

# The Impact of the Syrian Refugee Influx on the Education and Housing Outcomes of Jordanians

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## About the authors

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## In a nutshell

- Jordan was on a path of improving educational outcomes and improved housing quality prior to the onset of the Syrian refugee crisis and continued on that path since then.
- Jordanian education authorities accommodated the influx of Syrian students primarily by adding a second shift to existing schools, but those newly added second shifts were primarily for Syrian students.
- Measures of school crowding for Jordanian students were essentially unaffected in areas with high proportions of Syrian students.
- Out of 12 school outcomes, only one appears to be negatively affected by the influx of Syrian refugees, suggesting that the adverse effects on education of Jordanians were limited.
- The housing quality of poorer Jordanian households in areas exposed to the Syrian refugee influx improved less rapidly than that of their counterparts elsewhere in Jordan, suggesting some negative impact on groups directly competing with refugees for housing.
- We recommend targeting poorer Jordanian households in affected areas with rent subsidies and low-interest mortgages to mitigate these adverse effects on them.

## Introduction

Even before the outbreak of the events referred to as the Arab Spring in early 2011, Jordan was buffeted by powerful external forces that directly affected the lives of Jordanians. After growing rapidly for several years during the 2000s, the economy slowed dramatically starting in about 2008 as it reacted to the global financial crisis.

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The disruption of trade with Syria and Iraq and the interruption of tourism after 2011 were additional blows that kept growth at low levels up to the present. As the Syrian conflict unfolded, Jordan began receiving growing numbers of refugees. Syrian refugees began arriving in Jordan in large numbers in early 2012, with flows growing rapidly during 2013. The number of refugees registered with UNHCR had reached 600,000 by February 2014 (Salemi, Bowman, & Compton, 2018) and climbed further to 662,000 by April 2018 (UNHCR, 2018). The Jordanian Population Census, carried out in November 2015, estimated the number of Syrians in Jordan at 1.265 million (DoS, 2016), about double the number registered with UNHCR.

This large influx of refugees into Jordan occurred at a time when many other forces were strongly affecting the Jordanian economy and society. Isolating the impact of the refugee influx from that of all these other developments is therefore challenging at best. This policy brief reports on some of the results of a research program that attempts to do just that. The methods used in this research take advantage of the fact that Syrian refugees located in large numbers in specific places in Jordan, which are either close to refugee camps or the Syrian border or which had been places where Syrian communities had previously been present in Jordan. The localized effects of the Syrian influx can then be estimated by comparing the trend in various outcomes before and after the influx across the locations that had high shares of Syrians at the time of the 2015 Population Census and those that had low share.<sup>2</sup> Data are from the two waves of the Jordan Labor Market Panel Survey (JLMPS), which were carried out in 2010 and 2016 by ERF in cooperation with the Jordanian Department of Statistics.

This brief begins by discussing the impact of the refugee influx on education outcomes for Jordanians

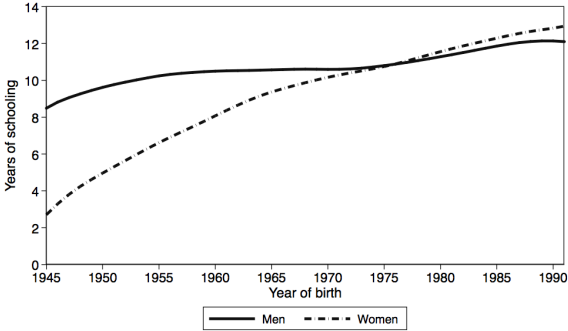
<sup>2</sup> This method is referred to as a “difference-in-difference” method and is based on an assumption that the time trend in the outcome was similar across the two types of locations prior to the start of the influx.

and then moves to the housing outcomes. Each part first shows the trend in these outcomes over time in Jordan and then reports on the results of the analysis that attempts to relate changes in outcomes to the refugee influx.

*Education Outcomes*

Jordan has made great strides in increasing educational attainment in recent decades. Jordan had the third largest increase in the world in average years of schooling from 1980 to 2010 (Barro & Lee, 2013). By 2016 the average years of schooling for Jordanians 25 and older was 10.4 years, according to the JLMPS. As shown in Figure 1, average years of schooling increased more rapidly across cohorts of birth for women than for men, to the extent that among the youngest cohorts with completed education, the average for women exceeds that of men by about 1 year of schooling.

**Figure 1 Average Years of Schooling by Year of Birth and Sex, Jordan, 2016**

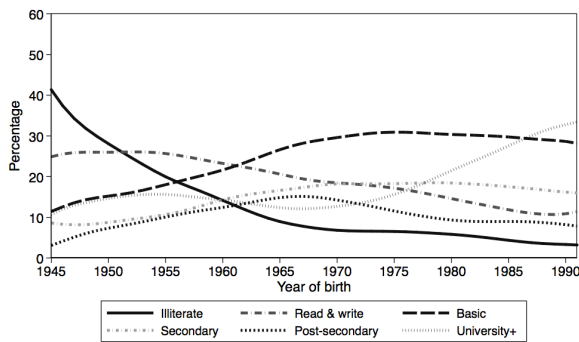


Source: Assaad, Krafft and Keo (2018)

As shown in Figure 2, the most notable increase among recent cohorts of Jordanians has been in the share acquiring university education, which went from about 10% in the cohort born around 1970 to 30% in the cohort born around 1990. University education has become the most common educational attainment among these younger cohorts, exceeding basic education, which had until recently been the most common credential. Again, the propor-

tion of women with university education among the youngest cohorts exceeds that of men by a wide margin. The overall proportion of working age Jordanians males with university education or above increased from 14% to 16% from 2010 to 2016, but increased from 13% to 17% for women (Assaad, Krafft, & Keo, 2018).

**Figure 2 Educational Attainment (Percentage) by Year of Birth, 2016**

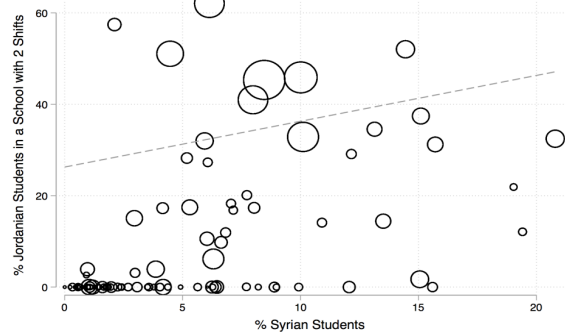


Source: Assaad, Krafft and Keo (2018)

There are a number of ways in which the migration shock represented by the Syrian refugee influx could have affected Jordanian students. These include the conversion of schools to double shifts, which could reduce the duration of the school day, potential crowding, strains on educational resources, such as teachers and educational materials, and peer effects from having students of different ability or preparation in the same classroom. We begin our analysis of the potential impact of the Syrian influx by examining data on schools at the sub-district level. As shown in Figure 3, the percentage of Jordanians in two-shift schools increases with the percentage of Syrian students in their sub-districts. This is because the primary response to accommodate Syrian students into the education system was to add second shifts to existing schools, a policy that was partly supported by donor funds (Hashemite Kingdom of Jordan Ministry of Planning and International Cooperation & United Nations, 2013). As the size of the circle indicates a larger number of students in the sub-dis-

trict, we can see that larger districts tend to have a higher incidence of two-shift schools. Three of five largest districts are in Amman, one is in Zarqa and one in Irbid. Despite the increase in the proportion of multiple shift schools, we note that the percentage of Jordanian students in the second shift declines as the percent of Syrian students increases, suggesting that the second shift is mostly used enroll Syrian students. In fact, 56% of Syrian students are enrolled in the second shift.<sup>3</sup>

**Figure 3 Percentage of Students in a Two-shift School and Percentage of Students who are Syrian at the Sub-district Level, Jordanians**



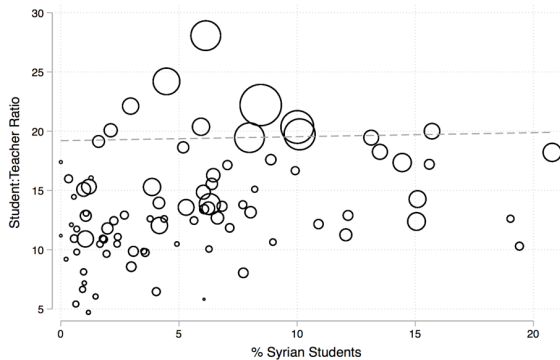
Source: Assaad, Ginn and Saleh (2018)

Note: Size of bubble is based on sub-district size

There is little evidence from school data that the presence of the Syrian students has adversely affected the education resources available to Jordanian students. As shown in Figure 4, the average student-teacher ratio at the sub-district level is unrelated to the percentage of Syrian students in the sub-district. The student-teacher ratio tends to be high in larger sub-districts, a sign of general population pressure. Similarly, the ratio of students to available classrooms shows no relationship with the percentage of Syrian students in a sub-district (Figure 5). Again, the ratio tends to be high in larger sub-districts.

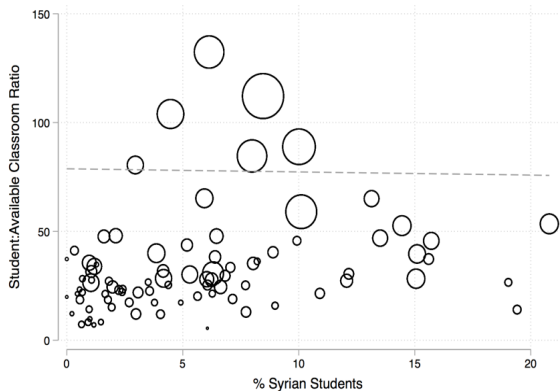
<sup>3</sup> Data derived from the Ministry of Education’s Education Management Information System (EMIS) database <https://jo-moe.openemis.org/portal/>.

**Figure 4 Average Student/Teacher Ratios and Percentage of Students who are Syrian at the Sub-district Level, Jordanians**



Source: Assaad, Ginn and Saleh (2018)  
 Note: Size of bubble is based on sub-district size

**Figure 5 Ratio of Number of Students to Available Classrooms and Percentage of Students who are Syrian at the Sub-district Level, Jordanians**



Source: Assaad, Ginn and Saleh (2018)

In a recent study (Assaad, Ginn and Saleh 2018), we have systematically examined a large number of education outcomes to determine whether the Syrian refugee influx has had an effect on them. The outcomes we assessed include: (i) ever attended school, (ii) age at start of basic school, (iii) drop-out from basic schools, (iv) grade repetition in basic schools, (v) receipt of tutoring in basic school, (vi) completing basic school, (vii) continuing to secondary after com-

pleting basic school, (viii) dropout from secondary school, (ix) grade repetition in secondary school, (x) receipt of tutoring in secondary school, (xi) completion of secondary school, and (xii) entering tertiary education conditional on completing secondary. As explained above we use a “difference-in-difference” method where we compare the relevant outcome for two cohorts of students, a young cohort that was of age to be exposed to the Syrian influx, and an older one that was not, across areas with different proportions of Syrians in the population. The cohorts are defined differently depending on the schooling outcome we are examining. All estimates are disaggregated by sex.

Our findings reveal that the schooling outcomes of Jordanian students were largely not affected by the Syrian refugee influx. Of the twelve outcomes listed above, only one – completion of basic schooling -- shows a significant negative impact of the Syrian refugee influx on Jordanian students and the result is not robust to using the locality rather than the sub-district as the relevant geographic unit. The others either show no effect or in some cases a positive effect. It is hard to know how much credence to put on the one statistically significant effect, since it is often the case that when multiple tests are conducted, some results can be significant when there is truly no effect. Having said that, we find that, among boys, the cohort exposed to the Syrian influx had a lower probability of completing basic school sub-districts with a high percentage of Syrian refugees. Interestingly, there is no significant effect on the probability of entering secondary for either boys or girls, suggesting that those whose completion may have been affected were the marginal students who would not have entered secondary anyway.

Surprisingly, some analyses revealed a positive effect of the Syrian refugee influx on Jordanian students’ outcomes. For instance, there is a reduction in grade repetition at the secondary stage for girls in sub-districts. There is a similar but weaker effect for boys. Similarly, there is a positive effect on the probability of finishing secondary school for girls and a positive

effect on entering tertiary education for boys. These results are not all that robust and could be the result of pure chance.

To conclude, there is little evidence that the Syrian refugee influx has resulted in negative effects on the schooling outcomes of Jordanians. School-level outcomes, such as student-teacher ratios or number of students per classroom do not appear to be related to the Syrian refugee presence at the local level. Out of 12 different individual-level school-related outcomes, only one – basic school completion -- showed a negative effect of Syrian refugee presence. Conversely, three indicators showed positive effects of the Syrian influx. When a large number of outcomes is examined, some turn out to be statistically significant just by chance and we cannot exclude that this is the case here.

### Housing Outcomes

Jordan’s housing markets are characterized by a significant degree of flexibility relative to comparator countries, such as Egypt and Tunisia (Assaad, Krafft, & Rolando, 2016). The flexibility can be attributed to relatively uncontrolled rental markets and a well-functioning housing finance sector ((Erbas & Noth-aft, 2005). Overall, housing conditions in Jordan improved over the 2010-2016 period. The proportion of people owning their homes rather than renting increased from 74% to 81% and the area of the dwelling per person increased from an average of 35 to 37m<sup>2</sup>/person. Other measures of housing quality, such as access to central gas or electric heating and access to a public sewerage system or to a garbage dumpster also improved on average (Elsayed, 2018))

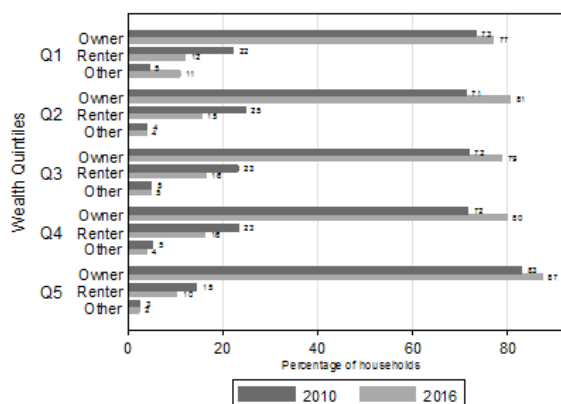
With some exceptions, the improvement in housing conditions were even more pronounced for newly formed households than for all households. We define newly-formed households as households that were formed at most five years prior to each wave of the JLMPS survey. The proportion of newly formed households that own rather than rent increased from 57% in 2010 to 69% in 2016. The proportion with

central gas or electric heating increased from 64% to 76%, and the proportion with access to a garbage dumpster increased from 82% to 94%. The exception is a slight decline in the dwelling area per person from 39 to 38 m<sup>2</sup>/person.

The improvement in housing conditions among Jordanian households occurred across all income groups, with some variation across groups. We use wealth quintiles to proxy for the variation in socio-economic status. The quintiles are based on a wealth index that summarizes household ownership of various durable goods and housing conditions.<sup>4</sup> The quintiles classify Jordanian households from the poorest fifth to the richest fifth in either 2010 or 2016.

As shown in Figure 6, the largest increase in the share of households that own their dwellings in Jordan was among households in second, third and fourth quintiles. As a possible sign of rising housing pressures among the poor, those in the bottom quintile had somewhat higher rates of home ownership in 2010 than the next three wealth quintiles, but had the lowest rates in 2016.

**Figure 6 Type of Occupancy for Jordanian Households by Wealth Quintile in 2010 and 2016 (percentage)**

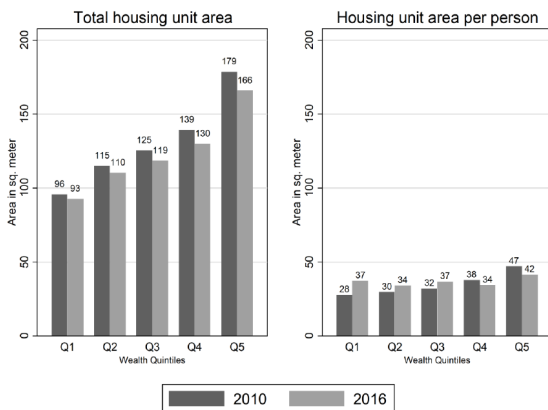


Source: Elsayed (2018)

<sup>4</sup> This method was first proposed by Filmer & Pritchett (2001) and has since been used in a large number of surveys that do not collect detailed expenditure or income data.

Figure 7 shows the total dwelling area in square meters and the dwelling area per person by wealth quintile in 2010 and 2016. We first note that both variables are strongly related to wealth quintile, both rising steadily from the lowest to the highest wealth quintile at least in 2010. The relationship between dwelling area and wealth quintile is somewhat less regular in 2016. Although total dwelling area declined for all household groups, this could be an indication of declining household size. This appears to be the case for at least the bottom three quintiles, where dwelling area per person appears to be increasing over time. In fact, the greatest increase in dwelling area per person was for the bottom quintile, which experienced the largest decline in household size (from 5.0 to 3.9 persons per household).

**Figure 7 Total Dwelling Area and Dwelling Area per Person by Wealth Quintile in 2010 and 2016 (percentage)**

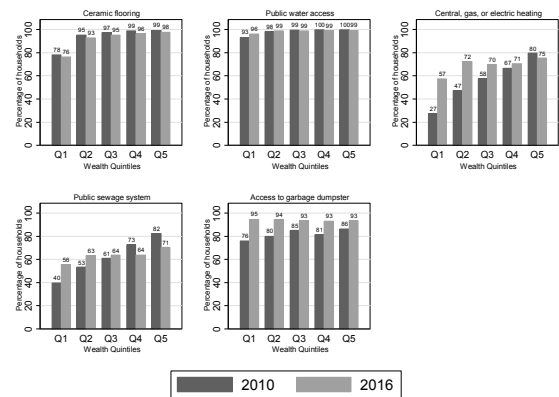


Source: Elsayed (2018)

Other housing quality indicators mostly showed an improved distribution across income groups. For example, as shown in Figure 8, the proportion of dwellings with ceramic/tile flooring (the high-quality material) was lowest among the poorest income group and declined somewhat more for the bottom four quintiles than for the highest. The proportion with access to the public water network was almost universal for the top four quintiles and increased for the bottom quintile from 93% to 96% of households in that group. The proportion with central gas or

electric heating and with connections to public sewer networks was also rising with wealth, but increased the most for the bottom two.<sup>5</sup>

**Figure 8 Housing Quality Indicators by Wealth Quintile in 2010 and 2016**



Source: Elsayed (2018)

In a recent study of the impact of the Syrian refugee influx on housing outcomes in Jordan (Al-Hawarin, Assaad, & Elsayed, 2018) we used the proportion of Syrians at the locality level as reported by the 2015 Population Census as a measure of the degree of local exposure to the Syrian refugee influx.<sup>6</sup> We then compared housing outcomes across localities with differential exposure to Syrian refugees before and after the influx. This method allows us to determine the effect of exposure, controlling for differences in initial conditions in various localities and for changes over time that affect all localities in the same way.

We obtain our housing outcomes from the 2010 and 2016 waves of the JLMPS for households observed in both waves.

<sup>5</sup> In fact, the proportion with connections to public sewers has declined for the top two quintiles, possibly an indication of their tendency to move to outlying suburbs with as yet not fully developed sewerage networks.

<sup>6</sup> The locality level is fourth level of administrative geography in Jordan. There were a total of 983 localities in Jordan in 2015. The first three levels are the governorate (of which there are 12), the district (of which there are 51), and the sub-district (of which there are 89).

As a robustness check we use data from the 2006 and 2013 rounds of the Jordanian Household Expenditure and Consumption Survey (HEIS) on the same or similar outcomes. The outcomes we examine are dwelling area and dwelling area per person, as well as a housing quality index, which is a composite of various housing characteristics. These characteristics include type of dwelling (apartment or house), floor type, connection to public water and sewer networks, source of space heating, access to garbage disposal, and dwelling area per household member. Since both rounds of the HEIS have information on rent, we use that data to examine how rents have been affected by exposure to the Syrian refugee influx.<sup>7</sup>

Before we discuss our findings on the impact of refugee influx, we should note that average housing quality improved significantly over the 2010 to 2016 period in the country as a whole, as noted above. Nevertheless, the improvement for areas affected by the refugee influx were lower in a statistically significant manner than those of households in less exposed areas. A 10 percentage point increase in the share of Syrian refugees, which is nearly a doubling of the national average, reduces the housing quality index by 0.13 standard deviations -- a relatively modest effect. We find no statistically significant effects on dwelling area per person.

Our findings also show, however, that this modest average effect masks variation in effects across different classes of Jordanians, with more disadvantaged households being more negatively affected than average by the influx of Syrian refugees. Whether disadvantage is measured by household wealth or by the education or skill level of the household head, we find that these households have a larger negative effect on their housing quality. In contrast, the housing quality of more advantaged households, those in the upper half of the wealth distribution, is either unaffected or somewhat positively affected by the influx of Syrian refugees.

<sup>7</sup> Because HEIS does not have information on dwelling area, we use persons per room as an alternative measure of the degree of crowding to dwelling areas per person.

In particular, the dwelling area per person for these households appears to increase in response to the influx. We interpret this seemingly puzzling finding as follows: more advantaged households that can presumably pay more for housing are moving up to higher quality housing to avoid having to compete for the type of housing in demand by Syrian refugees. Poorer households that cannot afford to pay more are forced to accept lower quality housing.

Results using the HEIS data from 2006 to 2013 are substantively similar for housing quality. However, they do not detect any differences in the change in housing rents between areas that have high exposure to Syrian refugees and those that do not. Rents seem to have increased uniformly in both types of areas.

To determine how housing conditions in different parts of the country were affected by the influx of Syrian refugees, we disaggregate the analysis to areas that are closer to the Syrian border and ones that are further away.<sup>8</sup> We find that there is a weak negative effect of exposure to the Syrian influx on housing quality in both areas, but the effect is actually larger for each percentage point of exposure in the areas further away from the border. This may be due to the fact that such areas do not receive the same support from donors and other international actors helping to mitigate the effects of the refugee influx. Although our HEIS analysis shows that rent is not affected by the proportion of Syrian refugees nationally, there seems to be modest effect on rent in the region closer to the Syrian border.

In conclusion it appears that average housing quality for Jordanians was affected weakly by the Syrian influx, but that this average effect masks some differences by social class. Poorer and less educated Jordanians who compete directly for the type of housing that Syrian refugees can afford have actually experienced a larger negative effect on their

<sup>8</sup> Areas close to the Syrian border includes the governorates of Irbid, Ajloun, Jerash, Mafraq, and Zarqa. Areas further away from the Syrian border include the governorates of Amman, Balqa, Madaba, Karak, Tafileh, Ma'an and Aqaba.

housing quality, whereas richer Jordanians actually experienced an increase in quality when exposed to a higher prevalence of Syrian refugees. We interpret this effect as a “fleeing away” effect, where Jordanians who can afford it move to the kind of housing that Syrians cannot access. In general, we find that rents did increase as a result of the Syrian influx, but more so in the Northern region, closer to the Syrian border than in other regions.

Our findings suggest that the policy measures and donor responses that were undertaken to accommodate the influx of Syrian students into the Jordanian public education system were effective for the most part in shielding Jordanian students from the potential adverse effects of the influx. There is limited evidence that Jordanian students in areas with greater exposure to the Syrian refugee influx were adversely affected. There is some evidence however that schools in large urban areas are suffering from overcrowding, and more resources need to be devoted to reduce student-teacher ratios and the number of students per classroom in these schools.

The policy implications of our findings regarding the impact on housing is that low income Jordanians, who are in direct competition with Syrians over low-cost housing, may need some assistance to maintain their housing quality in face of tighter housing markets. Such assistance can be provided in the form of housing vouchers targeted to Jordanian households below a certain income level who are currently relying on rental housing. There could also be some subsidized mortgage programs for those seeking housing finance to purchase a home and who meet certain eligibility criteria.



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