United Nations
Educational, Scientific and
Cultural Organization

EFA GMR EDUCATION FOR ALL GLOBAL MONITORING REPORT

2011/ED/EFA/MRT/PI/50

Think piece prepared for the
Education for All Global Monitoring Report 2011

The hidden crisis: Armed conflict and education

The quantitative impact of conflict on education

UNESCO Institute for Statistics

2010

The quantitative impact of conflict on education

UNESCO Institute for Statistics

September 2010

Abstract

This study examines the impact of armed conflict on the population of twenty-five countries, finding substantial negative effects of exposure to conflict on educational attainment and literacy. Using household survey data from Demographic and Health Surveys and Multiple Indicator Cluster Surveys conducted between 2000 and 2008, analysis at the national and sub-national level reveals that conflict often leaves an unfortunate legacy for the affected generations: smaller shares of the population with formal schooling, fewer average years of education, and decreased literacy rates, which persist over time. Furthermore, in many countries existing gaps between marginalized groups, such as women, and the rest of the population worsen during conflict. The study contributes to the growing literature in this field by demonstrating the lasting impact of conflict on education for a large and diverse set of countries.

Keywords: education, attainment, literacy, conflict, disparity, household survey

This publication was prepared by Sheena Bell (s.bell@uis.unesco.org) and Friedrich Huebler (f.huebler@uis.unesco.org) of the Education Indicators and Data Analysis unit of the UNESCO Institute for Statistics. The authors would like to thank Amélie Gagnon, Olivier Labé and Patrick Montjourides for their valuable comments.

UNESCO Institute for Statistics
CP 6128 Succursale Centre-Ville
Montreal, QC H3C 3J7
Canada
www.uis.unesco.org

Table of contents

1. Introduction

In the ten years since the adoption of the Education for All (EFA) goals in Dakar, Senegal in 2000, many regions of the world have shown remarkable gains toward meeting the six EFA goals by 2015. However, as the 2010 EFA Global Monitoring Report states, there are still many countries that remain far from achieving their commitments (UNESCO 2010a, 10). Conflict represents a major impediment for the realization of the EFA and Millennium Development Goals (MDGs), especially for the universal completion of primary education and gender equality in primary and secondary education (Buckland 2005, 1).[1] In fact, over half of the world's primary-aged children out of school are estimated to live in conflict-affected fragile states (Nicolai 2008, 27). Given that armed conflicts vary in duration, intensity and localization, educational systems may be affected in different ways. Research has exposed many dimensions of the educational system that are negatively affected by conflict, especially with regard to existing inequalities within societies, whether by region, gender or ethnicity. On the other hand, not every conflict-affected country is off track for achieving the Millennium and EFA goals. The World Bank has identified 13 conflict-affected countries that are on track to meet the goal of universal primary education, including Colombia, El Salvador, Kosovo and Sri Lanka (Buckland 2005, 29). Some international organizations see conflict as both a major challenge and a major opportunity, as the post-conflict environment may be fertile ground for substantial development (Buckland 2005; Nicolai 2008). In order to improve educational policy responses during and after conflict periods, it is essential to understand the complex effects of conflict on education. Therefore, this study conducts a quantitative analysis of the effects of conflict on national education systems in the following 25 countries: Afghanistan, Bosnia and Herzegovina, Burundi, Cambodia, Central African Republic, Chad, Colombia, Democratic Republic of the Congo, Republic of the Congo, Côte d'Ivoire, Eritrea, Ethiopia, Guatemala, India, Iraq, Mozambique, Pakistan, Rwanda, Sierra Leone, Somalia, Tajikistan, Turkey, Uganda, Yemen, and Zimbabwe.

The results of the present analysis point to the significant negative impact of conflict on the proportion of the population with formal education, the average years of education attained, and the literacy rate. This legacy of conflict is visible at the national and sub-national level in household survey data from all countries analyzed, with the exception of six countries, to be discussed below. The trends for most countries demonstrate that cohorts that were of school-going age during a time of conflict have lower educational attainment that persists over time, indicating that these children generally do not resume their education after a conflict to attain levels of education similar to non-exposed cohorts. These lost years of schooling reflect the legacy of the conflict and its repercussions. However, consistent with the literature, national and sub-national trends

[1] In the context of this study, conflict refers to violent conflict, including civil and interstate wars and armed rebellions. This definition is used in the World Bank publication by Buckland (2005).

for Colombia, Côte d'Ivoire, Central African Republic, Ethiopia, Tajikistan and Bosnia and Herzegovina do not display much observable decline during periods of war. The countries where no visible impact of conflict on education is observed at the national or sub-national level in most cases require a more fine-grained municipal level analysis to pinpoint the conflict-exposed population. Scholars have demonstrated the negative effects of wars on educational attainment in Colombia, Bosnia and Herzegovina and Tajikistan but use more precise data on the location of conflict and the affected population. Further reasons why the trends do not emerge at the national level include the presence of "war schools" in the Bosnian case, the short duration of the war in the case of Tajikistan and Bosnia and Herzegovina, and the fact that the conflicts are too recent to study their effects in the Central African Republic and Côte d'Ivoire (Swee 2009; Shemyakina 2006).

Conflict affects education in many ways. Most tragically, it results in the death or displacement of teachers, staff and students. For example, more than two-thirds of teachers in primary and secondary schools were killed or displaced as a result of the Rwandan genocide (Buckland 2005, xi). Cambodia and Somalia represent extreme cases. In the late 1970s the Cambodian educational system was left in ruins with virtually no trained or experienced teaching professionals (Buckland 2005, xi). State collapse in Somalia coupled with targeted attacks on educational infrastructure ground the country's educational system to a halt (Abdi 1998). War and conflict also often destroy and damage schools and educational infrastructure. The World Bank reports that as a result of the conflict in Bosnia and Herzegovina, 50% of its schools required repair or reconstruction (Buckland 2005). Similarly, 58% of primary schools in Mozambique had been closed or destroyed as a result of its long civil war (Brück 1997, 17). The level of destruction was even higher in Iraq, at 85% (Buckland 2005, 17). Schools and places of learning are often explicit targets during periods of armed conflict. In *Education Under Attack*, UNESCO reports that "education has been attacked in at least 31 countries in Africa, Asia, Europe and Latin America over the past three years" (2010b, 15). One of the most afflicted countries is Afghanistan, which witnessed a dramatic increase in attacks on schools, from 242 in 2007 to 670 in 2008 (UNESCO 2010b, 43). Many of the countries where education is under attack are included in the present study: Afghanistan, Burundi, Chad, Democratic Republic of the Congo, Ethiopia, Guatemala, India, Iraq, Pakistan, Somalia and Zimbabwe.

As well, conflict results in decreased access to school, preventing the opening of schools, threatening children's security while travelling to school and attending class, and increasing teacher absenteeism. Access issues are also critical for refugee or internally displaced children, who may lack the appropriate documentation or language skills to participate in new schools (Shemyakina 2006, 12). For children who do attend school, conflict can have a negative effect on educational attainment, increasing drop-out and reducing educational survival rates due to displacement, military recruitment or economic hardship. Educational attainment beyond primary suffers the most during conflict, perhaps due to the greater specialization needed for these levels, as well as the

increased likelihood for youth involvement in the military, the workforce or marriage (Swee 2009; Shemyakina 2006). The quality of education also suffers due to shortages in basic necessities, such as food and water and school materials, especially in areas bordering the conflict that may experience an influx of refugee or internally-displaced students. As is often the case, the academic year may be interrupted or shortened due to conflict (Shemyakina 2006, 15).

Existing marginalization in society is often exacerbated by conflict. Due to the economic difficulties which often accompany war, the poorest in society may opt to take their children out of school and put them to work to maintain their existing level of consumption (Shemyakina 2006, 10). Increased incidences of poverty and child care responsibilities during conflict periods tend to affect existing gender disparities. As well, girls may be kept from school by their parents in fear of violence against female students. Attacks motivated by a clear gender bias have been documented in countries like Pakistan, Tajikistan and Afghanistan (Shemyakina 2006, 16; UNESCO 2010b, 71). Regional, ethnic or religious group inequalities in educational attainment can be further widened as a result of armed conflict, as is the case for ethnic groups living in Northern Uganda, indigenous peoples in Guatemala or women in Afghanistan.

Several studies have examined the quantitative impact of conflict on education. Cross-country quantitative analyses show that states in civil war experience a decline in enrolment by between 1.6 to 3.2 percentage points, which means a decline of 64,000 students for a country with a normally enrolled population of 4 million (Lai and Thyne 2007, 284). In a study on the hardest-hit cities in Germany in World War II, Akbulut-Yuksel (2009) finds that children who were school-aged during this period attained 0.4 fewer average years of schooling and those in the most bombed cities completed 1.2 fewer years. This finding is echoed by Ichino and Winter-Ebmer (1998) in their research on Germany and Austria during the World War II. In his case study of Cambodia, Merrouche (2006) reveals that exposure to landmines resulted in a similar average loss of 0.4 years of education. Given that educational attainment for the Cambodia sample was 4.5 years, this represents a highly significant effect. To put this in perspective, the author provides the example of Indonesia, which constructed 61,000 primary schools as one of the largest school construction programs on record, resulting in an estimated education gain of 0.38 years for the cohort of children most exposed to the program (Merrouche 2006, 16). The impact of the Rwandan genocide was similar, decreasing the average level of educational attainment by 0.5 years, or 18.3 percentage points (Akresh and de Walque 2008, 2). However, Rwanda is a striking case because of the dramatic increase in enrolment after the conflict. Lopez and Wodon (2005a) demonstrate that within five years of the genocide, enrolment rates in Rwanda returned to their pre-conflict levels. Finally, data from Tajikistan shed light on a gendered effect of conflict on education, wherein Shemyakina (2006) finds no significant effect on male education; girls, on the other hand, were 12.3 percentage points less likely to complete the mandatory secondary schooling than those who completed their education before the outbreak of war.

However, a few studies point to examples where conflict has not had a significant long term negative impact on educational attainment. Swee (2009) does not observe any significant effect of conflict on the completion of primary education in Bosnia and Herzegovina, but does find that those cohorts affected by the Bosnian war were less likely to complete secondary school. Looking at U.S. bombing in Viet Nam, Miguel and Roland (2006, 3) find that the most bombed areas do not have lower levels of literacy than regions not affected by bombing, a success that they attribute to high levels of aid and resources distributed after the conflict, rather than to the lack of impact of conflict on education.

In all, the existing research is clear: the effects of conflict represent significant challenges for national education systems. This study seeks to understand how conflict affects educational attainment in twenty-five countries with diverse cultural and conflict backgrounds. The paper is divided as follows. Section 2 introduces the household survey data and methodology utilized in the quantitative analysis.

Sections 3 to 9 contain the country analysis with national and disaggregated trends of school attendance, educational attainment and literacy over time. These countries were selected for study to represent a range of regions and conflict types. The countries are grouped by EFA region. Two countries from the Arab States, Iraq and Yemen, are followed by two countries from Central and Eastern Europe, Bosnia and Herzegovina and Turkey. From two regions – Central Asia, and East Asia and the Pacific – one country each was studied: Tajikistan and Cambodia, respectively. For Latin America and the Caribbean, survey data from Colombia and Guatemala were analysed. For South and West Asia, three case studies follow: Afghanistan, India, and Pakistan. The remaining countries are from Sub-Saharan Africa: Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Republic of the Congo, Côte d'Ivoire, Eritrea, Ethiopia, Mozambique, Rwanda, Sierra Leone, Somalia, Uganda and Zimbabwe. In Country cases studied range in conflict duration from long (ex. Colombia) to short (ex. Bosnia and Herzegovina), and in severity as defined by the UCDP-PRIO database used in the analysis: war (ex. Afghanistan) and minor and intermediate armed conflict (ex. Central African Republic). See the Methodology section for more information on the classification of conflict severity.

The paper concludes with a final section, outlining the general findings of the paper.

2. Methodology

Over the past decade, the number of nationally representative household surveys from developing countries has grown substantially, partly due to increased data collection efforts in connection with the Education for All goals and the Millennium Development Goals. The surveys are a rich source of data for studies of the effect of conflict on education.

The present study draws mainly on data from two survey programmes: the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS). The Demographic and Health Surveys were launched in 1984 by the United States Agency for International Development (USAID) to provide data on population and health trends in developing countries (Rutstein and Rojas 2006). DHS surveys take place every year, with a varying list of countries, and the goal is to cover every participating country every three to five years. DHS data can be obtained from the site www.measuredhs.com.

The Multiple Indicator Cluster Surveys were developed in the 1990s by the United Nations Children's Fund (UNICEF) in collaboration with the World Health Organization, UNESCO, the UN Statistics Division, USAID, the London School of Hygiene and Tropical Medicine, and the United States Centers for Disease Control and Prevention. The original purpose of MICS was to collect data for the monitoring of progress toward the goals of the World Summit for Children that took place at the United Nations in New York in 1990 but they now also provide data for the monitoring of the MDGs (UNICEF 2006). DHS and MICS surveys are closely coordinated to avoid overlapping data collection in one country. MICS data are available at the site www.childinfo.org/mics4_tools.html.

In the case of Guatemala, the paper utilizes data from the Encuesta Nacional de Condiciones de Vida (ENCOVI), conducted by the Instituto Nacional de Estadística in 2006. The purpose of the survey was to collect data on the living conditions of the population as an evidence base for the design of national policies aimed at poverty reduction (Instituto Nacional de Estadística 2006). Further information about the ENCOVI is available at www.ine.gob.gt.

The datasets that were analysed for this paper are summarized in Table 2.1. In total, 25 countries were studied, with survey data collected between 2000 and 2008. The sample size ranges from about 21,000 in Bosnia and Herzegovina to about 727,000 in Pakistan. Each figure presented in the analysis in this paper includes a line indicating the year the source survey data was collected.

The DHS and MICS questionnaires contain similar modules to collect data on education, including the highest level and grade attended. This information can be used to create a set of variables that will be analysed in the sections that follow.

Table 2.1: Summary of analysed household survey data

Country	Survey	Year	Sample size
Afghanistan	MICS	2003	145,363
Bosnia and Herzegovina	MICS	2006	21,063
Burundi	MICS	2006	41,301
Cambodia	DHS	2005-2006	73,010
Central African Republic	MICS	2000	92,466
Chad	DHS	2003	29,614
Colombia	DHS	2004-2005	157,840
Congo, Democratic Republic	DHS	2007	48,291
Congo, Republic	DHS	2005	31,481
Côte d'Ivoire	MICS	2006	54,441
Eritrea	MICS	2002	45,137
Ethiopia	DHS	2005	67,540
Guatemala	ENCOVI	2006	68,739
India	DHS	2005-2006	534,161
Iraq	MICS	2006	116,106
Mozambique	DHS	2003	63,496
Pakistan	DHS	2006-2007	727,493
Rwanda	DHS	2005	47,851
Sierra Leone	DHS	2008	41,985
Somalia	MICS	2006	33,557
Tajikistan	MICS	2005	40,340
Turkey	DHS	2003-2004	47,894
Uganda	DHS	2006	45,439
Yemen	MICS	2006	26,082
Zimbabwe	DHS	2005-2006	42,698

A first variable indicates whether a household member has any formal education, where formal education includes programmes that are covered by the International Standard Classification of Education or ISCED (UNESCO 2006), with the exception of pre-primary education. A second variable measures the years of formal education by each household member, regardless of whether a person ever attended school; persons without formal education are counted as having 0 years of schooling. A third variable also measures the years of formal education, but only for persons that were ever in school; persons without formal education are excluded from this measure of educational attainment.

Data on literacy were analysed for 13 countries: Cambodia, Chad, Republic of the Congo, Democratic Republic of the Congo, Ethiopia, India, Mozambique, Pakistan, Rwanda, Sierra Leone, Uganda, Turkey, and Zimbabwe. The data for these countries were collected with DHS surveys that included a reading test to assess literacy skills of the population. The reading tests are usually administered to women 15 to 49 years and men 15 to 59 years with less than secondary education but in the case of Cambodia, Pakistan and Turkey, literacy data were only collected for women. Persons with secondary or higher education are assumed to be literate and are not given the reading test during a survey.

For the reading test, DHS survey respondents are asked to read a simple phrase in a language that they know, for example “Farming is hard work” or “The child is reading a book” (ICF Macro 2008). In the analysis in Sections 3 to 9, only persons who could read an entire phrase were counted as literate, in line with the UNESCO definition of a literate person as someone “who can, with understanding, both read and write a short simple statement on his or her everyday life” (UNESCO 2005, 153).

To study the possible effect of conflict on education, all persons in a country’s survey dataset were assigned to two cohort groups. The first group combines all persons who were 15 years old in a particular year, and the second group combines all persons who were 13 to 17 years old in a particular year. Indicator values for the second group are equivalent to five-year moving averages for the first group, with less year-to-year variation than in the values for single-year cohorts. The ages 15 and 13 to 17 were selected because these cohorts would be expected to have lower educational attainment if a conflict took place at a time they were around 15 years old and thus of school-going age. 15 years is also the age at which persons are assumed to have reached their literacy status as an adult, according to the *Global age-specific literacy projections model* (GALP) that is used by the UIS to forecast national literacy rates from survey and census data (Lutz and Scherbov 2006).

In the graphs in Sections 3 to 9, values for single-year cohorts are plotted with individual markers, while the values for five-year age groups are plotted with trend lines. Readers interested in indicator estimates for other age cohorts, for example 12-year-olds or 10- to 14-year-olds, can obtain the respective values by shifting the markers along the horizontal axis. As an example, the average educational attainment of persons who were 15 years old in 2000 is also the value for persons who were 14 in 1999 and 16 in 2001. Similarly, the average educational attainment of the cohort that was 13 to 17 years old in 2000 is also the value for the cohort 12 to 16 in 1999 and the cohort 14 to 18 in 2001. This method allows a reader to compensate for possible lags in the effect of a conflict on education indicators.

It must be emphasized that the data from the household surveys studied cannot reveal the educational attainment of 15-year-olds or 13- to 17-year-olds at any time in the past. We can only identify today’s educational attainment of cohorts that were 15 or 13 to 17 years old at a particular point in time. To give an example, someone who was 15 in 1980 may be shown in survey data from 2005 as having completed 16 years of education because he or she later went on to study at a university. It is also possible that someone whose education was disrupted as a child went on to complete primary or secondary education as an adult. In these cases, an effect of the conflict (delayed education) cannot necessarily be observed in the analysed variables.

It should also be noted that with the methodology described above it is possible to generate indicator estimates for periods that follow the year of data collection. For example, with data from a 2005 survey it is possible to estimate the educational

attainment of 15-year-olds in the year 2010. The estimate for this indicator would be identical to the observed educational attainment of persons who were 10 years old in the year of data collection. Because younger cohorts have typically not reached their highest educational attainment, indicator estimates for the latest data points may be too low and hence misleading. Unexpected reversals in indicator trends for the youngest cohorts should therefore be interpreted with caution.

In addition to aggregate analysis of the quantitative effect of conflict on education, several sub-groups of the population are studied in the sections that follow. The data are disaggregated by sex, household wealth, ethnicity or sub-national region. To reveal possible links between household wealth, conflict and education, the households in each survey dataset were divided into wealth quintiles, using a methodology developed by Filmer and Pritchett (2001). An analysis by household wealth is limited by the fact that the survey data only reveal a person's socio-economic status at the time of the survey but not during periods in the past. Upwardly mobile persons may have moved from lower wealth quintiles to upper quintiles, thus distorting the analysis. However, if a person's relative standing compared to poorer and wealthier households is unchanged in a society, the analysis by household wealth remains valid. In the present study, analysis based on wealth compared those in the two richest quintiles with those in the two poorest quintiles to partially account for change in socio-economic status over time.

Lastly, the persons in the survey samples were grouped by sub-national regions to compare conflict-affected areas with areas not affected by conflict. This type of analysis is only relevant for countries in which a conflict did not affect the entire country or where the level of intensity of a conflict varied between different parts of a country. The regional analysis has one weakness: survey data only show residence at the time of the survey, not at points in the past. Populations affected by conflict often migrate and may not return to their original area of residence after a conflict has ended. However, the analysis for some of the countries in this paper, for example Guatemala, Pakistan, Iraq and Uganda, shows that regional effects can be observed, indicating that despite displacement in conflict-affected regions, the effects of conflict on the education of the region's population remain.

Periods of conflict in a country were identified with the UCDP-PRIO database, which lists armed conflicts that took place since World War II. This annually updated database was created through joint work by the Uppsala Conflict Data Program (UCDP) of Uppsala University and the International Peace Research Institute in Oslo (PRIO). The data can be obtained at the UCDP website at www.pcr.uu.se/research/UCDP/. For the database, armed conflict is defined as "a contested incompatibility which concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths [per year]" (Eck 2005, 58). The database further classifies conflicts by severity, with "minor armed conflict" resulting in a total of less than 1000 battle-related deaths; "intermediate armed conflict" resulting in more than 1000 battle-related deaths, but fewer than 1000 per year;

and “war” being defined as any conflict with at least 1000 battle-related deaths per year (Eck 2005, 58). In the graphs following Sections 3 to 9, conflict periods are colour-coded by intensity, with yellow marking years with minor and intermediate armed conflict and red marking years with conflict classified as war.

All statistical analysis was carried out with Stata version 11 (StataCorp 2009).

3. Country Analysis: Arab States

3.1 Iraq

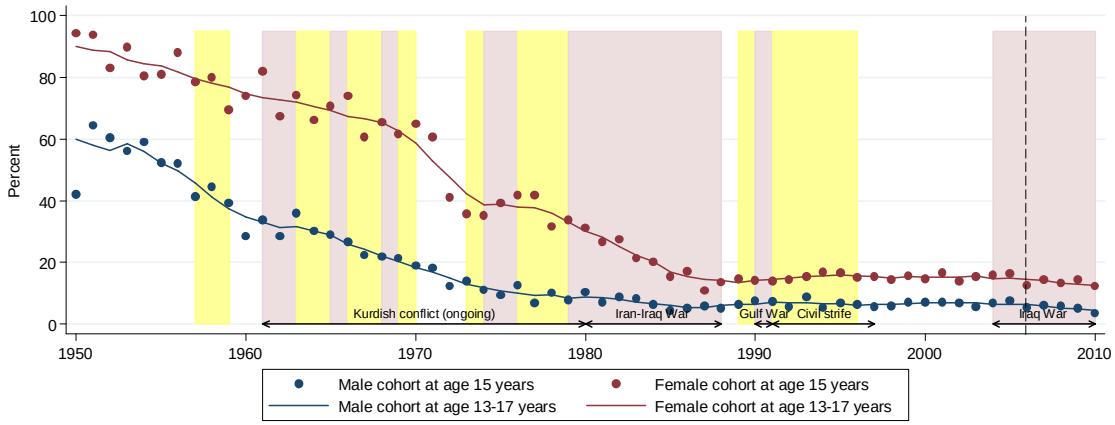
For over four decades Iraq has been living in an almost constant state of conflict, internally against various ethnic or religious groups, such as the Kurds in the north, or major wars against Iran, Kuwait and the US-led coalition forces. In the early 1980s, the UN Office of the Humanitarian Coordinator claimed Iraq had “one of the best education systems in the Arab world” (de Santisteban 2005, 63). In 1974, the government made all primary, secondary and tertiary education free, and primary education compulsory (de Santisteban 2005, 62). The deterioration of the Iraqi educational system since that time is due to neglect, conflict and more recently looting after the collapse of the Saddam Hussein regime (Buckland 2005, 16). Moreover, while conflict is a major factor in the decline of the educational system, UNESCO and UNICEF have also shown quantitatively that the sanctions placed on Iraq in the late 1990s and early 2000s had a negative effect on education (de Santisteban 2005, 61). In 2003, the UN reported that conflict had affected education in a number of ways. The school year was disrupted for 6 million students; thousands of schools required repairs, especially those in internally displaced person (IDP) camps; government forces used schools in the centre and south for ammunition storage; and rampant looting damaged higher educational institutions, libraries and laboratories (United Nations Office of the Humanitarian Coordinator for Iraq 2003). More recently, UNESCO reported that going to school was a dangerous activity for many Iraqis, as between March 2003 and October 2008 there were 31,598 reported attacks on educational institutions (UNESCO 2010b).

Gender Analysis

For an analysis of the state of education in Iraq, data from a 2006 MICS were available. Disaggregation of the Iraqi data by gender is relevant because it appears that conflict had a gendered effect in the case of average years of educational attainment, as will be seen in Figure 3.2. Beginning first with the share of the population without formal education in Figure 3.1, the cohorts who were school aged before the Iran-Iraq War (1980-1988) saw a relatively consistent decline in the proportion with no education. Table 3.1 indicates that female and male cohorts had an average annual decline in the share without formal education of 1.7 and 2.0 percentage points, respectively, over the

period 1950 to 1979.[2] This reflects the increasingly strong Iraqi educational system during this period, as described above. It appears that school participation for the female generations of school age during the Iran-Iraq War was not overly negatively affected by the conflict, as the proportion of uneducated women in each cohort declined throughout the war years by 2.2 percentage points per year, compared to a decline of only 0.3 percentage points per year of the conflict for male cohorts. However, over the last 20 years, from the first Gulf War to the present, just under 20 percent of both male and female cohorts remain without formal education.

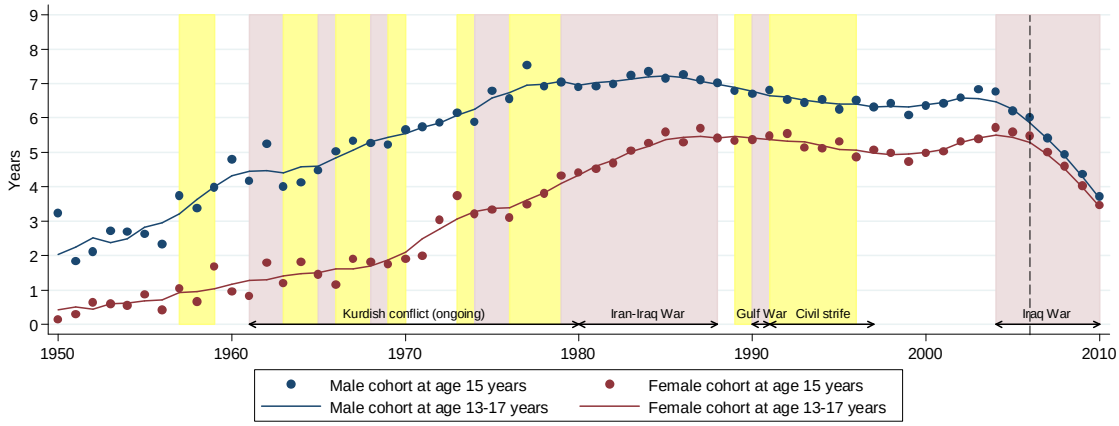
Figure 3.1: Iraq - Share of population without formal education, by sex



Turning now to the average years of education of men and women in Iraq, in Figure 3.2 we see a consistent increase for the generations of students before the outbreak of the Iran-Iraq war. In contrast to men, female cohorts of school age during the Iran-Iraq war continue to increase in average educational attainment by an average 0.1 years per conflict year, which further narrows the gender gap. However by the end of the Iran-Iraq war, both groups begin to decline in educational attainment, coinciding with the period of sanctions, the Gulf War and the final years of the Saddam Hussein regime. Both women and men appear to be affected roughly equally by these events.

[2] The disruption in the female trend during the early 1970s is likely related to unreliable age data for women who were of school-going age at that time. The MICS dataset contains a relatively larger number of women aged 50 to 54 as compared to those aged 45 to 49. The final report from the Iraq MICS attributes this to interviewer bias who assigned women to an older cohort to reduce the number of interviews, as the women's questionnaire was only asked to women aged 15 to 49 years at the time of the survey (UNICEF Central Organization for Statistics & Information Technology and Kurdistan Regional Statistics Office 2007).

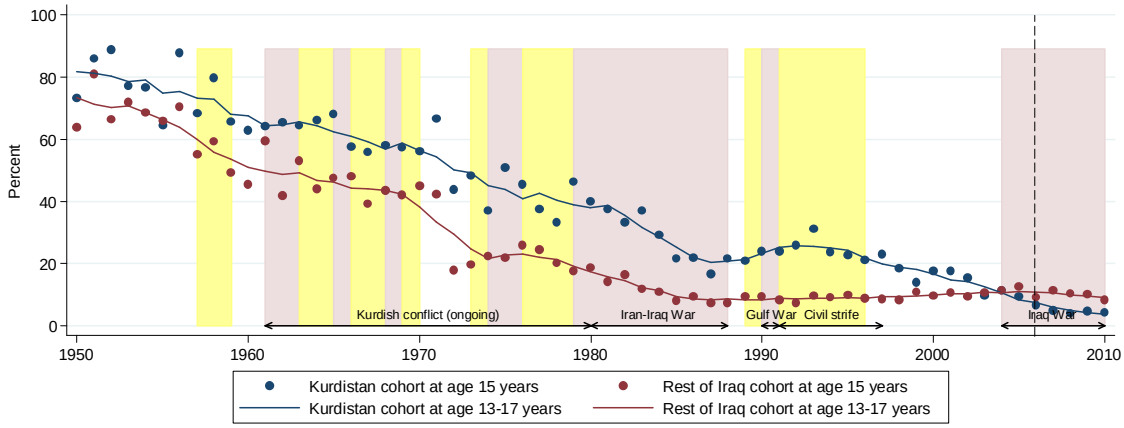
Figure 3.2: Iraq - Average years of education, by sex



Regional Analysis: Kurdistan

The Kurdish people have a long history of conflict and struggle in Iraq since the 1960s. The Kurdistan region currently comprises three Iraqi governorates: Duhok, Erbil, and Sulaymaniya. Figure 3.3 focuses on the regional and ethnic dimension of education, comparing the outcomes of the Kurdistan region with the rest of the Iraqi population. From 1950 until about 1990, the gap between the share of people without formal education in Kurdistan and the rest of Iraq widened over time, with the rest of the Iraqi population progressing at a faster pace. Table 3.1 demonstrates this development by comparing the average percentage point decline in the pre-war period for the two groups. However, the generations of school-going age in the Kurdistan region just before the first Gulf War began to catch up, with an average annual decrease in the share of persons without formal education of 2.8 percentage points, almost triple the rate in the rest of the country. The impact of the Hussein regime and internal conflict is clearly seen for those living in the Kurdistan region. In contrast to the rest of Iraq where the share of school-aged cohorts without formal education remained relatively unchanged, the share of persons without formal education in Kurdistan increased by an average of 0.3 percentage points per year. However, since the onset of the second Gulf War, cohorts of school age in Kurdistan managed to surpass residents of other parts of Iraq in terms of educational attainment. As shown in Figure 3.3, Kurdish cohorts had a lower share of persons without formal education than the rest of Iraq for the first time since 1950. This achievement is reflected in the final report from the MICS 2006, which reports that the Kurdistan region has been one of the safest in the country and has not been subject to the same levels of violence and disruption as other parts of Iraq (Central Organization for Statistics & Information Technology and Kurdistan Regional Statistics Office 2007).

Figure 3.3: Iraq - Share of population without formal education, Kurdistan compared to other regions



The remarkable changes in educational attainment for the Kurdistan region are also evident in Figure 3.4. Again, there is an increasing disparity between this region and the rest of Iraq for cohorts of school age before approximately 1996. The legacy of the Gulf War and Saddam Hussein's regime are clearly evident for Kurdistan, as the average number of years of education fell by almost a whole year after the Iran-Iraq war. However, the region shows notable shifts in educational attainment throughout the late 1990s and 2000s, attaining more years of education on average than the rest of the country by the start of the second Gulf War in 2003. The greater violence and insecurity in the rest of Iraq is clear, as educational attainment fell slightly for generations going to school in the 1990s as compared to those of school age previous to the first Gulf War.

Figure 3.4: Iraq - Average years of formal education, Kurdistan compared to other regions

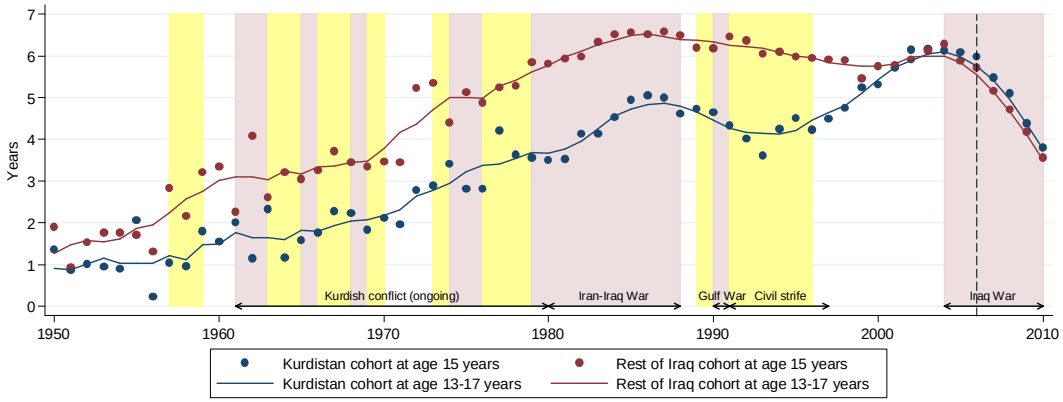


Table 3.1: Iraq - Average change in educational attainment indicators, by conflict period

		Time Period			
	Indicator	**Pre-war (1950-1979)**	**Iran-Iraq war (1980-1988)**	**Gulf War and Civil strife (1990-1997)**	**Second Gulf War* (2004-2006)**
Male	**Proportion with no formal education**	-1.95%	-0.32%	**-0.07%**	0.10%
Female	**Proportion with no formal education**	-1.67%	-2.23%	**0.07%**	-1.00%
Male	**Average years of schooling, with or without education**	0.19 years	**-0.01 years**	-0.06 years	-0.28 years
Female	**Average years of schooling, with or without education**	0.12 years	**0.11 years**	-0.03 years	0.03 years
Kurdistan	**Proportion with no formal education**	-1.15%	-2.75%	**0.28%**	-0.97%
Rest of Iraq	**Proportion with no formal education**	-1.85%	-1.14%	**-0.09%**	-0.50%

Source*:* Iraq 2006 MICS.
* Note: The MICS data were collected in 2006 and for this reason only the first three years of the Second Gulf War are listed in the table. Younger cohorts are likely to not have reached their maximum educational attainment and including them in the trend analysis would have distorted the results.

3.2 Yemen

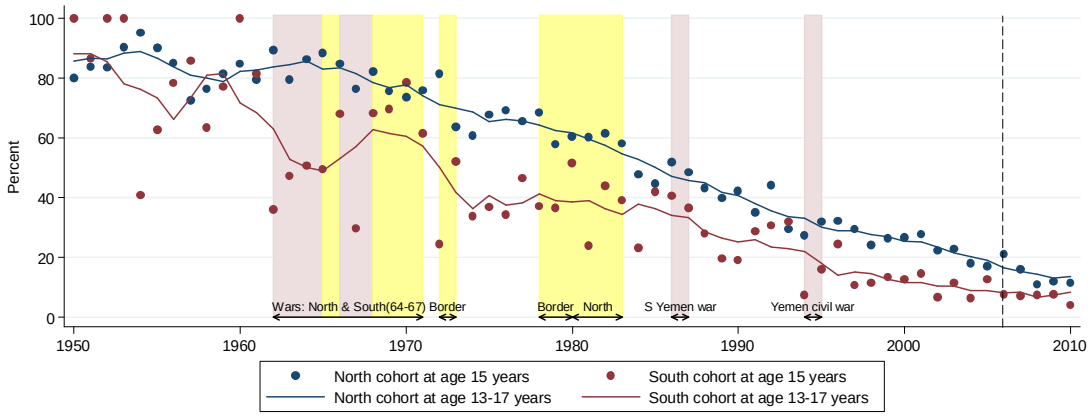
The Republic of Yemen was established with the unification of South and North Yemen in 1990. Both former countries had long histories of conflict, with civil wars and border clashes (Carapico 1998, 20). The formal education system previous to unification in North Yemen was almost non-existent, based more on traditional religious education (UNICEF 2008a). Thus, by 1990 this part of the country was behind in terms of educational infrastructure, funding, quality and enrolment (Birks, Sinclair, and Socknat 1981, 51). The newly formed government placed a large emphasis on education in 1990, which was hampered by the First Gulf War, as well as the Yemeni civil war in 1994. The impact of the conflicts before unification and of the 1994 war will be analyzed with data from a 2006 Multiple Indicator Cluster Survey.

Regional Analysis

The north-south divide in the country makes a regional analysis particularly relevant to the Yemeni case. Previous to unification, both countries faced civil wars at different time

periods which may reveal differential effects on conflict-exposed and less conflict-exposed generations of school children. However it is important to note that the Southern Yemeni sample is smaller than the Northern sample in the MICS dataset, which leads to more variation for particularly small cohorts, such as those of school-going age previous to 1965. As a result, fluctuation in the trends may be affected by data issues in addition to conflict and other historical events. Figure 3.5 compares the educational participation levels of cohorts living in the North and South of Yemen. Although it is clear there has been some migration over time, the figure nonetheless shows interesting trends for Southern Yemeni cohorts during conflict periods. While the Northern cohorts of school-going age during the civil war in North Yemen show an increase in the proportion without any formal education, the respective values for Southern cohorts decrease dramatically. During the civil war in the South (1964-1971), the share of formally educated South Yemenis of school-going age during the conflict rose by almost ten percentage points. However there was little change for the Southern cohorts from the pre-conflict trends in the 1970s throughout the border conflict and Northern internal conflict. At the time of the South Yemen war, there was another increase in the proportion of the population without formal schooling, which again decreased in the post-conflict period. The most recent conflict period of 1994 does not coincide with any changes for either cohort in the proportion with no formal schooling. This may be due to the fact that these cohorts entered school after the conflict.

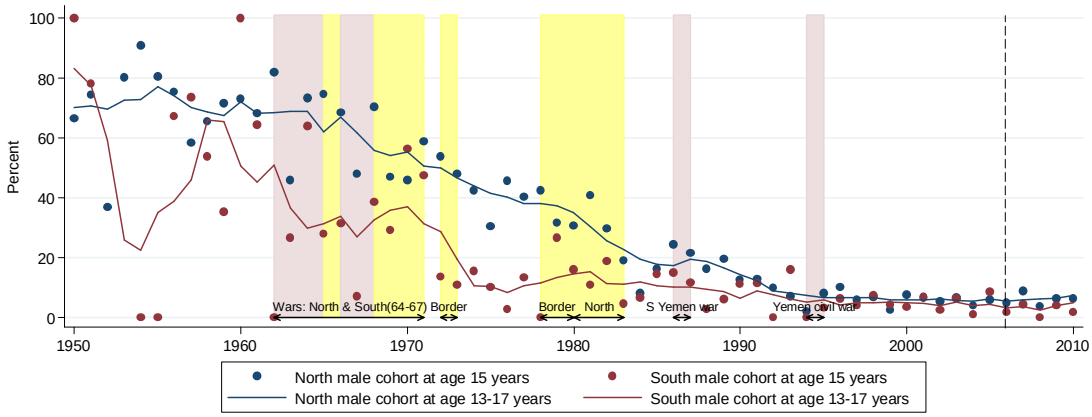
Figure 3.5: Yemen - Share of the population without formal education, by region



There are persistent gender gaps in education in Yemen (UNICEF 2008a). Therefore it is interesting to explore the legacy of the conflict periods on male and female generations. Figure 3.6 looks at regional differences in the proportion of males without any formal education. Despite the presence of outliers that affect the trend of the five-year moving average in both groups, there are visible changes in participation rates in formal education during conflict periods. Looking first at the North, the share of persons without formal education among male cohorts of school-going age stayed relatively steady during the 1960s civil war but fell significantly in the post-conflict period. In the late 1980s, there were further increases in the proportion without formal schooling, which

in fact coincided with the Southern Yemen war. Thus, the negative effect of conflict on education is visible for North Yemeni males. Turning now to their Southern counterparts, we see that there was an increase in the proportion without formal schooling during the periods of the South Yemen civil war in 1964, as well as the border conflict around 1980. In addition, most cohorts of school-going age during the South Yemen civil war also show an increase in the share without formal schooling, by almost ten percentage points.

Figure 3.6: Yemen - Share of the male population without formal education, by region



How are the educational participation rates for women affected during conflict periods? As Figure 3.7 shows, almost all women of school-going age during the civil war in the 1960s in Northern Yemen did not have any formal schooling and this trend only changed after hostilities ceased in 1971. During the period of the border and Northern conflicts, the downward trend slowed, resuming after the conflict. Interestingly, we see that there is stagnation in the decrease in the proportion of Northern Yemeni women without any formal schooling during the period of the 1994 civil war. For Southern women, the respective values increased during the Southern civil war, and the overall downward trend came to a halt during the Border and South Yemen war. It is only in the post-conflict period that the proportion of Southern Yemeni women without formal schooling began to decrease. The fluctuation in the cohorts of school-going age around the time of the 1994 war makes interpretation of the impact on this group difficult.

Figure 3.7: Yemen - Share of the female population without formal education, by region

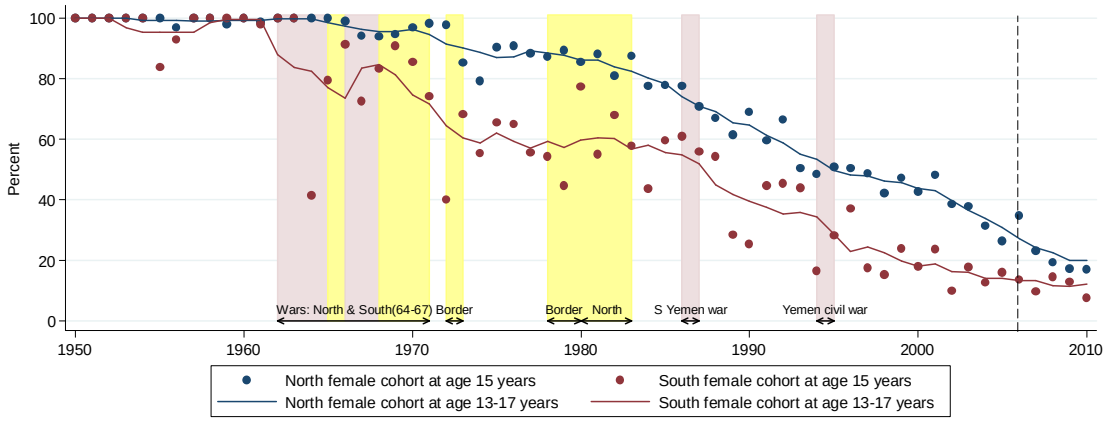
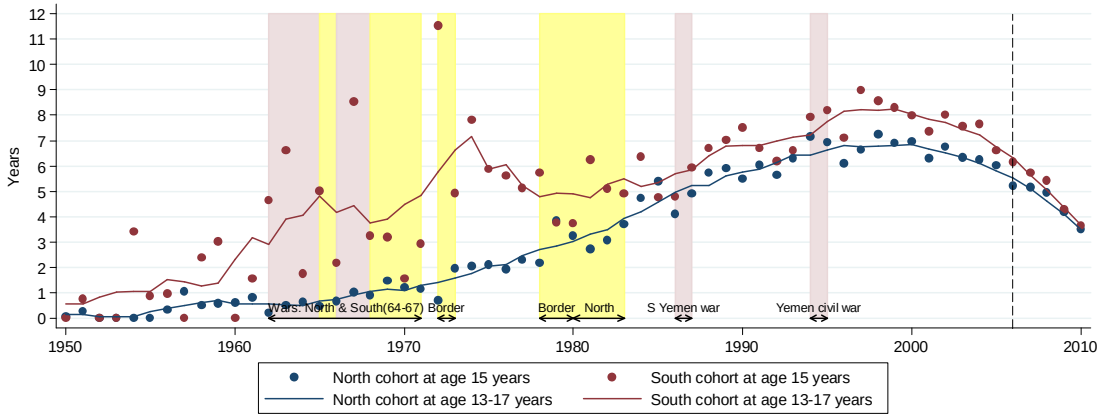


Figure 3.8 shows the trends in educational attainment during the various conflict periods in North and South Yemen. In the case of the Northern population, the smooth trend line belies some interesting fluctuation in the individual cohorts during conflict periods. While on average the northern population had less than one year of education for most of the civil war period in the 1960s, there was a decrease during the years of the North civil war in 1980, as well as during the years of the war in Southern Yemen. Looking at the southern population, there was an increase in attainment in the years leading up to the 1964 conflict in that region. During the conflict period there was a marked decrease in attainment by almost two years. In the post-conflict years the increase resumes and then stagnates through the period of the border war, the North Yemeni conflict and the South Yemeni war. In the post-war interlude there was again an increase in attainment to about seven years until the war in 1994.

Figure 3.8: Yemen - Average years of education, by region



The data for average years of education for women and men by region are difficult to interpret due to inconsistent data for the South with large year-to-year variations. For this reason, no results for this analysis are shown.

4. Country analysis: Central and Eastern Europe

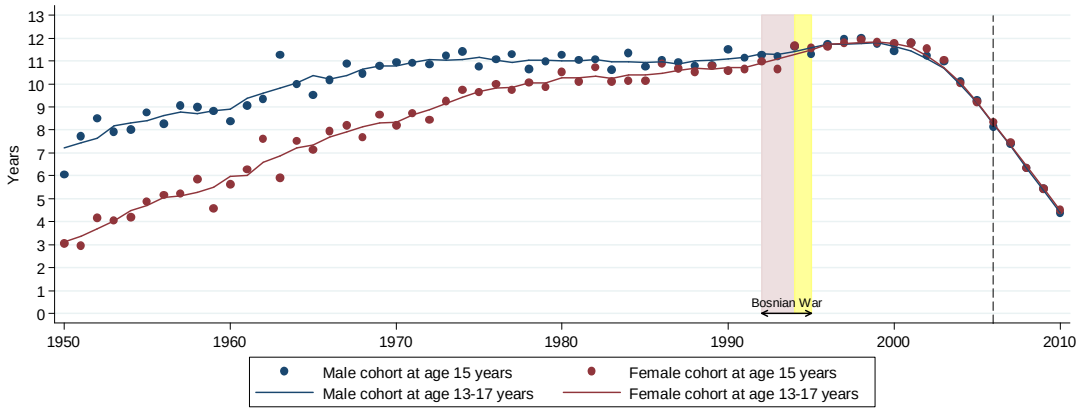
4.1 Bosnia and Herzegovina

As part of former Yugoslavia, residents of Bosnia and Herzegovina had the right to eight years of free primary education. Widespread implementation of compulsory education made primary completion "virtually universal" (Swee 2009, 6). The outbreak of the Bosnian war had significant effects on the educational system, both in terms of physical infrastructure, mentioned in the introduction (50 per cent of the country's schools required repair or reconstruction), and in terms of human infrastructure, as teachers were a scarce resource during the conflict and mass migration affected school attendance (Swee 2009, 7). Nonetheless, there is evidence that the educational system was not completely incapacitated during the conflict, as "war schools" continued to offer classes in various settings. This is particularly the case for the primary level, which requires less specialized material and expertise than the secondary and tertiary levels of education (Buckland 2005; Swee 2009, 7). Using the difference in difference method, Swee (2009) finds that the war did not negatively affect completion of primary school, but that it did have a negative effect on the likelihood to complete secondary education, especially for males (see also Buckland 2005). The World Bank also noted that in contrast to primary, secondary enrolment rates in Bosnia and Herzegovina "have barely recovered their prewar levels [and] remain among the lowest in the region" (Buckland 2005, 25).

Gender Analysis

The effect of the conflict in Bosnia and Herzegovina can be studied with data from a 2006 Multiple Indicator Cluster Survey. In the pre-conflict period (while part of Yugoslavia), educational attainment gradually increased for men and increased at a faster rate for women, narrowing the gender gap over time (see Figure 4.1). The cohorts of school age during the Bosnian war show no distinct differences from the cohorts of school age before or after the war, other than a slight increase in the average number of years of education for both men and women in the late 1990s. Swee (2009) also found little gender difference at the primary level of education, but his study shows that the conflict had a significant impact on male attendance in secondary school.

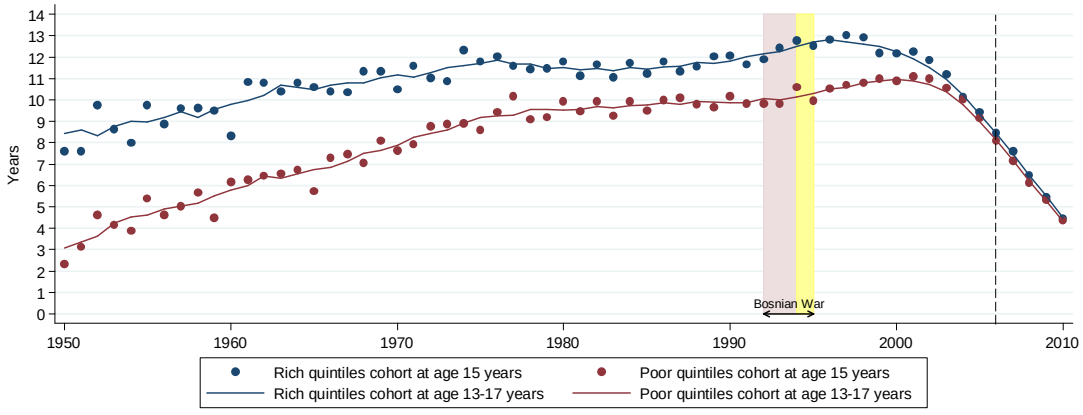
Figure 4.1: Bosnia and Herzegovina - Average years of education, Bosnia and Herzegovina, by sex



Wealth Analysis

Given the evidence that secondary and tertiary enrolment and attainment were the most affected by the Bosnian War, an analysis based on household wealth quintiles was attempted to discover whether attainment among the two richest quintiles of the population was more affected than among the two poorest quintiles, who may be less likely to continue to later secondary and tertiary levels. Indeed, as Figure 4.2 shows, the gap between the richest and poorest generation of school-going age after the Bosnian war narrows right after the conflict. This is interesting as the gap between them had been widening since the 1980s. The narrowing of the educational attainment disparity of the post-conflict generations is due more to the decrease in attainment of the richest cohorts than to the increase in the poorest cohorts. This confirms the trends regarding secondary education stated in the literature, albeit indirectly.

Figure 4.2: Bosnia and Herzegovina - Average years of education, Bosnia and Herzegovina, by wealth quintiles



Regional Analysis

The Bosnian war caused mass migration during and after the conflict. As many as 2.2 million people were displaced and over half of these migrants sought refuge outside Bosnia, representing a displacement rate of one in every two people (Swee 2009, 5-6). Although Swee (2009), using the casualty rate, was able to identify regions more affected by war than others – the east, northeast and northwest – it is difficult to identify these in MICS data. Firstly, Swee (2009) does not identify which kantons belong to the most affected regions he identifies. Secondly, regional data in the MICS are difficult to divide into coherent 'war-affected regions', as they include non-official regions such as Krajina in the west of the country. Swee (2009) had access to municipal level war intensity data, which allow for a disaggregated analysis based on region, as well as data on migration. For these reasons, a regional analysis of the MICS data for Bosnia and Herzegovina is not presented.

4.2 Turkey

In the eastern part of Turkey, a civil war between Turkish government forces and Kurdish separatists took place in the 1980s and 1990s. The period from 1992 to 1999 was the most violent, with more than 1000 battle-related deaths per year. The conflict eased after the capture of Abdullah Öcalan, leader of the separatist Kurdistan Workers' Party (*Parti Karkerani Kurdistan*, PKK) in 1999, but there is continued tension between Kurds and other ethnic groups. As in other countries, education suffered as a consequence of the conflict. UNESCO reports that the PKK saw schools as legitimate targets because they were viewed as a tool by the Turkish government, which had banned the use of the Kurdish language in schools, to assimilate the Kurdish minority into the majority population and thus to "annihilate Kurdish culture" (UNESCO 2010b, 126).

To identify possible disparities between the war-affected regions and the rest of Turkey, data from a Demographic and Health Survey collected over 2003 and 2004 were analysed. The DHS reports data by province and for the purpose of the analysis in this section, Kurdish-inhabited provinces were identified with a map from the collection of the Perry-Castañeda Library at the University of Texas at Austin.[3] The provinces with a Kurdish population are Adiyaman, Agri, Ardahan, Batman, Bingöl, Bitlis, Diyarbakir, Elazig, Erzingan, Erzurum, Hakkari, Igdir, Kars, Malatya, Mardin, Mus, Sanliurfa, Siirt, Sirnak, Tunceli, and Van.

The presence of a Kurdish-speaking population in the selected provinces was confirmed with information on the interview language used during the 2003-04 DHS.[4] Sirkeci (2000, 153) used the same approach to identify Kurdish households in his study of data from a 1993 DHS. As Mutlu (1996, 509) writes, "the Kurdish language has almost always been

[3] Maps for the Middle East are available at http://www.lib.utexas.edu/maps/middle_east.html.

[4] Interview language is identified in variable sh162b in the household member recode file from the 2003-04 DHS.

a rallying point and an inseparable part of the … definition of Kurdishness" for Kurdish leaders and ordinary Kurds.

Figure 4.3 shows the share of the population without formal education in Kurdish-inhabited provinces and in other areas of Turkey. The assumption is that Kurdish areas suffered from exposure to violent conflict during the 1980s and 1990s and an effect of the conflict is indeed apparent in the 1990s. Kurdish-inhabited areas were traditionally home to persons with less formal education than other parts of Turkey (Sirkeci 2000, 167). Still, the share of persons without formal education was declining almost steadily in all of Turkey since the 1950s and continued to decline throughout the conflict years. However, in Kurdish-inhabited areas the rate of decline flattens for cohorts that were 13 to 17 years old in the 1990s and continues to be flat in the early years after 2000. Only among the youngest cohorts do 90 percent or more have at least some formal education, regardless of the area of residence.

Figure 4.3: Turkey - Share of population without formal education, Kurdish-inhabited provinces compared to rest of Turkey

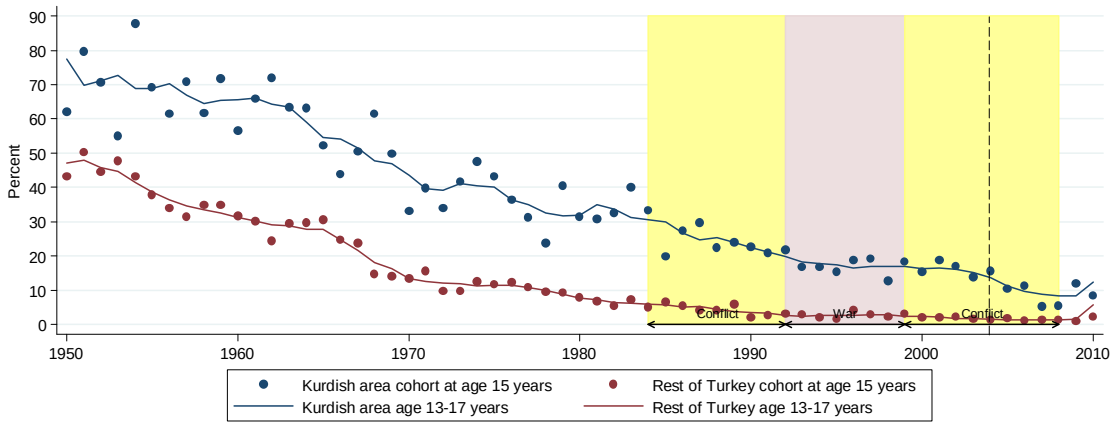
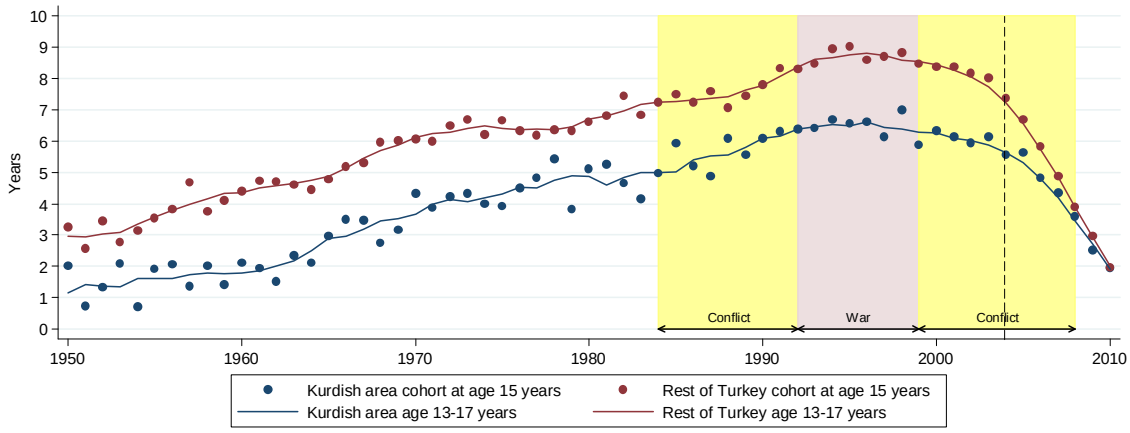


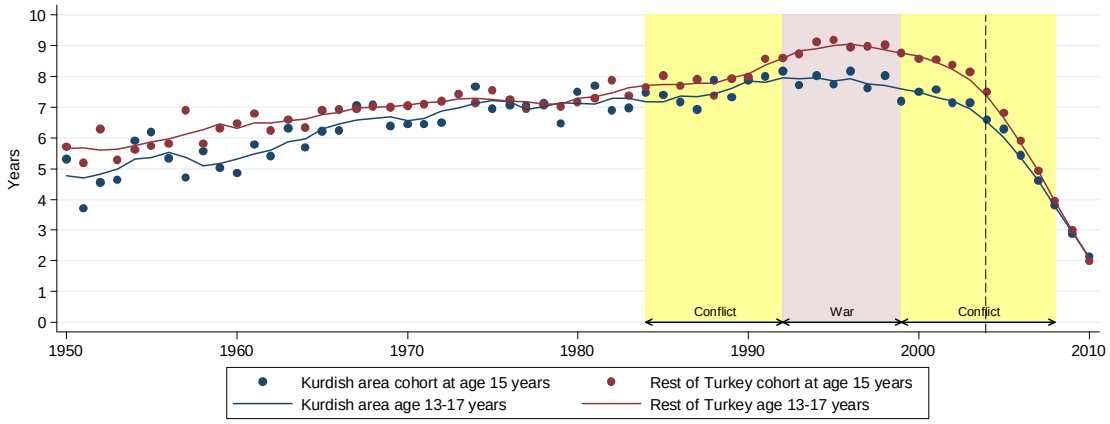
Figure 4.4 compares the average number of years of schooling of the two groups. For the purpose of this analysis, persons without formal education were counted as having zero years of schooling. Here, an effect of the conflict can be observed for persons who were 13 to 17 years old in the 1990s. In non-conflict areas the educational attainment of the population continued to increase throughout the 1980s and 1990s while in conflict-affected areas, the curve flattened in the early 1990s and thus the average number of years of education no longer improved.

Figure 4.4: Turkey - Average years of schooling, Kurdish-inhabited provinces compared to rest of Turkey



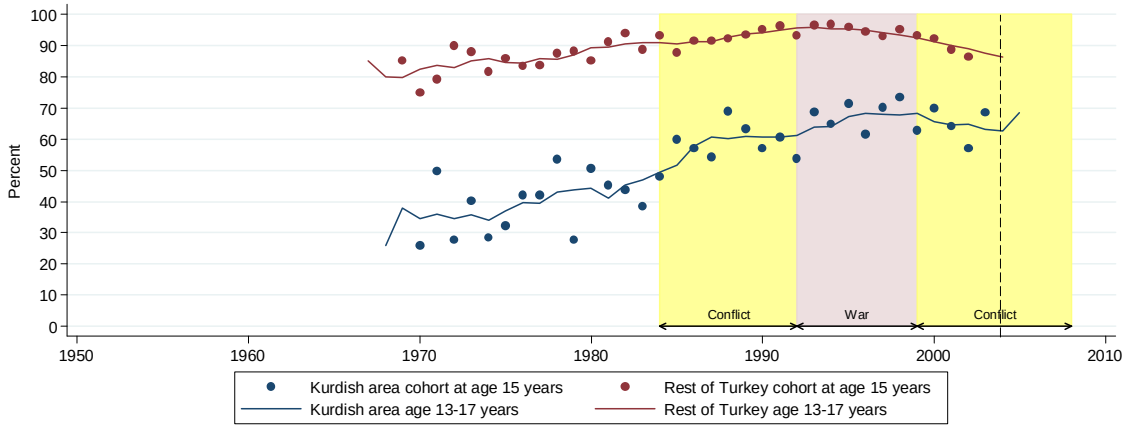
The effect observed in Figure 4.4 becomes more pronounced in Figure 4.5, which plots the average number of years of schooling of persons who went to school. In contrast to Figure 4.4 there is only a small gap between the population from majority Kurdish areas and the population from other parts of Turkey. The gap in Figure 4.4 can be explained by the larger number of persons in Kurdish areas who never attended school. As Figure 4.5 shows, persons with any formal education were likely to leave school after almost the same number of grades throughout Turkey, and by the late 1970s the gap between Kurdish and non-Kurdish areas had closed. However, with the onset of the conflict in the 1980s, the gap began to widen, especially between 1992 and 1999, the most intensive period of the civil war according to the UCDP/PRIO database. In non-conflict areas, the average number of years of schooling continued to increase in the early and mid-1990s, whereas in conflict areas educational attainment began to decline around 1990.

Figure 4.5: Turkey - Average years of schooling (schooled population), Kurdish-inhabited provinces compared to rest of Turkey



Finally, Figure 4.6 compares the literacy rate among female residents of conflict and non-conflict areas. For male residents no comparable data were available because the DHS in Turkey applied a reading test only to female respondents aged 15 to 49 years who were ever married.[5] For female cohorts aged 13 to 17 years living in non-conflict areas the literacy rate first exceeded 90 percent in the 1980s, but the average annual rate of increase was relatively small. Female cohorts aged 13 to 17 years from conflict areas displayed a steeper increase in the literacy rate until the late 1980s but then the average annual rate of increase began to decline. The relatively lower literacy rate for the youngest cohorts, who were 15 years old during the late 1990s, can be expected to increase as the persons in this age group acquire literacy skills at a later age.

Figure 4.6: Turkey - Share of literate women, Kurdish-inhabited provinces compared to rest of Turkey



5. Country analysis: Central Asia

5.1 Tajikistan

After the break-up of the former Soviet Union, newly-independent Tajikistan was embroiled in a violent six-year civil war from 1992 to 1998. In the poorest of all post-Soviet states, the civil war created disruptions and insecurity in a previously relatively strong educational system. Declining enrolment rates coincided with the civil war period, which began to return to pre-conflict levels after 1998 (Shemyakina 2006). Research shows that certain regions of the country were more affected than others. Dushanbe, Khatlon and Regions of Republican Subordination (RSS) were the most severely affected. Shemyakina (2006, 7) reports that within these regions “assassinations, hostage-taking, rapes, murders and robberies during the daylight became common”. With municipal level data on household damage due to war, she conducts regression analysis that shows that the conflict had a negative impact on the schooling attainment

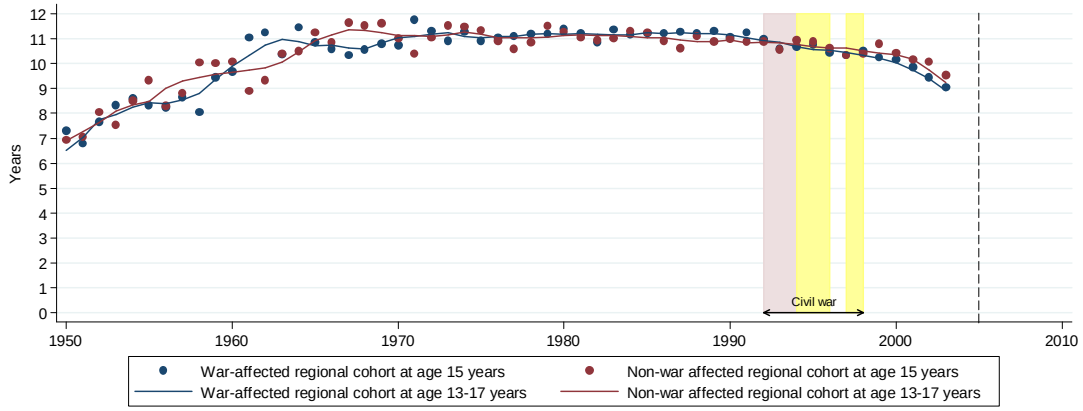
[5] The questionnaire is reprinted in the final report from the DHS (Hacettepe University Institute of Population Studies 2004).

of females but not males. Shemyakina (2006, 4) attributes this finding to the tendency for households to “play it safe” by investing in education past primary levels for males rather than females.

Regional analysis

Regional analysis for Tajikistan is necessary due to the fact that certain regions of the country were relatively isolated from the conflict. However, the data from the 2005 Multiple Indicator Cluster Survey used here do not provide the level of detail necessary to identify the war-affected area. Shemyakina (2006, 16) utilized municipal level data, as she found great variation of conflict-related damage within an affected region. It is not surprising then, that Figure 5.1 shows no substantial differences between affected and non-affected regions. Nonetheless, it is apparent that educational attainment has slightly declined since independence and the outbreak of the war for both regional cohorts.

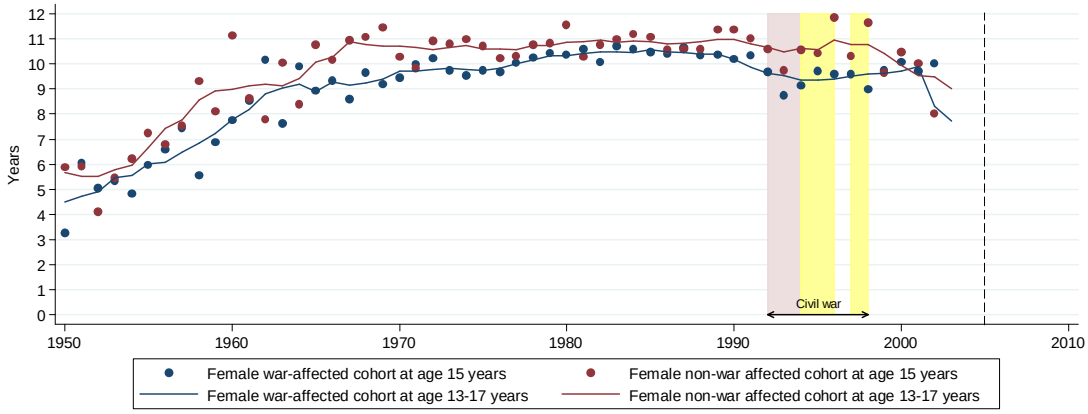
Figure 5.1: Tajikistan - Average years of education, by region



Gender and Regional Analysis

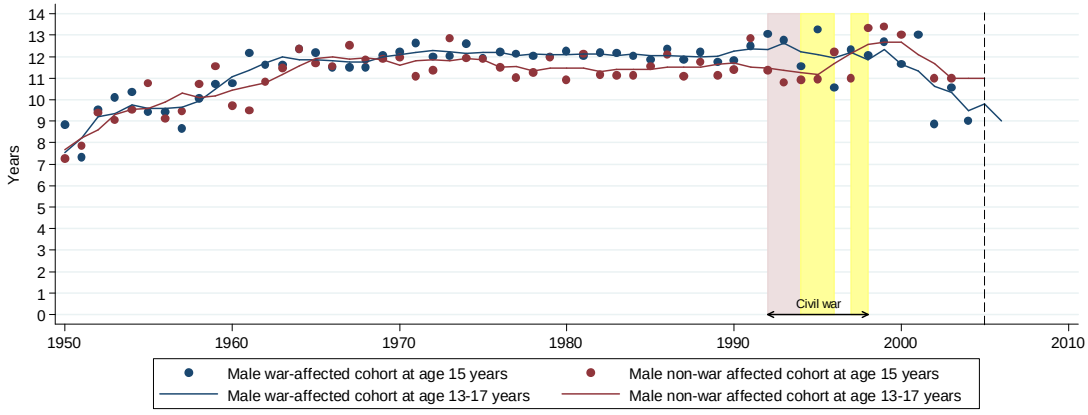
Based on the findings by Shemyakina (2006), a regional analysis by gender was attempted. In Figure 5.2 there is a widening of the gap between women who were school-aged during the civil war compared to those who went to school before 1992. As expected, female cohorts in the war-affected region showed a larger decline in educational attainment than those in non-affected regions. Post-conflict cohorts from these regions mostly returned to pre-conflict levels by the end of the civil war.

Figure 5.2: Tajikistan - Average years of education (women), by region



Shemyakina's (2006) findings suggest that there was no significant effect of the conflict on the educational attainment of males. Figure 5.3 reflects this conclusion. The educational attainment of the regional cohorts during the civil war shows a widening gap, but in the opposite direction than expected. That is, the average number of years of education declined among men in non-affected regions, rather than among males in Dushanbe, Khatlon and RSS. Part of the problem may be that the regional level data for the war-affected regions include the capital city, which tends to have a more highly educated population than other parts of a country.

Figure 5.3: Tajikistan - Average years of education (men), by region



6. Country analysis: East Asia and the Pacific

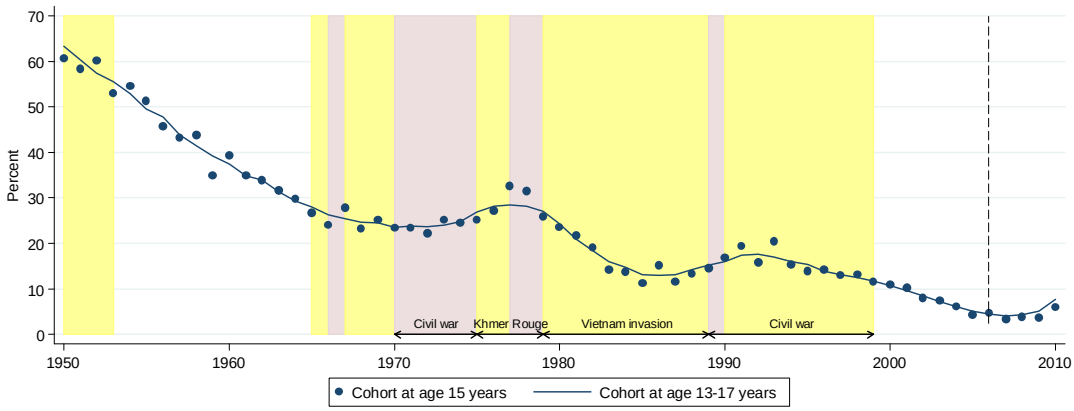
6.1 Cambodia

Prior to 1970 Cambodia was renowned in colonial Indochina for its educational system, with well-trained teachers, modern infrastructure and regional universities (Nicolai 2008, 127). The civil war and the subsequent Khmer Rouge regime destroyed this remarkable achievement and the regime's Maoist philosophy specifically targeted the educated elite, both in terms of human infrastructure, such as teachers and scholars, and physical

infrastructure, such as schools (Nicolai 2008; Buckland 2005; de Walque 2006). The long-term educational legacy of this period is strikingly clear in Figures 6.1 to 6.4, which show data collected with a 2005-06 Demographic and Health Survey.

As seen in Figure 6.1, throughout the pre-conflict period there was a steady decline in the share of the population without education, by an average of 2.2 percentage points per year (see Table 6.1). This progress stops with the onset of the civil war, to an average decrease of 0.1 percentage points. The cohorts who were of school age during the Khmer Rouge regime actually show an *increase* in the share of persons without formal education of 0.3 percentage points per year of the conflict. After the fall of the Khmer Rouge there is a remarkable return to the previous increase in average educational attainment, despite the existence of a conflict with Vietnam and internal strife in some parts of the country. For children of the early 1990s, Figure 6.1 shows an increase in the proportion without any formal education. This may be due to a generational effect as the Khmer Rouge generation started raising families.

Figure 6.1: Cambodia - Share of population without formal education

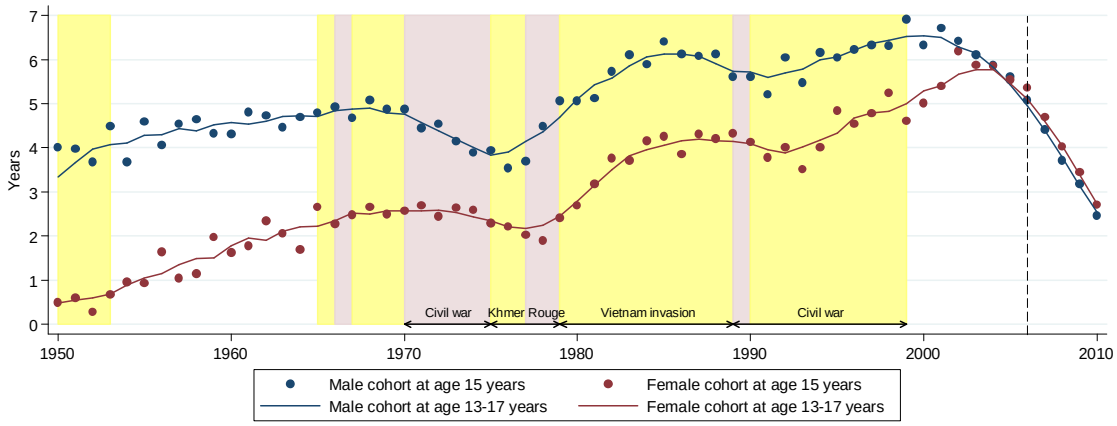


Gender Analysis

Scholars studying the Khmer Rouge period have identified gender as a key factor shaping educational attainment for conflict-affected Cambodians. Using DHS data, de Walque (2006) finds that the educational attainment of males was the most significantly affected by the Khmer Rouge period. This finding reflects how the regime targeted educated elites (men usually having higher educational attainment), but also that men were more likely to participate in the military, thus missing out on education. In Figure 6.2, there is a much steeper decline in the educational attainment of men, as compared to women, during the civil war and Khmer Rouge period. This is clear when looking at Table 6.1, which outlines the average change in educational attainment during the different conflict periods. While men show a decrease of 0.2 years of education per year of the civil war on average, women's educational attainment only decreased by 0.04 years on average per year of the Khmer Rouge conflict. However it is interesting to note that in this figure males seem to gain in educational attainment during the Khmer Rouge regime, which belies the qualitative evidence regarding the state of Cambodia's

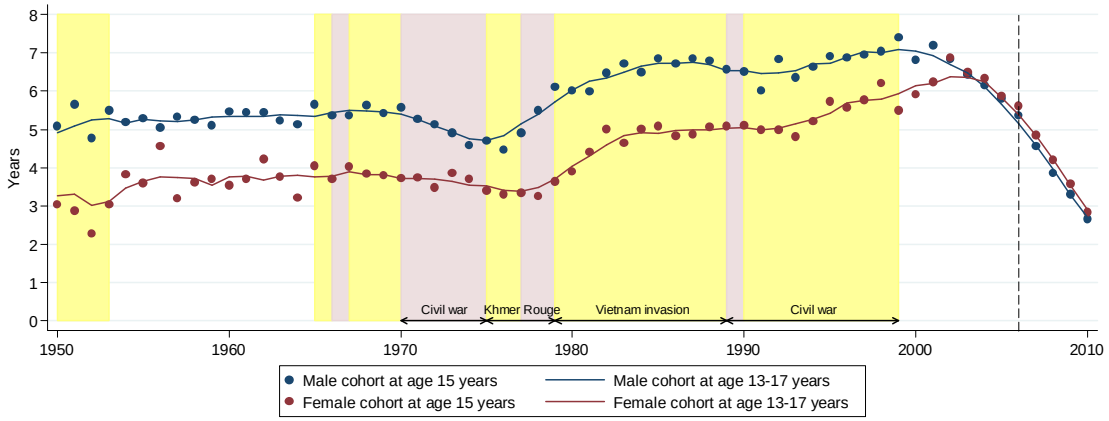
educational system at the time. However, it is possible that this increase is due to cohorts completing school after the Khmer Rouge regime. Overall there is almost a full year difference in educational attainment between males of school age before the Khmer Rouge conflict and those school-aged during the conflict period.

Figure 6.2: Cambodia - Average years of formal schooling, by sex



The impact on the educated classes, particularly men, in Cambodian society is clearly seen in Figure 6.3, which looks at the average years of education for those with any formal schooling. The decline in the average years of formal schooling for men, as compared to women, is much steeper and begins during the civil war period, only regaining pre-conflict levels after 1980.

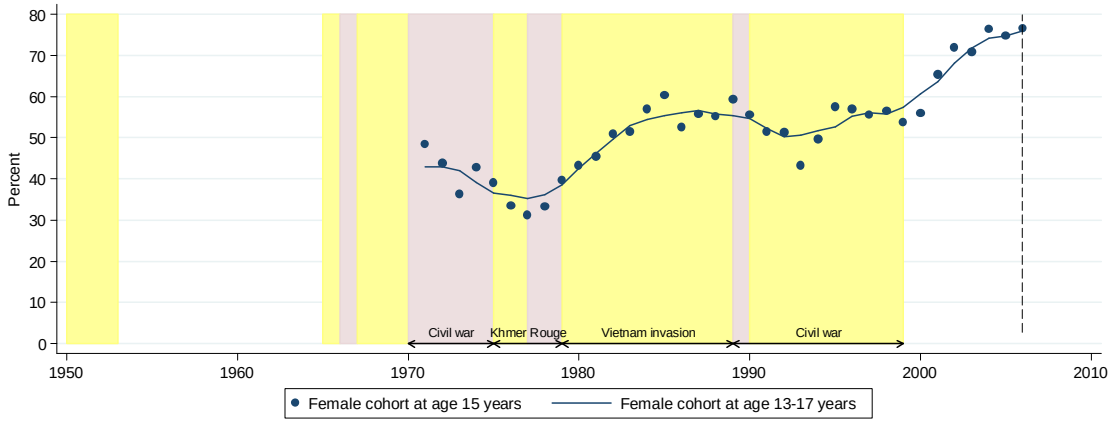
Figure 6.3: Cambodia - Average years of formal schooling (only those with any formal schooling), by sex



Literacy

The 2005-06 DHS measured literacy levels among women between the ages of 15 and 49 years.[6] Figure 6.4 presents the percentage of women who are literate by single-year and five-year cohort. Similar to the trends in educational attainment and participation, the percentage of women who are literate shows a significant decrease during the Khmer Rouge period and a subsequent increase in the post-Khmer period. Less than forty percent of women who were of school-going age during the Khmer Rouge period are considered literate, as compared to fifty percent of the generation that went to school before this period. There is also a slight decrease in the literacy rate of women who were of school going age during the 1990s, although the decline is not as strong as it was during the Khmer Rouge. It is hypothesized that this cohort may be the children of the Khmer Rouge survivors.

Figure 6.4: Cambodia - Female literacy rate



Regional Analysis

While the impact of conflict on education at the sub-national level has been examined by scholars (Merrouche 2006), the DHS used for the present study does not contain adequate data for a regional analysis. Using data based on persons' region of residence in 2005-06 may be imprecise given that the conflicts in question took place more than 20 years earlier. Mass internal migration during the civil war and Khmer Rouge regime pose significant challenges for regional analyses. Moreover, almost every region in Cambodia has been touched by conflict and thus it is difficult to identify non-conflict-affected regions. The Khmer Rouge regime affected many regions (as indicated by mass burial and prison sites), U.S. bombing took place in regions near the border with Viet Nam, and landmines are concentrated near the north-western frontier with Thailand (Merrouche 2006, 8). Scholars who have conducted regional analyses focused on one aspect of conflict, such as landmines, and had more in-depth municipal level data (Merrouche 2006).

[6] As in the 2003-04 DHS in Turkey, no literacy data were collected for men.

Table 6.1 Cambodia - Average change per year in educational attainment indicators, by conflict period

		Time Period			
	Indicator	**Pre-War (1954-1966)**	**Civil War (1970-1975)**	**Khmer Rouge (1975-1979)**	**Conflict with Vietnam (1979-1989)**
Total	**Proportion with no formal education**	-2.19%	-0.13%	**0.28%**	-1.13%
Male	**Average years of schooling, with or without education**	0.03 years	**-0.2 years**	0.24 years	0.06 years
Female	**Average years of schooling, with or without education**	0.16 years	0.02 years	***-0.04 years***	0.19 years

Source: Cambodia DHS 2005-06

7. Country analysis: Latin America and the Caribbean

7.1 Colombia

After the Israel-Palestine and India-Pakistan (Kashmir) conflicts, Colombia has undergone the third longest continuous domestic conflict in the 20th century (Rodríguez and Sánchez 2009, 17). Several groups participated in this conflict: Marxist-influenced guerrilla movements such as the Revolutionary Armed Forces of Colombia (FARC) and the Army of National Liberation (ELN), Colombian security forces and far-right paramilitary groups. The paramilitary organizations were initially supported by the Colombian military and the United States during the Cold War, but have since become entangled in drug trafficking, human rights violations and other criminal activities. While all of these groups have committed human rights violations, paramilitary organizations are responsible for the majority of the violations over the past twenty years (Nicolai 2008, 189).

The war created a dangerous and insecure environment for all Colombians. The annual number of politically motivated homicides has recently ranged from 3000 to 6000 and the country has one of the highest homicide rates in the world (Nicolai 2008, 190). Furthermore, Colombia has over three million internally displaced people, of which over half are estimated to be of school-going age (Nicolai 2008, 191). Attacks on teachers and schools are widespread. For example, between 1991 and 1996, “808 Colombian educators were killed, 2015 received death threats, 21 were tortured, 59 were ‘disappeared’, and 1008 were forced to leave their homes and jobs for fear of violence” (Nicolai 2008, 187). More recent data show that attacks on teachers have increased since the 1990s (UNESCO 2010b, 59). Recruitment of children into war is a significant

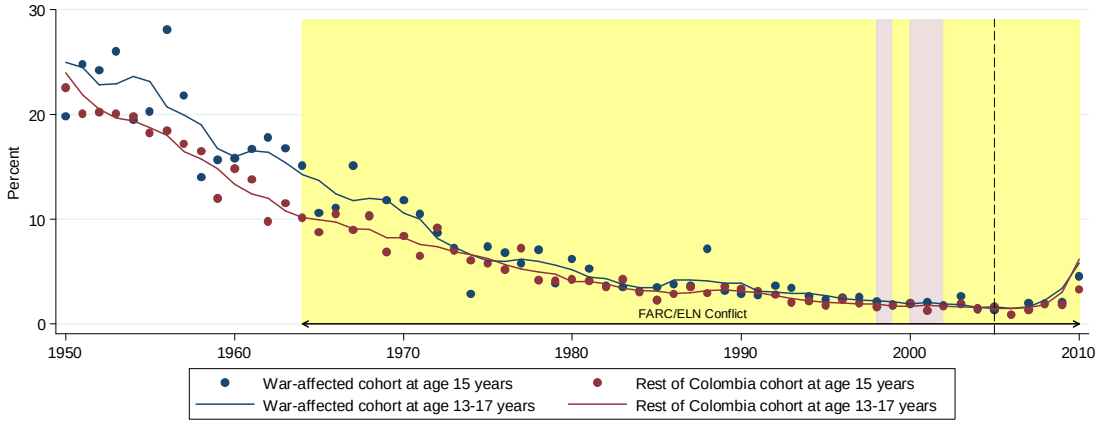
problem in the country. The organization War Child reports that 14,000 children were serving as child soldiers in 2007, many of whom were recruited from schools (Nicolai 2008, 177). The war has also affected government spending on education, putting a strain on schools and teachers as average yearly government expenditure on education dropped by five percentage points, from 17% of total government spending to 12% during some of the most intense conflict periods (Nicolai 2008, 41).

Surprisingly, Colombia is nonetheless on track to meet the MDG of universal primary completion (Buckland 2005, 29). This belies the substantial effects that the armed conflict had on education in the country. There has been some important research on the impact of armed conflict on educational attainment and child labour in Colombia. Rodríguez and Sánchez (2009, 23) argue that to understand the impact of armed conflict, one must look beyond macro-level trends. The authors employ municipal-level data and regression analysis and find that children aged 12 and older from municipalities with a high exposure to violence are more likely to drop out of school, controlling for gender, migration, socio-economic status and other variables. The authors further estimate that the conflict has reduced the average educational attainment of affected students by one full year (Rodríguez and Sánchez 2009, 7). Due to the large displaced population and the variation of violence within departments in Colombia, the present study attempts sub-national analysis at a departmental level. The data for the Colombian analysis come from a 2004-05 DHS.

Regional Analysis

As Rodríguez and Sánchez (2009) have noted, municipal level data are more accurate, as violence levels vary within departments. The 2004-05 DHS used in this analysis provides department-level data only. Given the long timeframe of the conflict and the proliferation of armed groups over time, an analysis was attempted by isolating four departments with the highest rates of violence in the country (Antioquia, Bolívar, Cauca, and Santander) as ”war-affected” and the other regions as “less war-affected” (Holmes, Amin Gutierrez de Pineres, and Curtin 2006, 171). It is clear that the high levels of internal displacement affect this type of regional analysis; nonetheless, any trend noted is most likely underestimated due to the lack of finer-grained municipal data, and violence which has occurred in other “less-affected” departments. In Figure 7.1 we see that the most conflict-affected regions show fluctuation during three periods of Colombia’s long conflict: during the outbreak of the war in the mid 1960s, the late 1970s, and the late 1980s. This first period coincides with the period of *La Violencia*, which swept over the Colombian countryside from approximately 1948 to 1964 and which is largely believed to be the root of the ongoing conflict in the country (Nicolai 2008, 189). The other increases in the proportion of the cohorts in the most war-affected regions without formal education may also be related to increased intensity of armed conflict.

Figure 7.1: Colombia - Share of the population without formal education, by region



Disparities between the rich and poor within the populations of these affected regions may also provide insight, as rich students may be able to afford safer schools and are less-affected by military recruitment. Indeed, as we see in Figure 7.2, there was a large but declining gap in the share with formal education between the richest and poorest populations. Despite the presence of conflict, the poorest cohorts move steadily towards values similar to the richest cohorts.

Figure 7.2: Colombia - Share of the population without formal education, by region and wealth quintiles

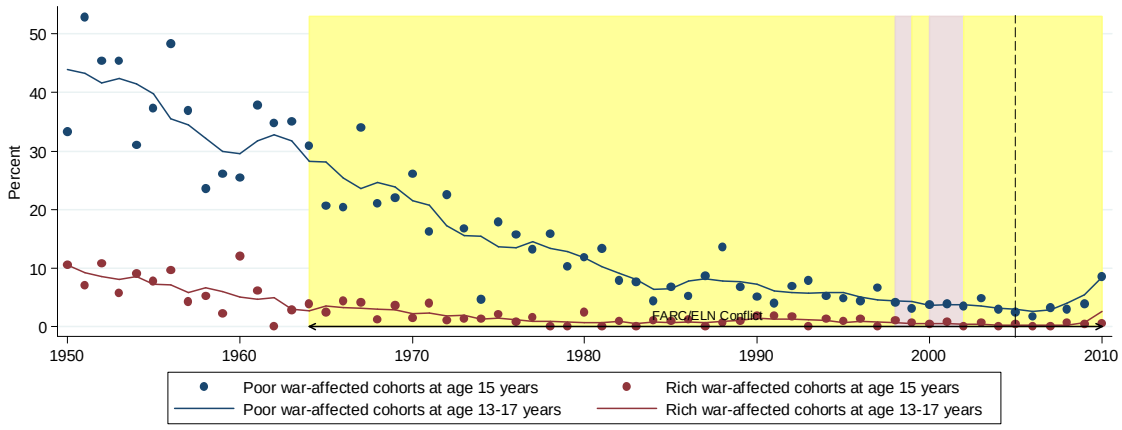
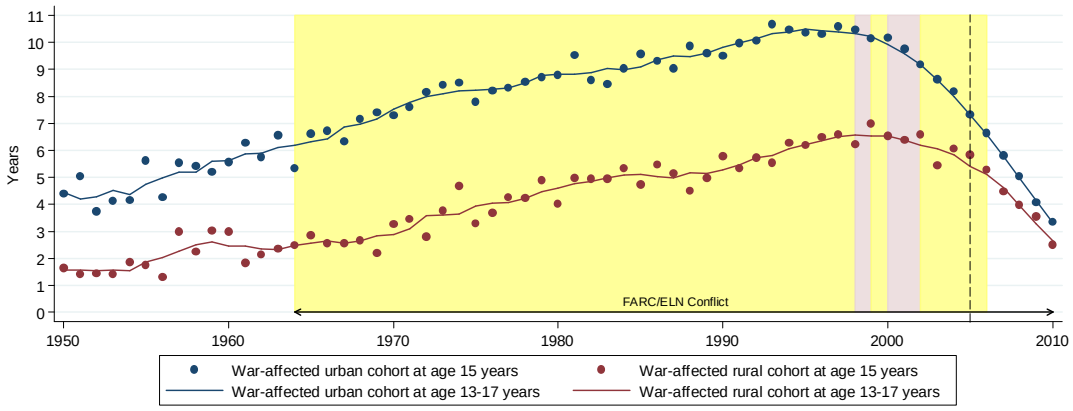


Figure 7.3 looks at educational attainment, given that by the mid 1980s only a small percentage of students did not have any formal schooling. From the trends it is clear that there are no visible changes in educational attainment by either the rural or urban cohorts during the conflict period. Both groups, albeit with a large gap between them, seem to follow the same upward trend throughout the civil conflict.

Figure 7.3: Colombia - Average years of education, by region and residence



While there are studies that point to the strong negative impact of the ongoing conflict on Colombian educational attainment, the data from the Demographic and Health Survey are not precise enough to target the conflict-exposed population. Therefore, the fact that this analysis does not reveal negative effects on education in Colombia does not refute the findings of Rodríguez and Sánchez.

7.2 Guatemala

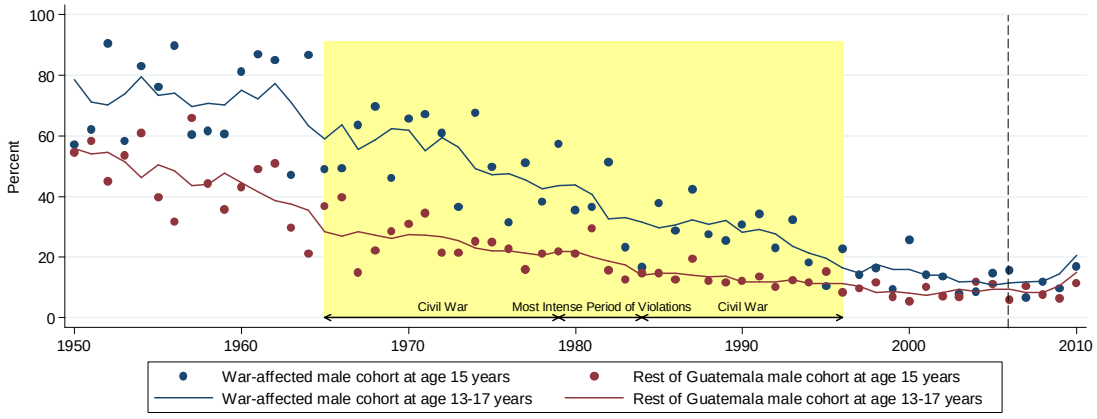
Guatemala's brutal thirty-six year war began in 1965 and continued until peace was reached between the government and internal armed groups in 1996. The number of people displaced during the most intense years of the conflict (1981-1983) range between 500,000 and 1,500,000 (Chamarbagwala and Morán 2010, 8). State forces and related paramilitary groups were largely responsible for the mass human rights violations documented (Chamarbagwala and Morán 2010, 8). As we will see, Guatemala's civil war widened pre-existing disparities between the advantaged and disadvantaged groups in Guatemalan society. While victims included men and women from all socio-economic backgrounds and ages, most (83% of fully identified victims) had Mayan ethnicity (Chamarbagwala and Morán 2010, 8). The Guatemalan civil war also varied in intensity by region. Scholars have identified five regions as the most highly affected: Quiché, Baja Verapaz, Alta Verapaz, Petén, and Huehuetenango (Chamarbagwala and Morán 2010, 13). The population of Quiché, the most heavily affected region, is nearly all Mayan and the region has lagged far behind in terms of basic infrastructure. By 1973, 94% of the population did not have any basic services including water, sanitation or electricity (Chamarbagwala and Morán 2010, 7). The World Bank reports that during the civil war primary school enrolment stagnated and secondary and postsecondary enrolment remained below regional averages (Buckland 2005, 17). Using both the difference in difference method and regression analysis, Chamarbagwala and Morán (2010, 1) found that the conflict had a significant effect on the educational attainment of females living in the war-affected regions: girls exposed to conflict completed 0.44 fewer years of schooling, and older female cohorts exposed to the war attained 0.64 fewer years of education than the equivalent group in non-war

affected regions.[7] As the authors note, this finding is most likely underestimated, as their analysis looks only at those who were born in the region where they lived at the time of data collection (Chamarbagwala and Morán 2010, 11). Due to a lack of data on displacement, their findings do not include people who did not live in their region of birth at the time of data collection. The present study uses a similar approach to identify the conflict-affected population, using the 2006 ENCOVI survey.

Regional and Gender Analysis

The present analysis looks at the differences in educational participation and attainment by gender and region, given the importance of these two dimensions in the literature. Beginning with the proportion of the male population without formal education, we see disparity between the war-affected regions and the rest of Guatemala before the conflict (Figure 7.4). During the initial years of the conflict this gap widened but the generations of boys going to school after 1975 show a narrowing of the gap between the two regions. Therefore, similar to the findings of Chamarbagwala and Morán (2010), there is no visible impact of the most violent period of the civil war on males who were of school-going age during this time.

Figure 7.4: Guatemala - Share of the male population without formal education, by region

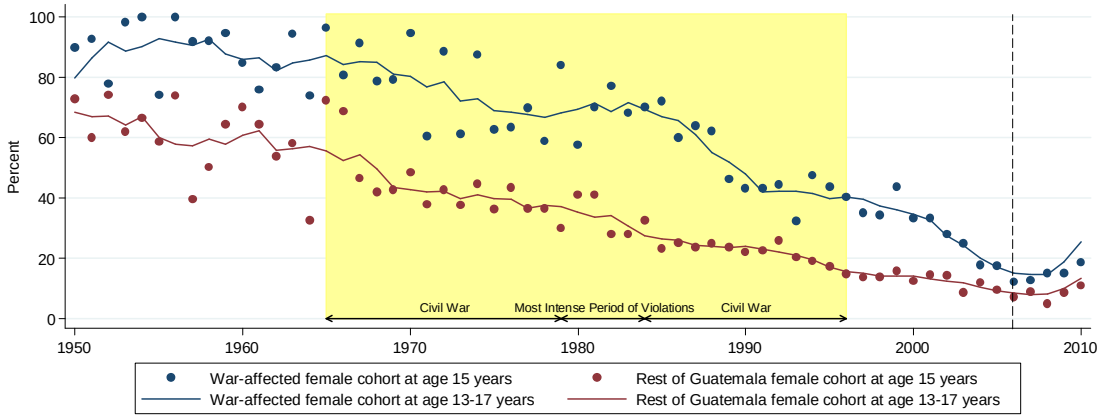


The legacy of conflict on women of school-going age during the civil war differs. Contrary to their male counterparts, the female cohorts over time do not narrow the regional gap in schooling. For those school-aged during the most violent years of the civil war, Figure 7.5 shows increases in the proportion without formal education. However this proportion decreases significantly at the end of the intense conflict period, around 1984. This

[7] Chamarbagwala and Morán look at the impact of the worst years of the conflict on primary and secondary educational attainment by dividing the cohorts into two groups. They define older cohorts as those “born between 1961 and 1966, who were secondary and/or high school age between 1979 and 1984.” By contrast, the younger cohorts were ”born between 1967 and 1977 and therefore were in primary school during at least part of the worst period of the civil war from 1979 to 1984” (Chamarbagwala and Morán 2010, 20)

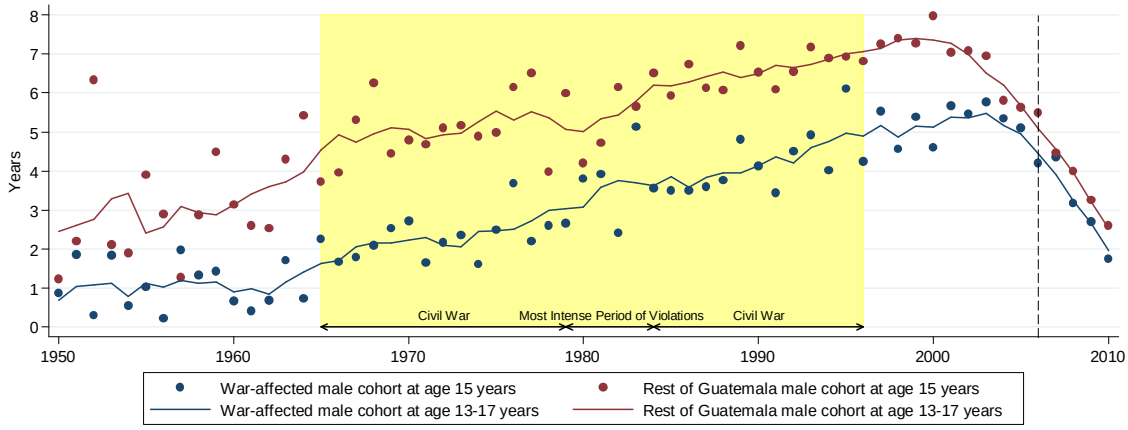
finding is supported by Chamarbagwala and Morán (2010), who find significant negative effects on girls going to school during the most intense periods of the conflict. After the conflict's end in 1996, the regional gap between girls' school participation drops quickly and almost closes by 2006.

Figure 7.5: Guatemala - Share of the female population without formal education, by region



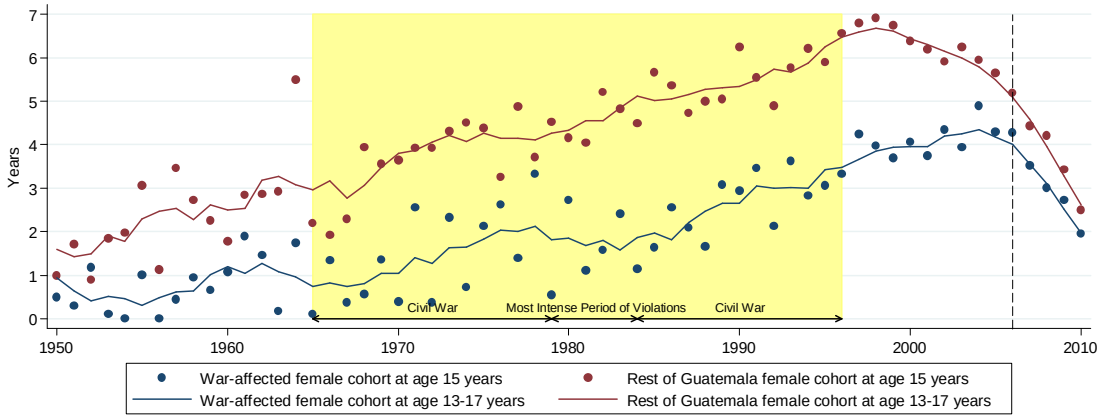
The Guatemalan civil war also affected the educational attainment of women more than of men. Looking at both Figures 7.6 and 7.7, the average number of years of schooling for women and men in the pre-conflict period is about one year for the war-affected regions and two years for the rest of Guatemala. However, in Figure 7.6 the upward trend beginning in the years before the conflict begins to flatten during the mid 1960s until the mid 1970s. Generations of boys who were of school-going age after this time show a steady upward trend, until the most intense years of the conflict (1979-1984), when there is a surprising decrease in educational attainment for male cohorts in regions less-affected by war. There is no significant change in the trend for war-affected cohorts. After 1985 both male cohorts begin to increase at a steady rate, with the war-affected regional cohorts reaching over five years of education on average by 2006.

Figure 7.6: Guatemala - Average years of education (men), by region



The educational attainment of women in war-affected regions also shows marked differences from their non war-affected counterparts, particularly during 1979 to 1984 (Figure 7.7). In the pre-conflict period there is a rise in attainment for women in the war-affected regions, around 1960, which falls again just before the onset of the civil war. From the beginning of the conflict period we see a gradual rise in the average years of education attained by women in the most heavily affected regions. Yet during the most intense period of the civil war the line depicting the five year moving average reveals a growing gap, as average educational attainment of women in these regions decreases and thus does not keep pace with the increase among female cohorts from the rest of Guatemala. The disparity begins to narrow slightly as the conflict continues throughout the late 1980s and 1990s. Nonetheless, women in these regions attain on average almost two years less education than those in the rest of the country.

Figure 7.7: Guatemala - Average years of education (women), by region

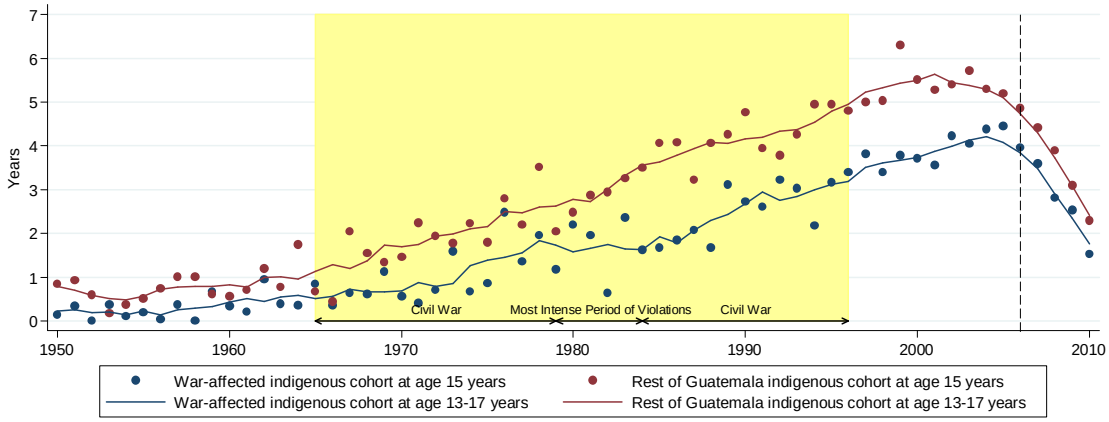


Ethnic Group Analysis

Given that most of the identified victims of the civil war were indigenous people, Figure 7.8 looks at the educational attainment of the indigenous population, disaggregated by

region. The following data combine all indigenous ethnic groups as “indigenous”, and those identified as foreign or not indigenous are combined in a “non-indigenous” group. The generations of school-going age during the most intense periods of conflict display a markedly different trend than that for indigenous people in the rest of the country. During the late 1970s until the mid-1980s, the data points again have a greater variance compared to the periods before or after this time. This mirrors the trends displayed in all previous figures for Guatemala and may reflect population displacement and the disruption in education during that period. The five-year moving average shows a flattening of the trend in educational attainment for indigenous cohorts in war-affected regions, which begins to increase at a similar rate as the rest of the indigenous population after the most intense period of the war ends. This in effect widens the gap which has persisted to the present. Therefore, the period of the most intense conflict widened the gap in educational attainment between women and indigenous groups in the war-affected regions and their counterparts in the rest of the country.

Figure 7.8: Guatemala - Average years of education (indigenous), by region



8. Country analysis: South and West Asia

8.1 Afghanistan

Afghanistan has faced three decades of nearly continuous conflict since the beginning of the Soviet-Afghan war in 1978. War and the repressive educational policies of the Taliban regime (1996-2001) devastated the educational system of the country. Although primary education was officially made compulsory and free in 1964, the implementation of this policy was not widespread (UNESCO 1999a). Under the Taliban regime, education in Afghanistan deteriorated even further. Women were banned from teaching and all girls’ schools were systematically closed in 2000 (Marsden 1998, 89).

There has been a huge increase in enrolment for both boys and girls in the post-Taliban period. In 2008, 6.3 million children were enrolled in school, including 4.9 million at the primary level of education, representing the largest school population in Afghanistan’s

history. This achievement is even more remarkable when one considers that by the end of the Taliban regime in 2001, Afghanistan had only 774,000 students in primary school (UIS 2010). However this increase in enrolment has put a major strain on Afghanistan's already frail educational infrastructure. In 2002, only 25 per cent of Afghanistan's schools were rated "usable" by the Ministry of Education, and only 50 per cent of schools actually had a building (Nicolai 2008, 105). Major safety issues persist for students and teachers in Afghan schools. CARE states that between January 2006 and December 2008, there were 1,153 attacks on education infrastructure, personnel and pupils, including "the damaging or destruction of schools by arson, grenades, mines and rockets; threats to teachers and officials delivered by 'night letters' or verbally; the killing of students, teachers and other education staff; and looting" (UNESCO 2010b).

The analysis that follows draws on data from a Multiple Indicator Cluster Survey conducted in 2003. It is important to note that this survey only provides complete educational data for the population aged 10 years and older, as opposed to 5 years and older in other MICS and DHS samples. This affects primarily cohorts aged 15 in 2007-2010 as shown on the figures in this section.

Gender Analysis

The policies of the Taliban make gender a particularly important lens of analysis. The proportion of the male population of Afghanistan that completed at least one year of school increased in the pre-war period, widening the gap between female and male cohorts until the onset of the Afghan war in 1978 (see Figure 8.1). After this time, the share of males with any formal education stagnated, even slightly increasing for certain cohorts throughout the conflict period. Women in Afghanistan remain mostly without formal education throughout the pre-conflict and conflict periods. However, there is a clear shift after 2001, when the proportion of those with any formal schooling for both women and men begins to rise dramatically.

Figure 8.1: Afghanistan - Share of population without formal education, by sex

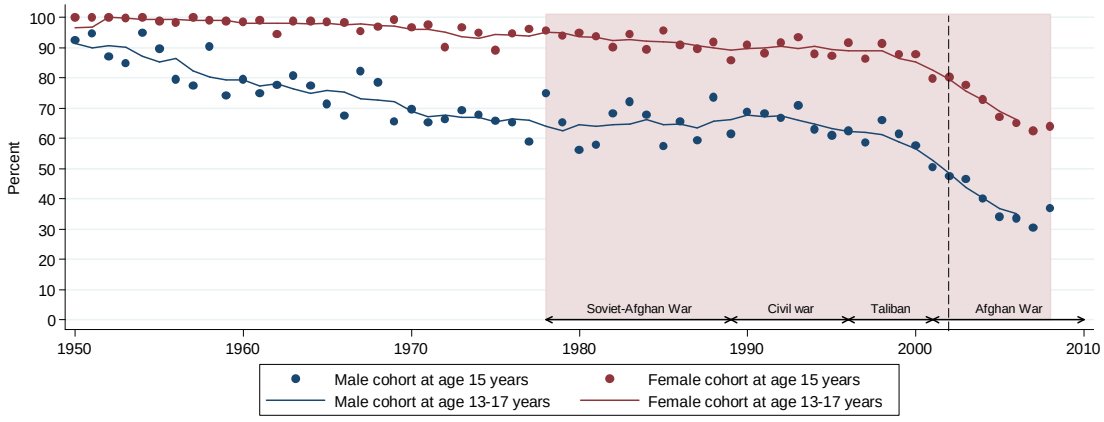
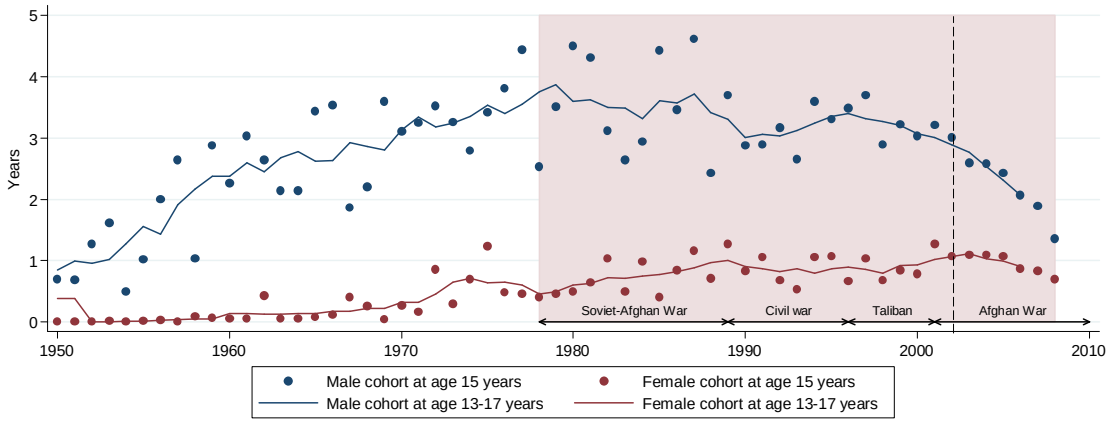


Figure 8.2 displays the average trends in educational attainment, measured by years of education, for male and female cohorts in Afghanistan over the pre-conflict and conflict

periods. Like Figure 8.1, Figure 8.2 illustrates the toll on education taken by the legacy of the conflicts in Afghanistan. Between the 1950s and the 1970s the average number of years of education of males tripled. However, women have persistently lagged behind men in their attainment, having on average less than one year of education for the entire timeline presented in Figure 8.2. The beginning of Afghanistan's long decades of conflict in 1978 coincides with the beginning of a gradual decline in average educational attainment for males, falling below three years of education for cohorts that were 15 years old after 2000. In all, the differences in average educational attainment before and during war in Afghanistan illustrate the significant impact of conflict on the lives of children in the country.

Figure 8.2: Afghanistan - Average years of formal schooling, by sex



Given the low overall average years of educational attainment by the population portrayed in Figure 8.2, narrowing the focus on persons with at least one year of education reveals a very different picture of educational attainment in Afghanistan. Male cohorts that were 13 to 17 years old during the pre-conflict period completed, on average, about 10 years of education. Younger cohorts – those who were of school age during the Soviet-Afghan war – display a gradual but persistent decline in educational attainment, which is the opposite of the global trend in developing countries. The average years of schooling for women increase significantly before the onset of conflict and do not significantly fall below the average for men throughout the Soviet-Afghan war, as Figure 8.3 shows. Few girls went to school, but those that were in school managed to reach similar attainment levels as boys. The gap in attainment begins to widen for the cohorts of school age during the latter part of the Afghan civil war and the Taliban regime. Among the youngest generation, of school-going age after the end of the Taliban conflict, both males and females seem to have relatively similar levels of attainment. It is difficult to interpret this trend, as the MICS data used for the analysis are from 2003 and thus cannot show the long term attainment of this generation. Table 8.1 summarizes the average annual change in educational attainment of male and female cohorts since 1950.

Figure 8.3: Afghanistan - Average years of formal schooling (only those with any formal schooling), by sex

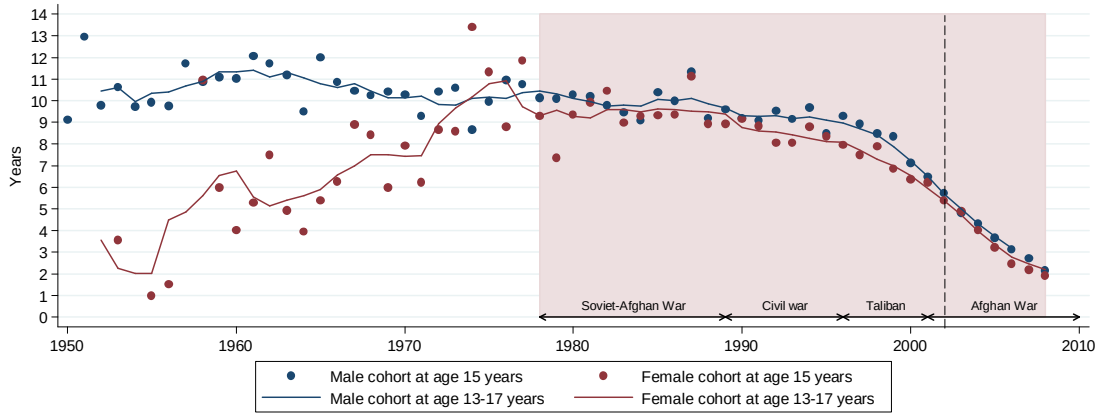


Table 8.1: Afghanistan - Average change per year in educational attainment indicators, by conflict period

		Time Period				
	Indicator	**Pre-War (1950-1978)**	**Afghan-Soviet War (1979-1989)**	**Civil War (1989-1995)**	**Taliban (1996-2001)**	**Afghan War (2002 - 2003)***
Male	**Proportion with no formal education**	-0.56%	-1.23%	**-0.60%**	**-0.71%**	-3.66%
Female	**Proportion with no formal education**	0.40%	-0.90%	**0.26%**	**0.07%**	-3.33%
Male	**Average years of schooling, with or without education**	0.06 years	0.11 years	**-0.06 years**	**-0.06 years**	-0.15 years
Female	**Average Years of Schooling, with or without education**	-0.05 years	0.08 years	**-0.04 years**	**-0.06 years**	0.1 years

Source: Afghanistan MICS 2003.

* Note: Only the first two years of the Afghan War (2002-2003) are listed in this table because the MICS data were collected in 2003. Younger cohorts are likely not to have reached their maximum educational attainment and including them in the trend analysis would have distorted the results.

8.2 India

The highly contested states of Jammu and Kashmir have been the site of four wars between India and Pakistan since partition in 1947. While tensions have lingered over the last 60 years, wars between the two countries over this region have been frequent but relatively short, taking place in 1948, 1965, 1971 and 1999. Thousands of people have been displaced and live in Jammu and Kashmir or in camps in bordering states (Sudan 2010). The constant state of insecurity and the displacement of communities have taken a toll on the population. Approximately 20,000 women have died due to the conflict in the two states over the past 20 years, and as many as 40,000 children have

been orphaned (Sudan 2010, 2). Children who live in camps have limited access to school, and the enrolment rate is estimated at about 66 per cent, but can be as low as 36 per cent for specific camps (Sudan 2010, 9). Renegade Kashmiri militants have set fire to many schools on the belief that the schools were not supporting their cause (Schofield, 182). Human Rights Watch (2006, 13) states that 640 educational buildings have been destroyed since the conflict began. There have also been reports of child soldier recruitment in schools by some Kashmiri rebel groups (UNESCO 2010b). UNESCO (2010b, 60) has also stated that the Naxalite (Maoist) conflict in India has affected schooling in three other states: Bihar, Chhattisgarh and Jharkhand.

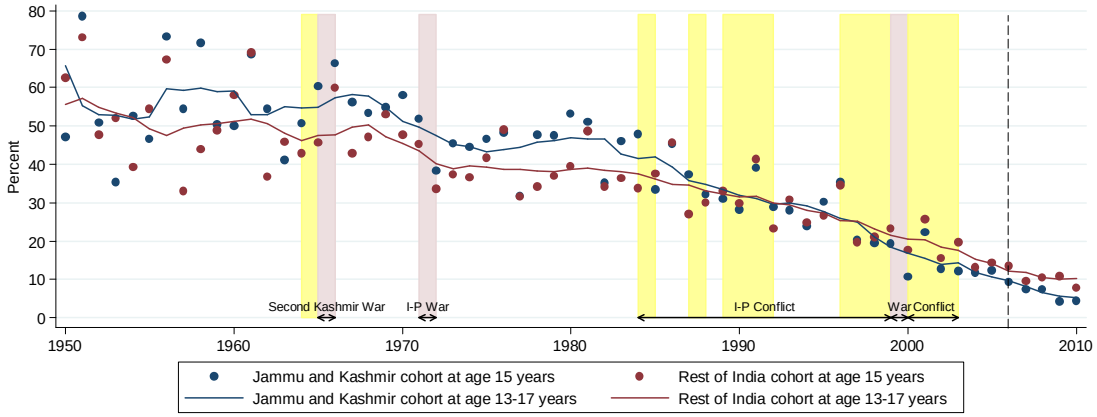
The data for the analysis that follows are taken from a Demographic and Health Survey conducted in India in 2005-06. The implementing agency refers to the survey as National Family Health Survey (NFHS).

Regional Analysis

The case of India is particular, due to its large population and the localized nature of the armed conflict. Comparing educational data from Jammu and Kashmir with the rest of India obscures many trends and differences between the other states of India. Overall in the regional analysis, the picture that emerges is that while there was a disparity in educational participation and attainment for Jammu and Kashmir cohorts in the 1960s to the 1980s, the gap has narrowed over time. In some cases, the conflict-affected regions outperform the rest of India in education. This is puzzling if one considers the insecurity in the province, but there are other factors that may influence the Indian average, such as natural disasters or poverty. Nonetheless, the following analysis compares cohorts of school-going age living in Jammu and Kashmir with cohorts from the rest of India.

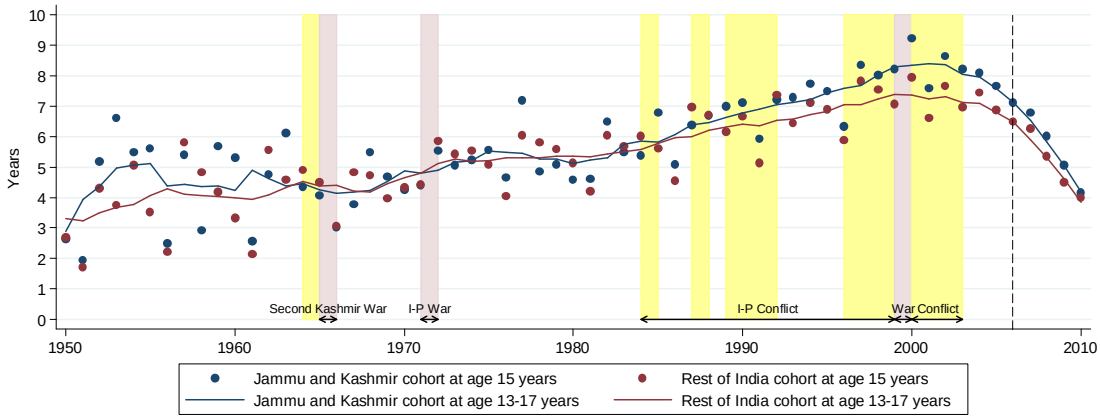
Figure 8.4 shows the average trends in educational participation for cohorts in Jammu and Kashmir compared to their counterparts in the rest of the country. Between the mid-1950s and the 1990s, the proportion of the population in these war-affected regions without formal education was higher than in other parts of India. An increase in the share without formal schooling coincided with the Second Kashmir War in 1965, yet this increase is also reflected in the rest of the country. In fact, the only trend that differs visibly from the rest of the country after this time is an increase in the share of persons without formal education for cohorts of school-going age in the late 1970s and early 1980s, which does not coincide with a major war in the area. The cohorts of school-going age in Jammu and Kashmir during the 1999 war actually began to have a higher share of those with formal schooling than the rest of the country. Therefore, the impact of the conflict is difficult to discern from the data so far. In addition to the short nature of the conflict, another important factor to consider that may change the results is the displacement of people across state borders due to the wars.

Figure 8.4: India - Share of the population without formal education, Jammu and Kashmir compared to other regions



Educational attainment by region also shows little variation during periods of conflict between India and Pakistan. From Figure 8.5, the cohorts living in Jammu and Kashmir follow more or less the same steady increases in average years of education over time as the rest of the country. There appears to be no link between conflict and educational attainment, as during the conflicts of the late 1990s and early 2000s the cohorts from Jammu and Kashmir achieved an average of 8 years of education, compared to 7 years in the rest of India. Comparing Figures 8.4 and 8.5, it is interesting to observe that the increase in the share of the Jammu and Kashmir population with no formal education in the l970s and 1980s is reflected in a decline in educational attainment during the same period in Figure 8.5.

Figure 8.5: India - Average years of education, Jammu and Kashmir compared to other regions

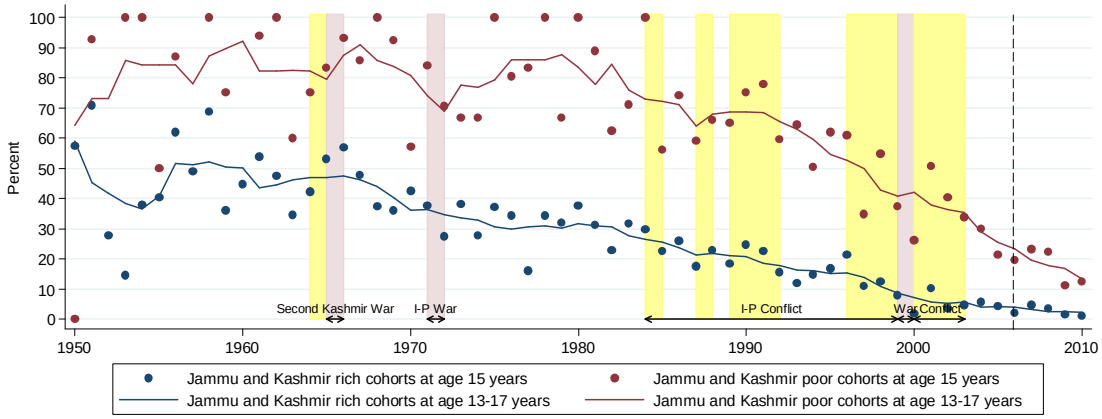


Regional and Wealth Quintile Analysis

Figure 8.6 compares educational participation of the two richest quintile groups with the two poorest. The importance of socio-economic status becomes clear when looking at

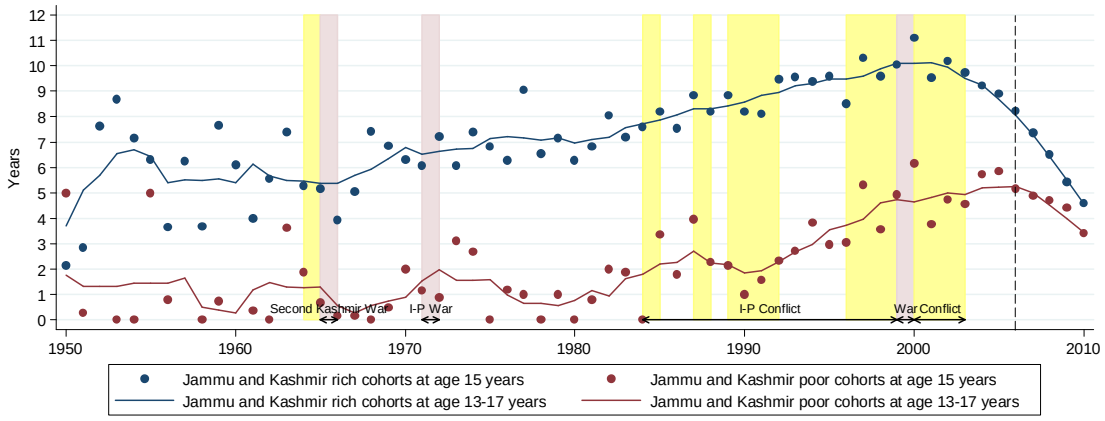
the vacillation of the percentage of the poorest cohorts that have no formal education over time. While the richest cohorts living in the Jammu and Kashmir region steadily improve their access to education from the 1960s onward, the poorest cohorts fall behind during the period of the Second Kashmir War, as well as during the 1970s and early 1980s. Furthermore, there is an increase in the non-schooled proportion of the poorest population of school-going age during the conflicts of the early 1990s, followed by a decline in the post-conflict period. The poorest residents of Jammu and Kashmir were thus most affected by the conflict, while the richest residents continued their studies mostly uninterrupted. During the 1999 war, the poorest single-year cohorts of school-going age vacillate between 55 per cent and 35 per cent without formal education while there is no such fluctuation for the richest cohorts of the same period. While the five-year average indicates a declining trend throughout this period for the poorest cohorts, the fluctuation can be attributed to instability and conflict.

Figure 8.6: India - Share of the population without formal education, by wealth quintile and Jammu and Kashmir compared to other regions



Wealth quintile also seems to be an important dimension in the educational attainment of the population of Jammu and Kashmir during conflict periods. While both groups decrease in schooling attainment during the Second Kashmir war, the richest and poorest populations display very different trends after this point, as illustrated in Figure 8.7. Again we see that the richest cohorts show somewhat steady improvement after 1970, but the poorest cohorts fluctuate in average years of schooling, decreasing during the mid 1970s and during the conflict in the 1990s. The period near the 1999 war shows significant instability in average years of schooling attained for the poorest cohorts, which is not seen to the same extent for the richest cohorts of school-going age during that period. Therefore wealth seems to be a major dimension which mediates the educational path of children in Jammu and Kashmir.

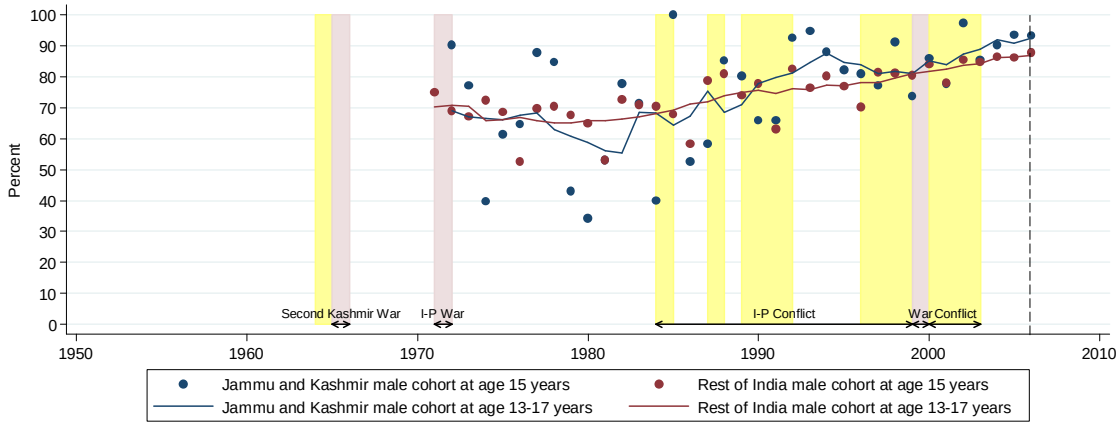
Figure 8.7: India - Average years of education, by wealth quintiles and Jammu and Kashmir compared to other regions



Literacy

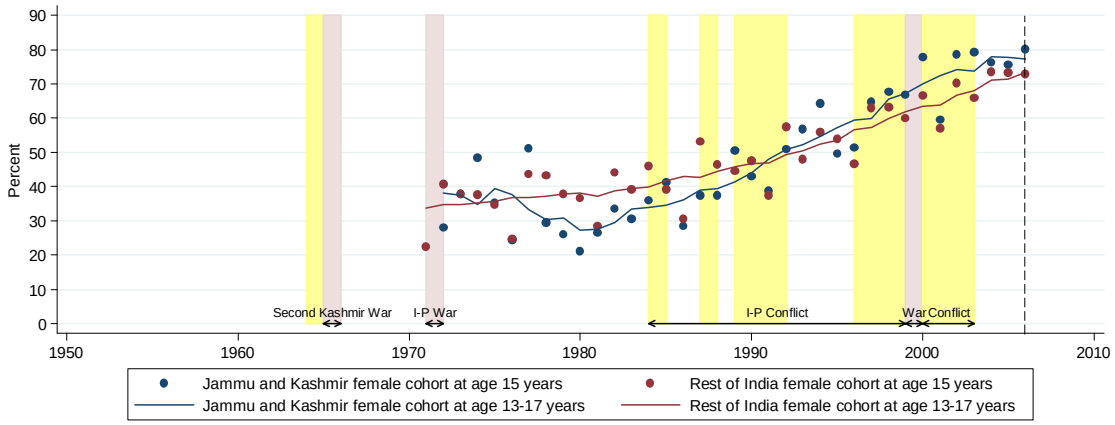
Looking at changes in the literacy rate for various generations in Jammu and Kashmir as compared to the rest of the country also shows the negative impact of conflict. In Figure 8.8, we see that males in Jammu and Kashmir who were of school-going age during the conflict in the late 1990s and early 2000s display a distinct decrease in literacy. There is no corresponding decline in literacy rates for the rest of India.

Figure 8.8: India - Male literacy rate, Jammu and Kashmir compared to other regions



Looking at the literacy rates of women in Jammu and Kashmir we see that unlike men there is no visibly different trend during conflict periods. Rather, in Figure 8.9 it seems that women cohorts of school-going age during the Jammu and Kashmir conflict continue their steady improvement in literacy time. Due to small sample sizes and great fluctuation in the data, the unreliable results of an analysis based on wealth quintile and region are not shown here.

Figure 8.9: India - Female literacy rate, Jammu and Kashmir compared to other regions



8.3 Pakistan

Bordered by Afghanistan, Iran and India, Pakistan has experienced a great deal of conflict since the partition of British India in 1947. Two armed conflicts in particular have shaped the country: the ongoing dispute over the Jammu and Kashmir region, as well as internal fighting against the Taliban and other extremist insurgents, especially in the North-West Frontier Province. Recent fighting in the region has caused at least 1,200 deaths and the displacement of approximately two million people (UNESCO 2010b, 218). In recent years the Taliban has systematically destroyed hundreds of schools in a "war on schoolchildren" (Allbritton 2009). UNESCO (2010b, 26) has documented hundreds of fire bombings and suicide attacks on schools, particularly in the Swat district in the North-West Frontier Province. From 2007 to March 2009, 116 schools were either damaged or completely destroyed by attacks. The targets of attacks are all schools, although girls' schools are often singled out. Public threats by leading Taliban members of attacks on all girls' schools led to the closure of 900 government and private schools, denying educational access to 120,000 female students (UNESCO 2010b, 27). Furthermore, UNESCO (2010b, 62) has reported increasing recruitments of children from schools for training as suicide bombers. Therefore, there is clear evidence that the education of children in Pakistan has been negatively affected by conflict. The analysis that follows examines educational trends in Pakistan with Demographic and Health Survey data from 2006-07.

Regional and Gender Analysis

The North-West Frontier Province (NWFP) has been particularly affected by conflict, due to its proximity to Jammu and Kashmir as well as Afghanistan. The Pakistan DHS 2006-07 survey report states that the survey did not cover the Federally Administered Tribal Areas, the Federally Administered Northern Areas or the disputed or restricted areas such as Azad Jammu and Kashmir (National Institute of Population Studies and Macro International Inc. 2008, 4). Therefore, the NWFP is the most relevant region for which data are available.

Figure 8.10 compares males who reside in the NWFP with those who live in the rest of the country. The only difference of note between these two groups is the increase in the proportion of non-schooled males from the NWFP who were of school age during the end of the Second Kashmir War and the India-Pakistan war in 1971, and a subsequent decrease after the conflict ended in the late 1970s. However, there does not seem to be much appreciable difference in the trends of these two regional groups during following conflict periods. The slight gap opening between the groups in 2000 is difficult to interpret, as despite the conflict a lower percentage of NWFP cohorts are without formal education, as compared to the rest of the country. It could be that families are prioritizing male education, given the pressure not to send girls to school in the NWFP, or that there are economic or other factors, such as the expansion of violence and insecurity outside the NWFP, which may affect educational levels in the rest of Pakistan.

Figure 8.10: Pakistan - Share of the male population without formal education, NWFP as compared to other regions

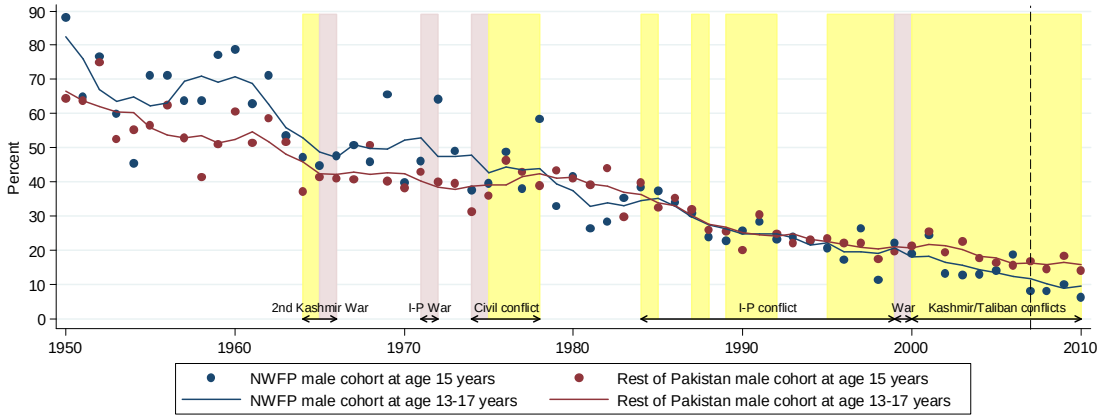
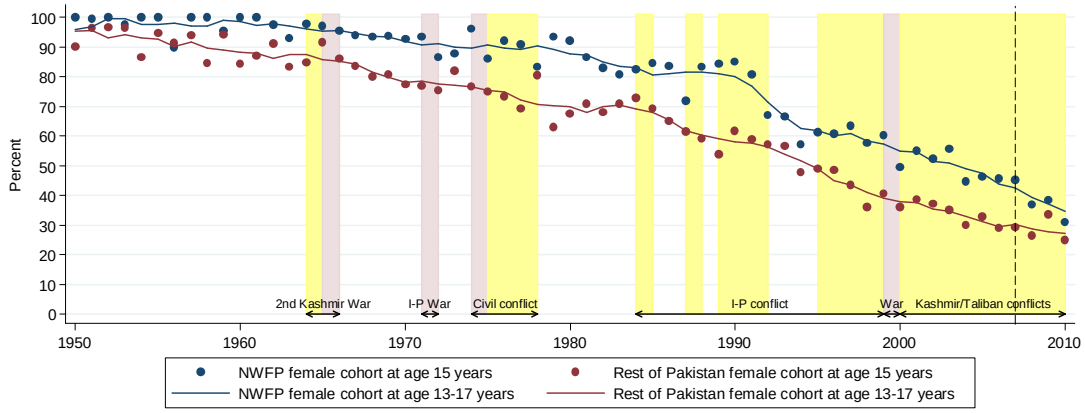


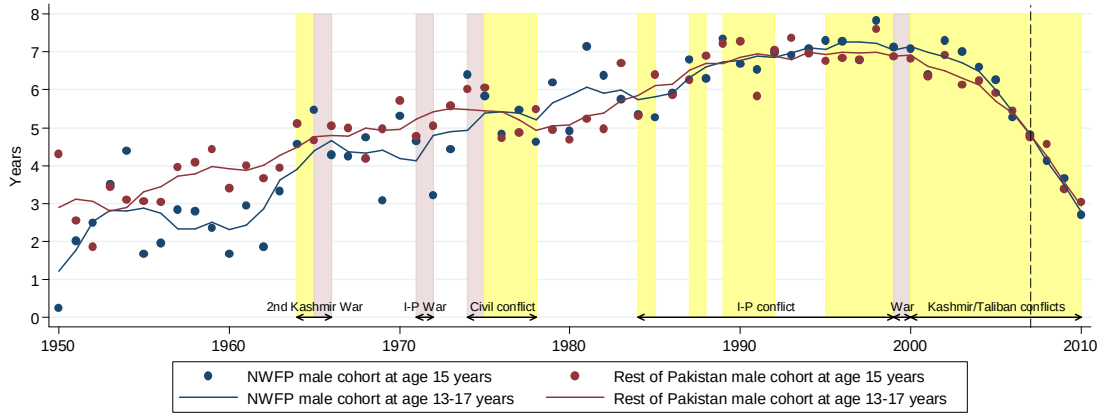
Figure 8.11 provides clear evidence that girls' schooling is negatively affected by conflict in Pakistan. Looking at the overall trends, we see that during periods of conflict there are "bulges" in educational participation rates over time. This means that the share of non-schooled women from the NWFP increased during conflicts and declined after a conflict subsided, while their counterparts in the rest of the country continue the steady trend toward increased formal schooling throughout the conflict. In Figure 8.11, this effect is clearly shown during the civil conflicts in the 1970s, the India-Pakistan tensions throughout the late 1980s to mid 1990s, as well as during the ongoing Kashmiri conflict that began in 1995 and coincided with war in neighbouring Afghanistan.

Figure 8.11: Pakistan - Share of the female population without formal education, NWFP as compared to other regions



Are the same trends reflected in educational attainment for male and female cohorts in the NWFP compared to the rest of Pakistan? Figure 8.12 displays the data for male cohorts. In fact, a negative trend in educational attainment for the war-affected group can be observed during the Second Kashmir War and the India-Pakistan War in 1971. In the period between conflicts in the 1980s, the education of male cohorts from the NWFP increases significantly, outpacing the average attainment levels in the rest of the country for the first time. From the mid-1980s onward, males from all regions of Pakistan experienced an increase in average years of education attained.

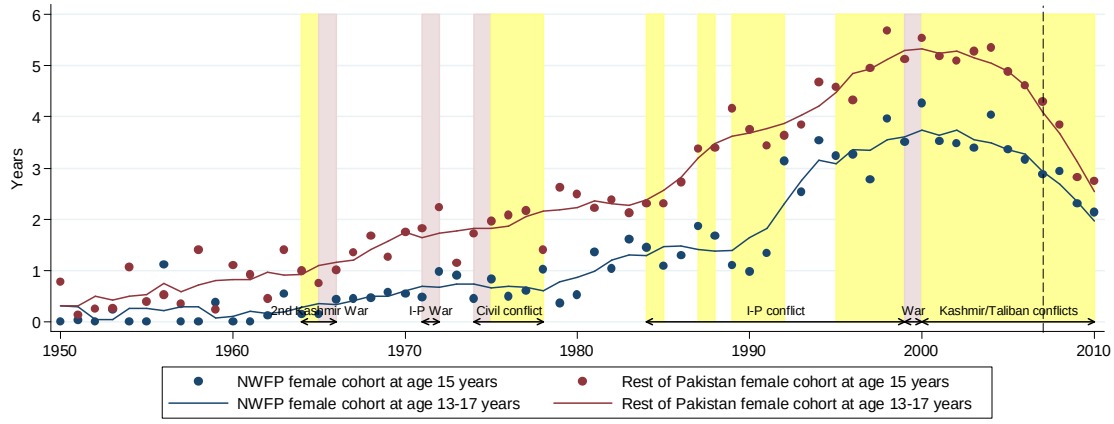
Figure 8.12: Pakistan - Average years of education (males), NWFP as compared to other regions



The legacy of the armed conflict on females of school-going age is significantly clearer, as seen in Figure 8.13. Considering the population residing in the rest of Pakistan, we see that cohorts of school-going age attained slightly less education during the Second Kashmir War, although the five-year average line smoothes out the clear decline, concealing trends for single-year cohorts due to the short duration of the war. In the period following the Second Kashmir War, the average number of years of education

continues to increase, although the rate of increase slows slightly during the two wars in the 1970s and increases again during the Kashmiri conflicts in the mid-1980s onward. Over time, the gap between the two regional groups widens: female cohorts from the NWFP attained on average about half the education of their peers in the rest of the country. Women from NWFP of school-going age during the 1950s and 1960s had almost no formal education; the average education increases to one half year for cohorts of school age during the period between the Second Kashmir War and the India-Pakistan War, and then stagnates again throughout this conflict and the civil conflicts in the 1970s. For cohorts of school-going age during the period that follows, average educational attainment increases once more, and then begins to halt during the renewal of hostilities over Jammu and Kashmir. The period after the conflict in the early 1990s coincides with an increase in attainment that narrows the gap with the rest of Pakistan significantly. However, as expected, the attainment of girls in the conflict-affected region stops increasing during the late 1990s and remains stable at about three and a half years of education until the year of the survey (2006). In sum, female cohorts in the NWFP who were of school-going age during conflict periods consistently exhibit negative effects on educational attainment, suggesting that the conflicts were detrimental to their educational attainment.

Figure 8.13: Pakistan - Average years of education (females), NWFP as compared to other regions



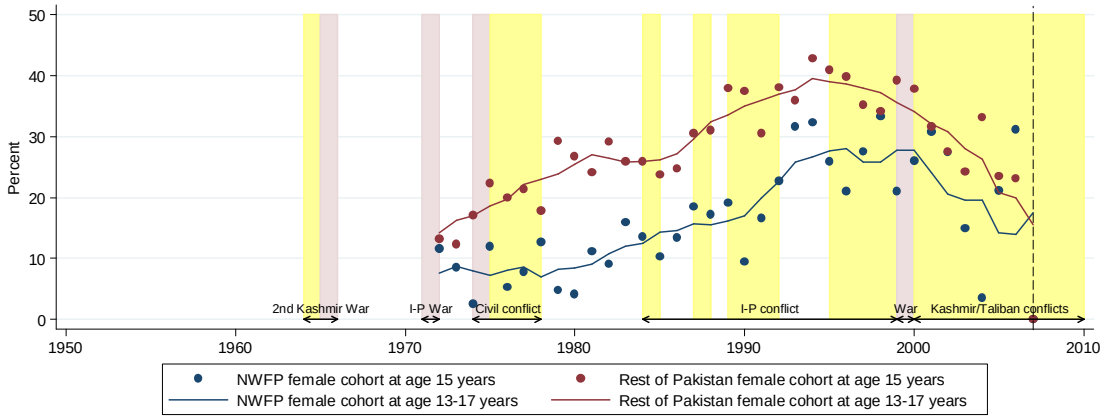
Literacy

Looking at trends in female literacy rates over time reveals another dimension of the negative impact of conflict on education in Pakistan.[8] Figure 8.14 shows how the literacy rate steadily improved in the period before the conflict in the mid nineties, for both North-West Frontier Province female cohorts of school-going age and their counterparts in the rest of the country. However with the renewed outbreak of armed conflict in the late 1990s, the literacy rates of both regional groups consistently decline. In fact, literacy among female cohorts from the rest of Pakistan decreases substantially, almost closing

[8] The Pakistan DHS of 2006-07 did not collect literacy data for men.

the gap with women from the NWFP. The NWFP female cohorts also decrease throughout the conflict period until 2006, the year of the survey data collection.

Figure 8.14: Pakistan - Female literacy rate, NWFP compared to other regions



9. Country analysis: Sub-Saharan Africa

9.1 Burundi

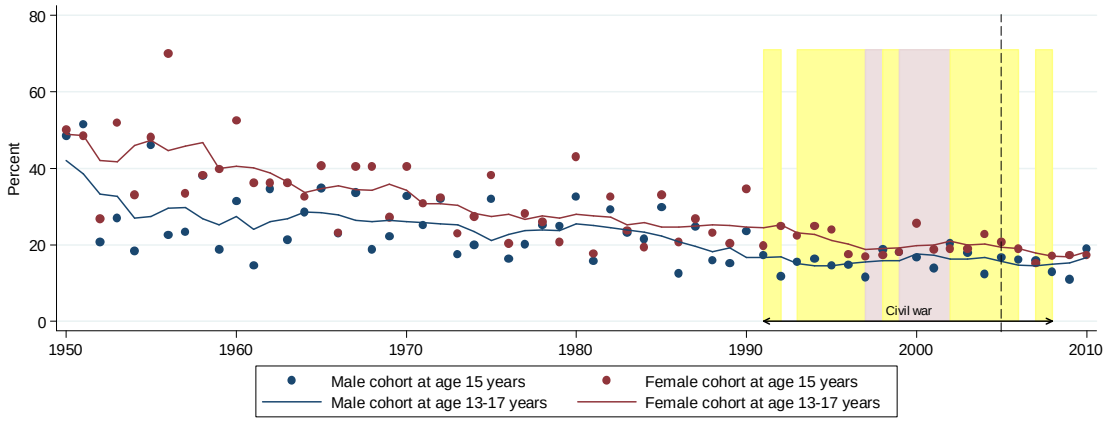
Independent since 1962, Burundi has had five civil wars: the longest-running and most recent of which began in 1993 and continues to the present. Disparities between the Hutus residing in the Bururi region and the rest of the country are a key source of conflict (Collier and Sambanis 2005, 1:35). In terms of education, prior to the outbreak of the 1993 civil war, this region had a nearly universal primary school enrolment (99%), while other regions such as Kayanza, Kirundo and Muyinga have never achieved enrolment levels greater than 60% (Nkurunziza and Ngaruko 2002, 28). Education serves as a gateway to lucrative employment in the public sector, and unequal educational resource distribution is a means for the elite to maintain a privileged position (Nkurunziza and Ngaruko 2002). The conflict has often targeted the educated. Nkurunziza and Ngaruko (2002, 19) note that in 1972 about 18% of the Hutu population died as part of a reprisal for a massacre of Tutsis that had occurred earlier: “almost all educated Hutus with secondary or university education were physically eliminated”. The ongoing civil war has affected the entire country, displacing an estimated 687,000 people and killing 300,000 (Collier and Sambanis 2005, 1:37). To date, no literature exists on the quantitative impact of conflict on educational attainment in Burundi. Nonetheless, scholars have documented the socio-economic consequences of the civil war (Collier and Sambanis 2005, 1:54). The present study looks at the legacy of the ongoing civil using data from a Multiple Indicators Cluster Survey conducted in the country in 2006.

Gender Analysis

The turbulent history of Burundi since independence is reflected in the relatively slow decline in the proportion of the population without formal education since the 1960s. Although for most of the generations of school-going age during the 1970s and 1980s

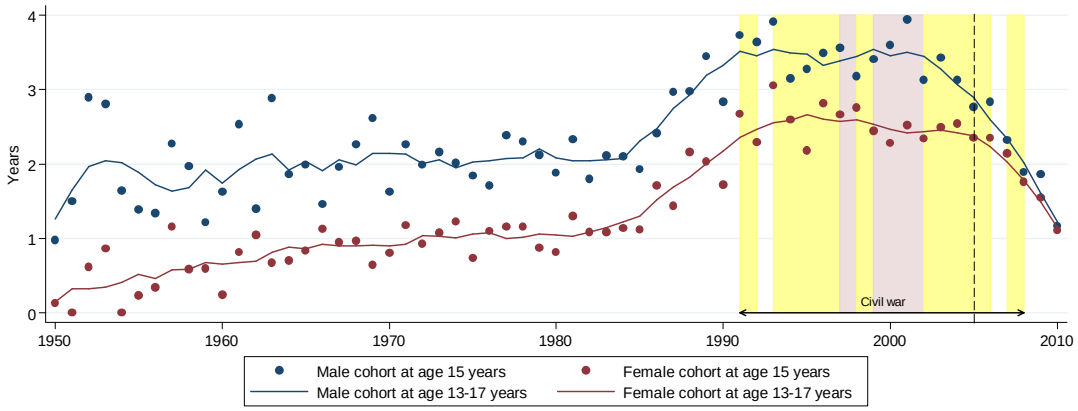
there is not a large gender gap, we see with the onset of the civil war in 1991 and 1993 a widening of the disparity in the share with no formal schooling. Similar to findings in Guatemala and Tajikistan, the schooling of girls during the beginning of the conflict is more affected than that of boys. However, it is interesting to note that the gap begins to close during the war years themselves, by about 2000.

Figure 9.1: Burundi - Share of the population without formal education, by sex



The legacy of the civil war on the educational attainment of the male and female cohorts of school-going age during the war years is much clearer in Figure 9.2. The average values for both male and female cohorts hover around two years and one year, respectively, between the post-independence period and the beginning of the 1980s. Around 1984 the cohorts of school going-age begin to rapidly increase their average educational attainment, reaching about three and a half years for men and just above two years for women by 1991. This dramatic increase in enrolment has also been documented by UIS data as well during this period, and is due to the expansion of primary education which doubled the primary enrolment rate in five years (1982-1987) (UNESCO 1999b, 1; UNICEF 2008b). There is an abrupt change in the increasing trends in educational attainment for female and male cohorts in the early 1990s, coinciding with the onset of the civil war. During the entire period of the conflict, educational attainment ceases to increase for male cohorts, and in fact decreases for girls of school-going age. Table 9.1 shows that in fact male cohort attained on average 0.1 years less education per year throughout the war period.

Figure 9.2: Burundi - Average years of education, by sex



Wealth Analysis

Figure 9.3 compares the educational outcomes of the population in the two poorest and richest quintiles in Burundi, based on their wealth reported in 2006. The period of the civil war in 1991 and 1993 show that the cohorts of school-going age in both socio-economic groups halted in their progress. The educational attainment for the richest cohorts of school-going age between 2000 and 2006 decreases in average years of educational attainment, dropping to 1987 levels by 2006, the year the survey data were collected. In contrast, the bottom quintiles cohort does not substantially decrease in attainment before 2006, remaining at about two years on average throughout this period, as is seen in Table 9.1. If we compare the findings of both the share without formal schooling and the average years of education, we see that similar to other countries in the present study, war and conflict here seems to affect the survival rate, rather than participation in the educational system overall.

Figure 9.3: Burundi - Average years of education, by wealth quintiles

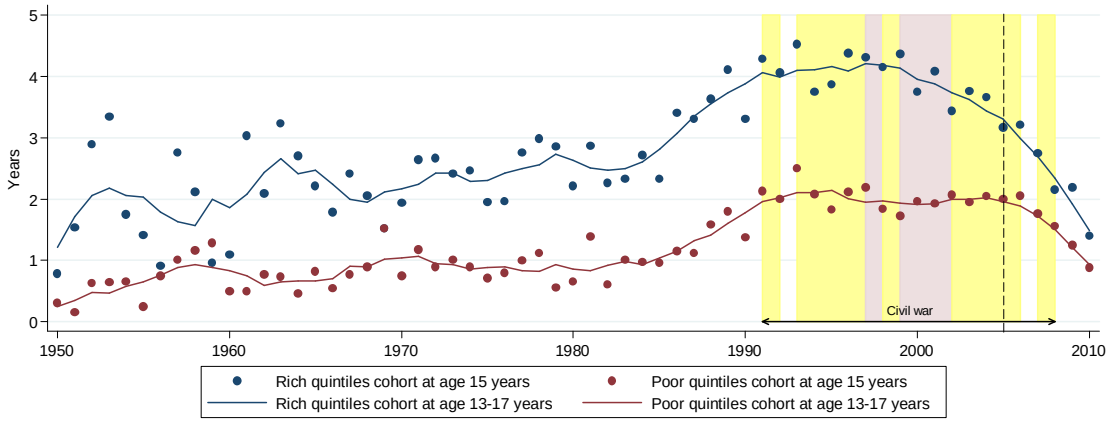


Table 9.1: Burundi - Average change per year in educational attainment, by conflict period

		Time Period	
	Indicator	**Pre-War (1981-1991)**	**Civil War (1991-2006)**
Male	**Average Years of Schooling, with or without Education**	0.06 years	**-0.07 years**
Female	**Average Years of Schooling, with or without Education**	0.05 years	**-0.02 years**
Richest	**Average Years of Schooling, with or without Education**	0.05 years	**-0.08 years**
Poorest	**Average Years of Schooling, with or without Education**	0.00 years	**-0.01 years**

Source: Burundi MICS 2006

9.2 Central African Republic

The Central African Republic is a landlocked country surrounded by Chad, Sudan, the Democratic Republic of the Congo, the Republic of the Congo, Nigeria and Cameroon. It ranks as one of the least developed countries in the world, due in part to conflict and decades of military rule. Mutinies by military officers took place in 1996 and 1997, and in 2001 there was a coup attempt which failed but resulted in several days of fighting between forces representing the President and his challenger (Bureau of African Affairs 2010). Rebel activity in 2006 erupted in the northern part of the country, and has resulted in the death and displacement of many civilians. The UN estimates that fighting in 2007 forced 100,000 people to flee to Chad and Cameroon, and a further 100,000 into the forests of the Central African Republic (IRIN Africa 2009). Unfortunately, the MICS and DHS surveys available at the time of writing did not have sufficiently recent data for the Central African Republic to analyze the impact of this conflict on educational outcomes. The present study uses a MICS conducted in the country in 2000.

Gender Analysis

The recent and localized nature of the conflicts in 1996 and 2000 in the Central African Republic renders analysis of educational outcomes difficult, particularly because the survey was conducted during the 2000 uprisings in the capital city. In Figure 9.4 we see that there is little change in the share of male and female cohorts without formal education during the conflict. Figure 9.5 shows a decline in educational attainment for male and female cohorts of school-going age in the years just preceding and during the conflict, but it is possible that a part of this population was still in school, and thus the average years of education for their cohorts are underestimated.

Figure 9.4: Central African Republic - Share of the population without formal education, by sex

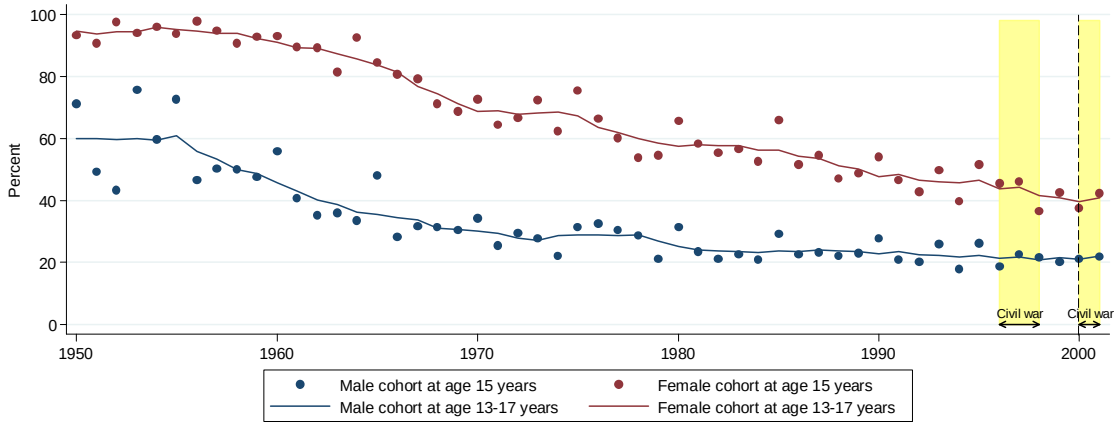
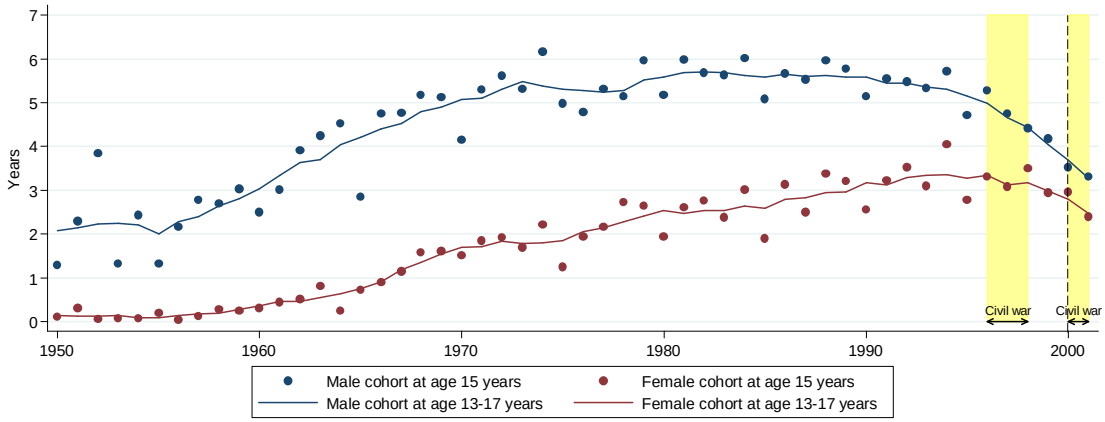


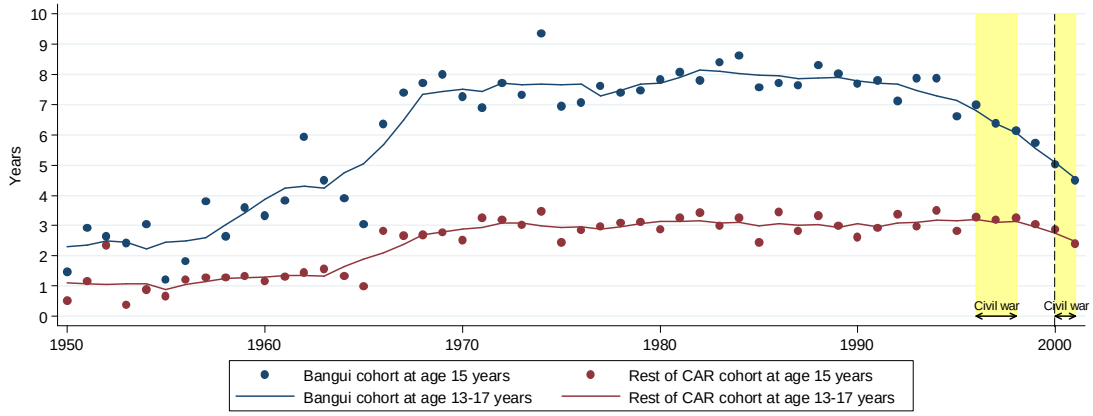
Figure 9.5: Central African Republic - Average years of education, by sex



Regional Analysis

Because the conflicts in question were mainly located in the capital city Bangui, an analysis isolating the population living in Bangui was attempted. In Figure 9.6 we see that the educational attainment of the Bangui population is higher than that of the rest of the country. Similar to Figure 9.5, it is difficult to interpret the decline in average years of education of the Bangui population in the late 1990s.

Figure 9.6: Central African Republic - Average years of education, by region (Bangui)



9.3 Chad

Chad is bordered by many other nations: Libya, Sudan, Nigeria, Central African Republic, Cameroon and Niger; as a result, Chad has been host to internal conflict, foreign intervention and spill over from other wars in the region. The history of conflict in Chad in the 20th century is complex, in large part due to the fractionalization and fluctuation of the main actors. Alliances between rebel groups shift frequently and many have been supported by foreign powers. After Chad gained independence from France in 1960, a group called the National Liberation Front of Chad (FROLINAT) was formed to oust Chad's first president. From the 1970s onward rebel groups formed and broke apart, fighting both each other and the government. During the 1980s, Libya sought to influence Chadian politics, and fought Chad over the Aozou Strip on Chad's northern border. After the Chadian victory, political factionalism continued and a host of rebel groups sought to destabilize the government. In 2005, Chad became increasingly involved with the conflict in Sudan. Conflict has touched all parts of the country, especially as much of the tension is regional in nature (north versus south). It has undoubtedly affected educational infrastructure, teachers and their students. Unlike many other former colonies, Chad did not inherit a substantial school system. Decalo (1980) notes that education was the most neglected sector of French colonial policy in Chad. As of 1958, there were only three secondary schools in the entire country (Decalo 1980, 31). The civil wars in Chad have created an insecure environment that affects teacher and student retention and access to school, and diverts government resources away from education (Collelo 1988). Collelo (1988) notes that there were dramatic examples of the destruction and looting of primary and secondary schools during the war, and even the national university's archives were attacked in 1979 and 1980. Data from a 2003 Demographic and Health Survey will be used to analyze the legacy of conflict on the educational attainment of the Chadian population.

Gender Analysis

Given the scant literature on the impact of war on educational outcomes in Chad, we first explore whether gender is a significant factor in educational attainment during war periods. In Figure 9.7, we see there is a longstanding gender gap in school participation: more than 90% of the female cohorts of school-going age before 1970 had no formal education. Male cohorts show an unsteady but overall decreasing proportion without schooling. However the outbreak of civil war in the late 1970s is linked to an increase in the uneducated share of males of school-going age. In contrast, their female counterparts display a decrease in the same period. After the 1979 war period, the proportion of the population without formal schooling begins to decrease once again. Female cohorts show less improvement over the 1980s and 1990s than male cohorts, opening the gender gap in school participation.

Figure 9.7: Chad - Share of the population without formal education, by sex

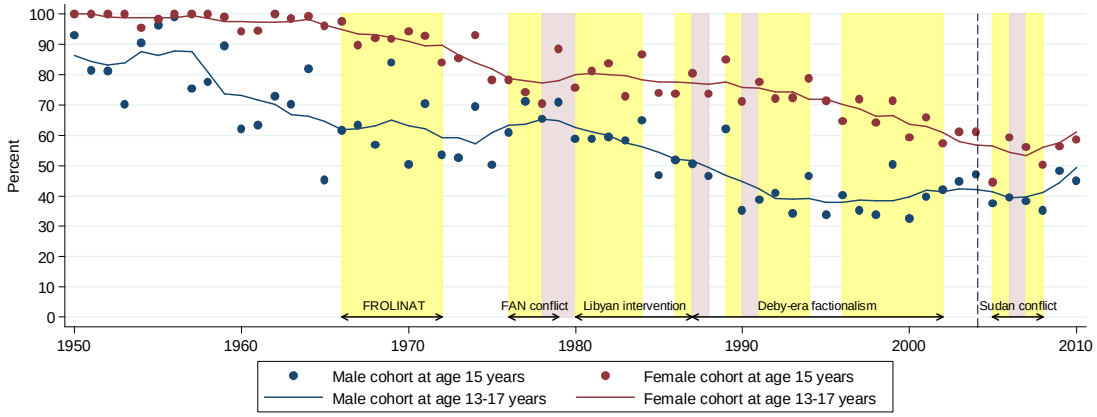
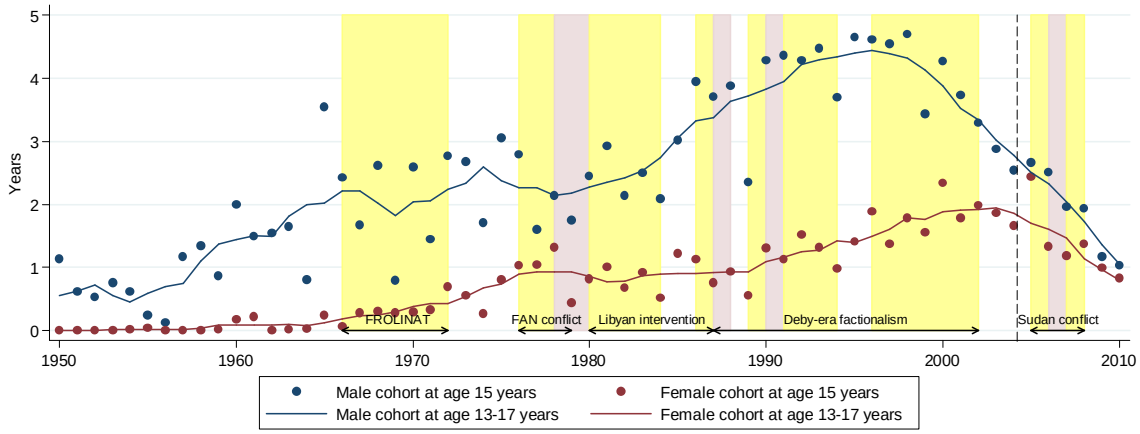


Figure 9.8 presents the average years of education acquired by men and women. While female cohorts rise slowly towards about two years of education by 2003, male cohorts show more variation over time. Once again, we see that the conflict in the late 1970s coincides with a visible change in the educational outcomes of male cohorts. During the late 1970s there is a decrease in the educational attainment of male cohorts by almost half a year. This drop corresponds to the conflict between 1976 and 1984. After this point, the educational achievement of male cohorts continues to increase despite wars in the late 1980s and early 1990s. By the late 1990s male cohorts begin to drop once again in average years of education, despite the fact that the data used in Figure 9.8 is complete until 2003. Overall, it seems that the conflict in the late 1970s coincides with a marked decrease in educational attainment of male cohorts and female cohorts of school-going age during this period.

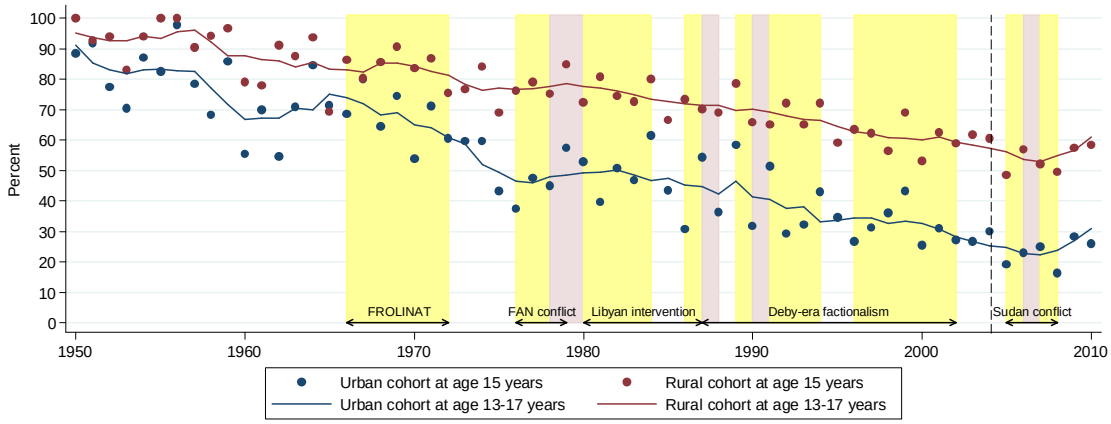
Figure 9.8: Chad - Average years of education, by sex



Residence Analysis

Although internal displacement and the long history of civil war in Chad make the interpretation of regional analysis difficult, disaggregation by rural and urban residence was attempted. The trends that emerge in Figure 9.9 show that the rural population, in general, has slowly but steadily decreased in the share of the population without formal education. There are slight rises for cohorts of school-going ages during the War of Independence and the conflict in the late 1970s. Urban cohorts exhibit much more variation over time. We see a rapid decrease in the share of the population without formal schooling in the pre-conflict period in the mid-1970s, which ceases during the subsequent conflict. After this time, the decreasing trend continues throughout the thirty years that follow. Figure 9.9 is quite similar to Figure 9.7 in terms of overall trends, except the urban cohort does not seem to have been as affected by the 1979 conflict as males overall.

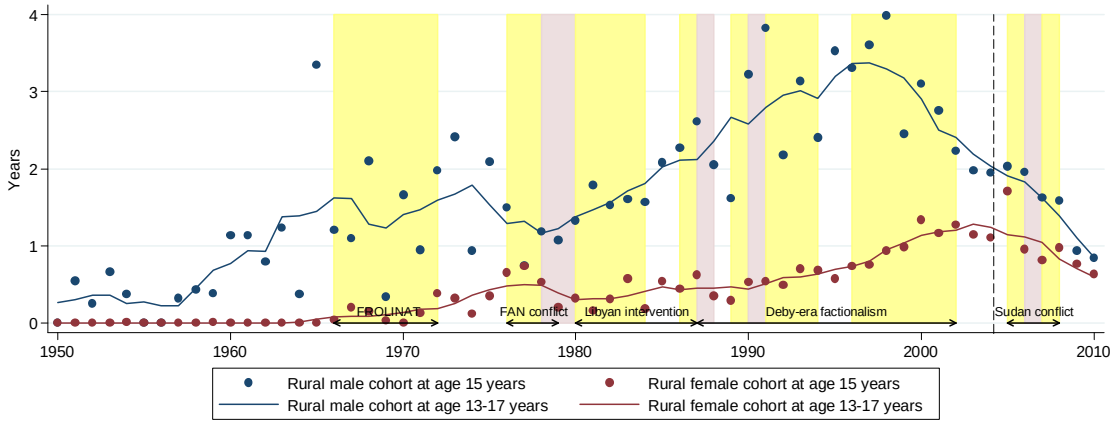
Figure 9.9: Chad - Share of the population without formal education, by residence



Further disaggregation reveals that there is more variation within the rural cohort than shown in Figure 9.9. Looking at the educational attainment of rural male and rural female

cohorts in Chad in Figure 9.10, we see that the period of conflict in the late 1970s does indeed coincide with a visible decrease in educational outcomes for the male cohorts. The line displaying the moving average of the rural male cohort aged 13-17 years shows a decrease in average education by half a year between the mid-1970s and the end of the decade. Given the low levels of attainment for rural males, this represents a drop in average attainment by about 33 percent. The cohort with the lowest levels of attainment during this period coincides with the most intense years of the war (1978-1980). After this point, rural male cohorts begin to acquire more education, reaching a peak of just over three years schooling on average by the late 1990s.

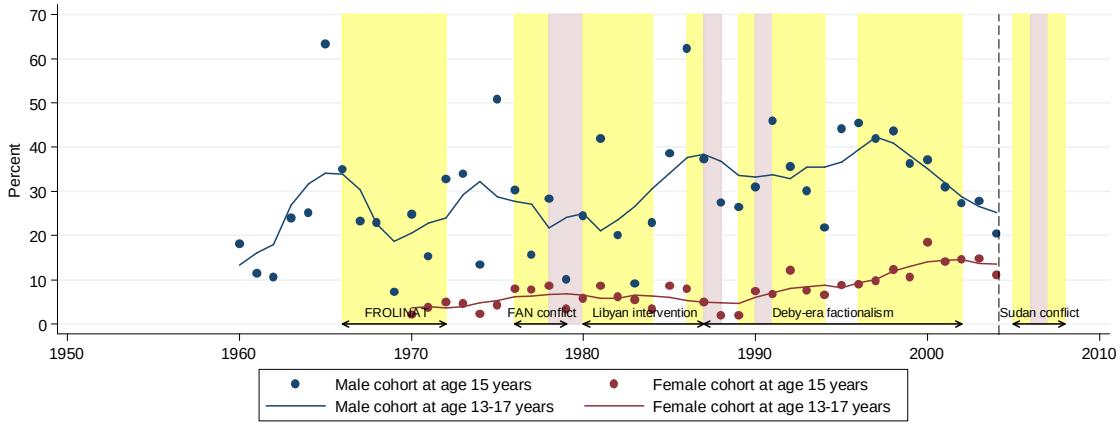
Figure 9.10: Chad - Average years of education, by residence and sex



Literacy

Figure 9.11 presents the literacy rate of the population that was of school-going age during different conflict periods in Chad. Overall, we see that literacy rates for men peak for cohorts of school-going age during or directly after non-conflict periods, and there is a decline in the percentage of literate males during each major conflict. However due to the small size of the male sample, there is significant year-to-year variation before 1990, which makes accurate interpretation of the literacy rates difficult. Nonetheless, it seems that male literacy rates have fluctuated over time, roughly corresponding to the conflict history of Chad. Women, on the other hand, have made hardly any progress, remaining below a literacy rate of 10% until the late 1990s. Among the youngest cohort, about 15% are literate. Due to the significant variance caused by small sample sizes, literacy rates by residence and gender are not shown here.

Figure 9.11: Chad - Literacy rate, by sex



9.4 Congo, Democratic Republic of the

The Democratic Republic of the Congo (DRC) is a resource-rich country that has been plagued by instability throughout its history as an independent nation. The United Nations has declared the latest conflict in the DRC to be “the most deadly humanitarian catastrophe in 60 years” (United Nations Office for the Coordination of Humanitarian Affairs 2006, 6). The UCDP/PRIO database lists five main conflict periods. The first began in the early 1960s and concerned regional conflicts in the eastern provinces of Katanga and South Kasai, as well as the Kwilu rebellion led by the Comité National de Libération (Ndikumana and Emizet 2005, 65). The Shaba wars in 1977 sought to challenge the rule of then-president Mobutu, with the Front pour la Libération Nationale du Congo (FLNC) fighting against the government in 1977 and 1978.

In the late 1990s the Kinshasa government was overthrown by the AFDL (Alliance des Forces Démocratiques pour la Libération du Congo) with support from international forces from Angola, Uganda and Rwanda. The new administration sought to favour previously marginalized ethnic groups such as those from the Katanga province and Congolese of Rwandan descent. Forces mounted against the new President Kabila and this instigated the Second Congolese War from 1998 to 2003, which had a horrific impact on the lives of the Congolese. In 2005, the DRC was again plunged into war, leading to further destruction and displacement of lives in the country. Although the death toll in the DRC has been contested, experts agree that the total is much more than 4 million people (Bell 2006, 2). A further 1.66 million people have been internally displaced, mostly in the eastern part of the country, notably the regions of Kivu and Katanga (United Nations Office for the Coordination of Humanitarian Affairs 2006, 28).

Children are particular targets in the war. UNICEF ranks the DRC as the country with the highest number of children used as soldiers, sexual slaves and labourers (Bell 2006). Schools are no safe haven for children in conflict-affected DRC. Many have been abducted on their way to school by rebel groups to serve as child soldiers, and schools

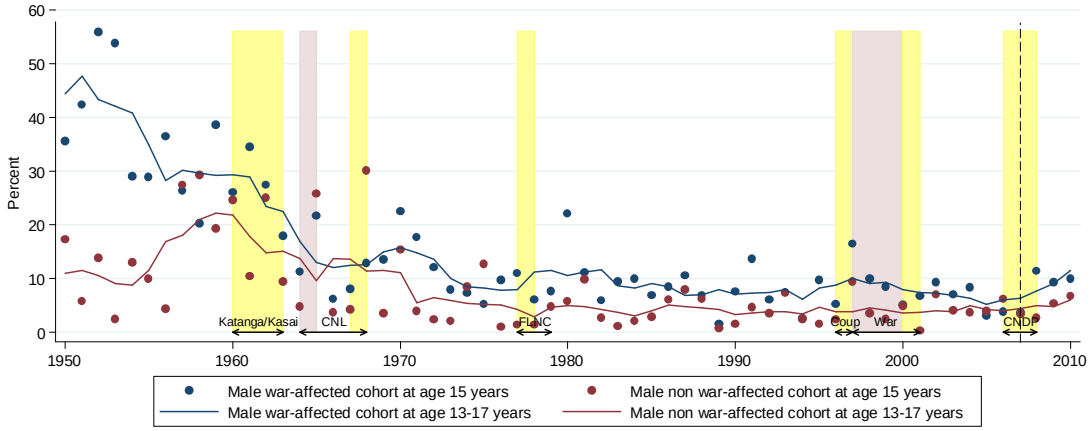
have been ransacked by police and rebels and occupied by the army and the rebel group CNDP (UNESCO 2010b, 61). One of the most tragic aspects of the war is the sexual abuse of women, especially girls. UNESCO reports that rape as a weapon of war is an extremely widespread problem in the country. For example, in 2005 there were 25,000 reported cases of rape in eastern DRC (Bell 2006, 3).

The data for the analysis that follows come from a Demographic and Health Survey conducted in the Democratic Republic of the Congo in 2007.

Regional and Gender Analysis

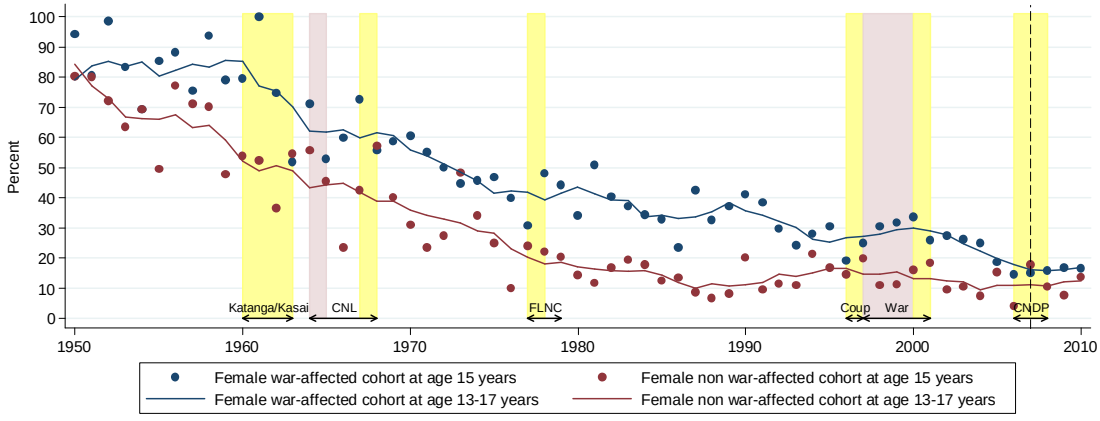
Identifying the regions of the Democratic Republic of the Congo that have been most affected by war is complicated by the large numbers of internally displaced persons as a result of the conflict. Based on data from Ndikumana and Emizet (2005), North and South Kivu, Katanga, Orientale, Kasai Orientale, Maniema and Equateur were the most affected provinces in recent conflicts. By contrast, Bas-Congo, Kinshasa, Bandundu and Kasai Occidental were considered to be less affected by conflict. Given that gender is such an important dimension in the DRC conflict, Figure 9.12 compares the regional differences in the proportion of the male population that does not have any formal schooling. The legacy of the conflicts and instability in these regions emerges from the data. The proportion of males without formal schooling is relatively low, indicating that most males (about 90% since 1970) receive at least one year of formal education. Nonetheless, there are distinct increases in the proportion of males with no formal schooling for cohorts of school going age around the conflict periods. While it seems that all residents of the Democratic Republic of the Congo who were of school age in the 1960s were affected by the conflict, access to education improves in less-affected regions over the 1960s. The trend deteriorates for male cohorts from war-affected region around 1970, directly after the end of the last conflict in the 1960s. Again, coinciding with the conflict in the late 1970s, which affected Katanga in particular, there is an increase in the share of males with no education. This decreases once the conflict subsides, only to increase once more for cohorts of school-going age during the period of the Congo War in the late 1990s.

Figure 9.12: Democratic Republic of the Congo - Share of the male population without formal education, by region



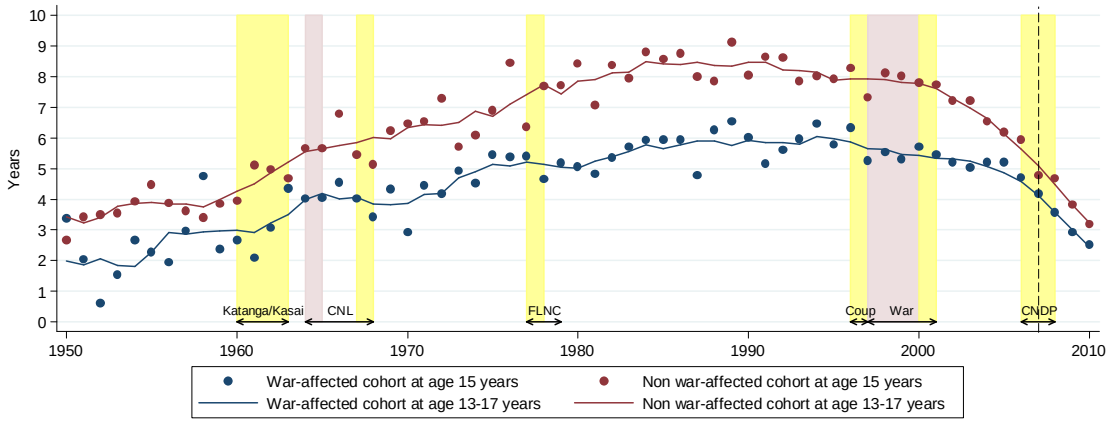
Given the reports of gender-based violence in the DRC, it is no surprise to see that conflict affected the educational participation of girls. Figure 9.13 shows that the cohorts of women in conflict affected areas have a much lower rate of participation in formal schooling than cohorts from less affected regions. The regional gap is larger for women than for men. During the conflict periods in the 1960s we see periodic increases in the share of girls without formal education for the conflict affected regions, especially for single-year cohorts, while the rest of the DRC has a relatively steady downward trend. During the period between conflicts, the proportion without formal schooling decreases for both groups, affected and not affected. However, the values for conflict-affected regions again increase at the onset of the FLNC conflict and fluctuation in the trend continues over time, perhaps partly due to instability in neighbouring countries such as Burundi and Rwanda. There is a marked increase in the share without formal schooling for girls of school-going age during the period of the Congo War in the late 1990s. In the post-conflict stage, the trend decreases once again.

Figure 9.13: Democratic Republic of the Congo - Share of the female population without formal education, by region



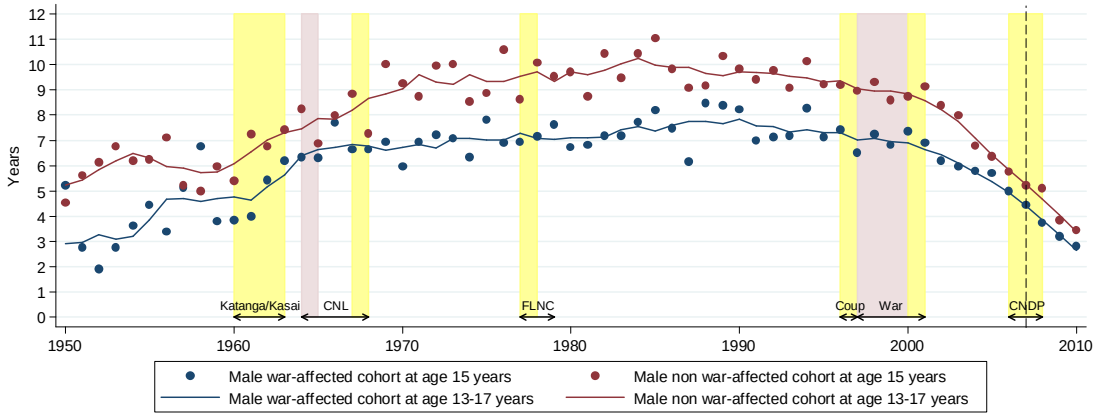
Educational attainment shows the regional and gender dimension of the conflict more clearly. Figure 9.14 presents the average years of education, disaggregated by region. There is some divergence in the trends during conflict periods, where the gap between the regions grows, during the 1960s, the late 1970s and slightly in the late 1990s war.

Figure 9.14: Democratic Republic of the Congo- Average years of education, by region



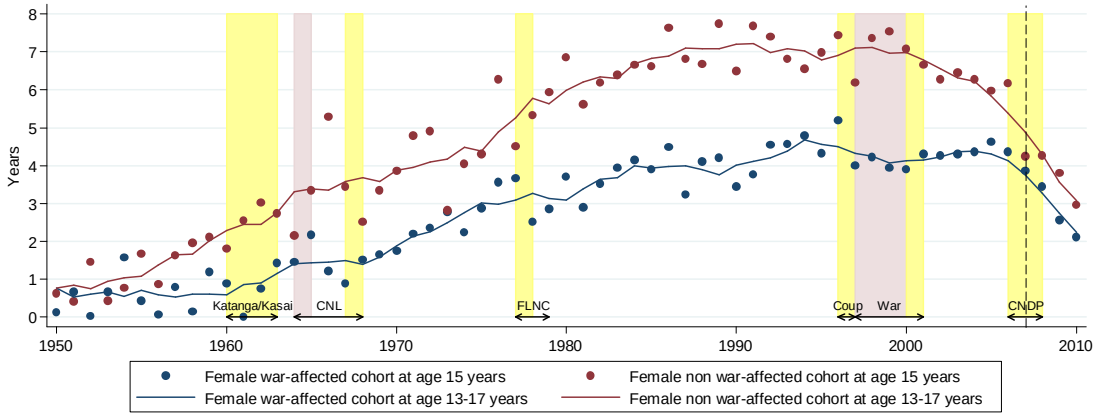
However, disaggregation by gender reveals how the educational attainment of girls and boys are affected differently during the conflict. Analysis of the trends of male cohorts in the two regions shows that the conflict did not have much visible impact on educational attainment (see Figure 9.15). Both groups see a fall or stagnation in average years of education in the late 1950s. The average years of education increase to about 8 years for the less war-affected regions and 7 years for the war-affected regions by the mid- to late 1970s. At this point there is a clear shift in the trends, as the educational attainment of those in conflict-affected regions holds constant, while that of cohorts in non-war affected regions continues to increase, thus widening the gap. The trends of both male regional cohorts show a decrease in the average years of education during the 1990s and by the end of the Congo War period in 2001, the levels for both groups reflect those of the 1970s or 1980s.

Figure 9.15: Democratic Republic of the Congo - Average years of education (males), by region



In contrast to the trends for men, Figure 9.16 shows that the educational attainment of women is more negatively affected during conflict periods. The non-war affected group shows a steady upward trend in the average number of years of education. For women in the conflict-affected regions, educational attainment vacillates much more. During the uprisings in the 1960s a gap emerges in educational attainment between the two female regional cohorts, there is stagnation in attainment during the 1960s conflict period, with a slight rise and then subsequent stagnation of educational attainment. The non war-affected regions outpace the small gains of the other regional female cohorts during the 1960s. In the post-conflict period the war-affected regional cohorts begin to close the gap with the rest of the DRC, only to be interrupted by the FLNC conflict. Throughout the 1980s and early 1990s, the attainment of cohorts from the previously war-affected regions increases, and decreases again at the onset of the Congo war in the late 1990s. Given the violence visited upon many girls during this conflict, it is no surprise that girls of school-going age are not acquiring as many years of schooling as in the pre-conflict period. Given that the data used for this analysis is from 2007, the decreases during the war period in the late 1990s are most likely not due to the fact that these cohorts are still in school. Therefore the data show a very significant legacy of conflict on the educational attainment of girls in the Democratic Republic of the Congo.

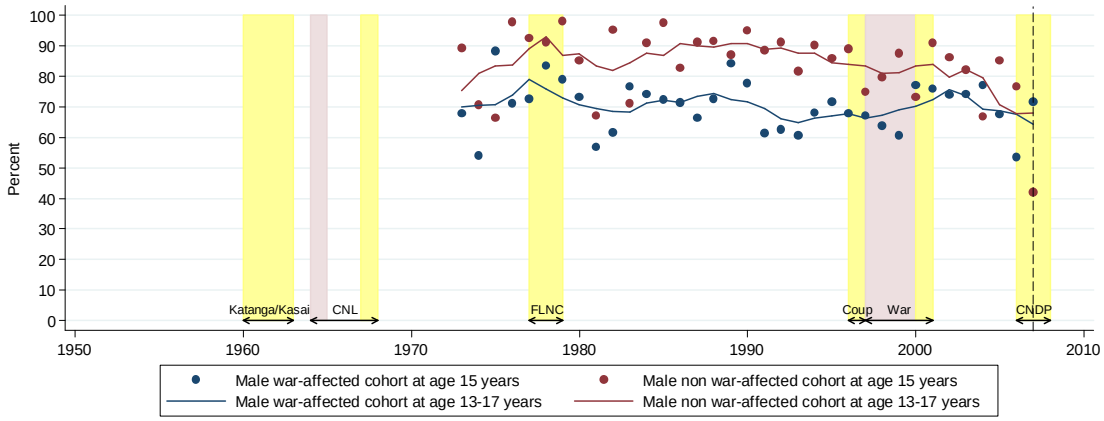
Figure 9.16: Congo, Democratic Republic of the - Average years of education (females), by region



Literacy

It is not surprising that literacy rates have also been negatively affected by conflict in the country. Figure 9.17 compares the percentage of literate males in war-affected and less war-affected regions. It is clear that there is a regional gap in literacy levels that has persisted over time. The war in the late 1990s coincides with a drop in literacy levels for war-affected male cohorts of school-going age. In the post-conflict period, we see an increase in literacy to almost 1980 levels. In the less affected male group, the trend is more stable throughout the war period.

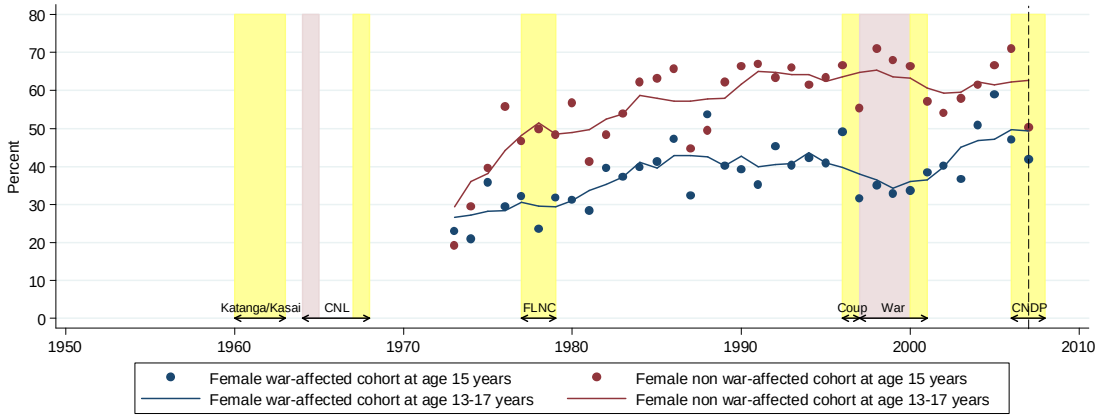
Figure 9.17: Congo, Democratic Republic of the - Male literacy rate, by region



The devastating effect war has had on women in the Democratic Republic of the Congo is also reflected in Figure 9.18, which compares the literacy rates of women in war-affected regions and the rest of the country. During the two conflict periods for which there is literacy data, we see a widening of the regional disparity in women's literacy rates. This is mainly attributable to the decrease in literacy rates for women in conflict-affected regions, during both the FLNC conflict and the Congo war. The decline in literacy levels is most evident in the Congo war period, when the percentage of women

in war-affected regions falls by about ten percentage points. In the post-conflict period, the literacy rates for these women of school-going age rise considerably, narrowing the gap once again. The trends evident in Figure 9.18 echo the negative effect of conflict on access to schooling and educational attainment of females.

Figure 9.18: Congo, Democratic Republic of the - Female literacy rate, by region



9.5 Congo, Republic of the

The Republic of the Congo's economic and political environment deteriorated into civil war in 1997. The conflict directly killed at least 12,000 people, displaced 860,000 and caused widespread looting and rape of civilians. An estimated 35% of the country's population in 1998 was forced to leave their homes due to the conflict (Englebert and Ron 2004, 62). The World Bank has reported that the war has had a devastating impact on the country. Entire provinces lack clean drinking water and the poverty rate peaked at 70% of the population in the immediate post-conflict period (World Bank 2009). In terms of regional impact, the war had disastrous effects on Brazzaville, as well as the South, most notably the Pool region (Kilokila-Kiampassi 2005). The displacement and conflict in other regions pose challenges for regional analysis.

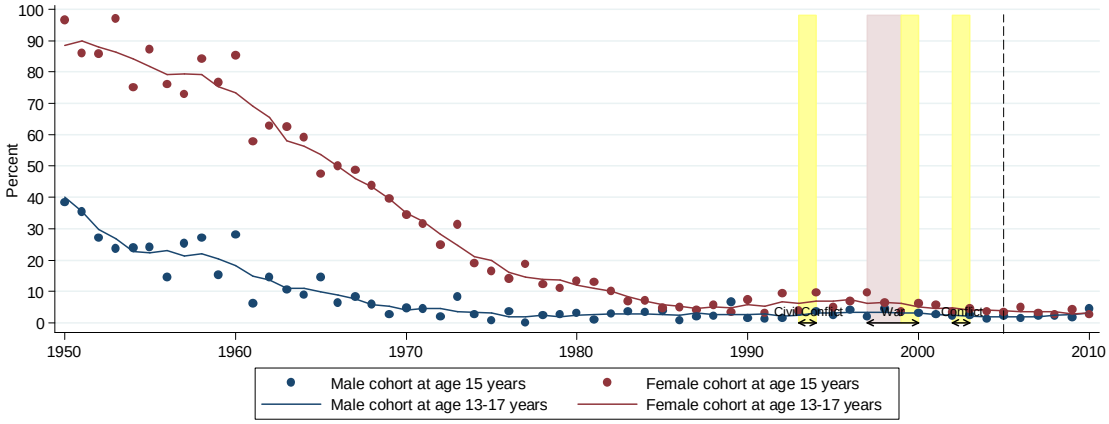
There have been widespread negative effects of the conflict on children. Over 5,000 child soldiers took part in the hostilities, and 11% of children under the age of 15 are orphans (Englebert and Ron 2004, 62). The primary enrolment rate fell almost 50 percentage points from 1990 to 2000, with only 40 % of children enrolled in primary education in 2000 (World Bank 2009). More recently, UNICEF (2009) has stated that the country is on track to meet the Millennium Development goal of universal primary education, despite the fact that at the present time one-third of students who begin primary schooling do not complete it. This analysis of the Republic of the Congo uses Demographic and Health Survey data from 2005.

Gender Analysis

Given the data reported above by the World Bank on the primary enrolment rate, it is important to see whether this is reflected in the proportion of children of school-going

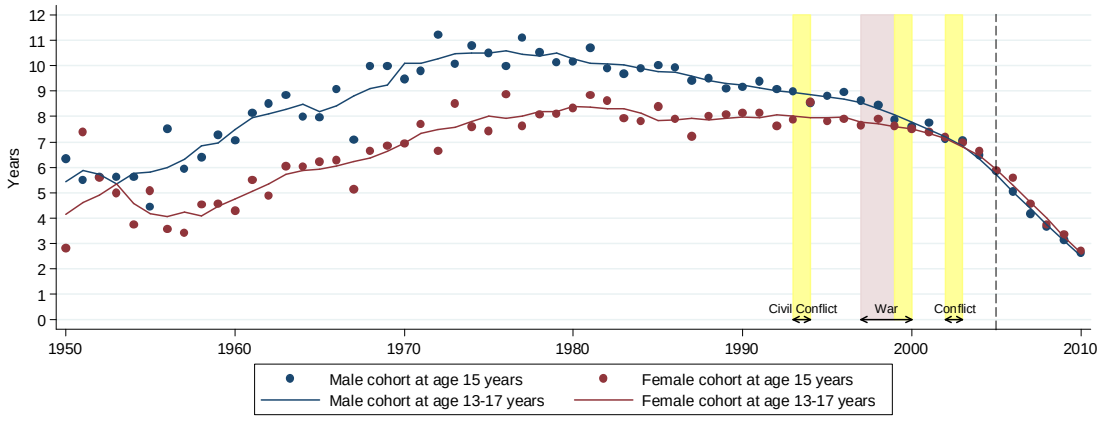
age who received no formal schooling. From Figure 9.19, we see that the period 1990-2000 has a slight rise in the proportion of no formal education for female cohorts who were of school going age during the conflict. However, this proportion does not rise above 10%. The data suggests that the drop in the primary enrolment rate may not be explained by an increase in children who do not attend school at all, as almost all completed at least one year of formal schooling. The trend may therefore be explained by drop outs.

Figure 9.19: Republic of the Congo - Share of the population without formal education, by sex



The high rates of participation in formal schooling in the Republic of the Congo mean that it is useful to examine trends in the population with any formal schooling, as in Figure 9.20. Looking at the trends over time in the educational attainment of boys and girls going to school during the conflict periods, we see that there is no significant negative effect visible for either gender. The declining trend for males begins much before the conflict period, around 1980. Women as well experience no increase over time in educational attainment after the mid 1980s. The data from this survey were collected in 2005, so it is possible that for the cohorts in 2003-2005 part of the declining trend comes from uncompleted education. In all, the data do not reveal any visible legacy of the conflict period on educational attainment on both genders; rather, it seems that both groups reflected the pre-conflict trends in schooling. A trend may indeed emerge with more recent data that could adequately measure the educational outcomes of these post-conflict cohorts.

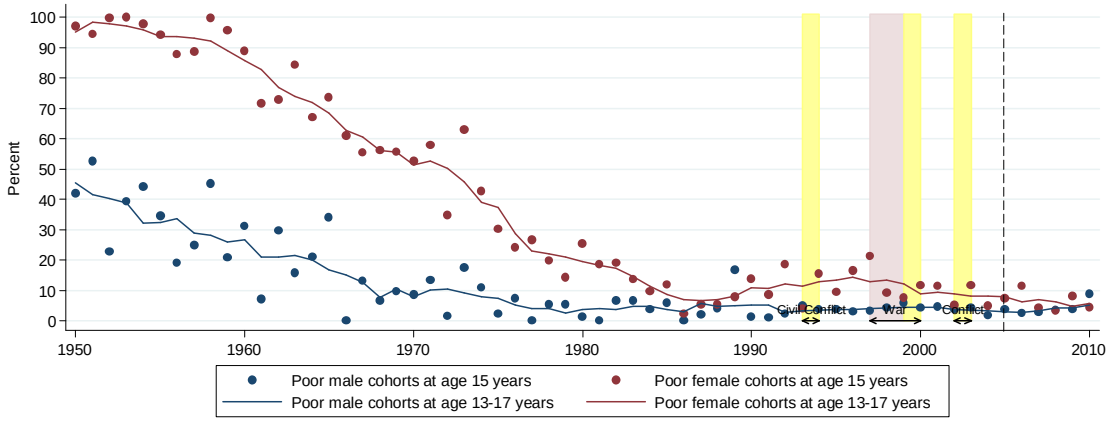
Figure 9.20: Republic of the Congo - Average years of education (only those with any formal schooling), by sex



Wealth Quintile Analysis

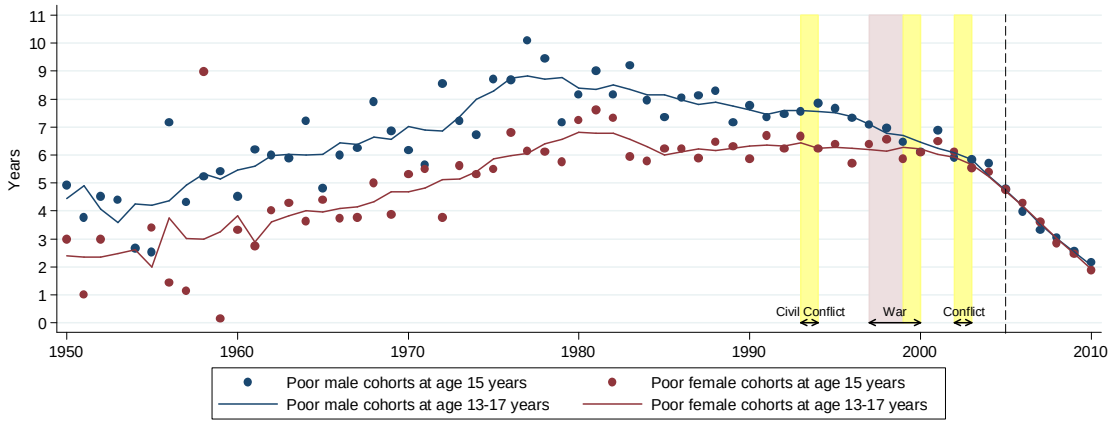
While gender alone did not emerge as an important dimension of the conflict in Figures 9.19 and 9.20, disaggregating further by wealth quintiles portrays a very different story. In Figure 9.21, we see a wide but narrowing gap between the share of females and males in the two poorest wealth quintiles without formal education, with the gap almost completely closing by the mid-1980s. However, during the conflict period we see that the share of females in the poorest wealth quintiles without any formal schooling increases significantly to about 15%. The situation of female cohorts improves as the conflict intensity decreases, returning to pre-conflict levels by 2000. Throughout the conflict period, male cohorts in the poorest quintiles remain below 10% without any formal education. Therefore, when disaggregating further by wealth, we see a marked difference between girls and boys during the conflict period. It seems that girls of school-going age during this period were kept out of school, whether for security or economic reasons.

Figure 9.21: Republic of the Congo - Share of the population without formal education, by wealth quintile and sex



It is clear from Figure 9.21 that the conflict period in the Republic of the Congo coincided with a dramatic increase in the proportion of poor women of school-going age. We now turn to an analysis of those with at least one year of education. In Figure 9.22 we can see that the educational attainment of poor boys of school-going age has been negatively affected during the conflict period. Although attainment among this group had been in decline since the 1980s, around 1991 we see a slight increase in the average years of education, which subsequently fall by almost a year during the civil war period. Turning to the attainment of the poor female population, since the mid-1980s attainment has held steady at about six years of education, even through the conflict period. Therefore, it seems that in this case the war affected the participation of poor females of school-going age in formal education, and the educational attainment of poor males.

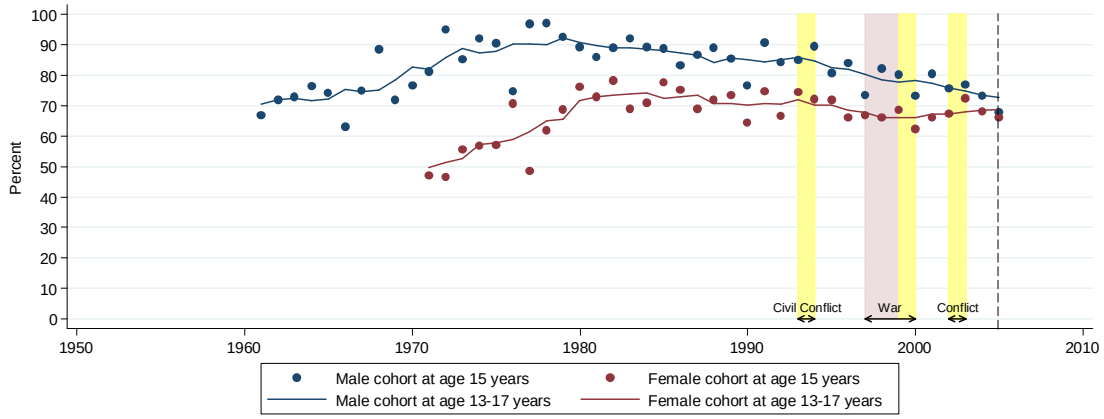
Figure 9.22: Republic of the Congo - Average years of education (only those with any formal schooling), by wealth quintile and sex



Literacy

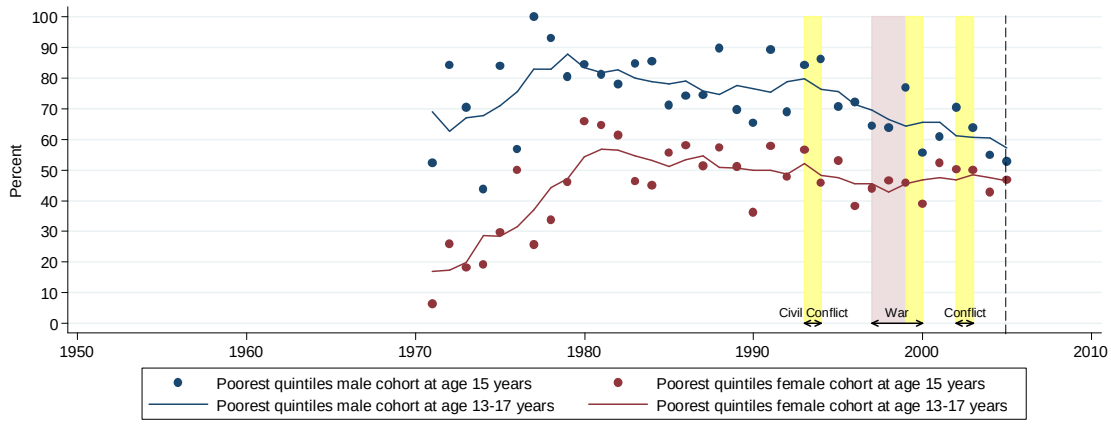
Figure 9.23 presents the literacy rates of males and females by cohort. The depicted trends look very similar to those in Figure 9.20, which focused on educational attainment for males and females in Congo. There is little visible differentiation of the literacy rate during the conflict period for males and females. It is apparent that there is an ongoing decline in the share of the population that is literate and this decline persists and slightly accelerates during the conflict period. Unfortunately, there are no literacy data after 2005 which could suggest the trends in the post-conflict period.

Figure 9.23: Republic of the Congo- Literacy rate of the population, by sex



The literacy rate in the Republic of the Congo also declined for certain groups throughout the conflict periods. Figure 9.24 shows the percentage of male and female cohorts in the poorest two quintiles which are literate. The decline in educational attainment for cohorts of school-going age that began in the 1980s is also reflected in the trend of the literacy rate. There is a visible decline during the conflict periods in the 1990s. The literacy rates for both poor male and female cohorts of school-going age decrease throughout the period. In contrast to Figure 9.21, which shows that the participation rate of poor girls was more affected during the conflict period than the participation rate of boys, Figure 9.24 shows that poor boys exhibit a steeper fall in literacy rates. The five-year average line shows a decline from about 80% literate at the onset of the conflict to less than 50% by the time the survey was conducted in 2005. The female cohorts, on the other hand, do not decline after the most intense war years, and stabilize at approximate 50% literacy rate. This is reflected in the narrowing of the gender gap in literacy, due mostly to the fall in the share of the poor male population that is literate.

Figure 9.24: Republic of the Congo - Literacy rate of the population, by sex and wealth quintile



9.6 Côte d'Ivoire

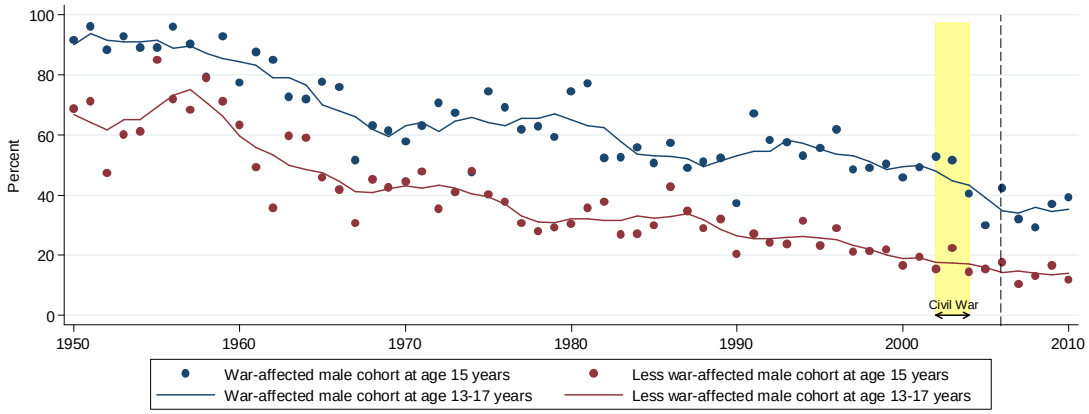
Despite the existence of some ethnic tension, Côte d'Ivoire has been relatively stable since independence. However civil war erupted in 2002, after a military coup and a failed reconciliation between opposing forces. The war (2002 to 2004 according to the UCDP/PRIO database) killed approximately 3,000 people and displaced 700,000, roughly partitioning the country into the rebel-controlled north and the government controlled south (World Bank 2010). This conflict had a significant impact on education: the World Bank (2010) reports that during the height of conflict the number of children out of school was estimated at over 500,000. UNICEF has also reported on widespread interruption of classes due to the continuation of the conflict. In 2005 throughout the northern region there were approximately 72,000 children who were unable to write their exams. Schools in the north also significantly delayed the beginning of the 2005 school year, affecting thousands of children (UNICEF 2005).

The data used for the analysis in this section come from a 2006 Multiple Indicator Cluster Survey, which states in the official survey report that the north and west part of the country remained under rebel control during data collection (Institut National de la Statistique (INS) [Côte d'Ivoire] 2007, 12). Therefore, the data presented here were collected during a conflict period and may not show the full effects of the war, as the cohorts of school-going age during the conflict had not yet gone through the full war period and may continue their education after the conflict.

Regional and Gender Analysis

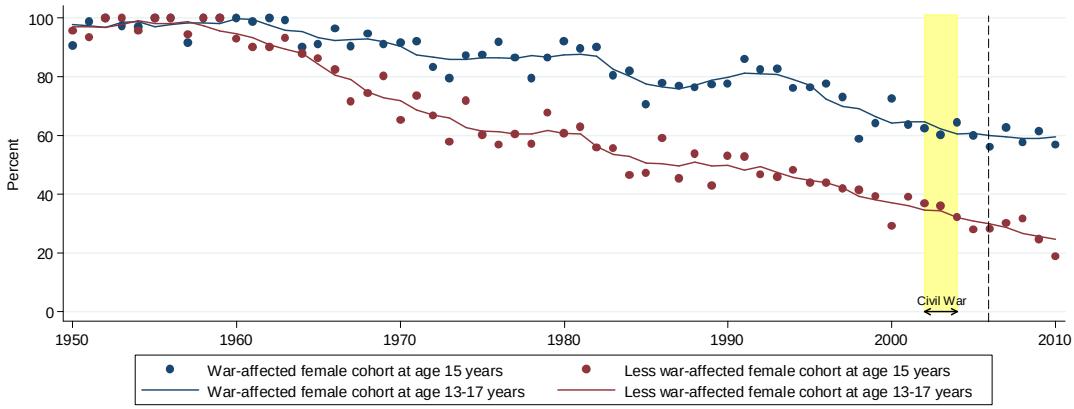
Analyzing the effects of an ongoing conflict presents challenges for interpretation. In the pre-conflict period, there is fluctuation in the proportion of males without formal education in the two regions which can not be attributed to internal conflict. Looking at the conflict period in Figure 9.25, we see that there is an increase in the uneducated proportion of male cohorts in war-affected regions. This falls by around 10 percentage points after the conflict period. Comparing this trend to that of the centre-south regions of Côte d'Ivoire that were government controlled (the less war-affected regions), we see that overall there is little change during the conflict period for this group.

Figure 9.25: Côte d'Ivoire - Share of the male population without formal education, by region



Turning to the female cohorts in Figure 9.26, we see that the percentage of females without formal education stagnates for those in war-affected areas during and after the conflict period. This is in striking contrast to the continued gradual improvement in the rest of the country throughout the pre-conflict, conflict, and post-conflict period, expressed by a decline in the share of women without formal education. The conflict period thus perpetuates the pre-existing disparity between girls in the northern and western parts of Côte d'Ivoire and the rest of the country.

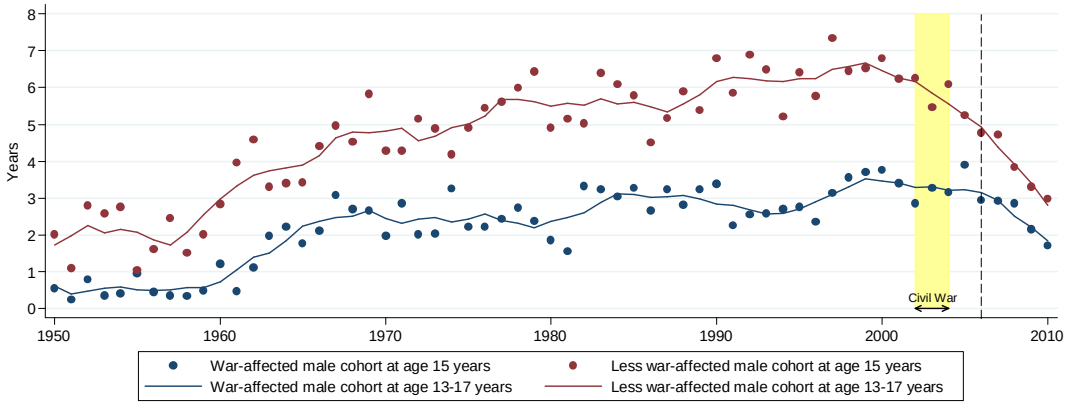
Figure 9.26: Côte d'Ivoire - Share of the female population without formal education, by region



Given the well-documented interruptions in schooling in rebel-controlled areas due to the conflict, it is expected that there will be a negative effect on the average years of education attained by cohorts going to school during the conflict. In Figure 9.27 we see that indeed, during the conflict period, there is stagnation and a slight decrease in the educational attainment of males in war-affected regions. However, there is also a significant decline for males in the centre-south regions, perhaps due to the fact that residents of these regions generally achieve higher levels of education and the cohorts

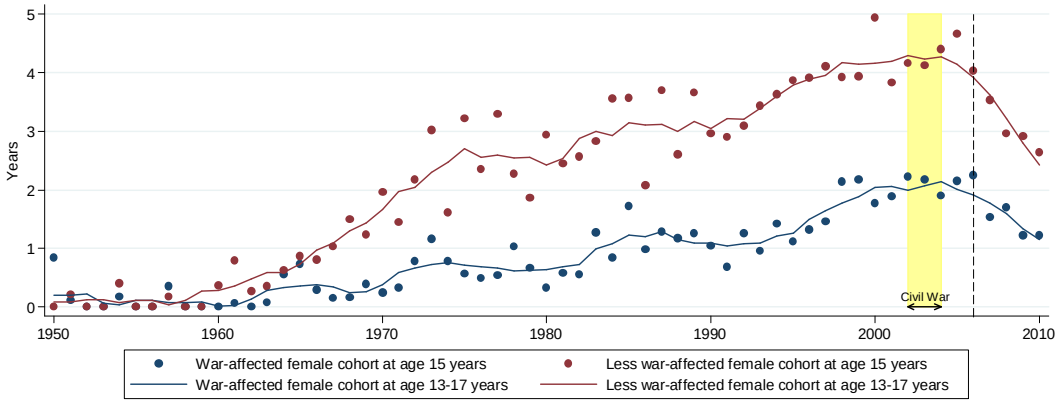
in question were still in school at the time the data were collected. The MICS 2006 data show indeed that many students aged 17 to 20 years were still in school, partly due to delayed entry into the education system, which is common in many countries in Sub-Saharan Africa. Yet, the conflict may also decrease participation in secondary school for males, as work and military opportunities may prompt boys to leave school after primary. Therefore it is difficult to determine from the data what is driving this decline.

Figure 9.27: Côte d'Ivoire - Average years of education (males), by region



There is a similar regional disparity in educational achievement for women in the country, as seen in Figure 9.28. Girls of school-going age in conflict-affected and less affected regions show a flattening of the upward trend in the average number of years of schooling during the civil war period. Educational attainment of women in rebel-controlled areas was historically quite low, reaching a peak of only two years on average by the pre-conflict period. The average educational attainment of all female cohorts in Côte d'Ivoire falls after the conflict, but the decline is more likely due to the timing of the data collection rather than to the conflict itself.

Figure 9.28: Côte d'Ivoire - Average years of education (females), by region



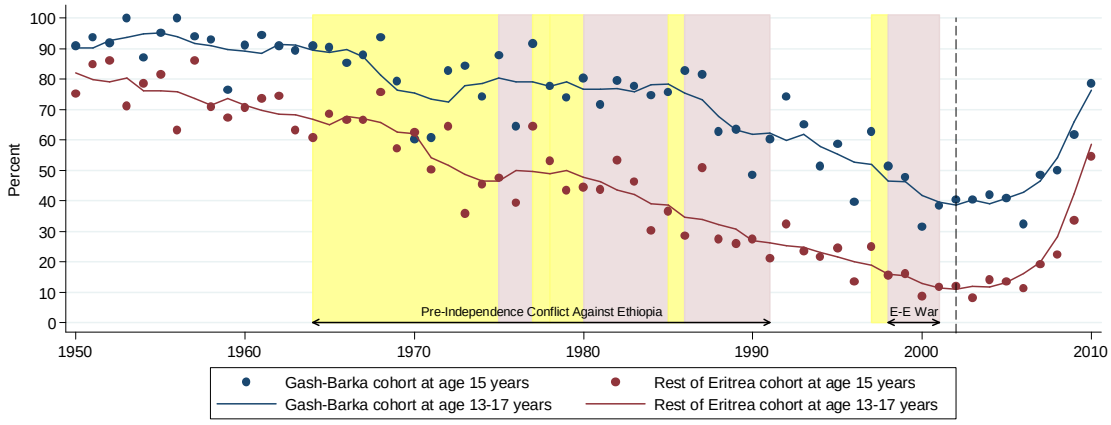
9.7 Eritrea

Eritrea emerged as an independent country in 1993, after a 30 year separatist war against Ethiopia. Eritrea faced major challenges upon becoming independent. Ethiopian policies and successive droughts left the new country in a dismal state and the nation had to "start from scratch" in building up its infrastructure (Eritrea Ministry of Education 1999). Rena (2008, 3) notes that in 1991 the newly independent country had only 190 schools, 84% of which were in "serious disrepair". After independence the country prioritized education, implementing major reforms at all levels and expanding the number of schools to 1,100 by 2005 (Rena 2008, 3). In 1998, Ethiopia and Eritrea became embroiled in a border war, affecting the Gash-Barka region of Eritrea in particular. By the time it ended in 2000, the war between two of the world's poorest countries had resulted in 50,000 battle-related deaths (Lacina and Gleditsch 2005, 155). Other scholars have estimated that the total number of people wounded or killed during the war may be 100,000, with over 600,000 people displaced as a result of the conflict (Steves 2003, 11). The Eritrea Ministry of Education (1999) reports that despite the ongoing war, educational expenditure did not decline significantly over the conflict period. However Rena (2008, 7) reports that the war closed down many schools and damaged school infrastructure in the border areas with Ethiopia. There is scant information in the literature regarding educational outcomes during the war in Eritrea. The data for the analysis that follows were collected with a Demographic and Health Survey in 2002, two years after the end of the border war.

Regional Analysis

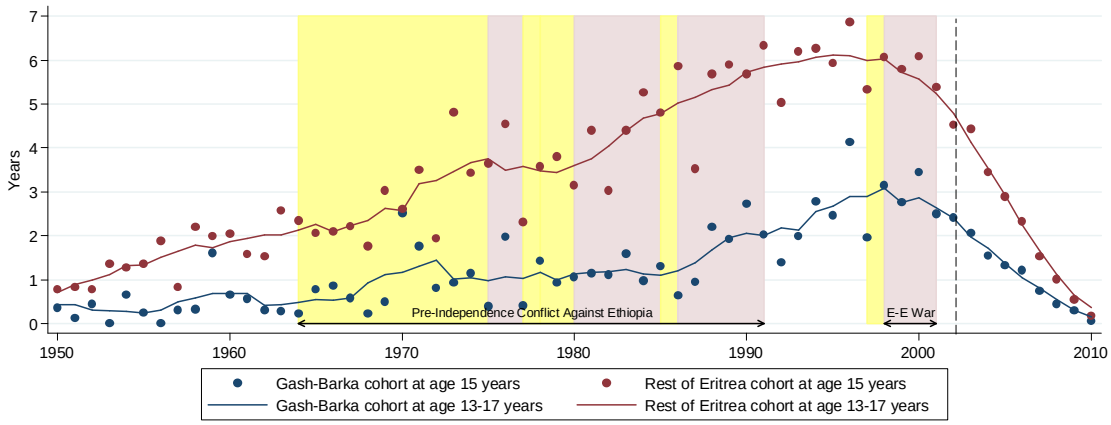
Although Eritrea became independent in 1993, it is possible to track the educational attainment of its residents before this time, when they were part of Ethiopia. The Gash-Barka region of Eritrea has been one of the hardest hit by the Ethiopian-Eritrean war of 1998-2000. In Figure 9.29, there is a persistent gap in school participation between this region and the rest of the country. During the 1960s there was a slight narrowing of this regional disparity, but this gap grew as the wars between the Eritrean independence forces and Ethiopia broke out in the mid-1970s, 1980 and 1986. The proportion of cohorts of school-going age without formal education in Gash-Barka did not decrease over time, while access to education in the rest of what was to become Eritrea improved steadily. After the independence of Eritrea, the Gash-Barka cohorts began to display a trend toward increased school participation. In the post-war period this trend did not continue and the share of the population without formal education remained at about 40%, while among the cohorts in the rest of the country around 10% were without formal education. This suggests that the legacy of the conflict on schooling participation in Gash-Barka has served to perpetuate regional disparity in the country, as the conflict periods opened a gap which has not closed over time.

Figure 9.29: Eritrea - Share of the population without formal education, Gash-Barka compared to other regions



The educational attainment of cohorts in Gash-Barka can be seen in Figure 9.30. There was growing disparity between this region and the rest of modern Eritrea, until about the end of the war of independence. In the intervening period, there was an increase in the average years of education of cohorts in Gash-Barka until about the onset of the Ethiopian-Eritrean war, which coincided with a decrease in educational attainment below an average of three years of schooling. Although the data are from 2002, the decreases in educational attainment in the late 1990s and early 2000s may be due to the fact that cohorts are still in school.

Figure 9.30: Eritrea - Average years of education, Gash-Barka compared to other regions

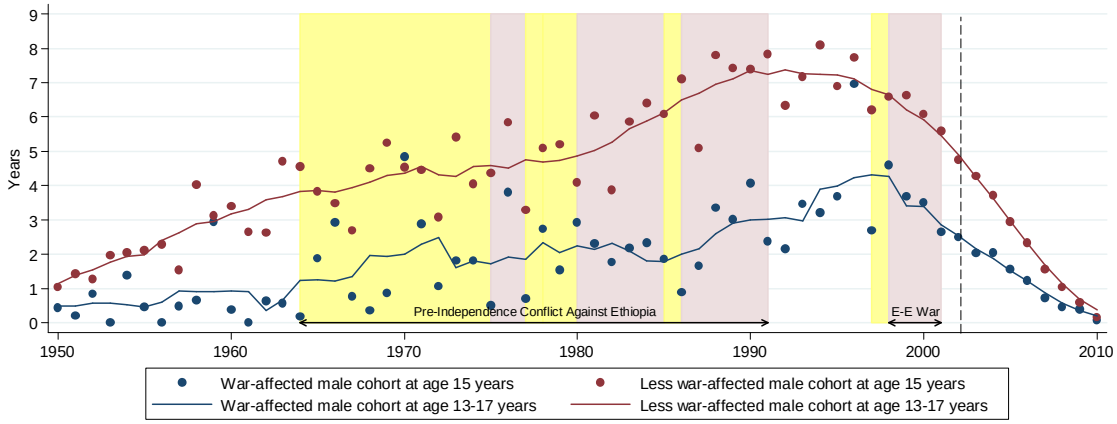


Region and Gender Analysis

There is a large gender gap in educational participation and attainment in Eritrea; however the short and recent nature of the Ethiopia-Eritrean border war means that the full impact of the war may not be visible in this analysis with data from 2002. Figure 9.31 looks at male cohorts living in the Gash-Barka region. Beginning in the late 1980s, we

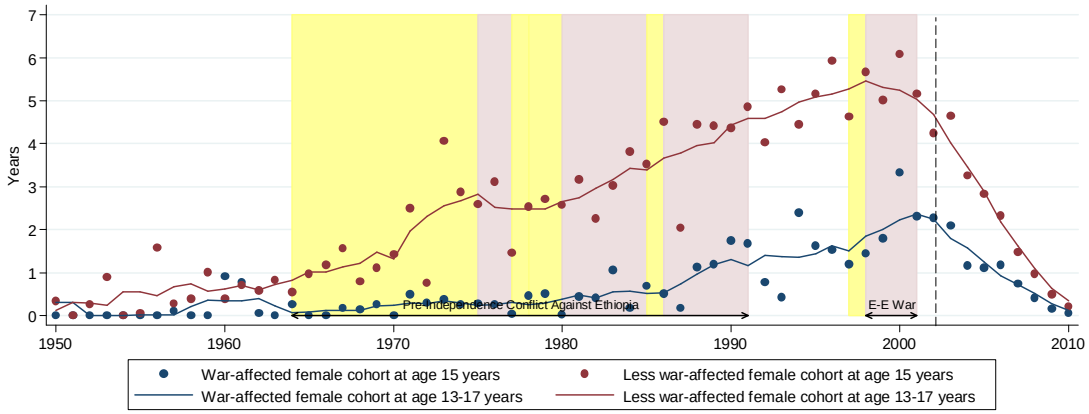
see a decrease in the share of this group without formal education, which stayed at about 40% throughout the conflict and did not further decrease in the post-conflict years.

Figure 9.31: Eritrea - Share of the male population without formal education, Gash-Barka compared to other regions



Looking at the female population living in Gash-Barka, as compared to females living in the rest of the country, we see that the first years of independence actually show a slight decrease in the share of persons without formal education. Yet, certain female cohorts during this period did have much higher proportions without formal education. During the years of the border war, there was a significant fall in the proportion of females of school-going age during this period who had no schooling. It is unclear whether this participation occurred during the war years themselves, or after the conflict was over. In the post-war period, the proportion without formal schooling among female cohorts of school-going age began to increase similar to females in the rest of the country. From this data, therefore, it is difficult to interpret the legacy of the conflict period on the participation in schooling by females in Eritrea.

Figure 9.32: Eritrea - Share of the female population without formal education, Gash-Barka compared to other regions



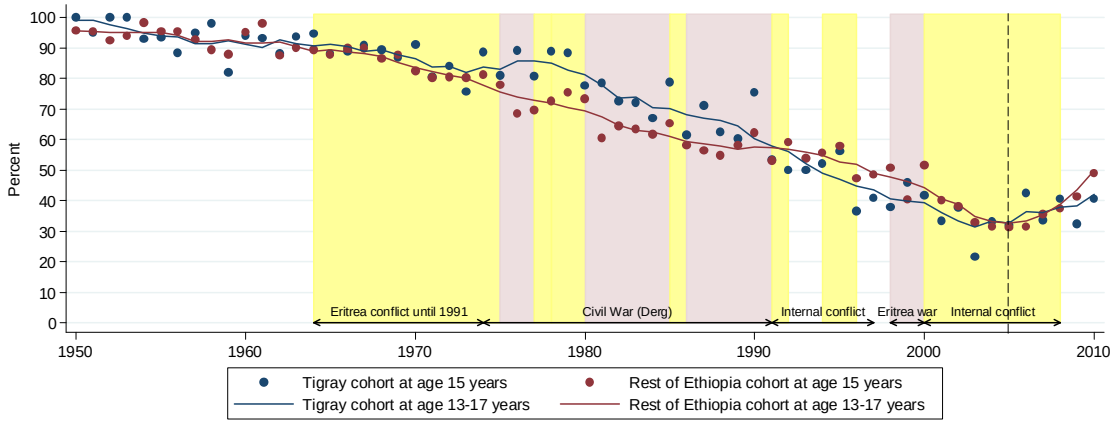
9.8 Ethiopia

Ethiopia counts as among the poorest countries in Africa and in the last 40 years it has faced conflict both internally and externally, against Somalia and Eritrea. Conflict with Eritrea began in the 1960s and resulted in the independence of Eritrea in 1991 (Uppsala Conflict Data Program, Uppsala University 2009). The Eritrean-Ethiopian war (1998-2000) particularly affected Ethiopia's Tigray region near its northern border. The World Bank observes that this war diverted government funds from education, but does not argue that the conflict had any specific impact on educational attainment in Tigray (Buckland 2005, 25). Enrolment data from 1993 to 2001 suggest that as a region Tigray has higher than average gross enrolment ratios for primary education, but that growth in enrolment over the 1990s has not been as high as in the rest of the country (Buckland 2005, 114). There also seems to be no significant impact on secondary education in the Tigray region. The secondary gross enrolment rate expanded substantially between 1993 and 2001, more than twice as fast as the Ethiopian average (Buckland 2005, 114). Overall, the existing literature does not indicate that the Eritrean War has had a large impact on schooling attainment in Ethiopia.

Regional Analysis

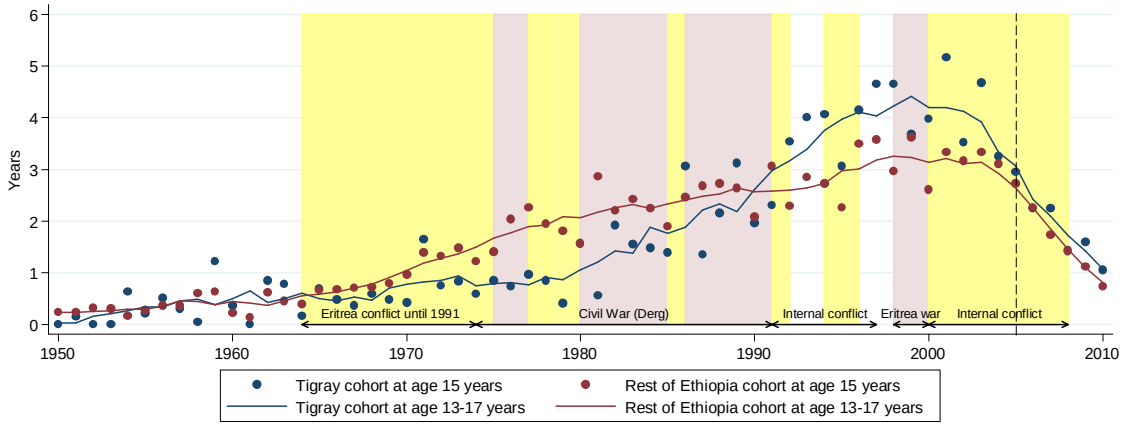
The long and regionally-based conflicts in Ethiopia require disaggregated analysis to understand the impact of war on education. The Eritrean conflict has affected the peoples living in the Tigray region. To compare the state of education in Tigray with other parts of Ethiopia, data from a 2005 Demographic and Health Survey were analysed. Figure 9.33 shows a general decrease in the share of the population without formal education until just before the separation of Eritrea in 1991. The only exception is a relatively higher share of persons without formal education among the population of Tigray that was school-aged in the late 1970s, which coincides with the Eritrean conflict. The trend for the rest of the Ethiopian population, on the other hand, is a relatively steady increase in participation in formal education until about 1990. It is interesting to see the Tigray region cohorts with lower proportions of people without formal schooling throughout the 1990s. This trend however begins to narrow looking at the cohorts school-aged near the conflict with Eritrea that began in 1998. While the trend for the rest of Ethiopian remains relatively unchanged throughout the 1990s, the Tigray cohorts demonstrate a slight increase in the proportion with no formal education. This may reflect disruption in education due to the conflict, as there is no similar trend in the other cohorts during that period.

Figure 9.33: Ethiopia - Share of population without formal education, Tigray compared to other regions



The legacy of the Eritrean-Ethiopian War is less visible when looking at average years of education. In Figure 9.34, we see a similar pattern as in the previous figure. The average number of years of schooling attained by the Tigray population surpasses the rest of Ethiopia during the 1990s, climbing to an average of 4 years for the cohorts of school age in 2000. However, after 2000 attainment begins to decline at a more rapid pace than for other Ethiopian cohorts, almost completely closing the gap by 2005, or the outbreak of the war.

Figure 9.34: Ethiopia - Average years of education, Tigray compared to other regions

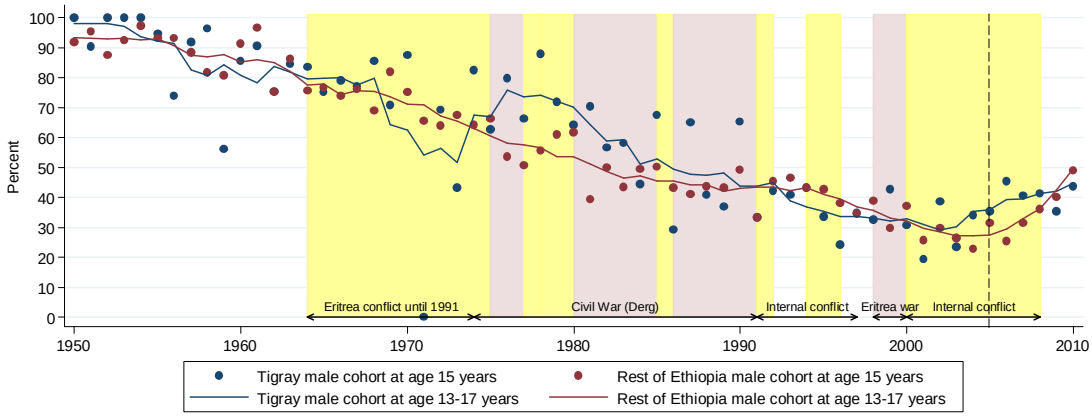


Regional and Gender Analysis

While the regional data on their own show no strong impact of conflict on the education of children growing up during the period of the war with Eritrea in the late 1990s, further disaggregation by gender reveals a more complex story. In contrast to Figure 9.33 which displays no substantial difference in the proportion of cohorts that have no formal education during the conflict period, Figure 9.35 suggests that the legacy of the conflict is more apparent for the male population. In comparison to the rest of Ethiopia, the male

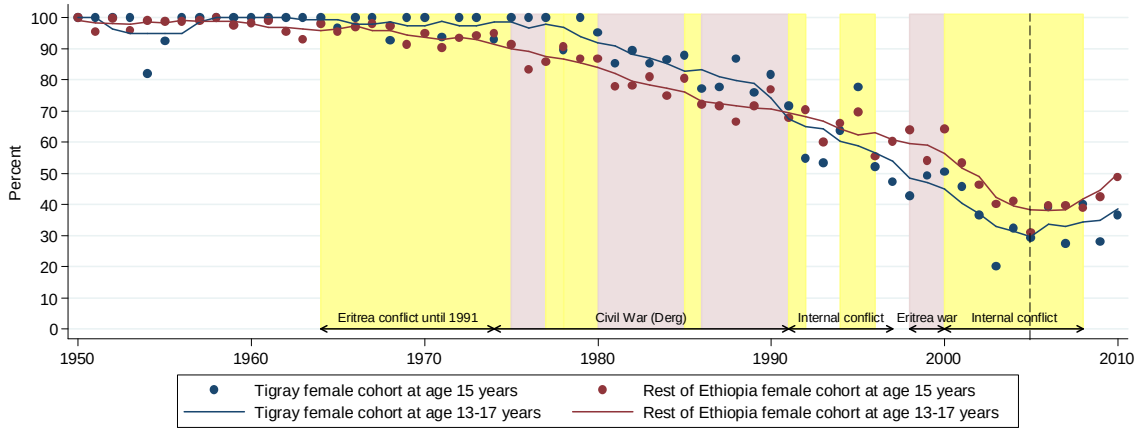
population of Tigray who were of school age during the war with Eritrea increases in the proportion without formal education.

Figure 9.35: Ethiopia - Share of the male population without formal education, Tigray compared to other regions



Turning to the female population in Figure 9.36, we see a very different trend. Female residents of Tigray seem not to have been negatively affected by conflict in the 1990s, maintaining their lower share of persons without formal education as compared to the rest of the country. Nonetheless, there is a slight increase visible for female cohorts in Tigray that were of school age during the conflict at the end of the 1990s coinciding with the war, which is not reflected in the trend for the rest of Ethiopia.

Figure 9.36: Ethiopia - Share of the female population without formal education, Tigray compared to other regions

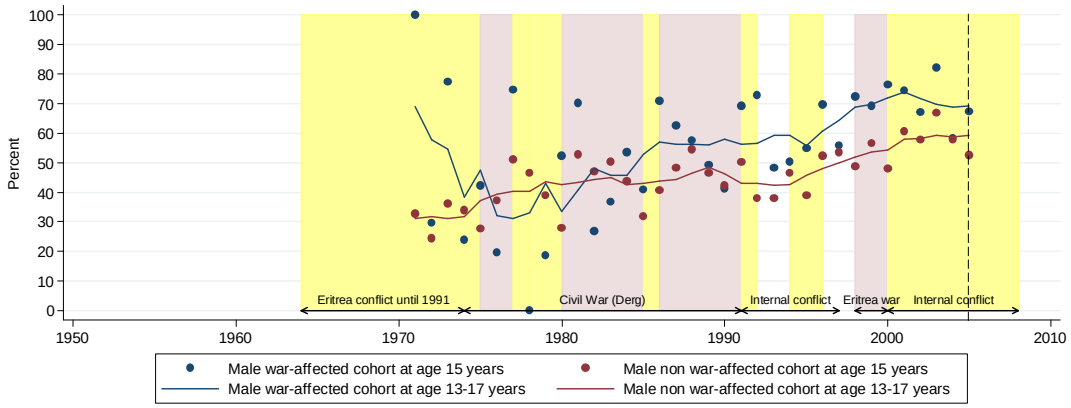


Literacy

The ambiguous findings for the impact of conflict on education in Ethiopia are also reflected in the trends for literacy rates over time. Due to very small sample sizes the trends for male literacy in Tigray are difficult to interpret; nonetheless, the Eritrean war

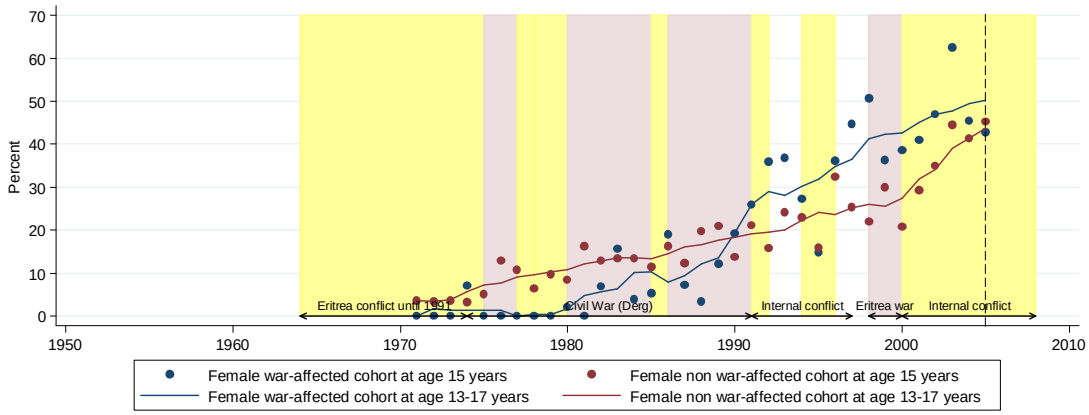
period coincides with a continued increase in the literacy rate for males of school-going age in the Tigray region.

Figure 9.37: Ethiopia - Male literacy rate, Tigray compared to other regions



The female sample sizes are much larger and thus result in clearer trends in Figure 9.38. Here we can see a similar trend where the Tigray cohort surpasses the rest of the country in literacy around the 1990s. Nonetheless, several cohorts of school-going age show significant decreases in the literacy rate during the war, falling from a high of 50% to about 35%. The recovery in the post-war period appears to have been rapid, as the regional gap narrows after 2000.

Figure 9.38: Ethiopia - Female literacy rate, Tigray compared to other regions



9.9 Mozambique

Mozambique's war of independence with Portugal lasted a decade, from 1964 to 1974. During the first years of independence education was a priority, which resulted in literacy programs and a surge of enrolment in primary and secondary education (UNESCO 1999c). The country had barely emerged from this conflict before it was embroiled in a long and destructive civil war, from 1977 to 1992. The cost in human lives of these two wars is estimated to be one and a half million people (Development Studies at the

University of Dublin, Trinity College 2010). The victims of the war were largely civilian: in the period 1981-1987 civilians represented over 85% of the deaths reported as a result of the conflict (Dodge and Raundalen 1991, 10). UNESCO (1999c) reported that in the 1980s the combination of an economic crisis, floods and drought, as well as the ongoing civil war, negatively affected enrolment levels and educational attainment. The civil war was also highly destructive to physical educational infrastructure: the Mozambique Ministry of Education reported that by the end of the civil war, 58% of primary schools in the country had been closed or destroyed (Brück 1997, 40). This means that primary schools were destroyed at an average rate of about 6% per year during the latter part of the civil war, 1983 to 1991 (Brück 1997, 40). Furthermore, the UN (Machel 1996, 33) has reported that during the years 1981 to 1988, armed conflict in Mozambique resulted in 454,000 child deaths.

Using a Demographic and Health Survey from 2003, the present study finds that the period of the civil war had a negative impact on education. Although the war affected all areas of the country, Weinstein and Francisco (2005, 184) observe that the southern regions of Mozambique faced the most violent incidents. Regional analysis in the case of Mozambique, however, is difficult without more specific data on migration, especially due to the long duration of the conflict.

Gender Analysis

In the Mozambique case, gender emerges as an important dimension in the study of the impact of conflict on education. In contrast to countries like Tajikistan, Uganda and the Democratic Republic of the Congo, male cohorts of school-going age during the conflicts in Mozambique seem to have been more negatively affected than their female counterparts.

Looking at the share of the population that does not have formal education for cohorts in the pre-independence period in Figure 9.39, we see an overall decline in the uneducated share of the population, coinciding with the end of the War of Independence in the mid 1970s. Between the years 1970 and 1977, the average proportion without formal schooling dropped by one percentage point per year for male cohorts and three percentage points per year for female cohorts (see Table 9.2). This corresponds to the educational policies of the newly independent Mozambique government. However, for cohorts of school-going age during the civil war there was a stagnation of the positive trend. During the most intense years of the civil war, the proportion of males without formal education increases while female cohorts stay about the same. Table 9.2 indicates that over the entire civil war period there was little change in the proportion with no formal schooling for both groups. In the post-civil war period both male and female cohorts show declining trends in the share with no formal education, similar to those in the pre-civil war period, reducing the gender gap significantly.

Figure 9.39: Mozambique - Share of the population without formal education, by sex

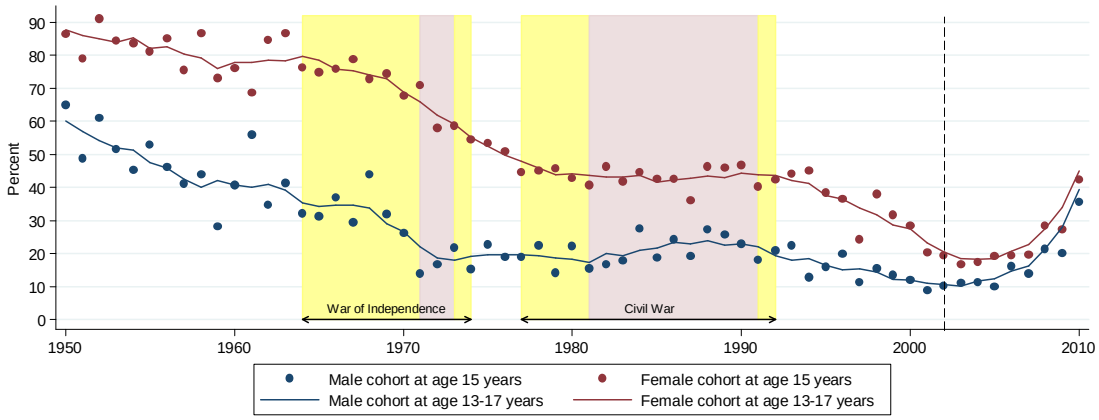
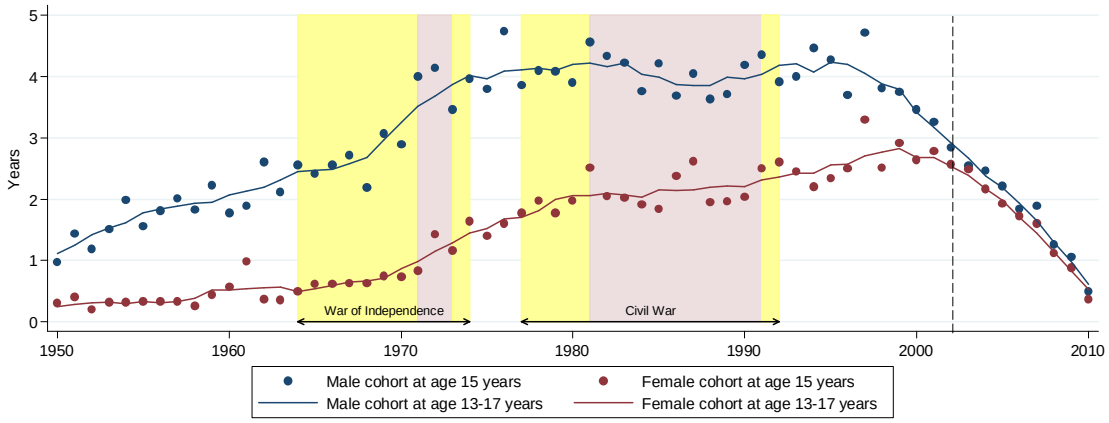


Figure 9.40 also shows how gender mediates the educational impact of conflict in Mozambique. In the period before the War of Independence, we see males double their average educational attainment between 1950 and the mid-1960s, while female cohorts on average do not have more than half a year of formal education until 1970. However, the educational attainment of both groups increase significantly during the end of the War of Independence and in subsequent years. Table 9.2 shows that between the period 1970 and 1977, male cohorts attained 0.3 years of education more per year, while girl cohorts increased on average 0.2 years per year. Similar to Figure 9.39, the growth of this period does not continue into the Civil War, particularly those of the most intense periods of conflict. During the 1980s, while female cohorts remain at an average of two years of formal schooling, male cohorts show a decrease by almost half a year. The average change reported in Table 9.2 over the entire civil war period shows no average change in average years of education attained for either sex. In the post-conflict period, both cohort groups show increases in average educational attainment, but decrease dramatically by 2003, when the DHS data were collected, probably reflecting the fact that some children who had not yet completed their schooling.

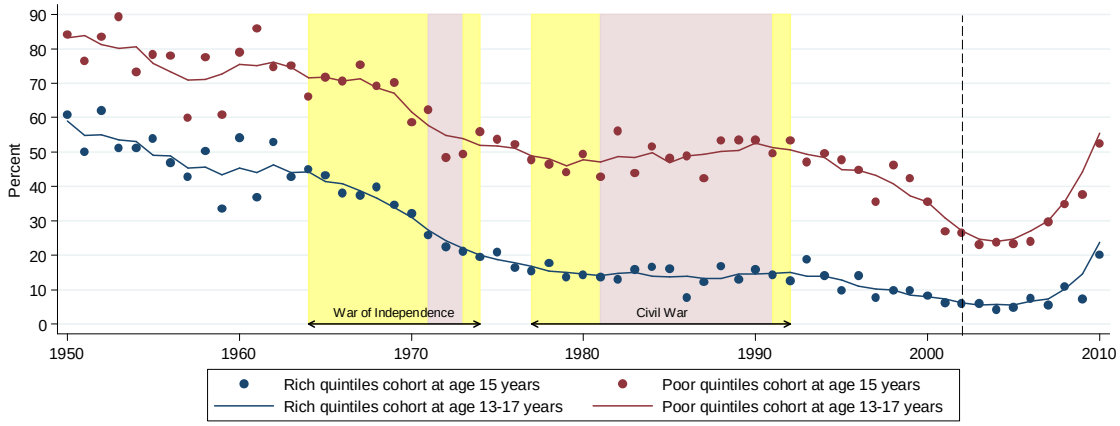
Figure 9.40: Mozambique - Average years of education, by sex



Wealth Analysis

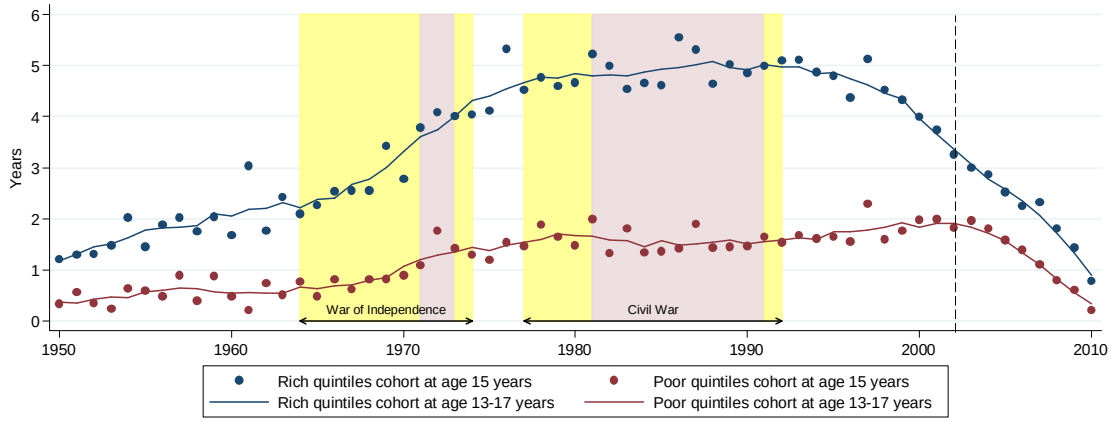
Disaggregation by wealth quintiles can be problematic, especially if the conflict period in question is not recent. Furthermore, conflict periods are often economically disruptive and there may be wealth lost and gained by different groups within society. In the case of Mozambique, the conflict period ended over a decade before the DHS survey data, including information on current assets and wealth, were collected. To compensate for some shifts in socio-economic status over time, wealth analysis throughout this paper compares those in the two poorest quintiles with those in the two richest quintiles, in other words, the poorest 40% of the population with the richest 40%. Figure 9.41 presents the share of the richest and poorest populations with no formal education. Similar to the trends in Figures 9.39 and 9.40, the War of Independence period seems to have had a limited effect on those of school-going age during this time. The proportion without formal education of both the richest and poorest cohorts of school-going age between 1970 and 1977 declines over this period: richest cohorts rapidly decline by 3 percentage points per year, while the poorest cohorts decline by 1 percentage point per year over the seven year period. However, the civil war period reveals a different trend. It is clear that the population in the two poorest quintiles was more negatively affected than the richest group, as the share of the former without formal education increases during the final years of the war. After the conflict subsides, the proportion without formal schooling drops dramatically at a rate of 3 percentage points on average per year, as a higher percentage of these cohorts gain access to education, as seen in Table 9.2.

Figure 9.41: Mozambique - Share of the population without formal education, by wealth quintiles



Looking at the short period before the Civil War, the richest quintiles cohorts increased from about four years of education to five years, while the poorest quintiles cohorts only saw a rise of about half a year of education (Figure 9.42). Based on wealth data from the 2003 DHS, the trends in average years of education do not seem to be negatively affected by the civil war period. As seen in Table 9.2, both groups show little change throughout the duration of the civil war and after the growth in the pre-war period.

Figure 9.42: Mozambique - Average years of education, by wealth quintiles



Literacy

The negative impact of conflict on the education of males in Mozambique is also seen in the trends of the literacy rate during the civil war. In Figure 9.43 we can see that the literate share of male cohorts that were of school-going age during the civil war decreased by over 10% as the war progressed. The literacy rate improved in the post-war period, returning to pre-war levels by 2000. Turning now to female cohorts, we see that there was a rise in the literacy rate in the pre-civil war period, which stagnated throughout the war. Similar to their male counterparts, we see that after the war, female literacy rates begin to rise once more.

Figure 9.43: Mozambique - Literacy rate, by sex

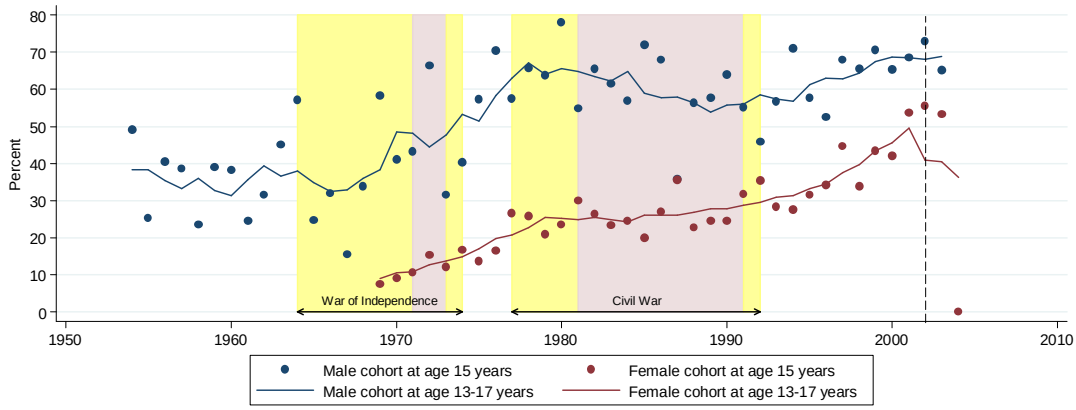


Table 9.2: Mozambique - Average change per year in educational attainment indicators, by conflict period

		Time Period		
	Indicator	**War of Independence & post-conflict period (1970-1977)**	**Civil war (1977-1992)**	**Post-conflict period (1992-2003)**
Male	**Proportion with no formal education**	-1.2%	**-0.1%**	-1.1%
Female	**Proportion with no formal education**	-2.8%	**-0.3%**	-2.3%
Richest	**Proportion with no formal education**	-2.7%	**-0.1%**	-0.7%
Poorest	**Proportion with no formal education**	-1.1%	**0.1%**	-2.7%
Male	**Average years of schooling, with or without education**	0.3 years	**0.0 years**	-0.1 years
Female	**Average years of schooling, with or without education**	0.2 years	**0.1 years**	0 years
Richest	**Average years of schooling, with or without education**	0.4 years	**0.0 years**	-0.2 years
Poorest	**Average years of schooling, with or without education**	0.1 years	**0.0 years**	0.0 years

Source: Mozambique DHS 2003

9.10 Rwanda

The 100 days of the Rwandan genocide in 1994 are an undoubtedly important and tragic event in the country's turbulent history. Rwanda's education system was not spared from the disastrous consequences of the genocide. To give just one example, the World Bank reports that more than two thirds of primary and secondary teachers either died or fled the conflict (Buckland 2005, 13). Teachers were targets of the attacks and educated adults were more likely to die in the conflict (de Walque and Verwimp 2009). However, Rwanda is being hailed as a post-conflict success story in education, as enrolment levels returned to their pre-conflict levels by 1999, five years after the genocide (Buckland 2005; Lopez and Wodon 2005b). The impact of the genocide on children who

were school aged during the genocide remains: Akresh and de Walque (2008) show through regression analysis that genocide-affected children completed one-half fewer years of education, 18 percent less than children that were not affected by the genocide. Work by Lopez and Wodon (2005b) confirms these findings. The genocide affected progression through the educational system, rather than participation in school overall (Akresh and de Walque 2008). In particular, the educational attainment of some groups was more negatively affected by the genocide than others. Certain regions were more heavily affected (Akresh and de Walque 2008) and boys were more affected by the genocide than girls (de Walque and Verwimp 2009). Rwanda therefore represents a complex but important case to study the impact of conflict on education. The analysis that follows draws on data from a Demographic and Health Survey conducted in the country in 2005.

Regional Analysis

The regions affected by conflict during the genocide include Kigali and surrounding areas, Gitarama, Butare, Gikongoro, Cyangugu, Kibuye, Umatara, and Kibungo (Akresh and de Walque 2008). This leaves three regions as less affected by the conflict: Gisenyi, Ruhengeri and Byumba – those closest to the Ugandan border where the Rwandan Patriotic Front troops had more control. The impact of the genocide on the most affected regions is visible in Figure 9.44, as the gap between the two regional cohorts is similar for the decades prior to the 1990s. In 1994 there is a sudden increase in the proportion of people without formal education for cohorts of school age during this period. Although Table 9.3 suggests a continued average decline in the share of persons without formal education, albeit less than in previous periods, this can be attributed to fluctuation in the data for cohorts aged 15 years between 1994 and 1996. The success by Rwanda in boosting post-conflict enrolment is also visible, as five years after the genocide both regional cohorts show a decline by about 1.3 percentage points per year for the period 1997-2003 in the share of people without formal education, and the regional disparity disappears.

Figure 9.44: Rwanda - Share of population without formal education, by region

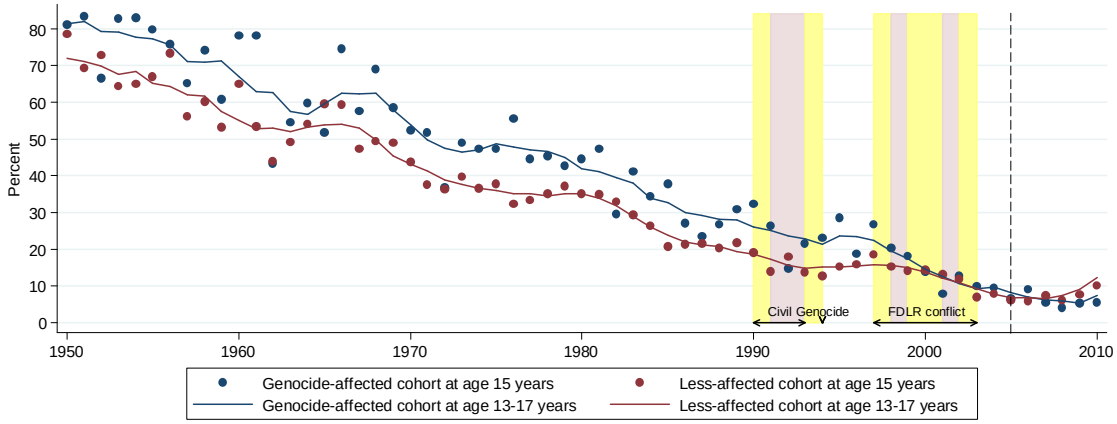
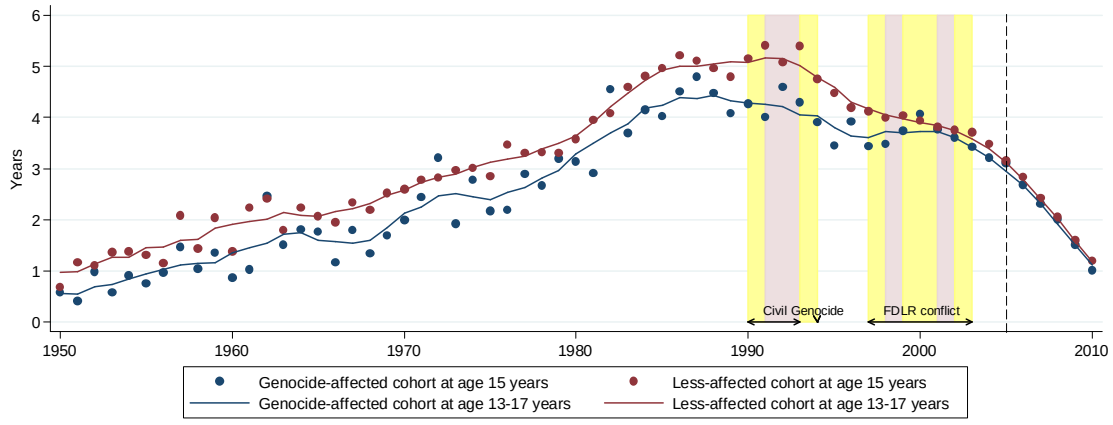


Figure 9.45 presents the educational attainment of the most and least affected regions in Rwanda as measured by the average number of years of education. It is important to remember that the DHS does not include data on migration, so the regional data used for this analysis – and indeed all regional analyses – in this study are based on the region of residence at the time the survey was conducted. Nevertheless, the cohorts that were school-aged during the Rwandan civil war and the genocide show marked decreases in educational attainment. However, in this case, the decreases in attainment for the regions affected by the genocide begin during the civil war period, and continue after the genocide. The gap between the regions closes by 2000, although at a lower average level of attainment than before the conflict. The latter can be explained by the fact that persons aged 15 at the time of the survey in 2005, as well as younger cohorts, have not completed their education and their average number of years of schooling is therefore likely to increase.

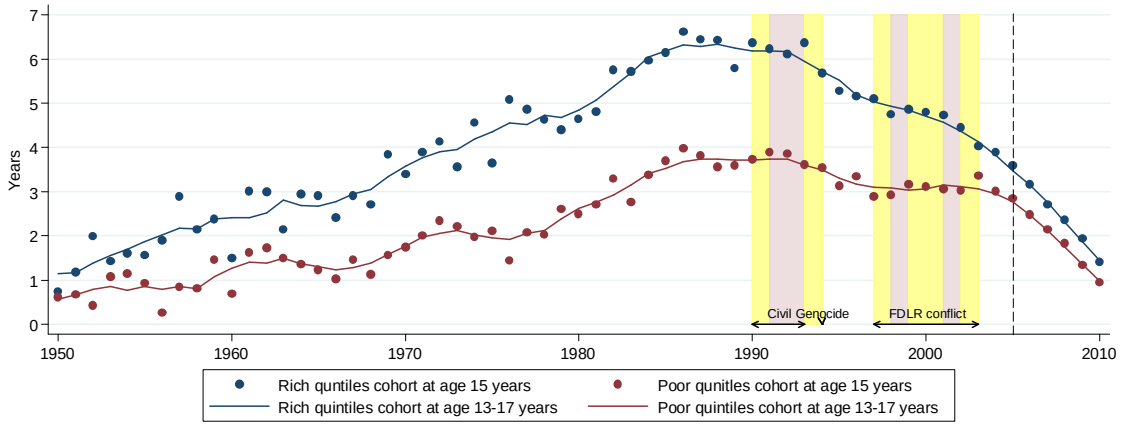
Figure 9.45: Rwanda - Average years of education, genocide-affected regions compared to other regions



Wealth Quintile Analysis

Another interesting dimension of analysis of the Rwandan civil war is the difference in educational attainment between the richest and poorest segments of the population. The literature suggests that progression through the education system, not initial access, is the major problem after the genocide (Akresh and de Walque 2008). Figure 9.46 shows that the educational attainment of the cohorts of school age during the genocide declined by about 1 year for the population in the two poorest wealth quintiles compared to the pre-conflict generation. However, the educational attainment of the richest quintiles group exhibits a more dramatic shift: school-aged cohorts in this group fell from almost 8 years education on average to an average of 4 years at the time the survey was carried out in 2005. Table 9.3 also demonstrates the differing effect of the genocide on these two groups: while educational attainment among cohorts from the poorest quintiles declined an average of 0.05 years per year, attainment among the richest quintiles decreased over four times as much per year, 0.2 years on average. However, as explained above, the average number of years of education among the youngest cohorts is likely to increase over the years the follow the survey.

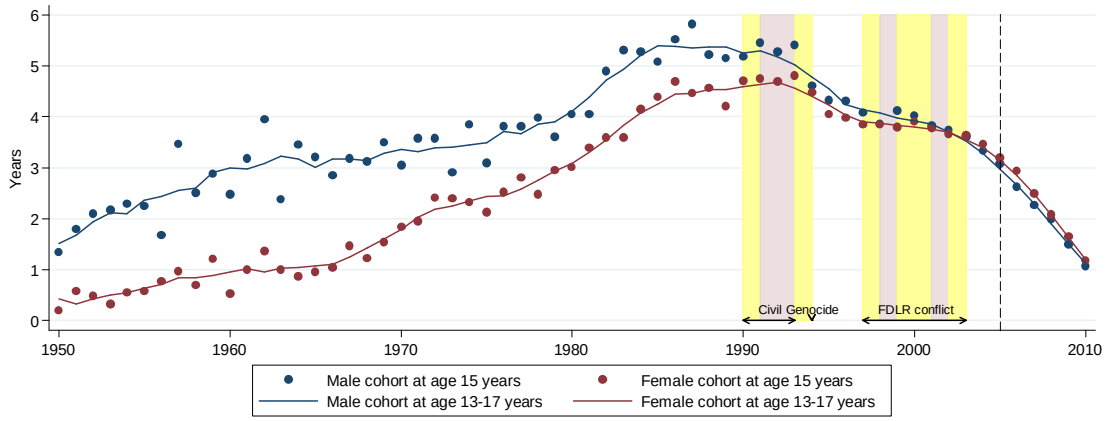
Figure 9.46: Rwanda - Average years of education, by wealth quintiles



Gender Analysis

Akresh and de Walque (2008, 19) found that one consequence of the genocide was the near elimination of the gender gap in education, though this was due more to the decline in boy's educational achievement than an increase by girls. This finding is also reflected in Figure 9.47, where the gender gap in educational attainment for cohorts narrows slowly over time. Table 9.3 shows that the average decline in educational attainment over the genocide period was larger for boys (-0.4) than for girls (-0.3). The male group in the genocide generation declines at a much faster rate than women, almost closing the gap by 2000.

Figure 9.47: Rwanda - Average years of education, by sex



Literacy

There are similar negative trends in the literacy rates for the cohorts of school-going age during the genocide. In Figure 9.48 we can see that the average literacy rate of those in genocide-affected regions who were of school-going age during the genocide declined more than the literacy rate of those living in other areas of Rwanda. In fact, the year of the genocide widened the literacy gap and this gap persisted through the initial post-war

years. However by about 1998 the literacy rate began to increase in conflict-affected areas, closing the gap with other parts of Rwanda.

Figure 9.48: Rwanda - Literacy rate, genocide-affected regions compared to other regions

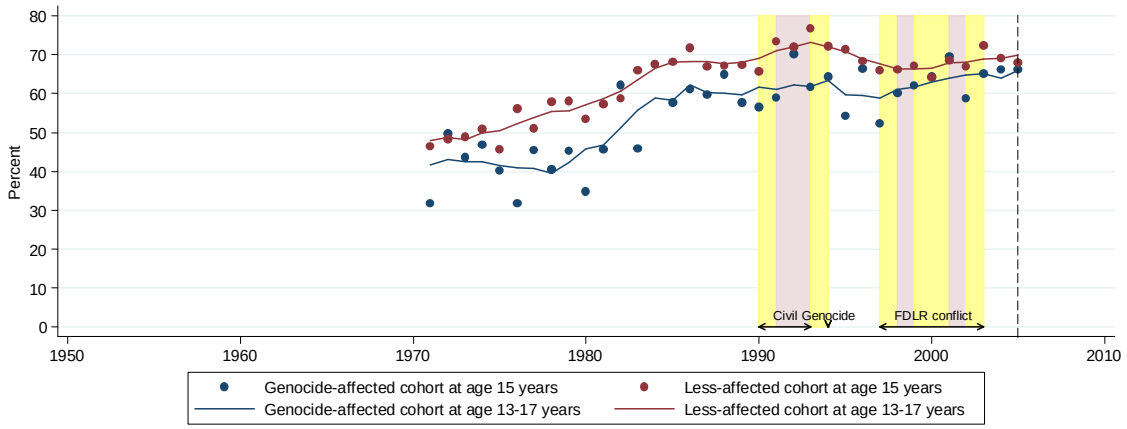
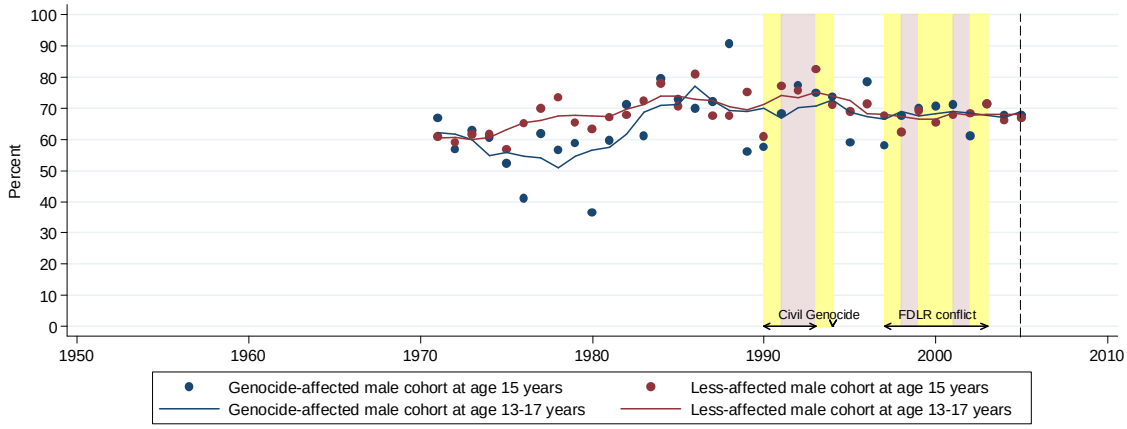


Figure 9.49 presents the literacy rates of males by region. Due to the smaller sample size of the data for men, the year-to-year fluctuation in the regions most affected by the genocide makes the results difficult to interpret. We can see a slight decline after the genocide in 1994, but there seems to be no difference between the two regional groups in their trends during the conflict periods.

Figure 9.49: Rwanda - Male literacy rate, genocide-affected regions compared to other regions



The rapid decline in educational indicators is visible in the literacy rates for women of school-going age during the genocide. Figure 9.50 compares the literate proportion of females in the regions where the genocide had the largest impact with the rest of Rwanda. We can see that literacy levels fell from over 90% in 1990 to about 80% by 1994, but began to improve after the genocide. Females of school-going age living in

less-affected regions also show a slight decline in literacy rates, but not to the extent of those in the regions with the heaviest exposure to the conflict. This group also shows an increase in the literacy rate to pre-genocide levels by 2005.

Figure 9.50: Rwanda - Female literacy rate, genocide-affected regions compared to other regions

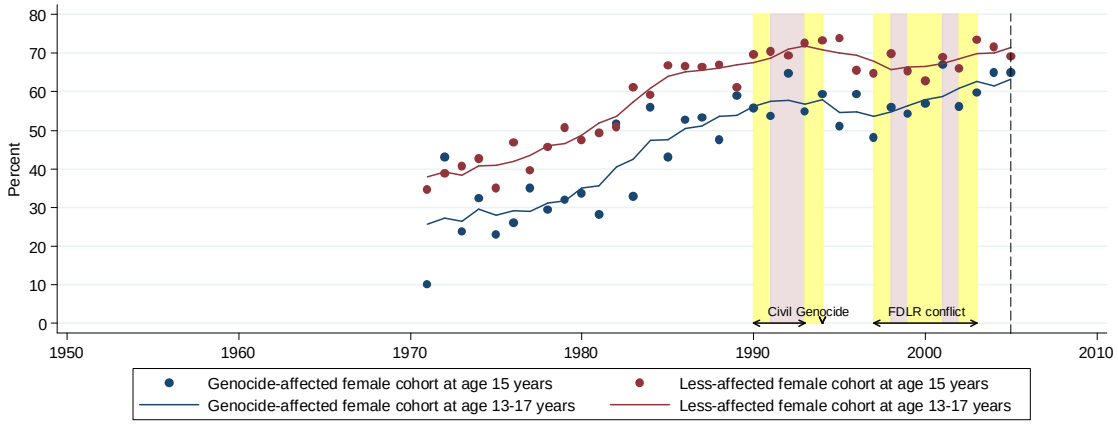


Table 9.3: Rwanda - Average change in educational attainment indicators, by conflict period

		Time Period			
	Indicator	**Pre-war (1960-1989)**	**Civil war (1990-1993)**	**Genocide and aftermath (1994-1996)**	**Internal conflict FDLR (1997-2003)**
War-affected	**Proportion with no formal education**	-1.00%	-2.31%	**-0.99%**	-1.24%
Not war-affected	**Proportion with no formal education**	-1.05%	-1.98%	**0.68%**	-1.27%
Male	**Average years of schooling, with or without education**	0.08 years	0.07 years	**-0.36 years**	-0.1 years
Female	**Average years of schooling, with or without education**	0.1 years	0.15 years	**-0.28 years**	-0.05 years
Richest quintiles	**Average years of schooling, with or without education**	0.07 years	0.09 years	**-0.23 years**	-0.03 years
Poorest quintiles	**Average years of schooling, with or without education**	0.07 years	-0.13 years	**-0.05 years**	0 years

Source: Rwanda 2005 DHS

9.11 Sierra Leone

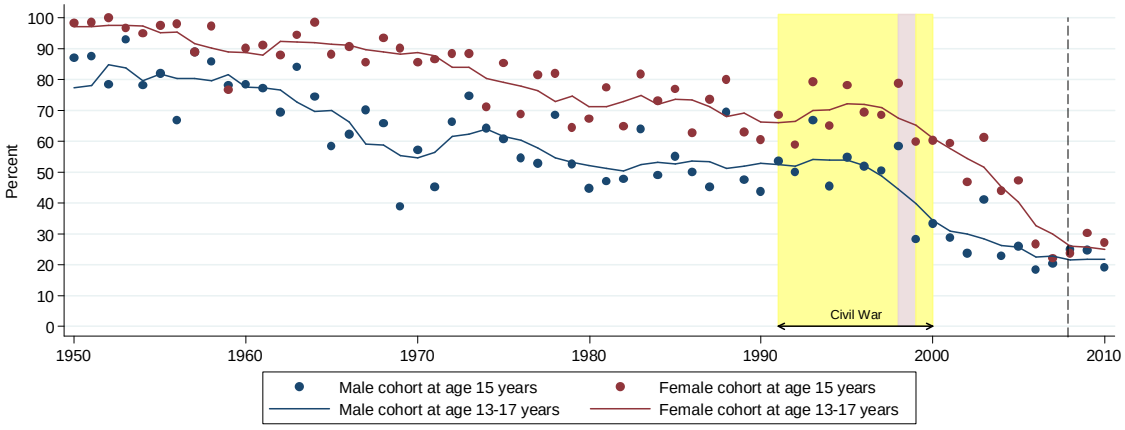
During the 1990s Sierra Leone was embroiled in a destructive civil war that resulted in an estimated 50,000 deaths, over 1,000,000 people displaced and thousands more victims of assault, amputation and sexual abuse (Bellows and Miguel 2006, 394). The war between the Revolutionary United Front (RUP) and the government took a heavy toll on civilians, who bore the brunt of the violence of the conflict (Bellows and Miguel 2006, 394). In a study on the impact of exposure to violence on people's lives during the post-war period, Bellows and Miguel (2006, 398) find that the war had no significant negative effects on 2004 school enrolment levels. However, they do not analyze the legacy of the conflict on those of school-going age during the conflict period itself. Nonetheless, it is clear from the numbers reported above that the conflict was very destructive. Looking at regional variation in violence, Bellows and Miguel (2009) construct a comprehensive conflict index, which shows that while violence is concentrated in eastern Sierra Leone, every district witnessed violence.

The data used in the present study comes from the 2008 Demographic and Health Survey. Due to the high number of displaced people, the widespread nature of the violence and the fact that the data were collected 8 years after the end of the war, regional disaggregation is not used in the present study. Moreover, analysis based on wealth quintiles reveals little differentiation; the educational attainment of the richest and poorest population displayed no substantial changes during the war period.

Gender Analysis

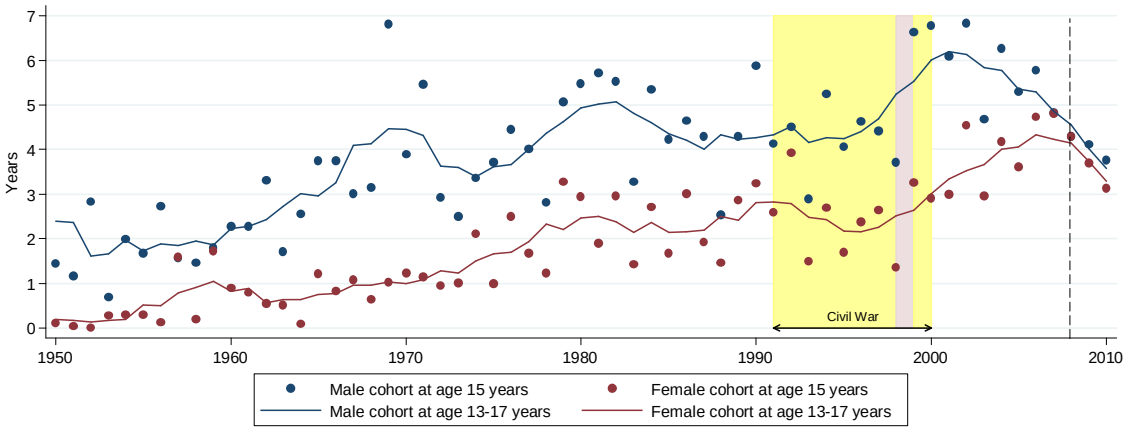
Figure 9.51 shows the increase of the proportion of the population with no formal education for both male and female cohorts who were of school-going age during the conflict. From about 1980 until the onset of the civil war the trend is relatively stable, but at the beginning of the conflict there is an increase of girls who have not received any formal education. The trend for their male counterparts during the war is less clear, remaining somewhat consistent with the proportion of those without formal education in the pre-conflict period, at about 50%. Near the end of the war school participation increases and the share of persons without schooling drops significantly among both male and female cohorts. This trend reflects part of the findings by Bellows and Miguel (2006), namely that school enrolment in the post-conflict period in conflict-affected areas was not significantly different from enrolment in other parts of the country.

Figure 9.51: Sierra Leone - Share of the population without formal education, by sex



Similar to other countries in this study, the effect of the conflict period on education is most pronounced in progression through the educational system, rather than participation in any formal schooling whatsoever. In Figure 9.52 we see that there is a decrease in the average years of education of both boys and girls who were of school-going age during the civil war. Girls in particular show a marked decrease, falling by almost a year on average from about 3 years at the beginning of the conflict down to two years in the middle of the conflict period. As seen in Figure 9.51, there is a surge in school participation in the latter years of the conflict. Here it is important to reiterate that these high levels of attainment which appear to occur during the conflict may reflect education acquired by these cohorts after the civil war period.

Figure 9.52: Sierra Leone - Average years of education, by sex

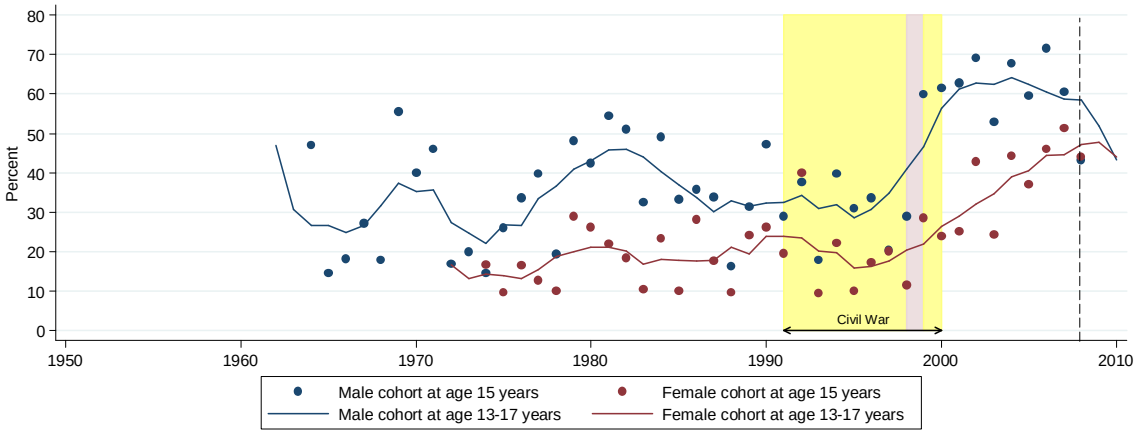


Literacy

Starting with the pre-war period of the 1980s, we see a drop in the literacy rates for male cohorts of school-going age. Female cohorts, on the other hand, maintain a somewhat steady 20% literacy rate. After the outbreak of the civil war, male literacy rates stagnate,

and women's literacy rates decline, an indication of the negative impact of the Sierra Leone civil war. There is an important surge in literacy rates in the immediate post-conflict period for both groups, which is similar to the increases during this time seen in the previous figures for Sierra Leone. All in all, literacy rates for both males and females were negatively affected by the conflict, although women were more affected than men during the conflict itself. The upsurge in the literacy rate for males of school-going age in the post-conflict period widened the gender gap in literacy, as these gains were not equalled by their female counterparts.

Figure 9.53: Sierra Leone - Literacy rate, by sex



9.12 Somalia

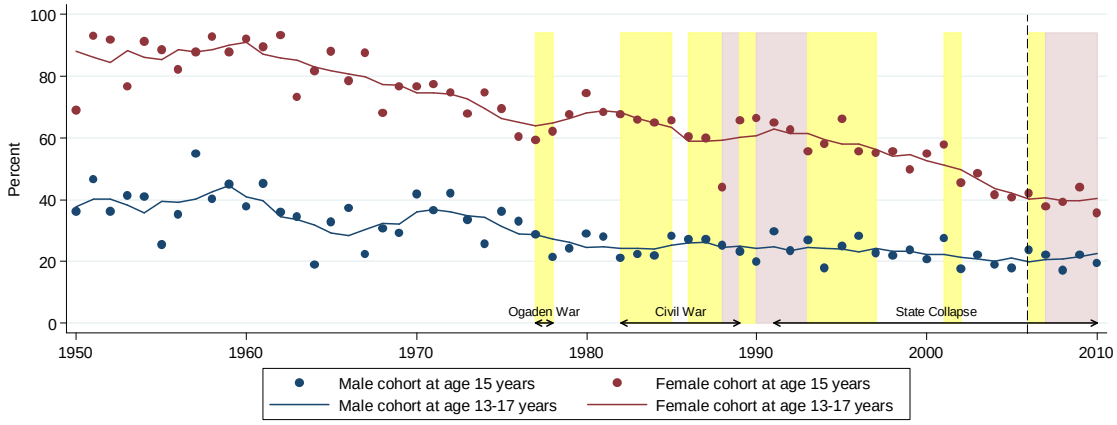
After the collapse of the Somali government in 1991, the country's education system ground to a halt. One scholar studying Somali education stated "all modern systems of learning in the country were destroyed by the fighting factions, and Somalia has since been a country without any formal programmes of education" (Abdi 1998, 327). Since independence in 1960, Somalia has had wars, against Ethiopia in the Ogaden region in 1977, and various internal conflicts against armed groups. Historically, there were large initial gains in enrolment and literacy rates by the late 1970s due to the creation of a written Somali language as well as mass education campaigns (Abdi 1998, 333). However battles between internal armed factions and the government created an environment of instability as education took a backseat to defence, weakening expenditure and consequently the educational gains of the previous decade. Educational access was also restricted during this time, as schooling became possible mainly for those with connections with those in power (Abdi 1998, 335). Abdi (1998, 334) notes that the country's literacy rate fell from an all-time high of 55% in the mid 1970s to 24% in 1990. In 1991, the collapse of the government led to chaos and violence in the country. Educational infrastructure was often the primary target, including "the deliberate destruction of schools, university lecture halls, libraries and laboratories, sometimes complemented by the targeting of the educated cadre among the warring factions" (Abdi 1998, 335; 338). UNESCO (2010b, 222) has reported numerous cases more recently

(2006-2010) of attacks on schools, military recruitment on school grounds, sexual violence against children, as well as targeted killings of students and in particular teachers and humanitarian care workers. Therefore, Somalia represents a very relevant and important case for analysis on conflict and education. The data for this analysis comes from a 2006 Multiple Indicator Cluster Survey.

Gender Analysis

How did the conflicts in Somalia affect the educational participation of boys and girls of school-going age during periods of violence? Figure 9.54 shows the trends for both groups: firstly it is clear that there is a wide but slowly narrowing gender gap in participation. In addition, there doesn't seem to be any clear increase in the proportion of males or females without formal education during the conflict periods. Instead, just over 20% of males had no formal education throughout the 1980s and 1990s, and the values for female cohorts declined after the lessening of conflict in the late 1990s and early 2000s.

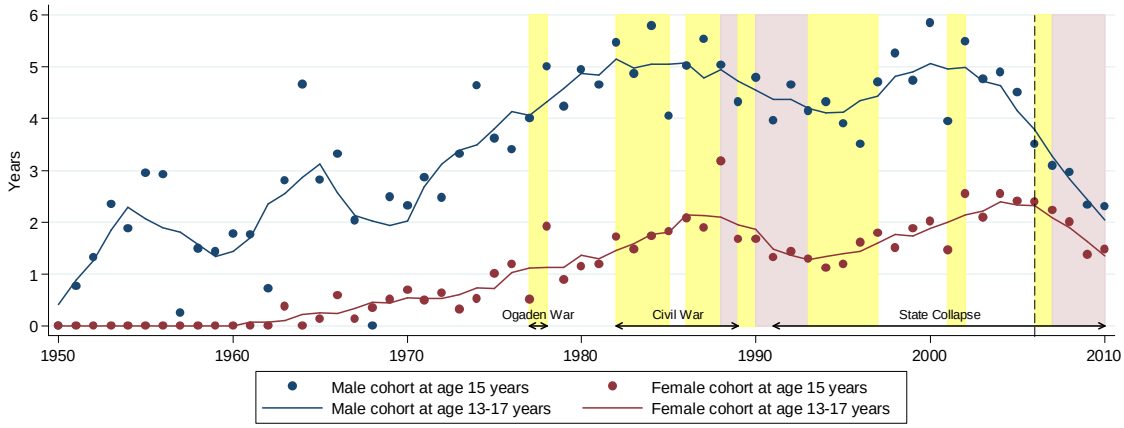
Figure 9.54: Somalia - Share of the population without formal education, by sex



Analysis of the educational attainment of male and female cohorts reveals a substantial negative impact during periods of conflict, particularly during and after the state collapse in 1991. In Figure 9.55 we see that the average years of formal schooling attained by men after independence in 1960 decline in the late 1960s, which coincides with the beginning of Siad Barre's dictatorship in the country. After about 1970, both female and male cohorts show a steady increase until the beginning of war in the late 1980s, when the average educational attainment for both groups falls substantially. Attainment among male and female cohorts of school-going age during the conflict falls by almost a whole year of education, representing a 20 percent reduction for males but almost a 50 percent reduction for females during this period. Table 9.4 shows an average decrease of 0.1 years of education for every year of the conflict (1989-1997). The average change for female cohorts in Table 9.4 is zero, but this is due to the averaging of the decrease and increase in attainment of female cohorts during the same period. After the conflict, both

groups do show an increase in attainment to pre-conflict levels, with males decreasing by 2006, the date of the survey used in this analysis.

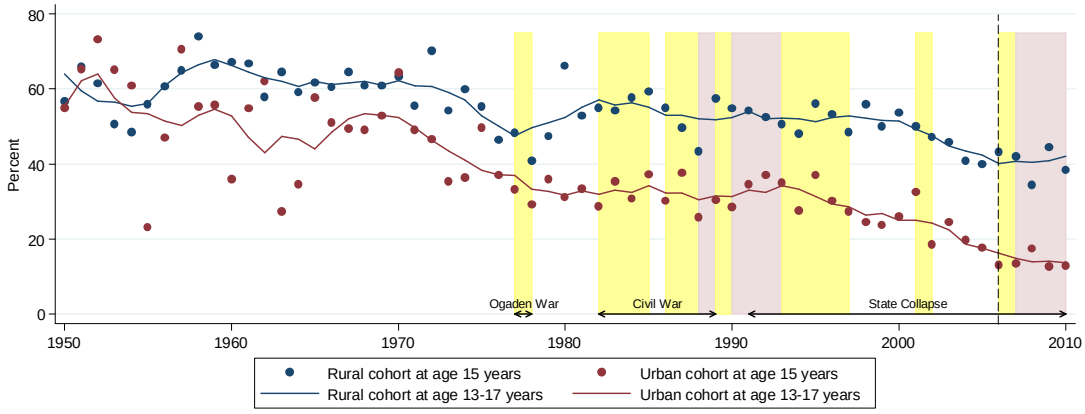
Figure 9.55: Somalia - Average years of education, by sex



Urban / Rural Analysis

Another dimension of interest is the rural and urban populations in Somalia and how they were affected by the conflict in 1991. In the pre-conflict period we can see a decrease in the proportion without formal education in the 1970s, which corresponds to the government's literacy and educational campaigns as discussed earlier in this analysis. Figure 9.56 shows a relatively steady proportion without any formal education for both cohorts of school-going age during the civil war and state collapse periods. After the intensity of the conflict wanes, the values for both groups decrease, indicating that a greater share of both rural and urban cohorts participated in formal education.

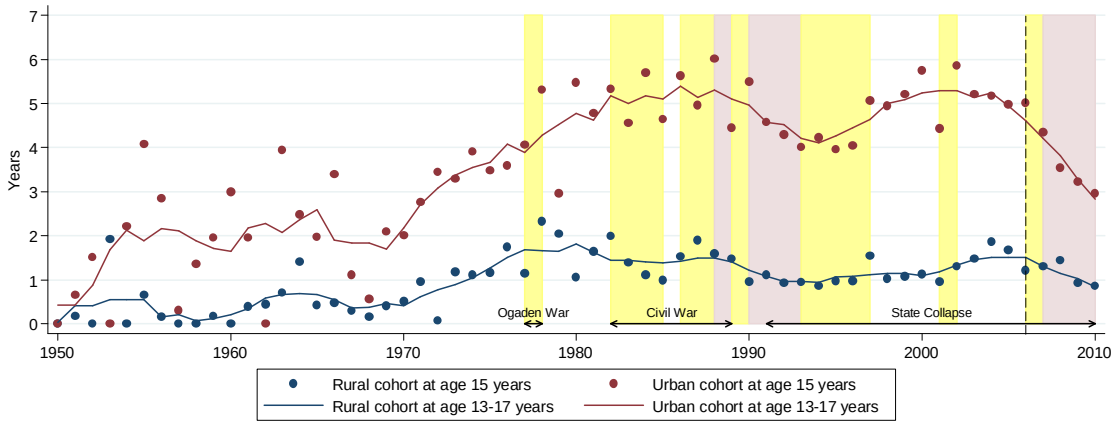
Figure 9.56: Somalia - Share of the population without formal education, by residence



The impact of conflict on the average years of schooling attained by rural and urban cohorts is very clear. Figure 9.57 portrays the growing gap between rural and urban

educational attainment in Somalia. Since 1960, urban cohorts have consistently outpaced the educational gains of their rural counterparts. This is particularly the case in the 1970s. There is a sharp rise in the attainment of urban cohorts during the period of the literacy and education campaigns. While both urban and rural cohorts decline in average educational attainment during the war, the urban cohorts of school-going age fall by more than one year of education. Table 9.4 shows an average yearly decrease of 0.1 years of education for both rural and urban cohorts during the period 1989 to 1997. By contrast, their rural counterparts fall by approximately half a year of education, almost one quarter of the average attainment. Both groups regain the pre-war levels of education by the year of the data collection in 2006.

Figure 9.57: Somalia - Average years of education, by residence



Wealth Quintile Analysis

Comparing respondents in the two richest wealth quintiles with those in the two poorest in Figure 9.58 reveals similar trends to those reported in Figure 9.57. In the data, a large majority of the richest population lives in urban areas. In this case high educational attainment among the richest may have been caused by reduced funding for education that may have prioritized urban over rural areas, and by the fact that the richest cohorts may have had better access to education due to their socio-economic status relative to the various regimes in power. Nonetheless, the average educational attainment of the richest cohorts fell by about one year over the period of the 1991 civil war. This decline is reflected in Table 9.4, which shows that on average the richest cohorts fell by -0.1 years of education during each year of the conflict period between 1989 and 1997. The poorest cohorts, on the other hand, show a slow but steady decline in average attainment beginning at the outbreak of conflict in 1986 to less than one year of education.

Figure 9.58: Somalia - Average years of education, by wealth quintiles

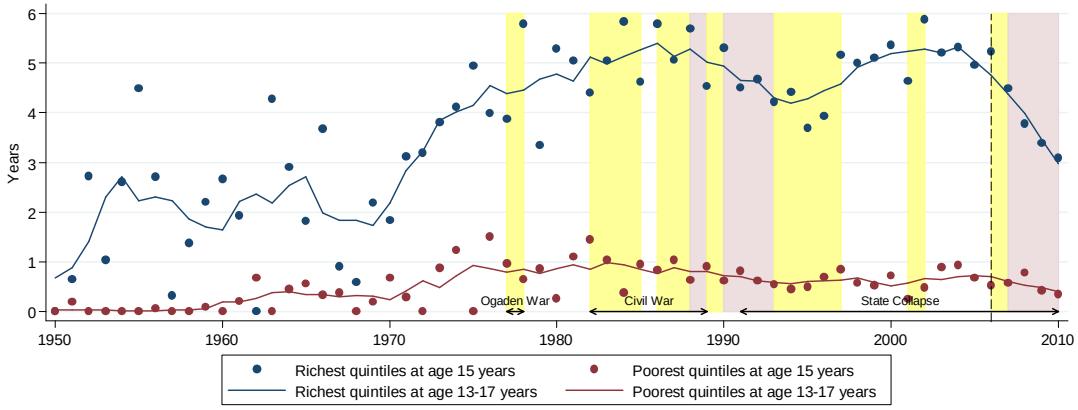


Table 9.4: Somalia - Average change per year in educational attainment indicators, by conflict period

		Time Period		
	Indicator	**Minor civil war (1981-1989)**	**Civil war and state collapse (1989-1997)**	**Post-conflict (1997-2006)**
Male	**Average Years of Schooling, with or without Education**	0.1 years	**-0.1 years**	-0.03 years
Female	**Average Years of Schooling, with or without Education**	0.3 years	**-0.01 years**	0.1 years
Rural	**Average Years of Schooling, with or without Education**	0 years	**-0.1 years**	0.0 years
Urban	**Average Years of Schooling, with or without Education**	0.2 years	**-0.1 years**	0 years
Richest	**Average Years of Schooling, with or without Education**	0.1 years	**-0.1 years**	0 years
Poorest	**Average Years of Schooling, with or without Education**	-0.1 years	**-0.03 years**	0 years

Source: Somalia MICS 2006

9.13 Uganda

For the last two decades, Uganda has been plagued by conflict. Arguably no region in Uganda has suffered as much as the north due to the war against the Lord's Resistance Army (LRA) (Nicolai 2008, 211). This conflict had hugely detrimental impacts on the

Acholi population, who are the primary ethnic group in northern Uganda. As Finnström (2006, 203) observes “the evolving war has caused an enormous humanitarian catastrophe in northern Uganda. In late 2005, about 90 per cent of the Acholi people, and more than 1.5 million of the total population in northern Uganda, were internally displaced”. Children have faced the brunt of this war; tactics by the LRA include rampant abduction of children for use as soldiers or sex slaves. This precarious situation led former UNICEF Executive Director Carol Bellamy to declare Northern Uganda “pretty much the worst place on earth to be a child” (CSOPNU 2007, 2). Where children can still attend school, infrastructure and teaching staff face major strains, school days are shortened, schools lack enough teachers and basic materials, and insecurity hampers access to school for many children. NGOs reported in 2007 that in most learning centres the ratio of teacher to pupil was approximately 1:300 to 1:400 (CSOPNU 2007, 31).

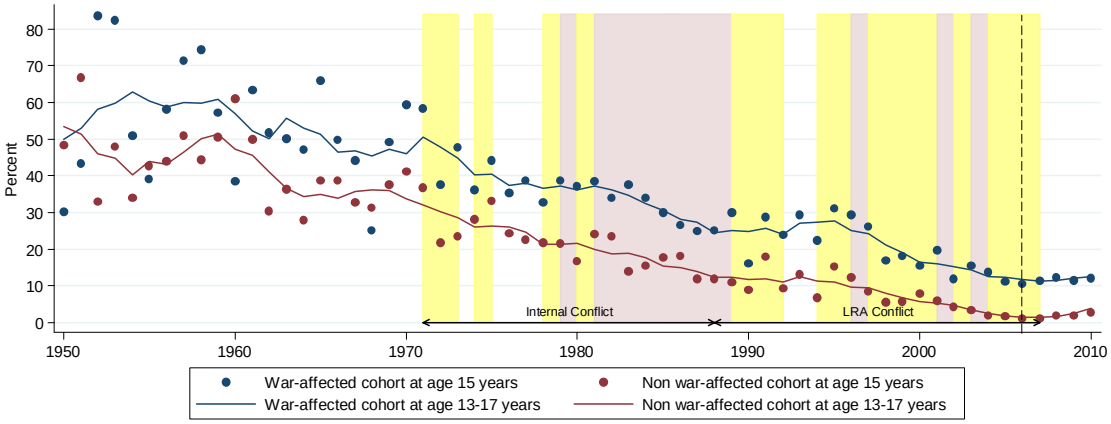
Regional and Linguistic Analysis

This study looks at two methods of identifying those most affected by the Northern Ugandan conflict, using data from a 2006 Demographic and Health Survey. The first method is based on region of residence, which may accurately identify the most exposed population given that the LRA conflict was ongoing at the time of the survey. However, in light of the fact that 90 percent of the Acholi were forcibly displaced, region of residence in 2005 may not capture the part of the exposed population that left the northern region of Uganda in the years and months preceding the survey. Therefore, the study also looks at those whose first language is Luo, the language of the Acholi people. There is a strong correlation between living in the North and speaking the Luo language. Cross tabulation of area of residence and language of the survey respondent shows that 95 percent of Luo speakers also reported living in the Northern region. Identifying persons by first language may therefore include Acholi who fled the region during the conflict.

Regional Analysis

Focusing first on the population which lives in Northern Uganda as opposed to other regions of the country, we see in Figure 9.59 that with the onset of the LRA conflict in 1988 there is a marked increase in the proportion of the northern population without formal education. This is striking when comparing the Northern Uganda population against the rest of the country, which shows a steady decline through the 1980s, 1990s and 2000s. The gap between the North and the rest of Uganda persists throughout the conflict and even increases in the mid-1990s, coinciding with the beginning of the LRA conflict.

Figure 9.59: Uganda - Share of population without formal education, north compared to other regions



Disaggregating the regional data further by gender, it becomes clear that the legacy of the LRA conflict is apparent in both male and female generations growing up in conflict. In Figures 9.60 and 9.61 there is a visible increase in the proportions of the population without formal education of the respective cohorts coinciding with the beginning of the LRA conflict, inflating the gap between the region and the rest of Uganda. The share of Northern Ugandan males without formal education in 2005 amounts to that of the generations of the early 1970s in the rest of Uganda. Similarly, the gap between Northern Ugandan women and women from other parts of the country in 2005 reflects the situation almost twenty years earlier. Nearly all younger Ugandans have at least some formal education, while Northern Uganda lags considerably behind.

Figure 9.60: Uganda - Share of male population without formal education, north compared to other regions

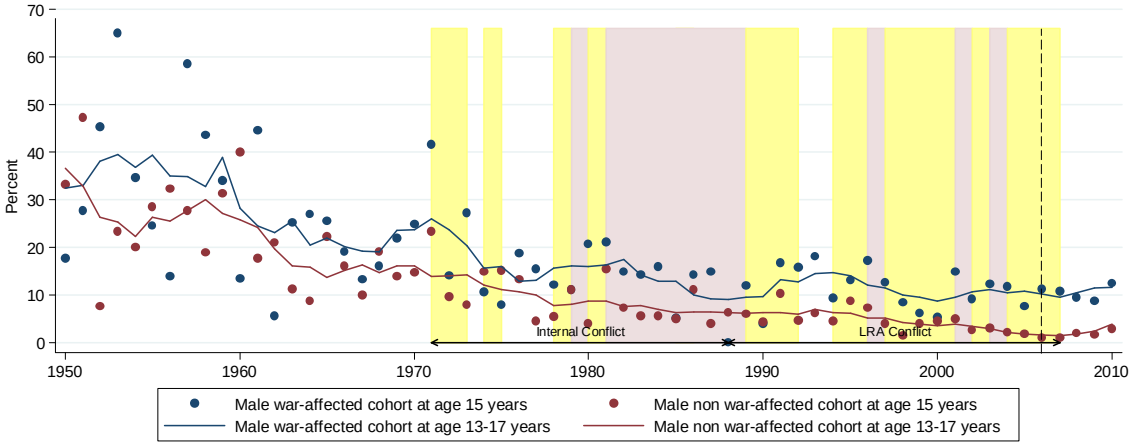
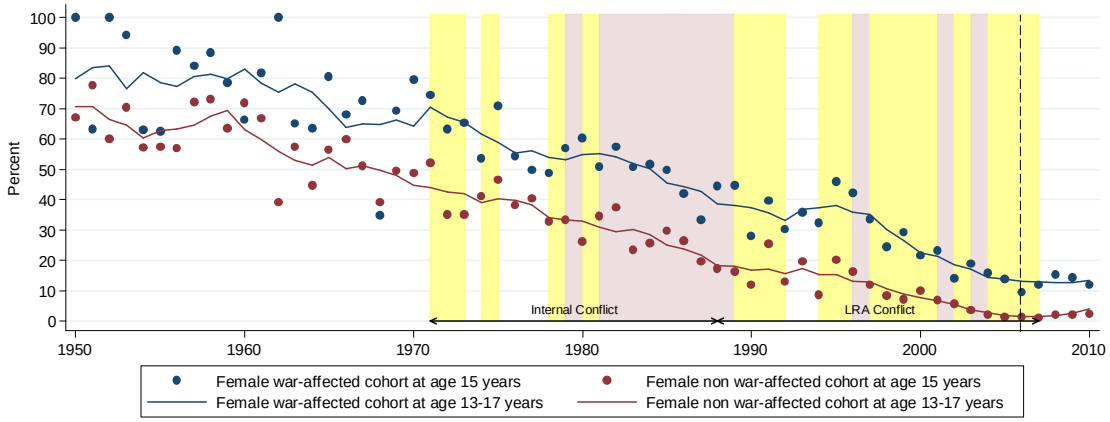
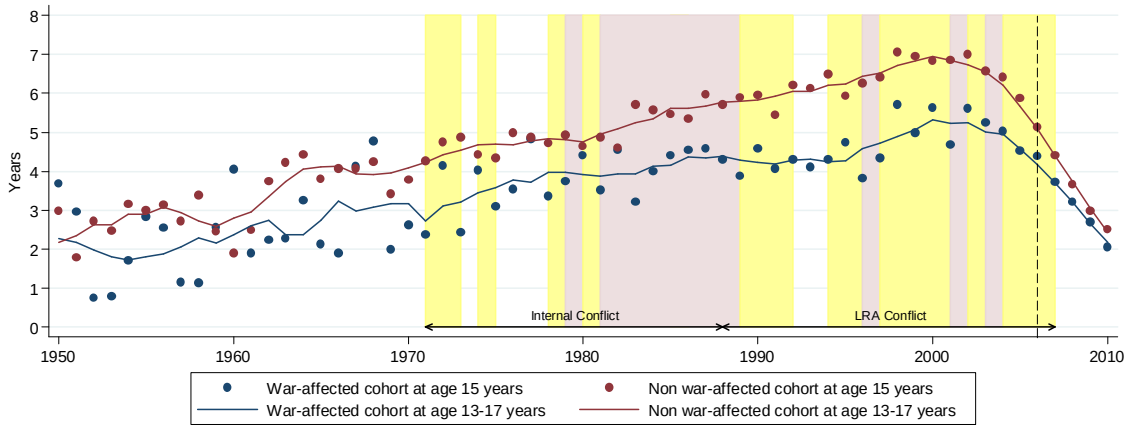


Figure 9.61: Uganda - Share of female population without formal education, north compared to other regions



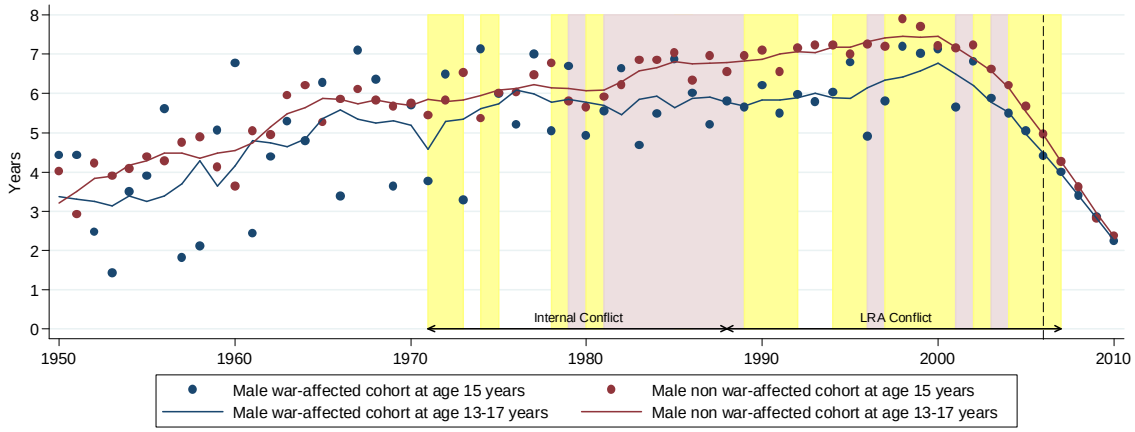
The LRA conflict has affected educational attainment for Northern Ugandans. Figure 9.62 shows how the generations growing up during the conflict have not kept pace with the gains in attainment in the rest of Uganda. For the generations who were of school age during the beginning of the conflict, there is a clear widening of the disparity between the region and the rest of Uganda. For cohorts of school-going age during the late 1990s there is an increase in average years of education, but the near two-year gap between the North and the rest of the country persists.

Figure 9.62: Uganda - Average years of formal education, north compared to other regions



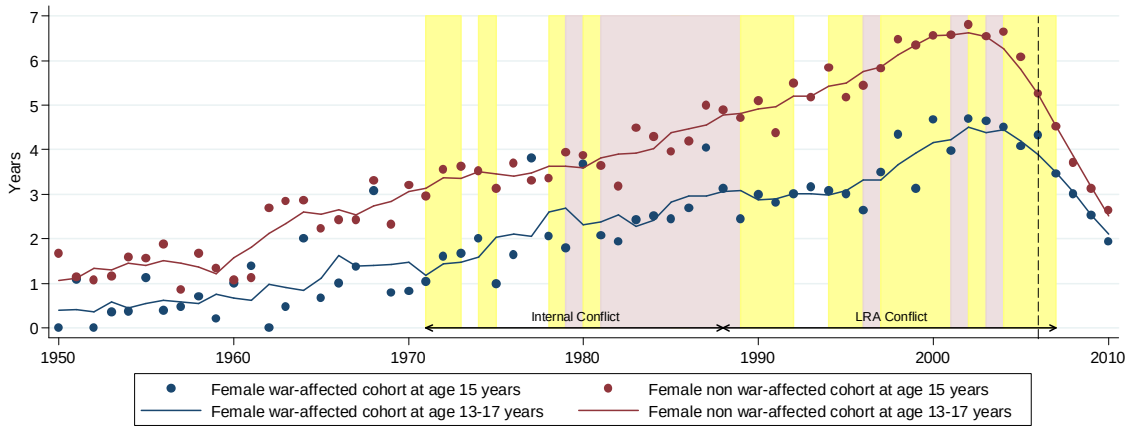
Educational attainment for both Northern Ugandan men and women is visibly affected for the generations who were around 15 years old during the LRA conflict. Average years of schooling for men in Figure 9.63 reflect an increasing disparity between males from the two regional populations. However, this disparity began to widen before the LRA conflict, in about 1980.

Figure 9.63: Uganda - Average years of education (men), north compared to other regions



Women in particular seem to have been negatively affected by the LRA conflict. In Figure 9.64 there is a shift in the trend of educational attainment for the Northern Ugandan subgroup during the onset of the LRA insurgency. While other Ugandan cohorts achieved steadily higher educational attainment, female cohorts from North Uganda who were of school going age in the early 1990s stagnated at approximately three years of schooling. Consistent with the other graphs, there is an increase in educational attainment for the North Ugandan cohorts in the late 1990s.

Figure 9.64: Uganda - Average years of education (women), north compared to other regions



Linguistic Analysis

Identifying the conflict-exposed group by first language also reveals the impact of conflict on generations growing up with the LRA presence. In fact, the impact of the LRA conflict is more clearly seen in Figures 9.65 and 9.66. For the Luo speaking generations that were of school age during the period of LRA conflict, there are visible negative trends in educational attainment compared to other linguistic groups. This is particularly the case

for men, who in the regional analysis showed stagnation in the average number of years of education since the late 1970s, but in the linguistic analysis this group only shows a decline after 1988. However, women from conflicted-affected linguistic groups also display a lack of progress in average educational attainment during the early 1990s, as shown in Figure 9.67.

Figure 9.65: Uganda - Average years of education, Luo compared to other language groups

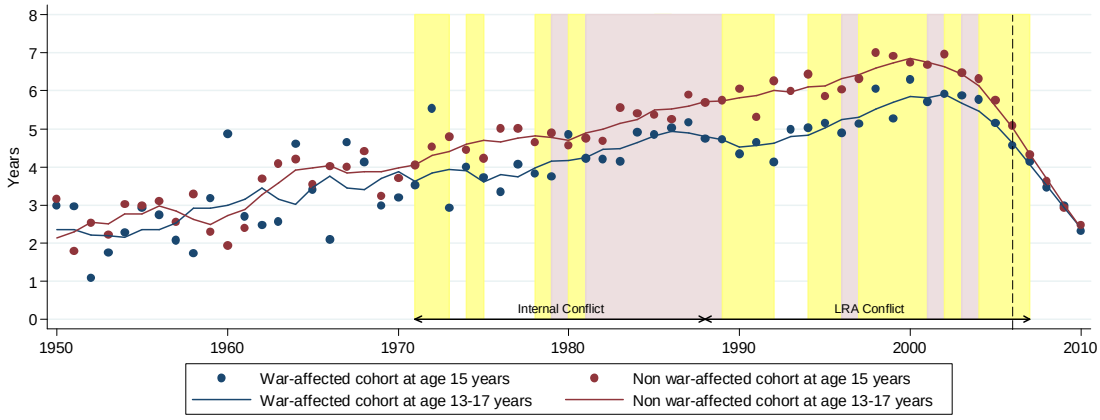


Figure 9.66: Uganda - Average years of education (men), Luo compared to other language groups

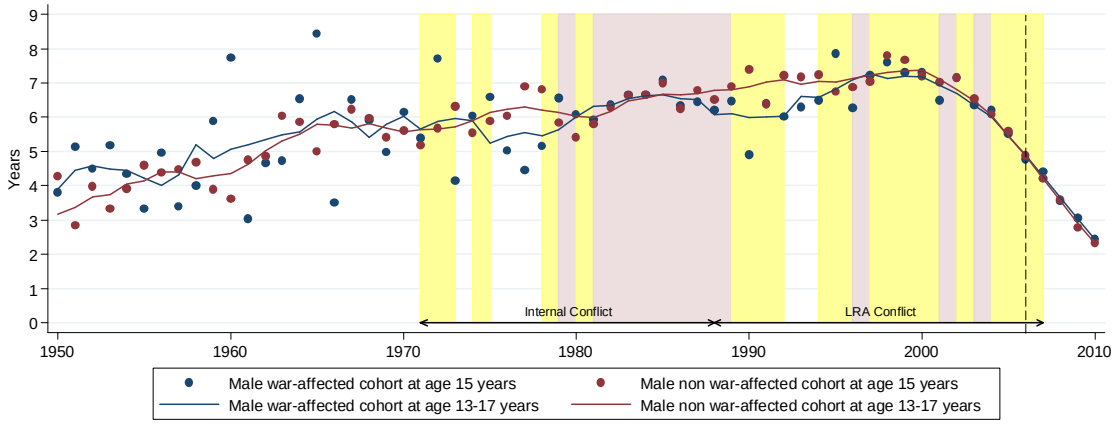
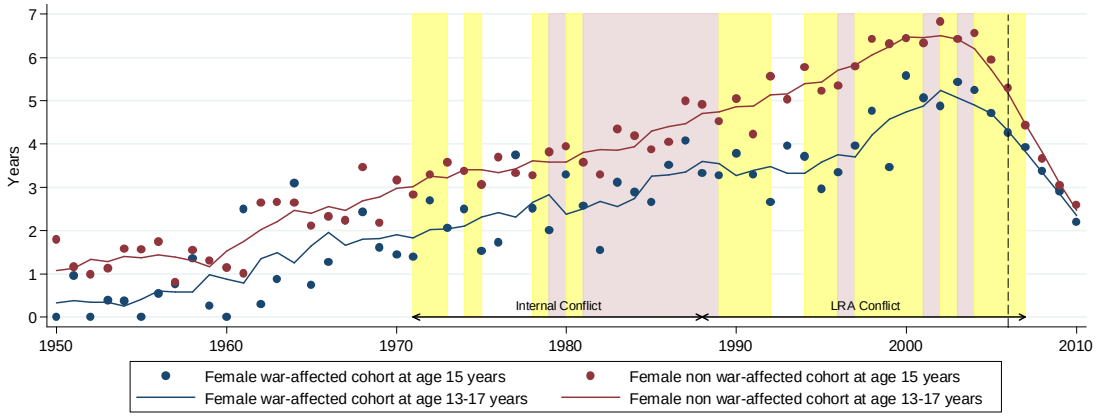


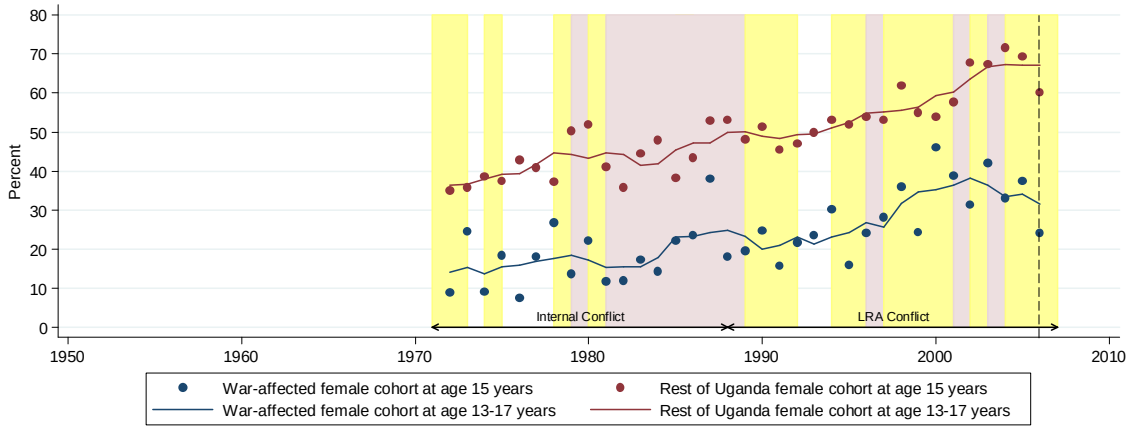
Figure 9.67: Uganda - Average years of education (women), Luo compared to other language groups



Literacy

Due to the small sample size of the male data, only the literacy rate trends of females in Uganda are shown. In Figure 9.68, the percentage of women who are literate in the North and the rest of Uganda are presented. Firstly, we see that there is a significant regional disparity in literacy levels in the country. Looking at the most recent conflict period, we see that literacy levels have declined after 2000, in contrast with the continued increases in the rest of the country. It would be interesting to see the literacy levels of cohorts of school-going age after 2006 in order to understand this trend better. Nonetheless, the graph suggests that the conflict had a detrimental impact on literacy levels of women in the North of Uganda. It is important to note that in addition to analysis based on region, linguistic analysis was also conducted for literacy rates. The resulting figures depicted very similar trends to those based on regional analysis and are therefore not shown here.

Figure 9.68: Uganda - Female literacy rate, Northern region compared to other regions



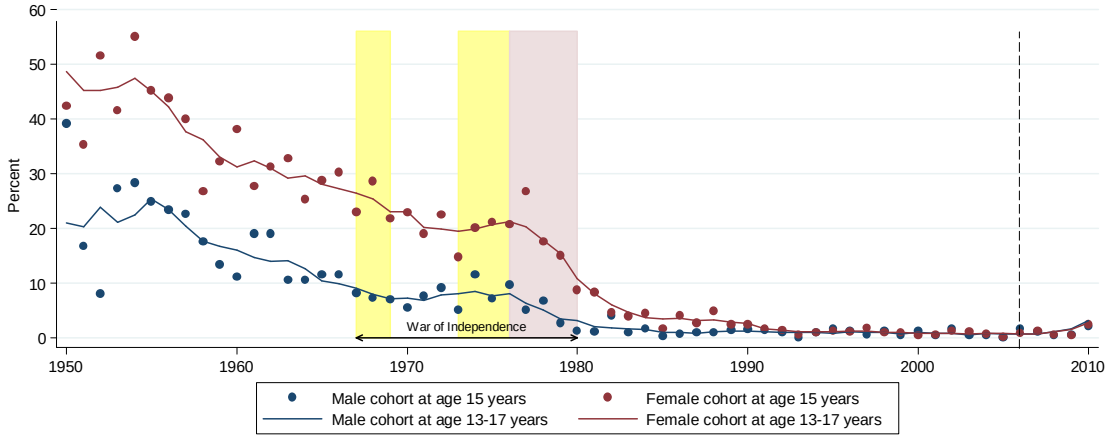
9.14 Zimbabwe

Zimbabwe has been dominated by a single party, ZANU-PF and its leader Robert Mugabe, since independence in 1980. The country fought a brutal independence war against Britain from 1964 until 1979, and has faced conflict after independence between the government and opposition forces. There have been hundreds of reported human rights abuses in the country perpetrated mainly by the ZANU-PF in the last ten years as Mugabe seeks to hold on to power. In terms of education, the country has one of the highest literacy rates in Africa due to a massive literacy and education campaign after independence, which saw more than 600 schools built, the abolishment of primary and secondary school fees, and primary enrolment rates soaring to nearly 100% in 1984 (Pape 1998, 256). Ansell (2002, 92) writes that by 1989 the secondary gross enrolment ratio of 46% was one of the highest on the continent. The country was hailed as a success story during the 1980s. However, these trends have begun to reverse, as school fees have returned and have become increasingly difficult for students to pay. The pressure on the system by the generations of school-going age during the 1980s boom has stretched resources as they move through secondary and now tertiary levels (Ansell 2002). There is little research on the impact of the war of independence on educational levels of children of school-going age during the conflict; work tends to focus on post-independence educational achievements. In Zimbabwe's case children who were denied education under Rhodesia rule may have acquired education in the post-war Zimbabwe period, which may therefore underestimate the interruption and impact of the conflict on their education. The data for the following analysis come from a 2005-06 Demographic and Health Survey.

Gender, Residence and Wealth Quintile Analysis

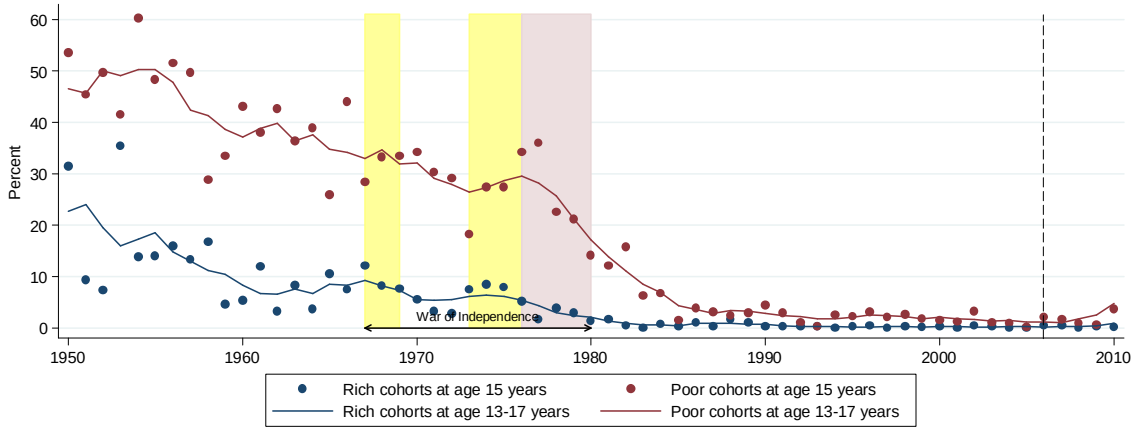
The intersections between gender, wealth and place of residence have very significant effects on the impact of conflict on education in Zimbabwe. From Figure 9.69 we can see that the period of the War of Independence coincides with an increase in the share of both the male and female cohorts without any formal schooling. The substantial education reforms after independence are clearly shown by the rapid decline after 1980 in the share of the population that never attended formal schooling.

Figure 9.69: Zimbabwe - Share of the population without formal education, by sex



Disaggregation by wealth also reveals differential effects of conflict on education (see Figure 9.70). The conflict period did not seem to have a substantial negative effect on the share of the two richest cohorts that had no formal schooling. There are slight increases during the two periods of minor intensity conflict, as represented by the yellow shaded areas. By contrast, the population in the two poorest cohorts experienced a much more substantial rise in the proportion without formal schooling. This can be observed most notably for poor cohorts that were of school age around 1976, the beginning of the most intense period of the conflict. Both groups seemed to have benefitted from educational reforms in the independence years, although the gap between the richest and poorest in Zimbabwe took about ten years to close.

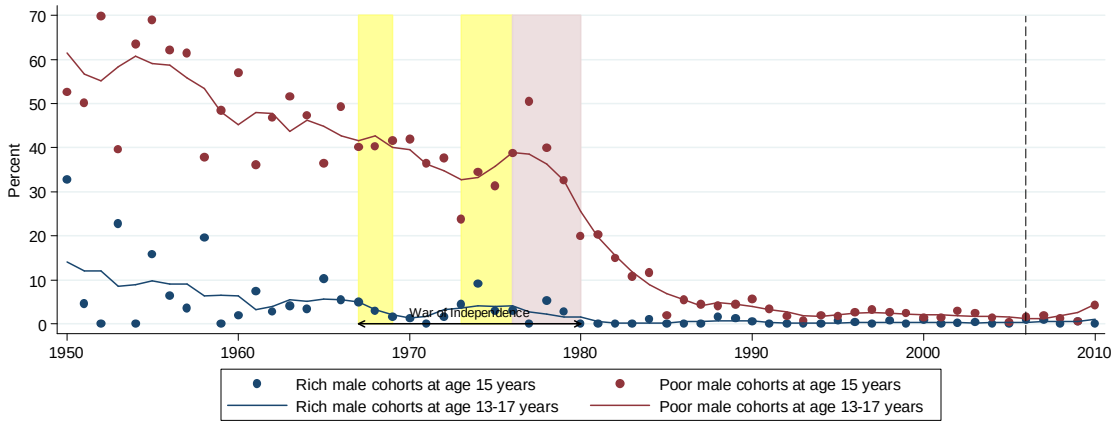
Figure 9.70: Zimbabwe - Share of the population without formal education, by wealth quintiles



Pursuing the wealth dimension further sheds greater insight into the effects of the War of Independence on Zimbabwe's children. Figure 9.71 provides a comparison of the outcomes for richest and poorest males in the population. It is clear that males of school-going age during the conflict periods who are in the two richest cohorts were hardly affected by the conflict in terms of school participation. On the other hand, males

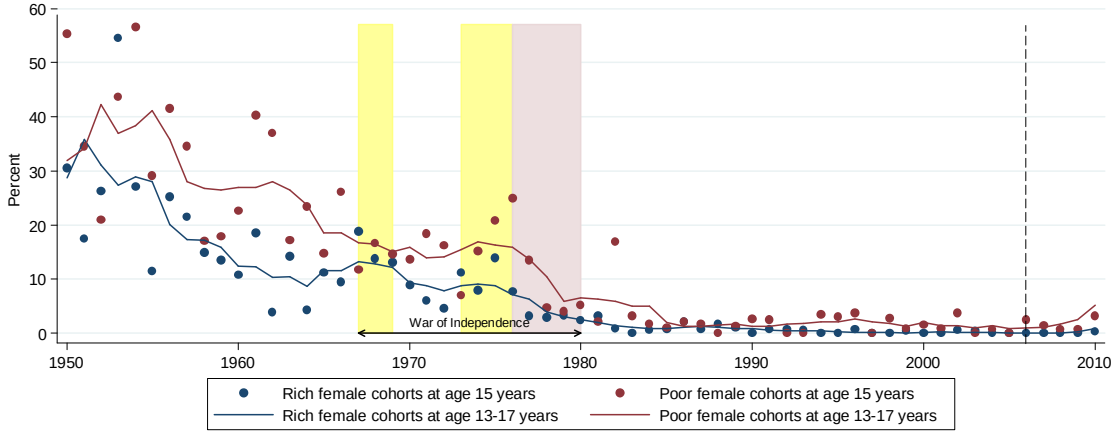
who were of school-going age during the conflict and who are in the two poorest cohorts show a much larger increase in the proportion with no formal education. In the post-war years this group showed rapid improvement and by the late 1980s had similar rates as the richest cohort in terms of participation in education.

Figure 9.71: Zimbabwe - Share of the male population without formal education, by wealth quintile



What role does wealth play in how the share of females without formal education changes over periods of conflict? Figure 9.72 shows that conflict affects the educational participation rate of the poorest and richest women in the population. Women of school-going age during the conflict increase in the proportion without formal education during both conflict periods. While the poorest women rise more than the richest ones, the trends of women are strikingly different than those of men, where wealth played a much larger role in determining the impact of conflict on educational participation.

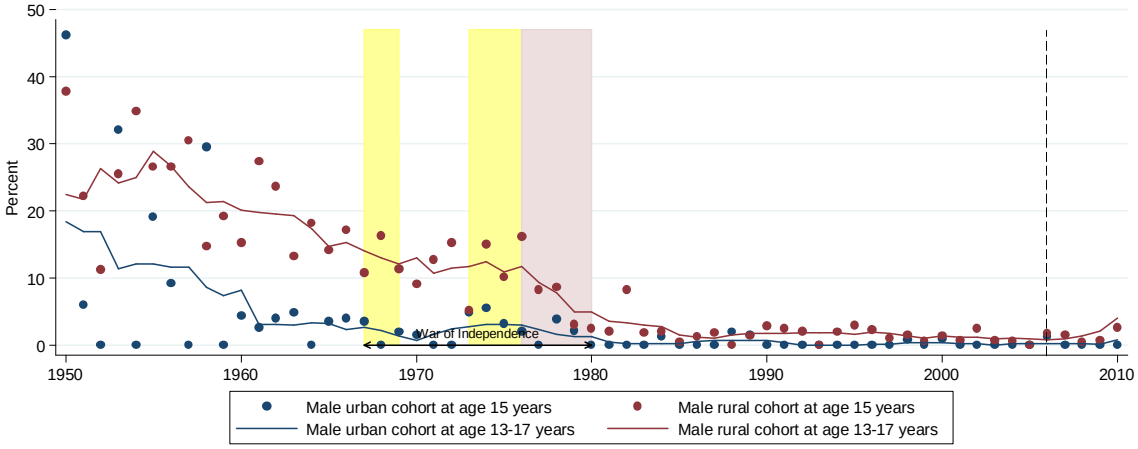
Figure 9.72: Zimbabwe - Share of the female population without formal education, by wealth quintile



The rural and urban divide is very important in the Zimbabwe case. Pape (1998, 256) reports that “before 1980, there was not a single government secondary school in the

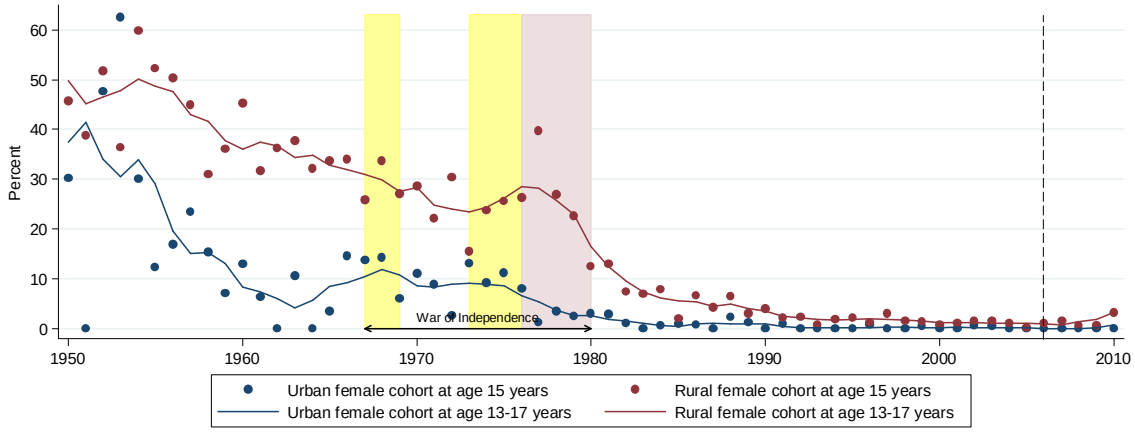
rural areas". While it is clear that there has been migration and displacement since the war period, the data from the 2005-06 DHS survey still reveal some interesting results. From the trends in Figure 9.73, we can see how the conflict periods coincided with a widening in the rural/urban divide for males of school-going age during that time. However, the gap is not as wide as the disparities in educational participation when looking at wealth as in Figure 9.71. Nonetheless, it is clear that males living in urban areas who were of school-going age during the civil war show no substantial differences from the trends in the pre-conflict period. Thus the urban and rural divide seems to be an important determinant of the impact of the conflict on access to formal education for males.

Figure 9.73: Zimbabwe - Share of the male population without formal education, by residence



Again, female cohorts in both rural and urban settings suffer most during periods of conflict and show significantly bigger increases in the share without formal education than male cohorts (see Figure 9.74). While the girls of school-going age during the conflict living in rural areas show a larger increase, the legacy of the conflict period is clear for both groups. Therefore, women, whether rich, poor, urban or rural, were all negatively affected by the conflict in terms of educational participation.

Figure 9.74: Zimbabwe - Share of the female population without formal education, by residence



Conflict has also negatively affected the educational attainment of Zimbabweans, but in a selective way. In the figures that follow we will see that a decrease or stagnation of the average levels of education during the War of Independence only occurs for the poor or those living in rural areas. Furthermore, the educational attainment of women overall seem to be more significantly affected than that of men by the war. Figure 9.75 compares men and women and shows a slight weakening in the overall increasing trend during the initial years of the conflict. However to uncover the real effects of the War on education, we must examine deeper.

Figure 9.75: Zimbabwe - Average years of education, by sex

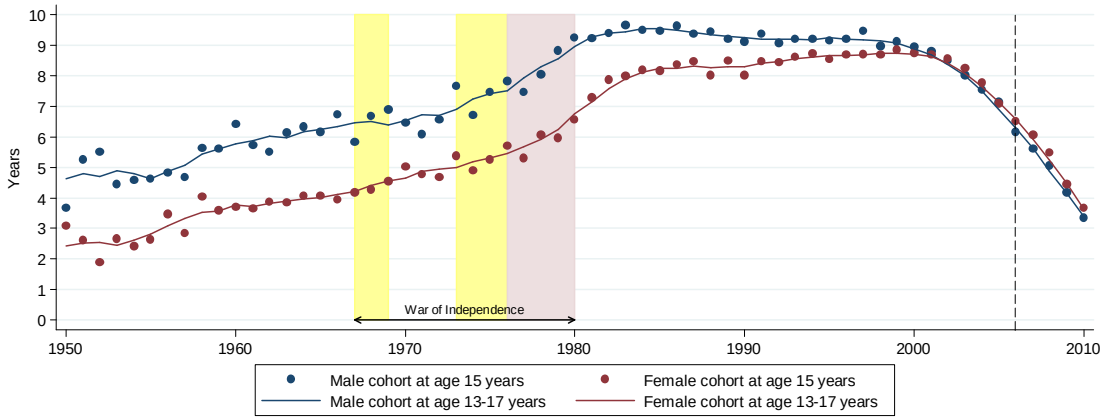


Figure 9.76 portrays the impact of household wealth on educational attainment during conflict in Zimbabwe. Unlike the richest cohorts, the poorest cohorts experience only a weak increase in average years of education over the conflict period. There is near-stagnation in their educational attainment, which in turn widens the wealth gap in education. Only during the final years of the conflict is there an increase in educational attainment, which is most likely attributable to education gained after the conflict by

these cohorts. When looking at the educational attainment of the poorest women and men in Figure 9.77, we see similar trends. Poor women actually show a decrease in average years of education during the most intense years of the war. The legacy of the conflict on the educational attainment of poor male cohorts was less severe than for poor female cohorts. Nonetheless, poor male cohorts of school-going age show a weakening in the increase in average years of education over the war years. The richest cohort, on the other hand, improves steadily over most of the conflict period, as can be seen in Figure 9.76. It is interesting to observe that during the conflict in the late 1960s, rich, poor, rural and urban cohorts show a flattening of the trend in educational attainment. The difference is that some groups, such as poor women or the rural population, show little improvement from 1970 to the end of the war, while others, such as the rich cohort below, increase in attainment throughout the rest of the war period.

Figure 9.76: Zimbabwe - Average years of education, by wealth quintiles

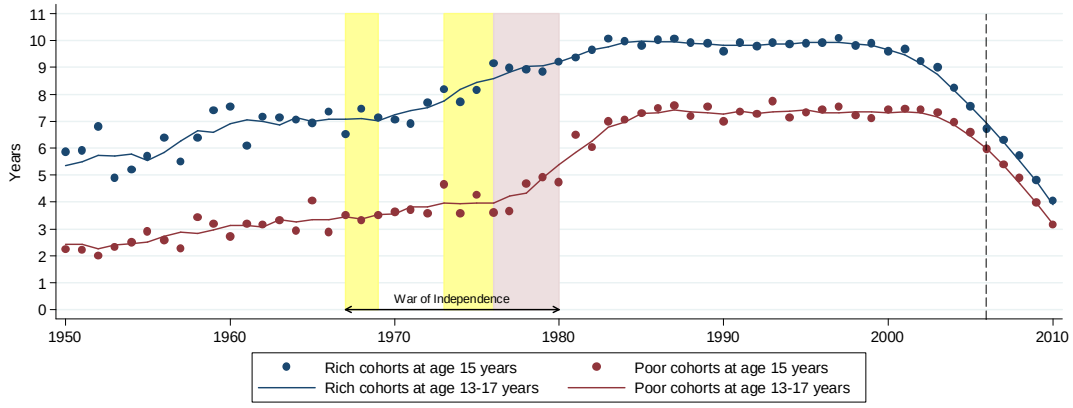
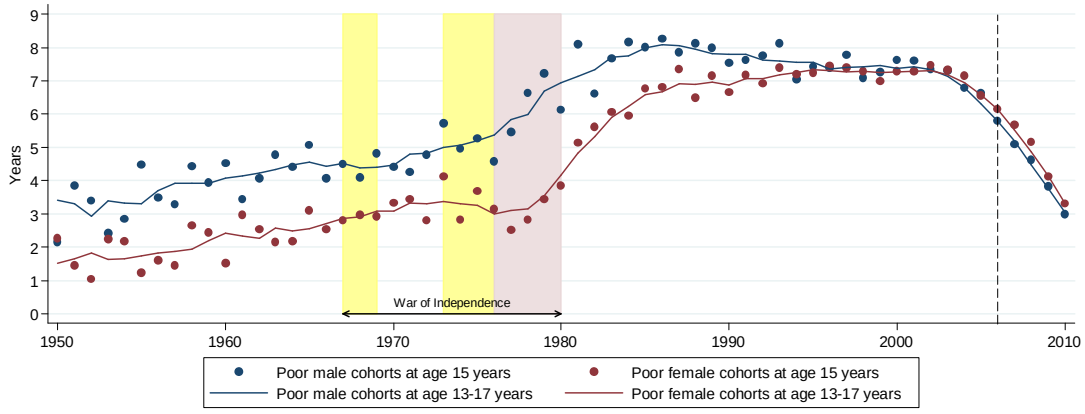


Figure 9.77 Zimbabwe - Average years of education, by sex and wealth quintiles



Literacy

Figures 9.78 and 9.79 both reflect the rapid improvement in literacy rates in Zimbabwe in the post-independence period. Due to age restrictions in the women's and men's questionnaire of the DHS, no literacy data are available for cohorts of school-going age

before the War of Independence. This is unfortunate because it prevents understanding of the pre-conflict trend and levels of literacy. Nonetheless, it is apparent in both figures that there was stagnation of the literacy rate during the war, for both men and women, and for those in the two richest and poorest wealth quintiles. After the war all groups increased the literate share of their cohorts, with women and the poorest quintiles undergoing the most dramatic rise in literacy levels.

Figure 9.78: Zimbabwe - Literacy rate, by sex

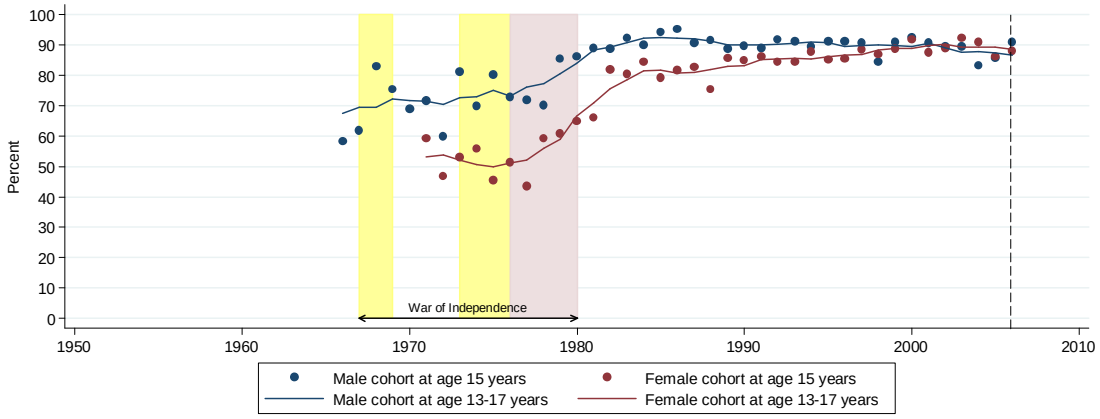
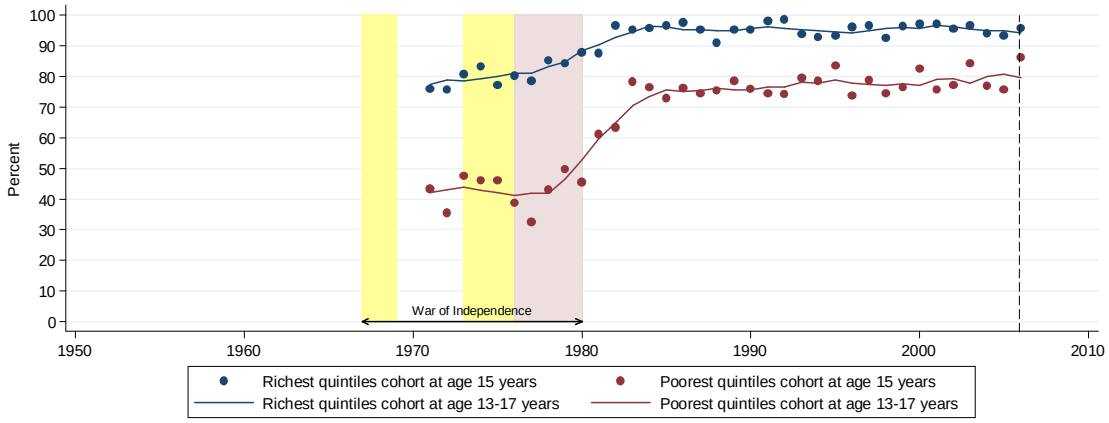


Figure 9.79: Zimbabwe - Literacy rate, by wealth quintiles



10. Conclusion

Overall, the analyses paint a compelling picture of the negative effects of conflict on generations of school age during periods of war. From country to country the particular impact of conflict varies; gender, region, residence, language, ethnicity and wealth all emerged as important dimensions for the twenty-five countries studied. The paper did not conduct difference-in-difference analysis or regression, but instead sought to compare its findings with those of scholars who did use these methods for as many countries as possible. The paper's approach was similar to the one taken by de Walque

(2006), looking at the legacy of conflict on the population with DHS data. The results provide a snapshot of the educational legacy of conflict years on the population of the country at the time of the survey. Background research was important to situate and interpret the trends in attainment. However, in order to truly understand the casual mechanisms for the declines presented in the figures, in-depth qualitative research would complement the findings reported in this paper.

The paper mainly differentiated between two kinds of conflict: interstate and intrastate conflicts of high intensity and those of minor intensity as defined by the UCDP/PRIO database (Uppsala Conflict Data Program, Uppsala University 2009). As well, the study examined the effects of one-sided violence or non-state conflicts, as in the case of the Khmer Rouge regime in Cambodia, or the Rwandan genocide.

The study focused on two dependent variables that measure access to formal schooling and retention: the share of the population without formal schooling and the average number of years of formal education. In the twenty-three countries where some negative effect of conflict on education could be observed, not all showed negative effects for both variables. Access to formal schooling during conflict was severely impeded in Afghanistan, Rwanda and Uganda, among others. In these countries, significant negative effects on education could be demonstrated for cohorts who were of school-going age during conflict periods. In some countries, such as Bosnia and Herzegovina, Republic of the Congo and Tajikistan, the strong education system meant that the proportion of the population without formal schooling remained extremely low despite the conflict. Rather, progress to higher levels of education was negatively affected. The analysis based on the population with any formal schooling looked at the changes in retention levels during conflict periods. In Cambodia, the paper analyzed the average number of years of education only for cohorts with any formal education, which revealed that decreased retention played a significant role in the reduction in average years of education during conflict periods.

In many countries gender influenced the effects of conflict on education. It is clear that the effects of war are often gendered: for some countries, such as Ethiopia, Cambodia, Chad and Mozambique, the educational attainment of male cohorts was more negatively affected than that of female cohorts during periods of conflict. However, for the most part, conflict periods often coincided with higher proportions of girls without formal education and steeper declines in educational attainment. As we saw, this was the case in Zimbabwe, Uganda, the Democratic Republic of the Congo, Tajikistan, Chad and Eritrea. While the decline in any group's educational attainment is unfortunate, the impact of conflict on girls often serves to worsen existing disparities between men and women. On the other hand, in some countries the deleterious effects of conflict were observed in both male and female generations for Afghanistan, Iraq, Rwanda, Guatemala, Burundi, Sierra Leone and Somalia. For these countries there were little marked differences in educational attainment between the male and female cohorts of

school-going age during conflict periods; both showed relatively equal declines in educational attainment and participation during conflict.

Region also emerged as a significant factor in the study. For most countries, conflict was localized in specific regions, which tended to exacerbate pre-existing disparities in educational attainment. Some caveats apply to the regional analysis in the study, as the DHS and MICS do not contain migration or municipal level data, which would render results more accurate. Nonetheless, analysis of Uganda, Pakistan, India, Eritrea, Ethiopia, Rwanda, Guatemala, Democratic Republic of the Congo, Iraq, Turkey and Côte d'Ivoire showed that conflict disproportionately affected particular regions, and the effects were discernable with the regional-level household survey data available in DHS, MICS and ENCOVI. The widespread nature of conflict in other countries permitted a national-level analysis; an impact of conflict on educational trends for the population as a whole was observed in Cambodia, Afghanistan and Zimbabwe.

Another key dimension affecting educational attainment during conflict is household wealth. In most countries the cohorts of school-going age during a conflict who belonged to the richest quintiles showed relatively uninterrupted increases in educational attainment throughout the conflict period. However, the cohorts in the poorest quintiles were likely to show increases in the proportion without formal education or decreases in educational attainment over the same period. This was the case in Bosnia and Herzegovina, Republic of the Congo, India, Afghanistan and Zimbabwe.

Perhaps surprisingly, in other countries it is the educational attainment of the richest cohorts that is most negatively affected. In some countries the richest cohorts of school-going age declined in educational attainment during conflict periods, while the poorest cohorts remained at their relatively low pre-conflict levels. These countries include Burundi, Rwanda, Cambodia and Somalia. Scholars have noted that war tends to affect secondary school enrolment more than primary enrolment (Shemyakina 2006). As mentioned in the introduction, there are several arguments that seek to explain this phenomenon. Secondary education requires more specialized resources than primary and is thus more difficult to establish during or after armed conflict. In addition, work or military opportunities can be attractive to students of secondary school age, especially in an environment of economic uncertainty. As well, in the case of Rwanda, Cambodia and Somalia, the educated classes of society were actively targeted during the conflict, which can also decrease the average years of education for cohorts during this period.

Residence in urban or rural areas was another significant factor that shaped the educational path of generations of school-going age during conflict. In Chad and Somalia, the rural-urban divide was an important factor. The urban population in Chad declined in educational attainment during conflict periods, while their rural counterparts did not show any marked difference from pre-conflict trends. Urban cohorts in Somalia also had much lower attainment during the early 1990s, coinciding with the collapse of the government, while the attainment of rural cohorts declined slightly. This is

interesting, as in both cases urban educational attainment outpaced that of the rural population, but it was more negatively impacted. The rural-urban divide was also indirectly studied in many regional analyses in the paper, which examined predominantly rural regions such as Tigray in Ethiopia, Gash-Barka in Eritrea and Mayan-populated areas in Guatemala.

It is important to note that in many cases the groups most negatively affected by conflict were those that suffered from multiple exclusion, for example based on gender, area of residence, household wealth, language, and ethnicity. In countries with regionally-focused conflicts most often there was another important dimension that shaped the effects of the conflict. For example, in the Democratic Republic of the Congo, women who lived in the eastern part of the country were negatively affected. In the case of Uganda, female Luo speakers who were of school-going age during the conflict showed significant negative effects on educational outcomes.

Of the twenty-five countries analyzed in this paper, only two countries did not reveal any visible legacy of conflict on generations of school-going age. Despite disaggregation and analysis based on the dimensions mentioned above, no observable trends emerged in Colombia and the Central African Republic that pointed to a specific impact of conflict. Scholarly work on conflict-exposed Colombian children shows clear negative effects in terms of drop-out levels; however this requires municipal level data and more accurate information on the location of conflict (Rodríguez and Sánchez 2009). In the case of the Central African Republic, more recent data are needed to show the educational outcomes for the conflict-exposed generation.

This study demonstrated that household surveys can shed light on the multifaceted effects of conflict on education. It is clear that for most of the countries studied, conflict had far-reaching and permanent negative effects on both access to school and progress through the education system. The negative trends are even more striking if one considers that the data include education that may have been completed in the post-conflict period. The data provided by household surveys for cohorts of school-going age during conflict are a measure of the maximum educational attainment achieved by the cohort. Therefore, the fact that conflict-exposed cohorts in twenty-three countries exhibit negative trends in educational participation and attainment underscores the permanent harm caused by armed conflict. While some children may return to school after a conflict, the results of this study point to the fact that most do not, leaving behind entire generations with a significant educational deficit.

Bibliography

Abdi, Ali A. 1998. Education in Somalia: history, destruction, and calls for reconstruction. *Comparative Education* 34, no. 3 (November): 327-340.

Akbulut-Yuksel, Mevlude. 2009. *Children of war: The long-run effects of large-scale physical destruction and warfare on children*. Discussion papers No. 4407. Bonn: IZA.

Akresh, Richard, and Damien de Walque. 2008. *Armed conflict and schooling: Evidence from the 1994 Rwandan genocide*. Policy Research Working Paper 4606. Washington: World Bank.

Allbritton, Christopher. 2009. The Pakistani Taliban's war on schoolchildren. *Time Magazine*, December 4. http://www.time.com/time/world/article/0,8599,1943639,00.html.

Ansell, Nicola. 2002. Secondary education reform in Lesotho and Zimbabwe and the needs of rural girls: Pronouncements, policy and practice. *Comparative Education* 38, no. 1: 91.

Bell, Martin. 2006. *Democratic Republic of Congo: Martin Bell reports on children caught in war*. Child Alert. United Nations Children's Fund (UNICEF), July. http://www.unicef.org/childalert/drc/content/Child_Alert_DRC_en.pdf.

Bellows, John, and Edward Miguel. 2006. War and institutions: New evidence from Sierra Leone. *The American Economic Review* 96, no. 2 (May): 394-399.

———. 2009. War and local collective action in Sierra Leone. *Journal of Public Economics* 93, no. 11 (December): 1144-1157.

Birks, J. S., C. A. Sinclair, and J. A. Socknat. 1981. Aspects of labour migration from North Yemen. *Middle Eastern Studies* 17, no. 1 (January): 49-63.

Brück, Tilman. 1997. *Macroeconomic effects of the war in Mozambique*. QEH Working Paper Series. Queen Elizabeth House: University of Oxford International Development Centre, December.

Buckland, Peter. 2005. *Reshaping the future: Education and post-conflict reconstruction*. Washington: World Bank.

Bureau of African Affairs. 2010. Background note: Central African Republic. U.S. Department of State, January. http://www.state.gov/r/pa/ei/bgn/4007.htm.

Carapico, Sheila. 1998. *Civil society in Yemen: The political economy of activism in modern Arabia*. Cambridge Middle East studies 9. New York: Cambridge University Press, March 28.

Central Organization for Statistics & Information Technology, and Kurdistan Regional

Statistics Office. 2007. *Iraq Multiple Indicator Cluster Survey 2006*. Iraq.

Chamarbagwala, Rubiana, and Hilcías E. Morán. 2010. The human capital consequences of civil war: Evidence from Guatemala. *Journal of Development Economics* (Article in Press). http://www.sciencedirect.com/science/article/B6VBV-4Y7P4S8-1/2/eca76acf92ef8ce17e40d696cb37fce4.

Civil Society Organisations for Peace in Northern Uganda (CSOPNU). 2007. *Worst place to be a child: The impact of armed conflict on children in Northern and North-Eastern Uganda*. Kampala: CSOPNU, March.

Collelo, Thomas. 1988. Chad: a country study. GPO for the Library of Congress. http://countrystudies.us/chad/.

Collier, Paul, and Nicholas Sambanis. 2005. *Understanding civil war: evidence and analysis -- Africa*. Vol. 1. World Bank Publications.

Decalo, Samuel. 1980. Regionalism, political decay, and civil strife in Chad. *The Journal of Modern African Studies* 18, no. 1 (March): 23-56.

Development Studies at the University of Dublin, Trinity College. 2010. Mozambique. April. http://www.tcd.ie/Economics/Development_Studies/link.php?id=143.

Dodge, Cole P., and M Raundalen. 1991. *Reaching children in war: Sudan, Uganda, and Mozambique*. 1st ed. Bergen, Norway: Scandinavian Institute of African Studies.

Eck, Kristine. 2005. *A beginner's guide to conflict data: Finding and using the right dataset*. UCDP Paper no. 1. Uppsala: Department of Peace and Conflict Research, Uppsala University, December.

Englebert, Pierre, and James Ron. 2004. Primary commodities and war: Congo-Brazzaville's ambivalent resource curse. *Comparative Politics* 37, no. 1 (October): 61-81.

Eritrea Ministry of Education. 1999. *Education for All in Eritrea: Policies, strategies and prospects*. EFA Country Reports. Asmara, Eritrea: UNESCO, September.

Filmer, Deon, and Lant H. Pritchett. 2001. Estimating wealth effects without expenditure data - or tears: An application to educational enrollments in states of India. *Demography* 38, no. 1 (February): 115-132.

Finnström, Sverker. 2006. Wars of the past and war in the present: The Lord's Resistance Movement/Army in Uganda. *Africa* 76, no. 2: 200-220.

Holmes, Jennifer S., Sheila Amin Gutierrez de Pineres, and Kevin M. Curtin. 2006. Drugs, violence, and development in Colombia: A department-level analysis. *Latin American Politics and Society* 48, no. 3: 157-184.

Human Rights Watch. 2006. *"Everyone lives in fear": Patterns of impunity in Jammu and Kashmir*. Human Rights Watch, September 11. http://www.hrw.org/en/node/11179/section/4.

ICF Macro. 2008. Demographic and Health Surveys: Model men's questionnaire. August 22.

Ichino, Andrea, and Rudolf Winter-Ebmer. 1998. *The long-run educational cost of World War II: An example of local average treatment effect estimation*. EUI Working Paper ECO No. 98/10. San Domenico: European University Institute, April.

Institut National de la Statistique (INS) [Côte d'Ivoire]. 2007. *Côte d'Ivoire: Enquête par grappes à indicateurs multiples 2006 - Rapport final*. Abidjan: Institut National de la Statistique.

IRIN Africa. 2009. *Central African Republic: Humanitarian needs "overwhelming"*. Nairobi: IRIN Africa, August 14. http://www.irinnews.org/Report.aspx?ReportId=85713.

Kilokila-Kiampassi, Krysis. 2005. *Barbarie et folie meurtrière au Congo-Brazzaville*. Paris: Editions L'Harmattan.

Lacina, Bethany, and Nils Petter Gleditsch. 2005. Monitoring trends in global combat: A new dataset of battle deaths. *European Journal of Population/Revue européenne de Démographie* 21, no. 2: 145-166.

Lai, Brian, and Clayton Thyne. 2007. The effect of civil war on education, 1980-97. *Journal of Peace Research* 44, no. 3 (May): 277-292.

Lopez, Humberto, and Quentin Wodon. 2005a. The economic impact of armed conflict in Rwanda. *Journal of African Economies* 14, no. 4: 586-602.

Lutz, Wolfgang, and Sergei Scherbov. 2006. *Global age-specific literacy projections model (GALP): Rationale, methodology and software*. Montreal: UNESCO Institute for Statistics (UIS).

Machel, Graça. 1996. *The impact of armed conflict on children*. United Nations Children's Fund (UNICEF), August 26. http://www.unicef.org/graca/a51-306_en.pdf.

Marsden, Peter. 1998. *The Taliban: War, religion and the new order in Afghanistan*. Politics in contemporary Asia. New York: Oxford University Press; Zed Books.

Merrouche, Ouarda. 2006. The human capital cost of landmine contamination in Cambodia. *Households in Conflict Network*, no. 25. Working Paper (December).

Miguel, Edward, and Gerard Roland. 2006. *The long run impact of bombing Vietnam*.

NBER Working Paper. Cambridge: National Bureau of Economic Research, January.

Mutlu, Servet. 1996. Ethnic Kurds in Turkey: A Demographic Study. *International Journal of Middle East Studies* 28, no. 4 (November): 517-541.

National Institute of Population Studies, and Macro International Inc. 2008. *Pakistan: a Demographic and Health Survey 2006-07*. Islamabad, Pakistan: National Institute of Population Studies and Macro International Inc., June.

Ndikumana, Leonce, and Kisangani Emizet. 2005. The economics of civil war: The case of the Democratic Republic of Congo. In *Understanding civil war: evidence and analysis vol. 2*, 63-87. Washington D.C.: World Bank Publications.

Nicolai, Susan, ed. 2008. *Opportunities for change: Education innovation and reform during and after conflict*. Paris: UNESCO.

Nkurunziza, Janvier, and Floribert Ngaruko. 2002. *Explaining growth in Burundi: 1960-2000*. The Centre for the Study of African Economies Working Paper Series. Centre for the Study of African Economies.

Pape, John. 1998. Changing education for majority rule in Zimbabwe and South Africa. *Comparative Education Review* 42, no. 3 (August): 253-266.

Rena, Ravinder. 2008. Education in Eritrea: Developmental challenges. *International Journal of Scientific Research in Education* 1, no. 1. MPRA Paper no. 12626 (June): 41-53.

Rodríguez, Catherine, and Fabio Sánchez. 2009. Armed conflict exposure, human capital investments and child labor: Evidence from Colombia. Documentos CEDE, February.

Rutstein, Shea Oscar, and Guillermo Rojas. 2006. *Guide to DHS statistics*. Calverton, MD: ORC Macro, September.

de Santisteban, Agustin Velloso. 2005. Sanctions, war, occupation and the de-development of education in Iraq. *International Review of Education* 51, no. 1 (January): 59-71.

Schofield, Victoria. n.d. *Kashmir in conflict*. New York: I.B.Tauris.

Shemyakina, Olga. 2006. *The effect of armed conflict on accumulation of schooling: Results from Tajikistan*. HiCN Working Paper 12. Falmer: University of Sussex, November.

Sirkeci, Ibrahim. 2000. Exploring the Kurdish population in the Turkish context. *GENUS, An International Journal of Demography* 56, no. 1: 149-175.

StataCorp. 2009. *Stata statistical software: Release 11*. College Station, TX: StataCorp

LP.

Steves, Franklin. 2003. Regime change and war: Domestic politics and the escalation of the Ethiopia--Eritrea conflict. *Cambridge Review of International Affairs* 16, no. 1: 119 -133.

Sudan, Falendra Kumar. 2010. *Social and economic costs of armed conflicts on children: Evidence from displaced camps in Jammu and Kashmir, India*. Oxford, United Kingdom: Households in Conflict Network, February 1. http://www.hicn.org/FifthWorkshop_Sudan.pdf.

Swee, Eik Leong. 2009. *On war and schooling attainment: The case of Bosnia and Herzegovina*. Households in Conflict Network Working Paper 57. Falmer: University of Sussex, April.

UNESCO Institute for Statistics (UIS). 2010. Data Centre. http://stats.uis.unesco.org.

United Nations Children's Fund (UNICEF). 2006. *Multiple Indicator Cluster Survey manual 2005: Monitoring the situation of women and children*. New York: UNICEF.

———. 2008a. Yemen: The big picture. *At a Glance: Yemen*. March 26. http://www.unicef.org/infobycountry/yemen.html.

———. 2008b. Education statistics: Burundi. May. http://www.childinfo.org/files/ESAR_Burundi.pdf.

———. 2009. At a glance: Congo. UNICEF, February 5. http://www.unicef.org/infobycountry/congo.html.

———. 2005. Children given chance to resume education in Côte d'Ivoire. *UNICEF Newsline*, April 11. http://www.unicef.org/infobycountry/cotedivoire_25081.html.

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2010a. *Education for All global monitoring report 2010: Reaching the marginalized.* Paris: UNESCO.

———. 2010b. *Education under attack 2010*. Paris: UNESCO.

———. 2006. *ISCED 1997: International Standard Classification of Education*. Montreal: UNESCO Institute for Statistics.

———. 2005. *Education for All: Literacy for life - EFA global monitoring report 2006*. Paris: UNESCO.

———. 1999a. *Education for All 2000 assessment for Afghanistan*. ENDP/UNESCO, December. http://www.unesco.org/education/wef/countryreports/afghanistan/contents.html#cont.

———. 1999b. *Education pour Tous : Bilan à l'an 2000 Burundi*. Bujumbura: Ministère de l'éducation nationale / UNESCO, August. http://www.unesco.org/education/wef/countryreports/burundi/contents.html.

———. 1999c. *Education for All: The year 2000 assessment report of Mozambique*. UNESCO. http://www.unesco.org/education/wef/countryreports/mozambique/contents.html.

United Nations Office for the Coordination of Humanitarian Affairs. 2006. *Action plan 2006: Democratic Republic of Congo*. Kinshasa: United Nations Office for the Coordination of Humanitarian Affairs.

United Nations Office of the Humanitarian Coordinator for Iraq. 2003. Background paper: Education in Iraq. United Nations, May 16. http://iraq.undg.org/uploads/doc/Education%20in%20Iraq%20-%20background.doc.

Uppsala Conflict Data Program, Uppsala University. 2009. UCDP/PRIO armed conflict dataset v.4-2009, 1946-2008. June 21. http://www.ucdp.uu.se/database.

de Walque, Damien. 2006. The socio-demographic legacy of the Khmer Rouge period in Cambodia. *Population Studies* 60, no. 2: 223-31.

de Walque, Damien, and Philip Verwimp. 2009. *The demographic and socio-economic distribution of excess mortality during the 1994 genocide in Rwanda*. Policy Research Working Papers 4850. Washington: World Bank Publications.

Weinstein, Jeremy, and Laudemiro Francisco. 2005. The civil war in Mozambique: The balance between internal and external forces. In *Understanding civil war: Evidence and analysis*, 1:157-192. Washington, D.C.: World Bank Publications.

World Bank. 2009. Country brief: Republic of Congo. World Bank, September. http://go.worldbank.org/8Q3J019QF0.

———. 2010. Country brief: Côte d'Ivoire. World Bank, January 20. http://go.worldbank.org/SN2JJ08PI0.