

## Does social action fund promote schooling in conflict affected countries? Mixed evidence from Angola

Eric W. Djimeu<sup>1</sup>

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**Abstract:** Although recent evidence shows detrimental effects of armed conflict on educational attainment, coupled with the fact that 50% of children out of school live in conflict affected countries, there is a lack of studies rigorously assessing the effectiveness of different social and economic development interventions aiming to mitigate the impact of armed conflict on education outcomes. In order to fill this knowledge gap, this study assesses the impact of education investments financed by the Angola Social Action Fund from 1994 to 2001 on years of schooling. I use the Angola 2001 Multiple Indicator Cluster Survey to evaluate this impact. Using difference in differences estimation and a fixed effects model, I find that for individuals currently enrolled in schools and living in non-migrant households, an additional year of exposure to Angola Social Fund leads to an increase of years of schooling by 0.175 years. I find that Angola Social Action Fund has no impact on years of schooling for individuals currently out of school and for individuals living in migrant households. I find no heterogeneous effects of ASAF by variables considered. Interventions such as social funds can be used to mitigate the impact of civil war on education for individuals already enrolled in schools and living in non-migrant households. However, for individuals out of schools, there is great need to design innovative interventions specifically addressed to their circumstances and to test them rigorously in order to find interventions that can effectively mitigate the impacts of civil war on education.

**Keywords:** Armed conflict, Social Action Funds, Education, Difference- in-differences, Angola

**JEL Codes:** O1, I2, O2

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<sup>1</sup> The International Initiative for Impact Evaluation, 1625 Massachusetts Ave., NW Suite 450 Washington, DC 20036, USA; e-mail: [edjimeu@3ieimpact.org](mailto:edjimeu@3ieimpact.org). Tel: + (1) 202 629-3939 x108, Fax: + (1) 202 677 4109. I thank Jean-Louis Arcand, Harsha Thirumurthy, and Gabriel Tourek for helpful comments and discussions. I also thank the participants of seminars at the CERDI, University of Clermont-Ferrand 1. I bear sole responsibility for the content of this paper.

## 1. Introduction

Although 22% of the world's primary school aged population lives in conflict affected countries, they comprise 50% of children who are denied an education in 2011, a proportion that has risen from 42% in 2008. The vast majority –95%– lives in low and middle income countries (UNESCO, 2011, 2013).<sup>2</sup> Conflict causes the death of students and teachers, destroys school facilities and other infrastructures, degrades living conditions, causes large movement of people, suffering and trauma of any kind with long term effects, and destroys social capital. In addition to a cross-country literature analysis showing that civil war is devastating for an educational system, as both expenditures and enrollment decline during periods of civil war (Lai & Thyne, 2007), there is an emerging microeconomic research that examines the causal impact of armed conflict on schooling through a difference-in-differences approach.

Akresh & de Walque (2010) examine the impact of Rwanda's 1994 genocide on children's schooling, combining two cross-sectional household surveys collected before and after the genocide. They find a strong negative impact of the genocide on schooling, with exposed children completing one-half year less education representing an 18.3 percent decline. Dabalen & Saumik (2012) estimates the effects of civil war on years of education in the context of a school-going age cohort that is exposed to armed conflict in Côte d'Ivoire. They find that the average years of education for a school-going age cohort is 0.94 years fewer compared with an older cohort in war-affected regions. Blattman & Annan (2010) assess the impact of military services on the human capital of Ugandan

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<sup>2</sup>In 2011, of the 28.5 million primary school age children out of school in conflict-affected countries, 12.6 million live in sub-Saharan Africa, 5.3 million live in South and West Asia, and 4 million live in the Arab States (UNESCO, 2011, 2013).

youth. They use rebel recruitment methods as source of variation to deal with self-selection, screening, and selective survival. They find that abducted male youth attain 0.75 fewer years of education, a 10% reduction relative to the average non abducted youth's 7.6 years of education. Verwimp & Van Bavel (2013) combine a nationwide household survey with secondary sources on the location and timing of the conflict to investigate the effect of exposure to violent conflict on human capital accumulation in Burundi. They find that the probability of completing primary schooling for a boy exposed to violent conflict declines by 7 to 17 percentage points compared to a non-exposed boy. Digging deeper, Guariso & Verpoorten (2014) using two waves of Demographic and Health household Surveys (1992 and 2000) and two waves of population census data (1991 and 2002) examine the impact of the armed conflict in Rwanda on primary and secondary schooling, and the relative importance of three channels underlying this impact, i.e. school initiation, grade progression and drop-outs. The authors find that the armed conflict caused a drop both in primary and secondary schooling attainment, be it through different channels; the drop in primary schooling driven by slower grade progression and increased drop-outs, while the drop in secondary schooling mostly due to a decline in school initiation.

Outside of Africa, Merrouche (2011) uses unique district level data on landmine contamination intensity in Cambodia combined with survey data on individuals to evaluate the long-run impact of Cambodia's 30 years of war (1970–1998) on education levels and earnings. She finds that individuals who were too young to have attended school before the start of the war received in average 0.5 less years of education. Similarly, de Walque (2006) studies the long-term impact of genocide during the period

of the Khmer Rouge (1975-79) in Cambodia. He finds that individuals—especially males—who were of schooling age during this interval have a lower educational attainment than the preceding and subsequent birth cohorts. In particular, schooling for abducted youth falls by nearly a year. Swee (2011) identifies war intensity effects of the 1992–1995 Bosnian War on schooling attainment and finds that cohorts of children that endured greater war intensity are less likely to complete secondary schooling. However, he does not find a similar result for primary schooling. Chamraborty & Morán (2011) combine data from the 2002 National Population Census and the distribution of the number of human rights violations and victims across 22 departments to examine how Guatemala's 36-year-long civil war affected human capital accumulation. They find that rural Mayan males exposed to conflict completed 1.09 years less of schooling while rural Mayan females exposed to the conflict completed 1.17 years less of schooling. Justino et al. (2013) examine the impact of the conflict in Timor Leste on primary school attendance, grade deficits and primary school attainments of boys and girls. Using two cross-sectional household surveys: the Timor Leste Living Standard Measurement Surveys conducted in 2001 and 2007 and data on events and violations contained in the Human Rights Violations Database, the authors find a strong negative impact of the conflict on primary school completion among boys of school age exposed to peaks of violence during the 25-year long conflict. Rodríguez & Sánchez (2012) estimates the effect that exposure to armed conflict has on school drop-out decisions of Colombian children between the ages of six and seventeen. They find that armed conflict reduces the average years of schooling in 8.78% for all Colombian children. This estimate increases to 17.03% for children between sixteen and seventeen years old. Oyeler & Wharton (2013)

examine the impact of internal armed conflict in Colombia on education outcomes of school aged children (Internally Displaced Persons (IDPs) directly affected by conflict. Using four sources of data including the Colombia 2005 census, the humanitarian situation risk index, the coca cultivation survey from 2001 to 2005, and municipality-level conflict data, they find a significant education accumulation gap for children of IDPs compared to non-migrants that widens to approximately half a year at the secondary level. They find no evidence of enrollment gaps at the primary level but do find a lower probability of enrollment at the secondary level. Lastly, Brück et al. (2014) evaluate the effect of the Israeli-Palestinian conflict on the probability to pass the final high-school exam for Palestinian students in the West Bank during the Second Intifada (2000-2006). Using several datasets coming from different sources and exploiting within school variation in the number of conflict-related Palestinian fatalities during the academic year, they find that the conflict reduces the probability to pass the final exam and to be admitted to the university.

From the perspective of gender, Shemyakina (2011a) uses differences in regional and temporal exposure to the 1992–1998 armed conflict in Tajikistan to study the effect of violent conflict on schooling outcomes. She finds that girls who were of school age during the conflict, and lived in conflict-affected regions, were 12.3% less likely to complete mandatory schooling as compared to girls who completed their schooling before the conflict started. They are also 7% less likely to complete school than girls of the same age who lived in regions relatively unaffected by the civil war. She finds no effect of regional and household conflict exposure on education of boys. Furthermore, using the data from the 2003 and 2007 Tajik Living Standards Measurement Surveys,

Shemyakina (2011b) finds a persistent and lasting gap in the educational attainment by women who were of school age during the war and lived in the more conflict-affected regions as compared with women the same age who lived in the lesser affected regions and also to the older generation. Singh & Shemyakina (2013) explore the long-run effect of the 1981-1993 Punjab Insurgency on the educational attainment of adults who were between ages 6-16 years at the time of the insurgency. Using the 2005 India human development survey, a unique historical dataset on the annual expenditure decisions by farmers in the state of Punjab during 1978-1989, and the data on the number of terrorist incidents and killings at the district level come from the South Asia Terrorism Portal (SATP). They find a significant negative effect of the insurgency in Punjab on educational attainment in the long run, and find a negative effect that is mostly felt by women.

The strong negative impact of the civil war on female education is also found by Chamarbagwala & Morán (2011). In contrast, Swee (2011), Akresh & de Walque (2010), de Walque (2006), and Justino et al. (2013) find the impact of conflict schooling attainment is more important for boys than girls. Thus, the magnitude of the loss and the relative impact on girls versus boys may depend on contextual factors (Buvinić et al. 2013).

However, despite strong evidence across time and different contexts of significant and long-lasting detrimental effects of armed conflict on education and a great need due to the fact that 50% of children out of school live in conflict affected countries, there is a lack of evidence of proven effective interventions to mitigate the impact of conflict on education attainment. As suggested by Shemyakina (2013), conflict affected countries

requires rigorous evaluations of post-conflict policies and aid that can provide useful information to address educational needs and gender differentials in these environments. While both formal and non-formal education interventions (Beltramo, & Levine, 2012; Nordtveit, 2005; Population Council and Women's Refugee Committee, 2010; Anastacio, 2006; Zelaya et. Al, 2003; Blattman & Annan, 2011; Buj et al. 2003; Cook & Younis, 2012; Fauth & Daniels, 2001; Hamilton & Greenwood, 2011; Right to play, 2010; Whalen, 2010) have been implemented in different settings in conflict affected countries (i.e. classrooms, community centers, non-formal learning groups) to improve access to basic education, reading, writing, and mathematics skills, only few of them have been rigorously evaluated using experimental or quasi-experimental methods (Burde & Linden, 2013; Fearon et al. 2009; Beath et al., 2012). In fact, educational outcomes (enrollment and test scores, minimum walk to school, probability that child is enrolled in school, school attendance) used in these studies might not be the most relevant outcomes to properly assess whether these programs can mitigate the impact of conflict on education attainment. These measures capture short-term effects which might not necessarily be sustained and translated into long-term impacts (education attainment), which should be one of the main goals of any program aiming to mitigate the impact of conflict on education.

In order to fill this important knowledge gap, in this paper, I assess the impact of the Angola Social Action Fund (ASAF) on education attainment (years of schooling). To the best of my knowledge, this is the first paper that rigorously examines the impact of

social funds on education attainment in fragile and conflict affected countries.<sup>3</sup> Social funds, which are one of the key instruments of local level development implemented by World Bank, finance small projects in health, education, water and sanitation, and income-generating activities using a demand-driven process (Jørgensen & Van Domelen, 1999). While a majority of Community Driven Development (CDD) interventions and social funds have been implemented in non-conflict-affected countries, the approach has also been applied in conflict or post-conflict countries. According to one account (World Bank, 2006), 94 CDD and social fund projects were in operation in 2006 in countries characterized by violent armed conflict or post-conflict reconstruction.

Quantifying the impact of ASAF on education attainment is important to inform policy for at least two reasons. First, it enables to ascertain whether intervention such social funds work in fragile and conflict affected countries, and, if they work, to what extent (magnitude) social funds mitigate the impact of conflict on education attainment. Second, it allows for evaluation of the heterogeneous impacts of social funds on educational attainment for different subgroups, especially by gender, given strong existing evidence of the differential effects. The heterogeneity analysis will tell us whether there is a need for specific targeted interventions across distinct subgroups. Angola provides a unique opportunity to assess the impact of social funds because of the length of the Angola civil war (27 years), its detrimental effects, and the length of the roll out of Angola Social Action Fund.

Because the assignment of ASAF was not random and only post-intervention data are available, I rely on a non-experimental method, difference in differences estimation,

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<sup>3</sup>Education attainment has been used in most studies evaluating the impact of conflict on education. Therefore, I think that it is the most relevant outcome when assessing the effectiveness of interventions aiming to mitigate the impact of conflict on education.

to evaluate the effect of ASAF on education attainment. Specifically, I exploit both temporal variation in the exposure of ASAF and regional variation across communities in the ASAF participation to identify the ASAF's causal impact on education attainment. I also check the robustness of difference in difference results by estimating a fixed effects model.

My main finding is that ASAF increases years of schooling for individuals currently enrolled in school and living in non-migrant households. Specifically, individuals exposed to ASAF during one year have in average 0.166 years to 0.175 years of schooling higher than individuals not exposed to ASAF. Put differently, this represents 7.642% to 7.936% increases of years of schooling due to one year exposure to ASAF. The remaining sections of the paper are organized as follows. Section 2 reviews the literature of the impact of social funds on education outcomes. Section 3 presents the context and rollout of ASAF. Section 4 presents data and preliminary observations. Section 5 discusses the methodology used. Section 6 presents the findings and Section 7 concludes.

## **2. The impact of social funds on educational outcomes**

To the best of my knowledge, this is the first paper that evaluates the impact of social funds on educational attainment in a conflict-affected country. Hence, given that effects of social funds on education in conflict and non-conflict countries have been assessed only on intermediary (short-term) educational outcomes, this literature provides an overview of impact of social funds on short-term educational outcomes and discusses what impacts might be on education attainment in a conflict-affected country.

Three papers examine the impact of different interventions (one village-based school and two social funds) on short-term educational outcomes in conflict affected countries. Burde & Linden (2013) examines the effect of village-based schools over a 2-year period on children's academic performance using a sample of 31 villages and 1,490 children in rural northwestern Afghanistan. Using random assignment design, they find that program significantly increases enrollment and test scores among all children, but particularly for girls. Specifically, girls' enrollment increases by 52 percentage points and their average test scores increase by 0.65 standard deviations. Fearon et al. (2009) assess the effects of community-driven reconstruction (CDR) project in northern Liberia implemented in 42 communities between September 2006 and February 2007. Using data collected in 2008 and a random assignment design, they find that individuals in treated communities enjoyed greater access to education with a 4.3% higher attendance rate among children and youths aged 7 to 24. Similar results hold when they focus on the probability that a child or youth has had minimal access to education. Lastly, Beath et al. (2012) analyzes the effect of Phase-II of Afghanistan's National Solidarity Programme (NSP), which ran from 2007 through 2011. Using random assignment design and data for the first follow-up survey collected in October 2009, they find NSP may have increased girls' school attendance rates, although this may be due in part to stochastic variation unrelated to NSP between the control and treatment villages. No evidence exists that NSP increase boys' attendance rates.

In short, this review shows that not much can be learned from existing studies of the impact of social funds on educational attainment in conflict-affected countries. Indeed, the length of roll out of programs (less than 2 years) assessed renders it

impossible to evaluate the impact of these programs on the educational attainment. However, one might think that the increase of school enrollment and attendance, especially among girls, will translate into an increase in educational attainment will depend on whether constraints impeding schooling in these environments stay constant over time.

Regarding the impact of social funds on educational outcomes in non-conflict countries, results focus on intermediary outcomes and are mixed. Newman et al. (2002) consider the impact of small-scale rural infrastructure projects in education (construction and rehabilitation) funded by the Bolivian Social Investment Fund (SIF) over the period 1994-1998. Using random assignment design and PSM and endline data collected in 1998, they find that education projects improved school infrastructure but had little impact on educational outcomes (dropout rate, number of students attending classes, number of students repeating classes). Chase & Sherburne-Benz (2001) evaluate education projects financed by the Zambia Social Fund (ZSF) between 1991 and 1998. Using household-level data collected in 1998, pipeline and PSM methods, they find that education projects increased school attendance and households' education expenditures. Chase (2002) uses pipeline and PSM to analyze the impact of school rehabilitation projects financed by the Armenian Social Investment Fund (ASIF) during the period 1996-2000. He finds that education projects increased monthly household expenditures on schooling across the country as a whole but not in conflict zones where ASIF households spent significantly less than either of the control groups. Furthermore, education projects increase the proportion of 7 to 12 year olds attending school across the country as a whole but not in conflict zones. Pradhan and Rawlings (2002) consider the

impact of education investments (construction and school rehabilitation) by the Nicaragua Emergency Social Investment Fund between 1991 and 1998. Using household data collected in 1998 and PSM, they assess education investments on various educational outcomes including primary net enrollment, the education gap (the difference between the ideal education attainment, given a child's age, and the highest grade attended), children in correct age for grade, days of school missed in past month, and age in first grade. They find education investments had no impact of primary net enrollment, the share of children in the correct grade for their age, and days of school missed in past month. However, they find a positive impact on education gap and the age in first grade. Paxson & Schady (2002) use difference-in-differences, and instrumental variables estimators to estimate the impact of construction and renovation of school facilities funded by the Peruvian Social Fund (FONCODES) over the period 1992-1998. They find that education investments by FONCODES had positive effects on school attendance rates for young children (children ages 6-11). Voss (2008) uses a difference-in-differences matching estimator to examine the impact of education investments funded by the Kecamatan Development Program in Indonesia (KDP2) over the period 2002-2007. They find that KDP2 has no impact on primary and secondary school enrollment rates.

Overall, none of these studies assesses the impact of social funds on educational attainment although the length of programs assessed enables the authors to do so. The impact on intermediary outcomes is mixed and might depend on context-specific characteristics; therefore, it is difficult to draw any implications for similar interventions in a post-conflict country. To conclude, it is plausible that despite many challenges faced (chronic shortages of qualified teachers, lack of school facilities and other infrastructures,

degradation of living conditions, large movement of people, trauma of any kind with long term effects faced by students and teachers, and destruction of social capital) by conflict-affected countries, a marginal improvement of the education system in a context of the extreme poverty and massive educational needs that prevails in these countries will have a substantial effect on educational outcomes. Therefore, social funds might have positive impacts on educational outcomes in conflict countries.

### **3. Background**

#### **3.1 The context and educational outcomes after the Angolan civil war**

After its independence in 1975, Angola went through a 27 year civil war that only came to an end in 2002. Despite its oil and diamond resources and supply of arable land, in 1994 the GDP per capita was estimated at U.S. \$ 420 by Instituto Nacional de Estatística (INE). Between 500,000 and 1 million people had been killed during the civil war and more than 4.5 million were displaced. A household survey conducted in Luanda in 1994 by INE shows that 64% of the population lived below the poverty line while another study by Fernando Ribeiro in 1993, estimated that 86% of the population lived below the poverty line (World Bank, 1995).

Educational outcome indicators were alarming. In 1993, many schools (especially in rural areas) were closed or destroyed by the war; the remaining few are severely overcrowded (in Luanda classroom size averages 140 students) and many schools are forced to operate on a three-shift system to accommodate the overflow of students. The quality of both urban and rural primary education suffers from deteriorating facilities, where poorly-trained teachers are often demoralized by the lack of equipment and books. Consequently, in early 1990, the net enrollment is around 50%. The situation in the

secondary system is not better, since at the same period the gross enrollment ratio was estimated at 12% (World Bank, 1995).

### **3.2 Intervention: ASAF**

The ASAF is an autonomous structure created by the Angolan government in October 1994 under the authority of the Ministry of Planning, which determines its objectives. Between 1994 and 2001, the first two phases of the ASAF (I and II), whose impact on educational attainment and various other educational outcomes is evaluated in this paper, were deployed in 9 out of the 18 Angolan provinces: Cabinda, Luanda, Kwanza Sul, Benguela, Huambo, Namibe, Huila, Cunene, and Bengo. The roll out of program was confined to areas under government control. An important purpose of the ASAF was to aid in the transition towards peace. The stated aims of the program were to improve community access to basic infrastructure, to improve the capacity of communities and local NGOs to plan, evaluate, manage and maintain community level infrastructure, and to create income generating activities both in rural and urban areas (World Bank, 1995).

The functioning of the ASAF is similar to that of many social funds around the world. Specifically, ASAF interventions had the following core components. After targeting the provinces for intervention, ASAF undertook initial activities to sensitize local communities to the new development project through different channels (community-level meetings, radio, and graphics and printing campaigns). After learning about this opportunity, community members attended several meetings where they identified sub-projects, established a project bank account, and agreed to contribute between 10% and 20% of the cost of implementation. Then, proposals for selected sub-projects were submitted for funding by *nucleos comunitarios* (community groups) or

agencia de enquadramento (churches, NGOs). Sub-project proposals received by the provincial ASAF office were evaluated according to predefined criteria and some were approved for funding. Following the approval of a subproject and the disbursement of funding, the implementation was led by nucleos comunitarios or agencias de enquadramento and monitored by the provincial ASAF office. The completion of a subproject whose implementation generally lasted between six and nine months was determined by the provincial ASAF office.

Between 1994 and 2001, the ASAF funded \$29 million worth of projects; 67% of these funds were provided by multilateral donors such as the World Bank, with the rest coming from bilateral donors and the Government of Angola (GOA). A total of 685 projects were funded during the period, with 47.4% in water, sanitation, and waste management, 34% in education, 9% in health rehabilitation and construction of health posts, and 9% in income generating activities (Guilherme & Ducados, 2003). The average size of an ASAF project was \$20,000. Although the ASAF financed different subtypes of programs, in this paper I examine only the impact of education investments (construction and/or rehabilitation of primary schools) on years of schooling. The selection of education investments is motivated by two factors. First, the focus of this paper is to highlight interventions, in this case, social funds that may mitigate the impact of civil war on years of schooling. Therefore, I have selected interventions that aim to directly affect educational outcomes. Second, existing evidence (Casey, Glennerster & Miguel, 2012; Fearon, Humphreys, & Weinstein, 2008) suggests that similar interventions providing similar amounts of financial assistance per community have almost no impact on direct measures of household welfare, which might indirectly affect educational

outcomes. In this paper, a treated community is one which received an education investment (construction and/or rehabilitation of schools).

#### **4. Data**

##### *4.1. Angola 2001 Multiple Indicator Cluster Survey*

To measure the impact of ASAF on years of schooling, I use the Angola 2001 Multiple Indicator Cluster Survey (MICS), which is a nationally representative cross-sectional survey carried out in all 18 provinces of the country between April and October 2001. The 2001 MICS was conducted by National Institute of Statistics (INE) with technical support from United Nations Children's Fund (UNICEF) and financial support from several organizations. It uses a multi-stage probabilistic sampling in which 20 households were surveyed in a random fashion in each *aldeia* (village) in rural areas and each *bairro* (neighborhood) in urban areas. The 2001 MICS covers 6,252 households in urban and rural areas. The 2001 MICS provides detailed information on education, household characteristics (the date of birth, sex, residence, household size, housing facilities, and presence of durable goods in the household), fertility, child mortality, health service utilization, and nutritional status of young children. Important for the purpose of this study is the fact that the data also indicate the municipality in which respondents were born and whether they have ever migrated out of that municipality. This information is essential for identifying whether an individual was exposed to education investments through ASAF, as the community of current residence may not capture such exposure for households that have migrated.

The sample used in this paper is from 5237 individuals aged 6 to 18 living in 2,769 households within 77 communities (302 neighborhood or villages) across the 18

provinces in Angola. There is an average 28,143 inhabitants per community. 2001 MICS is very appropriate for the purpose of this study because it is a nationally representative survey conducted before the end of civil war. Therefore, it enables me to assess whether educational investments in conflict situations mitigate the impact of civil war on education by increasing years of schooling.

#### *4.2. Years of schooling and Treatment variable*

The outcome for this study is years of schooling, which is the number of years of schooling received by individuals. I restrict my sample to individuals aged 6 to 18 in 2001 who are currently or not enrolled in school and whose the highest level of education is primary school.<sup>4</sup>

Angolan primary education has four grades in 2001.<sup>5</sup> These individuals were exposed for at least one year up to a maximum of 6 years to construction and/or rehabilitation of primary schools realized by ASAF. I choose years of schooling which is a stock variable as my outcome variable for two reasons. First, as noted above, almost all studies assessing the impact of conflict on education have used this variable as the main outcome, and thus I keep it for comparison to existing results. Second, an indicator such as school enrollment depends on the instant of data collection rather on a period of time of exposure to education investments and might not fully capture the impact of ASAF on education. Moreover, school enrollment will not capture the impact of the intervention

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<sup>4</sup>Although the official primary school age is 6 to 9 years old, I included individuals aged from 10 to 18 years old because they represent 79.83% of individuals currently enrolled in the primary school. In fact, the average age in the first grade is 10.71 years old.

<sup>5</sup>The Angolan education system before its reform in 2003 has four levels: primary education, intermediate basic education, secondary education, and tertiary education. Thus, in 2001, primary education has one level with four grades; the official school age is 6 to 9 years old in primary education.

for individuals out of school thought they may have been exposed and might have benefited from the intervention.

I construct a measure of ASAF exposure which is defined at the community-birth cohort level of an individual's exposure to ASAF. ASAF exposure is an interaction between a binary indicator of residence in an ASAF community (a community where ASAF constructed and/or rehabilitated primary schools over the period 1994 to 2001) with the duration (in years) of exposure to ASAF for individuals living in ASAF communities and defined as  $ASAFCommunity_j * Exposure_t$ .<sup>6</sup> Thus, this measure is continuous and indicates the years of exposure to ASAF intervention for an individual living in an ASAF community. It equals zero for an individual living in a non-ASAF community and takes values ranging from one to six for individuals living in an ASAF community. This measure of ASAF allows us to exploit variation across two dimensions: spatial (variation of ASAF interventions across communities) and temporal (within each community, the timing of birth (age) determines the variation in exposure to ASAF across cohorts). Similar construction of variables representing exposure to an event in order to determine the impact of such exposure on different outcomes has extensively been used in a growing body of microeconomic research that examines the impact of armed conflict on child health and education outcomes (Bundervoet, Akresh, &

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<sup>6</sup>The duration (in years) of exposure to the ASAF for individuals living in an ASAF community is determined by the year of birth, year of data collection, and the official primary school starting age in Angola in 2001. This official primary starting age is six years. Given that ASAF was rolled out between 1994 to 2001, for individuals born in 1995 (who have 6 years old in 2001) and living in ASAF community, the duration of exposure to the ASAF is zero; for individuals born in 1994 (who have 7 years old in 2001) and living in ASAF community, the duration of exposure to the ASAF is one; For individuals born in 1989 (who have 12 years old in 2001) and living in ASAF community, the duration of exposure to the ASAF is 6, and for individuals who are more than 12 years old in 2001, the duration of exposure to ASAF is 6 (individuals born between 1983 and 1988).

Verwimp, 2009; Akresh, Bundervoet, & Verwimp, 2011; Akresh, Lucchetti, & Thirumurthy (2012); Gianmarco, 2012).

#### *4.3 Preliminary observations*

Panel A of Table 1 compares characteristics of households in ASAF and non-ASAF communities. Along some dimensions, such as education, urban status, and proportion of poorest (non-significant), non-ASAF communities appear more developed and better off than ASAF communities. For other characteristics such household head age and whether household head is male, there is no difference across communities. Panel B compares individual characteristics between ASAF and non-ASAF communities. Overall, there is no observable difference in terms of years of schooling, age, proportion of male, proportion of individuals currently enrolled in the primary school, education gap in years, and age in the first grade in years between individuals living in ASAF and non-ASAF communities.<sup>7</sup> In fact, although the difference of years of schooling between individuals living in ASAF and non-ASAF communities is non-significant, years of schooling of individuals living in ASAF communities are slightly higher than those of individuals living in non-ASAF communities. Indeed, we might expect the reverse configuration given that non-ASAF communities seem better off than ASAF communities. This might also reflect the fact that the estimation of potential impact of ASAF by a simple difference might be underestimated due to pre-existing differences in years of schooling (difference before ASAF intervention). Therefore, an estimation of the impact of ASAF requires taking into account pre-existing different in years of schooling between individuals living in ASAF and non-ASAF communities and different potential time

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<sup>7</sup>The education gap is the difference between ideal education attainment, given an individual's age, and the highest grade attended.

trends in years of schooling across communities. This is illustrated in our identification strategy.

Table 1: Individual and household characteristics, by treatment status

	ASAF communities	Non-ASAF communities	Difference
	[1]	[2]	[1]-[2]=[3]
<i>Panel A: household characteristics</i>			
Household head is male	0.7831 [0.014]	0.778 [0.006]	0.004 [0.024]
Household head age	43.310 [0.456]	42.826 [0.178]	0.483 [0.939]
Urban area	0.537 [0.017]	0.751 [0.006]	-0.214** [0.101]
Years of schooling of household head	5.435 [0.114]	5.990 [0.047]	-0.555* [0.293]
Wealth index (proportion of poorest)	0.201 [0.014]	0.114 [0.004]	0.086 [0.053]
<i>Panel B: child characteristics</i>			
Years of schooling	2.255 [0.037]	2.181 [0.015]	0.074 [0.087]
Age in years	12.570 [0.105]	12.490 [0.044]	0.080 [0.240]
Male	0.494 [0.018]	0.518 [0.007]	-0.023 [0.016]
Proportion currently enrolled in school	0.822 [0.013]	0.8355 [0.005]	-0.013 [0.017]
Education gap in years	3.962 [0.095]	4.012 [0.039]	-0.049 [0.285]
Age in the first grade (years)	10.737 [0.177]	10.713 [0.069]	0.024 [0.419]
Observations	770	4467	

Note: Robust standard errors in brackets, clustered at the community level. \* Significant at 10%, \*\* significant at 5%, and \*\*\* significant at 1%. Number of observations for Years of schooling of household head is 4257 with N equal 618 for ASAF communities and N equal 3639 for Non-ASAF communities. Number of observations for Age in the first grade (years) is 1756 with N equal 229 for ASAF communities and N equal 1527 for Non-ASAF communities. Source: Author's calculations using MICS 2001

## 5. Identification Strategy and Econometric Specification

My empirical identification strategy can be illustrated in the Figure 1 which shows kernel-weighted local polynomial regressions of years of schooling on age using an Epanechnikov kernel. This figure examines the nonparametric relationship between years of schooling and age that determines the exposure to ASAF intervention. The dashed lines indicate individuals living in ASAF communities, while the solid lines indicate individuals living in non-ASAF communities. For younger individuals (6 to 14 years old)

who might have more likely benefited most from ASAF intervention because they are closest in terms of age to the official primary school age (6 to 9 years old) during the ASAF intervention, the Figure 1 shows the expected relationship between years of schooling and age by treatment status (living in ASAF communities versus living in non-ASAF communities). More specifically, individuals living in ASAF communities exhibit higher years of schooling than individuals with same age living in non-ASAF communities. In contrast, older individuals (15 to 18 years old)— who might have been most affected by the civil war and benefited less from ASAF intervention because they were older than the official primary school age during the ASAF intervention— living in ASAF communities means lesser years of schooling than individuals of same age living in ASAF communities. This simply confirms the result finds in Table 1, showing that older individuals living in ASAF communities are better off in terms of years of schooling than their counterpart living in non-ASAF. The fact that years of schooling of individuals aged 15 to 18 living in ASAF communities is less than those in the same age living in non-ASAF communities does not mean that ASAF did not have an impact, it reveals that whether or not ASAF has an impact, it was not able to totally offset the pre-existing gap of years of schooling between ASAF and non-ASAF communities but that ASAF might have reduced this gap.

Thus, in order to take into account pre-existing difference in years of schooling, observables, and the potential differential time trends in years of schooling between individuals living in ASAF and non-ASAF communities, my identification strategy relies on a comparison of years of schooling of similarly aged individuals in ASAF and non-ASAF communities taking into account these pre-existing differences that might be

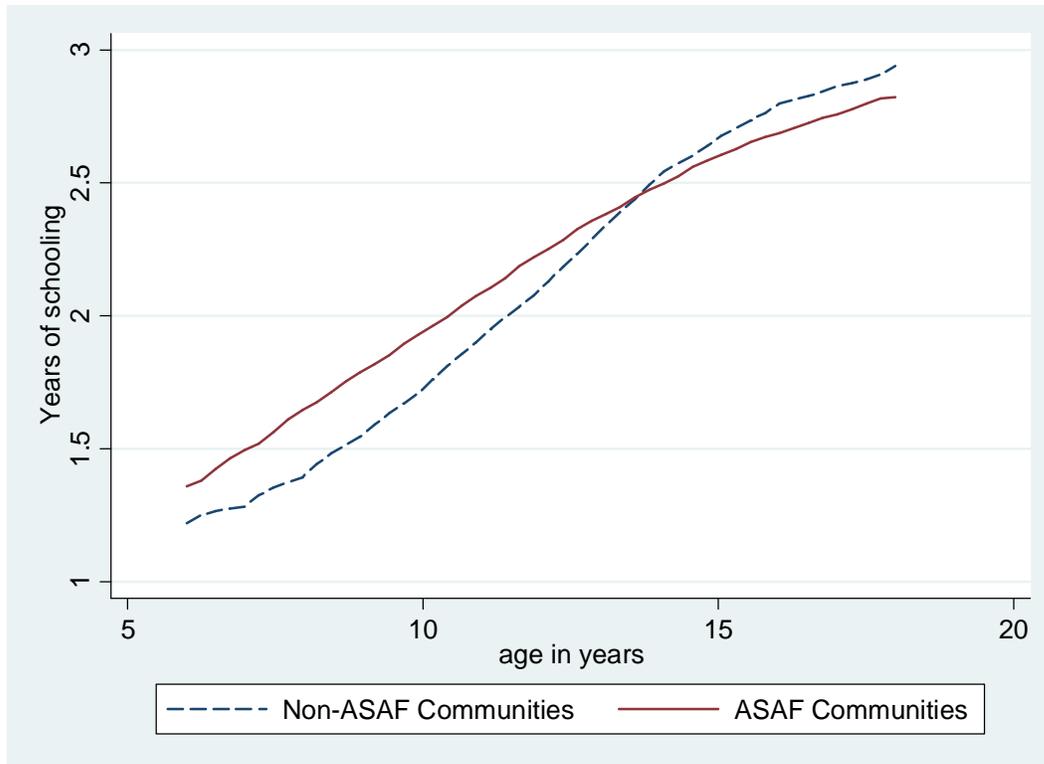
related to changes and years of schooling and ASAF participation. The implicit assumption is that differences in average years of schooling between individuals with same age (birth cohorts) living in ASAF and non-ASAF communities would have been similar before and after ASAF intervention in the absence of ASAF intervention. In other words, the identification strategy is valid as long as changes over time in average years of school would be similar across communities in the absence of the ASAF intervention.

Based on the non-parametric regression, I estimate the following regression with community, birth cohort fixed effects and community-specific time trends:

$$S_{ijt} = \alpha_j + \delta_t + \beta_1(ASAFCommunity_j * Exposure_t) + CommunityTrend_{jt} + X_{ijt} + \varepsilon_{ijt} \quad (1)$$

$S_{ijt}$  is years of schooling for individual  $i$  born in year  $t$  in community  $j$ ,  $\alpha_j$  is community fixed effects,  $\delta_t$  is year of birth cohort fixed effects,  $X_{ijt}$  are individual and household (household head) characteristics, and  $\varepsilon_{ijt}$  is a random, idiosyncratic error term.  $ASAFCommunity_j * Exposure_t$  is a continuous measure that indicates the years of exposure to ASAF intervention for an individual living in an ASAF community (it equals zero for a child living in a non-ASAF community), the coefficient  $\beta_1$  measures the effect of an additional year of ASAF exposure on years of schooling.  $CommunityTrend_{jt}$  is defined as a community specific time trend to capture potentially different time patterns in each community. The inclusion of this time trend buttresses the argument that changes in years of schooling in these communities would have been similar in the absence of ASAF intervention. In other words, it allows me to control for the possibility of differential time trends across communities. Including all communities in the regressions allows us to exploit both temporal variation in the exposure of ASAF

and regional variation across communities in the ASAF participation to identify the ASAF's causal impact on years of schooling.



**Figure 1:** Years of schooling by age in years in ASAF and non-ASAF communities.  
 Notes: Kernel-weighted local polynomial regression (using Epanechnikov kernel) of years of schooling on age in years.  
 Source: Author’s construction using 2001 MICS

**6. Empirical results:**

**6.1 Difference-in-differences estimation (ASAF community and ASAF exposure)**

Table 2 presents the regression results for Equation (1). Each regression includes community and individual age fixed effects, and community-specific time trends. Columns 1, 2, and 3 present results restricted to the sample of individuals currently enrolled in school. Results in column 1 when controlling for only individual characteristics (sex and age) show a positive impact of ASAF exposure on years of schooling. For individuals living in ASAF communities, an additional year of ASAF exposure increases years of schooling by 0.109 years. This increase is statistically

significant at the five percent level. In column 2, I include additional household controls in regression such as the household head age, the household head's sex, and whether the household lives in urban area. Adding these controls yields consistent results, with an additional year of ASAF exposure increasing years of schooling by 0.105 years. In column 3, although presenting missing values, I control for years of schooling of household head which can be a strong predictor of year of school of individuals. Controlling for this important variable, I find a strong positive impact of ASAF exposure on years of schooling that is significant at the five percent level. One additional year of ASAF exposure increases an individual's years of schooling by 0.131 years. In fact, the impact of one year of ASAF exposure represents an increase of 6.03% in the average of years of schooling for individuals living in ASAF communities.<sup>8</sup>The magnitude of this impact is relatively important because— assuming that the impact of ASAF exposure is constant over time and linear— in 2 to 3 years, ASAF intervention cancels the impact of civil war on years of schooling found in previous research mentioned in the introduction of the paper. For instance, in Rwanda, civil war has lowered years of schooling of 18.3% whereas in Uganda, civil war has lowered years of schooling of 10%.<sup>9</sup>

In Columns 4, 5, and 6, I replicate the previous analyses restricted to the sample of individuals not enrolled in school. I find no impact of ASAF exposure on years of schooling. Indeed, this finding shows that ASAF is not effective to mitigate the impact of civil war on years of schooling for individuals currently out of school. Although, I will

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<sup>8</sup>In our sample, the mean of years of schooling for individuals currently enrolled in school is 2.172 years.

<sup>9</sup>Given the difference in the length of primary school across countries, instead to use the absolute value of years of schooling as metric of comparison, it is more appropriate to use the increase (decline) of years of schooling in percentage due to exposure of ASAF (war) for comparison purpose.

discuss later the implication of this finding, this is worth mentioning that it suggests that intervention such as ASAF may not be effective for individuals who are out of school.

In short, the point estimates of the impact of ASAF on years of schooling are consistent and statistically significant when controlling for community and individual age fixed effects, and community-specific time trends and individual and household characteristics.

This is a strong indication that the relationship between ASAF exposure and years of schooling is a causal one. Given that I find no evidence of the impact of ASAF exposure on years of schooling for individuals out of school, for the rest of the paper, I focus only on individuals currently enrolled in school.

**Table 2**  
Measuring the impact of ASAF on years of schooling by status of school enrollment of individuals

years of schooling	Individuals currently enrolled in school			Individuals not enrolled in school		
	[1]	[2]	[3]	[4]	[5]	[6]
Years of ASAF exposure	0.109** [0.054]	0.105* [0.057]	0.131** [0.059]	-0.032 0.153	0.015 [0.134]	-0.110 0.093
Individual is male	0.092** [0.043]	0.106** [0.043]	0.111** [0.047]	0.045 0.084	0.060 [0.082]	0.027 0.114
Age of individual	0.176*** [0.006]	0.193*** [0.006]	0.199*** [0.008]	0.322*** 0.036	0.300*** [0.044]	-0.705*** 0.228
Household head is male		-0.085** [0.036]	-0.250*** [0.040]		-0.273*** [0.091]	-0.5315*** [0.147]
Household head age		0.000 [0.001]	0.003** [0.001]		0.000 [0.003]	0.007 [0.004]
Urban		0.127 [0.098]	0.124 [0.105]		0.078 [0.188]	0.079 [0.234]
Years of schooling of household head			0.048*** [0.005]			0.077*** [0.016]
Wealth index quintiles	Yes	Yes	Yes	Yes	Yes	Yes
Individual year of birth fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Community fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Community-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.362	0.384	0.403	0.381	0.414	0.455
Observations	4323	4323	3572	863	863	638

Notes: Robust standard errors in brackets, clustered at the community level. \* Significant at 10%, \*\* significant at 5%, and \*\*\* significant at 1%. All specifications include individuals age fixed effects, community fixed effects and region-specific time trends.

Source: Author' estimates using MICS 2001

## 6.2 Robustness check

In addition to the previous approaches using a difference-in-differences strategy, I estimate the impact of ASAF exposure on based on within household variation in an individual's exposure to ASAF. In Table 3, I estimate equation (1) by replacing community fixed effects with household fixed effects. This allows us to control for characteristics of the individual's household that do not vary across siblings. Identification is driven by comparing individuals living in the same household but who have different years of exposure of ASAF. Results in columns 1, 2, and 3 indicate large positive impact of ASAF exposure on years of schooling. In the household fixed effects specifications, the magnitude of the positive impact is larger. In these household fixed effects regressions, only households who have multiple individuals currently enrolled in school are included. Since households with multiple individuals may have different characteristics than those with only one individual, column 4 of Table 5 enables a proper comparison by showing the results from regressions without household fixed effects for the sample of households with more than one individual. Results still indicate positive and statistically significant impacts of ASAF exposure on individuals' years of schooling. The magnitude of the effect of ASAF is smaller in the specifications that do not contain household fixed effects, which highlights the importance of controlling for households' characteristics that could differ across households even within a community.

**Table 3**

Measuring the impact of ASAF on years of schooling, including household fixed effects

Dependent variable: years of schooling	[1]	[2]	[3]	[4]
Years of ASAF exposure	0.165** [0.061]	0.175** [0.064]	0.173*** [0.063]	0.103* [0.059]
Individual is male		0.141*** [0.039]	0.146*** [0.043]	0.096** [0.044]
Age of individual		0.230*** [0.011]	0.243*** [0.017]	0.194*** [0.009]
Household head is male		-0.234	-0.417***	-0.266***

Household head age			[0.158]	[0.125]	[0.051]
			0.013***	0.013**	0.003**
Urban			[0.004]	[0.006]	[0.001]
			-0.487	-0.910*	0.117
Years of schooling of household head			[0.312]	[0.489]	[0.121]
				0.067*	0.049***
Wealth index quintiles	No	Yes		[0.037]	[0.006]
			Yes	Yes	Yes
Individual year of birth fixed effects	Yes	Yes		Yes	Yes
Household fixed effects	Yes	Yes		Yes	No
Community fixed effects	No	No		No	Yes
Community-specific time trends	Yes	Yes		Yes	Yes
R <sup>2</sup>	0.519	0.524		0.530	0.434
Observations	3300	3300		2785	2785

Notes: Robust standard errors in brackets, clustered at the community level. \* Significant at 10%, \*\* significant at 5%, and \*\*\* significant at 1%. All specifications include individuals age fixed effects, household fixed effects and region-specific time trends.

Source: Author' estimates using MICS 2001

Furthermore, a factor such as endogenous migration can affect how well I am able to capture the true causal effects of ASAF exposure. I examine the role of migration and present evidence that the main results are unlikely to be strongly influenced by migration. More specifically, if some families move to ASAF communities because of ASAF intervention, this would bias our estimates because I would incorrectly determine an individual's ASAF exposure based on the individual's current community of residence. More importantly, if well-off households with more educated individuals migrated from non-ASAF communities to ASAF communities, our results would over-estimate the impact of ASAF. MICS 2001 allows us to correct the bias induced by this geographic misclassification. In MICS 2001, the variable *nasceu e sempre vive nestemunicipio* allows for a municipality to distinguish individuals who were born and live in that municipality from those who were born outside of municipality.<sup>10</sup> Thus, I am able to separate individuals born and who have never left community from those who have

<sup>10</sup>*Municipio* (municipality) is administrative division just above *comuna* (community).

migrated in community.<sup>11</sup>Based on this distinction, Table 4 presents the impact of ASAF exposure by migration status of households. I find a larger impact of ASAF exposure on years of schooling for individuals living in non-migrant households. Results in Column 2 show that one additional year of exposure to ASAF increases years of schooling by 7.64%. However, for individuals from migrant households, results in columns 4 and 5 indicate no impact of ASAF exposure on years of schooling. This latter result suggests that ASAF may not be effective for migrant households who might be more affected by civil war.

**Table 4**  
Measuring the impact of ASAF on years of schooling migrants by migration status of household

Dependent variable: years of schooling	Non-migrant households		Migrant households	
	[1]	[2]	[4]	[5]
Years of ASAF exposure	0.143*** [0.041]	0.166*** [0.039]	0.055 [0.089]	0.099 [0.135]
Individual is male	0.109** [0.040]	0.107** [0.044]	0.183* [0.109]	0.202* [0.112]
Age of individual	0.207*** [0.007]	0.205*** [0.009]	-0.085* [0.048]	-0.022 [0.052]
Household head is male	-0.060 [0.038]	-0.232*** [0.038]	-0.206* [0.119]	-0.339** [0.151]
Household head age	0.001 [0.001]	0.004** [0.001]	-0.003 [0.004]	-0.001 [0.004]
Urban	0.175* [0.088]	0.166* [0.099]	0.179 [0.212]	0.178 [0.238]
Years of schooling of household head		0.045*** [0.006]		0.053*** [0.010]
Wealth index quintiles	Yes	Yes	Yes	Yes
Individual year of birth fixed effects	Yes	Yes	Yes	Yes
Community fixed effects	Yes	Yes	Yes	Yes
Community-specific time trends	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.402	0.418	0.454	0.473
Observations	3554	2886	767	684

Notes: Robust standard errors in brackets, clustered at the community level. \* Significant at 10%, \*\* significant at 5%, and \*\*\* significant at 1%. All specifications include individuals age fixed effects, community fixed effects, and region-specific time trends.

Source: Author' estimates using MICS 2001

<sup>11</sup>1.32% (69) of our sample is constituted by individuals born in municipality but who have migrated at some point of their live in other municipalities and came back in municipality of their birth. I added this small number of individuals in the group of individuals who never migrated.

### **6.3 Heterogeneous treatment effects of ASAF**

The impact of ASAF exposure estimated in the section above is the average impact of ASAF on years of schooling. However, it is quite likely that the impact of ASAF varies by subgroups such as gender, household head education (primary education versus secondary and more), location (rural versus urban), age group of individual, and poverty status. Specifically, in each of these subgroups, for individuals with lower years of schooling, we can expect to see a greater impact of ASAF. For instance, we might expect to see a greater impact of ASAF for individuals from households where the household head's level of education is primary level. Also, we might expect to see greater impact of ASAF on individuals coming from poorest families. The estimation of heterogeneous treatment effects can be done by stratifying the sample by characteristics of the individuals and estimating the impact of ASAF in each subgroup. However, in order to avoid low power when conducting subgroup analyses, I estimate heterogeneous treatment effects by using interaction terms. Specifically, in equation (1), I add a control variable which is the interaction term between ASAF exposure and the individual characteristic considered. The point estimates for the reference group considered is the sum of the coefficient of ASAF exposure and the coefficient of the interaction terms. In order to assess whether the two groups considered in each category are different, I perform a test of equality of coefficients. I present the p-values for the test of the null hypothesis that the effect on the two groups is identical.

The results are shown in Table 5. First of all, I find a positive and significant effect of ASAF exposure on years of schooling in every subgroup considered. Except for the subgroup analysis by age, the effect size found is similar to that observed in the

specifications that contain household fixed effects (Table 3) and in difference-in-differences restricted to the sample on individuals currently enrolled and living in non-migrant households (Table 4). Furthermore, in none of subgroup analyses, I reject the null hypothesis that the effect of ASAF exposure on the two groups is identical. I find no heterogeneous effect in none of subgroups considered. Overall, heterogeneous analysis of effects of ASAF shows that ASAF exposure has the same effect on different subgroups. This finding suggests that a targeting approach for subgroups is not necessary to mitigate the impact of civil on years of schooling through an intervention such as ASAF.

**Table 5**  
Measuring heterogeneous effects of the impact of ASAF on years of schooling

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<i>Panel A: Gender of individual</i>	
Male	0.150***
Female	0.173***
P-value	0.148
<i>Panel B: Education of head of household</i>	
Primary education	0.181***
Above primary education	0.156***
P-value	0.169
<i>Panel C: Location of individual</i>	
Urban	0.172***
Rural	0.159***
P-value	0.634
<i>Panel D: Age of individual</i>	
Younger(6 to 14 years old)	0.305***
Older (15 to 18 years old)	0.252***
P-value	0.281
<i>Panel E: Wealth index quintile</i>	
Poorest (fifth quintile)	0.175***
Non poorest	0.163***
P-value	0.640

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### 6.3 Discussion of the ASAF impact mechanisms

Understanding the mechanisms by which ASAF exposure impacts years of schooling is critical for developing adequate policy responses to mitigate the negative effects of war on education. For instance, if ASAF increases years of schooling through the increase of school enrollment, it will be important to design specific interventions to increase school enrollment in conflict-affected countries in addition to construction and rehabilitation of

schools. However, in order to fully answer this question, detailed household and school level data that are not present in MICS 2001 are required to test different potential mechanisms. With this mind and relying on MICS 2001, I hypothesize that the effect of ASAF exposure on years of schooling might be due to the increase of school enrollment, the reduction of education gaps, and the reduction of age in first grade of primary school. For individuals out of school, ASAF might increase years of schooling by allowing them to be enrolled in school. Moreover, for individuals already enrolled in schools, the existence of new infrastructure might reduce education gaps. This reduction of education gaps might also enable newly enrolled individual to remain for longer periods in the education system. Lastly, I assume that the younger the age at which individuals start school, the longer they will stay in education school, which will in the end increase years of schooling.

I formally test the first two hypotheses, whether ASAF increases school enrollment and reduces the education gap in years. Table 6 presents the impact of ASAF exposure on school enrollment and education gap in years. I find no impact of ASAF on school enrollment (column 1). This finding and those found in Table 2 (columns 4, 5, and 6) suggest that ASAF has only impacted years of schooling for individuals already enrolled in school. Furthermore, I find ASAF exposure reduces the education gap in years. Specifically, one additional year of ASAF exposure reduces the education gap in years by 0.149 years. This effect size is pretty similar to what I find above for the effect of ASAF exposure on years of schooling, implying that the main driver of the increase in years of schooling might be a reduction in education gaps.<sup>12</sup>

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<sup>12</sup> I was not able to estimate the impact of ASAF exposure on age in the first grade (years) because in the econometric specification (equation (1)), age is also one of control variables. However, given that ASAF

**Table 6**  
Measuring the impact of ASAF

Dependent variable:	Currently enrolled in school	Education gap in years
	[1]	[2]
Years of ASAF exposure	0.012 [0.025]	-0.149*** [0.048]
Individual is male	0.031** [0.013]	-0.103** [0.046]
Age of individual	-0.022*** [0.003]	0.767*** [0.011]
Household head is male	0.002 [0.029]	0.231*** [0.045]
Household head age	0.001** [0.000]	-0.005** [0.001]
Urban	-0.001 [0.028]	-0.186* [0.109]
Years of schooling of household head	0.007*** [0.001]	-0.048*** [0.006]
Wealth index quintiles	Yes	Yes
Individual year of birth fixed effects	Yes	Yes
Community fixed effects	Yes	Yes
Community-specific time trends	Yes	Yes
R <sup>2</sup>	0.230	0.8682
Observations	3329	2870

Notes: Robust standard errors in brackets, clustered at the community level. \* Significant at 10%, \*\* significant at 5%, and \*\*\* significant at 1%. All specifications include individuals age fixed effects, community fixed effects, and region-specific time trends.

Source: Author' estimates using MICS 2001

## 7. Conclusion

This paper assesses the impact of ASAF on years of schooling using MICS collected in Angola in 2000. In order to estimate a causal relationship, I employed difference-in-differences estimation. In addition to difference-in-differences estimation, I performed a robustness check using fixed effects estimation and taking into account endogenous migration. The two estimation methods produce similar results. I find that ASAF exposure increases years of schooling for individuals currently enrolled in school and living in non-migrant households. Individuals exposed to ASAF during one year have on average 0.166 years to 0.175 years of schooling more than individuals not exposed to ASAF. In relative terms, this represents 7.642% to 7.936% increases of years of schooling. If ASAF does not have any impact on school enrollment, it is unlikely that it has an impact on age in the first grade (years).

schooling due to one year exposure to ASAF. This effect size substantially offsets the observed negative impact of civil war on years of schooling in conflict-affected countries. I find that the impact of ASAF on years of schooling occurs mainly through the reduction of education gaps. Also, I find no heterogeneous effects of ASAF across observable subgroups. In short, interventions such ASAF can be considered as one of many possible ways to mitigate the impact of civil war on years of schooling for non-migrant individuals enrolled in school. However, I find that ASAF has no impact on years of schooling for individuals currently out school and for individuals living in migrant households. In fact, ASAF has no impact of school enrollment, which should be the first gateway for any intervention aiming to increase years of schooling for individuals out of school who might have suffered more from the civil war. This finding suggests that innovative interventions specifically targeting individuals out of school should be designed and rigorously tested in order to find interventions that can effectively mitigate the impacts of conflict on education for this category of individuals who represent currently 50% of individuals out of school in the world. Furthermore, our results show that ASAF has no impact on years of schooling for individuals living in migrant households. This result is important and implies that depending on the context and given the strong association between being migrants and being out of school, specific interventions should be designed to mitigate the negative impacts of war on individuals living in migrant households who mostly constitute war-displaced households. To the best of my knowledge, this is the first study that examines the impact of social funds on education (years of schooling) in a conflict-affected country. The result shows that the fragility of these countries might impede the effectiveness of social funds to mitigate the

impact of civil war for individuals out of school. Given the prevalence of conflict in the world and especially in Africa and the fact that 50% of children currently out of school live in conflict-affected countries, I hope that this research will pave the way for further research on effective interventions to improve education in conflict-affected countries.

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