

# Forced Displacement and Human Capital Evidence from Separated Siblings

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## Abstract

We examine the impact of conflict-driven displacement on human capital looking at the Mozambican civil war (1977 – 1992), during which more than four million civilians fled to the countryside, to cities, and to refugee camps and settlements in neighboring countries. First, we present descriptive patterns linking education and sectoral employment to the various displacement trajectories using the full population census. Second, we compare siblings separated during the war, using those who stayed behind as a counterfactual to one's displacement path. Displacement is associated with increased educational investments, with the largest effects experienced by rural-born children escaping to urban areas. Third, we jointly estimate place-based and uprootedness effects. Both are present, with displacement increasing education and decreasing attachment to agriculture by the same rate as being exposed to an environment approximately one standard deviation more developed than one's birthplace. Fourth, we conduct a survey in Mozambique's largest Northern city, whose population doubled during the civil war. Those displaced to the city have significantly higher education than their siblings who remained in the countryside and they converged to the levels of schooling of non-mover urban born individuals. However, those displaced exhibit significantly lower social/civic capital and have worse mental health, even three decades after the war ended. These findings reveal that displacement shocks can trigger human capital investments, breaking links with subsistence agriculture, but at the cost of long lasting, social, and psychological traumas.

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# 1 Introduction

At the end of 2020, more than 82 million people had been forcibly displaced from their homes. Protracted conflict in Syria, Yemen, Libya, Afghanistan, and civil violence in Myanmar and Venezuela have contributed to a doubling of this figure since 1990. One person becomes displaced every three seconds (UNHCR 2020); just in 2020 about 11 million were forced to flee. With worsening conflict in many parts of the world, the number of displaced seeking shelter across the developing world is expected to rise, particularly in Africa. Besides the lasting conflicts in Congo, Sudan, and the Sahel, there is an escalation of violence in the Tigray region in Ethiopia and in Northern Mozambique.

Forced displacement can take many forms. The most common (about 60%, 48 million in 2020) is internal displacement (IDPs) to either rural or urban areas. The remaining share (40%) corresponds to individuals fleeing to neighboring countries and residing in UN-managed camps or in informal settlements. Yet, despite the increasing salience of this phenomenon, there is limited empirical evidence on its short and long-term impacts. Often constrained by detailed but small surveys, the literature (discussed below) usually studies a single type of displacement. Moreover, most case studies zoom into advanced economies, even though 85% of those displaced live in the developing world.<sup>1</sup> There are also formidable challenges to identification: conflict is not random and several household and locality characteristics may shape both displacement and economic choices.

This paper advances on these issues by examining the impact of displacement on schooling and sectoral employment in the context of one of the most devastating post-WWII civil wars: the displacement of about a third of Mozambique's population during a protracted civil war (1977-1992). During this period, at least seven hundred thousand Mozambicans sought shelter in camps managed by the United Nations High Commission for Refugees (UNHCR 1998) in Zimbabwe and in Malawi. Thousands more fled to Zambia, Swaziland, and Tanzania, settling in villages and in informal settlements. However, similar to conflicts today, the majority were internally displaced. Roughly 1.8 million rural-born sought protection across Mozambique's

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<sup>1</sup>The UN estimates that 36 of the most fragile countries in the world account for less than 3% of global GDP but host over a third of the world's forcibly displaced.

vast countryside and its few urban centers, while about 700,000 urban-born were reshuffled across other towns. The government’s villagization and food production policies moved about 50,000 city-dwellers to the countryside during the war period.

The impact of forced displacement on human capital is ambiguous. On the one hand, disruption magnified by insecurity and poverty, may force children out of school. On the other hand, displacement may spur human capital investments, as it represents a mobile asset that cannot be expropriated. This idea goes back to [Stigler and Becker \(1977\)](#), who credit Reuben Kessel and earlier scholars on the *uprootedness hypothesis* (see [Becker et al., 2020](#)). Many have argued, for example, that the expulsions of Jews were instrumental in fostering human capital (see [Botticini and Eckstein, 2012](#)). Nevertheless, the destination is likely to have first-order effects. Fleeing to areas with more opportunities may incentivize educational investments, while displacement into poorer, more violent districts may nullify (exacerbate) any positive (negative) uprootedness effects. While there is growing evidence on the impact of regions and neighborhoods, empirical studies focus on movements during peaceful times, rather than conflict-driven displacement (e.g., [Chetty and Hendren, 2018a,b](#); [Nakamura et al., 2021](#)).

## 1.1 Results Preview

We reconstruct the movements of the full Mozambican population (about 12 million) during the civil war to study the consequences of multiple displacement trajectories in a single setting. Our analysis proceeds in four steps. First, we present correlational evidence linking the displacement paths of more than four million Mozambicans to schooling during the civil war and sectoral employment five years after its end. Compared to rural non-displaced from the same district, IDPs completed higher levels of schooling, particularly those who fled to cities and towns. In contrast, those who flee to rural areas experience smaller gains in schooling relative to those staying behind. The analysis for the urban-born mirrors these patterns. Urban dwellers forcibly displaced to the countryside are less educated than those staying or moving into other cities. Educational gains move in tandem with a shift out of agriculture into services, suggesting that conflict-driven human capital accumulation might spur structural transformation (see [Porzio et al., 2020](#)).

Second, to tighten identification we focus on families with siblings separated from each other during the war. Comparing brothers and sisters with different trajectories accounts for household characteristics, related to exposure to violence, aspirations and preferences for education, religious and ethnic background, among others. Looking at split siblings is important in itself, as it is a devastating though defining feature of contemporary conflicts (Gluck and Alalem, 2020). Displaced into cities and towns have a higher propensity to attend school and work in services, compared to their brothers and sisters who stayed behind. Even displacement to other rural areas, often destitute, increases schooling, albeit to a lesser extent. The within-family estimates are smaller in magnitude than the cross-sectional ones, suggesting that sorting is present, even in a fairly unpredictable civil war.

Third, we measure uprootedness and place-based effects in a single framework. To capture place effects we exploit origin-destination differences in development (stock of human capital, population density, school availability) and conflict intensity (battles, landmines). Both forces are at play. Individuals displaced into worse (better) places lose (gain) compared to their staying-behind siblings. At the same time, IDPs to areas comparable to their birthplace are significantly more likely to attend school and shift into services after the war. The uprootedness effect is sizeable and comparable to moving to a district that is roughly one standard deviation more developed than one's birth district.

Fourth, we report on a self-administrated survey of 208 residents of Nampula, Mozambique's most populous Northern city, whose population surged during the war. In line with the short-run Census-based patterns, three decades after the war, IDPs in Nampula have significantly higher education compared to their siblings in the countryside. IDPs' education is similar to those born and raised in the city, despite large urban-rural educational gaps at the time and today. However, IDPs report much lower social capital, civicness, and community trust than urban-born never displaced. Moreover, IDPs score significantly worse on mental health and appear more pessimistic than urban-born respondents. This survey highlights both the upside and the considerable long-run social and psychological downsides of forced displacement.

## 1.2 Related Literature

Our paper is part of the literature examining the economic impact of refugee flows. This work has overwhelmingly looked at resettlement in advanced economies (e.g., [Friedberg, 2001](#); [Borjas, 2003](#); [Borjas and Monras, 2017](#); [Foged and Peri, 2016](#)) or at historical episodes, such as the relocation of Germans after WWII ([Peters, 2019](#)), Poles resettlement from the East to the West in 1945 ([Becker and Ferrara, 2019](#)), and the population exchange between Turkey and Greece in the mid 1920s ([Benos et al., 2021](#)).<sup>2</sup> Our contribution to this research agenda is sixfold. First, we focus on a low-income environment, comparable to contemporary civil war settings. Second, we provide a comprehensive account of population movements’ impact during conflict using the universe of the Mozambican population, against a literature that mostly works with surveys and small samples.<sup>3</sup> Third, the Mozambican civil war allows us to study different experiences in a unified framework, understanding their relative impact on human capital investments and occupational choices, against a literature that invariably looks at a single trajectory.<sup>4</sup> Fourth, we sharpen identification comparing about 135,000 siblings (from 45,000 families) with different displacements. Fifth, we estimate in a single framework both exposure and uprootedness effects, quantifying their relative importance. Sixth, we document the long-term consequences of forced displacement: the lasting positive impact on education, but also chief downsides, worse mental health and social disengagement.

Our paper connects to a broader literature on civil wars (see [Blattman and Miguel, 2010](#), for a survey). The impact of conflict on human capital is not well-understood as some studies document a negative correlation (e.g., [Saing and Kazianga, 2020](#); [Chamarbagwala and Morán, 2011](#); [Fergusson et al., 2020](#)), while others a positive one ([Chen et al., 2007](#)). We uncover a link between displacement, human capital, and a shift out of (subsistence) agriculture, as a potential mechanism of post-conflict recovery that appears heterogeneous. Our focus on a specific aspect of civil wars also relates to studies “unbundling” conflict, looking, for example,

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<sup>2</sup>See [Becker and Ferrara \(2019\)](#); [Verme and Schuettler \(2021\)](#); and [Devictor et al. \(2020\)](#) for reviews.

<sup>3</sup>[Verwimp et al. \(2020\)](#), for example, analyze data from 4,523 Burundian women to examine the impact of conflict-induced displacement on fertility.

<sup>4</sup>[Sieverding et al. \(2018\)](#) look at educational enrollments of Syrian refugees in Jordan. [Fransen et al. \(2018\)](#) compare the education of externally displaced Burundians to locals after their return. [Ginn \(2020\)](#) compares Syrian refugees in Jordan, Iraq and Lebanon.

at child-soldiering (Blattman and Annan, 2010), landmines (e.g., Chiovelli et al., 2019), and bombardment (Miguel and Roland, 2011; Dell and Querubin, 2018; Riaño and Valencia, 2020).

Our paper relates to research trying to isolate the causal impact of places from spatial sorting (Chetty and Hendren, 2018a,b; Bazzi et al., 2019; Alesina et al., 2021a). Rather than looking at internal migration in peaceful times, we look at conflict-induced displacement, bringing two new results. First, exposure matters for human capital accumulation, even in poverty-stricken settings. Second, individuals who are forcibly displaced invest more in human capital, above and beyond any exposure effects, revealing the upside of disruption.

**Structure.** Section 2, discusses forced population movements during the war. Section 3 presents correlational evidence in the full census linking educational investments and sectoral employment to the different displacement trajectories. Section 4 reports the within-family estimates. Section 5 isolates exposure and uprootedness effects, comparing siblings with different displacement paths. Section 6 presents the survey results. Section 7 concludes.

## 2 Historical Background and Data

### 2.1 Civil War

Mozambique gained independence from Portugal in 1974, after a decade-long war that ended with the rise to power of Mozambique’s Liberation Front (FRELIMO). FRELIMO provided shelter to the African National Congress and the Zimbabwean African National Union that fought the apartheid regimes in South Africa and Rhodesia, respectively. In response, the Rhodesian Secret Service backed the Mozambican National Resistance (RENAMO), an initially small rebel group, to destabilize the country.

In the first phase of the war (1977 – 1980), RENAMO attacked military bases and infrastructure in central provinces, close to the Zimbabwean border. The conflict took a violent turn in 1980, when South Africa took over RENAMO’s patron role after the fall of Ian Smith’s regime in Rhodesia. In the second phase (1980 – 1986), the war spread throughout Mozambique, as RENAMO’s operational capacity improved. With efforts to bring South Africa and Mozambique closer failing, the war entered its third phase (1986 – 1990) marked by REN-

AMO’s “terror” against civilians. Village burning, killings, child soldiering raids, and looting became widespread ([Gersony, 1988](#)) and the (limited) state apparatus collapsed. In the fourth phase (1990 – 1992), FRELIMO introduced a new constitution safeguarding civil and political rights, which together with South Africa’s shift away from supporting RENAMO led to the end of the war, with the signing of the Rome Treaty in October of 1992. At the end of the war, Mozambique was the second poorest country in the world with more than 85% engaged in (subsistence) agriculture and more than 60% of its population illiterate ([World Bank, 2020](#)).

## 2.2 Displacement

Population reshuffling was a defining feature of the conflict. Civilians fled to neighboring countries, mostly Malawi and Zimbabwe, to other rural areas, and to cities. The UN led an unprecedented repatriation assisting millions to return home between 1992 and 1994.

Our primary data source is the Mozambican decennial Census of 1997, the first post-war and effectively the first post-independence, as the the 1980 Census only recorded population counts. This Census allows us to reconstruct the displacement trajectories of the universe of the surviving population. Specifically, it provides information on an individual’s location during three key points in time: place of birth (at the admin-2 level, 216 districts); residence in 1992 prior to the end of the war (also at the district level); and residence in 1997 (at the admin-4 level, 1,187 localities). With this information, we reconstruct the movements for the universe of 12 million individuals five years and older in 1997.<sup>5</sup>

[Table 1](#) reports the number and share of displaced, by trajectory, distinguishing between urban and rural born.<sup>6</sup> Besides the full population figures, columns (3) and (4) report the distribution for 5,625,327 Mozambicans between 12 and 32 years of age in 1997, whose primary schooling decisions were made during the civil war. [Appendix B](#) provides further evidence, summary statistics, and descriptive statistics.

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<sup>5</sup>We also drop 768,784 individuals with missing information of residence in either 1997, or 1992, or at birth.

<sup>6</sup>The National Institute of Statistics classifies as urban 23 cities and 68 towns with median populations in 1980 of 56,718 and 7,740, respectively.

Table 1: Refugees, Internally Displaced, and Non-Movers

	Full Sample (5+)		Sample (12-32)	
	Observations (1)	Proportion (2)	Observations (3)	Proportion (4)
<b>Refugees</b>	783,105	0.07	363,542	0.06
Born Abroad	182,217	0.23	53,616	0.15
Refugee, Rural	537,323	0.69	275,393	0.76
Refugee, Urban	63,565	0.08	34,533	0.09
<b>Internally Displaced</b>	2,470,986	0.21	1,193,207	0.21
Internally Displaced, Rural	1,785,338	0.72	852,808	0.71
Internally Displaced, Urban	685,648	0.28	340,399	0.29
<b>Non Displaced</b>	8,730,392	0.73	4,068,578	0.72
Non Movers, Rural	6,614,035	0.76	3,012,113	0.74
Non Movers, Urban	2,116,357	0.24	1,056,465	0.26
<b>Total</b>	11,984,483		5,625,327	

Notes: The table shows the number and 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) provide tabulations for individuals aged 5 and older (full sample), while columns (3)-(4) show the statistics for individuals aged 12-32 in 1997.

### 2.2.1 Non-Displaced

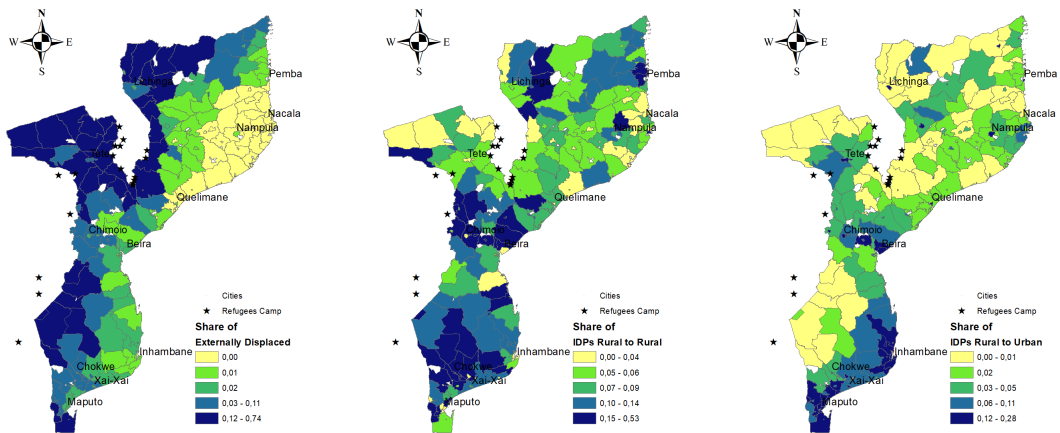
“Non-Movers” denote Mozambicans residing at the end of the civil war (in 1992) in their district of birth. Roughly 2.1 million urban-born are non-movers (half in the 12 – 32 sample) and close to 6.6 million rural-born (3 million aged 12 – 32). [The Census does track the timing of the displacement nor temporary moves. Moreover, we cannot track within-district movements.]

### 2.2.2 External Displacement

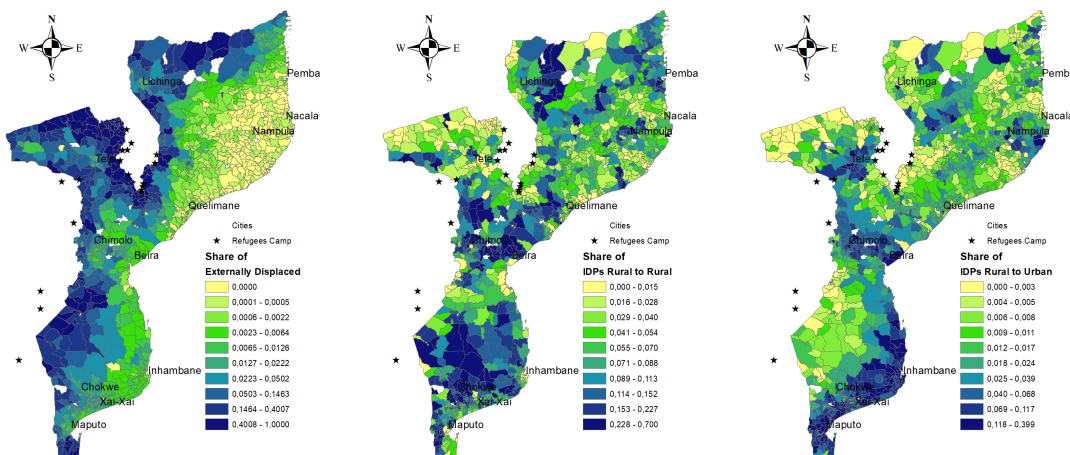
Close to 600,000 civilians were externally displaced during the war and 180,000 were born abroad. Over 550,000 resided in Malawi in 1992 and about 125,000 in Zimbabwe; with 60,000 Mozambicans found in Tanzania, Zambia, and Swaziland, alongside local communities at the end of the war. About 50,000 refugees were in South Africa ([Table B.1.](#)) The Census does not record whether people settled in a camp. But, almost all Mozambicans in Zimbabwe settled in five UNHCR camps. In Tanzania, Zambia, and Swaziland, Mozambicans moved into villages and informal settlements. In Malawi, refugees settled in twelve UN-run camps and in small towns.<sup>7</sup> Refugee flows accelerated in the mid 1980s, during RENAMO’s terror.

<sup>7</sup>The country-specific numbers roughly coincide with UN estimates (UNHCR 1992). The Census misses about 15% who stayed in the country of displacement; those returning before 1992; temporary moves; and returning refugees deceased before 1997.





**Panel A: Forced Displacement by District of Birth**  
 Refugees                      IDPs Rural → Rural                      IDPs Rural → Urban



**Panel B: Forced Displacement by Residence Locality in 1997**  
 Refugees                      IDPs Rural → Rural                      IDPs Rural → Urban

**Figure 1:** The figures plot the spatial distribution of the share of rural-born displaced Mozambicans across 216 birthplace districts and 1,197 residence localities, as recorded in the 1997 Census. There are three displacement categories: (i) Externally displaced (refugees) residing or born in a neighboring country in the end of the war (1992). (ii) Internally displaced people found at the end of the war (1992) in a town or city. (iii) Internally displaced people (IDPs) residing in 1992 in another than their birthplace rural district. [Table 1](#) provides the totals for each trajectory.

Figure 1, panels (A)-(B) plot the share of externally displaced across birth districts (admin-2) and residence localities in 1997 (admin-4). It was mostly civilians born in border areas who fled the country. Refugees did not have the right to work and given the scarcity of employment opportunities, they largely depended on UN transfers. The UNHCR funded schools, both in areas with a large number of refugees and in camps (Azevedo, 2002, p. 47). Refugees lacked “any psychological assistance, beyond basic medical care (...)” (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.* Most refugees returned to their place of birth (over 85%) after the war (UNHCR 1994).

### 2.2.3 Internal Displacement

Given the considerable heterogeneity in internal displacement, we classify the 2.5 million IDPs by birth origin and displacement destination (Table B.2 provides details).

**Rural to Urban Displacement:** During the civil war, small and big towns experienced a significant inflow of IDPs. Half of the rural-born IDPs (about 900,000) sought protection in urban centers. Maputo-Matola, Beira, and Nampula, the three largest (coastal) cities, received close to half a million IDPs. 190,000 (21%) rural-born moved to ten smaller cities and towns (Chimoio, Nacala-Porto, Quelimane, Tete, Xai-Xai, Maxixe, Lichinga, Pemba, Dondo, and Angoche) and 200,000 (22%) moved to 81 smaller towns. Urban households grew, as many accommodated displaced relatives.<sup>8</sup> Living conditions in the cities were challenging, with food shortages and insecurity. However, schools and hospitals were functional. Figure 1 illustrates the spatial distribution of rural to urban displacement. It was mostly those born close to the cities on the coast who managed to reach them. The mean share of individuals ending in cities/towns is small (4%), as the fragmented transportation network, contaminated by landmines, and rebel attacks made it hard to reach the coastal cities.

**Rural to Rural Displacement:** About 900,000 rural-born Mozambicans resided in a rural area other than their birth region during the war. Such rural-to-rural movement is uncommon during peaceful times. Internal rural-to-rural displacement was widespread as the civil war hotspots changed and civilians tried to adapt to the constantly changing circumstances. Besides, RENAMO forcibly moved peasants into forced labor villages in controlled territories to produce food and carry goods [see Appendix A].

**Urban to Rural Displacement** The Census records a non-negligible movement of about 186,000 people from urban places to the countryside. First, FRELIMO's villagization

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<sup>8</sup>By 1991, the average urban household comprised 5.7 persons, compared to 4.4 in the countryside.

scheme pushed some 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.

**Urban to Urban Displacement:** The census reveals the urban to urban movement of half a million IDPs. Two-thirds reflect movements into the largest cities (Maputo, Beira and Nampula) from smaller, often-attacked by RENAMO, towns in the interior.

**Post-War Repatriation:** In 1992, UNHCR initiated one of its largest repatriation efforts. Rates of return by 1997 ranged from 5% for those who had moved from an urban area to another urban area, to 27% for rural-born dislocated to another rural district. Rates of return for rural to urban moves were about 12%. [Table B.3](#) provides details on repatriation patterns by birth district, residence in 1992, and in 1997.

## 2.3 Data

The Mozambican decennial Census of 1997 provides information on our key outcomes: educational attainment and sectoral employment. The Census also provides individual and family-level characteristics, like gender, age, household size and offspring mortality.

We combine the 1997 Census with additional data. First, we digitized archival railroad and road maps in 1973, just before independence. Second, we processed and geo-coded data from the Ministry of Education on the location of primary schools from 1963 until 1992. Third, we digitized maps of colonial trade hubs – *cantinas* that alongside population density we use to proxy local development (Portuguese Colonial Yearbooks, 1965). Fourth, we extend the Uppsala Conflict Data Program Georeferenced Event Dataset (UDCP-GED) that covers 1989–1992 with information on the main civil war battles from [Domingues \(2011\)](#), [Robinson \(2006\)](#), and [Weinstein \(2002\)](#). Fifth, as an alternative conflict proxy, we use the extent of landmine and unexploded ordinance contamination from [Chiovelli et al. \(2019\)](#).

## 2.4 Drivers of Displacement

While our focus is on the implications of the various forced displacement trajectories, we also explored its drivers as this helps gauge the type of selection that underpins population

movements. We run linear probability (and multinomial logit) models linking displacement (types) to regional and family characteristics for rural and urban born. The results, reported in [subsection B.4](#), reveal the importance of conflict; in contrast, differences in development are uncorrelated with displacement. [Figure 1\(a\)-\(f\)](#) illustrate geography’s role: distance to the border is the most significant correlate of external displacement, while distance to cities correlates with displacement to urban centers. However, the economic significance of the prediction models are low. Warfare and location explain a tiny portion of the variation in displacement, as the civil war entailed many idiosyncratic features and unpredictable dynamics.

### 3 Correlational Evidence

This section reports correlational evidence linking education and sectoral employment to different displacement patterns across the full population.

#### 3.1 Specification

Given the considerable differences between rural and urban born, we run separate specifications for the two groups. To isolate educational investments during the civil war (1977 – 1992), we focus on Mozambicans aged 12 to 32 in 1997.

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

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

$Y_{il}$  denotes education and employment sector for individual  $i$ , born in locality  $l$ .  $EDP$  identifies those who are 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 rural born, who at the end of the war resided in another rural district.  $IDP(U - R)_{il}$  and  $IDP(U - U)_{il}$  denotes urban-born displaced to a rural or to another urban district, respectively.  $X_i$  reflects individual controls, gender and age dummies. Birthplace fixed effects,  $\mu_l$ , absorb differences in the socioeconomic environment in the region of birth. Standard errors are double clustered at

the district of birth and residence in 1992, to accounts for spatial correlation.<sup>9</sup>

## 3.2 Results

Table 2 reports LS estimates for rural born in Panel A and urban born in Panel B. Columns (1)-(2) and (3)-(4) report OLS estimates on the association between the different displacement trajectories and the probability of completing at least one year of primary school and years of schooling, respectively.<sup>10</sup> Columns (5)-(8) give linear probability model (LPM) estimates looking at agriculture and service employment, respectively.<sup>11</sup> Odd-numbered columns provide a test of means across displacement paths (as there are no controls), while even-numbered columns condition on gender, age, and birth-district fixed effects.

### 3.2.1 Rural Born [Panel A]

The estimates on the externally displaced are close to zero, revealing that refugees' educational outcomes are quite similar to that of non-movers, the omitted category. Once we condition on age, gender, and birthplace the estimates are nil. In contrast, IDPs from the countryside to cities/towns have, on average, higher human capital, when compared to non-movers of the same age, gender, and birth district. The difference in primary school attainment is considerable, 24 – 30 percentage points (pps), which is significantly larger than the mean value of non-movers, 13pps. Rural-born IDPs to cities have a 1.7 – 2.0 extra years of schooling, against a non-movers baseline of 0.7 years. Rural-born IDPs to another rural district also have more schooling compared to non-movers from the same birth district: the propensity to attend at least one year of school is 7pps higher and IDPs an extra half year of extra schooling by 1997.

In columns (5)-(8) we explore whether the various displacement paths correlate with a shift out of agriculture towards services. On the one hand, displacement may facilitate occupational shift, as IDPs and refugees lost access to land. And there may be more opportunities in retail and other services in towns. On the other hand, the transition to services may have been

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<sup>9</sup>Clustering at the admin-3 level or adjusting errors with Conley's method yields similar inference.

<sup>10</sup>As schooling years is highly nonlinear with many zeros, Table C.1 reports Negative Binomial ML and Poisson ML estimates. The implied magnitudes are similar to LS.

<sup>11</sup>The drop in observations is due to missing information that may reflect underemployment and/or imperfectly recorded employment status.

challenging, as education levels were low, poverty was endemic, and Mozambicans had been working in agriculture for generations. The cross-sectional estimates reveal significant sectoral employment shifts for the internally displaced. IDPs into urban areas are more likely to work in services five years after the end of the war. The coefficient is sizable (34pps) and drops modestly with the introduction of controls (29pps). We also observe some modest sectoral employment shifts of 5 – 6pps for IDPs moving to another than their birthplace rural area. For refugees the sectoral employment patterns appear no different than those of rural non-movers from the same birth district.

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

	Schooling (Dummy)		Years of Schooling		Agriculture Employment		Service Sector Employment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
Externally displaced	-0.020*** [0.004]	-0.003 [0.006]	-0.087*** [0.023]	-0.031 [0.044]	0.012*** [0.004]	-0.011 [0.007]	-0.006*** [0.002]	0.005 [0.004]
Intern. Displ. Rural → Urban	0.297*** [0.020]	0.243*** [0.016]	1.984*** [0.141]	1.677*** [0.116]	-0.396*** [0.038]	-0.327*** [0.027]	0.335*** [0.033]	0.289*** [0.025]
Intern. Displ. Rural → Rural	0.074*** [0.010]	0.069*** [0.013]	0.503*** [0.073]	0.471*** [0.089]	-0.071*** [0.010]	-0.056*** [0.012]	0.059*** [0.008]	0.048*** [0.010]
Mean Omitted Observations	0.130 4,185,268	0.130 4,185,268	0.723 4,185,268	0.723 4,185,268	0.900 2,716,853	0.900 2,716,853	0.055 2,716,853	0.055 2,716,853
Adj. R-squared	0.060	0.136	0.072	0.147	0.101	0.204	0.107	0.161
Panel B: Born Urban								
Intern. Displ. Urban → Rural	-0.090** [0.042]	-0.087*** [0.030]	-0.586* [0.298]	-0.581*** [0.220]	0.168** [0.083]	0.175*** [0.066]	-0.134* [0.072]	-0.142** [0.059]
Intern. Displ. Urban → Urban	0.142*** [0.017]	0.155*** [0.029]	1.158*** [0.084]	1.244*** [0.224]	-0.261*** [0.018]	-0.212*** [0.048]	0.241*** [0.015]	0.206*** [0.048]
Mean Omitted Observations	0.413 1,416,124	0.413 1,416,124	2.556 1,416,124	2.556 1,416,124	0.543 574,164	0.543 574,164	0.337 574,164	0.337 574,164
Adj. R-squared	0.015	0.217	0.020	0.236	0.055	0.386	0.048	0.267
Omitted Category	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Age FE	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 columns (1)-(2) is an indicator variable that takes the value of one for individuals who have completed at least one year of formal education and zero otherwise. The dependent variable in (3)-(4) is years of schooling. The dep. var. in columns (5)-(6) and (7)-(8) are indicator variables that take the value of 1 for employment in agriculture and the service sector, respectively, and zero otherwise. Even-numbered columns additionally control for gender and include age and district-of-birth fixed effects. Panel A shows trajectories for rural-born Mozambicans and panel B focuses on 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 reside in 1992 in urban regions and zero otherwise. IDP R-R is an indicator that takes on the value of one for rural-born individuals residing in 1992 in some rural district different from their own region of birth. 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 district of birth. The omitted category in panel A are rural-born Mozambicans residing in the same district in 1992 and the omitted category in panel B are 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 region of birth and admin-2 region of residence in 1992) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

### 3.2.2 Urban Born

Turning to urban-born (Panel *B*), those found in rural areas at the end of the war have lower education compared to those who stayed in cities and in towns. Average years of schooling for urban-born non-movers was 2.56, with 41.3% having completed at least one year of schooling. The unconditional drop in the likelihood of attending schooling for those displaced in the countryside is about 9 percentage points and 0.6 years. Accounting for birth place, gender, and age does not much change the estimates. Movers to other urban hubs experienced higher levels of schooling; 15.5 pps increase in attending primary school and 1.24 years of schooling.

Columns (5)-(8) show that urban-born displaced into rural areas are more likely to work in agriculture (by 0.175 pps), as compared to services. The sign of the correlations are reversed for those moving during the war to another urban area. The coefficient on service employment (out of agriculture) is 0.21 pps higher (lower), compared to a baseline of 0.34 (0.54).

### 3.3 Interactions

We report in [Appendix C](#) that those with higher levels of schooling are more likely to shift into service employment. This suggests that human capital investments can go hand in hand with structural transformation (see also [Porzio et al., 2020](#)).

## 4 Sibling Analysis

While the Mozambican civil war entailed several unpredictable and idiosyncratic aspects, the full Census estimates do not yet capture causal relationships. Families and individuals may have sorted into different environments and incurred in educational investments based on hard-to-observe individual, household, and locality characteristics. To sharpen identification, we exploit the fact that in the chaos of the war, attacks by militias and rebels often resulted in families separation.<sup>12</sup> The Mozambican war was ripe with instances of abductions, child-soldiering raids, and the forced relocation of thousands. UNICEF estimated that by 1989, there were

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<sup>12</sup>Recognizing the pervasiveness of this phenomenon, UNICEF and the International Committee of the Red Cross (ICRC) have set up programs to reunite families in post-conflict settings.

about 250,000 separated children from either their parents or their siblings.<sup>13</sup>

In this Section, we compare (close to age) siblings that experienced different displacement paths during the war. This setting allow us to account for regional characteristics at birth and residence in 1977 at the most granular level, and family attributes, household size, preferences, aspirations, and networking capital. The within-family design also accounts for religion, ethnicity, culture, and social practices, which are strong correlates of education in Africa (Alesina et al., 2021b). We first provide an overview of households with separated siblings. Second, we lay down the sibling-pair empirical specification. Third, we present the within-family results. Fourth, we summarize the sensitivity checks. Fifth, we go over the heterogeneity analysis. Appendix D gives descriptives and presents the sensitivity and heterogeneity analysis.

## 4.1 Split Households. Patterns and Characteristics

### 4.1.1 Patterns

Table 3 plots the distribution of 45,445 households with at least two 12 – 32 year-old siblings residing in different districts in 1992 but together in the same household in 1997.<sup>14</sup> Approximately 10,000 rural-born families had one sibling moving to a city by 1992, while the remaining sibling(s) were in their birthplace. 5,970 households had (at least) one sibling in a neighboring country and another in the region of birth. About 9,000 rural households had a son or daughter residing in another rural district in 1992, with a sibling staying at birthplace. 8,000 urban-born households had siblings experiencing different displacement trajectories. More than 5,000 households had siblings internally displaced into different regions (e.g., city and other rural districts). There are 4,195 households with siblings facing three types of displacement.

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<sup>13</sup>In Appendix A, we review accounts and testimonies of children separated from their families during the war using at the time reports and surveys (Gersony, 1988; Human Rights Watch, 1991; Boothby et al., 1991).

<sup>14</sup>Siblings are sons or daughters of the household head. In the Appendix we also compare all young individuals in the same household with different displacement paths during the war to account for those that in 1997 had not reunited with their siblings. These non-reunited young individuals appear in the census in some other relationship to the household head (nephew, niece, etc).



Table 3: Displacement Patterns of Split Households

	Split Household (12-32 yo)			
	Households	Proportion	Siblings	Proportion
NM Rural and IDP Rural → Urban	10,020	0.22	28,663	0.21
NM Rural and IDP Rural → Rural	9,132	0.20	25,853	0.19
NM Rural and Externally Displaced	5,970	0.13	17,552	0.13
NM Rural and IDP Urban → Urban	170	0.00	440	0.00
NM Rural and IDP Urban → Rural	188	0.00	504	0.00
NM Urban and IDP Urban → Rural	2,448	0.05	6,877	0.05
NM Urban and IDP Urban → Urban	4,294	0.09	13,763	0.10
NM Urban and Externally Displaced	1,243	0.03	4,112	0.03
NM Urban and IDP Rural → Urban	451	0.01	1,436	0.01
NM Urban and IDP Rural → Rural	256	0.01	658	0.00
Ext. Displ. and IDPs	1,736	0.04	4,934	0.03
Various Trajectories of IDPs	5,342	0.12	13,979	0.10
More than 3 displacement trajectories	4,195	0.09	17,717	0.13
<b>Total</b>	<b>45,445</b>	<b>1.00</b>	<b>136,488</b>	<b>1.00</b>

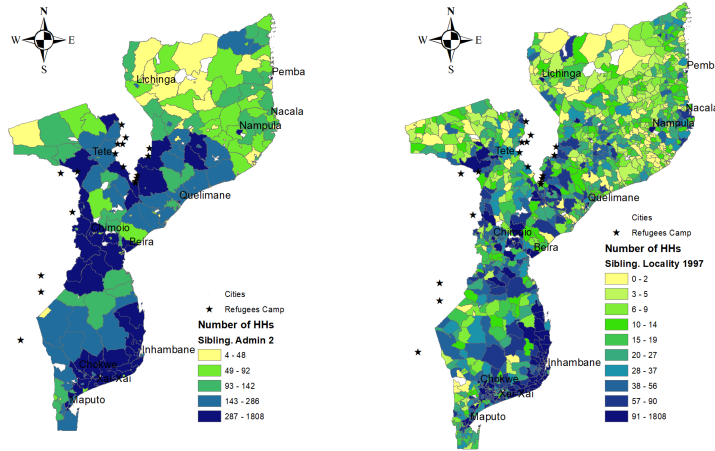
The table reports in columns (1) and (2) the number and percentage of split households, defined as those where at least two 12-32 year-old individuals in 1997 with different displacement trajectories. Columns (3) and (4) give the number and percentage of separated siblings of households with different trajectories. For rural-born and urban individuals there are four possibilities: (1) non-displaced (NM rural and NM urban); (2) internally displaced people (IDP) to an urban locality; (3) IDPs displaced to a rural area; (4) Externally displaced outside Mozambique.

Figure 2, panels (A)-(D) plot the spatial distribution of separated households at the end of the civil war. Panels (A)-(B) portray the number of split households across birth districts (admin-2 units) and residence locality in 1997 (admin-4 units). Panels (C)-(D) reflect the share of split households to total households across districts and localities of residence during the 1997 Census, respectively. There are more split households in areas proximate to Maputo/Matola, Beira, Xai Xai, Inhambane, and Chimoio, the main (coastal) cities in the South and Center. Separated households are somewhat less likely in the Northern provinces, as the civil war there spread after the mid-1980s. Once we standardize by population (number of households), regions more heavily affected by the civil war including those South of the Zambezi river (just north of Beira) have a higher density of split households.

#### 4.1.2 Households with and without Separated Siblings

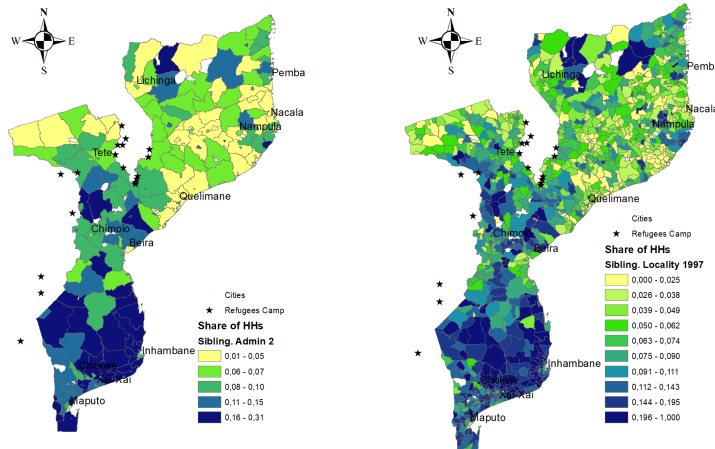
Our analysis rests on the comparison between households with separated siblings and households in which siblings remained together. The latter category consists of families that moved together and households that remained in their birthplace. Table D.2 and Table D.3 in the Appendix show that household heads and grandparents of families with separated siblings have

## Number of Households in Separated Sibling Sample



Panel A: District of Birth    Panel B: Locality in 1997

## Share of Households in Separated Sibling Sample



Panel C: District of Birth    Panel D: Locality in 1997

**Figure 2:** Panels (A) and (B) plot the spatial distribution of the number of households where at least two siblings, aged 12-32 in 1997, have followed different displacement trajectories across 216 birth regions (admin-2 units) and 1,195 localities of residence in 1997 (admin 4 units). Panels (C) and (D) plot the distribution of households with separated siblings across birth regions and residence localities as a share of birth district and residence households with at least two siblings, aged 12-32 in 1997.

similar education levels to non-split households. Given that these investments were made prior to the war, it suggests that the two sets of families are likely comparable on other non-observable dimensions to begin with. Households with separated siblings are, on average, larger and the mother (spouse of the household head or the female head) reports more children born alive. Larger families may have found it harder to stay put or to move together during a protracted war. Split households compared to families that never moved also experienced more adverse

conditions, as reflected in child mortality.<sup>15</sup> This is not the case when we compare separated families to families that were displaced together. As we do not know the time of children’s death, we cannot conclude whether displaced families faced higher mortality before or during displacement. However, the simple tabulations reveal that separated families have experienced more deprivation and adversity compared to households that were not displaced, reinforcing the involuntary nature of displacement.

## 4.2 Specification

In our baseline within-family specification the unit of analysis is a pair of siblings  $i, j$  with different displacement trajectories.

$$\Delta Y_{ij} = \alpha + \beta_1 \Delta EDP_{ij} + \beta_2 \Delta IDP(R - U)_{ij} + \beta_3 \Delta IDP(R - R)_{ij} + \delta_i X_i + \delta_j X_j + \phi \Delta Age_{ij} + \mu_{li} + \mu_{lj} + \epsilon_{ij} \quad (2a)$$

$$\Delta Y_{ij} = \alpha + \beta_4 \Delta IDP(U - R)_{ij} + \beta_5 \Delta IDP(U - U)_{ij} + \delta_i X_i + \delta_j X_j + \phi \Delta Age_{ij} + \mu_{li} + \mu_{lj} + \epsilon_{ij} \quad (2b)$$

$\Delta Y_{ij}$  denotes the difference in outcomes between siblings  $i$  and  $j$ .  $X_i$  and  $X_j$  denote sibling-specific controls, age constants, gender, and an indicator for the eldest child in the household.<sup>16</sup> We also include siblings’ age difference fixed-effects,  $\Delta Age_{ij}$ . As siblings may have been born in different places, we include birth-district fixed effects,  $\mu_{li}$  and  $\mu_{lj}$ .

## 4.3 Results

Table 4 reports the sibling-pair estimates for differences in schooling in columns (1)-(4), and sectoral employment in columns (5)-(8). Panel A presents results for rural born, while Panel B examines urban born.

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<sup>15</sup>We construct family child mortality by subtracting from the number of born-alive children those not alive in 1997. For these comparisons we omit 5.5% of families with multiple wives.

<sup>16</sup>Birth order may impact selection into displacement and schooling. Signing the bias is, however, unclear. On the one hand, households may relocate the eldest sibling to the cities or safer rural areas to secure a safe-haven for the rest of the family to follow. On the other hand, families may prefer that the eldest sibling stays behind to protect the house and ancestral farmland.

Table 4: Forced Displacement, Schooling, and Employment - Separated Sibling Analysis

	$\Delta$ Schooling $_{ij}$		$\Delta$ Years of Schooling $_{ij}$		$\Delta$ Agriculture Employment $_{ij}$		$\Delta$ Service Sector Employment $_{ij}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
$\Delta$ Externally Displaced $_{ij}$	0.018 [0.024]	0.013 [0.008]	0.070 [0.160]	-0.003 [0.065]	-0.078*** [0.016]	-0.050*** [0.014]	0.028*** [0.008]	0.011 [0.008]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Urban $_{ij}$	0.077*** [0.010]	0.073*** [0.007]	0.544*** [0.066]	0.530*** [0.052]	-0.046*** [0.011]	-0.039*** [0.009]	0.045*** [0.009]	0.043*** [0.009]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Rural $_{ij}$	0.030*** [0.005]	0.028*** [0.005]	0.240*** [0.029]	0.235*** [0.030]	-0.001 [0.005]	-0.003 [0.005]	-0.002 [0.004]	-0.001 [0.004]
Non-Mover Mean	0.197	0.197	1.095	1.095	0.848	0.848	0.081	0.081
Observations	102,426	102,426	102,426	102,426	32,860	32,860	32,851	32,851
R-squared	0.006	0.074	0.009	0.084	0.008	0.086	0.005	0.052
Panel B: Born Urban								
$\Delta$ Intern. Displ. Urban $\rightarrow$ Rural $_{ij}$	-0.075*** [0.018]	-0.087*** [0.016]	-0.393*** [0.110]	-0.492*** [0.099]	0.004 [0.010]	0.006 [0.011]	0.011 [0.011]	0.014 [0.011]
$\Delta$ Intern. Displ. Urban $\rightarrow$ Urban $_{ij}$	0.030*** [0.011]	0.022* [0.012]	0.357*** [0.096]	0.283*** [0.094]	-0.019 [0.013]	-0.017 [0.012]	0.021 [0.014]	0.023 [0.014]
Non-Mover Mean	0.425	0.425	2.526	2.526	0.527	0.526	0.335	0.335
Observations	45,576	45,576	45,576	45,576	6,966	6,951	6,966	6,951
R-squared	0.004	0.114	0.005	0.121	0.001	0.140	0.001	0.074
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Own District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Sibling District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Age Difference FE	No	Yes	No	Yes	No	Yes	No	Yes

The table reports linear model (LM) estimates associating the difference between siblings on an indicator variable that takes the value of 1 if the individual has completed one year of formal education and zero otherwise [models (1)-(2)], years of schooling [models (3)-(4)], an indicator variable that takes the value of 1 if an individual is employed in agriculture and zero otherwise [models (5)-(6)] and an indicator variable that takes the value of 1 if an individual is employed in the service sector and zero otherwise [models (7)-(8)]. The sample consists of siblings, aged 12-32 years old in 1997, who come from split households (i.e., at least one brother and sister experienced a different displacement trajectory). Panel A gives estimates across rural born.  $\Delta$  Externally Displaced $_{ij}$  measures the difference between siblings on externally displaced status (those who in 1992 resided in neighboring countries and those born in neighboring countries).  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Urban $_{ij}$  is a variable that measures the difference between siblings on rural to urban displacement status (rural-born individuals who reside in 1992 in urban regions) and  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between siblings on rural to rural displacement status (rural-born individuals residing in a rural area outside their region of birth in 1992). Panel B gives estimates across urban-born individuals.  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between siblings on urban to rural displacement status (urban-born residing in 1992 in rural regions) and  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Urban $_{ij}$  is the difference between siblings on urban to urban displacement status (urban-born residing in an urban region in 1992 outside their region of birth). The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (admin-2 region of birth of sibling  $i$  and admin-2 region of residence in 1992 of sibling  $i$ ) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

### 4.3.1 Rural Born [Panel A]

**Externally Displaced:** Refugees have similar levels of schooling to non-mover siblings, a pattern that echoes the cross-sectional patterns across all 12-32 year olds in [Table 2](#). Even though the UN built primary schools in camps, villages and towns in Zimbabwe and Malawi with Mozambican refugees, there is not much evidence that this translated into significantly higher investments in education. This is likely driven by the dearth of employment opportunities leading, potentially, to low perceived returns to education. Specifications (5)-(8) suggest

however a small occupational shift of refugees out of agriculture, possibly due to the loss of land during the period of displacement. Compared to their non-moving siblings, externally displaced have 5pps lower likelihood of working in agriculture, five years after the end of the war.

**IDPs to Urban:** Turning now to IDPs in cities and towns, the education specifications reveal substantial gains. Namely, a 7.3 percentage points increased likelihood of attending some primary schooling and 0.53 more years of schooling, compared to their siblings staying behind in rural areas. The magnitudes are considerable, roughly a third of the mean for their non-displaced brothers and sisters (with primary school access of about 20% and one year of formal schooling on average). The within-family estimates are smaller than the cross-sectional ones, revealing considerable selection. Columns (5)-(8) look at occupational shifts. Rural-to-urban IDPs have 4 pps higher likelihood of non-agricultural (service) employment.

**IDPs to Other Rural** The sibling-pair comparisons show that displacement to other than birthplace rural areas also increases education. The estimates imply a 3pps higher likelihood of attending school and an increase of 0.24 years. These estimates, while not large, are supportive of the *uprootedness hypothesis* as rural Mozambique was at the time one of the most impoverished and most insecure parts of the world. We return to this issue in the next Section. IDPs into other rural areas have employment similar to their staying behind siblings. This finding accords with the historical narratives, as IDPs in the countryside continued working in agriculture. for example, in RENAMO’s notorious forced-labor camps or in FRELIMO’s communal villages [see [Appendix A](#)].

#### 4.3.2 Urban Born [Panel B]

**IDPs to Rural:** Urban-born displaced to the countryside have about 9pps lower likelihood of attending primary school and about 0.5 less years of schooling, as compared to their brothers and sisters who stayed in their cities and towns of birth. These results suggest that FRELIMO’s forced relocation of urban dwellers in the countryside during “operation production” and the move of dissidents into “development villages” had adverse consequences for human capital. IDPs displaced to the countryside do not seem to have a differential attachment to agriculture

compared to their siblings (albeit in a considerably smaller sample and starting from a lower baseline). The within-family estimates for the urban-born are much smaller in absolute value as compared to the cross-sectional ones, revealing selection.

**IDPs to Other Urban:** Urban-born moving to other cities and towns have similar education and sectoral employment to their staying-behind brothers and sisters. The marginally significant within-family correlation (0.02) is 5-7 times smaller than the cross-sectional highly significant estimates, illustrating spatial sorting.

#### 4.4 Sensitivity Analysis

We conduct several sensitivity checks that, for brevity, we report in [subsection D.2](#). First, we simply add family fixed effects to the cross-sectional specifications (equations 1a and 1b). While we cannot control for sibling-pair features, these simpler specifications are directly comparable to the cross-sectional estimates in [Table 2](#). These results are similar to the sibling-pair specifications. Second, we rerun the sibling pair specifications among individuals 12 and 18 years in 1997, as co-habitation rates with parents drop for older children. Results are stable. Third, we expand the comparisons to extended family members, such as cousins or other relatives, in the same household. Fourth, we drop the oldest (male) sibling to minimize concerns of parents' favoritism. Fifth, rather than controlling for gender, we only consider boy-to-boy and girl-to-girl comparisons. Sixth, we zoom on siblings four, three, and even two years apart. Across all permutations, we obtain similar results to [Table 4](#). *(i)*: Schooling of refugees is similar to their siblings, of similar age and gender, staying in the countryside. *(ii)*: There are considerable benefits for rural-born IDPs displaced to urban centers; about 5 – 6*pps* higher likelihood of attending any primary school, 0.35 – 0.5 extra years of schooling; and a 30*pp* increased propensity to work outside agriculture. *(iii)*: Rural IDPs displaced to another rural area other than their birthplace district also enjoy small-to-modest higher schooling attainment and years. *(vi)*: Urban-born displaced into the countryside have lower schooling and are more likely to work in agriculture after the end of the war.

## 4.5 Heterogeneity

We also explored heterogeneity, reported in [subsection D.3](#). First, we look at siblings moving with an older household member, without detecting significant differences. Second, we examine whether split but reunited in the birthplace siblings fare differently compared to separated siblings who reunited in a different location after the civil war. The estimates are similar across the two groups. Third, we test whether refugees in countries with different integration strategies (e.g., Zimbabwe hosted UN camps while in Zambia, Tanzania, and Swaziland refugees gathered in informal camps and villages) fare any differently when compared to their siblings staying behind. There is again not much heterogeneity.

## 5 Place-Based vs. Uprootedness Effects

The within-household estimates are in line with both the importance of place-based effects (as IDPs into cities and towns invest in education the most) and the uprootedness hypothesis, as even rural to rural displacement generates some educational improvements. In this section, we further unpack these mechanisms and estimate jointly place-based and uprootedness effects. [Appendix E](#) reports robustness checks.

### 5.1 Approach

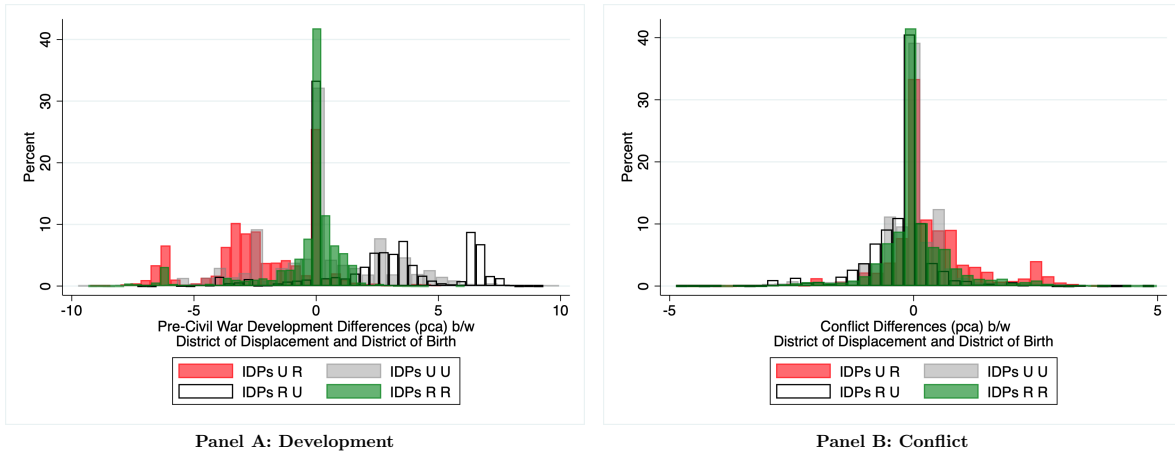
To capture the role of regions, we first compile for each displaced measures reflecting differences between the destination (displacement) region  $d$  and (birth) origin district ( $o$ ) in development and civil war intensity. Given noise and imprecision in the regional data, we aggregate via principal components proxies of development and conflict.<sup>17</sup> We aggregate six proxies of regional development: (i) log population density in 1997, excluding individuals born after 1992<sup>18</sup>; (ii) share of (non-displaced) grandparents that speak Portuguese or have some schooling; (iii) offspring mortality of non-displaced women older than 35; (iv) log road density in 1973; (v) log number of colonial agricultural markets (cantinas) per sq. km. in 1965; and (vi) log number

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<sup>17</sup>[subsection 2.3](#) gives variable sources. [Appendix B](#) provides summary statistics, the correlation structure, and mappings of the spatial distribution of all development and conflict proxies.

<sup>18</sup>The correlation between population density in 1997 and density at the birth district is 94%.

of schools opened by 1992 per sq. km.<sup>19</sup> The use of factor-analysis appears appropriate, as we have many noisy variables proxying aspects of local economic activity. The first principal component explains approximately half of the common variance of the six measures. All measures but offspring mortality load positively on the first principal component, with an eigenvalue greater than two. Similarly, to measure regional conflict intensity we take the first principal component of log conflict events per capita and the log of landmines and unexploded ordnance per capita. Both measures load positively on the first principal component, which explains 62% of the common variance, with an eigenvalue of 1.24.



**Figure 3: Destination-Origin Differences in Development and Conflict Intensity**  
The figure depicts the distribution of the differences between destination district ( $d$ ) and birth-origin district ( $o$ ) in Development (Panel A) and Civil Conflict (Panel B) for displaced Mozambicans aged 12-32 years at the time of the 1997 Census. The figures plot destination (in 1992) - birth-origin differences in regional development and conflict distinguishing between four displacement trajectories of IDPs: (i) Red: Urban-born individuals displaced to rural regions. (ii) Grey: Urban-born individuals displaced into different urban areas. (iii) White: Rural-born individuals displaced to urban areas. (iv) Green: Rural-born individuals displaced to other than their birthplace rural regions. The regional development measure is the first principal component of six proxies of development (population density, road density, schools per capita, education of the older generation, and trading hubs). The regional conflict measure is the first principal component of log number of civil war events per capita and log number of landmines and unexploded ordnance per capita.

Figure 3 plots the distribution of destination-origin differences in development,  $\Delta_{od}^{dev}$  (Panel A), and conflict,  $\Delta_{od}^{conf}$  (Panel B), for 55,238 IDPs, highlighting the four main trajectories. (i) Urban-born displaced into the countryside (red bars) experienced the biggest drop in regional development and increase in conflict. The mean drop in population density between destination and origin is 2.74. (ii) Urban-born moving to other urban districts (grey bars), which are, on average, more developed, but not more peaceful. (iii) Rural-born displaced to

<sup>19</sup>School data are imprecise as many schools closed during the civil war or operated intermittently.



cities destination-origin differences in regional development are on average positive and in some cases large. The average increase in population density is 3.17. (iv) Rural-born displaced to other rural areas (green bars) face on average similar to their birthplace economic and conflict conditions at destination. Some get displaced into moderately more prosperous and peaceful destinations; others find themselves in more conflict prone and less developed regions.

## 5.2 Within-Household Specification

To jointly estimate place-based and general uprootedness effects of displacement, we modify the sibling-pair specifications (Equation 2) adding destination-origin differences in regional development and conflict and pooling across both rural-born and urban-born 12-32 year old.<sup>20</sup>

$$\Delta Y_{ij} = \alpha + \underbrace{\gamma \Delta DISPL_{ij}}_{\text{Uprootedness}} + \underbrace{\pi_1 \Delta_{od}^{dev}_{ij} + \pi_2 \Delta_{od}^{confl}_{ij}}_{\text{Place-Based Effects}} + \delta_i X_i + \delta_j X_j + \phi \Delta Age_{ij} + \mu_{li} + \mu_{lj} + \epsilon_{ij} \quad (3)$$

The  $\pi_1$  and  $\pi_2$  coefficients on destination-origin differences in development and civil conflict capture exposure effects of forced displacement on the siblings' attainment gap. Therefore, the  $\gamma$  coefficient on the change in displacement status isolates the role of *uprootedness*, irrespective of the relative destination characteristics. The specifications condition on birth-region fixed effects for each sibling, age, gender, eldest-sibling indicator, and age difference constants.

## 5.3 Results

### 5.3.1 LS Estimates

Table 5 - Panel A reports the LS estimates.

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<sup>20</sup>The sample comprises of 38,880 families with separated siblings that had at least one child who was either an IDP (55,238) or was born abroad (796). For the foreign born returning to Mozambique after the war, we set differences between end-of-war conditions (destination) - origin to zero. We exclude the externally displaced siblings born in Mozambique because we cannot assign them destination characteristics while displaced in a foreign country. We also include families of IDPs only in 1997 leveraging variation in place-based effects. Excluding the latter and/or dropping the foreign born does not alter the estimates.

Table 5: OLS and 2SLS Sibling-Pair Estimates. Place-Based and Displacement Effects on Schooling

	$\Delta \text{Schooling}_{ij}$				
	(1)	(2)	(3)	(4)	(5)
<b>Panel A: OLS. Actual Changes in Destination-Origin</b>					
$\Delta \text{Displaced}_{ij}$	0.036*** [0.005]	0.021*** [0.004]	0.031*** [0.005]	0.020*** [0.004]	0.020*** [0.004]
$\Delta_{92-Birth} \text{ Development (PC)}_{ij}$		0.011*** [0.002]		0.010*** [0.002]	0.008*** [0.002]
$\Delta_{92-Birth} \text{ Conflict (PC)}_{ij}$			-0.019*** [0.003]	-0.007** [0.003]	-0.008** [0.003]
<b>Panel B: OLS. Predicted Changes in Destination-Origin</b>					
$\Delta \text{Displaced}_{ij}$	0.036*** [0.005]	0.040*** [0.003]	0.039*** [0.004]	0.040*** [0.003]	0.037*** [0.003]
$\Delta_{92-Birth} \text{ Pred. Development (PC)}_{ij}$		0.012*** [0.001]		0.012*** [0.001]	0.011*** [0.001]
$\Delta_{92-Birth} \text{ Pred. Conflict (PC)}_{ij}$			-0.011** [0.005]	-0.000 [0.004]	-0.002 [0.004]
<b>Panel C: 2SLS</b>					
$\Delta \text{Displaced}_{ij}$	0.036*** [0.005]	0.014** [0.006]	0.032*** [0.005]	0.014** [0.006]	0.013** [0.006]
$\Delta_{92-Birth} \text{ Development (PC)}_{ij}$		0.016*** [0.002]		0.016*** [0.002]	0.014*** [0.002]
$\Delta_{92-Birth} \text{ Conflict (PC)}_{ij}$			-0.013** [0.006]	0.001 [0.005]	-0.002 [0.005]
Mean Non-Displaced	0.276	0.276	0.276	0.276	0.236
Observations	125,587	125,587	125,587	125,587	104,602
Weak Identification (KP F-Stat)	.	94.206	471.074	42.848	44.593
Sample Age	12-32	12-32	12-32	12-32	12-18
Individual and Sibling Pair Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes

The table reports OLS [Panels A and B] and 2SLS [Panel C] estimates associating the difference between siblings on an indicator variable that takes the value of one if an individual has completed one year of formal education with displacement trajectories and differences in development and conflict intensity between the place of residence at the end of the war (destination,  $d$ ) and birthplace (origin,  $o$ ). The sample in columns (1)-(4) consists of siblings, aged 12-32 years and in column (5) aged 12-18 in 1997. All specifications include gender and eldest-offspring indicators for each sibling, age difference fixed effects, age fixed effect and district of birth fixed effects for each sibling in the pair.  $\Delta \text{Displaced}_{ij}$  is the difference in displacement of any type (external, internal to cities or other rural areas) within a pair of siblings.  $\Delta_{92-Birth} \text{ Development (PC)}_{ij}$  denotes the difference between destination and origin district for the displaced as a proxy of regional development.  $\Delta_{92-Birth} \text{ Conflict (PC)}_{ij}$  denotes the differences between destination and origin in civil conflict. The Predicted (100km)  $\Delta_{92-Birth} \text{ Development (Civil Conflict)}_{ij}$  PC in the reduced-form estimates in Panel B is computed by averaging the Development (Civil Conflict) PC at the destination districts within 100 kilometers from one's district of birth and subtracting the Development (Civil Conflict) PC at district of birth. In Panel C actual differences in development and civil conflict between destination and origin district are instrumented with predicted measures. Heteroskedasticity-adjusted standard errors clustered on two dimensions (admin-2 region of birth of sibling  $i$  and admin-2 region of residence in 1992 of sibling  $i$ ) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Column (1) shows that displaced siblings have a 3.6pps higher likelihood of attending primary schooling than their brothers and sisters staying in their region of birth. This estimate

reflects both a generic displacement impact and place-based exposure effects. In columns (2)-(3) we account for economic and conflict differences between the destination of displacement and a child’s birthplace adding  $\Delta_{od}^{dev}$  and  $\Delta_{od}^{conf}$ , respectively.<sup>21</sup> Both terms enter with significant estimates. Place effects are strong even during a devastating and destructive civil war: children displaced to a district that is one standard deviation more (less) developed, about 2.7 units, increases (decreases) the likelihood of schooling by 3*pps*. Likewise, displacement to a more conflict-prone destination district than one’s origin (by one standard deviation, about 0.91) lowers significantly educational attainment by about 1.9*pps*).

In column (4), we account jointly for differences in development and conflict. The displacement indicator now captures differences in attainment between a non-moving individual and his/her sibling fleeing to a district with similar conflict and development. The estimate suggests that the independent impact of displacement is raising school attainment by about 2*pps*. The displacement impact and the place-based estimates on development and conflict are similar in the 12-18 year old in 1997 (column (5)). Appendix [Table E.1](#) reveals similar patterns with years of schooling, while [Table E.2](#) and [Table E.3](#) show that exposure and uprootedness effects matter also for sectoral employment. The generic 2*pps* increase in schooling for the displaced is comparable to fleeing to a district one standard deviation more developed than one’s birthplace. This estimate is in the ballpark of the displacement effect from a rural to another rural area ([Table 4](#)), which should not come at surprise as such movements are associated with small differences in development and conflict.

## 5.4 2SLS

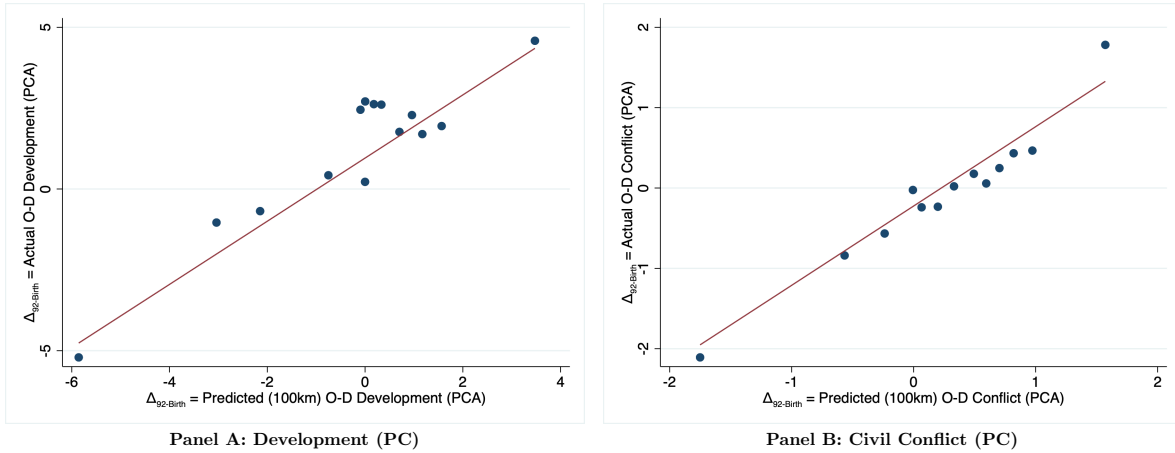
While displacement was triggered by various unpredictable conflict features, one may still have selection concerns, as the destination may be correlated with unobserved sibling features. To allay this concern, we rely on the fact that Mozambique’s rudimentary and heavily mined transportation network placed significant restrictions to civilian movement. As shown in [Figure 1](#), geographic proximity to cities and the border are the strongest correlates of displacement. The median displaced sibling found herself in a district roughly 97 kilometers away from birthplace.

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<sup>21</sup>The mean (median) of  $\Delta_{od}^{dev}$  is  $-0.33$  (0), the standard deviation 2.7, and the p90-p10 range  $-3.74 - 2.69$ . The mean (median) of  $\Delta_{od}^{conf}$  is 0.055 (0), the standard deviation 0.91, and the p90-p10 range  $-0.70 - 0.93$ .

We, therefore, estimate 2SLS specifications instrumenting actual differences between destination and origin in development and war intensity with predicted ones based on districts 100km from one’s birthplace. The 2SLS specifications, thus, capture the place-based effects determined by geographic proximity. We compute “predicted” exposure for displaced from origin,  $o$ , as the proximity-weighted analog:  $\widehat{\Delta}_o = \sum_{d=1}^D \Delta_{od}/D$ , where  $D$  comprises of districts inside a 100 kilometers of origin radius, for development,  $\widehat{\Delta}_o^{dev}$ , and civil conflict,  $\widehat{\Delta}_o^{conf}$ .

**First-Stage.** Figure 4 shows a binned scatter associating actual ( $\Delta_{od}$ ) and proximity-predicted differences ( $\widehat{\Delta}_o$ ) between the destination and origin in development (Panel A) and civil conflict intensity (Panel B). The elasticity between actual and proximity-predicted differences in development (conflict) is 0.86 (0.88) and is precisely estimated.



**Figure 4:** The graphs report binned scatterplots associating actual destination-minus-origin differences in Development (Panel A) and Civil Conflict (Panel B) and geography-predicted displacement-destination based on averaging Development and Civil Conflict of districts within 100 km from the district of origin. The regressions yield the following coefficients (standard errors):  $\Delta_{od}^{dev} = 1.35(0.14) + 0.86(0.091)\widehat{\Delta}_o^{dev}$  and  $\Delta_{od}^{conf} = -0.38(0.028) + 0.88(0.039)\widehat{\Delta}_o^{conf}$ .

**Reduced-Form.** Table 5 - Panel B reports “reduced-form” estimates associating differences in educational attainment between siblings to displacement status and proximity-based differences between destination and origin in development and conflict. The specifications are otherwise identical to Panel A, but replacing  $\Delta_{od}^{dev}$  and  $\Delta_{od}^{conf}$  with the corresponding proximity-predicted differences in equation Equation 3. Displacement to a district that is one-standard-deviation more developed than one’s birthplace increases schooling by 5pps. The coefficient on civil conflict exposure is smaller and becomes marginally insignificant. The estimate on the displacement index that isolates *uprootedness effects* remains precisely estimated at 4pps.

**2SLS Estimates.** Panel *C* of [Table 5](#) gives the 2SLS estimates, instrumenting actual differences between destination and origin in development and civil conflict with the proximity-predicted ones.<sup>22</sup> The 2SLS estimate for the role of destination-origin differences in development estimate is similar to the corresponding LS estimate. While the coefficient on development differences is precisely estimated, the estimate on civil conflict differences is smaller than the LS and statistically insignificant. The estimate on the displacement index is now smaller, reflecting selection, but it retains significance.

## 6 Long-Term Impact of Forced Displacement. Survey Evidence

There are three follow-up questions. First, are the educational gains of internal displacement lasting? Second, how do individuals displaced into cities fare compared to never displaced urban-dwellers? Third, are there any long-term socioeconomic and psychological costs of displacement? 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.<sup>23</sup> [Appendix F](#) gives additional results.

### 6.1 Survey

We conducted the survey between January and March of 2020, covering all administrative boroughs. Through door-to-door in field-sampling, we randomly surveyed residents, older than 35 years old, to ensure that their primary schooling decisions had taken place during the civil war. 77 respondents moved from the countryside during the civil war, confirming that the move was due to conflict and 131 were born in Nampula and did not move during the war.<sup>24</sup> In line with the historical accounts, most of these IDPs report moving during and after the mid 1980s, when RENAMO’s terror strategies spread to the North and state’s power in the countryside collapsed. We obtained information on educational attainment, employment,

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<sup>22</sup>Given the strong association between actual and distance-projected differences in conflict and development, the Kleibergen-Papp *F* stat is well above conventional levels, underscoring the instrument’s.

<sup>23</sup>The 1997 Census tabulations suggest that out of 303,000 inhabitants, about 90,000 moved during the war.

<sup>24</sup>Note that the 1997 census reveals that approximately 60% of rural-born moving to cities -and to Nampula-remained there even after the war had ended.

beliefs, values, and social norms. Besides, we inquired on mental health (e.g., depression, loneliness, pessimism).

## 6.2 Long-Run Effects of Displacement on Education

To explore the lasting legacy of forced displacement, we asked respondents about their siblings' education and experience during the civil war. With this information, we estimate within-family specifications comparing primary schooling completion between (77) IDPs displaced in Nampula during the war and their siblings (265), who stayed in their locality of birth.<sup>25</sup> The LPM specifications in Table 6 reveal that IDPs to Nampula have a 10*pps* higher likelihood to complete primary schooling as compared to their brothers and sisters, who stayed in the countryside. This pattern applies to boys, girls, and siblings of similar age (results not shown). While the sample is arguably small, these estimates are consistent with our findings in the previous sections, relying on thousands of separated siblings (section 4). The majority of IDPs (73%) report that they followed friends' and extended relatives' advice who hosted them to attend school once in the city. They further mention that they believed education was necessary to find a job in the city [results not shown].

Table 6: Displacement to Nampula and Primary School Completion - Cross-Sectional and Within-Family Estimates

	Completed Primary Schooling Indicator			
	(1)	(2)	(3)	(4)
Displaced	0.148** [0.058]	0.140** [0.055]	0.124* [0.064]	0.104* [0.061]
Observations	361	361	361	361
Non-Mover Siblings Mean	0.279	0.279	0.279	0.279
Individual Controls	No	No	Yes	Yes
Family Fixed Effects	No	Yes	No	Yes
R-squared	0.020	0.499	0.048	0.510

The table reports linear probability model estimates associating an indicator that takes on the value of one for individuals with (at least) completed primary schooling. The Displaced variable identifies respondents born in the countryside who moved to Nampula during the civil war. The omitted category, Non-Mover Siblings, denotes survey respondent's siblings, born in the countryside, who stayed in the countryside. Columns (1) and (3) report cross-sectional specifications. Columns (2) and (4) give within-household estimates (family-specific constants not reported). Columns (3) and (4) control for age, gender, and an eldest-offspring indicator. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively, based on heteroskedasticity-adjusted standard errors.

<sup>25</sup>The sibling comparison with the Census data (in section 4) compares brothers and sisters reunited after the civil war. Here, we compare IDPs in Nampula to their siblings that stayed behind.

### 6.3 Economic Differences. Displaced vs Urban-Born

We then examine the degree of “economic” convergence of IDPs in Nampula comparing them urban-born, never displaced residents.<sup>26</sup> Table 7 suggests convergence on educational attainment (columns (1)-(2)), despite the fact that urban – rural differences in education were, and still are, considerable in (Northern) Mozambique.<sup>27</sup>

We then explore differences in employment, using a binary index that switches to one for individuals with paid work. There are no major differences between the two groups. In (5)-(6) we look at log wages in a smaller sample as many respondents did not report employment income. Despite educational convergence, IDPs appear to earn lower wages when compared to the urban-born though given the small sample these estimates are purely suggestive.

Table 7: Education and Employment: Displaced vs Non-Movers

	Primary Schooling		Paid Work		Ln Monthly Wages	
	(1)	(2)	(3)	(4)	(5)	(6)
Displaced	0.032 [0.071]	0.014 [0.073]	-0.009 [0.069]	-0.013 [0.069]	-1.064** [0.492]	-1.019** [0.495]
Observations	208	208	208	208	89	89
Non-Mover Nampula-born Mean	0.397	0.397	0.412	0.412	8.357	8.357
Controls	No	Yes	Yes	Yes	Yes	Yes
Schooling Control	-	-	No	Yes	No	Yes
R-squared	0.001	0.017	0.119	0.174	0.083	0.099

The table reports OLS estimates associating schooling, paid employment, and log wages to a Displaced indicator that identifies respondents born in the countryside and displaced to Nampula during the civil war. The omitted category consists of residents of Nampula, born in the city. The dependent variable in columns (1)-(2) is an indicator that takes on the value of one for individuals with (at least) completed primary schooling and zero otherwise. The dependent variable in columns (3)-(4) is an indicator for respondents with paid employment. The dependent variable in columns (5)-(6) is the natural logarithm of monthly wages. Odd-numbered specifications give unconditional estimates. Even-numbered specifications control for age, gender, and a first born indicator. Columns (4) and (6) also control for a variable that equals one for respondents with completed primary schooling. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively, based on heteroskedasticity-adjusted standard errors.

### 6.4 Social Capital and Trust

Many policy debates on displacement regard the social integration of refugees and IDPs to the local communities as crucial as the economic one. To shed light on this issue, we obtained

<sup>26</sup>We cannot tease apart exposure from uprootedness effects as we observe IDPs only in Nampula and do not have much information of birthplace conditions. Overall, works on place-based effects find educational catch-up of migrants in peaceful times to that of permanent residents at destination. However, neither educational convergence (e.g. [Alesina et al., 2021a](#)) nor income convergence are full (e.g., [Chetty and Hendren, 2018a](#))

<sup>27</sup>For example, primary completion rate in 1997 for older than 15 years old urban residents (in Northern Mozambique) was 21% (15%), while for rural residents just 3% (2%). The preliminary tabulations of the 2017 census reveal that primary school dropout rates in the countryside were double that in cities (29% to 14%).

measures of inter-community trust, social capital, participation in political life, and civiness. Our analysis is also motivated by a fast-growing literature showing that social/civic capital and trust are associated with income, education, and public goods (see [Algan and Cahuc, 2013](#) and [Guiso et al., 2011](#) for reviews).

Table 8: Social/Civic Capital, Attitudes, and Mental Health: Displaced vs Non-Movers

<b>Panel A: Social/Civic Capital</b>				
	Trust	Social Capital	Political Participation	Civic Attitudes
	(1)	(2)	(3)	(4)
Displaced	-0.469** [0.224]	-0.223 [0.198]	-0.261* [0.151]	-0.441** [0.177]
Observations	208	207	208	208
Non-Mover Nampula-born Mean	0.288	0.083	0.080	0.258
Individual Controls	Yes	Yes	Yes	Yes
R-squared	0.049	0.082	0.028	0.141

<b>Panel B: Mental Health and Optimism</b>				
	Loneliness	Group Belonging	Optimism	Mental Health
	(1)	(2)	(3)	(4)
Displaced	-0.075 [0.081]	-0.114 [0.106]	-0.222*** [0.071]	0.326*** [0.102]
Observations	208	208	208	208
Non-Mover Nampula-born Mean	0.051	-0.006	0.573	-0.085
Individual Controls	Yes	Yes	Yes	Yes
R-squared	0.072	0.055	0.085	0.134

The table reports OLS estimates associating proxies of social capital, trust and civic attitudes (Panel A) and optimism and mental health (Panel B) to a Displaced indicator variable that identifies respondents born in the countryside and moving to Nampula during the civil war. The omitted category consists of residents of Nampula, born in the city. The dependent variables in Panel A are: in column (1) a Trust Index constructed by aggregating via principal components the respondent's answers on whether he/she feel comfortable with a neighbor looking after keys and looking after children; agree that the respondent belongs to neighborhood; trust people in neighborhood. In column (2) a Social Capital Index is constructed by aggregating via principal components respondent's answers on his/her willingness to give to good causes without return; Unpaid work for community in last 12 months; Importance of solving community problems; Agree or disagree exchange favours with neighbors. In column (3) a political participation index is based on respondent's answers on the importance of voting and whether they discuss political matters. In column (4) a Civic Attitudes index is constructed by aggregating via principal components the respondent's answers on whether it is justified to claim benefits, avoid taxes, and pay bribes. In Panel B the dependent variables are: in column (1) a Loneliness Index constructed by aggregating via principal components a respondent's answer on whether they feel lack of companionship, there is no one to turn to, they feel alone, don't feel close to anyone, don't share interests with people, and they feel isolated. In column (2) a Group Belonging Index is constructed by aggregating via principal components the respondent's answers on whether they feel in tune with people, belong to a group of friends, have things in common with people, outgoing, can talk to people, and there are people he/she can turn to. In column (3) an Optimist index reflects respondent's answers on the likelihood that their children would be richer than at his/her age. In column (4) a Mental Health Index is constructed using respondent's answers on whether in the previous two weeks, they had little interest in doing things, felt depressed, had trouble sleeping, felt tired, had too little or too much appetite, felt like a failure/disappointed, had difficulty concentrating, speaking/moving too slowly or too fast, felt nervous, could not stop worrying, worried too much, had trouble relaxing, felt restless, was easily annoyed, felt afraid. All specifications control for age, gender, an eldest-offspring indicator, and an indicator for completed primary school. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively, based on heteroskedasticity-adjusted standard errors.



Table 8, Panel A examines differences between IDPs' and non-mover urban dwellers across civic/social capital proxies, reflecting: (1) willingness to contribute to good causes, working voluntarily for community projects, and favoring exchanges with neighbors; (2) trust towards neighbors; (3) political participation and importance of voting; (4) civicness, as in whether it is justifiable to avoid taxes and pay bribes.<sup>28</sup> All specifications yield negative coefficients on the displacement indicator. Three decades after the war ended, IDPs report lower levels of trust, political participation, and civicness, as compared to their urban born cohort that was never displaced.<sup>29</sup>

We cannot compare IDPs to those staying in the countryside during the war, as we run the survey in Nampula. However to shed some light on this issue, we tabulated urban-rural differences on trust and social capital from the Afrobarometer Surveys, conducted periodically across dozens of African countries. Both when we look across 34 Sub-Saharan African countries, across Mozambique, even zooming in its Northern provinces, we find that rural-residents exhibit *higher* trust and social capital, as compared to urban-dwellers (subsection F.2). In light of the higher trust of rural residents, the correlations in Table 8-Panel A, therefore, suggest that forced displacement considerably lowered IDPs trust, social and civic capital.

## 6.5 Mental Health

Forced displacement is a deeply traumatic experience for survivors. While hard to measure, the psychological trauma of being displaced from one's homeland, often separated from brothers, sisters, and parents, is considerable [see Appendix A for some descriptive evidence collected during the war]. And, while there is a generalized sense of the deep emotional scars of displacement during warfare, there is little work quantifying these effects. In an effort to gauge the psychological impact, we inquired on how lonely respondents feel, how strongly they connect with other people, and how optimistic they are about the future. We also construct a mental health index relying on the standard and validated measures of clinical depression research, following the administration of the PHQ-9 module.

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<sup>28</sup>We condition on education that correlates with the outcome variables. The estimates are similar omitting it.

<sup>29</sup>These estimates are in line with Rohner et al. (2013), Nunn and Wantchekon (2011), and Besley and Reynal-Querol (2014) documenting lasting impacts of warfare and coercion on distrust across Africa.

Table 8 Panel B reports OLS estimates comparing IDPs to urban-born on these dimensions. In columns (1) and (2) we examine differences in loneliness and group belonging, respectively.<sup>30</sup> IDPs appear more lonely and less connected than urban-born, but the estimates are noisy. Column (3) uncovers a sizable and significant gap between IDPs and urban-born on how optimistic they are that their children will be richer than them. This intriguing difference highlights displacement’s adverse consequences, as IDPs and urban born have similar education levels. In column (4) we explore differences in adverse mental health using an index that averages responses on whether in the past two weeks the individual felt depressed, worried, nervous, restless, disappointed, easily annoyed, afraid, tired, without much appetite, had trouble relaxing, not much interested in doing things, without getting much sleep, and ability to concentrate. Higher values indicate a higher stress and worse mental health. The IDP indicator enters with a highly significant estimate, revealing a considerable mental health gap between IDPs displaced during the war and those born in the city and never displaced. The estimate, while not causal, is quite large (0.326).

## 6.6 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 across three dimensions. First, the survey uncovers the lasting legacy of displacement on education. IDPs’ education is considerably higher than their siblings who stayed in the countryside. Besides, IDPs’ education converged to that of urban-born residents, a noteworthy pattern given the large urban-rural educational gaps prevalent in Mozambique -and Africa. Second, IDPs have lower community trust, civic participation, and social capital than urban-born. As both across (Northern) Mozambique and Sub-Saharan Africa rural residents have higher trust, social and civic capital, the survey hints at considerable social costs of forced displacement. Third, compared to urban-born, IDPs are less optimistic and report higher levels of mental stress, almost three decades after the civil war, revealing forced displacement’s long-lasting scars.

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<sup>30</sup>Loneliness is an index that averages responses on lack of companionship, feelings that there is no one to turn to, isolation, not close to anyone, and without sharing interests with other people. Group belonging is an index that aggregates respondents’ views of whether they feel they can talk to people, have things in common and can turn in to others, and whether they belong to some group.

## 7 Conclusion

We examine the impact of different conflict-induced displacement trajectories on schooling investments during the Mozambican civil war (1977 – 1992), associated with the dislocation of about four million civilians.

Besides reporting correlational patterns using the full population census, conducted five years after the end of hostilities, we advance on identification exploiting within-family variation across thousands of separated siblings, experiencing different trajectories. Rural-born IDPs who found refuge in Mozambican cities and towns have considerably higher schooling compared to their brothers and sisters who stayed in their birthplace. But even IDPs displaced into other than their birthplace rural districts invest more in education compared to their staying behind siblings, an intriguing regularity as rural Mozambique was at the time one of most impoverished and insecure places in the world. Mirroring these patterns, urban-dwellers, forcibly moved into state farms and development villages in the countryside, have lower schooling as compared to their brothers and sisters in the cities. In contrast, refugees in neighboring countries have similarly low to their staying behind brothers and sisters, despite international community’s efforts to build schools in camps and informal settlements in Malawi and Zimbabwe. Displacement goes hand in hand with employment shifts out of (subsistence) agriculture into services, telling of a novel link between forced dislocation and structural transformation.

The diverse trajectories of displacement, coupled with the large sample of households with separated siblings (close to 50,000), allows us to develop a framework to tease apart the role of the two key channels linking displacement to schooling and employment decisions: *Place-based effects*, arising for displaced into safer and more developed districts than birthplace. A generic *uprootedness effect* of expatriation, which may create incentives to invest in portable and non-expropriable human capital. Studying the two mechanisms in a single framework, reveals that both are at play. Displacement into relatively more developed and less conflicts districts increases schooling and lowers agriculture employment, telling of place-based effects. However, even IDPs finding refuge in less developed and more violent places invest more in schooling, potentially driven by “uprootedness”.

We complement the census-based results, with a self-administrated survey in Mozambique’s largest Northern city to shed light on the long-run effects of forced displacement. IDPs in Nampula have significantly higher education as compared to their brothers and sisters who stayed in the countryside three decades after the war. Strikingly, IDPs’ education is similar to urban-born non-displaced despite large urban-rural educational gaps, both at the time and now. However, compared to urban-born Nampula residents, IDPs exhibit lower community trust, social capital, and civiness, telling of the challenges of social integration. Alarmingly, IDPs report much higher levels of mental stress and appear pessimistic on the future.

Overall, our findings reveal how forced displacement can act as a devastating mobility shock that triggers investments in education and employment shifts. Our results from a low-income country where a third of the population got displaced has relevance for the applied policy agenda on the fragility trap (Cameron et al., 2018). While there is need for more research on forced displacement from frontier and fragile countries, the population-wide and within-family results from a 15-year long devastating civil war with a variety of displacement trajectories can help understand developments in the Sahel, South Sudan, Eastern Congo, Ethiopia, and Northern Mozambique, where millions have been displaced in the past years. Our research suggests rethinking the refugee camp paradigm, perhaps investing not only in schools, but also in security and employment. Besides, policy-makers and international agencies should consider refocusing attention and resources on the integration of displaced individuals into urban environments with more opportunities. Forced displacement comes with non-negligible psychological costs and our results further reveal sizable costs of social integration, much needed to heal the wounds of violence, human loss, and forced displacement after civil wars. Strategies that address mental stress and enable the social coalescing of displaced into the new communities are priorities. Combined, these strategies may leverage forced displacement as an opportunity for lasting structural transformation. The educational investments of refugees and IDPs can be a pillar for post-war reconstruction and recovery.

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# ONLINE APPENDIX

## FORCED DISPLACEMENT AND HUMAN CAPITAL: EVIDENCE FROM SEPARATED SIBLINGS

(NOT FOR PUBLICATION)

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### Abstract

The Online Appendix provides auxiliary results. [Appendix A](#) reports narratives from various reports and gives additional information on displacement trajectories. [Appendix B](#) provides additional details on the data; it presents summary statistics, descriptive statistics and tabulations on displacement patterns. It also reports the cross-sectional association between education and employment of the various displacement trajectories. [Appendix C](#) gives further evidence of the correlational analysis. [Appendix D](#) presents sensitivity checks and heterogeneity analysis of the within-family estimates that compare the education and employment outcomes of siblings with different (displacement) trajectories during the civil war. [Appendix E](#) complements the within-household analysis that isolates uprootedness from place effects. It also gives additional results linking education and sectoral employment to the geography-predicted component of displacement. [Appendix F](#) gives details on the self-administrated survey in Nampula.

*Keywords:* Africa, Forced Displacement, Education, Refugees, Civil War.

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## A Narratives and Descriptives

*Capitao, let me go!*

*Oh, Mother! Ah, capitao!*

*Oh, mother!*

*Oh, Mother, I am going away!*

Human Rights Africa Watch Report, Conspicuous Destruction, 1993

### Introduction

In this Section, we offer narratives and descriptives of internal and external displacement, as recorded in reports conducted during the civil war. First, we go over the findings of the **GerSONY report**, based on extensive interviews of refugees and internally displaced. The report, commissioned by the United States (US) administration in 1987, influenced heavily US and international policy. Second, we go over the main patterns and present narratives from the “**Children of Mozambique: The Cost of Survival**” report conducted in the mid-late 1980s. The report is based on dozens of interviews taken by the *Save the Children Federation (USA)*. Third, we summarize the main takeaways and present narratives from the **Human Rights Africa Watch, Conspicuous Destruction report** of 1992 on the civil war and its immediate aftermath.

### A.1 GerSONY Report (1988)

#### A.1.1 Introduction

The GerSONY report ([GerSONY, 1988](#)) was a turning point for the Mozambican civil war, as it revealed the atrocities that warring parties, mostly RENAMO, inflicted upon the civilian population. The report goes over child soldiering, abductions, mutilations, rapes, killings, torture, and forced labor. Robert GerSONY, the report’s author, is a legendary international humanitarian aid worker who conducted influential reports on conflict zones in his lifetime.<sup>1</sup> The

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<sup>1</sup>Besides Mozambique, GerSONY also wrote reports on civil wars in Rwanda, North Uganda, and Somalia. See Robert Kaplan’s biography “*The Good American: The Epic Life of Bob GerSONY, the U.S. Government’s Greatest Humanitarian*”, Random House, New York.

US Department of State (Bureau for Refugee Programs) commissioned the report in December 1987, alarmed by the fourfold increase in the number of Mozambican refugees in southern Africa (mostly Malawi) in the previous year. At the time, US policy was somewhat ambivalent. While the US had provided aid to Mozambique, there was pressure to the Reagan administration to stop supporting FRELIMO, pointing to its Marxist ideology and support from the Soviet Union. Some far-right groups in the US even supported backing RENAMO, which employed an anti-communist and liberation rhetoric. The Gersony report, released in April 1988, highlighted RENAMO's war against the civilians, its lack of any ideology, and plan for governance. The report appeared at the same time as RENAMO's atrocities in Homoine (mid-June 1987) and elsewhere, covered by international media. It further steered US and European policy towards supporting the Mozambican government.

Backed by Gersony's findings, Roy A. Stacy, Deputy Assistant of State for African Affairs argued *"What has emerged in Mozambique is one of the most brutal holocausts against ordinary human beings since World War II . . . The supporters of RENAMO, wherever they may be, cannot wash the blood from their hands unless all support for the unconscionable violence is halted immediately. . . . RENAMO is waging a war of terror against innocent Mozambican civilians through forced labor, starvation, physical abuse and wanton killings"* (taken from Human Rights Watch, 1992). Mozambican President Joaquim Chissano, who succeeded Samora Marcel after his death in the mysterious plane crash in October 1986 in the South Africa border, had meetings in the Oval Office with Roland Reagan in 1987 and George H. Bush in 1990.

Bob Gersony conducted field work in 42 different locations in Mozambique, Malawi, Zimbabwe, South Africa, and Tanzania in early 1988. He visited 25 sanctuary sites for refugees and displaced persons (10 sites in 6 Mozambican provinces and 15 in neighboring countries) and 17 other locations (five national capitals and twelve administrative centers with hospitals and relief centers). Gersony interviewed at length 196 randomly chosen displaced individuals in the language that the refugee identified as his/her native language.

### **A.1.2 Main Findings**

The extensive interviews revealed the following:

- Over 90% of the 1987 – 1988 arrivals in refugee sites (81% overall) stated that they fled their home areas because of abusive conduct. About 5% said they had migrated because of drought, 2% to seek employment and 2% for other reasons.
- Refugees “*arriving in poor health, severely malnourished, without belongings and often naked*” came from 46 Mozambican districts, mainly from areas close to the border.
- 65% of displaced described themselves as farmers, 4% as farm-workers, 9% as small traders, 5% teachers, and 5% students.
- Almost all refugees were residents of small villages and hamlets, a pattern consistent with the 1997 Census.
- About half (45%) of the refugees had at least one earlier visit in the country. Other surveys and books indicate that refugees would go back and forth (mainly in Malawi). Unfortunately, the 1997 Census does not record temporary displacement.
- Roughly 40% of the 55 IDPs had never traveled outside the country, and about 45% had visited one of the potential neighboring asylum countries.
- Most of the respondents inside Mozambique and in neighboring countries had no formal education or literacy skills, a pattern that is confirmed in the 1997 Census.
- 20% of the refugees said they had involuntarily resided for many months – sometimes for years – in areas with pervasive insurgent violence. RENAMO had often used them as porters, a pattern in line with other surveys, books, and reports.
- The great majority of displaced (internal and external) cited RENAMO actions as the reason for their flight. Roughly 40% reported personally witnessing the murder of civilians principally by RENAMO combatants and RENAMO police in the absence of resistance or defense. The 169 refugees who arrived at their current locations in 1987/1988 reported roughly 600 such murders. The refugees provided eyewitnesses or other credible accounts about these killings, including shooting executions, knife/ax/bayonet killings, burning

alive, beating to death, forced asphyxiation, forced starvation, forced drownings, and random shooting at civilians in villages during attacks.

- Nearly 40% of the refugees had direct knowledge of the imposition by RENAMO of forced portering on the civilian population; about 20% had themselves served as porters. Over 70% of those who had served as porters witnessed severe beatings of porters who could not keep up, who stumbled, or who dropped their loads. About 60% of those who served as porters' eye-witnessed or had credible reports of captive porters beaten to death or executed along the route.
- Nearly 40% of the refugees complained about the abduction of civilians. Of these, over a quarter had been victims of kidnapping. 94% identified RENAMO combatants as the abductors; the remainder split between government soldiers and unknown parties.
- Nearly 60% of displaced reported looting and forced contribution of resources. 93% of looters were RENAMO combatants, 6% government soldiers, 1% unknown.
- 5% of the refugees reported mutilations, were all attributed to RENAMO combatants.
- Accounts of serious abuses attributed to government soldiers were reported in credible detail. However, they were small compared to complaints concerning RENAMO and did not appear to represent systematic discipline problems or command and control.
- Refugees were very hostile towards RENAMO, with 91% reporting very negative and 5% somewhat negative opinions; only 3% of the displaced had no complaint. Regarding FRELIMO, 7% expressed very negative and an extra 10% somewhat negative sentiments. 72% expressed no complaints towards the government.

## **A.2 Children of Mozambique: The Cost of Survival Survey (1989-1991)**

### **A.2.1 Introduction**

In “**Children of Mozambique: The Cost of Survival**”, [Boothby et al. \(1991\)](#) report on their experience and surveys in Mozambique during the final phase of the war (1989-1991).

The authors were all involved in projects for *Save the Children Federation (USA)* when they collected the information. The report was conducted for the US Committee of Refugees. This report, released in November 1991, summarizes interviews of 504 children who experienced the civil war during ages 6-15 in the countryside. They thus correspond to our analysis of rural-born Mozambicans displaced into other than their birthplace rural districts.<sup>2</sup>

The 504 children come from 49 districts and seven provinces “*from Maputo in the South to Nampula Province in the north*” (not covered are Manica, Niassa, and Cabo Delgado). All interviewed children had personal war experiences. Social workers of Mozambique’s National Director of Social Action (DNAS) asked children to describe their experiences in detail. A set of questions guided these open-ended interviews. In addition, the parents, teachers, and caretakers of 105 of these children were interviewed about the children’s current mental health and behavior. “*The sessions were conducted in native languages unless a child preferred to speak in Portuguese; the sessions took place in the most private conditions possible within deslocado camps, orphanages, schools, or individual homes. In many cases, the interviews of the children have undergone two translations (native language to Portuguese to English), and certain word choices and linguistic nuances have been affected accordingly. Given these impediments, the children’s narratives represent the authors’ best efforts to recreate their accounts.*”

### **A.2.2 Main Findings and Patterns**

**Overall.** The more than 500 interviews revealed the following descriptive patterns.

- More than 75% of children witnessed killings
- Almost 90% saw people beaten or tortured
- More than 50% were forcefully separated from their families and abused
- About 10% were abducted from their families and were forced to kill.

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<sup>2</sup>The authors write, “*the report focuses on those Mozambican children living in the many areas of the country that have become the battlefield of the armed struggle. This report thus is not representative of the larger number of Mozambican children from major urban centers, such as Maputo, who have not come under direct attack. Nor does it include rural children who fled to safer locations before attacks or escaped the war in other ways.*”

- Almost all children described abuses by RENAMO, while 9.4% reported abuses by government forces, a breakdown similar to the Gersony report.

**Abuses by RENAMO:** The report suggests widespread violence against civilians by RENAMO.

- 77% witnessed killings, most intentional, including beatings and beheadings.
- 37% witnessed family members killed, mostly when they tried to protect themselves or family members and property. Few killings were for political reasons.
- 88% witnessed physical abuse or/and torture, including public beatings that appear typical in RENAMO-controlled areas.
- 51% were physically abused or tortured.
- 7% suffered permanent physical injuries, including mutilation of ears, noses, fingers, and genitals.
- 63% witnessed rape or sexual abuse, including girls as young as 10 years old.
- 16% admitted being raped.

There was also ample evidence of kidnaps, mostly children for portering and soldiering. In Renamo control zones, *the forced separation of children from their families is widespread. In areas where Renamo does not control the territory, children are abducted from their families during hit-and-run raids, often targeting schools.*

- 64% were abducted from their families.
- 75% of abductees serve as porters, traveling for weeks carrying heavy loads with little food and water. Children have been kept portering for months without being permitted to return to their families. Those who fall behind are beaten or killed
- 28% of abductees are trained for combat, with the average age in the South being 11.5 and, in the center, and north of about 13 – 15. Boys are often forced to kill civilians in base camps as a test of loyalty. Those who refuse are beaten or killed.

- 9% of abductees admitted to killing.

**Abuses by FRELIMO:** The report suggests much less violence from Mozambican Government Forces forces:

- 4% witnessed government troops kill or abuse civilians.
- 6% were abused or tortured by government forces, often during intelligence interrogations

### A.2.3 Narratives of fear, abductions, violence, and family separation

Separation from Family. 10-year-old Fernando from Nampula: *“One night my family was at the funeral service of our cousin. Suddenly bandits began shooting at everyone inside the church. I ran out of the church into the bush. When I came back, the bandits were gone, but some houses near the church had been burned down. Someone told me the bandits had captured one of my brothers.”*

Separation from Family. A 10-year-old girl from Tete. *“Frelimo soldiers appeared near our home. I was there with my parents, but my brothers were away from the house. The Frelimo soldiers told my parents that we had to leave with them right away. My parents knew my brothers were not far away, but they were too afraid to tell the soldiers. We went away with the soldiers, but my brothers were left behind.”*

Separation from Family. Ramos, a 15-year-old boy recalls his experience: *“My mother was afraid I would be sent away for military training with the bandits and said we should escape. But she said that most of the family should stay behind since we would be caught if we all tried to escape at once. She believed we should escape in small groups and always leave behind two family members. She was firm about this because she knew of a family of seven and when six of them escaped the bandits went and killed the one person who stayed behind. Since I was most at risk, I fled first with my older sister and my brother-in-law.. My mother stayed behind..”*

Violence against Civilians/Village Raids. A 14-year-old boy from northern Sofala described his experience: *“The bandits attacked the Frelimo base at Inhaminga. Then they attacked the entire town. My family ran into the bush, but we [my brothers and sisters] lost our parents. As*



*I ran, I was shot in the leg. It went through the side of my leg and left a deep scar. My brothers and sisters and I met up with people from the town, and everyone decided to stay in the bush for the night. We hoped the bandits would leave. But the next morning we realized the bandits were coming after us, and we ran deeper into the bush... But we were caught by another group of bandits.”*

Violence against Civilians and Family Separation/Village Raids. a 13-year-old in Maputo Province had a similar experience: *“Our town had been attacked twice. Both times we ran to the bush and came back when it was safe. ’This time, the bandits attacked close to our house. We tried to run but the bandits shot at us. I saw my mother fall. I kept running into the bush where I would be safe. I didn’t know what happened to my father and sister, and I still don’t know.”*

Violence against Civilians/Village Raids. Chichone, a 14-year-old boy from Sofala, described RENAMO’s attack: *“In 1986, the town was attacked by bandits who defeated the Frelimo soldiers and took over. Some families ran away during the fighting, but we did not. The bandits began to destroy the town. . . . The bandits also began using children. Many older boys [between 15 to 191 were sent to the bases for military training. They also sent off some younger boys and girls, but I don’t know why. My parents worried we would also be carried away, so they made us stay in the house. A number of people from the town were able to sneak away from Marrumeu. When the bandits saw they had left, they brought people into the town from nearby villages and moved them into the houses of the people who escaped. week later, Frelimo helicopters and soldiers attacked the town. There was a lot of confusion, but the bandits gathered many of the captured people and made them go with them to the other side of the river [Zambezi River] to areas the bandits already controlled. They shot people who tried to get away... I lost my family when they ran in a different direction. I ran outside the town and hid until the next day. When I came back, I saw that Frelimo was in charge again but many people, including my family, had been taken away by the bandits.”*

Violence against Civilians/Village Raids. An 11-year-old girl from Southern Nampula Province describes her experience. *“I am from a government “village.” Because of this, we were afraid Renamo would come and attack us. But my village was not attacked until three years ago. At*

*that time, I was living there with my parents and brothers and sisters. One night the bandits attacked, and we fled into the bush. I saw some people shot as I ran, but I managed to get away with my family, and we gathered together in the bush. We knew that Renamo was burning the village and were scared they'd come after us. We walked into the bush for a long time and stopped about 30 kilometers from our village. We were afraid to go back and didn't know where to go for help. We were too afraid to look for Frelimo soldiers. We decided to stay where we were. We lived in the bush for two years. Our life was very hard. We knew we could not survive if we didn't plant some fields, but we had no tools. My father tried to return to the village where he could get his knife and whatever else the bandits didn't steal. He left one day and didn't come back. Some people decided to go look for him. They found his body near a road and thought he had run into some bandits. He had been stabbed with a bayonet. After that, we were afraid to leave our place in the bush. We did not build houses there. We made small huts and survived on roots and whatever food we could find. We barely had enough food, and we didn't have any salt or clothes. Two of my uncles and one of my sisters died of sickness... We stayed in the bush because we didn't know where to go."*

Violence against Civilians. An 11-year-old girl from Sofala describes her experience. *"The bandits came to our house and told my mother to give them food. My mother told them we didn't have any. They beat her until she died. All this time they were holding my father back. They left and took my father with them. He didn't come back... I think they killed him. I was alone with my younger sister and four brothers. I couldn't get other people to help us get food because nobody had any. I began to go into the bush and search for roots that I brought back to feed my sister and brothers. I had to keep going farther and farther into the bush to find enough roots. While I was away, my sister died. Then my brothers began to die one by one. Then my last brother died. I left that night. I walked for two days and two nights until I was safe..."*

Violence against Civilians and Family Separation. Aurelia, a 12-year-old girl from Northern Zambezia. *"I was in the bush at the time, but my brother had gone into the village to see my parents. Our house was near the Frelimo Secretary's house, and that is the part of the town that the bandits attacked. They went to the Secretary's house and grabbed him and seven other*

*men, including my father and brother. They lined all the men up and shot them. Everyone died except my brother who was shot in both legs and pretended he was dead. Then the bandits rounded up other people, including my mother, and took them away..”*

Kidnapping and Separation from Family. Orlando, a 14-year-old boy from Gaza province, says.

*“I was kidnapped from my school along with my 10-year-old sister... I stayed with my sister at the base camp until a chief chose me to be his bodyguard. I left my sister and went to live near the chief and other bandits in their part of the base...”*

Kidnapping and Separation from Family. A 16-year-old girl from Inhambane described her displacement to work as a porter for RENAMO and her split from her siblings. *“I was living with my grandmother, aunt and two brothers when the bandits arrived at night. They took all of us but my grandmother with them. We joined a group of other people from the village who had been captured to carry things the bandits had stolen. I carried a sack of flour that must have weighed 30 kilos. My aunt carried a pig... The bandits beat people and told them that if any cried out they would be killed. They kept telling my aunt that she was pretty and that she was going to become the chief bandit’s woman... I saw some of the bandits take some of the girls and rape them... While we were walking at night, there was gunfire and the bandits began shooting at what must have been Frelimo soldiers. I was able to escape but not my aunt and my brothers... I haven’t seen them since...”*

Kidnapping and Separation from Family. Mario a 12-year-old boy from Sofala describes his abduction. *“I lived with my parents and four brothers until Renamo captured us and forced us to travel to their base. We joined a larger group of people. Everybody was carrying things the bandits had stolen. The bandits made us walk fast, and it was hard to keep up. The bandits started beating those who were slow.”*

Kidnapping and Separation from Family. Matias, a 13-year-old boy from Sofala: *“The bandits kidnapped my family and took many other people from my village to march to their base. They made everybody carry something... It took two days and two nights to reach the bandits’ base.”*

Child Soldering. A teacher in a rural school outside Chockwe in Gaza Province described child soldiering raids. *“The bandits arrived just before midday. Normally, they attack late at night*

*when everyone is asleep. But they only attacked our school and left quickly. Maybe they were scared because it was light, and Frelimo soldiers were not far away. One group of bandits, the same age as our own students, starting shooting into the nearby houses, killing women and children. When others escaped, the bandits did not follow. They surrounded our school [which was outdoors under the trees]. They took all of our boys (ages 7 to 13) back with them... Nobody else was taken... Just the boys.”*

Child-Soldiering. A 15-year old girl from Zambezia described: *“Boys [around 15 to 16] were sent to the bandits’ [provincial]base for military training. Younger boys [around the ages of 11 to 12 were used by the bandits as servants.”*

Psychological Trauma and Mental Health. An 8-year old boy who witnessed RENAMO murdering his mother: *“Every morning I wake up and remember the dreams from the night before. I always see my mother’s face and it is looking out at me. When I think about these dreams I get sad. Then I get angry. Then I start to fight with the other boys.*

Psychological Trauma and Mental Health. A teacher from Chockwe in Gaza describes his students’ trauma. *“...Many children are very sad. They sit in class with their heads turned to the side and stare at the wall. At first, I thought they couldn’t hear... I finally realized they were able to hear, but were unable to concentrate. I wonder what’s going on inside of them... They’re distant..in a world far away. ... Many didn’t know how to sit at a desk, or hold a pencil, or recite lessons, or answer questions, or speak Portuguese. Some were with Renamo so long they didn’t know many of the simple facts of village life. Some had no respect for me as a teacher... they fight other students... I’d say about one-half of the students are like this... We have to begin at the beginning...”*

Psychological Trauma and Mental Health. A 12- year old girl from Sofala Province: *“(In the dream) I am sleeping on a mat above the ground. I wake up and see a monster with the head of a man crawling towards me. I know if I scream others will hear me and come help. But I cannot scream. The monster has cast a spell and my voice is stuck in my throat. I realize that it is my last chance to survive—the monster is about to attack me. I reach down deep inside my stomach and cry out with all my strength. I do cry out because my brother always wakes*

MAJOR SYMPTOMS (N=105)		
NUMBER (OF CHILDREN)	PERCENTAGE	PROBLEM REPORTED/OBSERVED
<b>(Post Traumatic Stress Disorder)</b>		
82	78%	experiences nightmares
79	75%	has recurrent dreams
65	62%	has trouble concentrating
49	46%	experiences loss of energy
57	54%	experiences feelings of guilt
87	83%	experiences feelings of sadness
<b>(Behavioral Problems)</b>		
21	20%	is often aggressive with other children
27	26%	is often aggressive with adults
32	30%	is often disobedient
19	18%	often lies
12	12%	often steals
7	6%	is often sexually provocative

**Figure A.1: Major Psychological Symptoms.** Children of Mozambique (6-15) Displaced in the Countryside (1989-1991)

*up frightened and asks what is wrong.”*

#### A.2.4 Psychological Trauma

The report concludes with descriptive patterns on the traumatic cost of displacement and conflict on children. The table below, reproduced from the report, is telling of the huge trauma, an issue we examine in [section 6](#), where we report on our survey in Nampula in 2020.

### A.3 Human Rights Africa Watch, Conspicuous Destruction. 1990-1991

#### A.3.1 Background

Africa Watch, the African branch of Human Rights Watch, established in 1988, produced a thorough report on the Mozambican civil war, its origins, and implications just before the signing of the Rome Peace Treaty ([Human Rights Watch, 1991](#)). The Mozambican government asked the international NGO to report on human rights abuses in 1990. The researchers visited prisons, displacement sites, conducting many interviews “*under conditions of absolute privacy.*” “*Africa Watch was also able to meet with senior members of the government up to, and including, the President. The level of access provided and degree of frankness shown by the Mozambique government was unprecedented in Africa Watch’s dealings with African governments.*” The report covers (in different sections) all aspects of the war: violence against the civilian population, warring parties’ efforts to control the population, forced recruitment, famine.<sup>3</sup> The report gives a concise summary of the civil war, going over the central policies of FRELIMO and RENAMO and their impact on the local population across all provinces.

The report’s conclusion on the civil war toll is telling: “*The total cost of the war to Mozambique is beyond calculation. Tens of thousands have been killed in the fighting, and far larger numbers died on account of the ensuing hunger and disease. One estimate for the total number of war dead is 600,000; another estimate is that the country has 200,000 orphans. The economic and social infrastructure has been largely destroyed, and the opportunities for educating a generation have been lost. The country is bankrupt, and the government is almost wholly dependent on foreign aid to pay its employees. The countryside is militarized and many men and boys have grown up knowing how to make a living only from robbery and extortion.*”

#### A.3.2 Narratives

The report neither provides statistics on displacement nor gives descriptives on refugees’ and IDP’s experiences. However, various parts discuss FRELIMO’s and RENAMO’s forced relocation of thousands, their efforts to control the population, forced conscription, and child

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<sup>3</sup>The report also covers the constitutional, legal, and press freedom initiatives of the government.

soldiering. Besides, the report includes dozens of excerpts from interviews covering all aspects of conflict, including RENAMO's terror strategies and offenses towards civilians, mutilations, abductions and kidnappings, forced labor, and dislocation. We extract from the report narratives of displacement to illustrate the conditions.

Kidnaps and Family Separation. A woman in her forties, interviewed in the Hulene suburb of Maputo in May 1992, encounters: *"In November [1991] the Matsanga had come to this, my mother's cousin's village, Adelina. They told everyone to come with them and she and her children were kidnapped. After a while the Matsanga let Adelina and two young boys return to the village, but they kept two other sons and her fourteen-year-old daughter, Alice. Alice became one more wife of a Matsanga chief. After some months the boys escaped and Alice tried too. But while escaping she met some Matsanga returning to their base. The group took her back to the base and the Matsanga called everybody to see her tied up. She was shot and cut and tied into pieces."*

Violence against Civilians/Village Raids. A RENAMO guerrilla described a rebel raid on his village in the district of Alto Molocue, in Zambezia province on August 12, 1989. *"I was trying to hide, but they were everywhere... They were running everywhere in the village trying to catch chickens. Then they gathered the people together and separated the young men and women from the rest. Women with infants, they did not take. I had heard of the massacres and I was scared. Everyone was. They took my cousin Fatima and my younger brother Carlitos. The only thing I thought about was dying. There were 272 of us taken. I know that because when we arrived at the checkpoint at Macringe base near Gurue, the soldiers asked me what education I had and I said fourth grade, so they told me to count the people. There were 272."*

Kidnapping and Separation from Family. A 17-year old boy recalls his capture by RENAMO around the town of Namacurra in Zambezia: *"I was living in the house of my cousin on my father's side in the Maolati bairro [neighborhood] in Namacurra. FRELIMO had forced us to come there in 1986 because of the war situation. There was no food in the town, so we used to go back to our old farm to gather cassava. On September 25, 1989, my aunt, younger brother, and I went to get food. A big RENAMO group was passing by at the time carrying food to their*

base. They told us to help them carry their baggage. It was rice. We walked for one day to Vuruka, where there was a lot of population. When we reached the area, the soldiers told us to put down the food. They left me in the home of a civilian living there. My aunt and younger brother were taken on to a RENAMO base at Namanjavira.”

Kidnapping/Abduction. A young man encounters his capture in 1985 in Mogovolas in Nampula province. “I was with four friends and we were tending twenty cows. We were sitting down on a log when a large RENAMO group arrived. They had guns, and I knew they were Matsanga. They told us that we had to go with them. We began walking. They said we were going to Sofala. It took us one month to get there. Along the way we saw a lot of people. That is who gave us our food. The commander would talk to the local mambo, and then the population would bring the food.”

Kidnapping/Abduction and Family Separation. A former fighter from Maputo describes his abduction at the age of 15 in 1984. “I was sleeping at my father’s house when a group of RENAMO soldiers came. It was on September 5, 1984. They took me, my brother, and my mother, who was thirty-four years old then. The next day, they let my brother and mother return. They marched me ten days to the Gumbene base on the Gaza-Maputo border. I was there for six months training with guns.”

Kidnapping/Abduction. A 19-year old man from Nauela describes his abduction and forced relocation to a RENAMO “control area”, alongside 271 others. “In December the [RENAMO] base sent a unit to the house [where I was sick] to take me back. It was the police of RENAMO, the mujibas. The membro [political commissar] said that I was still sick, but the mujiba said they had orders. The membro accompanied us to the checkpoint and talked to the soldiers there. He said I was too sick to become a soldier. He said my convulsions could come at any time, and I would not survive. The soldiers said that I was not taken to become part of the population; I was taken to be a soldier. All the others of my group had already trained and they had arms. The membro then came to me and told me that I had to go. He could do nothing. I entered the base in January. They took me to a base at Namanjavira [in the neighboring district of Mocuba] and told me that I was going to train to be a soldier. They trained me and gave me a



*gun. Two days later, we left for a mission in Jonge.”*

Famine. An aid agency worker describing IDPs in Red Cross facilities in Mozambique after the 1983-4 famine. *“These people are characterized by complete destitution, exhaustion, trauma, and very poor nutrition; most are naked or dressed only in bits of sack and rags.”*

Population Control and Dislocation. A government military official explaining FRELIMO’s tactics: *“We do move people into protected zones. It is for their safety. Otherwise the bandits would make them feed them. In remote areas we then destroy the fields so the bandits will not become fat.”*

Population Control. A kidnapped 24-year old by RENAMO man describes rebels’ territorial control: *“The soldiers were from all over, Zambézia, Inhambane, everywhere. It is difficult to get away because RENAMO has controls around the base area . . .”*

Population Control. Likewise, an old man in Derre, Zambezia described RENAMO’s control areas as: *“RENAMO keeps us in Derre like an animal in a sack; anyone leaving the security of the town for food or to open farms as the rains start is liable to be killed or kidnapped. Four of us were killed yesterday and eight this morning.”*

Population Control. A 43-year-old man, father of seven, who was taken by RENAMO while working in the fields describes. *“The wounded were taken on up to the mountain where there was a hospital. I had a bad stomach illness. They sent me for military training, but I lasted one month. I could not continue. Eight of us tried to run away, but RENAMO soldiers caught us. Two of us were shot dead. The commander decided it was dangerous to be shooting because the enemy might be near, so four others were bayoneted. I do not know why the two of us were not killed. I was sent to work on a “state farm” north of Casa Banana called Nyapera. There were about fifty people there, all of them sick and unable to do much else.”*

Villagization. An elected official in Fidel Castro communal village, outside Xai Xai, provincial capital of Gaza, told the story of its formation after the 1977-78 floods. *“The soldiers came and said we had to move to this place, and everyone said no. Then they built a school and health center, homes. FRELIMO officials kept telling us to come to this place, but we refused. Finally, they called everyone to a meeting here, and when we came, the soldiers surrounded the*

area.”

Villagization. A FRELIMO military commander from Sofala described the process. *“The policy of FRELIMO is that these camps will become permanent settlements. The policy is to move them into permanent concentrations. We want to bring people together to live in villages, which will grow into cities. It might be a drastic change, but it is a change that brings a higher standard of living, with greater civilization. It is necessary to take this measure. These people have lived dispersed for 500 years, and what has this gotten them?”*

Operation Production. Here is one encounter from a professional from Maputo who was sent to Niassa in the operation production where the government forced urban-dwellers, often prisoners and political dissidents to the countryside. *“Two days later, a group of prisoners was driven in a truck to the airport. They boarded a plane of the state airline, LAM, for the trip to Niassa. The government had canceled all domestic flights for the week so they could be used in Operation Production. . . . The same night, they were driven sixty miles north of Lichinga (the capital of Niassa) to an isolated area called Mwembe. They had to build their homes, and in the beginning slept out in the open. The camp was organized along military lines with 400 men to a battalion. The camp was strictly male, and there were other camps for women. . . . The police enlisted local peasants to take part in surveillance. They told them that the camp inmates were criminals, that they were killers. The inmates were supposed to wear black clothes. Anyone who tried to escape was beaten in public. They would tie up a guy’s hands and legs and then slip a stick through the back. Some guys were tied against trees. They also dug trenches and put people in them for a week. . . . The typical day began at between 4:00-4:30 A.M. with the sound of a whistle for roll call. Every meal was maize and beans. After a while, the trains to Lichinga stopped running, so the food got worse. Many people tried to run away. Some were eaten by the lions, while many were believed to have ended up with RENAMO.”*

## B Sample and Descriptive Statistics

This section complements the Data, Summary Statistics, and Descriptive patterns section of the main paper [subsection 2.2 and subsection 2.3].

### B.1 Displacement Patterns

#### B.1.1 Externally Displaced (Refugees)

Table B.1 shows the number and share of externally displaced for the full 1997 Census population and for Mozambicans aged 12 – 32 whose primary education decisions took place during the civil war, distinguishing by the country of displacement or birth. The 12 to 32 sample is our main sample throughout the analysis. At the end of the civil war (1992), most refugees resided in Malawi (more than 550,000) and Zimbabwe (about 125,000). As RENAMO’s operations and headquarters were mostly in the center, Mozambicans residing close to the border with Zimbabwe and Malawi sought shelter in these countries. Close to 50,000 Mozambicans resided in South Africa in 1992, while about 57,000 lived in Tanzania, Swaziland, and Zambia.

Table B.1: Refugees. Country of Displacement or Birth

	Full Sample (5+)		Sample (12-32)	
	Observations	Proportion	Observations	Proportion
Malawi	550,742	0.70	255,987	0.70
Zimbabwe	125,321	0.16	59,382	0.16
South Africa	49,910	0.06	21,776	0.06
Other Countries	57,132	0.07	26,397	0.07
<b>Total</b>	<b>783,105</b>		<b>363,542</b>	

Notes: The table reports the total number of Mozambicans at least 5 years old and those between 12 and 32 in 1997, who were displaced or born in neighbouring countries between 1977 and 1992. The table also reports the share of displaced in each country among all refugees. The residual category “Other Countries” includes Mozambicans displaced or born in Swaziland, Zambia, and Tanzania.

#### B.1.2 Internally Displaced People (IDPs)

Table B.2 reports the number and share of the different internal displacement trajectories, distinguishing between rural-born (Panel B) and urban-born (Panel C).

Table B.2: Internally Displaced People

	Sample (5+)		Sample (12+)		Sample (12-32)	
	Obs	Prop	Obs	Prop	Obs	Prop
Panel A: All Persons						
<b>Internally Displaced to Urban Areas</b>	1,393,454	0.56	1,266,288	0.58	688,921	0.58
Maputo/Matola	559,766	0.40	517,165	0.41	255,070	0.37
Beira	166,449	0.12	156,655	0.12	80,676	0.12
Nampula	87,195	0.06	78,682	0.06	51,047	0.07
Main Towns (10)	270,256	0.19	243,551	0.19	146,821	0.21
Smaller Towns and Large Villages (81)	309,788	0.22	270,235	0.21	155,307	0.23
<b>Internally Displaced to Rural Areas</b>	1,077,532	0.44	924,834	0.42	504,286	0.42
Panel B: Born Rural						
<b>Internally Displaced to Urban Areas</b>	893,569	0.50	818,354	0.51	436,141	0.51
Maputo/Matola	336,423	0.38	313,204	0.38	151,167	0.35
Beira	120,308	0.13	114,151	0.14	56,685	0.13
Nampula	46,605	0.05	42,101	0.05	27,269	0.06
Main Towns (10)	190,373	0.21	172,636	0.21	101,473	0.23
Smaller Towns and Large Villages (81)	199,860	0.22	176,262	0.22	99,547	0.23
<b>Internally Displaced to Rural Areas</b>	891,769	0.50	785,406	0.49	416,667	0.49
Panel C: Born Urban						
<b>Internally Displaced to Urban Areas</b>	499,885	0.73	447,934	0.76	252,780	0.74
Maputo/Matola	223,343	0.45	203,961	0.46	103,903	0.41
Beira	46,141	0.09	42,504	0.09	23,991	0.09
Nampula	40,590	0.08	36,581	0.08	23,778	0.09
Main Towns (10)	79,883	0.16	70,915	0.16	45,348	0.18
Smaller Towns and Large Villages (81)	109,928	0.22	93,973	0.21	55,760	0.22
<b>Internally Displaced to Rural Areas</b>	185,763	0.27	139,428	0.24	87,619	0.26
<b>Total</b>	1,393,454		1,266,288		688,921	

The table reports the number and proportion of internally displaced people (IDPs) to urban and rural areas, using the 1997 Census classification. The table lists the number and share of IDPs to the three main cities, Maputo/Matola (in the South), Beira (in the Centre), and Nampula (in the North), the ten main towns (Chimoio, Nacala-Porto, Quelimane, Tete, Xai-Xai, Lichinga, Pemba, Dondo, Angoche and Inhambane), and the 81 smaller towns and large villages. Columns 1-2, 3-4, and 5-6 show tabulations for the sample aged 5 and above, 12 and above, and between 12-32 years old, respectively. Panel A includes all individuals, while panels B and C tabulate statistics for individuals born only in rural or urban places, respectively.

## B.2 Post-War Repatriation

At the end of the war, the United Nations put in place an unprecedented for the time repatriation program, relocating hundreds of thousands from refugee camps and other settlements in neighboring countries over a brief period of time (1992 – 1994).

Table B.3 tabulates the trajectory for those with at least 5 years of age (Panel A) and 12-32 year old individuals (Panel B) in three key moments: at birth, in 1992 (just before the end of the civil war), and in 1997, when the census took place.

1. Row (1) looks at rural-to-rural IDPs. About 51% of rural to rural IDPs (458, 439 5+ year old individuals) stayed in the district of displacement, while 27% (approximately 242, 500) had returned by 1997 to their region of birth. 139, 024 (16%) and about 52, 000 (6%) settled in another locality other than their rural birthplace or urban district, respectively.
2. Row (2) looks at urban-to-rural IDPs. 114, 840, about 62% stayed in their place of displacement after the war ended, and only 22, 683 (12%) returned to their birthplace, out of a total of 185, 763 displaced.
3. Row (3) tabulates the statistics for close to 900 thousand rural-born IDPs who moved to urban areas during the war. 541, 228 (61%) stayed, while 216, 762 (24.2%) returned to their region of birth. The remaining moved to another urban (9%) or rural (6%) locality after the war.
4. Row (4) looks at urban-to-urban movements. About 385 thousand individuals stayed in the district of displacement (77%), while only 27, 253 (5%), moved back to their urban area of birth. 11% moved to a third urban place and 6% moved to a rural district between 1992 and 1997.
5. As row (5) shows, the majority of rural-born refugees, about 450 thousand returned to their place of birth (84%); the remaining settled after the war in another rural (12%) or urban (4%) area.
6. Row (6) looks at the 63, 565 urban born that became externally displaced. About 20% returned to their birth region, often close to the border, with the overwhelming majority (75%) settling after the end of the civil war in another locality other than their urban district of birth, settling mostly in the three coastal cities.
7. Row (7) looks at the 180, 000 Mozambicans born abroad during the civil war, where their families had been displaced. The overwhelming majority, 95%, settled in an urban district, while less than 10, 000 settled in a rural place.

Table B.3: Post Civil War Patterns of Movement of Displaced Individuals

	Observations (Proportion)			
	Stayed (1997)	Back (1997)	Other Rural (1997)	Other Urban (1997)
Panel A: Full Sample (5+)				
Int. Disp. From Rural → Rural (1992)	458,439 (0.51)	242,458 (0.27)	139,024 (0.16)	51,848 (0.06)
Int. Disp. From Urban → Rural (1992)	114,840 (0.62)	22,683 (0.12)	32,767 (0.18)	15,473 (0.08)
Int. Disp. From Rural → Urban (1992)	541,228 (0.61)	216,762 (0.24)	54,895 (0.06)	80,684 (0.09)
Int. Disp. From Urban → Urban (1992)	385,505 (0.77)	27,253 (0.05)	30,494 (0.06)	56,633 (0.11)
Ext. Disp. Rural Born	0 (0.00)	450,259 (0.84)	21,718 (0.04)	65,346 (0.12)
Ext. Disp. Urban Born	0 (0.00)	11,418 (0.18)	4,579 (0.07)	47,568 (0.75)
Born Abroad	0 (0.00)	0 (0.00)	9,577 (0.05)	172,640 (0.95)
Panel B: Sample (12-32)				
Int. Disp. From Rural → Rural (1992)	196,759 (0.47)	122,619 (0.29)	71,813 (0.17)	25,476 (0.06)
Int. Disp. From Urban → Rural (1992)	50,655 (0.58)	11,129 (0.13)	17,826 (0.20)	8,009 (0.09)
Int. Disp. From Rural → Urban (1992)	253,196 (0.58)	111,124 (0.25)	33,396 (0.08)	38,425 (0.09)
Int. Disp. From Urban → Urban (1992)	188,984 (0.75)	16,593 (0.07)	19,384 (0.08)	27,819 (0.11)
Ext. Disp. Rural Born	0 (0.00)	231,280 (0.84)	12,138 (0.04)	31,975 (0.12)
Ext. Disp. Urban Born	0 (0.00)	6,817 (0.20)	2,572 (0.07)	25,144 (0.73)
Born Abroad	0 (0.00)	0 (0.00)	2,757 (0.05)	50,859 (0.95)

Notes: The table reports the displacement matrix for all individuals in the 1997 Census who reported having moved during the war. Panel A shows tabulations for the full population aged 5 and above; Panel B reports the numbers for those aged 12-32 in 1997. In each panel, Row (1) records the displacement and movement trajectory statistics (observations and percentage) of internally displaced people (IDPs) born in rural localities and displaced into other rural localities during the war. Row (2) records displacement and movement trajectory statistics for IDPs born in urban localities but displaced into other rural areas during the war. Row (3) records displacement and movement trajectory statistics for IDPs born in rural localities and displaced into other urban areas during the war. Row (4) records displacement and movement trajectory statistics for IDPs born in urban localities and displaced into other urban areas during the war. Row (5) records the number and proportion of rural-born Mozambicans who were externally displaced in 1992. Row (6) records the number and proportion for urban-born Mozambicans who were externally displaced in 1992. Row (7) records the number of Mozambicans born in neighbouring countries and their post war trajectories.

### B.3 Summary Statistics

Table B.4 provides the averages for the main outcome variables in each of the different displacement trajectories for Mozambicans older than 5 (Panel A) and those 12 – 32 years old (Panel B) as recorded in the 1997 Population Census.

Table B.5 reports summary statistics for various development and conflict proxies, such as population, school density, civil conflict incidents, and landmines across 216 admin-2 regions.

Table B.6 shows correlations between the proxies of regional development and civil conflict intensity, alongside the two principal components. subsection 2.3 in the main paper provides variable sources and details.

Figure B.1 illustrates the spatial distribution of the development and civil conflict proxies that we employ in the empirical analysis across admin-2 units (districts). subsection 2.3 in the main paper gives variable sources. Table B.5 gives summary statistics and Table B.6 provides the correlation structure. The development principal component (PC) denotes the first principal component of population density in 1997, road density at independence (1973), local markets (cantinas) density in 1965, school density by the end of the war (in 1992), and offspring mortality of non-displaced mothers older than 35 years old, as recorded in the 1997 Census. The civil conflict principal component (PC) is the first principal component of landmines and unexploded ordnance (UXOs) per 1,000 inhabitants and battles and violence against civilians per 1,000 inhabitants, both of which are scaled using population in 1997.

Table B.4: Summary Statistics Education and Employment

	Non-Movers Rural	Non-Movers Urban	Refugees	Int. Displ. into Rural	Int. Displ. into Urban
Panel A: Full Sample (5+ years old)					
Schooling (Dummy)	0.07	0.30	0.09	0.16	0.39
Years of Schooling	0.38	1.86	0.53	0.99	2.56
Agriculture Employment	0.93	0.43	0.90	0.82	0.43
Service Employment	0.03	0.41	0.05	0.12	0.44
Panel B: Sample (12-32 years old)					
Schooling (Dummy)	0.11	0.48	0.12	0.22	0.47
Years of Schooling	0.60	2.97	0.68	1.35	3.06
Agriculture Employment	0.92	0.38	0.90	0.81	0.44
Service Employment	0.04	0.47	0.06	0.13	0.45

The table reports the mean of the outcome variables by displacement categories. Panel A shows the averages for Mozambicans aged 5 and above while Panel B shows the averages for individuals aged 12 to 32 in 1997. Schooling is an indicator variable that takes the value of one for individuals who have completed at least one year of formal education and zero otherwise. Years of Schooling is what individual reports in 1997. Agriculture Employment is an indicator that takes the value of one for individuals working in agriculture and zero otherwise. Service Employment is an indicator that takes the value of one for individuals working in services and zero otherwise. Non-Movers Rural are rural-born Mozambicans residing in the same (rural) district in 1992 as their birthplace. Non-Movers Urban denotes urban-born Mozambicans residing in the same (urban) district in 1992 as their birthplace. Refugees are those who in 1992 resided in neighboring countries; the category includes those born in Mozambique or those born in neighboring countries. The Int. Disp. into Rural areas category reflects Mozambicans displaced to a rural district during the war. Int. Disp. into Urban are Mozambicans displaced to a urban district during the war.

Table B.5: Summary Statistics Development and Conflict Across Districts

	District Of Birth					
	Obs	Mean	St.D	Median	Min	Max
Population Density 1997	216	159.16	317.70	27.55	0.46	2472.47
Road Density 1973	214	90.09	140.78	19.19	0.00	767.18
Cantinas Density 1965	216	0.01	0.03	0.00	0.00	0.37
School Density 1992	216	0.03	0.07	0.01	0.00	0.73
Share of Educated Elders	216	0.09	0.07	0.07	0.01	0.51
Offspring Mortality Rate	216	273.12	64.69	273.15	110.02	432.16
PC Development	214	0.00	1.82	-0.56	-2.94	8.88
Conflict Events (1k inha.)	216	0.12	0.26	0.02	0.00	1.61
Landmines and UXOs (1k inha.)	216	1.04	1.85	0.52	0.00	18.53
PC Conflict	216	0.00	1.12	-0.34	-1.14	6.66

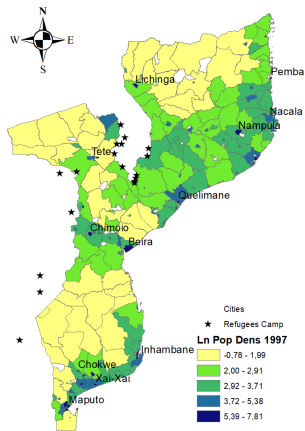
The table reports summary statistics for proxies of regional development and conflict intensity across Mozambican (admin-2) districts. The development PC denotes the first principal component of population density of individuals above the age of 5 in 1997, road density at decolonization (1973), commercial hubs (cantinas) per square kilometer in 1965, primary school density in 1992, the share of completed primary education among the old, and offspring mortality of non-displaced women older than 35 in 1997. The conflict PC is the first principal component of civil conflict incidents per one thousand inhabitants and the number of landmines and unexploded ordnance (UXOs) per one thousand inhabitants, both scaled using population above the age of 5 in 1997.

Table B.6: Correlation Matrix, PCA Development/Conflict And Their Components

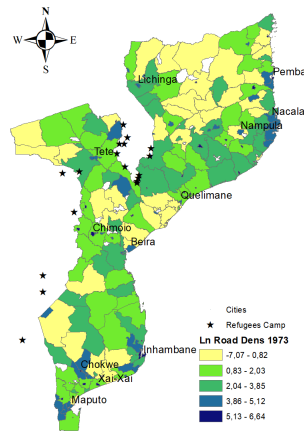
	Log Population Density	Log Road Density	Log Offspring Mortality Rate	Log Share of Educated Elders	Log Schools Density	Log Cantinas Density	Log Conflict Events	Log Landmines and UXOs	PC Development	PC Conflict
Log Population Density	1.000									
Log Road Density	0.665	1.000								
Log Offspring Mortality Rate	-0.399	-0.374	1.000							
Log Share of Educated Elders	0.715	0.527	-0.546	1.000						
Log Schools Density	0.551	0.377	-0.256	0.393	1.000					
Log Cantinas Density	0.428	0.357	-0.206	0.246	0.730	1.000				
Log Conflict Events	0.173	0.176	-0.246	0.292	0.218	0.349	1.000			
Log Landmines and UXOs	-0.452	-0.092	-0.091	-0.135	-0.284	-0.082	0.241	1.000		
PC Development	0.870	0.754	-0.607	0.788	0.744	0.658	0.322	-0.234	1.000	
PC Conflict	-0.177	0.054	-0.214	0.100	-0.042	0.170	0.788	0.787	0.057	1.000

The table reports correlations for proxies of regional development and conflict intensity across Mozambican (admin-2) districts. The development PC denotes the first principal component of log population density of individuals above the age of 5 in 1997, log road density at decolonization (1973), log commercial hubs (cantinas) per square kilometer in 1965, log primary school density in 1992, log share of completed primary education among the old, and log offspring mortality rate in the district of birth. The conflict PC is the first principal component of log civil conflict incidents per one thousand inhabitants scaled using population in 1997 and log number of landmines and unexploded ordnance (UXOs) per one thousand inhabitants scaled using the population older than 5 in 1997.

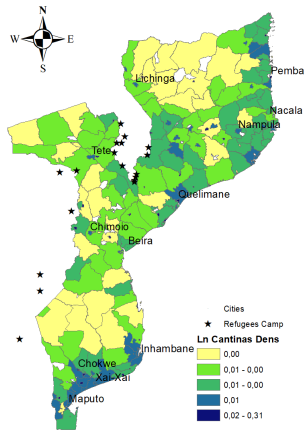




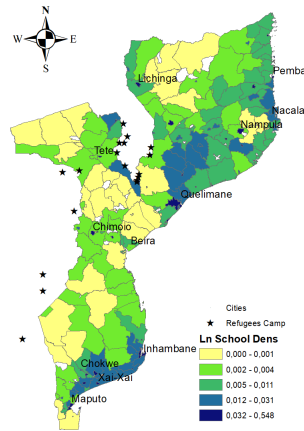
Panel A: Pop Dens 1997



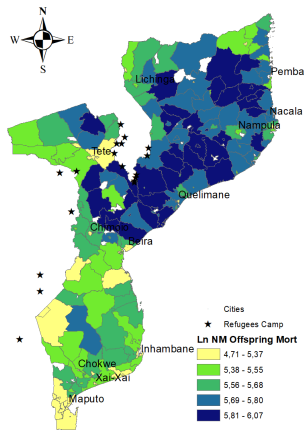
Panel B: Road Dens 1973



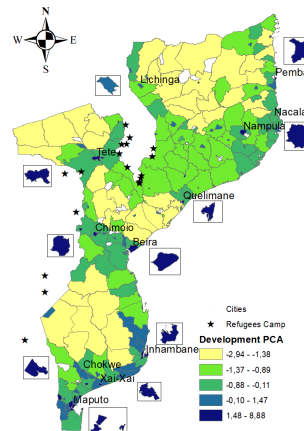
Panel C: Cantinas Dens 1965



Panel D: School Dens 1992

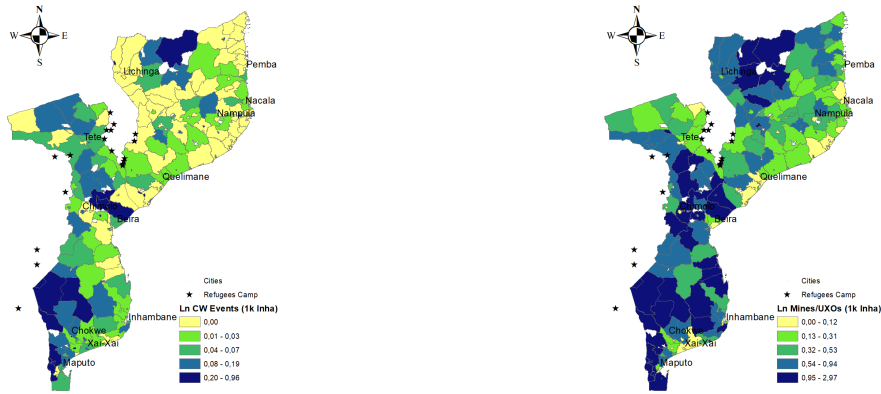


Panel E: NM Offspring Mort.

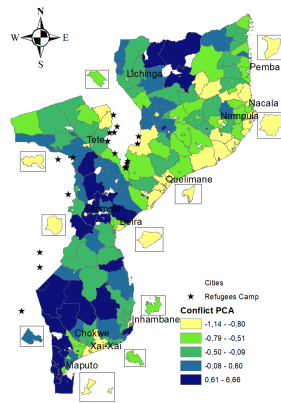


Panel F: Development Principal Component

Figure B.1: The panels plot the spatial distribution of development characteristics in the district of birth.



Panel A: Civil War Events (per 1k inha.) Panel B: Landmines and UXOs (per 1k inha.)



Panel C: Conflict Principal Component

**Figure B.2:** The Figure panels plot the spatial distribution of conflict intensity at the district of birth. Panel A plots civil conflict incidents per one thousand district inhabitants. Panel B plots landmines and unexploded ordnance per one thousand inhabitants. Panel C plots the first principal component of civil war incidents (battles and violence against civilians) and landmines and unexploded ordnance (UXOs).

## B.4 Correlates of Displacement

Table B.7 explores the correlates of displacement for rural-born Mozambicans, aged 12-32 in 1997, whose schooling decisions were shaped during the civil war. The table shows linear probability model (OLS) estimates associating an indicator that takes the value of one for displaced (externally or internally) with various birth-district features that proxy for development and conflict, simply conditioning on province fixed effects (constants not reported). Table B.7 gives estimates adding the various development and civil conflict variables one by one in the cross-district specification. The specifications yield weak evidence on the link between displacement and development. Log road density and log cantinas (agricultural markets) density enter with significantly positive estimates, but the share of educated elders with a significantly negative

coefficient. And population density and school density with small and statistically indistinguishable from zero estimates. When we aggregate the various development proxies and use the first principal component to reduce noise, we obtain a small and insignificant coefficient. In contrast, civil conflict enters with a significantly positive estimate and so does the conflict principal component. However, the model fit is quite poor. The adjusted  $R^2$  is around 0.07, although the model also includes highly significant province constants (that explain about 0.068). The marginal  $R^2$  that gives the increase in the fit when we add the variable of interest to the province constants is 0.01, even when considering the statistically significant variables.

Table B.7: Correlates of Displacement. Development and Civil War across Districts

Dependent Variable: Indicator for Displaced									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Log Pop Dens 1997	-0.010 [0.008]								
Log Road Density		0.005*** [0.001]							
Log Cantinas Density			2.748*** [0.555]						
Log Nnbr Educ Elders				-0.542* [0.283]					
Log School Density					0.365 [0.306]				
Development Principal Comp.						-0.009 [0.008]			
Log Conflict Events (1k inha.)							0.241*** [0.038]		
Log LandMines & UXOs (1k inha.)								0.045 [0.035]	
Conflict Principal Comp.									0.064*** [0.014]
Observations	5,558,502	5,555,518	5,558,502	5,558,502	5,558,502	5,555,518	5,510,047	5,510,047	5,558,502
Mean Dependant	0.270	0.269	0.270	0.270	0.270	0.269	0.268	0.268	0.270
Adjusted R-squared	0.071	0.070	0.074	0.075	0.070	0.071	0.072	0.070	0.078
Marginal R-squared	0.001	0.001	0.004	0.005	0.001	0.001	0.003	0.000	0.009
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table reports linear probability model (LPM) estimates associating an indicator that takes the value of one for displaced individuals (internally and externally), with characteristics at the district of birth. The sample consists of individuals, aged 12-32 years old in 1997. Log Pop Dens 1997 is the natural logarithm of the 1997 population above the age of 5 divided by the area of the district. Log Road Density is the natural logarithm of the colonial road network in 1973 (paved roads, unpaved roads, and trail) per square kilometer. Log Cantinas Density is the logarithm of commercial hubs per square kilometer. Log NM Educ Elders is the log of share of non-movers educated elders (speaking Portuguese or having at least one year of education). Log School Density is the log of schools per square kilometer opened by 1992. Log Conflict Events (1k inha.) is the log of the total number of conflict events per thousand inhabitants in the district of birth. Log Landmines UXOs (1k inha.) is the log number of landmines and UXOs per thousand inhabitants. Conflict Principal Comp. is the principal component of Log Conflict Events and Log Landmines UXOs. Heteroskedasticity-adjusted standard errors clustered at the admin-2 of birth level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Table B.8 also reports LPM estimates associating the displacement indicator with the principal components for development and civil conflict, alongside distance to nearest neighboring country and distance to the closest city. Development is not much related to displacement. The conflict proxy continues entering with a significant estimate, showing that most movement is driven by violence.

Table B.8: Development and Civil War across Districts of Birth

Dependent Variable: Indicator for Displaced					
	(1)	(2)	(3)	(4)	(5)
Log Distance Big City	0.010 [0.009]	0.020 [0.017]	0.018 [0.018]	0.020 [0.017]	0.018 [0.018]
Log Distance Neighbouring Country	-0.047 [0.067]	-0.042 [0.056]	-0.043 [0.055]	-0.043 [0.056]	-0.044 [0.055]
Development Principal Comp.	0.002 [0.013]	0.009 [0.010]	0.006 [0.011]	-0.006 [0.009]	-0.001 [0.007]
Conflict Principal Comp.	0.076*** [0.029]	0.052*** [0.014]	0.054*** [0.014]	0.056*** [0.016]	0.056*** [0.016]
Log Land Area			-0.018* [0.010]		-0.017 [0.015]
Log Population Dens (1997)				0.015*** [0.003]	0.007 [0.011]
Observations	5,555,518	5,555,518	5,555,518	5,555,518	5,555,518
Mean Dependant	0.269	0.269	0.269	0.269	0.269
Adjusted R-squared	0.030	0.083	0.085	0.083	0.085
Province FE	No	Yes	Yes	Yes	Yes

The table reports linear probability model (LPM) estimates associating an indicator variable that takes the value of one for individuals, who get displaced (both internally or externally) in 1992, with several characteristics at the district of birth level. The sample consists of individuals, aged 12-32 years old in 1997. Distance to Big City is the distance (km) to the nearest large city. Distance to Neighbouring Country is the distance (km) to the nearest country boarder. Development Principal Comp. is the principle components of Log Population (above the age of 5) Density in 1997, Log Road Density, Log Number Cantinas, Log NM Educ Elders, and Log School Availability, computed at the district of birth level. Conflict Principal Comp. is the principal components of the Log Conflict Events (1k inha.) and Log Landmines UXOs (1k inha.) computed at the district of birth level, both of which are scaled using population older than 5 in 1997. Heteroskedasticity-adjusted standard errors clustered at the admin-2 of birth level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## C Correlational Analysis. Further Evidence

This section complements the analysis in [section 3](#). Although the cross-sectional patterns do not have a causal interpretation, due to selection, omitted variables, and other forms of endogeneity, they are relevant since they are derived from the full population census. We therefore conduct and report below some sensitivity checks of the cross-sectional correlations.

### C.1 Schooling Years

In [Table C.1](#) the dependent variable denotes individuals' years of schooling. As schooling is highly non-linear with many zeros, the Table reports Negative Binomial Maximum Likelihood (ML) and Poisson ML estimates alongside OLS (in columns (5)-(6)).

In line with LS estimates in [Table 2](#), the estimates in Panel *A* show that internally displaced to urban areas double their years of schooling by 1997, as compared to rural non-movers. IDPs displaced to other rural areas experience a much smaller increase in years of schooling. The implied magnitudes are considerable as average years of schooling for rural-born is just 0.723. The coefficient on externally displaced is small and often statistically insignificant.

Panel *B* provides the cross-sectional estimates for the urban-born. Those displaced to the countryside have about 0.26 – 0.6 less schooling years, as compared to those born in the same urban place and not-displaced. Urban-born displaced to another urban area, other than their birthplace gain about half a year of education.

Table C.1: Forced Displacement Trajectories and Years of Schooling Cross-Sectional Estimates

	Years of Schooling					
	Neg. Binomial ML		Poisson ML		OLS	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Born Rural						
Externally displaced	-0.128*** [0.007]	-0.213*** [0.006]	-0.128*** [0.028]	-0.078 [0.057]	-0.087*** [0.023]	-0.030 [0.044]
Intern. Displ. Rural → Urban	1.320*** [0.006]	1.365*** [0.003]	1.320*** [0.073]	1.013*** [0.072]	1.984*** [0.141]	1.672*** [0.116]
Intern. Displ. Rural → Rural	0.528*** [0.006]	0.517*** [0.004]	0.528*** [0.062]	0.480*** [0.079]	0.503*** [0.073]	0.467*** [0.089]
Mean Omitted	0.723	0.723	0.723	0.723	0.723	0.723
Observations	4,185,268	4,185,139	4,185,268	4,185,268	4,185,268	4,185,268
R-squared	.	.	.	.	0.072	0.147
Panel B: Born Urban						
Intern. Displ. Urban → Rural	-0.265*** [0.007]	-0.374*** [0.006]	-0.265** [0.113]	-0.259*** [0.079]	-0.586* [0.298]	-0.588*** [0.220]
Intern. Displ. Urban → Urban	0.379*** [0.004]	0.490*** [0.003]	0.379*** [0.069]	0.410*** [0.093]	1.158*** [0.084]	1.233*** [0.223]
Mean Omitted	2.556	2.556	2.556	2.556	2.556	2.556
Observations	1,416,124	1,416,086	1,416,124	1,416,124	1,416,124	1,416,124
R-squared	.	.	.	.	0.020	0.234
Omitted Category	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover	Non-Mover
Female (Dummy)	No	Yes	No	Yes	No	Yes
Age FE	No	Yes	No	Yes	No	Yes
District of Birth FE	No	Yes	No	Yes	No	Yes

The table reports maximum likelihood (ML) and OLS estimates associating years of schooling with various displacement trajectories for individuals aged between 12 and 32 in 1997. Columns (1)-(2) report negative binomial ML estimates. Columns (3)-(4) show Poisson ML estimates and columns (5)-(6) OLS estimates. Odd-numbered columns give unconditional estimates. Even-numbered columns control for gender and age and also include district of birth fixed-effects. Panel A looks at rural-born and Panel B at urban-born. The externally displaced indicator identifies those who in 1992 resided in neighboring countries. IDP R-U is an indicator that takes the value of one for rural-born individuals who resided in urban regions during the war and zero otherwise. IDP R-R is an indicator that takes on the value of one for rural-born individuals residing somewhere rural other than their region of birth during the war. IDP U-R is an indicator that takes the value of one for urban-born individuals who resided in rural regions during the war 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 are rural-born residing in their district of birth in 1992. The omitted category in Panel B are urban-born residing in the same district of birth in 1992. The rural-urban classification follows the 1997 Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (district of birth-region and district of residence in 1992, during the war) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## C.2 Displacement, Human Capital, and Employment

To shed light on the mechanisms underpinning our results, we examine whether moving out of agriculture is more common among those investing more in education during the war. [Table C.2](#) splits our sample between individuals who during the war acquired some education and those who did not. While we find that both groups have a higher likelihood of shifting out of agriculture and into services, this probability is significantly higher for those who got some

schooling (by a factor of 2). Forced displacement of rural-born individuals without any formal schooling into urban areas is associated with a higher propensity of services employment of about 18*pps*. For individuals with at least one year of schooling displacement into urban places increases service employment by more than 35*pps*, compared to similarly educated individuals staying in their birthplace. Even displacement into rural areas yields a non-negligible decline in agricultural employment for individuals with some schooling. This drop is three times larger for those with some schooling. These patterns, while not causal, reveal a strong link between human capital investments and shifts out of agriculture.

Table C.2: Forced Displacement Trajectories and Employment, by Schooling

	Agriculture Employment		Service Sector Employment		Agriculture Employment		Service Sector Employment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
	No Schooling				Schooling			
Externally displaced	0.011*** [0.004]	-0.013*** [0.005]	-0.003* [0.002]	0.009*** [0.002]	-0.007 [0.010]	0.007 [0.019]	-0.011* [0.006]	-0.029*** [0.011]
Intern. Displ. Rural → Urban	-0.244*** [0.031]	-0.204*** [0.023]	0.204*** [0.029]	0.178*** [0.022]	-0.452*** [0.030]	-0.390*** [0.021]	0.392*** [0.025]	0.348*** [0.019]
Intern. Displ. Rural → Rural	-0.035*** [0.004]	-0.026*** [0.007]	0.027*** [0.003]	0.020*** [0.005]	-0.149*** [0.021]	-0.137*** [0.025]	0.132*** [0.018]	0.120*** [0.022]
Mean Omitted	0.921	0.921	0.038	0.038	0.744	0.744	0.177	0.177
Observations	2,298,014	2,298,014	2,298,014	2,298,014	416,118	416,118	416,118	416,118
Adj. R-squared	0.036	0.128	0.044	0.086	0.151	0.250	0.132	0.185
Panel B: Born Urban								
	No Schooling				Schooling			
Intern. Displ. Urban → Rural	0.097** [0.048]	0.148** [0.059]	-0.075* [0.041]	-0.121** [0.052]	0.235*** [0.084]	0.184*** [0.067]	-0.189** [0.075]	-0.146** [0.061]
Intern. Displ. Urban → Urban	-0.233*** [0.028]	-0.168*** [0.045]	0.215*** [0.031]	0.162*** [0.044]	-0.116*** [0.032]	-0.162*** [0.043]	0.120*** [0.034]	0.162*** [0.043]
Mean Omitted	0.718	0.718	0.188	0.188	0.264	0.264	0.573	0.573
Observations	338,757	338,757	338,757	338,757	232,556	232,556	232,556	232,556
Adj. R-squared	0.036	0.298	0.038	0.224	0.035	0.251	0.023	0.123
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
Age FE	No	Yes	No	Yes	No	Yes	No	Yes
District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes

The table reports LS estimates associating employment outcomes with various displacement trajectories for individuals aged between 12 and 32 in 1997, depending on their schooling. The dependent variable in (1)-(2) and (5)-(6) is an indicator that equals one for employment in agriculture and the dependent variable in (3)-(4) and (7)-(8) is an indicator that equals one for employment in the service sector. Columns (1)-(4) show estimates for individuals who have no formal schooling and columns (5)-(9) show estimates for individuals who have at least one year of schooling. Even numbered columns control for gender, first-born, and include age and district of birth fixed effects. Panel A shows trajectories for rural-born and panel B for urban-born. The externally displaced indicator identifies those residing in 1992 in neighboring countries. IDP R-U is an indicator for rural-born who resided during the war in urban regions and zero otherwise. IDP R-R is an indicator for rural-born individuals residing somewhere rural other than their region of birth during the war. IDP U-R is an indicator for urban-born individuals who resided in rural regions during the war and zero otherwise. IDP U-U is an indicator for urban-born individuals residing in an urban area that is not their urban district of birth. The omitted category in Panel A are rural-born residing in the same district of birth and the omitted category in Panel B are urban-born residing in the same district of birth during the war. The rural-urban classification follows the 1997 Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (district of birth and district of residence in 1992) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## D Siblings Analysis. Further Evidence

This Appendix Section complements the within-family analysis in [section 4](#) of the paper where we compare siblings with different displacement trajectories. First, we provide details on the split household sample. Second, we report sensitivity checks. Third, we explore heterogeneity.

### D.1 Households with Separated Siblings

#### D.1.1 Descriptive Patterns

[Table D.1](#) reports the number of households with separated and non-separated siblings, as recorded in the 1997 Census. Roughly 10% of all households with 12-32 year old children in 1997, 45,378, have siblings found in different districts at the end of the war; the majority of households with separated siblings, more than 37,000, are rural households, while there are close to 8,000 urban households with separated siblings. The small discrepancy of split households in [Table D.1](#) (45,378) from [Table 3](#) in the main paper (45,445) comes from households without an urban-rural classification of the household head.



Table D.1: Household Categories. Separated and Non-Separated Siblings

	Siblings and HHs 12-32 years old					
	All		Head Rural-Born		Head Urban-Born	
	Siblings	Households	Siblings	Households	Siblings	Households
<b>Non-Split</b>	1,280,534	485,924	981,216	379,609	299,318	106,315
Non-Split & Same Birthplace	1,100,975	425,380	852,390	335,412	248,585	89,968
Non-Split & Same Birthplace & Same Displacement	1,100,975	425,380	852,390	335,412	248,585	89,968
- Non-Split & Same Birthplace & Non-Displaced	940,201	359,996	717,310	280,307	222,891	79,689
- Non-Split & Same Birthplace & IDPs	94,972	38,559	74,814	30,551	20,158	8,008
- Non-Split & Same Birthplace & Ext. Displ.	65,802	26,825	60,266	24,554	5,536	2,271
<b>Split</b>	136,309	45,378	110,404	37,147	25,905	8,231
Split & Same Birthplace	97,053	33,763	80,941	28,303	16,112	5,460
- Split & Same Birthplace & Displaced Returnees	33,308	24,057	30,677	21,907	2,631	2,150
- Split & Same Birthplace & Displaced Non-Returnees	15,470	9,792	10,537	6,427	4,933	3,365

The table summarizes (i) the tabulation of split (i.e, at least two siblings residing in different districts in 1992) and non-split households and (ii) the displacement trajectories of the siblings. Non-Split are households where all the siblings resided in the same district in 1992. Non-Split & Same Birthplaces are households where all the siblings resided in the same district in 1992 and they were all born in the same district. Non-Split & Same Birthplaces & Non-Displaced are households where all the siblings are non-displaced as they resided in the same district in 1992 and they were all born in that same district. Non-Split & Same Birthplaces & IDPs are households where all the siblings, who were born in the same district, got displaced in another district altogether. Non-Split & Same Birthplaces & Ext. Displ. are households where all the siblings, who were born in the same district, got displaced in another neighboring country altogether. Split are households where at least two siblings resided in different regions/districts in 1992 [this is the sample we consider in our main sibling analysis]. Split & Same Birthplaces are households where at least two siblings resided in different districts in 1992 and all the sibling were born in the same district. Split & Same Birthplaces & Displaced Returnees are households where at least two siblings resided in different districts in 1992, all the sibling were born in the same district, and all the siblings are found in their district of birth in 1997. Split & Same Birthplaces & Displaced Non-Returnees are households where at least two siblings resided in different districts in 1992, all the sibling were born in the same district, but the household is not found in 1997 in the siblings' district of birth.

### D.1.2 Household Characteristics

We explored whether families with separated siblings differ across aspects that may affect schooling and displacement. We look at the schooling of parents and grandparents to approximate households' human capital. As we look at old-generation members older than 35 in 1997, this measure predates the civil war as schooling decisions of parents and grandparents would have been made prior to 1977.

Table D.2 reports the tabulations. Columns (1) and (2) reveal that families with separated siblings during the civil war are not different from non-split, non-moving, rural families in terms of the educational attainment of the older generation in the household, suggesting that our focus on split families is unlikely to be driving our main results for the rural born sample. For urban born, we find that older generation household members of split families were somewhat more educated.

In columns (3)-(5) we compare split to non-split, non-moving, households on the number

of children born alive, whether the family lost a child, and the share of children deaths in the family, respectively. We detect significant differences between the two groups. Families with separated siblings appear to experience more adverse conditions during the civil war. These findings are in line with the historical accords, narratives, and policy reports; they further illustrate that displacement (for the rural-born) is associated with adversity.

Table D.2: Households with Separated Siblings vs Households with Non-Moving (Non Split) Siblings Family Education and Conflict Intensity

	Rural Born				
	Years Schooling Parents (1)	Years Schooling Grandparents (2)	Children Born Alive (3)	Lost Child (dummy) (4)	Sh. Death Children (5)
Split Household (dummy)	0.090 (0.128)	-0.020 (0.038)	0.072* (0.037)	0.040*** (0.010)	0.013*** (0.004)
Mean Dependent	.545	.0564	6.86	.571	.204
Observations	276,463	6,204	201,828	201,828	196,978
Adj. R-squared	.103	-.0278	.0985	.0364	.0404
	Urban Born				
	(1)	(2)	(3)	(4)	(5)
Split Household (dummy)	0.268* (0.153)	0.341** (0.163)	0.054 (0.045)	0.024* (0.014)	0.007 (0.005)
Mean Dependent	2.15	.507	6.33	.43	.14
Observations	76,902	2,017	59,327	59,327	57,951
Adj. R-squared	.184	-.0239	.122	.0518	.0577
Omitted Category	Non-Split NM >= 2 Child	Non-Split NM >= 2 Child	Non-Split NM >= 2 Child	Non-Split NM >= 2 Child	Non-Split NM >= 2 Child
Individual Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE × Age FE	Yes	Yes	Yes	Yes	Yes

The table reports OLS estimates associating household-level characteristics with an indicator variable identifying split households, households where at least one sibling resided in a different district compared to his or her siblings in 1992. The Split Household indicator takes the value one for households with separated siblings in the end of the civil war, in 1992. It equals zero for households with all siblings residing in their birthplace in 1992, non-moving, non-split. The sample consists of households whose head is older than 35 years old. Panels A and Panel B report the estimates for Rural-Born and Urban-Born, respectively. The dependent variable in (1) is the year of schooling of the household head and in column (2) the average year of schooling of the grandfather(s) and the grandmother(s). The dependent variable in column (3) denotes the number of offspring born alive as reported by the mother of the household. The dependent variable in (4) is an indicator that equals one if the mother of the household reports a number of kids alive in 1997 smaller than the number of kids born alive. The dependent variable in column (5) denotes the ratio of dead offspring over the number of children born alive. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

In [Table D.3](#) we compare families with separated siblings to displaced families without separated brothers and sisters. There are no differences in parents' and grandparents' education for both rural and urban-born. Moreover, when we compare the experiences of the two sets of families *during* the war, we do not detect any substantive differences on children lost and mortality rates. This suggests that families that were displaced altogether or separated, may have experienced similar levels of adversity during the war, particularly when compared to non-moving families. However, households with separated siblings tend to be, on average, larger (column 3). This (partly) explains why the household members did not manage to stay

together in the chaos of war, as compared to smaller families that managed to flee together.

Table D.3: Displaced Households with Separated Siblings vs Displaced Non-Split Households

	Rural Born				
	Years Schooling Parents (1)	Years Schooling Granparents (2)	Children Born Alive (3)	Lost Child (dummy) (4)	Sh. Death Children (5)
Split HH (dummy)	0.043 (0.033)	0.003 (0.044)	0.156*** (0.046)	-0.005 (0.008)	-0.002 (0.003)
Mean Dependent	.973	.0908	6.65	.568	.195
Observations	80,203	1,968	56,641	56,641	55,330
Adj. R-squared	.111	-.0456	.115	.0312	.0395
	Urban Born				
	(1)	(2)	(3)	(4)	(5)
Split HH (dummy)	-0.012 (0.072)	0.544 (0.389)	0.206** (0.080)	-0.016 (0.014)	-0.013** (0.006)
Mean Dependent	2.36	.527	6.18	.466	.159
Observations	15,527	180	11,847	11,847	11,568
Adj. R-squared	.204	.186	.134	.0414	.0565
Omitted Category	Non-Split Displ >= 2 Child	Non-Split Displ >= 2 Child	Non-Split Displ >= 2 Child	Non-Split Displ >= 2 Child	Non-Split Displ >= 2 Child
Individual Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE × Age FE	Yes	Yes	Yes	Yes	Yes

The table reports OLS estimates associating household-level characteristics with an indicator variable identifying split households, households where at least one sibling resided in a different district compared to his or her siblings in 1992. The Split Household indicator takes the value one for households with separated siblings in the end of the civil war, in 1992. It equals zero for displaced households with more than two kids where all siblings reside in the same region in 1992 although born in different districts (see Table D.1). The sample consists of households whose head is older than 35 years old. Panels A and Panel B report the estimates for Rural-Born and Urban-Born, respectively. The dependent variable in column (1) is the years of schooling of the household head and in column (2) the average year of schooling of the grandfather(s) and the grandmother(s). The dependent variable in column (3) denotes the number of offspring born alive as reported by the mother of the household. The dependent variable in (4) is an indicator that equals one if the mother of the household reports a number of kids alive in 1997 smaller than the number of kids born alive. The dependent variable in column (5) denotes the ratio of dead offspring over the number of children born alive. Heteroskedasticity-adjusted standard errors clustered at the admin-2 (district) level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## D.2 Within-Household Analysis. Robustness Checks

This sub-section reports and briefly discusses various sensitivity checks of the baseline within-household, sibling-comparison results [reported in Table 4 of the main paper].

### D.2.1 Cross-Sectional vs Within-Family Estimates

We begin the sensitivity checks estimating a simple within-family specification. Rather than conducting the analysis across pairs of siblings, we augment the cross-sectional specification (regression equation (1)) with household constants. Doing so, enables us to directly compare the cross-sectional to the within-family estimates. The specifications read:

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

$$Y_{ilh} = \alpha + \beta_4 IDP(U - R)_{il} + \beta_5 IDP(U - U)_{il} + \nu X_i + \mu_l + \delta_h + \epsilon_{il}$$

The chief difference to regressions equations (1a)-(1b) is the inclusion of the household constants,  $\delta_h$ , that allows comparison of children of the same family. [Table D.4](#) reports the within-family estimates (in even-numbered columns), alongside the cross-sectional ones that explore children variation both across and within families (in odd-numbered columns) for comparability. The family-fixed-effects estimates also suggest that compared to their non-displaced siblings, rural born IDPs into cities/towns and other rural places have a higher propensity to attend primary schooling, by 7.5 pp and 3 pp, respectively. IDPs in cities have 0.54 years of extra schooling vis a vis their staying behind brothers and sisters, while IDPs displaced to other than their birthplace rural region have about 0.23 extra years of schooling (vis a vis a baseline of 1.3 years). IDPs in cities are considerably more likely to work in services, as compared to agriculture, by about 3.5pps. In contrast, internal displacement in the countryside or external displacement do not translate into a movement out of agriculture.

Table D.4: Forced Displacement Trajectories, Schooling and Employment Within-Family Analysis Estimates (12-32 year olds)

	Schooling (Dummy)		Years of Schooling		Agriculture Employment		Service Sector Employment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
Externally displaced	-0.023*** [0.006]	0.006 [0.008]	-0.210*** [0.047]	-0.029 [0.054]	-0.030*** [0.010]	-0.043*** [0.014]	-0.003 [0.004]	0.010 [0.007]
Intern. Displ. Rural → Urban	0.111*** [0.015]	0.075*** [0.007]	0.771*** [0.109]	0.540*** [0.058]	-0.067*** [0.011]	-0.036*** [0.009]	0.063*** [0.009]	0.036*** [0.008]
Intern. Displ. Rural → Rural	0.011 [0.009]	0.029*** [0.006]	0.121** [0.057]	0.228*** [0.037]	0.011 [0.007]	-0.002 [0.005]	-0.003 [0.005]	-0.000 [0.005]
Mean Omitted	0.220	0.220	1.249	1.249	0.838	0.838	0.091	0.091
Observations	81,915	81,915	81,915	81,915	33,823	33,823	33,823	33,823
Adj. R-squared	0.131	0.383	0.140	0.420	0.122	0.441	0.076	0.371
Panel B: Born Urban								
Intern. Displ. Urban → Rural	-0.147*** [0.017]	-0.088*** [0.020]	-0.947*** [0.121]	-0.500*** [0.123]	0.158*** [0.059]	-0.003 [0.017]	-0.110** [0.045]	0.021 [0.020]
Intern. Displ. Urban → Urban	0.082*** [0.013]	0.026** [0.010]	0.752*** [0.087]	0.307*** [0.092]	-0.055* [0.030]	-0.018 [0.016]	0.058** [0.022]	0.016 [0.014]
Mean Omitted	0.480	0.480	2.980	2.980	0.506	0.506	0.349	0.349
Observations	30,158	30,158	30,158	30,158	6,613	6,613	6,613	6,613
Adj. R-squared	0.227	0.454	0.263	0.529	0.321	0.656	0.205	0.502
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Omitted Category	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.	Non-Displ.
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family 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 12-32 in 1997. The dependent variable in (1)-(2) is an indicator variable that takes the value of one for individuals who have completed at least one year of formal education and zero otherwise. The dependent variable in (2)-(3) 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 add family fixed effects. 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. Intern. Displ. Rural → Urban is an indicator that takes the value of one for rural-born individuals who resided in urban regions during the war and zero otherwise. Intern. Displ. Rural → Rural is an indicator that takes the value of one for rural-born individuals residing somewhere other than their region of birth during the war. Intern. Displ. Urban → Rural is an indicator that takes the value of one for urban-born individuals who reside in rural regions during the war and zero otherwise. Intern. Displ. Urban → Urban 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 are rural-born Mozambicans residing in the same district of birth during the war and the omitted category in Panel B are urban-born Mozambicans residing in the same district of birth during the war. The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered on two dimensions (admin-2 district of birth and admin-2 district of residence in 1992) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## D.2.2 Co-habitation: Sample of 12-18 year old Siblings

Table D.5 mirrors the baseline sibling comparison estimates (in Table 4) but zooming into brothers and sisters aged 12-18 in 1997 to compare siblings close in age likely to be cohabitating with their parents. The results are similar to the baseline ones.

Table D.5: Forced Displacement Trajectories, Schooling and Employment Sibling Analysis, Sample 12-18

	$\Delta$ Schooling <sub>ij</sub>		$\Delta$ Years of Schooling <sub>ij</sub>		$\Delta$ Agriculture Employment <sub>ij</sub>		$\Delta$ Service Sector Employment <sub>ij</sub>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
$\Delta$ Externally Displaced <sub>ij</sub>	0.012 [0.025]	0.010 [0.009]	0.043 [0.169]	-0.020 [0.079]	-0.062*** [0.016]	-0.039** [0.015]	0.022*** [0.007]	0.009 [0.006]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Urban <sub>ij</sub>	0.070*** [0.013]	0.067*** [0.009]	0.489*** [0.087]	0.471*** [0.061]	-0.035*** [0.012]	-0.028*** [0.009]	0.031*** [0.009]	0.029*** [0.008]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Rural <sub>ij</sub>	0.028*** [0.005]	0.027*** [0.005]	0.210*** [0.025]	0.213*** [0.029]	0.002 [0.006]	0.000 [0.006]	-0.003 [0.005]	-0.003 [0.005]
Mean Non-Displaced	0.167	0.167	0.893	0.893	0.873	0.873	0.060	0.060
Observations	84,086	84,086	84,086	84,086	24,558	24,558	24,558	24,558
R-squared	0.005	0.070	0.008	0.081	0.005	0.082	0.003	0.052
Panel B: Born Urban								
$\Delta$ Intern. Displ. Urban $\rightarrow$ Rural <sub>ij</sub>	-0.073*** [0.018]	-0.086*** [0.016]	-0.410*** [0.113]	-0.528*** [0.107]	-0.002 [0.010]	0.006 [0.009]	0.006 [0.011]	0.011 [0.009]
$\Delta$ Intern. Displ. Urban $\rightarrow$ Urban <sub>ij</sub>	0.029** [0.011]	0.021* [0.012]	0.329*** [0.090]	0.241** [0.092]	-0.015 [0.014]	-0.009 [0.012]	0.005 [0.011]	0.004 [0.013]
Mean Non-Displaced	0.363	0.363	2.029	2.029	0.635	0.635	0.243	0.243
Observations	36,803	36,803	36,803	36,803	4,448	4,448	4,448	4,448
R-squared	0.004	0.104	0.005	0.114	0.000	0.167	0.000	0.110
Sample Age	12-18	12-18	12-18	12-18	12-18	12-18	12-18	12-18
Controls	No	Yes	No	Yes	No	Yes	No	Yes
District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Comparison Sib. Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Age FE	No	Yes	No	Yes	No	Yes	No	Yes
Comparison Sibling Age FE	No	Yes	No	Yes	No	Yes	No	Yes
Age Difference FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The table reports linear model (LM) estimates associating the difference between siblings on an indicator variable that takes the value of 1 if an individual has completed at least 1 year of formal education and zero otherwise [models (1)-(2)], years of schooling [models (3)-(4)], an indicator variable that takes the value of 1 if an individual is employed in agriculture and zero otherwise [models (5)-(6)] and an indicator variable that takes the value of 1 if an individual is employed in the services sector and zero otherwise [models (7)-(8)]. The sample consists of siblings, aged 12-18 years old in 1997, who come from split households (i.e., at least one brother and sister experienced a different displacement trajectory). Panel A gives estimates across rural-born.  $\Delta$  Externally Displaced<sub>ij</sub> measures the difference between siblings on externally displaced status (those who during the war resided in neighboring countries and those born in neighboring countries).  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Urban<sub>ij</sub> is a variable that measures the difference between siblings on rural to urban displacement status (rural-born individuals who reside in urban regions during the war) and  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Rural<sub>ij</sub> is a variable that measures the difference between siblings on rural to rural displacement status (rural-born individuals residing in a rural area outside their region of birth during the war). Panel B provides estimates across urban-born individuals.  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Rural<sub>ij</sub> is a variable that measures the difference between siblings on urban to rural displacement status (urban-born residing in rural regions during the war) and  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Urban<sub>ij</sub> is the difference between siblings on urban to urban displacement status (urban-born residing in an urban region in 1992 outside their region of birth). The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered at the admin-2 district level (143 districts) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

### D.2.3 Larger Sample of Extended Family Members

As we have been comparing siblings in an attempt to obtain a proper counterfactual for displaced, we do not leverage variation among young individuals who in 1997 are not with their siblings. Do the patterns change when we include them in the estimation sample?

Table D.6: **HH Composition by Displacement Trajectories**

Panel A: Rural Born								
	NM Rural-Born		IDPs R-R		IDPs R-U		Ext. Displ.	
	Observations	Proportion	Observations	Proportion	Observations	Proportion	Observations	Proportion
Head	44,375	0.04	5,372	0.04	4,192	0.03	3,000	0.02
Spouse	111,282	0.10	12,606	0.09	7,383	0.06	10,492	0.09
Children	700,899	0.65	80,026	0.57	72,464	0.54	90,687	0.74
Father/Mother	0	0.00	0	0.00	0	0.00	0	0.00
Brother/Sister in Law	18,361	0.02	3,510	0.03	3,427	0.03	1,417	0.01
Grandchildren	71,588	0.07	9,223	0.07	8,364	0.06	6,925	0.06
Other Relat.	122,378	0.11	25,407	0.18	34,230	0.26	8,249	0.07
No Relat.	9,810	0.01	3,189	0.02	3,949	0.03	1,273	0.01
<b>Total</b>	1,078,693	1.00	139,333	1.00	134,009	1.00	122,043	1.00

Panel B: Urban Born								
	NM Urban-Born		IDPs U-U		IDPs U-R			
	Observations	Proportion	Observations	Proportion	Observations	Proportion		
Head	5,675	0.01	1,978	0.02	1,090	0.03	-	-
Spouse	11,355	0.03	3,572	0.04	2,252	0.06	-	-
Children	293,776	0.73	45,734	0.55	22,333	0.58	-	-
Father/Mother	0	0.00	0	0.00	0	0.00	-	-
Brother/Sister in Law	4,400	0.01	1,382	0.02	764	0.02	-	-
Grandchildren	25,052	0.06	4,764	0.06	4,039	0.10	-	-
Other Relat.	58,294	0.14	22,791	0.28	7,216	0.19	-	-
No Relat.	5,885	0.01	2,596	0.03	1,060	0.03	-	-
<b>Total</b>	404,437	1.00	82,817	1.00	38,754	1.00	-	-

The table reports the number (shares) of 12-18 years old individuals in terms of their relationship to the HH Head distinguishing by the trajectory of displacement (internally displaced to rural, internally displaced to urban, externally displaced, and non-displaced individuals) as recorded in the 1997 Census. Panel A and Panel B report the tabulation for rural and urban born, respectively.

Before reporting the results, it is instructive to look at how the relationship to the household head differs by the type of displacement for individuals in-between 12 and 18 years. [Table D.6](#) gives the comparisons for rural-born (Panel A) and urban-born (Panel B). 65% of 12-18 years old rural-born residing in their birthplace in 1992 appear as the children of the household head in 1997. The corresponding statistics for those displaced in another rural areas is 57%, 54% for those displaced to an urban area, and 74% for externally displaced. So, IDPs are somewhat less likely to reside with their parents in 1997 compared to non-displaced. Differences in cohabitation rates reflects the fact that IDPs are more likely to reside with some other older relative in 1997. This is consistent with the accounts describing displaced children finding a home with some distant relative. A similar pattern emerges when we look at the relationship to the household head of 12-18 urban born individuals.

In [Table D.7](#) we reproduce the baseline specification that compares pairs of 12-32 years old in the household including cousins and other relatives in this age range. The sample increases by 90% vis a vis the siblings-only sample in [Table 4](#). The patterns are quite similar to those in the main paper. Rural to urban IDPs enjoy an *8pps* higher educational attainment

and 0.6 extra years of schooling; the rural to rural IDPs have a 3pp higher probability to attend primary school and 0.2 years of schooling as compared to relatives who stayed in their rural birth districts. These results imply that the educational gains from displacement are not solely among separated but reunited children, but extend to all displaced during the war compared to other household members that had not moved.

Table D.7: Forced Displacement Trajectories, Schooling and Employment  
All Household Members Estimates, Sample 12-32

	$\Delta$ Schooling $_{ij}$		$\Delta$ Years of Schooling $_{ij}$		$\Delta$ Agriculture Employment $_{ij}$		$\Delta$ Service Sector Employment $_{ij}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Born Rural								
$\Delta$ Externally Displaced $_{ij}$	0.041** [0.016]	0.019** [0.008]	0.238** [0.104]	0.053 [0.058]	-0.125*** [0.030]	-0.070*** [0.021]	0.044*** [0.008]	0.013* [0.008]
$\Delta$ Intern. Displ. Rural Urban $_{ij}$	0.092*** [0.010]	0.081*** [0.008]	0.701*** [0.075]	0.585*** [0.059]	-0.052*** [0.009]	-0.034*** [0.008]	0.045*** [0.007]	0.035*** [0.007]
$\Delta$ Intern. Displ. Rural Rural $_{ij}$	0.032*** [0.006]	0.028*** [0.005]	0.266*** [0.035]	0.219*** [0.031]	-0.008** [0.004]	-0.003 [0.003]	0.007 [0.004]	0.003 [0.004]
Mean Non-Displaced	0.204	0.204	1.132	1.132	0.869	0.869	0.072	0.072
Observations	188,774	188,774	188,774	188,774	64,731	64,731	64,731	64,731
R-squared	0.008	0.072	0.013	0.083	0.014	0.118	0.005	0.058
Panel B: Born Urban								
$\Delta$ Intern. Displ. Urban Rural $_{ij}$	-0.067*** [0.016]	-0.087*** [0.014]	-0.419*** [0.096]	-0.520*** [0.093]	0.000 [0.009]	0.007 [0.009]	0.007 [0.010]	0.002 [0.011]
$\Delta$ Intern. Displ. Urban Urban $_{ij}$	0.038*** [0.009]	0.030*** [0.008]	0.402*** [0.079]	0.348*** [0.073]	0.001 [0.017]	0.002 [0.013]	0.016* [0.010]	0.012 [0.009]
Mean Non-Displaced	0.413	0.413	2.442	2.442	0.592	0.592	0.284	0.284
Observations	71,517	71,517	71,517	71,517	12,026	12,026	12,026	12,026
R-squared	0.004	0.101	0.006	0.111	0.000	0.142	0.000	0.064
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Controls	No	Yes	No	Yes	No	Yes	No	Yes
District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Comparison Relative District of Birth FE	No	Yes	No	Yes	No	Yes	No	Yes
Age FE	No	Yes	No	Yes	No	Yes	No	Yes
Comparison Relative Age FE	No	Yes	No	Yes	No	Yes	No	Yes
Age Difference FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The table reports LS estimates associating the difference between household members on an indicator variable that takes the value of one if an individual has completed at least a year of formal education [models (1)-(2)], years of schooling [models (3)-(4)], an indicator for individuals employed in agriculture [models (5)-(6)] and an indicator for individuals employed in services [models (7)-(8)]. The sample consists of household members, aged 12-32 years old in 1997, who come from split households (i.e., at least one household member experienced a different displacement trajectory). Household heads, their spouses, and unrelated to the household head members are dropped. Panel A gives estimates across rural-born.  $\Delta$  Externally Displaced $_{ij}$  measures the difference on externally displaced status (those who during the war resided in neighboring countries and those born in neighboring countries).  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Urban $_{ij}$  measures the difference on rural to urban displacement status and  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference on rural to rural displacement status. Panel B gives estimates across urban-born.  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between household members on urban to rural displacement status.  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Urban $_{ij}$  is the difference on urban to urban displacement status. The rural-urban classification follows the 1997 Mozambican Census. Tabulations for relationship to the household head are: Rural Sample: Siblings = 104613, Grandchildren = 10146, In-laws = 3401, Other = 6028, Number of households = 35864. Urban Sample: Siblings = 42338, Grandchildren = 2929, In-laws = 1634, Other = 3169, Number of households = 14164. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level (143 regions) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.



#### D.2.4 Other Checks

Tables [Table D.8](#) and [Table D.9](#) present additional sensitivity checks looking at differences in human capital (primary school attainment and schooling years) and employment (agriculture and services) between siblings, respectively.

**Birth Order and Gender.** In columns (1) and (6) we drop the oldest sibling and in columns (3) and (8) we drop the oldest male sibling to minimize concerns that the estimates pick up favoritism in education that can be correlated with displacement trajectories. The estimates are quite similar to the ones in the full sample. Refugees' education is quite similar to siblings staying behind in the countryside. Rural-born IDPs to cities and to a lesser extent in other rural areas have higher schooling and are less likely to work in agriculture than their brothers and sisters who stayed behind. Conversely, urban-born IDPs displaced to the countryside have lower schooling than their staying in the cities brothers and sisters.

**Gender.** In columns (2) and (7) we restrict estimation to brothers, while in columns (3) and (8) we compare sisters. Internal displacement is associated with higher educational attainment and schooling years for both boys and girls, although the coefficients are somewhat larger for boys. Furthermore, we observe increased employment in services, as compared to agriculture for both rural-born boys and girls displaced into cities and major towns.

**Age Difference.** In columns (4)-(5), (9)-(10) we restrict our analysis to a sample of siblings that are only at most two or three years apart in age to further account for unobserved differences at birth and age effects. Despite the considerable reduction in the number of observations and the associated efficiency loss, we continue to obtain highly significant estimates for rural-born IDPs in cities/towns and other rural areas for both human capital investments and employment sector.

Table D.8: Forced Displacement Trajectories, Schooling, Sibling Analysis Robustness Estimates, 12-32

	$\Delta$ Schooling $_{ij}$					$\Delta$ Years of Schooling $_{ij}$				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Born Rural										
$\Delta$ Externally Displaced $_{ij}$	0.014 [0.012]	0.008 [0.011]	0.001 [0.014]	0.022*** [0.006]	0.021*** [0.005]	0.050 [0.083]	-0.052 [0.077]	-0.025 [0.089]	0.072* [0.051]	0.072** [0.047]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Urban $_{ij}$	0.057*** [0.008]	0.092*** [0.008]	0.048*** [0.011]	0.060*** [0.008]	0.058*** [0.007]	0.405*** [0.062]	0.655*** [0.062]	0.345*** [0.069]	0.422*** [0.051]	0.422*** [0.047]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Rural $_{ij}$	0.021** [0.008]	0.029*** [0.007]	0.016* [0.009]	0.022*** [0.006]	0.021*** [0.006]	0.152*** [0.046]	0.255*** [0.045]	0.154*** [0.049]	0.142*** [0.036]	0.149*** [0.036]
Mean Non-Displaced	0.186	0.223	0.175	0.208	0.205	1.022	1.256	0.965	1.171	1.153
Observations	46,767	33,779	19,588	28,036	42,106	46,767	33,779	19,588	28,036	42,106
R-squared	0.075	0.078	0.073	0.047	0.046	0.085	0.088	0.080	0.051	0.049
Panel B: Born Urban										
$\Delta$ Intern. Displ. Urban $\rightarrow$ Rural $_{ij}$	-0.069*** [0.015]	-0.058*** [0.013]	-0.095*** [0.017]	-0.061*** [0.015]	-0.067*** [0.015]	-0.380*** [0.105]	-0.324*** [0.082]	-0.564*** [0.108]	-0.339*** [0.085]	-0.374*** [0.079]
$\Delta$ Intern. Displ. Urban $\rightarrow$ Urban $_{ij}$	0.004 [0.014]	0.021* [0.011]	0.016* [0.008]	0.004 [0.014]	0.009 [0.011]	0.131 [0.099]	0.316*** [0.091]	0.258*** [0.052]	0.101 [0.081]	0.125** [0.060]
Mean Non-Displaced	0.411	0.424	0.429	0.445	0.440	2.398	2.558	2.521	2.693	2.653
Observations	23,165	13,753	9,650	12,458	18,546	23,165	13,753	9,650	12,458	18,546
R-squared	0.119	0.142	0.134	0.063	0.065	0.128	0.152	0.141	0.060	0.060
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Sample Condition	No FB	Male	Female	Within 2y	Within 3y	No FB	Male	Female	Within 2y	Within 3y
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table reports linear model (LM) estimates associating the difference between siblings on an indicator variable for completion of one year of formal education [columns 1-5] and years of schooling [columns 6-10]. The sample consists of siblings, aged 12-32 years old in 1997, who come from split households (i.e., at least one brother and sister experienced a different displacement trajectory). Columns (1) and (6) restrict the sample to only non first born children. Columns (2)/(7) and (3)/(8) allow only males and females, respectively. Columns (4) and (9) allows for siblings no more than 2 years apart in age, and columns (5) and (10) allows for siblings no more than 3 years apart. Panel A reports estimates across rural-born.  $\Delta$  Externally Displaced $_{ij}$  measures the difference between household members on externally displaced status (those who resided in neighboring countries and those born in neighboring countries during the war).  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Urban $_{ij}$  is a variable that measures the difference between household members on rural to urban displacement status (rural-born individuals who reside in 1992 in urban regions) and  $\Delta$  Intern. Displ. Rural  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between household members on rural to rural displacement status (rural-born individuals residing in a rural area outside their region of birth in 1992). Panel B gives estimates across urban-born individuals.  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between household members on urban to rural displacement status (urban-born residing in rural regions during the war) and  $\Delta$  Intern. Displ. Urban  $\rightarrow$  Urban $_{ij}$  is the difference between household members on urban to rural displacement status (urban-born residing in an urban region outside of their region of birth during the war). The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered at the admin-2 district level (143 regions) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

Table D.9: Forced Displacement Trajectories, Employment, Sibling Analysis Robustness Estimates, Sample 12-32

	$\Delta$ Agriculture Employment $_{ij}$					$\Delta$ Service Sector Employment $_{ij}$				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Born Rural										
$\Delta$ Externally Displaced $_{ij}$	-0.046*** [0.015]	-0.053*** [0.016]	-0.012 [0.012]	-0.048*** [0.012]	-0.051*** [0.011]	0.014 [0.013]	0.015 [0.009]	0.012 [0.009]	0.011 [0.009]	0.015* [0.009]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Urban $_{ij}$	-0.031 [0.021]	-0.029** [0.012]	-0.021** [0.010]	-0.037*** [0.009]	-0.034*** [0.009]	0.043** [0.017]	0.049*** [0.011]	0.013 [0.011]	0.038*** [0.009]	0.032*** [0.009]
$\Delta$ Intern. Displ. Rural $\rightarrow$ Rural $_{ij}$	-0.001 [0.009]	-0.000 [0.009]	-0.005 [0.005]	-0.002 [0.007]	-0.003 [0.007]	-0.007 [0.008]	-0.015* [0.008]	0.011** [0.005]	-0.006 [0.007]	-0.002 [0.006]
Mean Non-Displaced Observations	0.855 13,334	0.770 11,053	0.925 6,654	0.847 9,250	0.848 13,847	0.075 13,334	0.129 11,053	0.036 6,654	0.088 9,250	0.084 13,847
R-squared	0.101	0.057	0.067	0.097	0.086	0.069	0.053	0.077	0.064	0.056
Panel B: Born Urban										
$\Delta$ Intern. Displ. Urban $\rightarrow$ Rural $_{ij}$	0.004 [0.026]	0.026 [0.020]	-0.016 [0.019]	0.015 [0.014]	0.010 [0.015]	0.004 [0.019]	0.001 [0.028]	-0.005 [0.017]	0.020 [0.015]	0.016 [0.014]
$\Delta$ Intern. Displ. Urban $\rightarrow$ Urban $_{ij}$	-0.052*** [0.019]	-0.025 [0.028]	-0.004 [0.020]	-0.015 [0.017]	-0.013 [0.016]	0.062*** [0.022]	0.043 [0.029]	-0.014 [0.014]	0.029** [0.014]	0.018 [0.014]
Mean Non-Displaced Observations	0.533 2,853	0.413 2,591	0.667 1,260	0.526 2,039	0.527 3,044	0.338 2,853	0.405 2,591	0.265 1,260	0.334 2,039	0.332 3,044
R-squared	0.184	0.148	0.188	0.173	0.154	0.121	0.132	0.204	0.110	0.096
Sample Age	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32	12-32
Sample Condition	No FB	Male	Female	Within 2y	Within 3y	No FB	Male	Female	Within 2y	Within 3y
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

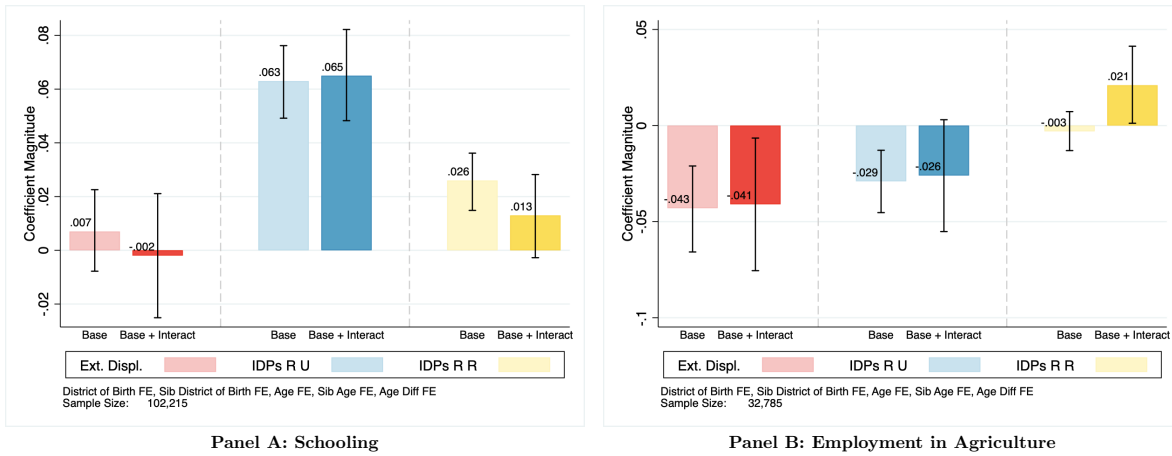
Notes: The table reports linear model (LM) estimates associating the difference between siblings on an indicator variable for agricultural employment [columns 1-6] and an indicator variable for service sector employment [columns 7-12]. The sample consists of siblings, aged 12-32 years old in 1997, who come from split households (i.e., at least one brother and sister experienced a different displacement trajectory). Columns (1) and (6) restrict the sample to only non first born children. Columns (2)/(7) and (3)/(8) allow only males and females, respectively. Columns (4) and (9) allows for siblings no more than 2 years apart in age, and columns (5) and (10) allows for siblings no more than 3 years apart. Panel A gives estimates across rural-born.  $\Delta$  Externally Displaced $_{ij}$  measures the difference between household members on externally displaced status (those who in 1992 resided in neighboring countries and those born in neighboring countries).  $\Delta$  Intern. Displ.  $\Delta$  Rural  $\rightarrow$  Urban $_{ij}$  is a variable that measures the difference between household members on rural to urban displacement status (rural-born individuals who resided in urban regions during the war) and  $\Delta$  Intern. Displ.  $\Delta$  Rural  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between household members on rural to rural displacement status (rural-born individuals residing in a rural area outside their region of birth in 1992). Panel B gives estimates across urban-born individuals.  $\Delta$  Intern. Displ.  $\Delta$  Urban  $\rightarrow$  Rural $_{ij}$  is a variable that measures the difference between household members on urban to rural displacement status (urban-born residing in 1992 in rural regions) and  $\Delta$  Intern. Displ. Urban Urban $_{ij}$  is the difference between household members on urban to rural displacement status (urban-born residing in an urban region in 1992 outside their region of birth). The rural-urban classification follows the 1997 Mozambican Census. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level (143 regions) are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

### D.3 Heterogeneity

We also explored heterogeneity of the within-household patterns, based on key characteristics of displacement, namely: (i) whether the displaced moved with an older member of the family; (ii) whether the displaced returned to his/her place of birth after the civil war; and (iii) the country of external displacement.

### D.3.1 Moving with an Older Family Member

We allowed the within-household estimates to differ for individuals displaced alongside older generation household member(s), father, mother, or grandparent. [Figure D.1](#) reports the sibling-pair estimates for rural-born Mozambican, looking at primary school attainment (Panel A) and agriculture employment (Panel B). In both specifications we condition on siblings' age and age difference fixed effects, gender, and birth order, and add birth district constants for each sibling. The estimates across all displacement trajectories, IDPs to urban areas (blue bars), IDPs to rural districts (yellow bars), and externally displaced (red bars) are quite similar for children moving with or without adults. So, to the extent that those young individuals fleeing with one of their grand(parents) also experienced an educational boost suggests that fostering, a common practice in developing countries is not mediating the displacement effect.



**Figure D.1: Moved with an Adult vs Moved without an Adult. Sibling Sample**

### D.3.2 Post-War Moves. Returnees, Stayers, and New Movements

The within-family specifications compare siblings found in different districts at the end of the war (in 1992) reunited by 1997. Family re-unification may take place because the displaced return to their birthplace or because the non-displaced siblings (residing in their birth district in 1992) join the displaced brother/sister in the district of displacement (or they all move in some other location). An immediate question arises: Are the patterns linking displacement to human capital and sectoral employment different when we compare siblings of reunited households at

their place of birth versus some other location? To address this, we distinguish between the post-war movements of the non-displaced, IDPs, and refugees. We define as non-returnees those who in 1997 reside in a district different than their place of birth and as returnees those displaced in 1992, but who by 1997 reside in their birthplace. [Table B.3 describes the post-war movements for the displaced.]

Figure D.2 Panel A plots the LPM estimates for primary schooling for rural-born individuals interacting the returnee-non-returnee indicator for each sibling in the household with his/her status; Panel B gives the sibling-pair estimates for agriculture employment. In both specifications, we condition on individual characteristics, household-specific constants, and district of birth and age-specific effects. There is little heterogeneity, besides rural-to-rural IDPs and refugees returning to their birthplace with somewhat higher education.

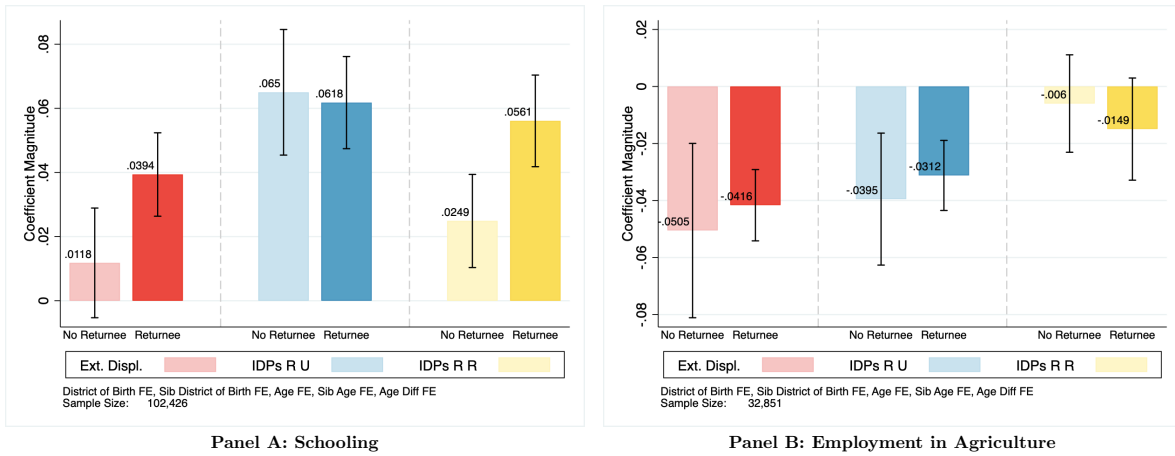


Figure D.2: Returnees vs Non returnees. Sibling Sample

### D.3.3 Refugees' Country of Displacement

Refugees' experience was heterogeneous as some settled in UN camps while others settled in villages and small towns in neighboring countries. In Zimbabwe, the overwhelming majority of Mozambicans settled in UN-administrated camps, close to the border. In Zambia, Tanzania, and Swaziland, Mozambicans settled into informal camps and villages. In Malawi there was a mixed model, with both UN-camps and settlement in villages and towns. We thus examined whether the link between external displacement, education, and employment sector differs

across the three paradigms, as the Census does not record whether refugees in 1992 resided in a camp.

Figure D.3 gives the within-family estimates looking at education (Panel (A)) and agriculture employment (Panel (B)), conditioning on gender, oldest-child indicator, age fixed effects and age differences, and birth district constants; the omitted category consists of siblings staying in the district of birth. The figure shows that there are marginally significant differences in schooling depending on whether refugees settled in Malawi and Zimbabwe relative to other countries (Zambia, Tanzania, Swaziland, and South Africa). But the estimates are small, around 2pps. The educational attainment of refugees does not differ much from their brothers and sisters who stayed behind. The shift out of agriculture estimates are about 2pps for all external displacement paradigms.

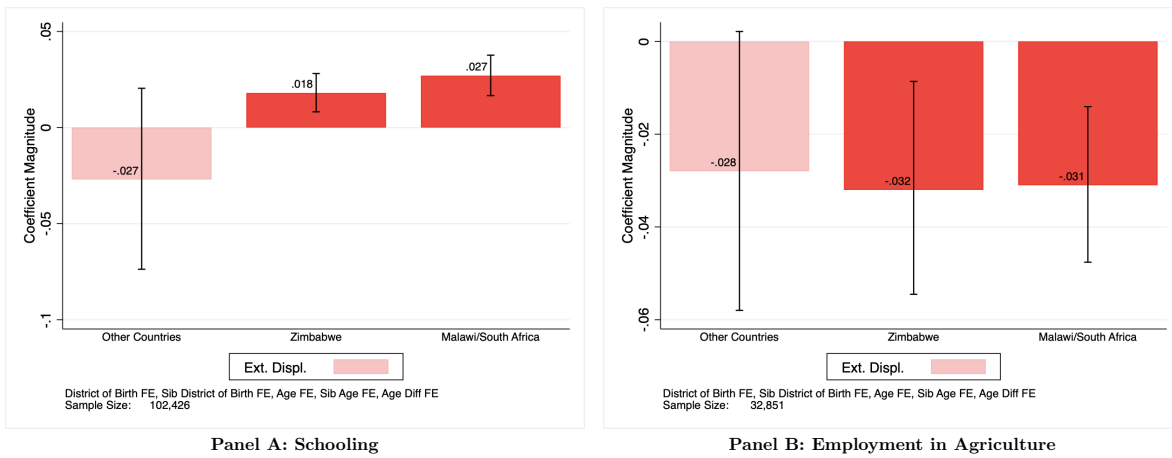


Figure D.3: Country of Displacement. Sibling Sample

## E Place-Based versus Uprootedness Effects. Further Evidence

This section gives further evidence, complementing the analysis in [section 5](#) of the main paper that jointly estimates place-based exposure and uprootedness effects for rural-born Mozambicans in the same within-family (sibling-pair) empirical setting (regression equation (2a)).

The tables below mirror [Table 5](#) in the main text, but rather than looking at primary school attainment of rural born, we use schooling years ([Table E.1](#)), agriculture employment ([Table E.2](#)), and service employment ([Table E.3](#)). Across all three tables, Panel *A* reports OLS estimates, linking differences between siblings in schooling years and sector-specific employment to differences in displacement (*Displaced*) and differences between destination district  $d$  and origin district  $o$  in development and civil war intensity. Panel *B* gives “reduced-form” estimates linking between sibling differences in schooling and employment to displacement and predicted-by-distance differences in development and civil conflict intensity between destination and origin districts. Panel *C* reports two-stage-least-squares (2SLS) estimates linking sibling differences in schooling and employment sector to displacement status instrumenting differences in development and civil conflict intensity between origin and destination with the proximity-predicted counterparts. In all specifications, we control for gender, an eldest child indicator, age constants for each child, and age difference fixed effects; we also include birth district fixed effects for each sibling, as they may be born in different places. There are three main independent variables in the Tables.

- $\Delta Displaced_{ij}$  denotes the difference between siblings in displacement status of any type (external or internal). It takes the value of 0 when both (or none) are displaced and 1 (-1) when sibling  $i$  ( $j$ ) is displaced and sibling  $j$  ( $i$ ) is not.
- $\Delta_{92-Birth} Development (PC)_{ij}$  denotes the difference between sibling  $i$  and sibling  $j$  in the change in exposure in terms of regional development between destination and origin. For non-movers and for the refugees born in a foreign country, the change in exposure is 0. The development variable is the first principal component of various proxies of well-being:
  1. log population density in 1997, excluding those individuals born after 1992.
  2. share of (non-mover) elders that either speak Portuguese or have some schooling.

3. offspring mortality constructed by subtracting the children no longer alive in 1997 from the total number of children born alive of non-mover women, older than 35.
  4. log road-railroad per square kilometer in 1973.
  5. number of colonial commercial markets, *cantinas*, per square kilometer.
  6. log schools opened by 1992 per square kilometer.
- $\Delta_{92-Birth} \text{ Conflict (PC)}_{ij}$  denotes the difference between sibling  $i$  and sibling  $j$  in the change in conflict exposure between destination and origin. For non-movers and for the refugees born in a foreign country, the change in exposure is 0. Conflict exposure between origin and destination district is measured as the first principal component of:
    1. log civil war events per capita between 1980-1992.
    2. the log of landmines and unexploded ordnance per capita in 1992.

Differences between origin and destination in development and civil war intensity capture exposure effects, while the estimate on  $\Delta \text{Displaced}_{ij}$  captures the effects of displacement, conditional on regional gaps in development and conflict, related to *uprootedness*.<sup>4</sup>

## E.1 Schooling Years

[Table E.1](#) looks at sibling differences in schooling years. In line with the estimates with the schooling indicator, there is evidence for both place-based and uprootedness effects of internal displacement. The LS and 2SLS estimates on the displaced indicator are significantly positive; IDPs have on average about 0.15–0.2 extra years of schooling compared to their staying behind brothers and sisters. The coefficients on the difference between destination and origin district in regional development and civil conflict are also highly significant, revealing the importance of places. IDPs displaced into more (less) developed and less (more) conflict-prone districts than birthplace have higher (lower) schooling years as compared to their brothers and sisters who stayed. But, the displaced indicator retains statistical and economic significance, even

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<sup>4</sup>[Table B.5](#) gives summary statistics across districts (admin-2 units) for the six plus two variables we use to compile the development and the civil war intensity principal components. [Figure B.1](#) reports the spatial distribution across birth districts for all proxies of development, human capital, and conflict.



when we jointly include the differences in development and war intensity proxies, consistent with uprootedness effects.

Table E.1: OLS and 2SLS Sibling Pair Estimates. Place-Based Effects and Displacement Effects on Schooling Years

	$\Delta$ Years of Schooling $_{ij}$				
	(1)	(2)	(3)	(4)	(5)
<b>Panel A: OLS. Actual Changes in Destination-Origin</b>					
$\Delta$ Displaced $_{ij}$	0.302*** [0.032]	0.207*** [0.026]	0.266*** [0.030]	0.203*** [0.026]	0.177*** [0.028]
$\Delta_{92-Birth}$ Development (PC) $_{ij}$		0.068*** [0.012]		0.059*** [0.013]	0.052*** [0.015]
$\Delta_{92-Birth}$ Conflict (PC) $_{ij}$			-0.134*** [0.017]	-0.061*** [0.019]	-0.063*** [0.023]
<b>Panel B: OLS. Predicted Changes in Destination-Origin</b>					
$\Delta$ Displaced $_{ij}$	0.302*** [0.032]	0.325*** [0.022]	0.318*** [0.027]	0.326*** [0.022]	0.288*** [0.024]
$\Delta_{92-Birth}$ Pred. Development (PC) $_{ij}$		0.068*** [0.007]		0.068*** [0.008]	0.064*** [0.009]
$\Delta_{92-Birth}$ Pred. Conflict (PC) $_{ij}$			-0.062** [0.030]	-0.002 [0.029]	-0.015 [0.032]
Mean Non-Displaced	1.592	1.592	1.592	1.592	1.291
<b>Panel C: 2SLS</b>					
$\Delta$ Displaced $_{ij}$	0.302*** [0.032]	0.179*** [0.039]	0.282*** [0.036]	0.179*** [0.040]	0.148*** [0.044]
$\Delta_{92-Birth}$ Development (PC) $_{ij}$		0.087*** [0.014]		0.088*** [0.016]	0.083*** [0.018]
$\Delta_{92-Birth}$ Conflict (PC) $_{ij}$			-0.073** [0.035]	0.003 [0.037]	-0.012 [0.041]
Mean Non-Displaced	1.592	1.592	1.592	1.592	1.291
Observations	125,587	125,587	125,587	125,587	104,602
Weak Identification (KP F-Stat)	.	94.207	471.075	42.848	44.593
Sample Age	12-32	12-32	12-32	12-32	12-18
Individual and Sibling Pair Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes

The table reports OLS [Panels A and B] and 2SLS [Panel C] estimates associating the difference between siblings on years of schooling with displacement trajectories and differences in development and conflict intensity between the place of residence at the end of the war (destination,  $d$ ) and birthplace (origin,  $o$ ). The sample in columns (1)-(4) consists of siblings, aged 12-32 years and in column (5) aged 12-18 old in 1997. All specifications include gender and first-born indicators, age difference fixed effects, sibling age fixed effect, district of birth fixed effects for both siblings.  $\Delta$  Displaced $_{ij}$  is the difference between rural-born siblings on displacement of any type (external, internal to cities or other rural areas).  $\Delta_{92-Birth}$  Development (PC) $_{ij}$  denotes the difference between origin and destination district for the displaced in a proxy of regional development.  $\Delta_{92-Birth}$  Conflict (PC) $_{ij}$  denotes the differences between origin and destination in civil conflict. The Predicted (100km)  $\Delta_{92-Birth}$  Development (Civil Conflict) PC $_{ij}$  in the reduced-form estimates in Panel B is computed by averaging the Development (Civil Conflict) PC at destination district within 100 kilometers from one's district of birth and subtracting the Development (Civil Conflict) PC at district of birth. In Panel C actual differences in development and civil conflict between origin and destination district are instrumented with predicted measures. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

## E.2 Education. Province Heterogeneity

We also examined heterogeneity of the uprootedness effect across Mozambique’s macro regions and 10 provinces. [Figure E.1](#) plots region of birth- and province of birth-specific coefficient estimates of  $\Delta Displaced_{ij}$ ,  $\Delta_{92-Birth}$  Development (PC) $_{ij}$ , and  $\Delta_{92-Birth}$  Conflict (PC) $_{ij}$  reported in [Table 5](#). First, we classify Mozambique into three regions: North (Niassa, Cabo Delgado, Nampula, and Zambezia), Center (Tete, Manica, Sofala), and South (Inhambane, Gaza, Maputo). The regional disaggregation produces some (albeit, very few) singletons, hence the difference in observations between line 1 (All Mozambique) and the sum of its 3 regions (lines 2-4).  $\Delta Displaced_{ij}$  enters positive and significant in each of the three region specification; also the two Development PC and Conflict PC differences between destination in 1992 and district of birth are in line with the evidence reported in [Table 5](#). Second, the disaggregation by provinces also presents the same patterns. Overall, the results reported in [Table 5](#) patterns are not driven by a specific region or province of Mozambique.

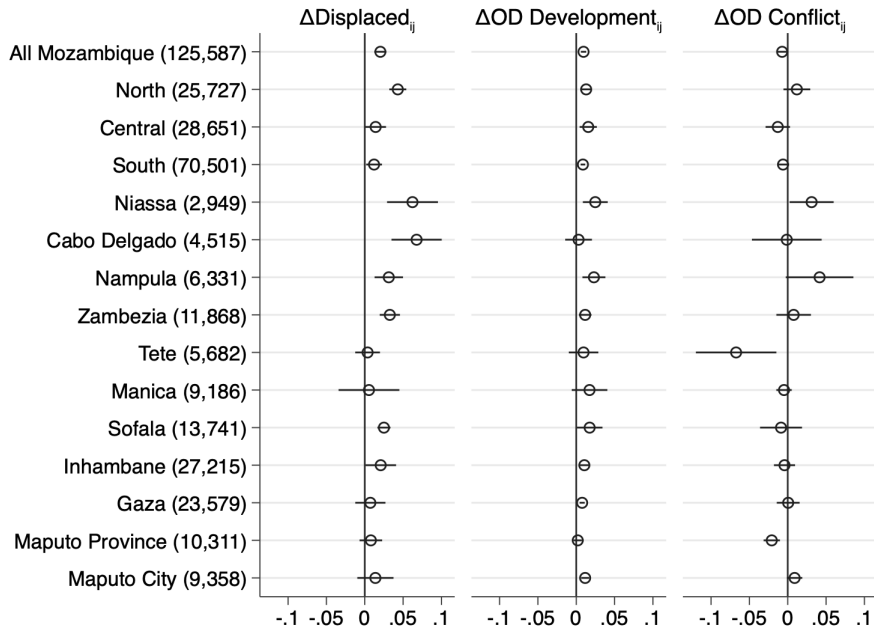


Figure E.1: Regional Coefficient Plots

### E.3 Employment Sector

Appendix [Table E.2](#) and [Table E.3](#) look at uprootedness and exposure effects on agriculture and service employment, respectively.

Having fled to more developed regions during displacement is associated with a decreased propensity of employment in agriculture in 1997. However, the 2SLS estimates do not exceed standard significance thresholds. The displacement indicator, nevertheless, that captures effects on top of destination-origin differences precisely estimated suggesting that the experience of fleeing under duress leads to some movement out of agriculture into services.

Table E.2: OLS and 2SLS Sibling Pair Estimates. Place-Based Effects and Displacement Effects on Agriculture Employment

	$\Delta$ Employment In Agriculture $_{ij}$				
	(1)	(2)	(3)	(4)	(5)
<b>Panel A: OLS. Actual Changes in Destination-Origin</b>					
$\Delta$ Displaced $_{ij}$	-0.020*** [0.004]	-0.010*** [0.004]	-0.020*** [0.004]	-0.010*** [0.004]	-0.008** [0.004]
$\Delta_{92-Birth}$ Development (PC) $_{ij}$		-0.006*** [0.002]		-0.007*** [0.002]	-0.006** [0.003]
$\Delta_{92-Birth}$ Conflict (PC) $_{ij}$			0.000 [0.004]	-0.008* [0.004]	-0.010** [0.004]
<b>Panel B: OLS. Predicted Changes in Destination-Origin</b>					
$\Delta$ Displaced $_{ij}$	-0.020*** [0.004]	-0.020*** [0.004]	-0.018*** [0.004]	-0.017*** [0.005]	-0.012** [0.005]
$\Delta_{92-Birth}$ Pred. Development (PC) $_{ij}$		0.000 [0.002]		-0.002 [0.002]	-0.000 [0.002]
$\Delta_{92-Birth}$ Pred. Conflict (PC) $_{ij}$			-0.010* [0.006]	-0.011* [0.006]	-0.011* [0.006]
<b>Panel C: 2SLS</b>					
$\Delta$ Displaced $_{ij}$	-0.020*** [0.004]	-0.020*** [0.007]	-0.024*** [0.004]	-0.020*** [0.007]	-0.017*** [0.006]
$\Delta_{92-Birth}$ Development (PC) $_{ij}$		0.000 [0.003]		-0.003 [0.003]	-0.001 [0.003]
$\Delta_{92-Birth}$ Conflict (PC) $_{ij}$			-0.012* [0.007]	-0.014* [0.008]	-0.013* [0.008]
Mean Non-Displaced	0.790	0.790	0.790	0.790	0.832
Observations	32,308	32,308	32,308	32,308	24,029
Weak Identification (KP F-Stat)	.	39.453	572.130	18.247	19.860
Sample Age	12-32	12-32	12-32	12-32	12-18
Individual and Sibling Pair Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes

The table reports linear probability model (LS) [Panels A and B] and 2SLS [Panel C] estimates associating siblings' difference on agriculture employment with displacement trajectories and differences in development and conflict intensity between the place of residence at the end of the war (destination,  $d$ ) and birthplace (origin,  $o$ ). The sample in columns (1)-(4) consists of siblings, aged 12-32 years and in column (5) aged 12-18 old in 1997. All specifications include gender and first-born indicators, age difference fixed effects, sibling age fixed effect, district of birth fixed effects for both siblings.  $\Delta$  Displaced $_{ij}$  is the difference between rural-born siblings on displacement of any type (external, internal to cities or other rural areas).  $\Delta_{92-Birth}$  Development (PC) $_{ij}$  denotes the difference between origin and destination district for the displaced in a proxy of regional development.  $\Delta_{92-Birth}$  Conflict (PC) $_{ij}$  denotes the differences between origin and destination in civil conflict. The Predicted (100km)  $\Delta_{92-Birth}$  Development (Civil Conflict) PC $_{ij}$  in the reduced-form estimates in Panel B is computed by averaging the Development (Civil Conflict) PC at destination district within 100 kilometers from one's district of birth and subtracting the Development (Civil Conflict) PC at district of birth. In Panel C actual differences in development and civil conflict between origin and destination district are instrumented with predicted measures. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99% confidence level, respectively.

Table E.3: OLS and 2SLS Sibling Pair Estimates. Place-Based Effects and Displacement Effects on Service Employment

	$\Delta$ Employment in Services <sub>ij</sub>				
	(1)	(2)	(3)	(4)	(5)
<b>Panel A: OLS. Actual Changes in Destination-Origin</b>					
$\Delta$ Displaced <sub>ij</sub>	0.018*** [0.004]	0.008** [0.004]	0.016*** [0.003]	0.008** [0.004]	0.003 [0.003]
$\Delta_{92-Birth}$ Development (PC) <sub>ij</sub>		0.006*** [0.002]		0.006*** [0.002]	0.005** [0.002]
$\Delta_{92-Birth}$ Conflict (PC) <sub>ij</sub>			-0.005 [0.004]	0.003 [0.004]	0.004 [0.004]
<b>Panel B: OLS. Predicted Changes in Destination-Origin</b>					
$\Delta$ Displaced <sub>ij</sub>	0.018*** [0.004]	0.018*** [0.004]	0.016*** [0.004]	0.016*** [0.004]	0.008** [0.004]
$\Delta_{92-Birth}$ Pred. Development (PC) <sub>ij</sub>		-0.001 [0.003]		0.000 [0.003]	0.002 [0.002]
$\Delta_{92-Birth}$ Pred. Conflict (PC) <sub>ij</sub>			0.009 [0.006]	0.009 [0.006]	0.007 [0.006]
<b>Panel C: 2SLS</b>					
$\Delta$ Displaced <sub>ij</sub>	0.018*** [0.004]	0.020*** [0.008]	0.021*** [0.004]	0.020*** [0.007]	0.008 [0.005]
$\Delta_{92-Birth}$ Development (PC) <sub>ij</sub>		-0.001 [0.004]		0.001 [0.004]	0.003 [0.003]
$\Delta_{92-Birth}$ Conflict (PC) <sub>ij</sub>			0.010 [0.007]	0.011 [0.008]	0.009 [0.007]
Mean Non-Displaced	0.126	0.126	0.126	0.126	0.090
Observations	32,308	32,308	32,308	32,308	24,029
Weak Identification (KP F-Stat)	.	39.453	572.119	18.247	19.860
Sample Age	12-32	12-32	12-32	12-32	12-18
Individual and Sibling Pair Controls	Yes	Yes	Yes	Yes	Yes
District of Birth FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling District of Birth FE	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes
Comparison Sibling Age FE	Yes	Yes	Yes	Yes	Yes
Age Difference FE	Yes	Yes	Yes	Yes	Yes

The table reports linear probability model (LS) [Panels A and B] and 2SLS [Panel C] estimates associating the difference between siblings on services employment with displacement trajectories and differences in development and conflict intensity between the place of residence at the end of the war (destination,  $d$ ) and birthplace (origin,  $o$ ). The sample in columns (1)-(4) consists of siblings, aged 12-32 years and in column (5) aged 12-18 old in 1997. All specifications include gender and first-born indicators, age difference fixed effects, sibling age fixed effect, district of birth fixed effects for both siblings.  $\Delta$  Displaced<sub>ij</sub> is the difference between rural-born siblings on displacement of any type (external, internal to cities or other rural areas).  $\Delta_{92-Birth}$  Development (PC)<sub>ij</sub> denotes the difference between origin and destination district for the displaced in a proxy of regional development.  $\Delta_{92-Birth}$  Conflict (PC)<sub>ij</sub> denotes the differences between origin and destination in civil conflict. The Predicted (100km)  $\Delta_{92-Birth}$  Development (Civil Conflict) PC<sub>ij</sub> in the reduced-form estimates in Panel B is computed by averaging the Development (Civil Conflict) PC at destination district within 100 kilometers from one's district of birth and subtracting the Development (Civil Conflict) PC at district of birth. In Panel C actual differences in development and civil conflict between origin and destination district are instrumented with predicted measures. Heteroskedasticity-adjusted standard errors clustered at the admin-2 region level are reported below the coefficients. \*, \*\*, and \*\*\* indicate statistical significance at the 90%, 95%, and 99%, confidence level, respectively.

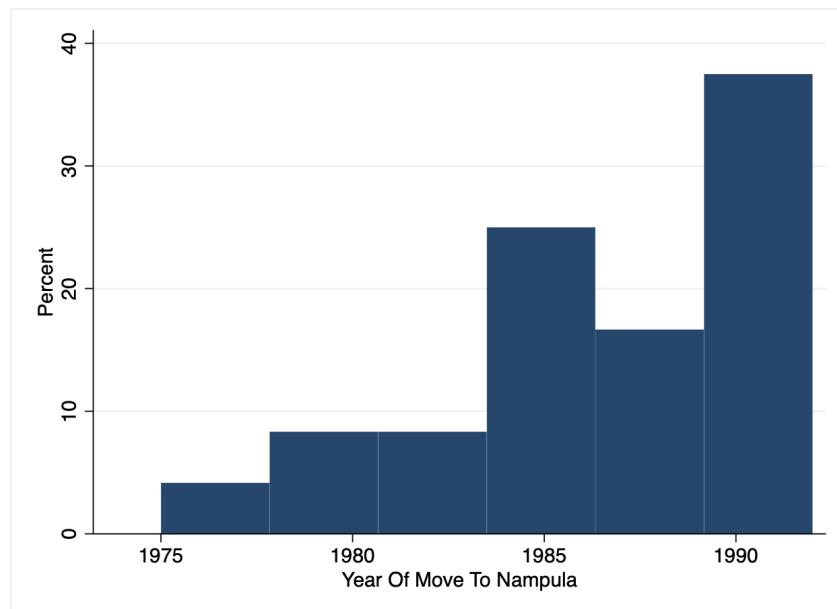
## F Survey Results. Descriptives and Further Evidence

This Appendix Section complements the analysis in [section 6](#) that reports on the survey we conducted in Nampula, Mozambique’s largest urban hub north of the Zambezi. First, we provide details on the sample. Second, we report specifications exploring rural-urban differences in social capital, trust, and civiness across African countries and (Northern) Mozambique using data from the Afrobarometer Surveys; these estimates help in the interpretation of the survey comparing rural-born IDPs displaced in Nampula to those born and staying in the city.

### F.1 Survey. Descriptives

[Figure F.1](#) plots the histogram of the year of displacement for the 77 rural-born IDPs in our survey. Most IDPs moved to Nampula after the mid-1980s, when the war spread and intensified in the Northern Provinces. Displacement peaks in 1989-1990, when state’s capacity collapsed in the countryside, RENAMO’s terror strategy becomes widespread, and various militias and armed groups emerge [see also [Appendix A](#)].

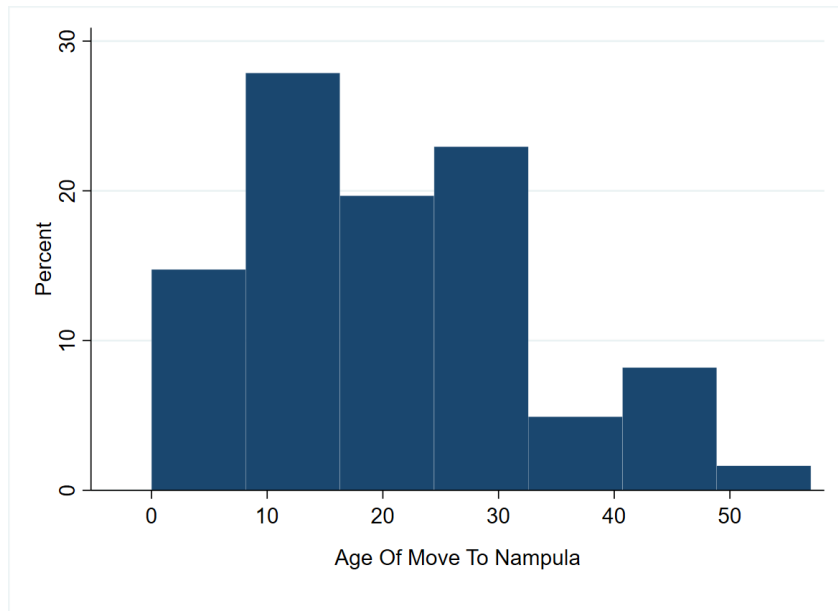
**Figure F.1: Year of Displacement To Nampula. Survey Sample**



[Figure F.2](#) plots the distribution (histogram) of the age of move in Nampula of the 77 IDPs in the self-administrated survey. Roughly half have been displaced in Nampula before

turning 16. 15% were under the age of 8 and about 30% moved in the city when they were over 8 and under 16. About 20% of IDPs reached Nampula after the age of 30.

**Figure F.2: Age of Displacement To Nampula. Survey Sample**



## F.2 Urban-Rural Differences in Trust, Social, and Civic Capital

### F.2.1 Approach

Our survey was conducted in early 2020 and covered IDPs and urban born. While we asked IDPs information on the education of their brothers and sisters who stayed in the countryside during the civil war, we lack information of trust, social capital and civiness for non-displaced rural born. As such, our analysis on attitudes in [section 6](#) compares rural-born IDPs to Nampula to residents born in Nampula who stayed in the city throughout the war. A question with our results in [Table 8](#), Panel A, is whether the same differences exist in these indicators between rural and urban born.

To shed light on this, we tabulated data from the Afrobarometer Surveys on urban - rural differences on social capital and civiness. These nationally representative surveys are conducted every 2 – 4 years in many African countries, aiming to measure beliefs, norms, trust, political participation, perceptions, and civic attitudes. An extensive literature relies on

the Afrobarometer data, including [Nunn and Wantchekon \(2011\)](#), [Besley and Reynal-Querol \(2014\)](#), and [Rohner et al. \(2013\)](#) linking historical violence to distrust. We use Afrobarometer’s wave 3 (2005), wave 4 (2008), and wave 5 (2011-2013), covering 34 African countries: Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Cote d’Ivoire, Egypt, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Sudan(North), Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe. We extract from the surveys data on social/civic capital and trust questions, closely linked to our survey. We then estimate LS models associating proxies of trust, social capital, and civicness to an indicator that equals one for rural respondents (and zero for urban respondents). [Table F.1](#) reports the analysis. We run the specifications across three samples:

- All 34 African countries. To account for heterogeneity, we include country-survey constants to compare rural-urban respondents in the same country and year.
- Mozambique using all three Afrobarometer Surveys, conditioning on round constants.
- The four Northern Mozambique Provinces of Cabo Delgado, Niassa, Nampula, Zambezia, as these are the most comparable to our survey sample in Nampula.

## F.2.2 Results

[Table F.1](#) gives the estimates tabulating urban-rural differences in trust, social capital, and civicness across Africa (Panel *A*), Mozambique (Panel *B*) and its Northern Provinces (Panel *C*). Across all specifications we include survey-round fixed effects and condition on a gender indicator, age constants, and education fixed effects. [The patterns are similar when we omit these controls. We obtain related estimates when we add province-specific constants.]

**Trust.** In columns (1)-(2) we examine urban-rural differences in trust to compare them with the survey evidence showing that rural-born IDPs displaced in Nampula during the civil war exhibit *lower trust* than urban dwellers born in the city ([Table 8](#), Panel *A*, column (1)). In column (1) we tabulate respondents’ answers to a trust-neighbors question that ranges from 0 (not at all) to 4 (a lot). As the Afrobarometer Surveys include various trust-related questions



in column (2) we use as the dependent variable the first principal component of trust towards relatives, neighbors, and other people. The coefficient on the rural indicator is significantly positive, suggesting that Africans and Mozambicans residing in the countryside have *higher* levels of trust, compared to those residing in cities and towns. The implied economic magnitude is considerable, especially when we use the average index that reduces noise. The fact that residents in the countryside have higher levels of trust makes the survey estimates of lower IDPs' trust more telling of displacement's role, as one should expect -on average- higher rather than lower trust for rural-born, both in Africa and in (Northern) Mozambique.

**Social Capital.** In column (3) we tabulate rural-urban differences in social capital that aggregates answers on attendance of community meetings and membership of voluntary associations. Recall that the Nampula survey comparison between rural-born IDPs and urban-born (Table 8-Panel A in the main paper) revealed some IDPs score somewhat lower in a social capital proxy (based on willingness to help others without return). The estimates in Table F.1 are in sharp contrast with the survey ones. Rural residents' social capital is considerably *higher* than that of urban dwellers across Africa, Mozambique, and Northern Mozambique. Therefore, the impact of displacement on social capital is most likely considerable, as, if anything, (Northern) Mozambicans living in the countryside exhibit higher levels of social capital.

**Civicness.** In columns (4)-(6) we explore differences in various proxies of civic capital between rural and urban residents in Africa and (North) Mozambique. Doing so, allows us to compare the survey evidence (in section 6) that IDPs score *significantly lower* than urban born in civicness, as reflected on a composite index reflecting whether they feel that it is justifiable not to pay taxes, claiming social allowances without justification and paying bribes. We tabulate from the Afrobrometer three questions proxying civic values. In column (4) we employ an indicator that equals one for respondents stating that they feel completely free to choose who to vote for without feeling pressured. In column (5), the outcome is an indicator that equals one if the individual responds that people should not pay taxes. In column (6) we use a composite bribes (moral values) index that aggregates via principal component answers to questions capturing whether the respondent has payed a bribe for a document or a permit, water or sanitation services, treatment local health, avoid problem with policies, and school

placement. The results reveal no major differences in these civic capital proxies between urban and rural respondents. The estimates in the large and more representative pan-African sample are very close to zero and statistically insignificant. The estimates in Mozambique and its Northern provinces are also small and mostly insignificant. Even the statistically significant estimates are small. So, the contrast between the overall small rural-urban differences in civicness and the significant gap we found in our survey, suggests that rural-born, displaced during the civil war have significantly *lower* civic values.

Table F.1: Afrobarometer Estimates. Rural-Urban Differences in Social/Civic Capital

<b>Panel A: 34 African Countries</b>						
	Trust Neigh.	Trust PC	Social Capital	Free Vote	Tax Evas.	Bribes
	(1)	(2)	(3)	(4)	(5)	(6)
Rural	0.132*** (0.016)	0.241*** (0.027)	0.354*** (0.022)	-0.004 (0.006)	0.003 (0.004)	-0.009 (0.042)
Mean Omitted	1.33	-.239	-.265	.748	.175	-.0194
Omitted Category	Urban	Urban	Urban	Urban	Urban	Urban
Observations	77,817	50,509	77,199	76,638	97,069	74,659
R-squared	.116	.164	.168	.121	.0309	.0508
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
<b>Panel B: Mozambique</b>						
	Trust Neigh.	Trust PC	Social Capital	Free Vote	Tax Evas.	Bribes
	(1)	(2)	(3)	(4)	(5)	(6)
Rural	0.369*** (0.040)	0.498*** (0.067)	0.282*** (0.039)	-0.004 (0.018)	-0.037*** (0.013)	0.094* (0.056)
Mean Omitted	1.1	-.427	-.0425	.707	.172	-.59
Omitted Category	Urban	Urban	Urban	Urban	Urban	Urban
Observations	3,348	2,205	3,300	3,083	4,024	3,176
R-squared	.0777	.0626	.0688	.00817	.00739	.0167
<b>Panel C: Northern Mozambique</b>						
	Trust Neigh.	Trust PC	Social Capital	Free Vote	Tax Evas.	Bribes
	(1)	(2)	(3)	(4)	(5)	(6)
Rural	0.225*** (0.060)	0.183** (0.090)	0.218*** (0.056)	0.065** (0.028)	-0.029 (0.018)	0.069 (0.080)
Mean Omitted	1.36	.102	.0825	.652	.157	-.635
Omitted Category	Urban	Urban	Urban	Urban	Urban	Urban
Observations	1,719	1,139	1,695	1,562	2,067	1,609
R-squared	.0549	.035	.0644	.0259	.0101	.0153
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes

All panels report OLS estimates associating trust, social capital, and civicness to a dummy variable that identifies rural, as compared to urban, respondents, as recorded in Afrobarometer waves 3, 4, and 5. The rural-urban classification follows the Afrobarometer Surveys. Panel A reports country fixed-effects specifications (constants not reported) across 34 countries. Panel B reports estimates across Mozambique. Panel C reports estimates at the northern provinces of Mozambique. The dependent variables are: Column (1): Trust neighbors (q88b) takes values from 0 (not at all) to 4 (a lot). Column (2): Trust PC denotes the first principal component of trust towards relatives (q88a), neighbors (q88b), and other people you now (q88c). Column (3): Social Capital is the first principal component of attendance to a community meeting (qq26a) and membership of voluntary associations (q25b). Column (4): Free Vote is an indicator for respondents stating that (s)he is completely free to choose who to vote without feeling pressured (q17c). Column (5): Tax Evasion is an indicator that equals one if the individual responds that people should not pay taxes (q48c). Column (6): Bribes denotes the first principal component capturing whether the respondent has paid bribe on document or permit (q61a), water or sanitation services (q61b), treatment in local health (q61c), avoid problem with policies (q61d) and school placement (q61e). All specifications include survey round fixed-effects, a gender indicator, age fixed-effects, and education fixed effects. Heteroskedasticity-adjusted standard errors clustered at the admin-1 level are reported below the estimates Panel A. Heteroskedasticity-robust standard errors are reported below the estimates in Panels B and C.

## G Appendix References

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