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Eleftherios Giovanis and Oznur Ozdamar

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Send correspondence to:
Eleftherios Giovanis
Manchester Metropolitan University
L.giovanis@mmu.ac.uk

[1] Manchester Metropolitan University, Business School, Department of Economics, Policy and International Business (EPIB), Manchester, United Kingdom. Adnan Menderes University, Nazilli Faculty of Economics and Administrative Sciences, Department of Public Finance, Nazilli/ Aydın, Turkey, egiovanis@adu.edu.tr.
[2] Izmir University Bakırcay, Faculty of Economics and Administrative Sciences, Department of Economics, Gazi Mustafa Kemal, Kaynaklar Cd., 35665 Menemen/İzmir, Turkey, oznur.ozdamar@bakircay.edu.tr.

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Abstract

The civil war in Syria, which started in March of 2011, has led to a massive influx of forced migration, especially from the Northern Syria to the neighbouring countries. The unexpected movement of refugees has created large exogenous labour supply shocks with potential significant effects on the labour and living standard outcomes of natives in the host countries. While earlier studies have explored the impact of the Syrian refugee crisis on the natives' labour outcomes little is known about its impact in Egypt. Furthermore, the literature does not provide evidence about the impact of the Syrian refugee inflows on the labour outcomes of migrants who have been relocated in the host countries before the refugee crisis. Using a difference-in-differences (DID) framework this study explores the impact of Syrian refugees on labour outcomes in Egypt, Jordan and Turkey. Furthermore, we implement an instrumental variables (IV) approach within the DID framework, where we instrument the Syrian population at the area-governorate level of the host country with variables that incorporate physical travel distances. The results are mixed and vary, not only across the labour outcomes explored, but also across demographic and socio-economic groups, as females and low educated are mostly affected by the refugee crisis negatively. However, the effects, positive or negative, are rather negligible.

Keywords: Difference-in-Differences; Forced Migration; Formal Employment; Labour Market; Instrumental Variables; Living Standards and Wealth; Syrian Refugees; Wages; Unemployment.
JEL Classifications: C21, C26, F22, J15, J21, J46, J61, R23.

1. Introduction

Forced migration and refugees pose political, moral, socio-cultural and economic challenges for the host countries (Card et al., 2005). According to the UNHCR (2019a), the scale of this challenge is larger than ever, with almost 79.5 million people forcibly displaced worldwide by conflicts. The civil war in Syria has produced more refugees than any other conflict in the past two decades. As by the end of 2019, in Turkey, Lebanon, Jordan, Iraq and Egypt only, there were almost 5.3 million refugees coming from Syria, with around 3.5 million located in Turkey; around 914,000 in Lebanon followed by Egypt, Jordan and Iraq ranging between 130 and 660 thousands.[3]

The economic theory assumes that immigration and large refugee inflows may cause an outward shift in the labour supply, as the pool of workers in certain sectors and industries increases. On the other hand, migration may increase also the demand for labour, as migrants expand the demand for certain goods and services. In case the labour supply increases more, the native workers are replaced by the immigrants, resulting to lower employment rates and wages. Nevertheless, this will depend on various factors, as whether the refugees are perfect substitutes or complements to natives in the production process.

The previous literature reports mixed results, as a number of studies found negligible effects of migration on natives' wages and employment (Altonji and Card, 1991; Gang and Rivera-Batiz, 1994; Pischke and Velling, 1997). One explanation is that migrant workers are complements or poor substitutes for native workers, at least in the short run, as the human capital stocks of immigrants are not instantly transferable to the host economy, thus, if there is any effect, this would become apparent in the long-term period. On the other hand, other studies found a negative impact of migration flows on natives' employment and wage rates arguing that migrant workers are actually substitutes to the natives, and especially for those belonging to the lower levels of the wage distribution (Card, 2001). However, these studies have explored the impact of voluntary and regular migration on labour outcomes, while our study aims to investigate the impact of forced migration, such as the Syrian refugee crisis. Thus, this brings up the question on whether the impact of forced and displaced migrants on the labour outcomes in the host countries differ from the findings in the previous literature that investigate mainly the impact of regular migration.

Following the discussion so far, the main objective of this study is to explore the impact of Syrian refugee influx on labour outcomes in Egypt, Jordan and Turkey. Moreover, we explore the impact of the Syrian refugees on labour outcomes of both natives and migrants in Jordan and Turkey, but not in Egypt, due to data unavailability. The motivation on exploring also the impact on migrants' well-being outcomes lies in earlier studies that mainly focus on natives[4]. The analysis will also take place across gender, age and education groups, while we will investigate and compare the impact of the Syrian

[3] https://data2.unhcr.org/en/situations/syria

[4] Even though, a large influx of Syrian refugees has been recorded in Lebanon, due to data unavailability we will not explore the impact of Syrian refugees.

refugee crisis on wages and job security across those employed in the formal and informal sector, as well as, those employed in high and low-skilled jobs. The aim is to further explore whether natives and migrants are displaced in the formal or informal sector by the refugees and whether are displaced mainly in low-skilled or high-skilled jobs. We assume that refugees can be either substitutes for one group of workers, but complements to another group, and thus, we explore the impact of the refugee crisis on natives and migrants by their education level and the job skills. The results vary between countries and across the labour outcomes explored, as well as, across various demographic and socio-economic groups.

The remaining sections are organised as follows: In section 2 we discuss the earlier literature on the impact of the refugee inflows on labour outcomes. In section 3 we present the methodology applied and we describe the data employed in the empirical work. In section 4 we report the main findings and in section 5 we discuss the main concluding remarks and policy implications of the migration effect.

2. Literature Review

A number of studies have explored the impact of refugees on labour outcomes of native populations. The most similar studies to our paper is by Del Carpio and Wagner (2015), Tumen (2018), and Fallah et al. (2019). Del Carpio and Wagner (2015) using the Turkish Household Labour Force Survey (HLFS) implemented a similar identification strategy to explore the impact on employment. The study suggests that Syrian forced migration had a large-scale displacement in the informal sector for native people, while on the contrary formal employment of natives noted a significant increase. In particular, for every 10 refugees almost 7 Turkish workers are displaced in the informal sector, while for the same number of refugees, around 4 jobs in the formal sector for the natives are created. Ceritoglu et al. (2017) also found a negative impact of the Syrian migrant influx on natives' labour outcomes in Turkey, such as rising unemployment and decline in the labour force participation. In a similar fashion, Fallah et al. (2019) explored the impact of Syrian refugees on labour outcomes in Jordan employing a DID technique. To further solve for the endogeneity coming from the "sorting" process which characterizes the refugees' decision to relocate in certain areas, the authors instrument for the locality share of refugees based on the distance to the locality from the Zaatari refugee camp; Jordan's largest camp. Overall, the study shows no deterioration in the natives' labour outcomes.

These findings are supported from studies using similar identification strategies, such as the DID comparing areas with low and high number of refugees, and investigating the impact of forced migration in other regions and countries of the world. For instance, Kreibaum (2016) explored the impact of Congolese refugees on natives in Uganda and they found that refugee inflows increase educational attainment, employment opportunities and household welfare, measured by the household expenditures. However, natives are less likely to use health facilities due to congestion caused by the increasing number of refugee inflows. Furthermore, some vulnerable groups, such as low skilled workers, are displaced in terms of employment, as they are directly forced into competition with the refugees, indicating that refugees are substitutes to those natives in the production process. Borjas and Monras (2017) explored the impact of the exogenous labour supply shocks created by four refugee

crises on native populations. In particular, they explore the Balkan refugees following the Yugoslav wars between 1991-2001; the Algerian refugees resulted from the Algerian independence war in 1962; the Soviet refugees in Israel in 1990 and the "Marielitos" who fled from the port of Mariel in Cuba in 1980 and the destination was Miami. Using a DID framework their findings are mixed as they found a negative impact on the low-skilled workers in the case of the Algerian refugees in France and the Marielitos in Miami, while a negative effect on wages and employment is found in the high-skilled Israelis competing with large numbers of high-skill Soviet migrants.

This study attempts to contribute to the earlier literature by several ways. First, there is no study investigating the impact of Syrian refugees on both natives' and migrant's labour outcomes in Jordan and Turkey. Second, to the best of our knowledge, there is no study exploring the impact of Syrian refugee crisis in Egypt, where there are no refugee camps, but most Syrian refugees live in overcrowded and poor neighbourhoods of cities (Montaser, 2020). Third, we expand our analysis by decomposing and investigating the impact of the Syrian refugee crisis on labour outcomes across gender, age and education groups, as well as, across formal and informal sector employment and high versus low skilled jobs.

3. Methodology and Data

3.1 Difference-in-Differences (DID) Framework and Instrumental Variables (IV)

The empirical set up for our analysis is based on a DID framework. More specifically, following the studies by Del Carpio and Wagner (2015) and Tumen (2018) we estimate the following DID model:

$$E_{irt} = a_0 + a_1(T_{ir} \times P_{it}) + a'\mathbf{X}_{irt} + l_r + \theta_t + \varepsilon_{irt} \quad (1)$$

Where E_{irt} is the outcome of main interest for individual i, in region-governorate r and year t. T_{ir} takes a value of 1 for the treated group and 0 for the control, while P_{it} takes a value of 1 for the year 2012 and after, where the Syrian refugee influx started taking place and 0 for the years before 2012.

We should notice that while the civil war started in 2011 the inflows mainly started in 2012, especially in Turkey and Egypt (Cagaptay and Menekse, 2014) Furthermore, we prefer to consider the impact of the refugee crisis by considering one-year lagged inflows, since the surveys take place in the spring of each year. We explore five labour outcomes: employment in the formal sector; wages; unemployment; labour force participation; and the contract type, and in particular, permanent versus temporary job. All the labour outcomes are dummy variables taking a value of 1 whether the respondent is employed; participates in the labour market or she is employed under a temporary contract and 0 otherwise, while wages is a continuous variable expressed in 2012 real prices. The interaction term of T_{ir} and P_{it} and the etimated coefficient a_1 is the DID estimator, which gives the causal effect of the main interest.

Vector $\mathbf{X}_{irt}$ is a vector of individual and household characteristics. The control variables for Egypt and Jordan are common and they include gender, age, education level, marital status, household size, and parental characteristics, such as education and employment status. Furthermore, in the case of labour outcomes, except for unemployment, we include the firm size, the professional class according to the International Standard Classification of Occupations (ISCO88) and the industry code. For Turkey we use the same controls except for the parental characteristics because these are not recorded in the HLFS. Sets l_r and θ_t are respectively the region-governorate and year fixed effects.

The next step for the identification strategy discussed so far is to present the "treated" and "control" groups. In particular, in figures 1-3 and table 1 we illustrate the treated-control areas in the three countries we explore. According to table 1 and figure 1, for Egypt we will consider areas-governorates with high percentage of Syrian migration population, such as Cairo, Giza, Alexandria, Damietta, Sharkia and Kalyoubia, as the treated groups, while the rest of the governorates are defined as control areas. The next country of interest is Jordan. Based on figure 2 and the reports by UNHCR[5], the governorates of Amman, Zarqa, Balqa , Irbid, and Mafraq will form the treated group. The remained of the governorates presented in table 1 and illustrated in figure 2 will comprise the control group.

In table 1 and figure 3 we present the treated-control groups for Turkey mapped at the Nomenclature of Territorial Units for Statistics (NUTS) 2 level. The control area corresponds to the Eastern Anatolia, which is exactly specified and defined as the Northeast Anatolia (Kuzey Doğu Anadolu) coded as TRA and the Middle East Anatolia (Orta Doğu Anadolu) coded as TRB, while the treated group-area corresponds exactly to the southeastern Anatolia NUTS 1 level (Güney Doğu Anadolu) coded as TRC.

While Adana and Hatay have also received a considerable number of Syrian refugees, and are included in the western parts of the dark gray shaded areas in figure 3, we will exclude them from the analysis. The main justification of doing this is that these provinces belong to the Mediterranean region, which includes also the provinces of Mersin and Antalya, two large provinces that have received a trivial number of refugees from Syria and their inclusion will most likely pose a threat our identification. Furthermore, these provinces present large differences in terms of both economic, demographic and socio-cultural characteristics. Additionally, we will test the parallel trend assumption (Angrist and Pischke, 2008; Autor, 2003).

The second specification model is to take the logarithm of the population of Syrian refugees in the host areas-governorates and to employ an IV approach within the DID framework using the Two-Stage Least Squares (2SLS) method. The instrument is similar to earlier studies (Del Carpio and Wagner, 2015; Tumen, 2018) and is based on the distance from the source governorates in Syria to destination provinces in Turkey and Egypt, while in Jordan we will use additionally the distance between the refugee camps and the respondent's governorate. The instrument is:

[5] https://reliefweb.int/sites/reliefweb.int/files/resources/Syrian_Refugees_Admn3_Dec2016_A3L.pdf
https://reliefweb.int/report/jordan/unhcr-jordan-factsheet-january-december-2018

$$IV1_{rt} = \sum_s \frac{1}{D_{sr}} P_s R_t \quad (2)$$

In instrument (2), D_{sr} is the shortest travel distance from a Syrian governorate s to each area-governorate r in the countries we explore. We apply the Haversine formula instead of the Euclidean distance, as the first accounts for the great-circle distance along the surface of the Earth (Sinnott,1984).

In relation (2) we get the inverse distance weighting that gives more weight to closer points. This applies to all countries; however, in the cases of Jordan we include also the distance between the refugee camps and the centroid of the Jordanian governorates. We consider the governorates in Egypt and Jordan and the areas at NUTS 2 level for Turkey in table 1. For example, in Turkey and the NUTS-2 level we have 7 areas and 13 Syrian governorates, which implies 91 pairs (7×13). Similarly, for Egypt we have 286 pairs and 195 pairs for Jordan that includes also three refugee camps; the Zaatari, Mrajeeb Al Fhood and Azraq. Syrian refugees in Egypt and Jordan originate mainly from Damascus and its rural suburbs, followed by those coming from the governorates of Aleppo, Homs and Daraa. On the other hand, Turkey has hosted almost the 90 percent of Syrian refugees coming from the governorates of Aleppo, Al-Raqqah, Hamah, Lattakia, Idlib, Al-Hassakeh that are located in the borders with Turkey. Nevertheless, we will take the distance and population statistics of all 13 governorates of Syria. Hence, P_s in relation (2) denotes the population of each Syrian governorate in 2010 prior to the civil war and R_t is the proportion of the Syrian refugees over the total population in the host country corresponding to one year before the interview. As we have shown in table 2, there have been very few Syrians before 2012, both regular migrants and refugees, across the three countries we explore. Hence, this measure captures the variation in the cross-locality in the share of Syrian refugees and migrants, possibly due to the Syrian civil war of 2011. Peri (2012) and Black et al. (2015) used this instrument to explore voluntary migration, while Baez (2011) and Ruiz and Vargas-Silva (2015) have employed this instrument to explore the impact of 500,000 refugee inflows resulted by the genocides of Burundi and Rwanda and fled in Kagera- a region in northwestern Tanzania. Following the discussion so far, estimate the following regression using the 2SLS method:

$$E_{irt} = b_0 + b_1 lnRP_{rt} + b'\mathbf{X}_{irt} + l_r + \theta_t + \varepsilon_{irt} \quad (3)$$

Where the variables and vector **X** are defined as in (1), while $lnRP_{rt}$ denotes the logarithm of the Syrian migrant population instrumented with the variables mentioned above. In both regressions (1) and (3), standard errors are clustered at the regional-governorate level combined with wild bootstrapping.

3.2 Threats to the Identification Strategy

A major threat to our identification strategy can be the fact that the Syrian refugees may tend to migrate into areas where there is a large concentration of Syrian migrant enclaves and diaspora. Earlier studies

have used the past values of migration flows arguing that historical settlement patterns of immigrants may drive the migrants' location decisions (Bartel, 1989; Altonji and Card, 1991). Hence, migrants tend to migrate into areas with a strong presence of diaspora, where previous generations or migrant flows have built immigrant enclaves, sharing common cultural and social characteristics (Bartel, 1989; Beine et al., 2011). These diasporas may also reduce assimilation and information costs for the migrants, providing support with housing, employment, and adjusting to cultural issues and social norms (Beine et al., 2011). However, as we show in table 2 the number of refugees and regular migrants from Syria before the civil war is significantly lower compared with the numbers that have reached following the refugee crisis. We present the total number of refugees and regular Syrian migrants to highlight that even though the Syrian refugees may tend to locate in areas with large established Syrian enclaves, the low number of regular migrants before the crisis does not pose a particular threat to our estimates. Furthermore, until 2013-2014 Syrian refugees were mainly located in camps in Turkey (Esen and Binatlı, 2017). Moreover, the largest number of Syrian migrants before the refugee crisis and also a large movement of Syrian refugees after the crisis took place in Istanbul which is not included in the analysis, as other major metropolitan areas-cities, including Izmir and Bursa.

Similarly, another key threat to the validity of the instrument employed in the analysis, is that areas that are located close to a border in the case of Turkey, or areas close to the refugee camps, may systematically differ from those that are further away. While we could control for the physical distance only, our instrument incorporates multiple border-crossings between Syria and Turkey and multiple origins-destinations in the case of Egypt and Jordan, including also the refugee camps in Jordan. Thus, refugees from Syrian governorates will use also different border crossings to reach different parts in the host countries, allowing us to directly control for the distance from the borders. In particular, there are two main crossings, Alexandria and Cairo, to reach different parts in Egypt, and to a lesser degree other crossings include the seaports, and in particularly Nuweiba. In Jordan there are two main border crossings in Dar'a/Ramtha and Naseeb/Jaber and many other unofficial crossings. In Turkey there were 8 border crossings, however, after 2013, five of them were closed[6].

Another possible drawback in our estimates is the fact that Turkey has signed an agreement with the European Union in 2016 on the exchange of refugees and thus, migrants may choose Turkey as a transit country to Europe using the Balkan or the Aegean route. However, our empirical analysis for Turkey is based on data derived up to 2013. Furthermore, the evidence shows that refugees use also Jordan and Egypt as transit countries to Europe using the Mediterranean route (Brian and Laczko, 2016; Baklacioğlu, 2017).

A final threat to our identification strategy could be the employment policies implemented in Jordan providing work permit to the Syrian refugees, implying that will motivate them to stay in the country, in contrast to Turkey, where the refugees may use it as a transit country. Nonetheless, slightly fewer than 40,000 valid work permits have been issued to them until May 2017 (Livelihoods Working Group,

[6] https://reliefweb.int/sites/reliefweb.int/files/resources/syrian_border_crossings.pdf

2017; Lenner and Turner, 2019), which is after the period of the empirical analysis in this study, indicating that our estimates could still be robust.

3.3 Data

For the empirical analysis we will derive data from various surveys. In particular, we will use the Integrated Labor Market Panel Surveys (ILMPS) for Egypt in 2006, 2012 and 2018 and for Jordan in 2010 and 2016. For Turkey, we will use the cross-sectional Household Labour Force Survey (HLFS) over the period 2009-2013. The ILMPS is provided by the ERF NADA data portal (OAMDI, 2019), while the HLFS in Turkey is provided by the Turkish Statistical Institute (TURKSTAT). The population of Syrian governorates can be found at the Central Bureau of Statistics (http://cbssyr.sy/). The population of Syrian migration in Egypt and Jordan has been derived from the United Nations High Commissioner for Refugees (UNHCR), the Jordan Population and Housing Census from the Department of Statistics, and the Central Agency for Public Mobilization and Statistics (CAPMAS). For Turkey, the data can be found at the Directorate General of Migration Management (DGMM https://en.goc.gov.tr/).

4. Empirical Results

4.1 Egypt

In table 3 we report the DID and DID-IV 2SLS estimates for Egypt. One major limitation of the estimates is that we cannot distinguish about whether the respondent is native or immigrant, as we are able to do in the cases of Jordan and Turkey. Based on the DID estimator we find no impact of the Syrian refugee crisis on wages, the probability of being employed in the formal sector under a permanent contract, while a reduction in unemployment is found at 0.41 percent based on the DID-IV estimates. We should recall that the dependent variable *unemployment* takes a value of 1 if the respondent is unemployed and 0 otherwise, thus, we may conclude that migration increases the probability for the respondent of being employed. On the other hand, the results show that refugees reduce the labour force participation. To test for the parallel trend assumption, we will apply the leads and lags test (see Angrist and Pischke, 2008; Abraham and Sun, 2018 for more details):

$$y_{it} = \sum_{j=-q}^{s} \beta_j D_{it+j} + \mu_i + \theta_t + \varepsilon_{it} \tag{4}$$

Where D_{it} is an indicator showing whether the treatment-policy (Syrian migration) is switched on in year t, and the leads and lags of the treatment are expressed respectively by s and q. The coefficients of leads should be insignificant, and given the period of our analysis for Egypt we have only 1 lag and no lead period, while for Turkey we will consider 2 lags and 2 leads. Regarding Jordan, we cannot implement this test, since we have only two years in our empirical analysis, in 2010 and 2016, and thus, we cannot test the parallel trend assumption and the validity of the DID model. In all cases, based on the leads and lags test we accept the null hypothesis, indicating that the parallel trend assumption is not violated and the identification of the DID framework is valid. Furthermore, according to the

Cragg-Donald Wald *F-statistic* weak instrument test and its associated *p-values*, we reject the null hypothesis, concluding that the instrument is valid. Based on the *Hansen J* test, we also accept the null hypothesis, implying that the instrument employed is exogenous.

Overall, the impact either positive or negative is very small. For instance, based on the DID-IV estimates, one percent increase in the Syrian refugee population is associated with a drop of 0.41 and 0.49 percent respectively in unemployment and labour force participation. Even though there is no research investigating the impact of Syrian migration on labour outcomes in Egypt, our findings confirm the findings by Fakih and Ibrahim (2016) and Fallah et (2019) who found trivial impact of migration on labour outcomes, such as employment and wages.

To shed more insights about the impact of the refugee crisis, we have repeated the DID and DID-IV estimates by demographic and socio-economic groups in table 4. While the benchmark results show no impact on formal employment, the results in table 4 show that Syrian refugees have actually a detrimental effect on females, low educated, and those aged between 36 and 64. This indicates that some groups are not affected at all, while other more vulnerable groups are affected negatively by the Syrian refugee crisis. The same applies for the labour force participation, where females, low educated and those aged 36-64 are less likely to participate in the labour market. Hence, the results show that the refugee crisis may create employment opportunities for those groups, as we can see from the second column in table 4, but they are displaced in the informal sector, as we found a negative impact on the probability of being employed in the formal sector. Moreover, we find that low educated working in the informal sector are negative influenced by Syrian refugees in terms of wages, indicating that refugees are mainly substitutes for those groups of workers, resulting to a displacement in terms of lower earning potential. Interestingly, males and those employed in high-skilled positions experience an increase in their wages, even though modest, due to Syrian refugees.

4.2 Jordan

In table 5 we report the DID and DID-IV with 2SLS estimates for natives and migrants in Jordan Regarding natives, the results are mixed. We find a positive impact on employment and formal employment for both natives and migrants in Jordan, but a negative effect is found on the labour force participation and the probability of being employed in a permanent position. Furthermore, the refugee crisis affects adversely the migrants' wages. Our results are partly consistent with previous studies that found no impact of the Syrian migration on labour outcomes, such as employment and wages (Fakih and Ibrahim, 2016; Fallah et al., 2019). In particular, our findings confirm the results by Fallah et al. (2019) who found that the impact of Syrian migration had no impact on unemployment, but a positive impact on formal employment for Jordanians, suggesting that there was a shift in the type of jobs Jordanians do, rather than a loss in employment or job creation. Nevertheless, our results show also a positive impact of the Syrian refugees on employment opportunities.

However, these studies have not explored the impact on permanent contract, where we found a negative, but a small impact of 0.8 and 1.36 percent respectively for the natives and migrants. On the contrary, while Fallah et al. (2019) found an insignificant impact on monthly wages, our findings show a significant and negative effect for migrants. Thus, our results show that Syrian migration does not displace Jordanian workers in terms of unemployment, and increases the probability of being employed in the formal sector, but are less likely to participate in the labour market, and are more likely to be employed in temporary job positions. Regarding migrants, we find also a negative impact of the Syrian refugee crisis on their earning potential in terms of monthly wages.

Our results may differ from earlies studies due to various reasons. First, the study by Fakih and Ibrahim (2016) explored the labour outcomes at the aggregate governorate level using a vector autoregressive methodology, while Fallah et al. (2019) have instrumented the main endogenous variable-the share of Syrian refugees, with the distance between the locality and the Zaatari refugee camp. As we mentioned earlier, we instrument, not only with the distance between one refugee camp and the locality, but also using the weighted distance between locality and other refugee camps and between the locality and the Syrian governorates. The concluding remarks remain the same for the sample of the migrants in the ILMS, where the Syrian refugee inflows have a positive impact on formal employment and employment, but a negative effect on monthly wages. Moreover, it reduces the probability of labour force participation and the employment in a permanent position.

In tables 6-7 we report the DID-IV estimates by gender, education, age, formality and job-skills. As high education we define those who have completed the high school and upper, as the majority of the respondents explored in these countries have completed an educational attainment up to a secondary school ranging between 75-80 percent. As high skilled persons we consider those who are managers; technicians and associated professionals; and skilled agricultural workers, while the low-skilled group comprises of those who are support workers; working in sales and trade, and are employed in elementary occupations. The estimates across natives and migrants share some common characteristics. In particular, males, high educated, and those aged between 36-64 are more likely to be employed in the formal sector, while there is no effect on low educated and young respondents.

Furthermore, the refugee crisis has a positive effect on the probability of migrants being employed in the formal sector for both high and low skilled jobs. Similar conclusions are derived for the unemployment, however, we find that low educated migrants and aged 36-64 are more likely to be unemployed. Regarding the job security and whether the respondents are employed in a job with a permanent contract, we find a negative impact on native males and low educated, but a positive impact is found for those employed in the formal sector. On the other hand, migrants are in a more difficult position as both formal and informal workers are more likely to be employed in a temporary job. Regarding wages, we find no effect except for natives working in low-skilled jobs and are negatively affected, while on the contrary high educated people experience an increase in their monthly wages. Migrants, on the other hand, experience a fall in wages, and in particular, males, low educated, young and employed in the informal sector.

Overall, Syrian refugees may increase the formal employment opportunities for both natives and migrants, but they displace young, low educated and the informal migrant workers with low skills in terms of wages. This indicates that Syrian refugees are substitutes to the migrants and in particular, to low educated and low-skilled workers, but complements to the natives and to high educated and high-skilled workers. Theoretically, we could expect that lower wages in the informal sector may result to substitution from formal to informal workers. However, we found a positive impact on the formal employment for both native and migrants, which could be attributed to the lower production costs that expands the output and increase the demand for formal workers. Therefore, natives in Jordan could take advantage of the low costs of Syrian refugee labour that creates new jobs. Nevertheless, it can be argued that the Syrian refugee influx has created many low-skilled jobs that could have been available to Jordanians. This is especially the case of low educated, low-skilled and youth with no working experience, who have to compete with refugees who are willing to accept considerably lower wages (Stave and Hillesund, 2015).

4.3 Turkey

In table 8 we report the DID and DID-IV estimates for natives and migrants in Turkey. We should not that we report only the coefficient of main interest, which is the DID estimator. We observe that Syrian refugees had a positive impact on the labour outcomes of natives explored. On the other hand, we find no impact on the labour outcomes of migrants, and in particular, the unemployment and labour force participation, but the Syrian refugee crisis increases the probability for the migrants to be employed in the informal sector under temporary contracts, experiencing lower earnings. Thus, we conclude that Syrian refugees displace the migrants, but create more employment opportunities and higher earning potential for the natives. Our results are consistent with the study Del Carpio and Wagner (2015) and Aksu et al., (2018) who found that formal employment of Turkish natives noted a significant increase due to Syrian refugee inflows, but a negative impact is found for those employed in the informal sector.

In tables 9-10 we report the DID-IV 2SLS estimates respectively for the natives and migrants in Turkey across the demographic and socio-economic groups we presented in the previous tables for Egypt and Jordan. The results are heterogeneous, as we find a positive impact on employment opportunities in the formal sector under permanent positions for males, while women are more likely to be employed in temporary positions. Furthermore, the impact on labour force participation and annual wages is higher in the sample of males. A similar conclusion is derived by the analysis across education groups, where high educated individuals are more likely to be employed in permanent positions in the formal sector, while low educated respondents are negatively influenced by the Syrian refugee crisis in terms of job security and formal employment. Both high and low-skilled natives, as well as, both high and low-educated workers experience an increase in their annual wages, where the impact is almost doubled for the high-skilled and high-educated workers. Overall, even though the Syrian refugees have a positive impact on natives' labour outcomes in Turkey, based on the results of table 8, women, young and low educated are negatively affected by the refugee crisis, as respondents belonging to these groups are more likely to be unemployed or employed under temporary contracts.

The results in table 10 confirm the negative impact of the Syrian refugees on the labour outcomes of migrants in Turkey. The effect is stronger for females, low educated, and young, indicating the large discrepancies across those groups. Furthermore, while we found a negative impact on formal employment, those aged 36-64 are more likely to have social security, while no significant impact is found on the permanent contract, unemployment, labour force participation and wages for high educated individuals. Moreover, migrants employed in the informal sector are more likely to work under temporary contracts. When we decompose our analysis by high and low-skilled migrants, we find a significant and positive impact on formal employment, due to the refugee crisis, only for the high-skilled workers, while a negative and significant probability for being employed under a permanent contract is found for the low-skilled workers. Regarding wages, the refugee crisis has a negative and significant impact on both low and high-skilled migrants, with the former group experiencing a larger fall. However, the impact is rather negligible, where a 1 percent increase in the Syrian refugee population is associated with a decline of wages ranging around 0.05 and 0.09 percentage points.

5. Conclusions

This study has attempted to estimate the impact of the Syrian refugee influx on labour outcomes in Egypt, Jordan and Turkey. The results are mixed, and vary by country, labour outcomes, migrant status and socio-economic groups. In particular, while we found no impact of the Syrian refugees on formal employment and wages in Egypt, the effect becomes significant and negative for the low-skilled and low-educated workers, indicating the substitutability of refugees to those particular groups of workers. The same applies for Jordan, where the refugee crisis has created employment opportunities in the formal sector for both natives and migrants, but under temporary contracts, and associated with lower wages for the migrants. Regarding Turkey, the results show that natives located in areas that host most of the Syrian refugees, experience higher employment and wage rates, in contrast to migrants that report lower levels of wages and more unfavourable labour market conditions. Nevertheless, the inequalities in the three countries explored, are persistent in the most vulnerable groups, such as females, low educated and employed in low-skilled jobs.

However, the study is not without drawbacks. The first limitation is that we employ cross-sectional surveys and we cannot follow the same individuals across time to control for unobserved heterogeneity and omitted-variable bias. Second, due to information recorded in the HLFS in Turkey, we have limited the analysis to the period 2009-2013. The issue is that the majority of the Syrian refugees were located in camps up to 2013, while the following years were able to move across Turkey and relocate in other areas outside camps. This most likely have a significant impact on the labour outcomes explored, implying that our findings may underestimate the impact, positive or negative, of the Syrian refugees. For instance, while we find a positive impact on the formal employment and wages of natives, the effect can be lower or even reversed in some areas that host large number of Syrians. Thus, HLFS and other surveys should record the nationality and ethnicity of the respondent, in order to identify the

migrant status. This can be expanded into an analysis where, not only first generation migrants, but also second and higher generations of migrants can be considered.

Future studies may exploit similar identification strategies to explore the effect of forced migration on subjective well-being, such as life satisfaction, happiness, psychological well-being and mental health, as well as, on cultural, social values and norms in the MENA region countries. Therefore, further research is needed to understand a more complete picture of the Syrian refugee crisis and its impact on the local population and economies in the countries we explored, but also in other countries affected by the crisis, including Lebanon, Iraq and European countries. Furthermore, further analysis to better understand the long term effects of the refugee crisis on various economic, demographic and socio-cultural outcomes of both natives and migrants is needed.

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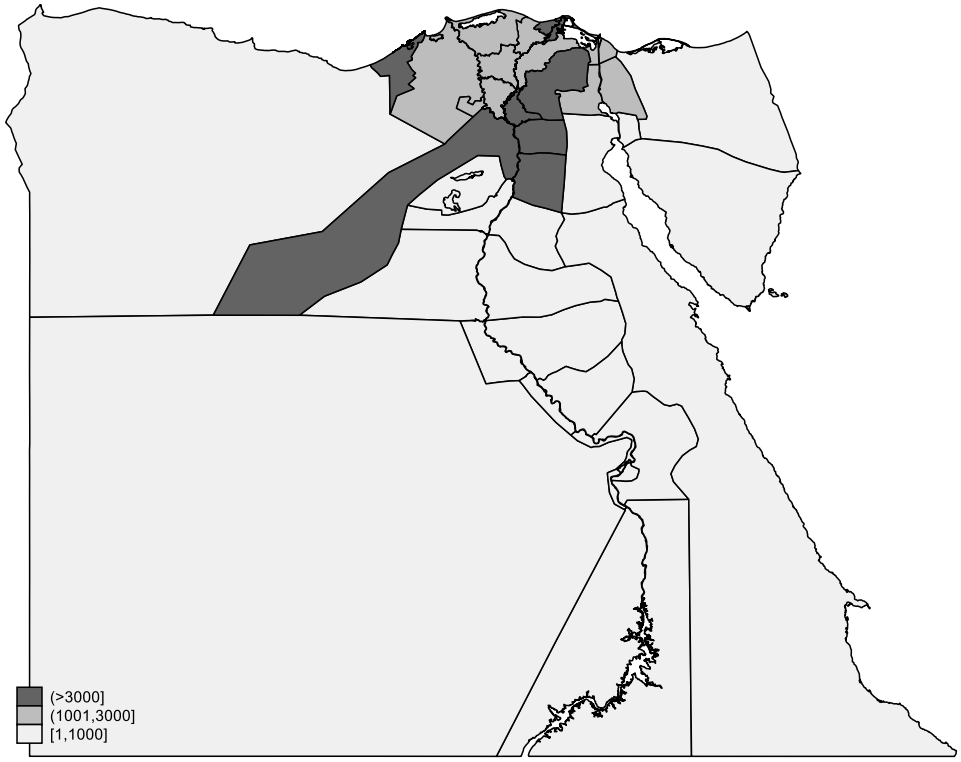
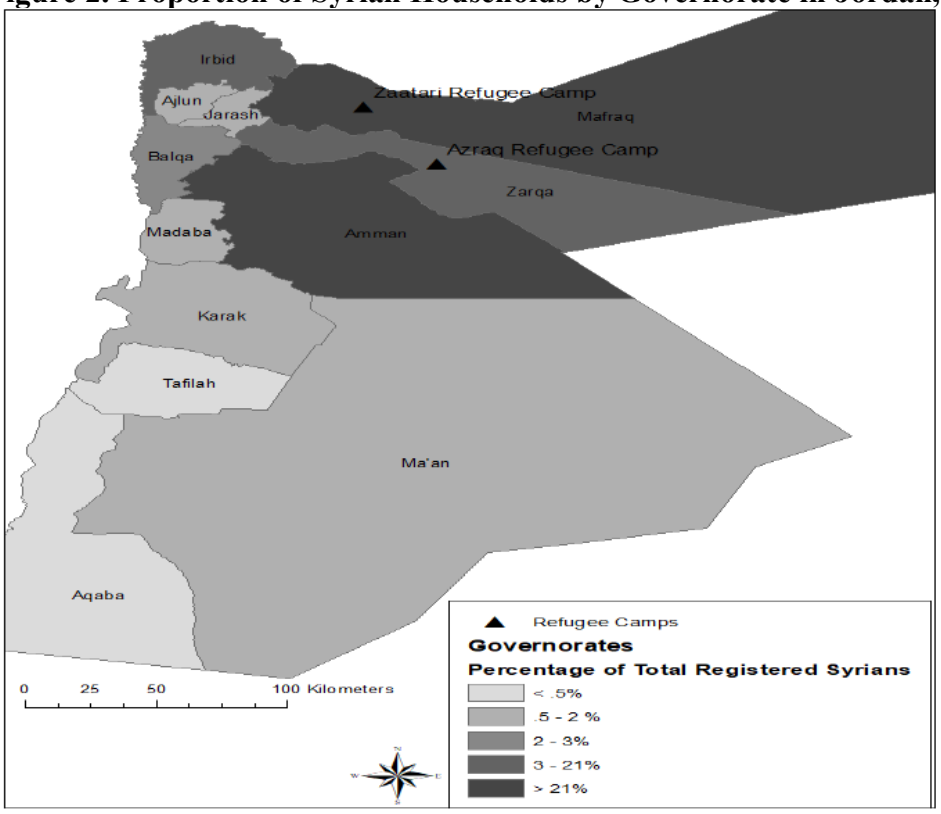
Figure 1. Proportion of Syrian Households by Governorate in Egypt, 2017



Source: UNHCR (2019b)

Figure 2. Proportion of Syrian Households by Governorate in Jordan, 2015



Source: Salemi et al. (2018)

Figure 3. Identification Strategy in Turkey based on NUTS-2 Level

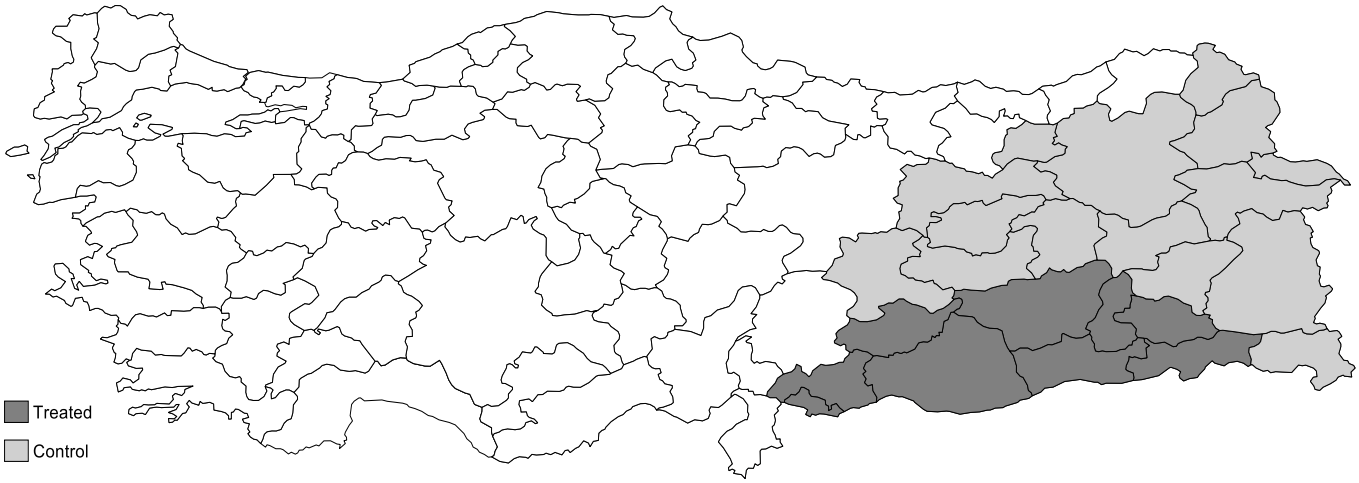


Table 1: Treated and Control Areas-Governorates

Panel A:Egypt			Panel B:Jordan		Panel C: Turkey	
Treated	Control	Control	Treated	Control	Treated	Control
Cairo	Port-Said	Behera	Amman	Madaba	TRC1	TRA1
Alexandria	Suez	Ismailia	Zarqa	Jarash	TRC2	TRA2
Damietta	Dakahlia	Beni-Suef	Balqa	Ajloun	TRC3	TRB1
Sharkia	Kafr-Elsheikh	Fayoum	Irbid	Karak		TRB2
Kalyoubia	Gharbia	Menia	Mafraq	Tafileh		
Giza	Menoufia	Asyout		Ma'an		
	Suhag	Qena		Aqaba		
	Aswan	Luxor				

Table 2. Averages of Syrian Refugees and Regular Migrants

Egypt	Total
2006	4,500
2012 and 2018	721,772
Jordan	
2010	38,130
2016	1,265,514
Turkey	
2008-2011	9,500
2012-2015	2,816,156

Source: United Nations High Commissioner for Refugees (UNHCR), Department of Statistics (Jordan) http://www.dos.gov.jo/dos_home_e/main/population/census2004/index.htm and Central Agency for Public Mobilization and Statistics https://www.capmas.gov.eg/HomePage.aspx for Egypt and Jordan; Directorate General of Migration Management (DGMM) and UNHCR for Turkey.

Table 3. DID and DID-IV Estimates for Egypt

DID	DV: Formal Employment	DV: Unemployment	DV: Permanent Contract	DV: Labour Force Participation	DV: Logarithm of Monthly Wage
Treat	0.0082	-0.0125**	0.00043	-0.0285**	0.1697**
	(0.0053)	(0.0060)	(0.0039)	(0.0142)	(0.0743)
Post	-0.0044	0.0018	-0.0922***	-0.0391***	0.0443***
	(0.0050)	(0.0026)	(0.0193)	(0.0106)	(0.0111)
Treat*Post	-0.0113	-0.0065**	0.0393	-0.0322***	0.1271
	(0.0106)	(0.0031)	(0.0597)	(0.0106)	(0.0935)
No. Observations	41,960	88,216	48,652	113,803	25,904
R-square	0.8494	0.0485	0.5278	0.4505	0.1530
Leads and Lags Test	-0.0067	-0.0062	0.0609	-0.0227	0.1625
	0.0170)	(0.0139)	(0.0618)	(0.0164)	(0.1188)
DID-IV	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	-0.0084	-0.0041***	-0.0080	-0.0049*	0.0540
	(0.0078)	(0.0013)	(0.0074)	(0.0029)	(0.0411)
No. Observations	29,804	64,576	29,992	84,546	20,445
Centered R-square	0.8478	0.0433	0.5092	0.4590	0.1809
Weak Identification Test: Cragg-Donald Wald F statistic	4,327.926	5,552.825	5,898.904	6,355.28	9,075.087
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Hansen J statistic for endogeneity	0.0010	0.0012	0.0015	0.0013	0.0021
	[0.9999]	[0.9998]	[0.9988]	[0.9991]	[0.9894]

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level. DV denotes Dependent Variable.

Table 4. DID-IV Estimates for Egypt Across Groups

Male	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0041 (0.0094)	-0.0056 (0.0106)	0.0053 (0.0060)	0.0014 (0.0022)	0.0325* (0.0183)
No. Observations	24,329	31,799	24,482	42,259	16,948
Centered R-square	0.8278	0.0280	0.5544	0.5582	0.1177
Female					
Logarithm of Syrian Migrant Population	-0.0027** (0.0013)	-0.0078*** (0.0021)	-0.0081 (0.0060)	-0.0075*** (0.0025)	-0.0614 (0.1087)
No. Observations	5,475	32,777	5,510	42,287	3,497
Centered R-square	0.9168	0.0597	0.2673	0.1978	0.2513
High Education	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	-0.0066 (0.0122)	-0.0086*** (0.0023)	0.0082 (0.0094)	-0.0013 (0.0026)	0.0255 (0.0203)
No. Observations	6,974	11,085	7,060	11,159	5,566
Centered R-square	0.8153	0.0993	0.3170	0.1904	0.2168
Low Education					
Logarithm of Syrian Migrant Population	-0.0102* (0.0054)	-0.0026** (0.0013)	-0.0119 (0.0108)	-0.0114*** (0.0026)	-0.0246*** (0.0071)
No. Observations	22,830	53,491	22,932	73,387	14,879
Centered R-square	0.8226	0.0108	0.4799	0.4449	0.0755
Age 16-35	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	-0.0031*** (0.0010)	-0.0066*** (0.0018)	-0.0118 (0.0108)	-0.0036 (0.0030)	0.0117 (0.0075)
No. Observations	15,219	38,565	15,454	48,065	11,367
Centered R-square	0.8717	0.0495	0.4799	0.4628	0.1088
Age 36-64					
Logarithm of Syrian Migrant Population	0.0076 (0.0145)	-0.0025 (0.0078)	-0.0039 (0.0047)	-0.0067* (0.0036)	0.0141 (0.0082)
No. Observations	14,585	26,011	14,538	36,481	9,078
Centered R-square	0.8173	0.0197	0.5417	0.4725	0.1656
Formal Sector			**DV: Permanent Contract**		**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population			0.0090 (0.0063)		0.0133 (0.0099)
No. Observations			11,264		9,836
Centered R-square			0.2220		0.1619
Informal Sector					
Logarithm of Syrian Migrant Population			-0.0075 (0.0089)		-0.0161* (0.0086)
No. Observations			18,540		10,609
Centered R-square			0.5213		0.0724
High Skill	**DV: Formal Employment**		**DV: Permanent Contract**		**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0038 (0.0095)		-0.0163 (0.0139)		0.0277* (0.0135)
No. Observations	14,416		14,433		8,543
Centered R-square	0.8702		0.5377		0.2243
Low Skill					
Logarithm of Syrian Migrant Population	-0.0048 (0.0085)		-0.0056 (0.0181)		-0.1294 (0.0995)
No. Observations	15,388		15.559		11,902
Centered R-square	0.8255		0.5180		0.0886

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 5. DID and DID-IV Estimates for Natives and Migrants in Jordan

DID	DV: Formal Employment		DV: Unemployment	
	Natives	Migrants	Natives	Migrants
Treat	-0.0202	-0.0527***	-0.0260**	-0.0053
	(0.0188)	(0.0161)	(0.0110)	(0.0201)
Post	-0.0348*	-0.0582***	0.0417***	0.0509**
	(0.0186)	(0.0178)	(0.0114)	(0.0213)
Treat*Post	0.0312*	0.0268***	-0.0252**	0.0124
	(0.0167)	(0.0212)	(0.0124)	(0.0109)
No. Observations	10,748	987	30,834	3,364
R-square	0.8065	0.8738	0.0581	0.0643
DID-IV	**DV: Formal Employment**		**DV: Unemployment**	
	Natives	Migrants	Natives	Migrants
Logarithm of Syrian Migrant Population	0.0032*	0.0168***	-0.0042**	-0.0048*
	(0.0017)	(0.0047)	(0.0021)	(0.0026)
No. Observations	10,748	987	30,834	3,364
Centered R-square	0.8081	0.8917	0.0633	0.0801
Weak Identification Test: Cragg-Donald Wald F statistic	7,900.113 [0.000]	2,507.354 [0.000]	9,838.172 [0.000]	4,492.472 [0.000]
Hansen J statistic for endogeneity	2.104 [0.3182]	3.458 [0.1774]	2.125 [0.2672]	2.859 [0.2395]
DID	**DV: Permanent Contract**		**DV: Labour Force Participation**	
	Natives	Migrants	Natives	Migrants
Treat	0.0753***	0.1076***	-0.0286	0.0515
	(0.0303)	(0.0340)	(0.0197)	(0.0391)
Post	-0.0724*	-0.1031***	-0.0452**	-0.0198
	(0.0427)	(0.0365)	(0.0181)	(0.0213)
Treat*Post	-0.0697*	-0.1014*	-0.0072**	-0.1464***
	(0.0404)	(0.0599)	(0.0034)	(0.0257)
No. Observations	10,755	987	32,622	3,730
R-square	0.3707	0.4448	0.3648	0.4091
DID-IV	**DV: Permanent Contract**		**DV: Labour Force Participation**	
	Natives	Migrants	Natives	Migrants
Logarithm of Syrian Migrant Population	-0.0078**	-0.0136*	-0.0080***	-0.0207*
	(0.0036)	(0.0077)	(0.0021)	(0.0108)
No. Observations	10,755	987	32,622	3,730
Centered R-square	0.3723	0.5696	0.3668	0.4123
Weak Identification Test: Cragg-Donald Wald F statistic	7,910.127 [0.000]	1,285.450 [0.000]	29,941.32 [0.000]	5,018.691 [0.000]
Hansen J statistic for endogeneity	4.523 [0.2983]	3.459 [0.1874]	3.110 [0.2271]	2.863 [0.2390]

DID	DV: Logarithm of Monthly Wage		DID-IV DV: Logarithm of Monthly Wage	
	Natives	Migrants	Natives	Migrants
Treat	0.0477	0.2996		
	(0.0971)	(0.2058)		
Post	0.0403	0.4064**		
	(0.0533)	(0.1756)		
Treat*Post	0.0332	-0.5922***		
	(0.0876)	(0.1987)		
Logarithm of Syrian Migrant Population			-0.0161	-0.0781***
			(0.0174)	(0.0295)
No. Observations	8,346	863	8,346	863
R-square	0.2009	0.2098		
Centered R-square			0.2106	0.2374
Weak Identification Test: Cragg-Donald Wald F statistic			6,284.730 [0.000]	2,132.969 [0.000]
Hansen J statistic for endogeneity			3.027 [0.3381]	3.618 [0.3058]

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 6. DID-IV Estimates for Natives in Jordan Across Groups

Male	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0035**	-0.0028***	-0.0137***	-0.0116***	0.0209
	(0.0016)	(0.0009)	(0.0042)	(0.0022)	(0.0161)
No. Observations	8,378	15,234	8,382	16,214	6,098
Centered R-square	0.8011	0.0345	0.3887	0.2331	0.2089
Female					
Logarithm of Syrian Migrant Population	0.0018	0.0015	-0.0012	-0.0051**	0.0061
	(0.0035)	(0.0018)	(0.0039)	(0.0020)	(0.0242)
No. Observations	2,370	15,600	2,373	16,408	2,248
Centered R-square	0.8391	0.1136	0.2415	0.3060	0.3065
High Education	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0047**	-0.0055**	-0.0027	-0.0159***	0.0110*
	(0.0022)	(0.0024)	(0.0025)	(0.0033)	(0.0062)
No. Observations	3,610	7,104	3,612	7,145	3,085
Centered R-square	0.7581	0.1016	0.1262	0.1521	0.2005
Low Education					
Logarithm of Syrian Migrant Population	0.0019	-0.0017	-0.0161***	-0.0092***	0.0091
	(0.0026)	(0.0015)	(0.0051)	(0.0030)	(0.0102)
No. Observations	7,138	23,730	7,143	25,477	5,261
Centered R-square	0.8106	0.0323	0.4059	0.3752	0.1304
Age 16-35	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0007	0.0025	-0.0089**	-0.0077***	0.0045
	(0.0029)	(0.0024)	(0.0042)	(0.0021)	(0.0081)
No. Observations	6,405	18,100	6,409	19,100	4,466
Centered R-square	0.8194	0.0631	0.3337	0.4179	0.2034
Age 36-64					
Logarithm of Syrian Migrant Population	0.0084**	-0.0036**	-0.0145***	-0.0095**	0.0101
	(0.0041)	(0.0015)	(0.0045)	(0.0044)	(0.0097)
No. Observations	4,343	12,734	4,346	13,522	3,880
Centered R-square	0.7881	0.0210	0.4130	0.4325	0.2088
Formal Sector			**DV: Permanent Contract**		**DV: Logarithm of Wage**
Logarithm of Syrian Migrant Population			0.0026		0.0045
			(0.0082)		(0.0084)
No. Observations			6,011		5,023
Centered R-square			0.1864		0.1701
Informal Sector					
Logarithm of Syrian Migrant Population			-0.0268***		0.0226***
			(0.0073)		(0.0090)
No. Observations			4,744		3,323
Centered R-square			0.3863		0.1233
High Skill	**DV: Formal Employment**		**DV: Permanent Contract**		**DV: Logarithm of Wage**
Logarithm of Syrian Migrant Population	0.0021		0.0106*		-0.0038
	(0.0023)		(0.0054)		(0.0078)
No. Observations	3,601		3,604		2,638
Centered R-square	0.7958		0.3365		0.3193
Low Skill					
Logarithm of Syrian Migrant Population	0.0035		-0.0038		-0.0234*
	(0.0048)		(0.0078)		(0.0108)
No. Observations	7,147		7,151		5,708
Centered R-square	0.8052		0.3990		0.3990

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 7. DID-IV Estimates for Migrants in Jordan Across Groups

Male	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0188***	-0.0177*	-0.0314*	-0.0302***	-0.0926***
	(0.0048)	(0.0093)	(0.0187)	(0.0040)	(0.0296)
No. Observations	821	1,803	821	2,005	703
Centered R-square	0.8736	0.0458	0.4431	0.2906	0.2201
Female					
Logarithm of Syrian Migrant Population	-0.0350	-0.0011	-0.0523**	-0.0041	-0.0134
	(0.0348)	(0.0030)	(0.0217)	(0.0073)	(0.0117)
No. Observations	166	1,561	166	1,725	160
Centered R-square	0.9803	0.0378	0.9806	0.0982	0.8781
High Education	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0075**	-0.0036	-0.0129	-0.0270***	-0.0251
	(0.0038)	(0.0031)	(0.0108)	(0.0075)	(0.0228)
No. Observations	249	420	249	427	212
Centered R-square	0.8609	0.0943	0.1262	0.3787	0.3808
Low Education					
Logarithm of Syrian Migrant Population	0.0072	0.0115*	-0.0418*	-0.0178***	-0.0397**
	(0.0177)	(0.0063)	(0.0220)	(0.0054)	(0.0158)
No. Observations	738	2,944	738	3,303	651
Centered R-square	0.8960	0.0647	0.4598	0.3752	0.1459
Age 16-35	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0056	0.0057	-0.0397**	-0.0199***	-0.0498*
	(0.0045)	(0.0063)	(0.0194)	(0.0042)	(0.0282)
No. Observations	551	2,098	551	2,297	504
Centered R-square	0.9059	0.0710	0.4144	0.4302	0.1794
Age 36-64					
Logarithm of Syrian Migrant Population	0.0044*	0.0179**	-0.0368*	-0.0201***	-0.0051
	(0.0023)	(0.0076)	(0.0195)	(0.0055)	(0.0274)
No. Observations	436	1,266	436	1,433	359
Centered R-square	0.8376	0.0750	0.4939	0.4886	0.2995
Formal Sector			**DV: Permanent Contract**		**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population			-0.0531**		-0.0257
			(0.0260)		(0.0213)
No. Observations			332		538
Centered R-square			0.2316		0.2595
Informal Sector					
Logarithm of Syrian Migrant Population			-0.0263**		-0.0300*
			(0.0119)		(0.0158)
No. Observations			655		325
Centered R-square			0.5011		0.1721
High Skill	**DV: Formal Employment**		**DV: Permanent Contract**		**DV: Logarithm of Monthly Wage**
Logarithm of Syrian Migrant Population	0.0252***		0.0014		-0.0317
	(0.0050)		(0.0013)		(0.0450)
No. Observations	196		196		141
Centered R-square	0.9430		0.6613		0.5237
Low Skill					
Logarithm of Syrian Migrant Population	0.0175***		-0.0232**		-0.0132*
	(0.0054)		(0.0108)		(0.0071)
No. Observations	791		791		722
Centered R-square	0.8631		0.4782		0.4782

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 8. DID and DID-IV Estimates for Natives and Migrants in Turkey

DID	**DV: Formal Employment**		**DV: Unemployment**	
	Natives	**Immigrants**	**Natives**	**Immigrants**
Treat*Post	0.0335***	-0.3725***	-0.0076***	-0.0587
	(0.0055)	(0.1272)	(0.0026)	(0.0477)
No. Observations	202,173	542	252,612	796
R-Square	0.2840	0.5401	0.0273	0.0368
Leads and Lags Test	0.3341	0.1894	42.78	0.6320
	[0.7188]	[0.9096]	[0.000]	[0.5316]
DID-IV	**DV: Formal Employment**		**DV: Unemployment**	
	Natives	**Immigrants**	**Natives**	**Immigrants**
Logarithm of Syrian Migrant Population	0.0113***	-0.0753**	-0.0055***	0.0059
	(0.0028)	(0.0303)	(0.0018)	(0.0048)
No. Observations	202,173	542	252,612	796
Centered R-square	0.2845	0.5473	0.0296	0.0466
Weak Identification Test: Cragg-Donald	81,377.21	326.367	88,527.39	324.042
Wald F statistic	[0.000]	[0.000]	[0.000]	[0.000]
Hansen J statistic for endogeneity	0.1688	2.322	1.672	0.0155
	[0.8432]	[0.2585]	[0.3887]	[0.9282]
DID	**DV: Permanent Contract**		**DV: Labour Force Participation**	
	Natives	**Immigrants**	**Natives**	**Immigrants**
Treat*Post	0.0535***	-0.0477**	0.0362**	-0.0131
	(0.0058)	(0.0231)	(0.0158)	(0.0665)
No. Observations	162,721	504	332,386	1,022
R-Square	0.2246	0.1442	0.3177	0.3181
Leads and Lags Test	1.2130	0.6171	2.1615	1.847
	[0.1718]	[0.3103]	[0.3192]	[0.3971]
DID-IV	**DV: Permanent Contract**		**DV: Labour Force Participation**	
	Natives	**Immigrants**	**Natives**	**Immigrants**
Logarithm of Syrian Migrant Population	0.0159***	-0.0482**	0.0137***	-0.0028
	(0.0031)	(0.0227)	(0.0016)	(0.0033)
No. Observations	162,721	504	332,386	1,022
Centered R-square	0.2241	0.1914	0.3346	0.3241
Weak Identification Test: Cragg-Donald	49,124.35	334.428	58,925.41	1,266.778
Wald F statistic	[0.000]	[0.000]	[0.000]	[0.000]
Hansen J statistic for endogeneity	2.4983	0.0082	1.5288	1.5288
	[0.2283]	[0.9628]	[0.1525]	[0.1525]
DID	**DV: Logarithm of Annual Wage**		**DID-IV DV: Logarithm of Annual Wage**	
	Natives	**Immigrants**	**Natives**	**Immigrants**
Treat*Post	0.0157*	-0.0714**		
	(0.0081)	(0.0342)		
Logarithm of Syrian Migrant Population			0.0101***	-0.0820**
			(0.0022)	(0.0201)
No. Observations	152,223	484	152,223	484
R-Square	0.4538	0.5939		
Centered R-square			0.5026	0.5993
Leads and Lags Test	4.782	3.243		
	[0.1618]	[0.1961]		
Weak Identification Test: Cragg-Donald			79,171.25	356.086
Wald F statistic			[0.000]	[0.000]
Hansen J statistic for endogeneity			0.1433	0.1692
			[0.7057]	[0.6806]

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 9. DID-IV Estimates for Natives in Turkey Across Groups

Male	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	0.0154*** (0.0019)	-0.0068*** (0.0021)	0.0038*** (0.0011)	0.0191*** (0.0035)	0.0122*** (0.0016)
No. Observations	153,868	197,523	118,208	159,546	110,929
Centered R-square	0.2435	0.344	0.0116	0.0097	0.0776
Female					
Logarithm of Syrian Migrant Population	0.0016 (0.0013)	0.0089 (0.0118)	-0.0025*** (0.0007)	0.0123*** (0.0021)	0.0087*** (0.0005)
No. Observations	48,305	55,089	44,513	172,840	41,294
Centered R-square	0.6112	0.0245	0.0298	0.0370	0.0379
High Education	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	0.0158*** (0.0010)	-0.0232*** (0.0089)	0.0187*** (0.0020)	0.0213*** (0.0089)	0.0155*** (0.0021)
No. Observations	57,163	65,693	49,419	75,908	46,513
Centered R-square	0.0150	0.0165	0.0158	0.0153	0.0532
Low Education					
Logarithm of Syrian Migrant Population	-0.0013*** (0.0001)	-0.0053*** (0.0004)	-0.0048*** (0.0011)	0.0089*** (0.0022)	0.0075*** (0.0018)
No. Observations	145,010	186,919	113,302	256,478	105,710
Centered R-square	0.0146	0.0080	0.0152	0.3001	0.0151
Age 16-35	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	0.0064*** (0.0012)	0.0035** (0.0014)	-0.0027* (0.0014)	0.0116*** (0.0007)	0.0059*** (0.0014)
No. Observations	105,640	184,611	87,273	181,698	83,197
Centered R-square	0.0188	0.0138	0.0185	0.0117	0.0761
Age 36-64					
Logarithm of Syrian Migrant Population	0.0121*** (0.0014)	-0.0062*** (0.005)	0.0115*** (0.0015)	0.0158*** (0.0008)	0.0061*** (0.0022)
No. Observations	96,533	68,001	75,448	150,688	69,026
Centered R-square	0.0143	0.0210	0.4130	0.0211	0.0526
Formal Sector			**DV: Permanent Contract**		**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population			0.0206*** (0.0023)		0.0136*** (0.0016)
No. Observations			105,480		101,792
Centered R-square			0.0148		0.0501
Informal Sector					
Logarithm of Syrian Migrant Population			0.0038*** (0.0009)		0.0084*** (0.0032)
No. Observations			57,241		50,431
Centered R-square			0.0084		0.0719
High Skill	**DV: Formal Employment**		**DV: Permanent Contract**		**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	0.0217*** (0.0010)		0.0493*** (0.0021)		0.0333*** (0.0031)
No. Observations	93,141		73,604		69,609
Centered R-square	0.2034		0.2892		0.3028
Low Skill					
Logarithm of Syrian Migrant Population	-0.0089*** (0.0012)	0.0218 (0.0220)	0.0067*** (0.0008)		0.0172*** (0.0015)
No. Observations	109,032	130	89,117		82,614
Centered R-square	0.2713	0.6837	0.1130		0.5798

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.

Table 10. DID-IV Estimates for Migrants in Turkey Across Groups

Male	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	-0.0572** (0.0278)	-0.0018 (0.0027)	-0.0396* (0.0203)	0.0189** (0.0085)	-0.0450 (0.0458)
No. Observations	411	571	391	563	356
Centered R-square	0.2017	0.0310	0.0666	0.0236	0.1183
Female					
Logarithm of Syrian Migrant Population	-0.1001** (0.0442)	0.0040 (0.0026)	-0.0567** (0.0236)	-0.0758*** (0.0237)	-0.2711*** (0.0833)
No. Observations	131	225	113	459	128
Centered R-square	0.1468	0.1470	0.1335	0.0231	0.1606
High Education	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	-0.0386** (0.0182)	-0.0178 (0.0159)	-0.0034 (0.0094)	-0.0187 (0.0163)	0.0621 (0.0588)
No. Observations	138	181	111	277	102
Centered R-square	0.1245	0.0219	0.0441	0.0247	0.0998
Low Education					
Logarithm of Syrian Migrant Population	-0.0881** (0.0396)	0.0033* (0.0019)	-0.0831** (0.0387)	-0.0314** (0.0151)	-0.1144** (0.0462)
No. Observations	404	615	393	745	382
Centered R-square	0.0597	0.0277	0.2005	0.0324	0.0658
Age 16-35	**DV: Formal Employment**	**DV: Unemployment**	**DV: Permanent Contract**	**DV: Labour Force Participation**	**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	-0.0894** (0.0425)	0.0061 (0.0166)	-0.0642** (0.0318)	-0.0044 (0.0170)	-0.1415** (0.0574)
No. Observations	218	422	198	553	183
Centered R-square	0.0380	0.0107	0.1129	0.2361	0.1254
Age 36-64					
Logarithm of Syrian Migrant Population	0.0395* (0.0202)	-0.0179** (0.0084)	-0.0267* (0.0142)	-0.0330* (0.0179)	-0.0430 (0.0604)
No. Observations	324	374	306	469	301
Centered R-square	0.2132	0.0371	0.0424	0.0267	0.2298
Formal Sector			**DV: Permanent Contract**		**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population			0.0038 (0.0043)		-0.0710 (0.0501)
No. Observations			286		275
Centered R-square			0.0797		0.0762
Informal Sector					
Logarithm of Syrian Migrant Population			-0.0718** (0.0309)		0.0472 (0.0508)
No. Observations			218		209
Centered R-square			0.1751		0.0523
High Skill	**DV: Formal Employment**		**DV: Permanent Contract**		**DV: Logarithm of Annual Wage**
Logarithm of Syrian Migrant Population	0.1354* (0.0717)		0.0215 (0.0323)		-0.0539** (0.0243)
No. Observations	174		166		159
Centered R-square	0.4296		0.8410		0.8410
Low Skill					
Logarithm of Syrian Migrant Population	0.0218 (0.0220)		-0.0578** (0.0257)		-0.0913** (0.0410)
No. Observations	368		338		325
Centered R-square	0.6837		0.1751		0.6741

Wild Bootstrap Combined with Regional-Level Clustered Standard Errors in Parenthesis, P-values within brackets, ***, ** and * denote significance at 1%, 5% and 10% level.