
Book:
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McClanahan, a high-level convicted PIRA bomber. McClanahan explains that the PIRA routinely warned local police forces to minimize civilian casualties in terrorist attacks to maintain support from the Irish diaspora and humanitarian NGOs in the USA: "[i]n the early years, I'm talking say 1970 until probably '76, '77, your main source of weapons was coming from the US ... [W]hat I'm saying is bad politics plays bad in the bars and in the clubs of New York and wherever when you're asking for money to send back to the [P]IRA" (Brown 2015, 46).

Chapter 5. Empirical Analysis

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Abstract
In this chapter, the author tests the theoretical expectations presented in the study by conducting empirical analyses. The findings reveal that external non-state actors' support increases the lethality of terrorism used by rebel groups in civil wars. The effect of natural resources exploitation on terrorism lethality is not distinguishable from the effect of internal financing through local support. The magnitude of the effects of financing on terrorism lethality is similar for foreign states and external non-state actors, and the positive effect of external financing on terrorism intensity is primarily driven by external supporters rather than natural resources exploitation. The findings also suggest that more diverse financing sources available to rebel groups increase the lethality of terrorism they use in civil wars, which is driven by external supporters. However, when examining the role of specific external non-state actors, the findings show that the impact of their support depends on their interests when financing a rebel organization. The support of Diaspora groups and NGOs decreases the lethality of terrorism used by rebel groups, while the support of external rebel groups increases terrorism lethality.

This chapter contains the empirical analysis that verifies the validity of the theoretical expectations of this study. Below, I summaries the main arguments and formulate a set of testable hypotheses departing from the theoretical exploration contained in Chapter 1, 3, and 4. The theoretical point of departure is that the leadership cadres of rebel organizations take rational decisions on the intensity of terrorism killings, weighing the benefits and the costs of targeting non-combatants with terrorist attacks against the financing needs of their organization. This is because the way in which rebel groups support their rebellion has significant consequences on the importance of legitimacy costs associated with using lethal terrorist

violence against civilians. More specifically, the salience of the legitimacy-costs of terrorist violence varies depending on the role that the local population plays in making internal and external financing available to rebel groups.

The reliance on any external actor for financing reduces the impact of legitimacy costs associated with killing local civilians in terrorist campaigns. Consequently, financing obtained from any external actor leads rebel groups to perpetrate more intense terrorist killings compared to financing obtained from or through local popular supporters. On the contrary, rebel groups that rely on external financing from natural resource exploitation, face higher local legitimacy costs than rebels who obtain financing from any type of external actor. This is because natural resource exploitation is location-specific. Therefore, rebels that rely on natural resource exploitation are more likely to refrain from intense civilian killings with terrorist violence. I derive that:

> H1a: Rebel groups supported by foreign state actors are likely to perpetrate more intense terrorism killings than those who rely on local civilian support alone.

> H1b: Rebel groups supported by external non-state actors are likely to perpetrate more intense terrorism killings than those who rely on local civilian support alone.

> H1c: The magnitude of the effect of external non-state supporters is at least as big in size as the magnitude of the effect of foreign states supporters.

> H1d: The effect of natural resources on the likelihood of the lethality of terrorist attacks by rebel groups is not distinguishable from the effect of local civilian support.

The reliance on a more diverse range of external financing sources makes rebel groups less vulnerable to the consequences of alienating any one audience. As such, rebel groups with more diverse external financing sources can act more independently and use militarily cheaper violence such as terrorism to exert more pressure on their opponents and pursue their political goals without fearing consequences on their ability to survive as an organization and wage war. I derive that:

> H2: Rebel groups relying on more diverse sources of external financing are likely to perpetrate more lethal terrorist attacks than rebels with fewer sources of external financing.

While overall the expectations on the effect of external actors' support on terrorism lethality might be valid, examining external non-state supporters in a disaggregated manner reveals that the salience of the costs of lethal terrorist violence differ across different types of external non-state actors. Financing from Diaspora communities and NGOs is likely to decrease the use of lethal terrorist violence against non-combatants because they support rebel groups to minimize insecurity and shape favourable long-term political outcomes in conflict-affected areas. In contrast, external rebel group support is likely to increase the lethality of terrorist violence because rebel organizations support other armed groups to consolidate their international and domestic political influence and view highly lethal terrorist attacks as a measure of the credible commitment of their rebel protégées. Formally:

> H3a: Rebel groups that receive support from external rebel groups are likely to perpetrate more intense terrorism killings than rebels with other types of financing

H3b: Rebel groups that receive support from external NGOs and Diasporas are likely to perpetrate less intense terrorism killings than rebels with other types of financing

In the remaining of this Chapter, I will explain the research design, present the operationalization of phenomena and discuss the main results of the empirical analysis.

5.1: Research design and data

I test the hypotheses on a dataset composed by yearly observations on rebel organizations in civil wars. Periods of civil wars are identified when at least 25 battle-related deaths occur in a given country-year. The unit of analysis reflects the focus on rebel groups as rational actors making strategic decisions over the lethality of terrorism. The dataset comprises 204 rebel groups observed from 1989 to 2009 and contains information on rebel groups' number of terrorist-related deaths, battle-related deaths in conventional warfare, as well as external financing sources available to rebel groups in any given year of observation. To obtain this rich dataset, I extracted information from the Terrorist Organizations v.2014 2.0 (TORG) crosswalk (Asal, Cousins, and Gleditsch 2015); the Global Terrorist Database (GTD) by the National Consortium for the Study of Terrorism and Responses to Terrorism (START 2022) ; the Uppsala Conflict Data Program (UCDP) Dyadic Dataset v1-2015 (Harbom and Wallensteen 2007); the Non-State Actor Data 3.4 (NSA) (Cunningham and Gleditsch 2012; Cunningham, Gleditsch, and Salehyan 2013); the UCDP Georeferenced Event Dataset 0.4 (GED) (Sundberg and Melander 2013); and the UCDP External Support Project–Primary Warring Party Dataset (Högbladh, Stina, Therése Pettersson, and Lotta Themnér 2011). I also use Rustad and Binningsbø (2012) to obtain data on rebel groups' natural resources exploitation in civil wars.

5.1.a. Dependent variables

Terrorism killings intensity is measured through three alternative proxies. The main dependent variable - *'Terrorism killings intensity'* - This is a ratio of terrorist-related non-combatant casualties to the total number of casualties: *Terrorism killings intensity = terrorism-related civilian causalities/(terrorism-related civilian casualties + battle-related deaths).* To operationalized *Terrorism killings intensity*, I extract information on the number of victims of terrorist attacks from the GTD (START 2022) accounting for all GTD's inclusion criteria: 1) intentionality of the attacks; 2) use of violence or the threat of violence in the attacks; 3) attacks must be perpetrated by non-state actors; 4) attacks must be perpetrated for political, economic, or social goals; 5) perpetrators carry out attacks to coerce, threaten or transmit a message to a different audience than the victims; 6) attacks target civilians or non-combatants and thus they violate international humanitarian laws. I extract yearly information on rebel groups' casualties in conventional armed violence from GED (Högbladh, Stina, Therése Pettersson, and Lotta Themnér 2011). I avoid the potential overlap between deaths coded in GTD and in UCDP GED, by retaining from GTD violent events deliberately targeting civilians with terrorist violence and excluding from GED conflict events between hostile rebel groups and one-sided violence. I use a ratio of terrorist-related non-combatants casualties to the total number of casualties as the main proxy for the intensity of terrorism killings because this indicator allows to distinguish in an explicit manner the strategic choice of deliberately targeting non-combatants with terrorist violence from the overall severity of civil wars violence. Crucially, using the total number of rebel groups' battle-related deaths to capture the rebel groups' strategic choice of targeting state coercive apparatuses implies that rebels can avoid such violence by terrain concealment or dispersion as often occurs in conflict where non-state armed actors are involved. *Terrorism killings intensity* ranges from 0 to 1. Zero indicates years in which the violence is conventional only, 1 indicates years in which rebel groups exclusively targeted non-combatants with terrorist violence while 0.5 indicated years in which the number of both types of killings

equal. Figure 1 (below) shows the distribution of *Terrorism killings intensity*. It emerges that 58.68 percent of the observations correspond to years in which rebel groups exclusively cause the deaths of combatants, while 2.07 per cent of the observations correspond to rebel groups-years with only terror-related non-combatants casualties. Years of exclusively terror-related non-combatants casualties are possible because rebels might participate in conventional battles without killing anyone. These observations correspond to years in which the 25 battle-related deaths necessary for inclusion in UCDP GED are caused by the state actor in the dyad or by other non-state armed actors in the same conflict. In a remarkable 25% of the observations, rebel groups killed more non-combatants with terrorism violence than combatants in conventional warfare.

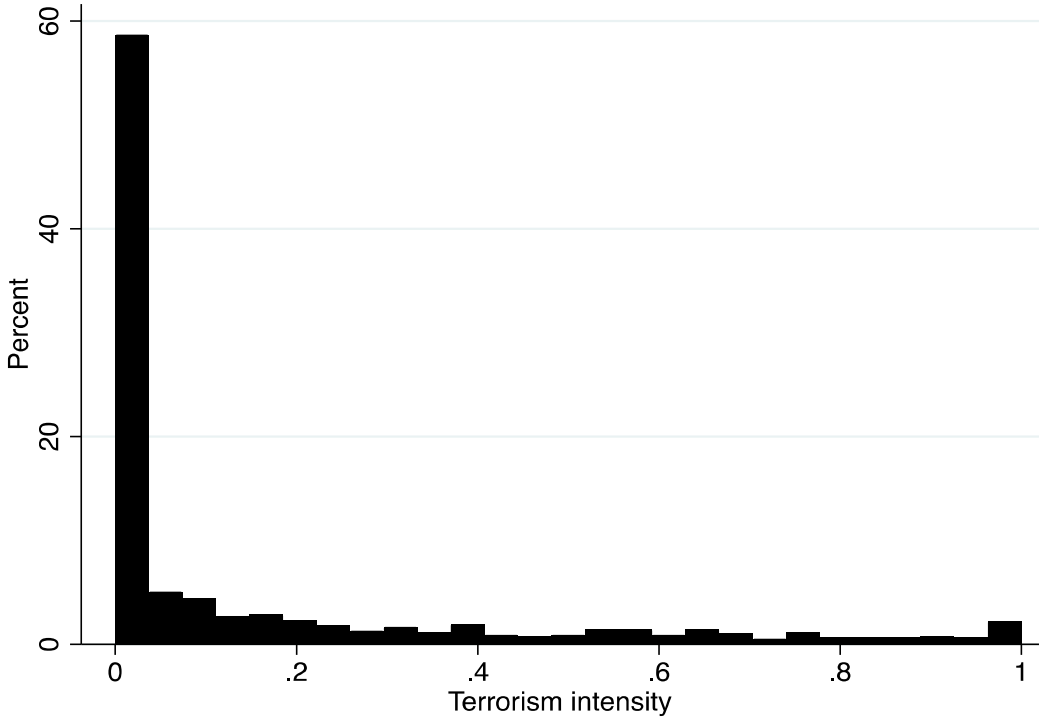


Figure 1 Terrorism killings intensity by rebel group-year

I also use two alternative dependent variables as robustness checks. The first alternative dependent variable proxies the willingness of rebels to provoke a high number of non-

combatants casualties with terrorist attacks and consists of a dichotomous indicator capturing the use of highly destructive explosive (for a similar approach see, Stanton 2013). *Highly destructive explosive* is equal to 1 if the rebels used grenades; mines; mail bombs; projectiles such as rockets mortars and missiles; remote explosive device; bombs carried bodily by human beings; time fuse; vehicle bombs and; other unknown explosive devices, equal to 0 otherwise. The use of highly destructive explosives represents a clear tactical choice of indiscriminate non-combatant targeting because rebel groups generally possess other, less sophisticated arms that allow a higher level of civilian targets' discrimination. Finally, I also use a dichotomous measure of *'Terrorism occurrence'* equal to one in years when rebel groups are reported to use terrorist tactics and zero otherwise to test my theoretical prepositions against a measure that proxies the willingness of rebel groups to use terrorism.

5.1.b. Independent variables

The main independent variables are dichotomous variables measuring rebel groups' sources of financing, including *Natural resources*, *Foreign state support*, and *External non-state support*. In addition, external non-state support is disaggregated into *External rebel groups' support* and *Diaspora and NGOs support*. Following the approach of Fortna et al. (2018), I assume, by elimination, that rebels with no access to support from foreign states and external non-state actors or natural resources are those who rely most heavily on the support of the local population. I use data from Rustad and Binningsbø (2012) to obtain information on whether rebels used natural resources to sustain their fight (see also Fortna, Lotito, and Rubin 2018). '*Natural resources'* is a dichotomous variable equal to one if natural resources provided income for the rebel groups including "precious gems, drugs, timber, crude oil, and other natural resources" (Fortna, Lotito, and Rubin 2018, 787). I do not use Lujala (2009) dataset on natural resources because it only provides information on whether natural resources are present in the conflict area and I do not use Walsh et al. (2018) dataset on natural resources because

this dataset codes the modality of access to natural resources and therefore its variable 'extortion' captures a sub-set of cases of terrorist attacks (James Igoe Walsh et al. 2018, 5).

To obtain the data on external support from foreign states and non-state actors and on support from external rebel groups, diaspora and NGOs, I manually coded information contained in the variables 'external_type_text'and 'external_code' from the UCDP External Support Project Primary Warring Party Dataset (Högbladh, Stina, Therése Pettersson, and Lotta Themnér 2011): these variables "contains an English-language description of external supporters" (12). For example, for the Naxalite People War Group (PWG) who opposed India in 1992 I coded an instance of external rebel group support. In this case, the variable 'external_type_text' reports: 'The PWG (…) had links with the Tamil separatist group Liberation Tigers of Tamil Eelam, and (…) the latter provided them with the equipment used by PWG for detonating explosives'; and the variable 'external_code' reports: 'LTTE: W [weapons] M [material/logistics]'. Another example is the Kurdistan Worker Party (PKK) who opposed Turkey in 1991. In this case the variable 'external_codes' codes: '(…) Kurdish Diaspora: $ [money]'. I code instances of external financing that is alleged only if there is a clear indication of its kind and the supplier of the support is explicitly named. Beyond using textual information contained in the UCDP External Support Project Primary Warring Party Dataset (Högbladh, Stina, Therése Pettersson, and Lotta Themnér 2011), I integrate my data with information derived from academic case studies on specific rebel groups' financing sources. '*Foreign state support'* and '*External non-state support'* are two dichotomous variables equal to one when there is evidence that foreign state and external non-state actors respectively provided support to a rebel group in a given year. Non-state actors are defined as those actors that are not identifiable with the government of a country.

I generate a dichotomous variable measuring *'External financing'* equal to 1 when at least one type of external financing mentioned above is available to rebel groups in a given year. I also

generate a count variable ranging from 0 to 3 measuring *'External financing diversity'* equal to the sum of the external financing sources available to rebel groups in a given year. Category 0 corresponds to cases where external financing is not observed, category 1 corresponds to cases where only one form of external financing is observed, and category 2 corresponds to cases where two out of the three possible types of external financing are observed. Observations with all three types of external financing contemporaneously present are coded as 3. Finally, I generate two dichotomous variables '*External rebel groups support'* and '*Diaspora and NGOs support'* equal to one when there is evidence that rebels receive support from diaspora groups and NGOs and external rebel groups respectively, zero otherwise.

5.1.c. Control variables

An obvious confounding variable is rebels' military strength. Support form external actors might be more likely provided to and accepted by moderately strong rebel groups (Salehyan, Gleditsch, and Cunningham 2011). On the other hand, militarily weak rebels are more likely to use terrorist violence during civil wars (Polo and Gleditsch 2016; R. M. Wood 2010). '*Fighting capacity'* is a dichotomous item that extracts information from 'rebstrength' in the NSA (Cunningham, Gleditsch, and Salehyan 2013). It takes the value of 1 when rebel groups are militarily 'weaker' or 'much weaker' than the opponent state, 0 otherwise.

I control for rebel groups territorial control. Even rebels that are weaker than the government they oppose may control terrain in remote regions where the state is feebler and exploit natural resources and local support in these peripheral areas. Territorial control may increase the cost of targeting civilians with terrorist attacks and rebels with territorial control might produce incentives to obtain resources locally rather than from transnational supporters. The proxy of '*Territorial control*' is a dichotomous measure, extracting information from the variable 'terrcont' in NSA (Cunningham and Gleditsch 2012; Cunningham, Gleditsch, and Salehyan 2013). '*Territorial control*' is equal to 1 when rebel groups control territory and equal to 0

otherwise.

I control for state capacity. This is also likely to affect rebel groups' opportunity to obtain and exploit different sources of internal and external financing. Stronger states are likely to be better at controlling their natural resources and their borders and might be better able to block support from external actors. In turn, weak states that are unable to provide basic services may create grievances and affect the intensity of violent dissent and the use of terrorist violence (Crenshaw 1981; Piazza 2006). '*State capacity'*, measures logged Real GDP per capita income of countries and it is extracted from Gleditsch (2002).

I also include a dichotomous measure of *Democracy* to control for regime type. This is a dichotomous variable equal to one when the positive converted *polity2* score extracted from the Polity IV Project (Marshall, Gurr, and Jaggers 2014) is equal or higher than 7, zero for if it is smaller than 7. Transnational actors might be more constrained to provide support to insurgent movements in democratic states with legitimate institutions (Salehyan, Gleditsch, and Cunningham 2011, 725). Democracies are also favourable environments for the use of terrorist strategies (Eubank and Weinberg 1994, 2001; Piazza 2006; Savun and Phillips 2009; Stanton 2013; Weinberg and Eubank 1998).

I control for the size of the population of the state extracting a logged measure of *Total population* from Gleditsch (2002). States with a larger population size experience a higher incidence of terrorist violence (Savun and Phillips 2009). Larger populations might also be correlated with higher opportunities for rebel groups to obtain local resources. Finally, I include a control for *Conflict intensity* in the models with binary outcome variables: terrorism occurrence and highly destructive explosive (see robustness checks in the Appendix). I introduce this measure to account for the level of civil war violence and I operationalise it as the total number of conventional casualties and extract this item from GED (Sundberg and Melander 2013).

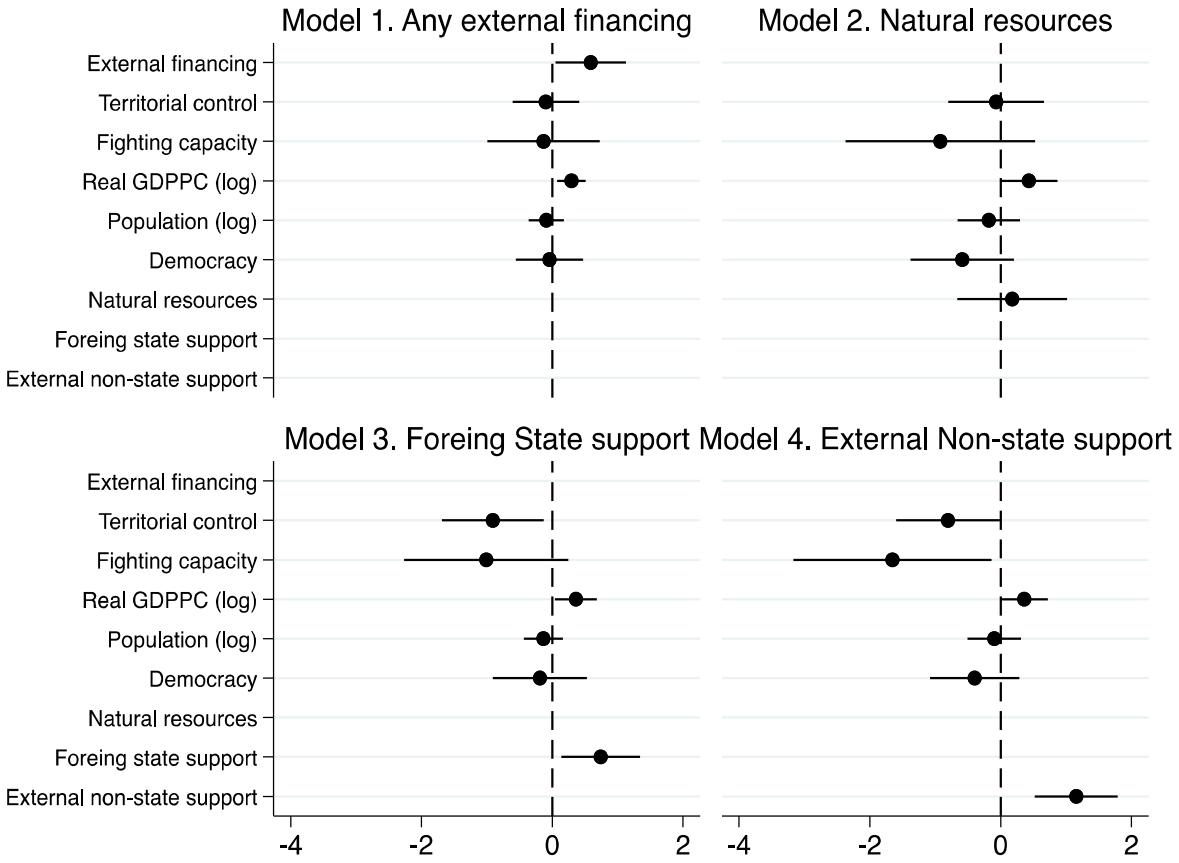
5.2. Empirical analysis

With the main dependent variables being a ratio ranging from 0 to 1, I estimate Papke and Wooldridge's (Papke and Wooldridge 1996) model for fractional response variables. This is generalized linear model with a logistic link.[1] I cluster standard errors by conflict-dyad to account that the variance may differ systematically across pairs of warring parties. I also include a count of the number of years in which the lethality of terrorist attacks is twice the average together with the cubic polynomial of this indicator. Including these variables accounts for time dependence in the occurrence of extremely lethal use of terrorism. In fact, highly lethal terrorist attacks likely depend on rebels' organizational age and therefore are time-dependent (Carter and Signorino 2010; Clauset and Gleditsch 2012).

Figure 2 below shows evidence for H1a, H1b, H1c and H1d. While Model 1 focuses on the effect of the occurrence of external financing on the likelihood of *terrorism killings' intensity* compared to the effect of local civilian support, Models 2, 3, and 4 show the individual disaggregated effects of different types of external financing, i.e. natural resources, foreign state support and, external non-state actors' support excluding from the sample observations that correspond to rebels with other types of external financing and, therefore, also having as baseline civilian support alone. In line with the expectations of existing literature on external support and civilian victimization, Model 1 shows a positive and significant effect ($p<0.05$) of the presence of external financing on the likelihood of the lethality of terrorism. As expected, rebel groups relying on external financing are likely to perpetrate more lethal terrorist attacks than those who rely on local civilian support alone. Similarly, Models 3 and 4 show positive and significant effects of foreign states' support ($p<0.05$) and external non-state actors' support

[1] I do not use a beta link because it is incapable of accounting for the zeros that represent 60 per cent of the observations in the outcome variable.

($p<0.01$) on the likelihood of the lethality of terrorism. These results suggest that rebel groups relying exclusively on foreign state support or external non-state support are likely to perpetrate more intense terrorism killings than those who rely on local civilian support alone, according to my expectations. Model 2 shows no evidence that a similar positive relation is in place for rebel groups relying exclusively on natural resources, suggesting that the effect of natural resources exploitation on the likelihood of the lethality of terrorism cannot be distinguished from the effect of local civilians' support.

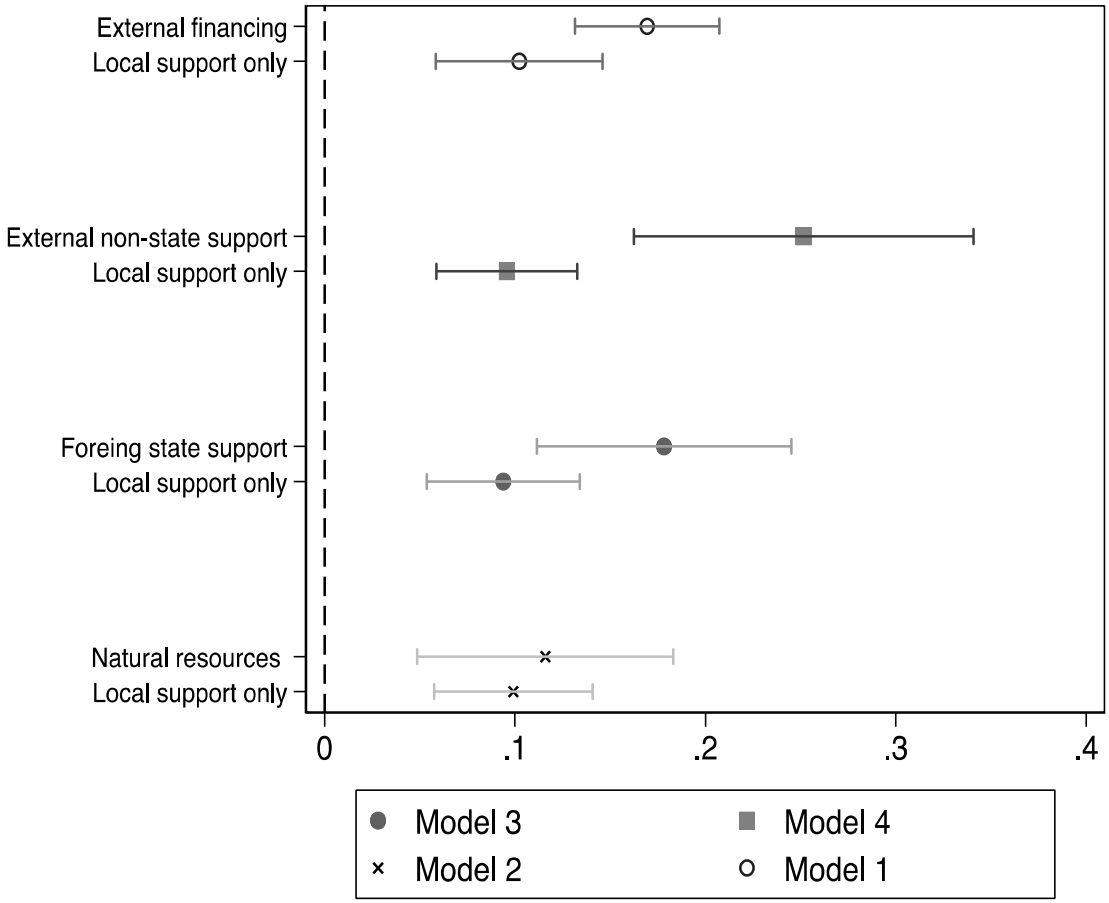


Note: The horizontal lines represent 95% confidence intervals.

Figure 2 The effect of external financing on the terrorism killings intensity

Figure 3 below plots the magnitudes of the effects of the variable of interests vs. the effect of local support for each of the four models presented in Figure 1. The results show that the

magnitude of the effect of external non-state support is similar in size to the effect of foreign state support providing evidence for H1c. Figure 2 also confirms that the effect of natural resources is statistically indistinguishable from the effect of local support.

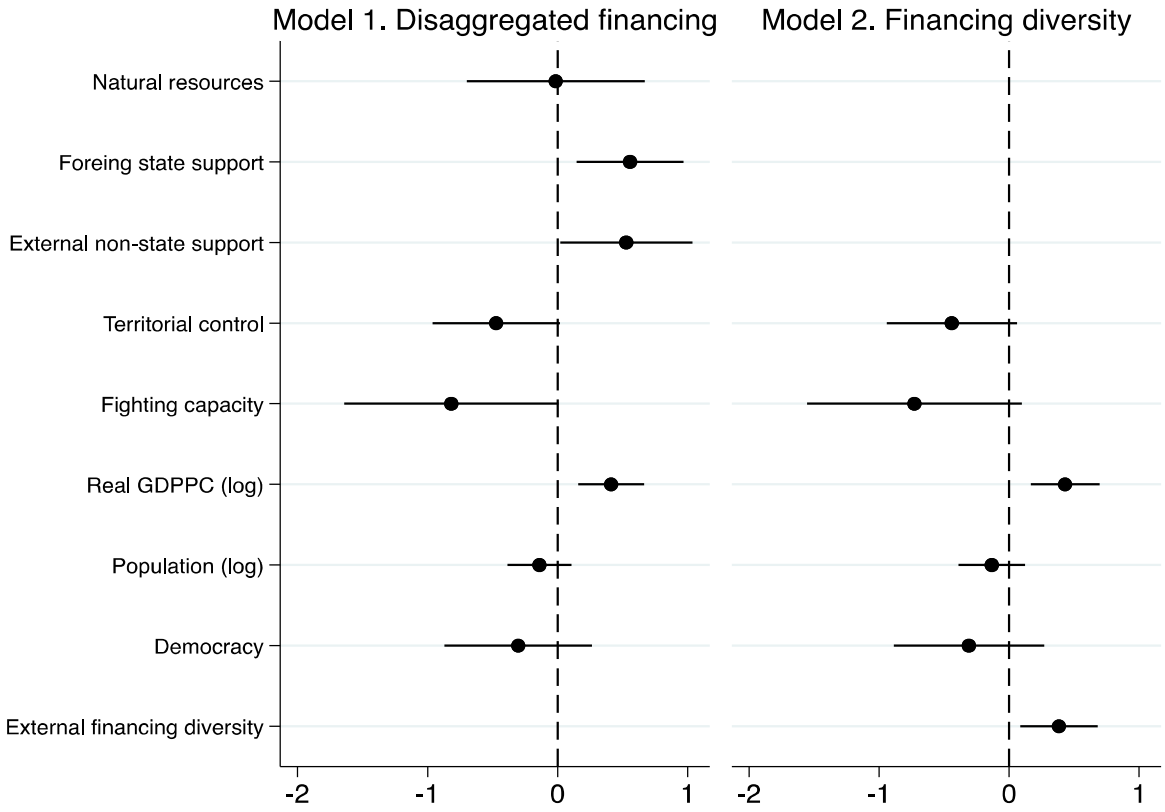


Note: The horizontal lines represent 95% confidence intervals.

Figure 3 Marginal effects of the variables of interest on the expected terrorism killings intensity (from Figure 2)

Figure 4 (below) presents two models that provide support for my expectations on the overall effects of the support of external actors and the diversity of sources of external financing (H2). Model 1 tests the individual effects of natural resources, support from foreign states, and external non-state actors considering the average effects of the other type of external financing simultaneously available to rebel groups in addition to the confounding variables already included in the analysis. The model shows that rebel groups with foreign state support and the

support of external non-state actors are likely to perpetrate more intense terrorism killings ($p<0.01$ and $p<0.05$ respectively), while the average effect of natural resources on the likelihood of terrorism killings intensity is not distinguishable from 0. According to H2, Model 2 shows that rebels relying on more diverse sources of external financing are likely to perpetrate more lethal terrorism than those with fewer sources of external financing. The effect of external financing diversity is, as expected, positive and significant at $p<0.01$.

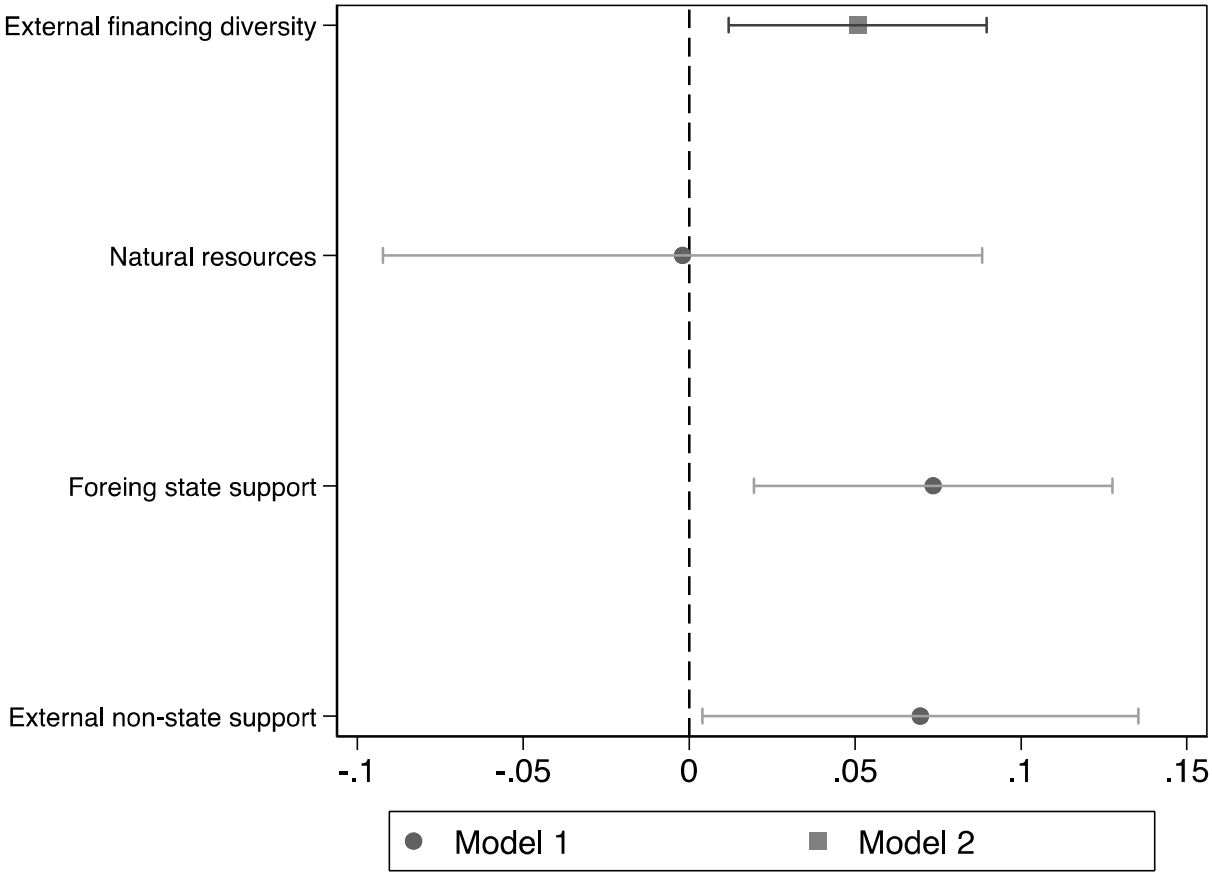


Note: The horizontal lines represent 95% confidence intervals.

Figure 4 Effects of different types of external financing and external financing diversity on likelihood of terrorism killings intensity

Figure 5 (below) shows the magnitude of the effects of each variable of interests extracted from Models 1 and 2 in Figure 3. Differently from Figure 2, which plots the magnitude of the effect of the individual type of external financing with local support as a baseline, this figure shows the magnitude of the effects of every type of external financing accounting for the average

effects of all other types of external financing simultaneously available to rebel groups. Collectively, and according to the comparative legitimacy costs theory presented above, Figures 4 and 5 show that the magnitude of the effect of support from external non-state actors is at least equal in size to the effect of support from foreign states. Figure 5 also suggests that the effect of external financing diversity is driven by the overall effects of the support of external actors rather than the reliance on natural resources since the overall effect of natural resources on the likelihood of the lethality of terrorism is indistinguishable from zero.

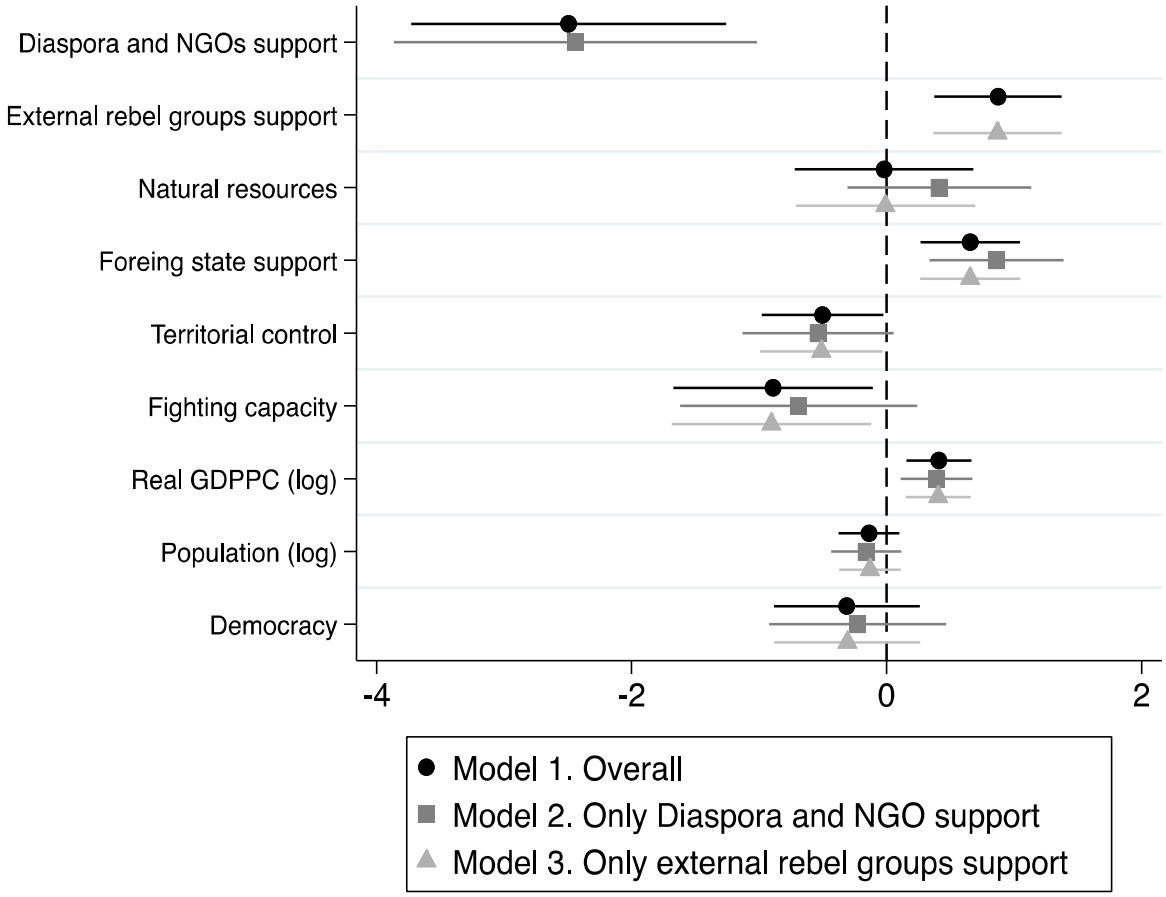


Note: The horizontal lines represent 95% confidence intervals.

Figure 5 Marginal effects of the variables of interest on the expected

While at an aggregate level it appears that financing from external non-state actors increases the lethality of terrorism, disaggregating the effects of financing from Diasporas and NGOs from financing from external rebel groups disclose a more nuanced picture: it provides

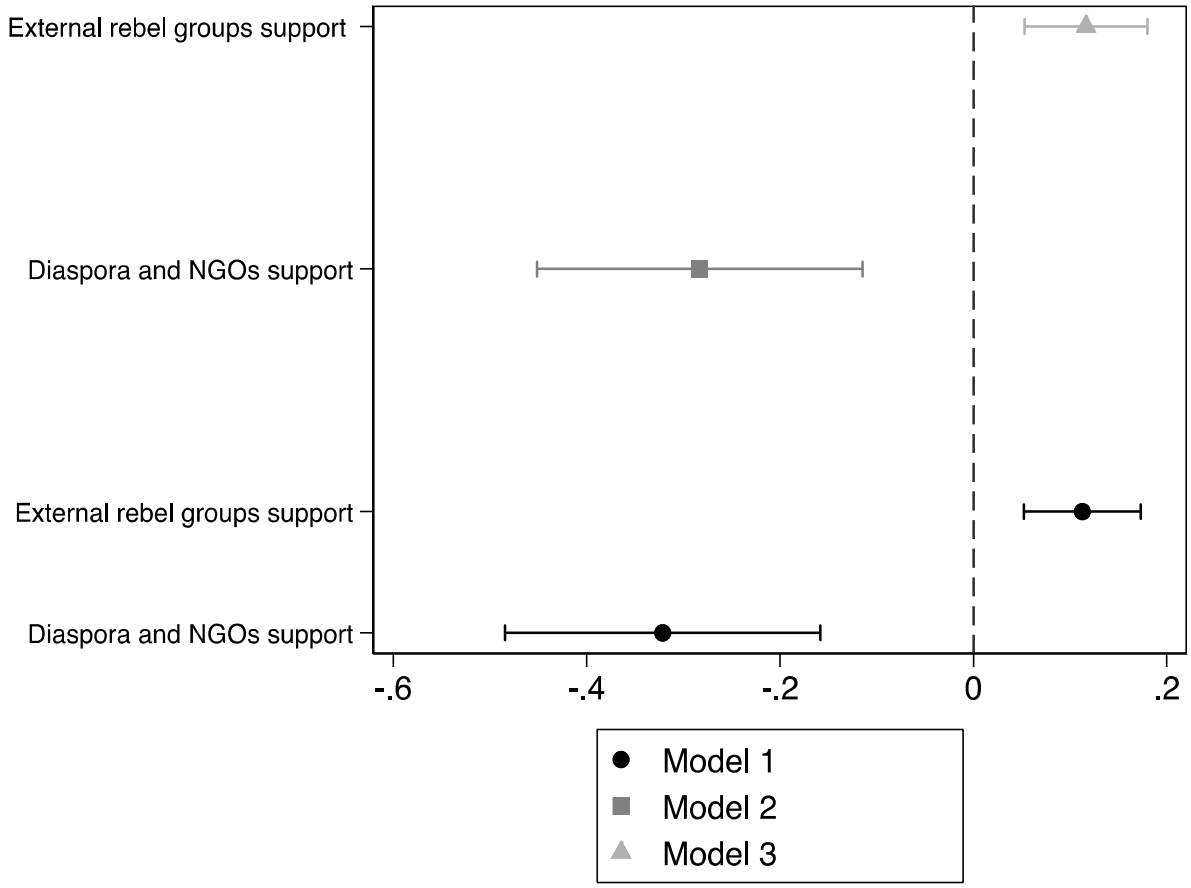
evidence suggesting that the effect of different types of external non-state supporters vary depending on their different rationales when financing rebels. In Figure 6 (below), Model 1 shows the disaggregated effects of the support provided by Diaspora and NGOs and external rebel groups taking into account simultaneously the average effects of the other type of external financing i.e., foreign state support and natural resources in addition to the confounding variables already present in the analyses above. Model 2 tests the effect of support from diaspora and NGOs excluding from the sample observations that correspond to rebel groups that receive support also from external rebel groups. Vice versa, Model 3 tests the effect of support from external rebel groups excluding from the sample observations that correspond to rebel groups that receive support also from diaspora and NGOs. Figure 6 shows evidence in support of hypotheses H3a and H3b. Rebel groups with support from Diasporas and NGOs are likely to perpetrate less intense terrorism killings and those with support from external rebel groups are likely to perpetrate more intense terrorism killings. Notably, the results reported for the effects of natural resources and state support in all three models are robust with the analyses presented in Figures 2 to 5.



Note: The horizontal lines represent 95% confidence intervals.

Figure 6 The effect of support from external rebel groups and Diaspora and NGOs on terrorism killings intensity

Figure 7 (below), shows that the marginal effects of support from Diaspora and NGOs and support from external rebel groups remain largely unchanged across the model specifications reported in Figure 6. External rebel groups' support increases the intensity of terrorism killings by 11 percent. Although relatively large uncertainty can be observed, the magnitude of the negative effect of support from Diaspora and NGOs on the intensity of terrorism killings is substantial: Diaspora and NGOs support decreases the intensity of terrorism killings by 32 percent on average.



Note: The horizontal lines represent 95% confidence intervals.

Figure 7 Marginal effects of the variables of interest on terrorism killings intensity (from Figure 6)

The only control variable with a robust and significant effect across the analysis is state capacity. Contrary to the expectation, however, higher state capacity, measured as real GDP per capita, is correlated with the likelihood of more intense terrorism killings. This might indicate that the relationship between state capacity and terrorist non-combatants targeting in civil wars is driven by rebels' considerations on the opportunities available to hurt the state indirectly rather than by grievances (Crenshaw 1981; Piazza 2006). The findings above remain robust across a wide range of robustness checks (36 additional models). In particular, the main findings do not change when excluding all control variables (Appendix, Figures 1 to 6) and they are also robust to using OLS as an alternative functional form (Appendix, Figures 7, 8,

and 9). All the main findings remain virtually unchanged when using logit models to test the hypotheses on terrorism occurrence (Appendix, Figures 10 to 15) and highly destructive explosive (Appendix, Figures 16 to 21) as alternative dependent variables. It is worth mentioning that the effect of natural resources became positive and significant across all models regressed on terrorism occurrence and that this is in accordance with the findings presented in Fortna et al. (2018). This result suggests that rebel groups financing their rebellion through natural resources might be willing to use terrorism as a repertoire of violence but might limit the lethality of terrorist attacks.

Conclusions for theory and policy

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Abstract
This final chapter analyses the insights gained from the theoretical and empirical investigation contained in this book and its ramifications in the realm of counterinsurgency. The overarching conclusion is clear: the ways in which insurgent groups finance their uprisings matter for their proclivity towards targeting civilians with terrorist tactics, but the association between financing and terrorism is intricate and, to be fully grasped, it necessitates disaggregated comparative analysis and taking into account the motivations of relevant actors when financing and receiving financing. In contrast, a significant portion of the contemporary literature on rebel financing tends to adopt a selective approach in analysing the impact of financing sources and types and/or relies on aggregated measures of financing sources accessible to insurgent groups. This final chapter begins by providing a concise summary of my main findings before delving into their theoretical significance. Additionally, it examines how these findings can inform policymaking discussions and contribute to the debate that aim to enhance counter-insurgency measures focused on safeguarding civilians.

Summary of the empirical results

Based on my empirical analyses, it appears that the various sources of financing employed by insurgent organizations to fuel their armed campaigns carry considerable weight in terms of determining the salience of the legitimacy costs associated with employing lethal terrorist tactics against civilian populations. My first set of results pertains to the comparative effects of different external financing sources, accounting for the role that the local population plays in