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IMPACT OF REFUGEES ON IMMIGRANTS' LABOR MARKET OUTCOMES

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Abstract

The Syrian refugee influx in Jordan came on top of an additional 1.6 million foreigners residing in Jordan. The non-national population of refugees and immigrants had increased Jordan's population of 6.6 million by about 45%. This raises an important question on whether the inflow of refugees has displaced immigrants in the Jordanian labor market. In this paper, we use novel data from Jordan from before and after the Syrian refugee influx to test whether economic immigrants were affected by Syrian refugees. We address several threats to identifications: the selectivity of immigrants and the geographic sorting of immigrants and refugees within Jordan using instrumental variable approach. We find that, as a result of the Syrian refugee influx, immigrants were more likely to work in the informal sector, and they worked fewer hours and had lower total wages as a result. The results suggest that the main competition that occurred in the Jordanian labor market was not between refugees and natives, but rather between refugees and economic migrants.

JEL Classifications: J61, J46, N35, O15, R23

Keywords: labor market, refugees, immigration, sorting, competition, substitution, informal market.

ملخص

جاء تدفق اللاجئين السوريين في الأردن ليضمهم إلى 1.6 مليون أجنبي إضافي يقيمون في الأردن. وقد زاد عدد السكان غير المواطنين، سواء كانوا من اللاجئين أو المهاجرين، من عدد سكان الأردن البالغ 6.6 ملايين نسمة بحوالي 45 في المائة. هذا يطرح سؤالاً هاماً حول ما إذا كان تدفق اللاجئين قد أدى إلى إزاحة المهاجرين من سوق العمل الأردني. في هذا البحث، نستخدم بيانات جديدة من الأردن من قبل وبعد تدفق اللاجئين السوريين لاختبار ما إذا كان المهاجرون الاقتصاديون قد تأثروا باللاجئين السوريين. نحن نتعامل مع العديد من التهديدات لتحديد الهوية: الانتقائية للمهاجرين والفرز الجغرافي للمهاجرين واللاجئين داخل الأردن باستخدام منهج متغيرات فعال. ونجد أنه نتيجة لتدفق اللاجئين السوريين، كان من المرجح أن يعمل المهاجرون في القطاع غير الرسمي، وكانوا يعملون لساعات أقل وكانوا يحصلون على أجور أقل نتيجة لذلك. تشير النتائج إلى أن المنافسة الرئيسية التي حدثت في سوق العمل الأردني لم تكن بين اللاجئين والسكان الأصليين، بل بين اللاجئين والمهاجرين الاقتصاديين.

1. Introduction

The Syrian war has caused a mass exodus of Syrians, which is unprecedented in recent history. Most of these Syrian refugees have taken refuge in neighbouring countries, namely Jordan, Lebanon, and Turkey. Indeed, Jordan is now home to more than 1.3 million refugees. Yet despite the massive inflow of refugees, the number of immigrants hasn't decreased in Jordan during the same period. According to the 2015 Population Census of Jordan, Jordan was hosting an additional 1.6 million foreigners potentially increasing its population by about 45%. Thus, the potential impact of the Syrian refugee on other immigrants in Jordan is an important issue. In particular, whether refugees displace other immigrants is key for policymakers interested in the welfare of refugees, immigrants and other vulnerable groups.

Indeed, there has been growing literature on the impact of refugees on the host communities. In particular, the impact of refugee supply shocks on the labor market of the host economy has been widely analysed using the flow of Cuban refugees in the Mariel boatlift in 1980 on Miami and leading to quiet mixed results; see Card, 1990; Borjas, 2016, 2017; Peri and Yasenov, 2015. Others focused on other contexts such as, Hunt (1991) studied the impact of refugee flows into France after the Algerian War of Independence in 1962. Friedberg (2001) examined inflows into Israel following the collapse of the Soviet Union in the early 1990s and Angrist and Kugler (2003) focused on the refugee flows into several European countries from the Yugoslav Wars during the 1990s. A small literature has analysed the refugee supply shocks on hosting developing countries' labor markets, in particular in African countries (e.g. Alix-Garcia and Saah (2009); Maystadt and Verwimp (2014); Ruiz and Vargas-Silva (2016)). More recently, the impact of Syrian refugee inflows has also attracted a growing interest. For example, several studies have examined the impact of Syrian refugees in Turkey on the labor market outcomes (e.g. Tumen (2016); Del Carpio and Wagner (2015).

However, so far there has been very little evidence on the impact of refugee influx on other economic immigrants. This paper, therefore, aims to examine the effect of the influx of Syrian refugees on immigrants in the Jordanian labor market. As such, our main contribution to this literature is to investigate a question that is central to the migration literature on the effect of refugees on several labor market outcomes of economic immigrants. Although there is a sizeable literature on the impact of immigration on natives), very few papers have examined the effect of newly arrived immigrants on other existing immigrants and whether these two groups complement or substitute each other in the labor market. For example, Manacorda, Manning, and Wadsworth (2012) show that new immigration has primarily reduced the wages of previous immigrants relative to the natives in the UK suggesting imperfect substitution between natives and immigrants in production. They conclude that recent immigrants are particularly sensitive to new immigrant inflows.

Our context is different given that we focus on the effects of refugees who are unlike economic migrants as refugees were forced to flee their country of origin, and typically have very little evidence in support of their qualification. However, both refugees and immigrants might be competing for the same jobs, if they have similar demographic and educational characteristics potentially leading to competition and displacement of immigrants. Alternatively, it could be that refugees and economic immigrants are imperfect substitutes, if they have different skill sets, whereby immigrants might not be affected by the refugee influx. In this paper, we examine the impact of refugee inflow on economic immigrants' labor outcomes.

In general, in a simple labor demand and supply framework, one can think of three types of labor (natives, immigrants and refugees). The higher the homogeneity in the skill set between the three types of labor, the higher is the competition between them. In this case, wages or hours of work are likely to be driven down. However, if the three types of workers differ in characteristics, and they are not perfect substitutes, then the wages and employment of natives

and immigrants would not be affected. In the case of these three groups being complements, a refugee influx would even lead to an increase in wages and employment of natives and immigrants. Therefore, at its core, this is an empirical question that we attempt to answer in our subsequent analysis.

We use a very rich and novel individual level panel dataset from Jordan that spans before (2010) and after the Syrian refugee influx (2016). We assess the impact of the refugee influx on immigrants' labor force participation, employment, formal and informal (jobs with no job contract and/ or no social security coverage) work, weekly hours of work, and hourly and total wages,. We tackle the potential endogeneity of the location of Syrian refugees in Jordan since 80% do not live in camps, by employing instrumental variable techniques utilizing distance to borders and distance to refugees' camps in Jordan as an identification strategy. Another threat to identification is that immigrants might avoid areas where refugees settled or, on the other hand, might find refugee concentrated areas more attractive due to changing labor demand. Furthermore, immigrants, regardless of the refugee influx, are also likely choose to work in areas where they experience positive labor market outcomes. To ensure that our estimates reflect the impact of refugee influx, rather than labor market conditions, we use the historic pre-refugee settlement of immigrants in Jordan as another instrument.

Our findings suggest that economic immigrants experience negative labor market outcomes as a result of the influx of refugees. We find evidence that immigrants and refugee compete in the labor market and that immigrants are more likely to work in the informal sector, work fewer hours, and receive lower total wages as a result of the refugee inflows. However, the decline in total wages appears to be driven by the decline in hours of work rather than the hourly wage. The rest of the paper is organised as follow. Section 2 provides the institutional setting. Section 3 describes the data and our sample. Section 4 explains our identification strategy and empirical methodology. Section 5 presents our findings, conclusions are summarised in section 6.

2. Background and Institutional Setting

This section will describe the institutional setting and labor market conditions of refugees and migrants in Jordan. The Syrian war erupted in 2011 and caused a mass exodus of 4.7 million people to neighbouring countries. By the end of 2016, the UNHCR reported the existence of 655,344 registered Syrian refugees in Jordan (UNHCR, 2016). However, according to the most recent Census of 2015 the total number of Syrians who have fled violence into Jordan is more than 1.2 million. In tandem, the 2015 Census showed that compared to its previous wave there has been a large increase in other immigrants[2] in Jordan as shown in Table 1. Compared to a total population of 6.6 million Jordanians in 2015, the non-national population of refugees and migrants have potentially increased Jordan's population by about 45%.

Table 1 - Refugee and Immigrant Population in Jordan between 2004 and 2015

Year	Syrian*	Other Immigrants
2004	38,130	354,143
2015	1,265,514	1,652,611
* Note: Syrians in 2004 are considered to be economic migrants, while they are mostly refugees by 2015. Source: Jordan decennial census 2004 and 2015, Department of Statistics, Jordan.		

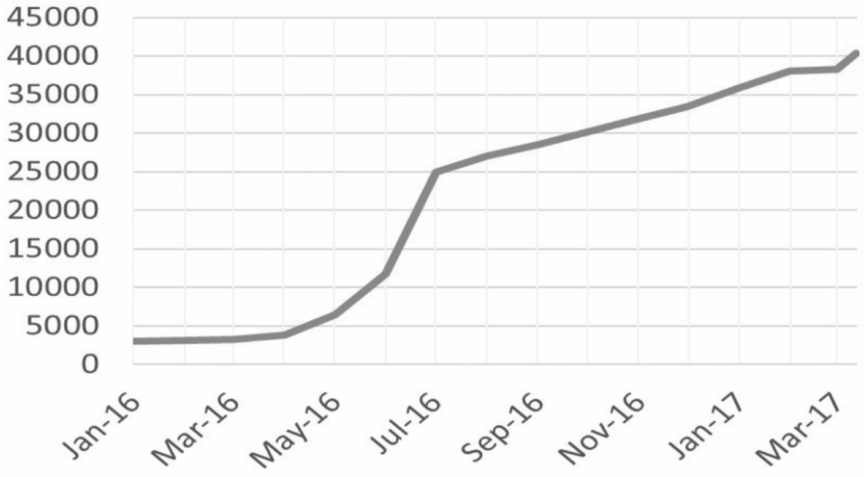
[2] While some of the immigrant population would include some who have fled violence in Iraq between 2003 and 2007, the upper bound estimates who have entered and exited Jordan during that period are at around 547,000 according to the Jordanian immigration authorities (Fafo and UNFPA, 2007). As of 2017, the number of Iraqi refugees registered with the UN refugee agency are estimated at around 62,830 individual.

Refugees in the Jordanian Labor Market

Upon arrival into Jordan, refugees who enter the country legally are sent to a refugee camp, while other refugees generally end up in urban areas. Indeed, estimates show that more than 70% of refugees are outside camps. In order to leave the camps, refugees need a formal bail-out by a Jordanian sponsor. In practice, this policy transformed into a market of paid sponsorships who would facilitate the exit of refugees out of the camps. When outside the camp, refugees mainly work in informal jobs which were normally taken up by non-Jordanian immigrants. Syrians generally work on a casual day-to-day job in order to avoid obtaining a work permit or enter into a sponsorship agreement with an employer (ILO, 2017b).

In February 2016, The Jordan Compact was signed and its purpose was to ease Syrian refugees' access to work permits and formalise their work. Before the compact, refugees had to obtain formal bail from a Jordanian sponsor if they lived in camps and had to pay expensive fees to obtain a work permit. Due to the permit system being tied to a single employer, which does not allow job mobility, most refugees chose to work in the informal sector. The Jordan Compact was based on the knowledge that most refugees work informally, limited job mobility within the permit system, evidence of exploitation when workers are tied to a sponsor, and that permits enhance the social protection and the working conditions of refugees. As a result, the new permit system for refugees was launched in phases in 2016, where it waived the fees in April, waived the requirement of submitting proof of social security by the employer in June, and waived medical examinations requirement by September 2016. The aim of this new system was to create 200,000 new permits. However, despite an increase in work permits, it had achieved less than a quarter of its objective by mid-2017. This is largely due to information frictions and reluctance on the part of refugees to take up formal permits (according to the ILO (2017b)).

Figure 1 - Number of Work Permits Issued to Syrian workers in Jordan



Source: ILO (2017b) Work Permits and Employment of Syrian Refugees in Jordan.

Immigrants in the Jordanian Labor Market

Interestingly, before the refugee influx, Jordan has been importing mainly unskilled workers, whilst exporting skilled workers, see Wahba (2014). Immigrant workers are on average less educated than native Jordanian workers. Indeed, many occupations in the Jordanian market are reserved for Jordanian citizens alone, in particular in the public sector. Immigrants tend to be confined to the private sector and mostly in informal employment with no job contract. Non-Jordanians are employed in trade, services, construction, manufacturing and agriculture and are heavily concentrated in unskilled occupations: elementary, craft workers, services and sales

workers. Thus, the evidence suggests that immigrants are employed in less attractive jobs compared to natives.

Although the 2015 Census document that the number of immigrants have not subsided, but on the contrary has increased between 2004 and 2015, little is known so far about the characteristics of recent immigrants and labor market outcomes- an issue we will examine in details in the rest of this paper. A primary concern for us is whether the government had tightened its regulations on other immigrants as a result of the refugee influx. The government of Jordan, after signing the Jordan compact in February 2016, was alleged to cut down on work permits to other nationalities. However, there is little evidence so far to support that. If such tighter regulations were put in place towards the end of 2016, this is likely to affect future immigrants as opposed to current immigrants who are already working and living in Jordan. Secondly, the ILO (2017a) shows that more than 75% of immigrant workers in Jordan work illegally and without work permits and that most immigrants and refugees are concentrated in agriculture, construction, manufacturing sectors. This suggests that so far there is no evidence of a change in policy space for work permits to immigrants affecting immigrants currently in Jordan.

Overall, the institutional setting summarised above provide the context for the labor market dynamics faced by refugees and other migrants. In the next section, we describe specific labor market mechanisms that may take place in such setting.

3. Data

In order to evaluate the impact of the influx of refugees on existing migrants, we use the Jordanian Labor Market Panel Survey (JLMPS) for 2010 and 2016/17. The data, which is nationally representative, covers around 5000 households and more than 25,000 individuals. The elaborate survey contains rich information on the labor market and migration including on current immigrants. The 2016 sample contains a refresher sample of 3,000 households, to capture non-Jordanian, mainly Syrian refugees' households. The refresher sample is also designed to be nationally representative of the refugee population.

While we rely primarily on the JLMPS data due to its high quality and comprehensive topic coverage, we also make use of other external data sources that are relevant to this study. Notably, we use data from the Jordanian Census (2004 and 2015).

We focus on males only, 15-59 years of age since female labor force participation in Jordan is generally low at around 18%. We have two groups of interest: immigrants and natives (Jordanians). A person is identified as an immigrant if their nationality is not Jordanian, and is not a refugee (i.e. does not live in a camp, is not registered as a refugee, and has not fled their country due to violence or persecution). Our sample is 16077 observations, of which 7264 in 2010, and 8813 in 2016. About 10% of our sample of males 15-59 are immigrants in 2010, and 13% in 2016. To capture the impact of refugees we use information from the census on the Syrians that live in each sub-district. Due to the difficulty in identifying a person as a refugee in the census, we calculate the proportion of refugees in each sub-district as the change in population of Syrians between two decennial censuses, 2004 and 2015, divided by the total population of the sub-district in 2015.

Table 2 - Descriptive Statistics

	2010			2016		
	Immigrant	**Jordanian**	**All**	**Immigrant**	**Jordanian**	**All**
Labor Market Characteristics						
Active in LF	0.78	0.72	0.73	0.69	0.64	0.66
	(0.41)	(0.45)	(0.45)	(0.46)	(0.48)	(0.47)
	444	*6820*	*7264*	*725*	*8088*	*8813*
Employed*	0.74	0.66	0.67	0.65	0.56	0.59
	(0.44)	(0.47)	(0.47)	(0.48)	(0.5)	(0.49)
	443	*6789*	*7232*	*718*	*8039*	*8757*
Informal*	0.47	0.25	0.27	0.51	0.21	0.29
	(0.5)	(0.43)	(0.45)	(0.5)	(0.41)	(0.45)
	444	*6820*	*7264*	*725*	*8088*	*8813*
log(hours/ week)	2.2	2.1	2.11	2.01	2.08	2.06
	(0.21)	(0.26)	(0.25)	(0.65)	(0.48)	(0.54)
	267	*3657*	*3924*	*352*	*3731*	*4083*
log(Hourly Wage)	0.11	0.52	0.48	0.32	0.64	0.54
	(0.93)	(0.79)	(0.81)	(1.09)	(0.88)	(0.96)
	268	*3653*	*3921*	*359*	*3701*	*4060*
Log (Total Wage 3 Months)	6.6	6.8	6.77	6.55	6.87	6.78
	(0.78)	(0.69)	(0.7)	(0.42)	(0.47)	(0.48)
	262	*3584*	*3846*	*314*	*3544*	*3858*
Sector: Public	0.02	0.36	0.32	0.04	0.41	0.3
	(0.14)	(0.48)	(0.47)	(0.19)	(0.49)	(0.46)
	331	*4431*	*4762*	*441*	*4575*	*5016*
Economic Activity (1 Digit ISIC Code)						
Agriculture	0.08	0.02	0.03	0.21	0.03	0.08
	(0.27)	(0.16)	(0.17)	(0.41)	(0.16)	(0.27)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Manufacturing	0.17	0.13	0.13	0.08	0.12	0.11
	(0.37)	(0.33)	(0.34)	(0.28)	(0.32)	(0.31)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Construction	0.15	0.07	0.07	0.17	0.06	0.09
	(0.36)	(0.25)	(0.26)	(0.38)	(0.24)	(0.29)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Retail and Trade	0.21	0.17	0.17	0.15	0.18	0.17
	(0.41)	(0.38)	(0.38)	(0.35)	(0.38)	(0.37)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Transport	0.02	0.1	0.09	0.01	0.07	0.05
	(0.15)	(0.3)	(0.29)	(0.11)	(0.25)	(0.22)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Public Administration	0.03	0.27	0.24	0.01	0.29	0.21
	(0.16)	(0.44)	(0.43)	(0.12)	(0.45)	(0.41)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Other Activity	0.35	0.25	0.26	0.36	0.26	0.29
	(0.48)	(0.43)	(0.44)	(0.48)	(0.44)	(0.45)
	331	*4431*	*4762*	*435*	*4528*	*4963*
Individual Characteristics						
Years of Schooling	10.42	11.25	11.17	9.09	11.15	10.6
	(4.54)	(3.47)	(3.6)	(5.69)	(3.56)	(4.33)
	444	*6820*	*7264*	*735*	*8216*	*8951*
HH Size	4.43	6.08	5.92	3.17	5.58	4.94
	(3)	(2.34)	(2.47)	(2.41)	(2.15)	(2.46)
	444	*6820*	*7264*	*735*	*8216*	*8951*
Regional Characteristics						
Urban	0.9	0.81	0.82	0.94	0.88	0.89
	(0.29)	(0.39)	(0.39)	(0.24)	(0.33)	(0.31)
	444	*6820*	*7264*	*735*	*8216*	*8951*
	0	0	0	0.09	0.1	0.1

Syrian Refugee Proportion **	(0)	(0)	(0)	(0.06)	(0.09)	(0.08)
	444	*6820*	*7264*	*735*	*8216*	*8951*

Notes: Mean is the first number, Std Dev is in parentheses and number of observations is in italics. All statistics are weighted to sample weights. The sample only includes males 15-59 (both active and non-active in the labor force). * Employment and Informal Employment are unconditional on labor force participation, i.e. they are the proportion of the respective category over the entire population of males 15-59. ** Syrian refugee proportion is measured using the 2015 and 2004 national censuses of Jordan obtained from the Department of Statistics, Jordan. It is calculated as *Syrian Refugee Proportion*= $\frac{Syrians\ 15{-}59_{2015} - Syrians\ 15{-}59_{2004}}{Total\ Population}$ for each sub-district in Jordan.

Source: Authors' calculations based on JLMPS 2010 and 2016, and Decennial Censuses of Jordan 2004 and 2015.

As seen in Table 2, most immigrant and Jordanian males, aged 15-59, are active in the labor force, despite a drop in participation in 2016 for both groups. Nearly all immigrants who are in the labor force are employed. In fact, those who are not in the labor force are mostly students. We find that most immigrants work in the informal market while Jordanians have much lower informality, however, the latter report higher hourly wages, but similar hours of work to immigrants. Furthermore, approximately 40% of Jordanians work in public sector while almost none of the immigrants do.

In terms of economic activity, we observe significant changes in immigrants' economic activities between 2010 and 2016: there is a large increase in their work in agriculture, and a decrease in both construction and manufacturing work. However, Jordanians exhibit no differences in economic activities between the two waves of the data. Malaeb and Wahba (2018) find that immigrants reduced their engagement in sectors that have higher refugee presence; where refugees mostly work in manufacturing (24%), construction (24%), and wholesale and retail trade (21%), all which are sectors in which immigrants have reduced their work in.

Comparing their individual characteristics, we find similar average years of schooling between immigrants and Jordanians in 2010, but some differences appear in 2016, where immigrants reported having lower levels of education. Household size, expectedly, is smaller for immigrants than for natives as they tend to migrate as single males, which became even smaller in 2016. Immigrants are mostly Egyptians and other Arabs. Malaeb and Wahba (2018) find a substantial increase in Egyptian and non-Arab proportions and a decrease in other Arabs among immigrants in 2016 compared to 2010. Finally, most immigrants and Jordanian males aged 15-59 live in urban areas and face similar proportions of refugee proportions in their relative sub-districts.

4. Empirical Methodology

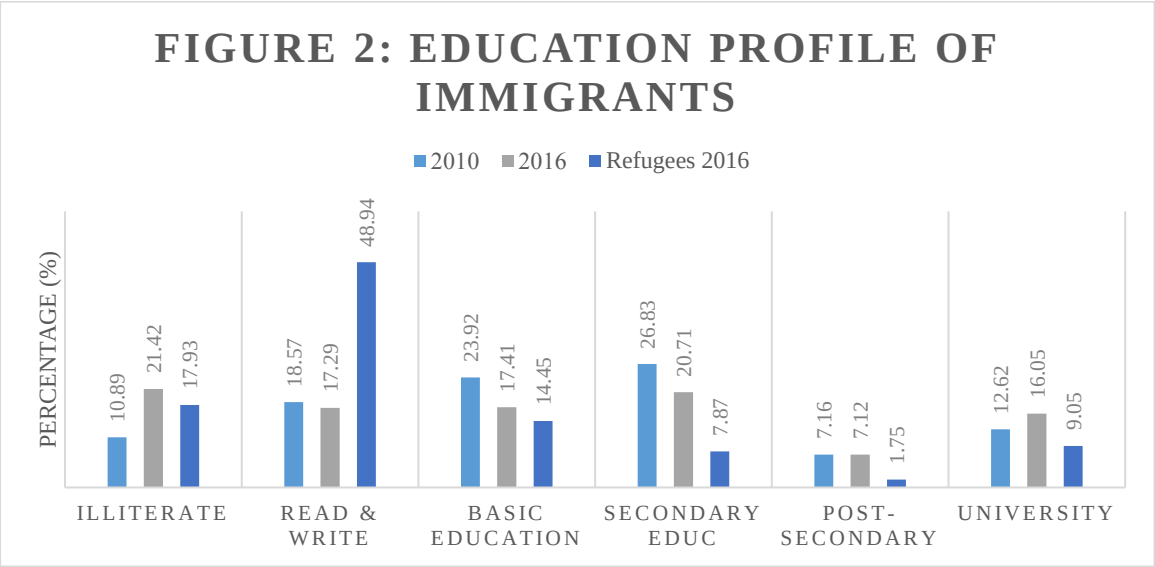
4.1 Empirical Challenges

This paper aims to examine the impact of the refugee inflows on other immigrants. The estimation of this effect is challenging because of (i) the selectivity of immigrants, (ii) the locational sorting of refugees and (iii) the sorting of immigrants. We discuss in turn each of these empirical challenges.

(i) Immigration Selectivity

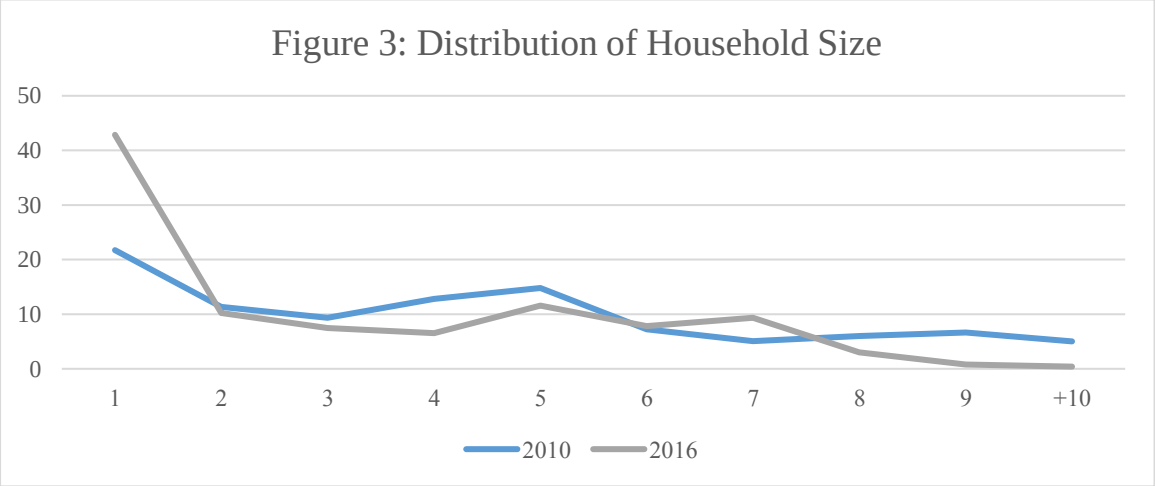
First, to address the challenge of the selectivity of immigrants, we examine data from the 2004 and 2015 Census of Syria. According to the 2015 Population Census of Jordan, in 2015, Jordan was hosting 1.3 million Syrians on top of an additional 1.6 million foreigners in 2015, compared to 354,000 foreign nationals in 2004. Hence, the evidence does not suggest that the refugee inflows have reduced immigration. Of course, we cannot say what the counterfactual would have been, but at least the concern about the impact on the size of immigration into Jordan is dampened. One possible explanation is that neighbouring countries have experienced political and economic turmoil that might have kept the flow of immigrants despite the inflow of refugees. We also examine whether the composition of immigrants in 2016 is different from

that of 2010. We find that immigrants are significantly less educated in 2016 than they were in 2010, and that there are more illiterate immigrants.



Notes: Immigrant and refugee males aged 15-59. Source: Authors' calculations based on JLMPS 2010 and 2016.

Furthermore, we find that the nature of immigration in Jordan is likely to have become more temporary in nature. Indeed, by examining the distribution of immigrants' household size, we find that approximately 43% immigrant males in 2016, versus 21% in 2010, have migrated individually without their families (despite 50% of those who report household size equal 1 are married). This suggests that these males may have migrated to Jordan temporarily for economic reasons.



(ii) Sorting of Refugees

Indeed, the sorting of Syrian refugees within Jordan poses a significant threat to identification in our setting. In contrast, the previous literature could establish settings whereby the forced displacement of individuals is exogenous enough to employ a difference in difference estimator of the sought impact. The Mariel Boatlift literature that was pioneered by Card (1990) is one such example. In the context of the Syrian crisis, Balkan and Tumen (2016) explore the impact of the refugee influx on the Turkish labor market in a quasi-experimental setting that holds due to four stipulated conditions. First, they ascertain that the immigration of Syrians is due to forces external to the Turkish economy (which is nonetheless true in the Jordanian labor market). Secondly, the location of the refugees in Turkey had been driven, at least in part, by

exogenous forces (e.g. government dispersal policies). This condition is only partially met in the Jordanian setting. Third, the flows of refugees must not have caused internal migration of other groups in the country. The fourth condition is that the differences in outcomes over time between the treatment (i.e. refugee concentrated) and control regions would have been the same in the absence of the refugee crisis (i.e. satisfying the parallel trends assumption). Akgunduz, van den Berg, and Hassink (2014) make similar assumptions in the Turkish setting. Similarly, Maystadt and Verminp (2014) argue that there is no threat to identification in their setting in Tanzania because refugee settlement had been politically, rather than economically, motivated and therefore, refugee locations are exogenous to labor market conditions. On the other hand, Ruiz and Vargas-Silva (2016) investigate the effect of refugees from Burundi using a two-stage least squares methodology by using the distance to the border and to the camps as instrumental variables.

We observe that many of the conditions that could validate the quasi-experimental setting of the forced migration into Jordan do not exist. There are many reasons for this. At the point of entry into Jordan these refugees were exogenously pushed into the country and pull-factors had not played a role in their initial settlement. Indeed, at the peak of their arrivals in 2012-13, many who registered with the authorities and the UN refugee agency were channelled to the nearest camps with available capacity (initially the Zaatari camp and later the Azraq camp). However, as time passed refugees found ways to exit the camps and settle in urban areas where work opportunities are available. At the time of our survey, in 2016-17, more than two-thirds of the refugees had relocated outside the camps. Clearly, this suggests that refugees self-select into their subsequent locations and that sorting behaviour is serious threat to identification.

Tumen (2016) describes the refugee outflow from Syria to have had two stages. The first is the (largely) involuntary escape to the nearest haven, which led them to Jordan, Lebanon, and Turkey. The second wave, which tends to occur sometime after seeking refuge, is the selectivity in the choice of location for family, work, or housing reasons. These stages are particularly important in our analysis as they have a direct impact on our choice of econometric methods. Indeed, UN refugee agency documents vast internal movement of Syrian refugees (individually and as a household) within Jordan between the original place of registration and subsequent locations, particularly between the northern governorates of Irbid, Mafraq, Zarqa, Ajloun, and Amman.

(iii) Sorting of Immigrants

In parallel, we find that immigrants have also altered their locations of choice vis-à-vis refugees'. As shown in Table 2, there has been a decrease in immigrants' location of settlement in governorates with higher refugee proportions (e.g. in Amman, Mafraq, and Irbid), and an increase in those with lower proportions (e.g. Balqa, Jarash, and Aqaba). These figures suggest the existence of a sorting behaviour between the two groups that need to be taken into account. Comparing the location of refugees to that of immigrants, about 39% of refugees lived in Amman, 28% in Irbid, 14% and 11% in Mafraq, and Zarqa, respectively, both of which host a refugee camp. On the other hand, immigrants altered their locations to some extent suggesting that immigrants' take into account the location of refugees, see Malaeb and Wahba (2018). For instance, immigrants (males and females) increased from 1% in 2010 to 4% between 2010 and 2016 in Aqaba which has low proportions of refugees, decreased by 8 percentage points in Amman which is the governorate with the majority of refugees, and increased in proportions in Zarqa which hosts a large refugee population and a refugee camp. In terms of work location, the sorting of immigrants based on refugees' location is more pronounced. Indeed, in Amman, the decrease in immigrants is as high as 13%, the increase in Balqa is around 7%, and an increase in Irbid by around 6%.

Table 3 - Immigrants and Refugee Locations in Jordan (%)

	Place of Residence			Place of Work*		
	Immigrants		Refugees	Immigrants		Refugees
	2010	2016	2016	2010	2016	2016
Amman	58.8	50.5	39.2	62.94	49.5	41.57
Balqa	2.9	9.6	2.9	4.22	10.91	5.18
Zarqa	13.6	16.7	11.1	11.89	11.52	6.94
Madaba	1.1	1.9	1.6	0.98	1.34	1.75
Irbid	8.0	9.3	27.9	7.71	13.3	25.06
Mafraq	3.2	2.8	15.4	1.85	5.76	11.43
Jarash	7.5	3.4		3.76	1.67	0
Ajloun	0.7	0.0	0.2	1.19	0.01	0
Karak	1.4	0.6	1.8	1.74	1.21	5.44
Tafileh	0.3	0.0	0.0	0.53	0	0.07
Ma'an	1.3	0.2		1.94	0.41	0.09
Aqaba	1.2	5.0		1.25	3.87	0
Don't Know				0	0.5	2.48
Total	100	100	100	100	100	100
N	771	1,263	1,407	345	429	193

Notes: age 15-59, males and females. * Conditional on having a job.
Source: Malaeb and Wahba (2018) based on JLMPS 2010 and JLMPS 2016.

Identification

In order to control for the sorting of both the refugees and immigrants, we use three instruments. First we use distance to border measured as the shortest distance between the sub-district and the border with Syria. Secondly we use distance to refugee camps measured as the shortest distance between the sub-district and a Syrian refugee camp. In order to control for sorting of immigrants, we use the proportion of immigrants in sub-district out of all immigrants in Jordan in 2004.

Empirical Strategy

However, the threats to identification are still exacerbated because a number of assumptions are violated. First, it is difficult to construct a placebo or a control group for the areas of high density of Syrian refugees. The low density areas would nevertheless have some refugees and the assumption that these areas are "untreated" may be a strong one. Another issue is that areas that differ in refugee density also differed, even before the war, in levels and trends of economic growth and development (e.g. Mafraq vs. Aqaba). Furthermore, there may exist spillovers across regions in terms of geographic, skills, and labor mobility. These assumptions are discussed in detail in Borjas and Monras (2017), albeit in a different setting. To overcome many of these difficulties, our empirical approach estimates a continuous treatment effect (as in Acemoglu et al (2004)) in a two-stage least squares setup. Our main model examines the cross-district pattern of immigrant employment and labor market outcomes

$$y_{ist} = \beta_0 + \boldsymbol{\beta X_{ist}} + \alpha . R_s + \gamma_{2016} + \lambda_g + \epsilon_{ist} \quad (1)$$

Where y is the labor market outcome for person i, in sub-district s, at time t. σ_s are sub-district dummies, $\square 2016$ is a time dummy, X_{ist} is a vector of age, years of schooling, household size, as well as an urban dummy and initial market characteristics of district d (where sub-district s is located in district d), and R_s is the proportion of refugees in the total population of the sub-district.

In order to examine the impact of refugees on immigrants, we add a dummy for being an immigrant, and interact that dummy with R_s in order to obtain the differential effect of refugee influx on immigrants relative to Jordanians. The equation can then be written as follows:

$$y_{ist} = \beta_0 + \boldsymbol{\beta X_{ist}} + \alpha . R_s + \theta . I_{st} . R_s + \pi I_{ist} + \gamma_{2016} + \lambda_g + \epsilon_{ist} \quad (2)$$

It is possible to think about R_s as an additive function of refugees who settled in sub-district s for economic reasons, and those for non-economic reasons, and a fraction that chose to settle there as a result of unobservable factors.
One can therefore write:

$$R_s = R_s^e + R_s^{ne} + e_s \quad (3)$$

Where the superscript *e* refers to economic factors, *ne* for non-economic factors, and e_s is the idiosyncratic variation in refugee settlement among sub-districts due to unobservable factors. The economic factors (R_s^e) are problematic, because if they affect refugee proportions for labor market motivations they are likely to also affect the immigrant's labor supply and earnings.

If we control for components of R_s^e, then we can estimate the effect of $R_s^{ne} + e_s$. We add the following covariates proportion of workers out of the labor force in 2004 of in **X** one at a time who: work in construction, agriculture, and manufacturing. The majority of immigrants and refugees work in these sectors. Therefore, if there are significant differences cross-sub-districts in these sectors which have higher demand for immigrants, we are likely to obtain biased results if we do not control for them. The reason is that districts that are more attractive to immigrants - historically -are more likely to have a higher demand for immigrants and a higher proportion of refugees. Therefore, we include these initial characteristics in 2004 based on the Census data interacted with 2016 dummy. We use the initial market characteristics of a district rather than sub-district in X_{ist} is because for these characteristics, the lowest representative disaggregation level we could obtain is at that level.[3]. So by controlling of their initial characteristics in each sub-district we can eliminate the components in R_s^e that affect both R_s and the outcome variable of immigrants (and natives).

If there are non-economic factors that affect refugee settlement, then by predicting the variation in refugee proportions across state accounted for by, say, distance to the border or camp would correct for that error. If for instance, refugees have an intrinsic preference to be closer to their native land (Syria) or if the flight from Syria landed in the nearest possible haven, then the distance to the Syrian border is likely to be strongly correlated with their proportions.

In order to control for sorting of immigrants, we also use the proportion of immigrants in sub-district *s* out of all immigrants in Jordan in 2004 as an instrument for the interaction between immigrant dummy I_{ist} and R_s. The first-stage equations can therefore be written as:

$$R_s = \mu_0 + \sigma_s + \gamma_{2016} + \boldsymbol{\mu X_{ist}} + \rho_1 I_{ist} + \rho_2 Border_{sd} + \rho_3 Camp_{sd} + \rho_4 Prop_{sd}^{2004} + \varepsilon_{ist}$$

$$R_s . I_{ist} = \omega_0 + \sigma_s + \gamma_{2016} + \boldsymbol{\omega X_{ist}} + \emptyset_1 I_{ist} + \emptyset_2 Border_{sd} + \emptyset_3 Camp_{sd} + \emptyset_4 Prop_{sd}^{2004} + \epsilon_{ist}$$

Where $Border_{sd}$ is the shortest distance between sub-district *sd* and the border with Syria, $Camp_{sd}$ is the shortest distance between sub-district *sd* and a Syrian refugee camp, and $Prop_{sd}^{2004}$ is the proportion of immigrants in sub-district *sd* in 2004 out of all immigrants in Jordan in 2004.

5. Results and Discussion

In Table 4, we show the results of the ordinary least squares analysis based on the full sample of immigrant and Jordanian males aged 15-59. We construct three binary labor market outcomes as follow (i) Participate in the Labor Force; (ii) Employed (unconditional on labor

[3] Source: IPUMS Jordan Census 2004.

force participation); (iii) Formal and Informal employment (conditional on participation) where informal work is one without job contract &/or social security coverage. We also examine (iv) Log weekly hours; (v) Log real hourly wage and (vi) Log total 3-months real wage[4] based on a month's reference period.[5]

The main findings of the OLS estimates is that there is a decreasing time trend in labor force participation and employment for immigrant and Jordanian, but no significant effect of the refugee influx on them; i.e. natives and immigrants in areas with higher refugee concentration do not experience worse outcomes compared to those in lower refugee concentration as far as participation and employment are concerned. We find that conditional on labor force participation, immigrants are more likely to be in the informal sector. Albeit, these OLS results do not control for the various threats to identification discussed below.

Next, we employ a 2SLS approach where we use distance to the border, distance to the camp, and proportions of immigrants in 2004 census, as instrumental variables for our variables of interest, namely for proportion of Syrian refugees and the interaction thereof with immigrant dummy. The first stage performs well across the board with the Craig Donald F statistic larger than the Stock and Yogo critical values suggesting good statistical identification at the first stage. Furthermore, the results of the first stage coefficients are significant and in the expected direction (we report the first stage results in the appendix). The results (Table 5 – Panel A) suggest that both immigrants and Jordanians are less likely to be in the labor force in areas of high Syrian refugee density but are less likely to be unemployed, while on average these areas have a higher likelihood of labor force participation. However, we find no differential effect on immigrants in terms of participation and employment. Furthermore, we find that as the Syrian refugee proportion increases in a certain sub-district, everyone, on average, is less likely to be in the informal sector, but immigrants are much more likely to be informal as the differential effect is significant and much larger in magnitude than the average effect. In the 2SLS results, we find that refugee proportion causes immigrants to work fewer hours but has no significant effect on their hourly wages. As a result, the effect on immigrants' total wages is negative and significant and appears to be driven by a decrease in hours rather than wages.
Furthermore, we then estimate the model that includes the initial economic characteristics of the sub-district. As we previously discussed, by controlling for sub-districts initial characteristics, we can rule out the economic component (R_s^e) of refugees' geographic sorting can affect both R_s^e and the labor market outcomes of immigrants (and natives). These results are shown in Table 5 – Panel B and show the same conclusions that we found previously.

In order to assess the robustness of our results, we undertake a further check. A primary concern is whether the definition of refugees and immigrants may be problematic. In the period of the study, one may argue that some nationalities (e.g. Iraqis) can be either refugees or immigrants. In our analysis, we use the proportion of Syrians in each sub-district in 2015 census (less their levels in 2004 census) as a measure for Syrian refugee shock. Furthermore, we repeat our analysis by excluding from the analysis immigrants who originate from conflict affected regions in order to rule out the possibility that an individual that we classify as an immigrant is in fact a refugee in Jordan. Our results (Table 5 – Panel C) remain robust to the changes in this definition. Indeed, we find that, relative to the Jordanians, regions with higher proportions of Syrian refugees increase the likelihood of an immigrants engaging in informal work, decrease their number of working hours, and as a result decrease their total monthly wages.

[4] 3-Month total wages are calculated as the sum of basic wage, overtime pay, bonuses, other wages, and profit share, based on the number of days worked per week, and the number of weeks worked per month, multiplied by 3 months.
[5] Real wages are deflated with the CPI, taking 2010 as the base year.

Table 4 - OLS Results

Panel A: All Migrants and Jordanian Males 15-19

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hourly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	0.04	-0.06	0.04	0.06	-0.05	0.05	0.00	0.17*
	(0.11)	(0.10)	(0.11)	(0.05)	(0.04)	(0.17)	(0.12)	(0.07)
R_s . D2016 . I_{ist}	0.28	0.01	0.28	-0.80***	0.86***	0.65	-0.53	0.09
	(0.23)	(0.27)	(0.23)	(0.19)	(0.19)	(0.60)	(0.40)	(0.57)
D2016	0.10***	-0.12***	0.10***	-0.01*	0.01	0.10*	-0.03	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.03)	(0.02)
I_{ist}	0.00	-0.01	0.00	-0.08***	0.09***	-0.15	0.02	-0.10
	(0.04)	(0.03)	(0.04)	(0.01)	(0.02)	(0.08)	(0.04)	(0.07)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16077	15989	16077	9725	9725	7935	7962	7658
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

Panel B: Controlling for Initial Characteristics in the labor market

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hrly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	0.03	-0.04	0.03	0.06	-0.05	-0.11	0.10	0.19*
	(0.10)	(0.09)	(0.10)	(0.04)	(0.03)	(0.19)	(0.09)	(0.09)
R_s . D2016 . I_{ist}	0.18	0.11	0.18	-0.84***	0.91***	0.59	-0.56	0.01
	(0.24)	(0.28)	(0.24)	(0.20)	(0.20)	(0.70)	(0.35)	(0.55)
D2016	0.10***	-0.12***	0.10***	-0.01*	0.01	0.13**	-0.04*	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.04)	(0.02)	(0.02)
I_{ist}	-0.00	0.00	-0.00	-0.08***	0.10***	-0.14	0.01	-0.11
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.08)	(0.04)	(0.07)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Initial Characteristics of Sub-District: % of workers in Construction, Agriculture, and Manufacturing	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16020	15933	16020	9698	9698	7919	7946	7643
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

Panel C: Excludes Migrants from Conflict Affected Countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hrly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	0.05	-0.07	0.05	0.06	-0.05	0.06	0.00	0.17*
	(0.11)	(0.10)	(0.11)	(0.05)	(0.04)	(0.16)	(0.12)	(0.07)
R_s . D2016 . I_{ist}	0.16	0.15	0.16	-0.83***	0.88***	0.38	-0.42	0.05
	(0.30)	(0.34)	(0.30)	(0.23)	(0.22)	(0.61)	(0.37)	(0.57)
D2016	0.09***	-0.12***	0.09***	-0.01	0.01	0.09*	-0.03	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.03)	(0.02)
I_{ist}	-0.01	0.01	-0.01	-0.08***	0.09***	-0.20*	0.03	-0.11
	(0.03)	(0.03)	(0.03)	(0.01)	(0.01)	(0.11)	(0.05)	(0.07)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16020	15933	16020	9698	9698	7919	7946	7643
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

Table 5 - 2SLS Results

Panel A: All Migrants and Jordanian Males 15-19

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hourly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	-1.14*	1.36**	-1.14*	0.60**	-0.50*	2.21	0.35	2.30**
	(0.62)	(0.57)	(0.62)	(0.27)	(0.27)	(1.55)	(0.83)	(1.03)
R_s . D2016 . I_{ist}	3.05	-3.49	3.05	-1.87***	1.99***	-1.40	-4.87***	-5.86**
	(2.71)	(2.33)	(2.71)	(0.46)	(0.48)	(4.52)	(1.82)	(2.49)
D2016	0.18***	-0.21***	0.18***	-0.05**	0.04*	-0.07	-0.01	-0.10
	(0.04)	(0.03)	(0.04)	(0.02)	(0.02)	(0.12)	(0.07)	(0.08)
I_{ist}	-0.19	0.24	-0.19	-0.01	0.02	-0.02	0.30***	0.26*
	(0.19)	(0.16)	(0.19)	(0.03)	(0.04)	(0.26)	(0.10)	(0.14)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16077	15989	16077	9725	9725	7935	7962	7658
Craig-Donald Wald F Statistic	127.14	126.44	127.14	145.69	145.69	120.05	109.98	87.93
Kleibergen-Paap Wald F statistic	3.74	3.71	3.74	4.78	4.78	3.85	4.09	3.55
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

Panel B: Controlling for Initial Characteristics in the labor market

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hrly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	-1.40*	1.72*	-1.40*	0.58**	-0.45*	1.88	0.47	2.10***
	(0.83)	(0.92)	(0.83)	(0.29)	(0.25)	(1.25)	(0.80)	(0.80)
R_s . D2016 . I_{ist}	4.30	-5.05*	4.30	-1.51***	1.55***	-0.26	-4.75***	-4.58**
	(2.73)	(2.63)	(2.73)	(0.54)	(0.51)	(3.55)	(1.60)	(1.92)
D2016	0.19***	-0.23***	0.19***	-0.05**	0.04*	-0.05	-0.02	-0.10
	(0.05)	(0.06)	(0.05)	(0.03)	(0.02)	(0.10)	(0.07)	(0.07)
I_{ist}	-0.29	0.36**	-0.29	-0.04	0.05	-0.09	0.28***	0.17
	(0.18)	(0.17)	(0.18)	(0.04)	(0.04)	(0.19)	(0.09)	(0.10)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Initial Characteristics of Sub-District: % of workers in Construction, Agriculture, and Manufacturing	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16020	15933	16020	9698	9698	7919	7946	7643
Craig-Donald Wald F Statistic	140.66	139.95	140.66	157.85	157.85	131.58	120.79	98.08
Kleibergen-Paap Wald F statistic	3.84	3.79	3.84	4.62	4.62	3.65	3.87	3.40
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

Panel C: Excluding Migrants from Conflict Affected Countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Inactive in LF	**Employed**	**Unemployed**	**Formal Employment**	**Informal Employment**	**Log(Hrly Wage)**	**Log(Hours/ Week)**	**Log(Total Wage in 3 Mo.)**
R_s . D2016	-1.17*	1.40**	-1.17*	0.59**	-0.48*	1.93	0.34	2.19**
	(0.67)	(0.64)	(0.67)	(0.28)	(0.28)	(1.44)	(0.80)	(1.04)
R_s . D2016 . I_{ist}	3.31	-3.71	3.31	-1.79***	1.90***	-1.15	-4.75***	-5.65**
	(2.78)	(2.41)	(2.78)	(0.45)	(0.47)	(4.37)	(1.83)	(2.38)
D2016	0.17***	-0.21***	0.17***	-0.05**	0.04*	-0.06	-0.01	-0.10
	(0.05)	(0.04)	(0.05)	(0.02)	(0.02)	(0.11)	(0.07)	(0.09)
I_{ist}	-0.23	0.28*	-0.23	-0.02	0.02	-0.11	0.31***	0.23*
	(0.18)	(0.16)	(0.18)	(0.03)	(0.04)	(0.24)	(0.10)	(0.13)
Governorate Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Econ. Activity Fixed Effects				Y	Y	Y	Y	Y
N	16020	15933	16020	9698	9698	7919	7946	7643
Craig-Donald Wald F Statistic	140.66	139.95	140.66	157.85	157.85	131.58	120.79	98.08
Kleibergen-Paap Wald F statistic	3.84	3.79	3.84	4.62	4.62	3.65	3.87	3.40
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

6. Conclusion

In this paper, we empirically tested the impact of the Syrian refugee influx into Jordan on immigrants' labor market outcomes. We find that immigrants mainly compete with refugees in the informal sector. More specifically, the results suggest that immigrants work fewer hours as a result of the influx of refugees and therefore earned a lower total wage over the three months preceding the survey. Our econometric methodology tackles a series of potential endogeneity issues and we carry out a number of robustness checks for our results. Most importantly, the methodology takes into account the sorting of refugees and the sorting of immigrants in Jordan and uses instrumental variables that are strongly correlated with this sorting behaviour but uncorrelated with the labor market outcomes. We also show the results based on different immigrant groups and find supportive evidence for our main conclusions.

Our paper is the first one to show the competition between refugees and economic immigrants. The potential displacement of immigrants into informal work and the negative impact on their hours of work and total wages suggests that immigrants' welfare might also need to be monitored during the influx of refugees.

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Appendix

First Stage Results - Panel A: All Migrants

	Inactive in LF		Employed		Unemployed		Formal Employment	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	0.88***	-0.20	0.88***	-0.20	0.88***	-0.20	0.78**	-0.36
	(0.26)	(0.17)	(0.26)	(0.17)	(0.26)	(0.17)	(0.30)	(0.28)
Distance to Border x 2016	-1.38***	-0.01	-1.38***	-0.00	-1.38***	-0.01	-1.29***	0.07
	(0.22)	(0.17)	(0.22)	(0.17)	(0.22)	(0.17)	(0.29)	(0.28)
Proportion of Immigrants in 2004 Sub-district x 2016	0.30***	0.08	0.30***	0.08	0.30***	0.08	0.22***	0.10
	(0.07)	(0.06)	(0.07)	(0.06)	(0.07)	(0.06)	(0.08)	(0.08)
N	16077	16077	15989	15989	16077	16077	9725	9725
	Informal Employment		Log(Hrly Wage)		Log(Hours/Week)		Log(Total Wage in 3 Mo.)	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	0.78**	-0.36	0.71**	-0.41	0.73**	-0.34	0.78***	-0.21
	(0.30)	(0.28)	(0.30)	(0.30)	(0.30)	(0.27)	(0.29)	(0.22)
Distance to Border x 2016	-1.29***	0.07	-1.25***	0.09	-1.26***	0.04	-1.30***	-0.04
	(0.29)	(0.28)	(0.30)	(0.30)	(0.30)	(0.28)	(0.27)	(0.24)
Proportion of Immigrants in 2004 Sub-district x 2016	0.22***	0.10	0.24***	0.10	0.23***	0.11	0.25***	0.13
	(0.08)	(0.08)	(0.08)	(0.09)	(0.08)	(0.08)	(0.08)	(0.08)
N	9725	9725	7935	7935	7962	7962	7658	7658
Only exogenous instruments reported								
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

First Stage Result – Panel B: Excluding Migrants from Conflict Affected Countries

	Inactive in LF		**Employed**		**Unemployed**		**Formal Employment**	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	z	-0.22	0.87***	-0.23	0.87***	-0.22	0.77**	-0.38
	(0.26)	(0.18)	(0.26)	(0.18)	(0.26)	(0.18)	(0.31)	(0.28)
Distance to Border x 2016	-1.37***	0.02	-1.37***	0.02	-1.37***	0.02	-1.28***	0.09
	(0.22)	(0.18)	(0.22)	(0.18)	(0.22)	(0.18)	(0.29)	(0.29)
Proportion of Immigrants in 2004 Sub-district x 2016	0.30***	0.08	0.30***	0.08	0.30***	0.08	0.22***	0.10
	(0.07)	(0.06)	(0.07)	(0.06)	(0.07)	(0.06)	(0.08)	(0.08)
N	16020	16020	15933	15933	16020	16020	9698	9698
	Informal Employment		**Log(Hrly Wage)**		**Log(Hours/Week)**		**Log(Total Wage in 3 Mo.)**	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	0.77**	-0.38	0.70**	-0.43	0.72**	-0.37	0.77***	-0.24
	(0.31)	(0.28)	(0.31)	(0.31)	(0.30)	(0.28)	(0.29)	(0.24)
Distance to Border x 2016	-1.28***	0.09	-1.24***	0.11	-1.25***	0.07	-1.29***	-0.02
	(0.29)	(0.29)	(0.30)	(0.31)	(0.30)	(0.29)	(0.28)	(0.25)
Proportion of Immigrants in 2004 Sub-district x 2016	0.22***	0.10	0.24***	0.10	0.23***	0.11	0.25***	0.13
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
N	9698	9698	7919	7919	7946	7946	7643	7643
Only exogenous instruments reported								
Other controls include: urban dummy, years of schooling, age, household size. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								

First Stage Result – Panel C: Controlling for Initial Characteristics

	Inactive in LF		Employed		Unemployed		Formal Employment	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	0.71**	-0.26*	0.71*	-0.26*	0.71**	-0.26*	0.65*	-0.41*
	(0.36)	(0.15)	(0.36)	(0.15)	(0.36)	(0.15)	(0.37)	(0.23)
Distance to Border x 2016	-1.23***	0.04	-1.23***	0.04	-1.23***	0.04	-1.17***	0.12
	(0.31)	(0.14)	(0.31)	(0.14)	(0.31)	(0.14)	(0.33)	(0.23)
Proportion of Immigrants in 2004 Sub-district x 2016	0.32***	0.10	0.32***	0.10	0.32***	0.10	0.25***	0.13
	(0.08)	(0.06)	(0.08)	(0.06)	(0.08)	(0.06)	(0.09)	(0.08)
N	16077	16077	15989	15989	16077	16077	9725	9725
	Informal Employment		**Log(Hrly Wage)**		**Log(Hours/Week)**		**Log(Total Wage in 3 Mo.)**	
	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}	R_s . D2016	R_s . D2016 . I_{ist}
Distance to Camp x 2016	0.65*	-0.41*	0.58*	-0.47*	0.60*	-0.40*	0.63*	-0.28
	(0.37)	(0.23)	(0.35)	(0.25)	(0.36)	(0.23)	(0.36)	(0.17)
Distance to Border x 2016	-1.17***	0.12	-1.13***	0.15	-1.14***	0.10	-1.15***	0.02
	(0.33)	(0.23)	(0.32)	(0.25)	(0.33)	(0.23)	(0.31)	(0.18)
Proportion of Immigrants in 2004 Sub-district x 2016	0.25***	0.13	0.27***	0.13	0.27***	0.14	0.27***	0.16*
	(0.09)	(0.08)	(0.10)	(0.09)	(0.10)	(0.09)	(0.09)	(0.09)
N	9725	9725	7935	7935	7962	7962	7658	7658
Only exogenous instruments reported								
Other controls include: urban dummy, years of schooling, age, household size. Sub-District Initial Characteristics included in the model. District Clustered Standard errors in parentheses								
*p<0.1, ** p<0.05, *** p<0.01								