There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.

Deposited on: 16 November 2018

Ethnicity and conflict severity. Accounting for the effect of co-ethnic and non-ethnic militias on battlefield lethality

Huseyn Aliyev and Emil A. Souleimanov

Abstract: *How does the presence of armed pro-regime groups affect conflict lethality? This study examines the relationship between ethnicity, militia violence and conflict lethality in civil wars. We emphasise that differences in whether pro-regime militias were recruited in accordance with their ethnicity or not are critical in their influence upon conflict lethality, which we estimate in battlefield deaths. To that end, we categorise militias into groups recruited on their ethnic basis (co-ethnic militias) and those recruited regardless of their ethnicity (non-ethnic militias). We hypothesise that conflicts are more lethal when non-ethnic militias are involved. We link higher numbers of battle-deaths in conflicts with non-ethnic militias with the militia use of one-sided violence against civilians. Co-ethnic militias – that is militias recruited from the same ethnicity as rebels – are deployed amongst their co-ethnics and therefore tend to target civilians less than non-ethnic militias. This militia-civilian relationship has direct impact on conflict severity. To test our hypotheses we conduct global statistical analysis of 84 intrastate conflicts from 1989 to 2014.*

Introduction

Since the start of Cold War, pro-government militias [1] were involved in over 80% of intrastate conflicts[2]. Militias function not only as top-tier violent non-state actors involved in civil conflicts, but they also on many occasions have military capacities and material potential parallel to the state.[3] However, the impact of such violent non-state actors as militias on civil war dynamics differs vastly from one episode of civil warfare to another. For instance, in the ongoing intrastate conflict in Yemen, the pro-regime Popular Committees operate as a key government force fighting against the Houthi rebels. A similar situation occurs in Iraq, where Shia volunteer brigades (*al-Hashed al-Sha'bi*) were deployed heavily during the Ramadi, Fallujah and Mosul offensives, both alongside and often instead of the regular army. By contrast, the role of PGMs in other conflicts, such as Nigeria's fight against Boko Haram, India's counterinsurgency against Naxalites, or the Philippines' conflict with Abu-Sayyaf has been marginal.

Since the term 'pro-government militias' refers to a vast diversity of quasi-state armed actors, not only divided in terms of their organisational dimension, such as formal and informal militias, but also with regard to their ethnic composition, the effect of different types of PGMs on conflict dynamics is filtered through a diversity of factors. State capacity, military strength and the political will, have been rehearsed in the literature as key determinants of militias' role in armed conflicts.[4] The effect of ethnicity on militia performance occasionally emerged in research on civil wars.[5] Existing research on militias in armed conflicts has argued that militias recruited from the same ethnicity as rebels – due to their embeddedness in the local context[6] – tend to be more efficient counterinsurgents than other types of militias. They also were found to be less willing to persecute co-ethnic civilians[7] and less prone to rely on extreme forms of violence.[8] Notwithstanding these

findings, the research to-date has tended to disregard the role of ethnicity in the militias' effect on conflict escalation, intensity and lethality. Theoretical explanations of how, when and under which conditions ethnicity comes into effect with militia performance, and particularly the capacity of pro-government proxies to influence conflict intensification, are notable by their absence. Providing a theoretical and empirical account on the effect of militias' ethnicity on conflict lethality would shed light on conflict escalation factors and the global patterns of the non-state actors' role in civil wars. In order to provide answers to the above puzzles, we conduct global statistical analysis of the militia involvement in 84 civil wars from 1989 to 2014.

We define as co-ethnic militias PGMs involved in a conflict between two or more ethnic groups, where co-ethnic militias are recruited by the government from the same ethnic group(s) as rebels and deployed to promote interests of the incumbent. Hence, co-ethnic PGMs are present only in ethnic conflicts – that is civil wars fought over ethnic grievances – because they were assembled in accordance with their ethnicity and in order to enable the government to benefit from ethnic ties of militias when deployed against their co-ethnics. Co-ethnic militias' key advantage is their ethnic embeddedness in rebel constituency, which might provide the government with unique access to intelligence and insider support from otherwise hostile ethnic group(s). Owing to this advantage of co-ethnic PGMs, they are deployed exclusively amongst their co-ethnics. Typical examples of co-ethnic militias are Kurdish Village Guards participating in Turkey's conflict with the PKK, Chechen *kadyrovtsy* in Russia's conflict with Chechen separatists, as well as Sri Lanka's anti-LTTE Green Tigers and Black Cats militias.[9] Along with many other similar militia organisations, these groups were recruited exclusively from rebel co-ethnics and were deployed by incumbents to serve amongst their own ethnic groups.

By contrast, militias recruited from other ethnic groups than rebels, or mobilised regardless of their ethnicity, are defined as non-ethnic PGMs. Non-ethnic militias might be deployed both in ethnic and non-ethnic conflicts. In ethnic conflicts, non-ethnic PGMs are often mobilised against ethnic groups other than their own. For instance, Serb militias in Yugoslav wars were used to attack other ethnicities. We describe such PGMs as non-ethnic because the key purpose of such organisations is to support the regime regardless of its ethnic makeup. One example of non-ethnic PGMs engaged in ethnic conflicts is Ukraine's volunteer battalions, which were recruited regardless of their ethnicity and enlist into their ranks, apart from Ukrainians, also Ukraine's ethnic Jews, Crimean Tartars and Georgians.[10]

This study hypothesises that the participation of co-ethnic and non-ethnic militias has notable effect on conflict severity, as defined by battlefield lethality. On the one hand, we argue that non-ethnic militias are more likely to function as ruthless pro-regime 'enforcers' deploying excessive violence in their efforts to physically eliminate the incumbent's opponents, and, therefore, are more conducive to higher lethality than co-ethnic pro-regime groups. On the other hand, this article posits that due co-ethnic militias' efforts to avoid attacking their fellow co-ethnics, they are likely to lead to lower battlefield lethality. We emphasise the critical role of one-sided violence, or the violence against civilians, that determines the patterns of militia violence and, most of all, militias' impact on battlefield lethality in intrastate conflicts. The key theoretical argument is that the difference between how co-ethnic and non-ethnic militias influence deaths on the battlefield is filtered through their use of one-sided violence against civilians. Our hypotheses are tested by Cox proportional hazards models, which validate our claims demonstrating that co-ethnic militias tend to be less lethal than non-ethnic PGMs.

This article proceeds as follows. In the next section, we examine existing literature on pro-government militias in civil wars. The following section will lay out our hypotheses and

present the theoretical argument in details. Next, a section on data and methods will discuss the dataset and explain the statistical models. Then, we present and analyse the empirical findings and consider probable alternative explanations. In the concluding section, we summarise our findings and describe possible avenues for future research and practice.

'Informal proxies': pro-government militias in civil wars

The role of PGMs in civil wars has been described as one of the key factors accounting for escalation of conflict-related violence.[11] A statistical estimate reveals that there is a 53% likelihood that a government can suppress an insurgency if it deploys a PGM[12]. Mitchell et al.[13] estimated that since 1989, as many as 60 countries employed PGMs in various counterinsurgency tasks. A growing number of studies confirmed that a presence of militias significantly increases government's capacity to spiral the violence. Research on PGMs' involvement in genocide, civilian targeting, human rights violations, mass killings and sexual violence demonstrated that PGMs significantly contribute to each of these types of conflict-associated violence.[14] Many of these studies have argued that PGMs were indispensable for governments in orchestrating repressions and persecuting dissent. The use of selective violence exercised by PGMs 'may in fact reduce the level of active popular support for the opposition, at least temporarily,'[15] antagonising parts of the population from the local insurgency. It has also been argued that the presence of PGMs can potentially 'increase the length of civil wars.'[16] However, the relationship between civil wars and militias is mutually reinforcing.[17] Not only PGMs impact the course and intensity of a civil war, but also the existence of a civil conflict is fundamental for the emergence and proliferation of pro-government militias. For instance, as found by Kalyvas[18] in his study of civil violence in the

1940s Greece, the key factor behind the appearance of militias was presence of insurgent violence and the incumbent's attempts to curb it.

The functioning of PGMs in civil wars, however, still 'is a neglected variable'[19] in research on militia violence. Despite the presence of PGMs in most episodes of civil warfare over the past several decades, research on militias has thus far been mostly case-driven.[20] The empirical work on militias is abundant with numerous case study-based analyses. More recently, a growing body of case studies began filling the gap in understudied theoretical aspects of militia violence.[21] Whilst some of these studies are comparative, most are dealing with a single case study. The bulk of existing theoretical studies on militias tend to explore functional and structural characteristics of militias through the lenses of their relationship with the state. Staniland[22] presents the militia-state dichotomy as engraved in state's strategies towards militias. These strategies are suppression, containment, collusion and incorporation. He proposes that the state's attitude towards militias is ideologically embedded in the government's perception of militias as either positive (superfluous supporters, strange bedfellows, armed allies and business partners) or negative (mortal enemies or undesirables) institutions.[23] A number of studies have sought to explain the emergence of PGMs and their development and transformation throughout the course of a conflict.[24] Whilst some argued in favour of rationalist and functionalist approaches,[25] others presented their case in support of structural and historical explanations.[26] In the words of Campbell and Brenner,[27] the reliance on militias 'lies in the need of state to deny that they breaking the established norms of behaviour.' The use of PGM in counterinsurgency allows foreign principals legitimising their actions amongst the population.

The research has demonstrated that governments create militias not only to outsource violence or to tackle issues of accountability for violence, but also to reduce the costs of counterinsurgency and to increase its efficiency.[28] The PGMs' unique capacities of

intelligence gathering and the access to local knowledge have been observed on numerous occasions.[29] Another advantage of using militias is that militia casualties are usually counted as civilian victims, which further demonises rebels in the eyes of the population and legitimises counterinsurgency. [30]

Notwithstanding the extant body of literature on militias, no efforts were made thus far to estimate the effect of PGMs on conflict lethality, or to link militias' ethnicity with battle-deaths. Since most of research on the relationship between militias' ethnicity and one-sided violence consists of single-case studies,[31] little is known about the effect of (non)ethnic militias on one-sided violence and how this relationship influences battle-deaths on a global scale. This article contributes to the growing body of literature on pro-government militias by exploring an important but thus far understudied aspect of militia organisations: the impact of ethnicity on conflict severity.

Non-ethnic PGMs and battlefield lethality in civil wars

Unlike co-ethnic PGMs, non-ethnic PGMs stand outside the fabric of local societies. Being outsiders – even if they emanate from the same area – usually renders non-ethnic PGMs exempt from ethnically-shaped clan and family ties.[32] Since they may have less in-group solidarity with the locals, makes non-ethnic PGMs similar to non-ethnic conventional forces. In turn, disconnection from the local population is likely to reduce access to important information on the ground as the locals may be less willing,[33] on the basis of the absent in-group networks, to provide intelligence to non-ethnic PGMs as opposed to ethnic PGMs.[34] To sum up, the lack of in-group solidarity, coupled with key information problem – inability and unwillingness to differentiate between combatants and their supporters on the one hand, and non-combatants on the other hand – may increase the willingness on the side of non-ethnic

PGMs to deploy excessive violence.[35] In addition, it is well-known in the literature that the knowledge of local customs, grievances, and social dynamics – present in the case of ethnic PGMs and absent in the case of non-ethnic PGMs and non-ethnic conventional forces – are salient for success in counterinsurgency.[36]

Importantly, existing research shows that many PGMs are almost exclusively recruited by the promise of material gains, as well as by the incumbent-imposed impunity to retaliate, rape, kill, etc.[37] Grievance-driven retaliation is known to be an important source of recruitment into insurgent groups.[38] In honorific societies, where many contemporary insurgencies and civil wars have been fought, the deeply embedded honour-centred code of retaliation amplifies this disconnection between the local population and non-ethnic PGMs. Non-ethnic PGMs, unlike ethnic PGMs, are more likely to originate from distant areas.[39] Unlike ethnic PGMs, non-ethnic PGMs and their relatives are thus harder to identify, localise, and retributively target by the avengers from amongst the local population. This, in turn, may be a contributing factor to the wider use of excessive and lethal violence by non-ethnic PGMs who are not to take into consideration retributive violence at the hands of locals.

In some cases, 'age-old ethnic hatred' between ethnic communities may play an important role. In fact, non-ethnic PGMs are often recruited from feuding ethnic populations, usually neighbours and rivals with a history of mutual hostilities. Non-ethnic PGMs may thus be willing to engage in conflict for the sake of retaliation, in continuation of ethnic antagonism, and so on. For instance, the Sudanese ethnic-Arab Janjaweed militias run by Khartoum have mainly attacked Darfur's non-Arab populations. The recent history knows plenty of cases of colonial powers recruiting non-ethnic PGMs to deploy against other-ethnic rebel groups, for instance, the British deployment of Assyrian PGMs in the Arab-majority Iraq in the 1930s.[40] Even when the underlying ethnic antagonism is not the case at the onset of the deployment of non-ethnic PGMs, their very presence in a conflict environment may

generate conflict along ethnic lines. As Sabine C. Carey and Neil J. Mitchell[41] have observed, 'ethnically defined militias may polarize ethnic groups, which creates long-term mistrust that further complicates post-conflict reconciliation.' For instance, in Congo-Brazzaville of the 1990s, three presidential candidates with various ethnic backgrounds created militia units, all made up of fighters from their respective ethnic groups. These non-ethnic PGMs were deployed in combat against their ethnic adversaries, both civilian and combatant, which ultimately contributed to deterioration of inter-ethnic relations in this African nation.[42] Likewise, Nigeria's Civilian Joint Task Force, a vigilante multi-ethnic group heavily deployed by Abuja against the Kanuri-dominated Boko Haram, Salafi-jihadist group, has increasingly assumed anti-Kanuri overtones.

Ethnically-conditioned violence is likely to be more excessive turning sways of the local population, just because of their ancestry, into potential targets. This, too, may increase the lethality of violence used by non-ethnic PGMs. Whilst the ultimate goal of PGMs is to undermine civilian support for insurgents, their excessive and lethal attacks may in the end be counterproductive in pitching the local population against counterinsurgency. Noteworthy, violence perpetrated by members of an ethnically distinct community may polarise both non-ethnic forces and the local population, making the latter put up stiff resistance to the former as the thrust of the Pashtun-dominated Taliban into Afghanistan's non-Pashtun areas illustrated.[43]

Excessive and highly lethal attacks carried out by non-ethnic PGMs may increase the pressure on the rebels to weigh in to defend their ethnic kin by counterattacking counterinsurgents, government troops, non-ethnic PGMs, and possibly also their alleged supporters and the collaborators from amongst the local populations. For instance, Taliban's invasion into non-Pashtun parts of Afghanistan in the late 1990s urged Tajik, Hazara and Uzbek-dominated areas to consolidate along ethnic lines to resist the invader, all despite

Taliban's efforts to present itself as a supra-regional group in the service of the country's Sunni Muslims.[44] Thus, being forced to protect their civilian support base, rebels may increase the overall level of violence, which results in higher battlefield lethality. Similar case had been reported during Colombia's civil war when encroachment by right-wing AUC paramilitaries on ELN support areas forced guerrillas to step up their attacks on perceived pro-regime targets.[45] When seeking to protect their civilian support bases from pro-regime harassment, rebels may not necessarily succeed in inflicting higher casualties on government forces and PGMs, but may instead lose higher numbers of their own fighters. Therefore, appearance of non-ethnic militias on the battleground might affect conflict lethality not only directly through militia violence against enemy combatants and civilians, but also indirectly by forcing insurgents to protect their support bases. Hence, we arrive at our first hypothesis, namely:

> **Hypothesis 1:** *Civil wars involving non-ethnic militias are more likely to have higher lethality than conflicts with co-ethnic militias.*

Co-ethnic PGMs and battlefield lethality in civil wars

Being embedded in the local society, with a range of extended networks, co-ethnic PGMs have access to information on the ground which enables them to differentiate between the 'guilty' and 'non-guilty.' This makes the task of selective targeting – *the* key to successful counterinsurgency – easier for co-ethnic PGMs, contrary to non-ethnic PGMs or conventional non-ethnic forces.[46] In fact, Peic[47] shows that recruiting local ethnic militia units for the sake of intelligence is the major task for counterinsurgent forces. Kalyvas[48] illustrates that locally recruited ethnic PGMs, for example, in Kenya or Algeria in the 1950s and or in Iraq in the 2000s, produce intelligence that conventional forces are less capable of producing. At the

onset of the Second Chechnya war, the locals were unwilling to share information with Russian troops seen as ethnically alien and unrelated to the locals by means of ethnicity and kinship. It was only after the gradual deployment of pro-Moscow Chechen paramilitaries, *kadyrovtsy*, that part of the local population, usually cognate with co-ethnic PGMs, started providing crucial support and information to ethnic-Chechen counterinsurgents.[49]

Ethnic PGMs usually refrain from engaging in violence for the sake of violence per se in that they seek to not antagonise the whole of the local population made up of their fellow ethnics. In fact, ethnic PGMs rely – at least partially – on some form of local support, particularly of their families and supporters, which makes them less willing to deploy excessive violence than non-ethnic PGMs.[50] Therefore, ethnic PGMs tend to avoid civilian persecution in the midst of their co-ethnics. In other words, civilians are not persecuted only on the basis of their ethnic background.[51] Ethnic PGMs usually operate in armed conflicts with blurred fault-lines, holding the sympathies of part of the local population, in contrast to polarised inter-ethnic conflicts in which non-ethnic PGMs are deployed. Unlike non-ethnic PGMs, 'ethnic hatred' is not what drives the violence of PGMs, although some family, clan, or subethnic animosities may still be present.

In addition, to resist co-ethnic militias, rebels need to have the ability to identify their targets more selectively. They need specific intelligence that can be obtained through their ethnic networks. Since militias often belong to the same ethnic group, targeting on both sides becomes less lethal. For example, in Russia's Dagestan, insurgents usually refrained from large-scale targeting in their ethnic areas out of fear of antagonising their ethnic kin and fellow clan and family members. Instead, they preferred to strike in areas populated by members of other ethnic groups.[52] When confronted by ethnic militias, rebels tend to target civilians more selectively – choosing members of particular ethnic groups – than when

fighting off non-ethnic PGMs when it is hard to identify regime supporters.[53] This results in lower battlefield lethality. Hence, we arrive at our following hypothesis, namely:

> **Hypothesis 2:** *Civil wars involving co-ethnic militias are less likely to have higher lethality than conflicts with non-ethnic militias.*

Data and Variables

We use Uppsala Conflict Data Program (UCDP) definition of civil war as an incompatibility over government or territory that leads to a minimum of 25 battle-deaths in a calendar year and occurs between a government and one or more armed non-state groups.[54] *Battlefield lethality* is the dependent variable of this study. The data on battlefield fatalities is taken from the UCDP Battle-Related Deaths (BRD) Dataset v.5-2016 that contains data on battlefield deaths in all civil wars from 1989 to 2015. The data is organised as a conflict-year time-series dataset with each conflict year constituting a separate observation. As each country might have several conflicts involving PGMs raging simultaneously or during different time periods, each conflict is treated separately. *Battlefield lethality* is a count variable presenting a total number of battle-deaths in each conflict-year. The BRD measures conflict-related fatalities strictly in terms of battlefield deaths, which exclude civilian casualties (one-sided violence) and other non-battlefield related fatalities.

Presence of pro-government militias is the main explanatory variable. It controls for the existence of militias in each conflict-year from 1989 until the end of conflict, or the last year of available data (2014), whichever comes first. For data on PGMs, we have relied on the UCDP Non-State Conflict Dataset (NSCD) v. 2.5-2015.[55] NSCD is a cross-sectional dataset that contains data on non-state actors from 1946 to 2014. The dataset does not differentiate

between militias and other armed groups, but employing our definition of PGMs (endnote 1) enabled us to identify a total of 84 intrastate conflicts with militia presence. NSCD records all armed non-state groups 'neither of which is the government of a state' involved in incidents of violence, 'which results in at least 25 battle-related deaths in a year'. In order to identify PGMs from other groups in the NSCD, we have relied on UCDP conflict database, which contains detailed descriptions of all armed groups. This data allowed us to determine whether a non-state group is pro- or anti-government. All pro-government armed non-state groups were coded as PGMs. *PGM* presence was coded as dummy controlling for whether at least one militia group was present in each conflict-year of BRD.[56] In order to identify ethnic identity of each militia group, we have relied on the Dangerous Companions Project[57] which offers data on ethnic composition of all armed groups active between 1945 and 2015. Following the data on ethnic membership of each PGM we were able to split all militias into two generic categories of co-ethnic and non-ethnic PGMs. Co-ethnic militias are PGMs recruited from the same ethnic group(s) as rebels. Whereas non-ethnic militias are PGMs recruited from ethnic groups other than rebels' constituency, or regardless of their ethnicity. To control for the presence of both types of militias in each conflict, we create *co-ethnic and non-ethnic PGMs* variable, which allows considering cases with multiple militia groups involved in one conflict episode.

Bearing in mind that conflict lethality in intrastate conflicts involving militias might be associated with violence against civilian population, which we discuss in our theoretical sections on a number of occasions, we introduce a set of explanatory variables measuring civilian victimisation. *Governments targeting civilians*, *rebels targeting civilians* and *militias targeting civilians* are three dummies designed upon similar variables from Stanton.[58] Each variable controls for the occurrence of violence against civilians committed by a certain type of conflict protagonists. According to Stanton's[59] terminology, civilian targeting includes

massacres, scorched earth campaigns, ethnic or religious cleansing, as well as purposeful bombing and shelling of civilian targets. Although one-sided violence is excluded from our definition of conflict lethality, intensity of violence against civilians has been rehearsed in the literature as a factor contributing to the overall conflict intensity.[60]

We also include a number of control variables in order to account for factors that might influence militia impact on battlefield lethality. Since each of our hypotheses is embedded in conflict context, accounting for various characteristics of conflicts enables to understand why a particular outcome is possible. To start with, a variable for duration was designed as a count of conflict years. Accounting for duration allows us to estimate whether longer conflicts are likely to be more lethal.[61] Duration is also critical for our statistical models as battle lethality levels fluctuate throughout the duration of many conflict episodes. Although survival analysis captures duration, we added a separate duration variable as an extra control for the significance of duration. To differentiate between ethnic and non-ethnic conflicts we adopt *Ethnic conflict* dummy modelled on Fearon and Laitin's[62] *ethnic wars* variable. This variable categorises civil wars as non-ethnic (1), mixed (2) and ethnic (3) intrastate conflicts. We define a conflict as ethnic if two or more ethnic groups are involved in a confrontation where the government and rebels belong to different ethnic groups. There are 26 non-ethnic and 58 ethnic conflicts in our dataset. Bearing in mind the central role of ethnicity for this study, controlling for ethnic conflicts is important for establishing whether conflict typology, such as differences between identity-based and ideological conflicts affect the dynamics of militia relationship with conflict severity. To further explore the role of ethnicity, we add a percentage log of country's ethnic fragmentation.[63] This variable controls for ethnically excluded population allowing to account for the effect of ethnic diversity on the relationship between dependent and outcome variables. *Political regime type* is coded on the basis of Polity IV as a count for democracies (10), autocracies (-10) and all other regimes in-between

these two base categories. Controlling for regime types enables us to explain as to whether militia ethnicity associates with conflict lethality in more (or less) liberal regimes. A log of the real Gross Domestic Product (GDP) per capita in current US dollars is constructed from the World Bank Database in order to account whether the level of economic development has an effect on conflict lethality. Another variable based on the World Bank data is a log of population size. We introduce this variable to control for variation between countries with larger and smaller populations as population size is commonly used in research to conflict severity.[64] Lastly, we add a percentage of mountainous terrain of each country's territory taken from Fearon and Laitin[65] in order to control for geographical characteristics and whether they have an effect on conflict lethality.

Empirical findings

We employ Cox proportional hazards models to control for transition from low to high battlefield lethality.[66] UCDP's threshold of transition from *low-intensity conflict* to *major war*, measured in 999 battle-deaths, was used as a point of transformation from low to high lethality. We choose a semiparametric model because it allows to work with right-censored observations more effectively than parametric models. Each conflict-year is treated as potentially at risk of intensifying from low to high lethality rates. Each conflict remains in the risk set until it reaches 999 battle-deaths threshold. Some civil wars that start as high lethality conflicts, with over 999 battlefield fatalities during their first year, transform into less lethal conflicts at later stages. For active conflicts, transition remains unobserved after 2014, therefore, these events become censored. For numerous civil wars, battlefield fatalities float throughout the course of conflict without ever reaching a threshold point of 999 battle-deaths per year. All of the above makes it difficult to establish clear-cut theoretical expectations of a

hazard rate, required for parametric models. Bearing in mind temporal character of battlefield lethality, Cox model allows to capture time-dependency, which would remain unobserved in probit and logit models, as well as negative binomial models with a count variable. Indeed, in multiple conflict episodes levels of battlefield lethality are constantly changing from one year to another, which makes the choice of survival analysis model rather intuitive.

Table 1 shows the results of Cox proportional hazards models. In Models 1 and 2, we test the presence of non-ethnic (Model 1) and co-ethnic (Model 2) PGMs for their likelihood of increasing the risk of higher battlefield lethality. In Model 3, we control for cases where both types of militias are present.

<Table 1.>

Our first hypothesis posited that civil wars involving non-ethnic militias tend to be more lethal in terms of battlefield deaths. Model 1 reports findings pertaining to non-ethnic groups and shows that hazard ratios for the PGM variable indicate nearly 70% risk of higher lethality (significant at .05) in conflicts with non-ethnic militias present. Descriptive statistics demonstrate that civil wars with non-ethnic militias involved include such high lethality wars as the Colombian and Iraqi conflicts, as well as ongoing Libyan and Syrian civil wars, each of which well exceeds 1,000 battle-deaths per year threshold.[67]

Employing the original BRD v.5-2016, we have also counted the average battle-deaths in non-ethnic conflicts with no militia presence, confirming that such conflicts produce on average over 700 battle-deaths per year, as opposed to over 2,000 in conflicts with militia presence.[68] Although still very casualty-intensive, non-ethnic conflicts without militias nevertheless fail to reach a 999 deaths threshold. This indicates that non-ethnic militias are not a characteristic of high lethality conflicts, but rather a likely cause of higher battle-deaths.

To visualise our findings pertaining to H1, we plotted the Cox model in Table 1 using Kaplan-Meyer survivor function. Results presented in Figure 1, show that conflict episodes involving non-ethnic PGMs are several times more likely to cause higher battlefield lethality than conflicts with no non-ethnic militias engaged.

<Figure 1.>

We turn to Model 2. Hazard ratios of co-ethnic militias are both negative and not statistically significant. Descriptive statistics indicate that average battlefield lethality in conflicts with co-ethnic militias is almost four times lower than in episodes with non-ethnic PGMs (under 10,000 deaths per year). Comparing models with and without co-ethnic PGMs, an alternative model tested without co-ethnic PGM presence produces lower AIC[69], suggesting that adding co-ethnic PGMs does not make for a better model.

Both hypotheses were framed in order to offer a tentative answer as to why non-ethnic PGMs are more conducive to high lethality. Amongst other factors, we proposed that non-ethnic militias are more likely to increase conflict lethality owing to their tendency of targeting civilians. In all three models, variable of militia targeting civilians is in positive direction, but it only has significance in Model 1 for non-ethnic militias. Government targeting civilians emerges as positive and significant in model for mixed PGMs, and rebels targeting of civilians remains negative and highly significant in all models. A detailed look at the data helps us to provide some explanations for these findings. In 51% of observations, non-ethnic militias engaged in targeting civilians. This number is lower than rebel civilian targeting (68%), but higher than government civilian targeting (41%). However, combining government and PGM targeting of civilians, and bearing in mind that on many occasions militias persecute civilians on behalf of the incumbent,[70] we discover that pro-regime forces

tended to target civilians in over 90% of cases in episodes involving non-ethnic conflicts. With such markedly high percentage of pro-regime civilian targeting, our earlier assumption that rebels are forced to intensify violence in order to protect (secure) their civilian support bases, therefore, both inflicting higher fatalities on the incumbent and suffering casualties of their own, becomes more empirically sound. By contrast, co-ethnic PGMs engaged in civilian targeting in 34% of cases. In conflicts with ethnic PGMs, rebels targeted civilians in 60% of observations and governments in 68%. Seemingly, co-ethnic pro-regime forces conducted a slightly higher degree of civilian persecution than non-ethnic militias.

The difference between two types of conflict episodes appears to be in the degree of militia persecution of civilians. Whilst in conflicts involving co-ethnic PGMs governments seem to be more willing to directly engage in targeting civilians, in conflicts with non-ethnic militias, PGMs takeover civilian persecution roles. To better understand the association between PGM targeting of civilians and the increase of battlefield lethality in non-ethnic conflicts we analysed total numbers of civilian casualties in both types of conflicts. We found that in conflicts with non-ethnic militia participation, rebels have claimed almost three times more civilian lives than governments.[71] These numbers are in completely opposite direction for conflicts with co-ethnic PGMs, where governments assassinated nearly five times more civilians than rebels. Keeping in mind that militia civilian victims are included in the number of civilians murdered by governments, the number of militia (as part of government forces) civilian victims in conflicts with non-ethnic PGMs is actually not too high relative to the frequency of pro-regime forces targeting civilians. One way to interpret these findings is to assume that high rates of government and militia attacks on civilians result in relatively low numbers of civilian fatalities due to pro-regime forces desire to intimidate civilians rather than to massacre them.[72] These acts in turn induce rebels to retaliate by attacking both (suspected) pro-regime civilians and armed forces. As rebels typically have lower capacity

and less resources to use non-lethal violence, such as detention and mass torture, their violence against civilians is more lethal.

Controlling for presence of both types of PGMs in one conflict episode, produced negative results (significant at .001). This suggests that when both co-ethnic and non-ethnic militias are involved, conflict lethality is not very likely to increase. The other possible explanation of that finding is that negative outcome is driven by a relatively small number of cases (less than 8%) when two types of PGMs are present in the same conflict episode.

As for controls, conflict duration produces about 70% of risk of higher lethality in all models. Hence, longer conflicts are clearly to be more lethal with either type of PGMs engaged. Ethnicity variables appear either irrelevant or negative in all three models. Political regime type, population size and the terrain roughness largely remain insignificant and negative. Economic performance is in expected negative and highly statistically significant direction, suggesting that well-developed economies are not likely to use militia services in armed conflicts.

To explore whether the distribution of hazard rate differs in parametric models, we tested the same set of models with Weibull and exponential distribution models. Both methods produced results identical to Cox proportional hazards models, with all variables behaving in the same manner as in semiparametric models.[73]

<Table 2.>

Assuming that time-dependency is not crucial for the analysis, we tested all three models using logistic regression models. We run regressions using a log of all battle-deaths exceeding 999 deaths threshold for each conflict-year. The logistic regression analysis yielded results similar to the survival analyses tests (see Table 2). Coefficients of PGM

presence in Model 1 (non-ethnic) are in positive direction and are statistically significant (at .01). Co-ethnic PGMs' coefficients are negative as well as results for both types of militias. Notable differences between Cox regressions and logit models are in findings related to conflict duration, which is negative and insignificant in logit models, and ethnic fragmentation which appears highly important in logit results.

Conclusion

This study has sought to explain whether ethnicity of conflict actors affects battlefield lethality in intrastate wars. We have argued that due to intricate relationship between one-sided violence and participation of pro-government proxies in civil wars, ethnicity plays a significant role in militias' contribution to conflict lethality. Whilst we avoided directly exploring as to whether co-ethnic and non-ethnic PGMs cause more casualties amongst civilian population, we suggested that militias' use of violence against civilians affects overall battlefield lethality. Bearing in mind that one-sided violence has been one of the causes responsible for conflict escalation processes, it is intuitive to hypothesise that the involvement of extra-state agents notorious for civilian persecution is likely to contribute to battlefield lethality. Although militias are not always directly deployed in action and, in many conflicts are not designed for combat missions, in their respective roles they are still potentially conducive to higher conflict lethality.

Our empirical findings suggest that different levels of one-sided violence employed by co-ethnic and non-ethnic PGMs are likely to have different effect on conflict severity. Less violent towards civilians, co-ethnic militias seem to create less opportunities for conflict escalation or higher lethality amongst the belligerents, than non-ethnic PGMs. By contrast, non-ethnic militias are well-known for their inclination to target civilians. Since few modern

conflicts occur in a vacuum, one-sided violence is likely to resonate either in retributive attacks by rebels, or in international intervention or increased international support for regime opponents. Scholars have argued that incumbents delegate civilian persecution to PGMs in order to avoid responsibility, yet few if any regime opponents are able or willing to differentiate between the regime and its proxies. As cases from Colombia, Sudan, former Yugoslavia and Myanmar demonstrate, excessive one-sided violence by pro-regime forces almost always leads to conflict escalation. One particular lesson to be drawn from this study for future research and practice is that understanding ethnic makeup of conflict protagonists is crucial towards explaining the dynamics of violence in civil wars. It also emphasises the collateral impact of one-sided violence on battlefield lethality and that civilian persecution is closely interrelated with deaths on the battlefield.

References

Ahram, A.I. *Proxy warriors: the rise and fall of state-sponsored militias*. Stanford, CA: Stanford University Press, 2011.

Aliyev, H. "Strong militias, weak states and armed violence: Towards a theory of 'state-parallel' paramilitaries." *Security Dialogue* 47, no. 6 (2016): 498-516.

Aliyev, H. "Precipitating state failure: Do civil wars and violent non-state actors create failed states?." *Third World Quarterly* 38, no. 9 (2017): 1973-1989.

Aliyev, H. "Pro-regime militias and civil war duration." *Terrorism & Political Violence* DOI: 10.1080/09546553.2017.1393415 (2017): 1-21.

Aliyev, H. "When and how militias disband? Global patterns of pro-government militia demobilisation in civil wars." *Studies in Conflict and Terrorism*. DOI: 10.1080/1057610X.2018.1425112 (2018): 1-20.

Aliyev, H. "'No peace, no war' proponents? How pro-regime militias affect civil war termination and outcomes." *Cooperation and Conflict*, DOI: 10.1177/0010836718766380 (2018): 1-19.

Alvarez, A. "Militias and genocide." *War Crimes Genocide & Crimes against Humanity* 2 (2006): 1-33.

Bazenguissa-Ganga, R. "The spread of political violence in Congo-Brazzaville." *African Affairs* 98, no. 390 (1999): 37-54.

Böhmelt, T, and G, Clayton. "Auxiliary force structure: Paramilitary forces and progovernment militias." *Comparative Political Studies* 51, no. 2 (2018): 197-237.

Campbell, B.B., and A.D. Brenner. *Death squads in global perspective: Murder with deniability*. Basingstoke: Palgrave Macmillan, 2002.

Carey, S.C., Mitchell, N.J. and W. Lowe. "States, the security sector, and the monopoly of violence: A new database on pro-government militias." *Journal of Peace Research* 50, no. 2 (2013): 249-258.

Clayton, G. and A. Thomson. "The Enemy of My Enemy is My Friend… The Dynamics of Self-Defence Forces in Irregular War: The Case of the Sons of Iraq." *Studies in Conflict & Terrorism* 37, no. 11 (2014): 920-935.

Cox, D.R. "Regression Models and Life-Tables." *Journal of the Royal Statistical Society* Series B (Methodological) 34, no. 2 (1972): 187–220.

Fearon, J.D., and D.D. Laitin. "Ethnicity, insurgency, and civil war." *American political science review* 97, no. 01 (2003): 75-90.

Forney, J.F. "Who Can We Trust with a Gun? Information Networks and Adverse Selection in Militia Recruitment. *Journal of Conflict Resolution 59,* no. 5 (2015): 824-849.

Gleditsch, N.P., Wallensteen, P., Eriksson, M., Sollenberg, M. and H. Strand. "Armed conflict 1946-2001: A new dataset." *Journal of peace research* 39, no. 5 (2002): 615-637.

Grajales, J. "The rifle and the title: paramilitary violence, land grab and land control in Colombia." *Journal of Peasant Studies* 38, no. 4 (2011): 771-792.

Gutiérrez, S.F. "Telling the difference: guerrillas and paramilitaries in the Colombian war." *Politics & Society* 36, no. 1 (2008): 3-34.

Hughes, G., and C. Tripodi. "Anatomy of a surrogate: Historical precedents and implications for contemporary counter-insurgency and counter-terrorism." *Small Wars & Insurgencies* 20, no. 1 (2009): 1–35.

Jentzsch, C., Kalyvas, S.N., and L.I. Schubiger. Militias in Civil Wars. *Journal of Conflict Resolution* 59, no. 5 (2015): 755-769.

Kalyvas, S.N. *The Logic of Violence in Civil War*. Cambridge: Cambridge University Press, 2006.

Kalyvas, S.N. "Ethnic defection in civil war." *Comparative Political Studies* 41, no. 8 (2008): 1043-1068.

Kilcullen, D. "Counter-insurgency Redux." *Survival 48*, no. 4 (2006): 111–130.

Koren, O. "Means to an end: Pro-government militias as a predictive indicator of strategic mass killing." *Conflict Management and Peace Science* 34, no. 5 (2015): 461-484.

Lacina, B., and N.P. Gleditsch. "Monitoring trends in global combat: A new dataset of battle deaths." *European Journal of Population/Revue Européenne de Démographie 21*, no. 2-3 (2005): 145-166.

Lacina, B. "Explaining the severity of civil wars." *Journal of Conflict Resolution* 50, no. 2 (2006): 276-289.

Lyall, J. "Are coethnics more effective counterinsurgents? Evidence from the second Chechen war." *American Political Science Review* 104, no. 1 (2010): 1-20.

Mason, T.D., and D.A. Krane. "The political economy of death squads: Toward a theory of the impact of state-sanctioned terror." *International Studies Quarterly* 33, no. 2 (1989): 175-198.

Millett, R.L. *Colombia's conflicts: the spillover effects of a wider war*. Carlisle, PA: DIANE Publishing, 2002.

Mitchell, N.J., Carey, S.C. and C.K. Butler. "The Impact of Pro-Government Militias on Human Rights Violations." *International Interactions* 40, no. 5 (2014): 812-836.

Mitchell, N.J., and S.C. Carey. *Pro-Government Militias and Conflict*. Oxford Research Encyclopaedia of Politics. Oxford: Oxford University Press, 2016.

Peic, G. "Civilian defense forces, state capacity, and government victory in counterinsurgency wars." *Studies in Conflict & Terrorism* 37, no. 2 (2014): 162-184.

Rochlin, J. *Social forces and the revolution in military affairs: The cases of Colombia and Mexico*. London: Springer, 2007.

Rubin, B.R. *The fragmentation of Afghanistan: State formation and collapse in the international system*. New Haven, CN: Yale University Press, 2002.

Salehyan, I., Gleditsch, K.S., and D.E. Cunningham. "Explaining external support for insurgent groups." *International Organization* 65, no. 4 (2011): 709-744.

Shahrani, N.M. "War, factionalism, and the state in Afghanistan." *American Anthropologist* 104, no. 3 (2002): 715-722.

Souleimanov, E.A. "An ethnography of counterinsurgency: kadyrovtsy and Russia's policy of Chechenization." *Post-Soviet Affairs* 31, no. 2 (2015): 91-114.

Souleimanov, E.A. "A Devout Ally or an Enfant Terrible? Explaining the Sources and Forms of Ramzan Kadyrov's Influence." *Russian Analytical digest* 171, no. 07 (2015): 5-8.

Souleimanov, E.A. "A Failed Revolt? Assessing the Viability of the North Caucasus Insurgency." *The Journal of Slavic Military Studies* 30, no. 2 (2017): 210-231.

Souleimanov, E.A. "A perfect umma? How ethnicity shapes the organization and operation of Dagestan's jihadist groups." forthcoming in *Ethnicities* (2017): 1468796817700933.

Souleimanov, E.A., and H. Aliyev. *The Individual Disengagement of Avengers, Nationalists, and Jihadists: Why Ex-Militants Choose to Abandon Violence in the North Caucasus*. Basingstoke: Palgrave Macmillan, 2014.

Souleimanov, E.A., and H. Aliyev. "Evaluating the efficacy of indigenous forces in counterinsurgency: Lessons from Chechnya and Dagestan." *Small Wars & Insurgencies* 27, no. 3 (2016): 392-416.

Souleimanov, E.A., and H. Aliyev. "Blood Revenge and Violent Mobilization: Evidence from the Chechen Wars." *International Security* 40, no. 2 (2015): 158-180.

Souleimanov, E.A., and H. Aliyev. "Asymmetry of values, indigenous forces, and incumbent success in counterinsurgency: evidence from Chechnya." *Journal of Strategic Studies* 38, no. 5 (2015): 678-703.

Souleimanov, E.A., Aliyev, H., and J-F. Ratelle. "Defected and loyal. A case study of anti-defection mechanisms in Chechen paramilitaries." *Terrorism & Political Violence* 30, no. 4 (2016): 616-636.

Souleimanov, E.A., and D.S. Siroky. "Random or Retributive?: Indiscriminate Violence in the Chechen Wars." *World Politics* 68, no. 4 (2016): 677-712.

Staniland, P. "Militias, Ideology, and the State." *Journal of Conflict Resolution* 59, no. 5 (2015): 770-793.

Stanton, J.A. "Regulating Militias Governments, Militias, and Civilian Targeting in Civil War." *Journal of Conflict Resolution* 59, no. 5 (2015): 899-923.

Sundberg, R., Eck, K. and J. Kreutz. "Introducing the UCDP Non-State Conflict Dataset." *Journal of Peace Research* 49, no. 2 (2012): 351-362.

Wimmer, A., Cederman, L-E. and B. Min. "Ethnic politics and armed conflict: A configurational analysis of a new global data set." *American Sociological Review* 74, no. 2 (2009): 316–337.

Notes

---

[1] We define as pro-government militias (PGMs) any armed organisation that on the one hand is not opposed to the state, but, on the other hand, functions outside of formal state structures. This definition distinguishes *pro-government militias* from *paramilitaries*, which are, as per Bohmelt and Clayton's categorisation, 'militarized security units, which are trained and organized under the central government to support or replace the regular military'. See Bohmelt and Clayton, "Auxiliary force," 198.

[2] Carey et al., "States," 851.

[3] Aliyev, "Strong Militias."

[4] Ahram, *Proxy Warriors*; Staniland, "Militias."

[5] Kalyvas, *The Logic of violence*, 107-09.

[6] Lyall, "Are coethnics."

[7] Stanton, "Regulating militias."

[8] Kalyvas, *The Logic of violence*, 108.

[9] Souleimanov et al. "Defected and loyal."

[10] Aliyev, "Strong militias."

[11] Campbell and Brenner, *Death squads*, 10.

[12] Peic, "Civilian defense," 162.

[13] Mitchell et al., "The impact of," 812.

[14] See Ahram, *Proxy Warriors*; Stanton, "Militias"; Mitchell et al., "The impact of"; Koren, "Means to an end."

[15] Mason and Krane, *The political economy*, 175.

[16] Jentzsch et al., "Militias," 6.

[17] Aliyev, "Precipitating state."

[18] Kalyvas, "Ethnic defection."

[19] Jentzsch et al., "Militias," 6.

[20] Ahram, *Proxy Warriors*; Clayton and Thomson, "The enemy."

[21] Gutiérrez, "Telling the difference"; Grajales, "The rifle"; Staniland, "Militias"; Jentzsch et al., "Militias"; Aliyev, "No peace"; Aliyev, "Pro-regime militias"; Aliyev, "When and how."

[22] Staniland, "Militias," 773-776.

[23] Staniland, "Militias," 780-781.

[24] See Forney, "Who can we."

[25] Carey et al., "States."

[26] Ahram, *Proxy warriors*.

[27] Campbell and Brenner, *Death squads*, 12.

[28] Souleimanov and Aliyev, "Evaluating the efficacy."

[29] Lyall,"Are coethnics"; Souleimanov and Aliyev, "Asymmetry of values."

[30] Peic, "Civilian defense," 167.

[31] Clayton and Thompson, "The enemy"; Lyall "Are coethnics"; Aliyev, "Strong militias."

32 Non-ethnic PGMs are more likely to have no or limited ties to the area they operate in due to the following reasons. First, non-ethnic PGMs are more likely to stem from distant areas or neighbourhoods because patterns of settlement often follow ethnic makeup. In other words, in Third World countries where the majority of civil wars and insurgencies have occurred, urban and rural neighbourhoods are often ethnically-exclusive as they are populated by members of one ethnic group that dominates the area demographically. In these countries, kinship ties often follow ethnic makeup, with inter-ethnic intermarriage not being the norm. Non-ethnic PGMs are thus more likely to be considered outsiders, without access to the locals and having a harder time acquiring information on the ground compared to ethnic PGMs. With non-ethnic PGMs being deployed against ethnically-distinct areas, pre-conflict ties between members of ethnic communities from which non-ethnic PGMs and the local population may originate are likely to reduce as they increasingly see each other as ethnic enemies.

33 Nor are the locals likely to be willing to provide support to non-ethnic PGMs.

[34] Souleimanov and Aliyev, "Blood revenge."

[35] Kalyvas, *The Logic*, 108; Souleimanov, "A failed revolt."

[36] Kilcullen, "Counter-insurgency."

[37] Alvarez, "Militias"; Hughes and Tripodi, "Anatomy"; Mitchell et al., "The impact."

[38] Kalyvas, *The Logic*.

[39] Souleimanov, "A perfect umma?."

[40] Ahram, *Proxy Warriors*, 62.

[41] Mitchell and Carey, "Pro-government militias," 16.

[42] Bazenguissa-Ganga, "The spread."

[43] Shahrani, "War."

[44] Rubin, "The fragmentation."

[45] Rochlin, *Social forces*, 56.

[46] Clayton and Thomson, "The enemy"; Souleimanov and Siroky, "Random."

[47] Peic "Civilian defense."

[48] Kalyvas, "Ethnic defection."

[49] Souleimanov and Aliyev, "Asymmetry of values"; Souleimanov, "An ethnography."

[50] Souleimanov, "A devout ally."

[51] Lyall, "Are coethnics"; Stanton, "Militias."

[52] Souleimanov and Aliyev, "Evaluating."

[53] Souleimanov and Aliyev, *The individual disengagement*.

[54] Gleditsch et al., "Armed conflict."

[55] Sundberg et al., "Introducing," 01.

[56] There were more than one militia group present in about two-thirds of civil wars.

[57] See https://nonstatearmedgroups.ku.edu.tr/about.php.

[58] Stanton, "Militias."

[59] Stanton, "Militias," 908.

[60] Lacina, "Explaining the severity."

[61] Lacina, "Explaining the severity."

[62] Fearon and Laitin, "Ethnicity."

[63] Wimmer et al., "Ethnic politics."

[64] Lacina and Gleditsch, "Monitoring trends"; Lacina, "Explaining the severity."

[65] Fearon and Laitin, "Ethnicity."

[66] Cox, "Regression models."

[67] In order to avoid endogeneity and to confirm that this result is not simply driven by high lethality intrinsic to non-ethnic conflicts, we tested an alternative model without a PGM variable and then compared AIC (Akaike's information criterion) values of both models. Adding a PGM dummy reduced AIC from 648 to 639, indicating a better model fit. This model is not reported in Table 1.

[68] Average for non-ethnic conflicts with PGMs is over 2,000 battle-deaths.

[69] AIC (Akaike's information criterion) analyses model fit by allocating lower scores to models with better fit.

[70] For instance, see Stanton, "Militias."

[71] A total of 24,949 civilians were killed by rebels and there were 7,409 civilian victims of governments.

[72] Civilian targeting along with murder, includes rape, torture and detention. All these types of violence were widely practiced in many non-ethnic conflicts included in our dataset, such as civil wars in Libya, Syria, Philippines and Peru.

[73] Since hazard ratios of these models were identical to Cox models, the results are not reported.

Table 1. Cox proportional hazards models of PGM types and conflict lethality

	Model 1	Model 2	Model 3
Non-ethnic PGMs	1.69*		
	(2.38)		
Co-ethnic PGMs		0.71	
		(-1.51)	
Co-ethnic and non-ethnic PGMs			0.15***
			(-8.59)
Government targeting civilians	1.38	1.47	1.47*
	(1.62)	(1.95)	(1.97)
Rebels targeting civilians	0.43***	0.41***	0.44***
	(-4.40)	(-4.54)	(-4.36)
Militias targeting civilians	1.54*	1.14	1.28
	(0.30)	(0.69)	(0.16)
Duration	1.74***	1.71***	1.74***
	(4.46)	(4.23)	(4.40)
Ethnic conflict	1.78	1.10	0.95
	(0.65)	(0.09)	(-0.38)
Ethnic fragmentation	0.44*	0.36**	0.31***
	(-2.14)	(-2.69)	(-3.32)
Political regime type	1.07	1.06	1.04
	(0.41)	(0.36)	(0.21)
Population size	0.86*	0.89	0.88
	(-2.22)	(-1.72)	(-1.84)
GDP per capita	0.77***	0.76***	0.76***
	(-3.59)	(-3.84)	(-3.86)
Mountainous terrain	0.99	0.99	0.99*
	(-1.33)	(-1.81)	(-2.13)
Log likelihood	-903.264	-904.983	-906.144
Number of observations	544	540	540
Number of failures	218	217	217
Time at risk	928466	925520	925520
AIC	1822.733	1826.144	1826.724

Hazard ratios are presented. Robust z-statistics (clustered by conflict) are in parentheses.
AIC – Akaike's information criterion.
*p<0.05, **p<0.01, ***p<0.001

Figure 1

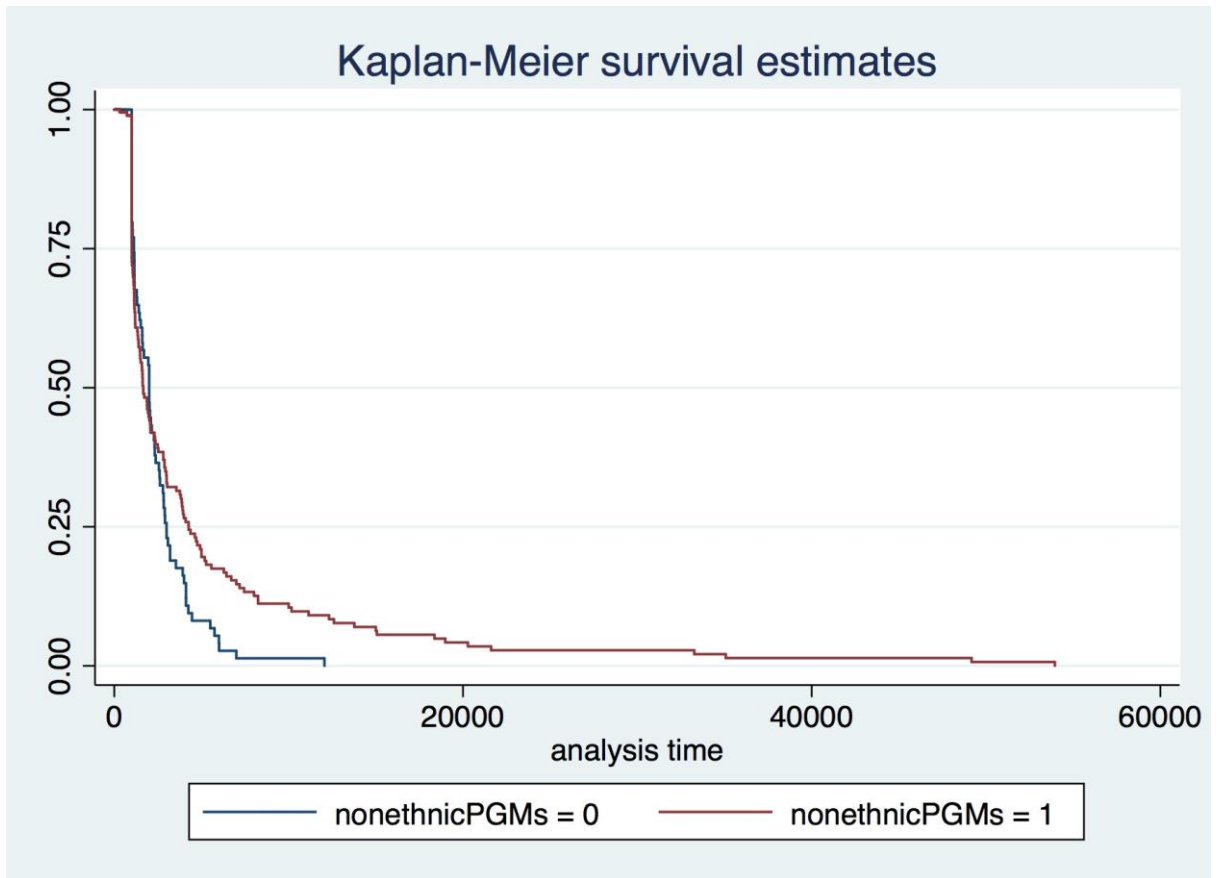Kaplan-Meier survival estimates

Table 2. Logistic regression models

	Model 1 (non-ethnic)	Model 2 (co-ethnic)	Model 3 (Co-ethnic and non-ethnic)
PGM presence	1.045** (0.401)	0.188 (0.444)	0.614 (0.495)
Government targeting civilians	0.563 (0.539)	0.601 (0.520)	0.594 (0.529)
Rebels targeting civilians	0.180 (0.382)	0.202 (0.368)	0.193 (0.368)
Militias targeting civilians	0.891 (0.465)	0.880 (0.468)	0.900 (0.465)
Duration	-0.954 (0.386)	0.118 (0.376)	0.110 (0.377)
Ethnic conflict	-0.640 (0.349)	-0.799* (0.327)	-0.787* (0.327)
Ethnic fragmentation	2.774** (0.917)	2.640** (1.012)	2.776** (0.987)
Political regime type	0.148*** (0.368)	0.138*** (0.375)	0.140*** (0.375)
GDP per capita	-0.567 (0.139)	-0.153 (0.153)	-0.156 (0.156)
Mountainous terrain	0.853 (0.877)	0.360 (0.880)	0.427 (0.862)
Log likelihood	-117.949	-121.395	-121.395
Number of observations	581	581	581
Log ratio^2	39.48	32.75	32.59
Pseudo ratio^2	0.143	0.118	0.118

Coefficients are presented. Standard errors are in parentheses.
Statistical significance at: *p<0.05, **p<0.01, ***p<0.001