties) are more vulnerable to terrorism:

> Repression and effective deterrence is more costly to the government in a competitive political system because it may harm political support and cause the government to lose power. In contrast, the largely unconstrained, repressive military regime, for example, can disregard civil liberties, effectively crush terrorist organizations, and reduce terrorist incidents.

The possibility to use repression to counter terrorism may also matter to the case of anti-American terrorism. Here, while it still seems likely—as argued already—that US aid is used to foster change or preserve a status quo favorable to the USA (and the dependent local government) but opposed by local insurgents, local repression may be used to increasingly suppress anti-American terrorism in this situation. For one thing, domestic repression may be particularly effective against anti-American terrorism because this kind of terrorism ought to be more costly than domestic terrorism (e.g., as there are fewer, better protected targets available). For another thing, there may even exist an incentive for local governments to use repression against anti-American resentment, given that this is expected to

secure future US aid. Following this argument, we may expect to find support for the alternative hypothesis:

Hypothesis 2 A combination of strong local repression and high military/economic dependence on the USA generates less anti-American terrorism in an aid-receiving country.

2.3 Endogeneity

The potentially complex interactions between US foreign assistance, local human rights conditions, and anti-American terrorism may be further influenced by the issue of endogeneity. Endogeneity refers to a situation whereby explanatory variables are not independent of the error term, therefore violating the assumption of the classical linear regression model that states that covariances of the explanatory variables and error term ought to be equal to 0. Endogeneity may lead to biased and inconsistent parameter estimates and thus affect hypotheses tests.

While the sources of endogeneity are manifold (e.g., omitted variables, measurement error), the cause of endogeneity most relevant to our study is simultaneity. First, human rights violations may affect anti-American terrorism, but human rights conditions may also deteriorate as a consequence of terrorism, as shown by Piazza and Walsh (2009) and Dreher *et al.* (2010). Second, not only may US aid affect anti-American terrorism, but aid is also expected to go to those countries that confront terrorism in the sense of a 'delegated fight'. For instance, Boutton and Carter (2014) show that the distribution of American foreign assistance is strongly influenced by foreign terrorist threats to the USA. Bapat (2011) argues that US military aid creates a moral hazard problem for the aid-receiving country. The provision of military aid (a consequence of the prevalence of terrorist groups in the aid-receiving country that are hostile to both the US and the local government) provides a disincentive for host states to reach a settlement with terrorist groups that is unfavorable to the USA, given that such a settlement would end US military aid. This is expected to lead to longer times of receiving aid, which may also result in further backlash (i.e., perpetuated terrorist campaigns) in the aid-receiving country. The model by Bapat (2011) thus points to a rather complex relationship between US military aid and anti-American terrorist activity.

Overall, this discussion suggests that our main variables of interest (US military and economic aid, human rights, and their respective interactions) may be susceptible to simultaneity bias. We shall consequently account for this by using system-GMM estimation models that appropriately control for endogeneity.

3. Research design

In this section we describe our data and econometric methods. We use data collected from 126 countries from 1984 to 2008, where the country-year is the unit of analysis.[3]

3.1 Variables and data sources

3.1.1 Dependent variable

To indicate anti-American terrorism we use dyadic data drawn from the International Terrorism: Attributes of Terrorist Events (ITERATE) data set (Mickolus *et al.*, 2009).

3 A country list and the summary statistics are reported in the Online Appendix. Note that due to the limited availability of some independent variables, our data set does not cover all countries and may thus be susceptible to sample bias.

ITERATE contains data on the characteristics of transnational terrorist groups, their activities with international impact, and the environment in which they operate (Mickolus *et al.*, 2009).[4]

For our analysis our dependent variable is the number of anti-US attacks in a given country-year, that is, the number of attacks by autonomous nonstate and non-US actors that primarily target US interests (e.g., diplomats, businesses, embassies). We assign an incident to a specific country-year according to the source definition of anti-US terrorism, that is, an attack is assigned to the perpetrator's country of origin, irrespective of the actual location of the attack.[5] For instance, the 1988 bombing of a US military recreational club in Naples (Italy) by the Japanese Red Army is assigned to Japan.

3.1.2 Independent variables

We measure local repression by using data on human rights violations from the Cingranelli and Richards (2010) CIRI Human Rights Dataset. We use the physical integrity rights index, which is an additive measure consisting of four individual components: (i) torture, defined as the deliberate and degrading infliction of extreme pain by government officials or by private individuals at the instigation of government officials; (ii) extrajudicial killings, that is, killings by government officials without due process of law; (iii) disappearances, that is, cases in which persons have disappeared, the victims have not been found, and political motivation appears likely; and (iv) political imprisonment, that is, the incarceration of persons by government officials because of their public statements, nonviolent opposition to government policies or leaders, religious attitudes, nonviolent religious practices, or their affiliation with certain (ethnic, racial etc.) groups. Each of these components is mapped on an ordinal scale with values ranging from 0 (practiced frequently), 1 (practiced occasionally), and 2 (never practiced). We rescale the original variable to the range 0 to 8, where higher values now correspond to more frequent human rights violations.

As measures of the local government's dependence on the USA, we use the amount of military and economic aid given by the USA to a specific country.[6] To control for scale effects and indicate relative dependence, we relate US aid to local GDP (both in constant US dollars). The data on economic and military aid is drawn from USAID Economic Analysis and Data Services (2013).

3.1.3 Controls

To avoid the problem of detecting only spurious relationships between the dependent and independent variables, we control for a number of further potential determinants of terrorism.

First, we consider the effect of population size on terrorism. Countries with larger populations may experience more terrorism because they have a larger pool of individuals

4 The Global Terrorism Database (GTD) is another potential data source. Enders *et al.* (2011) process the GTD raw data and divide it into transnational and domestic terrorist incidents. However, using ITERATE allows us to identify the source country of terrorism—in the sense that an attack is assigned to the perpetrator's country of origin—whereas the GTD only provides information about where an attack eventually took place. This is why we prefer ITERATE.

5 In our analysis we consider only the terrorists' first nationality as reported by ITERATE.

6 Note that since economic aid and military aid are highly correlated, we do not include them in the same specification to avoid collinearity.

willing to engage in terrorism. Indeed, numerous empirical studies find that population size correlates positively with terrorism (see the review by Krieger and Meierrieks, 2011). The (logged) population size variable is extracted from the Penn World Tables (Heston *et al.*, 2012).

Furthermore, we account for the effect of economic development, operationalized by (logged) real GDP *per capita* from the Penn World Tables. It may be argued that poor economic development is conducive to terrorism, as it corresponds to comparatively low opportunity costs of terrorism (Freytag *et al.*, 2011). There is some empirical support for this notion (Blomberg *et al.*, 2004; Freytag *et al.*, 2011; Gries and Meierrieks, 2013). Other empirical studies (e.g., Sanchez-Cuenca and de la Calle, 2012) however, do not find a strong relationship between economic underdevelopment and terrorism (also see the review by Krieger and Meierrieks, 2011). An answer to this empirical puzzle is suggested by Enders *et al.* (2014). They find a robust nonlinear income–terrorism relationship where terrorism is most concentrated in a middle-income range. Given these divergent lines of reasoning, we remain agnostic about the expected effect of economic development on anti-American terrorism.

We also consider geographical distance between the origin country of terrorism and the USA as another control. It is measured by the (logged) distance between Washington, DC, and the respective perpetrator country's capital as reported in the CEPII GEODist Database (Mayer and Zignago, 2011). The likelihood of anti-American terrorism may increase with distance. The greater the distance from the USA, the fewer social, cultural, economic, and personal interactions occur. This could mean that the perception of the USA is subject to local information (and thus terrorist propaganda), which may facilitate anti-American resentment. However, as argued by Neumayer and Plümper (2011), it is also possible that anti-American terrorism actually decreases with distance due to higher material costs of attacking. Given these conflicting ideas, we also remain agnostic about the expected effect of distance.

We furthermore control for state failure, assuming it to have an augmentative effect on terrorism. In particular, state failure may make terrorism more likely by creating a power vacuum that facilitates terrorist activity. Piazza (2008) shows that states experiencing failure are also more likely to experience transnational terrorism. We use data from the Political Instability Failure Task Force (PITF Global Report, 2014) which provides a composite state failure index capturing the intensity of revolutionary and ethnic wars, adverse regime changes, genocides, and politicides.

We also consider the influence of a country's Muslim population share. The data comes from the CIA World Factbook (Central Intelligence Agency, 2014). Given that many terrorist attacks against US interests—particularly after the end of the Cold War—have been conducted by perpetrators hailing from the Middle East and northern Africa (Enders and Sandler, 2012), we expect a larger Muslim population share to coincide with more anti-American terrorism.

Furthermore, we include a lag of the dependent variables and year dummies to account for serial correlation and trending effects associated with the dependent variable. The inclusion of a lagged dependent variable may also capture the dynamics of anti-American terrorism, for example, in the sense of accounting for a long-run terrorist campaign, with past levels of terrorism predicting present ones (e.g., Freytag *et al.*, 2011).

Finally, we run additional specifications including further controls to assess the robustness of our findings. Here, we analyse the influence of regime stability, trade openness,

government size, and economic growth. The latter three variables are drawn from the Penn World Tables. We anticipate them to negatively correlate with anti-American terrorism, as they ought to indicate better economic conditions, thus making terrorism a less attractive option. We operationalize regime stability by the (logged + 1) number of years since the most recent regime change, drawing the data from the Democracy and Dictatorship Revisited Dataset (Cheibub *et al.*, 2010). In line with Piazza (2008), we expect regime stability to negatively correlate with anti-American terrorism, as times of regime instability provide additional incentives and opportunities for terrorist groups to operate.

3.2 Methodology

3.2.1 Negative binomial regressions and interaction effects

Our dependent variable is a count that assumes only discrete, nonnegative values. Thus, as one empirical technique we apply a count-data model. Preliminary tests suggest overdispersion of the dependent variables; therefore, we estimate a series of negative-binomial regressions. To better evaluate the count-model findings, we report our results as incident-rate ratios (IRRs). As the IRRs present the effect of a one-unit change of the independent variable on the count-data outcome variable on a multiplicative scale, we can assess both statistical significance and (by evaluating the magnitude of the IRR) economic substantiveness.

Of most interest to us are the interaction effects associated with the combination of US aid and local repression. Yet interpreting interactions is not an easy task in nonlinear count-data models. As shown by Ai and Norton (2003, p.129), the 'interaction effect . . . cannot be evaluated simply by looking at the sign, magnitude, or statistical significance of the coefficient on the interaction term when the model is nonlinear'. Rather, the interaction effect in nonlinear models depends on all covariates of the specification and may differ with respect to statistical significance, economic substantiveness, and direction of influence depending on which combination of the interacting variables we consider (Ai and Norton, 2003; Hilbe, 2011).

To present and interpret interaction effects more clearly, Hilbe (2011, pp.520–9) suggests creating categories for continuous variables and presenting the results for selected values of the interacted variables. For our data set we proceed as follows. First, using the physical integrity index we create four categorical variables that correspond to different levels of human rights violations.[7] We then interact each categorical variable with the continuous variable indicating either US military or economic aid. Finally, all categorical variables measuring different levels of repression, the variables indicating aid, their respective interactions, and a set of control variables enter the negative binomial regression model. Importantly, the roles of local repression and aid in anti-American terrorism cannot be assessed by simply evaluating the regression coefficients (or IRRs) associated with the individual variables and their interaction term. Rather, we need to consider their combined effect on anti-American terrorism by calculating their interaction effects (Hilbe, 2011). This is done as follows.

Assuming that $\beta_{cat(k)}$ is the estimated coefficient associated with human rights violations category k from a negative binomial estimation and $\beta_{cont(ki)}$ is the estimated coefficient

7 Our first category is minor human rights violations, which corresponds to a physical integrity index (PII) of 1 or 2. The following categories are some human rights violations (PII = 3 or 4), substantial human rights violations (PII = 5 or 6), and severe human rights violations (PII = 7 or 8). The baseline is no human rights violations (PII = 0).

associated with the interaction term of this categorical variable k and the continuous aid variable i (either economic or military aid), the interaction effect (expressed in IRR) of the combination of repression (at k) and aid (at the specific value j of i) is calculated by:

$$exp\left(\beta_{cat(k)} + \beta_{cont(ki)} * j(i)\right) \quad (1)$$

Using eq. (1), we can consequently calculate the interaction effects for various levels of repression k at various levels of aid i. Here, standard errors and statistical significance may differ for each interaction effect combination.[8] Note that the calculated interaction effects are always expressed in comparison to the reference (baseline) level, that is, a country with the identical level of aid $j(i)$, but with no local repression (PII = 0).

3.2.2 System-GMM

As a second econometric technique, we apply a dynamic-panel system-GMM estimations approach. To better accommodate the dependent variable to this linear model, we transform it by taking the natural logarithm of the count of anti-American terrorist attacks (with unity added to allow for zero observations). In contrast to negative binomial regressions, the interpretation of interaction effects in linear system-GMM estimations is straightforward. For instance, the statistical significance of the interaction effect can be tested with a single t-test on the regression coefficient associated with the interaction term (Ai and Norton, 2003).

We use system-GMM to account for endogeneity that may bias our estimates. As previously discussed, the source of endogeneity may be the simultaneity of repression, aid, and anti-American terrorism. System-GMM may effectively deal with the problem caused by endogenous explanatory variables by using their lagged levels as instruments for the difference equation and lagged differences as instruments for the level equations (Roodman, 2009). System-GMM is particularly appropriate—as in our case—when there are no plausible external instruments available. The method, however, constitutes no 'magic bullet'; internal instruments may not effectively control for endogeneity. This is why we report a number of test statistics to evaluate instrument validity. In line with Roodman (2009), we also always keep the number of used instruments below the number of cross-sections considered for the system-GMM estimates (by means of restricting the instrument lag order and 'collapsing' the instruments), so as to avoid the problem of instrument proliferation, which may render GMM estimates invalid.

4. Empirical results

4.1 Negative binomial regression results

The negative binomial regression results that consider the role of US military aid and local repression in anti-American terrorism are reported in Table 1. Before considering our main research interest, we briefly discuss the findings for the controls. First, we find that population size is positively associated with anti-US terrorism. Consistent with Krieger and Meierrieks (2011), this is likely due to a scale effect, with larger countries simply being home to more (potential) terrorists. Higher monitoring costs in larger countries may also

8 The standard errors are computed as the square root of the variance of the interaction coefficient, which is $V(\beta_{cat(k)}) + j^2 V(\beta_{cont(ki)}) + 2 * Cov(\beta_{cat(k)}, \beta_{cont(ki)})$ for eq. (1).

Table 1. Anti-American terrorism and US military aid

	(1)	(2)	(3)
Lagged terrorism	1.538	1.524	1.517
	(0.092)***	(0.086)***	(0.099)***
Minor human rights violations $(HRV1)_{t-1}$	3.015	2.712	2.817
	(0.909)***	(0.814)***	(0.851)***
Some human rights violations $(HRV2)_{t-1}$	6.787	6.014	6.453
	(2.114)***	(1.988)***	(2.017)***
Substantial human rights violations $(HRV3)_{t-1}$	11.168	9.675	10.350
	(4.175)***	(3.873)***	(3.709)***
Severe human rights violations $(HRV4)_{t-1}$	12.414	11.047	11.631
	(5.098)***	(4.891)***	(4.650)***
Military dependence $(MD)_{t-1}$	34.779	14.145	19.033
	(174.999)	(70.811)	(92.896)
$MD*HRV1_{t-1}$	0.085	0.213	0.154
	(0.433)	(1.083)	(0.765)
$MD*HRV2_{t-1}$	0.080	0.217	0.145
	(0.405)	(1.091)	(0.710)
$MD*HRV3_{t-1}$	0.112	0.321	0.215
	(0.569)	(1.624)	(1.060)
$MD*HRV4_{t-1}$	0.037	0.085	0.071
	(0.184)	(0.427)	(0.345)
Population $(ln)_{t-1}$	1.356	1.355	1.332
	(0.106)***	(0.112)***	(0.100)***
GDP *p.c.* $(ln)_{t-1}$	1.674	1.796	1.650
	(0.157)***	(0.172)***	(0.153)***
Distance (ln)	1.112	1.116	1.111
	(0.070)*	(0.070)*	(0.075)
State $failure_{t-1}$	1.109	1.109	1.133
	(0.054)**	(0.051)**	(0.060)**
Muslim population share	1.357	1.376	1.296
	(0.357)	(0.370)	(0.336)
Regime $stability_{t-1}$		0.820	
		(0.083)*	
Trade $openness_{t-1}$		0.999	
		(0.002)	
Government $size_{t-1}$			0.973
			(0.021)
GDP *p.c.* $growth_{t-1}$			1.004
			(0.012)
Joint significance of interaction terms (Wald χ^2)	15.73	18.64	11.83
(Prob. $> \chi^2$)	(0.00)***	(0.00)***	(0.02)**
Joint significance of full model (Wald χ^2)	1,034.03	940.51	1,108.39
(Prob. $> \chi^2$)	(0.00)***	(0.00)***	(0.00)***
Log-pseudo-likelihood	−1,283.42	−1,280.31	−1,276.24
Number of observations	2,786	2,786	2,775

Notes: Constant not reported. All models include year dummies (not reported). Robust standard errors clustered over countries in parentheses. Incidence-rate-ratios reported. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

play a role. Second, higher levels of economic development coincide with more anti-American terrorism. This finding is in line with Sanchez-Cuenca and de la Calle (2012). Third, in some specifications distance is associated with higher levels of anti-American terrorism. This suggests that geographical distance translates into socio-cultural distance, which may facilitate the creation and harnessing of anti-American resentment. Fourth, political instability (state failure and low regime age) shares a robust, positive association with anti-American terrorism. This suggests that instable countries provide conditions under which terrorist groups can operate with relative ease, as previously argued by Piazza (2008). Fifth, we find that past terrorist activity is positively related to present terrorism, which is in line with Freytag *et al.* (2011) and suggests path dependence. For instance, longer terrorist campaigns generate economies of scale by reducing per incident costs and increasing media attention. Finally, a country's Muslim population share, trade openness, government size, and economic growth do not have a bearing on anti-American terrorism.

Of main interest to our study is the (interacting) influence of human rights violations and US military assistance on anti-American terrorism. Given that the individual regression coefficients associated with local repression, aid, and their interactions have little analytical meaning, we proceed to calculate—as already described—the interaction effects for various combinations of military dependence and local repression. Our findings are reported in Table 2.

The IRR calculated for the various interaction effects generally support H1. That is, in comparison to the reference country (which receives the same respective amount of US aid but has no repression) a combination of local repression and military dependence on the USA results in more anti-American terrorism. This effect also tends to be economically substantive. For instance, a country with a substantial level of human rights violations that receives the mean amount of military aid from the USA (approximately 0.043% of local GDP) is 10.16 more likely to generate anti-American terrorism compared to a baseline country that receives the same level of aid but does not exert repression. The interacting relationship of aid and domestic repression, however, breaks down for high levels of military support. For instance, receiving 1% of local GDP in US military aid while maintaining a substantial level of human rights violations only results in a 1.25 increase in anti-American terrorism compared to the reference level, where this effect is also not statistically significant.[9]

These findings provide several insights into the nexus between human rights conditions, US military assistance, and the causes of anti-American terrorism. First, consistent with H1, there is evidence that a combination of US aid and local repression creates incentives, dependencies, and grievances that result in anti-American terrorism. Second, this interaction effect is no longer present when US aid becomes very large. This finding may be due to the fact that high levels of aid translate substantially into increased counterterrorism effectiveness, thus negatively affecting the opportunity to carry out terrorism. This supports the idea that repression may have some terror-reducing merits (Daxecker and Hess, 2013). At very high levels of support the terror-enhancing and terror-augmenting effects of the aid–repression nexus may thus cancel each other out. However, there is still no evidence that US military aid—contrary to official statements by US policy makers—makes the USA

9 The plotted marginal effects (reported in the Online Appendix) associated with the regression specification (1) of Table 1 tell a similar story.

Table 2. Anti-American terrorism and US military aid (interaction effects)

Local human rights situation	Level of US military aid (% of local GDP)	IRR of interaction effect	Standard error of interaction effect
Minor human rights violations	0	3.015	0.909***
	0.025	2.835	0.865***
	0.043 (mean)	2.711	0.920***
	0.10	2.355	1.282
	0.25	1.627	2.048
	1.00	0.255	1.295
	2.00	0.022	0.220
Some human rights violations	0	6.787	2.114***
	0.025	6.373	1.952***
	0.043 (mean)	6.089	2.032***
	0.10	5.274	2.768***
	0.50	1.923	4.760
	1.00	0.545	2.715
	2.00	0.044	0.439
Substantial human rights violations	0	11.168	4.175***
	0.025	10.574	3.870***
	0.043 (mean)	10.164	3.935***
	0.10	8.973	4.998***
	0.25	6.461	8.002
	1.00	1.251	6.265
	2.00	0.140	1.413
Severe human rights violations	0	12.414	5.098***
	0.025	11.429	4.615***
	0.043 (mean)	10.765	4.551***
	0.10	8.916	5.168***
	0.25	5.427	6.723
	1.00	0.453	2.248
	2.00	0.017	0.165

Notes: IRR calculations for specification (1) in Table 1. The baseline is always a country with the same level of US military support, but no local human rights violations. IRR associated with the interaction effect of a given level of local repression and US military aid on anti-American terrorism in comparison to the production of anti-American terrorism in the respective baseline country reported. $^{***}p < 0.01$.

safer, even if this assistance is very large and/or channeled to particularly oppressive regimes.

Similar to US military aid, we also study the interacting effect of US economic aid and local repression on anti-American terrorism. The negative binomial regression results are reported in Table 3. Here, the results for the controls are very much in line to those reported in Table 1. We still find that anti-American terrorism is more likely in countries that are populous, are rich, are unstable, have a history of anti-American terrorism, and are geographically remote from the USA. We still also find that trade openness, government size, and economic growth do not have a substantive effect on anti-American terrorism. The only difference to our previous regression results is that we now also find that a country's Muslim population share is positively associated with anti-US terrorism. This may indicate that during our observation period the USA was over-proportionally attacked by citizens of

Table 3. Anti-American terrorism and US economic aid

	(1)	(2)	(3)
Lagged terrorism	1.564	1.551	1.536
	(0.095)***	(0.089)***	(0.103)***
Minor human rights violations $(HRV1)_{t-1}$	2.990	2.743	2.805
	(0.911)***	(0.834)***	(0.858)***
Some human rights violations $(HRV2)_{t-1}$	6.261	5.659	5.938
	(1.891)***	(1.800)***	(1.773)***
Substantial human rights violations $(HRV3)_{t-1}$	10.688	9.608	9.867
	(4.085)***	(3.922)***	(3.588)***
Severe human rights violations $(HRV4)_{t-1}$	12.634	11.468	11.863
	(5.211)***	(5.070)***	(4.708)***
Economic dependence $(ED)_{t-1}$	0.282	0.208	0.256
	(0.492)	(0.443)	(0.509)
$ED*HRV1_{t-1}$	4.634	6.326	5.107
	(8.080)	(13.461)	(10.122)
$ED*HRV2_{t-1}$	6.142	8.533	6.910
	(10.703)	(18.146)	(13.677)
$ED*HRV3_{t-1}$	5.517	7.364	6.241
	(9.660)	(15.724)	(12.385)
$ED*HRV4_{t-1}$	3.633	4.848	4.095
	(6.336)	(10.319)	(8.115)
Population $(\ln)_{t-1}$	1.427	1.421	1.398
	(0.114)***	(0.122)***	(0.106)***
GDP *p.c.* $(\ln)_{t-1}$	1.856	1.968	1.844
	(0.187)***	(0.202)***	(0.186)***
Distance (ln)	1.137	1.141	1.137
	(0.066)**	(0.067)**	(0.072)**
State $failure_{t-1}$	1.108	1.109	1.138
	(0.051)**	(0.049)**	(0.061)**
Muslim population share	1.627	1.657	1.550
	(0.404)**	(0.421)**	(0.377)*
Regime $stability_{t-1}$		0.849	
		(0.085)	
Trade $openness_{t-1}$		0.999	
		(0.02)	
Government $size_{t-1}$			0.966
			(0.020)*
GDP *p.c.* $growth_{t-1}$			1.004
			(0.012)
Joint significance of interaction terms (Wald χ^2)	20.07	19.15	20.05
(Prob. $> \chi^2$)	(0.00)***	(0.00)***	(0.00)***
Joint significance of full model (Wald χ^2)	1,019.27	959.22	1,127.94
(Prob. $> \chi^2$)	(0.00)***	(0.00)***	(0.00)***
Log-pseudo-likelihood	−1,281.37	−1,279.19	−1,273.24
Number of observations	2,786	2,786	2,775

Notes: Constant not reported. All models include year dummies (not reported). Robust standard errors clustered over countries in parentheses. Incidence rate ratios reported. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Muslim countries, consistent with the notion of a post–Cold War wave of Islamist terrorism (e.g., Enders and Sandler, 2012).

As before, we are primarily interested in the interaction effects associated with the relationship between domestic repression and economic assistance given by the USA in the aid-receiving country. The corresponding findings for the calculated interaction effects are reported in Table 4.

The IRR calculated for the various interaction effects again support H1.[10] In comparison to a reference country that receives the same amount of economic assistance but is not repressive, a combination of local repression and economic dependence on the USA results in substantively more anti-American terrorism. For instance, a country with a substantial level of human rights violations that receives the mean amount of US economic aid (approximately 0.38% of local GDP) is 20.40 more likely to generate anti-American terrorism compared to a nonrepressive baseline country that receives the same level of aid. There is also again some support that this relationship vanishes for very high levels of economic assistance; however, this latter finding is less clear in comparison to the findings reported in Table 2. In sum, our findings thus suggest that a combination of US economic aid and local repression—just like a combination of military aid and repression—is likely to create incentives, dependencies, and grievances that result in anti-American terrorism. For instance, a combination of US aid (potentially used to 'bribe' a local government) and local repression may be used to enforce policies that benefit the USA, which in turn ought to antagonize parts of the local population and create anti-American resentment.

4.2 System-GMM estimates

In this section we assess whether the findings of the previous subsection hold true when we explicitly take into account the potential endogeneity of human rights violations and US foreign assistance to anti-American terrorism. The corresponding system-GMM results are reported in Table 5.[11] With respect to the control variables, there are some differences to the negative binomial regression results. First, we still find that anti-American terrorism is positively related to past terrorism and *per capita* income. Second, we again find that trade openness, government size, and economic growth share no robust association with anti-US terrorism. Third, the system-GMM regressions show that distance from the USA and the Muslim population have no bearing on anti-American terrorism; these variables are only significantly related to terrorism in some negative binomial estimations. Finally, population size and political instability are no longer positive predictors of anti-American terrorism. This may be due to the log-transformation of the dependent variable for the system-GMM estimations, which makes it less likely to detect any scale effects on terrorism that are likely associated with these variables.

Similar to the control variables, the system-GMM estimates for our main variables of interest and their interactions tend to be in line with the negative binomial regression

10 In the Online Appendix we show the plotted marginal effects associated with specification (1) of Table 3. The plots are in line with the results reported in Table 4.

11 The diagnostics reported in Table 5 (Hansen *J*-test, AR(2) test) suggest that the sets of instruments chosen for each specification are valid. In accordance with Roodman (2009), Table 5 also shows that the instrument count in no specification exceeds the number of cross-sections.

Table 4. Anti-American terrorism and US economic aid (interaction effects)

Local human rights situation	Level of US economic aid (% of local GDP)	IRR of interaction effect	Standard error of interaction effect
Minor human rights violations	0	2.990	0.911***
	0.05	3.228	1.036***
	0.10	3.485	1.250***
	0.20	4.063	1.928***
	0.38 (mean)	5.340	3.955**
	1.00	13.853	24.732
	2.00	64.189	225.701
Some human rights violations	0	6.261	1.891***
	0.05	6.856	2.131***
	0.10	7.507	2.570***
	0.20	9.001	4.063***
	0.38 (mean)	12.442	8.877***
	1.00	38.456	67.523**
	2.00	236.214	823.272
Substantial human rights violations	0	10.688	4.085***
	0.05	11.641	4.473***
	0.10	12.678	5.143***
	0.20	15.040	7.433***
	0.38 (mean)	20.394	14.969***
	1.00	58.967	103.648**
	2.00	325.330	1134.686*
Severe human rights violations	0	12.634	5.211***
	0.05	13.476	5.629***
	0.10	14.373	6.332***
	0.20	16.353	8.634***
	0.38 (mean)	20.583	15.687***
	1.00	45.897	81.415**
	2.00	166.740	582.544

Notes: IRR calculations for specification (1) in Table 3. The baseline is always a country with the same level of US economic support, but no local human rights violations. IRR associated with the interaction effects of a given level of local repression and US economic aid on anti-American terrorism in comparison to the production of anti-American terrorism in the respective baseline country reported. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

results, as shown in Table 6.[12] To briefly summarize, first, higher levels of military aid are associated with more anti-American terrorism, consistent with H1. Only at high levels of military assistance does this relationship break down. Second, higher levels of economic aid are also associated with more anti-US terrorism. There is little evidence that this relationship breaks down even at the highest levels of US economic assistance. Hence, H2 cannot be supported, even if interactions of repression and aid marginally moderate these effects. In sum, our findings thus suggest that military and economic aid—representing military

12 The results of Table 6 are derived from a variant of eq. (1). In contrast to eq. (1), however, we do not exponentiate the interaction effect and do not use the categorical (but rather the continuous) values of the physical integrity index.

Table 5. System-GMM regression results

	(1)	(2)	(3)	(4)	(5)	(6)
Lagged terrorism	0.299	0.292	0.289	0.380	0.354	0.340
	(0.103)***	(0.101)***	(0.098)***	(0.106)***	(0.110)***	(0.113)
Human rights violations$_{t-1}$	0.082	0.083	0.074	0.054	0.054	0.055
	(0.028)***	(0.027)***	(0.030)**	(0.028)*	(0.028)*	(0.025)**
Military dependence$_{t-1}$	0.595	0.585	0.607			
	(0.248)**	(0.247)**	(0.259)**			
(Human rights violations* military dependence)$_{t-1}$	−0.066	−0.064	−0.067			
	(0.036)*	(0.037)*	(0.038)*			
Economic dependence$_{t-1}$				0.036	0.035	0.035
				(0.022)*	(0.022)	(0.021)*
(Human rights violations* economic dependence)$_{t-1}$				−0.007	−0.006	−0.006
				(0.003)**	(0.003)**	(0.003)**
Population (ln)$_{t-1}$	−0.013	−0.018	−0.007	−0.003	−0.001	0.002
	(0.017)	(0.020)	(0.016)	(0.017)	(0.018)	(0.016)
GDP *p.c.* (ln)$_{t-1}$	0.070	0.081	0.070	0.047	0.061	0.050
	(0.020)***	(0.020)***	(0.024)***	(0.021)**	(0.021)***	(0.020)**
Distance (ln)	0.014	0.013	0.015	0.010	0.011	0.100
	(0.016)	(0.017)	(0.012)	(0.007)	(0.009)	(0.008)
State failure$_{t-1}$	−0.006	−0.007	−0.003	0.007	0.006	0.012
	(0.017)	(0.015)	(0.020)	(0.017)	(0.017)	(0.016)
Muslim population share	−0.069	−0.065	−0.053	−0.016	−0.020	−0.035
	(0.059)	(0.054)	(0.054)	(0.051)	(0.050)	(0.053)
Regime stability$_{t-1}$		−0.018			−0.030	
		(0.016)			(0.016)	
Trade openness$_{t-1}$		−0.001			−0.001	
		(0.003)			(0.001)	
Government size$_{t-1}$			0.002			−0.002
			(0.005)			(0.003)
GDP *p.c.* growth$_{t-1}$			−0.007			−0.002
			(0.008)			(0.002)
Wald χ^2	154.43	186.16	134.75	213.40	207.01	179.50
(Prob. > χ^2)	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***
AB test for AR(2)	0.82	0.77	0.82	1.28	1.15	1.09
(Prob. > z)	(0.41)	(0.44)	(0.41)	(0.20)	(0.25)	(0.28)
Hansen *J*-test	76.02	75.25	69.34	72.77	78.83	71.07
(Prob. > χ^2)	(0.07)*	(0.08)*	(0.17)	(0.24)	(0.12)	(0.28)
Number of observations	2,786	2,786	2,775	2,786	2,786	2,775
Number of instruments	92	94	94	98	100	100

Notes: Constant not reported. All models include year dummies (not reported). Robust standard errors clustered over countries in parentheses. Regression coefficients reported. AB = Arellano-Bond. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

and economic dependence on the USA—interact with local repression, where various combinations of foreign dependence and domestic repression tend to result in more anti-American terrorism. Potentially, this suggests that the USA is perceived by foreign terrorist organizations to buy political influence in the terrorists' home countries through military

Table 6. Interaction effects for US military and economic aid (system-GMM)

Aid (% of local GDP)	Regression coefficient of interaction effect at given level of aid	Standard error
Panel A: Interaction effects for combination of local repression and US military aid		
0	0.082	0.028***
0.025	0.081	0.027***
0.043 (mean)	0.080	0.027***
0.10	0.076	0.026***
0.25	0.066	0.026**
1.00	0.016	0.036
2.00	−0.050	0.066
Panel B: Interaction effects for combination of local repression and US economic aid		
0	0.054	0.028**
0.05	0.054	0.028**
0.10	0.054	0.028**
0.20	0.054	0.027*
0.38 (mean)	0.051	0.027*
1.00	0.047	0.025*
2.00	0.040	0.022*

Notes: Regression coefficients calculated for specifications (1) and (4) in Table 5. Interaction effects calculated for varying levels of military/economic aid, with other covariates (including local repression) held constant. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

and development assistance, where local repression is used by domestic governments (loyal to and dependent on the USA) to enforce US interests. Such an interpretation of our results would be rather consistent with voices that are critical of US interventionism.

5. Conclusion

In this contribution we study the nexus between US economic and military aid, human rights, and anti-American terrorism. We argue that transnational terrorist activity directed against US interests is affected by an interaction between US aid and local repression in aid-receiving countries. Using data from 126 countries for the period 1984–2008, we conduct a series of negative binomial and system-GMM estimations, showing that combinations of local repression and economic and particularly military aid indeed lead to more anti-American terrorism. This supports those voices that are critical of US interventionism. However, the positive association between military-economic dependence on the USA and anti-American terrorism tends to break down when military or economic aid becomes very large. This may be due to increased capacity of oppressive regimes—possibly further incentivized by the prospect of future American support—to adopt harsh counterterrorism measures. Still, there is no evidence that the USA is made any safer by providing assistance to the source countries of terrorism, even if this assistance is very large and/or channeled to particularly oppressive regimes. Our study thus provides little support for the official notion that US foreign aid may be part of an effective strategy to prevent anti-American terrorism. Thus, to the extent that US foreign assistance creates benefits not related to security (e.g., access to foreign markets), the USA may face a trade-off between securing these benefits and being vulnerable to terrorism.

Our empirical study offers ample opportunities for future research. For one, the nexus between US military-economic aid, human rights, and anti-American terrorism may have further dimensions. For example, the nexus may behave differently depending on whether we consider tied or general aid; for example, Bandyopadhyay *et al.* (2011, 2014) discuss how different aid mixes may affect terrorist activity in aid-giving and aid-receiving countries. As another example, strong economic-military dependence on the USA coupled with high domestic repression may not only influence decisions made by local actors but may also incite anti-American resentment in other countries.[13] Furthermore, it may be interesting to study how other local conditions—besides human rights violations—interact with US aid to ultimately affect the patterns of anti-American terrorism. For instance, to the extent that military-economic aid buys American influence over a foreign country's economic, political, and cultural life, it may interact with local economic, political, and cultural change, which could produce anti-American resentment among local traditionalists opposing such change. These groups may consequently turn to terrorism to counter the (perceived) 'Americanization' of their home countries.

Supplementary material

Supplementary material is available at the OUP website.

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[13] For instance, the bin Laden quote earlier suggests that his anti-Americanism was fueled not only by US influence and local repression in Saudi Arabia but also by US cooperation with repressive regimes in Algeria and Russia, for example. We are grateful to a reviewer for pointing out that across the decades many terrorist movements have been motivated by domestic factors as well as global processes.

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