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## **Individual exposure to armed conflict and entrepreneurship**

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### **Abstract:**

We study the individual level impacts of exposure to armed conflict on entrepreneurial activity. We introduce new data from a large-N field survey we conducted in Turkey in 2019. Our study is built on a natural experiment setting that allows us to identify random exposure to armed conflict, to establish a clear timeline, to isolate the individual effects from any conflict induced deterioration in the economic environment, and to demonstrate the causal impact of armed conflict exposure. We show that while exposure to the conflict environment reduces the likelihood of private economic activity, those individuals who directly experience traumatizing violent events in that environment become significantly and substantially more likely to setup their own business. However, results also indicate that, while they are more likely to venture into private economic activity, these individuals are also more likely to fail in those ventures. Our analyses indicate exposure-induced changes in outlook on life as a potential mechanism behind these causal associations.

### **Draft Version**

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## 1. Introduction

Civil conflicts are grave in their economic consequences. They retard economic development through the destruction of physical and human capital, and the infrastructural, technological, and institutional regress they cause. Unfortunately, these detrimental effects then enhance the risk of further conflict and trap states in a spiral of economic decline and renewed conflict. Understanding the economic legacies of conflict is thus extremely important to the design of post-conflict recovery policies that can effectively break this vicious cycle and save countries from falling into the *conflict trap*.

As Blattman and Miguel (2010) point out in their review of the literature, the bulk of existing evidence on economic consequences focuses on conflicts' impacts on the aggregate availability of physical factors of production and finds that rapid post-conflict recovery along this dimension is possible. The impacts on human capital, however, are often found to be more complicated and persistent. On one hand, wars kill and maim people, both directly and indirectly. Recent studies demonstrate adverse and prolonged effects on numerous aspects of public health and education with serious negative implications for labor markets (Guha Sapir and Degomme, 2006; Justino and Verwimp, 2006; Ghobarah, Huth and Russett, 2003; Hoeffler and Reynal Querol, 2003; Kibris 2015). On the other hand, researchers also find evidence of potentially economic growth promoting consequences like enhanced altruism and prosocial behavior in people exposed to war violence (Voors et al. 2012; Bellows and Miguel, 2009).

In this study, we contribute to this discussion in important ways by studying in an innovative and detailed way whether and how exposure to armed violence in the context of a civil conflict impacts upon entrepreneurial activity. We introduce and analyze data from a large-N survey study we conducted in Turkey in 2019. Our study is built on a rare natural experimental setting that allows us to establish causal links and to isolate individual level effects from conflict induced changes in the economic environment. Results indicate heterogeneous effects depending on the type of exposure. We find that while exposure to an armed conflict environment decreases the likelihood of engaging in private economic activity, those who directly experience violent events in that environment exhibit the opposite tendency and become more likely to start a business of their own. We then continue to show that these effects transmit through exposure induced changes in one's outlook on life. We interpret our results in light of theoretical insights from the psychology of trauma literature. Following

Janoff-Bulman's (1992) theory on how traumatizing experiences shatters one's positive outlook on life we argue that while those who survive an armed conflict environment without a major mishap might maintain or even strengthen their positive outlook on life, those who directly experience traumatizing violence in that environment lose their trust in the "benevolence of the world". As a coping strategy, such individuals then strive to avoid situations, thoughts, and feelings they associate with their traumatic experience and to reconstruct an environment in which they can once again feel safe and in control. We argue that it is this differential change in worldviews that explain the differential results we obtain on our exposure measures.

The importance of entrepreneurial activity for economic development (Audretsch et al., 2006; Cornwall, 1998; Landes, 1998; Schumpeter, 1934) and for peace building (Strong, 2009) has long been emphasized in the academic and international political communities. Given the prevalence of civil conflicts, their robust endogenous relation with poverty, and the potential of entrepreneurial activity to lift populations out of that trap, research on the effects of armed conflict exposure on entrepreneurship has then proliferated in the last two decades. However, results remain mixed. While some studies find a positive impact (Kondylis, 2010; Abdelnour et al., 2008; Bullough, Renko, and Myatt, 2014; Menon and van der Meulen Rodgers, 2011; Anugwom, 2011), others report a negative relation or no impact at all (Bullough, Renko, and Myatt, 2014; Chowdhury, 2011; Deininger, 2003; Cañares, 2011; Ciarli, Parto, and Savona, 2010).

As Ciarli, Kofol and Menon (2015) point out, part of this variation originates from the heterogeneous nature of motivations individuals may have for entrepreneurial activity, and the different effects armed conflicts have on these motivations. Entrepreneurial activity can be necessity or opportunity driven (Ciarli, Kofol and Menon, 2015), where the first one is mainly a constrained choice to ensure subsistence in an economic environment where there are no other alternative employment opportunities, and the second is about a positive choice to pursue an identified opportunity for profit. Armed conflicts destroy physical and human capital; increase risks; lower expected returns; displace households; and disrupt markets, institutions, and social networks, and as such are expected to dampen opportunity entrepreneurship. However, the same destruction also leaves individuals with no choice but subsistence self employment in many cases. Thus, the variation in results can mostly be reconciled once we take into account the economic environment under study and how

entrepreneurial activity is conceptualized and measured in that environment.

Nonetheless, this reconciliation only informs us about how individuals respond to those conflict-induced economic conditions and constraints rather than to their exposure to armed conflict per se. One very important question remains unanswered and that is whether and how that exposure impacts upon people's career behavior and choices in a post-conflict setting when

markets are restored and the conflict induced deterioration in the economic environment is healed either partially or completely. This question is extremely important for understanding the dynamics of post-conflict recovery and the design of policies that can effectively contribute to and speed up that process. The destruction of physical capital, and infrastructure, and the disruptions in the labor market are usually seen as the primary drivers of the negative impacts of civil conflicts on the economy. Consequently, an economic recovery is expected once a conflict is over and capital stocks, infrastructure and labor markets are restored. However, that expectation may not materialize if the conflict environment changes individuals and their outlook on life in ways that are not conducive to economic growth. And once that likelihood is acknowledged, it ceases to be obvious that a conflict-stricken economy can bounce back with just the restoration of markets, infrastructure, and capital. Whether and how conflict exposure transforms economic agents remains as the missing piece of information. This information is

extremely important not just for understanding post-conflict recovery but also for the welfare and rehabilitation of the ever-increasing number of veterans and service personnel who return home after deployment in combat zones outside their countries. According to the US Census Bureau, nearly half of the 18 million veterans in the US in 2019 had combat zone deployment history with 3 million of them in the armed conflicts in Iraq and Afghanistan in the last two decades (Watson Institute, Costs of War Project). As Zalaquett and Chatters (2016) argue nobody returns from active war areas untouched. With such high number of military veterans and service personnel returning from war zones, seeking for ways to reintegrate into civilian life, looking for work and attempting to develop a career path, it becomes important to understand how that experience touches them.

In this study we contribute to the development of such an understanding. We identify and exploit a natural experiment created by the military institutions in Turkey and the long running civil conflict in the southeastern and eastern parts of the country. This natural experimental setting gives us a one-of-a-kind opportunity to study the individual level effects

of exposure to armed conflict without endogeneity and selection issues, and without the confounding effects of structural economic deterioration.

We derive our results from a field survey we conducted with 5,024 randomly selected adult male respondents in western Turkey in 2019. We designed the survey to explore the individual level effects of getting exposed to the armed violence of the long running civil conflict in the country and the underlying mechanisms that may transmit these effects.

We measure exposure to armed conflict in a detailed and objective fashion. Our first measure focuses on the intensity and duration of exposure to the conflict environment. Our second measure derives from the direct experiences of armed violence individuals had in that environment. In other words, we are not just conducting a binary comparison between the exposed and unexposed with a single measure, but rather, we measure exposure to armed conflict in a comprehensive, continuous, and individual-specific way to account for its different degrees and types.

We define entrepreneurship as starting a business to create self-employment for oneself and potentially for others. Interestingly, we find that while exposure to the conflict environment decreases the likelihood of such private economic activity<sup>1</sup>, those individuals who directly experience traumatizing violent events in that environment exhibit the opposite effect and

<sup>1</sup>Because we define entrepreneurship as starting one's own business, we use the terms *entrepreneurial activity* and *private economic activity* (PEA) interchangeably.

become significantly and substantively more likely to setup a business of their own. Our results indicate, however, that such direct experiences of violence also reduce the likelihood of success in these entrepreneurial ventures. We then continue to explore the potential mechanisms that may transmit the effects we observe. Results point to changes in worldviews.

## **2. Violent Conflict and Private Economic Activity (PEA)**

As Binzel and Bruck (2007) argue, the impact of conflict on individual behavior works through two levels: institutional - its impact on the economic, political, and social environment of the individuals, and individual - its direct impact on individuals. Given that both the environmental and individual level factors play important roles in economic behavior of individuals, the impact of violent conflict on PEA is then expected to transmit through both

levels.

The transmission through the institutional level is well documented by the existing literature. Kondylis (2010) reviews the impact of forced displacement on later employment status in Bosnia Herzegovina using population loss as a measure of community-level conflict exposure and finds that displaced people are more likely to be self-employed. She explains this as a necessity driven outcome and ties it to the informal nature of the Bosnian economy and the poorer access displaced people have to those informal networks in this structure.

Similar results are found in studies that focus on the internal displacements in Colombia. Calderon and Ibanez (2009) study the labor markets in the urban areas of the country and report that the surge in labor supply due to the influx of displaced populations increases the likelihood of employment in the informal sector. In another study on the Colombian case, Bozzoli, Brück, and Wald (2013) find that self-employment rates increase in the services sector in those municipalities that receive an inflow of displaced people and in the agricultural sector in those targeted by rebel attacks.

Focusing on the 'livelihood strategies' of internally displaced populations in South Sudan and Darfur, Abdelnour et al. (2008) report an increase in women's entrepreneurial activity as a response to reduced labour market opportunities for male members of households. Similarly, using community level conflict exposure measures, Menon and van der Meulen Rodgers (2011) find a positive association between conflict and self-employment of women in Nepal. Finally, Anugwom (2011) finds that women of conflict-affected Niger Delta engage in PEA to ensure the survival of their families as the conflict breaks down the traditional economy in these regions.

Further confirming this environmentally driven increase in necessity entrepreneurship, Ciarli, Kofol, and Menon (2015) find in Afghanistan that conflict severity in an area increases investment into low-capital entrepreneurial activity such as subsistence agriculture while decreasing investment into high-capital activity. They interpret their findings as an outcome of the economic environment which forces households into subsistence self-employment by reducing other income opportunities.

Note that, while the conflict-induced deteriorations in the economic environment can boost PEA by leading people into subsistence self-employment, they can also dampen it by disrupting markets and reducing business and investment opportunities. In fact, there is also a fair amount of research that shows a negative relation or no impact of conflict on entrepreneurial activity. Deininger (2003) studies household survey data from Uganda and

shows lower investment in agricultural assets and non-agricultural business start-ups in areas with civil strife. Ciarli, Parto and Savona (2010) find a negative, albeit small effect of conflict on entrepreneurship in their analyses of a household survey from Afghanistan. They measure conflict exposure at the community level and argue that the effect of conflict operates through inadequate access to markets and damage to infrastructure. Similarly, analysing an individual level survey from Afghanistan, Bullough, Renko, and Myatt (2014) find that the conflict significantly dampens people's intention to start a business through the perception of insecurity it creates. Canares (2011) finds a negative association in the Philippines between conflict and willingness to invest in private business, and argues that the effect is due to the conflict-induced insecurity in the economic environment. Chowdhury (2011) uses data from a household survey to examine the impact of the civil conflict on entrepreneurialism in Bangladesh and finds a dampening impact on the likelihood that a household owns a business. He argues that the reason might be the serious market imperfections and the collapse of the governance system caused by the conflict.

These works provide valuable insights about how armed conflicts impact upon PEA through the institutional level. However, the literature is still silent about the effects at the individual level as they get confounded by the changes in the economic environment especially in those studies conducted in active conflict areas with community level violence exposure measures. Moreover, in most cases, the generalizability of results remains constrained by endogeneity and selection bias concerns due to possibility of selection into conflict exposure

and/or due to focus on specific groups like the displaced.

The clean identification of an individual level causal effect of conflict exposure is a challenging task because it requires the random assignment of the treatment to individuals, which in this case necessitates either the experimental manipulation of exposure to armed conflict, which is impossible, or a random process that occurs naturally, which is extremely rare.

Our study is designed to employ one such rare random process that results from a natural experimental setting we identify in Turkey. Turkey has a long-running civil conflict, a draft army and a mandatory military service system which makes temporary combatants out of randomly chosen young, adult, civilian males. These young men get sent away from their peaceful hometowns into the conflict zone as soldiers for a significant but limited period of time at the end of which they are sent back home to continue their peaceful civilian lives. This

random exposure to the conflict environment gives us immunity to endogeneity biases. Because our subjects are civilians who randomly find themselves in a temporary combatant role, we are also immune to possible biases that come with studying specific subpopulations. Relatedly, we are able to isolate our results from the possible confounding effects of any conflict induced deterioration in the economic environment because we study the behaviour of people living in peaceful locations with no such deterioration. Finally, our design allows us to observe and measure in a precise and individual-specific way the conflict environment each individual was immersed in as well as the specific violent experiences he had in that environment. Hence, our measures give us clean control and treatment groups and enable us to comprehensively study the effects of different types of exposure.

Below, we present our study design and our identification strategy in detail.

### **3. Research Design**

#### **3.1 Identification Strategy: The Civil Conflict in Turkey**

Since 1984, Turkey has been suffering from an insurgency campaign led by the Kurdish separatist guerrilla organization the Kurdistan Workers' Party (PKK). The PKK was first founded with the goal of establishing an independent Kurdish state in southeastern Turkey though later in the 90s it appeared to have rolled back on its goal to a federational structure that would grant more autonomy to the region. And as Figure 1, which maps the distribution of total combatant casualties of the PKK and the Turkish armed forces in the 1984-2018 period<sup>2</sup>

demonstrates, the armed conflict has remained geographically concentrated in the southeastern and eastern parts of the country over the years.

<sup>2</sup>The data come from the Turkish State-PKK Conflict Event Database (Kibris, 2021).



**Figure 1. Geographical**

**distribution of total combatant casualties in 1984-2018** Turkey has a draft army and a mandatory military service system that requires each Turkish man to serve in the army for about 15 months<sup>3</sup> when he turns 20.<sup>4</sup> The drafted young men are first subject to a basic training program that lasts about a month and then are sent to military bases all over the country to serve the rest of their terms. They can be assigned to any military base in the country that has room for newcomers except those in their home district, and the assignments are randomly made via a lottery system. Under this system, the General Staff first determines the needs and availabilities of all the bases and declares them to the Ministry of Defense. A random matching between the draftees and bases is then conducted. In the 80s and early 90s the matching was literally done via having people draw names from a bag whereas in later years a computerized system was installed.<sup>5</sup> As a result of this lottery assignment system, a significant portion of the drafted young men are assigned to military bases in southeastern and eastern Turkey and get actively involved in the armed conflict against the PKK. Because assignments are conditional on the need and room for newcomers, the size of that portion changes across draft periods (of which there are four every year) making it difficult to give an exact number. However, the fact that the Turkish land forces are composed of four major armies two of which (the 2nd and 3rd army) are located in eastern and southeastern Turkey, and that the size of those two armies comprise about 45% of the total land force can give a rough idea about the size and significance of that portion.<sup>6</sup>

<sup>3</sup> The required length of service varied slightly over the years. We provide details about the changes in regulations in Section 3.2.

<sup>4</sup> Those still in higher education at age 20 are allowed to have their services postponed until graduation or until they turn 28 depending on whichever comes first.

<sup>5</sup> An official statement of this lottery system can be found on the information brochures for the prospective draftees by the Army Enrolment Services of the Turkish Defence Ministry ([https://asal.msb.gov.tr/Content/Upload/Docs/erbas\\_er\\_brosür.pdf](https://asal.msb.gov.tr/Content/Upload/Docs/erbas_er_brosür.pdf)).

<sup>6</sup> 39.3% of our survey respondents declared to have served in eastern and southeastern locations.

The Turkish setting, with its long-running civil conflict that is geographically concentrated in eastern and southeastern regions of the country, the mandatory military service

requirement that creates temporary soldiers from civilians, and the lottery mechanism that randomly assigns drafted young men to military bases all over the country, creates a natural experiment setting in which individuals are randomly exposed to an armed conflict for a significant period of their lives. This setting, therefore, removes the risk of endogeneity between exposure to armed conflict and behavior. Moreover, because the civil conflict in Turkey has been geographically concentrated in eastern and southeastern Turkey, for those individuals from other, non-conflict regions, time in the army constitutes their only personal exposure to the armed violence of the conflict. The ability to study such isolated exposure constitutes another very important advantage the Turkish case offers. At the end of their terms, these young men go back to their peaceful hometowns and engage in economic activities under normal economic conditions. Thus, we have a setting where we can study the individual level impacts of conflict exposure on economic behavior without the confounding effects of conflict induced changes in the economic environment. Finally, because one gets drafted at the age of twenty or right after graduating from college, exposure to armed conflict violence takes place before individuals get set in their careers.

This study builds on these important advantages. It is part of a larger project that aims to understand the individual level political, social, and economic impacts of political violence exposure in a civil conflict context. As part of the project, we designed, and with the help of a professional survey company, conducted a field survey in the (peaceful) Western districts of Turkey in 2019 with 5,024 randomly selected adult males at their residential addresses. At each randomly selected address, the eligible participant was the “man of the house” who completed his military service<sup>7</sup> sometime between 1984 and 2014<sup>8</sup>. Ethical approvals were received from the European Research Council Executive Agency, the Humanities and Social Sciences Research Ethics Committee of the University of Warwick and the Research Ethics Committee

<sup>7</sup>We excluded those who were exempt or served an irregularly short period of time due to special circumstances such as health problems.

<sup>8</sup>We focused on the 1984-2014 period both because the 90s was the most intense period of the conflict and because the Turkish army has been going through structural changes since 2014. With new legislation enacted in December 2014, the army instituted what is called “contract soldiers” and started to employ professional soldiers on fixed term contracts. Even though the Turkish General Staff never officially declared or admitted so, the rumour on the street is that these contract soldiers are to replace the draft ones especially in the conflict zone as part of a move towards a professional army. The Turkish State-PKK conflict event dataset (Kibris, 2021) supports these rumours as most security force casualties of the conflict after 2014 are professional soldiers. Moreover, with enough professional soldiers in place, regulations were relaxed after 2018 to allow civilians to pay their way out of military service.

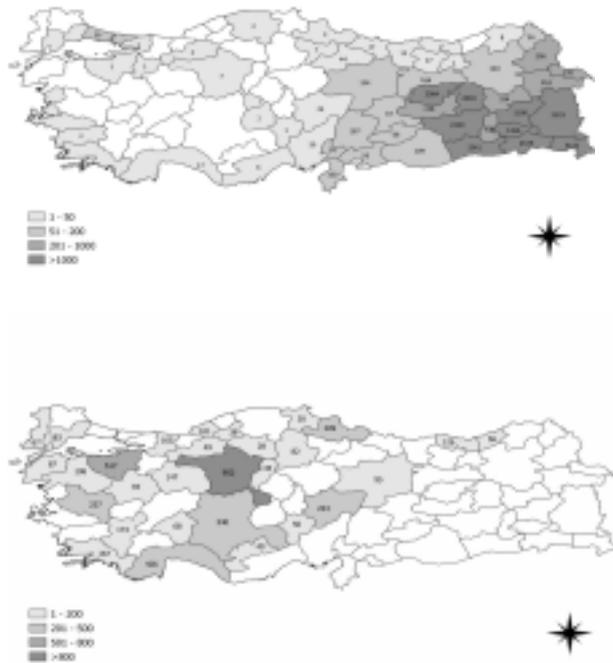
of Sabancı University. A pilot with 250 randomly selected participants was conducted to test the questionnaire and field organization before we embarked on the main field study. The survey questionnaire was designed to collect information on a wide range of economic, social, and political attitudes including entrepreneurial activity. Interviews were conducted in Turkish in respondents' addresses by extensively trained interviewers. This allowed us to lower the opportunity cost of participating in our study by maximizing respondent comfort and privacy which potentially increased the response rate while minimizing potential response biases that may result from unnatural and/or public settings. We trained the interviewers in a two-full-day training program in groups of 6. The second day of training was completely devoted to field practice. We accompanied each interviewer on this practice day as well as on his/her first day of the main study on the field to make sure that all implementation rules and procedures were properly followed. The response rate, calculated as the number of completed questionnaires divided by the number of addresses in which eligible men had been identified, was 83%<sup>9</sup>. Informed consent was obtained from all participants. The sample was randomly selected by the Turkish Institute of Statistics (TUIK) in proportion to population from 29 districts in the country. To capture isolated exposure to the conflict during military service and unconfounded individual level effects, we set the inclusion criteria for districts as being outside the conflict zone which we operationalized as having experienced at most 6 minor conflict events in the 1984-2018 period<sup>10</sup>; having at most 15% of its current resident population born in a district in Eastern (NUTS1) Turkey; and being representative of the socioeconomic structure of its region. Figure 2 maps the sample distributions alongside the distribution of combatant casualties to visualize the clear separation between the sampling and the conflict zone.

<sup>9</sup> Compared to Europe and North America, survey response rates are usually high in Turkey due to cultural reasons, but we would also like to credit the questionnaire design, the field organization, the intense and effective interviewer training, and the trust and acclaim the public holds for the partner Sabancı University for the welcome we received.

<sup>10</sup> Mean number of total conflict events in the 1984-2018 period in districts outside the eastern regions (NUTS1) is 6 (TPCONED (Kibris, 2021)).

**Figure 2. Sampling distribution versus the distribution of combatant casualties**

Sample Distribution Distribution of Combatant Casualties, 1984-2018



To identify exposure to the conflict we asked our respondents when, where and for how long they served in the army. We also asked them about their specific experiences of armed violence during service. Military service is culturally highly revered and associated with manhood in the Turkish culture. It is such a significant experience in a man's life that men

remember it in detail, and it is a common topic of conversation. Of the 5,024 respondents only 5 did not answer our questions on their military service. Figure 3 maps the geographical distribution of the military placements of our respondents at the district level.



Figure 3. Geographical distribution of military

placements of respondents

We must emphasize that, because sending their sons to the army involves serious risks, this assignment system and its fairness have always been under scrutiny by the public and the media in Turkey, especially during times of high conflict intensity as more draftees lost their lives. Therefore, the randomness of base assignments is a feature of the drafting system that has always carried great political costs. Consequently, the Turkish Ministry of Defence and the General Staff emphasize in all their communications that the system does not discriminate. This is also what we heard in all the communications we had with army officials. It must also be noted that the list of fallen soldiers in the conflict zone includes close relatives of high-level

politicians and army officials.<sup>11</sup> The high level of trust Turkish people have in the army also attests to the fairness of the system. We asked our respondents how much they trusted in various institutions in the country ranging from the Parliament to NGOs. With nearly 75% indicating high trust, we found the army to be by far the most trusted institution.<sup>12</sup> Finally, the balance tests we present in Section 3.3 on pre-military characteristics of our respondents indicate no bias in assignments with respect to these characteristics and as such provide further empirical evidence of the randomness of the assignment system.

### 3.2 Our Exposure and Entrepreneurship Measures

Our first variable of interest, *Exposure to Armed Conflict Environment (ACE)*, is the intensity and duration of exposure to the armed conflict environment which we measure by the standardized number of combatant casualties during the time of a respondent's military service in the district of the base he was assigned. Data on combatant casualties come from the Turkish State-PKK Conflict Event Database (Kibris, 2021).

ACE captures the individual level of exposure to the conflict environment with high geo-temporal precision since for each respondent it accounts for the intensity of armed clashes in his base district during the time he was there as a soldier. As such, it is not only sensitive to the place and time of service but also to its duration. And, compared to measures that rely on a person's retrospective and subjective assessment of his armed violence exposure, ACE is drastically more immune to response and recall biases as it is based on objective facts. Relatedly, because it is based on mandatory service requirements which legally enforce the continuous presence of each individual in the place and over the duration of his service, ACE does not admit any possible unobserved movements across different environments and thus captures certain exposure to the environment defined by those geotemporal parameters.

As can be inferred from its definition, ACE is determined by four exogenous and individual-specific components. The first component is timing which is determined by the date of service in the army, and as per the age requirement in the law, it is determined by birthdate. The second component is duration which is determined by length of service as dictated by the regulations in place when the time comes for an individual to serve in the army. The regulations about the required length of service were changed four times over the period we consider.

While the requirement for rank-and-file was 18 months in the 80s, it was taken down to 15

<sup>11</sup> A recent example is Mr. Babacan who was the secretary of state when his cousin died in 2007 in a PKK attack on the Çeltikli outpost in Bitlis while doing his military service.

<sup>12</sup> The percentage of those indicating high trust goes down to 43% for courts and 35% for the parliament. months in 1992, brought back to 18 months in 1995, back down to 15 months in 2003, and finally was reduced to 12 months in 2014. The third component is the intensity of the armed conflict around the base during service which we measure by the number of combatant casualties. Note that an individual can control or influence or anticipate neither his birthdate, nor the timing or content of any legislation change, nor the conflict events that are to happen around his base while he is in the army. Thus, these three components are, by definition, exogenous. Finally, the fourth component is the location in terms of the county of the military base an individual is sent to. As we discuss in detail above, this last component is also exogenous since it is determined randomly by the assignment lottery. Hence, ACE identifies exogenous and individual-specific exposure to the conflict environment.

One feature of the military service system in Turkey that we need to note here is that it incorporates some rank and duration differentiation in terms of education level. While

individuals with less than a college degree are all designated as regular-term rank-and-file soldiers, college graduates<sup>13</sup> might serve as reserve officers. Whether a college graduate serves as a reserve officer depends on the number of reserve officers needed by the army in that draft period, which is usually small and less than the number of college graduate draftees. To resolve this imbalance, draftees are given a chance to choose between rank and file and reserve office. Because reserve office comes with higher rank and somewhat better conditions (working hours, payment, accommodation etc.), to provide a balancing incentive, those college graduates who choose rank-and-file are then entitled to serve half the regular term.<sup>14</sup> Note that, as mentioned above, our measure of conflict exposure, by incorporating the length of military service, already accounts for the variation in duration of exposure.

What is important for our purposes is that because the need for reserve officers is expected to be higher in administrative headquarters of the army forces, most of which are located in major (western) centers like Ankara, Istanbul and Izmir for bureaucratic as well as strategic purposes, and because militarily it is better to employ soldiers for a longer period once they gain combat experience at bases in the conflict zone<sup>15</sup>, the availabilities in the lottery for college graduates (independent of the rank) are slightly skewed towards western locations. Nevertheless, while the percentage is lower compared to those with less education, a significant

<sup>13</sup> It must be a minimum 4-year college degree. Therefore, those with 2-year community college degrees do not qualify.

<sup>14</sup> In case the mismatch between supply and demand continues, a lottery is held among the candidates. The Law on Reserve Officers (Law number 1076, <https://www.mevzuat.gov.tr/MevzuatMetin/1.3.1076.pdf>) details the rules, regulations and procedures concerning reserve office.

<sup>15</sup> As it takes time for a newly drafted soldier to gain combat/field experience, relying on half-term soldiers is less than ideal for bases in the conflict zone.

portion of college graduates still get assigned to bases in the conflict zone. In our data, 30% of the college graduate respondents declared to have served in bases in Eastern (NUTS1) Turkey, whereas that percentage is 40% for those with less education.

Note that although college graduates are able to choose between rank-and-file and reserve office, they are not able to select themselves into Western locations as they are also subject to the same lottery system that randomly assigns draftees to bases. In fact, in Section 3.3 we empirically confirm that two options do not differ in terms of their likelihood of getting assigned to a base in the conflict zone. Moreover, in what follows, we control for education in all our statistical models. Finally, as further proof that it is not biasing our estimates, alongside

the full sample results we also report in all our regression tables the results we get when we exclude college graduates from our sample.

Apart from ACE, to have a more detailed understanding of their personal experiences, we also asked our respondents whether they ever got wounded in armed clashes or anyone around them got killed or hurt in armed clashes during their military service. *Traumatic Direct Experiences (TDE)*, which is our second measure of conflict exposure, is a binary variable that takes on the value 1 in the case of any such experience. Two percent of our respondents declared they got wounded in armed clashes and 13 percent reported that others around them got killed or hurt during their military service at a base in the conflict zone.<sup>16</sup>

In her book, which contains in-depth interviews with 42 such individuals who had served in bases in the conflict zone, Merter (1998) presents detailed qualitative accounts of the experience that our exposure measures are designed to capture quantitatively: “Ahmet was a reserve officer with an MA degree in economics. He shows a photo of a mountainous terrain, this is where his friend got shot by the PKK. “It took the helicopter 5 hours to get to us, my friend was dead by then.”” (p.9); “It was only 2-months into my term. I got the night watch. I was told that terrorists had cut the head off a soldier who had fallen asleep on watch right here. It was pitch dark and I was alone. It was the scariest experience of my life.” (p. 40); “Attacks on bases were very common. All of a sudden bullets start raining from the sky, the whole world shakes (p.43) ... This should be done by professional soldiers not ordinary civilian kids like us.” (p.45) The accounts we heard on the field from our respondents were similarly traumatizing: “One of our teams got attacked on the hills. They brought in the wounded and the dead with helicopters. The commander told me to wash the blood off the helicopter floor.

<sup>16</sup>Not surprisingly, one is more likely to experience violent events in high conflict intensity locations. However, because the percentage of those with such experiences is low, the correlation between ACE and TDE remains at 0.28.

It was everywhere, I still can smell the stench.” (author’s personal notes from the field). As described in these anecdotes, being a soldier in the conflict zone means immersion in a tense, scary and fatally risky combat zone with high military vigilance. Unfortunately, in many cases the experience also involves traumatic violent events like getting hurt or having others around get hurt.

Alongside these conflict exposure measures, we also include in our statistical models age, education and minority status as pre-treatment controls that might be associated with

economic behavior. *Age* is the age of the respondent at the time of the survey<sup>17</sup>, *Minority* is a dummy variable that takes on the value 1 if the respondent belongs to an ethnic minority, and *Education* is a categorical variable that ranges from 1 (received no schooling) to 16 (PhD graduate) and measures the education level of the respondent.

Our first dependent variable, *entrepreneurship*, is a binary indicator of entrepreneurial activity. The variable is derived from a question that asks whether a respondent has ever tried setting up his own business. Because it takes into account all entrepreneurial ventures throughout a person’s career, this is a more comprehensive measure of entrepreneurial inclinations than measures built on current employment status as most commonly used in the literature. Also, because one usually serves in the army at a young age (20 for most) before engaging with his career, *entrepreneurship* captures those ventures that took place after conflict exposure.

We also asked those who ever attempted to setup a private enterprise what happened to their business(es). Based on the answers, we constructed the ordered categorical variable, *success*, which takes on integer values from 0 to 4 denoting increasing levels of success in entrepreneurship.

Finally, we asked our respondents about their current employment. Based on the answers we constructed a binary indicator of *current self-employment status* which takes on the value 1 if an individual is working as a business owner or is a farmer working his own land, and zero otherwise.

Table 1 presents an overall summary view of our data. It shows the mean, standard error, minimum, maximum, and median for each variable we use in this study as well as the number of observations. The corresponding survey questions and the derivation of variables are presented in detail in the Appendix.

<sup>17</sup> Age (at the time of the survey) is a pre-treatment variable because it is determined by birth year.

One can observe that there is considerable heterogeneity in conflict exposure as well as in entrepreneurial activity and success, and that current self-employment status substantively underrepresents overall entrepreneurial experience of individuals.

**Table 1. Summary statistics**

	Mean	Standard error	Min	Max	Median	Number of observations

<b>Conflict exposure</b>						
Exposure to the Armed Conflict Environment (ACE) (standardized)	0	0.014	-0.297	9.917	-0.297	5,019
Traumatic Direct Experiences (TDE)	0.132	0.005	0	1	0	5,005
<b>Entrepreneurship</b>	0.504	0.007	0	1	1	5013
Entrepreneurship						
Success	2.397	0.021	0	4	3	2511
Current self-employment status	0.354	0.007	0	1	0	5019
<b>Demographics</b>						
Age	42.393	0.104	28	62	42	5,024
Height	175.444	0.098	150	199	175	5,021
Education	6.061	0.038	1	16	6	5,020
Minority	0.094	0.004	0	1	0	5,024
Kurdish ethnicity	0.068	0.004	0	1	0	5,024
<b>World assumptions</b>						
Trust in institutions	2.517	0.011	1	5	2.5	5,010
Trust in people	1.987	0.016	1	5	2	4983
<b>Social participation</b>						
Membership to social organizations	0.556	0.013	0	11	0	5024

### 3.3 Balance tests

As discussed in detail above, our identification strategy relies on the mandatory military service system in Turkey which creates a natural experiment setting that randomly exposes young adult males to armed violence in a civil conflict setting. Randomization implies that draftees assigned to bases in the conflict zone and draftees assigned to bases in peaceful locations in the west should be similar in terms of their pre-military characteristics. The results we present in this section confirm that they indeed are.

To make sure that we conduct a comprehensive analysis we conduct these tests with all the pre-treatment characteristics on which we have data. Specifically, we conduct t-tests on age, ethnic background, height, and education level. To avoid any adhoc definition of the “conflict zone”, we use two different classifications in these tests. The first one refers to those eastern districts with more than 50 combatant casualties over the course of the conflict<sup>18</sup>

(eastern districts colored by the two darkest shades in Figure 1), and the second one refers to the NUTS1 regional classification and designates the districts in the Northeastern, Southeastern and Central Eastern regions as the conflict zone.

The mean age in both groups is not statistically different from each other, indicating that there is no systematic bias across age groups in terms of the probability of getting assigned to the conflict zone.

Given the ethnic nature of the conflict, a non-random assignment system would be expected to differentiate among draftees in terms of Turkish vs. Kurdish ethnicity. However, the t-tests reported in Table 2 indicate no such difference regardless of the conflict zone definition we use. One might also expect a non-random assignment system to differentiate in terms of physical attributes, but the t-tests we report in Table 2 indicate no significant difference in terms of height either.

We then look into education level. As we discuss in detail above, college graduates are more likely to draw a western location from the assignment lottery. This is reflected in the sample as well. While 40% of respondents with less than a 4-year college degree declared to have served in eastern districts, this percentage drops to 30% for college graduates. Not surprisingly, as reported in Table 2, t-tests indicate that those sent to the conflict zone are less educated on the average. However, the difference disappears when college graduates (9.3% of the sample) are excluded from the sample. We also test whether college graduates serving as reserve officers differ from college graduates serving as half-term rank-and-file soldiers in their likelihood of getting assigned to a base in the conflict zone. We have 217 reserve and 252 half term rank-and-file soldiers in our sample. The results show that the two groups do not significantly differ from each other.

**Table 2. Balance tests**

Served outside the conflict zone	Conflict zone defined as districts with more than 50 combatant casualties				Conflict zone defined as districts in eastern NUTS1 regions											
	Age	Served in the conflict zone	Served outside the conflict zone		Served in the conflict zone		Served outside the conflict zone									
Mean	42.349	42.425	42.309	42.446	Standard error	0.158	0.138	0.165	0.133	N	2164	2860	1975	3049	t-stat [p-value]	0.365
	[0.715]	0.640	[0.522]													

<sup>18</sup> 50 is the median number of total combatant casualties in districts with casualties.

Served outside the conflict zone	Conflict zone defined as districts with more than 50 combatant casualties		Conflict zone defined as districts in eastern NUTS1 regions	
	Conflict zone	Ethnicity (% Kurdish):	Served in the conflict zone	

**Served outside the conflict zone****Served in the conflict zone**

Mean 0.067 0.069 0.066 0.070 Standard error 0.005 0.005 0.006 0.005 N 2,164 2,860 1,975 3,049 t-stat [p-value] 0.197 [0.844] 0.554 [0.580]

**Height (in cm):**

Mean 175.400 175.477 175.435 175.450 Standard error 0.148 0.131 0.155 0.127 N 2,162 2,859 1,973 3,048 t-stat [p-value] 0.392 [0.695] 0.074 [0.941]

**Education:**

Mean 5.913 6.173 5.885 6.176 Standard error 0.056 0.052 0.058 0.050 N 2,161 2,859 1,972 3,048 t-stat [p-value] 3.376 [0.001] 3.716 [0.000]

**Education (excluding college graduates):**

Mean 5.393 5.473 5.405 5.460 Standard error 0.044 0.039 0.046 0.038 N 1,994 2,559 1,831 2,722 t-stat [p-value] 1.354 [0.176] 0.935 [0.350]

**Rank (% of reserve officer among college graduates):**

Mean 0.550 0.480 0.566 0.479 Standard error 0.038 0.029 0.042 0.028 N 169 300 143 326 t-stat [p-value] -1.462 [0.144] -1.755 [0.080] All p-values are two-sided.

The results of these tests attest to the randomness of deployments in terms of location. We now examine whether there is a selection of draftees into different roles and tasks at the bases they are deployed which might then introduce a nonrandom component into their specific experiences during their service and consequently jeopardize the randomness of our second exposure measure, TDE. If certain types are more likely to be selected for more dangerous duties, then the likelihood of getting hurt becomes endogenous to those characteristics. The important thing to note here is that while draftees take on different tasks at their bases ranging from kitchen duty to peripheral patrol, they do not select themselves into these roles. The task assignments are done by the military command at the base at the very beginning of draftees' terms before command officers have time to observe any behavioural characteristics. One might still suspect observable pre-military characteristics such as height, ethnicity, and education to influence these assignments. The balance tests we present in Table 3, however, demonstrate that those respondents who got hurt in armed clashes during military service do not differ in any significant way from others in terms of their pre-military characteristics. Consequently, we see no ground to be concerned about certain types of draftees choosing tasks that can potentially be more dangerous or command officers selecting certain types into such roles.

**Table 3. Balance tests on the likelihood of getting wounded**

	Not wounded	Wounded
<b>Age</b>		
Mean	42.382	42.967
Standard error	0.105	0.791

N 4,932 92  
t-value [p-value] -0.757[0.450]  
**Ethnicity (% Kurdish):**  
Mean 0.069 0.054  
Standard error 0.004 0.024  
N 4932 92  
t-value [p-value] 0.534 [0.593]  
**Height (in cm):**  
Mean 175.42 176.29  
Standard error 0.099 0.685  
N 4929 92  
t-value [p-value] -1.181 [0.238]  
**Education:**  
Mean 6.064 5.913  
Standard error 0.039 0.305  
N 4928 92  
t-value [p-value] 0.529 [0.596]  
All p values are double sided.

One might still be concerned that, even though soldiers cannot self-select themselves into different tasks, they might self-select into different levels of violence exposure by choosing how much risk they take in dangerous situations. To rule out the possibility of such a bias, we reran our main analyses on the likelihood of entrepreneurial activity with an alternative traumatic experiences measure defined as a binary indicator of observing a fellow soldier get hurt or killed in armed clashes. Still capturing a major traumatic experience, this measure is expected to be more immune to any possible self-selection into violence as it is about a misfortune that had happened to someone else. As the results we present in Table A1 in the Appendix confirm our results do not change in any significant way when we replace TDE with this alternative measure.

#### 4. Results

Table 4 presents the results we obtain on our binary indicator of entrepreneurial activity. Interestingly, we find that our two exposure measures have opposing effects on the likelihood of PEA. While individuals who serve in the army in high conflict intensity locations and times become less likely to try to setup a business of their own, those who directly experience traumatizing violent events in that environment become more than 40% more likely to become entrepreneurs than those with no such experiences.

**Table 4. Conflict exposure and entrepreneurial activity**

Logistic	ratios reported)	variable:	(1)	(2)	
Regressions (odds	Dependent	<u>Entrepreneurship</u>	TDE=0		Full sample

(3)	(4)	(5)	(6)
Full sample	Full sample	College graduates <u>excluded</u>	College graduates <u>excluded</u>
ACE	0.88** 0.92***	0.89** 0.92***	0.89** (-2.50) (2.90) (-2.47) (2.87) (-2.34)
TDE	1.34*** 1.47***	1.44*** 1.43***	1.40*** (3.67) (4.40) (4.06) (3.92) (3.64)
ACE*TDE	1.06 1.06	(1.03) (0.86)	
Age	1.02*** 1.02***	1.02*** 1.02***	1.02*** (3.18) (3.14) (3.26) (3.25) (3.39) (3.59)
Ethnic minority	1.35** 1.36**	1.35** 1.35**	1.37*** 1.37*** (2.41) (2.54) (2.51) (2.52) (2.62) (2.62)
Education level	0.97* 0.98 0.98*	0.98* 0.99 0.99	(-1.94) (-1.49) (-1.65) (-1.65) (-0.79) (-0.78)
Constant	0.56** 0.56**	0.55** 0.55**	0.49*** 0.49*** (-2.33) (-2.38) (-2.48) (2.49) (-2.82) (2.82)

Observations 4326 4990 4986 4986 4523 4523 z-values in parentheses.

Standard errors are clustered at the neighborhood (bloc) level.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The interaction between ACE and TDE fails statistical significance. This implies that the impact of environmental or directly traumatizing exposure to violence is not dependent on the level of the other. In other words, a traumatizing violent incident has the same impact on the probability of future entrepreneurial activity of an individual regardless of the level of conflict intensity in the environment in which that incident took place.

Next, we turn to exploring the outcome of entrepreneurial ventures and whether conflict exposure makes a difference in terms of success rate. Our measure is an ordered categorical variable, *success*, which takes on integer values from 0 to 4. 0 indicates multiple trials all of which failed; 1 indicates one trial which failed; 2 indicates one successful trial that is still the current business of the respondent; 3 indicates multiple trials with some of them with success; and 4 indicates multiple trials all of which succeeded. Interestingly, the results in Table 5 indicate that while direct experiences of violent events increase the likelihood of private economic activity, they might also reduce the probability of success in those activities. Based on these results, we then expect to see either a much smaller or no effect of TDE on current entrepreneurial activity. Results we present in Table 6 confirm our expectation. While TDE boosts the probability of engaging in entrepreneurial activity by about 45%, those with such traumatic experiences are only about 20% more likely to be currently self-employed and that estimate is only significant at the 10% level.

**Table 5. Conflict exposure and entrepreneurial success**

Ordered logit Dependent variable:	Entrepreneurial success	TDE=0 (2) Full sample	(3) Full sample (4)	Full sample (5) College	graduates <u>excluded</u> (6)	College graduates <u>excluded</u>
ACE	0.06 0.02 0.06 0.03 0.05	(0.84) (0.44) (0.77) (0.60) (0.74)				
TDE	-0.23** -0.25* -0.24*	-0.22* -0.21	(-1.99) (-1.93) (-1.74) (-1.65) (-1.47)			

ACE\*TDE -0.06 -0.04 (-0.58) (-0.41)

Age 0.01 0.01 0.01 0.01 0.01 0.01 (1.12) (1.58) (1.56) (1.57) (1.41) (1.41)

Ethnic minority 0.06 -0.01 -0.01 -0.01 -0.01 (0.37) (-0.04) (-0.04) (-0.06) (-0.05) (-0.07)

Education level 0.04\*\* 0.03 0.03 0.03\* 0.04 0.04\* (2.34) (1.61) (1.63) (1.65) (1.64) (1.65)

Observations 2128 2502 2507 2502 2289 2289 z-values in parentheses.  
 Standard errors are clustered at the neighborhood (bloc) level.  
 \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 6. Conflict exposure and current self-employment status**

Logistic Regressions (odds ratios	reported) Dependent variable: <u>Current</u>	<u>self-employment</u> <u>status</u> (1) TDE=0	(2) Full sample (3) Full sample	(4) Full sample (5) College graduates	<u>excluded</u> (6) College graduates <u>excluded</u>
ACE	0.95 0.97 0.95 0.97 0.96	(-0.93) (-0.95) (-0.99) (-1.01) (-0.92)			
TDE	1.15 1.19* 1.17* 1.22** 1.20*	(1.61) (1.83) (1.68) (2.02) (1.91)			
ACE*TDE	1.04 1.03	(0.56) (0.40)			
Age	0.99 1.00 1.00 1.00 1.00 1.00	(-1.14) (-0.63) (-0.58) (-0.58) (-0.54) (-0.54)			
Ethnic minority	1.13 1.07 1.07 1.07 1.04 1.04	(0.96) (0.56) (0.54) (0.55) (0.32) (0.33)			
Education level	0.98 0.97** 0.97** 0.97** 0.96** 0.96**	(-1.63) (-2.13) (-2.17) (-2.17) (-2.04) (-2.04)			
Constant	0.78 0.73 0.72 0.72 0.75 0.75	(-0.98) (-1.31) (-1.35) (-1.36) (-1.12) (-1.12)			

Observations 4332 4997 4993 4993 4531 4531 z-values in parentheses.  
 Standard errors are clustered at the neighborhood (bloc) level.  
 \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

To summarize, our results tell us that different types of conflict exposure have different effects on entrepreneurship. The opposing effects we find for our two measures of exposure indicate that studies that focus on only community or individual level exposure can simply fail to detect any impact. Similarly, the dampening effect of direct exposure to violent events on entrepreneurial success can account for the lack of positive findings in those studies that only examine current entrepreneurial activity while ignoring past attempts.

## 5. Mechanisms

In this section, we investigate the possible mechanisms that might be linking exposure to armed conflict to PEA. We build our discussion on important works from the psychology literature based on which we argue that the link is created by overarching changes in worldviews and that engaging in PEA is part of how individuals cope with these changes.

Exposure to an armed conflict is a major shock for individuals. And as such, it is expected to have significant effects on their outlook on life, their perceptions, beliefs, and preferences (Carmil and Breznitz, 1991; Punamaki et al., 1997; Tedeschi and Calhoun, 2004). In her

influential book *Shattered Assumptions* Janoff-Bulman (1992) theorizes about the nature of these effects. She argues that at the core of our internal world we hold the fundamental assumptions that the world is benevolent and meaningful and that we are safe in it. Our experiences in life might strengthen or weaken these assumptions. Janoff-Bulman specifically focuses on traumatizing experiences and argues that their main impact is to shatter our positive assumptions about the world along with our illusions of safety. Having lost trust in the benevolence of the outside world the traumatized individual then adopts certain coping mechanisms to deal with the ensuing terror. Avoidance of situations, feelings, thoughts, and actions that one relates to those traumatic experiences is one common coping mechanism. Relatedly, the traumatized individual chooses behaviors and actions that help him/her recreate a world in which he/she finds meaning and safety and feels in control again. Given that our subjects had been exposed to an armed conflict environment in a hierarchical command structure which took away their control and decision-making power and given the autonomy and control that comes with running one's own business, we argue that the higher likelihood of PEA we observe in individuals with TDE is likely to be part of this avoidance and reconstruction process. Very similar arguments have been made in the literature on the effects of crime victimization where scholars link the observed increase in the civic and political participation of victims to a strong preference for safety and control enhancing activities as part of a "problem-focused" (Garnefski, Kraaij, and Spinhoven, 2001) individual coping mechanism (Nussio, 2019; Lab, 1990; Skogan and Maxfield, 1981).

Following the same line of argument, surviving an armed conflict environment without a major mishap is then expected to reinforce one's positive world assumptions. Those individuals maintain or even strengthen their trust in the benevolence of the world, and as such, they are less likely to strive for more autonomy and control.

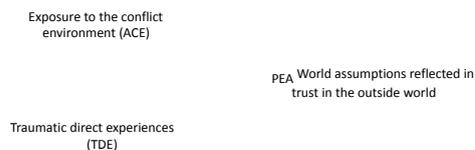
We thus have two parts to our argument, first that exposure to armed conflict impacts upon worldviews, and second that those who lose their positive assumptions cope with the situation by trying to avoid situations, thoughts, emotions, and actions they associate with their traumatic experiences and by trying to reestablish a meaningful and safe environment in which they feel in control again.

Note that innate assumptions people hold about life are not directly observable. However, we can use their observable implications as proxy measures. Based on the

theoretical structure we outlined above we expect one's world assumptions to reflect in the level of trust he has in the outside world. More specifically, we expect individuals with *shattered* world assumptions to display mistrust towards the outside world. Those who have their innate positive assumptions reinforced, on the other hand, are expected to exhibit the opposite tendencies and display a more trusting nature. Hence, we expect people's innately held world assumptions to be reflected in how trustful they are.

We use a structural equation modelling (SEM) approach to test these arguments. SEM is a widely used technique in the social and natural sciences (for an introduction and overview see Pearl, 2012; Kline, 2015). It builds on the same assumptions as linear regression estimation but as an additional advantage it allows testing for mediation effects with a straightforward assessment of the total effects of variables parsed out into indirect and direct effects. Figure 5 visualizes our statistical model.

Figure 5 Generalized Structural Equation Model of PEA



To have a comprehensive conceptualization, we measure trust in the outside world as trust in institutions and trust in people. Our measure for trust in institutions is the weighted average of answers to a set of 14-questions each of which requires respondents to indicate on a 5-point Likert scale their level of trust in a specific institution ranging from the parliament to media outlets. Similarly, we derive our measure for trust in people from a 4-question set that requires respondents to indicate on the same 5-point Likert scale how much they trust their friends; neighbours; people living in the same town; and strangers.

The coefficients for the paths depicted in Figure 5 are estimated using the *gsem* (generalized structural equation model) setup in Stata 16. The probability of entrepreneurial activity is modelled as a binary variable with a logistic distribution, and the two measures of trust in strangers are modelled as continuous variables with Gaussian distributions. More formally, the structural equation model estimates the parameters of the following compound functional form where  $f$ ,  $g$ , and  $h$  stand for the functional forms of the statistical distributions of the corresponding variables, and  $X$  is the vector of other control variables included in our original model of entrepreneurship.

Entrepreneurial activity likelihood = f (ACE, TDE, trust in institutions = g (ACE, TDE, X), trust in people = h (ACE, TDE, X), X) under the assumption of potential covariance between observed variables.

The first two columns of Table 7 report our findings on the effects of conflict exposure on the two trust measures. Supporting our arguments, we see a positive impact of environmental exposure on trust levels while those who experience directly traumatizing violence in that environment exhibit less trusting attitudes.

The second part of our argument is for this differential change in worldviews to affect career choices. Results in column 3 support this argument and indicate a strong negative association between trust in institutions and PEA.

**Table 7. Conflict exposure, trust, and entrepreneurial activity**

Table 7			
	(1)	(2)	(3)
(z-values in parentheses)	Trust in institutions	Trust in people	Entrepreneurial activity
	(OLS)	(OLS)	(Logit) (Odds ratios)
ACE 0.03**		0.03*	0.92***
	(2.28)	(1.84)	(-2.59)
TDE -0.13***		-0.10**	1.44***
	(-3.71)	(-2.36)	(4.00)
Age 0.00***		0.01***	1.02***
	(2.79)	(3.11)	(4.21)
Ethnic Minority -0.15***		0.00	1.32***
	(-3.20)	(0.07)	(2.77)
Education level -0.02***		0.02***	0.97**
	(-4.50)	(4.93)	(-2.33)

Trust in institutions	0.84***	(-4.84)		
Trust in people	1.02	(0.57)		
Constant	2.48***		2.69***	0.80
		(31.89)	(30.20)	(-0.98)
N	4993			
Robust standard errors.				
***: significant at the 1% level; **: significant at the 5% level; *: significant at the 10% level				

That those who lack trust in institutions are more likely to go into private business might at first seem contradictory given that a business owner is expected deal frequently and personally with institutions like regulatory offices, courts, trade associations, other businesses, and media outlets. However, note that our argument is not about isolating oneself from such interactions, but rather it is about establishing a sense of autonomy and control in them. A very similar dynamic that we observe in our data in terms of the effects of conflict exposure on political and social participation provides further support for our arguments. We asked our respondents a set of questions on membership to a list of organizations ranging from political parties to sports clubs. Analyzing the effects of conflict exposure on the number of such memberships they have we find that those with exposure to traumatizingly violent conflict events have significantly higher levels of social participation in these organizations even though they exhibit substantially lower levels of trust in institutions. We present the results in Table 8. This seeming contradiction between trust and behavior is akin to what we see in the case of PEA and leads us to argue that what we are observing is in fact an instrumental coping strategy through which these individuals strive to build networks to help them reestablish a meaningful and safe environment in which they once again feel in control.

**Table 8. Conflict exposure, trust, and social participation**

Table 8			
	(1)	(2)	(3)
(z-values in parentheses)	Trust in institutions	Trust in people	Membership in
	(OLS)	(OLS)	organizations (Poisson)

ACE	0.03**		0.03*	-0.04
	(2.28)		(1.84)	(-1.59)
TDE	-0.13***		-0.10**	0.19***
	(-3.71)		(-2.36)	(2.73)
Age	0.00***		0.01***	0.01***
	(2.79)		(3.11)	(4.11)
Ethnic Minority	-0.15***		0.00	0.15*
	(-3.20)		(0.07)	(1.88)
Education level	-0.02***		0.02***	0.04**
	(-4.50)		(4.93)	(3.71)
Trust in institutions	-0.08** (-2.54)			
Trust in people	0.08*** (3.01)			
Constant	2.48***		2.69***	-1.46***
	(31.89)		(30.20)	(-7.82)
N	4993			

Robust standard errors.

\*\*\*: significant at the 1% level; \*\*: significant at the 5% level; \*: significant at the 10% level

## 7. Conclusion

In this study, we employ a natural experimental setting which randomly exposes young men to an armed conflict environment in combatant roles for a significant period of their lives and we study the effects of this exposure on their likelihood of engaging in PEA. Our results reveal differential effects depending on the nature of exposure. Interestingly, we find that while those with environmental exposure become less likely to try setting up a business of their own, those who have traumatizing violent experiences in that environment become significantly and substantially more likely to do so. We then argue that these effects are part

of how people cope with their exposure and its psychological impacts finding support in our analyses of trusting attitudes and behaviors. Future research should expand beyond these measures to generate a more holistic model of coping strategies by individuals exposed to violent traumatic events during conflict.

Our study is a first in several ways. We are the first to benefit from a natural experimental setting that enables us to reveal causal impacts of conflict exposure on entrepreneurial activity. Our setup also gives us a clear timeline with exposure preceding economic activity, while our rich survey data enables us to investigate and provide empirical support for some interesting psychological mechanisms that transmit the effects of conflict exposure on PEA. Finally, and most importantly, we are the first to examine the effects of conflict exposure on entrepreneurial behavior of individuals without the confounding effects of conflict-induced changes in the economic environment. This ability makes our results relevant not just for understanding post-conflict recovery but also for the welfare and rehabilitation of the ever-increasing number of veterans and service personnel who return home after deployment in combat zones outside their countries. Over the past few years, more than 100,000 NATO troops have returned to their homelands from tours of duty in Afghanistan. As these individuals make decisions about their futures, many who experienced traumatic events may be considering venturing into entrepreneurship. However, these same individuals are the most likely to find the transition into PEA challenging. Targeted support is needed from all home governments to boost these veterans as they regain control of their futures.

Our results also speak to states seeking to rebuild after conflict. As countries like Syria lie in ashes after a protracted civil conflict, official bodies can spur economic growth with support for those who had direct exposure to the violence of the conflict – highly motivated to enter entrepreneurial activity and rebuild their homeland.

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## **APPENDIX**

### **A.1 Survey Questions**

The coding of variables included in the analyses are described below.

#### **Number of combatant casualties in the district of service during the time of service**

##### **(ACE):**

Time and location are derived from the answers to:

*When did you do your military service (start month, year – end month, year)? To which district were you assigned after your training?*

##### **Traumatic direct experiences (TDE):**

Binary variable that is coded 1 if the answer to any of the two questions below is

yes. *Were you ever injured in armed combat during your military service?*

*Was anyone around you ever injured or killed during in armed combat while you were on military service?*

**Entrepreneurship:** Binary variable that is coded 1 if the answer to the following question is yes.

*Have you ever tried to set up your own business?*

**Success:** Ordered categorical variable which takes on integer values from 0 to 4 denoting increasing levels of success in entrepreneurship based on the answers to the following question:

*Which of the following describes best the outcome of those businesses you set up?*

I tried to setup my own business once, but it failed so I closed it or sold it on.
I setup my own business once and I succeeded.
I tried to setup my own business more than once, but they all failed.
I tried to setup my own business more than once, some attempt(s) failed, some attempt(s) succeeded.
I setup several businesses of my own, they all succeeded.

**Current self-employment status:** Binary variable that is coded if the respondent indicated self-employment when asked his current employment status.

**Age:** Age of the respondent.

*What is your age?*

**Height:** Height of the respondent in centimeters.

*How tall are you in centimeters?*

**Education level:** Ordered categorical variable, increases from 1: “I have never been to school” to 16: “I have a doctorate degree”.

*What is your education level?*

1	Never been to school	10	Left university
2	Left primary school	11	Currently studying at a university
3	Completed primary school	12	A university graduate
4	Left secondary school	13	Left a graduate program
5	Graduated from secondary school	14	Currently a master’s student
6	Left high school	15	Hold a master’s degree
7	Completed high school	16	Hold a doctoral degree
8	Left higher education	99	Not known/no answer
9	Completed higher education		

**Minority:** Ethnic background is a dummy variable that takes on the value 1 if the respondent mentioned any language other than Turkish when asked:

*Which languages were spoken in your household when you were a child?*

1	Turkish
2	Kurdish
3	Zaza
4	Arabic
5	Greek
6	Armenian
7	Syrian
90	Other
99	Don't know/ No answer

**Kurdish ethnicity:** Dummy variable that is coded 1 if Kurdish and/or Zaza was indicated in the above question on languages.

**Trust in institutions:** The average of the item scores in the following scale on institutional trust.

*Using the 5-point scale below, please indicate how much you trust the following institutions. Scale 1 to 5: 1 = "I don't trust them at all"; 2 = "I don't trust them much"; 3 = "I neither trust nor distrust them"; 4 = "I mostly trust them"; 5 = "I trust them completely"; 99 – Don't know/no answer*

1. The army
2. Courts
3. Turkish Grand National Assembly
4. Tv channels
5. Newspapers
6. Political parties
7. Clergy
8. Universities
9. Environmental organizations
10. Charities
11. Police
12. Banks
13. Private firms
14. The EU

**Trust in people:** The average of the item scores in the following scale on trust in persons.

*Using the 5-point scale below, please indicate how much you trust people from the following groups.*

*Scale 1 to 5: 1 = "I don't trust them at all"; 2 = "I don't trust them much"; 3 = "I neither trust nor distrust them"; 4 = "I mostly trust them"; 5 = "I trust them completely"; 99 – Don't know/no answer*

- 1- Your friends
- 2- Your neighbours
- 3- People from your town
- 4- Strangers

**Membership:** The number of yes answers to the following scale of

questions. *Are you a member of any*

- 1- Charity organization?
- 2- Compatriot association?
- 3- Sports club?
- 4- Political party?
- 5- Trade union?
- 6- Religious club, association, or community?
- 7- Environmental organization?
- 8- Trade association or chamber?
- 9- Alumni association?
- 10- School family union?
- 11- Community association?
- 12- Social club?

## A.2 Results with Alternative TDE Definition

In this section we present the results we obtain when we reran our main regression with an alternative traumatic experiences measure defined as a binary indicator of observing a fellow soldier get hurt or killed in armed clashes. As can be seen, results remain similar. **Table A1.**

### Conflict exposure and entrepreneurial activity

Logistic variable:	Entrepreneurship	TDE_alternative=	Full sample	Full sample	Full sample	<u>excluded</u>
Regressions (odds ratios reported)	(1)	0	(3)	(4)	(5)	(6)
Dependent		(2)			College graduates	College graduates <u>excluded</u>
ACE	0.90**	0.93***	0.90**	0.93***	0.90**	(-2.32) (2.78) (-2.29) (2.75) (-2.16)
TDE_alternative	1.35***	1.44***	1.42***	1.41***	1.39***	(3.77) (4.39) (4.13) (3.81) (3.59)
ACE*TDE_alternative	1.06	1.04	(0.85)	(0.68)		
Age	1.02***	1.01***	1.02***	1.02***	1.02***	(3.05) (3.08) (3.19) (3.19) (3.53) (3.53)

Ethnic minority 1.36\*\* 1.35\*\* 1.35\*\* 1.35\*\* 1.36\*\*\* 1.37\*\*\* (2.41) (2.53) (2.49) (2.50) (2.61) (2.61)

Education level 0.97\*\* 0.98 0.98\* 0.98\* 0.99 0.99 (-2.02) (-1.56) (-1.72) (-1.72) (-0.82) (-0.82)

Constant 0.58\*\* 0.57\*\* 0.56\*\* 0.55\*\* 0.49\*\*\* 0.49\*\*\* (-2.19) (-2.34) (-2.43) (2.43) (-2.78) (2.78)

Observations 4244 4991 4987 4987 4524 4524 z-values in parentheses.

Standard errors are clustered at the neighborhood (bloc) level.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$