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**SYRIAN REFUGEES AND
THE MIGRATION DYNAMICS OF
JORDANIANS: MOVING IN OR MOVING OUT?**

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Abstract

This paper examines the impact of the Syrian refugee inflows on the migration dynamics of Jordanians. Using unique data from Jordan, we exploit the geographical distribution of Syrian refugees across Jordanian subdistricts and examine its impact on international, return and internal migration patterns of Jordanians. We rely on retrospective information to construct individual and household panel data before and after the beginning of the 2011 Syrian war. Using a Difference-in-Differences specification that takes into account unobserved heterogeneity, we find that the Syrian refugee inflows in Jordan do not have any effect on the international and return migration patterns of Jordanians. However, the Syrian presence increases the probability of Jordanian internal migration. Particularly, being a resident in camp governorates increases the probability of moving out while it decreases the probability of moving in. Our results are the first to show the impact of the massive refugee inflows on the host country's migration dynamics.

JEL Classifications: F22, J61, R23

Keywords: internal migration, return migration, international migration, refugees, Jordan.

ملخص

تبحث هذه الورقة أثر تدفقات اللاجئين السوريين على ديناميكيات الهجرة لدى الأردنيين. باستخدام بيانات فريدة من الأردن، نستخدم التوزيع الجغرافي للاجئين السوريين عبر المناطق الفرعية الأردنية ونفحص تأثيره على أنماط الهجرة الدولية والعائدة والداخلية للأردنيين. نحن نعتمد على معلومات بأثر رجعي لتجميع بيانات فردية ومجمعية قبل وبعد الحرب السورية عام 2011. باستخدام مواصفات الاختلاف في الاختلافات التي تأخذ في الاعتبار عدم التجانس غير الملحوظ نجد أن تدفقات اللاجئين السوريين في الأردن ليس لها أي تأثير على أنماط الهجرة الدولية والعائدة للأردنيين. ومع ذلك، فإن الوجود السوري يزيد من احتمال الهجرة الداخلية الأردنية. وبشكل خاص، الإقامة في محافظات المخيمات تزيد من احتمال الخروج منها بينما تقلل من احتمال الانتقال إليها. ونتائجنا هي أول ما يبين تأثير تدفقات اللاجئين الضخمة على ديناميكيات الهجرة في البلد المضيف.

1. Introduction

The recent unprecedented displacement of many people across borders due to conflict and violence has reignited interest in the impact of hosting displaced people and refugees. The Syrian crisis in particular has had been massive in size and have had implications on neighboring nations as well as many other countries further afield.

A key focus of the impact of refugees has been on the labor market of the hosting nation, and whether refugees displace natives, for example Tumen (2016). Another strand of this, very small but fast evolving, literature has examined the impact of refugees on food prices and housing, see Alix-Garcia and Saah (2010), and Balkan and Tumen (2016). An interesting but understudied aspect of hosting refugees is the impact on the migration dynamics of natives. To be more precise, it is possible that areas where refugees are hosted, in particular, where are camps, become less attractive to natives. This could lead natives to move out whether internally or overseas. There are several potential reasons for that mechanism which could be driven by potential negative impact on the labor market pushing out natives, or an increase in the price of services and housing, or congestion and competition in access to services.

Indeed, the crowding out of natives by immigrants in cities is not new. There is a sizeable literature focusing on what is known as the “White flight” whereby immigration leads to internal mobility of natives who move out of city centres and urban areas and into sub-urbans, see for example Boustan (2010). There is evidence for many developed countries of that phenomenon, see DiNardo and Card (2000). For example, Borjas (2006) found that immigration lead to simultaneous higher exit rates and lower entry rates into immigrant-targeted states, by natives in the US. Pischke and Velling (1997) found similar patterns for Germany. Yet, there is very little evidence when it comes to refugees, whether the same patterns are observed. An exception is the evidence from Turkey by Akgündüz et al. (2015) which finds that entry rates were lower while exit rates were unchanged in regions which experienced inflows of Syrian refugees, whilst their focus on the labor market implications of internal mobility.

In this paper we aim to examine the impact of refugee influx on the internal mobility of natives. We use unique data from the Jordan Labor Market Panel Survey (JLMPS) in 2016 to construct individual and household panel data relying on retrospective information on Jordanians’ geographical mobility. We examine the impact of the massive Syrian refugee inflows on the migration dynamics of Jordanians, in terms of international, return and internal migration patterns. Our panel data allows us to compare Jordanian mobility after the beginning of the Syrian war in 2011 and up to 2016, with the period preceding the Syrian war, between 2005 and 2010. We rely on a Difference-in-Differences specification that accounts for unobserved heterogeneity at the individual and household levels through fixed effects estimation. Our specification allows for variable treatment intensities according to the household location of residence, as our treatment variable captures the geographical distribution of the Syrians in Jordan at the subdistrict level, the third administrative level.² Our results suggest that the Syrian refugee inflows do not seem to impact Jordanian international and return migration patterns. However, we find a positive and significant effect of the Syrian inflows on the internal migration patterns of Jordanians. Indeed, we find that an increase in the share of Syrians to Jordanians increases the individual probability of internal migration in a broad sense. Considering the probabilities of moving in or out camp governorates, i.e. governorates where the most important refugee camps are currently located, we find that being a resident in a camp governorate increases the individual probability of moving out while it decreases the probability of moving in camp governorates. Our results are also robust to several robustness

² Jordan is divided into governorates (first administrative level), districts (second administrative level), subdistricts (third administrative level) and localities (fourth administrative level).

checks including the definition of internal migration and the choice of the cutoff point to construct our panel data. The findings of this paper are the first to empirically assess the impact of the massive Syrian inflows on the host country's migration dynamics.

The rest of this paper is organized as follows. Section 2 provides a brief description of the Syrian refugee crisis and the data used in our analysis. Section 3 describes our empirical strategy. Section 4 presents the results and robustness checks. Section 5 concludes.

2. Background information and the data

2.1 The Syrian refugee inflows

The outbreak of the conflict in Syria in 2011 has displaced almost 5 million people to neighboring countries and beyond. Jordan was hosting 1.3 million Syrians, of whom 630,000 were registered as refugees with the United Nations High Commissioner for Refugees in 2015 (DoS 2016). For a small country like Jordan of 6 million inhabitants, the Syrian refugee influx represents a major increase to its population. The Syrian refugee influx in Jordan began in 2012, peaked in 2013 and decreased thereafter. The majority of the Syrian refugees live outside refugees camps (80%). Yet the distribution of Syrian refugees is not uniform across all localities but tend to be highly concentrated in particular localities; mostly those hosting camps and Amman.

2.2 Data description

We use data from the Jordan Labor Market Panel Survey (JLMPS) in 2016. The JLMPS 2016 is the second wave of a panel survey carried out by the Economic Research Forum (ERF) in cooperation with the Jordanian Department of Statistics (DoS). The survey was carried out on a nationally representative sample of 31,753 individuals corresponding to 6,841 households. As a typical labor market survey, the JLMPS 2016 contains covers topics such as employment, unemployment and earnings. Additionally, it provides retrospective information on international migration, internal mobility, return migration and job dynamics.

The JLMPS interviews Jordanians, non-Jordanian nationals as well as Syrian refugees. It provides very rich information on the refugees in Jordan including whether they live in a refugee camp, whether they are registered officially as refugees, the month and year to registration, the number of times they moved internally, whether they have work permit, food vouchers or ration card, information about their hometown in Syria and on their spouses.

Figure 1 and Figure 2 feature the geographical distribution of the Syrian at the district level in Jordan. Figure 1 presents the number of Syrians to Jordanian population while Figure 2 presents the number of Syrians to total population. Unsurprisingly, Syrians are mostly geographically concentrated in the districts close to the Northern border, the border with Syria. The highest share of Syrians is in the district *Badiyah Shamaliyah Gharbiyah*, where the number of Syrians to Jordanians is about 1.5 higher and the share of Syrians to total district's population is approximately 58%.

In terms of characteristics, Table 1 presents some descriptive statistics on the sample of Syrian refugees, defined as those who are officially registered as refugees in Jordan and Jordanian nationals. Syrians refugees' characteristics are found to be statistically different from Jordanians along many dimensions. First, Syrian refugees in Jordan are found to be significantly older than Jordanian nationals and the incidence of being married is also higher among the first group. As for their educational attainment, Syrian refugees lag behind Jordanian nationals; they are found to be more likely to fall into the no education category and significantly less likely to have any type of education, whether it is basic, secondary or above secondary education. The incidence of having any type of formal education is 32% higher among Jordanians compared to the Syrian refugees. In terms of household demographics, there does not seem to be a statistically significant difference in the size of the average Jordanian

and Syrian household, however, the number of adults within the household is slightly higher among Jordanians. Also, Syrian households are found to be significantly more likely to live in rural areas; the incidence of residing in rural areas is 42% higher among Syrian refugees compared to Jordanians. In line with Figures 1 and 2, Syrian refugees are found to be more geographically concentrated in the Northern region and less present in the Southern and Middle regions. Finally, in terms of parental background and namely, parental education, we also find that Jordanians are more likely to have educated parents compared to Syrians; the likelihood of having an illiterate mother or an illiterate father is much higher among Syrian refugees.

The JLMPS has very rich retrospective information on all types of mobility: international, return and internal migration. Regarding international migration, individuals were asked about whether there is any household member living or working abroad at the time of the survey and they could report up to 9 international migrants at the household level. They were also asked about the month and the year of migration for each migrant. The JLMPS has also a particular module on return migration. However it is important to note that we don't observe households who have migrated in their entireties. Individuals aged between 15 and 59 years old were asked whether they have worked abroad for more than 6 months and they were also asked about the year of their final return to Jordan. Finally, for internal migration, we rely on retrospective data on geographical mobility. Individuals were asked if they moved from their place of birth, whether the move was inside or outside Jordan, the destination governorate, district, subdistrict and locality as well as the year corresponding to each move. Individuals could report up to 9 moves.

Based on this retrospective information, we construct a panel dataset accounting for the periods before and after the Syrian war in 2011. The survey being conducted in 2016, the period following the beginning of the Syrian war corresponds to the years between 2011 and 2016, inclusive, whereas, the period preceding the Syrian war is equally of 6 years' length and corresponds to the period of 2005 to 2010, inclusive. For these time periods (2005-2010 and 2011-2016), we are able to track any individual mobility whether it is international or internal mobility as well as return migration dynamics. Hence, we construct our dependent variables as dummy variable indicators accounting for the different types of mobility (international, return or internal migration) for the two periods under consideration.

Table 2 features the characteristics of the Jordanian internal migrants versus those of the non-movers. Movers are split into those who moved between 2005 and 2010 (before the beginning of the Syrian war) and those who moved between 2011 and 2016 (after the Syrian war). The moves considered are all types of moves within Jordan. Non-movers are Jordanians who did not move from their place of birth. Generally speaking, internal migrants in the periods 2005 to 2010 and 2011 to 2016 seem quite comparable along a number of characteristics including the marital status, their current geographical region, their sector of employment and the incidence of work contract. However, we find that movers between 2011 and 2016 are about 4 years younger than those who moved internally between 2005 and 2010. The 2011-2016 internal migrants are also found to be significantly more educated; the incidence of university education and above is 12% higher among the latter compared to the 2005-2010 movers. In terms of household demographics, the 2011-2016 movers are found to belong to smaller sized households. In terms of job characteristics, the job tenure is significantly lower among the 2011-2016 movers compared to the 2005-2010 internal migrants. Although there does not seem to be any statistically significant difference between the 2005-2010 and 2011-2016 movers in terms of sector of employment, the 2011-2016 movers are found to be more likely to be employed in the education and health sectors.

Table 3 and Table 4 present the internal migration matrices for the 2005-2010 movers and the 2011-2016 movers, respectively, between the governorate preceding the move and the

governorate corresponding to the move. The diagonal cells represent the percentage of Jordanians who stayed in the same governorate before and after the move, i.e. Jordanians who moved within the same governorate (at the district, subdistrict or locality levels). Two differences stand out when comparing the internal migration matrices of the 2005-2010 and the 2011-2016 movers at the governorate level. First, for the 2005-2010 movers, the share of individuals who moved in Zarqa and Mafrq (where the most important refugee camps are currently located),³ actually increased from 19% to 22% while for the 2011-2016 movers, the share of individuals who moved in Zarqa and Mafrq actually decreased from 18% to 16%. Second, we also find a drop in the share of individuals moving within Mafrq, the most important camp governorate, when comparing the 2005-2010 to the 2011-2016 movers. 71% of those who were residing in Mafrq moved within Mafrq between 2005 and 2010 while this figure drops to 12% for the 2011-2016 movers.

Given that the Syrians are found to be geographically concentrated in the Northern region in Jordan, as shown in Figures 1 and 2, and in the descriptive statistics in Table 1, we also present the internal migration matrices for Jordanians at the regional level in Table 5. Table 5 is split into two panels, Panel A and Panel B corresponding to the 2005-2010 and 2011-2016 movers, respectively. In line with our findings in Tables 4 and 5, we find that the share of Jordanians moving within the Northern region is lower among the 2011-2016 movers compared to the 2005-2010 movers, 75% versus 81%, respectively. Additionally, we find that the share of Jordanians moving in the Northern region between 2005 and 2010 had increased from 31% to 34%, while the corresponding figure for the 2011-2016 movers had actually decreased from 39% to 34%.

3. Empirical strategy and regression specification

Using retrospective information on Jordanians' geographical mobility inside and outside Jordan as well as information on return migration from the JLMPS (2016), we constructed our panel dataset at the individual and household levels. The two time periods under consideration correspond to 2005-2010 (before the Syrian war) and 2011-2016 (after the beginning of the Syrian war). Using panel data from before and after the Syrian war, we investigate the impact of the Syrian refugee inflows on the migration dynamics of Jordanians, including international, return and internal migration patterns. We estimate the following Difference-in-Differences specification:

$$Y_{hst} = \alpha_1 syrians_s \times T_{2011-2016} + \alpha_2 X_h \times T_{2011-2016} + \beta_h + T_{2011-2016} + \varepsilon_{hst} \quad (1)$$

$syrians_s$ - our treatment variable - is equal to the share of Syrian refugees normalized by the Jordanian population at the subdistrict level.⁴ Hence, Jordanians are exposed to variable treatment intensity according to the geographical location. $T_{2011-2016}$ is a dummy variable equal to 1 for the period between 2011 and 2016 (after the beginning of the Syrian war), 0 for the period between 2005-2010 (before the war). We rely on both household and individual level panel data. Equation (1) denotes the household level regressions but we also estimate the same regression using the individual panel data.

For the household regressions, the dependent variables are dummy indicators for each of the following variables: international migration, return migration and internal migration at the household level. For each period under consideration (for example the 2011-2016), the international migration dummy is equal to one if there is any household member living or

³ Azraq and Mrajeeb Al Fhood refugee camps are located in Zarqa governorate while Zaatari, Rukban and Hadallat refugee camps are located in Mafrq governorate.

⁴ We use three different variables for capture the geographical distribution of the Syrians in Jordan. The first one corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The second one corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The third one is equal to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The number of refugees at the subdistrict level is derived from the JLMPS (2016).

working abroad, who migrated between the years 2011 and 2016. As for the return migration dummy, it is equal to one if an individual currently residing in Jordan had worked abroad for more than 6 months and returned to Jordan between 2011 and 2016. Finally, for the internal migration, it is a dummy variable equal one if the individual changed his locality in the period under consideration 2005-2010 and 2011-2016, compared to the preceding locality of residence.

β_h and $T_{2011-2016}$ are respectively household and year fixed effects. The household fixed effects absorb the time-invariant variables: the non-interacted term $syrians_s$. In all regressions, standard errors are clustered at the subdistrict level. The number of clusters are reported in the last row of each regression table.

Since, all the control variables are time-invariant and to condition on time-varying effects of the control variables; we include the vector X_{ht} of household controls interacted with the time dummy. The household controls include a rural dummy, the number of adults who are 15-64 years old and three dummies for the head of the household's educational attainment. For the individual level regressions, the controls also include three dummies for the individual's educational attainment.

The main coefficient of interest is the parameter α_1 . It allows identifying the effect of the Syrian refugee inflows on the migration patterns of Jordanians between the two periods of interest.

4. Empirical findings

4.1 Moving in or moving out?

Table 6 presents the impact of the Syrian refugee inflows on the international migration patterns of Jordanians using household level regressions. As presented in Section 3, we use three alternative measures to capture the geographical distribution of the Syrians in Jordan. The first one corresponds to the number of refugees at the subdistrict level; the second variable corresponds to the number of refugees in 2011 or later, while the third variable corresponds to the total number of Syrians in 2016. All three variables are normalized by the total number of Jordanians at the subdistrict level. Our dependent variables in columns (1), (3) and (5) correspond to dummy variables indicators for the incidence of international migration at the household level, while those in columns (2), (4) and (6) correspond to the number of international migrants at the household level. We do a similar exercise in Table 7 where we examine the effect of the Syrian refugee inflows on the return migration patterns of Jordanians relying on household level regressions. The results of Tables 6 and 7 show that there is no significant effect of the Syrian refugee inflows on the international and return migration patterns of Jordanians.

By contrast, in Table 8, we examine the effect of the Syrian inflows on the internal migration patterns of Jordanians, using household level data. Similar to Tables 6 and 7, we examine the effect of the Syrian refugee inflows on both the incidence of internal migration and the number of internal migrants at the household level. Internal migration is defined with respect to the residence prior to the move. In other words, for each individual, we consider the locality of residence prior to the period under consideration 2005-2010 and 2011-2016, and define an internal migrant as an individual who changed his locality between the years considered compared to the preceding locality of residence. Using household level data in Table 8, the magnitude of the impact of the Syrian presence on the probability of internal migration ranges between 12% and 16%, using a standard deviation increase in the share of Syrians and evaluating the effects at the mean. We also find that the Syrian presence increases the number of internal migrants at the household level by 12% to 16%.

As explained in Section 3, we also rely on individual level data. Since international migrants cannot be interviewed at the time of the survey, we are only able to examine the effect of the

Syrian refugee inflows only on return and internal migration dynamics of Jordanians. In Table 9, we examine the effect of the Syrian inflows on the individual's probability of being a return migrant. In line with our findings in Table 7, we do not find any effect of the Syrian inflows on the return migration patterns of Jordanians.

Using individual level data to examine the effect of the Syrian inflows on the internal migration patterns of Jordanians in Table 10, we find suggestive evidence that the Syrians inflows increase the probability of internal migration in Jordan. This is a finding that is confirmed using both household and individual level data but also alternative measures of the Syrian geographical distribution. Indeed, we find that a standard deviation increase in the share of Syrians increases the probability of internal migration by 9% to 12%. Our results show a positive association between the share of Syrians at the subdistrict level and the probability of internal migration, as well as on the number of internal migrants at the household level. This result is robust to the three definitions used for the Syrians presence.

Whereas, we find that the Syrian refugee inflows did not affect the international and return migration patterns of Jordanians, we find a positive and statistically significant effect on the probability of internal migration. In Tables 8 and 10, internal migration is defined as all types of moves inside Jordan. In Table 11, we distinguish between movers in and movers out of what we denote as the camp governorates, namely Mafraq and Zarqa. The dependent variables in column (1) is dummy variable indicator equal 1 for Jordanians who moved in the camp governorates and zero for non-movers, while the dependent variables in column (2) is a dummy variable for movers out of the camp governorates and zero for non-movers. Movers in or movers out are defined with the respect to the governorate that preceded the move. Precisely, movers in are those who were not residing in Mafraq or Zarqa and moved into one of the two, whereas, movers out are those who were residing in either Mafraq or Zarqa and moved out of the two governorates. Our treatment variable as a dummy variable equal one for individuals who were residing in camp governorates prior to their geographical move. Interestingly, we find that being a resident in a camp governorate on the individual probability of migrating. Indeed, being a resident in a camp governorate reduces the probability of moving in, while it increases the probability of moving out. Compared to the mean of the dependent variables of interest reported at the bottom of the regression table for the pre-period (2005-2010), being in a camp governorate decreases the probability of moving in by 5 times compared to the mean while it increases the probability of moving out by 8 times. These results are in line with our descriptive findings in Section 2.2, showing that the 2011-2016 movers who were residing in either Mafraq or Zarqa were less likely to move within their governorate compared to the 2005-2010 movers, in addition to a decrease in the share of movers in Mafraq and Zarqa between 2011 and 2016, compared to the period between 2005 and 2010.

4.2 Robustness checks

In this section, we provide several robustness checks. The first one is related to the definition of internal migration. Throughout the paper, we defined internal migration with respect to the residence prior to the move. In other words, for each individual, we consider the locality of residence prior to the period under consideration 2005-2010 and 2011-2016, and define an internal migrant as an individual who changed his locality between the years considered compared to the preceding locality of residence. In Table 12 and Table 13, we check the robustness of our results to an alternative definition of internal migration using household and individual level regressions. Instead of considering internal mobility with respect to the residence prior to the move, we consider internal migration with respect to the place of birth. Individuals were asked if they moved internally compared to their place of birth and internal migrants for the periods 2005-2010 and 2011-2016 are those who reported a move between the years under consideration. Internal migrants are thus defined as Jordanians who moved internally compared to their place of birth. Our results in Tables 12 and 13 are robust to this

alternative definition of internal migration. Using household level data in Table 12, we find that a standard deviation increase in the number of refugees/Syrians increases the probability of internal migration at the household level by 11% to 16% and the number of internal migrants by 9% to 11%, evaluating the effects at the mean of the dependent variable in the pre-period (2005-2010).⁵ In Table 13, using individual level data, we find that a standard deviation increase in the share of Syrians increases the probability of internal migration by 7% to 10% at the individual level. These effects are evaluated at the mean of the dependent variable in the pre-period (2005-2010), reported at the bottom of the regression table.

The second robustness check we performed is with respect to the choice of the year 2011 to construct our individual and household panels. Since most of the Syrian refugees arrived in 2013 and the following years, we also constructed our panel data using the year 2013 as the cutoff point instead of the year 2011. In this case, the panels under consideration are 2009-2012 and 2013-2016. Results are reported in Tables A1, A2 and A3. Using household level data and in line with our results in Section 4.1, in Tables A1 and A2, we do not find any significant effect of the Syrian refugee influx on international and return migration patterns of Jordanians. Using individual level regressions in Table A3 and examining the impact of the Syrian inflows on the internal mobility of Jordanians, we find a positive and significant effect of the Syrian presence on the individual probability of internal migration, although imprecisely estimated in column (3). The magnitude of the estimated effects is comparable, slightly smaller, ranging between 5% and 7%.

5. Concluding remarks

This paper examines the impact of the Syrian refugee inflows on the migration dynamics of Jordanians in terms of international, return and internal migration patterns. Using data from the JLMPS survey conducted in Jordan in 2016, we constructed unique panel datasets relying on retrospective information to track Jordanians' mobility before and after the beginning of the Syrian war. We rely on a Difference-in-Differences specification to account for unobserved heterogeneity at the individual and household levels.

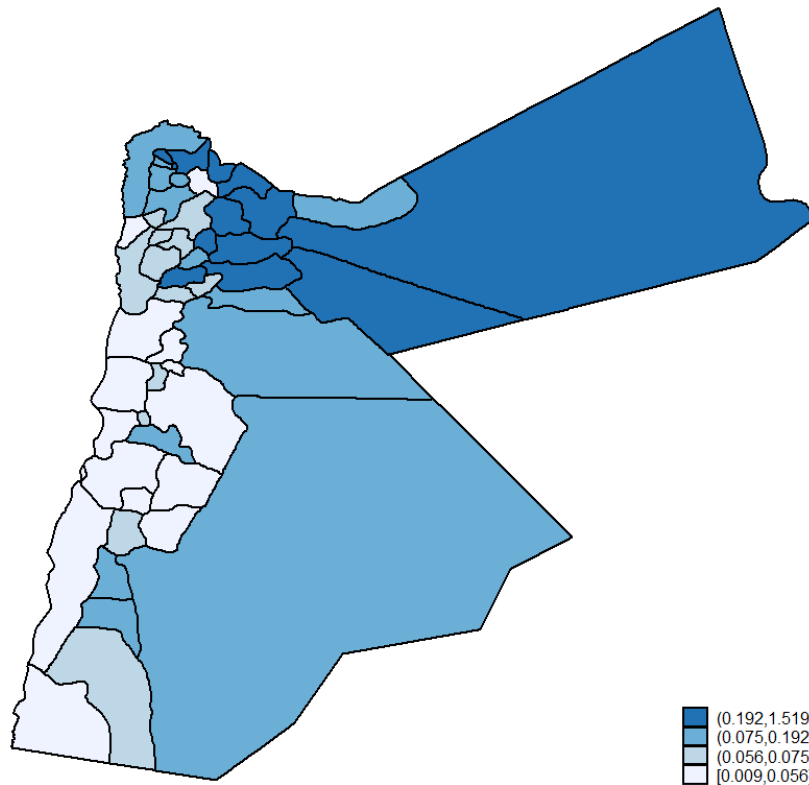
Our findings suggest that the Syrian refugee inflows do not have any effect on the international migration patterns of Jordanians. There is no evidence that international out-migration or return migration is significantly different in areas exposed more to Syrian refugees. However, we find that the refugee inflows in Jordan affected positively and significantly the individual propensity to migrate inside Jordan. In particular, our results highlight that an increase in the share of Syrians to Jordanians increases the probability of internal Jordanian migration but also reduces the probability of moving in the camp governorates, Mafraq and Zarqa. Additionally, residing in camp governorates seems to increase the individual probability of moving out of Mafraq and Zarqa. Our results are the first to show the impact of the massive refugee inflows on the host country's migration dynamics.

⁵ The variable Refugees has a standard deviation of 0.874, the variable Refugees 2011 has a standard deviation of 0.875 and the variable Syrians has a standard deviation of 0.642. The effects are evaluated using a standard deviation increase and are relative to the mean of the dependent variable of interest in the pre-period (2005-2010). For instance, in column (1), a standard deviation increase in the variable Refugees leads to an increase by 16% ($0.008 \times 0.874 / 0.045$) in the probability of internal migration at the household level.

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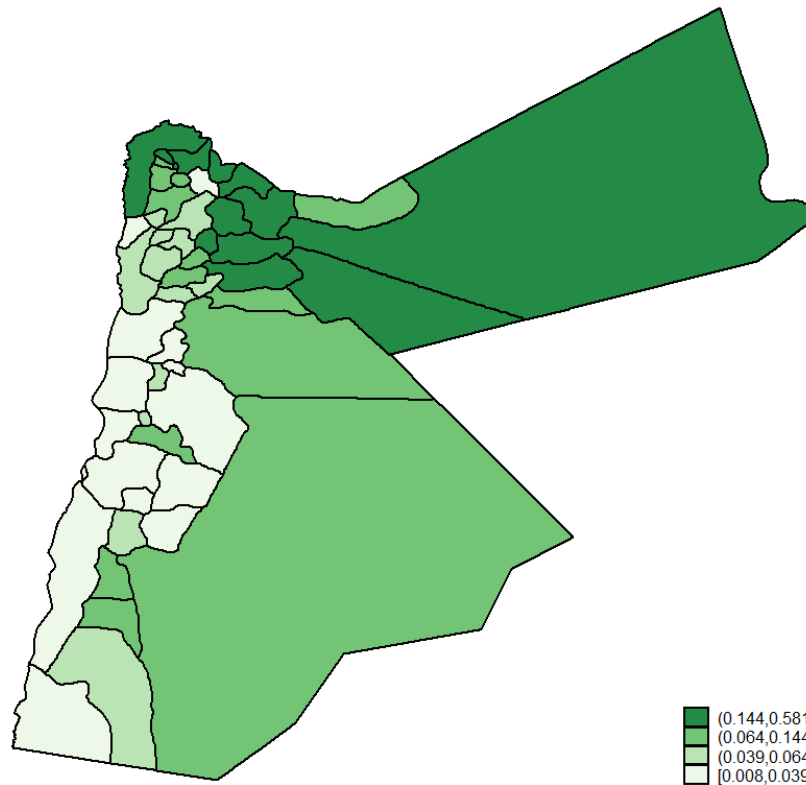
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Figure 1. Share of Syrians to Jordanians



Notes. This map represents the share of Syrians to Jordanians across Jordan's districts. Data comes from the Jordanian Department of Statistics (DoS) in 2016.

Figure 2. Share of Syrians to total population



Notes. This map represents the share of Syrians to total population across Jordan's districts. Data comes from the Jordanian Department of Statistics (DoS) in 2016.

Table 1: Descriptive statistics on registered Syrian refugees and Jordanians

VARIABLES	Syrian refugees			Jordanians			(7) Difference
	(1) Obs.	(2) Mean	(3) St. Dev.	(4) Obs.	(5) Mean	(6) St. Dev.	
<i>Individual characteristics</i>							
Age	1,292	31.010	11.26	27,480	25.960	19.590	-5.058***
Married	1,292	0.688	0.463	19,582	0.520	0.500	-0.168***
No education	1,291	0.758	0.428	22,948	0.435	0.496	-0.324***
Basic education	1,291	0.112	0.315	22,948	0.252	0.434	0.140***
Secondary education	1,291	0.080	0.271	22,948	0.130	0.336	0.050***
Above secondary education	1,291	0.050	0.219	22,948	0.184	0.387	0.133***
<i>Household characteristics</i>							
Household size	1,292	5.773	2.207	27,480	5.684	2.257	-0.090
Number of adults	1,292	3.083	1.607	27,480	3.416	1.871	0.333***
Rural	1,292	0.647	0.478	27,480	0.226	0.418	-0.421***
<i>Geographical regions</i>							
Middle	1,292	0.284	0.451	27,480	0.490	0.500	0.205***
North	1,292	0.714	0.452	27,480	0.334	0.472	-0.379***
South	1,292	0.002	0.048	27,480	0.176	0.381	0.174***
<i>Parental education - Father's level of education</i>							
No education	1,278	0.742	0.438	26,754	0.495	0.500	-0.246***
Basic education	1,278	0.141	0.348	26,754	0.239	0.426	0.098***
Secondary education	1,278	0.064	0.245	26,754	0.117	0.321	0.053***
Above secondary education	1,278	0.053	0.225	26,754	0.149	0.356	0.096***
<i>Parental education - Mother's level of education</i>							
No education	1,277	0.891	0.312	26,774	0.546	0.498	-0.345***
Basic education	1,277	0.074	0.263	26,774	0.197	0.397	0.122***
Secondary education	1,277	0.024	0.154	26,774	0.098	0.297	0.074***
Above secondary education	1,277	0.010	0.100	26,774	0.159	0.366	0.149***

*** p<0.01, ** p<0.05, * p<0.1

Notes. Column 7: is t-test for whether the difference in means between the two groups is statistically significant. Syrian refugees are defined as those who are officially registered as refugees in Jordan.

Table 2: Descriptive statistics on Jordanian internal migrants versus non-movers

VARIABLES	Movers 2005-2010		Movers 2011-2016		Non-movers		(7) Difference (1) and (3)
	(1) Mean	(2) St. Dev.	(3) Mean	(4) St. Dev.	(5) Mean	(6) St. Dev.	
<i>Individual characteristics</i>							
Age	31.790	12.140	27.850	10.220	28.150	17.260	-3.940***
Married	0.746	0.436	0.773	0.420	0.478	0.500	0.027
No education	0.212	0.410	0.180	0.384	0.454	0.498	-0.032
Basic education	0.309	0.463	0.254	0.436	0.254	0.435	-0.055*
Secondary education	0.202	0.402	0.174	0.379	0.125	0.331	-0.028
Above secondary education	0.277	0.448	0.393	0.489	0.167	0.373	0.116***
<i>Household characteristics</i>							
Household size	5.204	1.834	4.461	2.330	5.874	2.293	-0.743***
Number of adults	2.890	1.483	3.002	1.889	3.675	1.928	0.112
Rural	0.153	0.361	0.227	0.420	0.236	0.425	0.074
<i>Geographical regions</i>							
Middle	0.495	0.501	0.473	0.500	0.482	0.500	-0.022
North	0.320	0.467	0.326	0.469	0.338	0.473	0.006
South	0.185	0.389	0.200	0.401	0.180	0.384	0.015
<i>Job characteristics</i>							
Public sector	0.461	0.501	0.466	0.501	0.521	0.500	0.005
Incidence of work contract	0.644	0.481	0.597	0.492	0.597	0.491	-0.047
Job tenure	8.788	6.995	6.242	6.462	9.970	8.910	-2.546***
<i>Economic activities</i>							
Agriculture	0.052	0.223	0.028	0.164	0.052	0.222	-0.024
Manufacturing	0.148	0.356	0.090	0.287	0.085	0.279	-0.058
Trade	0.087	0.283	0.110	0.314	0.126	0.332	0.023
Public administration	0.235	0.426	0.234	0.425	0.345	0.476	-0.001
Education and health	0.235	0.426	0.352	0.479	0.172	0.377	0.117***
Other activities	0.243	0.431	0.186	0.391	0.220	0.414	-0.057

*** p<0.01, ** p<0.05, * p<0.1

Notes. Column 7: is t-test for whether the difference in means between column (1) and column (3) is statistically significant. Columns (1) and (2) correspond to Jordanians who moved inside Jordan between 2005 and 2010, inclusive. Columns (3) and (4) correspond to Jordanians who moved inside Jordan between 2011 and 2016, inclusive. Columns (5) and (6) correspond to non-movers, Jordanians who did not move from their place of birth.

Table 3: Internal migration matrices for Jordanian movers between 2005-2010

2005-2010 governorate (N=316)													
Previous governorate	Amman	Balqa	Zarqa	Madaba	Irbid	Mafraq	Jarash	Ajloun	Karak	Tafileh	Ma'an	Aqaba	Total (% total)
Amman	49.412	16.471	14.118	0.000	4.706	1.176	3.529	1.176	3.529	3.529	2.353	0.000	100.000 (26.899)
Balqa	59.091	9.091	27.273	0.000	0.000	0.000	0.000	4.545	0.000	0.000	0.000	0.000	100.000 (6.962)
Zarqa	30.233	16.279	25.581	2.326	0.000	23.256	0.000	0.000	0.000	0.000	0.000	2.326	100.000 (13.608)
Madaba	50.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.000	0.000	0.000	0.000	100.000 (0.633)
Irbid	6.897	3.448	1.724	0.000	53.448	13.793	6.897	5.172	5.172	1.724	0.000	1.724	100.000 (18.354)
Mafraq	0.000	0.000	11.765	0.000	11.765	70.588	5.882	0.000	0.000	0.000	0.000	0.000	100.000 (5.380)
Jarash	13.333	0.000	6.667	0.000	6.667	13.333	53.333	6.667	0.000	0.000	0.000	0.000	100.000 (4.747)
Ajloun	0.000	0.000	14.286	0.000	57.143	0.000	28.571	0.000	0.000	0.000	0.000	0.000	100.000 (2.215)
Karak	0.000	0.000	0.000	0.000	20.000	0.000	0.000	0.000	76.000	4.000	0.000	0.000	100.000 (7.911)
Tafileh	9.524	0.000	0.000	0.000	4.762	0.000	0.000	0.000	9.524	66.667	0.000	9.524	100.000 (6.646)
Ma'an	0.000	0.000	0.000	0.000	0.000	10.000	0.000	0.000	10.000	0.000	50.000	30.000	100.000 (3.165)
Aqaba	9.091	0.000	18.182	0.000	9.091	9.091	0.000	0.000	18.182	0.000	9.091	27.273	100.000 (3.481)
Total	24.684	7.911	11.392	0.316	15.506	11.076	5.696	1.899	9.810	6.013	2.532	3.165	100.000

Notes. The table represents internal mobility matrices for Jordanian internal migrants, who moved inside Jordan between 2005 and 2010, inclusive. The table features the mobility between the governorate preceding the move that occurred between 2005 and 2010 and the governorate the Jordanians moved to between 2005 and 2010. The internal mobility matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same governorate between the two time periods (moving within the governorate: at the district, subdistrict or locality levels). The cells above and below the diagonal represent the percentage of individuals who moved to a different governorate between the years 2005 and 2010 compared to their previous governorate.

Table 4: Internal migration matrices for Jordanian movers between 2011-2016

Previous governorate	2011-2016 governorate (N=440)												
	Amman	Balqa	Zarqa	Madaba	Irbid	Mafraq	Jarash	Ajloun	Karak	Tafileh	Ma'an	Aqaba	Total (% total)
Amman	46.512	17.442	19.767	2.326	1.163	2.326	2.326	0.000	2.326	1.163	0.000	4.651	100.000 (19.545)
Balqa	41.176	35.294	5.882	5.882	0.000	0.000	11.765	0.000	0.000	0.000	0.000	0.000	100.000 (3.864)
Zarqa	46.000	4.000	28.000	0.000	4.000	14.000	4.000	0.000	0.000	0.000	0.000	0.000	100.000 (11.364)
Madaba	26.667	0.000	6.667	40.000	6.667	0.000	0.000	0.000	0.000	0.000	0.000	20.000	100.000 (3.409)
Irbid	19.355	0.000	9.677	0.000	22.581	38.710	6.452	0.000	0.000	0.000	0.000	3.226	100.000 (22.727)
Mafraq	5.882	0.000	0.000	0.000	35.294	11.765	29.412	17.647	0.000	0.000	0.000	0.000	100.000 (7.045)
Jarash	13.636	0.000	0.000	9.091	50.000	4.545	9.091	4.545	4.545	0.000	0.000	4.545	100.000 (3.864)
Ajloun	13.636	0.000	0.000	9.091	50.000	4.545	9.091	4.545	4.545	0.000	0.000	4.545	100.000 (5.000)
Karak	12.857	0.000	2.857	11.429	0.000	0.000	0.000	0.000	68.571	1.429	0.000	2.857	100.000 (15.909)
Tafileh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.385	69.231	0.000	15.385	100.000 (2.955)
Ma'an	7.692	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	92.308	0.000	100.000 (2.955)
Aqaba	16.667	0.000	0.000	0.000	33.333	0.000	0.000	0.000	0.000	0.000	0.000	50.000	100.000 (1.364)
Total	24.318	6.364	9.773	4.318	21.818	6.364	4.318	1.364	12.273	2.500	2.727	3.864	100.000

Notes. The table represents internal mobility matrices for Jordanian internal migrants, who moved inside Jordan between 2011 and 2016, inclusive. The table features the mobility between the governorate preceding the move that occurred between 2011 and 2016 and the governorate the Jordanians moved to between 2011 and 2016. The internal mobility matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same governorate between the two time periods (moving within the governorate: at the district, subdistrict or locality levels). The cells above and below the diagonal represent the percentage of individuals who moved to a different governorate between the years 2011 and 2016 compared to their previous governorate.

Table 5: Internal migration matrices for Jordanian movers between 2005-2010 and 2011-2016

Panel A: Internal migrants between 2005-2010				
2005-2010 region (N=316)				
Previous region	Central	North	South	Total
Central	80.263	13.158	6.579	100.000 (48.101)
North	13.402	81.443	5.155	100.000 (30.696)
South	7.463	13.433	79.104	100.000 (21.203)
Total	44.304	34.177	21.519	100.000

Panel B: Internal migrants between 2011-2016				
2011-2016 region (N=440)				
Previous region	Central	North	South	Total
Central	82.738	11.310	5.952	100.000 (38.182)
North	21.765	75.294	2.941	100.000 (38.636)
South	20.588	1.961	77.451	100.000 (23.182)
Total	44.773	33.864	21.364	100.000

Notes. The table represents internal mobility matrices for Jordanian internal migrants, who moved inside Jordan between 2005 and 2010, inclusive (Panel A) and between 2011 and 2016, inclusive (Panel B). The table features the mobility between the governorate preceding the move and the governorate the Jordanians moved to between 2005 and 2010 (Panel A) and between 2011 and 2016 (Panel B). The internal mobility matrices are computed as % of the rows. The diagonal cells represent the percentage of individuals who stayed in the same region between the two time periods (moving within the region). The cells above and below the diagonal represent the percentage of individuals who moved to a region compared to their previous region of residence.

Table 6: The impact of Syrian refugee inflows on Jordanians' international migration, Household level regressions

VARIABLES	(1) Migration	(2) Number of Migrants	(3) Migration	(4) Number of Migrants	(5) Migration	(6) Number of Migrants
Refugees × year	0.000 [0.001]	-0.000 [0.001]				
Refugees 2011 × year			-0.000 [0.001]	-0.001 [0.001]		
Total Syrians × year					0.001 [0.002]	0.000 [0.002]
Observations	11,808	11,808	11,808	11,808	11,808	11,808
R-squared	0.533	0.530	0.533	0.530	0.533	0.530
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.002	0.003	0.002	0.003	0.002	0.003

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having an international migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of international migrants at the household level. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 7: The impact of Syrian refugee inflows on Jordanians' return migration, Household level regressions

VARIABLES	(1) Return	(2) Number of Returnees	(3) Return	(4) Number of Returnees	(5) Return	(6) Number of Returnees
Refugees × year	-0.000 [0.000]	-0.000 [0.001]				
Refugees 2011 × year			-0.000 [0.000]	-0.000 [0.000]		
Total Syrians × year					-0.000 [0.001]	-0.000 [0.001]
Observations	11,808	11,808	11,808	11,808	11,808	11,808
R-squared	0.499	0.499	0.499	0.499	0.499	0.499
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.003	0.003	0.003	0.003	0.003	0.003

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having a return migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of return migrants at the household level. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 8: The impact of Syrian refugee inflows on Jordanians' internal migration, Household level regressions

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Internal Migration	Number of Internal Migrants	Internal Migration	Number of Internal Migrants	Internal Migration	Number of Internal Migrants
Refugees × year	0.007** [0.003]	0.008* [0.004]				
Refugees 2011 × year			0.008** [0.003]	0.008** [0.003]		
Total Syrians × year					0.007* [0.004]	0.009* [0.004]
Observations	11,194	11,808	11,194	11,808	11,194	11,808
R-squared	0.596	0.500	0.596	0.500	0.596	0.500
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.039	0.050	0.039	0.050	0.039	0.050

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having an internal migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of internal migrants at the household level. Internal migration is defined according to the previous location of residence instead of place of birth. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 9: The impact of Syrian refugee inflows on Jordanians' return migration, Individual level regressions

VARIABLES	(1) Return Migrant	(2) Return Migrant	(3) Return Migrant
Refugees × year	-0.000 [0.000]		
Refugees 2011 × year		-0.000 [0.000]	
Total Syrians × year			-0.000 [0.001]
Observations	13,310	13,310	13,310
R-squared	0.499	0.499	0.499
Controls × year	YES	YES	YES
Individual FE	YES	YES	YES
Year FE	YES	YES	YES
Number of clusters	87	87	87
Dependent variable mean	0.003	0.003	0.003

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using individual level data. The dependent variables in columns (1), (2) and (3) are dummy variable indicators for being a return migrant. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include individual and household controls interacted with the year dummy. Individual controls include three dummies for the individual's educational attainment. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include individual and year fixed effects.

Table 10: The impact of Syrian refugee inflows on Jordanians' internal migration, Individual level regressions

VARIABLES	(1) Internal Migrant	(2) Internal Migrant	(3) Internal Migrant
Refugees × year	0.002*** [0.000]		
Refugees 2011 × year		0.002*** [0.000]	
Total Syrians × year			0.002*** [0.000]
Observations	40,753	40,753	40,753
R-squared	0.526	0.526	0.526
Controls × year	YES	YES	YES
Household FE	YES	YES	YES
Year FE	YES	YES	YES
Number of clusters	87	87	87
Dependent variable mean	0.014	0.014	0.014

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using individual level data. The dependent variables in columns (1), (2) and (3) are dummy variable indicators for being an internal migrant. Internal migration is defined according to the previous location of residence instead of place of birth. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include individual and household controls interacted with the year dummy. Individual controls include three dummies for the individual's educational attainment. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 11: The impact of being in camp governorates on the probability of moving in or moving out, Individual level regressions

VARIABLES	(1) Moving in	(2) Moving out
Being in camp governorate × year	-0.010*** [0.003]	0.008** [0.004]
Observations	40,127	40,126
R-squared	0.436	0.599
Controls × year	YES	YES
Household FE	YES	YES
Year FE	YES	YES
Number of clusters	87	87
Dependent variable mean	0.002	0.001

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using individual level data. The dependent variable in column (1) is a dummy variable indicator for moving in the camp governorates (Mafraq and Zarqa). The dependent variable in column (2) is a dummy variable indicator for moving out of the camp governorates (Mafraq and Zarqa). The two time periods correspond to the years 2005-2010 and the years 2011-2016. The treatment variable is a dummy variable indicator equal one for residing in either Mafraq or Zarqa before the move. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include individual and household controls interacted with the year dummy. Individual controls include three dummies for the individual's educational attainment. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 12: Robustness checks: Alternative definition of internal migration, Household level regressions

VARIABLES	(1) Internal Migration	(2) Number of Internal Migrants	(3) Internal Migration	(4) Number of Internal Migrants	(5) Internal Migration	(6) Number of Internal Migrants
Refugees × year	0.008** [0.004]	0.008* [0.004]				
Refugees 2011 × year			0.008** [0.003]	0.009** [0.004]		
Total Syrians × year					0.008 [0.005]	0.009** [0.005]
Observations	11,808	11,808	11,808	11,808	11,808	11,808
R-squared	0.504	0.499	0.504	0.499	0.504	0.499
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.045	0.063	0.045	0.063	0.045	0.063

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having an internal migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of internal migrants at the household level. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table 13: Robustness checks: Alternative definition of internal migration, Individual level regressions

VARIABLES	(1) Internal Migrant	(2) Internal Migrant	(3) Internal Migrant
Refugees × year	0.002*** [0.000]		
Refugees 2011 × year		0.002*** [0.000]	
Total Syrians × year			0.002*** [0.001]
Observations	40,912	40,912	40,912
R-squared	0.547	0.548	0.547
Controls × year	YES	YES	YES
Household FE	YES	YES	YES
Year FE	YES	YES	YES
Number of clusters	87	87	87
Dependent variable mean	0.018	0.018	0.018

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using individual level data. The dependent variables in columns (1), (2) and (3) are dummy variable indicators for being an internal migrant. The two time periods correspond to the years 2005-2010 and the years 2011-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2011 and 2016 (after the war in Syria) and zero for the period between 2005 and 2010 (before the war in Syria). Regressions include individual and household controls interacted with the year dummy. Individual controls include three dummies for the individual's educational attainment. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table A1: Robustness checks to the year 2013, Impact on international migration, Household level regressions

VARIABLES	(1) Migration	(2) Number of Migrants	(3) Migration	(4) Number of Migrants	(5) Migration	(6) Number of Migrants
Refugees × year	0.000 [0.001]	-0.000 [0.001]				
Refugees 2011 × year			0.000 [0.001]	0.000 [0.001]		
Total Syrians × year					0.001 [0.001]	0.001 [0.002]
Observations	11,808	11,808	11,808	11,808	11,808	11,808
R-squared	0.564	0.555	0.564	0.555	0.564	0.555
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.004	0.004	0.004	0.004	0.004	0.004

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having an international migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of international migrants at the household level. The two time periods correspond to the years 2009-2012 and the years 2013-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2013 and 2016 and zero for the period between 2009 and 2012. Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table A2: Robustness checks to the year 2013, Impact on return migration, Household level regressions

VARIABLES	(1) Return	(2) Number of Returnees	(3) Return	(4) Number of Returnees	(5) Return	(6) Number of Returnees
Refugees × year	-0.000 [0.001]	-0.000 [0.001]				
Refugees 2011 × year			-0.000 [0.000]	-0.000 [0.000]		
Total Syrians × year					-0.000 [0.001]	-0.000 [0.001]
Observations	11,808	11,808	11,808	11,808	11,808	11,808
R-squared	0.499	0.499	0.499	0.499	0.499	0.499
Controls × year	YES	YES	YES	YES	YES	YES
Household FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Number of clusters	87	87	87	87	87	87
Dependent variable mean	0.002	0.002	0.002	0.002	0.002	0.002

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using household level data. The dependent variables in columns (1), (3) and (5) are dummy variable indicators for having a return migrant at the household level. The dependent variables in columns (2), (4) and (6) correspond to the number of return migrants at the household level. The two time periods correspond to the years 2009-2012 and the years 2013-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2013 and 2016 and zero for the period between 2009 and 2012. Regressions include household controls interacted with the year dummy. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.

Table A3: Robustness checks to the year 2013, Impact on internal migration, Individual level regressions

VARIABLES	(1) Internal Migrant	(2) Internal Migrant	(3) Internal Migrant
Refugees × year	0.001** [0.000]		
Refugees 2011 × year		0.001*** [0.000]	
Total Syrians × year			0.001 [0.000]
Observations	40,650	40,650	40,650
R-squared	0.579	0.579	0.579
Controls × year	YES	YES	YES
Household FE	YES	YES	YES
Year FE	YES	YES	YES
Number of clusters	87	87	87
Dependent variable mean	0.012	0.012	0.012

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in brackets are clustered at the subdistrict level.

Notes. Each cell represents a coefficient estimate from a Difference-in-Differences regression using individual level data. The dependent variables in columns (1), (2) and (3) are dummy variable indicators for being an internal migrant. The two time periods correspond to the years 2009-2012 and the years 2013-2016. In the first row, the Refugees variable corresponds to the number of refugees at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the second row, the Refugees 2011 variable corresponds to the number of refugees in 2011 or later at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. In the third row, the total Syrians variable corresponds to the total number of Syrian inhabitants at the subdistrict level, normalized by the number of Jordanians at the subdistrict level. The year dummy is equal to one for the period between 2013 and 2016 and zero for the period between 2009 and 2012. Regressions include individual and household controls interacted with the year dummy. Individual controls include three dummies for the individual's educational attainment. Household controls include the following variables: a rural dummy, the number of adults aged 15 to 64 years old, and three dummies for the head of household's educational attainment. Regressions also include household and year fixed effects.