Entrepreneurship, victimization and the historical legacy of war: evidence from Eastern Europe and Central Asia*

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Abstract

We study the effect of family victimization and displacement during World War II on entrepreneurship and employment in the former communist countries of Eastern Europe and Central Asia. Using the 2010 Life in Transition Survey, we document a limited impact of war exposure on overall employment rates, employment with a formal contract, or whether the respondent works in a high-skill industry. However, our analysis points to long-term scarring effects of war on entrepreneurial behavior, possibly working through different attitudes toward institutions and redistribution in individuals from victimized families. Our results are robust to controlling for fixed sub-national factors, a wide range of individual characteristics, as well as to using non-survey measures of war exposure.

Preliminary draft. Comments welcome.

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1 Introduction

What are the costs of violent conflict? According to one strand of the literature, war-related violence may negatively affect health (Akresh et al., 2012; Ghobarah et al., 2003; Mansour and Rees, 2012), education (Leon, 2012; Shemyakina, 2011) and political and social attitudes (Besley and Reynal-Querol, 2012; Rohner et al., 2013), both over the long and short term. In contrast, a different view posits that while conflict may have substantial economic and humanitarian costs in the short run, its long-run impacts are limited (Chen et al., 2008; Davis and Weinstein, 2002; Miguel and Roland, 2011). Although the literature is undecided on the exact mechanisms through which these effects may work, a growing recent scholarship points to the important role of war-related victimization and displacement (Bauer et al., 2013; Bellows and Miguel, 2009; Minoiu and Shemyakina, 2014).

In this paper, we build on these contributions by studying the link between family-level victimization and displacement during World War II and the employment patterns of subsequent generations across 29 countries in Eastern Europe and Central Asia. Our analysis is based on the Life in Transition Survey (LiTS), a nationally representative household and individual level survey conducted throughout the transition region in 2010. We find limited evidence that victimization affects general employment rates, formal employment, or whether the respondent works in a high-skill industry, suggesting that some of the adverse effects of family victimization do not persist across generations. At the same time, we uncover a strong and robust negative effect of family war exposure on individual entrepreneurial behavior, captured by information on whether the individual has ever managed to set up a business. We interpret this as an indicator of a long-term link between war and entrepreneurship. This is a particularly relevant result for transition economies, as research has shown that entrepreneurial activity, banned for nearly half a century during communism, has been an important catalyst for growth in the region (Berkowitz and DeJong, 2011; Woodruff and McMillan, 2002).

There are several (possibly overlapping) mechanisms through which family-level victimization may affect the employment trajectories of future generations. For instance, household

victimization may simply be a proxy for victimization at the locality level. Similarly, victimization may affect a range of individual characteristics relevant for entrepreneurship and employment, such as family wealth, human capital and health, and attitudes and values. We are able to rule out some explanations, though the absence of longitudinal data limits our ability to identify the precise mechanism of impact. In particular, our analysis suggests that the negative effect of war on entrepreneurship is less likely to be driven by locality-level victimization, household financial resources (proxied by the education level of the respondent's father as well as family membership in the former communist party), or individual education. While we find some evidence that victimization may have affected the respondent's health status, reverse causality between entrepreneurship and health makes it problematic to interpret such a relationship as causal.

Instead, using an instrumental variables approach, we find suggestive evidence that war-induced attitudinal changes related to perceptions of institutions and preferences for redistribution may be important. Since a large literature has shown that individual attitudes and values also form at the locality level, we also collect non-survey subnational data on the location of World War II battles in our sample. To exploit the richness of cultural data in the LiTS, we then use household victimization as well as the distance of each locality to the nearest battle as instruments for various questions on attitudes and values. While parental background and controls for individual education should capture reasonably well the alternative channels through which war may affect employment and entrepreneurship, our IV results should nevertheless be interpreted as suggestive only due to the possibility of omitted variable bias as well as the imprecise first stages in some of the specifications.

Our research design has a number of attractive features. First, all of the countries in our sample underwent almost half a century of Soviet rule. In addition to imposing a common set of political and economic institutions, communism also largely banned private enterprise, which re-emerged after 1989. This particular feature of our setup allows us to implicitly control for at least two important factors that could be contaminating our results: parental wealth and family entrepreneurial legacies. Living under a centrally planned economy made

acquiring financial or other assets difficult, implying that parental wealth is likely to have been less important for post-communist entrepreneurs. Similarly, it is unlikely that parents transmitted preferences or human capital *specific* to self-employment to their children.

Second, while the fall of the Iron Curtain in the early 1990s can be viewed as plausibly exogenous, we also provide historical, graphical and econometric evidence that victimization status can be treated as a quasi-experiment. Third, the richness of our data set allows us to account for a wide variety of characteristics that may affect both victimization and entrepreneurship, such as individual and family communist party membership, family background, or religion, while the historical nature of our war victimization measure makes it more likely that conflict exposure affected entrepreneurial behavior, rather than the other way around. We also include fixed effects at the level of sub-national administrative regions, along with primary sampling unit (PSU) geographic characteristics. In this way, our empirical analysis compares individuals within relatively narrow geographical areas with arguably similar business environments and returns to entrepreneurship.

Our empirical tests provide strong evidence that family exposure to World War II affected subsequent entrepreneurial behavior. There do, however, remain other possible explanations that may account for the patterns observed in the data. First, although identification in our analysis rests on the assumption that conflict victimization occurred randomly, it is possible that war exposure is correlated with unobserved family characteristics transmitted over generations (such as ability), which may have an independent effect on entrepreneurial decisions. Our results survive the implementation of different techniques to address this concern: controlling for a wide variety of observable individual and family characteristics and a matching estimator at the individual level.

Second, it could be that our survey measures of war exposure and entrepreneurship are unreliable, particularly because LiTS is neither a conflict nor an entrepreneurial survey. It is also possible that less successful entrepreneurs tend to over-report the incidence of family victimization in order to "justify" failure. This is less likely to be the case, as the correlations between our survey variables and other sources on World War II deaths and entrepreneurship

(at the country level) are high (between 0.6 and 0.9). Accounting for whether the respondent has ever moved hardly changes our results, suggesting that selective migration is unlikely to drive our results. Third, our measure of entrepreneurship, which captures whether an individual has *ever* managed to set up a business, provides no information on the life span of established enterprises. To rule out that our findings are driven by short-lived businesses, in the online Appendix we also replicate our results for those individuals who, in addition to having started a business, have also been self-employed in the past 12 months. Although admittedly we cannot eliminate all sources of bias in our cross-sectional data, our multi-pronged, micro-level approach makes us more confident that there is indeed a causal - and long-term - negative relationship between conflict exposure and individual entrepreneurial behavior.

Our work integrates several different strands of the literature. In addition to the broader work on the microeconomic consequences of conflict, we speak to a small but important literature on the link between conflict and small-scale entrepreneurship (Bozzoli et al., 2013; Singh, 2013), firm behavior (Camacho and Rodriguez, 2013; Collier and Duponchel, 2013; Petracco and Schweiger, 2012) and employment (Blattman and Annan, 2010; Kondylis, 2010; Menon and van der Meulen Rodgers, 2013).[1] While several of the above studies have shown that conflict may have limited or even a *positive* effect on employment and self-employment over the short term, thus highlighting the resilience of families affected by war, this paper indicates that such a conclusion may be less accurate over the long run.

Our conclusions are thus in line with research that has documented a robust negative and long-term impact of World War II on health, education, income and social and political attitudes, both in the developed world and across the transition region (Akbulut-Yuksel, 2009; Grosjean, 2014; Ichino and Winter-Ebmer, 2004; Kesternich et al., 2014). More broadly, this paper complements a large body of work showing that cultural norms matter for a variety of outcomes, including economic and political development (Putnam et al., 1994; Acemoglu

[1]See also the reviews in Brück et al. (2011), Brück et al. (2013) and Brück and De Groot (2013) who note that there is insufficient attention in the literature on the link between conflict and entrepreneurs and firms. Our findings are also relevant for the literature on the determinants of entrepreneurship, particularly in the transition region such as Djankov et al. (2005, 2006); Demirgüc-Kunt et al. (2011); Estrin et al. (2006).

et al., 2011; Tabellini, 2010), trade (Guiso et al., 2009), violence (Grosjean, 2011) and political accountability (Nannicini et al., 2013). Our argument that attitudinal differences between victimized and non-victimized individuals may account for differences in their entrepreneurial behavior echoes findings that long-run historical events (such as slavery, persecution or experience with communism) may partly determine culture and preferences (Alesina and Fuchs-Schündeln, 2007; Nunn and Wantchekon, 2011; Grosfeld et al., 2013).

We next provide a brief background on World War II. We follow with a presentation of our data, empirical strategy and econometric evidence. The pen-ultimate section of the paper elaborates on mechanisms through which victimization may affect entrepreneurial behavior, and the last section concludes.

2 World War II-related victimization and displacement in Eastern Europe and Central Asia

There was substantial variation in the extent and type of involvement in World War II among the countries of Eastern Europe and Central Asia. Albania, former Yugoslavia, Bulgaria, Hungary, Romania and the Slovak Republic ended up siding with the Axis powers, either willingly or following military occupation. The Allies included most of the Soviet Union, the Czech Republic, Poland and Mongolia. Yet a third group of countries - Estonia, Latvia, Lithuania as well as present-day Ukraine, Belarus and Moldova - had parts of their territories controlled by both the Axis and the Allies.

World War II inflicted a heavy human toll worldwide, with up to 15 million military dead and up to 35 million civilians who perished. A total of 2 million Soviet prisoners of war were killed, while between 4 and 5 million Jews found their death in concentration camps, and an estimated 2 mllion more died in mass killings in Eastern Europe. The USSR suffered the greatest loss of population due to the war: nearly 7.5 million military dead (as well as 10 million civilians), while battle deaths in Yugoslavia, Poland and Romania were around 300,000 (Dupuy et al., 1986; Sarkees and Schafer, 2000). Since the Nazis never reached the

lucrative oil fields of the South Caucasus, the Eastern Soviet Union did not experience the same level of destruction and devastation as the countries in the Western USSR or the rest of Europe. Even so, soldiers throughout the Soviet Union were drafted in the Red Army, and many industrial plants were re-allocated to Central Asia during the war.

Nearly 25 million people were also displaced during, as well as shortly after, the war in the former communist bloc. At least 6 million people left the USSR to Western Europe, Czechoslovakia and Poland. Apart from the surviving Jews that often found that they were unwelcome in their old homes, by 1950, a total of 11.5 million Germans were expelled or departed voluntarily from Eastern Europe, including the Soviet Union, Poland, Romania and Yugoslavia. Nearly two million Poles were expelled from the eastern part of the country annexed by the USSR (the USSR also annexed territories from Czechoslovakia). In turn, half a million Ukrainians and Belorussians were sent from Poland to the USSR (Wasserstein, 2011; Kesternich et al., 2014).

3 Data

3.1 Data

Our main data source for the analysis is the second round of the EBRD and World Bank Life in Transition Survey (LiTS), which was conducted in 29 transition countries in the summer of 2010 using face-to-face interviews.[2] The LiTS is a nationally representative survey that combines several modules related to household and individual economic and demographic characteristics, individual attitudes and values, labor, education and entrepreneurship, climate change, and the impact of the crisis. Adult survey respondents (aged 18 and above) were drawn randomly, using a two-stage sampling method. Census enumeration areas, stratified by region and by level of urbanity and selected with probability proportional to size, served as primary sampling units (PSUs), while households served as secondary sampling

[2]The survey was also conducted in Turkey, Italy, France, Germany, Sweden and the UK, but to preserve comparability within our sample, we use only the data for the transition countries.

units. Overall, 50 PSUs consisting of 20 households each were selected in each country, with the exception of the UK, Poland, Russia, Serbia, Ukraine and Uzbekistan, where 75 PSUs consisting of 20 households each were selected. We supplement these data with external data on PSU geographic characteristics (including latitude and longitude), which we describe in more detail below and in the online Appendix.

3.2 Dependent variables: entrepreneurship and employment outcomes

3.2.1 Entrepreneurial start-up

To measure entrepreneurship, we use information from the following two survey questions: (1) "Have you ever tried to start a business?", and (2) "Did you manage to set it up?" Since attempting to start a business can involve a range of actions from simply considering a business idea to formally registering a business, relying on answers to the first question may be error-prone. Instead, our main binary dependent variable (*start-up*) captures whether the respondent has ever managed to set up a business, conditional on having tried to start one.

Our definition of entrepreneurship is in line with the approach taken in the rest of the literature, which considers those who are business starters and owners, as well as formally and informally self-employed individuals and subsistence farmers (Brück et al., 2013). However, our measure is subject to at least two caveats. First, since the questions only ask if the respondent *ever* managed to set up a business, we are unable to distinguish between serial and one-time entrepreneurs.[3] Although the survey asks about the last time when the respondent tried to start a business and about the reasons for failure, we do not have information on how long enterprises were in existence, or on the industry in which these businesses operated. To partially address this, in the online Appendix we also create a second dependent variable that includes those individuals who have ever started a business *and* have also been self-employed

[3]Gompers et al. (2010) find, in the context of US firms that obtained venture capital financing, that entrepreneurs with a track record of success are much more likely to succeed than first-time entrepreneurs and those who have previously failed.

in at least one of their listed jobs in the past 12 months.[4]

Second, our measure of entrepreneurship relies on self-reported, subjective information. Some respondents may regard setting up a business simply as registering the enterprise, while others may believe that a business is viable only after it has achieved a certain level of turnover. Unfortunately, we are not aware of any other data set that provides data on entrepreneurial activities for the entire transition region, along with information on victimization and displacement during World War II. To mitigate concerns about the reliability of our entrepreneurial data, we computed country-level correlations between the Global Entrepreneurship Monitor (GEM) variable "Established Business Ownership Rate" and information from the LiTS on self-employment, entrepreneurial trial, and business start-up for the 14 transition countries for which there are data in both surveys.[5] Although the correlations are not very precise (ranging from 0.35 for entrepreneurial start-up to 0.55 for self-employment), they are moderately high given the small sample size considered.

A favorable aspect of our data is that subjective questions on business experience such as the ones in the LiTS may capture entrepreneurship in the informal sector better, where detailed records of business operations are usually scarce (LiTS does not distinguish between formal and informal entrepreneurs). While GEM includes a much more detailed entrepreneurial module, comparability may be weaker, since phone interviews were substituted for in-person interviews in some transition countries, which did not happen with the LiTS.[6]

3.2.2 Employment

To measure employment, we first create a binary dependent variable based on the following question: "Did you work for income in the past 12 months?" Our next dependent variable aims to separate formal from informal employment and considers respondents who answered

[4]The LiTS asks respondents to list up to five jobs in which they have been employed in the past 12 months. Note that respondents may be self-employed without having started a business, for instance, if they inherited a business or are working in a family enterprise; if they are working in an informal business that is not registered; or if they are working as free-lance consultants.

[5]The GEM variable measures the percentage of the population aged 18-64, who are currently an owner-manager of an established business for more than 42 months.

[6]See Bosma et al. (2012) for more information on how the GEM is conducted.

yes to the previous question and have a contract or labor book for their job. Finally, we also create a dependent variable that is 1 if the respondent worked in a high-skill industry in the past 12 months.[7]

3.3 Independent variables: victimization and displacement

3.3.1 LiTS data

We make use of two questions that ask respondents about their family's experience with World War II: (1) "Were you, your parents, or any of your grandparents physically injured or killed during the Second World War?" and (2) "Did you, your parents, or any of your grandparents have to move as a result of the Second World War?" Since most respondents were not directly affected by the war, these questions capture primarily conflict exposure at the family level. In the regressions below, we create a binary index that takes a value of 1 if an individual indicated a positive answer to any of the two questions. We also present versions in which the two questions appear as separate explanatory variables.[8]

As in the case of entrepreneurship, an important concern relates to the reliability of self-reported data on war victimization. Although data on post-World War II displacement is scarce, secondary data on victim counts from the Correlates of War (COW) and the League of Nations Yearbook enable such comparisons at the country level for the question relating to familial injuries and death. In fact, calculations by Grosjean (2014) reveal that the information from the latter two sources is very highly correlated with that from the LiTS (at a level of 0.9). For our purposes, however, it is important to have accurate measures of victimization *within* countries to control for cross-regional differences in entrepreneurial opportunities. Indeed, a unique feature of the LiTS data set is that it allows us to exploit sub-national variation in victimization and entrepreneurship simultaneously.

In order to test further the accuracy of the individual-level data, we calculate the share of

[7]Our results are unchanged when we exclude from our analysis or control for those who are retired, students, disabled, taking care of the children or the house, or otherwise unable to work.

[8]Our results are robust to creating an index which is 0 if a respondent experienced neither victimization nor displacement, 1/2 if he experienced either, and 1 if he experienced both.

victimized individuals at the sub-national level for each country, having matched each PSU to its respective sub-national region. Figure A1 maps the distribution of the victimization and displacement rates across sub-national regions for Central and Eastern Europe, the Caucasus, and Central Asia, while Figure A2 does the same for Russia. Darker color tones refer to greater rates of victimization and displacement, while regions that were not covered by the LiTS are grayed out on the maps. Within each country, the maps depict regions with various rates of victimization, with certain regions containing a substantially high share of victimized households. In the transition region, the most affected areas lie along the Eastern Front, which stretches from the Baltics in the North to Crimea in the South.[9] At the same time, many of the Central European and Balkan countries have lower rates of victimization on average, owing in part to the minor role they played as battle grounds between the big powers.

3.3.2 External combat data

In addition to the LiTS data, we also use the within-country maps in Ellis and Cox (1993) to code the locations and duration of combat operations along the Eastern Front. We combine this information with data on the location of each PSU in the LiTS to calculate four additional variables: (1) a dummy variable for whether each PSU is located within 1 kilometer of combat action; (2) the number of combat events within 1 kilometer of each PSU (in logs); (3) the duration of events within 1 kilometer of each PSU (in log days); and (4) the log distance from each PSU to the closest combat location.

3.4 Control variables

The richness of our data set allows us to include a wide range of individual and family-level variables that may affect both war-related victimization and displacement as well as entrepreneurship. We control for an individual's age when he tried to start a business, gender, urban location, education, health, risk preferences and willingness to move. Some of these

[9]These areas are located mostly in present-day Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine, which came under partial control of both the Axis powers and the Allies throughout the war.

variables (e.g. urban location, risk preferences, health, willingness to move) may be partially endogenous to entrepreneurial behavior, but in the next section we demonstrate that our results change little when they are omitted. Of particular importance are any confounding effects related to the legacy of the Soviet regime, as well as family socio-economic status. To control for the former, we include a dummy capturing whether the respondent or any of his family members (mother, father or other members of the family) were members of the Communist Party prior to 1989. To proxy for the latter, we include information on the full-time education of the respondent's father.[10]

We are also able to investigate the link between war exposure and a wide range of individual attitudes and values, such as preferences for market economy, perceptions of institutions, preferences for redistribution, and political participation. In our robustness checks, we also include controls for whether the respondent has ever moved, whether he borrowed to start the business, and his marital status, religious affiliation, current income and assets. A detailed description of all variables is available in the online Appendix.

PSU Variables - Geography Geographic characteristics that enable easy transportation access, such as low altitude or being located close to a border or capital, may have affected both war victimization and entrepreneurship. We therefore include the altitude, latitude and longitude of a PSU, as well as its distance to the nearest border and distance to the country's capital. In addition, we capture the importance of natural resources by also including the distance from the PSU to the nearest mine (regardless of whether it is currently operating or not).

3.5 Summary statistics

Table 1 shows coefficients obtained from regressions in which each of the variables in the first column is regressed on the victimization dummy, sub-national region fixed effects and PSU

[10]We also have information on the respondent's mother's years of full-time education, though we omit it from the analysis as it not only leaves our results unchanged, but it is also highly correlated with the educational attainment of the respondent's father.

characteristics. We draw on a sample of around 20,000 individuals, with over a third of them coming from families affected by World War II. Around 12 per cent of respondents have ever tried to set up a business, and nearly 67 per cent have managed to start up an enterprise, conditional on trial.

Victimized and non-victimized respondents are on average similar across many characteristics, such as gender, marital status, living in an urban area or not, and willingness to take on risk or to move. However, there are several differences. First, victimized individuals seem to come from different socio-economic backgrounds (as proxied by educational attainment and income), they are less healthy, and their family members, including themselves, are much more likely to have been a member of the Communist Party. Second, individuals from victimized families are more likely to have a bachelor's degree than those from non-victimized families. Third, those affected by war are less likely to believe that effective institutions exist, while they are much more likely to meet up regularly with relatives. Differences in attitudes might be in part due to the fact that individuals from victimized families are on average older (by around four years) than those from non-victimized families.

These figures point to two important channels through which the long-lasting effects of exposure to conflict may impact on entrepreneurship. First, health and socio-economic status may guide individuals' ability to perform well at school and in the workplace, and they may thus have a direct impact on the probability of setting up a business. Second, individuals may inherit different attitudes and values from their predecessors, owing either directly to an history of victimization or to the resulting educational attainment and political involvement in the family.

4 Empirical strategy

Our identification strategy compares individuals whose families were affected by World War II with individuals whose families were unaffected, within relatively narrow geographic units. Our specifications include fixed effects at the levels of the country and sub-country admin-

istrative regions. We do not include primary sampling unit (PSU) fixed effects due to the small number of households contained in each unit (20), which unfortunately does not provide sufficient variation in war exposure or entrepreneurship. However, we include a wide range of PSU geographic characteristics, thus alleviating concerns about omitted variables operating at the sub-regional level.

Our main equation of interest is the following:

$$\mathrm{E}_{icrp} = \alpha + \beta_1 \mathrm{War}_{icrp} + \mathbf{X}_{icrp}\beta_2 + \mathbf{Z}_{crp}\beta_3 + \gamma_r + \mu_c + \varepsilon_{icrp} \tag{1}$$

where E_{icrp} is one of the four binary employment outcomes (entrepreneurial start-up, employment, employment with a formal contract, and employment in a high-skill industry) for individual i residing in country c, sub-national administrative region r and primary sampling unit (PSU) p. War_{icrp} is a dummy variable that takes a value of 1 if the individual and/or his parents or grandparents were injured, killed or had to move during World War II ; $\mathbf{X}_{icrp}$ is a vector of additional individual and family characteristics described above; $\mathbf{Z}_{crp}$ is a vector of PSU characteristics described above; γ_r is a fixed effect at the level of each country's administrative region; μ_c is a country fixed effect; and ε_{icrp} is the disturbance term. Each estimation includes survey sample weights, which ensure that the data are representative at the country level. In addition, all standard errors are clustered at the country-administrative region level. We exclude respondents who reported to have started a business before 1989 or who were 16 years or younger when they tried to start a business.

Our preferred method of estimation is a linear probability model. This approach is valid as long as we are primarily interested in the average partial effect of being victimized on the probability of entrepreneurial start-up or employment. Linear probability models often do a good job in capturing the average partial effect (Wooldridge, 2010): we obtain very similar results when we re-run our estimations using a probit model and calculate marginal effects.[11] Our main coefficient of interest is β_1; we expect that individuals from victimized families are less likely to be employed or to have started a business, as compared with individuals from

[11] These results available upon request.

non-victimized families.

4.1 Identification Concerns

Our identification strategy assumes that World War II victimization occurred randomly. This assumption may lead to biased results if families targeted during the war were different along observable or non-observable characteristics, such as income, ability, ethnicity, or values and beliefs, as compared with those who were not targeted. This is especially problematic if such characteristics are transmitted across generations and have an independent effect on individual entrepreneurial behavior.

We use three complementary approaches to tackle these concerns. First, we address the issue of selection by implementing a propensity score matching estimator. This should alleviate concerns about selection of individuals into victimization across observable individual, family and geographic locality characteristics. Second, we check that our results are robust to the inclusion of respondent characteristics that may have persisted across generations, such as the religious affiliation of the respondent and whether he ever moved, in addition to our baseline controls. We also experiment with several alternative definitions of individual income, which, albeit subject to possible reverse causality as discussed above, may be a good proxy for family socio-economic background. Our final tactic is to use an additional measure of victimization based on sub-national data on the location and duration of the major World War II battles along the Eastern Front from Ellis and Cox (1993). This information both captures the higher propensity to observe family victimization in certain localities versus others, and it also controls for any unobservable institutional determinants of entrepreneurship at the locality level that war-related destruction brings about in the long run.

Although we cannot completely rule out family-based war targeting, we feel confident that our multi-pronged approach - which includes national and sub-national fixed effects and geographic characteristics, the use of a wide range of control variables, the matching estimator, and the additional victimization proxy - makes it more likely that the link between war and entrepreneurship we uncover is causal rather than spurious.

5 Results

5.1 Entrepreneurship and individual welfare

Before we present our main findings, we briefly discuss the correlation between employment, entrepreneurship and individual welfare. Table 2 presents results from an OLS estimation of self-reported measures of happiness, asset count, and income on employment status and the same set of baseline controls and fixed effects as in (1). We find strong evidence for a positive impact of entrepreneurship on all three measures; individuals who started their own businesses are both happier and richer compared with individuals in regular employment, which is the omitted category in these regressions. At the same time, unemployed individuals are less happy, own fewer assets and report lower levels of income than those in regular employment. Although these estimates display simple correlations, they suggest that, in the transition region, opportunity rather than necessity entrepreneurs are likely to be more prevalent. Hence, our subsequent results can be interpreted as the impact of family victimization on the ability of individuals to actively seek investment opportunities and create profitable businesses and employment rather than a form of subsistence living with little growth potential, which may be the case in many developing countries (Banerjee et al., 2011).

5.2 Victimization, entrepreneurship and employment outcomes

Table 3 presents our baseline estimates of equation (1) with entrepreneurial start-up as the dependent variable. Column (1) reports estimates from a parsimonious specification that controls for the gender of the respondent, Communist Party membership in the family, father's education, age at the time the respondent tried to start a business, and geographical characteristics. The point estimate indicates that individuals from victimized families are on average 4.7 percentage points less likely to have ever started a business than individuals from non-victimized families, or 7.1 per cent relative to the mean. This estimate remains statistically significant when we control for the respondent's educational attainment and it

even rises in absolute size in column (2).

Certain regions within warring countries may have been targeted during the conflict due to observed and unobserved factors, such as distance to border, presence of strategic resources, or demographic characteristics. This requires us to control for war exposure at the locality level if we want to isolate the effect of victimization at the individual level. Although our regional fixed effects and set of PSU controls may account for such unobserved heterogeneity, we additionally control for proximity to major battle grounds. This is of interest in itself, since localities targeted during World War II may display a lower incidence of entrepreneurship today. This is indeed the case in column (3): individuals who live in localities within 1 kilometer of a major battle ground are on average 12.7 percentage points less likely to have ever started a business than those living in localities that were not targeted within the same (narrowly defined) region.[12] More importantly, the estimate on individual victimization is little changed and retains its significance. This suggests that our finding is not driven by a sorting of victimized individuals into areas that offer little entrepreneurial opportunity as a result of war.

Violent conflict affects individual health outcomes both over the short and long term (Ghobarah et al., 2003; Akresh et al., 2012; Mansour and Rees, 2012). In column (4), we control for respondents' health to see whether victimization impacts entrepreneurial activity through this channel. Health is strongly associated with business start-ups and it indeed lowers the point estimate on victimization by around 25 per cent relative to column (3). Respondents' health is likely to have a strong trans-generational component, for instance due to persistent psychological trauma or inherited diseases. At the same time, however, successful entrepreneurs are likely to have better health than unsuccessful ones. We therefore remain cautious in interpreting health status as a potential mechanism through which victimization lowers the prospect of entrepreneurship.

Table 4 investigates the impact of victimization on whether the individual was employed

[12]In unreported regressions, excluding the individual's own victimization status makes no difference to this result. Alternatively, we include the distance to the nearest battle ground, the number of battles near the PSU, and their duration as independent variables; our qualitative results are unchanged.

in the past 12 months using the same set of controls as before. Tables A2 and A3 in the Online Appendix do the same for whether the individual was employed with a formal contract or book, and whether he works in a high-skill industry. In all three tables, we fail to find a significant difference between individuals from victimized and non-victimized families in their employment outcomes. These results can be explained if individuals from victimized families are forced to compete on the wider labor market and acquire skills to become more employable, for instance by attaining more schooling. Indeed, schooling appears to have a stronger impact on employment, as compared with entrepreneurial start-up, with greater educational attainment monotonically related to better chances of being employed (in general or with a formal contract) and having a high skill occupation.

In columns (3) and (4), we find some evidence that individuals from localities in close proximity to battle grounds are more likely to be employed in the past 12 months. There seems to be no difference in formal vs. informal employment outcomes between targeted localities and those that were not. There is strong evidence, however, that individuals from localities near battle grounds are much more likely to be in a high-skill occupation than those from untargeted localities within a region (Table A3). This can be explained if targeted localities were home to industrial centers, government offices, or other high-skill employers such as hospitals and universities during the war and they retained their roles in the aftermath, or if reconstruction funds were dedicated towards creating disproportionately more high-skill jobs.[13]

5.3 Robustness checks

We conduct a number of robustness checks to verify our finding on the effect of victimization on entrepreneurship. If victimized families within the same region were targeted depending on certain observable characteristics that also impact on entrepreneurial behavior today, then our estimates of victimization on entrepreneurship would be biased. We tackle biases arising

[13]These effects survive when we control for whether the respondent has ever moved or not in unreported regressions. In addition, using alternative cutoff points when defining the exposure variable (2, 3 or 5 km) produces similar results.

from family targeting within PSUs by presenting results from a nearest-neighbor estimator in column (1) of Table 5. We match on all observable outcomes including individual and family characteristics as well as regional and PSU attributes.[14] Column (1) indicates that victimized individuals are on average 5.9 per cent less likely to have ever started their own business than non-victimized individuals, an effect that is larger than our initial OLS estimate.

In column (2) of Table 5, we add three measures of an individual's wealth to our baseline controls: a count of assets owned by the individual's household, a self-reported measure of the individual's relative income, and the share of monthly income spent on food in the household. The coefficient esimate on victimization remains similar to those reported in Table 3. While the first two measures of individual wealth are positively associated with the probability of start-up as expected, the last measure is insignificant and negative, which suggests that the sample more likely captures opportunistic entrepreneurs than necessity entrepreneurs. However, these estimates should be treated with caution since previous success as an entrepreneur should have an impact on assets and income today. To control for the financial well-being of potential entrepreneurs more accurately, column (3) includes an indicator variable for individuals who successfully borrowed to set up their business. Although this increases chances of start-up, the effect of victimization is little changed.[15] In the remaining columns of Table 5, we include self-reported individual characteristics that are potentially correlated with both family victimization and the ability to set up a business: willingness to take risk, willingness to move, and current marital status. The estimate on victimization is higher than in column (3) for each case.

Our victimization measure captures both individuals who had family members killed and those who had their family forcibly displaced during the war. While both experiences are traumatic, they may impact on the determinants of entpreneurial success differentially. Column (1) of Table 6 splits the victimization measure into three categories. Regardless of this definition, the negative impact of victimization remains. We find that individuals

[14]Estimates from our first stage probit to generate matches and the balancing tests will be reported in the Online Appendix.

[15]Bivariate probit results that take into account the inter-dependent nature of entrepreneurship and borrowing are similar to those reported here. These results are available upon request.

who have lost family members in the war are 4.66 percentage points less likely to set up their own business, while those who have experienced both killing and displacement are 6.41 percentage points less likely to do so. Families who were only displaced in fact display the smallest chance of entpreneurial success as they are 7.12 percentage points less likely to set up their own businesses.

Table 6 presents further robustness checks. Our main result is unchanged when we alternately control for the average share of victimized individuals in a PSU (column (2)), whether the respondent lives in an urban area or not (column (3)), whether the respondent's family ever moved cities (column (4)), or whether the respondent belongs to a religious majority (column (5)). These variables have no impact on the probability of a start-up and they do little to change the coefficient estimate on victimization.

5.4 Potential mechanisms

There are at least four (possibly inter-dependent) channels through which family victimization and displacement may affect the employment and entrepreneurship patterns of subsequent generations.

A first possibility is that war victimization has a negative effect on household financial resources, both over the short and long term. The death or injury of a family member may deprive a family of a bread-winner, and care for the sick or injured may also bring about additional financial strain. Similarly, household wealth and income are likely to decline when a family is forcibly displaced, not only because such migrants may have to abandon many possessions, but also because adjusting to a new environment - and a new labor market - may be difficult (Bauer et al., 2013; Kondylis, 2010). In addition to financial loss, victimization may simply prevent future generations from inheriting family businesses and retain a culture of self-employment.[16]

Second, war may, either directly or via income, affect children's health, height and nu-

[16]Dunn and Holtz-Eakin (2000) document a strong intergenerational correlation in self-employment in the United States, which they find to be a stronger determinant of the next generation's entrepreneurship probability than parents' financial assets.

trition and thus their labor market outcomes later in life.[17] For instance, Kesternich et al. (2014) find that children who experienced hunger and fell behind on their childhood immunizations during World War II have poorer adult health outcomes, including higher level of adult diabetes and depression. In Colombia, Camacho (2008) links pre-natal stress of the mother (associated with land mine explosions) to low birth weight.[18] A large literature in psychiatry and psychology has highlighted the importance of war-related psychological trauma, which may have wide-ranging effects on both war victims as well as on their children and grandchildren (Dekel and Goldblatt, 2008; Harkness, 1993).

Furthermore, conflict-related victimization may have have detrimental effects on education. In Uganda, Blattman and Annan (2010) show that (quasi-randomly) abducted youth soldiers fare worse economically in the long term, as time spent fighting reduces educational attainment. Similarly, in Bosnia, Swee (2009) finds that the military draft may explain the deterioration in secondary schooling among male children in the early 1990s. These educational effects, however, need not be persistent: Bauer et al. (2013) demonstrate that the children of displaced migrants in Germany after World War II obtain *more* education than their native peers.

A fourth possibility is that an extreme event such as war-related death, injury or displacement within a family may also fundamentally change perceptions and trust in institions and other people. In turn, these cultural traits are likely to be stable across generations, largely due to transmission from parents to children (Bisin and Verdier, 2001; Nunn and Wantchekon, 2011; Tabellini, 2008). Moreover, the cultural effect of war may be heterogeneous across different outcomes. On the one hand, several studies have found that conflict negatively affects trust in others as well as in institutions, both over the short and long term (Besley and Reynal-Querol, 2012; Cassar et al., 2013; Grosjean, 2014; Rohner et al., 2013). On the other hand, war exposure may in fact *increase* community involvement and political

[17] See Currie and Vogl (2012) for a review on the link between early childhood conditions and adult outcomes in developing countries.

[18] Leon (2012) and Mansour and Rees (2012) also argue that worse maternal health due to conflict exposure may also have spillover effects on children's health.

participation (Blattman, 2009; Bellows and Miguel, 2009).[19]

Disentangling the relative contribution of these mechanisms is challenging not only because they move together, but also because we lack longitudinal data. Nevertheless, our evidence suggests that some of the discussed mechanisms are more likely to be important than others. The fact that communism provided limited opportunities for enrichment for most people could explain why the negative effect of victimization on entrepreneurship survives even after controlling for household financial resources or individual education. As the previous section has shown, our results are robust to including several measures of household wealth and individual income (Table 5), although these estimates should be treated with caution due to reverse causality from entrepreneurship to current income. Similar to the financial channel, education seems to play a minimal role in explaining why victimization impacts on self-employment, but unlike current financial status, it is less likely to be affected by entrepreneurship today.

Furthemore, our regressions show that including self-reported health does decrease the victimization coefficient in Table 3, which suggests that the health channel discussed above may be at work. While some aspects of health are likely to be transmitted from parents to children, we cannot rule out that more successful entrepreneurs are more likely to be healthy, as we do not observe individual health status in the early 1990s. At the same time,

Our data provide a little bit more traction in evaluating the hypothesis that victimized respondents are less likely to be entrepreneurs because they have different attitudes and values. The literature has shown that cultural preferences form at both the individual and local level, so we explore the suitability of our victimization and distance to battle variables as instruments for various questions on attitudes, values and preferences from the LiTS, including trust in and perceptions of institutions and others, preferences for redistribution, democracy and the market, and social capital and political involvement. In order for the exclusion restrictions to be satisfied, our instruments must not affect entrepreneurship directly or through other variables omitted from the model. The inclusion of our baseline controls (at

[19]See also Voors et al. (2012) who use behavioral experiments to show that conflict exposure in Burundi is associated with more altruistic behavior, higher love for risk, and less patience.

both the individual and family level) and PSU-level victimization, as well as regional fixed effects and PSU geographic characteristics makes it more likely that this is indeed the case. Nevertheless, our IV results should be interpreted as suggestive only due to the possibility of omitted variable bias and the imprecise first stages in some of the specifications.

Tables 7-10 report estimates of several individual attitudes instrumented by individual victimization on the probability of having ever started a business succesfully. We include our baseline set of controls as in equation (1) as well as distance to battle grounds. Column (1) in each table provides the OLS estimate for comparison. We find strong evidence that individual victimization impacts on entrepreneurial success through individuals' beliefs that effective institutions exist. Our first-stage results indicate that victimized individuals support this argument less, and as a result are less likely to start their own business. Similarly, they believe that it is wrong to break rules and laws, and as a result choose self-employment on a less frequent basis. At the same time, social capital (as proxied by visiting relatives) does not seem to play a role. We find some evidence that victimized individuals are greater proponents of redistribution and this leads them to be less entrepreneurial. Controlling for health status or peer effects within the PSU does not change these results.

6 Conclusion

This paper exploits a new household-level data set from the transition region (the second round of the Life in Transition Survey) in order to study the link between family victimization and displacement during World War II and the employment and entrepreneurial patterns of subsequent generations. The fact that entrepreneurial activity was largely impossible in the former communist bloc until the fall of the Berlin Wall, along with the quasi-experimental nature of historical victimization, gives us traction in credibly isolating the long-term impact of conflict on economic activity.

Our analysis provides strong and robust evidence that individuals from victimized families are less likely to set up their own businesses than those from non-victimized households, but

no less likely to be employed. Our results survive several econometric techniques, including a matching estimator and the use of non-survey, historical data on victimization, which make it more likely that the effects we identify are causal. We also provide suggestive evidence that these findings may be driven by how war affects perceptions for institutions and preferences for redistribution in victimized families.

Our results have important implications for understanding the long-run impacts of violent conflict on local economic outcomes and societal welfare. Crucially, our findings document that exposure to war continues to affect families adversely even decades after the end of conflict and even when families have access to coping mechanisms, such as widely available education services, as has been the case in much of the transition region. While physical and psychological health effects are likely passed down from generation to generation, family values shaped by war exposure may be equally, if not more, persistent. Our paper thus suggests that violence may have particularly wide-ranging and long-term consequences on local economies as entrepreneurship is often the driver of new job creation and innovation in transition countries.

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Table 1: Comparison of victimized vs. non-victimized individuals

Variable	Coefficient	Standard error
baseline controls		
male	0.008	(0.031)
age @ trial	1.591***	(0.553)
communist	0.109***	(0.022)
father's education	-0.152	(0.176)
primary educ.	-0.016*	(0.009)
secondary educ.	-0.033*	(0.019)
post-secondary / bachelor	0.034*	(0.020)
master / PhD	0.015	(0.012)
additional controls		
health	-0.216***	(0.041)
combat action within 1km	0.006	(0.009)
WW2 others in PSU	0.108***	(0.009)
urban	0.023	(0.021)
ever moved	0.028	(0.025)
religious majority	-0.026	(0.021)
asset count	0.080	(0.083)
income	-0.358***	(0.073)
share of income spent on food	0.006	(0.008)
ever successfully borrowed	-0.010	(0.019)
risk	0.016	(0.128)
willing to move	0.023	(0.020)
currently married	-0.010	(0.019)
effective instit. exist	-0.106***	(0.032)
meet up with relatives	0.157***	(0.054)
wrong to break rules	-0.002	(0.024)
pref. for redistribution	0.084	(0.058)
Observations	2725	

Notes: The categories "Employed" and "Unemployed" do not include those individuals who have ever started a business, who are included in the category "Start-up." "WW2" is a dummy which is 1 for individuals who experienced directly injury or displacement during World War II or for whom any of their parents or grandparents were killed, injured, or had to move as a result of the war. The second and third column present the coefficients and standard errors (clustered at the level of sub-national administrative regions) of regressions of each of the variables in the first column on a dummy for WWII victimization or displacement, along with country-regional fixed effects and PSU characteristics.

Table 2: Happiness, wealth and income for entrepreneurs versus non-entrepreneurs

	(1) happiness	(2) asset count	(3) income
unemployed	−0.192***	−0.411***	−0.181***
	(0.0378)	(0.0525)	(0.0291)
start-up	0.363***	0.482***	0.225***
	(0.0523)	(0.0507)	(0.0414)
male	−0.0691**	0.00977	−0.0549**
	(0.0300)	(0.0245)	(0.0222)
communist	−0.0000397	0.128***	−0.0558
	(0.0404)	(0.0327)	(0.0348)
father's education	0.0427***	0.0553***	0.0333***
	(0.00505)	(0.00578)	(0.00420)
secondary	0.386***	0.647***	0.280***
	(0.0631)	(0.0835)	(0.0561)
post-secondary / bachelor	0.786***	1.066***	0.592***
	(0.0812)	(0.0816)	(0.0622)
master / PhD	1.176***	1.458***	0.911***
	(0.109)	(0.121)	(0.0822)
Age controls	✓	✓	✓
Region dummies	✓	✓	✓
PSU controls	✓	✓	✓
Observations	23629	23629	22615
R^2	0.180	0.509	0.202

Notes: The categories "Employed" (omitted) and "Unemployed" do not include those individuals who have ever started a business, who are included in the category "Start-up." OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: The effect of World War II-related victimization and displacement on entrepreneurial start-up

	(1) start-up	(2) start-up	(3) start-up	(4) start-up
WW2	−0.0470**	−0.0493**	−0.0485**	−0.0375*
	(0.0209)	(0.0208)	(0.0207)	(0.0205)
male	0.00768	0.00801	0.00816	0.00170
	(0.0175)	(0.0176)	(0.0177)	(0.0179)
communist	−0.00521	−0.0115	−0.0129	−0.00541
	(0.0224)	(0.0224)	(0.0223)	(0.0224)
father's education	0.00326	0.00192	0.00214	0.00120
	(0.00333)	(0.00333)	(0.00331)	(0.00334)
secondary		0.0610	0.0602	0.0635
		(0.0622)	(0.0621)	(0.0610)
post-secondary / bachelor		0.0681	0.0684	0.0649
		(0.0556)	(0.0553)	(0.0550)
master / PhD		0.174***	0.176***	0.163**
		(0.0655)	(0.0651)	(0.0657)
combat action within 1km			−0.127**	−0.135**
			(0.0600)	(0.0677)
health				0.0546***
				(0.0141)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Observations	2725	2725	2725	2713
R^2	0.189	0.193	0.195	0.203

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: The effect of World War II-related victimization and displacement on employment

	(1) employed	(2) employed	(3) employed	(4) employed
WW2	0.00817	0.00508	0.00498	0.0108
	(0.00823)	(0.00823)	(0.00822)	(0.00815)
male	0.139***	0.136***	0.136***	0.130***
	(0.0106)	(0.0105)	(0.0105)	(0.0106)
communist	0.0189**	0.00340	0.00360	0.00541
	(0.00902)	(0.00879)	(0.00877)	(0.00875)
father's education	0.00984***	0.00385***	0.00374***	0.00279**
	(0.00150)	(0.00129)	(0.00127)	(0.00132)
secondary		0.113***	0.112***	0.103***
		(0.0176)	(0.0177)	(0.0183)
post-secondary / bachelor		0.243***	0.242***	0.227***
		(0.0205)	(0.0206)	(0.0208)
master / PhD		0.326***	0.324***	0.304***
		(0.0236)	(0.0237)	(0.0242)
combat action within 1km			0.0452*	0.0421
			(0.0269)	(0.0265)
health				0.0435***
				(0.00495)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Observations	21339	21336	21336	21253
R^2	0.250	0.272	0.272	0.276

Notes: The dependent variable in each column is employment. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Robustness checks: Matching and additional covariates

	(1) start-up	(2) start-up	(3) start-up	(4) start-up	(5) start-up	(6) start-up
WW2	−0.0590**	−0.0484**	−0.0475**	−0.0541**	−0.0492**	−0.0480**
	(0.0240)	(0.0215)	(0.0198)	(0.0209)	(0.0219)	(0.0208)
asset count		0.0222***				
		(0.00721)				
income		0.0270***				
		(0.00675)				
share of income spent on food		−0.0293				
		(0.0706)				
ever successfully borrowed			0.194***			
			(0.0214)			
risk				0.0213***		
				(0.00533)		
willing to move					−0.0768***	
					(0.0219)	
currently married						0.0280
						(0.0223)
Individual controls		✓	✓	✓	✓	✓
Region dummies		✓	✓	✓	✓	✓
PSU controls		✓	✓	✓	✓	✓
Observations	2725	2339	2672	2688	2620	2719
R^2		0.219	0.222	0.205	0.205	0.194

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. Column (1) presents results from a nearest-neighbor matching estimator, where exact matching on country is specified, and individual and family characteristics, PSU controls, and region dummies are used as covariates. OLS coefficients are reported in the remaining columns. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Robustness checks: Alternative definitions of victimization and further controls

	(1) start-up	(2) start-up	(3) start-up	(4) start-up	(5) start-up
WW2		−0.0503**	−0.0492**	−0.0496**	−0.0467**
		(0.0219)	(0.0209)	(0.0208)	(0.0214)
killed only	−0.0466*				
	(0.0250)				
displaced only	−0.0712*				
	(0.0426)				
killed and displaced	−0.0641*				
	(0.0339)				
WW2 others in PSU		0.0106			
		(0.0532)			
urban			−0.00619		
			(0.0252)		
ever moved				0.0170	
				(0.0212)	
religious majority					0.0466
					(0.0309)
Individual controls	✓	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓	✓
Observations	2671	2722	2725	2721	2696
R^2	0.193	0.193	0.193	0.193	0.196

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Mechanisms: Trust in effective institutions

	(1) start-up OLS	(2) start-up IV	(3) start-up IV	(4) start-up IV
effective institutions exist	0.0340***	0.460***	0.413**	0.383**
	(0.0129)	(0.175)	(0.198)	(0.184)
combat action within 1km	−0.133**	−0.145**	−0.150**	−0.149**
	(0.0556)	(0.0656)	(0.0678)	(0.0676)
male	0.00507	0.0253	0.0196	0.0176
	(0.0168)	(0.0223)	(0.0224)	(0.0221)
communist	−0.0136	0.00166	0.00305	0.00311
	(0.0198)	(0.0236)	(0.0226)	(0.0223)
father's education	0.00333	0.00610	0.00536	0.00508
	(0.00294)	(0.00371)	(0.00387)	(0.00373)
secondary educ.	0.0593	−0.0146	−0.00474	0.000358
	(0.0579)	(0.0636)	(0.0632)	(0.0604)
post-secondary / bachelor	0.0721	0.00397	0.0108	0.0159
	(0.0515)	(0.0619)	(0.0590)	(0.0558)
master / PhD	0.184***	0.130*	0.130*	0.133**
	(0.0625)	(0.0706)	(0.0672)	(0.0649)
health			0.0227	0.0249
			(0.0219)	(0.0208)
WW2 others in PSU				−0.0323
				(0.0465)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Instrument	–	WW2	WW2	WW2
F-stat.	–	10.93	8.083	8.941
Number of observations	2965	2709	2699	2696

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported in the first column, while IV results are reported in the remaining columns. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Column (1) presents results from a nearest-neighbor matching estimator, where exact matching on country is specified, and individual and family characteristics, PSU controls, and region dummies are used as covariates. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Mechanisms: Social capital

	(1) start-up OLS	(2) start-up IV	(3) start-up IV	(4) start-up IV
meet up with relatives	−0.00771	−0.314*	−0.253	−0.296
	(0.0114)	(0.165)	(0.163)	(0.191)
combat action within 1km	−0.129**	−0.127*	−0.134*	−0.140*
	(0.0561)	(0.0665)	(0.0691)	(0.0718)
male	0.00293	0.00882	0.00418	0.00528
	(0.0167)	(0.0228)	(0.0217)	(0.0228)
communist	−0.0166	0.00464	0.00566	0.00536
	(0.0197)	(0.0279)	(0.0254)	(0.0263)
father's education	0.00291	0.000425	0.000120	−0.0000957
	(0.00287)	(0.00301)	(0.00298)	(0.00301)
secondary educ.	0.0561	−0.00103	0.0178	0.00942
	(0.0606)	(0.113)	(0.100)	(0.108)
post-secondary / bachelor	0.0730	0.0163	0.0271	0.0183
	(0.0535)	(0.104)	(0.0919)	(0.0998)
master / PhD	0.182***	0.153	0.151	0.148
	(0.0636)	(0.102)	(0.0924)	(0.0983)
health			0.0416**	0.0398**
			(0.0180)	(0.0193)
WW2 others in PSU				0.0797
				(0.0763)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Instrument	–	WW2	WW2	WW2
F-stat for weak identification	–	7.916	7.079	6.523
Number of observations	2975	2716	2704	2701

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported in the first column, while IV results are reported in the remaining columns. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Column (1) presents results from a nearest-neighbor matching estimator, where exact matching on country is specified, and individual and family characteristics, PSU controls, and region dummies are used as covariates. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Mechanisms: Law abiding

	(1) start-up OLS	(2) start-up IV	(3) start-up IV	(4) start-up IV
wrong to break rules	−0.00819	0.875**	0.954*	1.041*
	(0.0202)	(0.432)	(0.489)	(0.544)
WW2	−0.0494**	−0.0437	−0.0306	−0.0385
	(0.0208)	(0.0327)	(0.0337)	(0.0358)
male	0.00818	0.0281	0.0209	0.0226
	(0.0177)	(0.0277)	(0.0298)	(0.0317)
communist	−0.0110	−0.0108	0.00147	−0.00153
	(0.0225)	(0.0311)	(0.0332)	(0.0348)
father's education	0.00199	0.00138	−0.0000221	−0.000205
	(0.00334)	(0.00437)	(0.00460)	(0.00479)
secondary educ.	0.0605	0.0259	0.0286	0.0240
	(0.0624)	(0.0900)	(0.0931)	(0.0980)
post-secondary / bachelor	0.0673	0.0262	0.0201	0.0127
	(0.0556)	(0.0818)	(0.0865)	(0.0918)
master / PhD	0.175***	0.166*	0.149	0.144
	(0.0655)	(0.0891)	(0.0924)	(0.0971)
health			0.0710***	0.0733**
			(0.0269)	(0.0288)
WW2 others in PSU				0.116
				(0.0976)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Instrument	–	combat action within 1km	combat action within 1km	combat action within 1km
F-stat for weak identification	–	8.043	8.206	6.564
Number of observations	2708	2708	2696	2693

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported in the first column, while IV results are reported in the remaining columns. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Column (1) presents results from a nearest-neighbor matching estimator, where exact matching on country is specified, and individual and family characteristics, PSU controls, and region dummies are used as covariates. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Mechanisms: Preference for redistribution

	(1) start-up OLS	(2) start-up IV	(3) start-up IV	(4) start-up IV
pref. for redistribution	0.00922	0.425*	0.427*	0.447*
	(0.00834)	(0.251)	(0.255)	(0.270)
WW2	−0.0461**	−0.0786**	−0.0702**	−0.0712**
	(0.0203)	(0.0351)	(0.0358)	(0.0354)
male	0.00759	0.0110	0.00465	0.00412
	(0.0185)	(0.0273)	(0.0280)	(0.0286)
communist	−0.00713	−0.0370	−0.0313	−0.0331
	(0.0234)	(0.0346)	(0.0348)	(0.0348)
father's education	0.00206	0.00221	0.00107	0.00110
	(0.00340)	(0.00397)	(0.00404)	(0.00413)
secondary educ.	0.0750	0.171*	0.167*	0.173*
	(0.0628)	(0.0937)	(0.0937)	(0.0975)
post-secondary / bachelor	0.0694	0.140*	0.131*	0.135*
	(0.0569)	(0.0761)	(0.0762)	(0.0796)
master / PhD	0.178***	0.224**	0.206**	0.208**
	(0.0663)	(0.0897)	(0.0905)	(0.0932)
health			0.0473***	0.0470**
			(0.0179)	(0.0184)
WW2 others in PSU				−0.0167
				(0.103)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Instrument	–	combat action within 1km	combat action within 1km	combat action within 1km
F-stat for weak identification	–	4.122	4.171	3.696
Number of observations	2628	2628	2619	2616

Notes: The dependent variable in each column is entrepreneurial start-up. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported in the first column, while IV results are reported in the remaining columns. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Column (1) presents results from a nearest-neighbor matching estimator, where exact matching on country is specified, and individual and family characteristics, PSU controls, and region dummies are used as covariates. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A Online Appendix

A.1 Additional figures and tables

Figure A1: Distribution of victimization and displacement rates reported in LiTS (excluding Russia)

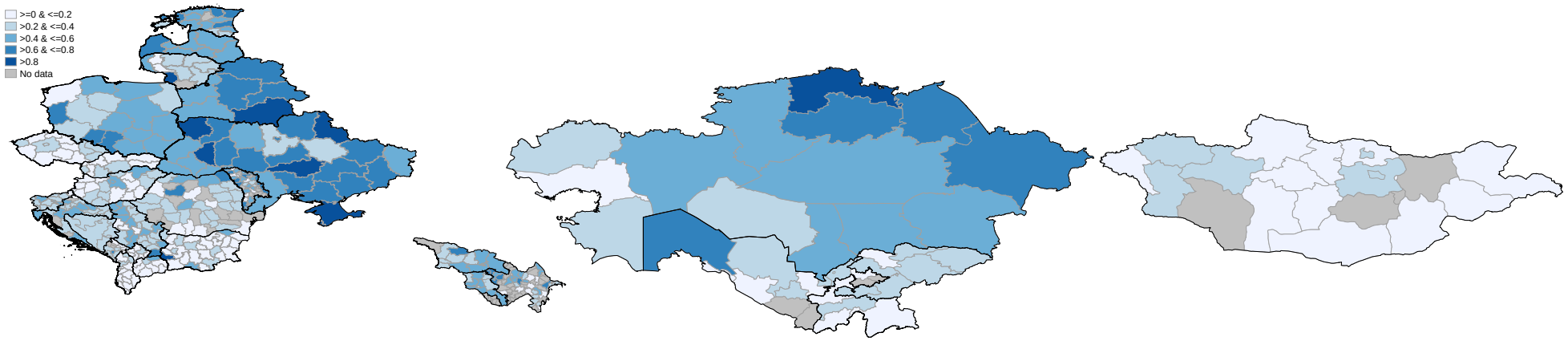

Figure A2: Distribution of victimization and displacement rates reported in LiTS (Russia)

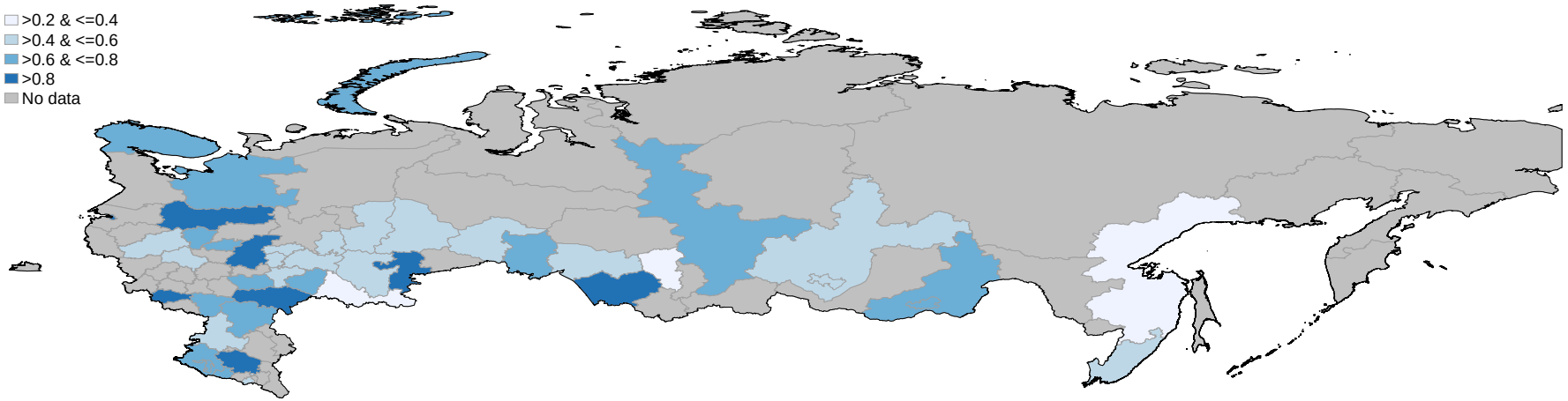

Table A1: The effect of World War II-related victimization and displacement on entrepreneurial start-up

	(1) start-up&self-empl.	(2) start-up&self-empl.	(3) start-up&self-empl.	(4) start-up&self-empl.
WW2	-0.0672^{***}	-0.0675^{***}	-0.0671^{***}	-0.0573^{***}
	(0.0189)	(0.0191)	(0.0191)	(0.0188)
male	0.0752^{***}	0.0751^{***}	0.0752^{***}	0.0685^{***}
	(0.0166)	(0.0165)	(0.0166)	(0.0169)
communist	0.00600	0.00562	0.00488	0.0108
	(0.0219)	(0.0217)	(0.0218)	(0.0225)
father's education	0.00111	0.00101	0.00113	0.000396
	(0.00235)	(0.00247)	(0.00249)	(0.00249)
secondary		0.0348	0.0344	0.0225
		(0.0496)	(0.0494)	(0.0496)
post-secondary / bachelor		0.0283	0.0285	0.0123
		(0.0473)	(0.0469)	(0.0467)
master / PhD		0.0359	0.0366	0.0144
		(0.0609)	(0.0606)	(0.0609)
combat action within 1km			-0.0654^{*}	-0.0667^{*}
			(0.0365)	(0.0364)
health				0.0432^{***}
				(0.0134)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Observations	2725	2725	2725	2713
R^2	0.187	0.188	0.188	0.193

Notes: The dependent variable in each column is entrepreneurial start-up conditional on being self-employed in the last twelve months. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A2: The effect of World War II-related victimization and displacement on formal vs. informal employment

	(1) formal contract	(2) formal contract	(3) formal contract	(4) formal contract
WW2	0.00371	−0.0000566	−0.0000829	0.00518
	(0.00888)	(0.00852)	(0.00852)	(0.00844)
male	0.0652***	0.0619***	0.0619***	0.0574***
	(0.00767)	(0.00728)	(0.00728)	(0.00733)
communist	0.0186**	0.000777	0.000826	0.00237
	(0.00867)	(0.00820)	(0.00820)	(0.00827)
father's education	0.0140***	0.00708***	0.00705***	0.00627***
	(0.00152)	(0.00125)	(0.00125)	(0.00128)
secondary		0.107***	0.106***	0.0986***
		(0.0177)	(0.0178)	(0.0180)
post-secondary / bachelor		0.268***	0.268***	0.254***
		(0.0194)	(0.0195)	(0.0196)
master / PhD		0.372***	0.371***	0.354***
		(0.0270)	(0.0270)	(0.0276)
combat action within 1km			0.0109	0.00774
			(0.0249)	(0.0241)
health				0.0376***
				(0.00442)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Observations	21339	21336	21336	21253
R^2	0.232	0.265	0.265	0.268

Notes: The dependent variable in each column is a dummy variable indicating that the respondent worked for income in the past twelve months and has a contract or labor book for at least one of his jobs. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: The effect of World War II-related victimization and displacement on high-skilled vs. low-skilled occupation

	(1) high skill occupation	(2) high skill occupation	(3) high skill occupation	(4) high skill occupation
WW2	0.00935	−0.000401	−0.000924	0.00138
	(0.0118)	(0.0110)	(0.0111)	(0.0113)
male	−0.0953***	−0.0778***	−0.0776***	−0.0819***
	(0.0107)	(0.00927)	(0.00927)	(0.00937)
communist	0.0520***	0.0363***	0.0369***	0.0368***
	(0.0132)	(0.0120)	(0.0120)	(0.0120)
father's education	0.0196***	0.00788***	0.00769***	0.00729***
	(0.00185)	(0.00150)	(0.00147)	(0.00149)
secondary		0.0971***	0.0961***	0.0907***
		(0.0170)	(0.0170)	(0.0171)
post-secondary / bachelor		0.383***	0.381***	0.373***
		(0.0209)	(0.0210)	(0.0210)
master / PhD		0.593***	0.590***	0.581***
		(0.0301)	(0.0300)	(0.0301)
combat action within 1km			0.0805***	0.0783***
			(0.0271)	(0.0268)
health				0.0241***
				(0.00590)
Age controls	✓	✓	✓	✓
Region dummies	✓	✓	✓	✓
PSU controls	✓	✓	✓	✓
Observations	10706	10706	10706	10666
R^2	0.097	0.203	0.204	0.206

Notes: The dependent variable in each column is a dummy variable indicating that the respondent worked for income in the past twelve months and worked in a high-skill industry in at least one of his jobs. "WW2" is a dummy indicating whether the respondent or any of his parents or grandparents were killed, injured or forced to move during World War II. OLS coefficients are reported. Standard errors, clustered at the level of sub-national administrative regions, are in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A.2 Additional data information

Dependent variables

Start-up: Dummy variable equal to 1 if respondent has ever managed to set up a business (conditional on having tried), zero if respondent tried but failed; LiTS 2010 q.532; q.531.

Start-up and self-employed: Dummy variable equal to 1 if respondent has ever managed to set up a business and has been self-employed in at least one of his reported jobs over the past 12 months; LiTS 2010 q.532; q.531; q.502.

Employed: Dummy variable equal to 1 if respondent worked for income in the past 12 months; LiTS 2010 q.501.

Formally employed: Dummy variable equal to 1 if respondent worked for income in the past 12 months and has a contract or labor book for at least one of his jobs; LiTS 2010 q.501; q.507.

Employed in a high-skill industry: Dummy variable equal to 1 if respondent worked for income in the past 12 months and worked in a high-skill industry in at least one of his jobs; LiTS 2010 q.501; q.506.

Independent variables

WW2: Dummy for whether the respondent, or any of his parents or grandparents were killed, injured or forced to move during World War II; LiTS 2010 q.721.

Willingness to move: Dummy variable if respondent is willing to move within the country or abroad for employment reasons; LiTS 2010 q.528,529.

Risk: Respondent's self-reported willingness to take risks on a scale of 1 (not at all willing) to 10 (very much willing); LiTS 2010 q.537.

Urban: Dummy variable equal to 1 if respondent lives in an urban setting; LiTS 2010 q.tablec.

Communist: Dummy variable equal to 1 if the respondent, or any member of his family, were a member of the former communist party; LiTS 2010 q.714.

Secondary, Post-secondary/Bachelor and Master/Ph.D: Dummy variables if respondent has completed any of the three education categories; omitted category is only primary and no

education; LiTS 2010 q.515.

Health: Captures the respondent's self-reported health on a scale of 1 (very bad) to 5 (very good); LiTS 2010 q.704.

Market economy: Dummy variable equal to 1 if the respondent believes that a market economy is preferable to any other form of economic system; LiTS 2010 q.310.

Age: Age of respondent; LiTS 2010 q.104.

Age at trial (start-up regressions only): Age of respondent when he tried to set up a business; LiTS 2010 q.531.

PSU Geographic characteristics: Include PSU latitude, longitude, altitude, distance to the country's capital and distance to the nearest border retrieved in October 2012 from: *www.daftlogic.com*; *www.diva − gis.org*; *maps.google.com*; *www.batchgeo.com*. For determining the location of mines we used the Raw Materials Database of SNL Metals and Mining.

Additional dependent variables (Tables 2 and 6)

Happiness: The extent to which the respondent is satisfied with his life right now, on a scale of 1 (strongly agree) to 5 (strongly disagree); LiTS 2010 q.301.

Income: Income of the respondent's household, as measured on a 10-step income ladder; LiTS 2010 q.330.

Asset count: Sum of all assets owned by respondent's household; LiTS 2010 q.225.

Poor, Veterans, Unemployed: Dummy variables equal to 1 if respondent believes that each of the respective groups of citizens deserve support from the government; LiTS 2010 q.307.

Trust institutions: The degree to which the respondent trusts a list of institutions and outcomes, such as Parliament, courts, or foreign investors, on a scale of 1 (complete distrust) to 5 (complete trust); LiTS 2010 q.303.

Effective institutions exist: The degree to which the respondent believes that a list of institutions and outcomes, such as law and order and freedom of speech, exist in his country; LiTS 2010 q.312.

Abide law: Dummy variable equal to 1 if respondent believes people should obey the law

without exception; LiTS 2010 q.316.

Question authorities: Dummy variable equal to 1 if respondent believes that, as citizens, we should be more active in questioning the actions of our authorities; LiTS 2010 q.316.

Voter: Dummy variable equal to 1 if respondent voted in the most recent local, presidential or parliamentary elections; LiTS 2010 q.319.

Member party: Dummy variable for whether the respondent is a member of a political party; LiTS 2010 q.712.

Robustness checks

Combat action within 1 km: Dummy for whether the PSU is within 1 km of combat action; Ellis and Cox (1993).

Number events within 1 km, log: Log of number of combat events within 1 km of each PSU; Ellis and Cox (1993).

Duration of events within 1 km, log days: Duration of combat events within 1 km of each PSU (in log days); Ellis and Cox (1993).

Log distance to combat action: Log distance (in km) of each PSU to the nearest combat action; Ellis and Cox (1993).

Male: Years of respondent's father's full-time education; LiTS 2010 q.718.

Male: Dummy variable equal to 1 if respondent is male; LiTS 2010 q.102.

Married: Dummy variable for whether the respondent is married; LiTS 2010 q.701.

Ever moved: Dummy variable if respondent has lived all their life in this city/town/village; LiTS 2010 q.705.

Food share of income: Share of income that respondent's household spends on food, beverages and tobacco; LiTS 2010 q.222.

Ever borrow successfully: Dummy variable equal to 1 if respondent attempted to and was successful in borrowing money for the business conditional on trial; omitted category is those that did not try to borrow or were unsuccessful at doing so; LiTS 2010 q.534 and q.535.

Religion dummies: Religious affiliation based on self-reported religion; LiTS 2010 q.716.