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EDUCATION INTERRUPTED: ENROLLMENT, ATTAINMENT, AND DROPOUT OF SYRIAN REFUGEES IN JORDAN

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Working Paper No. 1261

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Abstract

Education is a key means to integrate refugee populations into their host countries, as well as to prevent permanent deficits in human development among children affected by conflict. The large population of children affected by the Syrian conflict are at risk of becoming a “lost generation” due to interruptions in their schooling. Jordan hosts one of the largest populations of Syrian refugees and has made a concerted effort to provide access to education for refugee children. This paper assesses how educational enrollment, attainment, and dropout of Syrian refugees in Jordan have been affected by conflict, displacement, and educational opportunities and experiences after arrival to Jordan. We rely on nationally representative survey data from Jordan in 2016 and in-depth interviews with 71 Syrian refugee youth. Syrian refugees in Jordan faced disrupted schooling in Syria due to the conflict, followed by challenges in joining the Jordanian school system. Yet ultimately enrollment rates, at least through 2016, have recovered to pre-conflict levels for basic education among the group of Syrians in Jordan in 2016. Refugee youth faced a number of barriers to school reentry and persistence in Jordan, including school interruptions leading to students being older than their classmates, discrimination from peers and teachers, and academic difficulty particularly at the secondary level. For male youth, the pressure to work to support their families underlay many non-enrollment decisions. Although some youth faced documentation challenges upon initial enrollment in school, they were able to overcome these challenges, demonstrating the importance of Jordan’s efforts to expand public school access to refugees.

Keywords: Education, Refugees, Syria, Jordan

JEL Classifications: I21, I24, I25, N35

ملخص

التعليم وسيلة رئيسية لإدماج اللاجئين في البلدان المضيفة لهم ، وكذلك لمنع العجز الدائم في التنمية البشرية بين الأطفال المتأثرين بالصراع. يتعرض عدد كبير من الأطفال المتضررين من النزاع السوري لخطر "التحول إلى جيل ضائع" بسبب الانقطاع المتكرر في تعليمهم المدرسي. يستضيف الأردن واحدة من أكبر مجموعات اللاجئين السوريين وقد بذل جهودًا متضافرة لتوفير الوصول إلى التعليم للأطفال اللاجئين. تقيّم هذه الورقة كيف تأثر الالتحاق اللاجئين السوريين في الأردن بالتعليم ،, وتحصيلهم الدراسي وتسربهم من التعليم بالنزاع والتهجير وفرص التعليم والخبرات التعليمية بعد وصولهم إلى الأردن. نحن نعتمد على بيانات المسح الوطني الممثلة من الأردن في عام 2016 والمقابلات المتعمقة مع 71 من شباب اللاجئين السوريين. تعرض اللاجئون السوريون في الأردن إلى تعطل التعليم المدرسي في سوريا بسبب النزاع ، أعقبه تحديات في الانضمام إلى النظام المدرسي الأردني. ومع ذلك ، فإن معدلات الالتحاق في نهاية المطاف ، على الأقل حتى عام 2016 ، قد تعافت إلى مستويات ما قبل الصراع في التعليم الأساسي بين مجموعة السوريين في الأردن في عام 2016. وقد واجه شباب اللاجئين عدداً من العوائق أمام دخول المدارس والمثابرة في الأردن ، بما في ذلك انقطاع المدارس مما أدى إلى أن يكون الطلاب أكبر سناً من زملائهم في الفصل ، والتمييز بين أقرانهم ومدرسيهم ، وصعوبة أكاديمية خاصة في المرحلة الثانوية. بالنسبة للشباب الذكور ، فإن الضغط على العمل لدعم عائلاتهم كان وراء العديد من القرارات بعدم تسجيلهم في التعليم. على الرغم من أن بعض الشباب واجهوا تحديات في التوثيق عند التسجيل في المدارس في البداية ، إلا أنهم تمكنوا من التغلب على هذه التحديات ، مما يدل على أهمية جهود الأردن لتوسيع الوصول إلى المدارس العامة للاجئين.

1. Introduction

More than a million Syrian children have been forced to relocate to neighboring countries, primarily Jordan, Lebanon, and Turkey, to escape the violence in Syria that began in 2011. As a result of school interruption and dropout due to the protracted conflict and their displacement, these children and youth are at risk of experiencing permanent deficits in their educational attainment and becoming a "lost generation" (Brussels II Conference 2018) with reduced human capital. Enrollment rates of Syrian school-aged (registered) refugee children show sizeable deficits as of December 2017. In Lebanon 42% of school-aged[7] children were in school, compared to 56% in Jordan and 63% in Turkey (Brussels II Conference 2018).[8] These rates are lower than the national rate of 83% in 2009 in Syria pre-conflict.[9] Both disruption in schooling inside Syria due to the conflict and challenges enrolling or re-enrolling in school in their host countries may have affected Syrians' education outcomes.

To better understand the educational outcomes and prospects of this generation and the large numbers of Syrian refugee children who have been born and are reaching school age in a situation of displacement, it is essential to examine the dynamics of school enrollment, dropout and attainment among the refugee population. In this paper, we examine educational experiences among the Syrian refugee population in Jordan, which hosts 1.3 million Syrian refugees (Department of Statistics (Jordan) 2015) and has made an evolving, but concerted effort to expand educational access for the refugee population. We specifically examine the enrollment, attainment and dropout of Syrian refugees pre- and post-conflict. Using a mixed-methods approach, we also explore the demand and supply-side barriers and supports for refugee education.

We find that enrollment and progression had, as of 2016 in Jordan, recovered to comparable levels to the same group of Syrians prior to the conflict, particularly at the basic education level. Enrollment rates in secondary education among the refugee population were low even prior to the conflict, and have not recovered to pre-conflict levels. Although enrollment rates at the basic level have recovered, Syrian refugees still have substantially worse education outcomes than Jordanians and face numerous challenges entering and persisting in school. On the demand side, refugee youth face a number of barriers to entering school and financial pressures to work are an important reason why boys drop out of school. On the supply side, considerable progress has been made in overcoming barriers to refugee children's ability to register in Jordanian public schools. However, refugee students face academic and social challenges within their school

[7] School-aged covers ages 3-18 in Lebanon, 5-17 is used otherwise. Throughout this paper, we define school as formal schooling, not non-formal education.
[8] Globally, UNHCR estimates that over half of refugee children are not in school, with 61% of refugee children in primary school and 23% of adolescents in secondary school (UNHCR 2017), but there is wide variation across hosting countries (Dryden-Peterson 2015).
[9] Calculated for ages 5-17 from the PAPFAM 2009 discussed below.

environments. Interpersonal aspects of schooling have been particularly challenging for Syrian students, as many have experienced bullying by peers and sometimes teachers.

2. Background

2.1. Jordan's policy environment for refugee education

As refugees begin to arrive in a host community, there are two main models for incorporating them into services such as education. Refugees can either be provided services in a parallel system (e.g. separate schools and health clinics just for refugees) or included in host community systems (Rowley, Burnham, and Drabe 2006). While initially, for rapid scale-up during an emergency, parallel systems may be necessary, for the longer-term, inclusion into existing systems is more efficient (Rowley, Burnham, and Drabe 2006). Inclusion of refugees into host community education systems is now a stated goal of the United Nations High Commissioner for Refugees (UNHCR) (UNHCR 2016a). In Jordan, just 13% of Syrian refugees reside in camps, with the remainder residing in host communities (Jordanian towns and cities), almost all in urban areas (Krafft et al. 2018). The predominant model for Syrian refugees' education in Jordan has been integration into the Jordanian public school system, with a parallel educational system established for those refugees residing in camps.

Jordan's education system includes two (optional) years of pre-primary (kindergarten) education for ages four and five. Students start basic education at age six. Basic education lasts for 10 years (to age 16) and is compulsory. Secondary education is two years, from sixteen to eighteen. Most secondary education is in the academic track, with some vocational tracks as an alternative to academic secondary school. Depending on academic secondary examination scores (the *tawjihi*), students may be able to enroll in higher education, either in two-year post-secondary institutes (community colleges) or four-year university programs.

With the lengthening of Syrian refugees' displacement, the Jordanian education system has been strained by the growing number of students and by pre-existing structural challenges. The situation resulted most recently in the development of several policy documents laying out strategic directions for the education sector. The first is the Jordan Response Plan (JRP) 2018-2020 which is designed to coordinate all actors across sectors for a rolling three-year window (Ministry of Planning and International Cooperation 2017). For education, the Education Sector Working Group coordinates different actors including UN agencies and international, national non-governmental, and community-based organizations. One of the goals of the JRP is to shift from humanitarian response into long-term resilience and sustainable development. The second key policy document is the national Education Strategic Plan (2018-2022) by the Ministry of Education, which lays out goals and plans for the education system in the near term (Ministry of Education 2018b). The third relevant policy document is the national Human Resources Development Strategy (2016-2025) which lays out a long-term vision for education and human resources in Jordan (National Committee for Human Resources Development 2016). These

initiatives, among others, demonstrate the commitment of the Jordanian government to ensuring Syrian refugee children's right to education.

Basic and secondary schooling are free of charge to Syrian children in Jordan (Jordan Response Platform for the Syria Crisis 2016). Within host communities, Syrian refugees may enroll in Jordanian public schools with enrollment priority given to Jordanian students. Enrollment on a rolling basis during the school year is only sometimes available, meaning that in some cases children who arrive in the middle of a school year must wait until the following year to enroll (Culbertson et al. 2016). Double shift schools have been created when there were not sufficient spots in schools to include Syrians in a single shift. There were, as of 2017/18, 209 double shift schools in host communities and 45 in camps (Brussels II Conference 2018).

However, Syrian children in Jordan 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 and with the Ministry of Interior) to enroll in school. The requirement to have documentation was temporarily waived starting in fall of 2016 (Jordan Times 2016) and the waiver was made permanent in fall of 2017 (Al Abed 2017). In 2017, the Ministry of Education (MOE) also exempted Syrian children 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 and need to take alternative forms of education (Education Sector Working Group 2015). Since the majority of Syrian refugees in Jordan arrived in 2013 (Krafft et al. 2018), when documentation requirements were still in place, those who initially lacked documentation may have aged out of eligibility for formal schooling. For Syrian refugee children in formal camps, UNICEF provides education infrastructure and the MOE has committed Jordanian teachers to teach the Jordanian curriculum (Salemi, Bowman, and Compton 2018). In addition to enhancing access to education, the Jordanian Ministry of Education (MOE) and its partners from international funders, international non-governmental organizations, and UN agencies have worked to improve the quality of education, the school built environment, and to provide educational support and alternative education to Syrian refugees (Brussels II Conference 2018).

Although substantial investments and policy efforts have been made towards education of Syrian refugees in Jordan, these have not resulted in sustained increases in enrollment rates. Among school-age (age 5 – 17) registered Syrian refugees, 130,668 (56%) were enrolled in Jordanian public schools for the 2017-2018 academic year while 102,384 were not (Brussels II Conference 2018); enrollment rates among registered refugee children have fluctuated between 54% and 65% over 2013-2017.[10] It is thus important to understand the continued challenges to refugee

[10] Calculated based on:
In 2017, 233,052 school-age registered Syrian refugees in Jordan and 130,668 enrolled (56%) (Brussels II Conference 2018).

education that contribute to the persistent non-enrollment of a substantial percentage of this population.

2.2. Integration of Syrian refugees into host country education systems

Global literature demonstrates that there are three main challenges refugee children face in integrating into education following displacement: (1) disrupted and limited opportunities to attend school, (2) instructional challenges in school, and (3) discrimination (Dryden-Peterson 2015). A key challenge in limited or disrupted attendance is that, in addition to time spent out of school in their country of origin due to conflict, there are often lags between refugees' arrival in the host country and placement in the education system (Dryden-Peterson 2015). Legally, host countries that are signatories to the 1951 Convention are obliged to provide primary education and encouraged to provide other levels, but vary in the degree to which they do so (Ferris and Winthrop 2010). Jordan is not a signatory to the Convention. In both countries that are and are not signatories to the Convention, refugees may face barriers to educational access due to legal restrictions on schooling directly, or fear of exposure to authorities due to other documentation requirements (Dryden-Peterson 2015). Placement may also be limited by availability of schools and seats, driven by shortages or variability in financial resources from global partners, such as UNHCR, or local governments (Dryden-Peterson 2011; Ferris and Winthrop 2010).

As noted above, Jordan has expanded second shifts in schools in order to increase capacity to enroll new students, and documentation requirements for refugee access to schooling have changed over time. Although documentation requirements have recently been waived, these may have posed a barrier to school enrollment when refugees first arrived, and the "three-year rule" remains in place. The combination of these two documentation challenges, as well as time out of school in Syria, may make school reentry particularly challenging for youth who did not or could not enroll in school immediately upon arrival, and have now aged out of their three year window (Human Rights Watch 2016a). Lack of space, registration challenges and grade placement have all been noted in previous assessments as challenges for Syrian refugees' education in Jordan (Culbertson et al. 2016; Culbertson and Constant 2015).

Refugees who are able to reenter school after arrival in the host country may face additional challenges with the school system itself that serve as barriers to progression or even persistence in education. Globally, instructional challenges facing refugee children include language differences and low quality of instruction in refugee schools due to limited training of teachers,

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In 2016, 232,868 school-age registered Syrian refugees in Jordan and 126,127 enrolled (54%) (Brussels II Conference 2018),
In 2015, 223,301 school-age registered Syrian refugees in Jordan (UNHCR 2016b) and 145,458 enrolled (Ministry of Education 2018b) (65%).
In 2014, 214,199 school-age registered Syrian refugees in Jordan (UNHCR 2015b) and 129,058 enrolled (Ministry of Education 2018b) (60%).
In 2013, 220,000 school-age registered Syrian refugees in Jordan (Ministry of Planning and International Cooperation (MoPIC) 2014) and 120,557 enrolled (Ministry of Education 2018b) (55%).

large class sizes, and curricula that may be difficult for refugees to relate to due to cultural and historical differences (Dryden-Peterson 2015, 2011). In Turkey, for example, language barriers and the difficulties adjusting to a different school system have been cited as reasons for Syrian refugees' preferences for Temporary Education Centers (parallel education for refugees) as opposed to integration into Turkish public schools, despite issues with school quality (Aras and Yasun 2016; Çelik and İçduygu 2018). Foreign language instruction has likewise been noted to be a challenge for Syrian refugee children studying in Lebanon (Culbertson et al. 2016; Culbertson and Constant 2015). Parallel education systems may thus have some advantages for refugee children in terms of adjustment processes.

In Jordan, the majority of Syrian refugees who attend school do so in the Jordanian public school system, so many issues with school quality – which are substantial (Ahmadzadeh et al. 2014; Culbertson et al. 2016; Culbertson and Constant 2015; Human Rights Watch 2016a) – are the same issues facing Jordanian students, although they may be exacerbated by the rapid growth in the number of students. The issue of language differences is minimal in the case of Syrian refugees in Jordan, as both countries speak similar dialects of Arabic. However, there are other issues that may compound school quality issues for refugee students. In host community educational systems, refugee students globally often do not have skills that are matched to their expected grade for age level (Dryden-Peterson 2015). This has been noted by several reports as a challenge for Syrian refugees in Jordan and elsewhere (Brussels II Conference 2018; Culbertson et al. 2016; Human Rights Watch 2016a).

Another concern with educational quality is use of shift schools, which, as noted above, were expanded in order to accommodate the influx of Syrian students. Shift schools are associated with lower quality of education globally (Bray 2008), and have been noted as a challenge in the Jordanian context, since shift classes have shortened instructional time and teachers who are less experienced and paid less than those at first or single-shift schools (Culbertson et al. 2016; Culbertson and Constant 2015; Human Rights Watch 2016a). In a qualitative study with 7th and 8th graders in four schools in Amman, Salem (2018) also found that attending school in the second shift reduced students' time with their families and led them to feel more exposed to harassment on the way to and from school.

Finally, refugee children are vulnerable to harassment and discrimination within school settings, including bullying from peers and prejudicial behavior from teachers and peers (Dryden-Peterson 2015). Bullying and harassment have been noted as problems for Syrian students in Jordan and elsewhere (Culbertson et al. 2016; Culbertson and Constant 2015), and the relationship with shift schools in Jordan may be complex. While students may feel safer from bullying in Syrian-only second-shifts (Salem 2018), separation between Syrian and Jordanian students may exacerbate lack of integration (Human Rights Watch 2016a; Salem 2018).

2.3. Demand side factors affecting education of Syrian refugees

While Syrian refugees in Jordan have been profoundly affected by conflict, displacement, and Jordan's policy environment for refugee education, there are also demand (population) – side factors that affect refugees' education. First, refugees' educational outcomes are influenced by the education system in their country of origin, Syria, and the educational composition of the Syrian population that fled to Jordan. Since 2002, Syria's education system has consisted of basic education, secondary education, and tertiary education (Hessan et al. 2016). Basic education had two cycles, the first cycle for grades 1 through 4 (ages 6 to 10) and the second cycle grades 5 through 9 (10 to 15).[11] Basic education was compulsory and free. Secondary education was three years (ages 15 to 17), free of cost, and with vocational and general tracks that depended on basic education scores (Nuffic 2015).

Nationally, enrollment rates in basic education in Syria were fairly high prior to the conflict. As of 2009, enrollments were 94% or higher at ages 6-11 (through the first cycle of basic). Enrollment rates then dropped for ages 12-14, to 70%, and further for ages 15-17, when they were 45% (League of Arab States and Syrian Arab Republic 2011). By 2013, when most of the Syrians in Jordan arrived, 40% of all registered students in basic education in Syria had dropped out of school. In the hardest-hit provinces, attendance had dropped to 30% or below. In 2014, only half (48%) of school-age children were in school (United Nations Security Council 2014). 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 et al. 2018), which may affect demand for education among refugees due to intergenerational persistence in educational attainment.

Additional factors related to the context of their displacement in Jordan may affect demand for schooling among refugees. Key among these is poverty, which may hinder refugee households' ability to pay for school-related costs such as books and transportation even when schooling itself is free (UNICEF 2017). Poverty may also raise the demand for child labor, leading to withdrawal of children from school to support the household (Justino 2014). Although only 2% of Syrian refugee boys aged 10-14 report working (0% of girls in this age group) (Krafft et al. 2018), work has been cited as a reason for refugees' non-enrollment in school in Jordan and elsewhere (Ahmadzadeh et al. 2014; Aras and Yasun 2016; Education Sector Working Group 2015).[12] In Jordan, an estimated 86% of Syrian refugees live below the poverty line (UNHCR 2015a). Among Syrian refugee girls, marriage is a factor that may reduce demand for schooling, as marriage is widely viewed to be incompatible with education, and 18% of refugee girls aged 15-19 are already married (Sieverding, Berri, and Abdulrahim 2018). Finally, the returns to education in a context of conflict and displacement may also be low or perceived to be low

[11] Prior to 2002, basic education was split into primary (6 years) and preparatory (3 years) (Hessan et al. 2016).
[12] Based on the JLMPS 2016 data, we calculate that 10% of Syrian male youth aged 15-19 work and 48% of Syrian men aged 20-24.

(Justino 2014); for instance, in Jordan, refugees can only legally work in sectors that are predominantly low skilled (Razzaz 2017). The value of a Jordanian education upon possible return to Syria or migration to a third country may also be uncertain, reducing the incentive for refugee households to invest in education while they are in Jordan.

3. Data

Our analysis in this paper relies on a combination of quantitative and qualitative data on Syrian refugees in Jordan collected in 2016 – 2017. For some outcomes, we also compare our quantitative results with data from Syria in 2009, pre-conflict.

3.1. Quantitative Data: Surveys

We use the nationally representative 2016 Jordanian Labor Market Panel Survey (JLMPS 2016) to analyze education outcomes of Syrians[13] in Jordan. The JLMPS 2016 over-sampled areas with a high proportion of non-Jordanians in order to be able to examine outcomes for the Syrian population in Jordan (as well as other migrant groups). This sampling strategy is incorporated into the sample weights, which are used in our descriptive statistics (but not our multivariate models). We frequently compare the outcomes of Syrians in Jordan with Jordanians using the JLMPS 2016. We exploit the fact that 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, both during and prior to the conflict. To complement this dataset, we also use the 2009 Syria Pan Arab Project for Family Health (PAPFAM) survey to illustrate educational trends nationally in Syria prior to the conflict (when comparable data are available).[14] It is important to remember that the PAPFAM national trends are not necessarily representative of the experiences of the Syrians who fled to Jordan; the Syrian refugees in Jordan are a select group and may be different than the national pre-conflict average.

3.2. Qualitative Data

The qualitative component of this mixed methods research project was designed to complement the JLMPS 2016 by providing insight into youth experiences with and decision-making around key aspects of the transition to adulthood, namely education, work and marriage, as well as their access to formal services and informal social support in Jordan. The qualitative data consist of modified life history interviews with 71 Syrian refugee youth residing in the Mafraq and East Amman areas.

[13] In this paper we treat "Syrians" as synonymous with "Syrian refugees" for the case of Jordan. The percentage of Syrians in Jordan that either (1) are currently registered as a refugee and arrived in Jordan in 2011 or later, or (2) left a previous residence in 2011 or later due to violence, persecution, or lack of security is 93% (Krafft et al. 2018). The remainder may have entered Jordan for economic reasons but not returned to Syria due to conflict.

[14] For more information on the PAPFAM 2009, see League of Arab States and the Syrian Arab Republic (2011). For more information on the JLMPS 2016, see Krafft & Assaad (2018). The PAPFAM 2009 data are available on request from the Pan Arab Project for Family Health. The JLMPS 2016 data are available from the Economic Research Forum's Open Access Microdata Initiative (OAMDI) at www.erfdataportal.com

3.2.1. Site selection

Two study sites were selected for the qualitative data collection in order to better capture how differences in the service environment across Jordan's governorates may influence refugee youths' experiences in the transition to adulthood, including education. The first study site was Mafraq city, which is located in the North of Jordan near the Syrian border and the Zaatari refugee camp, through which most refugees enter to Jordan. The city was selected because of its potential as a location of resettlement for many refugees who had left Zaatari camp, and to represent the northern region of the country, where concentrations of refugees are high and services are generally less developed than in the capital. The second region was Marqa, which is a part of Eastern Amman, the outskirts of the Jordanian capital city, where formal services are most widely available and many government agencies and NGOs base their operations. Both sites were selected based on having a high concentration of Syrian refugee households. Amman and Mafraq are the two governorates that host the highest percentage of registered Syrian refugees within Jordan (UNHCR 2018) and thus capture the situation of refugees living in host communities.

3.2.2. Interview guide development

The original in-depth interview guide was theme-based and focused on youth experiences related to education, employment, marriage and use of health services since arriving in Jordan. However, during initial pretesting with Syrian refugees living in informal settlements in the Bekaa (a region in Lebanon with a high concentration of refugees), we found that refugees were highly mobile, and many details about their educational and work experiences were lost through a thematic approach. We therefore restructured the guide to follow a modified life history approach, focusing on the period since refugee youths' arrival in Jordan. Life history is a form of qualitative interviewing that allows respondents to describe the events of their life through their own understandings of transitions and trajectories (Davis 2009; Locke and Lloyd-Sherlock 2011). Life history interviewing has been used in the field of development to link respondents' life trajectories to their subjective experiences of poverty, marginalization or inclusion, and overall wellbeing (Davis 2009; Locke and Lloyd-Sherlock 2011).

In the interview guide for this project, we began with a brief discussion of respondent's lives in Syria and their experience of arrival to Jordan. Then, respondents were asked about each location in which they had lived since their arrival to Jordan, regardless of the duration of stay. For each place of residence, respondents were then asked about their experiences with schooling, employment, marriage and use of health services in that location. The discussion of education included, as applicable, decisions about school enrollment and dropout, experience of school re-entry after migration, and enrollment procedures. Those respondents who were in school in the location were also asked about their relationships with teachers and peers, satisfaction with school, curriculum difficulty, and other experiences with schooling. The discussions of work and marriage included how working or getting married interacted with respondents' decisions about

schooling. Finally, all respondents were posed a set of more general questions about the situation of Syrian refugees in Jordan, including their access to education, and further questions about their sources of social support and future aspirations. The interview guide was semi-structured, and left considerable flexibility for the interviewer to respond to and follow each respondent's trajectory since arriving to Jordan. The revised guide was written in the Syrian dialect of Arabic and piloted again in Lebanon by the authors and a final time in Jordan by the interview team with minor adjustments before finalizing. Most interviews lasted between 45 minutes and one hour, and we found that the chronological approach was easier for youth to respond to than a thematic one.

3.2.3. Data collection

Interviews were conducted in November 2017 by To Excel Sociocultural and Management Consultants, a research firm in Jordan. A team of eight junior Jordanian researchers with previous experience in qualitative data collection, and in most cases previous experience in data collection with refugee populations, was hired to conduct the interviews. The authors conducted a one-day training in Jordan to ensure that the researchers understood and could apply the interview guide. The training also covered the objectives of the study, the IRB approved study procedures (including consent, recruitment, and data management), and qualitative interviewing techniques particularly for the modified life history guide. Ethical approval for the qualitative study was obtained from the Institutional Review Board (IRB) at the American University of Beirut and To Excel obtained data collection permissions from the Jordanian Department of Statistics and Ministry of Interior.

Inclusion criteria for the qualitative study were that respondents be a Syrian aged 15 – 29 who had arrived in Jordan since 2011.[15] Recruitment of respondents was carried out differently in the two sites due to the challenges of accessing a dispersed population within host communities. To conduct the sample selection in Mafraq, a local community service organization provided the research team with contact information from its registry of Syrian refugee beneficiaries in urban and rural locations around Mafraq city. The interview team contacted Syrian refugees using a recruitment script to screen them for eligibility and introduce them to the study. Those who were eligible and interested were asked whether they would like to proceed to the consent process to learn more about the study and (if consenting) participate in an interview. Interviews were held in private rooms in the organization's premises over four days. In Eastern Amman, the research team knocked on doors and asked for Syrian refugee households in six different neighborhoods of Marqa that had substantial refugee populations. The interviewers knew of these neighborhoods from their previous experience working with Syrian refugee populations, and through asking community service organizations who targeted Syrian refugees. Within the

[15] Due to ethical considerations, we did not ask qualitative respondents about their legal registration status in Jordan. We therefore did not apply an inclusion criteria based on official refugee status.

targeted neighborhoods, snowball sampling was also used to contact additional respondents. In this study site, interviews were held in the respondents' homes.

After explaining the nature of the study and checking for eligibility, interviewers obtained respondents' consent to participate in the study. There were different consent procedures for respondents aged 18-29 and those aged 15-17. For respondents aged 15-17, written consent of the parent or legal guardian was sought before obtaining the respondent's verbal assent to participate. Respondents aged 18-29 were asked for their verbal consent to participate in the study. All respondents and consenting parents/guardians were given a copy of the relevant consent form and interviewers offered to read the consent form to the respondent or parent/guardian in case literacy was a barrier. Interviewers' verbal introductions and the written consent form emphasized the voluntary nature of the study, the respondent's right to refuse or withdraw from participation, and the fact that the decision to participate or not would not impact the respondents' ability to access services or benefits to which they may be otherwise entitled. Respondents and their consenting parents/guardians were also asked if they consented to the tape recording of the interview.[16] Participants were given approximately 10 USD worth of phone credits to thank them for their time, and transportation costs were covered for those in Mafraq who had to travel to the interview location.

Our target sample size within each study site was 36 interviews, evenly divided between male and female youth. In order to capture diversity within the sample, within each site, we adopted a purposive sampling strategy based on gender, age group, and youths' experiences of the transition to adulthood in terms of education, marriage and employment. Specifically, within the 15 – 19 age group, we sampled for both youth who were in and out of school. Among female youth in this age category, we aimed to include some who were married. Within both the 15 – 19 and 20 – 29 age groups, we aimed to capture diversity in whether youth were working and whether they were married. In the actual distribution of these characteristics among the sample, there were differences by gender (e.g. women were more likely to be married and men to be working). Table 1 shows the distribution of the 71 qualitative interview respondents by their characteristics.

Table 1. Characteristics of the qualitative interview sample

	Women	Men	Total
Location			
East Amman	17	18	35
Mafraq	18	18	36
Year of arrival in Jordan			
2011	1	1	2
2012	13	14	27

[16] No respondents refused tape recording.

	Women	Men	Total
2013	13	15	28
2014	6	6	12
2015	2	0	2
Age group			
15-18	17	16	33
19-23	11	13	24
24-29	7	7	14
School status in Jordan			
Currently attending	7	8	15
Previously attended	13	10	23
Never attended	15	18	33
Work status			
Not working	24	3	27
Searching for work	3	7	10
Working	8	26	34
Marital status			
Single	16	32	48
Married	14	4	18
Widowed	5	0	5
Mother's education			
Less than primary	6	7	13
Primary	7	13	20
Preparatory	17	9	26
Secondary	5	4	9
University	0	2	2
Do not know	0	1	1
Father's education			
Less than primary	1	3	4
Primary	8	12	20
Preparatory	17	14	31
Secondary	4	5	9
University	4	2	6
Do not know	1	0	1
Total	35	36	71

4. Methods

4.1. Quantitative analysis

Our quantitative multivariate analysis focuses on two different outcomes: (1) enrollment at the time of JLMPS 2016 survey and (2) attainment/timing of school exit, which exploits the retrospective data in the JLMPS 2016 to assess the impact of conflict and displacement on

progression and school exit. We further contextualize these outcomes by descriptively examining measures such as enrollment,[17] interruption of schooling and delays in schooling.

4.1.1. Multivariate logit model for current enrollment

In order to understand some of the supply- and demand-side factors that may be associated with refugees' enrollment in school, we examine the outcome of current, contemporaneous enrollment as of JLMPS 2016 (enrollment at the time of the survey). We use a logit model and present, in the appendix, odds ratios. We separately model enrollment for what would be on-time progression at the basic stage (for ages 6-15 in Jordan) and for enrollment in secondary and higher education (for ages 16-22).

4.1.2. Logit model covariates

The models for both the 6-15 and 16-22 ages include controls for sex and single years of age, as well as interactions between the two, in order to account for differences in enrollment by age and sex and to be able to test for the significance of such differences. Demand-side factors in the model include mother's and father's education (illiterate, read and write, and basic+). Parent's education may capture socio-economic status as well as parents' educational aspirations. We also control for number of siblings, as well as the presence of a younger or older brother or sister (four variables in total). All five sibling variables are also interacted with sex, since we expect differential effects of sibling composition by sex because of household responsibilities and the allocation of household resources. The model also includes some important policy and supply-side factors. Specifically, dummies for year of arrival (<2012 through 2016+ for ages 6-15, collapsed to <2013 to 2015+ for the ages 16-22 model due to its smaller sample size) are likely to capture policy conditions at time of arrival given changing school registration requirements over time. Since many 16-22 year-olds are no longer in their natal households, and characteristics of their households at the time of the survey may be caused by school enrollment decisions (for example, exiting school to marry), the above covariates are the only characteristics we consider in the logit model for ages 16-22.

In the model for those ages 6-15, we can use a much richer set of covariates, since reverse causality is not such a concern. We control for the sex of the head of the household (female versus male), since this may affect resources and demand for education. Syrians in Jordan have an unusually high share of female-headed households, potentially due to both death and displacement of men (Krafft et al. 2018). There are also several demand-side measures that we include in the 6-15 year-old model that capture household economic resources. The JLMPS includes information on employment (market work in the past three months). We do not examine the employment of children themselves, as it is likely to suffer from reverse causality. However, we do include a control for whether another household member was working in order to account

[17] We calculate basic and secondary net enrollment ratios (NERs) for years before and since arrival in Jordan based on retrospective data on educational history and residential mobility.

for potential demand for child labor to substitute other earners in the household. Further, we include the household's monthly wage income (per capita per month in Jordanian Dinar). We include a covariate for whether or not the household receives any transfers, which include interpersonal and institutional transfers such as remittances, pensions, public assistance funds, nonprofit/charity funds, and other. The other category includes transfers from UNHCR. The wealth quintile of the household, based on an asset index, and among all individuals in Jordan, is included as either the poorest, second, or third-fifth quintiles (higher wealth quintiles are relatively rare among Syrian households).

A control for current location, in host communities as compared to camps, is included in the age 6-15 models in case there is differential supply of schools in these locations. A further control for school access is included in terms of the travel time to basic school in the age 6-15 model, in minutes, as reported by households, including households with no students enrolled.

4.1.3. Survival analysis

Attainment, the level or grades of school completed, is the second key outcome of our analyses. Right censoring is an issue when calculating grades completed because we know that currently enrolled students may attain additional grades of schooling. Since our outcome of grades completed is right censored, survival analysis methods are required. For survival analyses, we structured the dataset as individual-grade observations, including grade "zero" for entry. We first estimate progression through grades (grades completed) with the Kaplan-Meier survival estimate, S_g, where exit from school is denoted at a specific grade, g, as the event T_g:

$$S_g = \Pr(T_g > g) \quad (1)$$

This allows us to estimate the probability of still being enrolled (continuing) past a specific grade in school. If an individual has never attended school, their highest year in school was set to grade zero, and that is when they exited. If an individual had previously attended school, yet is currently out of school, their grade of exit is the highest year they completed. Those currently in school are right-censored (have no exit), yet we know how many years they have persisted through schooling thus far and this information is incorporated into our estimates.

4.1.4. Multivariate hazard models for discrete time survival analysis

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 in a particular grade if he or she has not already left (Jenkins 1995):

$$h_{ig} = \Pr\left(T_g \middle| T_g \geq g\right) \quad (2)$$

Discrete time models allow the outcome variable (school exit) and the covariates, X_{ig}, to vary with grade (and thus time). There are two similar options for discrete time survival analysis: complementary log-log models and logit models (Jenkins 1995; Retherford et al. 2010). The complementary log-log model is easier to interpret since it is a proportional hazards model where

a covariate proportionately raises (or lowers) the hazard of exiting school. The complementary log-log model with covariates is specified as:

$$h_{ig} = 1 - \exp\{-\exp[\theta(g) - \beta X_{ig}]\} \quad (3)$$

or

$$\log(-\log(1 - h_{ig})) = \theta(g) + \beta X_{ig} \quad (4)$$

The term $\theta(g)$ denotes the baseline hazard, the probability of exiting school at each grade level (for the reference individual, when covariates are included). We estimate some models with just this baseline hazard to describe the hazard of exiting school at each grade for the population. 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 after arrival to Jordan, we limit the sample in our multivariate analyses to those aged 6-24 as of the end of December of the survey year. We use age at end of December of the survey year for all our analyses since children enter school (on time) in Jordan in the year when they are aged six by end of December (Ministry of Education 2018a). We further limit our analyses to the years 2006-2016, since going further back in time gives us a diminishing sample size of Syrians. 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, we have a sample for multivariate analysis of 1,111 Syrians in Jordan in 2016, compared to 10,702 Jordanians.

4.1.5. Hazard model covariates

We are particularly interested in the impact the conflict has had on educational outcomes such as school dropout and interruptions for Syrian refugees. We therefore identify the calendar year an individual was in each grade. To map grades to calendar years, we use variables on the year that basic education was started, the year basic was completed, the year secondary was completed, the year higher education was started, the year higher education was completed, the year post-grad was completed, and the year all schooling was completed.[18] If there was an interruption of schooling (the question in the JLMPS 2016 captures interruptions of about six months or longer) the starting and ending years that the individual experienced an interruption from school were used to adjust the calendar year corresponding to subsequent grades. We initially estimate our models with only the baseline hazards for grade in school (based on years of schooling completed, e.g. grade 3). We then aggregate some of the grades with similar baseline hazards (grades 1-5, 6-8, and 9-12). Thereafter, grades are also interacted with sex to account for

[18] If an individual has never attended school, we impute that their grade zero occurred during the calendar year they were 6 years old. We assume individuals progressed annually from their start year and then adjust their end year of levels where we have end data, if the dates differ from annual progression.

differential patterns of dropout by sex. We then estimate calendar year (e.g. 2014) effects. Subsequently, we aggregated some of the calendar years (into 2006-2010 (pre-conflict), 2011-2013 (conflict and displacement), and 2014-2016 (at which point the majority of refugees were in Jordan)). These estimates test the impact of the conflict and relocating to Jordan on dropout. In the models with covariates, we control for mother's and father's education, and number and composition of siblings interacted with sex (as above, in the logit).

4.2. Qualitative analysis

The field team transcribed the interviews verbatim in their original language (the Syrian and Jordanian dialects of Arabic). All transcripts were back-checked completely for accuracy by the authors. In order to capture the longitudinal dimension of the life history narratives while also analyzing themes across interviews, we adopted several approaches to the analysis. To develop the thematic codebook, the coding team separately coded a small subset of interviews using an open coding approach in which codes were derived from the data. We then reviewed the initial codebook together to identify common codes across the interviews, discuss a common understanding of codes, and group codes into families. We proceeded to code the full set of interviews in Dedoose, adding codes as needed. Very few codes were added in the latter stages of coding, indicating that saturation was reached.

While coding the interviews thematically, we also created detailed memos summarizing the life story of each respondent from the time of their arrival in Jordan. In order to compare trajectories better across respondents, we also kept an Excel sheet tracking each residential move the respondent made while in Jordan and their school, work, and marital status in each location. We further analyzed the educational trajectories of the qualitative respondents by age group and gender in order to account for the differential impact of conflict and displacement on sub-groups of youth. In this analysis, we focused in particular on timing of leaving school relative to the conflict, re-enrollment decisions after arrival to Jordan, and reasons for dropout after arrival in Jordan for those who ever re-enrolled in school.

In our analysis of refugee youth's educational experiences in Jordan, we rely both on these summaries of the life history narratives and educational trajectories and the thematic coding related to education. From the thematic analysis, we focus on code families (groups of codes) related to youths' own educational experiences, including barriers to and facilitators of education in Jordan, and formal school experiences in Jordan (including sub-code groups for academic experience, school interruption experiences, school environment and interpersonal relationships with teachers and peers). In order to integrate the qualitative and quantitative findings, we organize the results in terms of the different types of challenges to refugee education identified in the international literature.

5. Results

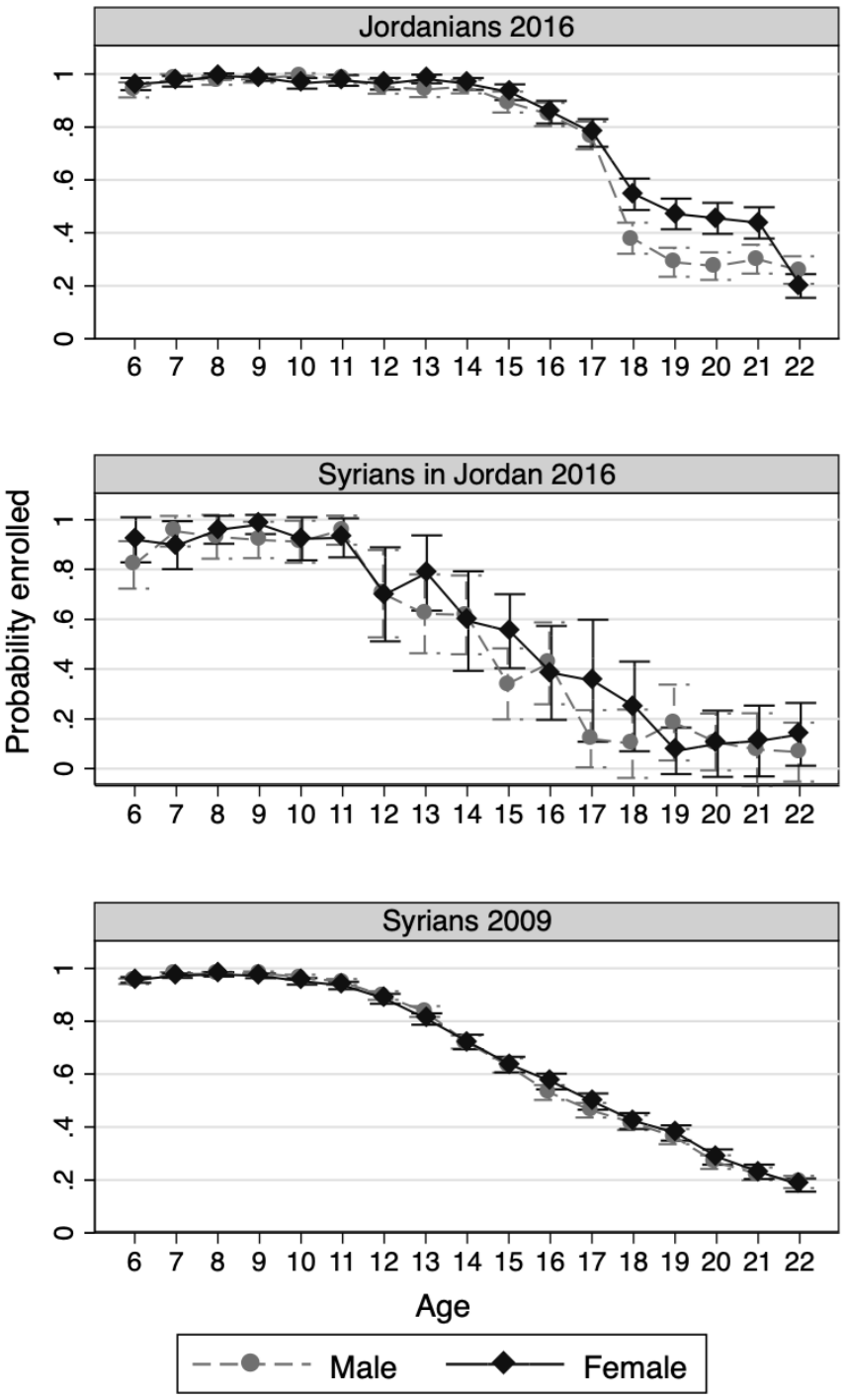
In this section, we present our mixed-methods results on education outcomes of Syrian refugee children and youth in Jordan. We begin with an overview of the enrollment outcomes of Syrian youth in Jordan in 2016 with comparisons to Jordanian youth in 2016 and Syrian youth in Syria in 2009 (section 0). In Section 0 we present the results of the logit models for current enrollment among 6-15 and 16-22 year olds, and discuss demand-side factors related to school enrollment. We then turn to the estimates of Syrian refugees' exit rates from school using survival analysis (section 0), and attempt to disentangle school exit pre- and post- arrival to Jordan among different cohorts of youth. We also look at the role of interruptions, school registration processes and access to schooling in reenrollment opportunities for refugees after arrival to Jordan (section 0). Finally, we look at possible supply-side reasons for exiting school among those who reenrolled in Jordan (section 0) related to the instructional environment and discrimination in schools.

5.1. Enrollment rates among Syrian youth in Jordan

Syrian school-aged children and youth in Jordan in 2016 had lower school enrollment rates than either Syrians in 2009 or Jordanians in 2016. Figure 1 shows predicted enrollment and 95% confidence intervals for Syrians in 2009, Jordanians in 2016, and Syrians in Jordan in 2016 based on a model with interactions by age and sex for those aged 6-22 (at the time of the survey).[19] This figure also allows us to test for significant differences across groups, by sex, and within groups, across sex, in enrollments at each age. Although noisy, the patterns in Jordan in 2016 suggest that Syrian boys are disadvantaged compared to girls. The differences between girls and boys for Syrians in Jordan in 2016 have joint statistical significance, but only one of the age-specific interactions (at age 15) is individually significant. This means that while we know that the patterns for girls are different than boys, we cannot say much about exactly when differences occur.

[19] The predicted probabilities from the interacted model are the same as unweighted descriptive probabilities of enrollment by sex, age, survey, and nationality; the use of the statistical model allows for creating standard errors, confidence intervals, and undertaking tests for statistically significant differences.

Figure 1. Probability of enrollment by nationality and survey, sex, and age, aged 6-22 at time of survey



Notes: Based on a logit model with triple interactions for nationality and survey, sex, and age.
Source: Authors' calculations based on JLMPS 2016 and PAPFAM 2009

Whereas enrollment rates for Jordanians in 2016 and Syrians in 2009 were high at early ages, Syrians in Jordan in 2016 have some gaps at early ages (6-7) possibly indicating delayed school entry.[20] The probability of enrollment for six-year-old Syrian boys in Jordan in 2016 is significantly lower for than for Jordanians or for Syrians in 2009. Regardless of sex, Syrians in Jordan in 2016 and Syrians in 2009 both exhibit declining enrollment rates starting around age 10. By comparison, Jordanians overall had nearly universal enrollment through the early teens. For Syrian boys in Jordan in 2016, enrollments were significantly lower than for Jordanian boys from age 10 and thereafter, and significantly lower than national enrollment rates in Syria in 2009 for age 12 and thereafter. For Syrian girls in Jordan in 2016, enrollments were significantly lower than for Jordanian girls from age 12 and thereafter. Syrian girls in Jordan in 2016 had lower enrollments starting at 12 as well compared to girls in Syria in 2009, but differences were significant only for ages 19 and 20. However, the population of Syrians in Jordan in 2016 is a select (and disadvantaged) group (Sieverding et al. 2018; Stave and Hillesund 2015); the lower enrollment rates of Syrians in Jordan in 2016 compared to in Syria in 2009 may be due to conflict and displacement, but may also be a continuation of pre-existing trends among this sub-population since there is often intergenerational persistence in educational attainment. We explore this issue further in subsequent sections where we examine enrollment trends over time among the Syrians in Jordan in 2016.

It is also worth noting that our school enrollment rates from weighted results using the JLMPS are higher than the rates that were found in the joint education needs assessment (JENA), which were based on a national survey conducted in 2014 (Education Sector Working Group 2015) as well as the rates for registered refugees calculated from MOE data cited above (Brussels II Conference 2018). Our rates are, however, similar to those found among registered Syrian refugees during early 2015 from the Vulnerability Assessment Framework (VAF) baseline and among refugees receiving assistance sampled across the four most populous governorates in 2016-2017 by the Overseas Development Institute (ODI) survey (Abu Hamad et al. 2017). The overall enrollment rate for school aged children (aged 6-17) is 75% in the JLMPS, compared to 80% in the ODI survey, 78% in the VAF baseline, 62% in the JENA and 56% (for ages 5-17) according to MOE numbers for 2016/2017 (Brussels II Conference 2018). The latter figure is among registered refugee children only and includes age 5, and the JENA was conducted in 2014 using a different sampling frame than the JLMPS (see Education Sector Working Group 2015 for details), which may contribute to these different rates.[21]

[20] Although pre-school enrollment rates of Syrians are far below Jordanians, they are nonetheless (slightly) higher for the Syrians in Jordan in 2016 than held for the Syrians in Jordan when they were in Syria (pre-conflict). Additionally, when looking at school enrollment based on their on-time start year, there is suggestive evidence that ultimately Syrians in Jordan are starting school, and doing so at increasing rates, albeit with entry delays (not shown).

[21] Compared to the JENA, the JLMPS found considerably higher enrollment rates for all age groups other than boys aged 12-17. However, compared to the ODI survey, results, particularly for younger ages were similar (the VAF report did not break down enrollment by age or sex to compare). For boys aged 6-11 the rates in JENA were 70%, compared 89% in the ODI survey and 91% in JLMPS, and for girls 70% in JENA compared to 91% in the ODI and

5.2.2. Demand-side factors related to enrollment rates in Jordan

Before turning to factors related to the Jordanian school system (opportunities for education, instructional factors, and discrimination) that may influence school enrollment rates among Syrian refugees, in this section we examine demand-side factors, such as family circumstances and social norms, that may influence enrollment. For the multivariate results, we discuss enrollment at the time of the survey for Syrians in Jordan in 2016 aged 6-15 and 16-22 (Table 2) as well as results from the discrete-time hazard model of school exit (Table 3) and how these outcomes vary by demand-side factors.

Parents' education and the intergenerational transmission of schooling norms (as well as socio-economic status) may play an important role in families' decision to enroll children in school. There were not significant differences in enrollment at the time of survey by the sex of the household head (only modeled for 6-15 year olds). Although odds of enrollment were higher at ages 6-15 if parents were more educated, the differences were not significant. However, for the 16-22 year-olds, having a basic+ educated father or, especially, mother, predicted significantly higher odds of enrollment. In the hazard model those with basic+ educated parents also had a significantly lower hazard of exit (and therefore greater persistence in school and attainment).
In the enrollment model for 6-15 year-olds, having an older brother predicted significantly higher odds of enrollment. The odds ratio for having an older brother was greater than one but not significant for ages 16-22, and the hazard ratio for school exit was lower but not significant for the hazard model. This was the only family compositional effect that was significant in the logit models, and after accounting for the interaction with sex, it is only significant for boys. Thus, for boys, having an older brother increases enrollment; this may be because the older brother would be more likely to work in case of financial need, allowing the younger brother to stay in school. Interestingly, in the hazard model, there is a significant interaction between number of siblings and female, suggesting that when there is sibling resource competition girls are more likely to drop out than boys. For boys, there is suggestive evidence in the hazard model (one of the specifications is significant) that having a younger brother increases dropout (likely the counterpart to the effect in the enrollment model; here older sons drop out to take on responsibilities when there are younger sons). Again, after accounting for the interactions with sex, this is only significant for boys.

Financial resources may shape families' decisions to send children to school (these dimensions can only be examined in the 6-15 year-old enrollment model). Although there were higher odds of enrollment with more wealth, another household member working, or receiving transfers, none of the differences were statistically significant. Monthly income was also insignificant and

87% in JLMPS. For the age group 12-17, for boys, rates were 47% (JENA) vs. 49% (JLMPS) and for girls 55% (JENA) vs. 67% (JLMPS) (see Education Sector Working Group 2015 for more details). ODI results were reported for older groups split between 13-15 and 16-17; enrollment rates at ages 13-15 were 77% for girls (ODI and JLMPS) and 74% for boys (ODI) vs. 50% (JLMPS). For ages 16-17, enrollment rates for boys were 46% (ODI) vs. 26% (JLMPS) and for girls 50% (ODI) vs. 41% (JLMPS).

near one. Although insignificant, the results suggest that having resources or income, more so than the exact level of income, may be more important.

In our qualitative data, in which the age of the respondents overlapped mainly with the older age group of youth (16-22) in the quantiative model, respondents emphasized their households' difficult economic situation and lack of finacial resources as the main demand-side challenge to school enrollment in Jordan. A few respondents said that their parents could not afford school fees and supplies,[22] so they either postponed school enrollment or gave up on the idea altogether. Transporation fees were a challenge mentioned by two respondents.

"*We went to school my mom and me, the administration said that we should pay fees and buy books. It needed a budget, something we do not have. My mom told my dad, so he said to put my education on hold, and I am still until now out of school."* Young woman, 16 years old, Mafraq, never attended school in Jordan.

More so than direct costs of education, difficult economic conditions kept male respondents out of school, as many were working to support their family.[23] This was particularly the case when they were either the eldest in the family or the only source of financial support to the family. Young men mentioned specifically that they worked so they could help to pay for the family's accomodation, the largest portion of expenditure seeming to be on house rent, electricity, and water bills, while food was covered by coupons (vouchers).

"I left school to look for a job. I had to leave. My father was ill and we needed someone to work so I was obliged to drop out and work instead." Young man, 20 years old, Mafraq, previously attended school in Jordan.

"I failed the 10th grade. I dropped out of school because the situation in our house became very difficult, I needed to work to spend on my parents, so they do not beg from someone else. We did not have enough money to pay for the rent, so I told my dad I would drop out." Young man, 17 years old, Mafraq, previously attended school in Jordan.

A very few young men worked while studying, and found it to be exhausting. They either worked during night shifts or on weekends, or ultimately dropped out of school.

[22] Since April 2012, education has been provided to Syrian refugees through the public Ministry of Education system, theoretically free of charge (Culbertson et al. 2016). However, it was only in 2017 that the Ministry of Education (MOE) also exempted Syrian children from tuition and textbook fees (Brussels II Conference 2018).
[23] Calculations from the JLMPS 2016, using the 3-month reference period and market definition of work, indicate that only 6% of male Syrian youth aged 15-19 were working. Among male Syrian youth aged 20-24, approximately 36% were working. Additional youth were searching for work; using the same definition of work and a standard (search required) definition of unemployment to define the labor force, 14% of Syrian male youth aged 15-19 were in the labor force and 44% of Syrian male youth aged 20-24 were in the labor force.

As for young women in the qualitative sample, marriage was also an impediment to schooling as some had to drop out of school after getting engaged (all of the female youth who had married in Jordan did so before the age of 18[24]). Married female respondents, even if their husband agreed to them attending school, found they could not be at school and manage a household simulteanously. 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 and fears for their safety.

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

"I hated education, because the teacher says I can't make use of it but [just] hang it [the diploma] on the wall." Young man, 17 years old, East Amman, attending school in Jordan.

"My future was lost with Syria's destruction and the events. I try to have hope. My future was lost with my lost education. I was putting high hopes on attaining an education and a decent job. My education stopped and so 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 used to urge us to study. She used to tell us how education is very important, it will tire us in the beginning but it will bear its fruits later." Young man, 17 years old, Mafraq, attending school in Jordan.

The issue of parental encouragement and young people's individual motivation to continue education under what, as described below, could be challenging conditions for school integration, is not something we can measure in the quantitative data, but is important to consider in interpreting the results regarding socio-demographic factors and the supply-side factors that may affect refugee youths' school enrollment.

[24] Early marriage was one of our sampling criteria for the qualitative sample, however, and this result is not representative. See Sieverding et al. (2018) for further analysis of marriage outcomes among the refugee population.

5.3. School exit timing among Syrian youth

There are several dynamics of school interruption and exit that may contribute to the lower enrollment rates among Syrian youth, particularly among the cohorts (aged 11-25 in 2016) whose educational trajectories were most likely to have been disrupted by the conflict. Youth who left school while still in Syria may never have re-enrolled after arrival in Jordan, or re-enrolled and then left school again while in Jordan. Other youth may not have experienced lengthy interruptions in schooling during the time of migration, but then left school after arrival in Jordan. In this section, we specifically examine how the timing of school exit relates to conflict and displacement, first descriptively and then in our multivariate models.

5.3.1. Patterns of school exit and timing

We first examine patterns of entry and exit from school for Syrians in Jordan in 2016 by cohort, with cohorts measured by on-time start year, or the year a child would have entered school if he or she entered on time, at age six. For example, a child born in 2000 would have an on time start year of 2006.[25] This approach allows us to examine how the educational persistence of Syrian youth may have been affected by trends over time, as well as their age at the time of conflict and displacement. Figure 2 estimates a Kaplan-Meier survival function showing the proportion of students who persist (remain in school) by grade, for the sample of Syrians aged 6-24 in Jordan in 2016. The analyses here do not account for whether school entry or exit was in Syria or Jordan.

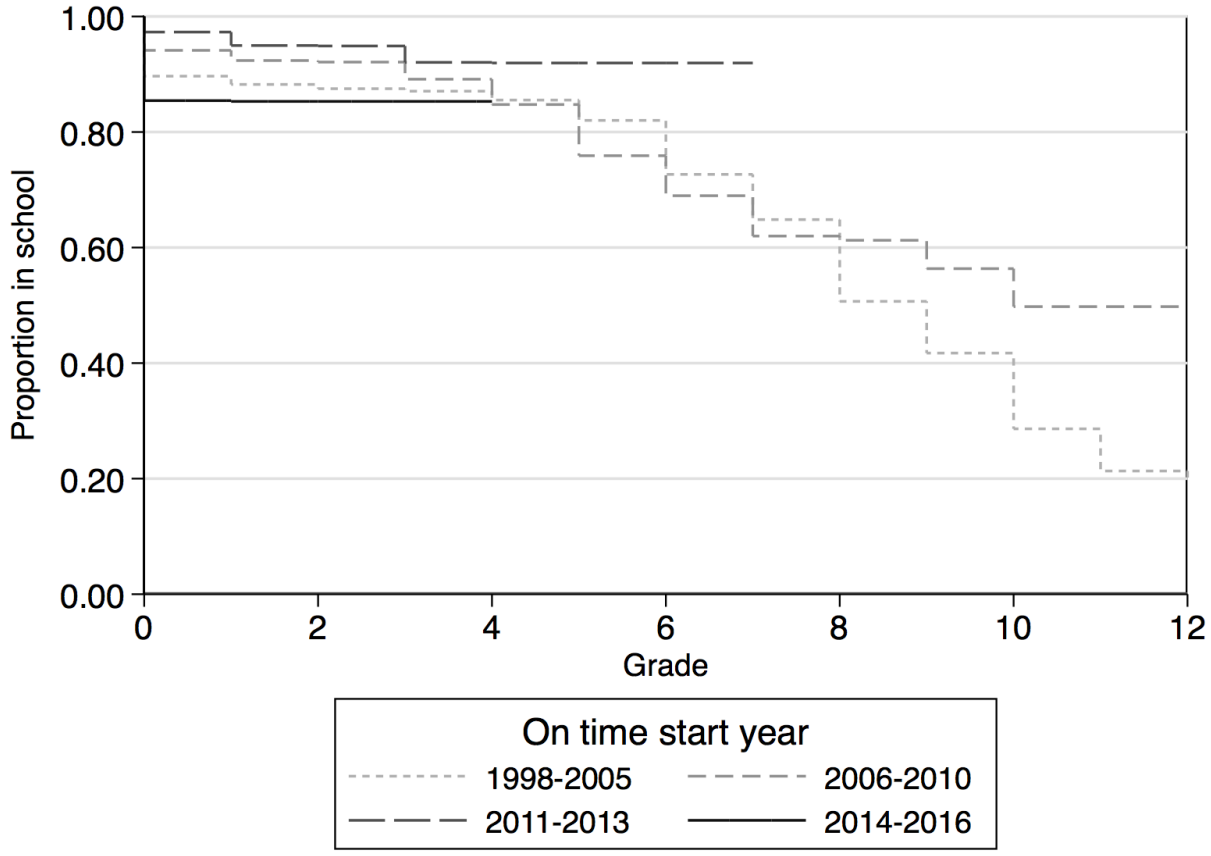
Beginning with the youngest, those Syrian refugee children in Jordan in 2016 who should have started school in 2014-2016 (after most arrived in Jordan) have the lowest rates of entry. However, additional analyses (not shown) suggest that there may also be some delay in entry, which may lead to an increase in school entry after 2016 among this group. For those who did start school in 2014-2016, there is very little drop out, although we only observe the first few grades of school. Among those children who should have started schooling in 2011-2013, the period of arrival for most of the refugees in the JLMPS, we see the highest rates of entry and the lowest proportion who exited (through the grades we observe). Thus, despite conflict and displacement, the Syrian refugees in Jordan in 2016 from cohorts which should have started their schooling during the peak years of conflict exposure and displacement are persisting through the early grades at rates higher than their peers from older cohorts did.

The Syrians in Jordan in 2016 who would have started school (if on time) in 2006-2010 (in Syria immediately pre-conflict) show high rates of entry and good persistence in the first few years of school. However, we observe lower persistence and more exit in the later grades of basic (4-8) for this cohort compared to the next oldest cohort. This may be due to disruptions at this stage of schooling due to conflict. While the Syrians who would have started in 1998-2005 (in Syria 6-13

[25] To account for the fact that some children never enroll in school, year zero in school signifies entry into school.

years prior to the start of the conflict) had greater persistence through grade 8, they were much less likely to persist through the end of basic and secondary; this may also be due to conflict affecting them at later schooling stages, as well as the overall trend of rising educational attainment over time, which means lower attainment for earlier cohorts. With the descriptives here we cannot disentangle cohort differences and conflict effects. We further explore these dynamics in our multivariate models, below, which can incorporate time varying covariates to separately estimate the impact of, for example, starting school in Syria in 2010, but then being exposed to conflict subsequently.

Figure 2. Proportion in school by grade and on time start year, Syrians in Jordan in 2016, aged 6-24 at time of survey



Notes: Showing through grade 12 based on ages 6-24 in 2016. Based on Kaplan-Meier survivor function.
Source: Authors' calculations based on JLMPS 2016

5.3.2. Multivariate models of school exit timing

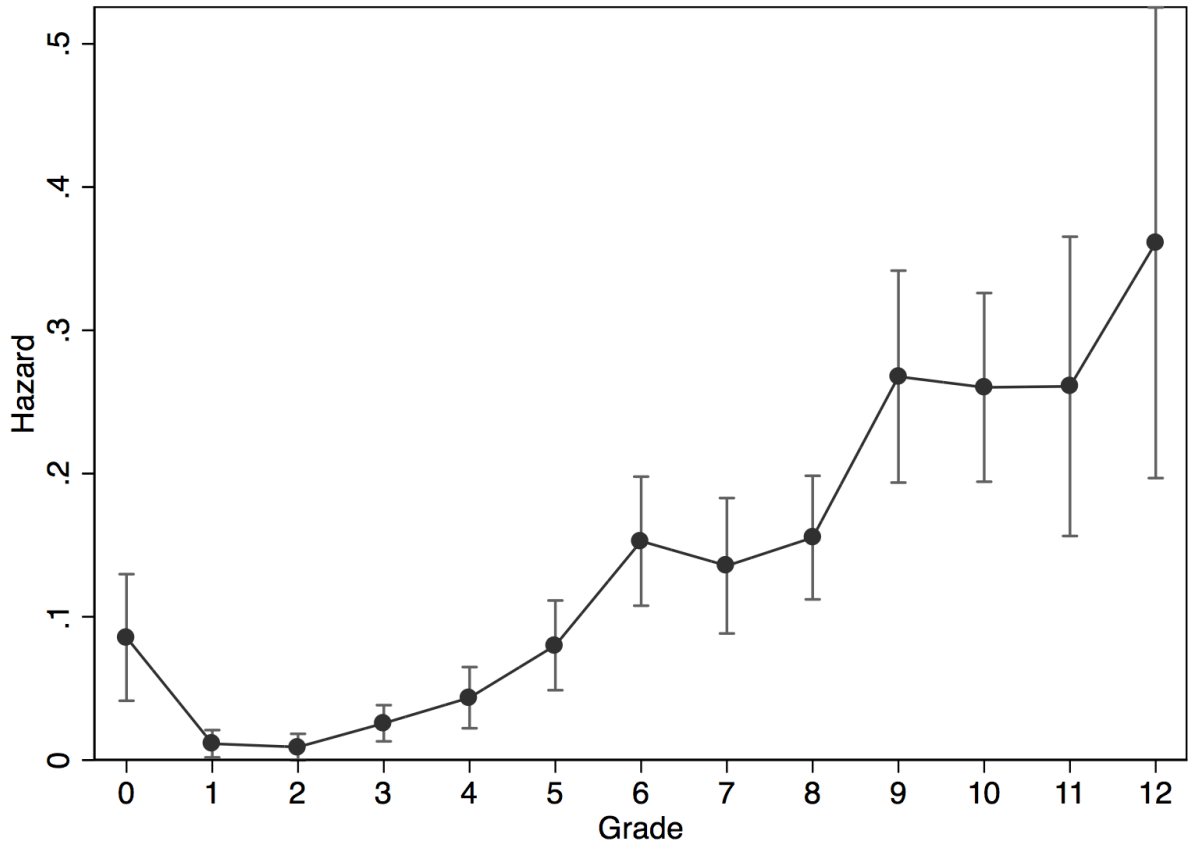
To better understand how conflict may have affected school exit, we next turn to our multivariate hazard models.[26] Figure 3 shows the baseline hazards of exit at each grade from a multivariate

[26] Enrollment logit models included year of arrival, but none of the odds ratios were significant. They did suggest those arriving around 2013 had higher enrollments than preceding years.

model without covariates for those aged 6-24 in 2016 and for years 2006-2016 for Syrians in Jordan in 2016. Grade zero is for school entry (and completing the first grade of school); the hazard of never entry is around 9% for Syrians. The baseline hazard of exit for Syrian students fluctuates below 9% between grades one to five, and then rises substantially at grade six, remaining similar through grades seven and eight. The hazard further increases at grade nine (and is similar through grades 10 and 11). It is highest, 26%, at grade 12 (the end of secondary).[27] The confidence intervals for the Syrian students at higher grades are particularly large due to the noise induced by the diminishing sample size. Hereafter, we group the relatively similar grades 1-5 (early basic), 6-8 (later basic), and 9-12 (transitioning from basic to secondary, secondary, and higher education) together into segments estimating the baseline hazards. Although there were significant differences in grades 1-5 in testing for equal coefficients, other grades were statistically equivalent. These aggregations allow us to subsequently look at differences by country of residence and over time for different grade segments, for example, whether dropping out during the later grades of basic (6-8) was different after fleeing to Jordan.

[27] In comparison, the hazard of dropout for Jordanian students (not shown) is very low until grade nine, then it increases dramatically at the end of basic (grade 10) and peaks in grade 11 (not passing the tawjihi) and 12 (not moving on to higher education).

Figure 3. Baseline hazards of exit at each grade, Syrians in Jordan 2016



Notes: Bars indicate 95% confidence intervals.
Source: Authors' calculations based on JLMPS 2016

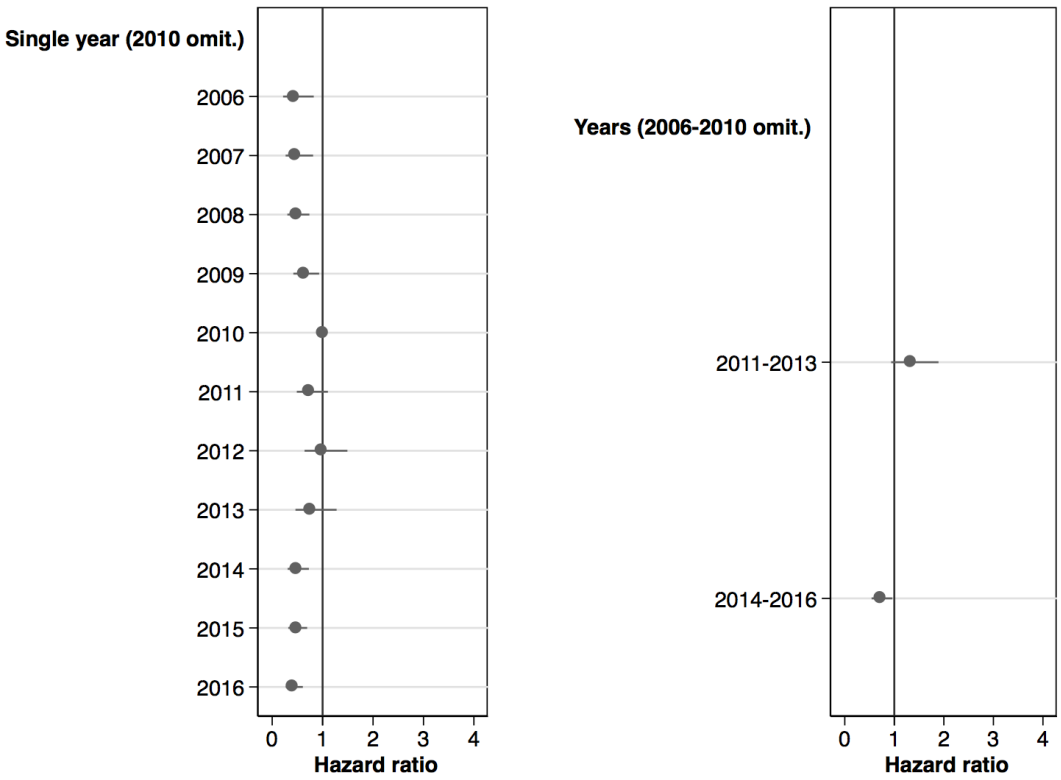
Having structured the baseline hazards into grade segments, in order to examine the effect of conflict we first estimate models that include calendar time, the hazard ratios for which are shown in

Figure 4 and specification 1 of Table 3. We initially estimate with controls for each calendar year (single year model) and use 2010 as the reference year. Since single years are noisy, we then aggregated into three periods (2006-2010, the reference, pre-conflict period in Syria; 2011-2013, during the onset of conflict and when most refugees relocated; and 2014-2016, when refugees were predominantly in Jordan).[28]

[28] Looking at the single years, we can see that trends pre-conflict were toward lower hazards than in 2010; in 2006-2009 compared to 2010 there was a significantly lower hazard of exit for Syrians. Hazards from 2011 through 2013 were not significantly different than 2010, but there is clear evidence of significantly lower hazards of school exit in 2014-2016 compared to 2010, when most Syrians in Jordan has been there for multiple years. Hazards for Jordanians were rising over time and significantly higher in 2013-2016 compared to 2010 (significant also for 2011-2013 and 2014-2016 compared to 2006-2010 in the grouped year models). These trends are not due to Jordanians being crowded out or competition with Syrians (Assaad, Ginn, and Saleh 2018).

In the models with grouped years (specification 2 in Table 3, tests for equality of year coefficients did not reject equality for this grouping), we see that the hazard of school exit was higher in 2011-2013 than 2006-2010 for Syrians, but not quite significant. Hazards in 2014-2016 were actually significantly lower than for 2006-2010. This result is counter to expectations; one would expect that Syrians would be substantially more likely to exit school during conflict and relocation. However, it is important to keep in mind a number of factors. First, this only captures the effects of conflict on Syrian refugees in Jordan, not those who remained in Syria (who presumably would be differentially affected). Second, if exit in 2011-2013 was higher, then a relatively select group persisted in 2014-2016 for subsequent grades. Third, the population of Syrians we are examining had higher hazards of exits Jordanians did; those who successfully transitioned school systems may have been positively affected.

Figure 4. Hazard ratios for single and grouped year models of exit, Syrians in Jordan in 2016



Notes: Bars indicate 95% confidence intervals. See Table 3, specification 1, for the coefficients for single year models, and specification 2 for coefficients from the grouped year models. Models include controls for sex, parents' education, and siblings.
Source: Authors' calculations based on JLMPS 2016

The models in Figure 4 essentially estimate the average effect of calendar years on exit. However, as noted above, there may be differential effects of the conflict on school entry or exit

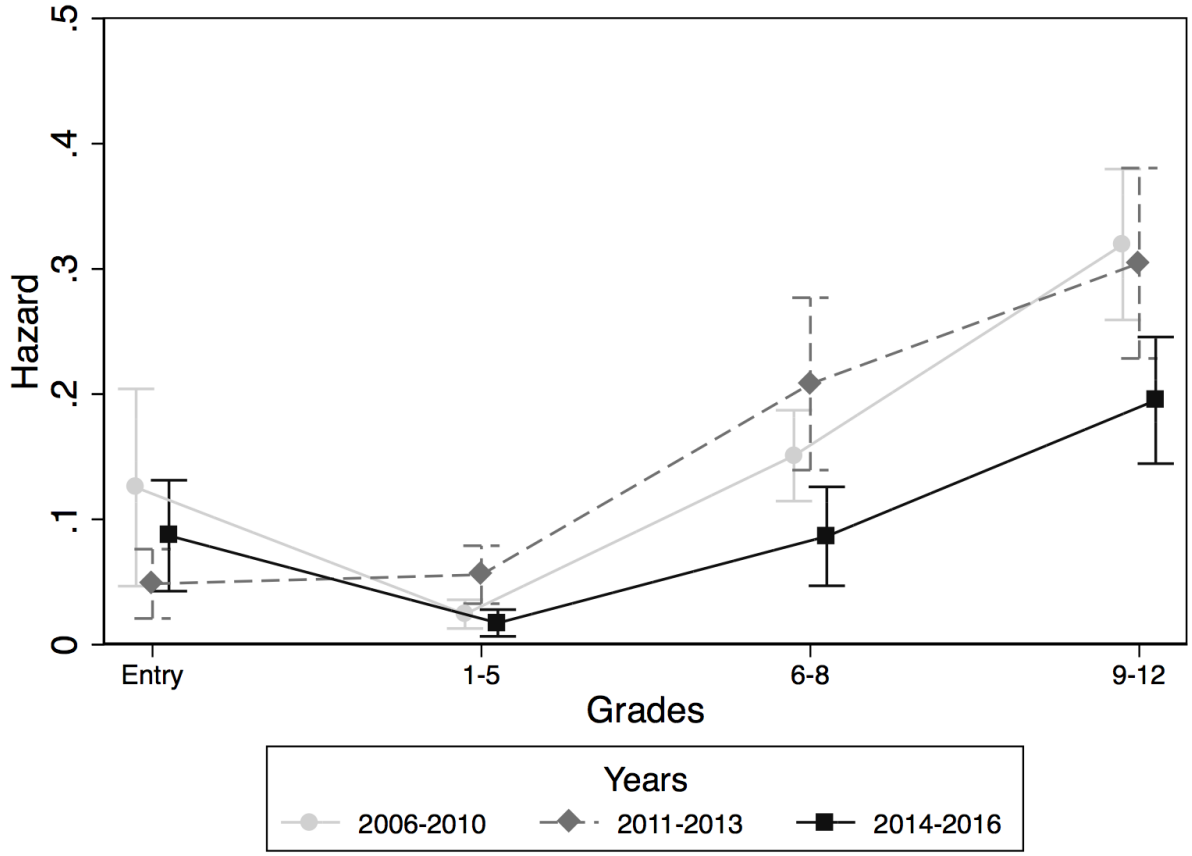
during different grades in school. We therefore fully interact the grouped years and grade segments in Figure 5. The results are noisy, but suggest that never-entry fell from 2006-2010 to 2011-2013 before rising slightly in 2014-2016 (significantly so comparing the hazard in 2011-2013 to the other years, but differences between 2006-2010 and 2014-2016 were not significant[29]). 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.

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). In other words, students who were in the early stages of basic education at the time that the conflict in Syria began and during the period in which 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. In the period after displacement, hazards of drop out in Jordan were similar to pre-conflict in Syria.

There was a not a significantly higher hazard of dropping out in 2011-2013 compared to 2006-2010 in grades 6-8. However, the hazards in 2014-2016 for grades 6-8 were significantly lower than both 2006-2010 and 2011-2013. This means that children in grades 6-8 in 2014-2016, a period 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 highly selected group of Syrian youth who made it to grade 9-12 had the lowest hazards of drop out 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.

[29] 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 are tested for equivalence or significant differences.

Figure 5. Hazards of exit by nationality and (grouped) year, Syrians in Jordan 2016



Notes: Bars indicate 95% confidence intervals. See Table 3, specification 3, for the coefficients. Models include controls for sex, parents' education, and siblings.
Source: Authors' calculations based on JLMPS 2016

The importance of age and schooling stage at the time of the conflict was also demonstrated by the educational experiences of the youth who participated in the qualitative study, who were quite mixed in terms of their contact with the Jordanian educational system. Of the 71 respondents, 33 had never attended school in Jordan, 23 had previously attended but were no longer doing so at the time of the interview, and 15 were currently in school (Table 1). None of the youth aged 24-29 at the time of the interview had attended school in Jordan. Among this cohort of youth, most of the young women and a few of the young men had dropped out of school prior to the war, mostly around 9th or 10th grade. These respondents viewed this as a common age to leave school in their communities, and had done so due to lack of interest in school, to help their families financially, and in the case of the young women most got married around the same age. Youth in the 24-29 age group who had still been studying at the time the

conflict began were nearly all men who had been in university when the conflict started, and none were able to resume university education in Jordan.[30]

Youth aged 19-23 (corresponding roughly to the on-time start year cohort 1998-2005 in Figure 2), had the most varied experiences in terms of how conflict impacted their educational trajectories. A few youth in this age group had dropped out of school prior to the start of the conflict, yet among the majority who were still in school at the time the conflict began, about half never reenrolled after arriving in Jordan. Among the young men who had not reenrolled in Jordan, most had not even considered attending school because they needed to work to support their families. Two of the young women who never returned to school had gotten married and another was working. Similarly, a couple of the young women in this age group who had reentered school in Jordan and then dropped out had married. Challenges in accessing secondary education, the tawjihi, which we discuss in more detail below, were also a particular barrier for this age group in terms of continuing education in Jordan.

With only one exception, all of the qualitative respondents who were still attending school at the time of the interview were in the age group 15-18 (corresponding roughly to the on-time start year cohort 2006-2010 in Figure 2). All had been studying at the time the conflict began in Syria (at which point they would have been around age 9-12). About a quarter of the respondents in this age group had never reenrolled in school after arrival to Jordan; about half of the remaining students had reenrolled and subsequently dropped out, such that less than half of the respondents in this age group were still in school at the time of the interview. As with the older cohorts, financial pressures to work were a backdrop to non-enrollment or dropout decisions among many of the boys in this age group. Yet it was this younger age group whose educational persistence was perhaps most affected by factors related to the Jordanian educational system, including the impact of interruptions on grade for age, academic difficulties, and relationships with their teachers and peers.

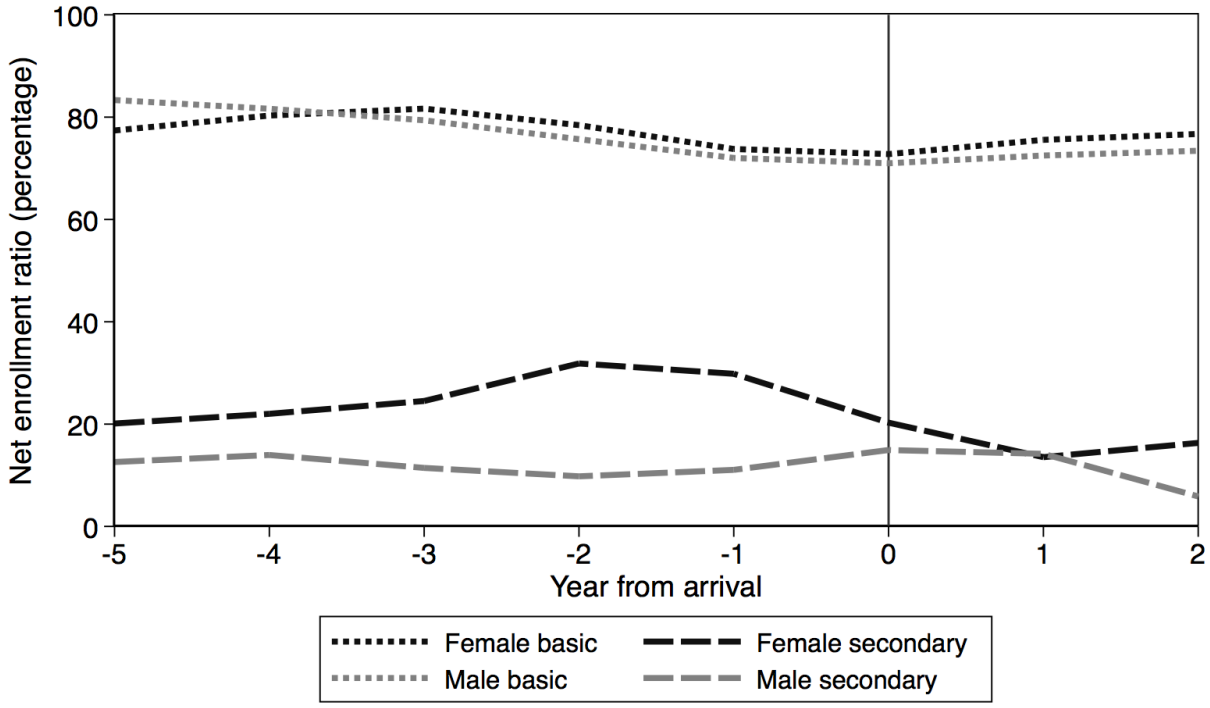
5.4. Re-enrollment in Jordan: Access to schooling, interruption and progression

After arrival to Jordan, there are a number of factors that may affect refugee youths' ability to transition into the school system of their host country. Following the global literature (Dryden-Peterson 2015) we examine these by factors related to access to education, instruction in the Jordanian school system, and discrimination, respectively. Starting with access to education and reenrollment in the host country, with the JLMPS data, we can specifically look at enrollments

[30] Only two respondents had tried to explore university education in Jordan, as all were working at the time of the interview to support their families. For the two young men who had wanted to attend university in Jordan documentation requirements and the difference in curriculum compared to Syria were barriers to enrollment that, in combination with their need to work, led them to give up on resuming university. Access to higher education has been an area largely neglected by the policy response to Syrian refugees, although given the protracted response, an increasing number of actors are adding it to their agendas (Sherab and Kirk 2016).

relative to the year of arrival in Jordan for net enrollment rates (NERs) in Figure 6. 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, although possibly with some delays in progression.[31] NERs for secondary are very low post-arrival, likely due to delays in progression and possibly non-reentry among students at this level of schooling after arrival in Jordan.

Figure 6. Net Enrollment Ratios (NER, percentage) by year from arrival by 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).

The stabilization of the NER for basic education is a positive indication of younger Syrian refugee children and youth's ability to return to school after arrival in Jordan, although youth at the secondary level appear to have faced greater challenges in school return and (on-time) progression. Although demand-side factors were an important factor in youths' reenrollment

[31] We also examined gross enrollment rates (GERs) as an alternative to NERs and patterns relative to 2011 (the onset of conflict) as an alternative to year of arrival. When we looked at enrollment by year since 2011 (not shown), the basic GER and NER fell, but experienced some recovery, particularly for female Syrians, starting around 2014. The chronological analysis suggests that children were particularly likely to be out of school as the conflict started and they relocated, but recovery has occurred to some extent in enrollments, particularly GERs, which include the delayed students.

decisions, as discussed above, the qualitative interviews were consistent with the quantitative results in indicating that those youth who wanted (and were able in terms of their household situation) to reenter school after arrival in Jordan were in fact able to do so from the perspective of administrative requirements and school availability.

Among those youth who had reentered school at some point after arrival to Jordan, all attended a public school. The large majority were attending or had attended the upper basic level (grades 5-10), with only a few having had experience with the tawjihi. Respondents and their families did not appear to exercise much school choice and the large majority said that they chose their school because it was the closest or only public school in the neighborhood. A few also said that they enrolled in their (former) school because it was the only school available to Syrians in the area or the only school where they found space. One or two respondents said they chose their school at least in part because it was better than other schools.

In terms of the enrollment process itself, many respondents said the process was easy and quick and did not experience any challenges enrolling in the school.

"They asked for a copy of my ID and a copy of my UNHCR card, here at the Ministry of Education in Mafraq. I went and turned them in, they told me to come back in two days. I went back after two days and found my papers ready. I took the papers, submitted them to the school and the next day I was in class." Young man, 19 years old, Mafraq, attending school in Jordan.

Those for whom the enrollment process was more difficult generally faced two types of challenges: lack of needed documentation and resistance from the school administration. At the time most of the qualitative 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. Those respondents who lacked the required documentation were missing documentation of refugee status in Jordan, or family books or school records from Syria. However, in all of these cases that came up within the qualitative sample, the respondents were eventually able to overcome the lack of documentation, sometimes with help from UNHCR, and enroll in school.

"First, there were a few problems before I could enroll. The school required the family book, identification card, and I do not know what other proof documents. When we obtained the UNHCR registration card, we were then able to enroll in school despite the missing family book. The UNHCR gave us a card replacing the family book." Young man, 17 years old, East Amman, attending school in Jordan.

Registration challenges appeared to be somewhat more commonly experienced among those who arrived in 2012 as opposed to later years, and in a few cases the effects of enrollment policy changes were directly experienced by respondents. This was particularly the case for those who

faced resistance from school administrations to letting them enroll in the school. 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 the family members helping them to register, often their mothers – were able to overcome this resistance through persistence. A few other respondents went to the Ministry of Education to intervene, and reported that the MOE obliged the school to enroll them.

"We went to the school principal [and] she needed some documents. My mom went to the Ministry of Education and took our UNHCR card and identification card and went through the process. Afterwards, I was accepted immediately by the school." Young woman, 15 years old, East Amman, attending school in Jordan.

"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 as she said. We tried several times to convince her, but she would not agree to it. Therefore, 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.

There were cases, however, in which respondents were not able to attend their closest public school due to lack of space and had to attend a school further away. This was a concern particularly for young women, whose parents were concerned about their safety on the way to school.

"We got all the required documents to enroll at school and we got our papers signed from the Ministry of Education, but still the school principals would not agree to enroll us, as the class was at full capacity. My dad kept on trying until I was accepted by a school." Young man, 15 years old, East Amman, attending school in Jordan.

"I asked in schools nearby to where we live but I could not find a place as school were at full capacity, so I had to choose this school instead." Young woman, 17 years old, East Amman, previously attended school in Jordan.

Although distance to the school did not appear to be the main factor influencing enrollment or dropout decisions among any of the respondents, there were a few cases in which it contributed to their reasons for being dissatisfied with their school prior to dropping out.

Another dimension of the qualitative respondents' experiences with school enrollment in Jordan was the mismatch some of them experienced between their expected grade for age and the actual grade they were placed in in the Jordanian school system. The large majority of respondents had been attending school at the time the conflict in Syria began (over six years prior to the

interview) and experienced at least some school interruption due to the conflict. Most of these respondents said they had left school while still in Syria due to insecurity, including direct attacks on schools, dangers or roadblocks on the way to school, particularly for those who were attending secondary school or university outside their immediate neighborhood or village, internal displacement within Syria, and fears about kidnapping of girls.

"When I was in Syria, I was in 10th grade, I studied for 3 months, and then for a whole week our school was continuously bombarded while we were in class. That is when we stopped going to school, the whole area was affected and without schooling opportunities." Young man, 19 years old, East Amman, attending school in Jordan.

"Only primary and preparatory levels were available in our hometown, we did not have [the] secondary level, so we needed to go to another town to sit for the secondary exams, even the 9th grade we went to another town to study; our hometown schools were very basic. We had to go to another town, but there were checkpoints on the way to school and problems, school buses were a target for gunfire, so after 15 days of attendance we stopped." Young woman, 20 years old, East Amman, never attended school in Jordan.

Only a few respondents did not leave school until the time of their relocation to Jordan. In some cases, respondents therefore experienced an extended period of school interruption even prior to their arrival in the country. The majority of those who eventually returned to school also experienced a period of time after arrival in Jordan during which they were out of school, ranging from a few months to a few years. A variety of factors contributed to delayed enrollment in Jordan, including the fact that most respondents spent a period of time in Zaatari refugee camp before relocating to a host community, and a few further delayed enrollment while they waited to settle in a permanent location in Jordan.

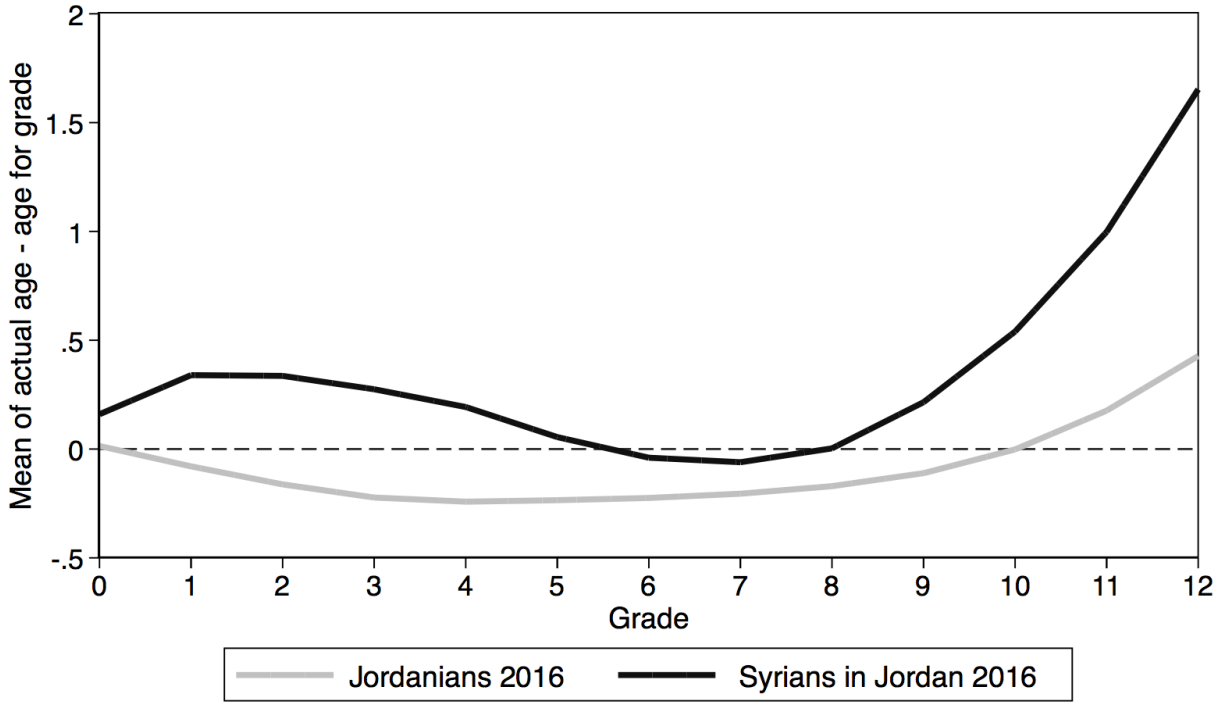
"My mom was sent to the Ministry of Education and then they sent her back to the school. She got bored from going back and forth so she did not enroll us. We waited for a whole year until we moved to another neighborhood to enroll at a school." Young woman, 19 years old, East Amman, previously attended school in Jordan.

A mixed pattern of non-re-entry, delayed re-entry, and relatively quick re-entry is also visible in the quantitative data. Interruptions in the JLMPS data are defined as being out of school for six months or longer, followed by a return (stopping and not returning is an exit or dropout). Shorter periods of school interruption are therefore not captured in the data. Among those who were aged 6-24 and ever went to school, starting grade 1 between 2005-2010, and were currently enrolled or left school in 2011 or later (thus, exposed to the conflict and a similar age to the younger cohorts in the qualitative sample), 15% of Syrians in Jordan in 2016 experienced long interruptions but returned and were still students in 2016, while just 2% had interruptions,

returned, and subsequently dropped out. If they returned, students thus appeared to persist for some time. However, a third (33%) of Syrians in this group dropped out all together without a (six-month or longer) interruption. In contrast, half (51%) had experienced no interruptions (of six months or more) in schooling and were currently enrolled as of 2016, suggesting that transitions to school in Jordan were relatively swift and successful for many of these Syrians.

As a result of disruptions and/or differences in the school system, Syrian youth may have skills below the grade level expected for their age and thus be placed in a lower grade than expected for their age, another form of delay.[32] Figure 7 explores this possibility in the quantitative data, examining the mean observed age for current students in grades 0-12 compared to the expected age in their grade. Syrians in Jordan in 2016 were slightly older than expected during the first few grades of basic particularly, and also during the latter grades of basic and especially secondary (Jordanians have a slight upward trend for secondary as well, due to repetition). It is important to note that this among the enrolled; students placed at grades well below their age may have decided not to enter or dropped out, or may even have been unable to enroll, by policy, if they were three or more years behind their age-appropriate grade level.

Figure 7. Mean observed age minus expected age in the grade, current students in grades 0-12, by grade and nationality



[32] Grade repetition is reported by very few Syrians in Jordan. Less than 1% of Syrians in Jordan who had attended and finished (or dropped out) of basic school reported repeating a grade in any year of basic school, compared to 2% of Jordanians. This may mean that when Syrians fail they drop out rather than repeat, but grade repetition does not appear to be contributing to any delays in progression directly.

Notes: Smoothed based on a locally weighted regression using lowess (bandwidth=2). Expected age in a grade is that entry into school (grade 0) happens at 6 years old and progression occurs annually. Number of Syrian children in each grade ranges from 102 (grade 1) to 12 (grade 12).
Source: Authors' calculations based on JLMPS 2016

Among the qualitative respondents 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 delays in registration due to documentation issues or lack of places, contributed to the fact that some of those who returned to school in Jordan were placed into a grade level below that expected for their age.

"They put me back a year [Interviewer: Why?]. They put me back a year because of the difference in the curriculum, that the style was different." Young man, 20 years old, Mafraq, previously attended school in Jordan.

"When we first came, we came in January 2014, and schools here in Jordan had already started the second semester. So they told me there was no new registration in the second semester. I submitted my papers in the new academic year and started to attend." Young woman, 20 years old, Mafraq, previously attended school in Jordan.

For several respondents, the gap in the grade they would have been placed in relative to their age 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 be in 11th grade. Imagine being put in 7th grade, that is a 5 year difference. So, I told them I do not want to enroll." Young woman, 18 years old, East Amman, never attended school in Jordan.

"I applied to one school last year but I was late to register. When I applied this year to the same school, they told me that I was too old and that I needed to be at another one." Young man, 15 years old, Mafraq, never attended school in Jordan.

"I wanted to enroll in the same school where my siblings were but the school principal said that I would need to be placed in 4th grade. That is with students two years younger than I am, so I did not want to. I went to enroll in another school where they required us to pay fees per semester, but my parents did not have the means and I am still out of school." Young woman, 16 years old, Mafraq, never attended school in Jordan.

Among the majority of respondents who chose to return to school despite experiences of interruption and/or grade-age mismatch, a few mentioned the gap in age relative to their classmates as one of the challenges they faced adjusting to school in Jordan. This was one of several adjustment challenges respondents faced, along with the combination of attending school in a new environment, with a new curriculum and classmates they did not know.

"At first it was hard and I wanted to stop [school], I didn't want to study. Because it was hard and I didn't mix with the other students…I didn't know anyone and no one knew me, I just arrived suddenly. I didn't know anything and the girls were younger than me. I entered 9th grade and two years had passed me, I mean I should have been in 9th grade two years before that." Young woman, 22 years old, Mafraq, previously attended school in Jordan.

Nevertheless, the majority of those who returned to school expressed their happiness upon doing so because they were working towards their aspirations, felt they would have another chance at a future, and/or enjoyed having the opportunity to socialize and make friends at school.

"I felt too happy returning to school, as I would be able to pursue my education and fulfill my dreams. Life has not stopped; there are still opportunities to grasp, to study and work later on." Young woman, 16 years old, Mafraq, attending school in Jordan.

"I liked everything about school. The teachers were good, the atmosphere with my peers, the jokes, we used to laugh always. Whatever problems we had at home, the school makes us forget them, despite all homework and other school requirements" Young woman, 18 years old, Mafraq, previously attended school in Jordan.

5.5. Supply-side barriers to education in Jordan: Academic factors and discrimination

Finally, for those Syrians who did re-enroll in school after arrival in Jordan, factors related to the school curriculum and environment itself may contribute to school exit or persistence. Among qualitative respondents who were currently or had previously attended school in Jordan, respondents' views on the quality of the education they received varied considerably.[33] About half of them reported being satisfied with the quality of education, because teachers made sure that the students understood the lesson or the teacher was competent and knew how to maintain control of the class.

"Yes, the teachers used to like me. They used to ask me whether I understood the lesson or not." Young woman, 16 years old, Mafraq, previously attended school in Jordan.

"They (teachers) used to help us a lot because we suddenly had to leave school in Syria, so they used to explain a lot to compensate for what we missed in education, to make ideas clear." Young woman, 18 years old, East Amman, previously attended school in Jordan.

[33] In our qualitative data, about equal numbers of both boys and girls were attending shift versus non-shift schools, but there were no noticeable difference in respondents' opinions of the quality of teaching or curriculum difficulty by whether or not they were in a shift school.

Other respondents had a different experience, in which the teachers did not explain the material well to the students or did not make an effort to teach well.

"Here in Jordan, it is not of the concern of the teacher whether you understand or not. He only gives the lesson." Young man, 15 years old, Mafraq, previously attended school in Jordan.

"*There was a teacher in 9th grade that never gave us class in the first semester. She only did the second semester when the inspector was around. She used to go through the lesson very quickly, her exams used to be very hard with topics we never studied*." Young woman, 16 years old, Mafraq at school.

The qualitative respondents also had varying opinions on the difficulty of the Jordanian curriculum. Among the majority who had studied at the basic education level in Jordan, about half reported that the curriculum was difficult to adjust to, especially science and English subjects. The language of instruction being English rendered the curriculum harder, and some respondents reported not understanding the subject at hand or that it took them more time to understand the topic because of the English. Respondents contrasted the level of English expected in the Jordanian curriculum with the curriculum in Syria, where they said English was not introduced until later.

"I had difficulties in math and especially with English. Everything was in English, I could not understand." Young woman, 17 years old, East Amman, previously attended school in Jordan.

In contrast, other respondents found the curriculum easy and faced only minor difficulties.

"The curriculum is very pleasant and easy too. It is easier than in Syria." Young man, 17 years old, Mafraq, previously attended school in Jordan.

Curriculum difficulty was a particular concern for the few respondents – primarily in the 19-24 age group - who had reached the tawjihi or had already been at the secondary school level when they arrived to Jordan. These respondents reported that they needed additional support classes after school to be able to prepare for the tawjihi exam and successfully pass it.

"They rely a lot on extracurricular classes, it is mandatory to enroll in such classes to pass the exam. I did not have the financial means, I studied alone, my parents helped me too but still I failed it." Young woman, 18 years old, East Amman, previously attended school in Jordan.

Several respondents dropped out at the tawjihi level for this reason, whereas others had attempted the tawjihi, but since they could not afford these extracurricular classes, failed the exam.

Yet more so than instructional factors, discrimination and interpersonal challenges at school emerged as an important theme for many respondents who had attended school in Jordan. Respondents' opinions on their Jordanian teachers were divided; whereas many described the relationship as positive, some reported that their teachers were either verbally abusive, discriminatory, or in a few cases violent. Those who had positive relationships with their teachers described them as cooperative, showing interest in the future of the student, and not tolerating differentiation between Jordanians and Syrians. Some students even formed a bond with their teachers.

"Teachers are not discriminating, they do not mention Syrian or Jordanian. We have a lot to study. They do not stop on nationality; they encourage us Syrians and Jordanians to be one and not separated." Young man, 15 years old, East Amman, attending school in Jordan.

"W*hen we entered school, teachers were like our mothers, and the students our sisters"* Young woman, 20 years old, East Amman, previously attended school in Jordan.

For those who reported a negative relationship with their teachers, they said that the teachers were verbally abusive and insulting to Syrians. A couple of students were physically punished by teachers and dropped out of school because they could not take this kind of treatment.[34]

"*The teacher hit me in front of everyone, because I was late, we live far from the school. Therefore, he hit me. I told my mom I do not want to go to school anymore, so I did not.*" Young man, 16 years old, East Amman, previously attended school in Jordan.

There were no clear patterns by age or sex in experiences of discrimination, which seemed to vary by school and sometimes by individual teacher. Some respondents also described different experiences with the school environment between one school they had attended and another.

"My relationship with teachers was worse than my relationship with the teachers in the previous school…that is why 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.

[34] In JLMPS, Syrians who attended basic school in Jordan reported slightly less physical punishment overall than Jordanians or Syrians who attended basic in Syria; 15% of Syrians who attended basic school in Jordan experienced physical punishment every day or frequently compared to 22% of Jordanians, Syrians who attended basic school in Jordan were just as likely to never (49-50%) experience physical punishment in school compared to Jordanians.

A few respondents also mentioned discriminatory attitudes on the part of the school principal or administration, expressed through denying registration of Syrians for invalid reasons or making it clear they were not welcome in Jordanian schools.

"Some teachers were very derogatory while talking to us, especially the school principal. He used to say very hurtful words that we Syrians are only good at requesting support from organizations and if it were not for them Jordanians hosting us, we would be still begging." Young man, 20 years old, Mafraq, previously attended school in Jordan.

In terms of their school peers, the majority of respondents who attended school formed friendships with Syrian peers, especially among girls. A few also managed to become good friends with Jordanians. Yet many respondents seemed to be bothered by the treatment they got from their Jordanian peers and reported that the Jordanian students did not seem to like the presence of Syrian students in mixed classes and were either verbally abusive or avoided mixing with them. In double shift schools where Syrian students were separated from Jordanian ones, some respondents reported quarrels occurring during the time between the two shifts.

"There was some discrimination at school. 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. Sometimes girls would hurt us with their words or push us…" Young woman, 18 years old, East Amman, previously attended school in Jordan.

The majority of bullied students said that they ignored their peers' comments in an attempt to avoid quarrels. Very few said they would reply or fight back if they were hit. Of those who were hit by other Jordanian students, the majority reported this to their parents, who sometimes went to the school administration to take corrective actions. The latter were sometimes cooperative and took effective measures, and in other cases no serious action were taken.

"They annoyed me with what they said, I was new to the school and I knew nothing about its system, school shifts, or the way to dress. The girls got a hold on me and they told me very nasty stuff, I was shocked, so I went to the school principal and asked her to call mom. My mom came and the other girls' moms were summoned to sort things out." Young woman, 16 years old, Mafraq, at school.

"The girls used to make negative comments all the time, but they never hit me. I used to stay quiet, I never replied to what they say. Staying quiet and ignoring the other is the best response." Young woman, 18 years old, Mafraq, previously attended school in Jordan.

Physical violence from peers, though not very common, as well as bullying, contributed to a couple of students dropping out of school.

"All of the kids at school wanted to hit me, I don't know why, maybe because I am Syrian. I went for only half of the semester." Young man, 15 years old, East Amman, previously attended school in Jordan.

6. Discussion and Conclusions

Education is critical to the integration of refugees into their host countries, and as well as mitigating human capital loss among conflict-affected populations, yet refugee children hosted in developing countries are some of the most marginalized in the world in terms of access to education (Dryden-Peterson 2015). Substantial efforts have been made to provide access to education to Syrian refugee children by the countries neighboring Syria that have received the largest refugee inflows, namely Turkey, Lebanon and Jordan. Notably, each country has pursued different, and evolving strategies towards refugee education (Culbertson et al. 2016; Culbertson and Constant 2015; Human Rights Watch 2016b). Understanding how these different strategies may have impacted enrollment rates, which remain well below 100% in all three contexts, is thus critical not only for improving educational access for the Syrian refugee children who remain in a situation of increasingly protracted displacement, but also for informing responses to future refugee crises.

In this paper, we took a broad look at the dynamics of enrollment, attainment and dropout among Syrian refugee youth in Jordan, examining a range of demand- and supply-side factors that may contribute to children and youth's persistence in school. Our findings concur with those of assessments carried out earlier in the refugee crisis (Ahmadzadeh et al. 2014; Culbertson et al. 2016; Culbertson and Constant 2015; Education Sector Working Group 2015) in indicating that the reasons for non-enrollment of a substantial portion of Syrian refugee children are multidimensional. The dynamics of dropout and non-enrollment also differ for different cohorts of children and youth, who were affected by conflict and displacement at different points in their educational trajectories, as well as for girls and boys.

At the level of basic education, the JLMPS data indicate that net enrollment rates for both Syrian boys and girls in Jordan have recovered to near pre-conflict levels. This positive 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%, well below universal. Patterns of enrollment by age show that Syrian refugee children seem to be experiencing both delayed entry into school (among the cohorts of children starting school in Jordan) and early exit, with enrollment rates dropping substantially from about age 12. There was accelerated dropout at the basic education level particularly during the peak conflict years (2011-2013) when most refugee children were still in Syria or in the

process of moving to Jordan. Enrollment in secondary schooling is thus very low, and has not recovered even to the low rate of pre-conflict participation in secondary schooling among the population of Syrians who are now in Jordan. However, those highly selected youth who managed to successfully transition to secondary school appear to persist at higher levels than pre-conflict.

Different policy and programmatic approaches are therefore needed at different levels of the schooling system and for different cohorts of children and youth in order to increase school enrollments and provide alternatives to those who are out of the formal school system. Among the youngest cohorts of children who are entering school for the first time in Jordan, further research is needed to better understand the causes behind our concerning finding of delayed or possibly non-entry. For the wide age group of children and adolescents who are now of basic education age, different strategies are needed for those who remain in school and those, mostly adolescents, who have already dropped out. For those in school, our findings concur with other studies (Education Sector Working Group 2015; Human Rights Watch 2016a; Salem 2018) in indicating that interpersonal aspects of schooling, and particularly bullying by peers, are a key factor affecting school experience and contributing to dropout decisions among adolescents. Particularly for boys, in the face of financial pressures to work, a negative school environment can serve as an extra push to leave school. There is an urgent need to test the efficacy of different interventions to improve integration of Syrian and Jordanian students in schools, and to involve teachers in efforts to improve the school environment. Although we are not able to rigorously assess quality of schooling with our data, the qualitative data are consistent with reports indicating that school quality varies widely (Ahmadzadeh et al. 2014; Education Sector Working Group 2015) and is thus a key area of intervention for all students, whether refugee or nationals.

For adolescents of later basic and secondary ages, our findings also indicate the critical role of parental education (also likely a proxy for wealth) and alternative sources of financial support for the family in keeping adolescents in school. Particularly for boys, the need to work was a key reason for being out of school at both the upper basic and secondary school levels. For girls, the demand-side factors limiting school enrollment were more mixed, but included marriage and family responsibilities. Removal of the three-year rule would be one important step towards opening school opportunities to these youth (Human Rights Watch 2016a), but will not solve the issue of age for grade gaps that now affect many young people in this category. Non-formal education, which we return to below, is a key strategy for this group.

Similar demand-side barriers to education were also key at the secondary level of schooling, by which time many Syrian refugees have already left the formal school system. In addition, the secondary schooling (tawjihi) level was the school level at which academic challenges emerged most systematically among the few who transitioned or attempted to transition to this level. In order to improve secondary school retention rates, targeted academic support for Syrian refugee

students may be needed, in addition to broader efforts to address poverty, which lies at the root of many of the demand-side challenges to enrollment among this age group. The decision in 2017 to waive textbook and tuition fees (Brussels II Conference 2018) may help reduce the barriers created by poverty, although other costs, such as transportation, reliance on tutoring and the need to support families, will remain an issue.

For young people who are unable, for whatever reason, to return to the formal education system, non-formal education programs are critical. There are already a number of non-formal programs that support refugee children in Jordan. Catch-up programs are designed to cover additional material rapidly, for children aged 9-12, to track them back in to the formal schooling system. Out-of-school adolescents and youth (13-18 for boys, 13-20 for girls) may attend dropout programs (Ministry of Education 2018b). There are also learning support services (informal education) offered by a number of partners. The largest are Makani centers, operated by UNICEF, which offer learning support for in-school children and learning opportunities for out-of-school children (UNICEF Jordan 2017). These programs, however, remain targeted primarily to children and, with the exception of Makani centers, have not reached a large scale. Particularly as displacement becomes increasingly protracted, there is clear need for designing educational services for older youth, particularly youth who did not acquire foundational numeracy or literacy skills. Creating services that are reconcilable with youths' other responsibilities towards their families is a particular challenge.

The experiences of refugee youth – primarily at the basic education level – in reenrollment in school after arrival in Jordan also provide critical policy lessons for refugee access to education in other contexts. Although other reports have noted documentation challenges as a reason for refugee children's non-enrollment in school (Education Sector Working Group 2015; Human Rights Watch 2016a), all of the respondents in our qualitative study who faced documentation challenges – as well as difficulties with individual school administrations, also noted by previous reports (Human Rights Watch 2016a) – were able to overcome these challenges through assistance by UNHCR or the Ministry of Education. Our sample is not representative and this is not to say that documentation challenges or administrative reluctance did not serve as a challenge to enrollment for other children and youth. Rather, in addition to the importance of removing documentation requirements, as Jordan has recently done, our findings point to the critically important role that supportive institutions play in ensuring consistent policy implementation across regions and schools.

Several other aspects of our results highlight lessons for refugee education globally. The recovery in Syrians' enrollments and progression, quantitatively, along with the qualitative results, highlight 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. Yet regulations around documentation, fees, and age of placement

can still act as barriers even in an otherwise supportive environment, underlining the importance of the details of inclusion. Even once lifted, the barriers posed by these documentation requirements can persist for those cohorts that were most affected. The quality of the school environment and interactions with fellow students and teachers are critically important determinants of education on the supply side, and in the case of Jordan, where Syrian refugees' displacement is becoming increasingly protracted, programs to support integration are greatly needed. On the demand side, multidimensional supports are needed as refugees face multifaceted challenges in pursuing education after conflict and displacement. Key among these supports are policies that are supportive of refugee livelihoods in general, such as the right to work, which increase the perceived and tangible benefits of education for young people and their families in a context of displacement.

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Table 2. Logit model (odds ratios) for enrollment at time of survey, ages 6-15 and ages 16-22 at time of survey

	Ages 6-15	Ages 16-22
Age (six omit.)		
7	4.026*	
	(2.815)	
8	3.026	
	(2.065)	
9	3.037	
	(2.174)	
10	2.414	
	(1.276)	
11	5.748*	
	(4.510)	
12	0.500	
	(0.200)	
13	0.426	
	(0.225)	
14	0.329**	
	(0.138)	
15	0.080***	
	(0.033)	
Age (sixteen omit.)		
17		0.153*
		(0.139)
18		0.157*
		(0.134)
19		0.242
		(0.210)
20		0.138*
		(0.108)
21		0.280
		(0.297)
22		0.223
		(0.213)
Sex (male omit.)		
Female	3.492	0.228
	(3.305)	(0.276)
Age and sex int.		
Female # 7	0.187	
	(0.183)	
Female # 8	0.579	
	(0.721)	

	Ages 6-15	Ages 16-22
Female # 9	1.381	
	(1.718)	
Female # 10	0.501	
	(0.508)	
Female # 11	0.157	
	(0.195)	
Female # 12	0.369	
	(0.334)	
Female # 13	0.957	
	(0.885)	
Female # 14	0.405	
	(0.309)	
Female # 15	1.026	
	(0.800)	
Female # 17		13.435*
		(17.552)
Female # 18		3.477
		(4.206)
Female # 19		0.362
		(0.558)
Female # 20		2.277
		(2.803)
Female # 21		0.476
		(0.599)
Female # 22		1.366
		(1.978)
Year arrived (<2012 omit.)		
2012	2.708	
	(1.905)	
2013	3.047	
	(1.865)	
2014	2.475	
	(1.852)	
2015	2.136	
	(1.330)	
2016+	1.280	
	(1.077)	
Year arrived (<2013 omit.)		
2013		0.414
		(0.206)
2014		1.270
		(0.597)

	Ages 6-15	Ages 16-22
2015+		0.167
		(0.201)
Head sex (male omit.)		
Female Head	0.797	
	(0.298)	
Mother ed. (illit omit.)		
Read & write	1.810	1.904
	(0.716)	(0.959)
Basic+	3.157	3.894**
	(2.009)	(1.992)
Father ed. (illit. omit.)		
Read & write	1.291	1.536
	(0.580)	(1.274)
Basic+	2.420	7.247**
	(1.367)	(5.289)
Receives transfers (no omit.)		
Received Transfers	1.282	
	(0.557)	
Another member in HH working (No HH members working omit.)		
1+ HH members working	1.105	
	(0.554)	
Wealth quintile (poorest omit.)		
2nd quintile	1.099	
	(0.699)	
3rd-5th quintiles	1.809	
	(2.293)	
Monthly wage income (per capita in JD)	0.992	
	(0.008)	
Location (Host comm. omit.)		
Camps	1.431	
	(0.568)	
Travel time to basic school (in min.)	0.991	
	(0.029)	
Siblings main effects		
Have older brother	1.904*	1.559
	(0.521)	(1.725)
Have older sister	0.709	0.347
	(0.281)	(0.250)
Have younger brother	1.056	0.623
	(0.398)	(0.412)
Have younger sisters	1.313	0.887

	Ages 6-15	Ages 16-22
	(0.487)	(0.777)
No. siblings (living and dead)	0.915	0.867
	(0.091)	(0.198)
Sibs. and sex int.		
Female # Have older brother	0.356	4.739
	(0.262)	(6.119)
Female # Have older sister	2.595	1.787
	(1.562)	(1.653)
Female # Have younger brother	0.880	2.526
	(0.452)	(2.145)
Female # Have younger sisters	1.845	1.876
	(0.960)	(1.771)
Female # No. siblings (living and dead)	0.912	0.817
	(0.133)	(0.192)
N obs.	766	299
Pseudo R-sq.	.273	.315

Notes: *p<0.05; **p<0.01; ***p<0.001.
Cells are odds ratios, standard errors in parentheses. Standard errors clustered on the primary sampling unit (PSU) level.
Source: Authors' calculations based on JLMPS 2016

Table 3. Discrete time hazard model of school exit, Syrians in Jordan in 2016, ages 6-24 at time of survey

	Spec. 1	Spec. 2	Spec 3.
Grades (entry omit.)			
1-5	0.367***	0.353***	0.179***
	(0.108)	(0.105)	(0.079)
6-8	2.046*	1.967*	1.280
	(0.633)	(0.606)	(0.462)
9-12	3.106***	3.178***	2.436*
	(0.984)	(0.991)	(0.872)
Year (2010 omit.)			
2006	0.423*		
	(0.144)		
2007	0.465**		
	(0.132)		
2008	0.471**		
	(0.108)		
2009	0.626*		
	(0.127)		
2011	0.735		
	(0.153)		
2012	0.978		
	(0.210)		
2013	0.768		
	(0.199)		
2014	0.472***		
	(0.104)		
2015	0.471***		
	(0.093)		
2016	0.405***		
	(0.084)		
Years (2006-2010 omit.)			
2011-2013		1.331	0.400**
		(0.239)	(0.121)
2014-2016		0.722*	0.680
		(0.106)	(0.203)
Grades and years int.			
1-5 # 2011-2013			6.418***
			(2.742)
1-5 # 2014-2016			1.198
			(0.653)
6-8 # 2011-2013			4.171***
			(1.489)

	Spec. 1	Spec. 2	Spec 3.
6-8 # 2014-2016			0.974
			(0.457)
9-12 # 2011-2013			2.713*
			(1.063)
9-12 # 2014-2016			1.010
			(0.397)
Sex (male omit.)			
Female	0.668	0.693	0.719
	(0.305)	(0.311)	(0.317)
Grade and sex int.			
1-5 # Female	0.998	1.005	0.984
	(0.351)	(0.355)	(0.341)
6-8 # Female	0.765	0.762	0.741
	(0.256)	(0.253)	(0.243)
9-12 # Female	1.464	1.473	1.421
	(0.559)	(0.554)	(0.538)
Mother ed. (illit omit.)			
Read & write	0.661	0.664	0.663
	(0.147)	(0.146)	(0.146)
Basic+	0.620	0.597*	0.595*
	(0.164)	(0.153)	(0.152)
Father ed. (illit. omit.)			
Read & write	0.833	0.837	0.834
	(0.189)	(0.187)	(0.186)
Basic+	0.434**	0.442**	0.446**
	(0.126)	(0.125)	(0.126)
Siblings main effects			
Have older brother	0.857	0.883	0.877
	(0.145)	(0.147)	(0.147)
Have older sister	1.293	1.294	1.349
	(0.291)	(0.284)	(0.300)
Have younger brother	1.403	1.401	1.421*
	(0.245)	(0.241)	(0.250)
Have younger sisters	1.042	1.045	1.063
	(0.237)	(0.235)	(0.242)
No. siblings (living and dead)	1.048	1.040	1.037
	(0.053)	(0.050)	(0.049)
Sibs. and sex int.			
Female # Have older brother	1.016	0.986	0.984
	(0.325)	(0.306)	(0.310)
Female # Have older sister	0.806	0.815	0.786
	(0.267)	(0.268)	(0.262)

	Spec. 1	**Spec. 2**	**Spec 3.**
Female # Have younger brother	0.640*	0.642*	0.643*
	(0.137)	(0.137)	(0.136)
Female # Have younger sisters	0.778	0.783	0.794
	(0.198)	(0.196)	(0.202)
Female # No. siblings (living and dead)	1.109*	1.104*	1.108*
	(0.054)	(0.053)	(0.054)
N obs.	4462	4462	4462

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