The Scars of Civil War: The Long-Term Welfare Effects of the Salvadoran Armed Conflict[1]

Pablo Acosta (World Bank)
Javier E. Baez (World Bank)
Germán Caruso (World Bank)
Carlos Carcach (Escuela Superior de Economía y Negocios, El Salvador)

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This paper estimates the long-term effects on human capital accumulation and subsequent labor market outcomes of in utero and early childhood exposure to the civil war in El Salvador (1980–92), the second longest and deadliest civil conflict in Central America. Identification is obtained from spatial and intertemporal variation in the intensity of the conflict drawn from historical archive data comprising records of human casualties, disappearances, and refugees. The results show that people born in highly violent areas during the civil war saw a reduction in their probability of being employed by 6 percentage points, and of getting a high-skilled job by 5 percentage points, 20 to 30 years hence. The civil war also reduced their education by 0.8 year, as well as their enrollment and literacy rates. Subgroup analysis indicates that exposed males and indigenous groups experienced the largest losses in human capital and had weaker performance in the labor market.

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1. Introduction

Internal conflicts are a constant threat to economic development worldwide. Over half of the nations have experienced an armed conflict at some point in the last 50 years (Petterson and Wallensteen 2015). After a drop at the end of the 20th century, there has been an upward trend in the number of internal conflicts since the early 2000s. The Uppsala Conflict Data Program (UPCP) globally recorded 40 armed conflicts with at least 25 battle deaths per annum for 2014, the highest number on record after 1999. Over 25% of these conflicts were civil wars that caused more than 1,000 battle deaths in a single year. The data also show that in 2014 the number of people forcibly displaced by armed conflicts worldwide reached close to 60 million, making it the highest annual increase since comparable records began in 1989 (United Nations High Commission for Refugees, 2015).

Civil conflicts are a source of huge devastation, ranging from loss of lives and forced displacement, destruction of human capital, physical infrastructure and private property to disruption of economic and political systems. Those affected by violence and displacement usually experience higher perceived probabilities of extreme poverty in the short- and long-term (Moya and Cartner, 2019). These hopeless beliefs can become self-confirming. Internal warfare has spillover effects in the form of refugees, crime and illegal trade into neighboring nations. At the macro level, countries often see growth slow down shortly after armed conflicts surge. Over time, however, most countries experience rapid post-war economic recovery, including a convergence of key factors of production (population and human capital) and standards of living (Blattman and Miguel 2010; Miguel and Roland 2006; Brakman et al. 2004; Davis and Weinstein 2002). Yet, at the micro level, a growing body of empirical research has been uncovering how wars inflict a subtler but long-lasting burden on the human capital of affected populations, undermining their long-term productivity and well-being (Bundervoet et al. 2009; Akbulut-Yuksel, 2017; Akresh et al. 2011).

Empirical research has found that the impacts of conflict and other shocks on future health, education, and socioeconomic outcomes are particularly persistent and severe when the individuals are affected during the early stages of life (see papers by Maccini and Yang, 2009, and Maluccio et al., 2009). The first thousand days, in utero and the first two years after birth, are critical for a child's physical and neurological development, as well as for the formation of human capital

(Leight et al., 2016; Caruso and Karimi, 2015; Neelsen and Stratmann, 2011). Indeed, the rate of return to an investment made while a person is young is much higher than the rate of return to an investment of the same cost made at later age (Carneiro & Heckman, 2003). The rationale behind this is that early investments are harvested over a longer horizon than those made later in life. In addition, early investments raise productivity and lower the costs of future investments.

During early childhood, children's nutritional status is affected by the quantity and quality of food they consume, and early deficits may bring negative, long-lasting consequences for children's health, education, productivity and earnings. For instance, undernourished children are more susceptible to infections, chronic diseases and disabilities (Rice et al., 2000; Almond and Mazumder, 2011), and present a higher risk of premature mortality related to these diseases (Behrman et al, 2004). However, more importantly, underinvestments during this stage of life result in lower physical and cognitive development. With insufficient energy, children fail to grow at a healthy rate (Hoddinott, 2013; Aguilar and Vicarelli, 2022). This lost growth is never fully regained, so these individuals end up shorter in height and with reduced body mass (Martins et al, 2004; Mansour and Rees, 2012) compared to full adult potential if their diets had been adequate.

Furthermore, investments at early stages are fundamental to neurological and cognitive development (Moorthy, 2021). Improved nutrition may increase educational attainment, the likelihood of completing primary school and secondary school, and the results of test scores (Maluccio et al, 2009; Leon, 2012; Alderman et al., 2006). However, in the lack of sufficient investment during early childhood, in the future, these children are more likely to have reduced attention, lower IQs, reduced working memory, fewer motor skills, slower brain connections, among other consequences (Hoddinott, 2013; Daniels and Adair, 2004; Duque, 2017). This in turn results in lower educational attainment, lower wages, lower likelihood of employment, more endangered livelihoods, lower productivity, etc. (Glewwe et al, 2001; Alderman et al, 2006; Alderman et al, 2001; Martins et al, 2004). Moreover, the effects of such shocks are stronger among children from poor families (Victora et al., 2010).

This paper contributes to the literature on the persistence of negative economic outcomes caused by adversities in early life. It contributes to the growing body of empirical research by providing evidence of the long-run human capital and productivity costs of civil wars. For this purpose, the paper investigates the labor market performance of adults who were exposed in utero

or early childhood, critical periods for the formation of human capital, to the violence generated by the civil war in El Salvador (1980-1992), one of the longest and bloodiest conflicts in Central America. Little is known so far about the consequences of the Salvadoran Civil War on individual outcomes, and this study aims to fill that gap in the literature.

At the start of the war, El Salvador was already one of the poorest and most unequal countries in Latin America. In order to address the endogeneity between the socioeconomic conditions and the civil war, we exploit exogenous intertemporal and spatial variations in the intensity of the conflict as a source of identification, a plausible instrument to estimate the impact of civil war exposure on economic outcomes. As such, this paper relates to the empirical approaches employed by other important papers in the literature (Akresh et al., 2012; Annan et al, 2011; Bundervoet et al., 2009). We estimate a difference-in-differences model, factoring an index variable for war exposed areas (ranking the different Salvadoran departments) along with a cohort-based measure of years of exposure to the war. We combine data from the 2007 national population census with event information on the timing and geographic location of the conflict from historical data archives between 1981 and 1985.

The results indicate that the consequences of the conflict span far beyond the direct human and economic costs and are still being realized 20 to 30 years later as individuals affected early in life and still alive today, are entering the labor market. Exposure to the civil war reduced their probability of being employed by 6 percentage points and the probability of getting a high-skill job by 5 percentage points in the affected departments. In disentangling the mechanisms at play, we find that disruptions in human capital formation through reduced inputs (such as weaker nutrition, lower school enrollment, and destruction of facilities) played an important role. The country's most war-torn regions saw a reduction in school attainment of around 0.85 year. These negative effects are robust to the inclusion of several control variables, time trends, different sample specifications and placebo tests. Other outcomes related to psychological effects, shorter life expectancy and overall health outcomes were not explored in this paper due to lack of data. However, traditional literature for similar conflict situations has shown that these outcomes are likely to be affected as well.

The remainder of the paper is organized as follows. The next section provides an overview of the civil war in El Salvador and the country's context. Section 3 describes the data used in the

analysis. Section 4 explains the empirical strategy, and Section 5 presents the empirical findings, including a discussion of the mechanisms behind the impacts and the results of the robustness analysis. Finally, Section 6 concludes.

2. Civil War in El Salvador

The roots of the civil conflict in El Salvador date back to the late 19th century. Land reforms initiated in the 1880s sought the abolition of communal land to support the expansion of an export-oriented coffee-based agriculture (Pérez Brignioli, 2001). Land privatization was the embryo of social tensions and socioeconomic inequality, pitting a growing mass of dispossessed peasants attached to a strong culture of access to common land against a government-private sector alliance seeking the unlimited expansion of a coffee-based economy. Social discontent continued to grow through most of the first half of the 20th century, compounded by sharp drops in coffee prices, economic collapse following the Great Depression in 1929, frequent uprisings of peasants and indigenous people against the government and the landed elite, brutal repression and recurrent political instability. The following decades were marked by economic volatility, price fluctuations of major export crops such as coffee, cotton and sugarcane, and the oil crisis which led to rising food prices and decreased agricultural output.

The ousting of the military President Carlos Romero by a group of reformists and moderate officers on October 15, 1979, along with the assassination of a large number of Salvadorans such as businesspeople, union leaders, politicians and human rights activists, tipped the sporadic violence of the 1970s between left and right wings into full-scale civil war. Indirect international involvement fueled additional violence and a human rights crisis. The Salvadoran conflict followed the victory of the Sandinista revolution in Nicaragua and the final years of the Cold War. This was seen by the U.S. government as a serious threat of communist expansion in the region, prompting it to increase its military aid to the government and right-wing groups. In contrast, countries from the Eastern Bloc, in particular the Soviet Union, were crucial allies to the leftist factions.

The full-fledged war lasted for 12 years and resulted in more than 80,000 deaths. Given the small size of the population at the time of the war (around 4.6 million), the death toll is substantial,

corresponding to an average homicide rate of approximately 150 deaths per 100,000 inhabitants. Beyond this burden of death, 8,000 disappearances were recorded, and more than a million people (nearly 22% of the pre-war national population) were forcibly displaced internally (Benítez Manaut, 1988). Children were recruited as guerilla fighters, and death squads deliberately targeted civilians in rural villages and urban centers. In addition to the human costs, the conflict led to widespread devastation and destruction of key infrastructure. The intensity of the conflict peaked in years 1982 and 1983. From 1980 through 1992 the annual GDP per capita growth averaged -1.9% with a lower peak of -13.3% in 1980, and annual inflation averaged 18.1% with a high peak of 31.9% in 1986 (World Development Indicators, 2019). Estimates based on synthetic counterfactual methods estimate an average annual loss of GDP per capita of 21.5% during the period of the conflict (Costalli et al. 2017).

Four different datasets, including those produced by the Commission for Human Rights in El Salvador, the files of the legal aid office of the Archbishopric of San Salvador and the acts of violence reported directly and by other organizations to the United Nations sponsored Truth Commission for El Salvador, concur that the first 3 years (1981-1983) represent the most violent period of the civil war (Hoover Green and Ball, 2019). During this period, the USIP's Commission on the Truth received direct complaints concerning 5,375 victims of serious acts of violence (1993); and at least 164,297 displaced persons were reported in 1981 (Montes, 1986).

However, in computations based on our own collected data for the years 1981 to 1985 (our sources of data include World Health Organization reports, historic municipal records and local newspaper reports about incidents at the time of the civil war), we assessed the number of deaths due to war operations at 17,912, the number of homicides at 10,635, and the number of displaced persons at 204,805. Figure 1 shows a map with the number of deaths by municipality due to war between 1981 and 1985. By 1985, 171 of the 262 municipalities in the country, 65.2% of the total, had been (directly) affected by the war.

3. Data

We use two sources of data for this paper. The first is the Salvadoran National Population and Housing Census, collected by the National Institute of Statistics and Census (DIGESTYC)

between May 12 and 25, 2007. The census surveyed close to 1.7 million households, which corresponds to an official count of approximately 5.7 million inhabitants. The instrument used for this paper asked questions about the characteristics of the dwelling (i.e., its geographic location, ownership, construction materials, access to basic services, among others), household composition and structure, ownership of basic assets and individual-level variables such as demographics (including ethnicity), school attainment, health status, labor participation, occupation, type of job, hours worked, remittances, migration and if the last-born child is still alive. Additionally, the census collected information on the date, department and municipality of birth for each individual counted.

We use a 10% random sample of the census to implement our empirical analysis. Table 1 shows how individuals within the sample are classified based on their cohort and district of birth. Summary statistics of the main variables used in this paper, including the dependent variables of interest, are shown in Table 2. Statistics related with human capital show evidence that 79.8% of the Salvadoran population can read and write, and most of them attend or attended an educational center (77.9%). On average, the total years of education for this population is 8.1 years. Labor market indicators show that 49.5% is employed and 25.9% is underemployed (working fewer than 40 hours per week). Internal migration has been important too, with 29.1% migrated, and 9.6% migrating during the civil war. Finally, population characteristics show that 54.9% of the population are women and 2.3% are indigenous.

The second source collects data by municipality and department of victims during the period of civil war in El Salvador. The database contains different categories of victims between 1981 and 1985: homicide, suicide, transit accident, war victim, and displaced person. This study uses war victims and homicides as indicators of violence during the civil war. Evidence shows that during the civil war more than 76% of the victims recorded died because of war or homicide.

Not all departments faced the same intensity of violence. This is reflected in the variation of homicide rates across departments. In order to identify the most affected departments without defining an arbitrary threshold, this work uses a cluster analysis method which allows us to identify the geographical areas with high and low intensities of violence. In particular, this paper clusters

departments according to the number of victims.[2] The analysis is robust to different clustering techniques, outliers, and misclassification.[3]

Finally, to test for endogenous sorting, we conducted empirical analysis on a Census sample collected before the Civil War. To verify that the shock was indeed conditionally random and that families across departments were equally likely to be exposed to changes in violence, we compared descriptive statistics across departments.[4] In this analysis we found that there were no major differences across departments before the Civil War, which suggests that households across departments were equally exposed to changes in violence at the time of the conflict. These tables (Tables A8-A13) can be found in the online appendix.

We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity during the first five years of the war (1981-1985), the most violent period of the whole conflict. Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. Basically, the empirical design relies on two sources of variation: i) across space, i.e., comparison of identical birth cohorts (1981–1985) from "high" and "low" intensity geographic areas; and ii) across time, i.e., comparison in "high" intensity areas of treated cohorts (born between 1981 and 1985) and cohorts old enough to have completed their education at the time of the shock (born right before 1961).[5] The underlying identifying assumption is that in absence of the war, the observed differences across different cohorts in each outcome would be similar across more and less affected

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[2] For splitting the sample, we have proceeded to cluster the municipalities according to their intensity of violence. Instead of relying on an aggregate indicator or focusing on one of them individually, our multivariate procedure allows us to exploit the multi-factor nature of civil war processes. Consequently, we build the clusters using k-means, the L1-norm, and the index of Calinski and Harabasz (1974) in order to determine the optimal number of clusters, which in this case happens to be two. We run this procedure 100 times, assigning a different random seed each time. This procedure provides us with 6 potential groupings. While there is a set of municipalities that is always assigned to the same group (35 to the high intensity of violence group and 28 to the other), there are 10 municipalities that switch groups. We also group the municipalities using the composite index (univariate procedure). The clusters according to the composite index are stable and never change.

[3] Method for Cluster analysis (Calinski and Harabasz, 1974).

[4] Unfortunately, the microdata of this Census is not publicly available, and we used the report of the Census. From these tables we found that the characteristics of individuals across departments are reasonably similar.

[5] Although results were consistent when including cohorts who received the shock while in schooling age (born between 1961-1981), they were ultimately left aside from our analysis as our data availability does not allow us to know if the individuals born in 1961-1980 were in affected or non-affected districts at the time of the war. This problem would have been compromising our identification strategy.

departments. We present evidence below supporting the presence of parallel trends in labor market and schooling outcomes. The main estimation equation is specified as follows:

$$Y_{ijt} = \alpha + \beta\big(Exposed\ Cohort_t\ x\ Affected\ District_j\ \big) + \delta_t + \gamma_j + \pi'X_{ijt} + u_{ijt} \quad (1)$$

where Y_{ijt} is the outcome of interest for individual i, from cohort t and born in department j; δ_t are cohort fixed effects; γ_j are department fixed effects; X_{ijt} is a set of regional- and individual-level control variables, including regional trends[6] and gender fixed effects; and u_{ijt} is a random, idiosyncratic error term. As the name suggests, the variable "Affected District" is an indicator variable that takes value equal to one if the department of birth of individual i was among the deadliest during the war and zero otherwise. This variable captures geographical variation in the level of violence caused by the conflict as measured by the homicides and war victims between 1981 and 1985 in department j. The variable "Exposed Cohort" is an indicator variable that takes value equal to one if the individuals were born during the deadliest period of the war (1981-1985) and zero otherwise. This variable captures all the time variation of the level of violence at the time of birth. The average treatment effect β measures the impact of the war on the outcome of interest Y.

To determine the affected departments, a cluster analysis methodology was used by department. Instead of defining an arbitrary threshold, we use a multivariate procedure which exploits clusters using k-means to identify the most violent group of departments, clustering them into two groups based on the distribution of the departments' rates of homicides and war victims as a proxy for level of violence. The clusters obtained are robust to multiple variations of the methodology.

This model identifies the average impact of the war under the assumption of "common trends" between groups in the absence of conflict. That is, the estimations in this paper assume that the trajectory of the individuals born in less affected departments is a valid counterfactual of the trajectory of the individuals in the more affected departments. This paper finds that trends for cohorts born before 1981 are indeed parallel.

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[6] Regional trends are composed by the interaction of birth departments with the cohort. In this way, we are capturing the temporal effect by the age (cohort) of individuals.

Figure 2 shows an example of these trends for years of education. The figure shows the differential effect on years of education for affected individuals, relative to unaffected individuals. Such an effect is not statistically significant for all individuals who were above the age of 5 in 1980, meaning that those individuals in the control group (born between 1940 and 1961) who lived in war-affected zones were not different from individuals in the control group who lived in non-affected zones. The differential effect is significant only for those who were born up to 5 years before the civil war or during the civil war. For these individuals, we can find the effect of the civil war. In sum, this graph shows evidence in favor of the parallel trends assumption, as trends before the treatment are not different between individuals of the control group in violent and non-violent areas.

A final consideration is that individuals who survived the civil conflict may be different from those who did not. We acknowledge that this is a limitation of the identification strategy as a potential selection bias may arise from just looking at survivors. Unfortunately, we do not have pre-Civil War data to compare observables among those who died vs those who survived. Furthermore, there could also be an association between violence and fertility. This is particularly relevant if women of certain characteristics (e.g., education) are less likely to have an additional child due to changes in violence, given that it could introduce some bias in the results. To seek if such association exists, we performed an analysis similar to that for other outcomes but using the total number of children per woman as dependent variable and restricting the samples according to mothers' characteristics (literate/illiterate, attended school/not attended school). The results suggest that exposure to violence had only a mild effect[7] on the number of children born per woman for literate women and women who attended school. However, the magnitude of a potential selection bias is likely to be small, as the decrease in 0.07 only represents a decrease of 4% relative to the average number of children per woman (1.89) and as the difference between the coefficients of literate and illiterate women is not statistically different[8].

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[7] Significant at 10%, but not at 5%.

[8] p-value = 0.927

4. Empirical Analysis

4.1 Results

i) *Labor Market Outcomes*

Table 3 reports the results of estimating Equation 1 using as dependent variable several labor market outcome indicators. The model specification for each outcome includes controls for district fixed effects and regional trends[9]. We initially investigate the impact of the civil conflict on the labor engagement of individuals in the sample. The results show that two decades after the war finished, the employment rate of those born in a violent area at the time of the war was reduced by 6 percentage points due to the conflict (column 1). This impact is large in a sample where the average labor force participation is 50%, and it is statistically significant at 99% of confidence.

In columns 2, 3, and 4, we analyze the differential impact on other labor market outcomes. We find that being born in a highly violent area during the war also reduced the probability of later getting a high-skill job[10] by 5 percentage points. Our estimates indicate that in violent departments the war also increased people's future probability of underemployment by 2.6 percentage points. Finally, the war also affected the probability of migrating internationally. Exposure at birth to the civil war increased the international migration rate by almost 2 percentage points.

ii) *Human capital*

Table 4 presents the results of our main specification for the effect of war exposure on human capital accumulation. We find that being born in a violent department at the time of the war reduced the years of education by 0.8 year (column 1). These impacts represent a reduction of 11% in a sample with a mean of eight years of education. In columns 2 and 3, we analyze the differential impact on other human capital outcomes. The direction of this effect coincides with similar exercises carried out for Colombia (Duque, 2014; Fergusson and Riaño, 2020), Guatemala (Chamarbagwala and Moran, 2011) and Peru (Leon, 2012) but its intensity is significantly higher than precedent evidence which records a reduction of 0.2 to 0.3 years of education conditioned to

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[9] Results are robust to inclusion of fixed effects as shown in table A.1-A.2. of the Annex. Results are also robust to continuous specifications of the violence exposure variable as shown in tables A.3-A.4 of the Annex where main outcomes are regressed against the victims count variable.

[10] High-skill jobs include managers, professionals, technicians and associate professionals, and armed forces occupations. On average, high-skilled workers earn $4 per day while low-skilled workers earn $1.38.

having been born or been a young child in an affected district during the violent years. We find that exposure to war also reduces the literacy rate by about 8 percentage points. In addition, our estimates indicate that being born in a department with high intensity of civil war violence decreased by 8 percentage points people's probability of ever being enrolled at school. Finally, our estimations suggest that the war had a negligible effect on the probability of the last-born child not being alive, which decreased by 0.65 percentage points[11]. The effect of the war on the number of children per woman was unsignificant, even when restricting the sample based on individual characteristics (literacy, attendance to school)[12].

4.2 Differential impacts by gender, migration status and for indigenous population

Table 5, Table 6 and Table 7 show the results of our main specification for the effect of war exposure by gender, by migration status and ethnicity respectively, on both the probability of being employed and years of education. For migrants, we also analyzed the effects on the probability of being in a high-skill job and on underemployment.

Our results show that the negative effects of the war are stronger for males and for the indigenous population. For instance, Table 5 shows that having been born in a violent department reduces the probability of being employed by about 8 percentage points for males and 4 percentage points for females. Moreover, having been born in a violent department reduces the years of education by 1 year for males compared to 0.7 year of education for females.

For non-migrants, the decrease in the probability of being employed and being in a high-skill job is stronger. However, the probability of underemployment increases more among migrants. In Table 6 we find that the probability of being employed fell 7 percentage points for non-migrants and 5 percentage points for migrants. Similarly, the probability of being in a high-skill jobs decreased 5.5 percentage points for non-migrants and 3.9 percentage points for migrants. On the contrary, the probability of underemployment increased 2.8 percentage points for non-migrants and 3.5 percentage points for migrants. We also ran regressions on the impact of the civil

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[11] p-value=0.039

[12] Under certain assumptions about the quantity and quality trade-off of children, it could be argued that if women chose to have less children due to their exposure to violence, our estimates could be biased. However, results in Table A.5 of the Annex suggest that exposure to violence only has a mild, negligible effect on the number of children per woman.

war on human capital outcome, by their status of migrants or non-migrants. Such results can be found in the online appendix, in Table A7. In sum, the effects were larger for those who did not migrate than for those who did migrate.

Furthermore, in Table 7 we find that exposure to the war reduced the probability of being employed for indigenous people (11 percentage points) more than for non-indigenous (6 percentage points). Being exposed to the war had an impact on human capital accumulation, but the results for non-indigenous people are not significant and thus inconclusive.

The indigenous population represents a minority of the El Salvador population, 0.23% according to the most recent projections based on the 2007 census (ECLAC, 2014). Far from being spatially clustered, they reside all throughout the national territory occupying 13 of the 14 districts (UNICEF, 2009). The Country Technical Note on Indigenous Peoples Issues (IFAD, 2017) has already documented greater vulnerability of the indigenous population regarding their occupation. Estimates presented in that document shows that a high proportion of indigenous people carry out unpaid, independent, and domestic jobs while a lower proportion is engaged in formal jobs in the public and private sectors. Also in line with our findings, the same document reveals that the current school attendance rate for the population over 6 years of age is almost identical for the indigenous and non-indigenous population. Nevertheless, the population that never attended school is almost 8.5 percentage points higher for indigenous people, which would indicate that inequality of educational access would have been greater for past generations, and gaps are putatively narrowing.

4.3 Robustness checks

We conducted several falsification tests and robustness checks on our identification strategy. First, we estimated our main specification for cohorts whose labor and educational outcomes were not at all affected by the war. In particular, we focused on those who completed their investments in human capital accumulation by the time the war started. Therefore, we defined as "non-exposed" or "born before war" those born before 1950. Table 7 shows no effect on human capital accumulation, except for the likelihood of the last-born child not being alive for this non-exposed cohort. In this regression we find that being in a war affected district but having completed the investments in human capital before the time of the war does not yield significant impacts of the war on years of education, on literacy, nor on school attendance.

We also ran the same specification for outcomes such as age or gender, which cannot be affected by the impact of war. If the regression would yield significant effects of war on gender or age, then our results could be considered spurious. However, in Table 8 we show that the specification does not generate spurious significant coefficients, as the regression does not yield any significant results. Additionally, we simulate false locations and false times for the armed conflict. To this end, we ran our same regression 100 times with randomly generated armed conflicts (either different departments or times from the control group). In 96 of the trials our results were not significant at the 10% level. These results are exhibited in Table A.14.

Finally, we ran an alternative specification including cohorts born between 1961-1980. Tough impact on this cohort were in interesting to analyze as they were exposed to shock while in schooling age, we ruled it out of our main analysis as our data only allow us to know where the individuals were at birth and were therefore unable to know if they resided in affected or non-affected district at that specific stage of their life. Results of Tables A15-16 show that our main model is robust to the inclusion of the mentioned cohort and that there are no sample composition issues.

5. Conclusions

This paper has shown the long-lasting effects of El Salvador's civil conflict in the 1980s on employment and human capital outcomes, particularly on education and on the probability that the last-born child is not alive. Our findings are consistent with those reported in the existent literature. Cohorts that were more exposed to conflict, vis-à-vis those non-exposed or less-exposed cohorts, are more likely to remain trapped in low-income situations and have fewer labor-market opportunities due to deteriorated human capital.

The war provoked a welfare reduction for the people exposed to it as well as long-term effects for future generations. These effects have not been uniformly distributed across the society. Thus, the stronger the exposure was, the more difficult it is to make these scars disappear. In particular, these impacts would require stronger state presence and increased governance in the form of development policies aimed at reducing regional gaps in territories that were greatly affected by the civil war.

These findings call for policy actions to help victims of conflict and their descendants improve their standard of living. While many countries have instituted war reparation benefits to victims (including El Salvador), interventions targeted to actively improve education and labor market policies are recommended since they can better help to overcome the main barriers for sustained income generation. However, more research is needed to identify the best policy outcomes to improve the life quality of groups specifically affected by conflict versus others affected by recurrent economic shocks that can have different long-lasting impacts on individuals.

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7. Tables and Figures

Figure 1: Average Number of Deaths Due to War by Municipality 1981-1985
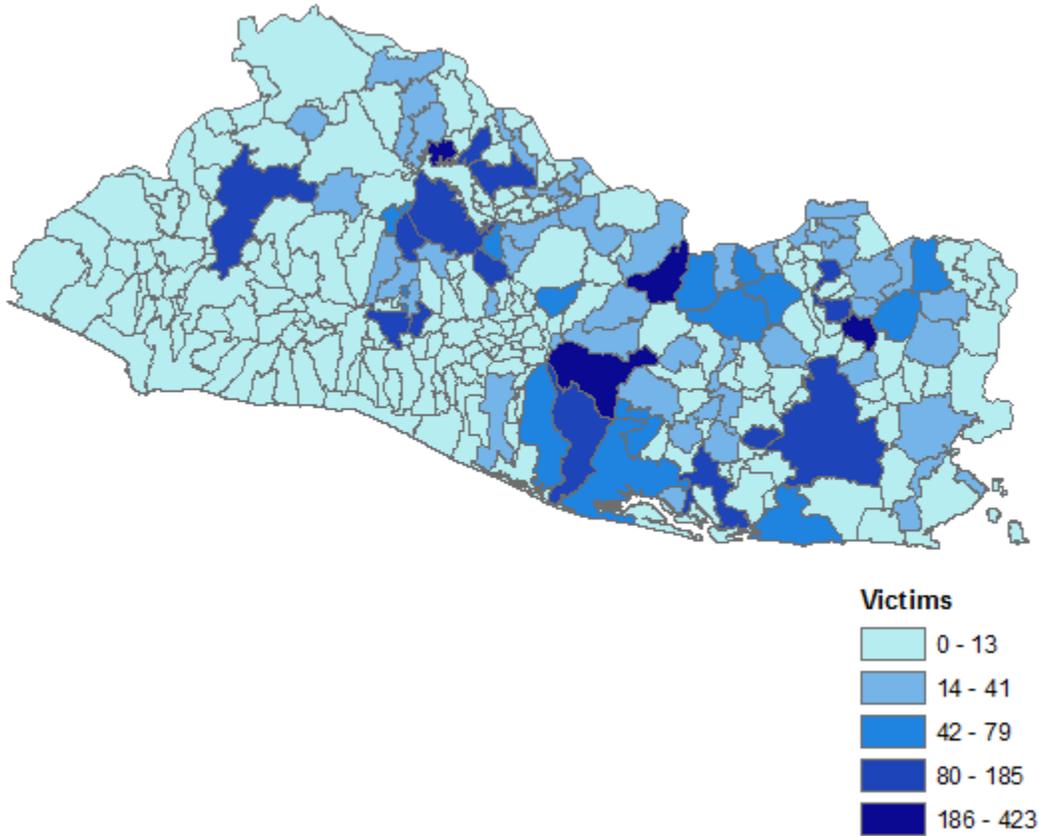
Source: Own elaboration based on municipality level violence data. This map shows the average number of death due to the war by municipality in 1981-1985.

Table 1: Sample structure

Departments		Cohort	
		Born between 1981 & 1985	Born between 1940 & 1961
	High intensity geographic area	Exposed cohort – Affected district	Non exposed cohort – Affected district
	Low intensity geographic area	Exposed cohort – Non affected district	Non exposed cohort – Non affected district

Note: Table 1 shows the sample structure of our data. Our data is composed of individuals born between 1981-1985 and individuals born between 1940-1961. Those individuals born between 1981 and 1985 belong to the exposed cohort, as they were born during the years of the civil war in El Salvador. On the contrary, individuals born between 1940 and 1961 are used as a control group, as they did not experience war around the years they were born. Our sample is also geographically differentiated between high violence and low violence departments, according to the data we have on number of deaths due to war.

Table 2: Summary Statistics, 2007 Census

	Full sample (n=1,269,242)		Affected individuals (n=85,505)		Not affected individuals (n=1,183,737)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Male	0.45	0.50	0.47	0.50	0.45	0.50
Female	0.55	0.50	0.53	0.50	0.55	0.50
Indigenous	0.00	0.05	0.00	0.04	0.00	0.05
Years of Education	8.18	4.85	10.74	4.50	7.95	4.82
Literate	0.80	0.40	0.95	0.22	0.79	0.41
Attended educational center	0.78	0.41	0.94	0.25	0.77	0.42
Employed	0.50	0.50	0.54	0.50	0.49	0.50
High-Skill Job	0.17	0.37	0.21	0.41	0.17	0.37
Underemployed (<40 hours)	0.26	0.44	0.18	0.39	0.26	0.44
Underemployed (<30 hours)	0.12	0.32	0.09	0.28	0.12	0.32
Internal migration	0.10	0.30	0.07	0.25	0.10	0.30
Migrate During the War	0.29	0.46	0.25	0.43	0.30	0.46
Household Characteristics						
International migration	0.13	0.33	0.10	0.30	0.13	0.33
Last son is alive	0.96	0.19	0.99	0.10	0.96	0.19

Notes: Table 2 shows descriptive statistics on the main characteristics of households and individuals by status of exposure to violence. High-skilled jobs include military, directors and managers, professionals, technicians. Underemployed variables take unitary values if individuals reported working less than 40 and 30 hours in the previous week. War refers to civil war. International migration takes unitary value if someone in the household migrated to another country.

Figure 2: Parallel Trends - Effects of the Civil War on Education by age
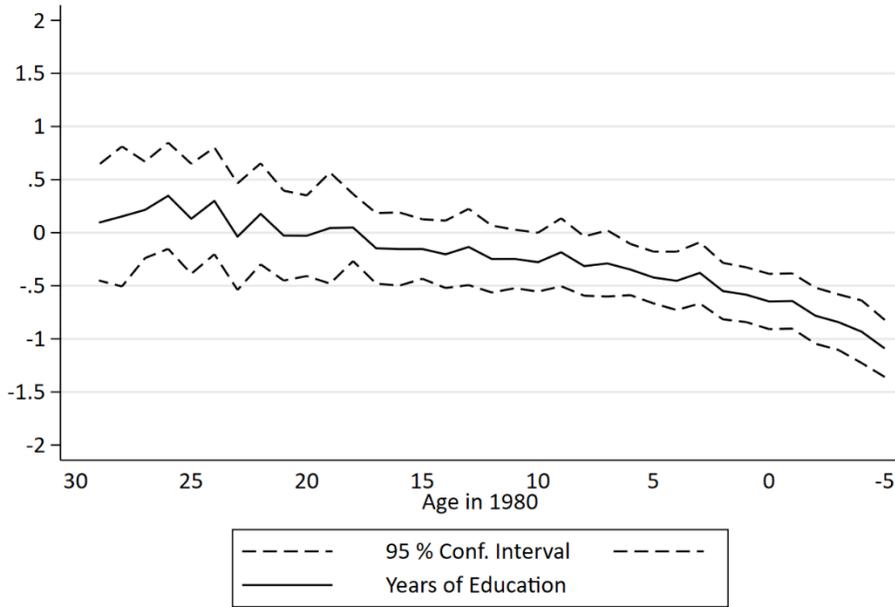
Note: Difference-in-differences estimates of the effect of violence on years of education by age in 1980. The figure plots coefficients and 95% confidence intervals for γ_k in the following regression model: $Y_{ikm} = C + \alpha_m + \rho_k + \pi_{ikm} + V_M + \sum_k (V_M + d_{ikm})\gamma_k + \varepsilon_{ikm}$, where Y_{ikm} is years of schooling of individual i from cohort k born in district m; α_m and ρ_k are district and cohort fixed effects, respectively; π_{ikm} are the regional trends; V_M equals 1 if district m faced high levels of violence during 1980-1985; and d_{ikm} is a dummy variable that equals 1 if individual i belongs to cohort k, where k represents the age of individuals in 1980 (the excluded cohort in the d_{ikm} set is individuals aged 29). The figure shows the differential effect on years of education for affected individuals. Such an effect is not statistically significant for all individuals who were above the age of 5 in 1980, meaning that those individuals in the control group (born between 1940 and 1961) who lived in war-affected zones were not different from individuals in the control group who lived in non-affected zones. The differential effect is significant only for those who were born up to 5 years before the civil war or during the civil war. For these individuals, we can find the effect of the civil war. In sum, this graph shows evidence in favor of the parallel trends assumption, as trends before the treatment are not different between individuals of the control group in violent and non-violent areas.

Table 3: Effects of the Civil War on Labor Market and Migration Outcomes

	(1)	(2)	(3)	(4)
	Employed	High-Skill Job	Underemployment	International Migration
Exposed Cohort* Affected District	-0.0602***	-0.0497***	0.0259**	0.0173*
	(0.0147)	(0.0148)	(0.0094)	(0.0094)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes
Outcome means	0.5	0.17	0.26	0.13
Observations	1,269,242	682,531	561,957	1,263,096

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** p<0.01, ** p<0.05, * p<0.1, 3) For International Migration, each person in the household was asked if at least one person of the household emigrated to another country, 4) All regressions were specified at the individual level, 5) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects.

Table 4: Effects of the Civil War on Human Capital and on the probability that the last-born child is not alive

	(1)	(2)	(3)	(4)
	Years of education	Literate	Attended school	Last-born child is not alive
Exposed Cohort*Affected District	-0.8493*** (0.2767)	-0.0804*** (0.0098)	-0.0831*** (0.0099)	-0.0065** (0.0028)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes
Outcome means	8.2	0.8	0.78	0.04
Observations	990,965	1,269,242	1,269,243	541,020

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) For "Last-born child is not alive", the regression analysis was run for the subsample of woman that had children, 4) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects.

Table 5: Effects of the Civil War by Gender

VARIABLES	Male		Female	
	(1)	(2)	(3)	(4)
	Employed	Years of education	Employed	Years of education
Exposed Cohort * Affected District	-0.0797***	-1.0064***	-0.0403**	-0.7127**
	(0.0144)	(0.2713)	(0.0141)	(0.2871)
Cohort FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes
Outcome means	0.35	8.4	0.68	8.0
Observations	571,757	464,556	697,485	526,408

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** p<0.01, ** p<0.05, * p<0.1, 3) All regressions were specified at the individual level, 4) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects. To look at heterogenous effects, we separated the sample by men and women.

Table 6: Effects of the Civil War on Labor Market Outcomes by Internal Migration

| | Migrants | | | Non Migrants | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
VARIABLES	Employed	High-Skill Job	Underemployment	Employed	High-Skill Job	Underemployment
Exposed Cohort*Affected District	-0.0497**	-0.0385**	0.0351***	-0.0699**	-0.0551***	0.0282***
	(0.0092)	(0.0083)	(0.0108)	(0.0162)	(0.0167)	(0.0090)
Gender	Yes	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes	Yes	Yes
Outcome means	0.53	0.20	0.23	0.48	0.16	0.27
Observations	371,603	213,396	561,957	897,639	469,135	385,883

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** p<0.01, ** p<0.05, * p<0.1, 3) All regressions were specified at the individual level, 4) We employ a difference-in-differences strategy that exploits exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends, and gender fixed effects.

Table 7: Effects of the Civil War for Indigenous Populations

VARIABLES	Indigenous		Non-indigenous	
	(1)	(2)	(3)	(4)
	Employed	Years of education	Employed	Years of education
Exposed Cohort*	-0.1110**	-1.5950**	-0.0602***	-0.8489***
Affected District	(0.0380)	(0.9736)	(0.0147)	(0.2776)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes
Outcome means	0.49	7.1	0.50	8.2
Observations	2,766	1,780	1,266,476	989,184

Notes: 1) Clustered at department level standard errors in parentheses. 2) *** p<0.01, ** p<0.05, * p<0.1 3) All regressions were specified at the individual level. 4) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects. To look at heterogenous effects, we separated the sample by indigenous and non-indigenous individuals.

Table 8: Effects of the Civil War on Human Capital and on the probability that the last-born child is not alive for Non-Exposed Cohorts

VARIABLES	(1) Years of education	(2) Literacy	(3) Attended to school	(4) Last-born child is not alive
Born Before War*	-0.2651	0.0305	0.0279	0.0071**
Affected District	(0.1620)	(0.0244)	(0.0262)	(0.0032)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes
Outcome means	7.4	0.74	0.71	0.05
Observations	663,519	1,066,17	1,066,175	533,552

Note: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) For "Last-born child is not alive", the regression analysis was run for the subsample of woman that had children, 4) All regressions were specified at the individual level, 5) We employ a difference-in-differences estimation for non-exposed cohorts. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects.

Table 9: Effects of the Civil War on Unrelated Outcomes

VARIABLES	(1) Age	(2) Male
Exposed Cohort*Affected District	0.0147	0.0113
	(0.0088)	(0.0077)
Gender	Yes	No
Cohort FE	Yes	Yes
District FE	Yes	Yes
Regional Trends	Yes	Yes
Outcome means	41.7	0.41
Observations	1,269,24	1,269,242

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) We conducted several falsification tests and robustness checks on our identification strategy. For this test, we ran the same specification as for the main results presented in this paper, but for outcomes such as age and gender, which cannot be affected by the impact of the war. This is because the age of a person cannot be affected by violence. In this way, by using outcomes for which the coefficients should not be significant (this is exactly what happens), we show that the specification does not generate spurious significant coefficients.

Annex

Figure A.1.: Parallel Trends Before 1981 Between Violent and Non-violent Municipalities

Years of Education for Violent and Non-Violent Municipalities by Cohort
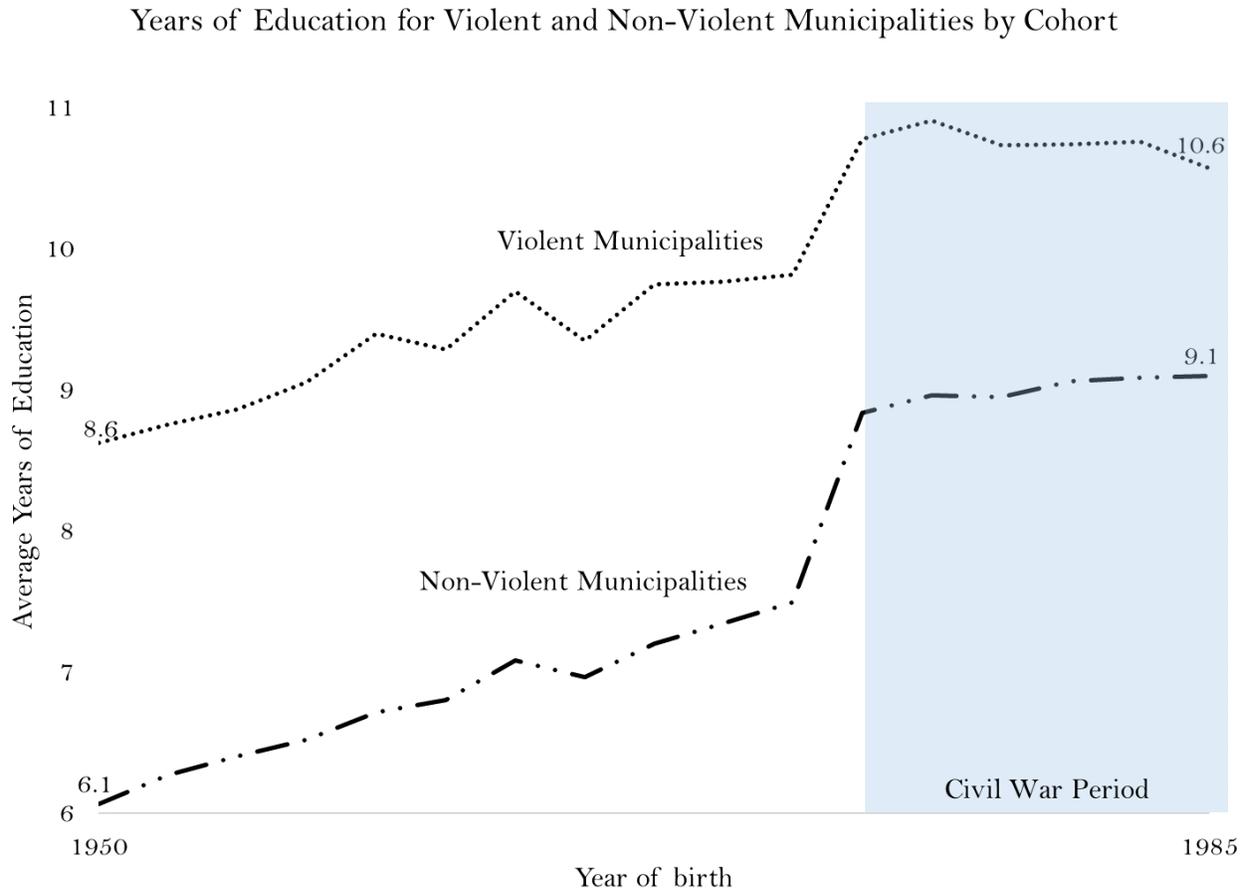
Note: Own elaboration. This figure shows the average years of education for violent and non-violent municipalities by year of birth.

Table A.1: Effects of the Civil War on Labor Market and Migration Outcomes

VARIABLES	(1) Employed	(2) High-Skill Job	(3) Underemployment	(4) International Migration
Exposed Cohort*Affected District	-0.0622***	-0.0395***	0.0286**	0.0175***
	(0.0124)	(0.0124)	(0.0108)	(0.0035)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	No	No	No	No
Regional Trends	No	No	No	No
Outcome means	0.5	0.17	0.26	0.13
Observations	1,269,242	682,531	561,957	1,263,096

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) International migration is assigned to all individuals in households where at least one member migrated to another country, 4) All regressions were specified at the individual level.

Table A.2: Effects of the Civil War on Human Capital

VARIABLES	(1) Years of education	(2) Literate	(3) Attended to school	(4) Last-born child is not alive
Exposed Cohort*Affected District	-0.6358**	-0.0882***	-0.0882***	0.0078**
	(0.2836)	(0.0166)	(0.0166)	(0.0033)
Gender	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
District FE	No	No	No	No
Regional Trends	No	No	No	No
Outcome means	8.2	0.8	0.78	0.96
Observations	990,964	1,269,242	1,269,242	541,019

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) For "Last-born child is not alive", the regression analysis was run for the subsample of woman that had children.

Table A.3: Effects of the Victims Count on Labor Market Outcomes

VARIABLES	(1) Employed	(2) High-Skill Job	(3) Underemployment
Exposed Cohort*Victims	-0.000042***	-0.0000311***	0.0000199***
	(0.0000)	(0.0000)	(0.0000)
Gender	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes
Observations	1,269,242	682,531	561,957

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) We conducted several robustness checks on our identification strategy. For this test, we ran the same specification as for the main results presented in this paper but replacing the binary violence variable with the victimization count (continuous variable). All coefficients remain statistically significant, and effects have the same direction.

Table A.4: Effects of Victims Count on Human Capital

VARIABLES	(1) Years of education	(2) Literate	(3) Attended to school
Exposed Cohort*Victims	-0.0005486***	-0.0000487***	-0.0000496***
	(0.0001)	(0.0000)	(0.0000)
Gender	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes
Observations	990,964	1,269,242	1,269,242

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) We conducted several robustness checks on our identification strategy. For this test, we ran the same specification as for the main results presented in this paper but replacing the binary violence variable with the victimization count. All coefficients remain statistically significant, and effects have the same direction.

Table A.5: Effects of the Civil War on births per woman - education

Subsample	Literate	Illiterate	Difference Literate - Illiterate	Attended to school	Never attended to school	Difference Attended - Never attended school
VARIABLES	Count of children per woman			Count of children per woman		
Exposed Cohort* Affected District	-0.0700* (0.0382)	-0.0770 (0.0478)	0.007	-0.0723* (0.0369)	-0.0434 (0.0343)	-0.0289
Gender FE	Yes	Yes	Difference of coefficients: p-value = 0.927	Yes	Yes	Difference of coefficients: p-value = 0.547
Cohort FE	Yes	Yes		Yes	Yes	
District FE	Yes	Yes		Yes	Yes	
Regional Trends	Yes	Yes		Yes	Yes	
Outcome means	1.89	1.90		1.89	1.89	
Observations	537,110	160,375		526,408	171,077	

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** p<0.01, ** p<0.05, * p<0.1, 3) All regressions were specified at the individual level, 4) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects. To look at heterogenous effects, we separated the sample by literate and illiterate, as well as those who attended school and those who not.

Table A.6: Cohort selection test

	Percent Male	Average Age	Percent Emigration	Percent Indigenous	Average years of education
Presence of violence	-0.0094	0.0004	-0.0038	-0.0002	-0.1033
	(0.0085)	(0.0069)	(0.0164)	(0.0003)	(0.1036)
Constant	0.4247***	66.4666***	0.2985***	0.0004	5.3706***
	(0.0299)	(0.0260)	(0.0223)	(0.0004)	(0.2828)
Department Fixed effect	Yes	Yes	Yes	Yes	Yes
Years fixed effects	Yes	Yes	Yes	Yes	Yes
Municipality specific cubic trend	Yes	Yes	Yes	Yes	Yes
Observations	16,116	16,116	16,116	16,116	14,939
R-squared	0.430	1.000	0.847	0.905	0.923

* Significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent. Standard errors clustered at the district of birth level in parentheses. Each observation represents a district x year cell, and the variable "Presence of violence" is an indicator that equals one if the district was considered to be violent in that particular year. The sample includes all people born after 1940. The table suggests that there is no cohort selection in our sample.

Table A.7: Effects of the Civil War on Human Capital by Internal Migration

VARIABLES	Migrants			Non Migrants		
	(1)	(2)	(3)	(4)	(5)	(6)
	Years of education	Literate	Attended to school	Years of education	Literate	Attended to school
Exposed Cohort*Affected District	-0.7846***	-0.0794***	-0.0828***	-0.9048***	-0.0821***	-0.0842***
	(0.1429)	(0.0142)	(0.0139)	(0.2882)	(0.0110)	(0.0109)
Gender	Yes	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Regional Trends	Yes	Yes	Yes	Yes	Yes	Yes
Outcome means	8.3	82%	80%	8.1	79%	77%
Observations	296,435	371,603	371,603	694,529	897,639	897,639

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** p<0.01, ** p<0.05, * p<0.1, 3) All regressions were specified at the individual level, 4) We employ a difference-in-differences strategy that exploits exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends, and gender fixed effects.

Table A.8: Characteristics by department in Census 1971 - Gender

Share of women and men, by department and urban/rural region

	Total		Urban		Rural	
	Men	Women	Men	Women	Men	Women
Total	50%	50%	47%	53%	51%	49%
Ahuachapan	51%	49%	47%	53%	52%	48%
Santa Ana	50%	50%	48%	52%	51%	49%
Sonsonate	50%	50%	48%	52%	52%	48%
Chalatenango	51%	49%	50%	50%	51%	49%
La libertad	50%	50%	48%	52%	51%	49%
San Salvador	47%	53%	46%	54%	50%	50%
Cuscatlan	50%	50%	47%	53%	51%	49%
La Paz	50%	50%	48%	52%	51%	49%
Cabañas	50%	50%	48%	52%	51%	49%
San Vicente	51%	49%	48%	52%	51%	49%
Usulutan	50%	50%	47%	53%	51%	49%
San Miguel	50%	50%	47%	53%	51%	49%
Morazan	50%	50%	49%	51%	51%	49%
La Unión	51%	49%	49%	51%	52%	48%

Note: Figures presented in this table are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.9: Characteristics by department in Census 1971 – Urban/rural

Share of population in urban/rural regions, by department and gender II

	Urban			Rural		
	Total	Men	Women	Total	Men	Women
Total	40%	38%	41%	60%	62%	59%
Ahuachapan	23%	21%	25%	77%	79%	75%
Santa Ana	43%	41%	45%	57%	59%	55%
Sonsonate	37%	35%	38%	63%	65%	62%
Chalatenango	27%	27%	28%	73%	73%	72%
La libertad	34%	33%	36%	66%	67%	64%
San Salvador	77%	75%	78%	23%	25%	22%
Cuscatlan	27%	25%	28%	73%	75%	72%
La Paz	29%	28%	30%	71%	72%	70%
Cabañas	17%	16%	18%	83%	84%	82%
San Vicente	29%	27%	30%	71%	73%	70%
Usulutan	27%	26%	28%	73%	74%	72%
San Miguel	34%	32%	36%	66%	68%	64%
Morazan	19%	18%	19%	81%	82%	81%
La Unión	22%	21%	23%	78%	79%	77%

Note: Figures presented in this table are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.10: Characteristics by department in Census 1971 - Marriage

Share of married population, by department and gender

	Married	
	Men	Women
Total	27%	27%
Ahuachapan	23%	24%
Santa Ana	24%	24%
Sonsonate	23%	24%
Chalatenango	31%	44%
La libertad	26%	27%
San Salvador	26%	24%
Cuscatlan	40%	39%
La Paz	28%	29%
Cabañas	42%	43%
San Vicente	32%	32%
Usulutan	22%	22%
San Miguel	24%	24%
Morazan	29%	30%
La Unión	26%	27%

Note: Figures presented in this table are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.11: Characteristics by department in Census 1971 - Literacy

Literacy rate, by department

	Literate
Total	56%
Ahuachapan	46%
Santa Ana	59%
Sonsonate	53%
Chalatenango	46%
La libertad	57%
San Salvador	80%
Cuscatlan	55%
La Paz	58%
Cabañas	43%
San Vicente	50%
Usulutan	46%
San Miguel	47%
Morazan	39%
La Unión	42%

Note: Figures presented on Table A.12 are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.12: Characteristics by department in Census 1971 - Education

	Primary	Median	University	Completed University	No education	Other
			Educational level, by department			
Total	55%	14%	1%	1%	28%	1%
Ahuachapan	56%	10%	0%	0%	32%	2%
Santa Ana	57%	13%	1%	0%	28%	1%
Sonsonate	56%	10%	0%	0%	33%	1%
Chalatenango	57%	5%	0%	0%	38%	0%
La libertad	54%	12%	1%	1%	31%	1%
San Salvador	56%	20%	2%	1%	20%	2%
Cuscatlan	60%	10%	0%	0%	29%	1%
La Paz	56%	9%	0%	0%	32%	1%
Cabañas	56%	9%	0%	0%	34%	1%
San Vicente	58%	10%	0%	0%	31%	1%
Usulutan	50%	10%	0%	0%	38%	1%
San Miguel	51%	11%	0%	0%	36%	1%
Morazan	52%	6%	0%	0%	41%	1%
La Unión	51%	6%	0%	0%	42%	1%

Note: Figures presented in this table are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.13: Characteristics by department in Census 1971 - Occupation

Occupation, by department		
	Occupied	Unoccupied
Total	88%	12%
Ahuachapan	88%	12%
Santa Ana	89%	11%
Sonsonate	86%	14%
Chalatenango	92%	8%
La libertad	89%	11%
San Salvador	89%	11%
Cuscatlan	89%	11%
La Paz	86%	14%
Cabañas	91%	9%
San Vicente	86%	14%
Usulutan	85%	15%
San Miguel	85%	15%
Morazan	91%	9%
La Unión	89%	11%

Note: Figures presented in this table are based on the tabulated extracts of El Salvador 1971 national census. No microdata was found.

Table A.14: Simulation of false locations and times of the armed conflict

	Did not yield significant results	Yielded significant results
Proportion of regressions	96%	4%

Note: We ran the same specification 100 times, but instead of using the correct treatment variables, we simulated false armed conflicts by randomly generating false locations and false times of the armed conflict. Of all 100 regressions of random (false) armed conflicts, only 4% showed significant results, while 96% yielded no significant results. Significance was considered at the 10% level. In this sense, we were able to reject spurious results.

Table A.15: Effects of the Civil War on Labor Market and Migration Outcome

	Employed	High-Skill Job	Underemployment	International Migration
1981-85 Cohort*Affected District	-0.0634***	-0.0539***	0.0289**	0.0203*
	(0.0167)	(0.0173)	(0.0100)	(0.0102)
1976-80 Cohort*Affected District	-0.0133	-0.0246**	0.0201***	0.0276*
	(0.0129)	(0.0096)	(0.0027)	(0.0130)
1971-75 Cohort*Affected District	0.0004	-0.0250***	0.0103**	0.0302*
	(0.0129)	(0.0053)	(0.0045)	(0.0149)
1966-70 Cohort*Affected District	0.0079	-0.0145**	0.0181***	0.0219**
	(0.0126)	(0.0051)	(0.0029)	(0.0094)
Constant	0.5384***	0.1089***	0.3473***	0.1025***
	(0.0107)	(0.0027)	(0.0025)	(0.0021)
Observations	2,300,428	1,356,697	1,114,940	2,287,969
R-squared	0.157	0.032	0.041	0.028

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) For International Migration, each person in the household was asked if at least one person of the household emigrated to another country, 4) All regressions were specified at the individual level, 5) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects.

Table A16: Effects of the Civil War on Human Capital and on the probability that the last-born child is not alive

	Years of education	Literate	Attended school	Last-born child is not alive
1981-85 Cohort*Affected District	-0.9460**	-0.0894***	-0.0924***	-0.0070**
	(0.3221)	(0.0103)	(0.0106)	(0.0030)
1976-80 Cohort*Affected District	-0.6079**	-0.0737***	-0.0750***	-0.0074***
	(0.2461)	(0.0075)	(0.0077)	(0.0022)
1971-75 Cohort*Affected District	-0.3980*	-0.0566***	-0.0584***	-0.0057**
	(0.2177)	(0.0067)	(0.0075)	(0.0021)
1966-70 Cohort*Affected District	-0.3020	-0.0388***	-0.0404***	-0.0052**
	(0.1821)	(0.0082)	(0.0095)	(0.0019)
Constant	5.5082***	0.6020***	0.5775***	0.9459***
	(0.0171)	(0.0035)	(0.0031)	(0.0000)
Observations	1,870,771	2,300,428	2,300,428	1,019,557
R-squared	0.121	0.095	0.094	0.017

Notes: 1) Clustered at department level standard errors in parentheses, 2) *** $p<0.01$, ** $p<0.05$, * $p<0.1$, 3) For "Last-born child is not alive", the regression analysis was run for the subsample of woman that had children, 4) We employ a difference-in-differences strategy that exploits plausibly exogenous, within-department cross-cohort variation in the intensity of violence during the first five years of the war (1981-1985). Identification is derived from a comparison of the outcomes of similarly aged individuals in more and less affected departments. The diff-in-diff specification includes cohort fixed effects, department fixed effects, regional trends and gender fixed effects.