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Can Black Tulips stop Russia again?☆

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ABSTRACT

Do the human costs of Russia's war in Ukraine undermine the popular support for the Russian government? Although there is little evidence that the poor performance of the Russian military forces in Ukraine erodes domestic support for the government, region-specific war casualties may help fuel anti-war sentiment. The paper hypothesizes that publicly announced military deaths and obituaries published in the local news and social media groups can incite anti-war sentiment because they bring the human cost of the war into peoples' homes. To evaluate this hypothesis, we use a hand-collected dataset of obituaries, published on the most popular social network in Russia, and analyze statistical connections between the announcements of war casualties and instances of various forms of political protests. The data support the casualties-protest connection, but find that obituaries of military servicemembers with non-Russian-sounding names are uncorrelated with protests even in their home regions, while the opposite is true for similar announcements with Slavic names. We speculate that the observed differences might reflect the intentional government policy of capitalizing on ethno-nationalist sentiment that has been cultivated for the support of Putin's regime.

1. Introduction

Russia's war in Ukraine and its global ramifications have drawn the world's attention. Against the reports of the mounting costs of the protracted war, scaled-up sanctions, and other economic pressures, many regional experts are searching for signs of Russia's economic decline, the breakdown of its authoritarian regime, and the downfall of President Vladimir Putin. Economic difficulties, military failures, and popular protests against partial military mobilization have been interpreted as signs of Putin's weakness and imminent decline (Laruelle, 2022). Yet, the regime continues to be resilient to such pressures. Russia has further escalated its war efforts in Ukraine, aggressive anti-Western stance, and domestic warmongering propaganda. On October 28, 2022, the Minister of Defense, Sergey Shoigu, reported 300,000 new troops drafted to meet the plans of the "partial military mobilization" announced in September (Gereihanova, 2022). This figure is disputed by some experts as understating the real scale of mobilization (Litavrin and Skovoroda, 2022; Bonch-Osmolovskaya and Savina, 2022). The successful military draft casts further doubt on whether the costs of the war are likely to undermine public support for Putin's regime. In fact, between February and December 2022, Putin's approval

☆ The "Black Tulip" was the nickname given to the transport plane that was used to transport the remains of Soviet soldiers who were killed in the Soviet-Afghan War. Casualties among Soviet troops were one of the main factors that contributed to the end of the war. We thank Oleksandr Talavera, Aneta Hryckiewicz, and seminar participants at Kozminski University for providing comments and feedback. We thank Jay Kozlova for excellent research assistance.

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rating rose from 69 to 82 percent, while that of the Russian government in general rose from 50 to 68 percent (Levada Center, 2022).

Domestic support for Russian aggression in Ukraine has not been shaken by the resulting international isolation, economic downturn, reports of war crimes committed by Russian soldiers, threats of nuclear weapons, or deliberate targeting of Ukrainian civilians and infrastructure. But will public support for the war and Putin's regime remain strong amidst the mounting casualties of Russian servicemembers? According to Ukrainian sources, as of January 21, 2023, more than 120,160 Russian military personnel have been either killed or wounded since the start of the war (General Staff, 2023). Will the Russian public ignore the human costs of the war on Russia's side the same way it remains indifferent to the loss of Ukrainian lives?

A plethora of comparative accounts indicate that the domestic public is highly sensitive not only to the economic hardship, but also to the human cost of military campaigns. As the casualties increase, domestic groups are often able to mobilize public opposition to the war and may effectively challenge the government's policy. The US anti-war movements during the Vietnam and Iraq wars (Epstein, 2003), Serbian anti-war mobilization during the Balkan wars (Fridman, 2011), Russian political opposition to the First Chechen War, and the public outcry against the "Global War on Terror" serve as vivid examples of the power of public opinion and civil society mobilization to challenge a government's military aggression.

Yet, there is also an opposing, well-documented connection between war and public support for the government. The "rally round the flag" effect captures the situation in which an external enemy helps mobilize support for the government's military actions, especially if they are seen as a response to attacks and provocations of hostile adversaries. The Iranian public rallied behind the government in the Iran-Iraq conflict; Serbs supported government hostilities in Bosnia and Kosovo; and after overwhelmingly opposing military engagement in Chechnya in the summer of 1999, Russians pivoted to support the Second Chechen War in late 1999 (Pain, 2001). Russians also significantly supported the 2014 illegal Annexation of Crimea.

Government control of the media and restrictions on the freedom of expression may set autocratic and democratic governments on divergent paths when it comes to public support of wars. Still, attempts to curtail human rights and restrict civil liberties for the sake of strengthening national security are not unique to autocracies. Democratic governments have used national security threats to justify repressive actions and censorship. The Global War on Terror, for instance, was used by the US and UK governments to justify targeting religious and ethnic minorities (Welch, 2004), engaging in torture and extradition (Sanders, 2018), and shutting down anti-government protests (Falconer, 2005). Both autocratic and democratic governments around the world have used the US-led War on Terror to justify retractions of human rights (Fitzpatrick, 2003). The regime type does not predetermine the extent of public support for war, nor does it dictate the government's response. Does the current military aggression against Ukraine foster public dissent or does it promote the "rally round the flag" effect?

We look for empirical evidence in support of the widespread anticipation of the Russian regime's collapse due to popular backlash against the war. We hypothesize that while both effects (i.e., "rally round the flag" and popular backlash) might be present, published obituaries and non-government provided information about war casualties might counterbalance the propaganda, which insists on the imaginary successes of the Russian army and, until recently, claimed the army "hasn't suffered a single loss" (Kremlin, 2022). We reason that such responses should operate on an emotional level, evoking empathy, fear, and anger. As the people are more likely to empathize with the in-group rather than distant subjects and as they are more likely to react to proximate than remote threats, reports of casualties of military personnel from a given province (region) might evoke more empathy and fear, leading to anti-regime protests in that province.

To establish whether information about Russian military casualties correlate with anti-government protests, we concentrate on the period between the start of the invasion on February 24 and June 9, 2022—shortly after the first court ruling in Russia that sanctioned a news outlet for publishing an obituary online, thus releasing "classified military information" to the public (Bohdanov, 2022). Since then, federal and regional outlets as well as social media have seen a rapid decline in published obituaries, with the old ones being removed from the websites. Another advantage of limiting the sample to data from February to June is that it precedes the wave of protest mobilization against the large military draft (partial military mobilization) the Russian government announced in September 2022. This allows us to separate grievances associated with actual and anticipated human costs of the military campaign and draw conclusions about the effects of casualties.

To perform the analysis, we use a unique crowd-sourced dataset of 3467 war-related obituaries, published in real time on the most popular social media platform in Russia, *VKontakte (VK)*, before June 9, 2022, after which civil authorities lost access to information about military deaths, or such access became severely reduced. The core of the dataset is publicly available at a Telegram Channel @pechalbeda200, which uses an internet spider/crawler to search Russian social media for war-related obituaries, published by the regional authorities, media, or relatives, and posts screenshots of the information. A separate group of Ukrainian and international journalists and activists manually arranges the data into a spreadsheet and supplements basic information such as the soldier's first and last name and funeral date with other information found in the text. Additional information often includes the date the obituary was first published, date and place the servicemember was killed and the individual's rank, hometown, unit location and more. These data on the documented Russian military deaths from the obituaries are analyzed to establish whether such announcements precipitate the onset of anti-government protests across 84 regions of Russia.

Unlike the data on military casualties, the data on protests in Russia are more easily attainable from the Global Database of Events, Language, and Tone (GDELT), which monitors the world's news media each day to compile a list of what is happening around the globe in over 300 categories of political events. We used Google's *BigQuery* system to scan millions of GDELT records to identify daily numbers and the locations of all types of protests in Russia during our sample period.

A cross-sectional analysis of the Russian provinces shows that the regions populated with ethnic minorities are significantly overrepresented among the fallen, as are the regions at the bottom of the income distribution, which hints at economic incentives

for some to participate in the war. Interestingly, this effect is observed for the fallen military personnel with Slavic names (in addition to Russian names, these may also include Ukrainian and Belarusian names, which are often indistinguishable from Russian names), but is absent for those with non-Slavic names. This could mean that for the latter, the participation in the war was not a choice, but an order.

A panel analysis at the day/region level reveals that there is a significant effect of published obituaries and funeral announcements on regional protest activity. Our results suggest that although region-specific military casualties of the Russian war in Ukraine are associated with the regional protest events, such a connection is limited only to the losses attributed to ethnic Russians. Reported deaths of ethnic minorities have no effects on the onset of regional anti-government protests, further supporting a notion that xenophobic government ideology in Russia is generally in alignment with public attitudes.

Although obituaries we analyze were not published by the government sources, it is likely the Russian government's decisions affected the timing of such reports. Russian sources reported that bodies of the fallen soldiers are shipped back to their home provinces not continuously, but in larger batches. Despite that they are released to the families in stages do avoid agitating the population (Gruzy, 2023). To account for the possible non-independence of obituaries from regional protests we use an instrumental variable approach. The two-stage least-squares analysis, where the casualties confirmed by obituaries are instrumented with battlefield casualties, supports our conclusions. It shows that one additional report of a fallen soldier is associated with up to a seven percent increase in the probability of a protest in the region.

The remainder of the paper proceeds as follows. The next section describes in detail the data and looks into the regional distribution of the confirmed casualties across the 84 regions of the Russian Federation. We then briefly review the major cross-sectional determinants of protest behavior in Russia and discuss how Russia's war in Ukraine has challenged some conventional wisdom about sources of regime support. Finally, we proceed to the empirical section where we use panel data analysis to estimate the effect of military casualties on protests. The paper concludes with a discussion about the nature of anti-war protest mobilization in Russia and speculates about its limited potential to promote policy and regime change in Russia.

2. Data

2.1. Russian military casualties

Russia treats military casualties as state secrets. As of the time this paper is being written, there have been four announcements by the Russian authorities about their losses: zero losses before March 2, 2022; 498 casualties as of March 25, 2022; 1351—as of September 21, 2022; and 5937 after that. These rare official statements by the Ministry of Defense grossly underestimate the number of Russian casualties. According to the Pentagon's estimates from December 1, 2022, "well over" 100,000 Russian troops had been killed or wounded in Ukraine by that date (Lamothe et al., 2022). The secrecy and clear attempts to cover up the losses make us suspect that the Russian government fears the staggering casualties may reduce public support for the war.[3]

Secrecy and biases of the official reports make us turn to the civil groups-generated data that traces social media posts of obituaries of Russian solders killed in Ukraine. We use the obituary dates to calculate the number of confirmed Russian casualties for each day in each region.[4] In total, our dataset consists of 3467 unique observations/obituaries, with each of them potentially having 32 characteristics. These variables include the age, date of birth, rank and regiment, military branch, date and place of death, home address, funeral date (the date is generally different from the obituary date) and location, family background such as whether the fallen had children, and the metadata on each public report or social media announcement if multiple sources reference the same deceased individual. Not all the variables are available for each individual. For instance, military rank is recorded for 2378 out of 3467 soldiers, which constitutes 69%.

Fig. 1 gives the daily count of the Russian casualties as reported by different sources between February 24 and June 9. In April, Russia's legislature restricted the right to spread information about the families of fallen soldiers, which applies to obituaries and funeral announcements. As the regulators stepped up enforcement and prosecuted Russian media outlet "60.ru" on June 5 for publishing war obituaries, the posting of new death announcements has significantly decreased. Moreover, some of the existing obituaries were deleted or hidden.[5]

Although we remain confident in the accuracy of all reports captured by the dataset, the resulting data are far from comprehensive.[6] By design the dataset does not include casualties left by the Russian army on the battlefield, buried in Ukraine, and those

[3] The fact that in fall 2022 Russia decided to conscript prisoners in exchange for pardons also suggests the Russian authorities anticipate a backlash against publicly visible military recruitment and casualties.

[4] Our data contain three different sets of dates for each entry: the battle-field death date, date the obituary was first published, and funeral date. We find considerable regional differences in the lag times among these sets of dates. On average, funerals take place 15 days after the reported battlefield death, but for some cases the lag exceeds several months. The average time between the recorded battlefield death and funeral date is three days shorter in regions with per capita income exceeding national average compared to the regions with the median income below the national average. For some ethnic regions, however, the published obituary dates succeed funeral dates. One explanation for the speedy burials is the prevailing religious practices. While Orthodox Christians perform burials on the third day of death, Islamic burials have to take place by the end of the day. Variations in religious traditions and wishes of the families introduce additional noise into our funeral date series. In what follows we concentrate on the battlefield death and obituary dates that are less likely to be influenced by ethnic and religious identity of the deceased. The assumption is that the battlefield death dates are generally unknown in real time, while the obituary dates are publicly available information with the potential to spark protests. To account for the fact that the data are hand-collected, we winsorized maximum daily casualties at 99.5 percent.

[5] In a random sample of 40 records, 50% of the original social media posts have now either been deleted or made private; records of them, however, are kept in various internet archives, such as archive.org.

[6] BBC and Media Zone have recently started working on a similar project, and published their estimates of regional casualties (Five, 2023). The cross-regional correlation between our estimates and theirs is 92 percent.

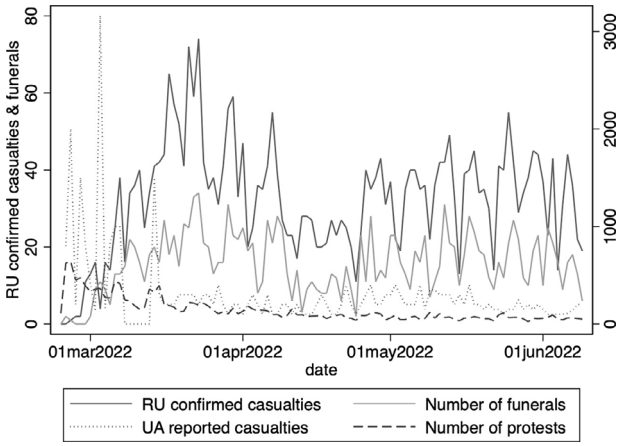

Fig. 1. Number of daily Russian casualties (by source) and number of protests in Russia. *RU confirmed casualties* is the number of confirmed daily Russian obituary casualties as reported in the public domain on social media and other public networks. *UA reported casualties* is the number of daily Russian casualties as reported by Ukraine. *Number of funerals* is the number of daily funerals of Russian soldiers who died in Ukraine. *Number of protests* is the total number of daily protests in Russia. *RU confirmed casualties* and *Number of funerals* are plotted on the left vertical axis, while *UA reported casualties* and *Number of protests* are plotted on the right vertical axis.

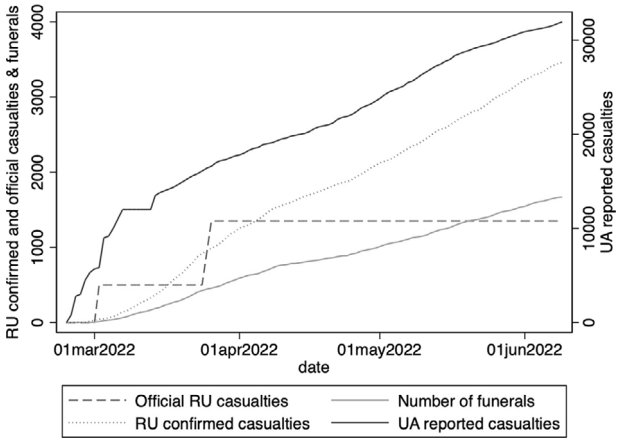

Fig. 2. Number of cumulative Russian casualties by source. *RU confirmed casualties* is the cumulative number of confirmed Russian obituary casualties as reported in the public domain on social media and other public networks. *UA reported casualties* is the cumulative number of Russian casualties as reported by Ukraine. *Number of funerals* is the cumulative number of funerals of Russian soldiers who died in Ukraine. *Official RU casualties* is the cumulative number of Russian casualties as officially reported by Russia. *RU confirmed casualties*, *Official RU casualties*, and *Number of funerals* are plotted on the left vertical axis, while *UA reported casualties* are plotted on the right vertical axis.

not returned to their relatives for other reasons. As discussed earlier, the Ukrainian official reports (as well as the US reports that are typically based on them) put the confirmed or estimated Russian battlefield deaths at significantly higher numbers than those captured by our dataset. These estimates are based on real-time battlefield reports and are typically supported by video records. While the Russian death toll numbers as reported by Ukraine are obviously higher, as of the end of our sample, the number of obituaries and even recorded funerals exceeds the official death toll as reported by Russian authorities, who admitted to only losing 1351 soldiers (in total) at that time.

Fig. 2 plots the cumulative casualty data from the Ukrainian sources against those we use in this paper and those admitted by the official Russian authorities. The Ukrainian data, however, do not indicate the home region of the diseased personnel. Moreover, the Russian public often interprets Ukrainian reports of Russian casualties as disinformation, discounts the total counts, and questions the authenticity of the recovered identifying documents and posthumous photographs. Hence, the Ukrainian data could not be used for the purposes of this study.

The publicly available Russian data on military obituaries, however, does reliably reveal the hometowns of the deceased personnel, and people tend to read and trust local sources. For example, in a random sample of 40 obituaries recorded in our dataset, some of which have also been reposted by Russian bloggers, the average view count as of today is 40,353, with a standard deviation of 72,993. Hence, while the official reports can indeed be mistrusted or ignored, it is much more difficult to ignore the reports of the deaths of specific people and of their funerals. The fact that military funerals take place in specific cities and villages

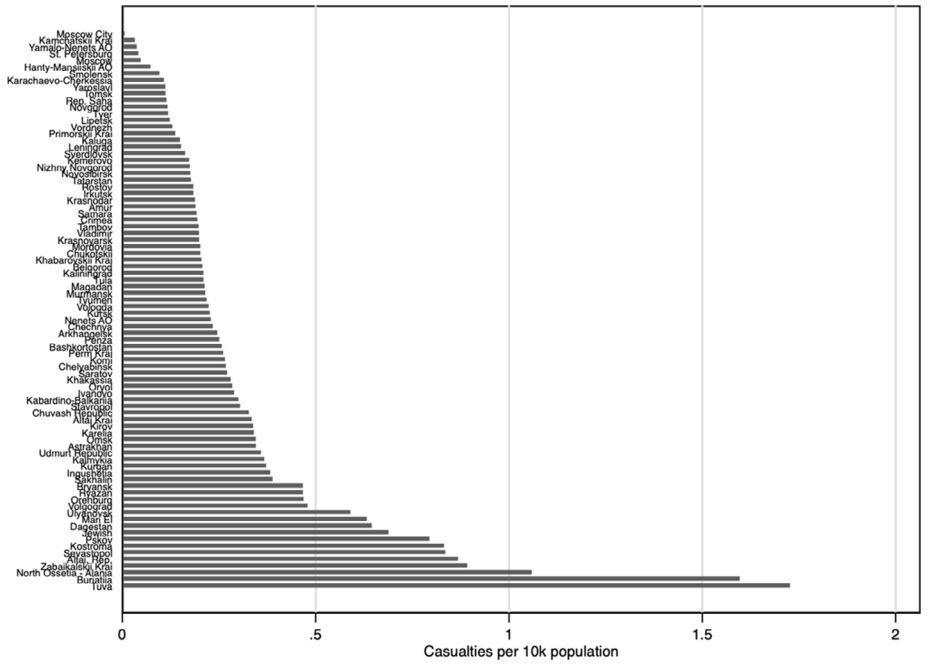

Fig. 3. Number of Russian casualties per 10,000 population by region. The figure presents the number of average daily confirmed Russian obituary casualties per 10,000 population.

across Russia helps the skeptical public verify the reported military deaths. One might personally know the deceased individual from his or her region; they may know their family and friends or come in contact with somebody who knows the deceased. Perhaps they witness the public funerals or relate to the pictures and obituaries with local references, such as schools attended, club memberships, or prior employment. In other words, obituaries and funerals of the military personnel from one's region bring the human cost of war close to home. Hence, we hypothesize that among the three sources of data on Russia's losses (actual obituaries/funerals, Ukrainian official data, and Russian official data), the former will have the most significant effect on the Russian public.

2.2. The regional distribution of casualties

To investigate if such "close to home" information about military casualties affects the level of support for the war and the government we manually analyzed burial location addresses to see which of the 84 Russian regions the deceased belonged to. This allowed us to group the observed Russian casualties by region. As a federal country, Russia has a considerable variation in socio-economic, ethnic, and political conditions across its provinces, republics, autonomous regions, and federal cities, often referred to as "regions". Regional differences offer a convenient vantage point for comparative analysis. To evaluate our hypotheses, we explore regional variation in war casualties' obituary reports and anti-government protests.

There are significant differences in the number of confirmed-obituary casualties across Russian regions. The highest daily averages in casualties stand at 199 in the Republic of Dagestan in the Northern Caucasus and 157 in Buryatia in Southeastern Siberia. Both are low-income regions with predominantly non-Russian ethnic populations. This is in sharp contrast to the seven and 22 total casualties from Moscow and St. Petersburg, respectively, which are the two most developed and populous cities in Russia. Fig. 3 shows that Moscow city residents suffered the least casualties per 10,000 population, while the residents of the Republic of Tyva suffered the most.

Not only does Moscow have few casualties per capita, but so also does the federal city of St. Petersburg, home to many universities and an important economic and cultural center, and many other economic and cultural hubs of the country, suggesting that the urban population is less likely to pay the human price of aggression. In fact, panel A of Fig. 4, which plots the number of casualties by the share of urban population, shows that across the country, higher shares of urban population are associated with fewer casualties.

We also find that poorer regions on average have higher per capita casualty counts compared to more affluent regions. Panel B of Fig. 4 plots the total number of casualties per 10,000 population against the natural logarithm of regional per capita income in 2021. The chart reveals that more affluent regions, including, but not limited to Moscow and St. Petersburg, generally have lower numbers of casualties per 10,000 residents. At the same time, poorer regions, such as Dagestan, North Ossetia-Alania, Tyva, Buryatia, and Ingushetia have the highest casualties. If the battlefield deaths are random and normally distributed across the places of origin of the servicemembers, our data should mean that the Russian commanders are more likely to send military units formed in poorer, more rural regions of Russia to the battlegrounds.

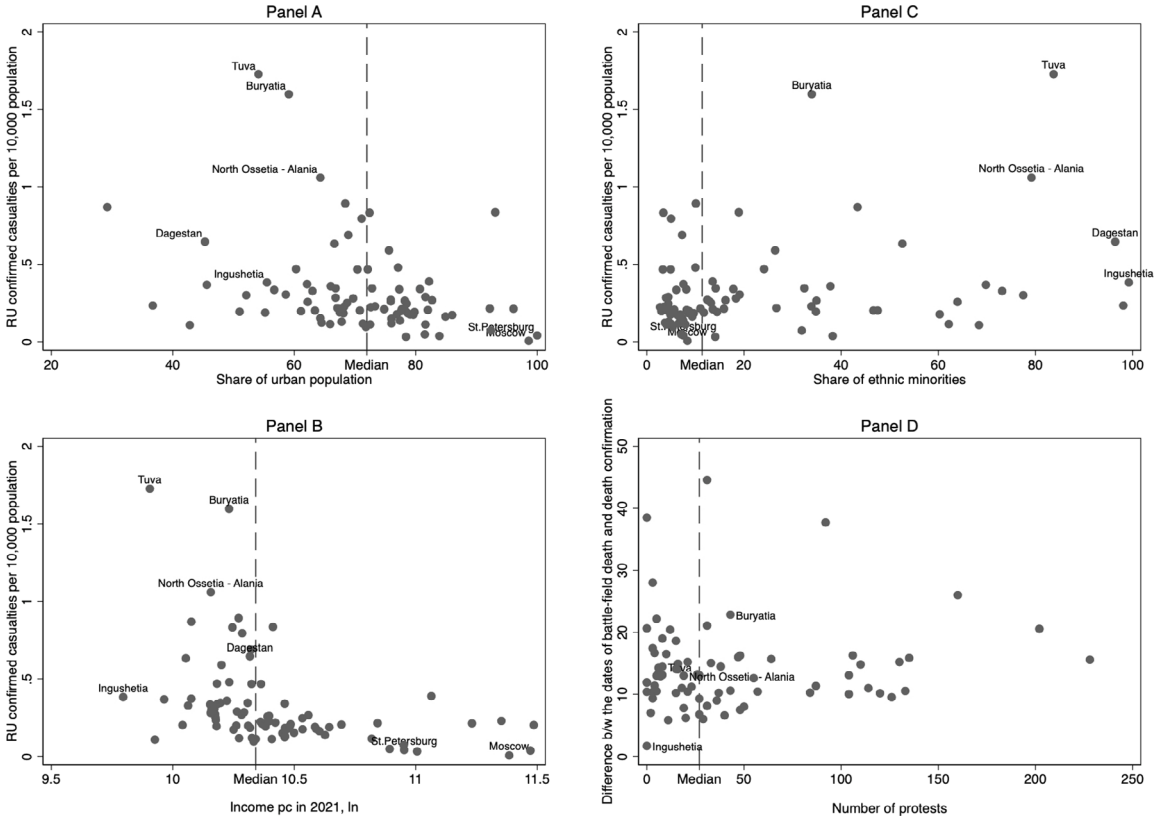

Fig. 4. Regional differences in casualties and their characteristics. *Panel A* displays confirmed Russian casualties per 10,000 population by share of urban population. *Panel B* displays confirmed Russian casualties per 10,000 population by per capita regional income (ln). *Panel C* displays confirmed Russian casualties per 10 000 population by the share of ethnic minorities in a region. *Panel D* displays the average difference between the dates of the battlefield deaths and the deaths' confirmation in obituaries by the number of protests in a region. To plot the figure in *panel D*, several outliers were dropped including Moscow and St. Petersburg. The number of average daily confirmed Russian obituary casualties per 10,000 population is plotted on the vertical axes in *panels A, B, and C*. The dashed lines are the medians of the variables plotted on the horizontal axis.

Russian human rights activists have suggested that regional disparities highlight the ethnic dimension of the Russian war against Ukraine. Analyzing the regional dimension of war losses, Media Zona reported in August that for each Muscovite killed in the war in Ukraine, there were 87 Dagestanies, 275 Buryats, and 350 residents of Tyva Republic (Rebryna, 2022). Dagestan, Buryat, and Tyva Republics are home to ethnic and religious minorities, who speak non-Slavic languages, are non-Christian, and are often visually identifiable for their distinct racial makeup. About 120 different ethnic groups live in Russia, with some regions having a high concentration of non-Russian populations. Specifically, the Northern Caucasus, Volga region, and sparsely populated South and East Siberia have high concentrations of ethnic minorities.

Panel C of Fig. 4 shows casualties per 10,000 residents by the shares of minority population in the region. Although some predominantly non-Russian regions suffer high casualty rates (Dagestan, North Ossetia), others do not (Ingushetia). Casualties are also high in regions that are home to ethnic groups. The Republic of Buryatia, for instance, despite being the homeland to the Buddhist Buryat ethnic group, has a 63% majority Russian population. Still, it experienced one of the highest rates of war casualties in 2022.

Finally, panel D of Fig. 4 shows the regional differences in the timing of announcements of casualties by the number of protests. There seem to be longer lags between the battle-field deaths and the publication of obituaries in regions with higher protest activity. This may suggest that the Russian Government strategically times the release of the death confirmations of military personnel to avoid mass protests.

In Russia, ethnic divisions are based on self-identified and out-group-labeled characteristics, which are important dimensions for building in-group empathy and solidarity.[7] Our dataset on obituaries does not have data on the ethnicity of the deceased military

[7] It should be noted that not all ethnic minority populations in Russia self-identify as such. Many members of the Siberian ethnic groups for generations have adopted Russian names, converted to Orthodox Christianity, and may not be visually identifiable as non-Russians. Yet others may identify themselves as non-Russians (including on their birth certificates and domestic passports) and have Russian-sounding names. This to a large extent explains the schizophrenic nature of Russian official nationalism and everyday racism. It has been reported that many members of neo-Nazi or Russian ethno-nationalist organizations are

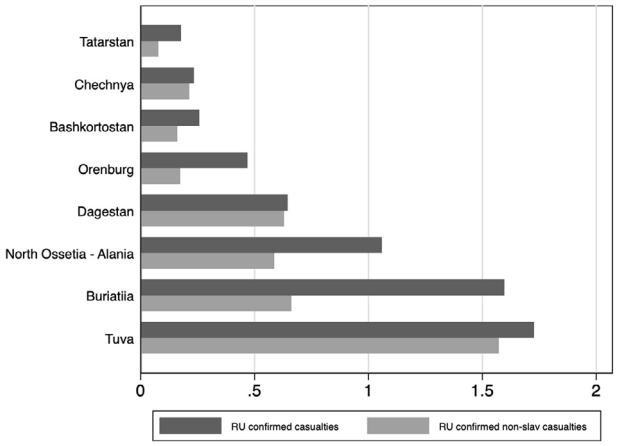

Fig. 5. Total confirmed Russian casualties vs. confirmed casualties with non-Slavic names per 10,000 population. The darker series present the average number of daily confirmed Russian obituary casualties per 10,000 population. The lighter series present the average number of daily confirmed Russian obituary casualties with non-Slavic names per 10,000 population. The figure reports the data for regions with the highest number of casualties with non-Slavic names that fall into the 90th percentile and above.

personnel. However, because ethnic-sounding names send unequivocal signals about an individual being non-Russian, we decided to exploit this dimension. To do this, we use a computer code to label the casualties as Slavic (Russian) or non-Slavic (non-Russian ethnic minority). Since we are interested in the public reaction to the announcement of military deaths, the names carry an important marker, identifying losses as "in-group" (ethnically Russian servicemembers) and "out-group" (the ethnic others). For the name analysis, we utilized a digital library of Slavic names and used a Python code to label them as such (Software, 2021). The script failed to identify Slavic names (in first, last, and patronymic, if present) in 22.45 percent of all entries. In 23.22 percent of the entries at least one of the name components was identified as a Slavic name. The first method identified names like Alexandr Nikitich Sotkin, Ivan Nikolaevich Maslikov, and Anton Sergeevich Yakimenko as Slavic and Akhmedzhan Khairbolatovich Amirgaliev, Balchii Orlan-oolovich Dongak, and Arsen Orlanovich Chuldum—as non-Slavic. Names like Viktor Evgen'evich Namsaraev, Nikolai Valer'evich Ilinbayev, and Khongor Nikolaevich Ivanov were coded as Slavic by the first method but non-Slavic by the second method because they contained at least one non-Slavic component.[8]

Fig. 5 plots the total number of casualties alongside non-Slavic casualties for a subset of regions with the highest number of military losses per 10,000 population. We see that all these regions are historically home to the ethnic minority populations and in many of them ethnic minorities in fact constitute a sizable share of military losses.

Russian and Ukrainian media have speculated that high rates of minority casualties might not be coincidental (Bessudnov, 2022). A large number of Russians have Ukrainian family connections and Ukrainian background, which might make them sympathetic with the Ukrainian side. Non-Slavs from the Caucasus and Siberia, on the other hand, are expected to be less sympathetic and less likely to collaborate with Ukrainians. It has also been suggested that financial incentives and promises of crime pardons have played a large part in the Russian military recruitment strategy. According to the "Ischi Svoikh" Telegram channel, government compensation to the families of fallen servicemembers varies widely across Russian regions. Citing local government sources, they report that in Moscow province, the one-time compensation to the family equals 3 million rubles; in Buryat Republic, 1 million; and in the remote Khanty-Mansi autonomous area, only 200,000 rubles. The lower economic standing of ethnic minorities compared to the majority Russian population may have helped bring them into the ranks of the Russian army.

Yet another potential explanation for why we might find ethnic minorities overrepresented in Russian war casualties is their deliberate targeting as part of the official ethno-nationalist propaganda. "Russian World", Putin's nationalist ideology that dates back to the early 2010s, revolves around the notion of "Russianness" defined vis-a-vis hostile others. The development of this ideology coincided with the increasing tolerance and even encouragement of xenophobic and racist groups and organizations, a rise in the number of attacks against ethnic minorities, and documented cases of minority discrimination in Russia (Human Rights Watch, 2022). Official propaganda normalized the use of derogatory language towards ethnic minorities and racial slurs (Tsygankov, 2022; Sharafutdinova, 2021). Since 2011–2012, as part of the attack on independent civil society organizations, authorities took significant efforts to curtail cultural autonomies and civic associations of ethnic minorities. With the official propaganda of exclusionary ethnic nationalism, authorities may hope that ethnic casualties will not resonate with the Russian public in the same way as the losses of Russian lives would—and as we see below, these expectations are justified. In other words, the Russian regime appears to be trying to avoid potential anti-war mobilization by shifting the human cost of fighting the war to ethnic minorities.

ethnic minorities themselves, which does not prevent them from being hostile to other minorities who look or sound "less Russian" than them (Arnold, 2010; Arnold and Markowitz, 2018).

[8] We transliterate these names here according to the Library of Congress format. In what follows we present data coded using the first method, but our results are robust to both methods of identifying Slavic and non-Slavic deaths.

2.3. History of anti-government protests in Russia

The second important building block of this study is data on anti-government/anti-war protests in Russia. Despite high levels of support for the government, Russians have historically engaged in protest activities. The older generations of Russians witnessed a wave of ethnic mobilization and mass rallies in the late 1980s that pushed the collapse of communism (Beissinger, 2002; Gorenburg, 2003). However, the democratization and social liberalization of the 1990s paradoxically increased disengagement from politics, which was a backlash against the decades of compulsory political activism demanded by the Soviet state. Political disengagement also meant declining levels of protests (Nikolayenko, 2008).

Marked by rising inequality, authoritarian consolidation, and rampant corruption, the early 2000s did not produce any significant mass mobilizations, which is a puzzling outcome that has been attributed to the sustained growth of the Russian economy and improvements in living standards (Robertson, 2007; Frye, 2021). Yet, in more recent years the electoral manipulations and attacks on civil liberties have brought about the strongest wave of popular mobilization recorded in Russia since the collapse of the USSR. Examples include the Dec 10, 2011, Bolotnaya Square protest in Moscow with an estimated 85,000–150,000 people participating, the anti-corruption protests of 2017–2018, the 2021 protests against Alexey Navalny's arrest, and the 2020–2021 protests in support of the arrested governor of Khabarovsk region Sergey Furgal (Grani, 2011).

However, surveys of protesters reveal that they were less likely to be motivated by pro-democracy values. Instead, most protesters were inclined to favor authoritarianism and ethno-nationalism (Chaisty and Whitefield, 2013). Also, although the Russian middle class was more likely to protest electoral fraud, those employed in the growing state sector were significantly underrepresented in the protest events (Rosenfeld, 2017; Lankina and Watanabe, 2017). Additionally, while protesters represented various political ideologies and made numerous political and economic demands (release of all political prisoners, support of revolution in Belarus, social justice, anti-corruption, independence of courts, etc.), they largely mobilized in support of political leaders, rather than broader political goals (Arhipova et al., 2021). Among all 5824 recorded protest events between 2007 and 2017, more than half of them were a-political, and made economic, social, cultural, legal, environmental, or civic demands (Lankina and Tertytchnaya, 2019).

When it comes to anti-war protests, historically they have been poorly attended. Protests of the Chechen wars (most significant in 1996 and 2001) mostly gathered civil society activists and oppositional politicians (Gorelik and Kovalev, 2001). The 2008 Moscow (population of 12 million people) protest the war in South Ossetia only gathered 150 people. The 2014 Peace March against military intervention in Ukraine was attended by about 20,000 people (Nikolayenko, 2019), which was about half of the estimated number of protesters opposing Navalny's arrest in 2021.

Paradoxically, the spikes in anti-government protests coincided with consistently high approval ratings of the Russian government. This might explain the failure of protests to attain their stated objectives. Still, there are indications that the Russian government takes protests seriously. A recent in-depth analysis of Russian labor relations by Crowley (2021) reveals that the fear of labor protests profoundly affects regimes' policy and institutional choices. Crowley argues that the need to cater to the interests of industrial workers has limited the economic reform choices for Putin, reinforcing the notion that autocratic survival continues to depend on popular support.

2.4. Data on anti-war protests in 2022

The announcement of the start of the "special military operation"—the Russian term for the war in Ukraine—was met by a wave of protest events. Mostly attended by university students, these were more numerous in Moscow and St. Petersburg and quite weak in other major cities. Mass arrests and the targeting of male protestors for military conscription quickly deescalated the initial wave, but smaller protests, individual pickets, and arson at the conscription points continued throughout the summer. The September announcement of compulsory military mobilization did not result in massive protest activities, with millions of Russians fleeing the country instead of standing up against unpopular government policy. The time series of protests can be seen in Fig. 1.

For the 2022 anti-government protest events across the 84 Russian regions we turn GDELT, which uses the Conflict and Mediation Event Observation and Actor Codebook (CAMEO) from Pennsylvania State University event data projects (Schrodt, 2012) to code all events. We used Google's BigQuery system to scan millions of GDELT records to identify daily numbers and location of all types of protests (CAMEO code 14). Using *BigQuery* we were able to identify the number of separate instances of anti-government protests that took place in each region each day from February 24, 2022 through June 9, 2022. We identified 15,342 separate contentious encounters.[9] Over the analyzed period, the largest numbers of protest events took place in Moscow (10,001 protest events), St. Petersburg (1564 protest events), and Sverdlovsk (376 protest events) region. Aginskiy Buryatskiy, Ust'-Ordynskiy Buryatskiy, and Nenetskiy autonomous regions; Altay and Ingushetiya republics; and Chitinskaya and Ul'yanovskaya provinces had no protests. The Republic of Adyheya had one protest. For protests lasting more than one day, each day in which a protest was reported was counted as a separate protest event. Descriptive statistics for the dataset we use is presented in Table 1.

[9] We simply count the number of protests in a day in a region, disregarding their magnitude. This way, an individual picket and a mass protest are counted equally.

Table 1
Descriptive statistics. The table presents the descriptive statistics of the main variables used in the paper. *Panel A* reports results for the variables used in cross-sectional regressions, *panel B* – panel regressions, and finally *panel C*—time series of the main variables. *Confirmed casualties* is the number of daily confirmed Russian obituary casualties. *Confirmed non-Slavic casualties* is the number of daily confirmed Russian obituary casualties with non-Slavic names. *Confirmed Slavic casualties* is the number of daily confirmed Russian obituary casualties with Slavic names. *Number of funerals* is the number of daily funerals of Russian soldiers who died in Ukraine. *Official RU cumulative casualties* is the cumulative number of Russian casualties as officially reported by Russia. *UA reported daily casualties* is the number of daily Russian casualties as reported by Ukraine. *Number of protests* is the number of daily protests in Russia either on day t or on day t in region i (depending on the format of data). *Protests dummy* is equal to 1 if there is at least one protest on day t in region i, and 0 otherwise. *Battlefield casualties* is the number of Russian battle-field casualties as reported on social media and in public domain. Other variables in *panel A* are: natural logarithm of income per capita in 2021, share of urban population, unemployment rate, share of ethnic minorities in a region, the number of employees of the federal executive authorities, number of employees of local governments, number of executive government employees, number of Bachelor students per 10,000 population, number of students of professional degrees per 10,000 population, fixed capital investments from regional budget, fixed capital investments from federal budget, average private profit of firms (mn RUB), natural logarithm of the per capita number of SMEs, population (in thousand), and the share of underaged criminals. The time series and panel data statistics is reported for the period between Feb 24, 2022, and Jun 09, 2022.

Variable	Obs	Mean	Std. dev.	Min	Max
Panel A: variables used in cross-sectional regression					
Confirmed casualties	84	41.2	35.1	1.0	199.0
Confirmed non-Slavic casualties	84	9.5	24.3	0.0	194.0
Confirmed Slavic casualties	84	32.0	24.9	1.0	103.0
Income pc, ln	84	10.4	0.3	9.8	11.5
Federal employees	84	14 054.3	12 416.4	662.0	89 953.0
FCI from regional budget	84	19.8	14.9	1.7	69.0
FCI from federal budget	84	12.5	12.6	0.1	61.3
Average private profit	84	162 954.0	421 832.2	−93 832.0	324 7670.0
Urban population, share	84	71.0	12.9	29.2	100.0
Unemployment rate	84	6.0	3.4	1.2	26.3
Population, thousand	84	1742.0	1810.1	43.8	12 615.3
Bachelor degrees	83	242.2	99.5	14.0	560.0
Professional degrees	84	162.9	28.4	81.9	228.4
Local government employees	84	5564.3	3857.5	207.0	17 488.0
Small businesses per capita	83	−4.3	0.6	−6.2	−3.1
Underaged criminals, share	78	0.6	0.3	0.1	1.4
Local executive government employees	84	5308.1	3682.4	186.0	17 056.0
Ethnic minorities, share	84	23.4	25.6	2.7	99.2
Panel B: variables used in panel regressions					
Number of protests	10,578	1.5	12.6	0.0	397.0
Protests dummy	10,578	0.2	0.4	0.0	1.0
Confirmed casualties	10,578	0.3	0.8	0.0	16.0
Confirmed non-Slavic casualties	10,578	0.1	0.4	0.0	16.0
Confirmed Slavic casualties	10,578	0.3	0.7	0.0	13.0
Battlefield casualties	10,578	0.2	0.6	0.0	16.0
Panel C: time series variables for the whole country					
Confirmed casualties, daily	106	32.6	14.5	0.0	74.0
Confirmed non-Slavic casualties, daily	105	7.7	4.1	0.0	23.0
Confirmed Slavic casualties, daily	105	25.3	11.9	0.0	64.0
Number of funerals, daily	106	15.7	7.8	0.0	34.0
Official RU casualties, cumulative	105	1087.0	442.5	0.0	1351.0
UA reported casualties, daily	106	301.4	410.1	0.0	3160.0
Number of protests, daily	106	143.7	124.5	25.0	641.0

3. Methodology and analysis

3.1. Cross-sectional analysis of regional data

As our first step, we look at the cross-sectional differences between the Russian regions, focusing on the correlations between their socio-economic characteristics and recorded losses. If ethnic minorities are in fact targeted by war mobilization efforts, we expect to notice that in the empirical estimation results, even after we control for other relevant regional variables. Hence, we estimate this simple cross-sectional regression model:

$$Casualties_i = \alpha + \beta \Gamma_i + \epsilon_i \tag{1}$$

where $Casualties$ is the total number of confirmed Russian casualties in region i, as reported in obituaries in the public domain on social media and other public networks. Γ_i is a vector of region-specific controls that includes a set of economic characteristics (per capita income, fixed capital investments from regional and federal budgets, average private profit of firms, number of SMEs per capita), characteristics that show how depending the region is on government funding (the fraction of employees working in for the local and federal government), and social characteristics (ethnic minorities as a share of regional population, total population, the

Table 2
Cross sectional correlates of war casualties across Russian regions. The table presents the cross-sectional OLS regressions in which the dependent variables are: confirmed Russian obituary casualties in a region (panels 1–3), confirmed Russian obituary casualties with non-Slavic names in a region (panels 4–6), and Russian obituary casualties with Slavic names in a region (panels 7–9). The independent variables include natural logarithm of income per capita in 2021, share of urban population, unemployment rate, share of ethnic minorities in a region, the number of employees of the federal executive authorities, number of employees of local governments, number of executive government employees, number of bachelor's degree students per 10,000 population, number of students of professional degrees per 10,000 population, fixed capital investments from regional budget, fixed capital investments from federal budget, average private profit of firms (mn RUB), natural logarithm of the per capita number of SMEs, population (in thousand), and the number of underaged criminals. #, *, **, † significant at .20, .10, .05, and .01 level or better. Standard errors are robust.

Variables	All casualties			Casualties with non-Slavic names			Casualties with Slavic names		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Income pc, ln	−26.660**	−20.095**	−30.865†	−0.539	1.030	−5.016	−26.375†	−21.334†	−26.020†
	(10.332)	(8.642)	(10.407)	(8.077)	(8.534)	(4.488)	(5.441)	(5.019)	(8.715)
FCI from regional budget	−0.060	−0.091	−0.214	0.697	0.574	−0.078	−0.758#	−0.664*	−0.111
	(0.917)	(0.679)	(0.594)	(0.640)	(0.608)	(0.279)	(0.560)	(0.396)	(0.457)
FCI from federal budget	0.206	0.241	0.329	−0.450	−0.351	0.082	0.660	0.595	0.236
	(1.046)	(0.818)	(0.827)	(0.616)	(0.612)	(0.356)	(0.729)	(0.515)	(0.616)
Average private profit	0.000	−0.000†	−0.000#	0.000	−0.000	0.000	−0.000	−0.000†	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Small businesses per capita	−6.508	−16.664#	−4.101	−20.268**	−23.962**	−4.245#	13.615†	7.088#	0.062
	(10.786)	(10.369)	(8.033)	(9.378)	(10.390)	(3.177)	(4.226)	(4.435)	(6.561)
Federal employees		0.001†	−0.001		0.001*	−0.002*		0.001†	0.001
		(0.000)	(0.002)		(0.000)	(0.001)		(0.000)	(0.002)
Local government employees		0.003	0.008		−0.001	0.003		0.003	0.005
		(0.008)	(0.006)		(0.011)	(0.004)		(0.006)	(0.005)
Local executive government employees		0.001	−0.005		0.001	−0.003		−0.001	−0.003
		(0.009)	(0.007)		(0.011)	(0.005)		(0.006)	(0.005)
Ethnic minorities, share			0.074			0.198*			−0.116
			(0.141)			(0.108)			(0.122)
Population, thousand			0.012			0.015**			−0.003
			(0.015)			(0.007)			(0.011)
Urban population, share			0.108			0.094			0.021
			(0.360)			(0.141)			(0.284)
Unemployment rate			−0.119			0.551			−0.647
			(2.129)			(1.008)			(1.780)
Bachelor's degrees			−0.016			0.008			−0.024
			(0.033)			(0.013)			(0.026)
Professional degrees			0.202#			0.151*			0.059
			(0.152)			(0.077)			(0.105)
Underaged criminals, share			7.687			9.966			−1.418
			(18.336)			(7.738)			(12.761)
R-Square	0.103	0.451	0.474	0.308	0.377	0.484	0.181	0.528	0.513
Sample size	83	83	76	83	83	76	83	83	76

share of urban population, unemployment rate, number of college and vocational school students per 10,000 population, and the share of underaged criminals).[10] The estimation results are presented in Table 2.

We find that regional income is a significant determinant of Slavic casualties, but it is insignificant for non-Slavic casualties. Assuming casualties are randomly distributed in the Russian armed forces sent to Ukraine, these correlations are consistent with the reports of economic reasons for enlisting in the army for those with Slavic names (predominantly, ethnic Russians). For the non-Slavic minorities, on the other hand, participation in the war might not have been a choice, but an order. Moreover, the high positive correlation of non-Slavic casualties with the share of ethnic minorities in a region may be evidence of discriminatory practices of Russian military forces in sending more non-Slavs to the battlefield.

3.2. Panel data analysis of regional protests

Proceeding to the analysis of our primary dependent variable – anti-government protest events – we construct a daily panel of 84 regional observations between February 24 and June 09. We estimate several specifications of the panel regression models in which observations vary across regions and date. We analyze the confirmed casualties date (obituary dates on social media and

[10] In controlling for characteristics associated with governance and state administration we follow Brown et al. (2009). The approach recognizes that the size of a nation or sub-national unit does not matter for many government functions because of substantial economies of scale in administration. The argument is further detailed in Gehlbach, who uses the example of Russia and Estonia. Both nations have exactly one chief central banker, although the population of Estonia is less than 1/100 of the population of Russia (Gehlbach, 2008). Within Russia, all cities – small and large – have one mayor, all state schools have one principal, and every village has a police office. We also reason that since the government-financed investments usually target infrastructure development, such as roads, bridges, and hospitals, the total rather than per-capita figures would be more indicative of the government footprint. If normalized by the size of regional population, such estimates would be biased in favor of large but sparsely populated remote regions of the far north.

in the public domain) because these have more relevance to the suggested causal mechanisms. Specifically, we are interested in estimating the following model:

$$\begin{aligned} Protests_{it} = \alpha_i + \beta Casualties_{it} \\ + \rho Protests_{i(t-1)} + \delta \Sigma_{k=1}^{7} Casualties_{i(t-k)} \\ + \gamma \Gamma_i + trend_t + \omega_t + \epsilon_{it} \end{aligned} \tag{2}$$

Because protests tend to cluster in time and region, such that some regions may have over a hundred separate protest events on a single day while others have none, we first define our dependent variable, Protests, as a dummy variable that equals 1 if at least one protest event takes place in a region on a given day, and zero otherwise. This allows us to interpret the regression coefficients as the marginal effects of the corresponding variables on the probability of protests. Our main independent variable is $Casualties_{it}$, the number of obituary-confirmed casualties on date t in region i.

Depending on the specification, we also control for the lagged protests, $Protests_{i(t-1)}$, turning our panel regression into a dynamic panel. We also take into account that the effect of casualties might accumulate in time and be more pronounced if there are multiple obituaries published or funerals happening within a short time, for instance, a week. To account for that, we add total weekly casualties as a control: $\Sigma_{k=1}^{7} Casualties_{i(t-k)}$. For the fixed effects regression, we include the regional fixed effects i, while the regional characteristics Γ_i are included into the random effects model. Finally, since evidence suggests that there is a trend in overall protests in Russia (their number is steadily going down after the initial uptick during the first week of the war), we include the country-wide quadratic time trend, $trend_t$, into the regression. For even more flexibility, we also allow for ω_t to capture more complex county-wide dynamics. The fixed effects estimation results appear in Table 3, Panel A.[11]

By looking at specifications (1)–(3), we can see that the effect of casualties on the probability of protests is very consistent. For each additional report of a fallen soldier, the probability of a protest in his home region increases by slightly more than one percent. This means that one additional report of casualties is associated with 1.4–1.5% increase in the probability of a region experiencing a protest event on a day the obituary is released. To appreciate the substantive significance of such effect, consider that in a 2020 study analyzing political behavioral effects of the social media network used for collecting our data, Enikolopov et al. (2020) found that a 10% increase in user penetration on the VK social network has led to a 4.5–4.8 percentage point probability increase of protest outbreak during the weekend that followed the national reports of electoral fraud in 2011. According to our estimates, to have a similar increase in the probability of anti-government protest in 2022 a region should see 3 to 4 reports of military deaths. Our results indicate that with all the limitations associated with social network communication, reports of military casualties had a strong substantive effect on real-world protest behavior. This result does not depend on whether we control for lagged protests or include a time trend.[12]

As our next step, we separate the casualties into those with Slavic and non-Slavic (minority) sounding names and include both variables into the regression. These fixed effects estimation results appear in specifications (4) and (5). By examining the two variables, it becomes clear that the Russian population reacts (i.e., protests) in response to Slavic deaths: each obituary with a Russian-sounding name increases the probability of at least one protest in that region by two percent. Non-Slavic casualties, on the other hand, do not increase the probability of protests. As before, the results appear to be robust to the various sets of controls and estimation methods. This conclusion does not change if we replace fixed effects with random effects and cross-regional controls, as in specification (6). The effects of casualties on protests remain qualitatively and quantitatively similar.

The *Protests* dummy, as defined above, equals 1 if at least one protest takes place in the region on a given day. The protest is not necessarily a war-related protest (as our data does not allow us to see the reason people are protesting). Nor is it necessarily massive: it can be a single-person picket—the only form of protests officially allowed in Russia. Finally, a protest might actually be a pro-war protest, even though there is anecdotal evidence that those do not get reported in the media. To at least partially account for the scale, rather than the mere fact, of protests, Table 3, Panel B, replaces the Boolean measure for the incidence of protests in a region on a given day with a quantitative measure of the number of registered protests. Specifically, we define *Protests* as the logarithm of protests plus 1 in region i on date t. This allows both, taking into account that for about half of our sample, daily protests are zero, and we want to keep these observations in the dataset, while for the remaining half, they vary substantially from 1 to 397.[13]

Our results remain consistent with this change. For instance, 10 additional Slavic casualties in a region on a given day increase the number of protests by 15 to 16 percent relative to the mean. As before, non-Slavic casualties do not have that effect.[14]

[11] While in the empirical analysis we cluster robust standard errors by region, using jackknife standard errors instead does not affect our conclusions.

[12] The inclusion of the lagged dependent variable together with fixed effects, biases the estimate of the persistence coefficient. The size of the bias is $-(1+\rho)/(T-1)$, meaning it is inversely related to T, and does not depend on the sample size, N. Since in our case $T = 124$, this potential bias can be ignored. An alternative approach is to use the Anderson-Hsiao estimator, which requires availability of strong instrument(s) for $Protests_{t-1}$.

[13] As another alternative, we also used fixed effects Tobit estimation. The results stay consistent and are available upon request.

[14] Additional robustness checks when we drop Moscow and St. Petersburg from the regression, express casualties in logarithms thus converting the slopes to elasticities, and measuring casualties as losses per capita are available on request. Our results remain robust to all these modifications.

Table 3
The results of regressing regional protests in Russia on confirmed Russian casualties. *Panel A* presents the results of the fixed (columns 1–5) or random (column 6) effects regressions in which the dependent variable is *Protests dummy* equal to 1 if there is at least one protest in region i on day t. *Panel B* presents the results of the fixed (columns 1–5) or random (column 6) effects regressions in which the dependent variable is the logarithm of the *Number of Protests*. *Number of Protests* is the number of protests in region i on day t. *Confirmed casualties* is the number of daily confirmed Russian obituary casualties in a region. *Confirmed Slavic casualties* is the number of daily confirmed Russian obituary casualties with slavic names in a region. *Confirmed non-Slavic casualties* is the number of daily confirmed Russian obituary casualties with non-Slavic names in a region. Lagged *Protests* is the number of protests from $t-1$. *Cumulative last week casualties* is the cumulative confirmed Russian obituary casualties over the previous week. Cross-sectional controls include: natural logarithm of income per capita in 2021, urbanization rate, unemployment rate, share of ethnic minorities, the number of employees of the federal executive authorities, number of employees of local governments, number of employees of local administrations, number of bachelor's degree students per 10,000 population, number of students of professional degrees per 10,000 population in a region, fixed capital investments by the local government, fixed capital investments by the federal government, profit less the loss of companies, natural logarithm of the per capita number of SMEs, and the share of underaged criminals. $^{\#}$, *, **, † significant at .20, .10, .05, and .01 level or better. Standard errors are clustered at regional level.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: The dependent variable is a 0/1 Protests dummy						
Confirmed casualties	0.014**	0.015†	0.015**			
	(0.005)	(0.006)	(0.006)			
Confirmed Slavic casualties				0.021†	0.020†	0.024†
				(0.006)	(0.006)	(0.007)
Confirmed non-Slavic casualties				−0.009	−0.012	0.003
				(0.012)	(0.012)	(0.014)
Lagged protests			0.078†	0.078†	0.081†	
			(0.014)	(0.012)	(0.015)	
Cumulative last week casualties					0.000	
					(0.216)	
R-Square	0.001	0.030	0.023	0.030	0.030	
Panel B: The dependent variable is the logarithm of the Number of Protests						
Confirmed casualties	0.010*	0.012**	0.010*			
	(0.006)	(0.006)	(0.006)			
Confirmed Slavic casualties				0.015**	0.015**	0.016**
				(0.007)	(0.007)	(0.008)
Confirmed non-Slavic casualties				−0.008	−0.009	−0.003
				(0.013)	(0.012)	(0.019)
Lagged protests			0.261†	0.261†	0.233†	
			(0.049)	(0.049)	(0.044)	
Cumulative last week casualties					−0.112	
					(0.238)	
Weekly time effects	Yes	No	No	No	No	No
Time Trend	No	Yes	Yes	Yes	Yes	Yes
Cross-sectional controls	No	No	No	No	No	Yes
Estimation method	FE	FE	FE	FE	FE	RE
R-Square	0.000	0.116	0.051	0.117	0.099	
Sample size	8904	8820	8904	8820	8400	8056

3.3. Timing of the effect of casualties on protests

In the analysis above, we assume a contemporaneous effect of casualties on protests. However, one might hypothesize that it takes time between an obituary being published online, information about it spreading, and someone deciding to take their grievance to the streets. Additionally, due to potentially different burial rituals for those soldiers with Slavic and non-Slavic names, we will eventually find the relationship between non-Slavic casualties and protests if we separate them in time.

For these reasons, we decided to repeat our original analysis, while lagging our main independent variable, $Casualties$, by k periods, for various values of k:

$$Protests_{it} = \alpha_i + \rho_k Casualties_{i(t-k)} + trend_t + \epsilon_{it} \tag{3}$$

The results of estimating Eq. (3) are presented in Fig. 6. Our investigation of the potential delayed response shows that the effect of casualties on protests is indeed contemporaneous: the coefficients on the lagged independent variables are not significant in the pooled regressions (Panel A), nor in the regressions which separately include lagged Slavic or non-Slavic casualties (Panels B and C). This means that if the protests do happen in response to casualties, they happen on the day the obituaries are made public. Notably, across all regressions, the effects of casualties are only present for Russian-sounding names. In regressions on non-Slavic names, we find no statistically significant relationships between protests and lagged casualty announcements, regardless of the lag length.

3.4. Endogeneity of confirmed casualties and 2SLS estimation

There is evidence that the Russian government strategically times news related to casualties to make sure a large number of fallen soldiers will not be buried in the same location on the same day (Gruzy, 2023). Moreover, when multiple human losses

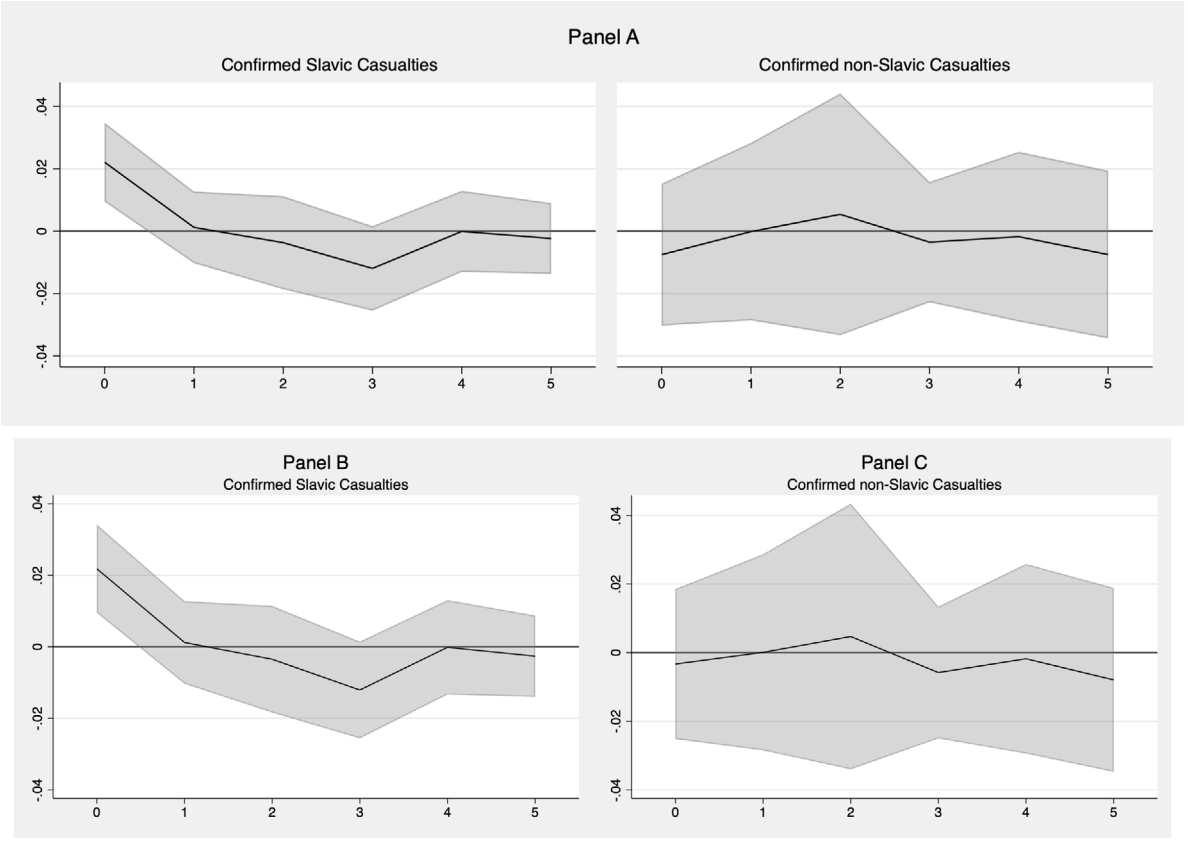

Fig. 6. The results of regressing regional protests in Russia on lagged confirmed casualties. The figure plots the coefficients of the fixed effects regressions in which the dependent variable is the *Protests dummy* equal to 1 if there is at least one protest in region i on day t. The independent variable is lagged by j days, and this lag length is plotted along the horizontal axis. *Confirmed Slavic casualties* is the number of daily confirmed Russian obituary casualties with Slavic names in a region. *Confirmed non-Slavic casualties* is the number of daily confirmed Russian obituary casualties with non-Slavic names in a region. *Panel A* plots results of the regression in which both *Confirmed Slavic casualties* and *Confirmed non-Slavic casualties* are used as independent variables. These variables are used as independent variables in separate regressions plotted in *Panel B* and *Panel C*. Standard errors are clustered at the regional level. Shaded areas are the 95 percent confidence intervals.

happen during a short period of time, it is customary to declare mourning on the regional or federal level. Strategically choosing the dates when to send the killed-in-action notices and when to release the bodies to the relatives might allow the government to avoid popular unrest. The possibility that the obituary dates might be endogenous puts our estimates at risk.

To deal with potential endogeneity, we propose using instrumental variables estimation. While the obituary date could indeed be endogenous, we have another casualty date in our dataset, which local Russian authorities have little to no control of: the battlefield death date. This date precedes the date when the families are notified of the death, sometimes by several weeks. This guarantees the relevancy of our instrument. Since this date is (generally) not known to the public until the death is confirmed by the authorities (thus, contributing to the confirmed casualties variable), it is likely excludable from the Protests equation by affecting them only through confirmed casualties.

Taking all the above into account, we re-estimate Eq. (2) while instrumenting $Casualties$ at time t with two weeks of lagged Slavic and non-Slavic battle-field casualties, lags (t-7) through (t-21). The estimation results are presented in Table 4.

As before, after controlling for endogeneity, only Slavic casualties remain significant. The non-Slavic casualties do not appear to spark protests, regardless of whether we include them in addition to Slavic casualties (as in specification in column 1) or separately (as in specification in column 3). When it comes to the point estimates of the effects, they are three to four times higher than their OLS counterparts and imply that an extra confirmed casualty with a Slavic-sounding name increases the probability of at least one protest by almost seven percent. The attenuation bias that appears in the OLS results in Table 2 could be explained by measurement error in our casualty data. Since the data is crowd-sourced and hand-collected and comes from multiple different sources that published the obituaries, this can well be one of the factors contributing to the bias.

Another factor that could explain the difference is the nature of the instrument. While we are explicitly controlling for all the time-invariant differences between the regions by including the fixed effects, the instrument—battlefield deaths—might affect the obituaries differently in different regions. As a result, we end up estimating the local average treatment effect.

Table 4
2SLS results of regressing regional protests on confirmed casualties. The table presents the results of the 2SLS fixed effects regression in which the dependent variable is the *Protests* dummy equal to 1 if there is at least one protest in region i on day t. Instruments used are: lags 7 through 21 (two weeks) of battle-field casualties, both Slavic and non-Slavic. *Confirmed Slavic casualties* is the number of daily confirmed Russian obituary casualties with Slavic names in a region. *Confirmed non-Slavic casualties* is the number of daily confirmed Russian obituary casualties with non-Slavic names in a region. #, *, **, † significant at .20, .10, .05, and .01 level or better. Standard errors are clustered at regional level.

The dependent variable is a 0/1 Protests dummy			
	(1)	(2)	(3)
Confirmed Slavic casualties	0.065**	0.066**	
	(0.027)	(0.026)	
Confirmed non-Slavic casualties	0.012		0.050
	(0.072)		(0.074)
Time trend	Yes	Yes	Yes
Estimation method	FE	FE	FE
Sample size	6460	6460	6460

4. Conclusions

Economic downturn and poor performance of the Russian military are expected to erode public support for the war in Ukraine. Such support has been fueled by the warmongering propaganda messages centered around Russian ethno-nationalism. In this paper we examined whether war casualties suffered by the occupying forces in Ukraine, when publicly announced by their friends and families or local authorities, affect anti-government protest activity. Analyzing the sub-national variation in the distribution of casualties of the war and the geography of anti-government protests in the first four months of the war, we found that casualties in fact lead to the greater incidence of protests, but such effects on a regional level are only observed for the obituaries of military personnel with Russian-sounding names. Minority death announcements are not statistically related to protests.

Our contributions are twofold. On the one hand, we show that despite the Kremlin's monopoly on war-related information and war-mongering ideology, the Russian public reacts to war casualties with anti-government protests. Our findings suggest that public opinion might be sensitive to Russia's human costs of military aggression, especially when losses are "close to home". The second contribution is we show that anti-war mobilization manifests itself in ways that reinforce, rather than challenge, the autocratic regime's legitimizing ideology. We demonstrate that ethno-nationalist divisions are a significant factor in protest mobilization, which may help explain the general failure of Russian society to mount sufficient opposition to Putin's war efforts.

Furthermore, our exploration of the ethnic dimension of military casualties, and by implication, military recruitment, suggests that an intentional government policy of shifting the human cost of fighting the war to Russia's ethnic minorities might be in place. We may be witnessing a revival of the infamous Soviet "Nationalities Policy" that targeted ethnic populations cast as "others" in the official rhetoric. Our analysis echoes the previous findings that Russian protesters are likely to align with authoritarian political ideology, rather than challenge it Chaisty and Whitefield (2013): only ethnically Russian deaths galvanize anti-government political behavior, which plays into the ethno-nationalist war legitimation rhetoric of Russian authorities. Targeting military rotations and drafts towards ethnic minorities appears to be an effective strategy to preempt anti-war mobilization.

Our research also has broader implications for the literature on autocratic stability. Over the past decade, the political economy literature has identified improving living standards and clientelistic rents as the major sources of societal support for Russia's autocratic regime (Frye, 2021). The literature has portrayed Russians as holding political positions consistent with the rational calculations over personal benefits attributable to the government's economic performance (White and Mcallister, 2008), sources of their personal income (Rosenfeld, 2017), or access to clientelistic rents (Szakonyi, 2019).

If the survival of Russian autocracy depends on public support, our results are consequential for understanding potential vulnerabilities of Putin's regime. Previous research stressed popular economic grievances as an important trigger of anti-government mobilization. A far cry from the regime-changing force, episodes of previous protests have affected the direction of government policy, forcing the Russian kleptocratic regime to accommodate popular demands with economic concessions. The Russian state continues to rely on the monetary hand-outs to appease families of fallen soldiers. It is unclear, however, if the past strategy of economic benefit hand-outs will be available moving forward. International sanctions and cuts in natural gas supplies to Europe are likely to dampen the budgetary receipts from oil and gas exports in Russia. Although the rising energy prices had offset some of the lost revenues, they are unlikely to result in budgetary surpluses necessary to appease economic grievances. In light of these considerations, information control and ethno-nationalist propaganda are likely to become even more important as the means to sustain Putin's regime.

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