

Civil War-Induced Displacement and Human Capital

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September 23, 2025[¶]

Abstract

We study the impact of conflict-driven displacement on human capital and occupational shifts, focusing on the Mozambican civil war (1977 - 1992), during which millions of civilians were forcibly displaced to the countryside, cities, and neighboring countries. Reconstructing the movements of the entire population during the civil war, we examine the consequences of multiple displacement trajectories within a unified framework. First, we characterize the education and sectoral employment of the universe of (non)displaced. Second, we exploit variation in displacement experiences among extended kin members during their school-going years to account for shared household characteristics. Displacement is associated with significant gains in education. Third, employing a “movers design,” we show that minors displaced earlier to better districts experienced an increase in educational attainment. Focusing on moves during the intensification of the war and when comparing members of the same household, regional childhood exposure effects remain strong, whereas spatial sorting vanishes. Fourth, we jointly estimate place-based, spatial sorting, and uprootedness effects, showing that all forces are at play. Fifth, a small survey in Mozambique’s largest northern city reveals long-term effects: internally displaced report higher education than their siblings who stayed behind, but lower social capital and worse mental health relative to locals. Our findings demonstrate that displacement shocks can foster human capital accumulation, even in very low-income settings, albeit at the cost of enduring social and psychological traumas.

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[¶]We thank Pinjas Albagli, Gabriela Deschamps, Andres Fajardo-Ramirez, Guy Pincus, Michelle Rao, Vivian Liu, Tarek Abdo, Matthew O’Brien, Michael Hadjigakis, and especially Anton Grahed for excellent research assistance. We deeply appreciate feedback and detailed comments from five anonymous referees and the Editor (Andrei Shleifer). We gratefully acknowledge financial support from the International Growth Center, LBS’ Wheeler Institute for Business and Development, and Sandra Sequeira acknowledges financial support from the European Research Council’s Starting Grant (REFUGEDEV) and the Leverhulme Trust.

1 Introduction

By the end of 2024, more than 123 million people had been forcibly displaced—equivalent to one person every three to four seconds (UNHCR, 2025). This is nearly four times the number recorded in 1990, driven largely by protracted conflicts in Ukraine, Syria, Yemen, Libya, Afghanistan, the Sahel, and widespread violence in Myanmar and Venezuela. As conflicts intensify and climate volatility worsens, displacement is expected to rise further, especially in the developing world. Sub-Saharan Africa is particularly vulnerable, as shown by recent episodes of forced migration in Eastern Congo, North and South Sudan, Ethiopia, the Sahel, and Northern Mozambique.

Forced relocation takes multiple forms. Internally Displaced Persons (IDPs) account for roughly two-thirds of all displaced worldwide, while the remainder cross borders, typically seeking refuge in neighboring countries. Only a small fraction of people apply for asylum in high-income countries. Although international media and policymakers focus disproportionately on refugee arrivals in Europe, the United States, and other advanced economies, more than 80% of displaced people in recent years are IDPs and refugees living in low- and middle-income countries, often in fragile states. Despite the surge in displacement, rigorous empirical evidence on its short- and long-term impacts remains limited. Recent humanitarian crises are characterized by multiple, simultaneous displacement trajectories that often unfold without targeted provisions for affected populations.¹ Moreover, evidence from the more structured, post-World War resettlements in Europe may not generalize to displacement driven by civil conflict in fragile, low-income contexts.

Quantifying the impact of conflict-driven displacement on economic outcomes poses formidable identification challenges. Conflict is not random, and household characteristics can simultaneously influence displacement trajectories and related decisions such as schooling. Conditions at both the origin and destination also play a critical role.

We address these challenges by combining a movers design with within-family comparisons of displacement effects, drawing on a unique micro-census dataset that tracks the trajectories of the

¹For example, the UNHCR (2024) estimates that the escalating conflict in South Sudan has displaced 2.3 million individuals internally, while 2.4 million have fled to neighboring countries. The Congo emergency entails approximately 6.7 million IDPs and about 1.1 million refugees. The Syrian crisis resulted in more than 7.2 million IDPs and 4.8 million refugees in Turkey, Lebanon, Jordan, Iraq, and Egypt. Moreover, the empirical literature mainly zooms in on advanced economies, even though most refugees and IDPs are in the developing world. In fact, the UN estimates that 36 of the most fragile countries in the world, which account for less than 3% of global GDP, host over a third of the world's displaced.

surviving population during and after the Mozambican Civil War (1977–1992), one of the most devastating civil conflicts of the post–World War II era. During the war, roughly one-third of the population was displaced. Mozambique’s 1997 General Population Census—conducted five years after the war—documented about 700,000 individuals residing in neighboring countries at the end of the war, either in UNHCR-managed camps or in villages and informal settlements. Yet, as in many contemporary conflicts, most displaced individuals never left the country. The Census records more than one million rural-born people who sought refuge within Mozambique’s countryside or were forcibly relocated by warring parties into labor camps or “protected villages.” Hundreds of thousands of farmers managed to reach cities, while about 700,000 urban-born residents moved to other, less affected urban settings. At the same time, government villagization and food-production programs forcibly relocated roughly 100,000 city-dwellers to the countryside.

Forced displacement and migration during a devastating civil war represent a complex bundled treatment, involving profound disruptions to daily life: injury, loss of family and friends, exposure to violence, and the destruction of assets and social networks. In this context, the impact of forced displacement on human capital is *a priori* ambiguous. On the one hand, the combined effects of insecurity, violence, poverty, and the destruction of essential infrastructure can drive children—and teachers—out of school (Bertoni et al., 2019; Shemyakina, 2011; Verwimp and Van Bavel, 2014). On the other hand, displacement may encourage investment in human capital, since education is a mobile asset that cannot be expropriated. The “uprootedness hypothesis” suggests that displaced families and minorities facing repression or discrimination invest in transferable human capital rather than land or physical capital (Kessel 1958; Stigler and Becker 1977a). Education, in turn, may facilitate integration into new communities and help offset the effects of discrimination in new environments.

However, the limited empirical evidence available (reviewed below) remains inconclusive. Some studies examine medium- to long-run outcomes, often overlooking potentially adverse short-run effects. Moreover, outcomes are likely to depend heavily on destination characteristics. Moves to areas with greater opportunities, more diversified economies, and better infrastructure can foster educational investment, while displacement to poorer or more violent regions may eliminate such gains. Selection and spatial sorting also complicate interpretation: individuals with stronger networks and higher aspirations may be more likely to move to better destinations. Although a growing literature documents

the effects of regions and neighborhoods on education, income, and intergenerational mobility, these studies focus on peaceful contexts rather than conflict-driven displacement (e.g., Chetty and Hendren 2018a, Chetty and Hendren 2018b; Chyn 2018; Nakamura et al. 2022).

1.1 Results Preview

In this paper, we reconstruct the displacement trajectories of Mozambique’s entire surviving population (approximately 12 million people) during the Civil War to examine the consequences of conflict-induced mobility and to investigate underlying mechanisms within a unified empirical setting.

Our analysis proceeds in five steps. First, we present correlational evidence linking the displacement paths of more than five million individuals to schooling during the war and to sectoral employment five years after its end. Compared to rural non-displaced peers from the same district, IDPs residing in a different district at the end of the war obtained more schooling, particularly if they fled to cities and towns. Even those forcibly relocated to rural areas by rebels or government forces show educational gains relative to those who stayed behind. Urban-born individuals who moved to other (often larger) cities also attained more schooling. In contrast, city dwellers who were forcibly relocated to the countryside, mainly through the government’s villagization and food-production programs, were less likely to complete primary education. These educational gains appear to be associated with a shift from agriculture into services, suggesting that conflict-driven displacement and human capital accumulation could potentially contribute to structural transformation (Porzio et al., 2022).

Cross-sectional variation in education and employment across displacement trajectories may reflect three underlying mechanisms: i) place-based effects, from moving to more developed, safer, and higher human capital districts; ii) spatial sorting, as families with stronger aspirations, networks, or risk tolerance relocate to better opportunities; and iii) uprootedness effects, whereby displacement alters attitudes and incentives toward investing in transferable human capital, with education serving both as a portable asset and a means of integration into host communities.

Second, we focus on households in 1997 with extended family members who were in separate districts during the war to address household-level factors such as ambitions, preferences for integration into new communities, and religious or ethnic background, all of which likely shaped displacement trajectories and educational and occupational outcomes. Studying separated minors is also valuable in

its own right, as separation is a devastating yet defining feature of many contemporary conflicts (Gluck and Alalem, 2020). While within-household comparisons help mitigate selection concerns, they also face limitations: variation is inherently restricted, measurement error may be amplified, and potential spillover effects among minors from the same family can bias estimates. Our findings from this within-family analysis are broadly consistent with the patterns observed in the population-level correlational analysis. Rural-born children displaced to cities or towns were more likely to complete primary and even secondary school and to work in services after the war. Consistent with the uprootedness hypothesis, displacement to other poor and insecure rural districts also raised schooling, despite high disruption costs. In our within-family sample, externally displaced people (refugees in neighboring countries) have similarly low education to children from the same family who stayed in Mozambique, but are less likely to work in agriculture.

Third, following the semi-parametric design of Chetty and Hendren (2018a), which leverages age-specific variation in displacement across children together with differences in cohort-specific human capital between origin and destination, we separately identify and quantify “spatial sorting” and “childhood regional exposure” effects. An additional year of childhood exposure to a higher human capital environment (among non-movers) before ages 14–15 raises the probability of completing primary school by roughly 2–3 percentage points, implying a 25–35 percentage-point gap between children displaced in early childhood rather than in adolescence. The estimates also reveal substantial selection: about half of the observed exposure effects are accounted for when considering all wartime moves. Quantitatively, the magnitudes of both childhood exposure and spatial sorting are comparable to estimates from 28 African countries based on moves during peaceful times (Alesina et al., 2021, 2023). However, spatial sorting falls sharply (while place-based effects remain stable) when focusing on moves during the most conflict-intensive years and when comparing siblings and relatives.

Fourth, we develop a methodology that integrates the movers’ design with the within-household approach to jointly estimate, “childhood regional exposure effects”, “uprootedness”, and “spatial sorting.” LS and 2SLS specifications, which instrument origin–destination movements with pre-civil war migration patterns of older individuals from the same ethnicity and birthplace, indicate that all three mechanisms are at play. This holds even when focusing on moves that occurred during periods of intensified conflict.

Fifth, in 2020, we surveyed 301 residents of Nampula, Mozambique’s largest northern metropolitan area, whose population expanded sharply during the civil war. Three decades after the war, IDPs report substantially more schooling than their siblings who remained in rural areas. The education of IDPs is comparable to that of urban dwellers born and raised in Nampula, despite the significant urban-rural educational gaps that persist to this day. At the same time, IDPs exhibit markedly lower levels of civic engagement, community trust, and worse mental health than urban-born residents, underscoring both the long-run gains and the significant social and psychological costs of forced displacement.

1.2 Related Literature

Our paper mainly contributes to the literature examining the economic impact of forced displacement (see Becker and Ferrara (2019), Devictor et al. (2020), Verme and Schuettler (2021), and Becker (2022) for reviews). This work has looked primarily at resettlement in advanced economies (e.g., Friedberg 2001; Borjas 2003; Foged and Peri 2016; Borjas and Monras 2017) or at significant historical episodes, such as the relocation of millions of Germans from Eastern Europe to West Germany after World War II (Bauer et al. 2013; Bauer and Kvasnicka 2014; Peters 2022; Ciccone and Nimczik 2023); the settlement of Poles from the East (*Kresy*) to the Western regions emptied by departing ethnic Germans in 1945 (Becker et al. 2020); the resettlement of the Finnish population from areas ceded to the Soviet Union after World War II (Sarvimäki et al. 2022); and the 1923 forced population exchange between Turkey and Greece (Michalopoulos et al. 2025). While the work on the “movement” of Poland after Yalta (Becker et al. 2020), Finnish refugees from the East (Sarvimäki et al. 2022), and Greek refugees from Anatolia (Michalopoulos et al. 2025) documents positive long-run effects of forced displacement on human capital, the evidence from the ethnic German population’s move to West Germany suggests no significant effects on education, despite substantial structural transformation and agglomeration. Similarly, the evidence from Jewish history is inconclusive on the displacement-education link (Botticini and Eckstein, 2012). However, long-run analyses overlook the immediate, adverse, and disruptive effects of conflict, which are likely to be more pronounced in fragile settings.

Our contribution to this fast-growing research agenda is five-fold. First, we focus on a fragile, low-income, and weak state capacity environment, comparable to many contemporary war settings, such as the Eastern Congo, Central Ethiopia, and Northern Mozambique, rather than relatively organized

forced displacement episodes from European history, where refugees often received land, housing, and other forms of support. Second, by reconstructing from the Census the displacement paths of the universe of the surviving individuals who grew up during the civil war, we study the impact of each type of trajectory on human capital investments and occupational choices in a *unified* setting, shedding light on ongoing conflicts with both internal and external displacement from both cities and the countryside (e.g., South and North Sudan, Syria, and Ukraine). This complements the low-income country-focused literature, which often looks at a single displacement trajectory in specific settings relying on surveys.²

Third, by exploiting variation in the age of displacement among more than 300,000 individuals who moved during childhood, we estimate spatial sorting, place-based exposure, and uprootedness effects within a unified framework, which allows us to quantify their relative importance. Fourth, we account for unobservable family characteristics, which appear to be first-order, by comparing the schooling and occupational outcomes of children from the same households who experienced different displacement trajectories. Finally, we complement the Census-based results with a small survey that provides suggestive evidence of the long-term consequences of forced displacement: the positive impact on education, as well as key downsides, including worse mental health and social disengagement.

Our paper also connects to the broader literature on civil wars (see Blattman and Miguel 2010, for a survey), which yields non-conclusive evidence on its human capital impact, as some studies document a negative conflict-education correlation (e.g., Chamarbagwala and Morán 2011; Brück et al. 2019; Saing and Kazianga 2020; Fergusson et al. 2020), while others document a positive one (Chen et al. 2007; Akresh and de Walque 2008). We uncover a link between displacement, human capital, and a shift

²Verwimp et al. (2020), for example, analyzes data from 4,523 Burundian women to examine the impact of conflict-induced displacement on fertility, while Verwimp and Van Bavel (2014) documents adverse effects on education from conflict in Burundi. Sieverding et al. (2018) looks at the school enrollment of Syrian refugees in Jordan. Fransen et al. (2018) compares the education of approximately 1,500 externally displaced, IDPs, and non-displaced Burundians and finds that refugees returning from Tanzania have higher education due to increased schooling availability. Ginn (2020) compares Syrian refugees in Jordan, Iraq, and Lebanon. Justino et al. (2013) documents adverse attainment effects from conflict and displacement among 5,000 respondents in East Timor. Using panel data from approximately 1,800 Nigerians, Bertoni et al. (2019) demonstrates that conflict and displacement harm education in regions affected by Boko Haram. Fiala (2015) documents lower education and consumption among IDPs in North Uganda. Kondylis (2008) compares approximately 5,000 Rwandan refugees and non-displaced individuals across various dimensions, yielding highly unstable and heterogeneous effects. Looking at Bosnia, Kondylis (2010) finds higher unemployment and lower labor participation for refugees and IDPs, although differences in education are small; Efendic et al. (2023) documents lower education and income of Bosnian IDPs compared to stayers. Kogure and Kubo (2023) finds that Cambodian refugees in Thailand who have returned to their country of origin have higher levels of schooling than those who remained, but refugees who sought shelter in Vietnam have lower educational attainment, illustrating the role of school availability in the host country.

out of agriculture as a potential mechanism of post-conflict recovery that appears to be heterogeneous worldwide. Our focus on a specific aspect of civil warfare also relates to studies “unbundling” conflict, looking, for example, at child soldiering (Blattman and Annan 2010), bombardment (Miguel and Roland 2011, Riaño and Valencia 2020) and landmines (Chiovelli et al. 2025).

Our work establishes a novel link between conflict research, evidence on uprootedness, and the fast-growing literature on the impact of regions (and neighborhoods) on development and education (e.g., Chetty and Hendren 2018a; Chetty and Hendren 2018b, Chyn 2018, Bazzi et al. 2019, and Alesina et al. 2021; see Chyn and Katz 2021 for an overview). Rather than examining internal migration in peaceful times, we quantify the impact of conflict-induced displacement on education, yielding three new findings. First, place-based exposure effects are key for human capital accumulation, even in conflict-stricken low-income settings. Second, while spatial sorting accounts for about half of the exposure effects of younger children overall, it drops considerably during conflict years. Third, conditional on place-based effects and accounting for spatial sorting, forcibly displaced children still acquire more schooling. This suggests “uprootedness effects”, even during a highly destructive civil war in one of the poorest parts of the world.

Structure The paper is structured as follows. Section 2, describes the various types of forced population movements during the Mozambican Civil War and presents the data. Section 3 presents the correlational evidence, using the full population census, which links schooling and sectoral employment to the different displacement trajectories. Section 4 discusses the within-household estimates. Section 5 presents the analysis from the movers’ design that separately estimates spatial sorting from regional childhood exposure effects. Section 6 reports LS and 2SLS cross-sectional and within-household estimates of place-based and uprootedness effects, conditioning on spatial sorting. Section 7 presents survey-based estimates of the lasting imprints of displacement. Section 8 concludes, discussing policy lessons.

2 Historical Background, Data and Displacement

This section provides an overview of the Mozambican Civil War, describes the main data, and discusses the different displacement trajectories. In Appendix A, we present some accounts and testimonials of

children’s exposure to conflict and displacement paths while Appendix B presents summary statistics and additional descriptive evidence.

2.1 Civil War

Mozambique gained its independence from Portugal in 1974, after a decade-long war that ended with the rise to power of Mozambique’s Liberation Front (FRELIMO). Once in power, FRELIMO expelled the Portuguese, nationalized land and private enterprise, and proceeded with an ambitious rural development plan. Under a flagship villagization program, the administration forced farmers to abandon their (very) dispersed settlements and move into communal villages (*aldeias comunais*). FRELIMO provided shelter to the African National Congress and the Zimbabwean African National Union, which fought the apartheid regimes in South Africa and Rhodesia, respectively, which in turn supported the Mozambican National Resistance (RENAMO), the main armed opposition group.

In the first phase of the Civil War (1977 – 1980), RENAMO attacked military bases and infrastructure in central provinces and areas near the Zimbabwean border. In the second phase (1980 – 1986), violence accelerated and the warfare spread throughout the country as the operational capacity of the rebels improved due to increased resources. As efforts to bring South Africa and Mozambique closer failed, the war entered its third phase (1986 – 1990) marked by RENAMO’s “terror”: village burning, killings, child soldiering, and looting became widespread (Gersony, 1988), while the (limited) state apparatus collapsed. The countryside became lawless, and the war turned into an attack on the civilian population. Armed forces from Zimbabwe, Tanzania, and Malawi intervened as the humanitarian crisis escalated. Refugee outflows accelerated in the mid-late 1980s (UNHCR, 1996). In the fourth phase (1990 – 1992), conflict waned as FRELIMO introduced a constitution safeguarding civil and political rights, and South Africa’s support for RENAMO dwindled. However, given the widespread insecurity, displacement continued at a rapid pace. The end of the war in October 1992 left millions of refugees and IDPs, hundreds of thousands killed or injured, and a destroyed and mined infrastructure. Mozambique was the third poorest country in the world, with more than 85% of the population in subsistence agriculture and more than 60% illiterate (World Bank, 2020).

2.2 Data

2.2.1 1997 Population Census

Outcomes Our primary source is the 1997 Mozambican Census, the first post-war and effectively the first post-independence, as the 1980 Census only recorded population counts. The main outcome variables are educational attainment (primary, upper elementary, and secondary) and sectoral employment (manufacturing, agriculture, and services).³ We also extract individual and family characteristics, such as gender, age, household size, and child mortality, as reported by the mother.⁴ About a third (31%) of households include extended family members, such as in-laws, aunts, uncles, nieces, and nephews (Appendix Table B.4). In the within-household analysis, we focus on the trajectories of the extended family members (living together in 1997) to capture household dynamics more accurately.

Displacement Population moves were a defining feature of the conflict. Millions fled to neighboring countries, mostly Malawi and Zimbabwe, other rural districts, and cities. The 1997 Population Census allows us to reconstruct the trajectories for the surviving population, almost 11.5 million individuals six years and older, as it records the individual’s birthplace (at the admin-2 level, 218 districts), district of residence in 1992 right before the war ended, and in 1997 (at the admin-4 level, 1,187 localities).⁵ While this is one of the few censuses inquiring about war displacement, there are limitations. First, the Census does not record the year of displacement, even though, as discussed below, we can bound the possible age at which a move occurred. Second, it does not capture relocations within districts. Third, it does not track multiple moves by the same individual, even though such repeated displacements were not uncommon (UNHCR, 1996). Fourth, we lack information on refugees’ exact residence and settlement type (camps, villages, informal settlements). Fifth, the Census misses (voluntary)

³Services consist of trade, restaurants, hotel services, transport, storage, communication, finance, insurance, real estate, business services, government services, community, social, and personal services. Retail through stalls and markets (22%) and public services (48%) are the major categories.

⁴The Census does not record the employment sector for many individuals. We lack sectoral information for 41.5% (2,334,594 individuals) of the sample of 12-to 32-year-olds. However, most of the missing information regards those under 18 years old in 1997. We explored whether the sample without employment information differs systematically from the rest. As shown in Appendix Table B.3, differences are small. Overall, younger, female, and slightly more educated individuals were less likely to report employment status.

⁵We drop 3,303,261 individuals who are younger than six years old in 1997. We do not consider 741,636 individuals, aged six or older, with missing residence in 1992, or at birth (524,319 for which we have non-missing education). We explored whether observations with missing information on residence or birthplace differ from the rest. As shown in Appendix Tables B.1 to B.2, differences are small.

repatriations before 1992. Finally, the Census does not record the hundreds of thousands who died from warfare, hunger, and disease.

Timing of Displacement Given the absence of a question on the year/age of individuals' moves, we apply an imputation method to recover plausible bounds for a move. Assuming that displaced members of the same household moved from their origin (birth) district at the same time, even if not to the same place, the birth year of the oldest member *born in the district of displacement* during the Civil War (the place of residence in 1992) becomes the last possible year of the move for all displaced household members, irrespective of their place of residence in 1992. If no child is born in the displaced district, then we consider 1992 to be the upper limit for household relocation. To determine the earliest possible year of move, we consider the birth year of the youngest displaced member, who was still *born in the origin district*. We then take the midpoint between the earliest and latest possible years as the most likely year of the household's move/displacement. Using these bounds, we report specifications restricting estimation to (i) individuals with a maximum moving window of five years, (ii) those displaced between the ages of 0 and 18, and (iii) those whose midpoint of movement is post-1975, to omit pre-war movements (see Appendix B.2 for details and an example).

Family Separation Our analysis also leverages the fact that in the chaos of war, child soldiering and kidnapping raids (for forced labor), and unexpected attacks by militias and rebels often resulted in family separation. UNICEF estimated that by 1989, approximately 250,000 children were separated from their parents or siblings. A nephew or niece was under the responsibility of a household head in one out of ten households, telling of the pervasiveness of family separation during the Civil War.

2.2.2 Conflict

In the absence of a systematic database documenting all significant incidents of the Mozambican Civil War, we relied on multiple sources supplemented by original research. We extended the Uppsala Conflict Data Program Georeferenced Event Dataset (UDCP-GED) that covers the period 1989 – 1992 with information on the primary battles from Weinstein (2002), Robinson (2006), and Domingues (2011), which go back to the onset of the war. As coverage was limited, we also collected, cleaned, and geo-referenced information from FRELIMO's war cables and international news reports from

the *Foreign Broadcast Information Service*, which included violence against civilians, as well as more minor, although still deadly, battles and attacks.

2.3 Displacement Trajectories and Conflict

Samples Table 1 reports the number and the share of displaced individuals by trajectory, distinguishing between those born in urban and rural areas, for all the samples used in the analysis.⁶ Columns (1) and (2) show the tabulations for all Mozambicans born before the end of the civil war (approximately 11.5 million). Columns (3) and (4) zoom into more than 5.5 million individuals aged 12 to 32 in 1997, who made schooling decisions during the civil war.⁷ Columns (5) and (6) focus on 112,674 extended family members (siblings, cousins, relatives) aged 12-32 in 1997 in households with at least one member displaced between ages 0 and 18 in the period 1975-1992, the sample we use in Section 4. Columns (7) and (8) show the tabulations for 310,113 12-32-year-olds, who moved as minors during the civil war, the sample in Section 5. Columns (9)-(10) show the patterns in the extended sample we use in Section 6, where we extend the movers' sample to include the 12-32 years old non-displaced members of their households (if there are any). Because we leverage within-household variation in this sample, single-member families are dropped.

Non-Displaced “Non-Displaced” denotes Mozambicans residing in their district of birth at the end of the Civil War (in 1992). Given the low levels of urbanization, most (about 76%) are rural-born (6.3 million), and about 24% were born in the main cities and towns (2 million).

⁶The National Institute of Statistics classifies as urban 23 cities and 67 towns with a median population in 1980 of 56,718 and 7,740, respectively.

⁷Those born before 1965 would have completed primary school before the start of the Civil War (1977). Those born after 1985 would have started primary school once the Civil War ended (in 1992).

Table 1: **Refugees, IDPs and Non Movers.**

	Full Sample		Sample 12-32		Separated HHs		Movers Analysis		Extended	
	Observations (1)	Prop (2)	Observations (3)	Prop (4)	Observations (5)	Prop (6)	Observations (7)	Prop (8)	Observations (9)	Prop (10)
Refugees	749,416	0.07	363,557	0.06	5,319	0.05	0	0.00	0	0.00
Born Abroad	159,123	0.21	53,624	0.15	0	0.00	0	.	0	.
Refugee, Rural	527,603	0.70	275,332	0.76	4,485	0.84	0	.	0	.
Refugee, Urban	62,690	0.08	34,601	0.10	834	0.16	0	.	0	.
Internally Displaced	2,431,551	0.21	1,191,273	0.21	58,483	0.52	310,113	1.00	272,157	0.57
Internally Displaced, Rural	1,755,829	0.72	848,834	0.71	40,262	0.69	210,168	0.68	182,214	0.67
Internally Displaced, Urban	675,722	0.28	342,439	0.29	18,221	0.31	99,945	0.22	89,943	0.33
Non Displaced	8,300,267	0.72	4,071,085	0.72	48,872	0.43	0	0.00	208,709	0.43
Non Displaced, Rural	6,280,931	0.76	3,006,824	0.74	28,918	0.59	0	0.00	98,504	0.47
Non Displaced, Urban	2,019,336	0.24	1,064,261	0.26	19,954	0.41	0	0.00	110,205	0.53
Total	11,481,234		5,625,915		112,674		310,113		480,866	

Notes: The table reports the number and the share of refugees (externally displaced), internally displaced, and non-displaced individuals as recorded in the 1997 Census. In each category, we distinguish between individuals born in rural districts and urban localities, using the Census classification. Columns (1)-(2) show the tabulation for the full sample of individuals older than 5 years in 1997. Columns (3)-(4) focus on individuals aged 12-32 in 1997, while columns (5)-(6) report the sample of extended family members (siblings, cousins, relatives) aged 12-32 in 1997 in households with at least one member displaced as a minor in the period 1975-1992. Columns (7)-(8) present tabulations for the movers-design sample, comprising all internally displaced individuals who were 0–18 years old at the time of displacement between 1975 and 1992. Columns (9)-(10) extend the movers’ sample to include the 12-32 years old non-displaced members of their households (if there are any).

External Displacement The 1997 Census records overall close to 750,000 refugees in 1992, out of which 363,557 were aged 12-32 during the war.⁸ Among these, about 160,000 and 53,624 12-32-year-olds were born abroad. Approximately 526,000 (and 256,000 born between 1965 and 1985) resided in Malawi in 1992; 120,440 (59,000) in Zimbabwe; 50,000 (21,000) in South Africa, and about 54,600 (26,000) in Tanzania, Zambia, and Swaziland (Appendix Table B.5). The census does not record the exact residence abroad, but historical and UN accounts suggest that most Mozambicans in Zimbabwe settled in the five UNHCR refugee settlements. Mozambicans stayed in villages and informal settlements in Tanzania, Zambia, and Swaziland. In Malawi, refugees settled into 12 UN-run refugee camps and small towns. Figure 1-Panel A plots the share of externally displaced across birth districts (218 admin-2 units). As the map illustrates, it was mainly civilians from border areas who fled abroad. Refugees did not have the right to work, and given the scarcity of employment opportunities, they largely dependent on UN support. The UNHCR funded schools (Azevedo, 2002, p. 47), but it was widely documented that refugees lacked “*any psychological assistance, beyond basic medical care*”

⁸UNHCR (1996) and Human Rights Watch (1992) refer to about 1.5-1.7 million refugees. Historical evidence suggests that most refugees (over 84%) returned to their country and place of birth after the war (e.g., Wilson (1994), Juergensen (2000)). The smaller Census estimates reflect: (i) the high mortality in post-war Mozambique (1992-1997), with the World Bank statistics suggesting a life expectancy of 45 years in the mid-1990s, and (ii) pre-1992 returnees.

(Brennan, 1986). Azevedo (2002, p. 70) estimates that “*at least 43% of refugees had nothing to do in the camp, 12% were drunk, 19% engaged in some farming activity, 6% spent time cutting wood and selling it, and 8% traded items inside and outside the camp as a daily occupation.*” In Malawi, they often went back and forth to till their land during the agricultural season (UNHCR, 1996).

Rural to Urban Internal Displacement Small and large towns experienced a surge of IDPs during the civil war. Among those born between 1965 and 1985 in the countryside, about 440,000 sought protection in urban centers. Maputo-Matola, Beira, and Nampula, the three largest (coastal) cities, received nearly a quarter of a million IDPs. 122,897 (28%) rural-born moved to the ten smaller cities (Chimoio, Quelimane, Tete, Xai-Xai, Gurue, Maxixe, Angoche, Lichinga, Pemba, and Dondo) and 82,137 (19%) to 76 smaller towns. Figure 1 Panel *C* illustrates the spatial distribution of rural-to-urban displacement. Farmers living near coastal cities were able to reach them, while rural-born Mozambicans from the interior relocated to other rural areas (see Panel *B* and Appendix Table B.6 for details). Urban households grew as they accommodated displaced relatives. By 1997, the average urban household comprised 4.8 persons, compared to 4 in the countryside. While living conditions in the cities were challenging, there were functioning schools and hospitals.

Rural to Rural Internal Displacement 1.75 million people lived in a rural district other than their birthplace when the war ended. In the sample of 12-32 year-olds, there are 848,834 such individuals and 40,262 extended family members in separated households, displaced between their birth and adulthood. Rural-to-rural displacement was widespread as the conflict’s hotspots shifted. RENAMO relocated farmers into labor villages/camps to produce food and transport goods, while FRELIMO also forcibly moved farmers, especially during the early phases of the civil war.

Urban to Rural Internal Displacement The census records a movement of 87,359 people from urban hubs to the countryside. First, FRELIMO’s villagization scheme pushed urban dwellers into communal villages, as one of the program’s objectives was to populate areas that could fall to RENAMO. Second, in the mid-1980s, FRELIMO relocated urban dwellers to the countryside to boost food production, weaken dissent, and reduce overpopulation in cities. Historical accounts suggest, and the census data support, that these moves were permanent.

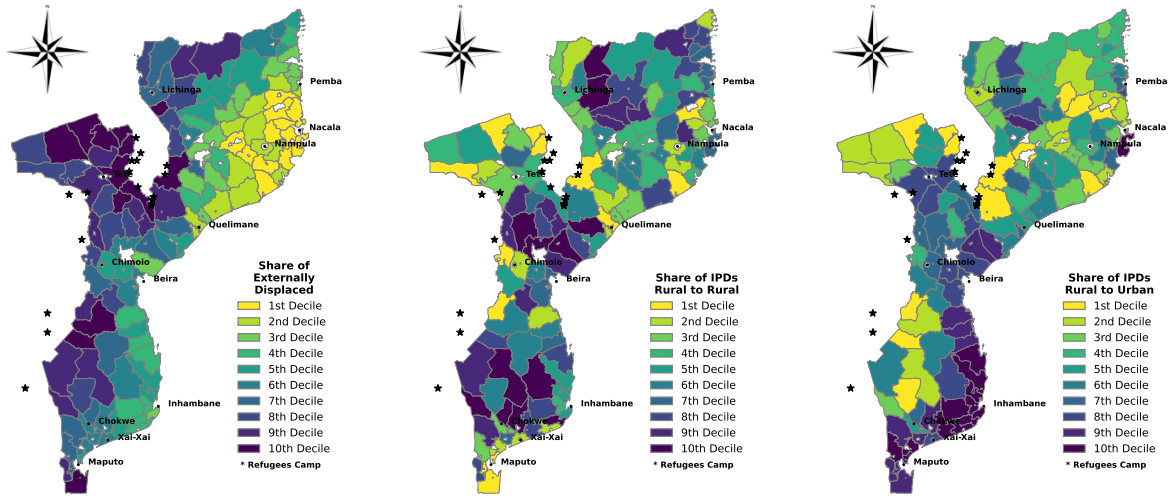


Figure 1: Displacement by District of Birth. The maps show the share of rural-born displaced Mozambicans aged 12 to 32 across 128 rural birth districts, based on the 1997 Population Census. The share is the number of displaced individuals in a given category divided by the total number of individuals aged 12 to 32 in 1997 born in that district, who would have made their schooling decisions during the civil war. The three panels correspond to distinct types of displacement among the rural-born: (i) externally displaced individuals (refugees) who resided in a neighboring country in 1992 (left panel) [mean = 0.08; median = 0; SD = 0.15]; (ii) internally displaced persons (IDPs) who, in 1992, resided in another rural district (center panel) [mean = 0.12; median = 0.10; SD = 0.10]; and (iii) IDPs who, in 1992, were living in a town or city (right panel) [mean = 0.11; median = 0.09; SD = 0.09]. Table 1 provides summary statistics and full counts by trajectory. Stars represent external refugee camps.

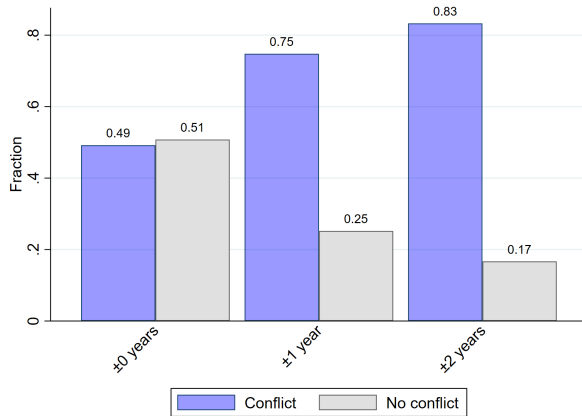
Urban to Urban Internal Displacement The census shows that over 250,000 individuals moved between urban environments, of which two-thirds reflect movements into the coastal cities (Maputo, Beira, and Nampula) from smaller towns in the interior, often attacked by RENAMO (Appendix Table B.6).

Post-War Movements In 1992-1993, UNHCR initiated one of its most extensive repatriation efforts to bring home millions of refugees and IDPs (see UNHCR 1996 for an overview). Multiple reports document high rates of return of refugees from all countries except South Africa (e.g., Juergensen, 2000; Wilson, 1994). Rates of return were lower for IDPs: a fourth of rural-born found in cities in 1992 had returned to their birth district by 1997. Three-fourths of urban-born individuals living in another city in 1992 stayed there, and only 5% returned to their birthplace (Appendix Table B.7).

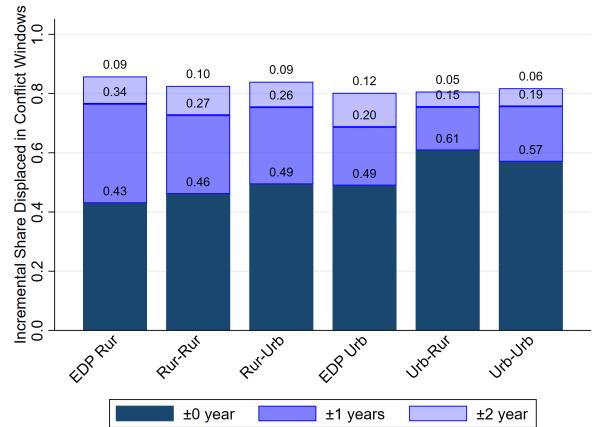
2.4 Drivers of Displacement

We explored the drivers of relocation by running linear probability models (LPMs), associating displacement with district of birth and individual characteristics. Figure 2 shows the tight link between

conflict and displacement. Panel A tabulates moves in conflict and non-conflict years for the main sample of individuals aged 12 to 32 in 1997. About half of the moves occur in the year of a significant conflict event in the birth district, although a conflict occurs in a third of the district-year panel. The cross-district mean (median) years of conflict is 5.22 (5), with a standard deviation of 3.3.⁹ When we allow for a short time window around conflict events to account for noise in conflict, measurement error in the (imputed) timing of the move, and potential anticipation, we observe that 75% (83%) of moves take place in a one(two)-year window surrounding a significant conflict event. The LPM, which conditions on individual features and (province-specific) trends, suggests that the likelihood of displacement more than doubles in the year of conflict (see Appendix Table B.9).¹⁰ Even after including birthplace fixed effects to account for otherwise unobserved district characteristics, the likelihood of moving rises by 82.4 percentage points during the conflict years. Figure 2, Panel B, reports the tabulations by the type of move. There is no significant heterogeneity.



Panel A: Share of Displacement by Timing of Move. Sample 12-32



Panel B: Share of Displacement by Time of Move and Trajectory

Figure 2: Displacement and Conflict at the time of move. Panel A plots in light blue bar the fraction of moves that happened during a conflict window (same year, ± 1 year, or ± 2 years) for the sample of individuals aged between 12 and 32. The light gray bar reports the fraction of individuals moving outside the corresponding conflict window. Panel B plots, for the sample of 12 to 32 year olds in the 1997 Census, the percentage moves in the year of conflict (blue navy), ± 1 year (blue), and ± 2 years (light blue) for: 1) rural-born externally displaced [EDP Rur]; 2) rural-born internally displaced to rural areas [Rur-Rur]; 3) rural-born IDPs displaced into urban centers [Rur-Urb]; 4) urban-born externally displaced [EDP Urb]; 5) urban-born IDPs, displaced in rural areas [Urb-Rur]; and 6) urban-born IDPs displaced into other urban locations [Urb-Urb].

⁹The average (median) number of conflict events in a district-year is 0.80 (0), with a standard deviation of 1.86. For the district-years with conflict, the average (median) is 2.40 (2), with a standard deviation of 2.57. The p90 is 5, with a maximum of 29.

¹⁰Boys and the eldest offspring in the household in 1997 are more likely to be displaced (Appendix Table B.10).

3 Correlational Evidence

We begin our empirical analysis by examining the relationship between different displacement patterns and education, as well as sectoral employment. While the cross-sectional correlations lack a causal interpretation due to selection, spatial sorting, and omitted variables, they describe the population-wide patterns—a rarity in civil war contexts. Appendix Section C reports additional results.

3.1 Specification

Given the considerable educational and employment differences between rural and urban-born individuals, we run separate specifications for each group. To isolate educational investments during the civil war (1977–1992), we focus on Mozambicans aged 12 to 32 in 1997 who were born between 1965 and 1985, hence schooling decisions were made during the civil war.

$$Y_{il} = \alpha + \beta_1 EDP_{il} + \beta_2 IDP(R - U)_{il} + \beta_3 IDP(R - R)_{il} + \nu X_i + \mu_l + \epsilon_{il} \quad (1a)$$

$$Y_{il} = \alpha + \beta_4 EDP_{il} + \beta_5 IDP(U - R)_{il} + \beta_6 IDP(U - U)_{il} + \nu X_i + \mu_l + \epsilon_{il} \quad (1b)$$

Y_{il} denotes educational attainment and employment sector for individual i , born in district l . Given the very low levels of education, our main focus is on completed primary school (5 years) and schooling years. We also show the impact of displacement on individuals who completed upper elementary (7 years) and secondary (12 years) education, as well as on whether they completed at least one year of schooling. EDP_{il} identifies externally displaced or born in a neighboring country. $IDP(R - U)_{il}$ corresponds to rural-born displaced to an urban district. $IDP(R - R)_{il}$ equals one for a rural-born residing in a different rural district at the end of the civil war. $IDP(U - R)_{il}$ and $IDP(U - U)_{il}$ denote urban-born displaced to a rural or another urban district, respectively. The vector of individual controls, X_i , includes gender, an indicator for the eldest offspring of the household head (living together in 1997), age constants, and, in some specifications, we include indicators for the individual's relationship to the household head. See Appendix Table B.4 Panel A for details of the household structure in this sample. μ_l accounts for differences in the socioeconomic environment of the district of birth. Standard errors are double clustered in the district of birth and residence in 1992

to account for spatial correlation.¹¹

3.2 Results

Table 2 reports the LS estimates for the rural-born (Panel *A*) and urban-born (Panel *B*). Columns (1)-(2) and (3)-(4) explore the association between the displacement trajectories and the likelihood of completing primary school and years of schooling.¹² Columns (5)-(8) report linear probability model (LPM) estimates looking at agriculture and service employment. Odd-numbered columns provide a test of means across displacement paths (as there are no controls), while even-numbered columns condition on gender, being the eldest young individual in the household in 1997, age fixed effects, and birth-district constants.

Rural Born The coefficient on the externally displaced indicator is close to zero, suggesting that refugees' educational outcomes are similar to that of non-movers.¹³ In contrast, IDPs moving to cities have higher schooling than non-movers of the same age, gender, and district of birth. The difference in primary school attainment is 24.4 percentage points (*pps*), higher than the average of non-movers at 12.8%. Rural-born IDPs who move to cities have almost two extra years of schooling compared to a non-mover baseline of 1.5 years. Rural-born IDPs in other rural districts also have more schooling than non-movers from their birth district: the propensity of completing primary education is 7*pps* higher, and IDPs have an extra half year of school. The patterns are similar, with the coefficients indicating larger magnitudes, when examining higher educational attainment (Appendix Table C.1): rural-born IDPs who move to cities have a 15 and 5 percentage point higher likelihood of completing upper primary and secondary schooling, respectively, than non-movers. The means for non-movers are

¹¹Clustering at the admin-3 level or adjusting with Conley's method and various cutoffs yields similar errors.

¹²We also estimated Negative Binomial and Poisson Maximum Likelihood (ML) models as schooling years are highly nonlinear with many zeros. As shown in Appendix Table C.3, the implied magnitudes are similar to the OLS estimates. Allowing for age-specific birth-origin fixed-effects (Appendix Table C.5) and conditioning on individuals' relationship to the household head (Appendix Table C.2), yields similar estimates.

¹³Reports suggest that the overwhelming majority of refugees returned after the war, as they were unable to obtain citizenship rights, and neighboring countries did not wish to retain them (UNHCR, 1996). While the stories of emigration and repatriation do not suggest selection, one may worry that returnees were systematically different from refugees who stayed in the neighboring countries. We processed data from IPUMS-International, which provides representative 10% samples of the 1998 Census in Malawi, the 2000 Census in Zambia, the 2002 Tanzanian Census, and the 1997 Mozambican Census. IPUMS does not report censuses from Swaziland, while the 2012 Zimbabwean Census is far from the end of the war. With the 10% samples, we first repeated the cross-sectional analysis and added an indicator for Mozambicans in Malawi, Tanzania, and Zambia. The results in Appendix Table C.7 do not reveal major differences between returnees and Mozambicans living in the neighboring countries.

just 3*pps* and 0.5*pps*. Rural-born displaced to other rural districts enjoy a 4*pps* (1.5) higher likelihood of at least 7 (12) years of education.

In columns (5)-(8), we explore whether the displacement paths correlate with a shift out of agriculture. On the one hand, displacement may facilitate occupational change, as IDPs and refugees lost access to land, and there could be opportunities for retail and other services in towns. On the other hand, the transition to services may have been challenging, as education levels were low and Mozambicans had been working in agriculture for generations. The cross-sectional estimates reveal that IDPs in urban areas are more likely to work in services five years after the end of the war. The coefficient is sizable (31*pps*) and drops modestly when conditioning on birthplace constants (mainly) and individual controls (27*pps*). There are also non-negligible sectoral employment shifts of 4 – 5 *pps* for IDPs moving to a rural area other than their place of birth. The employment patterns of refugees deviate weakly from those of non-movers (from the same origin). In addition, as shown in Appendix Table C.8, individuals with higher levels of schooling who were displaced were more likely to transition into service employment.

Urban Born Turning to urban-born, those in rural areas at the end of the civil war had lower education than those in cities and towns. The average years of schooling for urban-born non-movers was 3.65, with 41% of non-movers in cities having completed primary education. The drop in the likelihood of completing primary schooling for IDPs in the countryside is 9.5 – 8 percentage points and 0.7 years. The drop in the probability of completing upper primary and secondary is 5 and 1.4*pps*, against the non-movers' averages of 17.5% and 4.4% (Appendix Table C.1). The drop was similar for urban-born refugees living in neighboring countries in 1992. In contrast, movers to other urban hubs, which primarily reflect out-migration from interior towns to the big coastal cities, report a 14 – 16*pps* increase in completing primary school and 1.3 additional years of schooling, as well as a much higher likelihood of finishing upper primary and high school (Appendix Table C.1). Accounting for birthplace, gender, and age does not significantly change the coefficients. Columns (5)-(8) show that urban-born displaced into the countryside (or abroad) are more likely to work in agriculture (by 17*pps*). The signs of the estimates reverse for those moving to another city. Service (out of agriculture) employment is 0.20*pps* higher (0.23*pps* lower) compared to a baseline of 0.30 (0.57).

Table 2: Displacement Trajectories, Schooling and Employment
Cross-Sectional Estimates

	Compl. Primary (Dummy)		Years of Schooling		Agriculture Employment		Service Employment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
Externally displaced	-0.021*** [0.003]	-0.004 [0.006]	-0.253*** [0.026]	0.041 [0.054]	0.002* [0.001]	-0.013* [0.007]	-0.006*** [0.002]	0.001 [0.003]
Intern. Displ. Rural → Urban	0.296*** [0.021]	0.244*** [0.016]	2.215*** [0.162]	1.846*** [0.130]	-0.395*** [0.039]	-0.332*** [0.028]	0.308*** [0.031]	0.269*** [0.024]
Intern. Displ. Rural → Rural	0.075*** [0.010]	0.069*** [0.014]	0.589*** [0.071]	0.583*** [0.098]	-0.070*** [0.010]	-0.056*** [0.012]	0.052*** [0.007]	0.044*** [0.009]
Mean Omitted	0.128	0.128	1.488	1.488	0.918	0.918	0.042	0.042
Observations	4,184,614	4,184,614	4,184,614	4,184,614	2,712,014	2,712,014	2,712,014	2,712,014
Num Households	2,373,528	2,373,528	2,373,528	2,373,528	2,373,528	2,373,528	2,373,528	2,373,528
Panel B: Born Urban								
Externally displaced	-0.209*** [0.020]	-0.075*** [0.015]	-1.684*** [0.162]	-0.523*** [0.109]	0.247*** [0.061]	0.064*** [0.023]	-0.193*** [0.052]	-0.058*** [0.020]
Intern. Displ. Urban → Rural	-0.095** [0.042]	-0.083** [0.032]	-0.690** [0.289]	-0.555** [0.219]	0.174** [0.087]	0.172** [0.068]	-0.133** [0.067]	-0.135** [0.056]
Intern. Displ. Urban → Urban	0.138*** [0.005]	0.157*** [0.029]	1.041*** [0.000]	1.286*** [0.234]	-0.262*** [0.015]	-0.231*** [0.051]	0.223*** [0.014]	0.203*** [0.048]
Mean Omitted	0.412	0.412	3.653	3.653	0.572	0.572	0.298	0.298
Observations	1,441,301	1,441,301	1,441,301	1,441,301	579,307	579,307	579,307	579,307
Num Households	724,817	724,817	724,817	724,817	724,817	724,817	724,817	724,817
Omitted Category	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.
Controls	No	Yes	No	Yes	No	Yes	No	Yes
District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The table reports estimates associating schooling and employment outcomes with various displacement trajectories for individuals aged between 12 and 32 in 1997. The dependent variable in (1)-(2) is an indicator variable that takes the value of one for individuals who have completed primary school and zero otherwise. The dependent variable in (3)-(4) is individual years of schooling. (5)-(6) and (7)-(8) are indicator variables that take a value of 1 for employment in agriculture and the service sector, respectively, and zero otherwise. Even numbered columns additionally control for a gender indicator, an indicator for the eldest child of the household head, age fixed effects, and district of birth constants. Panel A shows trajectories for rural-born Mozambicans and panel B shows urban born Mozambicans. The externally displaced indicator identifies those who in 1992 resided in neighboring countries; the category includes those born in rural-areas in Mozambique or those born in neighboring countries. IDP R-U is an indicator that takes the value of one for rural-born individuals who resided in 1992 in urban regions and zero otherwise. IDP R-R is an indicator that takes the value of one for rural-born individuals who in 1992 resided in a rural region other than their region of birth and zero otherwise. IDP U-R is an indicator that takes the value of one for urban-born individuals who reside in 1992 in rural regions and zero otherwise. IDP U-U is an indicator that takes on the value of one for urban-born individuals residing in an urban area that is not their urban district of birth. The omitted category in panel A is rural-born Mozambicans residing in the same district in 1992, and the omitted category in panel B is urban-born Mozambicans residing in the same district in 1992. The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (admin-2 district level of birth and admin-2 district level of residence in 1992) are reported below the coefficients. *, **, and *** indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

4 Within-Family Analysis

Amidst the chaos of war, battles, civilian violence, and forced population moves by rebels and government forces, siblings and other household members got separated. In this Section, we draw on family separation, a pervasive feature in many contemporary conflicts, to shed light on the link between displacement and education. First, we describe the sample. Second, we present the within-household estimates. Third, we explore heterogeneity. Appendix Section D provides complementary evidence on the characteristics of separated households and additional results.

4.1 Sample

Households To assess the role of displacement within households, our analysis focuses on individuals who, as minors, experienced divergent life trajectories during the civil war. We consider households with at least two members residing in different districts in 1992, with at least one having moved from their district of birth. Our sample encompasses all 12-32-year-old extended family members—siblings, children-in-law, nephews, nieces, and other relatives who were co-resident at the time of the census (in 1997). This provides an accurate portrayal of household composition in post-war Mozambique, allowing us to examine displacement within a representative range of kinship arrangements. See Appendix Table B.4 for details on the household structure. For ease of reference, we refer to these as “separated households,” while recognizing that they encompass diverse individual trajectories.

Table 3 reports the displacement matrix for all households with extended family members in different districts at the end of the civil war. The sample consists of 30,947 households with 112,674 members separated between 0 and 18 years from their siblings and other relatives. About a third are rural families, where some members had remained, while others had relocated to another rural area. Within-household variation in displacement is considerable. For example, in 1997, there were approximately 1,000 households with 4,819 extended family members who experienced the following paths during the war: one stayed at their rural birthplace, at least one other moved to a city, and yet another moved to a different rural area.¹⁴

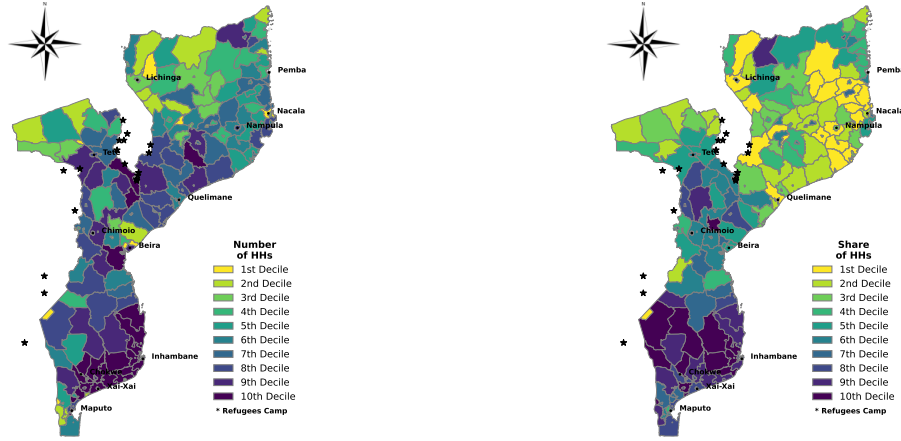
Mappings Figure 3 illustrates the spatial distribution of households with separated extended family members, plotting the number and the share of households across birth districts. More households with separated children are near Maputo/Matola, Beira, Xai Xai, Inhambane, and Chimoio, the main (coastal) cities in the South and Center. Separated households are somewhat less common in the Northern provinces, where the civil war spread after the mid-1980s and fighting was less intense. After standardizing by the number of households with at least two members, regions more heavily affected by the conflict show a higher concentration of households with displaced children (Appendix Figure B.4).

¹⁴We observe more than 2,500 households that include both non-mover urban and non-mover rural individuals. This occurs when two household members — both classified as non-movers — were in 1992 located in their respective places of birth, one rural, the other urban, but who moved after the war and lived together in 1997.

Table 3: **Households with Separated Extended Family Members
Displacement Trajectories (Birth Districts)**

Categories (Birth District)	Nbr of Individuals	Percentage	Nbr of HH	Percentage
NM Rural + IDP Rural	36841	32.7	10864	35.11
NM Urban + IDP Urban	17728	15.73	4765	15.4
IDP Rural Only	7485	6.64	2637	8.52
NM Rural + NM Urban + IDP Rural	9244	8.2	1965	6.35
NM Rural + EDP	4182	3.71	1376	4.45
NM Urban + IDP Rural	4796	4.26	1334	4.31
IDPs (R+U) Only	3224	2.86	1074	3.47
NM Urban + IDPs (R+U)	5123	4.55	1037	3.35
NM Rural + IDPs (R+U)	4819	4.28	1026	3.32
NM Rural + IDP Urban	2457	2.18	783	2.53
IDP Urban Only	2104	1.87	773	2.5
NM Rural + NM Urban + IDP Urban	3035	2.69	688	2.22
IDP Rural + EDP	2136	1.9	683	2.21
Other Categories	9500	8.43	1942	6.3
Total	112,674		30,947	

Notes: The table describes the different trajectories of extended family members (siblings, cousins, relatives) aged 12-32 in 1997 in households with at least one member displaced as a minor in the period 1975-1992. The table provides the number of individuals and households for each trajectory.



Panel A: Separated Household Numbers Panel B: Separated Household Share

Figure 3: Households with Separated Extended Family Members by District of Birth. Panel A plots the spatial distribution of the number of households where at least two extended family members, aged 12-32 in 1997, have followed, as minors, different displacement trajectories during the civil war across 218 birth regions (admin-2 units). Panel B plots the share of households with separated members, who moved between birth and age 18, to the total number of households from the birth district with at least two members across 218 birth regions (admin-2 units). We assign the household's birth district to that of the household head.

Households with and without Separated Members We explore whether households with separated extended family members differed from those in which all members stayed at their place of

birth and in which all members moved together (Appendix Tables D.1-D.2). To proxy pre-civil-war socioeconomic status, we rely on completed primary education and propensity to speak Portuguese of grandparents and household heads born before 1957. We also examine differences across households in household size, the number of children born alive, and the likelihood of losing a child, although these characteristics are (partly) outcomes of warfare and displacement. The education of household heads in separated households is higher than that of those whose members did not separate, suggesting that even during a devastating conflict, there is some selection at the household level, an issue we return to below. In addition, households with separated extended family members were larger in 1997, with higher fertility and child mortality, suggesting that larger families may have found it harder to stick together during the civil war, experiencing more adversity compared to non-displaced households.¹⁵

4.2 Methodology

To explore within-family variation and compare (extended) family members with different displacement trajectories, we augment the baseline specifications (regression (1a)-(1b)) with household fixed effects (θ_h). Doing so allows us to account for ethnicity, religion, and various hard-to-observe household factors related to aspirations that may shape both educational investments and displacement trajectories. For example, as discussed above, the head of household of separated families (and their parents) are on average more educated and more likely to speak Portuguese than those in non-separated households.¹⁶

While the historical evidence and narratives suggest that the long-lasting civil war was the key driver of displacement, one worry is that estimates of various displacement trajectories capture more typical migration, rather than conflict-driven relocation. We thus re-estimate the empirical specifications, comparing non-movers and displaced during the year(s) of significant civil conflict in their birth district. As the conflict data are noisy, we examine movements not only during years of conflict but also within a one-year window around a conflict event.

¹⁵Separated extended family members may be residing in families where the household head may also have been displaced. Non-displaced heads reflect families that host the displaced relative.

¹⁶The data record household composition five years after the end of hostilities rather than at the war's onset. Consequently, household constants capture fine-grained variation in individuals' locations in 1997, reflecting, among other factors, local labor market conditions, postwar family networks and resources, as well as the dynamics of family formation shaped by conflict.

4.3 Results

Table 4 reports the cross-sectional (in odd-numbered columns) and the within-family (in even-numbered columns) estimates for schooling (columns (1)-(4)) and agricultural employment (columns (5)-(8)). Panel *A* presents results for the rural-born and Panel *B* for the urban-born.

Table 4: **Displacement Trajectories, Schooling and Employment, Within-Family Estimates**

	Compl. Primary (Dummy)				Agricultural Employment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
Externally Displaced	-0.075*** [0.008]	0.008 [0.008]	0.021** [0.010]	0.005 [0.012]	0.011* [0.006]	-0.070*** [0.018]	-0.093*** [0.024]	-0.084*** [0.024]
Intern. Displ. Rural → Urban	0.135*** [0.015]	0.069*** [0.007]	0.064*** [0.010]	0.051*** [0.011]	-0.122*** [0.021]	-0.012* [0.007]	-0.017* [0.009]	-0.009 [0.011]
Intern. Displ. Rural → Rural	-0.020*** [0.006]	0.029*** [0.007]	0.031*** [0.007]	0.028*** [0.008]	0.034*** [0.009]	-0.006 [0.006]	-0.017** [0.007]	-0.009 [0.010]
Mean Non-Displaced	0.251	0.251	0.254	0.258	0.821	0.821	0.826	0.824
Observations	70,367	70,367	54,726	39,261	27,197	27,197	20,622	14,843
Num Household	21,701	21,701	17,371	12,832	9,689	9,689	7,543	5,503
Panel B: Born Urban								
Externally Displaced	-0.045*** [0.003]	0.005 [0.016]	0.007 [0.019]	-0.016 [0.016]	0.114** [0.046]	-0.045 [0.033]	-0.056 [0.036]	-0.038 [0.037]
Intern. Displ. Urban → Rural	-0.096*** [0.014]	-0.013 [0.014]	-0.018 [0.013]	-0.037*** [0.014]	0.286*** [0.046]	-0.010 [0.016]	-0.010 [0.020]	0.013 [0.020]
Intern. Displ. Urban → Urban	0.052*** [0.003]	0.033*** [0.011]	0.030** [0.012]	0.016 [0.013]	-0.054** [0.024]	0.000 [0.016]	-0.009 [0.022]	-0.005 [0.024]
Mean Non-Displaced	0.490	0.490	0.496	0.502	0.430	0.430	0.429	0.424
Observations	34,433	34,433	28,761	25,283	6,852	6,852	5,262	4,496
Num Household	10,336	10,336	8,962	8,057	2,630	2,630	2,067	1,781
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Conflict Condition	All Districts	All Districts	Moved ± 1 Years	Moved ± ± 0 Years	All Districts	All Districts	Moved ± ± 1 Years	Moved ± ± 0 Years
Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District of Birth FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Household FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

Notes: The table reports OLS estimates associating schooling and employment outcomes with various displacement trajectories for extended family members (siblings, cousins, relatives) aged 12-32 in 1997 in households with at least one member displaced as a minor in the period 1975-1992. The dependent variable in columns (1)–(4) is an indicator taking the value of one if the individual completed primary education and zero otherwise. In columns (5)–(8), the dependent variable takes the value of one if an individual is employed in agriculture and zero otherwise. Columns (3) and (7) restrict the analysis to non-movers and individuals who moved in a window of ± 1 year from a conflict event, while columns (4) and (8) zoom in on those individuals who moved during a conflict year. Panel *A* gives estimates across rural-born. Externally Displaced is an indicator that captures the externally displaced, defined as those who, in 1992, resided in neighboring countries. Intern. Displ. Rural → Urban identifies rural-born individuals who resided in 1992 in urban regions. Intern. Displ. Rural → Rural identifies individuals born in a rural area who reside in a rural area outside their region of birth in 1992. Panel *B* gives estimates across urban-born individuals. Intern. Displ. Urban → Rural identifies urban-born individuals residing in 1992 in rural regions. Intern. Displ. Urban → Urban identifies urban-born residing in an urban region in 1992 outside their region of birth. Controls include a gender indicator, an indicator for the eldest child of the household head, age fixed effects, and district of birth constants. The rural-urban classification is based on the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (admin-2 region of birth of child *i* and admin-2 region of residence in 1992 of child *i*) are reported below the coefficients. *, **, and *** indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Rural Born Externally Displaced While the cross-sectional estimates suggested that refugees had a lower likelihood of completing primary education, once we explore within-household variation (in (2)), the estimate drops in absolute value and becomes insignificant. This underscores the importance of accounting for unobserved family features. The coefficient on the externally displaced is close to zero when examining completed upper primary and secondary education (Appendix Table D.4). Specifications (5)-(8) suggest a non-negligible occupational shift of refugees out of agriculture of 7 – 9*pps* compared to a mean of 82% for non-movers, most likely due to the loss of land.

Rural IDPs to Urban Turning to rural-born IDPs moving to cities and towns, the within-family specification estimate in column (2) is about half of the cross-sectional one (in column (1)), illustrating the role of unobservables. The estimate implies a seven percentage points increased likelihood of completing primary schooling for minors displaced to cities compared to their relatives. The coefficients are similar when we focus on moves in the year(s) surrounding significant conflict (in columns (3)-(4)). The magnitudes correspond to approximately one-fourth of the mean for the non-displaced. When we look at upper primary and secondary attainment, we obtain similarly significant estimates, implying, however, *larger* effects (as the bases are very low): an increase in the upper primary of 4.2*pps* (mean of non-movers of 6.9%) and in high school of 1.5*pps* (non-movers average of 1.1%). Columns (5)-(8) show that rural-to-urban IDPs have a lower probability of employment in agriculture. However, the implied effect is small (1 – 2 percentage points), suggesting that while in cities, rural IDPs might still be working in agriculture, potentially in peri-urban areas.

Rural IDPs to Other Rural Despite the war’s extreme violence, which often occurred alongside displacement, the within-family comparisons show that moving to a rural district other than one’s rural birthplace increases the likelihood of completing primary school by 2.9 percentage points compared to relatives staying at their birthplace. This effect is about a tenth of the non-movers average completion rates. The estimates are similar when comparing movers during major war incidents to non-movers (in (3)-(4)). The estimates for upper primary and high school completion suggest larger effects: a 2.3% increase in upper primary compared to a mean of just 6.9%, and an increase of 0.9% in secondary school, similar to the mean of the non-movers. These estimates linking rural-to-rural displacement with education are consistent with the uprootedness hypothesis, as rural Mozambique was one of the

world’s least developed places at the time. The within-family coefficients for agricultural employment are small, which is unsurprising given that rural production was largely based on subsistence farming. When disaggregating by gender, we find evidence of increased employment in services among men, whereas women remain concentrated in agriculture (Appendix Table D.8).

Urban Born Externally Displaced While the few urban-born who were externally displaced at the end of the war have, on average, lower primary school completion than those born in the same district, the estimate approaches zero when comparing extended family members in the same household. Their propensity to be employed in the traditional sector is not different from that of their siblings and cousins residing in their urban place of birth at the end of the Civil War.

Urban-born IDPs to Rural Urban-born individuals displaced to the countryside have a similar probability of completing primary (and upper primary and secondary) school as their relatives who stayed in cities and towns of birth during the war. However, when looking at moves triggered by conflict (in (3)-(4)), the coefficient turns significantly negative, suggesting a $2 - 3.7pps$ lower likelihood of completing primary school. IDPs displaced to the countryside do not appear to have a differential attachment to agriculture compared to the children from their families who stayed behind (albeit in a considerably smaller sample and starting from a lower baseline). Even in urban locations, peri-urban agriculture was quite prevalent, with 56% of the urban labor force engaged in farming.

Urban-Born IDPs to Other Urban Urban-born individuals who moved to other, typically larger and coastal, cities and towns are 3.3 percentage points more likely to complete primary school than their non-displaced relatives. The household fixed-effects estimate is more than half of the cross-sectional one, hinting at selection. Additionally, when examining moves in the year(s) of a significant civil conflict event, the coefficient drops even further to 0.016. It becomes statistically insignificant, telling again of the role of unobservable features. The limited educational upgrade is associated with a small and statistically insignificant estimate on agricultural employment (in columns (6) and (8)).

4.4 Further Evidence

Heterogeneity First, we examine whether refugees returning from countries with different integration strategies fare differently from extended members from the same family who stayed behind (see Appendix Table D.7). Those who fled to Zimbabwe, where almost all settled in UN camps with schools, fared marginally better than their relatives in Mozambique. Mozambican refugees in Tanzania, Swaziland, Zambia, and South Africa, where there were no UN camps, have similarly low education compared to their siblings and cousins who remained in the country. There are no differences in education between stayers and refugees returning from Malawi. Second, we distinguish between children living with the same older household member in 1992 and 1997. Being together at the end of the civil war and five years later increases primary education and non-agricultural employment. However, this association is, if anything, weaker for displaced children (Appendix Table D.5). Third, we consider the possibility that habit formation (Sarvimäki et al., 2022) influenced human capital investments during the war. There is no asymmetry between displaced minors returning to their birthplace and those who either stayed at the place of displacement or moved to a different district after the war (Appendix Table D.6).

Sensitivity Appendix Section D.4 reports a battery of robustness checks of the within-household estimates in Table 4. First, results are similar when we rewrite the empirical model in differences, comparing completion rates across relatives rather than adding household fixed effects (Appendix Table D.9). Second, the patterns hold when we restrict the sample to extended family members aged 12–21 in 1997, i.e., those most likely to cohabit with parents or older relatives (Appendix Table D.10). Third, estimates are stable when we control for the relationship of each extended family member with the head of the household (Appendix Table D.11). Fourth, results are unchanged when we adopt a stricter definition of conflict events that excludes FRELIMO cable sources (Appendix Table D.12). Fifth, we replicate the analysis in the full 12–32 year-old census population, extending the sample to more than two million individuals from about 700,000 households; the coefficients remain close to the baseline (Appendix Tables D.13 and D.14). Sixth, we re-estimate the household fixed-effects model on the entire 1997 population (aged 6+) and find comparable schooling gains for rural IDPs and small, negative effects for urban-born displaced to the countryside (Appendix Table D.15). Lastly,

the main results are robust to a series of additional permutations—dropping the eldest child or eldest boy, estimating separately for girls and boys, excluding border districts, and restricting the sample to districts with the highest displacement or conflict intensity (Appendix Table D.16).

Intra-Household Spillovers The within-family educational gains of IDPs from rural areas could, in principle, arise from intra-household reallocation of investments between displaced and non-displaced minors. If wartime displacement drew resources away from those who did not move, we would expect them to have lower schooling outcomes than similarly-aged peers in non-moving households. Appendix Table D.3 shows the opposite: non-moving (extended) family members in separated households attain higher levels of schooling than peers in non-moving households. This pattern may partly reflect parental differences, as separated households tend to be more educated (Appendix Tables D.1-D.2).

5 Movers’ Analysis. Spatial Sorting and Place Effects

In this Section, we leverage differences in the timing of (conflict-driven) displacements *only* among movers to isolate “regional childhood exposure” effects from “spatial sorting” in driving human capital. First, we outline the methodology. Second, we present and discuss the semi-parametric estimates. Third, we discuss sensitivity checks and further results, reported in Appendix Section E.

5.1 Methodology

To distinguish and separately quantify spatial sorting and place-based effects in human capital, we apply the semi-parametric design of Chetty and Hendren (2018a), which combines differences in the age of children’s move with destination-origin differences in education among non-movers.¹⁷ If regions causally drive educational investments, their impact should be more pronounced the longer children are exposed to the environment, i.e., the younger they were when they got displaced. The key identification assumption is that the timing of displacement (the age at which a child moved during the Civil War) is uncorrelated with unobserved individual and family characteristics that may independently affect schooling. The nature of conflict, with all its idiosyncratic features, makes this a reasonable

¹⁷Throughout Sections 5 and 6, by “children” we refer to individuals who were between 0 and 18 years old at the time of displacement. By 1997, however, these individuals may have assumed any role within their household. Appendix Table B.4 Panels C and D report the individuals’ relationship to the household head in these samples.

starting assumption. We also consider a within-household specification that exploits variation in the timing of family members' moves. The schooling of children who moved from birthplace (origin) o to (destination) d at age m , living in household h can be expressed as follows:

$$\text{Schooling}_{i,b,m,h,od} = \alpha_{ob} + \alpha_m[+\alpha_h] + \sum_{m=0}^{18} \gamma_m \mathcal{I}\{m_i = m\} \Delta_{od,b} + \sum_{b=b_0}^B \kappa_b \mathcal{I}\{b_i = b\} \Delta_{od,b} + \varepsilon_{i,b,m,h,od} \quad (2)$$

The outcome variable equals one if child i , born in cohort b , completes primary (or upper primary) education and zero otherwise. The variables of interest, $\Delta_{od,b}$, denote the difference between the educational attainment of non-moving children (of the same age) in destination d and origin o .

$$\Delta_{od,b} = \widehat{HC}_{d,b}^{nm} - \widehat{HC}_{o,b}^{nm} \quad (3)$$

For each birth cohort (by year in the cross-sectional analysis and by decade in the household fixed-effects specifications), we use the district average of completed primary education among non-movers in the corresponding age bracket as a sufficient statistic for the local economic and social environment (Appendix Figure E.2 plots the distribution of $\Delta_{od,b}$). This measure captures the broader context shaping educational opportunities at both origin and destination, including school closures and other infrastructure, levels of development, exposure to conflict, and related factors (see Chetty and Hendren, 2018a). The specification allows for a different slope, γ_m , for each age of move (years 0 to 18), controlling for direct effects through age at move constants, α_m , which capture disruption effects, the start and end of primary and secondary school, and other age-specific unobservables. Origin-district-specific birth-year fixed effects, α_{ob} , account for unobserved factors of each mover's birth district at birth. The birth-year-specific trends in exposure account for measurement error (Chetty and Hendren, 2018a), though its inclusion does not affect the results. The intuition of specification (2) is that if children move from worse to better districts (in terms of the education of similarly-aged non-movers), and regional exposure indeed matters, the earlier the move, the greater the impact of these "*childhood regional exposure effects*". Since the specification includes origin-year constants, the variation arises from children born in the same place and year who move to districts with different levels of education. The age-specific slopes, γ_m , are identified even in the presence of sorting: more able or more motivated children and their families are likely to move to better places (with higher education), but the key

identifying assumption is that the age of move is uncorrelated with the child’s characteristics. Adding household fixed-effects, α_h relaxes this assumption, as identification requires households not to time their move to favor one/some young members, which is likely to hold in a war setting. In addition, we also re-run the corresponding semi-parametric specification focusing only on movers when conflict intensifies, as these are unlikely to capture standard migration.

Sample The analysis spans 310,113 internally displaced, both urban and rural born, from 183,122 households (Table 1, columns (7)-(8)). For 77,971 households, there are more than two moving members during the Civil War, and thus we can exploit within-family variation across 205,090 individuals. The analysis does not include refugees, as we cannot estimate human capital at the destination among non-movers. Appendix Table E.1 provides summary statistics for the outcome variables, and Appendix Figure E.1 shows the distribution of ages at move.

5.2 Results

Figure 4 plots the age-specific displacement effects γ_m , against the child’s age at the time of the move. Panel A shows cross-sectional estimates looking across all moving individuals. Panels B and C zoom into moves that occurred in a one-year window and only during years of significant civil war violence, respectively. Panels D and E focus on households with multiple members who were displaced during childhood. Panel F further restricts the sample to moves that occurred within a 1-year window of a recorded conflict event.

5.2.1 Cross-Sectional Estimates

Full Sample We begin with the analysis across all moving children (Panel A). The graph illustrates two distinct mechanisms. First, the age of move coefficients, γ_m , are sizable for children moving early in life and decline steadily through ages 14 – 15, implying that displacement to better (worse) destinations than the origin in terms of the non-movers’ human capital increases (lowers) the likelihood of completing primary schooling. The negative relationship between children’s age at move and exposure is approximately linear, implying what Chetty and Hendren (2018a) refer to as “*regional childhood exposure effects*.” An additional year of exposure before the ages of 14-15 in a high-human capital

district increases a child’s chances of completing primary school by roughly 1.7 percentage points (pps). The primary education completion rate of displaced children converges to that of non-moving children of the same age at the destination at a rate of roughly 1.7% per exposure year by the age of 14 – 15. Regional childhood exposure effects during the Mozambican conflict appear comparable to the estimates across dozens of Sub-Saharan African countries of about two percentage points (Alesina et al. (2021) and Alesina et al. (2023)).

Given the measurement error from the approximation of the age of move, the estimates in Figure 4 are attenuated, constituting conservative (lower) bounds of the actual exposure effects. Extrapolating over 15 years, children who move at birth to a district with one percentage point higher human capital experience a 25% – 30% increase in the probability of completing primary education solely due to place effects ($15 * 1.7 \simeq 25.5$). Second, the age-specific slopes are significantly positive even for children who moved after the age of 14-15. As moves after this age are unlikely to affect the likelihood of completing primary education, which at the time was 11 years, they capture ‘*selection*’ or ‘*spatial sorting*’. Selection accounts for about half (0.34) of the overall effect (0.6 – 0.62), suggesting that the two mechanisms are of roughly the same magnitude.

Conflict Years In Panels *B – C*, we estimate the movers’ design specification (equation 2), looking at children who fled the origin districts in the year(s) surrounding a significant civil war incident, as these moves are more likely to be induced by conflict.¹⁸ First, despite the reduction in sample size, which is not trivial given the data-intensive semi-parametric design, the analysis of moves during conflict year(s) also uncovers significant regional childhood exposure effects (0.021), similar to the full sample estimates. Second, spatial sorting drops, suggesting that when the move is triggered by conflict, there is less scope for individuals to sort into destinations with (relatively) high human capital.

5.2.2 Within-Household Analysis

Full Sample Panel *E* presents the within-household estimates exploiting variation in the timing of moves among family members across 77,971 families (see Appendix Table B.4, Panel C, for details on household structure). Panel *D* shows the cross-sectional estimates from the same sample. First,

¹⁸In the movers’ analysis sample (see Appendix Figure B.6-Panel C), 44% of all moves occur in the year of a civil war incident and an additional 23% in the years before and after (67%).

even when comparing relatives who moved at different ages, there is strong evidence of place effects. Compared to their relatives who moved after the age of 14 – 15, those who moved from the low to the high human capital destination before the age of 5, have a 25 – 30 percentage points higher likelihood of completing primary school. Place effects equal spatial sorting (Panel *D*). Second, spatial sorting drops considerably when exploiting within-household variation: the slopes on Δ_{odb} for moves after 15 are about 0.14 (from 0.45).

Relocations During Conflict Years Panel *F* provides household fixed-effects estimates, focusing on movements occurring in a one-year window around a conflict event. Regional childhood exposure effects appear first-order, as the age-specific slopes drop linearly until the age of 14 (from about 0.6 to less than 0.1). Even when considering family members who were more likely to be forced to leave their birthplace amid conflict, the minor who moved to a better (or worse) destination at a younger (or older) age has a significantly higher likelihood of completing primary education. As these specifications condition on household constants and only look at moves during conflict, they provide strong evidence that regions matter even during a devastating conflict. Additionally, spatial sorting (selection) is negligible when considering within-family variation in moves that occurred during conflict years.

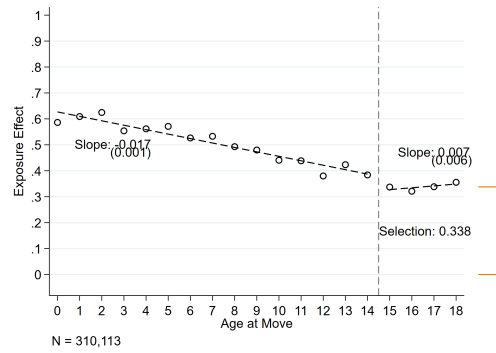
5.3 Sensitivity Analysis and Further Evidence

We conducted various tests to explore the sensitivity of the uncovered spatial sorting and place effects (see Appendix Section E). First, the age-of-move estimates remain virtually unchanged when we randomly draw the year of displacement within each individual’s bounded window (Appendix Figure E.3); in contrast, a placebo that assigns a completely random year during the civil war shows no childhood exposure effects (Appendix Figure E.4). Second, the patterns are robust when we restrict the analysis to the youngest displaced member of each household (Appendix Figures E.5). Third, we control for the individuals’ relationship to the household head (Appendix Figure E.6). If anything, childhood regional exposure effects are somewhat more substantial. Fourth, results are similar when we allow for ± 2 -year windows around conflict events and when we adopt a stricter definition of conflict incidents that excludes the FRELIMO cables (Appendix Figures E.7 and E.8). Fifth, exposure effects are similar when comparing moves occurring in years surrounding a conflict event to those in non-

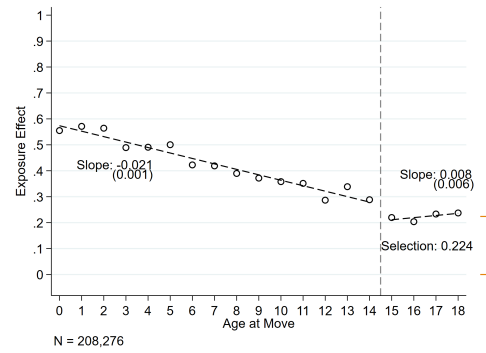
conflict years (Appendix Figures E.9). Sixth, we distinguish between Mozambicans fleeing the most and least conflict-prone areas as well as those leaving the districts with the highest and lowest share of (internal) displacement (Appendix Figure E.10). Regional childhood exposure effects are comparable to the baseline results. Spatial sorting drops and even disappears for those moving out of the high-conflict/displacement districts.¹⁹ Seventh, the results are similar when examining upper primary attainment, which at the time was very low; see Appendix Figure E.11.

Parametric Specification Lastly, we estimate less demanding parametric estimates of (equation 2), imposing a piecewise linear structure on regional exposure, allowed to differ for primary school ages (0–14) and post-primary (15–18), and also for other age cutoffs (see Chetty and Hendren (2018a)). As shown in Appendix Table E.2, an extra year of exposure to a high (low) human capital destination by the age of 15 increases (lowers) the completion of primary school by 1.7% – 2.1%. The estimates for upper primary education and secondary are about 1.3% – 1.7% and 0.05%, respectively. Appendix Table E.3 shows the effects are substantial for those moving during primary school ages (5 – 14) rather than preschool, which is similar to the pan-African estimates in Alesina et al. (2021). In addition, there is limited heterogeneity in childhood exposure effects when distinguishing between destinations that received many or few IDPs (Appendix Table E.4).

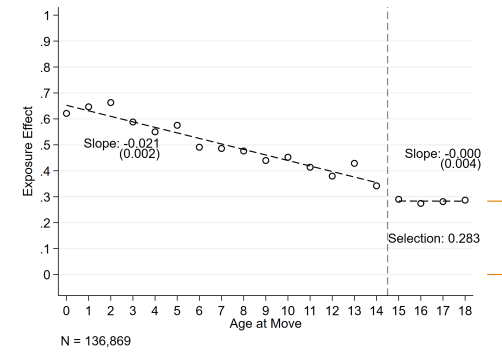
¹⁹These results align with Hornbeck (2023), who explores migration before and during the Dust Bowl in the 1930s: while overall more educated Americans moved out, during the Dust Bowl, selection weakened and even turned negative: in more environmentally eroded counties, migrants had lower education than non-movers.



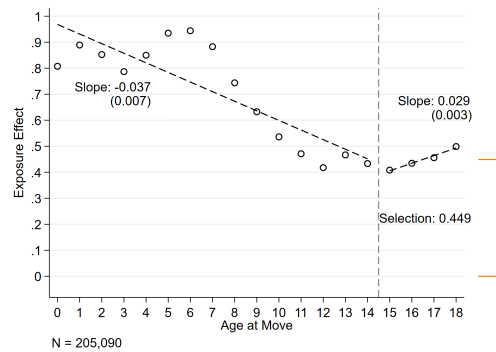
Panel A: All Movers



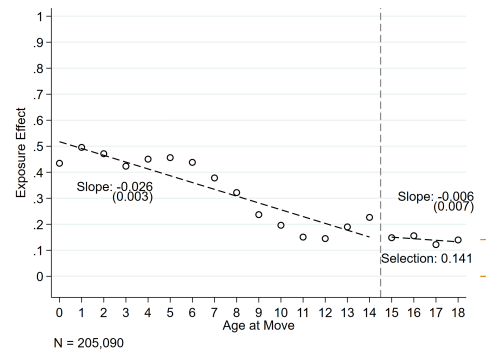
Panel B: ± 1 years



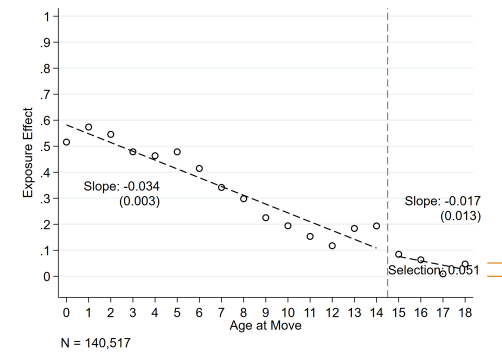
Panel C: ± 0 years



Panel D: Movers in HH FEs Sample



Panel E: HH FEs



Panel F: HH FEs ± 1 year

Figure 4: Regional Childhood Exposure Effects and Spatial Sorting.

All panels plot age-of-move coefficients (γ_m) on destination-minus-origin differences in completed primary schooling, estimated among non-movers of the same birth cohort, against the child's age when the household moved; regression equation 2. In Panels A-C, the cohort is a year, while in panels D-F, which exploit within-household variation, the cohort is a decade. The dashed vertical line separates the data into moves before the age of 15, mostly relevant for primary education, and after 15. The OLS regression fit of age-of-move slopes against the age of move before and after 15 represents estimates of regional childhood exposure effects for primary school completion. The estimates after the age of 15 represent spatial sorting (selection). Panels A-D report cross-sectional specification estimates, while Panels E and F report household fixed-effects estimates that compare relatives. Panel C restricts estimation to moves occurring in the year of a significant civil conflict event at the birthplace. Panels B and F restrict estimation to moves taking place in a one-year window surrounding a major civil war incident.

6 Spatial Sorting, Place-Based, and Uprootedness Effects

The age-at-move results (in Section 5) reveal the importance of place-based effects and spatial sorting, while the within-household estimates (in Section 4) hint at uprootedness effects, as even displacement from (very low development) rural to other rural areas are associated with significant educational improvements and forced urban-to-rural movements do not reduce schooling (despite the sizable regional drop in well-being). This section unpacks these mechanisms and jointly estimates the effects of places and uprootedness, accounting for spatial sorting and selection. First, we outline the empirical framework, then discuss the results and summarize the key sensitivity analysis, which is reported with additional descriptive statistics in Appendix F.

6.1 Approach and Specification

Specification To jointly estimate place-based and uprootedness effects of displacement, we blend the within-household approach (equation (1) with household constants) and the age-of-move design (equation (2)). We pool all households with individuals born between 1965 and 1985 in an origin district o (rural or urban) that include at least one member who, as a minor, moved to a destination region d . We then associate the primary-school completion of individual i —of age/cohort b , ethnicity e , and household h —to a binary displacement indicator ($DISP_i$) and to the destination-minus-origin difference in the human capital of non-movers from cohort b ($\Delta_{od,b}$).

$$Y_{i,e,b,w,h,o,d} = \alpha_o + \alpha_b + \underbrace{\beta DISPL_i}_{\text{Uprootedness + Disruption}} + \underbrace{\sum_{w=1}^4 \gamma_w \Delta_{od,b} \mathcal{I}\{w_i = w\}}_{\text{Place Effects}} + \underbrace{\alpha_h}_{\text{HH Selection}} + X_i' \Phi + \epsilon_{i,e,b,w,h,o,d} \quad (4)$$

As in the movers' analysis, the age-of-move specific coefficients γ_w on destination-origin differences in human capital (among non-movers of the same age) capture regional exposure effects on the moving children's primary education attainment. Following the age-of-move patterns in Figure 4, we define four indicator variables, w , which equal one if the move occurred at pre-school age (0–4), early primary (5–9), late/upper primary (10–14), or post-primary (15–18), and zero otherwise. For non-movers, the destination and origin characteristics are identical. [We present results with alternative cut-offs in Appendix Section F]. The household constants, α_h , which absorb family dynamics and their

interplay with movements during the civil war and subsequent educational investments, account for the considerable spatial sorting (found in the previous Section), as the comparisons are between moving young Mozambicans during the Civil War and their relatives who stayed at their birthplace. α_o allows for the comparison of children born in the same district, and α_b for age-specific intercepts. X accounts for gender and an indicator of whether the individual is the oldest child in the household.

The displacement indicator takes the value of one for internally displaced children and zero for non-displaced ones. As the specification accounts for age-specific place effects, its coefficient (β) captures two main mechanisms. First, it identifies adverse disruption effects, related to minors’ leaving their homes during civilian violence (village burnings and looting, child-soldiering raids), loss of family and friends, and abandoning school. Second, the literature on *uprootedness* emphasizes the potential benefits of displacement, as displaced individuals may invest in education to integrate into new communities or acquire transferable skills (Stigler and Becker (1977b), Kessel (1958)). Whether the negative consequences of disruption, which appear first-order in our low-income and high civilian violence setting, outweigh any positive forces of uprootedness, found mainly in studies of organized population transfers in Europe (e.g., Becker et al. (2020), Sarvimäki et al. (2022), and Michalopoulos et al. (2025)), is ultimately an empirical question.

$DISPL_i$ may also capture *individual selection*: moving children may be “better” in some unobservable aspect, which drives both their move and educational attainment. While we cannot entirely dismiss this possibility, the following points may help assess its relevance. First, research on internal migration and neighborhood effects in high-income countries, such as the United States, suggests that selection forces are stronger for moves during adulthood rather than childhood.²⁰ The median displaced child in our setting flees their ancestral home at the age of 7, so half of our sample leave their origin before primary school begins. Second, as moves took place during a destructive civil war, with considerable violence, including forced population moves by warring sides, selection concerns appear less salient, especially when exploiting within-household variation.²¹ To further support this point, we examine children fleeing during outbursts of violence. Third, the movers’ analysis suggests that

²⁰Harding et al. (2021) find that selection into migration among adults accounts for the uncovered neighborhood effects in non-experimental studies. Chetty et al. (2023) establish that children moving to better places at earlier ages have birth weights and gestation lengths that are comparable to children who make similar moves at older ages, supporting the identification assumption underlying the movers’ exposure design in the US.

²¹The narratives in Appendix A, paint a picture of idiosyncratic, erratic, and conflict-driven outflows, rather than deliberate choices to move out the more “gifted” 7-year-olds.

when comparing members of the same household, spatial sorting into high human capital destinations, which is substantial when comparing individuals from different households, becomes trivial. To the extent that the factors that limit sorting into high-human-capital destinations also shape the decision to move very early in life, the household constants largely account for selection.

Sample We extend the movers’ sample (Section 5) to include the 12-32 years old non-displaced members of their households (if there are any). We estimate the regression equation (4) across 145,038 households comprising 208,709 non-movers and 272,157 movers, born between 1965 and 1985, who made their primary school decisions during the civil war. Table 1, columns (9)-(10), tabulates the trajectories, while Appendix Tables B.8 and B.4 Panel D show summary statistics and details of the household structure, respectively.

Destination-Origin Human Capital Differences Figure 5-Panel *A* plots the distribution of destination-minus-origin differences in human capital, $\Delta_{od,b}$ of non-movers of the same age as the displaced. This offers a summary statistic of the change in opportunity, development, and security. As the Civil War primarily took place in the countryside, on average, the displaced moved from very underdeveloped areas to regions with higher education (although moves in the opposite direction also occurred): the mean (median) difference is 0.13 (0.09). Panel *B* illustrates the four main trajectories of internal displacement: (i) Urban-born displaced into the countryside (red bars) experienced the most significant drop. The mean decline in the share of completed primary schooling between destination and origin is -0.20 . (ii) Urban-born individuals moving to other urban districts (grey bars), experience, on average, a change of 0.11. (iii) For rural-born individuals displaced to cities, $\Delta_{od,b}$ is 0.30. (iv) Rural-born displaced in other rural areas (green bars) face economic and safety conditions that are, on average, similar to their places of birth.

Instrumental Variable (IV) Approach Although the within-household specifications (and the focus on conflict years) account for much of the spatial sorting (Figure 4), concerns may remain that a child’s settlement location is influenced by parental aspirations or other unobservable factors related to schooling. Drawing on a considerable literature on linguistic/racial networks and immigration (e.g. Card (2001), Hornbeck (2023), Boustan (2010), Calderon et al. (2023), Tabellini (2020)), for each

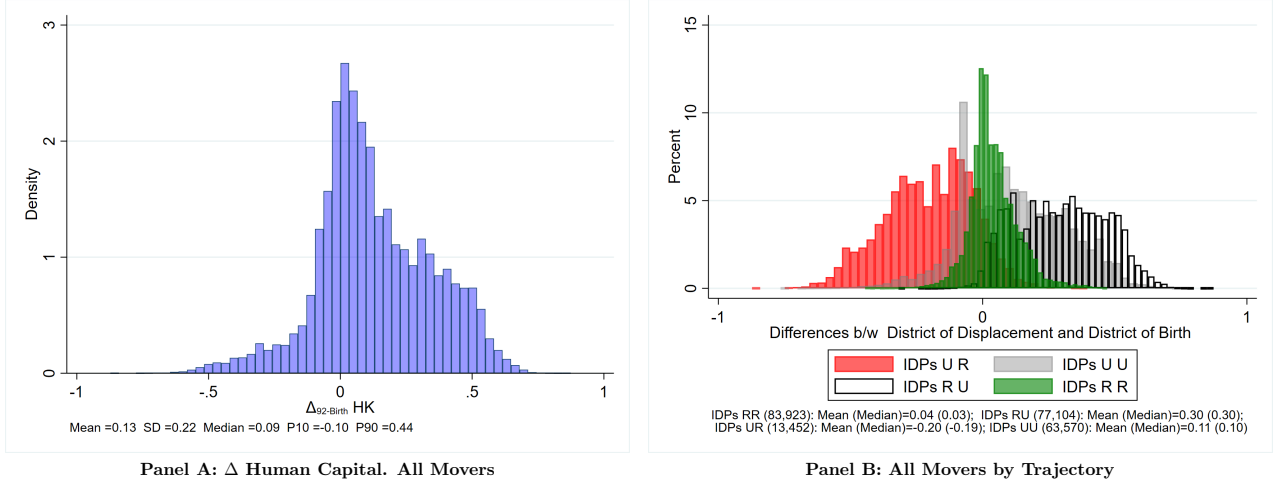


Figure 5: Destination-Origin Differences in Human Capital

The figure depicts the distribution of the differences between destination district (d) and birth-origin district (o) in completed primary education of non-movers ($\Delta_{od,b}$) for all movers. Panel A displays the histogram for all displaced Mozambicans aged 12-32 years at the time of the 1997 census, who moved between the ages of 0 and 18. Panel B distinguishes between four IDPs' displacement trajectories: (i) Red: Urban-born individuals displaced to rural regions. (ii) Gray: Urban-born individuals displaced into different urban areas. (iii) White: Rural-born individuals displaced to urban areas. (iv) Green: Rural-born individuals displaced to rural regions other than their birthplace.

displaced, we instrument the observed origin-destination difference in human capital ($\Delta_{od,b}$) among non-movers with the difference, adjusted using the share of individuals from the same birth district and ethno-linguistic group who resided in each destination district *before* the civil war. The central assumption is that those uprooted during the civil war were more likely to find refuge in destinations where older individuals from their birth district and ethno-linguistic group already lived. The IV specifications isolate from $\Delta_{od,b}$ the predicted change shaped by the pre-civil war destination-origin-ethnic network ($\widehat{\Delta_{od,b}^{HK}}$).

$$\widehat{\Delta_{od,b}^{HK}} = \widetilde{HK}_{o,e,b} - HK_{o,b}$$

where

$$\widetilde{HK}_{o,e,b} = \sum_{d \neq o} s_{o,d,e}^{\text{pre}} \cdot HK_{d,b}$$

$\widehat{\Delta_{od,b}^{HK}}$ denotes the predicted human capital difference for individuals from origin o , ethnicity e , and cohort b ; $\widetilde{HK}_{o,e,b}$ is the predicted destination human capital obtained by weighting each destination's $HK_{d,b}$ with the pre-war migration share $s_{o,d,e}^{\text{pre}}$; $HK_{o,b}$ is the origin's actual primary school completion of non-movers for cohort b ; and $s_{o,d,e}^{\text{pre}}$ is the share of household heads of ethnicity e born in o who,

before the civil war, resided in d with a child aged at least 20 who had been born already in location d . This allows us to capture primarily pre-war moves.

In line with earlier research showing that past (ethnic) migration and subsequent migration correlate, the elasticity between civil war moves and the prewar presence of people from origin (o) and ethnicity (e) residing in destination, d , is highly significant (see Appendix Section F and Table F.1 for details on the ethno-linguistic mix and aggregation). A destination with a one percentage point higher share of people from a given origin and ethnicity before the Civil War is associated with a three percentage points higher inflow of individuals during the War (Appendix Table F.2). Given such path dependence, wartime destination-origin differences in human capital correlate strongly with analogous measures using pre-war migration. Besides accounting for the endogeneity of “destination”, the 2SLS design also accounts for the measurement error of the regions where IDPs sought refuge during the civil war, as the 1997 Census does not record multiple moves.

6.2 Results

Table 5 reports cross-sectional (in columns (1)-(2)) and within-household (in (3)-(6)) estimates.

6.2.1 LS Estimates

Panel A shows LPM estimates. Column (1) reveals that displaced children have a 6 pps higher likelihood of completing primary schooling than those of the same age, gender, and origin who did not move during the Civil War. The estimate captures place effects, spatial sorting, selection into movement, and uprootedness/disruption effects. In column (2), we augment the specification with the age-specific differences in non-movers’ human capital between the destination of displacement and a child’s birthplace, $\Delta_{od,b}$. Place-effects are strong: children displaced to districts with a higher (lower) human capital early in life benefit (lose) more compared to those moving in adolescence. In line with the age-specific slopes in Figure 4, estimated only among movers, the (γ_w) coefficient on $\Delta_{od,b}\mathcal{I}\{w_i = w\}$ is larger for children moving earlier to the higher human capital districts: the coefficient is 0.59 for children moving in the first years of birth and 0.29, for children moving after the end of primary school (15 – 18). The implied *regional childhood exposure effects* are about two percentage points $[(0.59 - 0.29)/15]$, in line with the movers’ design estimates. In addition, conditional

on regional childhood exposure effects, displaced individuals have a roughly 2 pps higher likelihood of completing primary school than similarly aged people from the same birthplace who did not move.

Columns (3)-(4) show the corresponding household fixed-effects specifications. Three patterns emerge. First, place effects are first-order, as moving to a more educated district increases schooling, especially for children of primary school age. Second, even children who move after the age of 15 appear to have a higher probability of completing primary education, indicating spatial sorting, which, however, is much smaller than in the cross-sectional specification (0.11 vs 0.29). Third, the experience of moving increases the likelihood of primary school completion irrespective of the destination. Compared to staying behind relatives, and conditional on the human capital at the destination, the displaced have a two pps higher likelihood of completing primary school. Despite the considerable insecurity, violence, and often forced nature of the move, the significantly positive estimate suggests that uprootedness outweighs disruption. This finding, coming from hundreds of thousands of displaced, adds to the growing literature on uprootedness, which focuses primarily on organized population exchanges after the World Wars (e.g., Bauer et al. (2013), Becker et al. (2020), Sarvimäki et al. (2022), and Michalopoulos et al. (2025)), by showing that uprootedness forces emerge even among internally displaced during a brutal civil war in one of the world’s poorest and most insecure places. Specifications (5)-(6) zoom into moves during the intensification of conflict at origin, as these are more likely to reflect conflict-induced displacement. Place and uprootedness effects remain considerable and precisely estimated.

6.2.2 2SLS Estimates

Table 5-Panel *C* reports the 2SLS coefficients, while Panel *B* presents the corresponding “reduced-form” estimates, which associate primary school completion with the “instrument”. Given the strong association between the wartime and pre-civil-war migration flows (Appendix Table F.2 and Appendix Figure F.2), the Kleibergen-Papp F statistic is well above conventional levels, underscoring the strong first-stage fit. As the first-stage coefficient is close to one, the 2SLS estimates of γ are close to the reduced-form ones. The cross-sectional estimates in column (2) reveal place effects. The coefficients for moves before the start of primary school are close to the LS estimates. A move by the age of nine to a destination with a twelve percentage point higher primary school completion rate (the average)

is associated with a six-to-seven percentage point higher likelihood of completing primary school. The within-household specifications in columns (4)-(6) yield smaller (0.17–0.24), although still statistically significant, place effects, suggesting a reduction in selection. In line with the movers’ analysis (Figure (4)), the 2SLS estimates for those moving after the age of 15 are small and insignificant. By exploring within-household variation and instrumenting the destination with the pre-War migration flows, we reduce spatial sorting. Moves at 10-14 years somewhat increase schooling, but the estimates are smaller than for earlier age moves (0.06 vs 0.17 – 0.24). The effects of uprootedness outweigh any disruption costs, as even conditional on place-based exposure effects, displaced individuals had a two-percentage-point higher likelihood of completing primary school than non-movers with similar observable characteristics and residing in the same household. Uprootedness and place effects are also present when the analysis is restricted to moves triggered by a major conflict.²²

6.3 Sensitivity Analysis and Further Evidence

Appendix Section F reports the sensitivity analysis. First, the 2SLS estimates are similar when employing a granular ethno-linguistic (23 groups) composition of destination-origin links– despite the very sparse migration matrix–, and when we aggregate across six major groups (Appendix Table F.3 and F.4). Second, the patterns are similar when we distinguish between those who move before elementary school, 0 – 5; during primary school, 6 – 12; and those who move after the end of upper primary, 13 – 18 (Appendix Table F.5). Third, the estimates are similar when controlling for an individual’s relationship with the household head (Appendix Table F.6). Fourth, results are confirmed when looking at individuals aged between 12 and 21 years in 1997, as cohabitation with parents decreases for older children (Appendix Table F.7). Lastly, using a stricter definition of conflict events delivers a similar picture (Appendix Table F.8).

²²A possibility one cannot rule out is that the $DISPL_i$ coefficient captures also measurement error in destination-origin differences in cohort-specific human capital. However, when we instrument these bilateral differences, which partially corrects for measurement error, the $DISPL_i$ indicator continues to enter with a significantly positive estimate.

Table 5: **Place-Based Effects, Spatial Sorting, and Uprootedness**
OLS, Reduced-Form and IV Estimates

Panel A: Actual Change in O-D Differences						
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	0.060*** (0.017)	0.022*** (0.008)	0.027*** (0.005)	0.017*** (0.003)	0.020*** (0.004)	0.018*** (0.004)
$\Delta_{od,b} \times AOM_{0-4}$		0.592*** (0.027)		0.226*** (0.046)	0.250*** (0.047)	0.285*** (0.048)
$\Delta_{od,b} \times AOM_{5-9}$		0.553*** (0.047)		0.245*** (0.046)	0.229*** (0.046)	0.228*** (0.052)
$\Delta_{od,b} \times AOM_{10-14}$		0.362*** (0.039)		0.147*** (0.032)	0.143*** (0.039)	0.141*** (0.044)
$\Delta_{od,b} \times AOM_{15-18}$		0.289*** (0.038)		0.109*** (0.035)	0.108** (0.044)	0.105** (0.049)
Panel B: Predicted Changes in O-D Differences.						
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	0.060*** (0.017)	0.021 (0.015)	0.027*** (0.005)	0.020*** (0.003)	0.024*** (0.004)	0.021*** (0.005)
$\Delta_{od,b} \times AOM_{0-4}$		0.518*** (0.037)		0.094*** (0.027)	0.137*** (0.035)	0.192*** (0.044)
$\Delta_{od,b} \times AOM_{5-9}$		0.555*** (0.041)		0.145*** (0.032)	0.141*** (0.036)	0.146*** (0.039)
$\Delta_{od,b} \times AOM_{10-14}$		0.286*** (0.044)		0.016 (0.037)	0.014 (0.043)	0.019 (0.047)
$\Delta_{od,b} \times AOM_{15-18}$		0.156*** (0.042)		-0.059 (0.039)	-0.048 (0.048)	-0.049 (0.050)
Panel C: 2SLS						
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	0.060*** (0.017)	0.025*** (0.009)	0.027*** (0.005)	0.021*** (0.003)	0.025*** (0.004)	0.023*** (0.005)
$\Delta_{od,b} \times AOM_{0-4}$		0.557*** (0.046)		0.165*** (0.057)	0.191*** (0.055)	0.245*** (0.060)
$\Delta_{od,b} \times AOM_{5-9}$		0.591*** (0.074)		0.204*** (0.059)	0.186*** (0.055)	0.189*** (0.056)
$\Delta_{od,b} \times AOM_{10-14}$		0.321*** (0.064)		0.057 (0.055)	0.040 (0.059)	0.043 (0.061)
$\Delta_{od,b} \times AOM_{15-18}$		0.183*** (0.060)		-0.029 (0.059)	-0.032 (0.066)	-0.033 (0.068)
Number of Households	145,038	145,038	145,038	145,038	115,077	93,851
Observations	480,866	480,866	480,866	480,866	364,302	290,374
Kleibergen-Paap F-test	.	58.6	.	23.8	38.9	45.5
Specification	All	All	All	All	Moved $\pm$ 1 Years	Moved $\pm$ 0 Years
Controls	Yes	Yes	Yes	Yes	Yes	Yes
District of Birth FEs	Yes	Yes	Yes	Yes	Yes	Yes
Household FEs	No	No	Yes	Yes	Yes	Yes

Notes: The table reports OLS (Panel A), reduced-form (Panel B), and 2SLS (Panel C) estimates. The dependent variable is an indicator that equals one when an individual has completed primary education and zero otherwise. The main explanatory variable is a displacement indicator that identifies those who, at the end of the Civil War (in 1992), lived in a district other than their birthplace. $\Delta_{od,b} \times AOM_w$ is the interaction between an indicator (AOM_w) for different age-of-move groups (0–4, 5–9, 10–14, and 15–18) and $\Delta_{od,b}$ cohort-specific destination-origin differences in human capital of non-movers. The sample extends the movers' sample to include the 12-32-year-old non-displaced members of their households (if there are any). In all columns, we control for district of birth fixed effects, age constants, a gender indicator, and an indicator for the eldest offspring of the household head in 1997. Columns (3)–(6) add household fixed effects. Columns (5) and (6) restrict estimation to children who moved within ± 1 or ± 0 years of a major conflict event at their birthplace. The reduced form estimates in Panel B use predicted $\Delta_{od,b}$ from the pre-civil-war ethnic-district migrant networks. Panel C gives 2SLS estimates, using predicted from the pre-civil-war ethnic-district migrant networks destination-origin human capital differences as an instrument for actual on-war differences. Standard errors, clustered at the district of birth level, are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

7 Long-Term Impact of Forced Displacement. Survey Evidence

Our population-wide findings, shortly after the war, raise further questions. First, do the educational gains of IDPs endure over time? Second, does displacement carry any lasting costs? In this Section, we provide some tentative answers to these questions, reporting on a survey we conducted in Nampula, Mozambique’s second-largest urban hub (after the capital Maputo and its satellite city Matola), whose population went from 139,000 in 1977 to 250,000 in 1992, as civilians sought protection. Appendix Section G reports additional results.

Survey Through door-to-door in-field sampling covering all boroughs between January and March of 2020, we randomly surveyed 301 residents, older than 35, to ensure that their primary schooling decisions had occurred during the civil war. Conservatively, we restrict the analysis to 102 respondents who were born in Nampula and did not move during the war, and 125 respondents, not born in Nampula, who got displaced during the civil war.²³ In line with the historical accounts, most IDPs report moving in the mid and late 1980s, when RENAMO’s terror strategies spread to the North. We obtained information on educational attainment, employment, beliefs, social norms, and proxies for mental health (e.g., depression, loneliness, pessimism).

Within-Household Long-Run Associations To investigate the long-term legacy of displacement, we inquired about the displaced respondents’ siblings’ education, birthplace, and destination if they moved during the civil war. We then estimate within-family specifications that compare upper primary schooling completion between 258 IDPs, comprising 83 respondents²⁴ and 175 displaced siblings, and 80 siblings who stayed in their locality of birth.²⁵ The specifications in Table 6 reveal that IDPs have a 10*pps* higher likelihood to complete upper primary schooling relative to their brothers and sisters, who stayed in the countryside. While the sample is (very) small, these estimates are consistent with our findings above, which rely instead on thousands of minors displaced during the war.

²³In the 1997 Census, out of Nampula’s 303,000 inhabitants, about 90,000 moved there during the civil war. Approximately 63% of rural-born who moved to Nampula during the civil war remained there after it ended.

²⁴42 out of the 125 IDPs are not considered in the within-family analysis as they either reported no siblings, or their siblings’ information was incomplete.

²⁵The within-family comparison with the census data above compares extended family members of the household, including siblings, nieces, and nephews, who lived in different districts at the end of the civil war but were in the same household in 1997. Here, we compare IDPs in Nampula to their siblings who stayed behind.

Table 6: **IDPs and Rural-Born Stayers. Sibling Analysis. Upper Primary School Completion**

	Extended		
	(1)	(2)	(3)
Moved during the War	0.230*** (0.054)	0.106* (0.061)	0.109* (0.062)
Controls	No	No	Yes
Household FEs	No	Yes	Yes
Observations	338	338	338
R-squared	0.041	0.499	0.508

Notes: The table reports linear probability model estimates, where the outcome variable is an indicator that takes the value of one if an individual has completed upper primary schooling and zero otherwise. *Moved during the War* identifies 258 individuals displaced during the Civil War, including 83 of the original respondents and 175 of their siblings. The omitted category consists of 80 respondents' siblings, born in the countryside, who did not move during the war. Column (1) gives cross-sectional estimates; column (2) shows within-household specifications; column (3) also controls for age, gender, and whether the individual is the eldest offspring. Robust standard errors, adjusted for heteroskedasticity, are reported in parentheses. *, **, and *** indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Displaced vs Urban-Born The survey allows the comparison of the displaced residents of Nampula with those born in the city who were never displaced. Table 7 reports the cross-sectional relationships. In column (1), we examine the degree of educational convergence of IDPs in Nampula, by comparing them with the urban-born, never-displaced residents. The coefficient is statistically indistinguishable from zero, suggesting full educational catch up in terms of upper primary school completion, a somewhat unexpected result, as urban-rural differences in education were, and still are, considerable in (Northern) Mozambique.²⁶ Policy debates often focus on the displaced social integration into host communities. To shed light on this issue, in columns (2)-(4), we explore differences across civic/social capital proxies, reflecting the willingness to contribute to social causes, working voluntarily for community projects, trust towards neighbors, and civicness, as in whether it is justifiable to avoid taxes and pay bribes. Three decades after the war and despite educational convergence, IDPs report significantly lower levels of trust, political participation, and civicness, as compared to their urban-born cohort that was never displaced.²⁷ These patterns, although based on a small sample, hint at displacement's considerable adverse effects, as both across 34 Sub-Saharan African countries and

²⁶The upper primary completion rate in 1997 for older than 15-year-old urban residents (in Northern Mozambique) was 21% (15%), while for rural residents it was just 3% (2%). The preliminary tabulations of the 2017 census reveal that primary school dropout rates in the countryside were double that of cities (29% to 14%).

²⁷These patterns align with those of Rohner et al. (2013), Nunn and Wantchekon (2011), and Besley and Reynal-Querol (2014), which document the lasting impacts of warfare and coercion on distrust across Africa.

across (Northern) Mozambique, rural residents exhibit *higher* trust and social capital, as compared to urban-dwellers (Appendix Section G.2 reports the Afrobarometer Survey tabulations).

Lastly, in columns (5)-(7), we explore the emotional scars of displacement, which, although widely acknowledged (see Appendix Section A for illustrative accounts), are hard to quantify. To assess psychological impacts, we collected information on loneliness and optimism, and constructed a mental health index based on the PHQ-9 module (Kroenke, 2001). IDPs appear lonelier than those born in urban areas, although the estimates are imprecise. Specification (6) reveals a sizable gap in optimism about children’s future wealth, suggesting displacement has lasting costs even among groups with similar education. Column (7) examines mental health using an index averaging 13 symptoms of depression and anxiety over the past two weeks, rescaled so higher values denote better mental health. The IDP coefficient is highly significant, indicating a substantial mental health gap, 0.215, twice the mean for urban-born residents.

Table 7: Schooling, Social/Civic Capital, and Mental Health: Displaced vs Urban Non-Movers

	(1) Schooling	(2) Trust	(3) Social Capital	(4) Civic Attitudes	(5) Loneliness	(6) Optimism	(7) Mental Health
Moved During the War	0.060 [0.067]	-0.456** [0.220]	-0.054 [0.179]	-0.580*** [0.185]	-0.148 [0.091]	-0.189*** [0.065]	-0.215** [0.103]
Observations	227	227	227	227	227	227	227
Non-Mover Mean	0.373	0.353	0.072	0.346	0.105	0.569	0.155
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.022	0.050	0.006	0.072	0.038	0.108	0.036

Notes: The table reports OLS estimates linking various outcomes to a Displaced indicator, which identifies respondents who moved during the civil war. The omitted category consists of residents of Nampula who were born in the city and never moved. In column (1), the dependent variable is a binary index that identifies respondents with completed upper primary education (7 years). In column (2), the trust variable is constructed via principal components from responses on whether the respondent feels comfortable with a neighbor looking after keys or children, reports a sense of belonging to the neighborhood, and trusts people in the neighborhood. In column (3), the social capital index is a principal component aggregate of willingness to give to good causes without expecting a return, unpaid community work in the past year, the importance placed on solving community problems, and willingness to exchange favors with neighbors. In column (4), the civic attitudes index captures responses on whether it is justified to claim benefits, avoid taxes, or pay bribes. In column (5), the loneliness index is a principal component aggregate of respondents who feel a lack of companionship, have no one to turn to, feel alone, do not feel close to anyone, do not share interests with others, or feel isolated. In column (6), the optimism index measures expectations that children will be richer than the respondent at the same age. In column (7), the mental health index aggregates via principal components responses on whether in the previous two weeks respondents had little interest in activities, felt depressed, had trouble sleeping, felt tired, had appetite changes, felt like a failure, had difficulty concentrating, experienced slowed or restless movements, felt nervous, worried excessively, had trouble relaxing, felt restless or easily annoyed, or felt afraid. All specifications control for age, gender, and an eldest-offspring indicator. Robust standard errors are reported in brackets below the regression estimates. *, **, and *** indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Taking Stock Our findings from a random sample of IDPs and non-movers in Mozambique’s largest Northern city complement the analysis of the 1997 census along two dimensions. First, although the sample is small and from a single city, the survey reveals the enduring positive impact of displacement

on education. Second, IDPs have lower community trust than urban-born, and at the same time, they are less optimistic and more mentally stressed, hinting at the lasting scars of forced displacement.

8 Conclusion

As images, videos, and testimonies of millions displaced from Gaza, Sudan, Ukraine, Ethiopia, and Congo circulate widely across mainstream and social media and draw global concern, the need to rigorously examine the consequences of war-induced displacement has become increasingly urgent. We delve into the heterogeneous displacement trajectories during the Mozambican civil war (1977 – 1992), associated with the relocation of about four million civilians, a third of the surviving population. Overall, our analysis suggests that forced displacement can serve as a mobility shock, prompting investments in education and a modest shift away from agriculture. This result captures three broad underlying economic mechanisms. First, the displacement-education nexus is especially strong for rural-born moving to towns and cities, suggesting significant place effects. Comparing only movers and even only relatives, we uncover significant *childhood regional exposure effects*, as children (siblings) moving earlier in life into better (worse) regions gain (lose) disproportionately. Second, *spatial sorting* is of a similar magnitude to the place effects, indicating that mechanisms present during peaceful (external and internal) migrations also apply during a highly destructive civil war. Third, even rural-born individuals who relocate, often forcefully by warring parties, to other rural areas with limited opportunity, infrastructure, and security, invest more in education compared to those (relatives) who stay in their birthplace. Conditional on destination-origin differences in non-movers' education and spatial sorting, displacement is associated with modest educational uptick, suggesting *uprootedness* effects, even in an environment marked by low-income, insecurity, and limited state capacity, where *a priori* adverse disruption effects would have likely dominated. A complementary small survey in the largest Northern metropolitan area suggests that the educational dividend of displacement is lasting, although it comes with social disengagement and lower mental health.

Our evidence from a low-income setting speaks directly to humanitarian policy, as most displaced people today reside in fragile states. Future research should further investigate the three underlying economic forces at play –uprootedness, place effects, and selection –, examining, for instance, which

regional characteristics facilitate human capital investments by refugees; and whether psychological preferences or economic incentives underline uprootedness. As displacement is a “bundle” treatment, future work should try to unpack its main features, studying their effect and exploring interactions with policies. Our findings underscore the importance of enabling displaced populations to settle in locations where they have both the incentives and the capacity and support to invest in education. Expanding school infrastructure and other public investments in human capital can help break the fragility trap—the vicious cycle linking poverty, conflict, and limited state capacity (Cameron et al., 2018). But because displacement also entails substantial psychological and social integration costs, policies that reduce mental stress and foster the social integration of displaced individuals into host communities are essential, although more research is needed to understand their functions. Taken together, such strategies can transform the tragedy of conflict and displacement into an opportunity. If managed effectively, the educational investments of refugees and IDPs can serve as a cornerstone for post-war reconstruction and long-term structural transformation.

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