

Education Interrupted: Enrollment, Attainment, and Dropout of Syrian Refugees in Jordan

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Abstract

The children affected by the Syrian conflict, including the large population of Syrian refugee children hosted in neighboring countries, are at risk of becoming a ‘lost generation’ due to interruptions in their schooling. This paper examines how educational outcomes of Syrian refugees in Jordan have evolved from pre-conflict to during conflict and displacement. We rely on nationally representative survey data from Jordan in 2016 and in-depth interviews with Syrian refugee youth. We use discrete-time hazard models and compare dropout pre-conflict, during conflict, and during displacement for different stages of schooling. Syrian refugees in Jordan faced disrupted schooling in Syria due to the conflict, followed by a number of multidimensional supply- and demand- side barriers to education in Jordan. Yet ultimately enrollment rates, at least

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through 2016, have recovered to pre-conflict levels for basic education among the group of Syrians in Jordan, with important lessons for other countries struggling to protect refugee children's education. Host countries' policy response to refugee education plays a critical role in whether and for how long refugee children resume schooling after displacement.

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Conflicts of Interest

None

Data availability statement

Quantitative (survey) JLMPS 2016 data are publicly available from the Economic Research

Forum Open Access Microdata Initiative at: <http://www.erfdataportal.com/index.php/catalog/139>

The PAPFAM 2009 data are available on request from the Pan Arab Project for Family Health.

Replication materials, in the form of STATA do files, will be provided at

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Qualitative data cannot be shared due to ethical review restrictions

1. Introduction

As of 2020, the global number of displaced persons reached a new high of 82.4 million (UNHCR, 2021). Displacement has become increasingly protracted, with particularly concerning implications for the wellbeing of children, who make up 42% of the displaced (UNHCR, 2021). Among refugees, only 50% have access to primary education (versus 90% of non-refugee children), only 22% attend lower secondary (versus 84% of non-refugee adolescents) and only 1% attend university (compared to 34% of youth globally) (UNHCR, 2016). However, microeconomic research on conflict and education has focused on populations that stayed in the conflict country. Studies generally show a negative impact of conflict on educational outcomes (Bertoni et al., 2019; Diwakar, 2015; Fergusson et al., 2020; Fiala, 2015; Justino, 2013; Shemyakina, 2011; Verwimp & Van Bavel, 2014). However, impacts are heterogeneous and depend on the nature of the conflict, age of exposure, and children's gender (Buvinić et al., 2014; Shemyakina, 2011). There are also contexts in which conflict increased schooling for female youth, when insurgents pushed gender equality (Valente, 2014), or male youth, when conflict shut down labor markets and reduced the opportunity costs of schooling (Saad & Fallah, 2020).

There is little literature on educational outcomes during conflict and displacement for those who become refugees. We therefore propose a conceptual framework for considering how refugees' educational outcomes may evolve during conflict and displacement. The framework considers experiences prior to conflict, during conflict, and during different phases of displacement, accounting for both changes to households' socioeconomic status and evolving educational policies and practices. We then apply this framework to our empirical case of Syrian refugees in Jordan, which has implemented a robust policy response to the refugee crisis.

The gap in the literature on refugee education outcomes is partly a data problem. Country-level surveys include those who experienced conflict and stayed as well as those displaced internally; they miss the refugees who left and did not (yet) return (Verwimp & Van Bavel, 2014). Refugees are often a relatively small population and must be intentionally over-sampled in host country surveys. Data focused on refugee populations also often lacks the panel or retrospective dimension needed to understand their experiences in their country of origin, prior to conflict (Verwimp et al., 2019). Even with such data, it can be difficult to separate the impact of conflict from experiences in displacement (Ruiz & Vargas-Silva, 2013). Existing studies on the effect of displacement on refugees' educational outcomes are all historical studies from developed country contexts (Bauer et al., 2013; Becker et al., 2020). Yet as of 2020, 86% of refugees were hosted in developing countries (UNHCR, 2021).

The 6.7 million Syrians displaced by the civil war that began in 2011 largely took refuge in neighboring developing countries, primarily Turkey, Lebanon, and Jordan (UNHCR, 2021). This includes two million Syrian refugee school-age children who are at risk of becoming a 'lost generation' due to gaps in schooling (Brussels II Conference, 2018). As of 2017, Jordan was hosting 223 thousand school-age Syrian refugees (Brussels II Conference, 2018). This paper examines how their educational outcomes have evolved from pre-conflict to during conflict and displacement. We use nationally representative survey data from Jordan that oversampled areas with a high proportion of non-Jordanians. The data included detailed retrospective education and migration histories, such that we can determine country of residence and grade of school in each year in order to compare pre- and post-displacement education outcomes. The variation in exposure to conflict at different stages of schooling and over time depends largely on refugees' age when conflict started. We thus can model how dropout from school varied over time and by

country of residence (Syria vs. Jordan), using discrete time hazard models. We complement this quantitative analysis with a qualitative exploration of the drivers of educational access and integration in Jordan based on in-depth interviews with Syrian refugee youth.

We find that while during the 2011-2013 conflict and initial displacement period school dropout increased, enrollment rates and school progression in Jordan subsequently recovered to pre-conflict levels. The Jordanian government's concerted efforts to enroll Syrians appear to have been an important part of Syrians' educational recovery. However, there are important barriers to educational integration and secondary school enrollment rates remain low. Thus, our results not only contribute a conceptual framework and unique evidence on the evolution of refugees' educational outcomes in a developing country context, they also underline the importance of policy responses in host communities.

2. Conceptual Framework and Hypotheses

To conceptualize the potential evolution of educational outcomes from pre-conflict to during conflict and displacement, we draw on conceptual frameworks for household decision-making among forced migrants (Abbasi-Shavazi et al., 2018) and adapt them to the issue of education. Displacement can be conceptualized in stages: home country/pre-flight (including conflict exposure), flight/transit, asylum/temporary settlement, and longer-term settlement, return or resettlement (Abbasi-Shavazi et al., 2018). For the case of Syrian refugees in Jordan, we distinguish four distinct stages: pre-conflict; conflict exposure in Syria; initial displacement; and protracted displacement. Drawing on the literature on the policy environment for refugees and challenges to refugee integration (Dryden-Peterson, 2016; Justino, 2014), in the latter phase we emphasize the role of host-country education policies and practices as well as households' evolving socio-economic status. Per the conceptual framework (Figure 1), refugee education

outcomes are influenced by pre-conflict policies and practices in the country of origin as well as households' socio-economic status pre-conflict. Pre-conflict education trends are pertinent for considering the counterfactual of what education might have been achieved in the absence of conflict and displacement. These factors may continue to affect refugees' educational outcomes during conflict and displacement, e.g., through norms around education.

[Figure 1 near here]

Conflict itself impacts the education system in the country of origin (affecting children who are school-age during conflict), potentially including experiences of internal displacement. Conflict can also alter the socio-economic status of households. Subsequently, during displacement, the education policies and practices of the host country are important for education outcomes and may evolve substantially over time. Displacement also can alter refugee households' socio-economic status, with aid and economic policies in the host country shaping how socio-economic status changes, particularly as displacement becomes more protracted.

Thus, studying refugees differs from considering those affected by conflict but still in their countries of origin for three main reasons: (1) while conflict's effects on education are ongoing for those who remain in the country of origin, refugees are only subject to these effects until they flee the country; (2) refugees experience different education policies and practices in their host country and; (3) refugees experience different socio-economic trajectories than those who remain in their country of origin. Refugees in a particular destination may also be a selected population from their origin country along a variety of dimensions; when considering refugees in a particular host country (such as Syrian refugees in Jordan) this does not create a problem in terms of estimating the evolution of outcomes from pre-conflict to during conflict and

displacement among this particular refugee population, but it does limit generalizability to other populations.

Drawing on the literature and our conceptual framework, we test the following hypotheses for Syrian refugees in Jordan:

H1: School exit (dropout) will increase during periods of conflict and displacement compared to pre-conflict.

H2: There will be different patterns of school exit during conflict and initial displacement than during protracted displacement.

H3: Changes in dropout during conflict and displacement vary across the educational progression (across grades).

3. Refugee education and education policy in Jordan

In Jordan, the policy response for Syrian refugee education was rapid and based on comprehensive integration. Since April 2012, basic and secondary education were provided to Syrian refugees through the public Ministry of Education (MOE) system, free of charge (Culbertson et al., 2016). Within host communities, Syrian refugees may enroll in Jordanian public schools with enrollment priority given to Jordanian students (Culbertson et al., 2016). Double shift schools were created when there were insufficient places to include Syrians in a single shift with Jordanian students (Brussels II Conference, 2018). For Syrian refugee children in formal refugee camps, UNICEF provides education infrastructure and MOE provides Jordanian teachers (Culbertson et al., 2016).

However, Syrians can enroll in Jordanian schools only under certain conditions related to documentation and learning. Prior to 2016, children were required to have a service card (be registered as a refugee with UNHCR and with the Ministry of Interior) to enroll in school (Al

Abed, 2017; Jordan Times, 2016). This requirement was waived temporarily in 2016 (Jordan Times, 2016) and permanently in 2017 (Al Abed, 2017). In 2017, the MOE also exempted Syrians from tuition and textbook fees (Brussels II Conference, 2018). However, refugee children who are three or more years older than the age that corresponds to their expected grade level cannot enroll in formal education (Education Sector Working Group, 2015).

Physical integration in the school system does not necessarily mean social integration or academic success (Ager & Strang, 2008; Dryden-Peterson, 2016). Globally and among Syrians, refugee students often do not have skills that match their expected grade for age level (Brussels II Conference, 2018; Culbertson et al., 2016; Dryden-Peterson, 2016). Refugee children, including Syrians, are vulnerable to discrimination within school settings, including bullying from peers and prejudicial behavior from teachers (Culbertson et al., 2016; Dryden-Peterson, 2016).

Factors related to the context of their displacement may also affect refugees' demand for schooling. Poverty may hinder refugee households' ability to pay for books and transportation even when schooling itself is free (Culbertson et al., 2016). Poverty may also raise the demand for child labor, leading to withdrawal of children from school (Justino, 2014). In Jordan, an estimated 86% of Syrian refugees live below the poverty line (UNHCR, 2015), and child labor has been cited as a reason for non-enrollment (Education Sector Working Group, 2015). Among adolescent Syrian refugee girls, marriage is a factor that may reduce demand for schooling, with 18% of refugee girls aged 15-19 married (Sieverding et al., 2019). Furthermore, the returns to education in displacement may be low or perceived to be low (Justino, 2014), reducing the incentive to invest in education while in Jordan.

4. Data

4.1. *Quantitative data and analysis*

We use the nationally representative 2016 Jordan Labor Market Panel Survey (JLMPS 2016) to analyze education outcomes of Syriansⁱ in Jordan. The JLMPS 2016 over-sampled areas with a high proportion of non-Jordanians to be able to examine outcomes for Syrians. This sampling strategy is incorporated into the sample weights, which are used in our descriptive statistics (but not our multivariate models). The JLMPS includes a full educational history that allows us to assess the education experiences of Syrian refugees who were in Jordan in 2016 even when they were back in Syria. We also use the 2009 Syria Pan Arab Project for Family Health (PAPFAM) survey to illustrate enrollment patterns nationally in Syria pre-conflict.ⁱⁱ

Our quantitative multivariate analysis exploits the JLMPS 2016 retrospective data to assess the evolution of progression and school exit from pre-conflict to during conflict and displacement. We further contextualize these outcomes by descriptively examining measures such as enrollment. We calculate basic and secondary net enrollment ratios (NERs) for years before and since arrival in Jordan based on retrospective educational and residential mobility data (see the retrospective questions section in the supplementary online material).ⁱⁱⁱ

The level or grades of school completed is the key outcome underlying our multivariate analyses. Since our outcome of grades completed is right censored for those currently enrolled, survival analysis methods are required. We therefore structured the dataset as individual-grade observations, including grade ‘zero’ for entry. If an individual has never attended school, their highest year in school and exit was set to grade zero. If an individual had previously (but not currently) attended school, their grade of exit was the highest grade they completed. Those

currently in school are right-censored (have no exit), yet we know how many grades they have persisted through schooling thus far and this information is incorporated into our estimates.

We estimate a discrete time hazards model for grade (years of school completed). The hazard function, h_{ig} , describes the probability of an individual i exiting school (the event T_g) in a particular grade, g , if he or she has not already left (Jenkins, 1995):

$$h_{ig} = \Pr(T_g | T_g \geq g) \quad (1)$$

We use a complementary log-log model, which is a proportional hazards model where a covariate proportionately raises (or lowers) the hazard of exiting school (Jenkins, 1995):

$$h_{ig} = 1 - \exp \left\{ - \exp \left[\sum_1^J \theta_j g_j + \sum_1^K \beta_k X_{ik} \right] \right\} \quad (2)$$

The term θ_j denotes the baseline hazard, the probability of exiting school at each grade level g_j (for the reference individual, when covariates X_{ik} are included). The estimated coefficients, when exponentiated, characterize how the hazard ratio changes with a one-unit increase in the covariate. Hazard ratios greater than one mean a higher hazard of school exit, less than one mean a lower hazard of exit.

Since we are interested in how educational outcomes changed before and during the conflict, as well as in displacement, we limit the sample in our multivariate analyses to individuals aged 6-24 as of the end of December of the survey year (a sample of entry cohorts, as is ideal for survival analysis). We use this cut-off since children enter school (on time) in Jordan in the year when they are aged six by the end of December (Ministry of Education, 2018). We further limit our analyses to the years 2006-2016, since going further back in time gives us a diminishing sample size. With these samples, we can compare those who completed their course of schooling in Syria to those whose schooling was disrupted by the conflict and those whose

schooling started in Jordan. In the JLMPS 2016, our sample for multivariate analysis is 1,111 Syrians.

We are interested in how educational progression has evolved since the Syrian conflict, which started in 2011. We therefore identify the calendar year an individual was in each grade.^{iv} We initially estimated our models with only the baseline hazards for each grade in school (e.g., grade 3). We then aggregated some of the grades with similar baseline hazards (grades 1-5, 6-8, and 9-12^v; note that basic education is grades 1-10 in Jordan and secondary is grades 11-12). Thereafter, grades were also interacted with sex, denoted s , to account for differential patterns of dropout by sex. We then estimated calendar year (e.g., 2014) differences, denoted by c_j , as periods of exposure to conflict and displacement. We refer to this model, shown in equation (3) as specification 1.

$$h_{ig} = 1 - \exp \left\{ - \exp \left[\sum_1^J \theta_j g_j + \sum_1^J \theta_{j,s} g_j * s_i + \sum_1^J \gamma_j c_j + \sum_1^K \beta_k X_{ik} \right] \right\} \quad (3)$$

We are particularly interested in the coefficients γ_j on different calendar years, relative to a reference year of 2010 (immediately pre-conflict). The 2011 and onward estimates test H1, whether school exit increased during conflict and displacement. Examining the pre-2010 coefficients establishes whether there were changes over time in exit pre-conflict. Subsequently, we aggregated the calendar years into three periods: 2006-2010 (pre-conflict, the reference period), 2011-2013 (conflict and initial displacement), and 2014-2016 (displacement, at which point the majority of refugees were in Jordan). We refer to this model, shown in equation (4) as specification 2.

$$h_{ig} = 1 - \exp \left\{ - \exp \left[\sum_1^J \theta_j g_j + \sum_1^J \theta_{j,s} g_j * s_i + \gamma_1 c_{2011-13} + \gamma_2 c_{2014-2016} + \sum_1^K \beta_k X_{ik} \right] \right\} \quad (4)$$

We are particularly interested in γ_1 , the coefficient for the period of initial conflict and displacement and γ_2 , the coefficient for the period of protracted displacement in Jordan. These coefficients can be compared to test whether there were different patterns of exit during conflict and initial displacement than during protracted displacement (H2).

We also interact periods of time and stages of schooling to see whether different grades might have had varying changes in drop out over time. We refer to this model, shown in equation (5) as specification 3.

$$h_{ig} = 1 - \exp \left\{ - \exp \left[\sum_1^J \theta_j g_j + \sum_1^J \theta_{j,s} g_j * s_i + \gamma_1 c_{2011-13} + \gamma_2 c_{2014-2016} + \sum_1^J \theta_{j,2011-13} g_j * c_{2011-13} + \sum_1^J \theta_{j,2014-16} g_j * c_{2014-2016} + \sum_1^K \beta_k X_{ik} \right] \right\} \quad (5)$$

$\theta_{j,2011-13}$ and $\theta_{j,2014-16}$ test H3, whether the changes during conflict and displacement may vary by grade ($j=1-5, 6-8$ and $9-12$ as compared to entry).

In the models, we also control for mother's and father's education, and number and composition of siblings interacted with sex. Table A2 in the appendix presents descriptive statistics on these time-invariant covariates for Syrians aged 6-24. Table A3 in the appendix illustrates our time-varying data structure.

Conflict and displacement exposure affected different ages and stages of schooling across cohorts. While we can directly estimate differences over time, these differences are not

necessarily caused by conflict. There may, for example, have been rising enrollment and falling dropout over time pre-conflict (we test for this using γ_j for individual calendar effects pre-conflict). The cohorts entering and progressing through school may have changing composition over time in unobservable ways, and these omitted variables can bias estimates of change over time. Furthermore, the students still enrolled in school could experience varying degrees of selection over time. For instance, if conflict causes students who would have only completed a basic education to dropout early, the group of students who remains or returns to school in displacement would then be selected.

4.2. Qualitative data and analysis

The qualitative data consist of 71 in-depth interviews with Syrian refugee youth aged 15–29 residing in Mafrqa and Amman governorates. Half of the respondents were men (36) and half women (35). The majority arrived in Jordan between 2012-2013. Only 15 were still in school at the time of the interview, but 23 had previously attended school in Jordan; all (previously) attended public schools. Respondents were primarily attending or had attended the upper basic level (grades 5-10), with few having reached secondary. Interviews were transcribed, coded, and analyzed both thematically and in terms of life trajectories. From the thematic analysis, we present results related to youths' educational experiences, including barriers to and facilitators of education in Jordan, and school experiences in Jordan (including academic experience, school environment and interpersonal relationships). In the life trajectory analysis, we focused on timing of leaving school relative to the conflict, and re-enrollment and dropout decisions after arrival to Jordan. See the supplementary online material for details on the qualitative methods.

5. Results

5.1. Enrollment among Syrian youth in Jordan

Figure 2 presents the probability of enrollment for Syrians in Jordan in 2016, and (for comparison) Syrians in Syria in 2009 and Jordanians in 2016, by sex and year of age, along with confidence intervals. Syrians in Jordan in 2016 had lower chances of enrollment than either Syrians (in Syria) in 2009 or Jordanians in 2016. Although noisy, the patterns in Jordan in 2016 suggest that Syrian boys are disadvantaged compared to girls. Whereas the probability of enrollment for Jordanians in 2016 and Syrians in 2009 was high at early ages, Syrians in Jordan in 2016 have some gaps at early ages (6-7) possibly indicating delayed school entry. Syrians in Jordan in 2016 exhibit declining enrollment rates starting around age 10. By comparison, Jordanians had nearly universal enrollment through the early teens. In 2009, Syrians were also dropping out starting around age 10, with enrollments for Syrians in 2009 during the teen years well below those of Jordanians in 2016.

[Figure 2 near here]

The lower enrollment rates of Syrians in Jordan in 2016 compared to nationally in Syria in 2009 may be due to conflict and displacement but may also be a continuation of pre-existing trends among this selected and disadvantaged sub-population.^{vi} We therefore focus hereafter solely on the group of Syrian refugees who entered Jordan. When comparing educational outcomes pre-conflict to during conflict and displacement for this specific population of Syrians, selection into Jordan is not relevant since the whole population selected into Jordan (although endogeneity and generalizing to other groups of Syrians not in Jordan remain issues).

With the JLMPS data, we can also look at net enrollment rates (NERs) relative to the year of arrival in Jordan. The NER for a particular school level is calculated by dividing the

number of pupils enrolled in education in that level who are of age for that level by the population for the same age group. In Figure 3, year zero is the year of arrival in Jordan. Years one and two signify time post-arrival in Jordan, while years -1 to -5 signify time pre-arrival (in Syria). The NERs for basic education fell somewhat in the two years prior to arrival (during the conflict in Syria), then stabilized or increased slightly, indicating successful transition of students at this level into the Jordanian school system. NERs for secondary are very low post-arrival, due to delays in progression and possibly non-re-entry among older students.^{vii}

[Figure 3 near here]

5.2. School exit timing among Syrian youth

In order to statistically test for differences during conflict and displacement as compared to pre-conflict, we estimate the hazard models for the sample of Syrians in Jordan in 2016 that include single years of calendar time (specification 1), the hazard ratios for which are shown in Table 1.^{viii} Key to note is that the hazard of exit was rising pre-conflict, as it was significantly lower in 2006 to 2009 compared to the reference year of 2010 (immediately prior to the conflict). The drought and worsening economic conditions in Syria likely drove this trend (United Nations, 2010). Although the counterfactual of what would have happened in Syria without the conflict is difficult to know, the trend pre-conflict was notably *not* less dropout. The hazard of exit was not significantly different in 2011-2013 than in 2010 for the Syrians who ended up in Jordan. The hazard of exit was then significantly lower in 2014-2016, falling back to levels similar to the 2006-2008 period (less than half that of 2010).

[Table 1 near here]

In specification 2, we group the years into the pre-conflict period (2006-2010), conflict and initial displacement (2011-2013) and protracted displacement (2014-2016). Compared to the

reference 2006-2010 period, the hazard of exit is higher in 2011-2013 (during conflict and initial displacement) but insignificantly so. The hazard of exit is lower, significantly so, in 2014-2016, when Syrians were in Jordan.^{ix} This finding is counter to H1; rather than an increase in school exit during conflict and displacement, outcomes during conflict and initial displacement were similar to pre-conflict. Exit actually decreased in protracted displacement. Our results confirm H2; there are different patterns of exit during conflict and initial displacement compared to protracted displacement, since the coefficients for 2011-2013 and 2014-2016 are significantly different.

There may be differential changes in school entry or exit for students in different grades in school during conflict and displacement (H3). We therefore fully interact the grouped calendar years (2011-2013 and 2014-2016 versus 2006-2010) and grade segments (entry, grades 1-5, grades 6-8, and grades 9-12) in specification 3, summarized in Figure 4.^x The results are noisy but suggest that never-entry fell from 2006-2010 to 2011-2013 before rising slightly in 2014-2016 (significantly so comparing the hazard in 2011-2013 to the other years, but differences between 2006-2010 and 2014-2016 were not significant^{xi}). The 2014-2016 result must be interpreted with caution, as, since children aged six and older in 2016 are included, they may enter but with delay.

[Figure 4 near here]

There was a significantly higher hazard of dropping out in grades 1-5 in 2011-2013 compared to 2006-2010 or 2014-2016 (but 2006-2010 and 2014-2016 were not significantly different). Students who were in the early stages of basic education when conflict in Syria began and during the period when most refugees arrived in Jordan experienced higher hazards of

dropout than those who were in the same levels of education during the periods immediately prior to the conflict or after arrival in Jordan.

For grades 6-8, there was not a significantly higher hazard of dropping out in 2011-2013 compared to 2006-2010. However, the hazards in 2014-2016 for grades 6-8 were significantly lower than both previous periods. This means that children in grades 6-8 in 2014-2016, when nearly all were already in Jordan, were more likely to persist in school than those in grades 6-8 during the conflict or in Syria pre-conflict. The Syrian youth who made it to grade 9-12 had the lowest hazards of dropout in 2014-2016, significantly so compared to the other two periods. However, this group would be particularly selected, as relatively fewer of them would have made it through the preceding years of basic. Overall, the results support H3, that there were distinct changes in exit during conflict and displacement across grades. Children in grades 1-5, which had high enrollment rates pre-conflict, during conflict (the 2011-2013 period) did dropout at higher rates, but progression recovered in protracted displacement. Children in later grades (6-8 and 9-12) during protracted displacement had better outcomes than pre-conflict.

5.3. Supply-side barriers to education in Jordan

Syrian refugees who re-enrolled or considered re-enrolling in school after their arrival to Jordan faced a number of supply- and demand-side barriers. On the supply side, the main themes that arose from respondents' discussions were the registration process, academic difficulties, and discrimination.

Most respondents reported that the school enrollment process in Jordan was straightforward and smooth. Those for whom it was not faced two types of challenges: lack of needed documentation and resistance from the school administration. At the time most of the respondents arrived in Jordan, in 2012 and 2013, school enrollment policies were changing and

the documentation requirements that have since been waived were still in place. Some respondents were missing documentation of refugee status in Jordan, or family books or school records from Syria. However, in all the cases that came up within the qualitative sample, respondents were eventually able to overcome the lack of documentation, sometimes with help from UNHCR.

'Once we obtained the UNHCR registration card, we were then able to enroll in school despite the missing family book.' Young man, 17 years old, East Amman, attending school in Jordan.

Respondents' experiences were thus consistent with the quantitative results in indicating that those youth who wanted to re-enter school after arrival in Jordan were in fact able to do so from the perspective of administrative requirements.

A number of respondents reported school principals not wanting to admit them due to lack of space, or, in a few cases, implied bias against Syrian students. In some cases, respondents or their families were able to overcome this resistance through persistence. A few others went to the MOE for assistance and reported that the MOE obliged the school to enroll them.

'When I came from Syria, I brought with me my certificate of birth, but the school principal did not agree to enroll me because there was no policy to enroll Syrians in schools, she said. We tried several times to convince her, but she would not agree to it. So we went to the Ministry of Education. I complained to the Ministry, who contacted the school principal to tell her to enroll me and every other Syrian student applying.' Young woman, 16 years old, Mafraq, attending school in Jordan.

The combination of school interruptions, differences in the Jordanian and Syrian school systems, timing of arrival relative to the start of the school year, and lack of places contributed to the fact that some respondents were placed into a grade level below that expected for their age.^{xii} For several, the age-for-grade gap was a main factor contributing to the decision not to enroll in school after arrival to Jordan.

'I wanted to go back to school, but they wanted to place me in 7th grade while I should have been in 11th grade. That is a 5-year difference. So I did not want to enroll.' Young woman, 18 years old, East Amman, never attended school in Jordan.

Other respondents mentioned the difficulty of adapting to a school in a new environment, with a new curriculum and classmates they did not know.

'At first school was hard and I wanted to stop, I didn't want to study. I didn't know anything and the girls were younger than I was.' Young woman, 22 years old, Mafraq, previously attended school in Jordan.

Curriculum difficulty was a particular concern for the few respondents who had reached secondary or had already been at the secondary school level when they arrived in Jordan.

Yet more so than instructional factors, discrimination and interpersonal challenges emerged as an important theme for many respondents who had attended school in Jordan.

Respondents who had positive relationships with their teachers described them as cooperative, showing interest in their futures, and not tolerating differentiation between Jordanians and Syrians.

'Teachers are not discriminating. They do not mention nationality; they encourage us Syrians and Jordanians to be one and not separated.' Young man, 15 years old, East Amman, attending school in Jordan.

Those who reported a negative relationship with teachers, by contrast, said that their teachers were verbally and physically abusive, at times to the point that this was a factor motivating dropout.

'I dropped out... they used to hit me for no obvious reason... last time they summoned me to the administration where someone slapped me on the face, they accused me of stealing!' Young man, 15 years old, Mafraq, previously attended school in Jordan.

In terms of their school peers, the majority of respondents formed friendships with their Syrian peers, especially among girls. A few also managed to become good friends with

Jordanians. Yet many respondents reported being bullied by their Jordanian peers and feeling unwelcomed, so they avoided mixing with Jordanian students.

'Many girls used to tell us [Syrians] that Jordan is for them Jordanian nationals. Others on the contrary they were very helpful and did not allow others at school to bully us.' Young woman, 18 years old, East Amman, previously attended school in Jordan.

5.4. Demand side barriers to education in Jordan

Syrian households' difficult economic situation was the main demand-side theme that arose as a challenge to school enrollment in Jordan. Although a few respondents said that their parents could not afford school fees and supplies, more so than direct costs of education, the need to work kept male respondents out of school, as many were supporting their families. Young men mentioned specifically that they worked so they could help to pay for the family's accommodation.

'I did not inquire about education in Jordan. We had newly rented a house and there was no one but me to work and pay.' Young man, 23 years old, never attended school in Jordan.

For young women, marriage, which was also commonly linked to difficult economic circumstances, was an impediment to schooling as some dropped out of school after getting engaged. Married young women could not be at school and manage a household, or their families did not consent to their continuing school. A few other female respondents were out of school to take care of family members, or because their parents would not let them attend due to perceptions of insecurity in Jordan.

Besides financial challenges, a few youth mentioned that there was no value in education in Jordan, either because they could not use their education in the Jordanian labor market, or due to a general loss of hope in the future.

'My future was lost with Syria's destruction and the events. I was putting high hopes on having an education and later a decent job. When I stopped my education, my aspirations vanished.' Young man, 23 years old, Mafraq, never attended school in Jordan.

Despite the difficult circumstances, some youth perceived education as an achievement in one's life and wanted to continue or return to education. In this respect, parental encouragement (and sometimes requirement) for youth to stay in school was an important facilitator of education, as well as individual motivation.

'All of my siblings are educated, my mom urges us to study and repeats how education is very important.' Young man, 17 years old, Mafraq, attending school in Jordan.

6. Discussion and Conclusions

For the 6.7 million Syrians displaced by conflict, there have been concerns of a 'lost generation' of children missing out on school (Brussels II Conference, 2018; UNHCR, 2016, 2021). As refugees' displacement lengthens, the efforts of host communities and the international community to ensure their education are increasingly important. While previous research demonstrates that conflict usually (but not always) harms educational outcomes for those who stayed in their country of origin (e.g. Fiala, 2015; Justino, 2013), there has been little research on the impact of displacement on refugees' educational outcomes.

Our paper contributes a conceptual framework for understanding refugees' educational outcomes during conflict and displacement and some of the first evidence on refugee outcomes during conflict, initial displacement, and protracted displacement in a developing country. We hypothesized that school exit would increase during conflict and initial displacement as well as protracted displacement (H1). The analysis demonstrates that, contrary to our hypothesis, refugees can experience comparable or even better educational outcomes during protracted displacement compared to pre-conflict.

The results of the quantitative models show that there was accelerated dropout at the basic education level during the peak conflict years (2011-2013) when most refugee children

were still in Syria or in the process of moving to Jordan. However, persistence in school among the Syrian refugees in Jordan in protracted displacement (2014-2016) was comparable or higher than among this population pre-conflict. The evidence supports H2, that there are differences in school exit during initial conflict and displacement versus protracted displacement. This finding must nevertheless be placed in the context of the Syrian refugees in Jordan coming from an educationally disadvantaged population within Syria; net enrollment rates at the basic level remain around 80%. Enrollment in secondary schooling is low. However, those select youth who transitioned to secondary school persist at higher levels than pre-conflict. These results confirm H3 (that changes in exit during conflict and displacement vary by grade) and are consistent with other research that finds that the age of exposure to conflict matters for educational impacts, particularly relative to compulsory schooling (Bertoni et al., 2019; Fergusson et al., 2020).

The recovery in Syrians' enrollments and progression highlights how a clear policy mandate for including refugees in local education systems combined with a Ministry of Education that actively supports that mandate can substantially improve access to education. A comparison of Syrian refugees' outcomes in Jordan to those in Lebanon helps illustrate the importance of policy responses. In Lebanon, it was not until 2014 that the Ministry of Education and Higher Education launched a policy framework for refugee education (Buckner et al., 2017). In 2015, Lebanon had only 39% of children aged 5-17 enrolled in formal schools, compared to 66% in Jordan (Brussels Conference Education Report, 2017). As of 2017/18, only 4% of Syrian school-age children had never entered school in Jordan and enrollment rates were nearly 99% for ages 6-11 and had risen from 49% at age 14 in 2014 to 68% by 2017/18 (Tiltnes et al., 2019). In Lebanon, conditions had improved by 2017 with 70% of those ages 6-14 enrolled in school (up from 52% in 2014), but only 13% of those aged 12-14 were enrolled (UNHCR et al., 2017).

Although there were some differences in the education profiles of the older generation of Syrians who fled to Lebanon and Jordan, these differences were small relative to the enrollment differences observed in displacement,^{xiii} and thus signal an important role for host-country policy (Sieverding & Calderón-Mejía, 2020; Verme et al., 2016).

That countries can, with a concerted effort, ensure refugees have similar education outcomes to pre-conflict is an important policy lesson for the countries hosting displaced children and youth. Although historical cases from developed countries (Bauer et al., 2013; Becker et al., 2020) have demonstrated refugees may invest relatively more in education due to its portability, this is the first evidence that developing country contexts can also support and potentially even improve refugee educational outcomes.

These findings also point towards important areas for future research. Although we have, unusually, nationally representative data for a large number of refugees in displacement and detailed retrospective data, retrospective data may have substantial measurement error (Assaad et al., 2018). Contemporaneous and frequent panel data or administrative records on refugees would be helpful for future research. Our retrospective data also lack key details on conflict and displacement experiences in Syria and arriving in Jordan. While our estimates show changes over time in dropout, they are not necessarily causal impacts of conflict and displacement, as we lack additional variation to identify impacts (such as location-specific exposure to conflict). Designing surveys to better capture conflict and displacement experiences and facilitate stronger identification strategies is an important area for future work. While our results do generalize to those Syrian refugees in Jordan, since refugees are a select group, our findings would not necessarily generalize to other groups of Syrians.

The qualitative data are not representative, although helpful for understanding drivers. Our findings concur with other studies (Education Sector Working Group, 2015; Salem, 2018) that interpersonal aspects of schooling, and particularly bullying by peers, affect dropout decisions among refugee adolescents. Interventions that support teachers' and native students' diversity awareness and perspective taking have shown promise in evaluations in Turkey (Alan et al., 2021; Tumen et al., 2021) and should be tested in Jordan and at scale. Testing academic support programs for refugees is another important area for future research. For those who did dropout and cannot return to formal schooling, non-formal education may be an important intervention that merits research.

There are varying and context-specific results in the literature in terms of the impacts of conflict on educational outcomes by gender (Bertoni et al., 2019; Buvinić et al., 2014; Diwakar, 2015; Shemyakina, 2011). For adolescent boys, we found the need to work was a key reason for being out of school. Particularly in the face of financial pressures to work, a negative school environment can serve as an extra push to leave school. For girls, the demand-side factors limiting school enrollment were more mixed but included marriage and family responsibilities. Future research is needed on educational supports such as cash transfers (for example, De Hoop et al., 2019), school feeding programs (which were effective during conflict in Mali, see Aurino et al., 2019), as well as gendered interventions to prevent early marriage and child labor.

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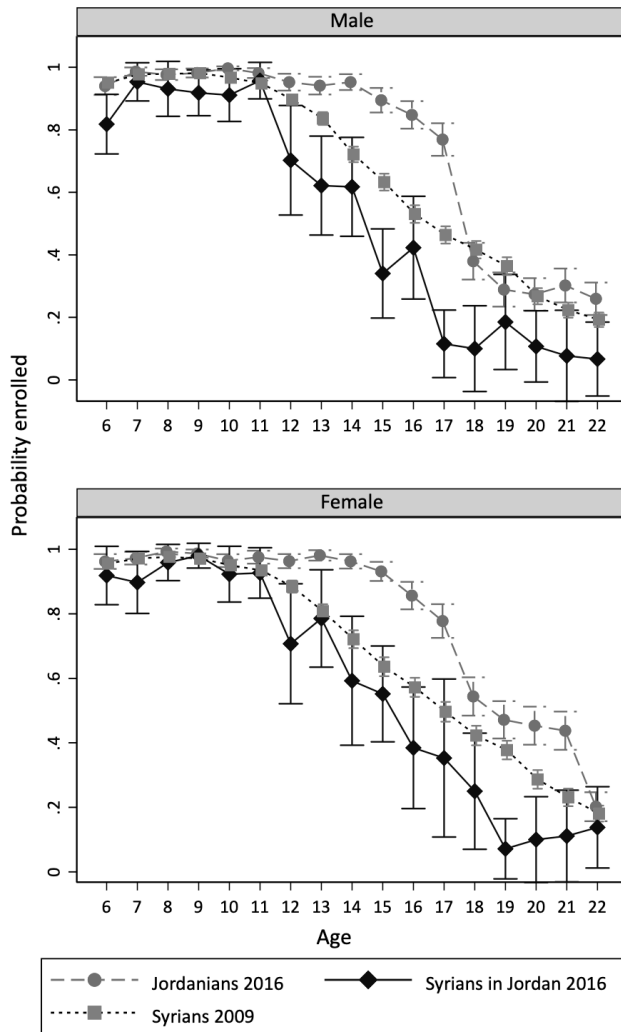
Figures

Figure 1. Conceptual framework for refugee educational outcomes

Phases:	Pre-conflict -->	Conflict -->	Initial displacement -->	Protracted displacement -->
	Pre-conflict education policies and practices in country of <i>origin</i>			
	Pre-conflict education trends in country of <i>origin</i>			
	Pre-conflict socio-economic status			
		Impact of conflict on education system in country of <i>origin</i> (potentially including internal displacement) (school-age during conflict)		
		Impact of conflict on socio-economic status		
			Education policies and practices of <i>host</i> country (potentially evolving)	
			Socio-economic status (including aid and economic policies) in <i>host</i> country (potentially evolving)	

Source: Authors' construction

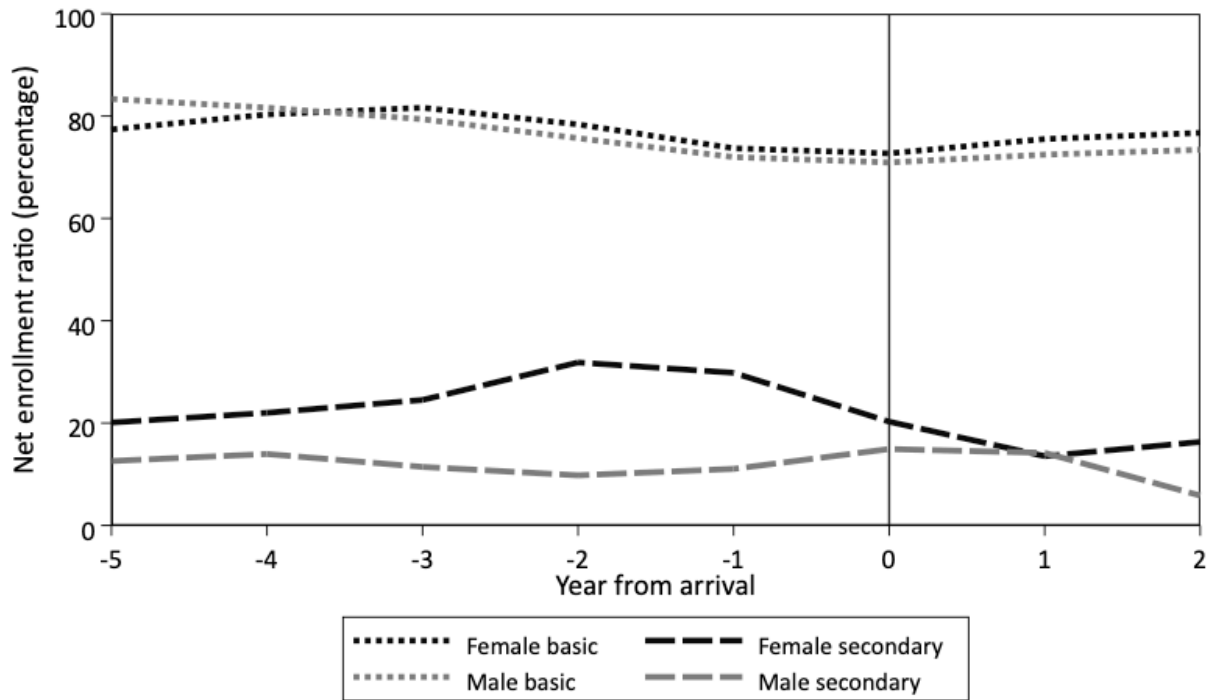
Figure 2. Probability of enrollment by nationality and survey, sex, and age, ages 6-22



Notes: Based on a logit model with triple interactions for nationality and survey, sex, and age. Bars show 95% confidence intervals. Table A4 in the supplementary online material presents the sample size by age.

Source: Authors' calculations based on JLMPS 2016 and PAPFAM 2009

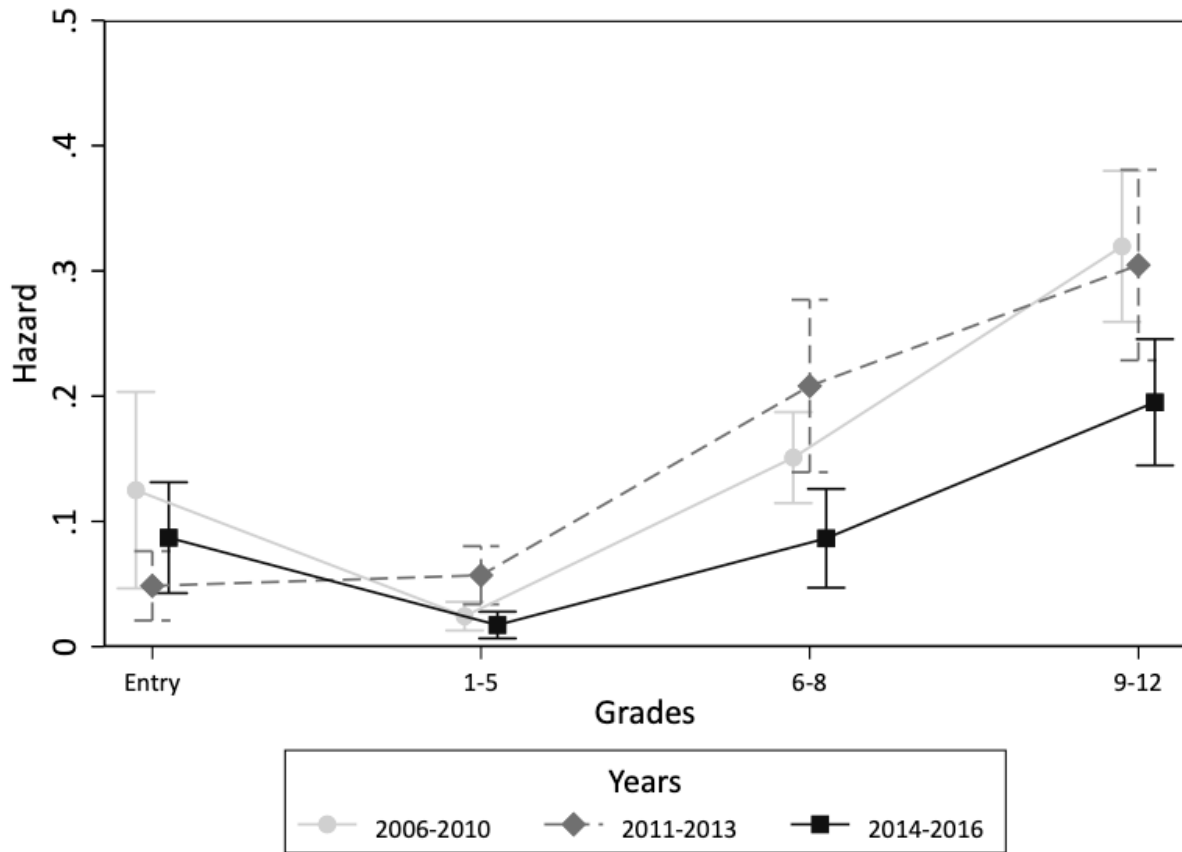
Figure 3. Net enrollment ratios (NER, percentage) by year from arrival, education level, and sex, Syrians in Jordan in 2016



Source: Authors' calculations based on JLMPS 2016

Note: Number of secondary-age children each year ranges from 21 (boys in year -5 from arrival) to 51 (boys in year 2 from arrival). Smoothed based on a locally weighted regression using lowess (bandwidth=2).

Figure 4. Hazards of exit by grade and year, Syrians in Jordan 2016



Notes: Bars indicate 95% confidence intervals. See Table 1, specification 3, for the coefficients. Models include controls for sex, parents' education, and siblings. Results jittered for ease of visualization.

Source: Authors' calculations based on JLMPS 2016

Tables

Table 1. Discrete time hazard model of school exit, Syrians in Jordan in 2016, ages 6-24 at time of survey

	<u>Spec. 1</u>	<u>Spec. 2</u>	<u>Spec 3.</u>
Grades (entry omit.)			
1-5	0.375*** (0.111)	0.361*** (0.108)	0.180*** (0.080)
6-8	2.051* (0.636)	1.972* (0.608)	1.285 (0.464)
9-12	3.124*** (0.991)	3.195*** (0.998)	2.454* (0.879)
Year (2010 omit.)			
2006	0.423* (0.144)		
2007	0.466** (0.132)		
2008	0.473** (0.108)		
2009	0.627* (0.127)		
2011	0.735 (0.153)		
2012	0.995 (0.215)		
2013	0.769 (0.199)		
2014	0.472*** (0.104)		
2015	0.471*** (0.093)		
2016	0.405*** (0.084)		
Years (2006-2010 omit.)			
2011-2013		1.339 (0.240)	0.401** (0.121)
2014-2016		0.721* (0.105)	0.680 (0.203)
Grades and years int.			
1-5 # 2011-2013			6.553***

	<u>Spec. 1</u>	<u>Spec. 2</u>	<u>Spec 3.</u>
			(2.782)
1-5 # 2014-2016			1.196 (0.652)
6-8 # 2011-2013			4.151*** (1.479)
6-8 # 2014-2016			0.973 (0.456)
9-12 # 2011-2013			2.703* (1.057)
9-12 # 2014-2016			1.006 (0.394)
Sex (male omit.)			
Female	0.653 (0.297)	0.677 (0.304)	0.702 (0.309)
Grade and sex int.			
1-5 # Female	0.977 (0.344)	0.984 (0.347)	0.964 (0.334)
6-8 # Female	0.765 (0.256)	0.762 (0.252)	0.741 (0.242)
9-12 # Female	1.459 (0.556)	1.467 (0.551)	1.417 (0.535)
Mother ed. (illit. omit.)			
Read & write	0.651 (0.144)	0.654 (0.143)	0.652 (0.143)
Basic+	0.613 (0.161)	0.590* (0.150)	0.588* (0.150)
Father ed. (illit. omit.)			
Read & write	0.845 (0.190)	0.849 (0.188)	0.847 (0.187)
Basic+	0.437** (0.126)	0.446** (0.126)	0.450** (0.127)
Siblings main effects			
Have older brother	0.864 (0.145)	0.891 (0.147)	0.885 (0.147)
Have older sister	1.270 (0.288)	1.272 (0.281)	1.327 (0.297)
Have younger brother	1.388 (0.245)	1.386 (0.241)	1.406 (0.249)
Have younger sisters	1.055	1.059	1.077

	Spec. 1	Spec. 2	Spec 3.
	(0.240)	(0.239)	(0.246)
No. siblings (living and dead)	1.045	1.037	1.034
	(0.052)	(0.049)	(0.049)
Sibs. and sex int.			
Female # Have older brother	1.007	0.978	0.976
	(0.323)	(0.305)	(0.309)
Female # Have older sister	0.824	0.832	0.803
	(0.275)	(0.276)	(0.269)
Female # Have younger brother	0.647*	0.649*	0.650*
	(0.139)	(0.138)	(0.137)
Female # Have younger sisters	0.767	0.773	0.783
	(0.198)	(0.196)	(0.202)
Female # No. siblings (living and dead)	1.112*	1.107*	1.111*
	(0.054)	(0.053)	(0.054)
N obs.	4469	4469	4469

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Cells are hazard ratios, standard errors in parentheses. Standard errors clustered on the primary sampling unit (PSU) level.

Source: Authors' calculations based on JLMPS 2016

7. Appendix

7.1. Summary statistics

Table A2. Summary statistics on time-invariant covariates, Syrians in the analysis sample

Sex	Percentage
Male	53
Female	47
Mother education	
Illiterate	28
Read & write	52
Basic+	20
Father education	
Illiterate	19
Read & write	38
Basic+	43
Have older brother	
No	31
Yes	69
Have older sister	
No	36
Yes	65
Have younger brother	
No	43
Yes	58
Have younger sisters	
No	44
Yes	56
<hr/>	
Total	100

Mean

Mean number of siblings	5.1
N (observations)	1,189

Source: Authors' calculations based on JLMPS 2016 and PAPFAM 2009

7.2. Data structure

Table A3 is an example of our data structure for two fictitious children. The table illustrates how grades and calendar years inter-relate and comparisons between children across time and grades are possible. In the cells, letters denote country (S=Syria, J=Jordan), numbers denote grades, and these are mapped to calendar years. The asterisk denotes the final year completed (dropout/exit). Child one was attending grade six in Syria in 2006 and continued through grade nine in 2009, when she dropped out. Child two started grade one in 2006 in Syria and continued through grade eight in 2013. She then fled to Jordan and started grade nine in Jordan in 2014, but then dropped out. Comparing data such as that of child one and child two allows us to estimate the baseline hazards (θ_j) of the different grades and how they vary over time, for instance how the hazard of dropout in grades 6-8 differs over 2006-2010 versus 2011-2013 ($\theta_{6-8,2011-13}$). Effectively, child one acts as a control group (pre-conflict) for child two.

Table A3. Example of data structure

Calendar year:	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Child 1	S6	S7	S8	S9*							
Child 2	S1	S2	S3	S4	S5	S6	S7	S8	J9*		

Source: Authors' creation. Letter S in cells denotes in Syria, letter J in cells denotes in Jordan, the number following the letter denotes the grade (e.g., S1=grade one in Syria). Asterisk denotes final year (dropout).

ⁱ In this paper we treat “Syrians” as synonymous with “Syrian refugees.” The percentage of Syrians in Jordan that are currently registered as a refugee and arrived in Jordan in 2011 or later or left a previous residence in 2011 or later due to violence, persecution, or lack of security is 93% (Krafft et al., 2019).

ⁱⁱ For more information on the PAFAM 2009, see PAFAM (2011). For more information on the JLMPS 2016, see Krafft & Assaad (2021).

ⁱⁱⁱ Although retrospective questions may be subject to bias, among the Jordanians of age for our analysis sample who ever attended school, 75% report starting grade one of basic the year they turned six and 96% report starting grade one of basic the year they turned six or seven, suggesting relatively accurate recall.

^{iv} See the retrospective questions section in the supplementary online material for the exact questions and details.

^v Too few Syrians in Jordan progressed to higher education to analyze beyond grade 12.

^{vi} In addition to refugees being from areas that were particularly affected by conflict, the adult Syrian refugee population in Jordan is less educated than the national population in Syria pre-conflict (Sieverding & Calderón-Mejía, 2020), which may affect demand for education among refugees due to intergenerational persistence in educational attainment. Other differences between the Syrian refugees who fled to Jordan and the national population of Syrians (which existed pre-conflict) may also be pertinent to educational outcomes, including higher poverty, higher fertility, and earlier marriage (Sieverding et al., 2019; Sieverding & Calderón-Mejía, 2020; Verme et al., 2016). Other research suggests that differences between adolescent Syrian refugees in Jordan and Jordanians in school enrollment are almost entirely explained by differences in socio-economic status between the two groups (Krafft et al., 2021).

^{vii} When including delayed students in gross enrollment ratios, secondary enrollment rates have come closer to recovering (Sieverding et al., 2018).

^{viii} Figure A5, in the supplementary online material, presents a descriptive analysis of school persistence and exit by cohort, the results of which are consistent with the multivariate findings.

^{ix} Estimating a model with time-varying country of residence corroborates that the hazard of exit was (insignificantly) lower in years when individuals were in Jordan compared to Syria.

^x We tested whether there were differential effects of the time trends and time trends interacted with grade by sex; there were not significant differences.

^{xi} Since the model includes both main effects and interactions between time and grade segment, the marginal effects (predicted hazards, shown in the figure) of different combinations were tested for equivalence.

^{xii} See Sieverding et al. (2018) for an examination of interruptions and re-enrollment, as well as age-for-grade and grade repetition. Syrians in Jordan were slightly older than their expected grade at some points in their trajectory, especially during latter basic and secondary, but did not repeat grades. A substantial fraction of Syrians in Jordan experienced interruptions of six months or more in their schooling, but often re-enrolled successfully after arrival to Jordan.

^{xiii} For instance, estimates among Syrian refugees aged five and older in 2014 show 7% of Syrian refugees in Lebanon had no education compared to 11% of Syrian refugees in Jordan; 22% in Lebanon and 20% in Syria had first stage primary; 54% in Lebanon and 52% in Jordan had second stage primary, 8% in Lebanon and 11% in Jordan had secondary attainment, and 5% in Lebanon and Jordan had university or above attainment (Verme et al., 2016).