European Bank
for Reconstruction and Development

The Effect of Conflict on Ukrainian Refugees' Return and Integration

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Abstract

During 2022, about eight million Ukrainians were displaced from Ukraine due to the Russian invasion. Whether these individuals will return holds great significance for Ukraine's reconstruction and is pivotal in shaping integration strategies in host countries. We used Facebook ads to recruit a panel of Ukrainian refugees in Europe, starting in June 2022. Six waves carried out in 2022 and 2023 allow us to examine the causal impact of local conflict intensity on refugees' return intentions and integration. We find that less than 10% of Ukrainian refugees express a desire to permanently settle abroad. While the duration of time spent abroad leads to a higher proportion of refugees being employed, it does not diminish their intentions to return. Conflict intensity in one's home municipality decreases current return intentions, but it has only a small impact on plans to return once safety is restored.

Keywords: conflict, Ukraine, migration, refugees, return migration

JEL Classification Number: D740, F220, J240

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We thank Lasha Chargaziya and Nadzeya Laurentsyeva as well as the participants at the German Economic Association Annual Conference (2023), the IZA Workshop on Labor Markets and Innovation during Times of War and Reconstruction, the 4th EBRD-KCL Workshop on the Economics and Politics of Migration, Silvaplana Political Economy Workshop, and seminars at the Kiel Institute for the World Economy, ifo, and the National University of Singapore. Kateryna Kozoroh and Tuncay Taghiyev provided excellent research assistance. Views presented are those of the authors and not necessarily those of the European Bank for Reconstruction and Development (EBRD) or any other organization. All interpretations, errors and omissions are the authors' own.

Working Paper No. 289 **Prepared in January 2024**

1 Introduction

Russia's full-scale invasion of Ukraine has triggered the largest refugee crisis in Europe since the Second World War, resulting in approximately eight million refugees, including those forcibly relocated to Russia (UNHCR, 2023b). Additionally, several million individuals have been internally displaced within Ukraine (IOM Global Data Institute Displacement Tracking Matrix, 2023). In the face of significant setbacks on the battlefield, the Russian strategy shifted towards breaking the morale of the Ukrainian people by targeting residential areas and crucial civilian infrastructure (Stepanenko *et al.*, 2023). Prior to Russia's large-scale invasion, Ukraine's population was already experiencing rapid decline due to low fertility and large labor emigration. If a substantial portion of Ukrainian refugees choose to remain abroad, it may increase Ukraine's vulnerability to additional military aggression and hinder post-war reconstruction efforts.

In this paper, using new panel data on Ukrainian refugees in Europe, we estimate the causal effects of conflict in one's home municipality in Ukraine on actual return, return intentions and integration outcomes. We find that less than 10% of Ukrainian refugees plan to settle abroad permanently. This share does not depend on time spent abroad, and only increases with intensity of conflict in one's home region. Using additional data from Gallup World Poll and other surveys conducted in Ukraine, we show that Ukrainians' resilience can be explained by their increased confidence in the government and military, boosted optimism, and stronger national identity. On the contrary, we do not find evidence that conflict in one's origin, conditional on staying outside of Ukraine, affects a range of integration outcomes such as employment, language skills and social and subjective integration.

Whether to emigrate is a complex decision that depends on many factors "pushing" potential migrants out of their country of origin or "pulling" them to a potential destination country. Theoretical models and empirical analyses in migration literature identify conflicts and poor economic conditions as push factors and high earnings as a pull factor (Adhikari, 2013; Massey *et al.*, 1994; Bohra-Mishra and Massey, 2011). Studies of previous conflicts (Camarena and Hägerdal, 2020, for example) suggest that refugees are less likely to return to their origin countries.

There are several reasons why predictions based on theoretical arguments and previous conflicts might not hold for Ukrainians. First, external threats tend to forge a stronger national identity (Kulyk, 2016; Gehring, 2021). A stronger national identity may directly increase the psychological cost of living abroad. Second, Ukraine's success in repelling the Russian invasion can be expected to have increased confidence in its government and military. This would make staying more attractive. Furthermore, confidence in the government and military institutions may increase optimism about future life in Ukraine. Third, international support and the prospect of potential EU accession and NATO membership could further increase optimism about life in Ukraine. The war can also generate a rally-around-the-flag effect (Mueller, 1970; Dinesen and Jæger, 2013; Yam *et al.*, 2020). The rally-around-the-flag effect is defined as an increased short-run popular support of a country's government or political leaders during periods of international crisis or war (Goldstein and Pevehouse, 2008). This effect may be driven by increases in national identity or by the pivotal role played by the government in responding to the conflict (Baker and Oneal, 2001). We conjecture that it could reinforce the outlined mechanisms that reduce desire to emigrate and encourage refugees to return. If these effects are sufficiently strong, they could overturn predictions from traditional migration literature so that Ukrainians would become more determined to live in Ukraine. Figure A1 in the Appendix illustrates these competing forces. The red arrow highlights the traditional view that suggests an increasing desire to emigrate and low willingness to return, while the blue arrows depict counteracting forces. Although Figure A1 is tailored for Ukraine, national identity, confidence in government and military as well as optimism could be counteracting conflict exposure also in other settings.

Research on previous refugee crises has concluded that refugees' return rates following conflict are very low and those who return do so with a significant delay (Camarena and Hägerdal, 2020; Beaman *et al.*, 2022). Destroyed housing, worsening safety conditions back home, and the personal experience of violence have been identified as relevant deterrents of return migration (Beaman *et al.*, 2022; Alrababa'h *et al.*, 2023; Serdar and Orchard, 2020; Balcilar and Nugent, 2019). However, this evidence concerns refugees fleeing undemocratic countries or civil wars, and in many cases being persecuted by their own government. Ukraine is a democracy under attack. This makes the nature of the conflict very different, leaving it open as to whether patterns established in previous literature hold. There is one other

publication that predicts Ukrainian migration decisions after the Russian war using Gallup Data collected before the war. However, Elinder *et al.* (2023) analyze destination choices and not return aspirations.

In addition, most of the previous studies rely on cross-sectional data only, making it difficult for researchers to separate causal effects of conflict on return intentions from selection into emigration based on unobservable characteristics. We contribute to this literature by showing how Ukrainian refugees' return intentions differ from those of refugees who mostly fled from civil wars or government persecution. Little is known about whether refugees from democratic countries would like to return, as there have been no large-scale refugee flows from democracies under external attack since the Second World War.

Previous literature has highlighted the importance of return migration for the development and reconstruction of the country of origin in terms of innovation (Choudhury, 2016) and entrepreneurship (Massey and Parrado, 1998; Demurger and Xu, 2011; Krasniqi and Williams, 2019). Return migration and contacts with the diaspora can also foster trade (Bahar *et al.*, 2022; Parsons and Vézina, 2018), investment (Mayda *et al.*, 2022), and political change (Chauvet and Mercier, 2014; Barsbai *et al.*, 2017). Hence, policymakers both in Ukraine and in refugees' destination countries urgently need evidence on the return intentions of Ukrainian refugees.

Our paper is related to the existing literature on the factors influencing refugees' labor market integration.[1] A range of studies, such as those conducted by Edin *et al.* (2003), Damm (2009), and Beaman (2012), has consistently shown that residing in areas with a high concentration of co-ethnic individuals can positively impact refugees' labor market outcomes. Examining the expansion of language training for refugees in Denmark, Arendt *et al.* (2020) reveals that refugees who received language training were more likely to be employed and had higher earnings after eighteen years. In a field experiment assessing the impact of job search assistance on recently arrived refugees in Germany, Battisti *et al.* (2019) found that personalized job search assistance can enhance the labor market integration of refugees. Additionally, Aksoy *et al.* (2023) highlight that attitudes toward immigrants are as crucial as local unemployment rates in shaping refugees' integration outcomes. Our study

[1]For a more extensive review of this literature, see Strang and Ager (2010) and Becker and Ferrara (2019).

complements these findings by offering new insights into the impact of contemporaneous conflict on refugees' integration efforts in their country of residence.

In addition, our paper contributes to the expanding literature on the social integration of refugees. Ager and Strang (2008) developed a conceptual framework specifying ten core factors—ranging from housing, education, and health to social connections in the community—that affect refugee integration. Proposing a survey-based measure identifying six dimensions (psychological, economic, political, social, linguistic, and navigational) of immigrant integration, Harder *et al.* (2018) further enriches this field. In our paper, we test how origin country conditions shape integration across various dimensions.[2]

Overall, we therefore make three contributions to the existing literature. First, we study how local conflict intensity affects actual return and return intentions among refugees from a democratic country. Second, we establish causality by exploiting new and rich panel data. Third, we study the effect of conflict back home on integration outcomes.

The paper is organized as follows. Section 2 describes the data, followed by Section 3 that presents the main empirical specification. Section 4 discusses the main results of conflict on return and return intentions including robustness tests and effect heterogeneities, while Section 5 examines the effect of conflict on a range of integration outcomes. Section 6 discusses migration aspirations among Ukrainians in Ukraine before and after the Russian invasion. Section 7 concludes and outlines policy implications.

2 Data and descriptive statistics

Survey of Ukrainian Refugees in Europe

We collaborated with the survey company Verian (formerly Kantar Public) to conduct a six-wave panel online survey among Ukrainian refugees across Europe. For the initial wave, respondents were primarily recruited through Facebook Ads, and for subsequent waves, contact was made via email. The first wave was administered between 14 June 2022, and 22 December 2022. The survey was completed by 11,783 respondents, of whom 6,299 agreed to participate in future waves. Those 6,299 respondents, including those who returned to

[2]Braun and Dwenger (2020) demonstrate that settlement location strongly affected the economic and social integration of millions of Germans expelled from Eastern Europe into West Germany after the Second World War, with integration proceeding worse in agrarian regions and in areas with high inflows of migrants.

Ukraine, were asked to fill out follow-up surveys via email. The second wave occurred from 21 September 2022, to 23 January 2023, with 2,065 individuals completing the survey. Table A1 details the specific times and number of observations for each wave and Figure A2 graphically shows the interview distribution over time. Overall, 18,202 interviews have been completed, with 2,716 individuals participating in at least two interviews. Participants were incentivized to encourage participation and minimize attrition rates in every survey wave with a voucher of 3 Euros.

The first survey wave includes questions concerning migrants' background, the municipality (*Hromada* in Ukrainian) where they resided before February 24, 2022, their current situation, and their intentions regarding return migration. Specifically, we explore the intention to return through the following question: *What are your plans regarding returning to Ukraine?* The response options include *I intend to go back very soon*, *I intend to go back at some point later when I feel it is safe to return*, *I do not intend to go back and plan to settle outside Ukraine*, *Do not know yet*, and *Prefer not to answer*.

The follow-up waves additionally probed respondents' current location, integration outcomes, expectations about the war, and personal conflict exposure. For all main text analyses, we disregard the small share of respondents (101 in the first wave sample) who are not Ukrainian citizens. In addition, we omit 220 individuals from the panel sample as they have answered the second wave within 30 days of the first wave interview. Moreover, we omit respondents who answer *Prefer not to answer* to the return intention question in further analyses. This concerns 370 individuals (3.1%) in the first wave and additionally 11 individuals in the second wave. To match respondents to local measures of conflict from ACLED and ISW (see below), we parse the fill-in field for municipality of origin and match 82% of respondents to a unique municipality of origin.

The following four waves mostly repeated questions from earlier waves so that changes could be measured and added a few more detailed questions on labour market integration, as well as mobility intentions. For further information about the Kantar Public survey and descriptive statistics, see Appendix A.3.1. Although the survey relied on sampling through ads on Facebook, the age and gender patterns match those of Ukrainians who have applied for a Temporary Protection Status, as shown in Figure A3.

ACLED event data

To obtain measures of local conflict intensity, we use the Armed Conflict Location Event Data Project (ACLED) database (Raleigh *et al.*, 2010). ACLED contains geocoded event-level data in a conflict, including the primary actor and the number of reported fatalities. Although ACLED provides more information by conflict type, we aggregate up the number of events and fatalities. We initially focus on fatalities as those are likely to better capture conflict because they are less likely to go unreported under certain conditions and capture the intensity of conflict better than the number of events. As in the fog of war military fatalities may go unreported, we focus on the number of events in a robustness test. The map in Figure A6 shows the number of reported fatalities in ACLED before the first of December 2022, which lies before the first date of any interview used in subsequent analysis. The most severe conflict is concentrated in a large band around the frontline in the south-east where the number of fatalities is high.

UCDP event data

As an alternative measure of local conflict intensity, we use Uppsala Conflict Data Program's Georeferenced Event Dataset (UCDP-GED) (Sundberg and Melander, 2013). As ACLED, UCDP-GED is also an event-level dataset, but with the strict inclusion criterion that at least 1 death should have been recorded. Raleigh and Kishi (2019) compare different conflict datasets, showing that in the case of the conflict in Donbass in Ukraine in 2018, ACLED and UCDP give more plausible results then automated conflict datasets. Therefore we do not use these datasets. They also find that ACLED picks up more events that only appeared in non-English speaking media than UCDP, which in the current contexts provides an advantage of ACLED.

Institute for the Study of War

We construct a daily dataset of the position of the frontline using the maps created by the Institute for the Study of War (ISW) between 01 June 2022 and 31 December 2023. ISW's maps visualize the state of the war based on publicly available information sourced from news outlets, social media and satellite imagery. Importantly, these maps include a line approximately indicating the frontline of the conflict. We categorize a district (*Raion* in Ukrainian) as either *under Ukrainian control*, *on the frontline* or *occupied*. For subsequent

analysis we calculate changes in the frontline status between the two interview dates for each respondent. Figure A5 shows the occupation status on first of January 2023. For further information about the ISW and descriptive statistics, see Appendix A.3.3.

Gallup World Poll

We use Gallup World Polls (GWP) conducted in Ukraine—both pre-, during, and post-conflict—to obtain information on Ukrainians' emigration aspirations, perceptions, and attitudes concerning the government.

In particular, we investigate the desire to emigrate using the following question: *Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?* We recode the desire to emigrate to 1 if the respondent answers "yes," to 0 if the respondent answers "no" or "don't know," and to missing if the respondent answers "prefer not to answer." For our analysis of the mechanisms, we limit the sample to all countries that were surveyed by Gallup in 2012 and 2023. We aggregate all other countries except Ukraine into five mutually exclusive country groups. As GWP does not visit every country every year, missing values are interpolated at the country level before aggregation to the country group. For Ukraine, the desire to emigrate in 2020 was the only missing question. For further information about the GWP and its questions, see Appendix A.3.4.

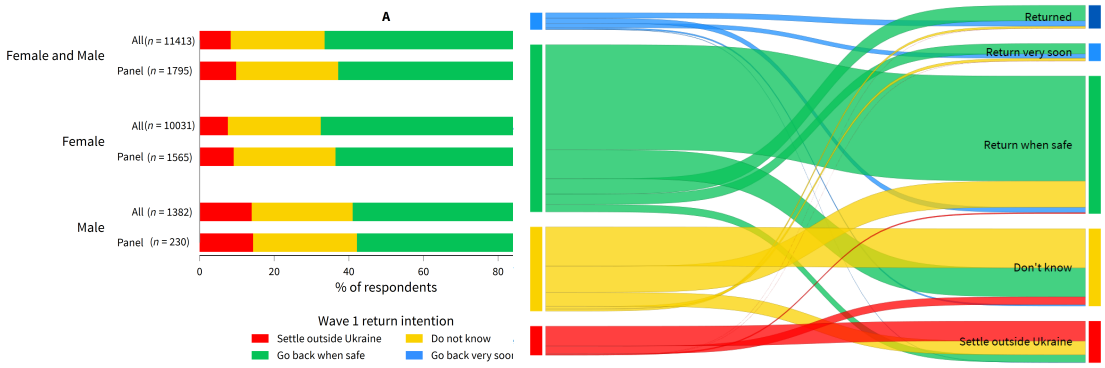
2.1 Descriptive statistics

2.1.1 Return intentions

Fig. 1A illustrates the return intentions according to gender during the first survey wave for the full sample and the panel sample. In the full sample, only 8.3% plan to settle outside Ukraine and the vast majority plan to go back very soon (7.6%) or when it is safe (59.0%). These percentages are remarkably similar when it comes to respondents' education and their district of origin. Men are slightly more likely than women to plan to settle outside Ukraine or to go back very soon. Fig.1B shows a Sankey diagram of return intentions and realized return to Ukraine between the first and the last wave an individual responded in, given that someone answered at least one follow-up wave. Table A2 shows the return rates by initial return intention. Return intentions in the first wave are strongly indicative of return: 33%

of those planning to return soon in the first wave have returned, compared with an average return rate of 7.9%.

Figure 1: Most refugees plan to return and return intentions predict actual return.



(a) During wave 1

(b) Long differences

Notes: (a) shows the return intentions of first wave respondents, for all respondents, and for the panel respondents. The number of observations per category is indicated left of the bar. (b) shows individual-level changes in return intentions between the two waves. The average number of days between interviews is 225 and the minimum is 30. N = 2,674.

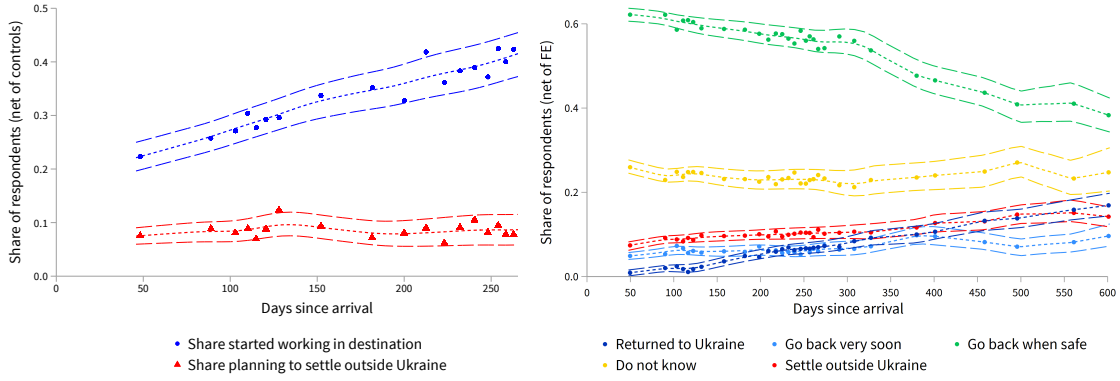
2.1.2 Employment and return intentions over time since arrival

To assess the resilience of the widely shared desire to return, we study how the time since arriving in the destination affects return intentions. As the first wave of the survey includes 11,783 observations between mid-June and December 2022, we can assess whether Ukrainians integrate into their destination country and start to exclude return as they spend more time in the destination. To show the non-parametric relation between the number of days since arrival in the current host country and return intentions, we perform the following procedure. First, we assign all observations to 20 equal-sized bins over the number of days since arrival. We residualize the outcome by regressing it on a comprehensive set of individual-level controls,[3] and destination and day of leave fixed effects. We perform this procedure

[3]Those are gender, seven age bins (16-24; 25-34; 35-44; 45-54; 55-59; 60-64; 65 and older), partnership status, whether someone left with their partner, whether someone left with children under 18, degree of urbanity

for 100 bootstrap samples drawn at individual level in order to obtain smoothened 90% confidence intervals. We draw markers for (i) the mean value for each of the 20 equal-sized bins, (ii) a predicted mean value for each number of days since arrival in the sample (iii) a 90% confidence interval around the predicted mean value. We perform this procedure for the binary indicator for started working and a binary indicator for planning to settle outside Ukraine on the sample of individuals without missing information for both these variables and the covariates. We show the results in Fig. 2.

Figure 2: Employment and return intentions over time since arrival in the destination



(a) During wave 1 (b) Across all waves

Notes: (a) shows a binned scatterplot by 20 equal-sized bins by time since arrival, net of demographic controls, destination country, and date-of-leaving Ukraine fixed effects. Markers indicate the bin-level average net of controls; short, dashed lines indicate the smoothened mean and long dashed lines indicate a bootstrapped 90% confidence interval around this mean. N = 9,871. (b) shows a similar binned scatterplot but across all waves and therefore over a longer time horizon, net of individual fixed effects.

Figure 2a shows the non-parametric relationship between labor market integration and intention to settle outside Ukraine and the number of days since arrival in the first wave.

of home location (Kyiv city, Kharkiv city, other city with more than 500,000 inhabitants, between 100,001-500,000 inhabitants, between 50,000 and 100,000 inhabitants, up to 50,000 inhabitants, a village, or not specified), 4 educational attainment bins (secondary education or lower, vocational education, Bachelor's, Master's or higher), whether the respondents speaks English, whether the respondent answered the survey in Russian, employment status in Ukraine prior to 24 February 2022 (employed, unemployed, out of labor force or student), whether someone continued their job in Ukraine remotely and whether someone left before 24 February 2022).

As we control for the day of arrival, variation is only driven by differential timing of the interviews. We find that despite strong labor market integration over time (an increase in the employment rate of about 20 percentage points over the full length of 250 days), the share of individuals planning to settle outside Ukraine did not increase in days since arrival. Figure 2b shows the non-parametric relationships between the levels of return (intentions) for all responses in all waves, net of individual fixed effects. These results show a different picture: the share of individuals planning to settle outside Ukraine increased over time, just as the share of individuals that returned to Ukraine. The number of individuals reporting to return when it is safe decreased strongly over time.

3 Empirical Strategy

To identify the causal effect of local conflict on return, return intentions and integration outcomes, we employ the following regression approach. We examine variations in individuals' return (intentions) and integration efforts and outcomes across different levels of (proximity to) conflict between two survey waves. In our primary analysis, we concentrate on the subset of individuals who participated in a follow-up survey at least one month after the initial interview, always utilizing the most recent interview responses for each individual. This long-difference model we estimate is as follows, with the time subscripts omitted for variables defined as changes or aggregations between the two survey dates, denoted as t_1 and t_2, which vary at the individual level:

$$\Delta Y_i = \alpha t + \beta_1 Liberated_r + \beta_2 RemainOccupied_r + \beta_3 Dist_{mt_2} + \beta_4 Conflict_{im} + \gamma ReturnInt_{it_1} + \delta' X_{it_1} + \theta_d + \phi_l + \epsilon_i \quad (1)$$

ΔY_i are individual-level *changes* in return (intentions) between the baseline wave and the last available wave. These are (i) whether one returned to Ukraine, (ii) whether one has a more concrete return intention than in the baseline wave, (iii) whether one has a less concrete return intention than in the baseline wave, and (iv) different integration outcomes. t is the time elapsed between both survey waves. $Liberated_r$ is a binary indicator for whether or not a district has been fully liberated by Ukraine between the two survey dates, $RemainOccupied_r$

is a binary indicator if a district has been continuously occupied between the two survey dates, $Dist_{mt_2}$ is the minimum distance between Russia or the frontline at the time of the second interview, and $Conflict_{im}$ is the local conflict intensity per day in one's municipality of origin between survey waves. We operate $Conflict_{im}$ as the first principal component of four different measures of conflict exposure: the log of the number of events and deaths, both in ACLED and UCDP. We standardize the measure for ease of interpretation. To further relax the identifying assumptions, we run our analysis both with and without the first wave return intentions, $ReturnInt_{it_1}$. We view the specification including these as most demanding. If not controlling for wave 1 return intentions, a concern could arise that Ukrainians from occupied or frontline areas are not or only weakly self-selected with respect to their underlying attitudes towards emigrating from Ukraine, while Ukrainians leaving from areas far from the frontline could be more strongly self-selected with respect to willingness to emigrate even in the absence of conflict. If so, the estimated effects of subsequent frontline changes could be conflated with differences in the initial self-selection. Controlling for initial return intentions alleviates this concern. To indicate that we run our analysis both with and without controlling for initial return intentions, we present this term in parentheses. $\mathbf{X}_{it_1}$ are individual-level covariates registered in the first wave. To account for differences in changes in return intentions driven by destination country factors as well as selection of refugees in the decision when to leave Ukraine, we include destination-country fixed effects (θ_d) and fixed effects for the week of leaving Ukraine (ϕ_l).

We will show the estimates of coefficients of some covariates in X_{it_1} that are of special interest. First of all, as most refugees are women and men could only leave under special circumstances or by paying a bribe (and thus may face stigma upon return), we are interested in whether there are gender differences in changes in return intentions. Secondly, as many refugees are women whose partner is still in Ukraine, we study whether the presence of a partner affects changes in return intentions. In a similar vein, we study the effect of children and parents at home. Third, many women are accompanied by under-aged children (of whom 85% answered in the first wave that children were the primary motive to leave Ukraine) and we study whether the presence of children in the household is an impediment for return. Finally, we are interested in whether return migration may be selective in education. We study the effect of both (i) a formal tertiary education (sample mean: 70%) and (ii)

whether one indicated to speak English in the first wave (sample mean: 46%). Controlling for English skills helps to account for a possibility that a considerable share of Ukrainians who have formally tertiary education may not be able to apply their education abroad, due to missing language skills.

Additional factors included in X_{it_1} consist of 7 age categories (16-24; 25-34; 35-44; 45-54; 55-59; 60-64; 65 and older), a binary indicator for partnership status, a binary indicator for originating from an urban area, whether one's hometown was occupied before the 24th of February 2022, whether one left Ukraine before the 24th of February 2022, whether one completed the first wave survey in Russian, the population of one's Hromada, and the squared-term of the population.

Respondents may be selected on conflict faced in their home municipality before wave 1 for two reasons. Those who left from Ukraine from high-conflict regions may be different from those who haven't as well as those who have returned to Ukraine before they could participate in our first wave survey. It is plausible that those from high conflict places in Ukraine are forcibly displaced. In contrast, those from low conflict places may have not been forcibly displaced and in absence of the war more likely to have emigrated nevertheless. Hence, those from higher conflict places probably have stronger ties to Ukraine and are more likely to want to return. As our empirical strategy is based on *changes* in conflict after accounting for first wave return intentions, the primary effect of selection does not affect our estimates. However, when selection on prior conflict also could affect *changes* in return intentions (for example, someone with stronger attachment to Ukraine is more likely to develop a more concrete return intention) and local conflict intensity between both survey waves is correlated to conflict before the first wave, our estimates could be biased towards the effects of selection. Therefore we control for conflict between the 24th of February 2022 and the wave 1 interview in the same way as we operationalize conflict between both survey waves. This also captures a potential delayed effect of conflict on changes in return intentions. Potential reasons why this may be delayed is because people are only fully informed later about the damage to their locality or only realize later this makes return less feasible or appealing. Given that the conflict-related variables are determined at either the municipality (*hromada* in Ukrainian) or district (*raion* in Ukrainian) level, we address spatial correlation by clustering standard errors at the district level.

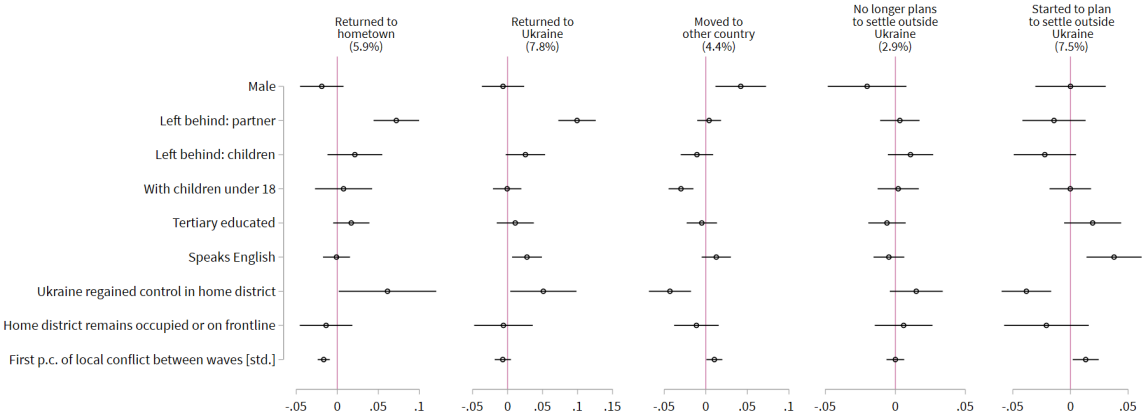
4 Results

4.1 Local conflict intensity and return intentions

The majority of Ukrainian refugees report that they would like to return when it is safe. Therefore, we study whether conflict intensity in refugees' place of origin in Ukraine reduces return intentions. We focus on five main outcomes: whether or not someone returned to their own home town (which is elicited in wave 2, 3 and 6), whether someone returned to Ukraine, whether someone moved to another country, whether one no longer plans to settle outside and whether someone newly plans to settle outside of Ukraine. The first three questions capture actual moving behavior, whereas the latter two reflect meaningful changes in return intentions. 7.8% of individuals returned to Ukraine in the main estimation sample. On the sample where we elicit where one returned to in Ukraine, 7.4% of individuals returned and 5.9% returned to their hometown. Hence, the vast majority of Ukrainians returning do so to where they lived prior to the Russian invasion. 4.4% of individuals moved to other countries than Ukraine and their initial destination during wave 1. We first present the results of the preferred specification, which encompasses all conflict-related factors, in Figure 3. We then show how the results change as we progressively incorporate these factors and add additional controls in Table 1.

The results in Figure 3 show that among the demographic factors, the most significant predictors of returning to Ukraine include having a partner in Ukraine (associated with a 9.7-percentage point increase), having children in Ukraine (linked to a 2.6-percentage point increase). These results suggest that the particular nature of female-dominated migration due to Ukraine's ban of men between 18 and 60 plays a large role in the strong return rates. Surprisingly, having knowledge of the English language increases the rates to return. At the same time, those speaking English are also more likely to newly plan settling outside of Ukraine. Tertiary educated immigrants are not less likely to return to Ukraine or move to other countries. These results suggest that, if anything, return migrants are not negatively selected from the available sample of migrants. Although the presence of children under 18 in the household is not associated with returning to Ukraine, these individuals are considerably less likely to have moved to another county.

Figure 3: Predictors of changes in return (intentions) and the effect of conflict



Notes: This figure shows coefficient plots with 95% confidence intervals based on standard errors clustered on the district level of five multivariate OLS regressions of actual return, moving to another country and changes in return intentions on personal characteristics and conflict-related variables. Each regression includes a wide set of control variables and fixed effects as outlined in equation 1.

Turning to the influence of military occupation and liberation, full liberation of one's home district between both survey waves encourages return, particularly to one's hometown, reduces moves to other countries and makes newly planning to settle outside Ukraine less likely. No such effects were found for individuals from places that remained under occupation or on the frontline. The notable disparities in point estimates between full liberation and continued occupation are striking and suggest that Ukraine's successful military operations could encourage return. Turning to the effect of conflict intensity, we find that more intense conflict in one's municipality of origin reduces return to one's home municipality, but not to Ukraine in general. A 1 standard deviation higher conflict intensity reduces return to one's home municipality by 1.8 percentage points, but return to Ukraine altogether by only 0.8 percentage points ($p \geq 0.10$). Furthermore, more intense conflict increases people to move to other destination countries and increases the likelihood of individuals to start planning to settle outside Ukraine.

Table 1 shows how the gradual inclusion of conflict-related variables affect the results. In column 1, we solely incorporate variables related to liberation status, while column 2 extends to include local conflict. Column 3 further introduces the variable of distance to

Russian-occupied territories, and the last column includes additional controls. Throughout the columns, point estimates exhibit a notable degree of stability, with a few exceptions.

In Panel A, the incorporation of local conflict intensity leads to an increase in the coefficients associated with Ukraine regaining control. These regions have experienced the most severe conflict, and not explicitly accounting for this conflict intensity introduces a downward bias in the estimates. In Panel B, although to a lesser extent, we observe a similar pattern as we move from column 1 to 2. The final column incorporates controls for survey timing and initial destination country, resulting in only limited shifts in the point estimates.

Table 1: The effect of conflict on return intentions

Panel A: **Returned to home town in Ukraine**				
	(1)	(2)	(3)	(4)
Ukraine regained control in home district	0.047		0.061**	0.051
	(0.033)		(0.030)	(0.035)
Home district remains occupied or on frontline	-0.036**		-0.014	-0.016
	(0.015)		(0.016)	(0.018)
First p.c. of local conflict between waves [std.]		-0.015***	-0.016***	-0.018***
		(0.004)	(0.004)	(0.004)
Observations	1433	1433	1433	1432
R^2	0.13	0.13	0.13	0.15
Average dependent variable	0.059	0.059	0.059	0.059

Panel B: **Returned to Ukraine**				
	(1)	(2)	(3)	(4)
Ukraine regained control in home district	0.042*		0.051**	0.048*
	(0.023)		(0.024)	(0.028)
Home district remains occupied or on frontline	-0.020		-0.006	-0.005
	(0.019)		(0.021)	(0.021)
First p.c. of local conflict between waves [std.]		-0.005	-0.007	-0.008
		(0.005)	(0.006)	(0.007)
Observations	2299	2299	2299	2297
R^2	0.14	0.14	0.14	0.16
Average dependent variable	0.078	0.078	0.078	0.078

Panel C: **No longer plans to settle outside Ukraine**				
	(1)	(2)	(3)	(4)
Ukraine regained control in home district	0.013		0.015	0.010
	(0.008)		(0.010)	(0.010)
Home district remains occupied or on frontline	0.003		0.006	0.006
	(0.009)		(0.010)	(0.011)
First p.c. of local conflict between waves [std.]		0.002	0.000	-0.001
		(0.003)	(0.003)	(0.003)
Observations	2299	2299	2299	2297
R^2	0.30	0.30	0.30	0.31
Average dependent variable	0.029	0.029	0.029	0.029

Panel D: **Started planning to settle outside Ukraine**				
	(1)	(2)	(3)	(4)
Ukraine regained control in home district	-0.030**		-0.038***	-0.028*
	(0.012)		(0.011)	(0.014)
Home district remains occupied or on frontline	-0.008		-0.021	-0.019
	(0.021)		(0.019)	(0.019)
First p.c. of local conflict between waves [std.]		0.008	0.013**	0.015***
		(0.007)	(0.006)	(0.006)
Observations	2299	2299	2299	2297
R^2	0.13	0.13	0.13	0.14
Average dependent variable	0.075	0.075	0.075	0.075

Panel E: **Moved to other country**				
	(1)	(2)	(3)	(4)
Ukraine regained control in home district	-0.034**		-0.043***	-0.054***
	(0.014)		(0.013)	(0.011)
Home district remains occupied or on frontline	0.003		-0.011	-0.021
	(0.010)		(0.014)	(0.014)
First p.c. of local conflict between waves [std.]		0.006	0.010**	0.010**
		(0.004)	(0.005)	(0.005)
Observations	2299	2299	2299	2297
R^2	0.09	0.09	0.10	0.12
Average dependent variable	0.044	0.044	0.044	0.044
Controlling for week of both waves and initial destination FE				✓

Notes: This table shows regressions for five different outcomes: a) Whether someone has returned to his or her home town in Ukraine, b) Whether someone has returned to Ukraine, c) Whether someone no longer plans to settle outside Ukraine, d) Whether someone started planning to settle outside Ukraine and e) Whether someone moved to another country. Standard errors, corrected for clustering at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

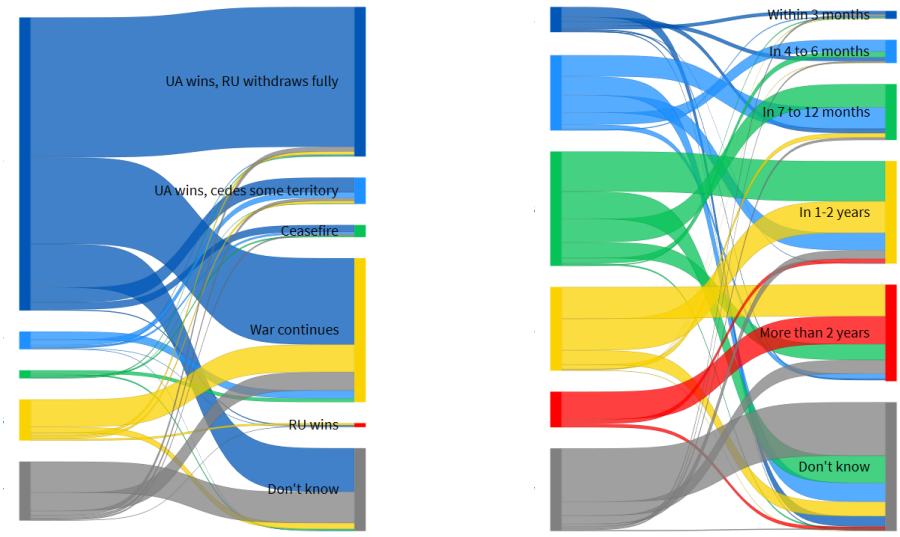
4.2 Return intentions by expectations about the outcome and duration of the war

Pessimistic expectations about the outcome and duration of the war could lower return intentions. To test this, we asked respondents in the second wave and again in the sixth wave what they expect the outcome of the war to be by the end of 2024, as well as how long they expect the war to continue. In the second wave, 72% expected Ukraine to win without making any territorial concessions. Since the number of respondents expecting a Russian win (only 4 respondents), peace agreement with Ukraine ceding some territory (73 respondents) or ceasefire (28 respondents) was small, we aggregate these to the category "Ukraine cedes territory or ceasefire" (6% of respondents). 8% expected the war to continue and the rest said that they do not know.

Return intentions are strongly correlated with the expected outcome of the war: the share of respondents planning to settle outside Ukraine is only 9% of those who expect Ukraine to win, whereas 21% of those who expect territorial concessions or ceasefire, and 24% of those who expect the war to continue until 2025 or longer plan to settle outside Ukraine (Figure 4). Furthermore, those expecting the war to end sooner had higher return intentions; due to small number of respondents not expecting Ukraine to liberate all occupied territories by the end of 2024 we carried out this analysis only among those expecting Ukraine to win without any territorial concessions.

Figure 4 shows how expectations about the outcome of the war by the end of 2024 and about the remaining duration of the conflict changed between waves 2 and 6. Ukrainian refugees became considerably more pessimistic about a quick victory, and more likely to expect the war still to continue at the end of 2024.

Figure 4: Sankey diagram of changes in expectations between waves 2 and 6



(a) Outcome of the war by the end of 2024

(b) Remaining duration of the war at the time of responding

Notes: (a) shows the changes in expectations about the outcome of the war by the end of 2024 between waves 2 and 6. (b) shows the changes in expectations about the remaining duration of the war at the time of the interview between waves 2 and 6.

Table 2 links changes in expectations about the outcome of the war with return plans. Respondents who became less optimistic about the outcome of the war by the end of 2024 were likely to have less concrete return intentions. However, return intentions remained generally strong and the overall predictive power of expectations about the outcome of the war in explaining observed changes in return intentions is minuscule.

Ukrainian refugees' will to return lies in stark contrast to findings from previous refugee waves. As an example, only 7% of Syrian refugees registered in the Middle East and North Africa have voluntarily returned to Syria by March 2023 (UNHCR, 2023a), and just 14% of Syrian refugees in Germany want to return to Syria if it becomes as safe as before the civil war (Al Husein and Wagner, 2023).

Table 2: The relation between changes in expectation and changes in return intentions

	(1) More concrete	(2) Less concrete
Less optimistic about outcome of the war	-0.008	0.056***
	(0.015)	(0.016)
More optimistic about outcome of the war	0.030	0.009
	(0.029)	(0.026)
Observations	3606	3606
R^2	0.000	0.004
Average dependent variable	0.152	0.143

Notes: This table shows the results of two regressions with the outcome (1) Return intentions becoming more concrete and (2) Return intentions becoming less concrete. Standard errors, corrected for clustering at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5 Integration

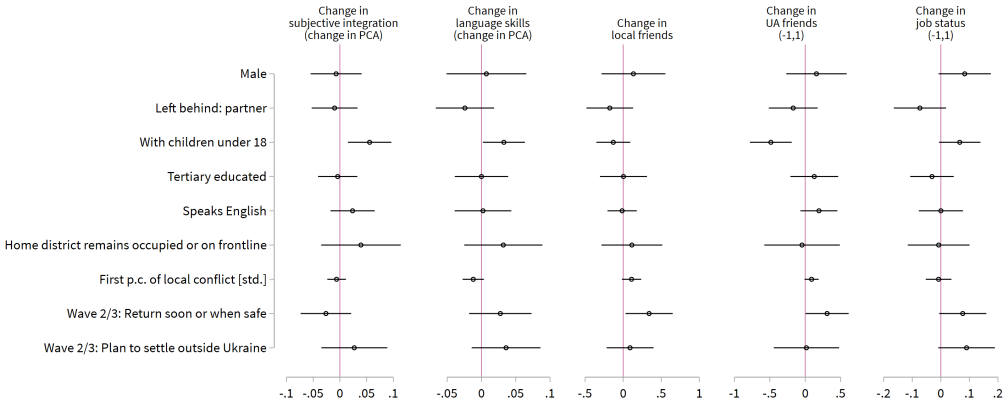
Apart from return intentions, conflict in one's home region could also affect integration outcomes. In particular, refugees who have the intention not to return could invest more in host-country specific human capital such as language skills and in their labor market integration. As more severe conflict in one's municipality of origin reduces return intentions, this may lead to improved integration outcomes. However, stronger conflict may also lead to stress and trauma, which may have negative effects on labor market outcomes, subjective and social integration, and language skills. Figure 5 shows the regression coefficients for the model introduced in equation 1 for five different measures of changes in integration outcomes between wave 2 and 3 and wave 6.[4] As most changes in the frontline happened before waves 2 and 3, no district has been liberated between those survey waves and wave 6. Therefore, this regressor is absent from Figure 5. It is important to note that these outcomes are only observed in case that the respondent has not returned.

The results suggest that refugees with children under 18 feel better integrated in the last wave compared to earlier waves. Conflict intensity in one's municipality of origin does not seem to systematically affect integration outcomes. Individuals from regions with higher conflict intensity report somewhat worse language skills and more local and Ukrainian friends, but the results are either just significant or just insignificant at a 5% level. There is some

[4]The other waves did not include all integration questions.

indication that refugees who intended to return soon or when safe have integrated better than those who did not know (the omitted category). As many of those individuals have not been able to realize their return intention over at least 8 months, it is not surprising that they have invested in language skills, social contacts and searched for employment. Moreover, refugees who already planned to settle outside Ukraine also seem to experience positive changes in employment status, but these coefficients are only marginally significant.

Figure 5: Predictors of changes in integration and the effect of conflict



Notes: This figure shows coefficient plots with 95% confidence intervals based on standard errors clustered on the district level of five multivariate OLS regressions of changes in integration variables. N = 1,023.

6 Evidence from Ukraine

To better understand why Ukrainian refugees have a strong resilience and determination to return to Ukraine once it is safe, we also look at migration aspirations of those still in Ukraine. Interestingly, also their determination to stay and live in Ukraine has increased strongly after the outbreak of the war. In line with our theoretical considerations outlined in the introduction, we conjecture that this can be explained by increased trust and confidence in the government, the military as well as increased optimism and national pride.

6.1 Desire to emigrate

Fig. 6A shows the share of individuals who desire to permanently emigrate over time in the Gallup World Poll (GWP), for Ukraine and five country groups. Between 2015 and 2021, the share of the population who desired to emigrate was higher for Ukraine than for any European country group. It is remarkable how Ukrainians' emigration intentions have changed following the large-scale Russian attack: the share of Ukrainians wanting to permanently emigrate declined from 34.9% in July 2021 to 9.4% in September 2022 and 12.4% in August 2023. In 2022, a lower percentage wanted to emigrate from Ukraine than from Western and Northern European countries.

Further analysis shows that the desire to emigrate has decreased among both women and men and in all six macro-regions in Ukraine. Importantly, in Appendix A.4 we show that only a very small part of the reduction in Ukrainians' desire to emigrate can be explained by selective out-migration of those with a stronger desire to emigrate. At the same time, optimism, confidence in government, and confidence in the military have increased considerably (Fig. 6B, 6C and 6D).

6.2 Higher levels of confidence in government and military, optimism, and national identity

The finding that Ukrainians' desire to permanently emigrate has decreased considerably during the national war lies in stark contrast to the theories of international migration based on conflict being a major push factor to emigrate. Instead, the pattern in Fig. 6A can be

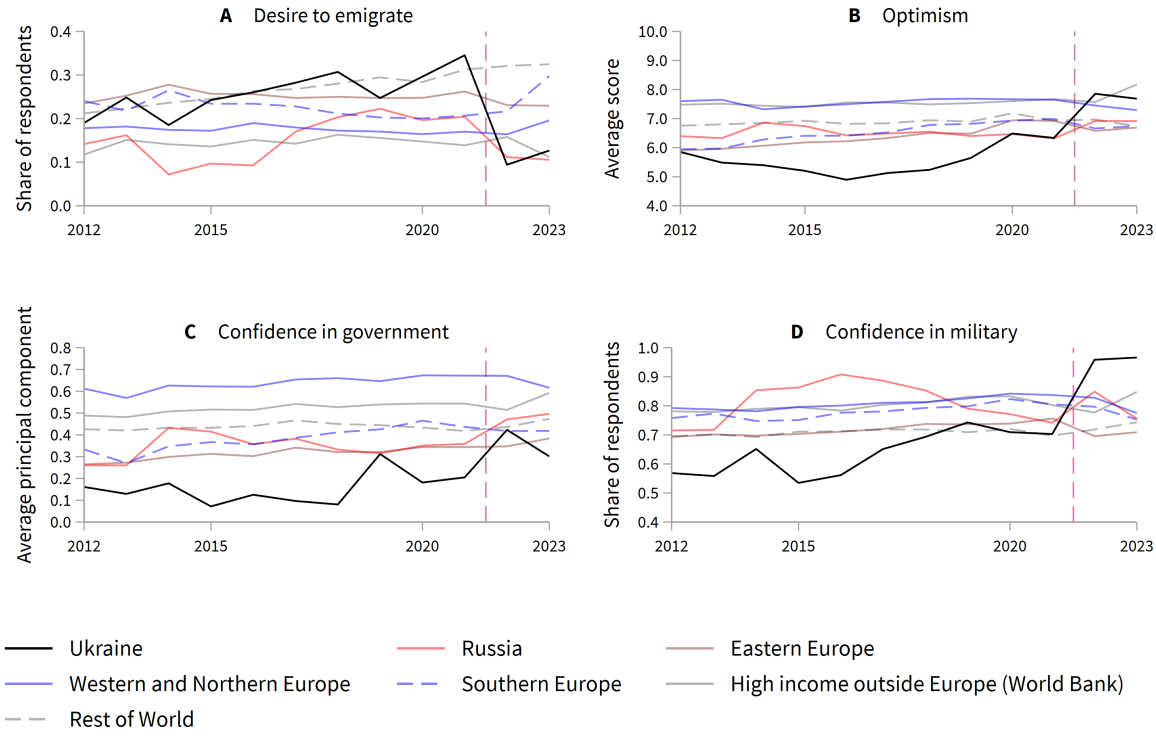


Figure 6: Desire to emigrate, optimism, and confidence in government and military in Ukraine and five country groups between 2012 and 2023.

Notes: (A) illustrates the share of respondents desiring to emigrate. (B) shows the average optimism score which measures how good the respondent expects their life to be in absolute terms in five years (ranging from 0 for the worst possible to 10 for the best possible life). Importantly, this is asked in absolute terms, not relative to the current situation. (C) shows the measure of confidence in the government as constructed in (Guriev *et al.*, 2021). The separate components of this measure are shown in Figure A8. (D) shows the share of respondents who have confidence in the military. The survey did not cover regions in Ukraine partially or fully occupied by Russia.

explained by higher levels of confidence in government and military, optimism, and national identity (Fig. 6B, 6C and 6D). The year-on-year decrease in the desire to emigrate is larger in Ukraine in 2022 than in any other country from 2012 to 2022, while increases in optimism, confidence in government, and confidence in the military are exceptionally large, too. An Oaxaca-Blinder decomposition shown in Figure A4 of the difference in the desire to emigrate between 2021 and 2022 reveals that increases in confidence in government, confidence in the

military, and optimism explain 41% of the gap, whereas other covariates explain only 5% of the gap, leaving an unexplained gap of 54%.

7 Conclusion

Our analysis has highlighted that the vast majority of Ukrainians in Ukraine plan to stay and most Ukrainian refugees in Europe plan to return. Ukrainians are therefore showing remarkable determination to live in Ukraine, which contrasts with high pre-war emigration desires. Realized levels of return migration will play a crucial role in the reconstruction when a significant number of human resources are required. In our panel survey, we find that close to 2% of Ukrainian refugees returned every month. What explains Ukrainians' exceptional determination to return? Ukrainians' confidence in their government and optimism have reached exceptionally high levels in international comparison (Fig. 6). This positive sentiment, combined with a stronger national identity, has acted as a counterforce against traditional push and pull factors, bolstering the determination of Ukrainians to live in their country. However, significant challenges persist in ensuring long-term prosperity for Ukraine. Confidence in the judiciary remains low, and corruption is perceived to be high. Can Ukraine successfully transition to a low corruption environment when the conflict is over? Historically, external conflict has often boosted investment in state capacity (Tilly, 1985, 1990; Besley and Persson, 2009). Yet, fiscal capacity also relies on citizens' quasi-voluntary compliance with their tax obligations (Levy, 1988). Citizens are likely to be more willing to pay taxes when they perceive that the revenues are used in their interest (Besley, 2020). The key challenge for Ukraine is to harness the shared purpose during the wartime to a broader institutional and cultural change. By doing so, Ukraine can weaken the push factors driving emigration, even as the rally-around-the-flag effect might diminish.

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A Appendix

A.1 Additional Figures

Figure A1: The expected overall effect of the Russian invasion on the desire to emigrate from Ukraine or return there is ambiguous.

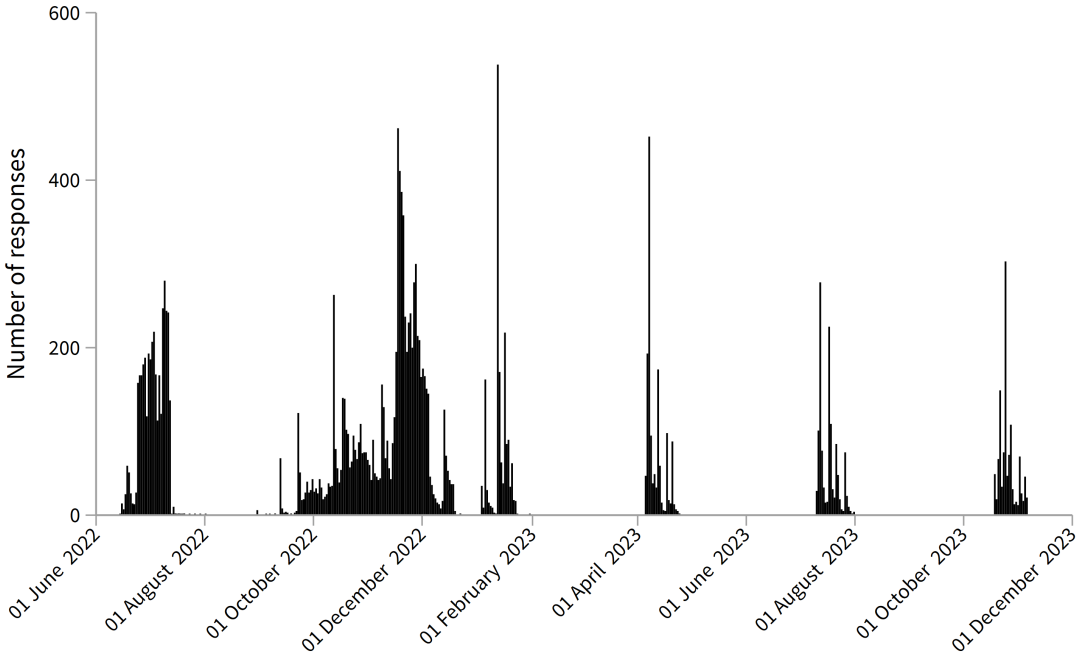


Figure A2: Distribution of the dates of interview

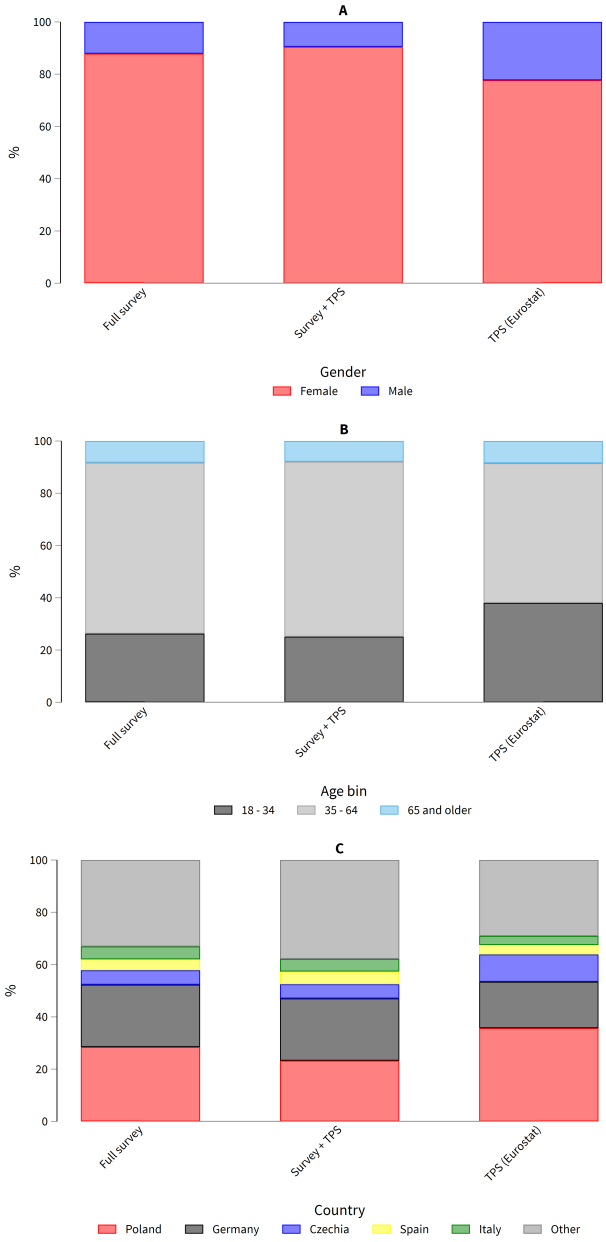


Figure A3: Distribution of gender, age and destination country of Kantar public survey and Eurostat TPS data. "Full survey" indicates the whole first wave sample, "Survey + TPS" indicates all individuals from the first wave sample who were granted Temporary Protection Status (TPS) (73% of the full sample), and "TPS (Eurostat)" indicates all Ukrainians granted TPS in 2022 by EU countries plus Iceland, Norway, and Switzerland. Not all countries report granular data by demographic characteristics, which are excluded in the respective analyses (A) Eurostat reports sex instead of age. As only 0.5% of respondents in the Kantar survey report a gender different from male or female, we compare gender in the Kantar survey to sex in the Eurostat data. (B) Age bins are constructed in the Kantar survey to match the three available bins in the Eurostat data. (C) The five destinations with the most TPS applications in 2022 are shown, as well as a category including all other countries. Those five destinations cover 71% of all recorded applications in 2022. From the left to the right bar in (A) N = 11,783, N = 8,660, and N = 3,725,845; (B) N = 11,783, N = 8,660, and N = 3,744,310; (C) N = 8869, N = 6299, and N = 3,647,100.

Figure A4: Assessed control of terrain in Ukraine. Example of a map from ISW from 11 November 2022 Institute for the Study of War, The Critical Threats Project (2022).

Figure A5: Ukrainian geographic divisions and occupation status

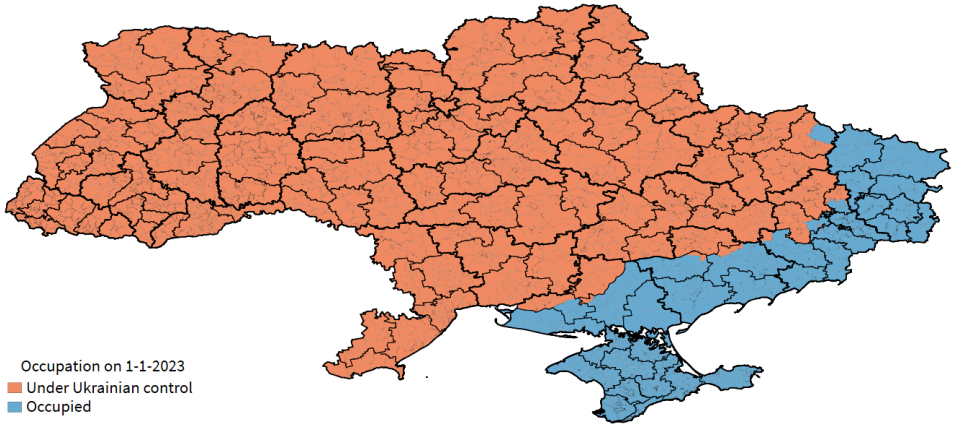
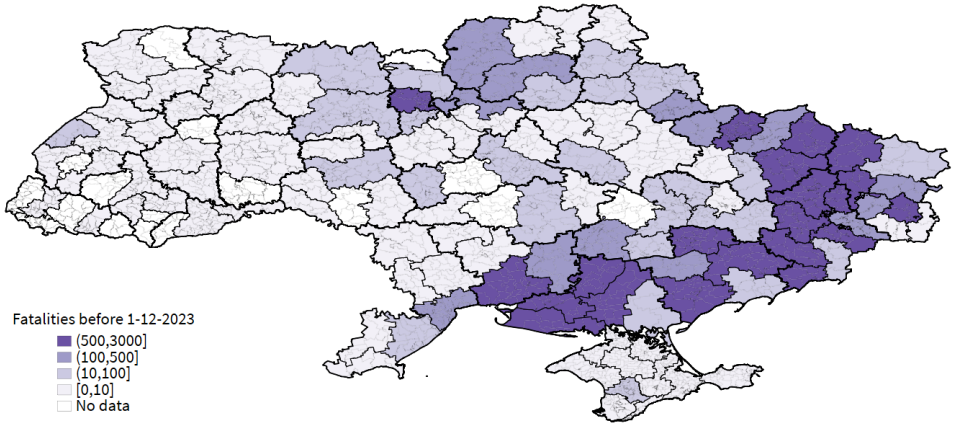


Figure A6: Ukrainian geographic divisions and district-level conflict intensity



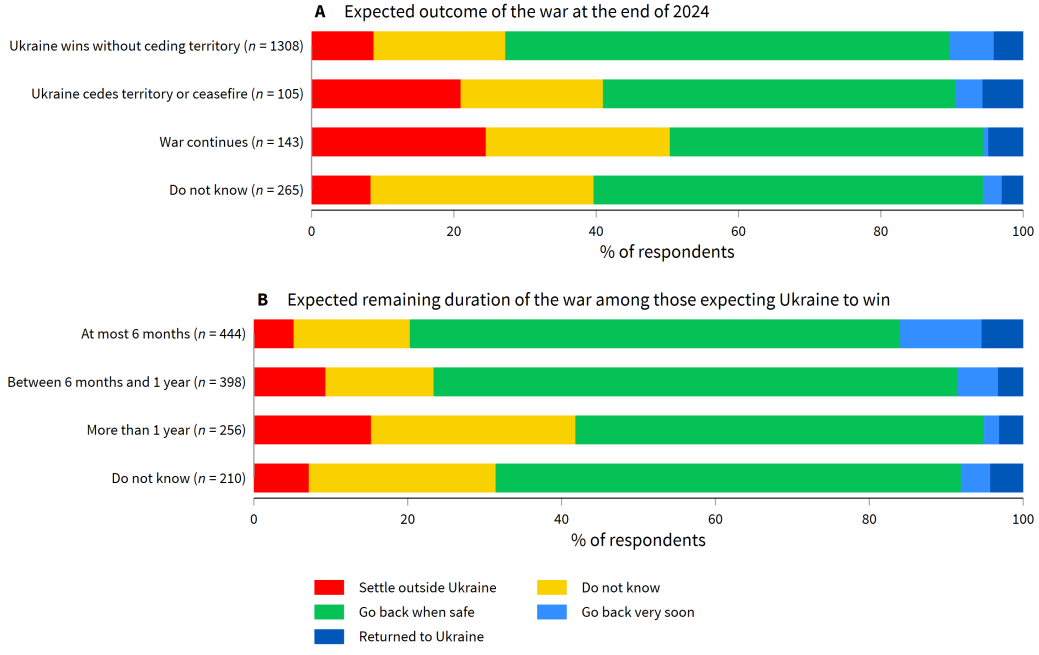


Figure A7: Return intentions by expectations about the war. (A) shows the distribution of return intentions by expectations about the outcome of the war elicited in the second wave. (B) shows the distribution of return intentions by expectations about the duration of the war, contingent on expecting Ukraine to win the war without ceding territory.

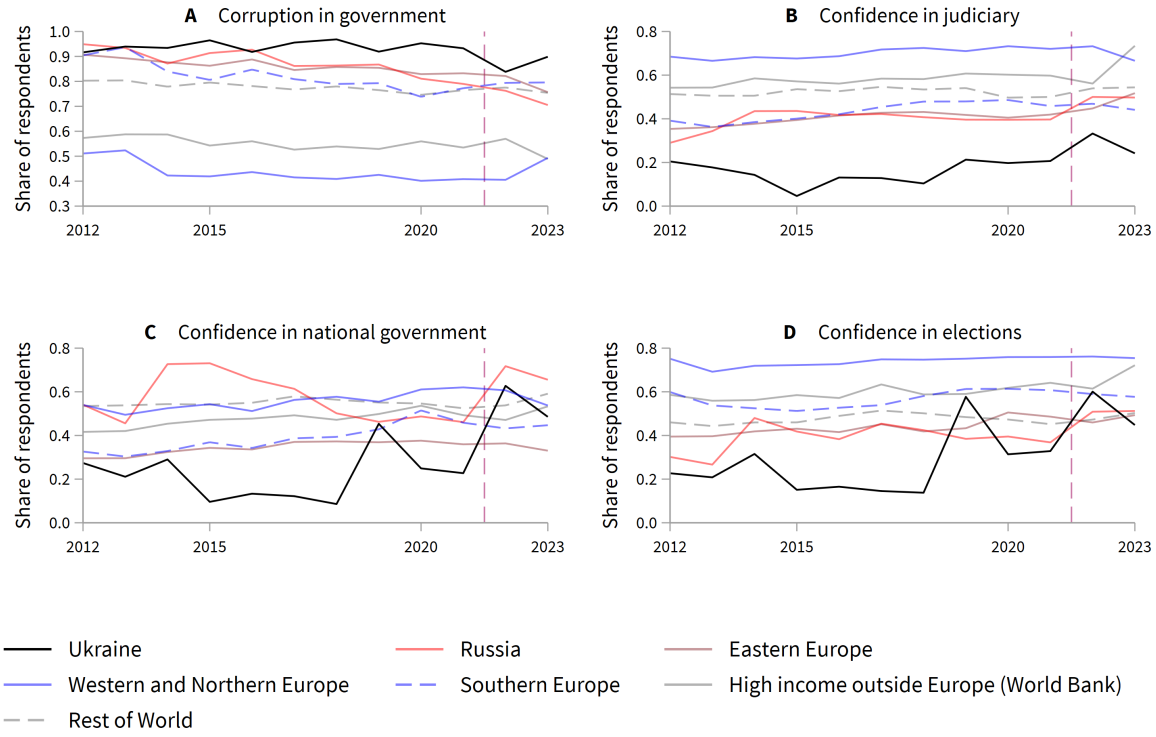


Figure A8: Components of the first principal component of confidence in the government (as shown in Figure 6) in Ukraine, Russia and five country groups between 2012 and 2023.

A.2 Additional tables

Table A1: Survey waves, number of respondents and timing

	Number of responses	First month	Last month
Wave			
1	11,783 (6,299 panellists)	June 2022	December 2022
2	1,005	September 2022	December 2022
3	1,610	January 2023	January 2023
4	1,411	April 2023	April 2023
5	1,218	July 2023	July 2023
6	1,175	October 2023	November 2023
Total	18,202	June 2022	November 2023

Table A2: Return rates by initial return intentions

	Share of wave 1 responses	Return rate by last wave
Wave 1 return intention		
Return soon	5.7	22.8
Return when safe	57.4	9.3
Don't know	10.1	2.6
Settle outside Ukraine	26.9	0.4

Table A3: Predictors of follow-up response

	(1) Agreed to be panelist	(2) Ever responded if panellist	(3) Ever responded	(4) Number of follow-up waves
Go back very soon	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
Go back when safe	0.055***	0.049*	0.048***	0.129***
	(0.019)	(0.026)	(0.015)	(0.042)
Settle outside Ukraine	0.116***	0.070**	0.089***	0.294***
	(0.025)	(0.033)	(0.021)	(0.062)
Do not know	0.063***	0.081***	0.069***	0.170***
	(0.021)	(0.028)	(0.017)	(0.047)
Prefer not to answer	-0.033	0.045	0.015	0.072
	(0.034)	(0.050)	(0.026)	(0.076)
Observations	10556	5844	10556	10556
R^2	0.04	0.07	0.05	0.05
Average dependent variable	0.554	0.435	0.241	0.569

Note: OLS regressions of a binary indicator of (1) agreeing to be panellist, (2) ever responded conditional on being a panellist, (3) ever responded, (4) the number of follow-up waves one responded in on the five levels of first wave return intentions and a comprehensive set of individual-level controls and day of leave, day of first wave interview and destination fixed effects. All explanatory variables included are the same as those discussed in section 2. The sample of analysis includes all first wave respondents without missing covariate values. Heteroskedasticity-robust standard errors are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Oaxaca-Blinder decomposition of the gap in desire to emigrate between 2021 and 2022. Based on all observations without missing responses for the desire to emigrate and for the explaining factors due to "don't know" and prefer not to answer" responses in Ukraine in 2021 and 2022. The middle column in Panel A gives the level in 2021 and 2022, the difference and the explained and unexplained part. The middle column in Panel B gives the percentage of the gap explained by each of the explaining covariates. As the Oaxaca-Blinder approach decomposes the difference in desire to emigrate between 2021 and 2022 into contributions due to shifts in covariate values between 2021 and 2022, the contribution of each of the explaining factors can take negative values. The rightmost column gives the standard deviations of the estimates in the middle column.

Panel A: Levels and explained and unexplained changes in desire to emigrate

	Value	S.E.
2021	.383***	.019
2022	.111***	.012
Difference	.272***	.023
Explained	.125***	.019
Unexplained	.147***	.028

Panel B: Explaining factors (%)

	Explained percentage of the gap	S.E.
Female	-3.1	2.7
Age	1.7	1.7
Female × age	4.2	3.2
Children	0.1	0.4
Tertiary education	0.0	0.3
Optimism	12.7***	3.6
Confidence in Government	14.2**	6.0
Confidence in Military	13.7**	4.3
Corruption in Business	2.6	1.6
Number of observations		1,329

A.3 Detailed Description of Data

A.3.1 Kantar Public Survey "Voice of Ukraine"

We cooperated with the Kantar Public survey company to roll out a survey among Ukrainian refugees throughout Europe. Importantly, the survey is a panel survey aiming to keep following Ukrainian refugees after returning to Ukraine. In the first wave, respondents were recruited primarily through Facebook Ads, while respondents were contacted for follow-up waves by email. As Facebook Ads may not reach the whole demography of Ukrainian refugees, we discuss representativeness of the survey below.

The first wave was administered between 14 June 2022 and 22 December 2022. A total of 62,896 people clicked on the advertisements. The first wave survey was completed by 11,783 respondents, 5,852 of whom agreed to be contacted for future waves. Respondents were asked to fill out the first follow-up survey via email between 21 September 2022 and 23 January 2023 and 2,065 completed the survey. All surveys lasted between 10 and 15 minutes. Participation was incentivized to reduce attrition rates. Respondents could receive a 3-euro voucher or give it to a Ukraine-related charity.

The survey includes a wide range of background variables relating to demographics, employment status, region of origin and conditions and reasons for stay in the host country. Importantly, to elicit return intentions we ask individuals the following question on return intentions in every wave:

Return intentions *What are your plans regarding returning back to Ukraine?* With the following answer options:

- I intend to go back very soon
- I intend to go back at some point later when I feel it is safe to return
- I do not intend to go back and plan to settle outside Ukraine
- Do not know yet
- Prefer not to answer

In addition to aforementioned question and various demographic variables, we use several other questions directly in the main text:

Started working *Did you start working in the country you are currently residing in, yes or no?*

Current location and return *In which country are you currently located?* [fill in country]

To which respondents can answer from a list of countries. In the second wave, this list also includes Ukraine, which enables us to identify those who have returned to Ukraine.

In the folow-up waves, we ask several additional questions:

Expectations about the outcome of the war *What do you find the most likely outcome of the war by the end of 2024?* With the following answer options:

- Ukraine wins and Russia withdraws from all territory it currently occupies
- Ukraine cedes some territory to Russia as part of peace agreement
- There is ceasefire
- Russia wins and annexes big parts of Ukraine
- The war continues
- Do not know
- Prefer not to answer

Expectations about the duration of the war *When do you expect the war in Ukraine to end?* With the following answer options:

- Within 3 months
- In 4 to 6 months
- In 7 to 12 months
- In 1-2 years
- I expect the war to continue more than 2 years
- Do not know

- Prefer not to answer

Data cleaning and processing

To determine an individual's place of living before they left during the war, the first wave of the survey asks (i) which region (oblast in Ukrainian) someone lived in before 24 February 2022 and (ii) which locality they lived through a write-in field. 18% of respondents did not answer the latter question. To match individuals to the location of the municipality (hromada) of residence before the war, we use geospatial information on Ukraine's administrative divisions as of 2020 from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) Nations (2023). The average municipality has 30,800 inhabitants, while the median has 13,200. Larger cities always consist of a single municipality. The spatial files contain all 1,764 municipalities (hromada), nested in 137 districts (raions) in 27 regions (oblasts) and six macro-regions. These localities mostly coincided with administrative divisions, but in the case of 550 individuals the localities had to be manually matched to municipalities within the oblast individuals indicated. Localities were classified into municipalities using the Ukrainian government website https://gromada.info/. Given that not all region-municipality pairs are unique, we cannot assign a unique municipality for 12 respondents and therefore set the municipality to missing. In the following, we describe the construction of two distinct samples used in the analysis in the main text: the first wave cross-sectional sample (the "first wave sample") and the two-wave panel sample (the "panel sample"). For both samples we focus on Ukrainian citizens by excluding all individuals who are not Ukrainian citizens. This applies to 101 individuals in the first wave sample and 13 individuals in the panel sample. As 220 respondents answered the second wave only several days following the first wave, we omit from the panel sample those observations with less than 30 days between the interviews. In individual analyses we discard respondents who answered "prefer not to answer" to any of the survey questions used.

Representativeness of full sample

As the baseline survey is fielded through Facebook Ads, the survey may not be representative of the full Ukrainian population. Nevertheless, more than 15 million Ukrainians used Facebook on a monthly basis in early 2022 Datareportal (2022), reaching more than 41.2% of the population over 13 years old. Women are slightly overrepresented on Facebook. Facebook Ads have also been successfully used to trace population displacements of Ukrainians in real-time Leasure *et al.* (2023).

To examine the demographic representativeness of our sample, we compare observable characteristics of our sample to administrative data of Ukrainians who received a Temporary Protection Status (TPS) from Eurostat Eurostat (2023). Fig. A3 shows the gender, age and destination country distribution of the Kantar Public survey respondents, those in the Kantar Public survey stating that they applied for TPS and those who received TPS in 2022 according to Eurostat.

Even though survey respondents are more likely to be female, somewhat older and less likely to be from Poland and Czechia than the overall recipients of Temporary Protection Status, reweighting respondents to match the observed distribution of country of residence, gender, and age does not change the overall picture of return intentions. For example, the share of first-wave respondents who received TPS planning to return either soon or when it is safe lies at 66.9%, compared with 66.5% in the unweighted sample, and the share planning to settle outside Ukraine lies at 8.9%, compared with 8.3%. All survey respondents used for this analysis are aged 18 or older to match the age bins in the TPS data. Only 0.4% of the full Kantar sample were younger than 18.

A.3.2 ACLED: measuring local conflict

To obtain measures of local conflict intensity, we use the Armed Conflict Location Event Data Project (ACLED) database (Raleigh *et al.*, 2010). ACLED contains event-level data containing armed battles, airstrikes, protests and non-conventional violence. For every event, ACLED categorizes the event in one of 6 main and 25 sub-event categories, provides the exact coordinates where it happened, the date, the estimated number of deaths, the primary and possibly secondary actor in the event and a note containing details about what happened from verified media reports. Since the beginning of the invasion of Ukraine on 24 February

2022, ACLED recorded over 38,000 events up to and including 31 January 2023. Using the information on the municipality of origin, we can calculate the number of events or fatalities per day in each municipality within a given radius from the focal municipality's center. We use a radius of 25 km. We prefer this approach to aggregating deaths only within the same municipality, as some municipalities are small and close to larger population centers that are the target of Russian attacks.

We restrict the ACLED sample as follows. First, we categorize the primary actor to be Russian-sided, Ukrainian-sided or unknown. We drop the 22% of events where the primary actor is not Russian-sided. Furthermore, we drop 54 events that are not geolocated. We link the geographic location of the event to Ukraine's administrative divisions, which enables us to link the respondents of the Kantar survey to local conflict intensity.

A.3.3 ISW: determining the frontline

To capture whether an individual's home region is under Ukrainian control, contested by fighting, or occupied by Russian forces, we construct a daily dataset of the position of the frontline. To construct the dataset, we draw on the (almost) daily updated maps of the war in Ukraine provided by the Institute for the Study of War (ISW) between 01 June 2022 and 30 November 2023 Institute for the Study of War, The Critical Threats Project (2023). Since the start of the war, ISW has been providing reports with maps visualizing the state of the war based on publicly available information sourced from news outlets, social media and satellite imagery. Importantly, these maps include a line approximately indicating the frontline of the conflict. Fig. A4 demonstrates an example of such a map. The constructed dataset is on the district level (average size of 4,406 km2) rather than the municipality level (average size of 342 km2). This makes it possible to realistically capture meaningful changes in the position of the frontline with respect to the locality of origin. As municipalities are relatively small, a municipality may be liberated but an adjacent municipality could still be on the frontline. By using the district as the level of analysis, we are better able to capture whether localities' status changes from the zone of conflict to being firmly under Ukrainian control. For instance, upon the withdrawal of Russian forces and advancements achieved by

the Ukrainian military, several districts in the Kharkiv region were liberated (light blue in Fig. A4).

We proceed by classifying districts in one of the following three categories:

1. The district is marked as "Under Ukrainian Control" if the full district is colored in light gray, meaning that the Ukrainian government fully controls it. This category also includes the districts bordering the frontline but separated with a large watercourse, such as the Dnipro River.

2. The district is marked as "On the Frontline" if any area inside includes the solid red line such as in Fig. A4.

3. The district is marked as "Occupied" if the full district is colored in red. This includes areas occupied prior to 24 February 2022 (outlined by a solid black line in Fig. A4) as well as areas that were first occupied by Russia following 24 February 2022 (outlined by a solid red line in Fig. A4).

A.3.4 Gallup World Poll

Our data on the desire to emigrate across countries originate from the 2012-2022 Gallup World Polls (GWP) obtained on 18 November 2022 from Gallup, including surveys up to and including 21 September 2022 The Gallup Organization (2022). These nationally representative surveys are repeated cross-sections fielded on an annual basis in more than 150 countries and interview approximately 1,000 individuals in each country on a wide range of topics. Surveys span several days. Importantly, GWP includes the following question on the desire to emigrate in most country-years:

Desire to emigrate *Ideally, if you had the opportunity, would you like to move permanently to another country, or would you prefer to continue living in this country?* With the following answer options:

- Move permanently
- Prefer to stay
- Don't know

- Refused to answer

In addition to the aforementioned question and various demographic variables, we use several other questions from GWP:

Optimism *Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. Just your best guess, on which step do you think you will stand in the future, say about five years from now?*

Confidence in Government We follow (28) and perform a Principal Components Analysis (PCA) and obtain the first principal component of the following four questions with yes, no, do-not-know, and refuse-to-answer as answer options:

- *In this country, do you have confidence in each of the following, or not? How about national government?*
- *In this country, do you have confidence in each of the following, or not? How about judicial system and courts?*
- *In this country, do you have confidence in each of the following, or not? How about honesty of elections?*
- *Is corruption widespread throughout the government in this country, or not?*

Confidence in Military *In this country, do you have confidence in each of the following, or not? How about the military?* with yes, no, do-not-know, and refuse-to-answer as answer options.

Furthermore, we use the following question on corruption in business, which serves as a robustness test in the decomposition analysis in S3.1.2:

Corruption in Businesses *Is corruption widespread within businesses located in this country, or not?* with yes, no, do-not-know, and refuse-to-answer as answer options.

A.3.5 Data cleaning and processing

In further analysis, we code the desire to emigrate as 1 if the answer is "Move permanently", 0 if the answer is "Prefer to stay" or "Don't know" and we omit the individual when "Refused

to answer" is chosen. In the full sample described in the next paragraph, 1.6% of individuals indicate "Don't know" and less than 0.2% of individuals indicate "Refused to answer". We adhere to the same procedure for all other variables with such an answer option structure.

For our analysis of changes by country groups in the desire to emigrate in Fig. 6, we limit the sample to the 53 countries that were visited by Gallup in 2012 and in 2022 after 24 February and up to 21 September 2022. We divide all countries but Ukraine in 5 groups, shown in table S1.

As GWP does not visit every country each year and the question on the desire to emigrate is not included in all country-years, we linearly interpolate the share of respondents who would like to emigrate on the country level for the 96 missing observations (out of 583) in Fig. 6, fig. A10 and fig. S22. To obtain yearly averages for each country group, we take the unweighted mean of the (interpolated) country-level averages. For Ukraine, only the 2020 values are interpolated in Fig. 6 and figs. A10 and A11 because the question on the desire to emigrate was not asked.

The method of contacting respondents changed over the years in Ukraine. Until 2019 surveys were conducted face-to-face, in 2020 and 2021 by landline or mobile phone, and in 2022 only by mobile phone. In 2019, 90.4% of respondents either had a landline connection or a mobile phone and in 2021 99.2% of respondents indicated that they used a mobile phone for making phone calls. This suggests that a mobile phone-based sampling approach is able to reach a closely comparable sample of respondents as in 2021. As in 2022 respondents were contacted via mobile phone, also Internally Displaced Persons (IDPs) are included, although we have no way of identifying them. In all years, respondents could answer the survey in either Ukrainian or Russian.

In all analyses, we weight observations by nationally representative weights supplied by Gallup to calculate statistics as representative as possible. Gallup's weights variable reflects the inverse probability of selection, calculated using respondents' information and (among others) national demographics, number of phone connections per household and the number of household members.

As some explaining factors used in the Oaxaca-Blinder (OB) decomposition in table S6 have missing responses (e.g., because of answering "don't know" or "refused to answer" on

some items), the sample is limited to those respondents without missing responses for the respective questions.

A.4 Selective out-migration and the drop in desire to emigrate

The large drop in desire to emigrate could be driven by selective out-migration of Ukrainians on observable and unobservable factors that (directly) affect migration intentions.

On observables To illustrate how the desire to emigrate, optimism, confidence in government and confidence in the military in Ukraine would have altered in 2022 if the composition in terms of age-by-gender and education-by-gender would not have changed, we residualize the outcome. For each of the four outcomes, we regress the outcome on the covariates, obtain the residuals from that regression and plot the residuals over time in fig. A10. The change in Ukraine in 2022 with respect to the five country groups in fig. A10 are comparable to Fig. 6.

On unobservables To understand what part of the drop could be explained by out-migration selected on unobservables, we perform a back of the envelope calculation based on the observed migration intentions in Ukraine in GWP, observed return intentions in the Kantar Public surveys as well as UNHCR data on population movements. As the Gallup World Poll was fielded in early September and participation was restricted to those residing in Ukraine at the time of survey, we take the information available on refugee populations on the midpoint of the interviews on 05 September 2022.

We proxy the size of the refugee populations on 05 September 2022 by the gross number of 2.4 million of border crossings to Russia and Belarus (there is no information about movements from Russia and Belarus into Ukraine) and by the 4.2 million net border crossings from Ukraine to the rest of Europe from UNHCR Operational Data Portal (2023). We have no information on the return intentions of 2.4 million Ukrainians who crossed the border to Russia and Belarus.

We assume that the share of minors in both refugee populations is 37%, in line with the share of minors among those who were granted Temporary Protection Status by 31 August

2022 Eurostat (2023). The pre-war adult population of Ukraine was 33.9 million of whom an estimated 12.3% left the country before the GWP was fielded (4.5% to Russia and Belarus; 7.8% to the rest of Europe).

Using these numbers, we can adjust the numbers in Fig. 2A for potentially selective out-migration by making various assumptions about the counterfactual desire to emigrate of the refugee population based on return intentions in the Kantar Public survey. In the following, we analyze the following four cases:

- **Case 1** We assume that the Kantar Public survey is representative of the adult refugee population (including those who crossed the border with Russia and Belarus) and that only those refugees who want to settle outside Ukraine are those who would have otherwise desired to emigrate.

- **Case 2** We assume that the Kantar Public survey is representative of the adult refugee population (including those who crossed the border with Russia and Belarus) and that those who want to settle outside Ukraine and those who do not know where to live are those who would have otherwise desired to emigrate.

- **Case 3** We assume that the Kantar Public survey is representative of the adult refugee population only in the countries it covers and that those who want to settle outside Ukraine and those who do not know where to live are those who would have otherwise desired to emigrate. Furthermore, we assume that no individuals who crossed the border with Russia and Belarus plan to settle outside of Ukraine.

- **Case 4** We assume that the Kantar Public survey is representative of the adult refugee population only in countries it covers and that those who want to settle outside Ukraine and those who do not know where to live are those who would have otherwise desired to emigrate. Furthermore, we assume that all individuals who crossed the border with Russia and Belarus plan to settle outside Ukraine.

Cases 3 and 4 represent polar opposites on desire to emigrate among Ukrainians who fled or were forcibly displaced to Russia and Belarus. Fig. A11.demonstrates how the change in desire to emigrate between 2021 and 2022 would have looked for these four scenarios. We

find that the observed drop of 25.1 percentage points increased to 25.2 pp in Case 1, and decreased to 22.1 pp in Case 2, 23.6 pp in Case 3 and 19.1 pp in Case 4. Even in the very conservative case 4, the drop in return intentions would still be in the 99th percentile of year-year changes shown in Fig. A9.

Figure A9: Yearly changes in the outcomes of Fig. 2. throughout the 2006-2022 GWP.

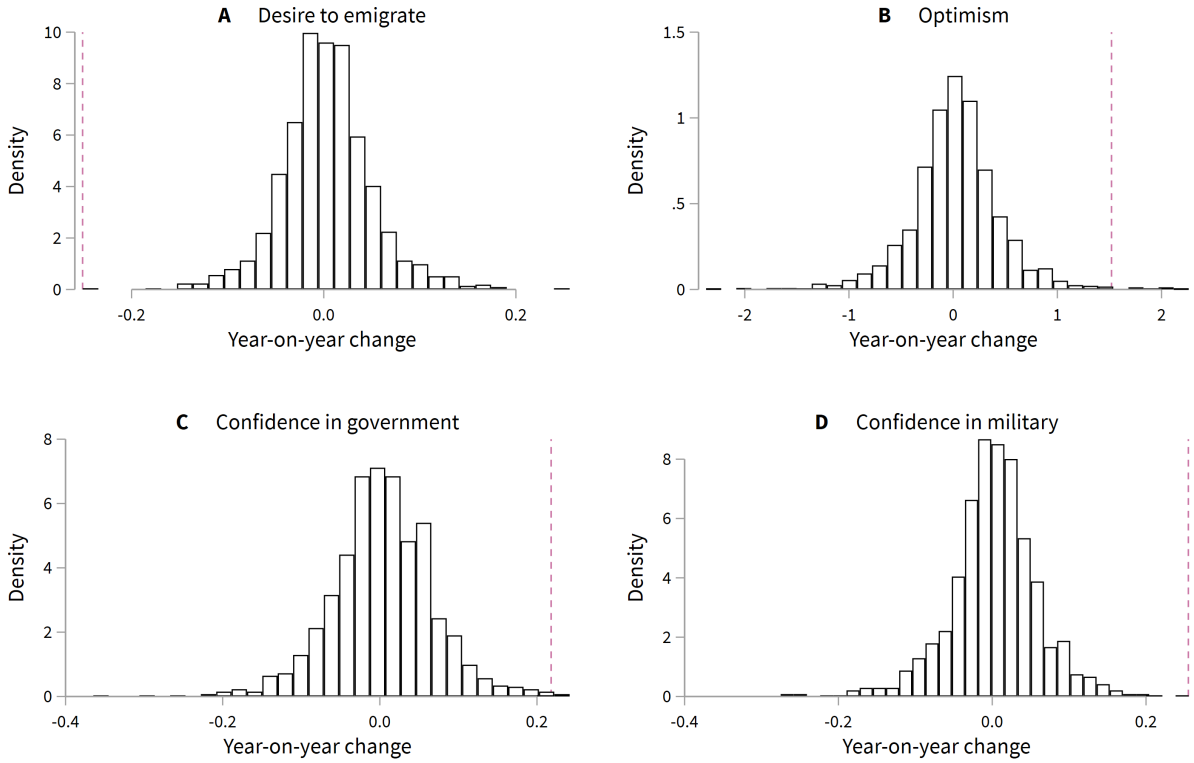


Figure A10: Desire to emigrate, optimism, confidence in government and military in Ukraine and five country groups, controlling for demographic factors

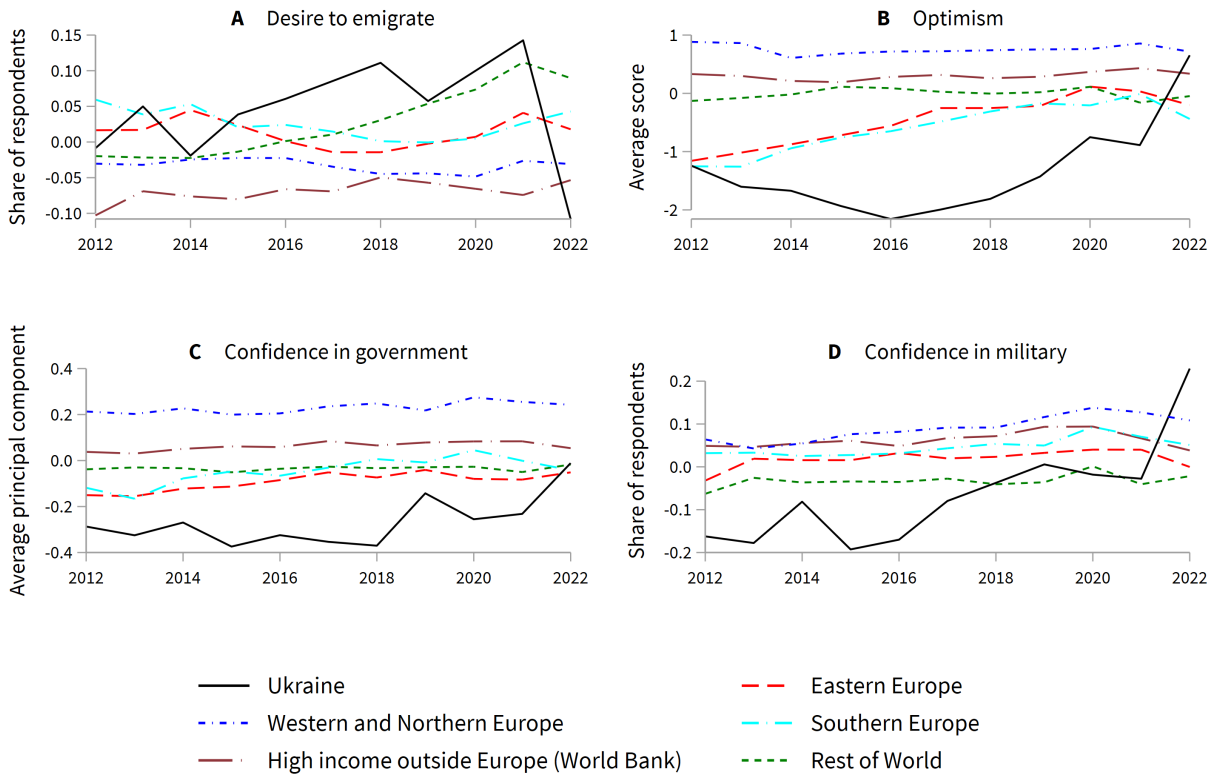


Figure A11: Desire of Ukrainians to live outside Ukraine under four scenarios.