

Group concentration and violence:  
Does ethnic segregation affect domestic terrorism?

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**Abstract**

This paper examines the link between ethnic segregation and domestic terrorism. The results show that ethnic segregation has a positive and significant effect on the incidence of domestic terrorism, which indicates that countries where ethnic groups are spatially concentrated face a higher risk of suffering this type of violence. This finding is not affected by the inclusion in the analysis of different covariates that may affect both ethnic segregation and domestic terrorism. The observed relationship between the degree of spatial concentration of ethnic groups and domestic terrorism is confirmed by various robustness tests. The results also suggest that the threat of secession is an important transmission channel linking ethnic segregation and domestic terrorism.

*Keywords:* domestic terrorism, ethnic segregation.

*JEL classification:* D74, J15, K4.

# 1 Introduction

Terrorism can be defined as “the premeditated use or threat to use violence by individuals or subnational groups to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate noncombatant victims” (Enders and Sandler, 2012, p. 4). Although its origins probably go back to the dawn of modern civilization, terrorist activity has increased considerably throughout the last decades. The figures provided by the Institute for Economics and Peace (2015) show that the number of deaths from terrorism has risen from 3,329 in 2000 to 32,685 in 2014, which represents a nine-fold increase since the beginning of the 21st century. Indeed, terrorism is nowadays the most important threat to national security facing many countries all over the world. Beyond its impact on direct victims, terrorism often has negative consequences in economic terms through its effect on capital flows (Abadie and Gardeazabal, 2008), trade (Nitsch and Schumacher, 2004), and tourism (Enders et al., 1992). Terrorist acts also represent a serious threat for political stability and institutional order because of its influence on voting behaviour (Montalvo, 2011), reelection probabilities (Gassebner et al., 2008), cabinet duration (Gassebner et al., 2011), or governments’ respect for basic human rights (Dreher et al., 2010). Furthermore, terrorist groups frequently spread their activities across national borders (Braithwaite and Li, 2007), which may lead to undermine the relations between neighbouring countries and regional stability. For all these motives, preventing terrorism and reducing its intensity is crucial for the affected countries.

The design of useful strategies in the fight against terrorism requires an understanding of the root causes of this type of violence. This explains why during the last years there has been an important amount of research on the cross-country determinants of terrorism.<sup>1</sup> Against this background, various studies have considered the link

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<sup>1</sup>For a review of this literature, see Gassebner and Luechinger (2011), Kis-Katos et al. (2011) or

between ethnicity and terrorist activity (e.g. Kurrild-Klitgaard et al., 2006; Dreher and Fischer, 2010; Choi and Piazza, 2014). To do this, most of these papers use a fractionalization index to capture the degree of ethnic diversity within a country. This type of indices contain information about the identity and size of the various ethnic groups, but they incorporate no additional information about other substantive characteristics of the groups. In particular, fractionalization indices do not capture the extent to which the members of each group are spatially concentrated, ignoring the degree of ethnic segregation within countries (Alesina and La Ferrara, 2005; Alesina and Zhuravskaya, 2011). This is potentially relevant in this context, as the settlement patterns of ethnic groups may influence the likelihood of violent conflict (Toft, 2002, 2003; Weidmann, 2009; Corvalan and Vargas, 2015). Accordingly, group concentration is a geographical aspect that deserves particular attention in the study of terrorism. However, despite its potential importance, this issue has hardly received any attention in the cross-country analyses on the causes of terrorism. In fact, to the best of our knowledge, the only exception is the recent work of Arva and Piazza (2016), who investigate whether countries with spatially concentrated minority communities are more likely to experience terrorist attacks. Undoubtedly, this study is an important step forward in the analysis of the link between group geography and terrorism. Nevertheless, by focussing exclusively on minority groups at risk, Arva and Piazza (2016) exclude from their analysis most of existing ethnic groups.

In order to fill this gap, in this paper we use measures of ethnic segregation at the national level to examine the relationship between the degree of spatial concentration of the various ethnic groups within a country and the incidence of domestic terrorism. To that end, we use a new dataset on the composition of ethnic groups at the subnational (regional) level compiled by Alesina and Zhuravskaya (2011). The aim is to test whether higher levels of ethnic segregation are associated with more domestic

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Krieger and Meierrieks (2011).

terrorist activity. We focus our attention on domestic terrorism because the various theoretical arguments discussed below suggest that ethnic segregation should mainly affect domestic terrorism rather than international terrorism. Although international terrorism tends to receive more media attention, domestic terrorist events are much more numerous (Abadie, 2006; Kis-Katos et al., 2011). Furthermore, Enders et al. (2011) show that domestic terrorism can spill over to international terrorism. Therefore, unveiling the causes of domestic terrorism is especially important in order to formulate sound and effective policy recommendations (Ezcurra and Palacios, 2016).

Our results show that ethnic segregation has a positive and significant effect on the incidence of domestic terrorism, which indicates that countries where ethnic groups are spatially concentrated face a higher risk of suffering this type of violence. This finding is not affected by the inclusion in the analysis of different covariates that may affect both ethnic segregation and domestic terrorism. The observed relationship between the degree of spatial concentration of ethnic groups and domestic terrorism is confirmed by various robustness tests. The results also suggest that the threat of secession is an important transmission channel linking ethnic segregation and domestic terrorism.

The remainder of the article is organized as follows. After this introduction, section 2 discusses from a theoretical perspective why ethnic segregation may affect domestic terrorist activity. Section 3 describes the empirical approach used to examine the effect of ethnic segregation on the incidence of domestic terrorism. The results of the analysis are presented in section 4. In order to complement our findings, section 5 explores various potential transmission channels linking ethnic segregation and domestic terrorism. The final section offers the main conclusions of the paper.

## 2 Why should ethnic segregation affect domestic terrorism?

There are various reasons to assume that ethnic segregation is related to the incidence of domestic terrorism. Thus, there is abundant literature showing that the settlement patterns of ethnic groups are key to understand the risk of secession faced by a country. In particular, spatially concentrated ethnic groups are more likely to advance claims to self-determination and engage in violence against the national government than those that are dispersed throughout the territory (e.g. Toft, 2002, 2003; Weidmann, 2009; Corvalan and Vargas, 2015). Indeed, as pointed out by Toft (2003, 2014), the spatial concentration of an ethnic group within a circumscribed territory can practically be considered a necessary condition for a self-determination movement to emerge. This can be explained by both a motivation- and an opportunity-driven mechanism (Toft, 2002, 2003; Weidmann, 2009). First, spatially concentrated ethnic groups tend to see their territory as their homeland, which leads them to demand some degree of autonomy over it. Second, spatially concentrated ethnic groups are more likely to mobilize for self-determination and conflict, as they have better social networks and face fewer problems in overcoming collective action problems (Arva and Piazza, 2016). In such a setting, if the political elites at the national level see these ethnically based claims as a potential threat for the territorial integrity of the state, the central government may be prone to either ignore them or respond with force, thus increasing the risk that discontented groups resort to violence to achieve their goals (Bakke and Wibbels, 2006).

An alternative option to avoid the threats of secession is to resort to government decentralization as a way to buy-back the loyalty of separatist regions (Hechter, 2000; Kyriacou and Morral-Palacín, 2015). As shown by the experience of numerous countries, decentralization can contribute to reducing ethnic conflicts and the risk of

secession by bringing the government closer to the citizens, increasing the opportunities to participate in government and giving groups greater autonomy and control over their political, social and economic affairs (Brancati, 2006). In fact, the so called ‘decentralization theorem’ provides an additional reason to assume that more ethnically segregated countries may end up being more decentralized. The argument is based on the idea that subnational tiers of government may be more capable than central government to tailor the provision of public goods to local needs, due to the existence of informational advantages and a better insight into the preferences of citizens (Tiebout, 1956; Oates, 1972). In countries where ethnic groups are spatially concentrated, it is more likely that the needs and preferences for public goods provision differ across regions. In this setting, decentralization can give rise to efficiency gains in the allocation of resources and in government activities (Ezcurra and Rodríguez-Pose, 2017). This suggests that security policies designed to fight against terrorism should be more effective in a decentralized system. However, decentralization may also cause coordination problems between the different tiers of government, which may lead to an underprovision and underfinancing of public safety (Dreher and Fischer, 2010).

There are different arguments that suggest that the devolution of power and resources from central to subnational governments is related to the incidence of domestic terrorism, although it is difficult to determine beforehand the final effect of decentralization on this type of violence. Various authors point out that government decentralization can affect the terrorists’ behaviour by modifying the expected net benefits of their attacks (Frey and Luechinger, 2004; Dreher and Fischer, 2010; Ezcurra, 2017). As is known, in order to achieve their long-run goals, terrorist organizations aim to destabilize the political system and the economy of the country under attack. Nevertheless, the risk that terrorists generate political instability is likely to be lower in decentralized countries because a decentralized political system “with many different centres of decision-making and implementation is difficult, if not impossible,

to destabilize” (Frey and Luechinger, 2004, p. 512). If one of these centres suffers a terrorist action, the remaining centres can take over, thus decreasing the impact of the attack on the functioning and stability of the political system (Dreher and Fischer, 2010). At the same time, the impact of terrorist activity on the economy tends to be more limited in a decentralized country because of the market (competition) preserving effect of decentralization (Weingast, 1995), which leads to the existence of a higher number of competing suppliers preventing the appearance of monopolies in the production of goods and services (Dreher and Fischer, 2010). These arguments suggest that the incidence of domestic terrorism should be lower in decentralized countries. Nevertheless, terrorists also seek to maximize media attention in order to promote their cause and make it widely known (Abadie, 2006; Rohner and Frey, 2007). The existence of multiple political targets in a decentralized country allows terrorist groups to increase their activity by choosing targets with lower direct costs of attack, which may increase media attention. However, the media coverage of a terrorist attack depends on the symbolic value of the target. Decentralization increases the number and availability of targets, which reduces the symbolic value of a single target. This implies that the media response to a particular terrorist attack may be lower in a decentralized system, thus reducing the marginal benefit from undertaking the attack (Ezcurra, 2017).

A decentralized system provides potential terrorist with more possibilities to achieve their long-terms goals through legal means, which decreases the risks that discontented groups resort to violence. Therefore, the devolution of power and authority from central to regional and local governments makes terrorism less attractive in comparison to alternative legal activities of voicing-dissent, thus increasing the opportunity costs of terrorists (Dreher and Fischer, 2011). However, at the same time, decentralization also contributes to reinforcing regional identities by giving them a sense of legitimacy, which is likely to increase the importance of regional parties with

a nationalist ideology and political movements based on claims for self-determination and secession (Brancati, 2006). In fact, in a decentralized system these groups have greater opportunities to collect financial resources and design channels through which to mobilize the local population according to their own interest. This means that, taking advantage of the weakness of central authority, decentralization can lead to increasing demands for sovereignty and self-rule, which may be supported by terrorist organizations (Ezcurra and Palacios, 2016; Ezcurra, 2017).

An additional channel that could explain the relationship between ethnic segregation and domestic terrorism is social capital. There are numerous studies showing that individuals prefer to interact and associate with other members of their own ethnic group (Glaeser et al., 2000; Costa and Kahn, 2003). Consequently, countries where ethnic groups are spatially concentrated tend to experience less social interactions among members of different groups, which leads to lower levels of social capital in the country as a whole. This is confirmed empirically by Uslaner (2008) and Alesina and Zhuravskaya (2011), who show the presence of a negative association between segregation and generalized trust, a key component of social capital.

Social capital may also play a relevant role in explaining the incidence of domestic terrorism. On the one hand, social capital contributes to decreasing the attractive and legitimacy of terrorism. Societies with higher levels of social capital are more likely to have greater participation rates in civic associations, which should provide dissatisfied groups with legal alternatives to pursue their objectives (Schmid, 1992; Putnam, 2001). Social cooperation also reduces the possibilities that terrorist organizations can take advantage of existing animosity among members of different groups. Moreover, social capital fosters the strengthening of cooperative social norms that often include the rejection of the use of violence against civilians in order to achieve political goals, which increases the social costs of terrorist activity (Helfstein, 2014). On the other hand, social capital may also lead to more domestic terrorism. In fact,



a higher level of social capital helps terrorist groups to overcome collective action problems, thus facilitating the organization of violent actions (Magouirk et al., 2008). Furthermore, the social impact of a terrorist attack is likely to be greater in environments with higher levels of social capital, which may affect the terrorists' cost-benefits calculations (Helfstein, 2014).

Taken together, the various arguments laid down in this section do not allow us to predict a priori the effect of ethnic segregation on domestic terrorism. As shown above, this is a complex relationship and attempting to understand how the degree of spatial concentration of ethnic groups affects domestic terrorism implies to take into consideration multiple factors and mechanisms that often work in opposite directions. In these circumstances empirical research is key to shed light on this issue. For this reason the rest of the paper is devoted to examining the effect of ethnic segregation on the incidence of domestic terrorism in a cross-section of countries.

### 3 Empirical approach

#### 3.1 Measuring ethnic segregation and domestic terrorism

Our research requires information on the degree of spatial concentration of ethnic groups within the various countries. To that end, we resort to the following index of segregation proposed by Alesina and Zhuravskaya (2011):

$$S_i = \frac{1}{M-1} \sum_{m=1}^M \sum_{j=1}^J \frac{p_j(\pi_{jm} - \pi_m)^2}{\pi_m} \quad (1)$$

where  $p_j$  is the population share of region  $j$  in country  $i$ ,  $\pi_m$  is the fraction of group  $m$  in country  $i$  and  $\pi_{jm}$  is the fraction of group  $m$  in region  $j$  of country  $i$ .  $M$  and  $J$  stand for respectively the total number of groups and regions in country  $i$ . This index is particularly useful for the purpose of the paper, as it allows one to quantify the degree of geographical concentration of the different ethnic groups within a country. The value of the index ranges from zero when every region has the same share of each group as the country as a whole (no segregation), to one when each region is inhabited by a separate group (full segregation). This index is, in fact, a squared coefficient of variation that attaches a relatively higher weight to the deviation of group composition from the national average in more populous regions than in less populous ones.

When calculating  $S$ , it should be noted that in many regions of different countries a fraction of the population remains not ascribed to any particular group, generally under the ‘other’ category. In order to calculate  $S$  in this case, it can be assumed that the ‘other’ group is composed of a number of distinct and small subgroups  $O$  which cannot be classified adequately due to the lack of data. Likewise, we can also assume that the different subgroups included in the ‘other’ category are uniformly distributed across all regions in the country, which means that there is no segregation within the ‘other’ category. Under these two assumptions, the segregation index  $S$  can be rewritten as follows (Alesina and Zhuravskaya, 2011):

$$\hat{S}_i = \frac{1}{N + O - 1} \left( \sum_{m=1}^M \sum_{j=1}^J \frac{p_j (\pi_{jm} - \pi_m)^2}{\pi_m} + S_o \right) \quad (2)$$

with

$$S_o = \sum_{j=1}^J \frac{p_j(\pi_{jo} - \pi_o)^2}{\pi_o} \quad (3)$$

where  $N$  is the number of identified groups,  $\pi_{jo}$  is the fraction of ‘others’ in region  $j$  and  $\pi_o$  is the fraction of ‘others’ in the whole population. As can be observed, in this case the segregation index is expressed as the sum of the segregation registered among the identified groups and the segregation of the ‘other’ category considered as a single group ( $S_o$ ), divided by the total number of groups ( $N + O$ ) minus one. In the rest of the paper we focus on  $\hat{S}$  as our primary measure of segregation.<sup>2</sup>

Employing the same classification of groups used in Alesina et al. (2003), Alesina and Zhuravskaya (2011) measure the level of segregation for three different dimensions of diversity: ethnicity, language and religion. In this paper we use their indices of ethnic segregation, which combines language, self-reported ethnicity and physical features, primarily skin colour. To calculate the index, Alesina and Zhuravskaya (2011) collect for each subnational administrative unit within each country (i.e. region) data on the total population size and the share of the population that belongs to the various ethnic groups. These data are drawn from the census closest to the year 2000, whenever it was available, national statistical offices, and demographic and health surveys. Using these sources, Alesina and Zhuravskaya (2011) calculate their measure of ethnic segregation for 97 countries.

Our study also needs information on the incidence of domestic terrorism in the various countries. To that end, we resort to the domestic terrorism dataset compiled by Enders et al. (2011) for the period 1970-2007. Following a five-step procedure,

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<sup>2</sup>Table A1 in the Appendix provides some descriptive statistics for the main variables used in the analysis.

these authors systematically separated the incidents in the Global Terrorism Database (GTD) into domestic and transnational terrorism after removing non-terrorist events such as insurgency and guerrilla warfare.<sup>3</sup> As pointed out by Enders et al. (2011, p. 3), “no other article provides such a complete partitioning of domestic and transnational [terrorist] incidents”, which explains why this dataset is widely used in the literature (e.g. Choi and Piazza, 2014; Berrebi and Ostwald, 2015; Arva and Piazza, 2016).

### 3.2 Control variables

The key explanatory variable in our empirical analysis is the measure of ethnic segregation described above. When considering the effect of this variable on domestic terrorism, it is important to bear in mind that the value of the index of ethnic segregation may be affected by the average size of the territorial units used to calculate  $\hat{S}$  (Alesina and Zhuravskaya, 2011). Therefore, we control for the average size of regions in each country as a way to minimize any potential bias emerging from the heterogeneity in territorial levels across countries. In any case, it is very likely that the incidence of domestic terrorism does not depend exclusively on the degree of spatial concentration of ethnic groups. For this reason, we also include in the analysis a set of variables that, according to the literature, are assumed to have influence on terrorist activity (Gassebner and Luechinger, 2011; Kis-Katos et al., 2011; Krieger and Meierrieks, 2011). Our aim is to use an econometric specification that is representative of the literature to determine whether the relationship between ethnic segregation and domestic terrorism is affected by the inclusion in the analysis of additional controls.<sup>4</sup>

Taking into account the aim of our study, we begin by examining the role played

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<sup>3</sup>The GTD is an open-source database maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland, which includes information on more than 150,000 terrorist attacks around the world since 1970. For further details, see <http://www.start.umd.edu/gtd/>.

<sup>4</sup>The Appendix provides detailed information on the definitions and sources of the different controls used in the paper.

in this context by the degree of ethnic diversity within the various countries. In fact, several studies consider the possibility that the level of ethnic fractionalization may affect the intensity of terrorist activity (e.g. Kurrild-Klitgaard et al., 2006; Dreher and Fischer, 2010; Choi and Piazza, 2014). As discussed in the introduction, segregation and fractionalization are two different notions (Alesina and La Ferrara, 2005). Nevertheless, Alesina and Zhuravskaya (2011) show that they are positively correlated. Accordingly, we must control our estimations by the degree of ethnic fractionalization in the sample countries.<sup>5</sup> To do so we resort to the index of ethnic fractionalization compiled by Alesina and Zhuravskaya (2011). These authors employ the regional data used to calculate the measure of segregation described above to construct an index of fractionalization at the national level for each country. This index measures the probability that two randomly selected individuals in a given country belong to different ethnic groups.<sup>6</sup>

Most of the studies on the determinants of terrorism examine the association between the level of economic development and the incidence of this type of violence (Li, 2005; Abadie, 2006; Kis-Katos et al., 2011). As is usual in the literature, we begin by using GDP per capita to capture existing differences in development across the various countries. On the one hand, this variable can be interpreted as “a state’s overall financial, administrative, police and military capabilities” (Fearon and Laitin, 2003, p. 80). A higher state capacity should reduce the risks of open rebellion or

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<sup>5</sup>Some authors alternatively include as a control a measure of the level of ethnic tensions (Basuchoudhary and Shughart, 2010; Gassebner and Luechinger, 2011). Nevertheless, this is not a good idea in our context, as the degree of ethnic tensions is likely to be itself an outcome of the level of ethnic diversity and the spatial distribution of ethnic groups within a country. Consequently, the inclusion of the degree of ethnic tensions as an additional control in our analysis would make it difficult to find out the causal effect of ethnic segregation on the incidence of domestic terrorism. For further details on this issue, see Angrist and Pischke (2009, pp. 64-68).

<sup>6</sup>The index of ethnic fractionalization can be expressed as follows:

$$F_i = \sum_{m=1}^M \pi_m (1 - \pi_m)$$

civil war, but it may make terrorist activity more likely (Blomberg et al., 2004). On the other hand, the level of GDP per capita is positively related to the opportunity costs of violence, which suggests that richer countries should experience less domestic terrorism (Ezcurra, 2017). At the same time, the shift from agricultural to urban societies associated with the advances in the process of economic development may give rise to grievances related to socio-economic and demographic strain, which in turn could lead to social unrest and violence (Robison et al., 2006). In fact, in urban areas it may be easier to organize and perform terrorist activities (Campos and Gassebner, 2013). In view of this, and in order to complement the information provided by GDP per capita, we also include in the list of controls the share of urban population in the various countries. At this point it is important to note that the level of economic development may also be related to the degree of spatial concentration of ethnic groups. For example, countries with higher urbanization rates tend to be characterized by lower levels of ethnic segregation, as group mixing is more likely to take place in cities (Alesina and Zhuravskaya, 2011).

Geographical factors may also be associated with the incidence of domestic terrorism. Rough and mountainous terrain can be used by terrorist groups to hide from government forces (Abadie, 2006). Likewise, the existence of a territorial base separated geographically from the country's centre should favour insurgency and terrorism (Fearon and Laitin, 2003). In turn, the degree of spatial concentration of ethnic groups may depend on the existence of physical constraints to mobility (Alesina and Zhuravskaya, 2011). For these reasons, we add to the list of regressors an index of terrain ruggedness and a dummy variable to identify countries with non-contiguous territory.

Domestic terrorism may also be associated with the degree of political instability (Piazza, 2008; Krieger and Meierrieks, 2011). In particular, the existence of civil war episodes is likely to increase terrorist activity within a country. As pointed out

by Merari (1999), rebel groups could resort to terrorist attacks in urban centres, while employing open guerrilla warfare tactics in less protected areas. Similarly, an international conflict reduces the government’s resources to address internal problems, which may be exploited by terrorist organizations (Lai, 2007). Moreover, the spatial distribution of ethnic groups may also be related to the existence of civil and interstate wars (Matuszeski and Schneider, 2006; Corvalan and Vargas, 2015). Taking this into account, we follow the convention in the literature and resort to a binary variable defined according to the number of casualties caused by this type of armed conflicts in order to control for this potentially important factor. Namely, in our analysis a country is recorded as having experienced a civil or interstate war in a year if a threshold of 1,000 or more battle-related deaths has been met (Ezcurra and Palacios, 2016).

Moreover, numerous scholars point out the potential effect on terrorism of the extent of civil liberties and political rights (Robison et al., 2006; Dreher and Fischer, 2010, 2011). Democratic states, characterized by the respect for civil liberties, offer non-violent ways of voicing dissent, thus reducing the risks that dissatisfied groups use violence to achieve their political goals (Li, 2005; Gassebner and Luechinger, 2011). However, the type of counter-terrorism measures that can be adopted by a democratic government is more limited than in autocratic regimes, which suggests that non-democratic states may be better able to fight against terrorism (Lai, 2007). In view of these arguments, we use two dummy variables to identify ‘Free’ and ‘Not Free’ countries according to their political rights and civil liberties ratings from Freedom House.<sup>7</sup>

As is usual in the literature, we also account for the size of a country’s population, as the absolute number of terrorist incidents should be higher in more populous

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<sup>7</sup>The main results of the paper remain unaffected if we alternatively employ the average value of the political rights and civil liberties ratings, or a democracy index drawn from the Polity IV Project.

countries (Freytag et al., 2011; Kis-Katos et al., 2011; Arva and Piazza, 2016). Furthermore, a larger population may imply higher levels of demographic stress and a larger recruitment pool for terrorist organizations (Krieger and Meierrieks, 2011). In addition, more populous countries are likely to have greater heterogeneity among their citizens.

The degree of economic integration with the rest of the world may also be related to domestic terrorism. The opening of national borders to the world markets often generates winners and losers within the various countries (Milanovic, 2016). This may cause grievances and social unrest, making violence more likely, especially in low-income countries (Chua, 2003). Nevertheless, the gains from international trade may also be used to improve the relative situation of the poor, thus increasing the opportunity costs of terrorism and making it difficult for terrorist organizations to find popular support. Moreover, international trade and economic globalization can modify existing structures and provide new opportunities for formerly excluded groups, which may reduce the likelihood of violent conflict (Gassebner and Luechinger, 2011). Bearing this in mind, we also control for the degree of international trade openness of the various countries, measured as the ratio between total trade (exports and imports) and GDP.

Furthermore, terrorism may be affected by government size. According to Kirk (1983), larger governments may lead to more terrorist activity with the aim of capturing the economic and political rents controlled by the government. At the same time, government size is related to the redistributive capacity of the state (Rodríguez-Pose and Ezcurra, 2010). This is potentially important, as the redistributive capacity of the state may be used to improve the relative situation of discontented groups, thus decreasing the potential for collective violence. In view of this, we also include in the analysis the level of public consumption of the various countries as a proxy for government size.



### 3.3 Econometric approach

When considering the effect of ethnic segregation on domestic terrorism, it is important to take into account that internal conflict and political violence may influence the spatial distribution of ethnic groups within a country (Corvalan and Vargas, 2015). This poses the possibility that ethnic segregation could affect domestic terrorism and, in turn, be affected by this type of violence, giving rise to a potential problem of reverse causality. Ideally, one should address this concern by means of an instrumental variable approach, which would require to have an appropriate instrument for ethnic segregation. Such an instrument should be correlated with the index of segregation. At the same time, conditional on the set of controls, the instrument should have no effect on the incidence of domestic terrorism, other than its impact through the degree of spatial concentration of ethnic groups. A natural candidate may be the instrument for ethnic segregation constructed by Alesina and Zhuravskaya (2011). This instrument relates the spatial distribution of ethnic groups within a country to the ethnic composition of neighbouring countries. In particular, Alesina and Zhuravskaya (2011) assume that when a specific ethnic group in the home country is also present in one of the neighbouring countries, the members of this group are more likely to concentrate near the border with this neighbouring country. On the contrary, if a group in the home country is not present in any of the neighbouring states, the members of this group will tend to be more uniformly distributed across the country, and not located closer to any particular border. Alesina and Zhuravskaya (2011) use this idea to obtain a predicted distribution of the different ethnic groups within the various countries, assuming that the members of a specific group ‘gravitate’ towards the borders of neighbouring countries that are inhabited by people from the same ethnic group. Using this predicted distribution, Alesina and Zhuravskaya (2011) construct an index of predicted segregation, which they use as an instrument for actual segregation

in their cross-country regressions of the quality of government.<sup>8</sup> Nevertheless, the validity of the exclusion restriction is difficult to defend in the context of our study, as the ethnic composition of neighbouring countries may exert a direct effect on the incidence of domestic terrorism in a given country through spatial spillovers across national borders (Braithwaite and Li, 2007). These spatial spillovers may be related to the existence of refugee flows, terrorist organizations seeking protection or wreaking havoc on neighbouring states to internationalize the conflict, alliances between transnational ethnic groups, or territorial demands involving two different countries (Salehyan and Gleditsch, 2006; Arva and Piazza, 2016).

In view of the difficulties to find an appropriate instrument for ethnic segregation in the context of our study, we follow two alternative strategies to mitigate any potential problem of reverse causality. First, taking into account that the data used by Alesina and Zhuravskaya (2011) to compute their segregation indices are drawn from the census closest to the year 2000, we restrict the time span under study to the period 2001-2007. Note that this approach is consistent with the strategy adopted in most of existing empirical studies on the determinants of terrorism, in which lagged values of the explanatory variables are used to address endogeneity problems (e.g. Freytag et al., 2011; Kis-Katos et al., 2011, 2014; Campos and Gassebner, 2013). Furthermore, focussing on the period 2001-2007 has the additional advantage of allowing us to investigate the factors behind the geographical and ideological shifts in the patterns of terrorist activity since the September 11 attacks (Choi and Piazza, 2014), thus increasing the policy relevance of our contribution. In any case, reverse causality should not affect all countries equally, as the existence of migratory movements in response to violence is clearly more likely in countries affected by high levels of terrorism. For this reason, our second strategy to address this potential problem consists in repeating

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<sup>8</sup>See Alesina and Zhuravskaya (2011, pp. 1889-1893) for further details and examples on the construction of the instrument.

the analysis excluding from the sample the countries in the most conflictive regions in the world. As can be seen in section 4.2, the observed relationship between ethnic segregation and domestic terrorism survives this robustness test.<sup>9</sup>

Our main dependent variable throughout the paper is the number of domestic terror attacks in each country over the period 2001-2007. This variable is a count variable (non-negative integers), which implies that OLS estimation can be inefficient, inconsistent and biased (King, 1988). In order to overcome this problem, we should employ a regression method that explicitly considers the count nature of our dependent variable. A first option would be to apply Poisson regression, which is the standard approach for dealing with count data. Poisson regression is based on the assumption that the variance of the dependent variable is equal to the mean (equidispersion). However, the number of domestic terrorist attacks shows significant overdispersion, with the variance being greater than the mean. For this motive, we resort to negative binomial regression, which is not affected by the inefficiency problems that may result from overdispersion (Cameron and Trivedi, 1998).

## **4 Is there a link between ethnic segregation and domestic terrorism?**

### **4.1 Main results**

According to the discussion in the previous section, we begin the empirical analysis by estimating different versions of our baseline model using negative binomial maximum-likelihood regression with White-Huber robust standard errors. The results are presented in Table 1. Focusing on the aim of the paper, the main finding is that the coefficient

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<sup>9</sup>Reverse causality might also affect some of the control variables described in section 3.2. In order to mitigate this concern, for all time-varying covariates we use in our analysis their mean values over the period 1995-2000.

of the measure of ethnic segregation,  $\hat{S}$ , is in all cases positive and statistically significant at the 1% level. Therefore, our estimates show that a higher degree of spatial concentration of ethnic groups increases the number of domestic terrorist attacks in a given country, which is consistent with several of the theoretical arguments laid down in section 2. In fact, this result is not affected by the inclusion of additional controls in the analysis, confirming its robustness and showing that the observed impact of ethnic segregation on domestic terrorism is not a spurious correlation resulting from the omission of relevant variables. In particular, it is important to note that the measure of ethnic segregation remains significantly related to the number of domestic terrorist incidents even when we control for the degree of ethnic fractionalization, the level of GDP per capita, urban population, geographical factors, and the existence of a civil or interstate war. This is especially relevant given that, as mentioned above, these variables may be correlated with both ethnic segregation and domestic terrorism. Accordingly, the information provided by Table 1 shows that the degree of ethnic segregation makes a contribution in explaining the cross-country variation in the incidence of domestic terrorism, and is not simply capturing the effect of these covariates.

[INSERT TABLE 1 AROUND HERE]

In order to find out the quantitative importance of ethnic segregation in this context, we can use the coefficient of  $\hat{S}$  from our preferred specification in Table 1 (column 8) to calculate the corresponding incidence rate ratio. This incidence rate ratio reveals that an increase in the measure of ethnic segregation by one standard deviation would rise the expected number of domestic terrorist attacks by a factor of 8.75, while holding constant all other covariates in the model. To get a more accurate idea of the dimension of the impact of the degree of spatial concentration of

ethnic groups on domestic terrorist activity, we can consider the case of India. India is a country characterized by a level of ethnic segregation around the sample mean ( $\hat{S} = 0.090$ ). According to the results in column 8 of Table 1, if India had a level of spatial concentration of ethnic groups similar to that of the Philippines ( $\hat{S} = 0.119$ ), then the number of domestic terrorist incidents experienced by India between 2001 and 2007 would have increased by around 77%. Although the nature of the analysis implies that these figures should be treated with caution, our estimates suggest that ethnic segregation has a quantitatively relevant impact on the incidence of domestic terrorism.

Regarding the additional controls included in the analysis, Table 1 reveals that there is a positive and significant relationship between the average size of regions used to calculate  $\hat{S}$  and the incidence of domestic terrorism. Our analysis also shows that rugged terrain and the existence of a civil or interstate war in previous years tend to promote domestic terrorism. At the same time, countries with lower levels of political rights and civil liberties experience less terrorist activity, which seems to suggest that authoritarian states may be in better position to fight against this type of violence than democratic regimes. Finally, the coefficient of the remaining controls are not statistically significant consistently across the various regressions included in Table 1.<sup>10</sup>

## 4.2 Robustness checks

The analysis performed so far shows that ethnic segregation appears as a positive and highly significant predictor of domestic terrorism. We now examine the robustness of

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<sup>10</sup>In view of the findings of Freytag et al. (2011) and Enders and Hoover (2012), we also investigate the possibility that the effect of GDP per capita on domestic terrorism may be non-linear. To that end, we include in the analysis the square of GDP per capita as an additional control. The results show that the coefficient of the index of ethnic segregation remains positive and statistically significant, but the estimates do not support the hypothesis of a non-linear link between GDP per capita and domestic terrorism.

this result.

#### 4.2.1 Influential observations

As a first robustness test, we investigate the impact of influential observations on the above results. We check that our findings are robust to the exclusion of any particular country from the sample. The most influential observations in ‘favour’ of our results are Indonesia and Israel, two countries with high levels of ethnic segregation and domestic terrorism. In turn, the most influential observations ‘against’ our findings are Guatemala and Sri Lanka. Although it is the second most ethnically segregated country in the sample, Guatemala did not suffer any domestic terrorist attack over the study period. In turn, Sri Lanka is a country characterized by a degree of ethnic segregation clearly below the mean, but with a relatively high incidence of domestic terrorism. Though the quantitative impact of the degree of spatial concentration of ethnic groups on domestic terrorism is affected when these countries are removed from the sample, columns 1 and 2 of Table 2 reveal that the observed relationship between ethnic segregation and terrorism still holds.

[INSERT TABLE 2 AROUND HERE]

As an additional sensitivity check, we assess the extent to which our results are determined by the inclusion in the analysis of specific groups of countries. Indeed, the positive association detected between ethnic segregation and domestic terrorism may be driven by a particular group of countries. In order to test whether this is the case, we estimate our baseline specification excluding different groups of countries. In particular, we examine the influence on the results of countries in North America, Latin America and Caribbean, Sub-Saharan Africa, Middle East and North Africa

(MENA), South Asia, East Asia and Pacific, and Europe and Central Asia. Despite the reduction of sample size, columns 3-9 of Table 2 show that the coefficient of the index of ethnic segregation continues to be positive and statistically significant in all cases, corroborating our previous findings.

#### 4.2.2 Alternative measures of ethnic segregation and domestic terrorism

Our baseline results may be affected by the choice of the measure used to quantify the degree of spatial concentration of ethnic groups. In order to examine this issue, we repeat the analysis using an alternative index of ethnic segregation proposed by Alesina and Zhuravskaya (2011). This index implies ignoring the group ‘other’ and computing the index of segregation exclusively for the  $N$  identified groups. The resulting measure is as follows:

$$\tilde{S}_i = \frac{1}{N-1} \sum_{m=1}^N \sum_{j=1}^J \frac{p_j (\pi_{jm} - \pi_m)^2}{\pi_m} \quad (4)$$

Note that, unlike  $\hat{S}$ , this index represents an approximation of the theoretically correct definition of segregation, as we are omitting the fraction of the population included in the ‘other’ category. In any case, the results in columns 1 and 2 of Table 3 indicate that the observed connection between the degree of spatial concentration of ethnic groups and domestic terrorism is unaffected by the inclusion of this alternative index of ethnic segregation instead of  $\hat{S}$ .

[INSERT TABLE 3 AROUND HERE]

The findings of our study may also be sensitive to the definition of domestic terror-

ism used in the analysis. As pointed out above, so far we have employed as dependent variable the number of domestic terrorist attacks drawn from the dataset compiled by Enders et al. (2011). As an additional robustness test, we now employ an alternative method to calculate the number of domestic terrorist incidents experienced by the sample countries. Using the information provided by the GTD, an incident is classified as domestic terrorism when the nationality of the perpetrator group coincides with the location of the attack and with the nationalities of the target. In addition, following Kis-Katos et al. (2011) and Ezcurra and Palacios (2016), we also consider an attack as domestic terrorism when the nationality of the perpetrator group and/or the targets are unknown. Using these criteria, we calculate the number of domestic terrorist incidents for each country and year over the study period.<sup>11</sup> Columns 3 and 4 of Table 3 show that our baseline findings regarding the impact of ethnic segregation on domestic terrorism remain qualitatively unaltered when we use this variable as dependent variable. That said, it is worth noting that the quantitative impact of the degree of spatial concentration of ethnic groups on domestic terrorism is considerably lower than in Table 1. However, this is not particularly surprising if we take into account that we are including in the analysis incidents whose consideration as domestic terrorism may be questionable (Enders et al., 2011).

At this point it should be noted that a raw count of terrorist attacks may not be a reliable indicator of the scope and level of intensity of terrorist activity in the sample countries (Frey et al., 2007). In order to overcome this potential limitation of the previous analysis, we follow Dreher and Fischer (2010, 2011) and Dreher et al. (2010) and classify a terrorist incident as severe when at least one person has been injured or killed. The remaining terrorist actions are considered as non-severe attacks. Moreover, we also calculate the number of casualties due to terrorism in each country

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<sup>11</sup>This count of terrorist attacks and that based on the dataset compiled by Enders et al. (2011) are highly correlated in our sample ( $\rho = 0.944$ ), although there are relatively important discrepancies between the two measures for some specific countries.



(Choi and Piazza, 2014). Columns 5-10 of Table 3 show the results obtained when we repeat the analysis using these alternative dependent variables. As can be seen, the coefficient of the measure of ethnic segregation is again positive and statistically significant in all cases, confirming the robustness of our findings.

### 4.2.3 Additional controls

As an additional robustness test, we now examine the possibility that our results may be driven by an omitted variable. We address this issue by controlling for different covariates that could plausibly be correlated with ethnic segregation and the incidence of domestic terrorism, and checking whether the inclusion of these covariates affects our previous findings.

Economic differences among ethnic groups tend to be more persistent in countries where ethnic groups are spatially concentrated, which is consistent with the positive relationship observed by Alesina et al. (2016) between segregation and ethnic inequality. This raises the possibility that the measure of ethnic segregation used in our analysis may be capturing the effect of the degree of income inequality among ethnic groups on domestic terrorism. In order to explore whether this is the case, we include in our baseline model two measures of ethnic inequality constructed by Alesina et al. (2016). Furthermore, Ezcurra and Rodríguez-Pose (2017) show that ethnic segregation is positively associated with the level of income inequality across regions within a country (i.e. spatial inequality), whereas the evidence provided by Ezcurra and Palacios (2016) reveals that a high level of spatial inequality increases the incidence of domestic terrorism. Bearing this in mind, we also examine whether the observed link between ethnic segregation and terrorism remains when we control for an index reflecting the degree of spatial inequality across first-level administrative units for each country. Furthermore, taking into account that ethnic inequality and

spatial inequality are related to the degree of dispersion in the income distribution across the whole population, we also include as an additional control a standard Gini index capturing the level of interpersonal inequality within the various countries.

[INSERT TABLE 4 AROUND HERE]

Columns 1-8 of Table 4 present the results obtained when our baseline model is estimated again including in the list of regressors the measures of ethnic inequality, spatial inequality and interpersonal inequality mentioned above. As can be seen, none of these additional controls is statistically significant at conventional levels. However, the main finding of the paper still holds, as the coefficient of the measure of ethnic segregation continues to be positive and statistically significant in all cases. Finally, the regressions in columns 9 and 10 of Table 4 include a complete set of regional dummies in order to confirm that the observed impact of the degree of spatial concentration of ethnic groups on domestic terrorism is not simply reflecting the effect of an omitted region-specific factor which may be related to historical, cultural, or geographical aspects.

#### **4.2.4 Alternative estimation strategies**

Due to the reasons mentioned in section 3.3, so far we have used a cross-sectional approach to examine the relationship between ethnic segregation and domestic terrorism. Nevertheless, in order to facilitate the comparisons between our results and the bulk of previous empirical research on the determinants of terrorism, it is reasonable to perform a new robustness test applying panel data techniques. Accordingly, we now investigate the effect of ethnic segregation on domestic terrorism using the pooled and the random effects negative binomial models with annual data. As is

usual in the literature, in both models we include year dummies to control for shocks over time common to all countries and capture eventual changes in data encoding procedures. Furthermore, in this set-up we take into account that the incidence of domestic terrorism may be positively affected by the existence of previous episodes of terrorist activity. We control for this path dependence effect by including the lag of the dependent variable as an additional regressor, which should help to minimize the potential impact of serial correlation and omitted-variable bias (Burgoon, 2006; Freytag et al., 2011). The results of the panel data analysis are presented in columns 1-4 of Table 5. As can be checked, our estimates confirm once again our previous findings. The degree of spatial concentration of ethnic groups continues to be a positive and significant predictor of domestic terrorism.

[INSERT TABLE 5 AROUND HERE]

When interpreting the results in Table 1, one may argue that the dependent variable, the number of domestic terrorist attacks experienced by a country, may be affected by measurement error, which would result in inefficient estimates (Dugan and Distler, 2016). Namely, measurement error in the dependent variable would lead to possible Type II errors. Therefore, if the coefficients in Table 1 are precisely estimated, then confidence that the true coefficients are indeed different from zero increases even in the presence of measurement error in the dependent variable. This suggests that this potential problem should not alter the observed relationship between ethnic segregation and domestic terrorism. In any case, in order to address this possible problem, we follow Li (2005) and estimate a probit model using as dependent variable a binary variable equal to one if a country has suffered any domestic terrorist attack over the study period, and zero otherwise. The estimates in columns 5 and 6 of Table 5 reveal that domestic terrorism is more likely in countries with higher levels of ethnic

segregation, which is consistent with our earlier results.

## 5 Transmission channels

As described in section 2, ethnic segregation may affect domestic terrorism through its impact on secession threats, the devolution of political power from central to subnational governments, and social capital. In order to complement our previous findings, we now present a preliminary analysis on the empirical relevance of these potential transmission channels.

Following Alesina and Zhuravskaya (2011), we use as a measure of secession threat a dummy variable that indicates whether a country has had an active separatist or autonomy movement in the past 25 years. This dummy variable has been constructed using the information provided by the separatism index (SEPX) included in the Minority at Risk (MAR) dataset. In order to quantify the degree of political decentralization, we resort to an indicator proposed by Treisman (2008) to capture decision-making by subnational governments. The indicator is a dummy variable that takes the value one if, under the national constitution, subnational legislatures have full control in certain specified areas not explicitly subject to central laws, zero otherwise.<sup>12</sup> Finally, our measure of social capital uses data drawn from the World Value Survey (WVS) on the prevalence of generalized interpersonal trust in a country’s population. This is a widely employed measure of social capital that reflects the proportion in a given country of all respondents that chose the answer ‘Most people can be trusted’ (as

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<sup>12</sup>This indicator is more appropriate in our context than standard measures of fiscal decentralization, such as the subnational share in total government expenditure or the subnational share in total government revenue. Despite the popularity of these measures in the literature, their employment has been heavily criticized because they provide no information about the degree of autonomy of subnational governments (Rodríguez-Pose and Ezcurra, 2010; Ezcurra, 2015). This limitation of this type of measures is particularly relevant for our analysis, as the various arguments discussed in section 2 on the role played by decentralization in this context are based on the existence of political decision- and law-making power at subnational level.

opposed to ‘Can’t be too careful’) when responding to the survey question ‘Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?’<sup>13</sup>

Using these variables, we can carry out a preliminary test of the potential transmission channels that could ultimately explain the observed relationship between ethnic segregation and domestic terrorism. To do this, we include in our baseline model the measures of secession threat, political decentralization and social capital. If these were valid transmission channels, the inclusion of these additional controls should reduce the effect of ethnic segregation on the incidence of domestic terrorism in terms of coefficient size and/or statistical significance. Table 6 presents the results of this analysis for a common sample of countries conditioned by the availability of data on the mediating variables described above. As can be seen, countries with active separatist movements tend to experience a higher number of terrorist attacks, which shows the potential risk that secessionism could pose for internal peace and stability (Hechter, 2000; Bakke and Wibbels, 2006). Our estimates also indicate that greater levels of political autonomy of subnational governments reduce the incidence of domestic terrorism, suggesting that political decentralization can be an useful instrument in the fight against this type of violence. However, the level of interpersonal trust does not appear to be significantly related to the intensity of terrorist activity. Most importantly, Table 6 shows that, unlike the remaining mediating variables, the inclusion of the measure of secession threat affects the observed relationship between ethnic segregation and domestic terrorism. Once we control for the indicator of secession threat, the size of the coefficient of the index of ethnic segregation decreases considerably (a 66% decline in the full specification in column 8 in comparison with the baseline specification in column 1), and its effect is no longer statistically significant

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<sup>13</sup>We take the mean value of respondents who opted for that answer across the different waves of the WVS conducted over the 1981-2004 time horizon in order to maximize the number of countries with non-missing observations (Alesina and Zhuravskaya, 2011).

at conventional levels. This suggests that secessionism is an important transmission channel linking ethnic segregation and domestic terrorism. Indeed, this interpretation is consistent with the information provided by Table 7, which reveals that the presence of separatist movements is more likely in countries with higher levels of spatial concentration of ethnic groups.

[INSERT TABLE 6 AROUND HERE]

[INSERT TABLE 7 AROUND HERE]

The exploratory nature of this analysis implies, however, that the results obtained should be treated with caution. Thus, our findings are insufficient to definitively reject decentralization and social capital as additional channels connecting ethnic segregation and domestic terrorism, as the measures used may be too crude to capture the effect of these factors in this context. Furthermore, the three proposed channels are highly interdependent (Brancati, 2006; Alesina and Zhuravskaya, 2011), which makes it difficult to isolate empirically the effect of each particular channel. Another important caveat is that secession risk, political decentralization and social capital may themselves be potentially endogenous in this framework (Arvanitidis et al., 2016; Ezcurra, 2017). In order to assess conclusively the relevance of the hypothesized transmission channels, one should exploit an independent exogenous source of variation for each of the mediating variables, a task that we leave open for future research.

## 6 Concluding remarks

This paper has examined the link between ethnic segregation and domestic terrorism. Our results show that ethnic segregation has a positive and significant effect on the

incidence of domestic terrorism, which indicates that countries where ethnic groups are spatially concentrated face a higher risk of suffering this type of violence. This finding is robust to the inclusion in the analysis of different covariates that may affect both ethnic segregation and domestic terrorism, such as ethnic fractionalization, the level of economic development, geographical factors, or the existence of a civil or interstate war. The observed relationship between the degree of spatial concentration of ethnic groups and domestic terrorism is confirmed by various robustness tests. The results also suggest that the threat of secession is an important transmission channel linking ethnic segregation and domestic terrorism.

Our research contributes to the existing literature on the causes of domestic terrorism by underlying the role played by ethnic segregation in explaining the incidence of this type of violence. The results reveal that the spatial distribution of ethnic groups is a key element in the generation of domestic terrorism and therefore should be taken into account by policy-makers and international organizations involved in the design of effective counter-terrorism strategies. In addition to highlighting the importance of the study of group settlement patterns, the findings of the paper also warn about the risks of considering the territorial separation of ethnic groups as a possible way to fight against domestic terrorism.

Additional extensions to our work are not difficult to conceive. For example, it would be interesting to differentiate terrorist attacks by the ideology of the perpetrator group in order to explore the link between segregation and ethno-nationalism terrorism. However, this is not an easy task for various reasons. First, as pointed out by Dugan (2012, p. 182), “nearly half of the attacks in the GTD are unattributed to any terrorist organization.” If we decided to consider exclusively those attacks with a known perpetrator group, the analysis would be subject to a selection bias that would distort the results (Choi and Piazza, 2014). Second, the ideology of some terrorist groups is difficult to classify and may change over time. Further research

will also have to pay particular attention to the need to complement and extend our analysis of the various transmission channels which ultimately explain the impact of the spatial distribution of ethnic groups on domestic terrorism. Only by pursuing these additional strands, we will be able to attain a fuller understanding of how ethnic segregation affects terrorism.

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## Appendix

### List of countries

Afghanistan	Burkina Faso	Ecuador
Argentina	Belarus	Estonia
Armenia	Cambodia	Ethiopia
Australia	Cameroon	Finland
Austria	Canada	France
Bahrain	Central African Rep.	Gabon
Bangladesh	Chile	Germany
Belgium	China	Ghana
Belize	Colombia	Greece
Benin	Costa Rica	Guatemala
Bolivia	Croatia	Guinea
Brazil	Czech Republic	Honduras
Bulgaria	Denmark	Hungary



Iceland	Nepal	South Korea
India	Netherlands	Spain
Indonesia	New Zealand	Sri Lanka
Ireland	Niger	Sweden
Israel	Norway	Switzerland
Italy	Pakistan	Taiwan
Ivory Coast	Panama	Tajikistan
Japan	Paraguay	Tanzania
Jordan	Peru	Togo
Kazakhstan	Philippines	Turkey
Kenya	Portugal	Uganda
Kyrgyz Rep.	Qatar	Ukraine
Latvia	Romania	United States
Lesotho	Russia	Uzbekistan
Lithuania	Rwanda	Vietnam
Macedonia	Saudi Arabia	Zambia
Malawi	Senegal	Zimbabwe
Mali	Slovakia	United Kingdom
Mexico	Slovenia	
Morocco	South Africa	

### **Description and sources of control variables**

*Average size of regions:* Natural log of the average population of the country's regions.

Source: Alesina and Zhuravskaya (2011).

*Ethnic fractionalization:* Index of ethnic fractionalization based on aggregate regional data. The index captures the probability that two individuals randomly drawn from

the population belong to different ethnic groups. Source: Alesina and Zhuravskaya (2011).

*GDP per capita*: Natural log of GDP per capita expressed in constant 2005 international U.S. dollars. Source: Penn World Table 7.1 (Heston et al., 2012).

*Urban population*: Share of the total population living in urban areas (%). Source: World Development Indicators (World Bank).

*Ruggedness*: Index of terrain ruggedness. Source: Nunn and Puga (2012).

*Non-contiguous territory*: Dummy variable that takes the value of one for countries with a territory holding at least 10,000 people and separated from the land area containing the capital city either by land or by 100 kilometres of water, and zero otherwise. Source: Esteban et al. (2012) and the authors.

*War*: Dummy variable that takes the value of one if the country has experienced a civil or interstate war between 1995 and 2000, and zero otherwise. A country is recorded as having experienced a civil or interstate war in any given year if a threshold of 1,000 or more battle-related deaths has been met. Source: UCDP-PRIO (Gleditsch et al., 2002).

*Free*: Dummy variable that takes the value of one if the country is classified as 'Free', and zero otherwise. The status of 'Free' is based on the average value of political rights and civil liberties ratings from Freedom House, ranging from 1 to 7, where lower values reflect greater freedom. Countries whose ratings average 1.0 to 2.5 are considered 'Free'. Source: Freedom House.

*Not Free*: Dummy variable that takes the value of one if the country is classified as 'Not Free', and zero otherwise. The status of 'Not Free' is based on the average value of political rights and civil liberties ratings from Freedom House, ranging from 1 to 7, where lower values reflect greater freedom. Countries whose ratings average 5.5 to 7

are considered ‘Not Free’. Source: Freedom House.

*Population size*: Natural log of total population (in thousands). Source: Penn World Table 7.1 (Heston et al., 2012).

*Trade openness*: Total trade (imports and exports) expressed as a share of GDP at 2005 constant prices (%). Source: Penn World Table 7.1 (Heston et al., 2012).

*Government size*: Government consumption share of PPP converted GDP per capita at 2005 constant prices (%). Source: Penn World Table 7.1 (Heston et al., 2012).

*Ethnic inequality (GREG)*: Gini index that reflects the differences in mean income –as captured by luminosity per capita at the ethnic homeland– across ethnic groups. Average value of the years 1992 and 2000. The location of the various groups is identified using the Geo-Referencing of Ethnic Groups (GREG), which is the digitized version of the Soviet Atlas Narodov Mira. Source: Alesina et al. (2016).

*Ethnic inequality (Ethnologue)*: Gini index that reflects the differences in mean income –as captured by luminosity per capita at the ethnic homeland– across ethnic groups. Average value of the years 1992 and 2000. The location of the various groups is identified using the Ethnologue. Source: Alesina et al. (2016).

*Spatial inequality*: Gini index that reflects the degree of income inequality across-first level administrative units. Average value of the years 1992 and 2000. Night-time light data are used as a proxy for regional incomes. Source: Alesina et al. (2016).

*Interpersonal inequality*: Income Gini index compiled and adjusted by Easterly (2007) using survey and census data drawn from the World Institute for Development Economics Research (WIDER). Average value over the period 1960-1998. Source: Alesina et al. (2016).

[INSERT TABLE A1 AROUND HERE]

Table 1: Ethnic segregation and domestic terrorism: Main results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ethnic segregation ( $\hat{S}$ )	8.446*** (2.082)	9.470*** (2.473)	16.117*** (4.671)	21.879*** (6.352)	14.454*** (4.096)	14.225*** (4.625)	31.034*** (5.506)	20.138*** (7.621)
Average size of regions (log)		1.615*** (0.361)	2.677*** (0.535)	4.396*** (1.113)	4.515*** (1.200)	2.544*** (0.878)	1.970*** (0.567)	4.632*** (1.448)
Ethnic fractionalization		-1.630 (2.018)	-1.630 (2.018)	-1.630 (2.018)	2.935 (2.071)	1.009 (2.384)	-4.208** (1.768)	1.235 (2.928)
GDP per capita (log)		2.309*** (0.752)	2.309*** (0.752)	2.346** (1.049)	2.346** (1.049)	1.616 (1.232)	3.685*** (1.003)	2.132* (1.296)
Urban population		-0.054 (0.035)	-0.054 (0.035)	-0.073** (0.034)	-0.073** (0.034)	-0.123** (0.056)	-0.149*** (0.036)	-0.063 (0.045)
Ruggedness		1.689*** (0.278)	1.689*** (0.278)	1.785*** (0.308)	1.650*** (0.275)	1.328*** (0.326)	1.328*** (0.326)	1.794*** (0.311)
Non-contiguous territory		-0.887 (0.978)	-0.887 (0.978)	1.137 (1.297)	2.072** (1.045)	1.311 (1.170)	1.311 (1.170)	1.271 (1.434)
War		5.397*** (1.215)	5.397*** (1.215)	7.148*** (1.430)	8.694*** (1.731)	6.184*** (1.837)	6.184*** (1.837)	7.642*** (2.267)
Free		0.466 (1.748)	0.466 (1.748)	0.466 (1.748)	3.669*** (1.205)	3.205* (1.913)	-3.419* (1.766)	0.855 (2.329)
Not Free		-3.036** (1.372)	-3.036** (1.372)	-3.036** (1.372)	-3.336*** (1.196)	-4.141** (1.787)	-2.776** (1.153)	-3.183** (1.392)
Population (log)		-2.248** (0.890)	-2.248** (0.890)	-2.248** (0.890)	-2.231*** (0.823)	-1.188 (0.804)	-0.383 (0.683)	-2.380** (1.014)
Trade openness		-0.033 (0.025)	-0.033 (0.025)	-0.033 (0.025)	-0.014 (0.019)	-0.041 (0.030)	0.001 (0.025)	-0.030 (0.029)
Government size		-0.161 (0.157)	-0.161 (0.157)	-0.161 (0.157)	-0.229** (0.103)	0.243 (0.289)	0.005 (0.089)	-0.171 (0.141)
Wald chi-square test	16.46*** 97	30.04*** 97	78.36*** 96	66.24*** 96	63.82*** 97	49.66*** 96	86.63*** 96	70.90*** 96
Observations	97	97	96	96	97	96	96	96

Notes: Negative binomial regressions. The dependent variable is in all cases the number of domestic terror attacks between 2001 and 2007 drawn from the dataset compiled by Enders et al. (2011). All regressions include a constant (not shown). Robust standard errors in parentheses. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table 2: Robustness analysis: Influential countries and regional dummies.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ethnic segregation ( $\hat{S}$ )	7.666*** (2.352)	27.307*** (6.405)	20.831*** (7.976)	25.977*** (6.761)	21.394*** (6.136)	7.490*** (2.369)	26.784*** (4.200)	13.355*** (5.749)	29.954*** (11.810)
Average size of regions (log)	1.489** (0.655)	3.772*** (1.082)	4.749*** (1.474)	3.347*** (0.930)	4.488*** (1.466)	1.485** (0.617)	3.995*** (1.213)	4.600*** (1.272)	5.587*** (2.096)
Ethnic fractionalization	0.249 (1.572)	-1.157 (1.878)	0.799 (3.052)	-1.909 (1.699)	3.508 (3.524)	0.039 (1.554)	11.328*** (3.043)	0.355 (2.452)	-0.879 (5.831)
GDP per capita (log)	1.495** (0.667)	0.370 (1.533)	2.145* (1.270)	2.951*** (1.113)	-0.984 (1.291)	1.327** (0.651)	3.076** (1.370)	1.802* (0.979)	4.637** (1.944)
Urban population	-0.173*** (0.040)	0.011 (0.047)	-0.062 (0.043)	-0.071* (0.037)	-0.064 (0.042)	-0.152*** (0.037)	0.023 (0.043)	-0.041 (0.032)	-0.220 (0.144)
Ruggedness	1.488*** (0.260)	2.108*** (0.365)	1.798*** (0.313)	1.792*** (0.313)	0.986*** (0.255)	1.454*** (0.221)	2.076*** (0.483)	1.880*** (0.305)	2.054*** (0.430)
Non-contiguous territory	7.442*** (1.546)	2.092 (1.365)	1.463 (1.609)	0.238 (1.152)	2.666** (1.085)	6.458*** (1.516)	6.770*** (1.114)	0.212 (1.389)	1.637 (3.962)
War	4.096*** (1.321)	3.564* (1.843)	7.615*** (2.240)	5.501*** (1.186)	9.636*** (2.848)	4.279*** (1.264)	4.366*** (1.490)	8.088*** (1.958)	6.770* (3.800)
Free	-1.653 (1.450)	1.159 (2.497)	0.364 (2.634)	-2.470 (1.795)	8.148** (3.710)	-1.276 (1.458)	-0.698 (1.658)	1.703 (1.666)	3.139 (4.084)
Not Free	-0.740 (0.676)	-2.059** (0.934)	-3.230** (1.327)	-3.158*** (1.040)	-8.726*** (2.600)	-0.717 (0.652)	1.060 (0.958)	-0.992 (1.688)	-2.769 (1.973)
Population (log)	-0.644 (0.637)	-1.499 (1.016)	-2.606** (1.225)	-1.869** (0.883)	-2.452*** (0.928)	-0.695 (0.593)	-2.592** (1.022)	-2.307** (0.905)	-3.334* (1.835)
Trade openness	-0.046** (0.022)	-0.052** (0.026)	-0.027 (0.029)	-0.050** (0.025)	-0.076*** (0.022)	-0.050** (0.022)	-0.051* (0.030)	-0.045 (0.034)	-0.016 (0.040)
Government size	-0.363*** (0.073)	-0.089 (0.150)	-0.182 (0.142)	-0.217*** (0.081)	0.367* (0.206)	-0.358*** (0.070)	0.359*** (0.127)	-0.065 (0.164)	-0.314** (0.139)
Omitted countries	Indonesia and Israel	Guatemala and Sri Lanka	North America	Latin America	Sub-Saharan Africa	MENA	South Asia	East Asia and Pacific	Europe and Central Asia
Wald chi-square test	124.7***	83.73***	71.37***	86.02***	49.57***	118.6***	165.9***	84.36***	74.11***
Observations	94	94	94	82	74	90	90	87	59

Notes: Negative binomial regressions. The dependent variable is in all cases the number of domestic terror attacks between 2001 and 2007 drawn from the dataset compiled by Enders et al. (2011). All regressions include a constant (not shown). Robust standard errors in parentheses. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table 3: Robustness analysis: Alternative definitions of ethnic segregation and domestic terrorism.

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Domestic terrorism (Enders et al., 2011)	Domestic terrorism (Enders et al., 2011)	Domestic terrorism (alternative definition)	Domestic terrorism (alternative definition)	Severe domestic terrorism	Severe domestic terrorism	Non-severe domestic terrorism	Non-severe domestic terrorism	Casualties of domestic terrorism	Casualties of domestic terrorism
Ethnic segregation ( $\hat{S}$ )	9.417*** (2.460)	18.656*** (5.365)								
Ethnic segregation ( $\hat{S}$ )			5.885*** (2.172)	6.218*** (1.864)	10.287*** (2.899)	18.662*** (6.930)	7.706*** (2.882)	16.730*** (6.445)	8.160*** (2.982)	12.998*** (5.107)
Average size of regions (log)	1.441*** (0.316)	4.697*** (1.256)	0.523*** (0.165)	-0.005 (0.272)	1.578*** (0.346)	4.122*** (1.426)	1.374*** (0.318)	3.303*** (1.155)	0.917*** (0.185)	0.729 (0.459)
Ethnic fractionalization		-0.824 (2.742)		-0.358 (0.671)		1.431 (2.791)		0.148 (2.217)		-0.291 (1.420)
GDP per capita (log)		2.026* (1.079)		0.533* (0.285)		1.899* (1.154)		0.690 (1.116)		1.667* (0.865)
Urban population		-0.058 (0.036)		-0.019 (0.014)		-0.050 (0.043)		-0.020 (0.044)		-0.011 (0.040)
Ruggedness		1.713*** (0.277)		0.595*** (0.146)		1.578*** (0.307)		1.662*** (0.319)		0.864*** (0.198)
Non-contiguous territory		0.748 (1.409)		0.289 (0.596)		0.020 (1.504)		1.624 (1.108)		-1.969* (1.184)
War		1.395 (1.864)		-0.865* (0.474)		0.264 (2.017)		2.545 (2.141)		-3.392** (1.645)
Free		-2.048 (1.298)		-0.895** (0.403)		-3.065** (1.228)		-4.271** (1.776)		-1.403** (0.703)
Not Free		-2.799*** (1.002)		0.568* (0.311)		-1.843* (1.019)		-1.282* (0.727)		0.387 (0.696)
Population (log)		7.701*** (1.895)		1.974*** (0.607)		7.212*** (2.170)		6.273*** (1.991)		2.810*** (0.877)
Trade openness		-0.043 (0.027)		-0.003 (0.007)		-0.017 (0.029)		-0.011 (0.025)		-0.044** (0.019)
Government size		-0.179 (0.165)		-0.063* (0.034)		-0.150 (0.108)		-0.135 (0.122)		0.002 (0.061)
Wald chi-square test	31.09*** 97	84.22*** 96	17.47*** 97	225.2*** 96	28.12*** 97	72.25*** 96	21.60*** 97	54.80*** 96	28.44*** 97	101.1*** 96

Notes: Negative binomial regressions. See section 4.2.2 for further details on the definition of the dependent variables. All regressions include a constant (not shown). Robust standard errors in parentheses. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table 4: Robustness analysis: Additional controls.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ethnic segregation ( $\hat{S}$ )	10.935*** (2.909)	19.763*** (7.465)	9.674*** (3.042)	21.057*** (8.136)	6.571** (3.322)	17.227** (7.389)	8.058*** (2.846)	13.162** (6.396)	17.098*** (3.771)	12.544*** (4.422)
Average size of regions (log)	1.779*** (0.392)	3.889** (1.658)	1.647*** (0.418)	4.029*** (1.554)	1.527*** (0.329)	5.086*** (1.501)	1.594*** (0.471)	4.916*** (1.571)	1.599*** (0.369)	1.820*** (0.630)
Ethnic fractionalization		1.368 (3.127)		1.909 (3.001)		-0.038 (2.621)		3.285 (2.918)		1.196 (1.906)
GDP per capita (log)		1.052 (1.407)		1.417 (1.389)		2.723** (1.140)		2.240 (1.470)		0.961 (0.625)
Urban population		-0.022 (0.052)		-0.040 (0.051)		-0.090** (0.039)		-0.052 (0.041)		-0.146*** (0.042)
Ruggedness		1.879*** (0.326)		1.897*** (0.337)		1.722*** (0.300)		1.669*** (0.308)		0.781*** (0.143)
Non-contiguous territory		1.310 (1.391)		1.378 (1.379)		1.212 (1.413)		1.911 (1.499)		6.823*** (0.893)
War		6.997*** (2.470)		6.883*** (2.346)		7.197*** (2.129)		7.244*** (2.496)		3.565*** (0.606)
Free		0.662 (2.344)		0.553 (2.090)		1.074 (2.260)		-1.032 (3.291)		-0.656 (1.080)
Not Free		-2.667** (1.242)		-3.279** (1.316)		-3.462** (1.592)		-1.669 (3.554)		-0.639 (0.806)
Population (log)		-1.623 (1.239)		-1.712 (1.187)		-2.680** (1.082)		-3.142** (1.290)		-1.356** (0.559)
Trade openness		-0.031 (0.030)		-0.030 (0.029)		-0.026 (0.026)		-0.045 (0.040)		-0.052** (0.020)
Government size		-0.189 (0.122)		-0.181 (0.154)		-0.218 (0.190)		-0.065 (0.287)		-0.167 (0.115)
Ethnic inequality (GREG)		-1.257 (1.356)		-2.951 (2.914)						
Ethnic inequality (Ethnologue)										
Spatial inequality					2.456 (1.812)	5.987 (3.891)				
Interpersonal inequality							-4.465 (6.577)	-11.257 (10.795)		
Regional dummies		No	No	No	No	No	No	No	Yes	Yes
Wald chi-square test	32.18***	76.90***	30.22***	79.50***	33.04***	86.43***	17.04***	65.39***	49.98***	388.2***
Observations	96	96	96	96	96	96	82	82	97	96

Notes: Negative binomial regressions. The dependent variable is in all cases the number of domestic terror attacks between 2001 and 2007 drawn from the dataset compiled by Enders et al. (2011). All regressions include a constant (not shown). Columns 9 and 10 include regional dummies for Latin America and Caribbean, Sub-Saharan Africa, Middle East and North Africa, South Asia, East Asia and Pacific, and Europe and Central Asia, while North America is the omitted category (World Bank classification). Robust standard errors in parentheses. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table 5: Robustness analysis: Alternative estimation strategies.

Estimation method	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled negative binomial model	Pooled negative binomial model	Random effects negative binomial model	Random effects negative binomial model	Probit model	Probit model
Ethnic segregation ( $\bar{S}$ )	3.115** (1.286)	5.622*** (1.761)	2.272** (1.040)	4.206*** (1.143)	2.918** (1.389)	4.138** (1.872)
Average size of regions (log)	0.240* (0.135)	0.054 (0.217)	0.288*** (0.083)	0.054 (0.173)	0.462*** (0.124)	0.514 (0.373)
Ethnic fractionalization		-0.238 (0.623)		-1.284** (0.562)		0.633 (0.882)
GDP per capita (log)		0.426 (0.265)		0.319 (0.198)		0.503 (0.501)
Urban population		-0.011 (0.014)		-0.006 (0.011)		-0.036 (0.027)
Ruggedness		0.534*** (0.126)		0.420*** (0.096)		0.611*** (0.177)
Non-contiguous territory		0.231 (0.455)		1.264*** (0.352)		2.107*** (0.779)
War		0.040 (0.272)		0.159 (0.134)		
Free		-1.123*** (0.423)		-0.750*** (0.235)		-0.994 (0.835)
Not Free		-0.821** (0.396)		-0.135 (0.196)		-0.046 (0.458)
Population (log)		0.447* (0.254)		0.404* (0.209)		-0.215 (0.365)
Trade openness		-0.000 (0.005)		-0.001 (0.004)		-0.013 (0.009)
Government size		-0.042 (0.043)		-0.007 (0.029)		-0.008 (0.048)
Past attacks	0.099*** (0.023)	0.067*** (0.017)	0.015*** (0.002)	0.014*** (0.002)		
Year dummies	Yes	Yes	Yes	Yes	No	No
Wald chi-square test	73.01***	250.8***	114.2***	246.4***	18.34***	30.48***
Observations	679	672	679	672	97	96

Notes: In columns 1–4 all time-varying regressors are lagged one year. Standard errors in parentheses (clustered at the country level in columns 1 and 2, and robust in columns 5 and 6). All regressions include a constant (not shown). The probit model in column 6 does not include the war dummy because this variable predicts success perfectly. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.



Table 6: Ethnic segregation and domestic terrorism: Transmission channels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ethnic segregation ( $\hat{S}$ )	14.076*** (4.689)	-0.149 (5.377)	15.752*** (3.531)	13.512*** (4.603)	4.876 (4.563)	-1.246 (9.664)	15.625*** (3.510)	4.823 (5.247)
Secession threat		8.562*** (2.508)			10.324*** (2.161)	8.747*** (3.103)		10.560*** (1.925)
Political decentralization			-2.839*** (1.092)		-4.476*** (1.297)		-2.827** (1.162)	-4.851*** (1.249)
Trust				3.447 (5.981)		1.987 (8.198)	1.512 (4.733)	6.280 (5.321)
Average size of regions (log)	5.279** (2.355)	2.748*** (1.060)	5.551*** (2.153)	5.454** (2.401)	3.550*** (1.131)	2.737** (1.063)	5.578** (2.187)	3.524*** (1.190)
Ethnic fractionalization	1.465 (4.175)	0.392 (2.619)	0.205 (3.071)	1.106 (3.395)	-1.619 (3.023)	0.299 (2.546)	0.046 (2.930)	-2.608 (3.010)
GDP per capita (log)	3.407 (2.980)	-2.382 (2.600)	4.368 (2.993)	3.383 (2.883)	-1.233 (2.639)	-2.710 (3.007)	4.267 (2.880)	-1.881 (3.020)
Urban population	-0.073 (0.078)	0.137 (0.109)	-0.119 (0.080)	-0.074 (0.076)	0.046 (0.129)	0.149 (0.139)	-0.117 (0.077)	0.048 (0.138)
Ruggedness	-0.437 (0.655)	1.848** (0.905)	-0.303 (0.624)	-0.369 (0.583)	2.478*** (0.850)	1.921* (1.011)	-0.254 (0.597)	2.655*** (0.757)
Non-contiguous territory	4.368*** (1.674)	6.401*** (1.833)	4.708*** (1.784)	4.088*** (1.518)	7.265*** (1.401)	6.378*** (1.994)	4.592*** (1.750)	7.084*** (1.348)
War	5.510** (2.697)	1.482 (1.729)	5.719*** (1.916)	6.363** (3.226)	2.109 (1.773)	2.013 (3.374)	6.045*** (2.341)	3.688 (2.283)
Free	-3.726 (4.207)	-2.728 (3.040)	-3.823 (4.190)	-3.633 (3.965)	-0.891 (1.899)	-2.603 (3.196)	-3.653 (4.007)	0.676 (2.091)
Not Free	-20.484*** (2.929)	-19.410*** (4.029)	-21.521*** (2.435)	-17.847*** (3.294)	-21.069*** (2.841)	-17.479*** (4.685)	-23.388*** (2.483)	-23.470*** (2.928)
Population (log)	-4.841* (2.799)	-3.840*** (1.280)	-5.058** (2.559)	-5.074* (2.780)	-4.203*** (1.263)	-3.945*** (1.460)	-5.119** (2.535)	-4.389*** (0.983)
Trade openness	-0.062 (0.047)	-0.137** (0.056)	-0.061 (0.046)	-0.068 (0.049)	-0.123 (0.076)	-0.142** (0.068)	-0.063 (0.047)	-0.120* (0.066)
Government size	0.073 (0.311)	0.176 (0.240)	0.087 (0.221)	0.096 (0.267)	0.250** (0.104)	0.181 (0.281)	0.089 (0.214)	0.217* (0.124)
Wald chi-square test	753.8*** 46	496.9*** 46	979.2*** 46	526.6*** 46	775.9*** 46	438.2*** 46	1102*** 46	825.5*** 46
Observations								

Notes: Negative binomial regressions. The dependent variable is in all cases the number of domestic terror attacks between 2001 and 2007 drawn from the dataset compiled by Enders et al. (2011). All regressions include a constant (not shown). Robust standard errors in parentheses. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table 7: Secession threat, political decentralization, trust and ethnic segregation.

Dependent variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Secession threat	Probit	Secession threat	IV-Probit	Political decentr.	Probit	Political decentr.	IV-Probit	Trust	OLS	Trust	2SLS
Ethnic segregation ( $\hat{S}$ )	12.362*** (3.552)		17.658*** (3.185)		-1.093 (4.117)		-0.366 (4.975)		0.041 (0.224)		0.041 (0.224)	-0.153 (0.266)
Average size of regions (log)	-0.095 (0.366)		-0.195 (0.276)		0.411 (0.483)		0.400 (0.479)		0.005 (0.024)		0.005 (0.024)	0.007 (0.022)
Ethnic fractionalization	3.586** (1.716)		2.114 (1.565)		3.414** (1.629)		3.286 (2.008)		0.038 (0.105)		0.038 (0.105)	0.064 (0.089)
GDP per capita (log)	2.645*** (0.826)		2.682*** (0.715)		-0.077 (0.629)		-0.056 (0.670)		0.077*** (0.025)		0.077*** (0.025)	0.071*** (0.022)
Urban population	-0.154*** (0.047)		-0.148*** (0.036)		0.036 (0.033)		0.034 (0.039)		-0.002 (0.002)		-0.002 (0.002)	-0.002 (0.002)
Ruggedness	-0.426 (0.283)		-0.534** (0.229)		0.436* (0.256)		0.419 (0.256)		-0.000 (0.013)		-0.000 (0.013)	0.003 (0.013)
Non-contiguous territory	0.437 (0.731)		0.393 (0.634)		-1.019 (0.706)		-0.993 (0.731)		0.038 (0.052)		0.038 (0.052)	0.032 (0.047)
War					1.061 (1.115)		0.970 (1.332)		-0.103 (0.084)		-0.103 (0.084)	-0.089 (0.077)
Free	-0.778 (0.691)		-0.426 (0.618)		2.209* (1.276)		2.227* (1.257)		0.010 (0.052)		0.010 (0.052)	0.003 (0.046)
Not Free	-1.171 (1.014)		-0.615 (0.880)						0.170** (0.072)		0.170** (0.072)	0.161*** (0.062)
Population (log)	0.209 (0.481)		0.386 (0.388)		0.373 (0.670)		0.389 (0.656)		0.027 (0.036)		0.027 (0.036)	0.024 (0.032)
Trade openness	0.000 (0.018)		0.012 (0.014)		-0.011 (0.015)		-0.009 (0.016)		0.001 (0.001)		0.001 (0.001)	0.001 (0.001)
Government size	-0.065 (0.068)		-0.068 (0.074)		-0.017 (0.082)		-0.022 (0.099)		0.001 (0.005)		0.001 (0.005)	0.002 (0.004)
Wald chi-square test	21.55***		61.81***		22.68***		23.28***					
Observations	46		46		46		46		46		46	46

Notes: All regressions include a constant (not shown). Robust standard errors in parentheses. In even columns ethnic segregation is instrumented with the index of predicted segregation calculated by Alesina and Zhuravskaya (2011). The controls excluded in columns 1-4 were removed because they predict success perfectly. \* Significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

Table A1: Descriptive statistics (cross-section analysis).

Variable	Mean	Std. Dev.	Min.	Max.	Obs.
Domestic terrorist attacks (Enders et al., 2011)	39.20	117.46	0.00	793	97
Ethnic segregation ( $\hat{S}$ )	0.10	0.11	0.00	0.39	97
Ethnic segregation ( $\tilde{S}$ )	0.12	0.12	0.00	0.49	97
Average size of regions (log)	13.84	1.41	10.19	17.58	97
Ethnic fractionalization	0.38	0.27	0.00	0.92	96
GDP per capita (log)	8.52	1.41	6.00	10.88	96
Urban population	55.29	23.86	11.87	96.96	96
Ruggedness	1.33	1.24	0.04	6.20	96
Non-contiguous territory	0.18	0.38	0.00	1.00	96
War	0.11	0.32	0.00	1.00	96
Free	0.43	0.50	0.00	1.00	96
Not Free	0.16	0.36	0.00	1.00	96
Population (log)	9.51	1.54	5.45	14.03	96
Trade openness	68.59	32.18	20.81	163.78	96
Government size	9.49	4.52	3.46	28.56	96
Ethnic inequality (GREG)	0.48	0.22	0.00	0.95	96
Ethnic inequality (Ethnologue)	0.48	0.32	0.00	0.95	96
Spatial inequality	0.35	0.20	0.09	0.83	96
Interpersonal inequality	0.42	0.09	0.27	0.67	82
Secession threat	0.48	0.51	0.00	1.00	46
Political decentralization	0.17	0.38	0.00	1.00	46
Trust	0.28	0.13	0.05	0.55	46