

# How war-related deprivation affects political participation: Evidence from education loss in Liberia

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## Abstract

How does civil war affect citizen engagement with democracy? Civilians who live through warfare face numerous disruptions to everyday life that can have permanent effects on political engagement even after peace is achieved. This article analyzes the role of depressed living standards resulting from education loss during the Liberia Civil War as a case study of war-related deprivation. I argue that the negative effects of war on education and economic outcomes clash with the expectations that citizens have for postwar democracy, leading to strong direct consequences on the democratization process. I demonstrate support for this argument using a mixed methods approach, combining qualitative interviews with census, voting, and Afrobarometer survey data. I leverage a difference-in-differences identification strategy to causally identify the negative impact of conflict on human capital for a generation of young adults, and on the downstream consequences of disruptions in education on political participation. Results indicate that children who were of school age during the civil war are differentially less likely to have any formal schooling by the end of the war. I further find that educational deficiencies disproportionately decrease postwar job prospects, breeding resentment against the newly elected government. This extends to political participation: those who lost out on educational opportunities due to war exhibit lower political engagement and less desire to engage with democratic processes.

## Keywords

conflict, deprivation, education, political participation, reconstruction

## Introduction

How does civil war affect society and citizen interaction with politics? Civilians who live through conflict face war-induced challenges to everyday life even after peace is achieved. I examine war-related relative deprivation through education loss due to the Liberia civil war, which took place from the end of 1989 until mid-1996 and then again from 1999 to mid-2003. I argue that adverse effects on future income, brought on by violence-induced disruptions in education, has downstream consequences on political participation postwar. Among individuals who grew up in comparatively well-educated areas, a loss of educational opportunities due to conflict has led to dissatisfaction with the postwar democratic government.

Extant literature has focused on other channels by which conflict can affect civic and political participation. One strand examines the effects of shared experiences of

victimization on community-based healing after war and finds pro-social outcomes including political participation, civic engagement, and community support (Bauer et al., 2016). For example, Bellows & Miguel (2009), Gilligan, Pasquale & Samii (2014), and De Luca & Verpoorten (2015) find in Sierra Leone, Nepal, and Uganda that victimization during war increased participatory behaviors. Another strand examines divisive beliefs and finds that war can induce negative social effects for different groups of citizens: Grossman, Manekin & Miodownik (2015) show that soldiers in the Israeli Defense Force exposed to combat have significantly more negative attitudes toward negotiation with opponents. This effect of war extends to subsequent generations as a result of

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intergenerational information and attitude transmission Lupu & Peisakhin (2017).

These studies focus primarily on psychological effects of conflict on active participants and particularly victimized communities, bypassing potential effects of violence and insecurity on the everyday lives of regular citizens. However, even for those who may have escaped the brunt of violence, prolonged conflict and its transition to peace disrupt civilian activities in numerous ways and can have negative downstream consequences for postwar reconstruction. I focus on education loss due to school closures, displacement, and poverty for an entire generation of young adults. This loss of education leads to a negative income effect that lasts long after war has concluded, and adversely affects postwar reconstruction.

I argue that declines in living standards due to civil war can lead to disengagement from the political system and a loss of faith in democracy when such problems are long-lasting and cannot be remedied by the state. With respect to education loss, the reality of poor economic prospects clashes with the expectations of prosperity under peace and democracy. Postwar democratization is often accompanied by promises and expectations of development, jobs, and improved living standards – promises that are difficult to deliver for the unskilled labor force. While this economic insecurity should broadly affect the entire populace, this is acutely felt by the generation of individuals living in *educated* areas – people who grew up expecting to attend school but were denied this opportunity as a result of conflict. I theorize that, where a civilian might have already been attending school or was expected to attend school after reaching school age, educational interruptions from war leads to unexpected postwar economic insecurity in comparison to their older friends and family. This leads to personal relative deprivation stemming from vertical inequality and breeds resentment against the democratically elected government.

I provide evidence using qualitative and quantitative data from Liberia.<sup>1</sup> The length, intensity, and impact of the Liberia civil war makes it an important case with which to study the downstream effects of war. Further, the poor state of Liberia's education system prior to war, as well as its neopatrimonial legacy, allow me to examine the impact of educational loss as a result of war, rather

than simply poor education in general, on social, political, and economic outcomes. The subject remains of contemporary significance as the country grapples with the 'lost generation' – young adults who were child soldiers during the civil war (Blattman, Jamison & Sheridan, 2017; Maclay & Özerdem, 2010) – as well as the issue of rebuilding education and jobs provision for youths turning to petty crime for income.

Combining the 2008 Liberia Housing and Population Census and three rounds of Afrobarometer data, I employ a difference-in-differences (DiD) design to examine the effects of war on education and downstream political outcomes. I identify conflict's effects on education in areas with historically higher education attainment, in comparison to areas that received little education even prior to war. In better-educated areas prewar, war had a substantial negative effect on educational attainment: results show that those who were born in highly educated areas between 1979 and 1989 and were therefore of primary school age at war onset, are differentially less likely to have formal schooling in comparison to those who were born prior to 1979 in those same areas.

I further show that education deficiencies in this particular generation of young adults extends to the economic and political sphere, where they exhibit poorer economic prospects, lower political engagement, less desire to engage with democratic institutions, and a greater rejection of democracy altogether. However, there is no effect on political awareness and understanding of democratic institutions, suggesting that these effects can be attributed to lack of interest in participation. Placebo checks using society-wide outcomes previously identified in the literature, such as positive effects on community engagement and trust in fellow citizens, provide additional assurance that the identified effects are indeed cohort effects induced by war-related loss of education.

The article makes two substantive contributions. First, by focusing on the effects of conflict on quality of life and satisfaction with reconstruction efforts, the theory expands upon existing work that focuses on the consequences of conflict by looking beyond victimization and the psychological impacts of violence (Blattman, 2009; De Juan & Pierskalla, 2016; Erikson & Stoker, 2011). Though some research has explored the negative impacts of war on human capital, these studies often stop at establishing this relationship (Angrist, 1990; Eder, 2014; Leon, 2012). A subset of these has further traced the economic or health impacts of decreased human capital (Justino, 2011; Verwimp & Van Bavel, 2014); however, none to my knowledge has examined the downstream political impacts and

<sup>1</sup> I conducted fieldwork between June and August 2016 as part of a broader project on postwar state governance. This article draws from 6 focus groups totaling 32 people and interviews with 5 political elites.

the reasons for why lowered educational attainment as a result of conflict might lead to negative political outcomes.

Second, the article contextualizes the effects of education on political participation by arguing that a *loss* of educational opportunities differs from a *lack* of education. While both predict adverse consequences on political participation, these negative outcomes manifest in different ways: rather than political ignorance or being unable to engage with the state (Bleck, 2015), individuals who experience a loss of education from conflict are more likely to withdraw from politics due to perceived failures in governance (Milton & Barakat, 2016; Thyne, 2006). This argument adds to current research on the relationship between education and conflict (King, 2013; Østby & Urdal, 2010) by showing that the manner by which education levels are changed, along with the population affected by educational changes, matter.

## Theory

Civil war can have long-lasting consequences on civilian lives even after conflict has ended, impacting postwar reconstruction and development. A growing literature has focused on physical and mental health (Hoddie & Smith, 2009), which affect social cohesion at the local level (Bauer et al., 2016; Bellows & Miguel, 2009). Socialization to violence similarly has long-term legacies (Deglow (2016), while economic consequences of war are equally devastating on both the state and individual citizens. Whether due to capital destruction, loss of human capital, or reluctance to invest (Collier & Duponchel, 2013; Imai & Weinstein, 2000; Serneels & Verpoorten, 2015), the downstream consequences of negative economic outcomes bode poorly for the durability of peace. These society-wide effects may have differential effects on subgroups of citizens, such as ethnic (Grossman, Manekin & Miodownik, 2015; Hutchison, 2014) or gender (Plümper & Neumayer, 2006; Skjelsbæk, 2012) groups.

I analyze the effects of conflict on economic outcomes through the lens of youth, and identify effects by examining the loss of education. Civil war ushers in a 'lost generation' of children whose adolescence had been disrupted by war, and education loss is one devastating by-product. Shemyakina (2011), for example, finds a negative effect of conflict on education among women, while Leon (2012) and Akresh & De Walque (2008) identify a generation-wide impact of war on education in Peru and Rwanda, respectively. Expanding on the effects of such education loss, Serneels & Verpoorten (2015) demonstrate decreased economic performance

in conflict-heavy regions in Rwanda, and link this to human capital destruction in such regions. Justino (2011) similarly finds numerous ways in which small negative shocks to education can have widespread effects on long-term development through numerous avenues.

I argue that at an individual level, educational loss should have direct economic consequences postwar for the youths who were of school age, decreasing their expected economic situation (Bozzoli, Brueck & Muhumuza, 2011) and quality of life in comparison to older peers or family who received the expected amount of education. This is true for two reasons. First, education loss as a child decreases marketable skills, consequently decreasing job prospects and earning potential as an adult (Deutsch, 1961). Second, missed schooling opportunities attenuate an individual's social network, which is particularly problematic in neopatrimonial systems where individuals must utilize different networks to access state resources (Bratton & Van de Walle, 1994).

*Hypothesis 1:* Poor educational attainment among those who were of school age at war onset decreases job prospects and economic outcomes.

However, besides this economic effect, there is an important element of *class* that moderates the effects of wartime educational loss: it disproportionately affects the youth who ought to have been among the relatively well educated. In weak states where conflicts tend to occur, access to education is unequal and large swathes of the civilian population may have little to no educational opportunities due to poverty and a lack of schools. In more affluent areas however, generations of families are more likely to enjoy consistent access to education – until the onset of conflict closes down or destroys schools and forces mass civilian displacement. It is these areas that are most greatly affected by conflict's effects on education as the youths' expectations of being educated – and thus their expectations for employment – are extinguished by conflict.

Individuals who lost opportunities for education due to civil war are more likely to experience unexpected economic hardship in comparison to their older peers. They should therefore feel greater deprivation relative to comparable individuals whose education was not affected by conflict. Similar to how political grievances arise from educated populations that cannot rise up the social ladder (Samii & West, 2021), the under-educated youth from well-educated families are more likely to be frustrated by opportunities out of their reach. Notably, unlike the *group-based* relative deprivation from horizontal inequalities (Cederman, Weidmann & Gleditsch,

2011), the deprivation felt here is *personal* relative deprivation stemming from vertical inequality. This grievance does not increase the likelihood of conflict, as theories of relative deprivation and rebellion would predict (Davies, 1962; Gurr, 1970), instead, in accordance with theories of personal relative deprivation from social psychology (Kim et al., 2018), the deprivation experienced in the case of Liberia not only does not increase collective action (Walker & Mann, 1987) but instead decreases pro-social behavior (Callan et al., 2017).

Thus, as the individuals deeply feel the differences in their life trajectories between war and peace, they are more likely to reject participating in the political system or joining other citizens to engage in political change. Reflecting ‘voice’ and ‘exit’ (Hirschman, 1970), the under-educated and economically dissatisfied youth choose to exit when empty promises under the new democratic government leads them to lose faith in the political system. Cynicism develops easily in the post-conflict context, as democratization is hastened through elections and touted as a panacea for inequality and violence (Englebert & Tull, 2008; Rich & Newman, 2004). Postwar elections in non-consolidated democratic states often feature a large number of candidates who make empty campaign promises with little accountability (Flores & Nooruddin, 2012) and with little means to fulfill them due to a scarcity of resources, weak postwar institutions, and legacies of poor governance (Englebert & Tull, 2008). These realities breed cynicism (Simon, 2002): having chosen to voice their opinions in postwar elections and experiencing no improvement in life, disappointment in the democratic process and the newly elected government lead individuals to write off political participation.

While democracy may fail to live up to expectations society-wide, those who experienced education loss from warfare are particularly susceptible to cynicism. First, lower-class individuals who lack education during peacetime are not only among those least socialized to participate politically (Bleck, 2015), but are also the least likely to experience a change in their economic prospects due to a war-induced drop in education. On the other hand, those who experienced educational loss – in comparison to older literate peers who acquired at least a basic education – were unable to attain skills that they had expected. Returning to primary school after the war is unlikely for an individual who is already an adult. Instead, citizens become unskilled members of the underemployed temporary workforce (Richiardi, 2015). Resource constraints prevent the state from establishing welfare systems for the poor, while jobs for

unskilled workers tend to be only temporary if they are available at all, rather than salaried positions (Izzi, 2013). Discontent over livelihood insecurity is therefore targeted at the political system and the politicians in power who are unable to fix the problems brought on by war (Maclay & Özerdem, 2010).

*Hypothesis 2:* Education loss leads to dissatisfaction with quality of life relative to family and older peers, which results in cynicism and disengagement from the democratic process.

Notably, this line of argument suggests that losing out on educational opportunities – education *loss* – differs substantially in character from the *lack* of education that underpins existing works on education and participation. This is because the *loss* of education through conflict affects a different subpopulation, namely, a relatively elite group of civilians. While research on the links between education and participation generally emphasize causal pathways through civic-mindedness and socialization (Deutsch, 1961; Glaeser, Ponzetto & Shleifer, 2007) or through an increased ability to engage with the state (Bleck, 2015), these primarily affect rural citizens initially removed from the state. The effect of education *loss* from warfare, as examined in this article, does not run through these channels: because political socialization is easily fostered at a household or community level (Cho, Gimpel & Dyck, 2006), relatively elite individuals whose education was disrupted due to war can continue to understand politics through their educated family members and peers (Bleck, 2015). We should therefore expect that individuals who experience education loss should exhibit no less understanding of democracy or democratic processes – predictions that are linked more uniquely to modernization theory (Deutsch, 1961).

*Hypothesis 3:* Individuals who experience education loss, unlike a lack of education, should not exhibit a lower level of knowledge about democracy or socialization into democracy.

## Qualitative accounts from Liberia

The Liberia civil war remains one of the most destructive conflicts in sub-Saharan Africa. The conflict began on Christmas eve of 1989 and engulfed almost the entire country by the end of 1990. Interrebel group fighting and casualties reached their peak in 1992 and 1994. Though peace was brokered in mid-1996, conflict resumed through cross-border attacks in 1998. The

conflict reached civil-war levels in 1999, and continued until August 2003, when all sides signed the Comprehensive Peace Agreement at Accra.

Education was poor even prior to war. In the formal education system, children entered primary school at age 6 for grades 1–6, and entered secondary school for grades 7–12. Despite a longstanding law mandating education for all children, however, school enrollment levels prior to war were low while attrition rates were high. When the war began the violence and destruction led to further setbacks in educational attainment in the country. Amidst the fighting, many schools were bombed while others were seized by rebels to use as barracks or as shields against attacks. Some students and teachers were shot and killed at school (Dahn, 2009), while others were forcibly conscripted as child soldiers during school recruitment raids (Tate, 2004). Beyond fighting and destruction, displacement played a large role in reducing educational attainment.

During fieldwork, school attendance was frequently identified from focus group conversations as having been disrupted by warfare and displacement, and frustrations over loss of education was a frequently discussed topic. The situation was acutely felt by those who were already going to school but were forced to drop out of school to avoid security risks. For these individuals who lived within well-educated areas, schooling was a ‘liberty’ that was taken away from them and became an uncertainty: ‘the means of going to school – those liberties were all ceased’ (Focus Group 3). Another civilian recalled, ‘From when the war came in 1990 and we left [for my mother’s hometown] until 1992 when we returned to Monrovia, I was not going to school. I was in the third grade, to be promoted to the fourth grade [...] It affected me a lot. I had not seen myself writing [...] for many months’ (Focus Group 2).

When the first war ended in 1996, children who tried to return to school had difficulties doing so. As one civilian explained, prior to the war, his parents were able to provide school supplies and school fees. After the war, this was no longer the case: His family suffered unemployment and could no longer afford schooling. While some students were able to get donated supplies from UNICEF (United Nations Children’s Fund), others were forced to drop out in order to work and help their families (Focus Group 5). As violence returned, the situation worsened. The Human Rights Watch reported, ‘Many children who fought with [Taylor’s forces] from 2000 to 2003 were picked up in round-ups on the streets, traveling to and from schools and at their homes’ (Tate, 2004: 14). This depressed school attendance even

further, as parents took their children out of school ‘in part due to lack of money to pay school fees,’ but also out of fear that ‘children would be picked up on their way to and from school’ (Tate, 2004: 14).

Even after the second war ended in 2003 and the country started transitioning towards democratic governance in 2005, progress toward education was slow. This was true for both returning child and adult soldiers and also for children who had not taken part in war: despite international aid and schooling initiatives, 65% of primary school-aged children in Liberia were not in school in 2007, while 58% of those between the ages of 15 and 24 had not completed primary school. In 2010, the net enrollment rate in primary schools – accounting only for those of primary school age – was only 41%, and only 65% of those who entered primary school completed their primary education (Education Policy and Data Center, 2014).

The democratic government’s inability to provide for citizens’ educational needs after the civil war, despite continued promises, has bred cynicism particularly among citizens who grew up during the conflict. For this generation of young adults, the window to educate themselves had closed soon after the end of the conflict. The issue of wartime educational loss is intimately tied to disappointment over current job prospects, and complaints about a lack of jobs and education during the postwar period frequently followed discussions about education losses during the war. As one focus group participant said, ‘under this regime, we see, yes, that we are in peace [...] but we are going through crisis in our various areas of life. No jobs. A lot of youths are out of jobs, a lot of youths are out of school’ (Focus Group 2). From the government’s perspective on the other hand, reform for unskilled workers is difficult to achieve, even with joint efforts between the government and the international community. As one government official explained, ‘Do you know how challenging it is? [...] There are thousands of Liberians here saying, “there’s no jobs.” And I say, “well what can you do?” And then his response is “anything.” Hm. Have you ever read a vacancy for “anything?”’ (Party official interview #2).

As citizens and the government are at odds over what can be done, citizen disappointment is exacerbated over what is perceived as a lack of progress by the democratically elected government in the last decade with regard to education, employment, and development more broadly. Because political campaign promises are empty and both party officials as well as citizens know this (Party official interview #1), citizens grow more cynical about the democratic process and of the usefulness of

political participation. One youth, after having described his exit from education, said of today's politics: 'why would somebody come to me and say, "elect me into office so I can build [a] school for you?" [...] it is my right. It is a responsibility for every government [...] So when you bargain for these things [...] then it becomes a fraud for me' (Focus Group 2). Another said, 'the elections in Liberia, we strongly believe that most politicians when they get into state power, they will not look back' (Focus Group 4). Notably, these types of statements were more likely to come from the youth participants in the focus groups while older citizens debated voting for the 'lesser of evils' (Focus Group 2, 4).

### Data and identification strategy

Quantitative analyses focus on two substantive findings. First, the article causally identifies the effects of civil-war onset on educational attainment among those who were children during the war. Specifically, analyses focus on primary school attendance and completion since primary school education was the median level of schooling in the country prior to the war. Second, having shown strong effects of war on education, I use the estimation strategy from the first step to identify the effects of wartime education loss on economic and political outcomes. I use two data sources: (1) Liberia's 2008 National Housing and Population Census, and (2) Afrobarometer survey data from rounds 4–6 at the district level.<sup>2</sup> For all main regressions, the bandwidth includes those born between 1975 and 1989 to minimize potential confounding effects of regime change<sup>3</sup> and wartime birth. Descriptive statistics for all variables are available in the Online appendix A1.

#### *Operationalizing treatment*

In the first set of analyses, the article utilizes a difference-in-differences (DiD) identification strategy to demonstrate the negative effects of war onset on education. Specifically, since I argue that education loss from war primarily affects the *educated* areas of the country, the DiD design is particularly useful at differentiating between the control group – those who would have received little to no education regardless of war – and

those who lived in relatively well-educated areas and thus had more to lose from war onset. The DiD identification strategy requires two variables: *post*, which indicates whether the individual is in the post- or pre-treatment group, and *treat*, which indicates whether the individual is in the treated or control group.

Children attend primary school in Liberia between ages 6 and 11, so the variable *post* is defined as those who were 11 years old or younger by the start of the war in 1990.<sup>4</sup> I allow *Post* to vary according to incrementally increasing partial treatment, such that those who were 11 years old receive a *post* value of  $\frac{1}{6}$ , while those who were ages 6 or younger receive a *post* value of 1.

I construct the exogenous *treat* variable for the DiD regression using the method in Duflo (2001), which in effect calculates treatment *intensity*. Specifically, I consider the likelihood that an individual would have attended primary school if the war did not occur. To do so, for each village or locality in Liberia, I calculate the average primary school attendance rate for those who were of primary school age in the five cohorts just before the start of the war (ages 12–17 in 1990) within the locality. For these cohorts, primary schooling was not affected by war onset. This average primary school attendance rate therefore represents the most likely level of education that those ages 6–11 living in that locality would have received had war not occurred. This allows me to isolate the war's effects on educational attainment of affected age cohorts, net of other confounding factors. Data for this variable are taken from the 2008 census, which provides the age and education level at the individual level. To minimize bias from displacement, I create the treatment intensity variable using only data from those who lived in the same locality during war as they did in 2008.

The outcome of the first set of analyses is education level, *school*, defined using an ordinal scale of 0–4 where 0 = no formal schooling, 1 = some primary school, 2 = completed primary school, 3 = some secondary school, and 4 = completed secondary school. Main results for DiD analyses use the full census sample, collapsed to a locality–age unit of analysis: For each locality, the mean education level for each age within the locality is taken as the outcome variable. The main DiD equation is:

<sup>2</sup> The Afrobarometer survey is a nationally representative survey conducted in selected sub-Saharan African countries. Afrobarometer began conducting surveys in Liberia since its fourth round in 2008.

<sup>3</sup> All would have been educated under President Doe's regime from 1981 (6 years old) onward.

<sup>4</sup> The war began on 24 December 1989; I consider war onset to be 1990 since the start date took place at the very end of 1989, and did not spread beyond the initial attack to other areas of the country until 1990.

$$\text{meanschool}_{b,l} = \tau(\text{post}_b \times \text{intensity}_l) + \beta \text{intensity}_l + \kappa_b + \eta_l + \epsilon_{b,l} \quad (1)$$

where  $b$  is the birth cohort and  $l$  is the locality. The regression is weighted by birth cohort population size within the locality, and standard errors are clustered at the locality level.

Further, since the second set of analyses uses individual respondent-level Afrobarometer data to estimate the effects of education on political outcomes, I also show that the DiD treatment effect is robust when limited to the Afrobarometer sample. Here, *intensity* is defined using the census data at the district level to reduce miss- ingness – rather than locality level – since matching at the locality level would have resulted in numerous unmatchable observations; however, the variable is allowed to vary according to gender such that women have a different *intensity* level than men. Given the dis- parate education levels of males and females, this allows a more precise identification of the effects of war on edu- cation. The Afrobarometer DiD equation is:

$$\text{school}_{i,b,d,y} = \tau(\text{post}_b \times \text{intensity}_d) + \beta \text{intensity}_d + X_i \gamma + \kappa_b + \eta_d + \zeta_y + \epsilon_{i,b,d,y} \quad (2)$$

where  $i$  is the individual respondent,  $\kappa_b$  denotes birth cohort fixed effects,  $\eta_d$  is district-gender fixed effects, and  $\zeta_y$  is survey year fixed effects. The Afrobarometer equation also includes the control for urbanity ( $X_i \gamma$ ), and standard errors are clustered at the district level.

For causal identification using the DiD strategy, par- allel pre-treatment trends must be satisfied to ascertain that there are no confounding causal channels. First, I check for confounders using two placebo cutoff dates, 1965 and 1970, estimated using the same bandwidth and estimation equation. Results in Online appendix A3 show that treatment induces a positive rather than negative effect using the sample and no effect using the Afrobarometer sample.<sup>5</sup> Second, I plot the mean educa- tion level for those who live in areas that have above 50th, 75th, and 90th percentile treatment values in com- parison to those who live in areas below the correspond- ing percentile treatment values across birth cohorts (Online appendix A2). Parallel trends in the census data

<sup>5</sup> Areas with higher education by 1975 (when treatment intensity was defined) may have had higher levels of educational development earlier on, which led to the high levels of education by 1970.

are visually satisfactory, and the plots further show that wartime educational loss is primarily affecting children in areas that previously had especially high education, as the drop in education becomes steeper with an increase in percentile. While the Afrobarometer sample shows greater noise in the data due to a small number of obser- vations for each birth cohort, the trend lines follow sim- ilar patterns.

#### *Political and economic outcome variables*

The DiD identification strategy causally identifies the effect of war on primary school education loss. I then identify the effect of this loss on political and economic outcomes using the same DiD identification equation. In this case, this mean that the *post*  $\times$  *intensity* variable acts as a proxy for lower education to estimate the effects of wartime education loss on politics.<sup>6</sup> As I show later, this strategy allows me to isolate the cohort effects through only education, as the estimates would be unaf- fected by other consequences of war such as socialization, trauma, or social capital. The equation is:

$$\text{outcome}_{i,b,d,y} = \tau(\text{post}_b \times \text{intensity}_d) + \beta \text{intensity}_d + X_i \gamma + \kappa_b + \eta_d + \zeta_y + \epsilon_{i,b,d,y} \quad (3)$$

where  $i$  is the individual respondent,  $\kappa_b$  denotes birth cohort fixed effects,  $\eta_d$  is district-gender fixed effects,  $X_i \gamma$  is urban fixed effects, and  $\zeta_y$  is survey year fixed effects. Standard errors are clustered at the district level.

Economic effects of war through education are esti- mated using the following variables. First, I use the individual-level census data to create *share employed*, which is the share of each birth cohort within each locality that is employed. There is no clear distinction between full-time and part-time employment in the cen- sus; thus, I use the Afrobarometer data for a wider range of individual-level economic outcomes. I replicate the full employment variable within the Afrobarometer sam- ple, and also create a *some employment* variable, which denotes whether the individual is employed in some

<sup>6</sup> An instrumental variable (IV) identification method would allow a more causal interpretation; however, the sample of Afrobarometer respondents born between 1975 and 1989 is small, resulting in a weak first stage  $F$ -statistic in a subset of the results. I therefore show IV results as a robustness check in the Online appendix using two samples – with respondents born in 1975–1989 (Online appendix A6), and with those born 1970–1994 (Online appendix A7). The latter regressions have appropriately high  $F$ -statistics due to the larger sample size. Both sets of IV results match the interpretations from the reduced-form regressions estimates.

capacity. I finally create an index of whether the individual lacks access to necessities (food, water, medicine, fuel, and cash income), and an index of whether the individual owns basic assets (radio, TV, vehicle).

To measure interest and participation in politics for Hypothesis 2, I create the following variables: first, I use the 2014 voter register, which provides the names, ages, and polling locations, to estimate voter registration behavior. Since the voter register does not record the locality in which each individual lives, I follow Bowles, Larreguy & Liu (2020) and assign each census locality to each polling location based on closest distance. I aggregate the population count for each birth year at the precinct level using the census data, and calculate, first, the population share of each birth cohort within the precinct. Second, I calculate the population share of each birth cohort who registered to vote within the precinct. For each birth cohort, I take the difference between the two population shares to calculate voter *representation*:

$$\text{representation} = \frac{\text{registered pop. of birth cohort}}{\text{total registered pop. in precinct}} - \frac{\text{pop. of birth cohort}}{\text{total pop. in precinct}} \quad (4)$$

This variable aims to capture how likely each birth cohort is to register to vote in relation to other birth cohorts: A negative value indicates that the birth cohort registers to vote less than their population share whereas a positive value indicates that the birth cohort registers to vote in greater proportion than other years. A positive value is thus interpreted as being more likely to register to vote. Since *voter registration* varies at the precinct-age level, the treatment *intensity* variable is redefined at the precinct level for this analysis, and regressions include precinct fixed effects with precinct clustered standard errors.

Finally, I use the Afrobarometer surveys to estimate the effect of conflict on three types of political engagement: (1) election outcomes, which include views on electoral processes, as well as actual participation in the election process; (2) participation and interest in politics *outside* of elections, including whether the respondent discusses politics with others, whether they are interested in public affairs, and whether they contact various types of government officials; (3) preference for democracy as a political regime. The variables used to create these indices are available in Online appendix A1.

## Results

This section first presents the effect of war on education. I then show the effect of war on economic and political

outcomes, through the channel of wartime educational loss.

### *Effect of war on education*

Table I presents estimates for the DiD regression results for the effects of war on educational attainment. In both the census sample and the Afrobarometer sample, children who were of primary school age by war onset are more likely to have less schooling than those born just before that cutoff. Effects are substantive in size: When estimated using the full census data, being fully treated by war onset – i.e., being 6 years old or younger in a highly educated locality – is associated with a -0.613 decrease in education where education is measured from a 0 to 4 scale. Effects are larger in the Afrobarometer sample, where treatment is defined at the district rather than locality level: Students lose almost an entire level of education when fully treated with war onset.

### *Effect of war on economics and politics through education*

Next, I find evidence to support Hypothesis 1 – that the identified loss in education has led to economic insecurity in the long term. Table II presents the reduced-form outcomes for employment and other economic outcomes using census and Afrobarometer data. In the census sample, the share of each birth year that is employed decreases by about 20% among the sample that is affected by the civil war, suggesting substantive negative economic consequences for those who were of primary school age during the war. The Afrobarometer sample tells a similar story: Those who were born after 1979 are less likely to be fully employed, and this 20% effect is statistically significant at the  $p < 0.01$  level. Unlike census results, the treated population is not less likely to be employed in at least a part-time position in the Afrobarometer sample; however, the effect becomes significant if the bandwidth is increased.

In the last two columns of Table II, I check whether the treated population is less likely to have access to basic necessities such as water, food, cash, and healthcare, or whether they are less likely to own a television, radio, or vehicle. Both effects are statistically insignificant; further, *lack necessities* is defined on a scale of 0–4, so the coefficient is small. Thus, these two columns suggest no substantive effects of education on access to necessities or ownership of assets. Yet, taken in conjunction with the employment outcomes, and given the Liberian job market's temporariness and uncertainty (Richiardi, 2015), the ability to reach mean levels of necessities and assets does not necessarily mitigate economic anxiety



stemming from underemployment. Instead, lower employment levels at the time of the surveys despite ownership of assets suggest that jobs – and income – tend to fluctuate so that individuals can afford items when they are employed but are unlikely to have permanent or long-term employment.

Hypothesis 2 argues that a loss of education due to war negatively affects political participation. Table III displays the effect of being part of the treated population on voter registration. Voter *representation* captures whether people in birth cohort  $b$  are registering to vote at a higher or lower level than their population share within each precinct. Results show a negative effect of being treated on vote representation: in comparison to the outcome standard deviation, which is 0.015 for the 1975–1989 birth cohorts’ sample, this effect size is substantive. This result is robust to larger bandwidths (Online appendix A5), and the estimated effect size in Table III is on the conservative side. Placebo cutoffs (Online appendix A5) confirm that these effects are unlikely to be due to confounding factors. These results

thus suggest that wartime exposure among the young populace living in educated areas is correlated with a decrease in the likelihood of registering to vote.

I next examine election outcomes using the Afrobarometer sample. Table IV provides estimates for variables that measure political participation in elections (Panel A) and interest in politics and political participation (Panel B). Results on participation in electoral processes are in accordance with the theory presented in this article: While the effect on voting in the last election is statistically insignificant in Panel A, as shown in Table III, these individuals are less likely to register to vote. Panel A also shows negative effects on their likelihood of attending political rallies in the 2011 election (27.3% reduction), canvassing for a candidate in 2011 (31.5% reduction), and volunteering and/or working for a political candidate in 2011 (30.8% reduction).

Interest in political participation is similarly reduced among the population most affected by wartime education loss. All variables in Panel B of Table IV are coded from 0–2, where a coding of 2 indicates a stronger opinion than 1. The results suggest that the decreased likelihood of participating in electoral processes is because this particular population is more likely to reject the idea of holding elections altogether: *Rejects elections* shows that people who are of primary school age in highly educated areas are 17.3% more likely to believe that ‘since elections sometimes produce bad results, we should adopt other methods for choosing this country’s leaders’ (Afrobarometer Data, 2015). The treated population is also around 20% less likely to discuss politics and to be interested in public affairs. The final variable to measure interest is a question on whether the respondent prefers a democratic government as opposed to another regime type. Results indicate a 22.3% increase in the likelihood of rejecting democracy.

Table I. Effect of war on education

	(1) <i>Census sample</i>	(2) <i>Afrobarometer sample</i>
Post × Intensity	−0.613 *** (0.030)	−1.001 ** (0.333)
Observations	102,556	1,756
Treatment level	Locality	District

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Robust standard errors in parentheses. Census sample is clustered at the locality level; Afrobarometer sample is clustered at the district level. Both regressions include birth year fixed effects; the Afrobarometer sample also includes urbanity fixed effects, gender fixed effects, and survey year fixed effects. The census sample uses locality fixed effects, while the Afrobarometer sample uses district-gender fixed effects.

Table II. Employment

	<i>Census sample</i>		<i>Afrobarometer sample</i>		
	<i>Share employed</i>	<i>Full employment</i>	<i>Some employment</i>	<i>Lack necessities</i>	<i>Assets</i>
Post × Intensity	−0.204 *** (0.008)	−0.204 ** (0.074)	−0.074 (0.072)	−0.158 (0.277)	0.006 (0.065)
Observations	102,556	1,768	1,768	1,768	1,765
$R^2$	0.779	0.137	0.165	0.192	0.288
Treatment level	Locality	District	District	District	District

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Robust standard errors in parentheses. Census sample is clustered at the locality level; Afrobarometer sample is clustered at the district level. Both sets of regressions include birth year fixed effects; the Afrobarometer sample also includes urbanity fixed effects and survey year fixed effects. The census sample uses locality fixed effects, while the Afrobarometer sample uses district-gender fixed effects.

Thus far, I have shown results consistent with Hypothesis 2 – that individuals affected by wartime education loss are less likely to participate in formal electoral processes and are generally less likely to be interested in political participation in everyday life. I argue that this is because this particular population chooses to ‘exit’ the political system, rather than because they have higher levels of distrust for validity of the electoral process, have a lesser understanding of democratic processes, or are less socialized into democratic politics (Hypothesis 3). I show evidence for this in Table V by analyzing responses about Liberia’s political climate and election process.

As expected, the three variables in Table V – whether the respondent believes that the ballot is not secret, whether they fear intimidation, and whether they feel the need to be careful about politics – all feature negative coefficients. Since the end of civil war, Liberian elections have been largely free and fair with very few irregularities and no threat of political intimidation. Survey responses to these questions suggest an accurate awareness of politics in Liberia. It further underscores the previous set of results: that individuals who experience education loss

decline to participate politically not because they are fearful or distrust the political process, but because they view politics through a cynical lens. In short, education loss among this group of individuals does not preclude them from learning about, or understanding, democratic politics through peers.

I provide further evidence that treated individuals do *not* have a lesser understanding of democratic institutions in the postwar context. In Table VI, individuals are asked about a variety of checks and balances: (1) whether the president should obey courts; (2) whether they agree with a two-term presidency; (3) whether MPs check presidential powers; and (4) whether Parliament should make the laws. The outcomes for these variables are statistically insignificant, meaning that the youths whose education expectations were interrupted by war (‘higher’ class) and the youths who did not expect education regardless (‘lower’ class) were equally (un)affected by war. Thus, unlike political participation levels (Tables III and VI), attitudes towards democratic institutions are not affected by the deprivation felt through education loss.

Table III. Voter registration

	(1) <i>Voter representation</i>
Post × Intensity	−0.009 *** (0.002)
Observations	18,510
R <sup>2</sup>	0.357

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Robust standard errors in parentheses, clustered at the locality level. Including fixed effects: birth year and locality.

*Alternative channels*

I have argued that education loss from war depresses political participation for a generation of young adults who would otherwise have been well educated during peacetime. For these individuals, war-induced education loss decreased economic outcomes, leading to cynicism towards democratic political participation. In this section, I show additional evidence that this effect is driven by education, and not by any alternative explanations. I also show that the DiD strategy using prewar education levels as treatment intensity avoids confounding

Table IV. Election outcomes

<i>Panel A</i>	<i>Participation in Elections</i>			
	<i>Voted last election</i>	<i>Attended rally</i>	<i>Canvassed for cand.</i>	<i>Worked for cand.</i>
Post × Intensity	−0.094 (0.091)	−0.273 * (0.132)	−0.315 ** (0.118)	−0.308 ** (0.114)
Observations	1,739	1,201	1,199	1,195
R <sup>2</sup>	0.160	0.136	0.175	0.123
	<i>Interest in Politics and Democratic Participation</i>			
(r <sup>2</sup> )2–5 <i>Panel B</i>	<i>Rejects elections</i>	<i>Discuss politics</i>	<i>Interest pub. affairs</i>	<i>No dem. pref.</i>
Post × Intensity	0.356 *** (0.103)	−0.407 * (0.177)	−0.392 * (0.188)	0.223 * (0.111)
Observations	1,761	1,707	1,726	1,601
R <sup>2</sup>	0.166	0.211	0.120	0.164

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Robust standard errors in parentheses, clustered at the district level. Included fixed effects: birth year, survey year, urbanity, district-gender.

Table V. Elections are free and fair

	(1) <i>Ballot not secret</i>	(2) <i>Fears intimidation</i>	(3) <i>Careful about politics</i>
Post × Intensity	-0.456 † (0.241)	-0.314 (0.261)	-0.398 * (0.191)
Observations	1,000	1,721	1,714
R <sup>2</sup>	0.158	0.126	0.169

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ . Robust standard errors in parentheses, clustered at the district level. Included fixed effects: birth year, survey year, urbanity, district-gender.

Table VI. Democratic institutions

	(1) <i>Pres. obey courts</i>	(2) <i>Want term limits</i>	(3) <i>MP checks pres.</i>	(4) <i>Parl. makes laws</i>
Post × Intensity	-0.139 (0.238)	0.154 (0.181)	0.101 (0.173)	0.093 (0.235)
Observations	1,757	1,752	1,755	1,748
R <sup>2</sup>	0.142	0.169	0.143	0.159

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ . Robust standard errors in parentheses, clustered at the district level. Included fixed effects: birth year, survey year, urbanity, district-gender.

alternative channels such as coping, socialization, or displacement. For these theories to be confounders, we should (a) see a correlation between prewar education and conflict intensity, and (b) observe that these are effects only for those who were younger than 11 years old in previously better educated areas, rather than affecting everyone. To address (a), I plot maps of conflict intensity and prewar education intensity and show that there is little correlation (Online appendix A6). I also show that ethnicity, displacement, and rebel presence cannot predict differential effects on education (Online appendix A7), reflecting the overwhelming magnitude of the war across the entire country. To address (b), I show that the DiD strategy is not affected by other channels, such as social coping, violent socialization, or displacement.

First, civic engagement and trust should not be affected by the theory of educational loss. They should, however, increase based on theories of community coping but decrease according to theories of war trauma. Table VII Panel A presents results of indices based on Afrobarometer responses to whether individuals (1) trust their relatives and neighbors; (2) trust acquaintances and other Liberians; and (3) are members of any associations.

Table VII. Alternative channels as placebo tests

	<i>Community engagement</i>		
	<i>Civic trust (close)</i>	<i>Civic trust (far)</i>	<i>Association member</i>
<b>Panel A</b>			
Post × Intensity	0.206 (0.352)	0.046 (0.327)	-0.041 (0.106)
Observations	1,102	1,097	1,760
R <sup>2</sup>	0.228	0.170	0.138
<i>Violent socialization</i>			
<b>(f)2-4 Panel B</b>			
	<i>Used force</i>	<i>Violence justified</i>	<i>Against amnesty</i>
Post × Intensity	0.079 (0.165)	-0.161 (0.341)	-0.324 (0.523)
Observations	1,076	1,070	556
R <sup>2</sup>	0.179	0.158	0.207
<i>Displacement</i>			
<b>(f)2-4 Panel C</b>			
	<i>Displaced</i>	<i>Schooling</i>	<i>Full employment</i>
Post × Intensity	-0.273 † (0.140)		
Displaced		0.107 (0.138)	0.048 (0.033)
Observations	560	558	560
R <sup>2</sup>	0.197	0.459	0.263
Treatment level	District	District	District

†  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ . Robust standard errors in parentheses, clustered at the district level. Included fixed effects: birth year, survey year, urbanity, district-gender.

Statistically insignificant results provide additional assurance that the estimation strategy is indeed identifying educational loss on political behavior. Second, people who lived through war may be socialized into a culture of violence, and are thus more likely to use violence than engage with democracy. In Table VII, Panel B, I show that individuals are not more likely to have taken part in political violence in the past year; believe that violence is ever justified in politics; or agree that ex-combatants should be granted amnesty.

Finally, education may co-vary with degree of displacement since educated families were likely wealthier, and thus more likely to permanently leave Liberia. This is untestable, since the diaspora does not appear in the Afrobarometer surveys. However, it is unlikely that this channel would affect *only* those under 11 at the start of war – wealthier families escaping conflict are likely to leave as a family. Further, since *intensity* is created only with people who lived in their locality at the start of war, the treatment would not capture the education levels of

those who fled the country during war. A second potential confounder arises if rural civilians are more likely to be displaced to cities, artificially depressing urban education levels. This is similarly unlikely to have only affected those under 11. As further evidence, column 1 of Table VII, Panel C shows a negative coefficient, suggesting that *older* individuals living in educated areas today are more likely to have experienced displacement, meaning that displacement *inflated* education levels in host areas. A t-test of displaced individuals further shows that people living in urban areas are 12.3% less likely to have been displaced during the war than rural citizens ( $p < 0.00$ ), indicating repatriation to rural areas by 2008. Columns 2 and 3 further show that displacement status across the entire population (as opposed to only those who were of primary school age) has no effect on schooling or employment.

## Conclusion

This article argues that the negative consequences of war on education negatively affects the political participation of an entire generation of school-aged children. During the civil war in Liberia, educational attainment – previously expected by populations living in well-educated areas – became secondary to security and survival. Students were often forced to go through periods of months or years without education, resulting in major educational setbacks. Even after the war, poor economic prospects and the individual's age closes the windows of remedial education for many who were affected by the war.

I show that wartime education loss decreases quality of life: economic prospects are lowered due to a lack of skills and an inability to afford more training, while jobs for unskilled workers are temporary. In postwar countries, a democratically elected government under peace is an unsatisfactory fix since it is constrained by inadequate resources and ambitious professional politicians. Thus, the generation of children who grew up during the war direct their anger at the democratic government that cannot improve their living conditions, leading to decreased political participation and cynicism. While these problems may have little to do with democracy or the democratic process itself, the resentment against politics during a time of transition can complicate democratic consolidation.

These results suggest that democratic transition after civil war hinges on myriad factors beyond maintaining the peace. With regard to education loss, providing adult education and ensuring that young adults have resources and opportunities for remedial schooling seem

particularly important, alongside reconstructing the country's education program for new generations of children and seeking new types of formal and permanent employment for unskilled workers. In doing so, the post-war government may minimize attitudinal shifts among the population affected by education loss and aid post-war democratic transition.

## Replication data

Data and do-files for the empirical analysis in this article, along with the Online appendix, can be found at <http://www.prio.org/jpr/datasets>. All analyses were conducted using Stata MP version 16.

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