The Economics of Civilian Victimization: Evidence from World War II Italy

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Abstract

We study the micro-level determinants of civilian victimization. We use evidence from the Italian Campaign in World War II (July 1943 - May 1945), when Allied forces slowly pushed Axis troops North along the Italian peninsula. We exploit plausibly exogenous variation in the position and time of activation of 32 front lines that affected both the potential returns to civilian victimization, due to increased insecurity for Axis troops, and its cost, resulting from decreased accountability. In a stacked difference-in-differences framework, we compare treated municipalities that fell into the combat zone on the day of activation of each front line (within 40km of the front line on the German side) with comparison municipalities that either remained far from the front line or stayed in the combat zone. We find that the likelihood of episodes of indiscriminate violence (collective civilian killings) increased 10-fold upon front activation. By contrast, the likelihood of selective individual killings did not change. The effect is concentrated in areas away from division headquarters, tasked with policing soldiers, while locations more exposed to allied bombing and partisan resistance show relatively low levels of indiscriminate violence. We interpret this evidence as suggestive of an accountability mechanism that fostered indiscriminate violence through a reduction in the cost of misbehavior.

Keywords: civilian killings, violence, WWII, Italy

JEL Classification: D74, D74, D90, N44

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1 Introduction

Targeted violence against civilians is one of the most terrifying consequences of armed conflicts. Despite being unequivocally condemned by international conventions and treaties (Stanton, 2016), civilian victimization is extensively used, often strategically, by armed actors across the globe to this day. In Ukraine alone, around 6,000 civilians were killed in 2022,[1] a large share of which was deliberately targeted by Russian soldiers.[2] The existing literature has largely focused on the macro-level determinants of the intensity of civilian victimization that are common across conflicts (Esteban et al., 2015; Kalyvas, 2006) and armed groups over-time (Guarnieri and Tur-Prats, 2022), and has placed particular emphasis on the returns to civilian victimization, namely the fact that violence can be instrumental in expropriating local resources, securing supply lines, reducing the risk of counterinsurgencies, displacing civilians from war zones and erasing ethnic minorities.[3] The determinants of the large heterogeneity in soldiers' behaviour within the same conflict and armed group, by contrast, are currently poorly understood (Blattman and Miguel, 2010). In particular, the role of accountability, viz-a-viz returns to victimization, has been largely neglected. Why is the same military unit more likely to commit atrocities on a specific day, while showing restraint on another? What makes areas under the control of the same army heterogeneously dangerous for civilians? These questions remain open (Straus, 2012), mainly due to lack of exogenous variation in behavioural economic incentives within the same conflict, of systematic data of civilian killings, and on the identity of the perpetrators.

This paper studies the micro-level determinants of civilian victimization perpetrated by Axis (chiefly German) soldiers throughout the Italian Campaign in World War II (WWII). It applies a conceptual framework based on a model of behavioural economic incentives (Becker, 1968; Shiffman, 2020), embedded in a principal-agent problem commonly applied to war studies (Salehyan et al., 2014; Kalyvas, 2006). In this framework, the principal (high-commands of regular armies) is generally in favor of *selective* strategic violence that facilitates the achievement of war objectives, but against *indiscriminate* one that may alienate local population and fuel counterinsurgency. By contrast, agents (soldiers and army units) may stand to gain from victimizing civilians indiscriminately, for instance if this increases their security or available resources, but also face an accountability cost if the use of violence goes against the principal's directives, who may punish them. Selective and indiscriminate violence differ in the willingness of perpetrators to

[1] Accessed at https://www.ohchr.org/en/news/2022/09/ukraine-civilian-casualty-update-26-september-2022 on September 27th 2022.

[2] See for instance https://www.theguardian.com/world/2022/sep/23/russia-has-committed-war-crimes-in-ukraine-say-un-investigators, accessed on September 27th 2022.

[3] This segment of the literature is vast. See, for instance, Costalli et al. (2020) in the context of WWII Italy and Heldring (2021) in a genocidal, ethnically divided setting.

ascertain individual responsibilities while pursuing strategic goals through victimization, and apply violence proportionately. Empirically, as the intentions of the perpetrators cannot be observed, the difference between *selective* and *indiscriminate* violence maps onto the distinction between individual and collective killings.[4]

The Italian Campaign offers ideal solutions to the described empirical challenges and nests into our conceptual framework. Between the Allied landing in Sicily in July 1943 and the surrender of German army in May 1945, Italy became the battleground for the Allied and the Axis Armies, who fought over front lines gradually shifting from the South to the North of the country, following the Allied advance. The "activation" of a new front line, defined as the day when a new defensive front line became operative (e.g. fighting started), suddenly shocked behavioral economic incentives for German troops deployed in the newly-formed "combat" zone, the actual area of fighting and military operations, which extended for about 40 km behind the front line (Ronchetti and Ferrara, 2014; Klinkhammer, 2016). On the one hand, a newly activated front line presented more uncertainty and dangers for the troops, which could stand to gain from victimizing civilians if they believed this would secure supply lines and eliminate potential informers of resistance fighters and allies (Costalli et al., 2020). On the other hand, in the combat zone the policing that German officers exercised on subordinates declined significantly for a few days after activation while the units adapted to the new tactical situation (Collotti, 1963b, Kurowski, 2003, Gentile, 2012). Chaos and uncertainty arguably reduced the cost of misbehavior: soldiers' accountability dropped as crimes against civilians that would normally be prevented and punished were more difficult to identify and trace, and as the willingness of the principal to enforce rules may have declined at these particular junctures.

We use newly assembled panel data on the universe of civilian killings perpetrated by Axis soldiers[5] during the Italian Campaign, that we match with the location and movements of the front lines. For roughly 5,300 episodes that involved around 25,000 civilian victims, we have detailed information on the

[4]In this definition, we closely follow Kalyvas (2006) who conceptualizes the difference between indiscriminate and selective violence in terms willingness of the perpetrators to use violence in a manner proportionate to the context-specific war objective. While both selective and indiscriminate can be used strategically by an army, indiscriminate violence is considered less desirable by high commands due to the possibility in alienating the local population and also due to the checks that have been created by the international community. As intentions cannot be observed, he discriminates between the two types of violence empirically by distinguishing between individual and collective targeting of civilians. In his words: "Both selective and indiscriminate violence are, in principle, instrumental forms of violence aiming to generate collaboration via deterrence. The distinction is based on the level at which "guilt" and hence targeting is determined. Because intentions are not always visible (though in many cases indiscriminate violence is publicized by political actors), one way to operationalize this distinction is by noting that selective violence entails personalized targeting, whereas indiscriminate violence implies collective targeting. [...] It (Indiscriminate violence, Ed.) is often described as "random" violence and its archetypical example is a strain of Nazi terror in parts of occupied Europe." (Kalyvas, 2006, p.142)

[5]German soldiers were the perpetrators in the majority of cases (roughly 4,000 episodes), but Italian Fascist units were also responsible for many killings. Because in the combat zone the virtual totality of killings were perpetrated by German forces, so for the front line area Axis and German should be considered as synonyms.

number of people killed, their gender and age, the killing mode, whether they were civilians or partisans, as well as the identity of the perpetrators. We also digitize the military maps produced by the German High Command that allow us to geolocate the position and to trace the identity of German divisions across the peninsula for the entire duration of the conflict. For each division, we collect data on its fighting history and on the commanders in charge at any point of the campaign. We complement this information with data on the Allied bombings, the location and activities of partisan bands, and the 1936 Population Census.

Our empirical strategy exploits the fact that the exact location of the defensive lines as well as the precise timing of their activation depended on geographic features that made front lines more defensible and on the outcomes of German and Allied fighting at the previous front. In other words, we argue that front lines location and activation were orthogonal to the German intention to kill civilians (Kesselring, 1954, Collotti, 1963a, Gentile, 2015). We estimate a stacked difference-in-differences model that compares Axis troops' behavior in municipalities that fell into the combat zone upon activation of a new front line and were outside it before (*treated* municipalities), with that of troops stationed in municipalities that either remained outside the combat zone or were already inside it (*comparison* municipalities), before and after activation. We show that treated and comparison groups were following statistically indistinguishable trends in civilian killings in the five days before front activation and were similar in terms of civilian killings, bombing and partisan activity in the 20 days before front activation.

We present three key results. First, we find that the activation of a new front line sharply increased the incidence of indiscriminate violence as measured by collective killings, those that involved more than one victim. We use this type of episodes as a proxy for a use of violence disproportionate to war-related needs, and thus against the general war conduct indicated by the directives of the German High Command (Kesselring, 1954, Kalyvas, 2006). More specifically, the likelihood of collective killings increased 10 folds upon front activation in treated municipalities relative to comparison ones, from a sample's average probability of about 0.1% to 1% on the day of front activation. The probability of collective killings unrelated to partisan activity and that involved vulnerable population (women, children and the elderly) also increased in treated municipalities relative to comparison ones at front activation, a result that further corroborates the indiscriminate nature of the observed violence jump in the combat zone. Second, by contrast, the occurrence of selective violence, measured by single civilian killings (targeted killings that showed a more moderate use of violence), did not change differentially between treated and comparison municipalities at activation. Third, the differential increase in collective killings between treated and comparison municipalities persisted up to three days after the front activation, with the effect only fading

away from day four.

We next investigate the mechanisms underlying our results. We start by ruling out that our findings are driven by sorting of German divisions at the front. All German units were cyclically employed in the combat zone. Adding to the baseline specification frontline-division specific trends leaves our estimates substantially unchanged. This result suggest that the selection of particularly "bad" people at the front is not the driving force behind the results. We then examine whether our results could depend on the increased insecurity that soldiers in the combat zone may experience. However, we do not find evidence of stronger effects in municipalities where soldiers insecurity was higher, as proxied by exposure to Allied bombing and the presence of partisan bands. Lastly, we test if decreased accountability associated with a new front activation could explain our findings. Consistent with the latter hypothesis, we find that the impact of front activation is concentrated in municipalities away from division headquarters, where maintaining and supervising troops discipline was more challenging. Based on this evidence, we interpret the effect as being driven by soldiers misbehaving when accountability relaxes (i.e. the cost of misbehavior drops), rather soldiers applying indiscriminate violence more frequently in response of a differential increase in insecurity (i.e. the returns to misbehavior go up).

Finally, we examine different dimensions of treatment heterogeneity. Looking at the underlying characteristics of German divisions, we find that collective killings were concentrated near units that were relatively poorly trained and inexperienced, which emerge as more strongly affected in their behavior by a drop in accountability for their actions. In terms of pre-war economic characteristics, we document stronger effects in more urbanized and industrialized municipalities, which indicates that indiscriminate violence could erupt more easily in strategic areas where German units were actively engaged in resource expropriation and looting (Klinkhammer, 2016). Troops and location characteristics, however, emerge as necessary but insufficient conditions to explain patterns of indiscriminate violence in our setting, as the effects only emerge when behavioral incentives are shocked by the movement of the front. Conversely, heterogeneity along war macro trends, such as the period of the war or the tactical characteristics of the defensive lines, appears limited. This finding shows how soldiers reacted in a similarly violent fashion to behavioral economic incentives irrespective of the broader strategic situation.

Our paper contributes to several strands of the literature. First, it adds to the literature studying the drivers of violence against civilians in armed conflicts. Previous works have focused on the macro determinants of civilian and women victimization, examining, for instance, the strategic and economic incentives to loot of armed groups across countries and military or paramilitary units (Azam, 2006; Kalyvas, 2006; Blattman and Miguel, 2010; Esteban et al., 2015; Guarnieri and Tur-Prats, 2022). Our paper is also

related to the studies on the intensity of genocides and mass killings (Browning, 1993; Midlarsky, 2005; Becker et al., 2022), that emphasize the role of economic relationships across ethnic groups (Grosfeld et al., 2020) and state capacity (Heldring, 2021) as powerful predictors of the severity of violence against civilians. At the more micro-level, scholars have shown that patterns of violence across combat groups within the same conflict are correlated with soldiers' response to new information (Iyengar and Monten, 2022), the organizational characteristics of the fighting units (Humphreys and Weinstein, 2006; Weinstein, 2007), the role of political and ethnic cleavages (Balcells, 2010; Horowitz and Ye, 2013), and attempts to limit insurgencies and undercut guerilla fighters civilian basis (Valentino et al., 2004). Our work complements this strand of research by providing quasi-natural variation in soldiers' behavioral economic incentives that allows for causal inference, by directly testing between returns to victimization and its cost, and thus by unveiling accountability as a key and neglected alternative mechanism in explaining soldiers behavior in war settings. In this sense, our results echo studies on terrorism and civil wars that identify lack of leadership and discipline as a key predictor of indiscriminate violence (Leiby, 2009; Abrahms and Potter, 2015; Oppenheim and Weintraub, 2017).

Second, our paper is related to studies on behavioral responses to changes in economic incentives. Many scholars have examined the determinants of "good" behavior. In war contexts, it has been shown that public recognition and awards can increase risk-taking and gallantry actions (Ager et al., 2021, Campante et al., 2022), while promoting social capital is of paramount importance for soldiers' loyalty (Costa and Kahn, 2003). Social pressure matters also in non-war settings, by affecting a range of behaviours, from charitable donations (DellaVigna et al., 2012), to campaign contributions (Perez-Truglia and Cruces, 2017), to voting decisions (DellaVigna et al., 2017). Compared to these studies, we focus on the behavioral economic incentives for soldiers' *misbehavior*, documenting that soldiers may commit horrific actions as accountability drops. To the best of our knowledge, this is one of the first papers to test such mechanism in a non-experimental setting, as most of the existing evidence relies on a theoretical or lab-experiment approach (Abeler et al., 2019) and does not deal with war settings. More broadly, our findings also relate to the long-standing debate in social sciences that analyze to what extent lack of misbehavior against fellow humans stems from individual preferences, for instance ethics, rather than from legally binding constraints created by a social contract (Hobbes, 1651; Rousseau, 1755; Becker, 1968; Olson, 2000).

Third, we contribute to the economic history literature that analyses the effects of German military occupation in Italy. Cannella et al. (2022) show that municipalities in the German military zone of operations exhibited greater support for radical opposition, as well as lower political participation, after the war while Fontana et al. (2022) find that in areas where the German occupation was both longer and harsher

the Communist Party gained votes until the late 1980s. In a paper closely related to ours, Costalli et al. (2020) suggest that civilian victimization in WWII Italy was related to vulnerability of German armies during retreat after the break of the Gothic and the Gustav Lines. By contrast, our paper focuses on the role of economic incentives in determining soldiers misbehavior, and by focusing on variation in violence across Italy on front lines where Axis troops were actively fighting rather than retreating.

The rest of this paper is organized as follows. Section 2 provides historical detail on our setting and sets the stage for the empirical analysis. Section 3 introduces our original dataset. Section 4 describes the main estimating equation and the identification strategy. Sections 5 and 6 present the main results and the analysis of the mechanisms, respectively. Section 7 studies heterogeneity. Section 8 concludes.

2 Historical Background

2.1 World War II in Italy

World War II began in Europe on September 1, 1939, when Nazi Germany invaded Poland. Great Britain and France responded by declaring war on Germany two days later. Despite being an Axis power, Italy remained neutral until June 10, 1940, when it joined the conflict on the German side and declared war on France and Great Britain. During the first two years of war, Italy faced a series of military defeats, especially on the East and the African fronts, that depressed population morale and weakened the Fascist regime. The situation escalated when on July 10, 1943 a combined US and British force landed close to Siracusa in Sicily in the so-called Husky Operation. On July 25, 1943, after six days of intense Allied bombing on Rome, Italian dictator Benito Mussolini was forced to resign and imprisoned. The newly-formed Italian government, led by General Pietro Badoglio, officially declared that the war would continue alongside Germany, whose troops took control of most peninsula and disarmed Italian soldiers. However, Badoglio began secret negotiations with the Allies, that led to the signature of the Armistice of Cassibile on September 3. The Armistice, made public on September 8, opened a new active war front on the Italian soil between the German and Allied armies until May 2, 1945, known as Italian Campaign.

The Armistice also determined the breakout of a Civil War. On one side, the Italian Fascists remained pro-German and created the *Repubblica Sociale Italiana* (Italian Social Republic, RSI) in Saló, with Mussolini installed as leader after he was rescued from imprisonment by German paratroopers. On the opposite side, the anti-Fascist Partisans, under the control of the *Comitato di Liberazione Nazionale* (Committee of National Liberation, CLN), carried out guerrilla attacks against German troops and aided the Allied

advance.

2.2 The Italian Campaign

The opening of a new front in Italy created substantial military problems for Nazi Germany, that was already under strong pressure on the Eastern fronts, and increasingly so after the Allied landing in Normandy in June 1944. Since Hitler did not believe that defending the peninsula was essential to achieve victory in the war, limited resources and troops were made available for the Italian Campaign (Kesselring, 1954). Therefore, the German High Command, and in particular Field Marshal Albert Kesselring, decided to put in place a so-called "fighting withdrawal" strategy (Ronchetti, 2018). This strategy aimed to slow down the Allied advance as much as possible by fighting along pre-set defense lines, sequentially built based on a strict schedule. German troops were ordered to "contend in the bitterest way every inch of land" (Ronchetti and Ferrara, 2014) on a given defense line and to withdraw only when the next line was ready, destroying everything that could further delay the Allies. Such tactics not only caused a large number of fatalities to the enemies, but also bought time for German troops not at the front to build a powerful defense line along the Apennine Mountains, the Gothic Line.[6]

An important part of the "fighting withdrawal" strategy was choosing the location of the defensive line. Given lack of time and resources, German Commanders decided to build such lines in easily defensible sites, exploiting the natural features of the soil, such as mountains, rivers, and caves (Short and Taylor, 2006). Front lines were not uniformly fortified: for instance, more vulnerable parts, such as coasts and mountain passes, were more secured. These areas were protected with kilometers of antitank ditches, concrete bunkers, tank turrets, and minefields. Elsewhere, defense lines were simpler: walkways and trenches of dry-stacked stone camouflaged in the soil and stone parapets. In protected areas with good visibility, positions for artillery were prepared. Moreover, in the ten kilometers preceding the lines, communication and electricity lines were dismantled (Ronchetti, 2018). These defensive lines would become a front line when the fighting broke out, as the Allied vanguards reached them. This is what we define as “front line activation”. Generally, by the time of activation, German troops had already almost fully fallen back to a new defensive position, with the withdrawal normally starting between fifteen and five days before activation (Short and Taylor, 2006).

Despite the meticulous organization of the defense lines, German commanders often had to deviate from their original plans on the ground. For instance, it was not uncommon that the withdrawal was

[6]The Gothic Line was the last major German defense line in Italy and spanned for 300km along the summits of the northern part of the Apennine Mountains from the province of Massa Carrara on the Tyrrhenian Sea to Pesaro-Urbino on the Adriatic side.

anticipated or delayed relative to what initially established based on the outcomes of the confrontation of German and Allied armies. Moreover, as ordered withdrawals were sometimes difficult under pressure, commanders were often forced to make a stand in positions different from the previously planned ones (Kesselring, 1954, Kurowski, 2003). Overall, the "fighting withdrawal" strategy was proven successful. The Allies were only able to reach the Gothic Line on August 25, 1944, more than one year after the landing in Sicily. This final defensive line was eventually broken in April 1945, only a few days before the official end of the war in Italy, on May 2, 1945.

2.3 Military Organization of Italy under Nazi German Occupation

With the signature of the Armistice of Cassibile, despite Nazi Germany officially recognized the authority of the Italian Social Republic, the country was *de facto* put under the military occupation of the Wehrmacht, the German Armed Forces. Specifically, on September 12, 1943 Kesselring declared Italy as "war territory", therefore subject to the Third Reich war laws (Collotti, 1963b, p.95).

The Italian territory was divided into two areas, whose borders were constantly changing as the front line moved: the occupied territory, that included all the areas not directly exposed to the fighting, and the operation zones, that included the areas directly exposed to the war, either on the front or proximate to it and 30km within the coastlines (Gentile, 2015). The extension of the operation zone, defined by the German High Commanders separately for each front line, covered an area of approximately 250km behind the front (Gentile, 2015). It was further divided into a combat zone of around 40km behind the front, where German troops fought against the Allied forces, and the rearguard, where the reserve divisions, the logistic services for troop supplies and the medical units were located (Gentile, 2015).

In the occupied territory, the military power was assigned to a Plenipotentiary General, who was responsible for administrative duties and for managing the war economy and the civil manpower to ensure "the most unified exploitation of Italy for the war conduct" (Collotti, 1963b, p.120 and 224). The German uniformed police (Ordnungpolizei, OrPo) was in charge of dealing with partisan attacks and manpower strikes, and maintaining the discipline of German troops (Collotti, 1963b, Gentile, 2015). By contrast, in the operation zones (the area closer to the frontline under military administration), Kesselring had the supreme military power on all the units, and the division commanders were solely in charge of the warfare, partisan fighting and maintaining German troops' discipline (Gentile, 2012, p.100). Specifically, each commander was responsible for supervising an area with a radius of about 30-kilometer around the division headquarter (Collotti, 1963b, p.100; Gentile, 2012, p.76; Klinkhammer, 2016, p.324).

When German troops had to fall back to a new defensive line, divisions had to be redeployed, their headquarters were moved, and commanders became responsible for supervising and policing a new 30-kilometer-radius area. Formally, their responsibility over the new area started on the day of deployment. Actual enforcement capacity, however, only materialized with a lag. The first-order problem, in fact, was to organize combat units effectively in preparation for the arrival of the Allied vanguards (what we define as front activation). It took a few days to deploy all units and only after military police units and command lines were wholly established and became fully operational. This process of adjustment to the new military situation typically started a few days before front activation and was not complete until a few days after, when the front line stabilized. In other words, there was a delay between deployment of the troops, activation of the front and the restoration of effective command lines and policing at the new front line. Oral testimonies confirm that this situation lasted a few days, and created a "no-man's land" within the new combat zones in which soldiers had a limited accountability and committed severe crimes against the civilian population (Gentile, 2012, Klinkhammer, 2006). As policing services were restored, German soldiers surprised in flagrant "unjustified violence against the civil population" could be executed without trial (Gentile, 2012). Kesselring himself was strongly motivated to severely punish these behaviors as they could "create distrust in the German Army and help the enemies propaganda" (Collotti, 1963a).

3 Data

We collected and digitized several types of historical and administrative data from primary and secondary sources. We uniquely matched the resulting datasets using municipality and province names. In this section, we describe the data we collected and present key summary statistics. Additional details on the data collection process and on the data sources can be found in Appendix B.

3.1 Axis Civilian Killings

We collected data on the Axis civilian killings from the *Atlante delle Stragi Naziste e Fasciste in Italia* (Atlas of the Nazi and Fascist Massacres in Italy).[7] The database lists and analyses "all the massacres and the individual murders of civilians and resistance fighters killed in Italy after September 8, 1943 both by German soldiers and soldiers of the Italian Social Republic outside of the armed fights". Thus, this source collects information on targeted civilian killings, while it excludes collateral killings, those that were committed unintentionally as a side effect of the fighting. The Atlas was commissioned by the German Foreign Min-

[7] We access this database, available at http://www.straginazifasciste.it, in November 2020.

istry in collaboration with the Italian government through the creation of a "German-Italian Fund for the future" to enhance the history and the memory of the relationships between the two countries during WWII.

The historical inquiry to determine the civilian killings was conducted locally by more than ninety researchers, using three main common sources: the database of violent crimes perpetrated against civilians during the German occupation of Italy, established by the Joint Historical Italian-German Commission and based on the police reports stored in the Archives of the Historical Office of Army General Staff and the Historical Archives of the Carabinieri of Rome; the General Repository of war crime reports collected from 1945 by the Army Prosecutor's office in Rome (illegally dismissed in 1960) located by the Parliamentary Commission of Inquiry while investigating on the reasons for the concealment of some files about Nazi-fascist crimes (14th Parliamentary term); and the rulings and files of the judiciary proceedings debated at the Military courts during the last trial season (from 1994 until now). Importantly for us, the project represents a systematic endeavour to collect the universe of episodes of civilian victimization. We discuss potential selection into sample more in detail in Section 4.3.

For each killing episode, the Atlas reports its location and date, the number of victims, their gender, age and fighting status (whether civilians or partisans), the killing mode, whether the killings were associated to other forms of violence (mainly robberies, tortures and rapes), and whether the perpetrators were Nazi, Fascists or both acting together. When known, also the identity of the victims is reported. Finally, 24 episodes for which the killing date is unknown or for which there are disagreements among the sources are excluded from the database and therefore from our analysis.

Between June 8, 1943 and May 2, 1945, 24,988 Italian civilians were killed in 5,298 different episodes (defined as municipality-day pairs). Out of 7,341 Italian municipalities, 2,200 (30 percent) experienced at least one killing episode during this time period. Killing episodes were concentrated in the central and northern part of the country, where fighting between German and Allied troops was more intense and the occupation prolonged (Figure 1, Panel A). By contrast, Sicily and Southern Italy registered only a few episodes.[8] While each episode counted on average 4.7 victims, 47 percent episodes registered a single killing (Figure 1, Panel B). The most violent massacre happened in Marzabotto near Bologna where on September 29, 1944 1,012 civilians were killed. Other bloody episodes included Sant'Anna di Stazzema near Lucca on August 8, 1944 and the "Fosse Ardeatine" massacre, which happened in Rome on March 24, 1944, when respectively 391 and 335 civilians were murdered. We report summary statistics for the main outcomes observed at the municipal-day level in Panel A of Table 1. The Table shows a roughly a

[8]In the island Sardinia there was no fighting after the invasion of Sicily and no recorded episodes.

0.1% probability of observing a collective civilian killing episode in our sample. Single killings occur with a similar probability.

3.2 Military Data on the Italian Campaign

3.2.1 Location of the Front Lines and combat zone

We geo-localized each front line, those defense lines on which the German and the Allied troops fought from the invasion of Sicily in July 9, 1945 to the end of the war on May 2, 1945. To establish their exact locations, we rely on reconstructed maps collected by the secondary literature (Blumenson, 1993; Short and Taylor, 2006). The military historians' reconstruction of these lines is facilitated by their tendency to follow natural features such as rivers and mountain ridges and by the significant survival of remains of the fortifications. We rely on the same body of work to establish with a high degree of precision the exact timing of the activation of each front-line. This generally coincides with the day of the inception of fighting along a new frontline and follows the retreat of German troops to a new defensive line by a few days. Overall, German and Allied troops confronted over 32 major defense lines in Italy. The first defense line in Western Sicily was active between July 11 and 15, 1943, right after the invasion. The last defense line, the Po Line, in North-East Italy was active from April 23 to May 2, 1945 when Nazi Germany surrendered (Figure 2). On average, each front line lasted 18 days. The two longest lines were the Gustav Line, that, despite some adjustments, lasted 164 days from November 3, 1943 to May 14, 1944; and the Gothic Line and the related lines over the Appennine Mountains that lasted 212 days, from August 30, 1944 to April 9, 1945. We do not presume to be able to collect the universe of the front lines.

Smaller adjustments to the fronts will not be captured in our data. However, we are confident to be able to locate all the major front lines that were active at any point of the campaign across the Italian peninsula. We use these cross-section, in combination with information of the date of their activation and collapse, to trace the movement of the combat zone throughout the campaign. We also use these front line to define the extent of the combat area on the Axis side for each front. As this area was not formally defined and changed depending on the front, we follow the secondary literature and use a 40 km distance cut-off that approximately defines the areas where the fighting took place (Ronchetti and Ferrara, 2014; Klinkhammer, 2016). This was the area where bombing, shelling and Allied offensive would typically take place. As this cut-off is an approximation, in the empirical part of the paper we vary it to check the robustness of our results to different definitions.

3.2.2 Operation Zones and location of the German Divisions

We retrieved the extension of the operation zones (the area of military operations under the sole responsibility of the army) at different moments in time during the Italian Campaign from the maps prepared by the Wehrmacht High Command (OKM), stored at the German National Archives (Bundes Archiv). These were produced with a frequency spanning between 1 and 5 days, and thus reflected the situation on the ground quite precisely. We match a military map showing the tactical situation on the ground, on the closest possible date to front line activation, to each of our 32 digitized front lines. In these maps, the High Command of the Wehrmacht (OKM) delineated the operation zone, which we digitize. While its exact size was front-specific, on average the operation and combat zones extended for roughly 100km behind the front.

We used these same maps to geolocalize the position of the headquarters of German army groups, armies and divisions. Individual regiments and battalions are also reported and digitized when they were located at a significant distance from their division headquarter. We use these data to trace German troops movements across Italy over all our fronts. These maps indicate that 47 Axis divisions operated during the Italian Campaign for a total of around 450,000 soldiers. 57 percent of divisions were infantry divisions, 34 percent Panzer (tank), and the remaining ones paratroopers.[9] Only two divisions in our sample were Italian. We use data on the location of Axis troops to identify the identity of the unit likely responsible for an episode of civilian victimization through nearest matching association, and to approximate the enforcement capacity of the army on their soldiers based on distance from division headquarters.

3.2.3 Italian Partisan Bands and Attacks

We geolocalized the position of the Italian partisan bands in September 1943 and collected data on the Partisan attacks against German troops during the Italian Campaign from the *Historical Atlas of Italian Resistance* (Baldissara, 2000). The Atlas has gathered documentation stored at more than 60 local institutes for the history of the Resistence between 1943 and 1945 (Istituti Territoriali per la Storia della Resistenza), under the supervision of the Italian Ministry of Culture. Overall, 184 partisan bands were active during the Italian Campaign. Most of them were concentrated in the central part of Italy and in the North-Eastern and Western part of the country, in the last phase of war.

[9]The difference between an infantry and a Panzer division is that the former consisted of mainly foot travelling infantry, with only heavy weapons being carried on carts and half-tracks; while the latter was equipped with tanks including panzer 4's, stug tank destroyers, Panther tanks, Tiger tanks, and Panzer threes (Short and Taylor, 2006).

3.2.4 Allied Bombing

We retrieved data on Allied bombing in Italy from the Theater History of Operations Reports (T.H.O.R.; Lt Col Robertson et al., 2013), compiled by the US Air Force Research Institute.[10] The database reports location, date, type of target and tons of explosives for each Allied air strikes during WWII. Between June 11, 1940 and the end of conflict, Italy was targeted by 22,325 air attacks that hit 877 different municipalities, for a total of 402,045 tons of explosives dropped. 21 percent of the attacks and 18 percent of the explosives were concentrated in the Italian Campaign.[11] In this phase of the war, the attacks hit the areas around the fronts more heavily. We use data on Allied bombing to approximate the intensity of Allied attacks across the front lines over the entire duration of the campaign.

3.3 Census Data

We digitized the 1936 Population Census, that provides data for the 7,341 Italian municipalities on population, total employment, employment by sector (agriculture, industry, and services), inactive population, municipality borders and surface. The resident population amounted to 43,059,372 people. Out of 18,368,193 employed individuals, 48 percent worked in agriculture, 29 percent in industry and 23 percent in services.

We also use the administrative documentation attached to the census to create a novel shapefile showing municipalities boundaries in 1936. These municipalities constitute our basic unit of analysis, and we aggregate information on killings, bombings, movements of the front lines and census data at this level of analysis.

4 Identification Strategy

We leverage plausibly exogenous movements of the front line, that shock economic incentives for misbehavior locally and over time. For each day from June 8, 1943 to May 2, 1945, we construct t artificial panels across all Italian municipalities m, spanning between 5 days (k) before and after t, which we then stack together. We restrict the baseline sample to those artificial panels in which the front line moved, which leaves us with 31 front-experiments, each composed of 5 days k before and after the movement of the front line. Effectively, in the baseline specification, we employ a stacked panel made of 31 artificial

[10] We access this database,available at www.afri.au.af.mil/thor, in January 2017.

[11] More specifically, in the first phase of the war Allied bombing was strategic and targeted the most populated and industrialized areas on the country. After the Armistice of Cassibile, it became tactical, with the goal of offering support to the Allied ground operations against the German troops. For more details, see Bianchi and Giorcelli (2022).

panels, each of 11 days, and each built around a day of front line activation.[12] We call each artificial panel an experiment. Across all episodes of front line activation, we compare municipalities that fell within the combat zone at time t but were outside it at time $t-1$ (treatment group) with municipalities in Axis territory, that either remained outside the combat zone at both times t and $t-1$, or that were inside it both at t and $t-1$. We define these municipalities as comparison group.

Formally, we estimate the following stacked panel difference-in-differences model:

$$\text{outcome}_{m,t,k} = \sum_{k=-5}^{5} \beta_k \text{Day}_{t,k} \cdot \text{Treatment}_{m,t} + \sum_{k=-5}^{5} \alpha_k \text{Day}_{t,k} + \Gamma + \Theta + \epsilon_{m,t,k} \quad (1)$$

$\text{outcome}_{m,t,k}$ is one of the key metrics of violence against civilians. More specifically, we use an indicator for collective civilian killings (episodes that involved two or more civilian victims), for single civilian killings (episodes that involved only one civilian victim), for collective civilian killings unrelated to partisan resistance, and collective killings where vulnerable civilians were also victimized (episodes that involved at least one woman, child or elderly person). Following Kalyvas (2006) and consistent with Collotti (1963b) and Gentile (2015), we argue that single killings may be part of routine policing duties carried out across the operation zone by the Wehrmacht, in line with the directives of strategic use of selective violence from the High German command (Kesselring, 1954). By contrast, collective killings episodes, episodes unrelated to partisan activity or that involved vulnerable individuals indicate indiscriminate violence against civilians, the outcomes of interest in our analysis. This is a type of violence that goes beyond the actual strategic needs of the occupying army in its severity and is thus disproportionate.[13] All variables are observed at the municipality (m), experiment (t, the day of activation of the new front line) and day-relative-to-experiment k level. $\text{Day}_{t,k}$ is a set of fixed effects for days k relative to front activation in day t. $\text{Treatment}_{m,t}$ equals one for municipalities that were not in the combat zone at time $t-1$ and fell into the combat zone at time t. We define combat zone as the 40km behind the front, based on its average extension reported on the Wehrmacht military maps and consistent with the secondary literature (Gentile, 2015), as explained in Section 3.2.2.[14] Roughly 5% of municipalities in our estimating

[12] We limit the number of days per experiment to 5 days k before and after the front movement as a longer number of days would imply cutting at least a front movement, the last of which occurred 5 days before the end of the war. We limit the sample to the 31 experiments where there is variation in the treatment for computational purposes. The results do not change if we include all 700 artificial panels.

[13] This distinction aims at capturing the difference between proportionate use of violence to achieve war-related goals, for instance keeping the combat area under control, and violent episode that are disproportionate to the objective. Of course, this distinction is an approximation and we acknowledge that there maybe be spillovers between the two categories. This distinction however is the one proposed by Kalyvas (2006), who relates the notion of indiscriminate violence to the willingness to ascertain individual responsibilities of civilians in occupied territory, as opposed to summarily victimizing multiple people.

[14] Specifically, the extension of the combat zones ranged from a minimum of 30 km and a maximum of 50 km behind the front line. Our main specification is robust to the use of 30 and 50 km as alternative cut-offs for the combat zone.

sample were ever treated based on this definition over the course of the Italian Campaign (Panel B, Table 1). Γ is a full set of fixed effects that allows us to estimate our average treatment effect within municipality (γ_m), front-experiment (γ_t) and day relative to front-activation (γ_k). Θ is a set of fixed effects designed to capture differential time trends. We account for municipality-experiment ($\theta_{m,t}$) and experiment-day-side of the front line ($\theta_{s,t,k}$) trends. Importantly, γ_k and $\theta_{s,t,k}$ allows us to estimate a consistent average treatment effect across different front movements with potentially heterogeneous local treatment effects and within the Axis-controlled side of the front line, respectively.

β_k estimates the causal effect of front activation on civilian killings under the assumption that, conditional on fixed effects, the exact location and time of activation itself is orthogonal to intention to kill civilians.[15] In the rest of this section, we provide empirical evidence in support of our identification assumption. Figure 3 provides a graphical intuition of the estimation we run for each episode of front activation.

4.1 Were Treated and Comparison Municipalities on the Same Trend before Front Activation?

We start our analysis by checking if treated and comparison municipalities were on the same trend of violence during the 5 days prior to front activation. Anticipation effects may have occurred, for instance, if the activation of a new defensive front line was preceded by other events that also affected the likelihood to kill, such as partisan attacks or population displacements. While this is a possibility, the timing of front activation was strongly correlated with the fighting outcomes against the Allies and was only partially dependent on German commanders decisions (Kesselring, 1954; Kurowski, 2003).

To formally test for differential time trends in killing outcomes between treated and comparison municipalities, we first estimate a constant linear time trend model in which we interact the linear panel-day trend with our Treatment variable. The estimated coefficients are small in magnitude and not statistically significant (Table 2). Second, we replace the linear time trend with a full set of indicators for each day before front activation. The estimated coefficients on the indicator terms are never statistically different from zero and we always fail to reject the null hypothesis that the interaction terms are jointly equal to zero (Figure A.1, Panels A-D). These results indicate that treated and comparison municipalities were on the same civilian killing trend in the five days before front activation.

[15] More specifically, β_k estimates an average treatment effect across all front activation episodes, obtained by averaging the local treatment effects estimated at each front activation.

4.2 Was the Position of the Fronts Orthogonal to Intention to Kill?

A second potential threat to our identification may arise if treated municipalities systematically differed from comparison ones before front activation, due to characteristics that simultaneously affected the location of the front and violence against civilians. For instance, the Wehrmacht may have decided to organize defensive lines in area where they intended to kill systematically more or less civilians relative to the control group. Alternatively, they may have chosen the location of defensive lines irrespective of their intention to kill, but based on underlying economic, social and geographical characteristics that may have simultaneously determined both front location and patterns of violence. To alleviate these concerns, we assert three points.

First, it is worth noting that equation 1 includes municipality and municipality-experiment fixed effects that control for unobservable underlying differences between municipalities and for municipality-experiment differential trends. This fact, however is not sufficient to rule out the possibility that time-varying factors, such as the intensity of the resistance guerrilla activity or the changing perceived strategic importance of a location in relation to tactical positioning may still influence the selection of the location of the front lines, which would make it potentially endogenous to intention to kill.

Thus, as a second point, we can compare treated and comparison municipalities in the 20 days before front activation across our different indicators of civilian victimization and available proxies for war activities. If the patterns of indiscriminate violence looked very different between treatment and comparison groups, we may worry that observables and unobservables in the combat zone may explain both the location of the front and the observed patterns of violence. The balancing tests, reported in Appendix Table A.1, show that, on average, treated municipalities did not look different in terms of perpetrated violence against civilians or war-related activity (such as allied bombing and reported partisan activity) during the twenty days before front activation.[16]

Third, the historical evidence indicates that front lines were built in easily defensible sites, that normally coincided with rivers and mountain chains (Short and Taylor, 2006). If anything, remoteness should have made it harder for the German soldiers to find and kill civilians in these areas. We can corroborate this anecdotal evidence by comparing ever treated and never treated municipalities in terms of their cross-sectional geographical and pre-war, socio-economic characteristics (Table A.2). The table confirms that German defensive lines were indeed selected based on geographical characteristics of the terrain and

[16]The only partial exception is vulnerable mass killings (column 4), which shows lower concentration in areas that will be treated 5 and 20 days before activation. This result however does not seem systematic and to be driven by a movement in the comparison group rather than by a drop in treatment

thus often in remote locations. Panel A, shows how, on average, treated municipalities contained a larger number of watercourses (column 1), were more elevated (column 2), rugged (column 4) and relatively close to the coastline, as it was tactically sound to fight defensive battles in the narrowest parts of the peninsula (column 5). Panel B also shows that these more remote locations were, logically, on average sparsely populated (column 1), far from provincial capitals (column 2), with little industrialization (column 3), and with very limited exposure to known partisan bands (columns 4 and 5). All together, these results suggest that, if anything, municipalities in the combat zone were negatively selected in terms of characteristics that could have increased the likelihood of indiscriminate violence, in areas with a geography that facilitated defense, in line with the secondary literature.

4.3 Were Killing Episodes More Likely to Be Reported Close to the Front Line?

A third potential threat to our identification may arise from differential reporting of killing episodes in treated municipalities relative to comparison ones. Such situation may lead to a problem of selection into sample. For instance, if the records on killing episodes came from the German army, one may worry that better data was collected near the front due to larger personnel availability and strategic needs. However, the Atlas of the Nazi and Fascist Massacres in Italy, our main data source, relies either on coeval reports by the Italian police, which had no jurisdiction at the front as Italy was an occupied territory, or on inquires of Italian authorities after the end of the war, as explained in Section 3.1. These features of the data collection would imply more difficulties in recording killing episodes nearby the front and would result, if anything, in an under-reporting of killing episodes in the combat zone, especially those that took place in the chaotic days around front activation.

5 The Effect of Front activation on Civilian Killings

A change in the economic incentives for misbehavior, proxied by the activation of a new front line, determined a sharp increase in indiscriminate violence against civilians. The likelihood of observing a collective killing episode increased by 0.8 percentage points in treated municipalities relative to the comparison ones in the day of front activation (Table 3, column 1). The estimated coefficient implies that the probability of collective killings raised by 10 folds, from an average of 0.1% in the day before the front activation to almost 1% on the day of the front activation. By contrast, single killing episodes did not differentially change between treated and comparison municipalities upon front activation (Table 3, column 2).

These results suggest that the front activation determined an increase in indiscriminate violence against

civilians, but did not affect isolated episodes of violence more likely reflecting regular policing duties carried out by the Wehrmacht across the operation zone in line with the High Command's directives (Kalyvas, 2006; Kesselring, 1954). However, the distinction between collective and individual violence may not fully capture the nature of all episodes of civilian victimization (e.g. the increase in collective killings may reflect a surge in violence proportional to new threats faced by the soldiers in the combat zone). For instance, such episodes may have been, a still illegal, but perhaps proportionate retaliation against civilians in response to partisan attacks, whose intensity could be correlated to the front activation itself. To rule out this possibility, we restrict the outcome variable to collective killing episodes not related to partisan resistance. Specifically, we run a text analysis on the descriptions of each collective killing episode and we exclude those where a word related to "partigian*" (the way resistance fighters were called) is featured in the description.[17] In column 3, we find that collective killings not related to partisan activity increased by 0.3 percentage points in treated municipalities relative to the comparison ones in the day of front activation (Table 3, column 3). Importantly, the magnitude of the increase relative to the sample mean is similar to column 1. In the same vein, we can restrict collective killings to those episodes that involved vulnerable population (women, children and the elderly), thus more likely to capture indiscriminate violence unrelated to the actual safety and tactical objectives of the troops on the ground. This type of collective killings also differentially increased by 0.25 percentage points upon front activation between treated and comparison municipalities (Table 3, column 4), which confirms the existence of a positive effect of front movements on indiscriminate violence. For all columns we report the β_{k-2} coefficients that confirm lack of pre-trends throughout.

To further analyze the effects of the front activation on civilian victimization, we estimate the β coefficient separately for each day, from 5 days before to 5 days after the event in an event-study. The difference in collective civilian killings between treated and comparison municipalities persisted up to three days after the front activation, becoming statistically insignificant in the following days (Figure 4, Panel A). Conversely, the single killing indicator shows a flat pattern across this 10-day period (Figure 4, Panel B). Finally, collective civilian killings unrelated to partisan activity and against vulnerable population show a dynamic similar to collective civilian killings (Figure 4, Panels C and D).

These dynamic effects are consistent with the idea that indiscriminate violence was affected only temporarily by a shock to economic incentives for misbehaviour in the combat zone, likely related to the temporary chaos triggered by the sudden movement of the front lines. The historical evidence, in fact,

[17] We can expand the text analysis to incorporate more words referring to guerrilla fighters, such as "resistenza" and "patriot*". The results do not change.

suggests that, when a new front line was established, there were two to three days of "no-man's land" where severe crimes against civilians were committed (Gentile, 2012; Aleksievič, 2018). This scenario was common also during the occupation of new territories on other fronts in the context of WWII. For instance, while describing the Soviet campaign against Germany, Solzhenitsyn (1977) explains: "When we occupied a new territory, in the first three days we looted and killed. [...] However, after three days, one could be exposed to court-martial punishments for doing this".

5.1 Robustness Checks

Our results are robust to a variety of modifications to the sample definition and the baseline specification.

Sample. We first limit our sample to the operation zone, which only includes municipalities directly exposed to the war and under the exclusive control of the Wehrmacht, obtaining estimates close in magnitude to our baseline ones (Table A.4). Second, we restrict the sample to municipalities located within 200 and 100 km from the front line to offer an even more stringent comparison between treated and comparison units. While the number of observations drops from roughly 2.5 million in the baseline sample to roughly 150,000, our results are substantially unchanged (Tables A.5 and A.6). Third, we use as comparison group only municipalities that were within 40km from the front line both at time t and at time $t-1$, effectively leveraging episodes of pivoting of the front lines. If our findings were driven by front proximity and not by its activation, we should not observe any difference in civilian killings between treated municipalities and those in the combat zone both before and after the front activation. Reassuringly, the estimated coefficients are very similar to the baseline ones, confirming that the sudden movement of the front line rather than proximity to it changed the behaviour of German soldiers (Table A.11). Forth, some municipalities may have been exposed to more than one front shift in either the 5 days prior or after $k = 0$, especially if they were located close to particularly unstable defense lines. Our results are robust to excluding from the sample these municipalities that were in fact treated multiple times within the same front-experiment (Table A.11). Finally, we show that, thanks the inclusion of side-front-day specific trends in the main specification, we can exclude the Allied-controlled part of the country for each front-experiment without changing the point estimates (Table A.3).

Concentration of German Troops. An alternative interpretation of our baseline results may be that the difference in collective killing is driven by a *higher* concentration of German soldiers in treated municipalities relative to the comparison ones due to front proximity, rather than by the *same* concentration of soldiers responding to a change in behavioral incentives. To rule out this possibility, we compare treated

and comparison municipalities in Axis territory that were within 100, 50 and 25 km from German division headquarters and therefore exposed to a similar concentration of German troops. Despite a demanding drop of observations from 2.5 million to roughly 136,000 with the more stringent specification, these estimates are fully consistent with our baseline ones. Based on this finding, we conclude that the estimated effects are not driven by a stronger concentration of German soldiers (Tables A.8, A.9 and A.10).

Definition of Treatment. In equation 1 we define treated municipalities as those within 40km of the front line, the average extension of the combat zone. As the combat zone could range between 30 and 50km, we test the robustness of our results to using these two distances as alternative cut-offs for the definition of treatment. The estimates are very similar to our baseline ones, thus suggesting that the results do not depend on the selection of a particular distance cut-off to define the extension of the combat zone (Tables A.12 and A.13).

Estimation. We re-estimate the effect of front activation on civilian victimization using a simple two-way fixed effect model. The results are larger in magnitude than the estimates on the stacked panel and indicate a small differential increase also in single civilian killings upon front activation (Table A.14). Since in a standard two-way fixed effects panel specification we cannot systematically account for side-front specific trends, these results should be interpreted as an upper bound. Finally, in Table A.15, we re-estimate the main table by applying municipality-area weights to make sure the effects are not driven by mechanical differences in the size of municipalities at the front.

6 Mechanisms

Our main results indicate that the activation of a new front line led to more violence against civilians and, in particular, indiscriminate one. In this section, we examine the underlying mechanisms of these effects. The main focus of this section is to test between the returns and cost of victimization hypothesis, which is a major contribution of the paper. In the following sections we test our hypotheses using our main outcome variable, our indicator for collective civilian killings taking place (column 1 of Table 3)

6.1 Sorting

A first potential mechanism relates to the sorting of divisions. If upon the activation of a new defense line, the German command systematically dispatched the more aggressive divisions at the front, as they were more capable to fight, this could also have indirectly affected violence against civilians. In this scenario,

increased civilian victimization would be due to a higher concentration of 'bad people' at the front, rather than 'regular people' turning bad as the behavioral incentives changed.

We test the sorting mechanism by offering two pieces of evidence. First, in Figure A.2, we report results from a multilogit model that estimates the probability for each of the 47 German divisions employed in the Italian Campaign to be located at the front. None of the estimated coefficient is significantly different from zero, which suggests that, due strategic constraints, all units were cyclically deployed in the combat zone, as explained by the historical literature (Kesselring, 1954, Collotti, 1963a).

Second, we estimate equation 1 controlling for front-specific, nearest division or second nearest division trends. By introducing division-specific trends that are front specific, we effectively estimate the treatment effect for municipalities exposed to the same army unit(s). The fact that the estimates remain virtually unchanged suggests that no military unit-specific trend is driving the results (Table 4, columns 2 and 3). In other words, we measure a differential increase in violence in treated municipalities relative to the comparison ones, even if we account for the general trend of all municipalities exposed to the same German combat unit, or with both the nearest and second nearest division in common.

Take together, these results indicate that the increased violence is not driven by different soldiers sorting into treatment and then misbehaving, but rather by the same type of soldiers responding to the behavioral incentives elicited by the war context.

6.2 Increased Insecurity

In proximity of the front, troops may be exposed to increased stress due to war-related insecurity, which can in turn affect the likelihood to commit collective murder. For instance, in a paper related to ours, Costalli et al. (2020) use evidence from the break of the Gustav and the Gothic lines and document an increased civilian victimization due to growing uncertainty during the German retreat. In such a setting, soldiers stand to gain from misbehavior as, by adopting a type of "shock-and-awe" strategy to prevent potential threats, they can better preserve supply lines. While vulnerability of German soldiers clearly played a role in Italian civilian killings, it is worth noting that we focus on episodes of front activation on pre-set defense lines rather than on the collapses of previously defended positions, where the overall security of the Germans had arguably increased relative to the previous days. It is also important to notice that we compare municipalities that were under the Axis control before and after treatment, where the German authority was incumbent. Had the German command wanted to implement a systematic "shock-and-awe" campaign in preparation of the fall back, it would have been rational to start in the days prior

to the actual activation of the new front, but we do not find evidence of anticipation effects (Figure A.1, Panels A-D). However, given the nature of our setting, we cannot rule out an actual or perceived increase in insecurity upon front activation.

To explore more the role of soldier insecurity on civilian victimization, we focus on two major sources of variation in stress levels: the intensity of Allied offensives, which we proxy with municipality-day data on Allied bombings, and intensity of partisan resistance, which we capture through proximity to Italian Partisan bands' headquarters at Armistice. We incorporate these sources of heterogeneity in our estimation framework by interacting binary indicators that proxy different levels of war-related, front-specific, stress with treatment dummies and all co-variates, effectively operating a series of sample splits. For all these splits, we include military units-specific trends throughout to account for sorting across heterogeneous units.[18]

We test if more civilian killings happened in municipalities that experienced at least a bombing episode within five days of front activation. Rather than observing stronger effects in bombed municipalities, we find that the increased collective killings were largely driven by areas not exposed to air attacks and likely more secure, even if the difference between the estimated coefficients is not significantly different from zero (Table 4, column 4). We next check if more killings happened in proximity of partisan bands' headquarters. Partisan presence may have forced German to fight against formal and informal opponents, lowering security and increasing stress. However, we do not observe a significant differences in killing episodes between municipalities located within or outside 15 km of partisan headquarters. In fact, the two coefficients are statistically indistinguishable (Table 4, column 5).

These two findings indicate that our estimated effect is unlikely driven by differential increases in returns to misbehavior upon front activation, as a consequence of the increased insecurity of the German soldiers. If anything, these heterogeneous analyses suggest that civilian collective victimization was stronger in more secure areas.

6.3 Decreased Accountability

Previous works have emphasized the importance of accountability in explaining soldier misbehavior (Salehyan et al., 2014; Butler et al., 2007). This line of research frames civilian victimization in a war context into a principal-agent problem. More specifically, the principal (high-command officers) would have

[18]Instead of including both the interacted and un-interacted terms, in order to simplify interpretation we include in all regressions and report coefficients for treatment subgroups by binary heterogeneity variables. This approach is equivalent to a sample split by means of a more conventional treatment interaction and allows to read the coefficient's magnitude by heterogeneity subgroup more directly, in other words without having to subtract the interaction's coefficient from the main effect. Panel B of Table 1 reports summary statistics for all binary variables employed in the sample splits.

strong preferences against excessive use of violence in order to facilitate cooperation with local population and exploitation of resources. However, there could be asymmetric information between the principal and the agent (soldiers at the front) and the principal may lack enforcement capacity.[19] In this scenario, cost from misbehavior might drop as accountability is negatively shocked, while strong leadership may improve soldiers' attitudes, as shown by Abrahms and Potter (2015).

In our setting, policing duties in the operation zone fell under the responsibility of divisions' commanders who acted, in coordination with Kesserling's high command, as the principal. It was in their interest to avoid "unjustified violence against the civil population" since, as Kesselring admitted, it could "create distrust in the German Army and help the enemies propaganda", jeopardizing German operations and supplies (Kesselring, 1954, Collotti, 1963a). A reasonable use of violence against civilian was also mandated by a series of international agreements, including the Geneva convention that, at least formally, constrained the behavior of the German Army (Stanton, 2016). However, enforcement capacity decreased with distance from Division headquarters, whose position we observe across all episodes of front activation. If decreased accountability was the driving mechanism behind our results, we expect civilian victimization to be concentrated away from command centers.[20] As each division was responsible for securing 30km-wide stripes around its headquarter (Collotti, 1963b, Gentile, 2012, Klinkhammer, 2016), we interact our treatment a binary indicator that equals one if a division headquarters was present within 30 km of a municipality's centroid to test this hypothesis. Consistently with an accountability mechanism, we observe that the increased civilian victimization is largely concentrated in municipalities away from divisions headquarters (Table 4, column 6).

We provide two additional pieces of evidence that are consistent with the decreased accountability mechanism. First, the fact that we observe a differential increase in collective killings involving vulnerable individuals in itself supports an explanation of the effect linked to a drop in accountability at activation (Table 3, column 4). Children, women and elderly men were unlikely perceived by German soldiers as active threats. Second, as shown in Figure 4, our estimated effects decrease and ultimately disappear three days after front activation. The historical evidence indicates that policing and command lines were restored with a lag relative to front activation, which created a two to three days of "no-man's land" (Kurowski, 2003, Gentile, 2012), fully consistent with the pattern of our results. By contrast, Allied

[19] Alternatively, the principal's willingness to prosecute agents at particular junctures, such as front movements, may have dropped if they saw indiscriminate violence as a strategic advantage when facing particularly challenging tactical situations. This would also lead to a drop in accountability.

[20] The flip side of this argument would suggest how indiscriminate violence should be concentrated close to division headquarters, where the enforcement capacity of the principal was stronger, if he approved the use of strategic indiscriminate violence at front activation.

offenses, that generally created more insecurity for the Germans, tended to become increasingly violent after front activation and peaked close to front collapse. Thus, if insecurity was the main mechanism behind the effect, we should expect stable or increasing dynamic effects.

7 Heterogeneity Analysis

As discussed in the previous sections, at activation and in proximity of newly established front lines, the Germans' behavior toward Italian civilians changed significantly compared to other similar areas of the country under their control. Not all soldiers, however, misbehaved under such circumstances, while the same army unit could show very distinct behavioral patterns in different parts of the country and period of the campaign. As a consequence, civilian collective killings remained rare. The sample's average, in fact, suggests a frequency below one in one-thousands which increases about ten-fold in treated municipalities to just below one in one-hundred. While these are not negligible probabilities, they beg the question of what underlying characteristics facilitated the adoption of particularly violent practices by German soldiers. In this section, we explore different dimensions of treatment heterogeneity. We start by asking the question of how division characteristics influenced the soldiers behavior at activation. Second, we consider the pre-war economic characteristics of the municipalities. Finally, we examine heterogeneity along macro war trends, so to understand whether major events related to the general progression of the war had an influence on the behavior of soldiers at the micro-level. Thinking about heterogeneity in these terms will improve our understanding of the dynamics at play, while also bridging the gap with the related literature, where contributions have often focused on some of these factors.

7.1 Division Characteristics

Divisions' identity and characteristics are often quoted as major drivers of civilian victimization in the context of WWII Italy (Gentile, 2015).[21] As discussed in Section 6, we do not find evidence of systematic sorting into treatment. The fact that the identity of the division nearest a given municipality was not an outcome of the shifting of the front allows us to study treatment heterogeneity by division characteristics.[22]

The first dimension that the historical literature mentions as a major determinant of violence is soldier

[21] We collect information on the characteristics and history of German divisions through various compendia, but mainly at https://www.lexikon-der-wehrmacht.de/, last accessed on 31/5/2022.

[22] We keep nearest and second-nearest division trends throughout our division heterogeneity analysis so to formally account for selective sorting.

affiliation with the Schutzstaffel (SS, Gentile, 2015). The SS were originally paramilitary units under the direct control of the Nazi party. Towards the end of WWII their number increased, and they began to represent a large share of active combat units. Although formally under the command of the Wehrmacht, these troops were characterized by ideological fanaticism and indoctrination and operated with more independently compared to other army units. These distinctive elements are often quoted as a major driver of civilian victimization (Ahmadov and Hughes, 2017). A few SS units were active in Italy throughout the campaign, most notably the I SS Division Adolph Hitler and the 16th SS Panzergrenedier Division. The latter was famously responsible for some of the most brutal collective killings on record, such as the massacre of Sant'Anna di Stazzema, where more than 500 civilians were killed. We test whether the effect of fronts activation on civilian killings was stronger in municipalities whose nearest division belonged to the SS.[23] Perhaps surprisingly, the results suggest that SS divisions did not behave differentially worse in treated municipalities relative to the comparison ones, while all the effect is concentrated near to non-SS units (Table 5, column 1). The difference between the two coefficients is statistically significant with a p-value of 0.000. It is worth noting that this finding does not imply that the SS units killed fewer civilians than other units. However, their killing inclination did not differentially change upon front activation.

A second driver of violence against civilians that emerges in the literature is heterogeneity in the level of training of units (Oppenheim and Weintraub, 2017). Well-trained soldiers should be better able to cope with war-related stress factors and to operate professionally, even in the absence of a stable command line, in a de-centralized manner. We test this hypothesis by interacting the treatment dummy with a binary indicator that equals one if a municipality was located near a unit that was assembled and trained in Germany. German-drafted units received more complete training until relatively late in the war. They were also more complete in terms of personnel and generally ethnically and linguistically homogeneous. By contrast, divisions drafted outside of Germany were typically patched-up units made of heterogeneous sub-units from disbanded combat groups who had often suffered significant damage. They normally received little or no training as a combat unit, were ill-equipped, and often lacked a full chain of command (Nafziger, 2000). While civilian victimization appears stronger near patched up units, the estimates are not precise and we cannot reject the hypothesis of equality between the two coefficients (Table 5, column 2, with a p-value of 0.730), which suggests this dimension as relatively unimportant in facilitating the increase in indiscriminate violence.

An influential view on the determinants of German soldiers' misbehavior in the context of WWII

[23] To do so, we operate a sample split, similarly to the methodology employed in Section 6, and we interact the treatment indicator (and all other covariates) with a dummy that takes the value of one if the nearest division was an SS one.

argues that units deployed to the East against Soviet Union, where racial edges were felt more strongly and the German commands justified systematic violence against civilians more easily, committed more atrocities (Gentile, 2015). When deployed elsewhere, these units would have been more likely to victimize civilians because of experiences from their previous deployment. We test this hypothesis by interacting all covariates with a dummy variable that takes the value of one if a unit had been previously deployed on the Eastern Front. Contrary to this hypothesis, the results indicate that the effects of front activation on civilian killings were stronger close to units not deployed on the Eastern Front (Table 5, column 3). The difference between the coefficients estimated on the interaction of treatment variable and the East and non-East indicators is significant at 5% level.

Finally, we check if the combat experience of the units played a major role in determining how soldiers responded to behavioral shocks in a stressful situation (Oppenheim and Weintraub, 2017). The literature, in fact, does highlight combat experience as a major driver of soldiers behavior. More experienced soldiers should, *ceteris paribus*, be better able to cope with lack of a functioning command chain and with increased fighting stress (Mitchell, 2004). We test this hypothesis formally by splitting the sample between municipalities that were closest to a German division below the sample's mean of divisions' creation date, which is the year 1942. Tellingly, the estimates show how the effect was fully concentrated near divisions with less combat experience (Table 5, column 4). The estimated coefficients are very different in magnitude, and of opposite sign and their difference is significant at the 1% level. This suggests how a limited level of combat experience was a necessary pre-condition to trigger a violent reaction on the German side when the enforcement capacity of the principal decreased due to a front movement.

To sum up, the data suggest how German divisions that were relatively poorly trained and more inexperienced were more likely to respond to a reduction in accountability for their actions.

7.2 Economic Characteristics

A change in economic behavioral incentives linked to front activation could also interact with local differences in monetary incentives related to the characteristics of individual municipalities (Grosfeld et al., 2020). More concretely, during the Italian Campaign, the Wermacht had strong incentives to exploit the economic resources of the Italian peninsula in a systematic manner to support the German war effort. These strategic needs entailed coercing labor and keeping industrial productive capacities at a maximum and, at times, also relocating industrial machinery to the North when the front line moved too close to specific municipalities to continue production (Klinkhammer, 2016).

We proceed along this line of enquiry by applying the same methodology of the previous sections, and operate a series of sample splits by binary indicators that approximate differences in local economic incentives while keeping the full set of fixed effects and division-specific trends. We first interact our regressors with binary indicator that equals one if a municipality's centroid was located within 30 km of a provincial capital, where most of the industrial apparatus was generally located. The estimates suggest a stronger effect in the proximity of provincial capitals, which might indicate a tendency to commit indiscriminate violence in strategically important locations (Table 6, column 1). We further explore this possibility by operating a a sample split at the median share of industrial employment. Also in this case the estimates suggest a stronger effect in more industrialized areas (Table 6, column 2). In both cases, we can reject the null hypothesis of equality between the two coefficients at 5%.

We next test treatment heterogeneity by economic size. By splitting the sample at the median of total resident population in 1936, we find a much larger and statistically different effect in more populated municipalities (Table 6, column 3). This result suggests how, in a production function of violence, the supply of potential victims played a major role in determining the severity of the effect. Interestingly, this heterogeneity only relates to the absolute size of the population. If we split the sample at the median population density we see how the effect is not differentially higher in more densely inhabited locations (Table 6, column 4). In other words, the size of the population matters but having a more concentrated population did not enhance the severity of civilian victimization.

All together, the heterogeneity analysis along pre-war economic characteristics shows stronger effects in more populated and industrialized areas, which maybe consistent with a systematic attempt on the part of the German troops to exert a firmer control of strategic locations and speaks to those contributions that link violence to looting (Blattman and Miguel, 2010).

7.3 Macro War Characteristics

We next analyze how macro war-trends interacted with the estimated effect. The literature, in fact, highlights how the behavior of the German army varied depending on the period of the war and the tactical characteristics of different front lines. For instance, there is evidence that the general deterioration of the morale of German troops, as the desperate situation of the Third Reich was becoming apparent towards the end of the war, led to more defections and a general increase in the incidence of violations of the military law (Klinkhammer, 2016). In the Italian setting, Costalli et al. (2020) point out how decreasing security for German troops towards the end of the Italian Campaign led to more frequent civilian victim-

ization. Furthermore, the characteristics of a specific front may have significantly influenced the soldiers' behavior, for instance if it gave a stronger sense of security to the troops deployed there. If the observed average effect was fully concentrated on fronts with common characteristics, or during a specific period of the Italian campaign, we would conclude that macro-war characteristics were fundamental in driving an increase in indiscriminate violence, when the right combination of limited accountability, presence of specific military unit and location characteristics occurred. By contrast, if we observe similar effects irrespective of macro conditions, this would suggest a predominant role of micro-level factors in shaping the effect, whatever the macro conditions may be.

We first hypothesize that the activation of a front line at a more easily defensible position might lead soldiers to perceive themselves as safer, compared to more precarious front lines, and thus exercise more restraint when dealing with civilians. As a first step to test this hypothesis, we interact the treatment dummy with an indicator equal to one if a given front line lasted above or below the median duration of all 32 fronts in our sample of fronts, 18 days. Contrary to our hypothesis, there is no statistically significant difference between long and short fronts (Table 7, column 1). If anything, the effect of front movements on collective killings was stronger for longer fronts, arguably those that had been better fortified and defended by the Germans. As the average duration of a front line was the outcome of several factors and these may have not been related with the actual security on the ground at front activation, as a second step, we provide an alternative measure of front line "safety". In column 2, we replicate the exercise, this time splitting the sample between fronts above and below the median of the standard deviation of terrain ruggedness, calculated across all treated municipalities separately for each front line. The rationale behind this measure is that a high average standard deviation in terrain ruggedness would capture those front lines that benefited from pronounced mountain ridges towering over relatively flat plains, a setting that would facilitate the defenders. Also in this case, the two coefficients are statistically indistinguishable from each other. These two tests combined suggest that the level of insecurity across different front lines mattered little in determining the severity of violence perpetrated against the civilian population.

Second, we check whether different macro-conditions linked to the phase of the war had a mitigating or enhancing effect on civilian victimization. We start by testing whether episodes of front activation before the landing of the Allies in Normandy on June 6 1944 show different patterns compared to later front lines. This episode, known as D-Day, had a strong negative impact on German hopes to obtain a victory in the war and might have consequently triggered a change in the behavior of the average German soldier. In column 3 of Table 7, we interact dummies defining front lines before and after the D-Day with all regressors. Interestingly the estimated coefficients are not statistically distinguishable from each-other.

This result suggests a limited role of macro-war events in shaping patterns of indiscriminate violence. In column 4, we also implement an alternative heterogeneity analysis along the time-series dimension, this time comparing front movements in the first half of the sample with those in the second half. Effectively, by interacting dummies defining fronts below and above the median of front lines dates, we split between the first 16 front movements and the second 16. This comparison can shed some light on the role played by soldier frustration towards the end of the war, that may have weakened the enforcement capacity of the German division commanders (Kesselring, 1954). Also in this case, the macro-dimension of the split seems to matter little for the effect with both subsamples showing positive and significant coefficients, that are statistically indistinguishable from each other

Overall, the observed heterogeneity along front characteristics and war phases is consistent with the hypothesis that micro-level variation in economic incentives, and accountability in particular, is the main driver behind the differential increase in indiscriminate violence at the front. Macro-war factors matter little in shaping the behavior of German soldiers towards civilians, which was consistently indiscriminate at activation across front line with different characteristics and in various phases of the war.

8 Conclusions

In this paper, we have studied to what extent economic incentives affect soldiers' behavior towards civilians in a war context. Using evidence from the WWII Italian Campaign, we show that the likelihood of collective civilian victimization, a proxy for indiscriminate violence, substantially increased upon front activation. This result is concentrated in municipalities located away from divisions' headquarters, routinely tasked with policing duties at the front. By contrast, we do not find evidence of a differential increase in civilian collective killings in municipalities exposed to more intense bombing and partisan resistance. We interpret this evidence as revealing of an accountability mechanism and less consistent with the idea that indiscriminate violence was always used strategically to achieve war-related, tactical objectives.

Additionally, we find effect heterogeneity along the dimension of the combat experience of the units responsible for the killings. The analysis reveals how more inexperienced units applied indiscriminate violence more frequently, as the effect is concentrated in areas under their control. The fact that the use of violence was often strategic is confirmed by the concentration of the effect in richer areas, where the incentives to loot were stronger. Both the experience of the units and the economic importance of locations, however, emerge as necessary but insufficient pre-conditions for the outbreak of indiscriminate

violence. Changes in economic incentives and, in particular, accountability emerge as key predictors of indiscriminate civilian victimization within the same war setting. By contrast, we find no evidence of macro-war trends having a significant influence on soldiers' behavior. Indiscriminate violence, in fact, broke out systematically at front activation irrespective of the period of the war and the tactical situation of the different front lines.

First, by studying the within-conflict variation in civilian victimization and by identifying a positive, causal effect of shocks to behavioral economic incentives on the frequency of indiscriminate violence, this paper contributes to the literature on the drivers of civilian victimization, which has studied variation across conflicts, or armed groups (Esteban et al., 2012; Guarnieri and Tur-Prats, 2022; Kalyvas, 2006). Second, by testing between returns and cost of misbehavior as mechanisms, this paper sheds new light on a neglected aspect of the story, namely the importance of accountability when thinking about civilian violence in wars and in explaining its incidence. This intuitively paramount factor has received little attention viz-a-viz returns to misbehavior so far (Stanton, 2016; Straus, 2012). Our findings have key policy implications for both international organizations and army commands that may want to prevent such events in the future.

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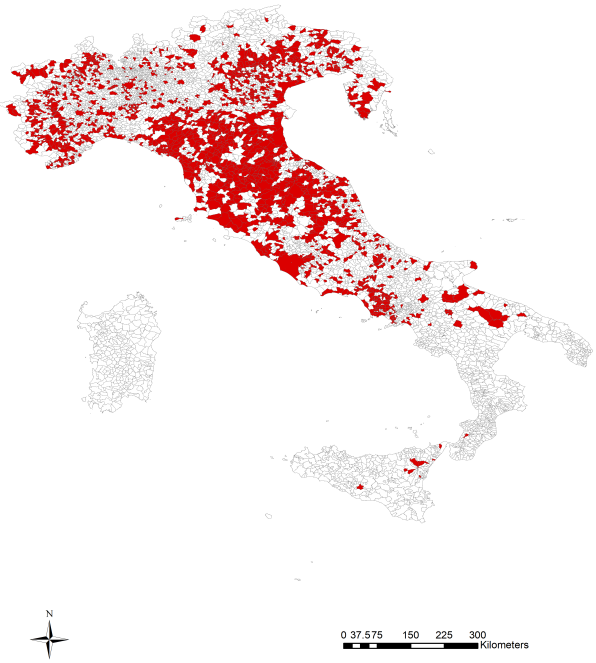
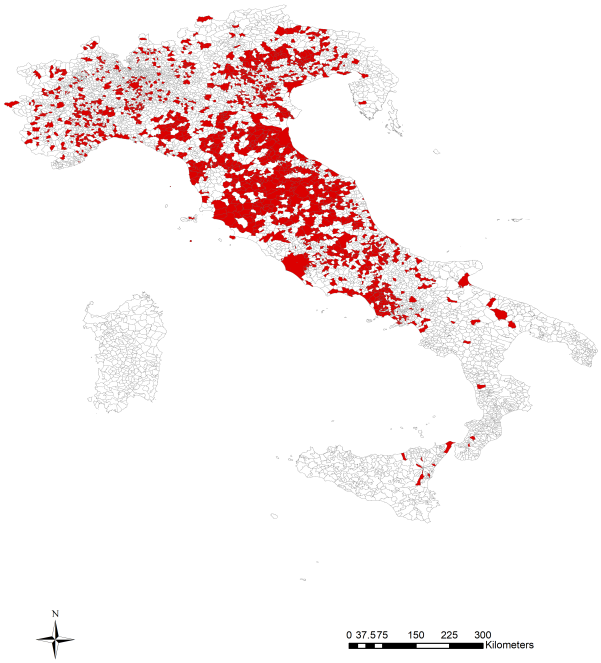
Figures and Tables

Figure 1: CIVILIAN KILLINGS DURING THE ITALIAN CAMPAIGN

(a) Collective killing, YES/NO



(b) Single killing, YES/NO



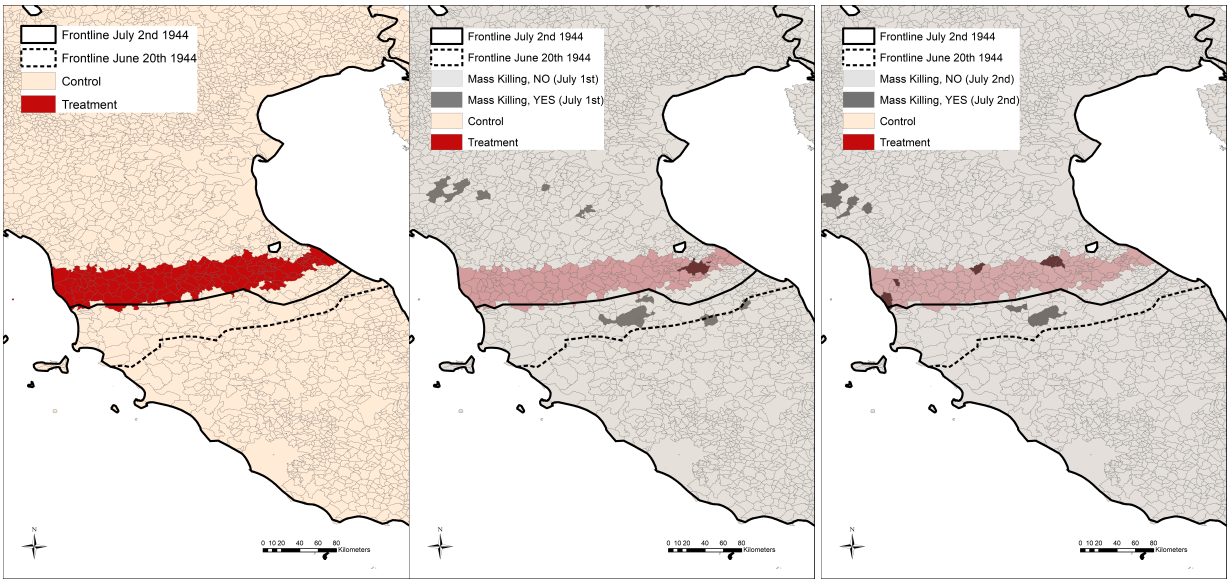
Notes. Subfigure (a) shows all Italian municipalities that experienced at least one episode of collective civilian victimization (two or more people were killed) between June 8, 1943 and May 2, 1945. Subfigure (b) shows all Italian municipalities that experienced at least one episode of single civilian victimization (one person was killed) between June 8, 1943 and May 2, 1945. Municipalities are drawn using the 1936 borders. *Source*: http://www.straginazifasciste.it/

Figure 2: FRONT LINES 9 JULY 1943 TO 2 MAY 1945

Notes.The figure shows all 32 front lines included in the sample, which closely approximates the universe of front line movements through the campaign. Minore front line adjustments are necesserily excluded from the sample. The location of the front lines is obtain from reconstruction provided by the secondary literature, chiefly Blumenson (1993). See text and data appendix for further detail.

Figure 3: FRONT ACTIVATION AND COLLECTIVE KILLINGS: INTUITION

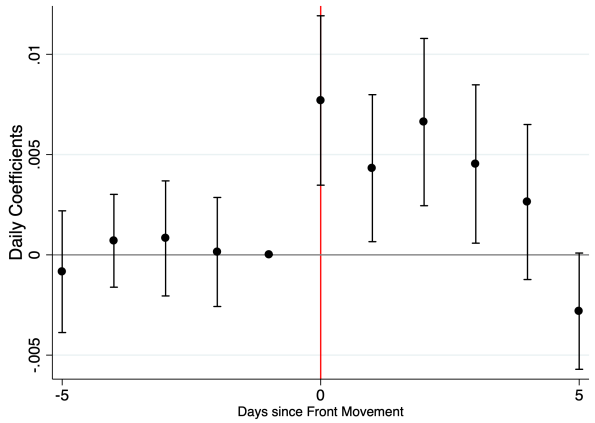
(a) New front line, July 2nd 1944 (b) collective killings in k=-1 (c) collective killings in k=0



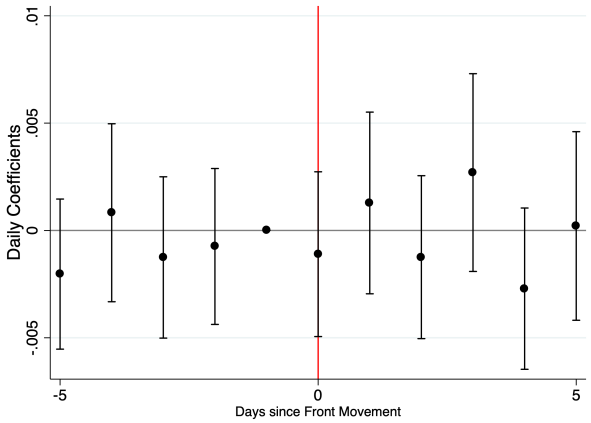
Notes. The figure shows treated municipalies that were more than 40 km away from the June 20th 1944 front line and within 40 km of the 2nd of July 1944 one after the combat zone moves North. Subfigure (b) shows episodes of collective killings one day before the activation of the new fronline. Subfigure (c) shows collective killings at activation. The units of observation are Italian municipalities with 1936 boundaries.

Figure 4: CIVILIAN VICTIMIZATION AROUND FRONT ACTIVATION

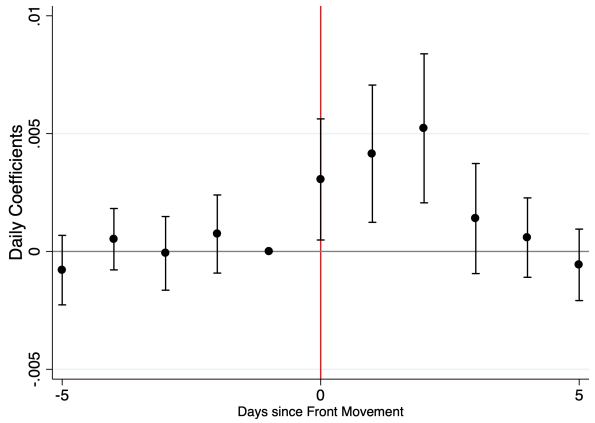
(a) Collective Civilian Killings



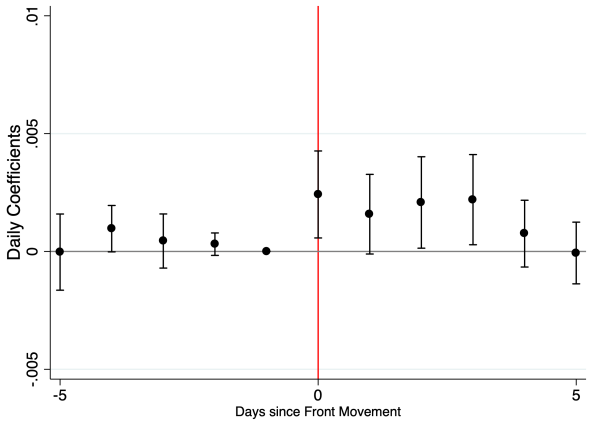
(b) Single Civilian Killings



(c) Collective Civilian Killings Excluding Partisans



(d) Vulnerable Killings



Notes. Daily coefficients estimated from equation 1. The dependent variables are indicators for collective civilian victimization (two or more people were killed, Panel A), single civilian victimization (only one person was killed, Panel B), collective civilian victimization not related to partisan attacks (Panel C), and vulnerable victims (women, children and elderly, Panel D). *Source*: http://www.straginazifasciste.it/

Table 1: SUMMARY STATISTICS

Panel A: Day-municipal level outcomes

	count	mean	sd	min	max
Collective killing yes/no	2488400	0.0007	0.0255	0	1
Single killing yes/no	2488400	0.0006	0.0238	0	1
Collective No Partisan killing yes/no	2488400	0.0003	0.0175	0	1
Collective vulnerable killing yes/no	2488400	0.0002	0.0134	0	1
Observations	2488400				

Panel B: Front-municipal level outcomes

	count	mean	sd	min	max
Treated yes/no	226016	0.04	0.21	0	1
Axis side yes/no	226016	0.73	0.44	0	1
Operation zone yes/no	226016	0.24	0.43	0	1
Bombed experiment yes/no	226016	0.01	0.08	0	1
<15km partisan band yes/no	226016	0.54	0.50	0	1
<30km division headquarter yes/no	226016	0.09	0.29	0	1
Near division SS yes/no	226016	0.05	0.22	0	1
Near division East deployment yes/no	226016	0.41	0.49	0	1
Near division >p50 creation date yes/no	226016	0.49	0.50	0	1
<30km provincial capital yes/no	226016	0.81	0.40	0	1
>p50 industrial employment share	226016	0.51	0.50	0	1
>p50 population yes/no	226016	0.50	0.50	0	1
>p50 population density yes/no	226016	0.52	0.50	0	1
Front >p50 yes/no	226016	0.47	0.50	0	1
frontline >p50 ruggedness SD	226016	0.50	0.50	0	1
After D-Day yes/no	226016	0.31	0.46	0	1
Last 16 fronts yes/no	226016	0.50	0.50	0	1
Observations	226016				

Notes: Summary statistics for all variables employed in the tables of the main paper. The sample is the same employed for the main regressions. It subsets to artificial panel containing a front movement, and excludes Sardinia, where no front movements and civilian killings took place.

Table 2: WERE TREATMENT AND COMPARISON MUNICIPALITIES ON DIFFERENT TRENDS?

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	Collective no Partisan killing (YES/NO)	Collective Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
pretrend_treat	0.000230	0.000275	0.0000958	-0.000209
	(0.000279)	(0.000429)	(0.000156)	(0.000199)
Mean of Y				
Observations	1096989	1096989	1096989	1096989
Day FE	314	314	314	314
Comune FE	227351	227351	227351	227351
Clusters 1	7341	7341	7341	7341
Clusters 2				
Clusters 3				
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Notes: OLS etimates from equation 1 in all columns. Coefficients on the interaction between a linear pre-trend in the five days before front activation and a treatment indicator (equal to one for municipalities within 40km of the combar zone). "Collective killing" is a dummy variable for episodes where two or more civilians were killed. "Single killing" is a dummy variable for episodes where one civilian was killed. "Collective no Partisan killing" is a dummy for Collective killings in whose description words for partisan resistance do not feature. "Collective Vulnerable killing" is a dummy for collective killings in which at least one child, woman or elderly person was killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table 3: DOES A CHANGE IN ECONOMIC INCENTIVES AFFECT SOLDIERS' BEHAVIOR?

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	Collective no Partisan killing (YES/NO)	Collective Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
Treat t-2	0.000143	-0.000746	0.000739	0.000308
	(0.00139)	(0.00185)	(0.000845)	(0.000243)
Treat t 0	0.00770***	-0.00111	0.00306**	0.00242**
	(0.00215)	(0.00196)	(0.00131)	(0.000942)
Mean of Y	0.0007	0.0006	0.0003	0.0002
Observations	2488400	2488400	2488400	2488400
Clusters	7341	7341	7341	7341
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Notes: OLS etimates from equation 1 in all columns. Coefficients for the treatment day and day -2 from front activation are reported. "Collective killing" is a dummy variable for episodes where two or more civilians were killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table 4: WHAT DRIVES THE INCREASE IN INDISCRIMINATE VIOLENCE?

Dependent variable:	Collective killing, yes/no					
	Baseline	Sorting		Insecurity		Accountability
	(1)	(2)	(3)	(4)	(5)	(6)
Treat t 0	0.00770***	0.00721***	0.00706***			
	(0.00215)	(0.00261)	(0.00261)			
Treat t 0 x no bombing				0.00779***		
				(0.00255)		
Treat t 0 x bombing				-0.0148		
				(0.0289)		
Treat t 0 x <= 15 km partisans					0.00685	
					(0.00459)	
Treat t 0 x > 15 km partisans					0.00684**	
					(0.00329)	
Treat t 0 x <= 30 km division						-0.000920
						(0.00424)
Treat t 0 x > 30 km division						0.00765**
						(0.00363)
Mean of Y	0.0007	0.0007	0.0007	0.0006	0.0007	0.0007
Observations	2488400	2488279	2488158	2486024	2487234	2487806
Clusters	7341	7341	7341	7341	7341	7341
P-value equality test				0.44	1.00	0.12
Municipality FE	YES	YES	YES	YES	YES	YES
Day FE	YES	YES	YES	YES	YES	YES
Front FE	YES	YES	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES	YES	YES
Division 1 x Front x day FE	NO	YES	YES	YES	YES	YES
Division 2 x Front x day FE	NO	NO	YES	YES	YES	YES

Notes: OLS etimates from equation 1 in all columns. Coefficients for the treatment day and day -2 from front activation are reported. "Collective killing" is a dummy variable for episodes where two or more civilians were killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table 5: HETEROGENEITY: DO MILITARY UNITS' CHARACTERISTICS MATTER?

Dependent variable:	Collective killing, yes/no			
	Indoctrination	Drafting	Fighting	Experience
	(1)	(2)	(3)	(4)
Treat t 0 x SS yes/no	-3.60e-18			
	(3.46e-17)			
Treat t 0 x no SS yes/no	0.00737***			
	(0.00213)			
Treat t 0 x Germany yes/no		0.00462		
		(0.00718)		
Treat t 0 x not Germany yes/no		0.00727***		
		(0.00274)		
Treat t 0 x East yes/no			0.000576	
			(0.00182)	
Treat t 0 x West yes/no			0.00983**	
			(0.00405)	
Treat t 0 x new yes/no				0.0105***
				(0.00389)
Treat t 0 x old yes/no				-0.000895
				(0.00190)
Mean of Y	0.0007	0.0007	0.0007	0.0007
Observations	2488323	2487993	2487647	2487658
Clusters	7341	7341	7341	7341
P-value equality test	0.00	0.73	0.04	0.01
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES
Division 1 x Front x day FE	NO	YES	YES	YES
Division 2 x Front x day FE	NO	YES	YES	YES

Notes: OLS etimates from equation 1 in all columns. Coefficients for the treatment day and day -2 from front activation are reported. "Collective killing" is a dummy variable for episodes where two or more civilians were killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table 6: HETEROGENEITY: DO LOCAL ECONOMIC CHARACTERISTICS MATTER?

Dependent variable:	Collective killing yes/no			
	(1)	(2)	(3)	(4)
Treat t 0 x <= 30 km capital	0.00999***			
	(0.00314)			
Treat t 0 x > 30 km capital	-0.00350			
	(0.00559)			
Treat t 0 x industrial		0.0155***		
		(0.00564)		
Treat t 0 x rural		0.00343		
		(0.00275)		
Treat t 0 x large municipality			0.0104***	
			(0.00402)	
Treat t 0 x small municipality			0.000826	
			(0.000562)	
Treat t 0 x high density				0.00487
				(0.00321)
Treat t 0 x low density				0.00989**
				(0.00413)
Mean of Y	0.0007	0.0007	0.0006	0.0006
Observations	2487619	2487355	2487619	2487267
Clusters	7341	7341	7341	7341
P-value equality test	0.04	0.05	0.02	0.34
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES
Division 1 x Front x day FE	YES	YES	YES	YES
Division 2 x Front x day FE	YES	YES	YES	YES

Notes:OLS etimates from equation 1 in all columns. Coefficients for the treatment day and day -2 from front activation are reported. "Collective killing" is a dummy variable for episodes where two or more civilians were killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table 7: HETEROGENEITY: DO MACRO WAR TRENDS MATTER?

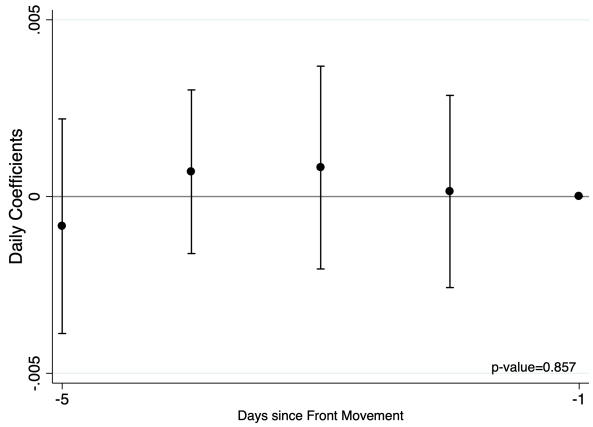
Dependent variable:	Collective killing (YES/NO)			
	Front characteristics		War trends	
	(1)	(2)	(3)	(4)
Treat t 0 x long front	0.00874*			
	(0.00509)			
Treat t 0 x short front	0.00594**			
	(0.00273)			
date3_tr_tr40_2_rugged		0.00583**		
		(0.00268)		
date3_tr_tr40_2_NOTrugged		0.00901*		
		(0.00523)		
date3_tr_tr40_2_pre_DD			0.00408**	
			(0.00207)	
date3_tr_tr40_2_post_DD			0.0114**	
			(0.00565)	
Treat t 0 x early war				0.00468**
				(0.00237)
Treat t 0 x late war				0.00961**
				(0.00476)
Mean of Y	0.0007	0.0007	0.0007	0.0007
Observations	2487880	2487880	2487880	2487880
Clusters	7341	7341	7341	7341
P-value equality test	0.63	0.59	0.22	0.35
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES
Division 1 x Front x day FE	YES	YES	YES	YES
Division 2 x Front x day FE	YES	YES	YES	YES

Notes: OLS etimates from equation 1 in all columns. Coefficients for the treatment day and day -2 from front activation are reported. "Collective killing" is a dummy variable for episodes where two or more civilians were killed. See text for a description of variables included in each column. Errors are clustered at the municipality level. *** p < 0.01, ** p < 0.5, * p < 0.1.

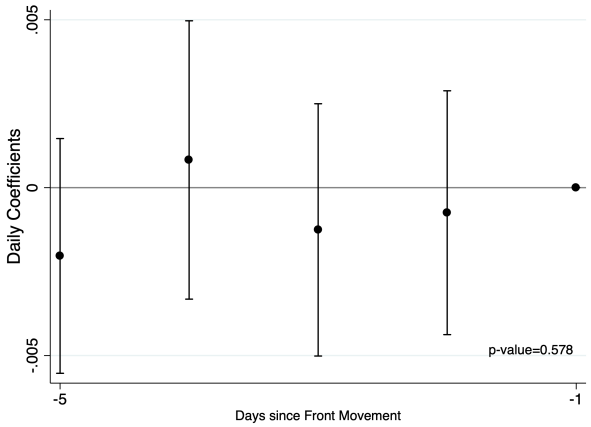
Online Appendix: Additional results — Not for Publication

Figure A.1: TEST FOR PRE-TRENDS

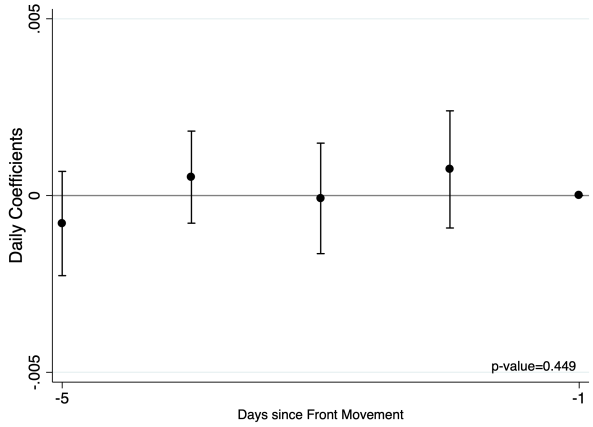
(a) Collective Civilian Killings



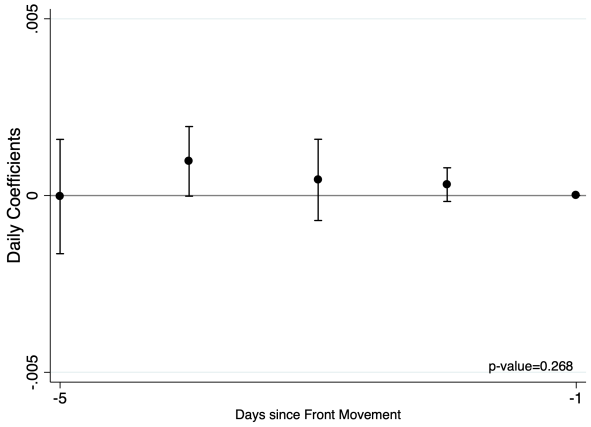
(b) Single Civilian Killings



(c) Collective Civilian Killings Excluding Partisans



(d) Vulnerable Killings



Notes. Daily coefficients estimated from equation 1 in the five days before the front activation. The dependent variables are indicators for collective civilian victimization (two or more people were killed, Panel A), single civilian victimization (only one person was killed, Panel B), collective civilian victimization not related to partisan attacks (Panel C), and vulnerable victims (women, children and elderly, Panel D). *p*-value in each panel reports the *p*-value of testing that all the coefficients are jointly zero. *Source*: http://www.straginazifasciste.it/

Table A.1: BALANCING TESTS BETWEEN TREATED AND COMPARISON MUNICIPALITIES

	Violence indicators				Fighting indicators	
Dependent variable:	Collective killing (YES/NO) (1)	Single killing (YES/NO) (2)	Collective no Partisan killing (YES/NO) (3)	Collective Vulnerable killing (YES/NO) (4)	Bombing (YES/NO) (5)	Resistance Activity (YES/NO) (6)
Panel A: Lag 5						
Treated yes/no	0.000355	0.00157	-0.000340	-0.000141	0.00165	0.00152
	(0.00136)	(0.00121)	(0.000755)	(0.000816)	(0.00123)	(0.00139)
Mean of Y	0.0007	0.0006	0.0002	0.0001	0.0011	0.0008
Observations	3165927	3165927	3165927	3165927	3165927	3165927
Clusters	6939	6939	6939	6939	6939	6939
Panel B: Lag 10						
Treated yes/no	0.000504	0.000856	-0.0000622	-0.000386***	-0.00236	0.00169
	(0.000844)	(0.00108)	(0.000414)	(0.000108)	(0.00161)	(0.00111)
Mean of Y	0.0006	0.0006	0.0002	0.0001	0.0010	0.0007
Observations	3165927	3165927	3165927	3165927	3165927	3165927
Clusters	6939	6939	6939	6939	6939	6939
Panel C: Lag 15						
Treated yes/no	0.00160	-0.000381	0.000962	-0.000120	0.00114	0.000411
	(0.00102)	(0.000637)	(0.000723)	(0.000113)	(0.00143)	(0.000843)
Mean of Y	0.0006	0.0005	0.0002	0.0001	0.0009	0.0007
Observations	3165927	3165927	3165927	3165927	3165927	3165927
Clusters	6939	6939	6939	6939	6939	6939
Panel D: Lag 20						
Treated yes/no	-0.000114	-0.000493	-0.0000581	-0.000250***	0.0000980	-0.0000483
	(0.000599)	(0.000454)	(0.000432)	(0.0000427)	(0.000961)	(0.000584)
Mean of Y	0.0006	0.0005	0.0002	0.0001	0.0009	0.0007
Observations	3165927	3165927	3165927	3165927	3165927	3165927
Clusters	6939	6939	6939	6939	6939	6939
Municipality FE	YES	YES	YES	YES	YES	YES
Day FE	YES	YES	YES	YES	YES	YES

Notes: The table compares treated and comparison municipalities North of the front line (in Axis-controlled territory) in terms of lagged outcomes. It uses the regular panel covering the entire study period from July 1943 to May 1945. Treatment is defined as in the baseline estimations. Panel A reports the 5-day lag of the outcome. Panel B reports the 10-day lag of the outcome. Panel C reports the 15-day lag of the outcome. Panel D reports the 20-day lag of the outcome. Columns 1 to 4 report the lags of all outcomes from Table 3. Column 5 reports the lags of a dummy that equals one if a municipality was bombed by the Allies. Column 6 reports the lags of a dummy that equals one if partisan activity was detected in a municipality. This is coded based on the description of the killing episodes through text analysis. If the word "partigian*" (the name of resistance fighters in Italy) is reported, the variable is coded as one. Sardinia is excluded as in the main estimations. Errors are clustered at the municipality level. *** $p < 0.01$, ** $p < 0.5$, * $p < 0.1$.

Table A.2: CROSS-SECTIONAL COMPARISON BETWEEN EVER AND NEVER TREATED

	(1)	(2)	(3)	(4)	(5)
Panel A: geographical factors					
	(max) Wtw_count	(max) Elev_avg	(max) Prec9_avg	(max) Rug_avg	(max) D_coast
(max) treated40_2	0.389***	52.37***	-4.086***	1071.1***	-38.90***
	(0.0475)	(10.91)	(0.645)	(161.9)	(1.144)
Mean of Y	1.2203	458.2947	78.4683	6857.1418	67.7711
Observations	7063	7061	7062	7062	7063
Clusters					
Panel B: socio-economic factors					
	density	(max) D_provC	industrial_share	(max) D_bands	(max) Bands_count
(max) treated40_2	-12.50*	1.688***	-0.0474***	7.942***	0.00907
	(6.772)	(0.345)	(0.00186)	(3.077)	(0.00572)
Mean of Y	187.5189	19.1849	0.1007	72.4032	0.0514
Observations	7061	7063	7053	7063	7063
Clusters					

Notes: The table compares ever treated and never treated municipalities in terms of time-invariant covariates in a cross-section. A municipality is coded as ever treated if it is coded as treated in one of the 31 front movements studied in the paper. Panel A uses geographical covariates as outcome variables. Column 1 reports the number of waterways in a municipality. Column 2 is the average elevation in meters. Column 3 is the average rainfall in centimeters measured in terms of average precipitations in the month of September between 1950 and 2000. Column 4 is the average ruggedness measured in per-thousant points. Column 5 uses distance from the coast in kilometers. Panel B performes the same excersise looking and 1936 socio-economic, municipal-level outcomes. Column 1 uses population density. Column 2 looks at distance in kilometers to the nearest point of the boundary of a provincial capital. Column 3 uses the share of the active population employed in the secondary sector. Column 4 looks at the distance in kilometers from the headquarters of the nearest partisan band at Armistice. Column 5 looks at the number of partisan bands reported as active in the territory of a municipality at Armistice. All distances are calculated from municipalities' centroids. Heteroskedasticity robust standard errors are reported in brackets. *** p < 0.01, ** p < 0.5, * p < 0.1.

Table A.3: MAIN RESULTS ROBUSTNESS: AXIS SIDE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.000143	-0.000746	0.000739	0.000308
	(0.00139)	(0.00185)	(0.000845)	(0.000243)
Treat t 0	0.00770***	-0.00111	0.00306**	0.00242**
	(0.00215)	(0.00196)	(0.00131)	(0.000942)
Mean of Y	0.0006	0.0006	0.0002	0.0001
Observations	1826673	1826673	1826673	1826673
Clusters	7217	7217	7217	7217
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.4: MAIN RESULTS ROBUSTNESS: OPERATION ZONE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	-0.000235	-0.000608	0.000795	-0.0000444
	(0.00165)	(0.00215)	(0.00100)	(0.0000941)
Treat t 0	0.00775***	-0.00174	0.00244*	0.00238**
	(0.00250)	(0.00230)	(0.00140)	(0.00113)
Mean of Y	0.0018	0.0017	0.0008	0.0005
Observations	605814	605814	605814	605814
Clusters	5904	5904	5904	5904
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.5: MAIN RESULTS ROBUSTNESS: 200 KM FROM FRONT LINE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	-0.0000132	-0.0000812	0.000630	-0.0000372
	(0.00150)	(0.00204)	(0.000930)	(0.000157)
Treat t 0	0.00828***	-0.00189	0.00313**	0.00230**
	(0.00237)	(0.00214)	(0.00143)	(0.00101)
Mean of Y	0.0020	0.0018	0.0008	0.0004
Observations	365136	365136	365136	365136
Clusters	6100	6100	6100	6100
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.6: MAIN RESULTS ROBUSTNESS: 100 KM FROM FRONT LINE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	-0.000831	0.000599	0.000458	-0.000158
	(0.00163)	(0.00221)	(0.000992)	(0.000198)
Treat t 0	0.00669***	-0.00151	0.00300**	0.00201**
	(0.00237)	(0.00230)	(0.00145)	(0.000933)
Mean of Y	0.0033	0.0031	0.0014	0.0007
Observations	153656	153656	153656	153656
Clusters	4085	4085	4085	4085
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.7: MAIN RESULTS ROBUSTNESS: 40 KM FROM FRONT LINE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.00149	0.000424	0.00129	2.15e-17
	(0.00303)	(0.00370)	(0.00192)	(0.000637)
Treat t 0	0.00769**	-0.00600*	0.00347	0.000685
	(0.00351)	(0.00357)	(0.00220)	(0.00135)
Mean of Y	0.0037	0.0038	0.0018	0.0010
Observations	64848	64848	64848	64848
Clusters	2518	2518	2518	2518
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.8: MAIN RESULTS ROBUSTNESS: 100 KM FROM DIVISION

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.00120	0.000000410	0.00127	0.000331
	(0.00136)	(0.00179)	(0.000939)	(0.000311)
Treat t 0	0.00683***	-0.000391	0.00363**	0.00205**
	(0.00220)	(0.00190)	(0.00149)	(0.00104)
Mean of Y	0.0007	0.0007	0.0003	0.0002
Observations	923747	923747	923747	923747
Clusters	7034	7034	7034	7034
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.9: MAIN RESULTS ROBUSTNESS: 50 KM FROM DIVISION

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.00110	-0.0000188	0.00179	-0.0000504
	(0.00165)	(0.00194)	(0.00114)	(0.000139)
Treat t 0	0.00756***	-0.000314	0.00432**	0.00212*
	(0.00265)	(0.00210)	(0.00186)	(0.00124)
Mean of Y	0.0010	0.0010	0.0005	0.0003
Observations	385606	385606	385606	385606
Clusters	5567	5567	5567	5567
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.10: MAIN RESULTS ROBUSTNESS: 25 KM FROM DIVISION

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.0000497	-0.00149	0.00190	-1.75e-17
	(0.00227)	(0.00286)	(0.00179)	(0.000237)
Treat t 0	0.00754**	-0.000817	0.00508**	0.00117
	(0.00355)	(0.00344)	(0.00250)	(0.00100)
Mean of Y	0.0015	0.0014	0.0008	0.0004
Observations	136118	136118	136118	136118
Clusters	3311	3311	3311	3311
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.11: MAIN RESULTS: CLEANED SAMPLE

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.000155	-0.000735	0.000740	0.000308
	(0.00139)	(0.00185)	(0.000846)	(0.000243)
Treat t 0	0.00771***	-0.00106	0.00308**	0.00241**
	(0.00216)	(0.00195)	(0.00131)	(0.000943)
Mean of Y	0.0007	0.0006	0.0003	0.0002
Observations	2402300	2402300	2402300	2402300
Clusters	7341	7341	7341	7341
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.12: MAIN RESULTS FULL - 30KM TREATMENT

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
date3_lag2_tr30_2	0.000998	-0.00291	0.000885	0.000285
	(0.00152)	(0.00183)	(0.000998)	(0.000222)
date3_tr_tr30_2	0.00616***	-0.00209	0.00324**	0.00181**
	(0.00217)	(0.00213)	(0.00147)	(0.000887)
Mean of Y	0.0007	0.0006	0.0003	0.0002
Observations	2488400	2488400	2488400	2488400
Clusters	7341	7341	7341	7341
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Table A.13: MAIN RESULTS FULL - 50KM TREATMENT

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
date3_lag2_tr50_2	0.00136	0.000454	0.00139	0.000348
	(0.00157)	(0.00169)	(0.000911)	(0.000274)
date3_tr_tr50_2	0.00684***	-0.00114	0.00227**	0.00222***
	(0.00203)	(0.00171)	(0.00110)	(0.000849)
Mean of Y	0.0007	0.0006	0.0003	0.0002
Observations	2488400	2488400	2488400	2488400
Clusters	7341	7341	7341	7341
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

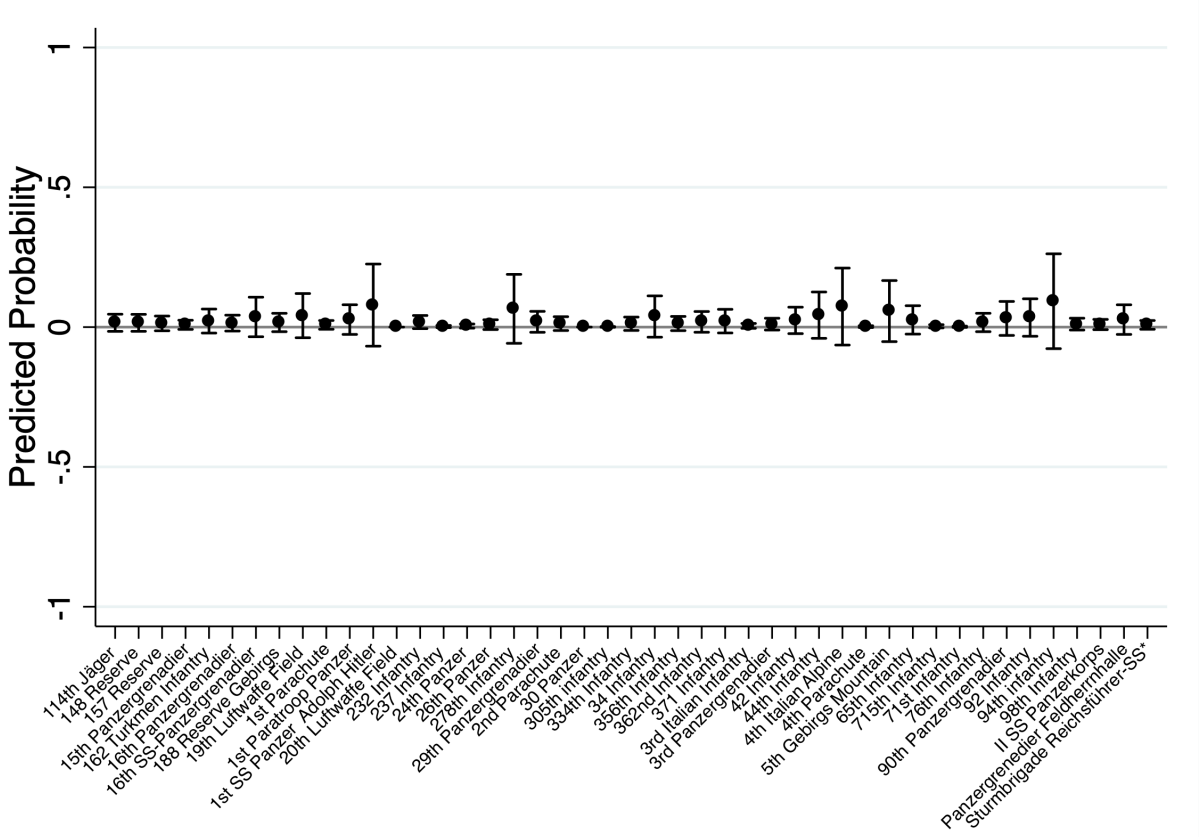
Table A.14: MAIN RESULTS FULL - TWOWAY FIXED EFFECTS

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
treated40_2	0.00950***	0.00331***	0.00306***	0.00312***
	(0.00179)	(0.00116)	(0.00105)	(0.00101)
Mean of Y	0.0006	0.0006	0.0002	0.0002
Observations	226016	226016	226016	226016
Clusters	7063	7063	7063	7063
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES

Table A.15: MAIN RESULTS FULL - MUNICIPALITY AREA WEIGHTS

Dependent variable:	Collective killing (YES/NO)	Single killing (YES/NO)	No Partisan killing (YES/NO)	Vulnerable killing (YES/NO)
	(1)	(2)	(3)	(4)
	killing_dummy_mass	killing_dummy_single	NPpartisan_dummy_mass	vulnerables_dummy_mass
Treat t-2	0.00717	0.00414	0.0127	0.0000852
	(0.0142)	(0.00701)	(0.0135)	(0.000305)
Treat t 0	0.0212**	-0.00670	0.00848	0.00783*
	(0.00909)	(0.00528)	(0.00604)	(0.00459)
Mean of Y	0.0015	0.0014	0.0007	0.0004
Observations	2488400	2488400	2488400	2488400
Clusters	7341	7341	7341	7341
Municipality FE	YES	YES	YES	YES
Day FE	YES	YES	YES	YES
Front FE	YES	YES	YES	YES
Front x Municipality FE	YES	YES	YES	YES
Front x Day FE	YES	YES	YES	YES
Front x Day x side FE	YES	YES	YES	YES

Figure A.2: PROBABILITY OF GERMAN DIVISIONS TO BE ON THE FRONT LINE



Notes: Predicted probability for the 47 Divisions operating during the Italian Campaign to fight on the front line based on division fixed effects. The excluded division is 1st Paratroop Panzer Division Hermann Göring.