The Impact of Mass Migration of Syrians on the Turkish Labor Market^{*}

Ege Aksu[†], Refik Erzan⁺, and Murat Güray Kırdar[#]

November 21, 2019

^{*} We would like to thank Y. Emre Akgündüz, Onur Altındağ, Güneş Aşık, Abdurrahman Aydemir, Selcen Çakır, Murat Demirci, Kıvanç Karaman, Kemal Kirişci, Gizem Koşar, Maissam Namer, Jan Stuhler, İnsan Tunalı, and the participants at departmental seminars at Bilkent, Boğaziçi, Işık, İbn-Haldun, İstanbul Technical, Koç, Middle East Technical, Sabancı, and TOBB-ET universities, the American University of Beirut, and U. of Hamburg and at workshops organized by Bahçeşehir University Economic and Social Research Center, the Central Bank of Turkey, and the World Bank Ankara Office, at the 2nd IZA/World Bank/NJD Conference on Jobs and Development, and at the conference on "Forced Displacement, Asylum Seekers and Refugees" at Queen Mary University for valuable comments and suggestions. Kırdar gratefully acknowledges financial support from Bogazici University Grant #13480. Part of this project was completed when Kirdar was visiting the American University of Beirut. The usual disclaimer holds.

¹ The Graduate Center, CUNY, Economics, 365 Fifth Avenue, New York, NY, 10016-4309 USA. e-mail: <u>eaksu@gradcenter.cuny.edu.</u>

¹ Department of Economics, Boğaziçi University, Bebek, Istanbul 34342 Turkey. e-mail: <u>erzan@boun.edu.tr.</u>

[#] Department of Economics, Boğaziçi University, Bebek, Istanbul 34342, Turkey. e-mail: <u>murat.kirdar@boun.edu.tr.</u>

Abstract

We estimate the effects of the arrival of 2.5 million Syrian refugees in Turkey as of the end of 2015 on the labor market outcomes of natives, using a difference-in-differences IV methodology. We also uncover channels that help explain our findings, including general equilibrium effects and factor movements. The migrant influx has strong adverse effects on competing native workers in the informal sector, particularly on temporary wage workers, less-educated and young workers, women who are part-time employed and self-employed, and workers in agriculture and construction. At the same time, it has favorable effects on complementary workers in the formal sector; in fact, both wage employment and wages of men in the formal sector increase—particularly in manufacturing. Moreover, it is not only the better-off in terms of educational attainment that benefit in the formal sector, as many native workers transfer from the informal to the formal sector. Increases in prices in the product market and capital flow to the treatment regions contribute to the rise in labor demand in the formal sector. The adverse effects on the most vulnerable groups in the labor market, along with the rise in consumer prices, imply that poverty might increase among these native groups.

Keywords: Labor Force and Employment; Wages; Immigrant Workers; Formal and Informal Sectors; Syrian Refugees; Civil War; Turkey; Difference-in-differences; Instrumental Variables

JEL Codes: J21, J31, J61, C26

1. Introduction

Forced migration around the world has reached unprecedented levels; according to the UNHCR (2019), 70.8 million people have fled their homes due to armed conflict. Of these, 25.9 million are refugees and 80% of these refugees live in countries neighboring their countries of origin. Therefore, residents of less developed countries have been facing the brunt of the economic and political consequences of refugees—including wage and employment effects in the labor market. Nonetheless, the majority of existing studies on the labor market impact of migrant labor supply shocks have focused on developed countries. This paper examines the effects of mass migration of Syrians on the labor market outcomes of natives in Turkey as of the end of 2015.¹ The Syrian civil war displaced 13.1 million Syrians—half of the country's population—5.6 million of whom took refuge in other countries by February 2018.² Turkey was the largest recipient of Syrians and has hosted the highest number of refugees in the world since 2015. By the end of 2015, 2.5 million Syrians were registered in Turkey,³ of whom very few had work permits and hence most worked in the informal sector.⁴

In our analysis, we use micro-level data from the 2004–2015 Turkish Household Labor Force Surveys (THLFS). For identification, we use the variation in the ratio of migrants to natives across 26 NUTS-2 level regions in Turkey over time in a difference-in-differences framework. A threat to identification in our study is that the distribution of supply shocks across regions may not be random because migrants take into consideration labor market conditions across potential destinations in choosing their destination. Therefore, we also use an instrumental-variable approach which employs a variant of the standard distance instrument in the literature. In identifying the effect of the migrant influx, the massive size of the influx in our context is extremely important, simply because it dwarfs virtually all other events—correlated with the distance instrument and taking place after the arrival of migrants—that could potentially contaminate the results.⁵

The bulk of the studies that examine the labor market effects of immigrants in host countries are in

¹ Syrians in Turkey do not have refugee status officially but are under "temporary protection". In this paper, Syrian migrants (the broader term) and Syrian refugees are used interchangeably for Syrians who have fled to other countries since the conflict broke out in 2011.

² United Nations High Commissioner for Refugees (UNHCR, 2018).

³ Disaster and Emergency Management Authority of Turkey (2018).

⁴ A total of 7,351 work permits were issued for Syrians before January 2016 (Ministry of Labor and Social Security). Workers in the informal sector have no social security coverage.

⁵ Since we use region-year fixed effects, any such other economic and political events that could contaminate the results have to be correlated with the distance instrument within regions at a given time—which is an unlikely situation.

the context of developed countries of North America and Western Europe. Many of these have utilized natural experiments in a context where there is a sudden shift in the labor supply resulting from an exodus of immigrants due to political events in sending countries—as in our context.⁶ The evidence from these studies yields mixed results. While some studies find no notable adverse effects of migrants on competing natives (e.g., Card, 1990; Hunt, 1992; Friedberg, 2001), others find much larger adverse effects (e.g., Glitz, 2012; Dustmann et al., 2017). A lively debate continues (see, e.g., Borjas, 2017 vs. Peri and Yasenov, 2019), perhaps because disentangling the migrant impact poses several measurement and statistical challenges. Although forced displacement due to armed conflict is becoming increasingly common across less developed countries, few studies exist on the labor market effects of forced migrants. Therefore, a study examining the labor market effects of a massive forced displacement for the host regions with a credible identification scheme provides valuable knowledge, particularly for less developed countries.

In the recent debate on the impact of migrants, a key issue is the identification of native groups who are most likely to be affected by the migrant shock. An important feature of our study is that the institutional setting makes it easier to isolate native groups who are threatened by migrants and those who stand to gain from them. While native workers in the informal sector are threatened by the arrival of Syrians, the fact that very few Syrian migrants in Turkey had work permits serves to shield the native workers in the formal sector from the arrival of Syrians.

An important dynamic of the Turkish labor market prior to the arrival of Syrian migrants was that the formal sector had seen a tremendous increase in employment at the expense of employment in the informal sector. According to the THLFS, the percentage of 18- to 64-year-old men employed in the formal sector rose from 41.2% to 49.2% between 2004 and 2011, while that employed in the informal sector dropped from 29.7% to 24.2%. Moreover, for women, important trends were observed in labor force participation and employment in this period. The fraction of women in the labor force increased from 26.3% to 33.0% and the fraction of women employed rose from 23.3% to 29.2%.⁷ At the same time, significant regional differences exist in labor market outcomes in Turkey.⁸ Hence, not accounting for differential trends in the pre-shock period across regions could cause significant bias

⁶ See, e.g., Card, 1990; Hunt, 1992; Carrington and Delima, 1996; Pischke and Velling, 1997; Friedberg, 2001; Angrist and Kuegler, 2003; Mansour, 2010; Cohen-Goldner and Paserman, 2011; Glitz, 2012; Foged and Peri, 2016; Borjas and Monras, 2016; Dustmann et al., 2017; Monras, 2020. Dustmann et al. (2016) provide a review of this literature, and Longhi et al. (2008) and Foged et al. (2019) conduct meta-analysis of the effect of immigration on natives.

⁷ Tunalı et al. (2018) discuss the underlying reasons for the increasing participation rate for women in Turkey.

⁸ In 2011, before the arrival of Syrian refugees, while the share of informal workers was 74.8% for women and 54.0% for men in eastern Turkey, it was 42.5% for women and 25.2% for men in western Turkey.

both in our OLS and IV frameworks—as shown by a number of recent papers in other settings (Jaeger et al., 2020; Goldsmith-Parkin et al., 2020; Christian and Barret; 2017).⁹ Therefore, we pay due attention to the potential preexisting time trends across regions in our estimation and assess the plausibility of our instrument under various specifications for preexisting trends.

We find that this exodus of Syrian migrants does not lead a fall in overall employment or wages of native men. For native women, although no adverse effects on average wages exist, total employment falls. In the informal sector, however, total employment and wage employment of men falls, and suggestive but not conclusive evidence of a fall in their wages exists—which is consistent with the rise in the supply of informal labor. Moreover, the substitutability between native and migrant workers in the informal sector decreases with rising levels of education and with age for natives. No evidence exists that a fall in the net migration rate of natives to the affected regions contributes to the fall in informal employment of native men. On the other hand, the migrant shock has a strong displacement effect on temporary wage workers, many of whom are *seasonal* migrant workers from other regions— which is a significant phenomenon in Turkey, particularly in agriculture and construction.

In the formal sector, we find a positive effect on wage employment and wages of men, which is consistent with an outward shift of the labor demand curve. This effect is especially strong in the manufacturing sector. We also provide explanations for this rise in labor demand in the formal sector. General equilibrium effects and factor movements play an important role, in addition to the complementarity between informal Syrian workers and formal native workers. We find evidence for a rise in prices in the product market, as migrants increase the consumption base more than the production base. A rise in capital movement to the treatment regions also takes place, as the productivity of capital in these regions increases with the massive labor supply shock.

The mass migration of Syrians into Turkey has already drawn the attention of researchers (Ceritoğlu et al., 2017; del Carpio and Wagner, 2016). In the next section, we demonstrate with replications serious methodological limitations of these papers. Moreover, these studies do not allow for differential preexisting time trends across regions in their estimation; however, we show that this creates substantial bias for several key outcomes in this setting.¹⁰ In our paper, we use richer data; the

⁹ In fact, of the 26 NUTS-2 level regions in Turkey, in the three regions where the migrant-to-native ratio is the highest, the hourly wage rate for men in the formal sector stayed virtually the same between 2004 and 2011, but it increased by 16% in the other 23 regions.

¹⁰ For instance, the positive effects of migrants on wages and wage employment of men in the formal sector appear only after allowing for differential preexisting time trends. On the contrary, not allowing them flags false negative effects on women's employment in the formal sector and migration of the young and less-educated natives to the affected regions.

number of refugees in 2015 is significantly higher than those in earlier years. Our paper is also more methodical in its analysis of labor market outcomes by formality status, gender, age, and education of natives so that we can understand the distributional effects of the migrant influx at a finer level.

We not only improve upon the data, methodology, and scope of the existing work but also introduce several novel elements. First, we uncover certain *channels* that help explain our findings, including general equilibrium effects and factor movements. Second, our analysis by type and sector of employment of natives and our examination of wage and wage employment together so as to be able to interpret the findings in a labor market equilibrium framework are novel. The latter also allows us to examine the heterogeneity in labor supply-and-demand elasticities by education and age. Third, we have several key novel findings: (i) wages in the formal sector increase for men and full-time employed women; (ii) a transition occurs from wage employment to self-employment and unpaid family work for men; (iii) men's full-time employment rises at the expense of part-time employment, (iv) women's wage employment in the formal sector falls, especially for less-educated and older women—the groups for which the post-2008 employment subsidy program generated the most jobs, (v) temporary wage workers, many of whom are seasonal migrant workers, are substantially displaced while no evidence exists for a change in outmigration of less-educated natives from the treatment regions; (vi) increases in consumer prices and in net firm openings contribute to the rising demand for formal native workers.¹¹ Moreover, some of our findings are different from those given in the above papers, as detailed in the next section.

In comparison to studies in other contexts of forced migration, while some of our findings are essentially similar, others are peculiar. The fact that the most vulnerable groups in the labor market— such as temporary wage workers, less-educated or young workers in the informal sector, and women who are part-time employed or self-employed—are adversely affected by the migrant shock is similar to the findings for Colombia (Bozzoli et al., 2013; Calderon-Mejia and Ibanez, 2016; Morales, 2017). However, while adverse wage effects on natives are more pronounced in the Colombian context, adverse employment effects dominate in the informal market in Turkey.¹² We find that employment of natives in the formal sector expands, which is similar to the findings of Alix-Garcia and Bartlett

¹¹ Other notable novel findings are as follows: (i) the fall in self-employment is the main driver of the fall in total employment of women, (iii) the positive effect on employment of men in the formal sector is realized for self-employment as well as wage employment, (iv) substantial displacement of men employed in construction, as well as men and women employed in agriculture, is observed whereas jobs created in the formal manufacturing and services sectors exceed the jobs lost in the informal sectors, (v) wages in the informal agricultural sector drops substantially for both men and women whereas wages in the formal manufacturing for both men and women and in the services sectors for men increase.

¹² At the same time, we also find substantial adverse wage effects on natives working informally in agriculture.

(2015) and Ruiz and Vargas-Silva (2015) for Sudan and Tanzania, respectively. However, in our context, it is not only the better-off individuals who benefit in the formal sector; employment of less-educated natives also substantially expands in the formal sector. Another unique finding for the Turkish case is the strong positive wage and employment effects in the formal sector, especially for the manufacturing sector. At the same time, it is important to note that these are relatively short-term effects. As Morales (2017) finds in the Colombian setting, these effects might dissipate over time. Finally, as in several other studies in less-developed countries, we find a positive impact of refugees on consumer prices.¹³ This fact, coupled with the adverse labor market effects on the most vulnerable groups, implies that poverty might increase among these native groups.

2. Relevant Literature

For less developed countries, there is a growing literature on the labor market effects of forced displacement by civil wars and other armed conflicts.¹⁴ In a similar context to our study, Fallah et al. (2019) find no adverse effects of Syrian refugees on natives' employment and wage outcomes in Jordan. At the same time, they report changes in Jordanian natives' type of employment. Malaeb and Wahba (2018), in the same context, analyze the effect of Syrian refugees on earlier migrants. They find that arrival of refugees pushes earlier migrants into the informal sector; moreover, earlier migrants work less and earn lower wages. In the Turkish setting, Aydemir and Kırdar (2017) examine the effect of the arrival of ethnic Turks from Bulgaria in 1989. They find that this migration influx increases the unemployment rate of native men and that this effect is stronger among younger natives and natives whose educational attainment is similar to that of the immigrants. However, that context differs sharply from the context of Syrian migrants in Turkey. First, ethnic Turks from Bulgaria could enter the formal labor force. Second, they did not face a language barrier.

Ceritoğlu et al. (2017) and del Carpio and Wagner (2016) examine the impact of refugees in Turkey on natives' labor market outcomes. Ceritoğlu et al. use a difference-in-differences approach using the 2010–2013 THLFS; however, they do not account for the potential endogeneity of the regional distribution of migrants. Their inference is based on heteroskedasticity-robust standard errors. However, when we replicate their study, we find that their claims of statistical significance virtually

¹³ See, e.g. Alix-Garcia and Saah (2010) and Maystadt and Verwimp (2014) for Tanzania, Alix-Garcia et al. (2018) for Kenya, Depetris-Chavuin and Santos (2018) for Colombia.

¹⁴ See, e.g., Alix-Garcia and Bartlett, 2015; Alix-Garcia et al., 2018; Bozzoli et al., 2013; Calderon-Mejia and Ibanez, 2016; Maystadt and Verwimp, 2014; Morales, 2017; Ruiz and Vargas-Silva, 2015. Surveys of this literature are provided by Ruiz and Vargas-Silva (2013), Becker and Ferrara (2019), and Maystadt et al (2019).

vanish once standard errors are clustered at the region-year level (see Table A1 in Appendix A).¹⁵ This is presumably not a surprise because they had data only up until 2013 and their dummy treatment variable does not account for the substantial variation in migrant intensity between 2012 and 2013.

Del Carpio and Wagner (2016) utilizes the regional variation in the intensity of migrants in their difference-in-differences analysis with the 2011 and 2014 THLFS. Their identification strategy uses a distance-based instrument—which depends on the annual stock of immigrants, the distance between the 26 NUTS-2 regions in Turkey and 13 provinces in Syria, and the prewar population shares of Syrian provinces—along with control variables for the interactions of the distance of NUTS-2 regions to the border with year dummies (time-varying distance variable).¹⁶ They use both this control variable for the distance to the border and the instrument because regional economic shocks in Turkey might be correlated with distance to the border, and hence the migrant shock.¹⁷ A key concern about using a time-varying distance variable with a distance-based instrument is that little variation remains in the key variable of interest. Using the methodology of del Carpio and Wagner (2016), we estimate 2SLS regressions with our data, as well as OLS regressions (see Tables A2 and A3 in Appendix A). What is striking in these results is the difficulty of interpreting some of the key estimates. For instance, the 2SLS estimates indicate that every 10 incoming Syrians displaces 14 native wage-worker men in the informal sector and generates jobs for 15 native men in the formal sector.¹⁸

In a recent and concurrent work to ours, Cengiz and Tekgüç (2018) examine the labor market effects of the Syrian migrants in Turkey using difference-in-differences and synthetic control methods with the 2004–2015 HLFS. They examine only four employment outcomes: informal employment, employment, and employment for two different education groups. They do not account for gender

¹⁵ For instance, their claims about the negative effect on men's employment in the informal sector and about the positive effects on men's employment in the formal sector and on men's unemployment all lose statistical significance.

¹⁶ Hence, the variation in their instrument comes from the distance between the provinces in Syria and the closest Turkish border crossing. Since there are several border crossings, this variable exhibits variation across NUTS-2 regions.

¹⁷ A more flexible way of accounting for regional shocks is to allow for calendar year effects to vary at the region level, which is what we do in this study.

¹⁸ The second issue is that once they control for distance with the instrument, the migrant-to-native ratio in the regressions increases for the regions in northwestern Turkey, the economically attractive areas of the country. In fact, when they compare the rank order of regions in terms of the migrant-to-native ratio before and after distance is controlled for (Table 4 in their text), the ranks of the Istanbul, Kocaeli, Bursa and İzmir regions all go up, implying that their 2SLS estimates put more weight in these regions than the OLS estimates do. If migrants were to move within Turkey for economic reasons, they would go to these regions, where the economic conditions are better. In essence, while their approach tries to fix one potential reason for endogeneity, it worsens another potential reason for endogeneity.

and informal/formal differences in the Turkish context.

Our findings, in terms of whether natives benefit or lose from the migrant influx, lie in-between the comparatively positive findings of Cengiz and Tekgüç (2018) and relatively negative findings of Ceritoğlu et al. (2017) and del Carpio and Wagner (2016). Unlike Cengiz and Tekgüç—who claim no adverse effects of the migrant influx on natives' employment or wages overall—we find robust adverse employment effects that are substantial in magnitude for men in the informal sector and for women in the overall labor market. On the other hand, unlike Ceritoğlu et al. and del Carpio and Wagner, we find no evidence for a negative impact on the employment of native women in the informal sector. While Ceritoğlu et al. report an increase and del Carpio and Wagner a decrease in unemployment of native men, we find no evidence of a change in men's unemployment. Unlike del Carpio and Wagner, we do not find a negative effect of the migrant shock on the net migration of natives to the affected regions. Moreover, examining the pre-existing trends in outcomes, we provide clues as to why some of our results are different. For instance, the positive effects of migrants on wages and wage employment of men in the formal sector appear only after allowing for differential preexisting time trends. This is why the other papers fail to uncover this effect.¹⁹

3. Background Information

3.1 Syrian Refugees in Turkey

The initial displacement of people in Syria took place in the early days of the Arab Spring popular uprisings that started in 2010. Turkey began to receive its first refugees from Syria as early as April 2011; however, the number of Syrian refugees at the end of 2011 was very small (at 8,000). Like the other front-line states, Turkey had an open door policy towards the refugees. Most of the refugees stated that they left Syria for security reasons and chose Turkey as their destination due to the ease of transportation (Ferris and Kirişci, 2016). The government gave "temporary protection" status to the Syrian refugees in October 2011. As the inflow of Syrians continued to increase, the Turkish Disaster and Emergency Management Authority (TDEMA) was tasked with setting up camps for them.²⁰ The number of Syrians in Turkey increased to 170,912 by the end of 2012, to 560,129 by the end of 2013, jumped to 1,622,839 by the end of 2014 and reached 2,503,549 by the end of 2015. According to the

¹⁹ Our findings that agree with those in the previous papers include the negative effect on men's employment in the informal sector, the positive effect on men's employment in the formal sector, and the negative effects on women's total employment and labor force participation.

²⁰ In about two years, by December 2013, 21 camps had been set up in 10 provinces, housing over 210,000 refugees.

Turkish Directorate General for Migration Management (TDGMM, 2016), many refugees preferred to settle in urban areas and only about 10% of them lived in refugee camps at the end of 2015.

In terms of demographic characteristics, Syrians in Turkey differ from the natives in important ways. First, Syrian refugees are on average younger; their median age is 21 compared to 31 for natives (Eryurt, 2017). Second, Syrian refugees have lower educational attainment. Table B1 in Appendix B compares the educational distributions of Syrians (based on a survey by the TDEMA and the WHO conducted in December 2015) and natives (based on the 2015 THLFS). In particular, the fraction of individuals with no school degree is much higher for Syrians.

Before January 2016, only 7,351 work permits were issued to Syrians—mostly to those who started a business. Because Syrians living in urban areas have to work to sustain their lives, several hundred thousand have joined the informal workforce. The anecdotal evidence points to a boom in the construction sector arising from the arrival of the refugees, particularly in the provinces bordering Syria, and that textiles and clothing manufacturing and agriculture were other major sectors of informal employment for the refugees (Erdoğan, 2014; Ferris and Kirisci, 2016). Since no official statistics exist for labor force participation and employment rates of Syrians in Turkey, we refer to surveys—which suggest that the employment rate is 30–40% and that labor force participation is about 50% for the working-age Syrian population—although there is a substantial gender gap.²¹

3.2 Relevant Characteristics of the Labor Market in Turkey

Here, we briefly discuss the important features of the Turkish labor market pertaining to this study. The statistics we provide come from the THLFS for 18- to 64-year-olds. The labor force participation rate of men in Turkey is similar to that in the OECD countries except for older workers due to the early retirement possibilities that were available for them. However, female labor force participation rates are markedly lower for all age groups in Turkey.²² In 2011, before the arrival of Syrian refugees, the participation rate of women was only 33%. The unemployment rate in 2011 was 8.2% for men and 10.3% for women with a 4-week job-search period definition. A significant fraction of workers in Turkey are not wage earners. Self-employment for men (21.6% in 2011) and unpaid family work for women (34.2% in 2011) are common among the employed. Employment in agriculture is

²¹ According to the above-mentioned survey by the TDEMA and the WHO conducted in 2015, of Syrian men aged 18–69, 51.2% are employed and 83.5% are in the labor force; by contrast, of Syrian women aged 18–69, 7.7% are employed and 11.5% are in the labor force. A more recent survey conducted by the Human Development Foundation (*İnsani Gelişme Vakfi*, 2017), finds that 31% of Syrians in Turkey are employed and 17% are unemployed. In another recent survey, Erdoğan (2017) finds that 38.6% of Syrians above age 12 are employed.

²² See Tunalı (2003) and Dayıoğlu and Kırdar (2010) for more details on these patterns.

important, where 40.5% of all employed women and 16.8% of all employed men worked in 2011.

We define informal employment as working without social security coverage. In many firms in Turkey, formal and informal employment exist together. Informality in Turkey is not restricted to certain sectors, although it is more common in agriculture and construction. In 2011, the incidence of informality was 82.6% in agriculture whereas it was under 25% in each of the manufacturing and services sectors. Informality is not limited to less-educated people either, although it is more likely for them.²³ While informality is observed across all types of employment, it is less common among wage workers than among self-employed because the latter group is more likely to be in agriculture.²⁴ Finally, part-time employment and temporary employment are more prevalent among workers employed informally.²⁵ Taymaz (2009) finds a significant wage gap between the formal and informal workers—controlling for self-selection into informal employment and individual characteristics.

The level of transition from informality to formality in the Turkish labor market is significant. Using a dataset with panel structure, Tansel and Acar (2017) estimate that of those who were wage earners in the non-agricultural informal sector in 2006, 15.0% became wage earners in the non-agricultural *formal* sector by 2007, 20.5% by 2008 and 23.9% by 2009. This information is particularly important for this study because Syrian migrants are close substitutes to natives in the informal sector.

4. Conceptual Framework

We outline a basic conceptual framework by adapting the canonical model used to assess the impact of migrant labor supply shocks (see, for example, Borjas, 2014) to our own setting. We use this conceptual framework in the interpretation of our findings. In this framework, the labor market in both the formal and informal sectors is competitive. In our setting, we can easily isolate the natives who are threatened by the migrant influx vs. the natives who stand to gain from it, because only a handful of migrants have work permits in the formal sector. Accordingly, we assume that natives in the informal sector and migrants are substitutes, whereas natives in the formal sector and migrants are complements. In fact, in a study that complements ours, Akgündüz and Torun (2020) provide supporting evidence for this fact in the same context.²⁶ We make certain other assumptions, which we

²³ In 2011, while 85.6% of those with no school degrees were informally employed, 49.2% of primary school or middle school graduates, 22.9% of high school graduates, and 7.4% of college graduates were.

²⁴ In 2011, 23.4% of wage workers were informally employed compared to 63.6% of self-employed.

²⁵ While 23.0% of workers employed informally were part-time in 2011, only 2.9% of workers employed formally were. Similarly, 13.5% of informally employed were temporary workers in 2011, compared with 3.3% of formally employed.

²⁶ Using a large dataset of firms in Turkey, they find that the arrival of Syrians pushed native workers into more complex

later relax. First, there are no factor movements. Capital is fixed across regions and natives do not migrate across regions in response to the migrant shock. Second, we ignore the general equilibrium effects coming from the product and capital markets.

In the informal sector, because migrants and natives are substitutes, the migrant influx shifts the supply curve outward, thereby lowering wages and the employment of natives. The magnitude of the supply shock depends on the degree of substitutability between native workers and migrants.²⁷ In the informal sector, where most native workers are relatively unskilled, we would expect a high degree of substitutability,²⁸ except for certain services sectors where language skills are important.²⁹ Moreover, since Syrians are on average less educated and younger than natives, we would expect the negative employment and wage effects of migrants to be more pronounced for the less-educated and younger natives in the informal sector.³⁰

Since natives in the formal sector and migrants complement each other, natives can specialize in more productive tasks. Consequently, the migrant influx increases the marginal product of natives in the formal sector and shifts the demand curve outward—increasing both wages and native employment. Whether the rise in labor demand has more of an effect on wages or on employment depends on the elasticity of the labor supply. When the labor supply is inelastic, wages rise more than employment.

In the longer run, factor movements take place in response to the migrant shock. In the regions where Syrians settle, the marginal productivity of capital increases. Hence, we would expect capital to flow into these regions from other regions. Existing firms expand and new firms are established, increasing the labor demand in both the formal and informal markets.³¹ While this brings about a further rise in employment and wages in the formal sector, it counteracts the negative wage and employment effects in the informal sector. Similarly, we could expect the migrant influx to affect natives' internal

jobs by increasing the intensity of more abstract and routine tasks at the expense of manual tasks. Similarly, using data on 15 European countries, D'Amuri and Peri (2014) find that immigrants push natives into more complex jobs.

²⁷ Whether migrants and natives are perfect or imperfect substitutes has been a critical issue in the debate on migrants' wage effects in the U.S. context. While Ottaviano and Peri (2012) report a significant level of imperfect substitutability between natives and migrants, Borjas et al. (2012) estimate that natives and migrants are perfect substitutes.

²⁸ In fact, in the context of Colombia, Calderon-Meija and Ibanez (2016) find a high degree of substitutability between migrants and low-skilled natives in the informal sector.

²⁹ Peri and Sparber (2009) report that in the U.S. context, the arrival of migrants pushes natives from jobs that require manual skills to jobs that require English-language skills.

³⁰ Another reason for a stronger effect on less educated natives is that migrants' skills could downgrade upon arrival (Dustmann et al., 2013).

³¹ In fact, Akgunduz et al. (2020) provide evidence for this also in the context of Syrian refugees in Turkey.

migration flows.³² Formal labor would flow to the treatment regions to the degree that formal and informal labor are complements. At the same time, as the marginal productivity of informal labor declines in the treatment areas, we would expect native informal labor to flow out. Finally, some of the displaced native workers in the informal sector would move to the formal sector, shifting the supply curve outward in the formal sector.

We also expect general equilibrium effects. First, the arrival of Syrians expands the consumption base and increases demand in the product market. At the same time, it also expands the production base as migrants enter the labor market. If the change in the consumption base dominates, prices in the product market increase—increasing firms' production and the demand for native workers. Syrians increase the capital supply as well as the labor supply. To the extent that they come with assets, the supply of capital shifts outward, lowering the rental price of capital, thereby boosting production and labor demand. In fact, as discussed earlier, Syrians have established several firms in Turkey.

5. Data

We use the 2004–2015 Turkish Household Labor Force Surveys (THLFS) conducted by the Turkish Statistical Institute (TurkStat). The nature of the data is repeated cross-sectional surveys, which are representative at the country level and across the 26 NUTS-2 regions. Since the target population is registered residents of Turkey, it samples Syrian migrants only if they acquire residency in Turkey, which is rare. We start with the 2004 survey because the survey structure changes in that year. We exclude the 2012 survey because data on the number of Syrian refugees across regions are not available for that year. We limit the sample to 18- to 64-year-olds.

The surveys provide detailed information on labor market outcomes and demographic characteristics. The demographic characteristics we use include age, educational attainment, and marital status. We use several labor market outcomes: employment, wages, labor force participation, unemployment, informal/formal status of employment, type of employment (wage earner, self-employed, unpaid family worker), and sector of employment. The information on informal/formal status is elicited by a question on social security eligibility.³³ We also use information on part-time vs. full-time employment status and on temporary vs. permanent employment status. Part-time employment is defined as working less than 30 hours per week, and temporary employment covers daily, seasonal

³² See, e.g., Card (2001) and Borjas (2006). Morales (2017) and Monras (2019) show that internal relocation is critical in dissipating the initial large effects of a migrant shock on wages over time in Colombia and in the US, respectively.

³³ This question is "Does your job provide any social security coverage?"

or occasional work that can be either contractual or not. The question about job searches within the last four weeks is elicited in the surveys after 2009; hence our variables for unemployment and labor force participation are available for the 2009–15 period only.³⁴ Table 1 presents the mean values by gender for the individual-level characteristics in panel (A) and for the labor market outcomes in panel (B). Table B2 in Appendix B gives the same descriptive statistics by year.

We combine these micro-level data on natives with data on the number of Syrians across the 81 provinces of Turkey from 2013 to 2015. We aggregate the provincial numbers to the NUTS-2 region level because the THLFS does not provide province identifiers. The TDEMA (2013) provides information on the number of Syrian refugees for 2013.³⁵ The number of refugees across provinces for 2014 is taken from Erdoğan (2014), who draws on information from the Ministry of Interior. Finally, the numbers for 2015 are provided by the TDGMM (2016). The micro-level data in the THLFS represent the full year, whereas the data on the number of Syrians across regions are for the end of each year. Figure B1 in Appendix B shows that the total number of Syrians in Turkey varied considerably from month to month in a given year. For this reason, we make an adjustment on the variation of Syrians across regions so that it represents the year average instead of the end of year.³⁶ Along with selected key information on the NUTS-2 regions, the resulting ratios of Syrians to natives across the 26 NUTS-2 regions from 2013 to 2015 are presented in Table 2.

We also use a number of auxiliary datasets. First, we use regional data on trade activity for the microdata period (TurkStat, 2018a). Second, we use data on regional consumer price indices for the 2003– 15 period, published by the Central Bank of Turkey (2018). Third, data on the openings, closings, and liquidation of firms, business cooperatives, and self-proprietorships are used; these are provided by the Union of Chambers and Commodity Exchanges of Turkey for the 2009–15 period. Fourth, we use data on internal migration across the NUTS-2 regions by age and educational attainment for the 2008– 15 period provided by TurkStat (2018b). Fifth, we use data on the number of health personnel across regions for the 2009-15 period provided by TurkStat (2019) and on the number of teachers across regions for the 2008-15 period provided by the Turkish Ministry of National Education (2019).

³⁴ Previously, the job-search status within the last three months was elicited. This information is available for 2004–13.

³⁵ Although no numbers are provided for provinces without camps, 80,000 refugees are reported as residing in them. Thus, for provinces without camps, we distribute 80,000 Syrians based on their shares in these provinces in 2014.

³⁶ First, for each year, we calculate the average value of the monthly numbers of Syrian migrants (call this v[t], where t denotes the year) using the time-series data. Then we calculate the total number of Syrian migrants in Turkey using the cross-sectional data for each year (call this w[t]). We adjust the regional numbers in the cross-sectional data by multiplying it by v[t]/w[t] to align the sum of regional numbers in each year with the average monthly value for that year.

6. Identification Method and Estimation

We estimate the following baseline equation,

$$y_{ijt} = \alpha + \beta R_{jt} + X'_{ijt}\Gamma + \gamma Z_{jt} + \delta_j + \mu_t + \theta_{jt} + u_{ijt}, \tag{1}$$

where y_{ijt} denotes the labor market outcome for individual i in region j at time t, and R_{jt} is the ratio of migrants to natives in region j at time t. The key parameter of interest is β , which shows the effect of increasing the migrant-to-native ratio from 0 to 1 on labor market outcomes. Individual-level control variables (X'_{ijt}) include full interactions of 11 age groups, four education groups, and marital status.³⁷ The education categories are (i) illiterate or literate with no diploma, (ii) primary school or middle-school graduates, (iii) high school graduates, (iv) university graduates.³⁸ In equation (1), Z_{jt} stands for macro-level variables at the region-year level that affect labor market outcomes. If the war in Syria affects the labor market outcomes of natives through channels other than the arrival of migrants, we would falsely attribute the effect of those channels to the effect of migrants. In fact, as discussed in Section 3, some studies suggest that exports from the Turkish provinces bordering Syria increased. Therefore, we include the log trade volume in Z_{jt} . In equation (1), δ_j stands for the NUTS-2 region dummies and δ_t for the year dummies; u_{ijt} is the error term.

Finally, θ_{jt} in equation (1) stands for time and province interactions. We in fact use four different specifications that differ based on this term. Our baseline specification does not include any time-province interactions. In the other three specifications, we use (i) time trends for 5 regions, (ii) time trends for 12 NUTS-1 regions, and (iii) the interactions of 5-region and year-fixed effects. These interactions are used to make sure that our findings are not driven by differential pre-existing time trends across provinces—as discussed more fully later in this section. The five regions in our study are West (NUTS-1 regions 1 to 4), Central (NUTS-1 regions 5 and 7), South (NUTS-1 region 6), North (NUTS-1 regions 8 and 9) and East (NUTS-1 regions 10 to 12).³⁹

³⁷ The age groups are 18–19, 20–21, 22–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, and 60–64. Five-year intervals are not used in the 18–25 age range because men in the 20–21 age group are not representative of the population due to mandatory military conscription. Military service can be deferred under certain conditions.

³⁸ It is important to separate the group with no school degree and the group with college education because men with no degree have markedly lower employment rates than other men and women with college degrees have substantially higher employment rates than other women (Dayıoğlu and Kırdar, 2010). We also interact marital status with age and education groups because, as reported by Tunalı et al. (2018), the labor force participation profile of low-educated women in Turkey has a pronounced M-shape over the life cycle, where the middle-bottom of the M-shape takes places in high-fertility ages.

³⁹ This is also the classification used in the Demographic and Health Surveys of Turkey.

6.1 Exploiting Distance as an Instrument

A likely concern for identification is that migrants take labor market conditions into account when they settle in different regions. Fleeing the war, Syrians arrived in Turkey via the closest border crossing and settled in the neighboring regions. Over time, however, they dispersed across the country. Nonetheless, a casual eyeballing of Figure 1 reveals that in 2015 they still resided mostly in the regions neighboring Syria—along with some disproportionate numbers in major cities in western Turkey. To investigate this issue further, we examine the major determinants of the migrants' location patterns in a regression framework, using the ratio of migrants to natives as the dependent variable. The results are given in Table C1 of Appendix C, where the variation in the dependent variable comes from 26 NUTS-2 regions over three years (2013–2015).

The distance of the Turkish regions to the Syrian provinces from which the Syrians in Turkey originate is the major determinant of settlement patterns. Syrian migrants are more likely to reside in western Turkey once distance and language are accounted for, which suggests that migrants move in search of better employment opportunities. Therefore, we use an instrumental variable that is based on the exogenous distance factor so that the variation in the key variable of interest coming from employment opportunities can be excluded. Before we define this instrument precisely, we briefly discuss why distance is a very relevant instrument in this setting. Firstly, since Syrian refugees were initially seen as temporary, the camps established by the Turkish state were close to the border. As Syrians moved out of the camps to cities and towns, they themselves chose to settle in regions close to the border for the same reason. Moreover, as Syrians stayed longer and started to use health and education facilities in Turkey, they were expected to use the ones in the province where they were registered. Although this was not strictly enforced, it created further inertia in movement within Turkey. Furthermore, there is anecdotal evidence that some members of refugee families stayed in Syria. In this case, settling closer to the border would allow for more frequent visits.

Our instrument is an extension of the one used by del Carpio and Wagner (2016), discussed in Section 2, which assumes that the timing and size of the refugee shock are exogenous. If Turkey were the only destination country for Syrian refugees, this assumption would be more plausible. However, Jordan, Lebanon, and Iraq, which border Syria, also received substantial numbers of Syrians. In fact, a tiny fraction of Syrians in Turkey originate from the provinces bordering Jordan and Lebanon. Moreover, the size of the refugee population entering Turkey and the time of their arrival could depend on the relative economic conditions and treatment of refugees in these destination countries. Hence, we extend this instrument by using the distance of Syrian provinces to all four neighboring countries and the total number of refugees in these countries. We define this instrument as follows,

$$I_{n,t} = \sum_{s=1}^{13} \frac{\left(\frac{1}{d_{s,T}}\right)\pi_s}{\left(\frac{1}{d_{s,T}} + \frac{1}{d_{s,L}} + \frac{1}{d_{s,I}} + \frac{1}{d_{s,I}}\right)} \frac{T_t}{d_{n,s}},$$
(2)

where $d_{s,X}$ for X=T, L, J, I stands for the minimum distance of Syrian province s to Turkey, Lebanon, Jordan, and Iraq, respectively.⁴⁰ In equation (2), π_s stands for the pre-war population shares of Syrian provinces and T_t stands for the total number of Syrian refugees in the four neighboring countries, which is roughly equal to the total number of Syrian refugees given the low numbers in other countries in these years. Finally, $d_{n,s}$ is the distance of Turkish region n to Syrian province s. In this instrument, the first ratio adjusts the prewar population shares of Syrian provinces according to their distances from the four neighboring countries. For instance, while the prewar population share of the Aleppo province was 21.6%, we would expect the share of Syrian refugees in Turkey originating from Aleppo to be 42.3% with this formulation—as Aleppo is much closer Turkey than the other three neighboring countries. In this instrument, we distribute the total number of Syrian refugees—not just those entering Turkey—first across countries by distance and then within Turkey by the distance of Turkish regions from Syrian provinces. Therefore, this instrument also accounts for the potential endogeneity in the size and timing of the refugees entering Turkey.

6.2 Plausibility of Identification Assumption

The assumption for the validity of our instrument is that the trends in labor market outcomes in regions with high and low values of the instrument would have been the same, conditional on region and time fixed effects and a set of covariates, in the absence of the refugee shock. We provide support for this assumption in Table 3 for outcomes in the informal and formal sectors separately and in Table 4 for outcomes in the total labor market where, using the pre-shock data, we conduct placebo regressions of the residual trends in the dependent variables on the instrument (as in Dustmann et al, 2017; Jaeger et al., 2020; and as suggested by Goldsmith-Pinkham et al., 2020). In both tables, columns (1) to (4) give the estimates for men and columns (5) to (8) the estimates for women. In the calculation of residual trends, columns (1) and (5) use the region and time fixed effects and a set of covariates, whereas columns (2) and (6) add 5-region specific time trends, columns (3) and (7) add NUTS1-region specific time trends, and columns (4) and (8) add 5-region by year fixed effects.

The tables in fact show that the assumption that the instrument is uncorrelated with the residual trends fails for a number of variables with the baseline specification. This evidence, however, disappears in

⁴⁰ Here, the minimum distance to any entry point in the border of these countries is taken. There are six entry points in the Turkish border, three in the Iraqi border, two in the Jordanian border, and four in the Lebanese border.

the specifications that allow for region-year interactions. Particularly, this is observed for wage employment of women in the informal sector and employment, wage employment, and hourly wage of women in the formal sector in Table 3 and full-time employment of women and wage employment of men in Table 4. For other variables, a high but statistically insignificant correlation that exists between the instrument and unobserved trends reduces substantially when region-year interactions are included. This includes men's self-employment in the informal sector and men's wages in the formal sector in Table 3 and men's unemployment and women's wages in Table 4. These findings highlight the importance of allowing for differential pre-existing trends.

We also provide visual evidence on the differential time trends in the pre-shock period between the regions with a high value of the instrument and regions with a low value of the instrument in Figure 2. For this purpose, we define the treatment group as the five NUTS-2 regions with the highest value of the instrument. Figure 2 clearly displays very different time trends for the same variables for which we find a high correlation between the instrument and the residual trends in Tables 3 and 4.

7. Results

Since our key identification assumption fails for several outcome variables with the baseline specification but not with the more flexible three specifications, we base the interpretations of our findings on the latter. We stay on the conservative side and make a conclusion only when all three specifications with the region-time interactions provide statistical evidence. At the same time, among these three specifications that do well in placebo checks, we prefer the one with the 5 region-year fixed effects in quantifying the results as it is more flexible. With our preferred specification, the identification assumption fails only for men's wage employment in the formal sector (Table 3).

7.1 Employment and Wages in the Informal and Formal Sectors by Gender

Table 5 presents the OLS estimates on the effects of migrants in the informal sector in panel (A) and in the formal sector in panel (B). Table 6 gives the 2SLS estimates in the same format.⁴¹ Mean values of the dependent variables are also given along with the regression estimates to allow the reader to assess the magnitude of the effects.⁴² First, we briefly discuss our first-stage estimates. Table 6 shows that the first stage is very strong in all specifications for both men and women. F-statistics are much higher than what is suggested in the literature. The strength of our instrument is not a surprise, given

⁴¹ The ratio of migrants to natives does not vary by gender.

 $^{^{42}}$ For instance, to understand the magnitude of the effects in the Hatay region, where the ratio of migrants to natives in 2015 is around 0.1, one needs to compare 0.1*coefficient estimate with the mean value for each dependent variable.

that distance is a strong predictor of the settlement patterns of Syrian migrants in Turkey.

7.1.1 Informal Sector

Panel (A) of Table 6 shows that the migration shock decreases the employment of native men in the informal sector. Quantitatively, with the preferred specification in column (4), every 10 incoming Syrians displaces about 4–5 native men in the informal sector. While the magnitude of this effect is quite large, a Syrian migrant can displace two natives because our employment definition includes part-time jobs.⁴³ In fact, when we examine the effect on full-time employment only, we find that every 10 incoming Syrians eliminates 2–3 full-time jobs for native men in the informal sector (Table C2 in Appendix C.) Considering the fraction of the working-age population among these 10 incoming Syrians and their employment rates, this finding implies that there is about a one-to-one replacement of native male workers in the informal sector.

Table 6 also shows that all of this replacement of native men in the informal sector is for wage workers. The outward shift of the supply curve in the informal sector, which decreases natives' wage employment, would also imply lower wages. There is suggestive but not robust evidence that wages of men in the informal sector fall; only our preferred specification with the region-year fixed effects yields marginally statistically significant coefficients. According to this specification, an increase of 10 percentage points in the ratio of migrants leads to a 6% fall in wages but a 48% (0.1*0.531/0.110) fall in wage employment.⁴⁴ The fact that wage employment responds much more than wages suggests that the labor supply curve for men in the informal sector is elastic. There is also suggestive evidence of an increase in unpaid family workers in the informal sector, along with the fall in wage employment (for which our analysis by sector of employment in Section 7.4 provides clues).⁴⁵

Next, we examine the effects of the migration shock on women's employment and wages in the informal sector. Although the coefficients for employment are negative and sizable once we relax the common-trend assumption across NUTS-2 regions in columns (6) to (8), they are statistically insignificant except in column (7). However, once we distinguish between full-time and part-time work, strong evidence emerges for an impact on part-time jobs (Table C2 in Appendix C). This is empirically relevant because 29.4% of women in the informal sector are employed part-time in the

⁴³ In 2011, before the Syrians arrived, about 13% of native men in the informal sector were part-time workers.

⁴⁴ Here, 0.531 stands for the estimated coefficient in Table 6 and 0.110 is the mean level of the dependent variable.

⁴⁵ The analysis of only full-time jobs, given in Table C2 of Appendix C, indicates an increase in full-time self-employment as well as full-time unpaid family work, along with a fall in full-time wage employment. These imply a shift from wage work to self-employment and unpaid family work for men in the informal sector.

pre-treatment period. While no evidence for an effect on women's wage employment in the informal sector exists, there is evidence for an effect on women's self-employment, which stems completely from the loss of part-time jobs (Table C2 in Appendix C). In the informal sector, 42.4% of the self-employed women are part-time workers, compared with 15.1% of wage-worker women.

7.1.2 Formal Sector

Panel (B) of Table 6 shows that the migrant shock has a substantial positive effect on men's employment. The arrival of every 10 Syrians generates about 6 jobs for native men. Moreover, this positive effect exists for all types of employment. Of the 6 new jobs generated, roughly 3.5 jobs are for wage workers, about 2 jobs are for the self-employed, and 0.4 are for unpaid family workers. (The remaining are employers.) In addition, the migrant influx has a positive effect on men's wages in the formal sector. Quantitatively, an increase of 10 percentage points in the ratio of migrants to natives produces a 9.5% increase in men's wages. The joint increase in wage employment and wages of men in the formal sector is consistent with an outward shift of the labor demand curve, resulting from migrants complementing natives in the formal sector. Moreover, our analysis in Section 8 uncovers other channels that contribute to the outward shift of the labor demand curve.

A striking example of the bias caused by the common-trend assumption across NUTS-2 regions is for men's wages in the formal sector. The estimates with this assumption indicate no effect; in fact, the coefficient estimate is very close to zero.⁴⁶ However, the specifications that relax this assumption, which yield similar estimates, indicate strong evidence of a positive effect. This finding is consistent with panel (B) of Figure 2, where wages in the pretreatment period for the control group display a strong upward trend, whereas they remain relatively constant over time for the treatment group.

Next, we examine the effects of the migrant shock on employment and wages of women in the formal sector. The estimates with the common-trend assumption across NUTS-2 regions show strong negative effects on total employment and wage employment. However, as we gradually relax this common-trend assumption, both the statistical significance and the coefficient magnitudes diminish. This change is consistent with panels (E) and (F) of Figure 2, where employment and wage employment for women in the formal sector increase at a much faster rate in the control region than in the treatment region during the pre-treatment period. In fact, with the region-year fixed effects in column (8), while the evidence for total employment vanishes completely, the evidence of a negative

⁴⁶ Similarly, Ceritoğlu et al. (2017) and del Carpio and Wagner (2016), who also force the common-trend assumption across NUTS-2 regions, find no effect on men's wages in the formal sector. Although del Carpio and Wagner do not separate men and women, most wage earners are men.

effect on formal wage employment persists. The arrival of every 10 Syrians displaces about 1.5 women who are wage workers in the formal market.⁴⁷

There is suggestive but not conclusive evidence of a positive effect on women's wages in the formal sector. While the specification with the common-trend assumption across NUTS-2 regions yields a virtually zero effect, the specifications that relax this assumption yield much higher coefficients, and the preferred specification with region-year fixed effects provides statistical evidence of a positive effect. At the same time, when we restrict the sample to full-time workers in the formal sector, we observe evidence across all specifications that women's wages increase (Table C3 in Appendix C), an increase that is almost as large as that for men.

7.2 Total Employment, Labor Force Participation and Unemployment by Gender

We now conduct the same analysis for total employment, labor force participation, and unemployment. We also examine full-time and part-time employment separately. Most part-time employment occurs in the informal sector.⁴⁸ Tables 7 and 8 present the OLS and 2SLS estimates, respectively. While the discussion below is based on the 2SLS estimates, we provide a brief discussion of a comparison of the OLS and 2SLS estimates at the end of this subsection.

For men, no conclusive evidence points to an effect on total employment, as the positive effect in the formal sector neutralizes the negative effect in the informal sector.⁴⁹ However, when we distinguish between full-time and part-time employment, we find that the former increases at the expense of the latter. In terms of type of employment, the negative effect on wage employment in the informal sector dominates the positive effect in the formal sector, and the total wage employment of native men falls. However, increases in self-employment and employment as unpaid family workers make up for this fall in wage employment. In other words, the arrival of Syrians causes a significant change in the type of employment of native men.⁵⁰ Average wages also increase, but this is not as interesting as the increase in wages in the formal sector because this overall increase results in part from the fall in total wage employment and from the compositional change in wage employment in terms of formality.

⁴⁷ It is possible that, to the degree that there is assortative mating, women in the formal sector might withdraw from the labor market due to the income effect accruing from the rise in their husbands' earnings in the formal sector.

⁴⁸ While the fractions of part-time employed in the pre-treatment period are 8.8% for men and 29.4% for women in the informal sector, they are 1.7% for men and 3.8% for women in the formal sector (Table B3 in Appendix B).

⁴⁹ Only the most flexible specification indicates weak statistical evidence of a positive impact.

⁵⁰ As can also be seen from Table 8, the baseline specification misses the effects on men's full-time employment, parttime employment, wage employment, and self-employment. In all these cases, the more-flexible alternative specifications are in congruence not only in terms of statistical significance but also in terms of the magnitude of the effects.

There is no conclusive evidence of an effect on labor force participation or unemployment, although some specifications reveal weak statistical evidence of a positive impact on labor force participation.

For women, total employment falls with the arrival of Syrians. Quantitatively, every 10 incoming Syrians displaces about four women according to our preferred specification, all of which are parttime jobs. Self-employment also decreases—which is consistent with the significant fall in part-time employment—because about 40% of the self-employed women work part-time (Table B3 in Appendix B). Most women who lose their part-time job leave the labor force. The negative effect on labor force participation is large and precisely estimated across all specifications. On the other hand, only weak evidence of a rise in unemployment emerges only with certain specifications, and the magnitude of this rise is much smaller than that of the drop in labor force participation.

Finally, we briefly discuss the differences between the OLS and 2SLS estimates. While the estimates for men are quite similar, notable differences emerge for women. In particular, the OLS estimates indicate weaker effects on women's total employment, self-employment, or labor force participation than the 2SLS estimates. Compared to the OLS estimates, the 2SLS estimates capture less of the effect in western Turkey, which is further away from Syria. Part-time employment of women, which is hit particularly hard by the migrant shock, is considerably less common in western Turkey (13.8%) than in eastern Turkey (38.4%). In addition, women in the western part of the country are much less likely to be employed in agriculture, a sector which is hit more negatively by the arrival of Syrians. While the same is true for men, the share of agriculture in men's employment is much lower.

7.3 Employment and Wages by Sector of Employment

Here, we briefly summarize our findings on the effect of migrants on natives' employment and wages by sector of employment. A detailed discussion is provided in Section D.1 of Appendix D. We find significant heterogeneity across sectors of employment in terms of the effect of the migrant shock. Native workers in the labor-intensive and informal-dominated construction and agricultural sectors are adversely affected, particularly men's employment in the construction sector. An increase of 10 percentage points in the ratio of migrants displaces more than half of the men in the informal construction sector. In agriculture, men's wage employment and women's self-employment fall. Moreover, natives' wages are hit particularly hard; for instance, an increase of 10 percentage points in the ratio of migrants to natives brings about almost a 20% fall in wages of women in the informal agricultural sector. On the other hand, in each of the manufacturing and services sectors, the increase in men's employment in the formal sector exceeds the decrease in men's employment in the informal sector. Moreover, wages of men increase both in the formal manufacturing and formal services sectors. Wages of women also increase in the formal manufacturing sector.

7.4 Wage and Wage Employment by Natives' Education and Age

Here, we first summarize our findings on the impact on wage and wage employment of natives' by age and education. Our analysis of wage employment and wages together provides important information on the heterogeneity in labor supply-and-demand elasticities by education and age. In Appendix D, a more detailed discussion is given in Section D.2 on the findings by education and in Section D.3 on the findings by age. The negative effects of the arrival of Syrians on wage employment and wages of men in the informal sector are more pronounced among the less educated and younger workers. This finding is consistent with the implications of the canonical migration model, given that Syrians are younger and less educated than the natives. At the same time, the positive effects on wage employment and wages of men in the formal sector are also stronger for the less educated and younger workers. Hence, it is not only the better off in terms of educational attainment that benefit from the arrival of Syrian migrants. In terms of elasticities, the fact that wages of men and women in the informal market decline only for those with no school degree implies that the labor demand for the least educated group is more inelastic. Moreover, labor supply elasticity in the formal sector decreases in education for men and is lower for youth among both men and women.

The negative impact on wage employment of women in the formal sector, shown earlier in Table 6, is driven by the impact on less-educated and older women. In fact, these subgroups of women are those who had benefited the most from the post-2008 employment subsidy program in Turkey by the time of the arrival of Syrian migrants (see, e.g., Uysal, 2013; Balkan et al., 2014).⁵¹ Essentially, the arrival of Syrians seems to reverse the positive impact of the employment subsidy program on women's formal employment. In addition, the negative effect of migrants on total employment and labor force participation of native women, displayed earlier in Table 8, also increases in women's age and decreases in their education among women with at least some school degree.

7.5 Robustness Checks

Alternative Instrument: Tables E1 and E2 in Appendix E replicate Tables 6 and 8, respectively, using the del Carpio and Wagner instrument. Overall, the results are notably similar, both qualitatively and quantitatively. At the same time, the first stage is weaker, due to the issues discussed in Section 6, yielding higher standard errors. In addition, the absolute magnitudes of the estimated coefficients are lower in most cases. Consequently, statistical significance is overall lower.

⁵¹ According to this program, the government paid firms' share of social security contributions for all newly employed women.

Standard Errors Clustered at NUTS-2 Level: When the error term in equation (1) is serially correlated over time for regions, it is better to cluster the standard errors at the NUTS-2 level. Tables E3 and E4 in Appendix E replicate Tables 6 and 8 when standard errors are clustered at this level. The statistical evidence for most of our findings remain. However, the evidence for negative effects on women's self-employment and on women's total employment is lost. In addition, the statistical evidence for other findings, such as the transition from wage employment to self-employment and unpaid family work for men, becomes weaker.

Potential Effects via Trade Volume: Not only does the war in Syria result in the arrival of refugees, but it also potentially changes the trade patterns of Turkey with Syria because the war affects production in Syria. In that case, the trade volume of the regions of Turkey bordering Syria, where the ratio of migrants to natives is higher, could be affected more because of their proximity to Syria. We examine this issue using data on trade volumes of the 26 NUTS-2 regions over time and find that trade volume in fact increases in the ratio of migrants to natives.⁵² This finding highlights the importance of controlling for trade volume in our regressions; otherwise, the migrant-to-native ratio would also stand for the effect of this rise in trade. Nonetheless, we also find that accounting for the trade volume makes little difference in our main estimates,⁵³ as the change in trade volume is small compared to the size of the migrant influx. In fact, in 2011, before the influx of refugees, trade with Syria amounted only to 1.1% of the total for Turkey.

8 Understanding the Rise in Labor Demand for Men in the Formal Sector

In the canonical migration model, the rise in the marginal productivity of formal labor resulting from the arrival of complementary informal Syrian labor is the reason for the outward shift in labor demand in the formal sector. However, as discussed in the conceptual framework section, other potential channels exist through which the labor demand curve in the formal sector could shift.

⁵² Table E5 in Appendix E shows the results of 2SLS estimations for three different measures of trade volume: exports, imports, and the sum of exports and imports. Quantitatively, a rise of 10 percentage points in the ratio of migrants to natives increases the total trade volume by about 24% with the preferred specification. In addition, this change results solely from the rise in exports—which means the fall in production in Syria with the war provided an opportunity to boost exports for producers in the border regions of Turkey.

⁵³ Tables E6 and E7 in Appendix E show how the main results in Tables 6 and 8 change when we do not account for trade volume in the regressions. Most estimates change little, and the key patterns still hold. At the same time, the positive effects of the migrant shock on employment and wage employment of men in the formal sector are slightly greater, suggesting that the migrant ratio also captures the positive effect of the expanding trade volume.

8.1 Product Prices

If the arrival of Syrians brings about a rise in the consumption base which is greater than that in the production base, product prices would increase—causing an increase in production and hence in labor demand. Here, we examine this issue, using data on the regional consumer price indices for the 26 NUTS-2 areas for the period between 2003 and 2015, using the data provided by the Central Bank of Turkey (2018). The results, given in Table 9, indicate that consumer prices rise as a result of the migrant shock. Quantitatively, an increase of 10 percentage points in the migrant-to-native ratio leads to a 2.6% rise in prices (with the preferred specification). In Table C4 of Appendix C, we conduct the same analysis for 12 aggregate consumption categories separately, using data from the Turkish Statistical Institute (2018c). The rise in the overall price index is mainly driven by the increase in housing expenditures (rent, heating, etc.).⁵⁴ Therefore, we can conclude that an increase in product prices caused by the arrival of Syrians contributes to the rise in demand in the formal labor market.

8.2 Capital Movement

Capital flow to the treatment regions—with the increase in labor supply and hence in the marginal product of capital in these regions—would increase firms' production and therefore their demand for labor.⁵⁵ This could take place either through the expansion of existing firms or the establishment of new firms. Here, we check the latter by examining the effect of the migrant shock on openings, closings, and liquidation of firms, business cooperatives and self-proprietorships. Table 10 provides the estimation results using data from the Turkish Union of Chambers and Commodity Exchanges (TUCCE, 2018) for the 2009–15 period. In fact, the arrival of migrants increases the establishment of new firms and business cooperatives as well as self-proprietorships, but there is no evidence of an effect on closings and liquidations. Quantitatively, an increase of 10 percentage points in the ratio of migrants to natives causes a 38% increase in the number of firms and business cooperatives and an 18% increase in the number of new self-proprietorships according to the preferred specification.⁵⁶ These findings are in line with those in Altındağ et al. (2020) and Akgündüz et al. (2020) who report a rise in firm creation in the same context using different datasets. Therefore, we can conclude that capital flow to the treatment regions contributes the rise in demand in the formal labor market.

⁵⁴ Expenditures on education as well as culture and entertainment also increase.

⁵⁵ The number of companies established in Turkey with Syrian shareholders increased to 1,599 in 2015 from just 30 in 2010 (TUCCE, 2018). In addition, while Syrian capital in new firm openings amounted to 2.2% of all foreign capital in 2011, this figure rose to 22.9% in 2015.

⁵⁶ Here, we do not use the specifications with time trends, as the pre-treatment period is shorter.

8.3 Labor Movement

We could also expect formal labor to move to treatment areas, as its marginal productivity increases with the entry of Syrian workers into the informal sector. While we have no information on migration by formality status in employment to directly test this hypothesis, we can use education as a proxy. Panel (A) of Table 11 shows how the migrant influx changes the net migration rates of natives by age and education across the 26 NUTS-2 regions, using TurkStat regional migration statistics (2018b). With the preferred specification, strong statistical evidence exists that the arrival of migrants increases the net migration rate of college graduates. Table C5 in Appendix C further shows that this evidence exists both for men and women. To investigate this issue further, in Table C6 in Appendix C, we examine the effect of the migrant shock on the number of health personnel and teachers. In fact, there is strong evidence that the arrival of migrants results in an increase in the number of each of doctors (both specialists and practitioners), nurses, and midwifes in the treatment regions. This flow of highly-educated health personnel to the treatment regions contributes to the estimated positive effect of the migrant and wages in the formal sector.

Internal migration would contribute to our finding that informal employment of native men in the affected areas falls if less-educated men in the affected areas, who are more likely to be in the informal market, migrated to the unaffected areas. However, the results in Table 11 do not present evidence for this. While the specification that imposes the common-trend assumption across NUTS-2 regions indicates weak statistical evidence that the arrival of migrants decreases the net migration rate of the 15-24 age group and of primary and middle school graduates, this finding vanishes with all other specifications. The result that the migrant shock does not affect the net migration rate of native men with a low level of education, who are likely to compete with migrants in the informal sector, is actually not a surprise in the Turkish setting—where *seasonal* migration for temporary wage employment is common. In fact, according to the 2011 THLFS, 70.6% of wage workers in agriculture and 51.2% of wage workers in construction are temporary workers. Many of these temporary wage workers are seasonal workers who migrate to a different region and live in temporary lodgings to pick agricultural crops or work in construction.⁵⁷ In fact, our findings, shown in panel (B) of Table 11, indicate a very strong displacement effect of the migrant shock on temporary wage employment among natives, many of whom are seasonal workers.⁵⁸ Essentially, the fact that migrants substitute

⁵⁷ While it is not possible to separate seasonal workers from other temporary workers in the THLFS, the project titled *Mevsimlik Tarım Işçileri* (2019) run by Harran University reports that about half of the workers in agriculture in Turkey are seasonal workers and that 48 of 81 provinces in Turkey receive seasonal workers in agriculture.

⁵⁸ Table C5 in Appendix C indicates that the displacement effect on temporary wage workers exists for both men and

natives who migrate only seasonally for temporary work helps us explain why we do not observe a response in less-educated natives' out-migration from affected areas (where out-migration entails a change of permanent residence).⁵⁹

9 Discussion and Conclusions

As forced migration continues to increase across less-developed countries due to civil and interstate wars and natural disasters, it is imperative to understand its labor market effects on host-country residents so that informed policy decisions can be made. In this study, we present the consequences of mass forced migration of Syrians into Turkey on natives' labor market outcomes using rich data and a credible identification scheme and interpret our findings within a dual labor market equilibrium framework. Our findings also contribute to the broader debate on the impact of immigration on labor markets in developed countries.

We find no negative effect of the arrival of Syrians on the total employment of men. The significant negative effect on informal employment is offset by an equally significant positive effect on formal employment. For native women, on the other hand, total employment falls—resulting mostly from the loss of part-time employment—as does labor force participation. In other words, employment of women with the weakest labor-market attachment responds the most. While the arrival of Syrians does not change the total employment of native men, it does change their type of employment. A shift from wage employment to self-employment and unpaid family work takes place. The cause of this shift is the displacement of native men with temporary wage employment, who work on a daily or seasonal basis. For native women, temporary wage employment also falls, as well as self-employment—particularly in agriculture.

In the informal sector, every 10 Syrians displaces four native men (including part-time jobs), all of whom are wage workers. Suggestive evidence of a fall in native men's wages also exists. The substitutability of native men in the informal sector with migrant workers is high—about one-to-one,

women. At the same time, it is stronger for men, for whom the displacement effect in the informal sector is also large. Given the strong displacement effect of migrants on temporary wage employment of natives, we further investigate this effect by sector of employment. The results are given in Table C7 in Appendix C. The effect on native men exists in all sectors but manufacturing, and it is the strongest in construction. Among women, the effect is the strongest in services.

⁵⁹ It is also important to note that these findings do not mean that less-educated natives in the informal sector do not give a permanent migration response at all. There could still be migration within the NUTS-2 areas, which are geographically large. The fact that there is a shift from wage work to self-employed and unpaid family work could imply that there might be migration from urban to rural areas of a given region for natives. Moreover, it might take a longer time after the arrival of migrants until the less-educated natives give a permanent migration response.

given the employment rate of migrants. In addition, the degree of the substitutability decreases with rising levels of education and with age, both for native men and native women—which is expected as the arriving Syrians are both younger and less educated than the natives. There is no evidence that a fall in the net migration to the treated regions of less-educated natives, who are likely to work in the informal sector, contributes to the substantial decline in men's informal employment. On the other hand, strong evidence exists that Syrian migrants substitute temporary wage workers among native men and women, many of whom are seasonal workers with temporary migration spells.

In the formal sector, every 10 Syrians generates jobs for about 6 native men, of whom roughly 3.5 are wage workers, about 2 are self-employed, and 0.4 are unpaid family workers. There is also a positive effect on men's wages in the formal sector; an increase of 10 percentage points in the ratio of migrants to natives results in a 9.5% increase in wages. This simultaneous increase in wage employment and wages is consistent with an outward shift in the demand curve, which suggests that migrant workers are complementary to native men in the formal sector. These complementarities are stronger for the less educated and younger natives. At the same time, general equilibrium effects and factor movements also contribute to the outward demand shift in the formal labor market. Prices in the product market increase with the arrival of migrants, which boosts firms' production and hence the demand for labor. In addition, capital flows to the treatment regions increase with the arrival of migrants—as the increased labor supply raises the marginal product of capital. Furthermore, internal migration of college-educated natives to the treatment areas increases, which also contributes to the rise in employment and average wages in the formal sector.

Our analysis by sector of employment reveals important distributional consequences of the migrant influx. Native workers in the labor-intensive and informal-dominated construction and agriculture sectors are substantially adversely affected. In the construction sector, native men's employment is remarkably reduced. In the agricultural sector, women's employment and both men's and women's wages fall. In fact, an increase of 10 percentage points in the ratio of migrants to natives causes a 15–20% fall in agricultural wages for both men and women. On the other hand, in each of the manufacturing and services sectors, jobs generated in the formal sector exceed jobs eliminated in the informal sector. Moreover, both men's and women's wages in the formal manufacturing sector and men's wages in the formal services sector increase.

The rise in native men's wage employment in the formal sector while falling in the informal sector suggests that some workers might have simply transferred from an informal position to a formal position within the same firm or the same industry without an actual job loss, as formal and informal workers coexist in many Turkish firms. The fact that the transition rate from informal wage

employment to formal wage employment is high in the Turkish labor market, as discussed earlier, makes this even more likely. This is also consistent with the finding of Akgündüz and Torun (2020) that the migrant shock pushed native workers into more complex jobs at the expense of manual tasks.

Turkey faced relatively favorable economic times in the period before the arrival of refugees. The average annual growth rate between 2004 and 2011 was 4.43%. In a parallel manner, there was a strong positive trend in many labor market outcomes in this period. Formal employment at the expense of informal employment and wage employment at the expense of self-employment and unpaid family work increased for men and women. Moreover, for women, labor force participation and employment rose significantly. Therefore, the findings of this paper mean that while the migrant shock accelerated the transition from informal to formal employment for men, it reduced the transition from self-employment to wage employment. It also implies that the estimated negative effect of the migrant shock on women's employment slowed down the pace at which the labor market created jobs for them rather than eliminating the existing jobs. In fact, we find that the drop in wage employment of women in the formal sector is particularly strong among the less educated and older women—the groups which benefited from the post-2008 employment subsidy program targeting women.

Our study highlights that forced migration brings opportunities and risks in the labor market for hostcountry residents. While several groups, not limited to the better-off in terms of educational attainment, benefit from the arrival of migrants through better and more secure jobs, it is the most vulnerable groups in the labor market who are displaced by the arrival of forced migrants. This fact, coupled with increasing consumer prices, as we document, implies that increasing poverty for these groups might be an important concern. An important contribution of our study is thus to capture these distributional effects of refugee migration on host country workers, which might be of specific concern for policy-makers.

References

- Akgündüz Y.E, Bagir, Y.K., Cilasun S.M. & Kirdar M.G. (2020). Consequences of a Massive Refugee Influx for Firm Performance and Market Structure. Mimeo.
- Akgündüz Y.E. & Torun H. (2020). Two and a Half Million Syrian Refugees, Tasks and Capital Intensity. *Journal of Development Economics* 145:
- Alix-Garcia, J. & Bartlett A. (2015). Occupations under Fire: the Labor Market in a Complex Emergency. *Oxford Economic Papers* 67(3): 687-714.
- Alix-Garcia, J., Bartlett, A. & Saah, D. (2011). Displaced Populations, Humanitarian Assistance and Hosts: A Framework for Analyzing Impacts on Semi-Urban Households. *World Development* 40(2): 373-386.
- Alix-Garcia, J., Walker, S., Bartlett, A., Onder, H. & Sanghi A. (2018). Do Refugee Camps Help or Hurt Hosts? The Case of Kakuma, Kenya. *Journal of Development Economics* 130: 66-83.
- Altındağ O., Bakış O., & Rozo S. (2020). Blessing or Burden? The Impact of Refugees on Businesses and the Informal Economy. *Journal of Development Economics* 146, 102490.
- Angrist, J. D., & Kugler, A. D. (2003) Protective or Counter-Productive? Labour Market Institutions and the Effect of Immigration on EU Natives. *Economic Journal*, 113, F302–F331.
- Aydemir, A., & Kirdar, M.G. (2017) Quasi-Experimental Impact Estimates of Immigrant Labor Supply Shocks: The Role of Treatment and Comparison Group Matching and Relative Skill Composition. *European Economic Review* 98: 282–315.
- Balkan, B., Başkaya, Y.S. and Tümen, S. (2014) "Evaluating the Impact of the Post-2008 Employment Subsidy Program in Turkey." Working Paper no. 1414, Research and Monetary Policy Department, Central Bank of the Republic of Turkey.
- Becker, S. & Ferrara, A. (2019). Consequences of Forced Migration: A Survey of Recent Findings. Labour Economics 59: 1-16.
- Borjas, G.J. (2006). Native internal migration and the labor market impact of immigration. *Journal of Human Resources*, 41(2), 221-258.
- Borjas, G.J. (2014). Immigration Economics. Harvard University Press, Cambridge, MA.
- Borjas, G.J. (2017). The Wage Impact of the Marielitos: A Reappraisal. *Industrial and Labor Relations Review*, 70(5), 1077-1110.
- Borjas, G.J., Grogger, J. & Hanson G.H. (2012). Comment: On Estimating Elasticities of Substitution. *Journal of the European Economic Association*, 10, 198-210.
- Borjas, G.J. & Monras J. (2016). The Labor Market Consequences of Refugee Supply Shocks.

Economic Policy, 32, 361-413.

- Bozzoli, C., Bruck, T. & Wald, N. (2013). Self-employment and Conflict in Colombia. *Journal of Conflict Resolution* 57(1): 117-142.
- Calderon-Mejia, V. & Ibanez A.M. (2016). Labour Market Effects of Migration-Related Supply Shocks: Evidence from Internal Refugees in Colombia. *Journal of Economic Geography* 16(3); 695-713.
- Card, D. (1990). The Impact of the Mariel Boatlift on the Miami Labor Market. *Industrial and Labor Relations Review*, 43, 245–257.
- Card, D. (2001). Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration. *Journal of Labor Economics*, 19, 22-64.
- Carrington, W. J., & de Lima, P. J. F. (1996). The Impact of 1970s Repatriates from Africa on the Portuguese Labor Market. *Industrial and Labor Relations Review*, 49, 330–347.
- Cengiz, D. & Tekgüç H. (2018). Is It Merely A Labor Supply Shock? Impacts of Syrian Migrants on Local Economies in Turkey. Mimeo.
- Central Bank of Turkey (2018). EVDS Data Central. Price Indices. Consumer Price Index and Indices by Regions. https://evds2.tcmb.gov.tr/index.php?/evds/serieMarket/#collapse 14.
- Ceritoğlu, E., Yüncüler, H.B., Torun, H., & Tümen, S. (2017). The Impact of Syrian Refugees on Natives' Labor Market Outcomes in Turkey: Evidence from a Quasi-Experimental Design. *IZA Journal of Labor Policy* 6: Article number: 5.
- Christian, P., & Barrett C.B. (2017). Revisiting the Effect of Food Aid on Conflict: A Methodological Caution. Working Paper 8171, World Bank.
- Cohen-Goldner, S., & Paserman, D. M. (2011). The Dynamic Impact of Immigration on Natives' Labor Market Outcomes: Evidence from Israel. *European Economic Review*, 55, 1027–1045.
- D'Amuri F. & Peri G. (2014). Immigration, Jobs, and Employment Protection: Evidence from Europe before and during the Great Recession. *Journal of the European Economic Association* 12, 432-464.
- Dayıoğlu, M. & Kırdar M.G. (2010). Determinants of and Trends in Labor Force Participation of Women in Turkey. State Planning Organization of the Republic of Turkey and World Bank, Welfare and Social Policy Analytical Work Program, Working Paper Number 5, Ankara.
- Del Carpio, X., & Wagner, M. (2016). The Impact of Syrian Refugees on the Turkish Labor Market. Policy Research Working Paper Series 7402.
- Depetris-Chauvin, E., & Santos R.J. (2018). Unexpected Guests: The Impact of Internal

Displacement Inflows on Rental Prices in Colombian Host Cities. *Journal of Development Economics* 134: 289-309.

- Dustmann, C., Frattini T. & Preston I. (2013). The Effect of Immigration along the Distribution of Wages. *Review of Economic Studies* 80(1): 145-73.
- Dustmann, C., Schönberg, U. & Stuhler J. (2016). The Impact of Immigration: Why do Studies Reach Such Different Results? *Journal of Economic Perspectives* 30(4), 31-56.
- Dustmann, C., Schönberg, U. & Stuhler J. (2017). Labor Supply Shocks, Native Wages, and the Adjustment of Local Employment. *Quarterly Journal of Economics* 132(1), 435-483.
- Erdoğan, M. (2014). *Syrians in Turkey: Social Acceptance and Integration Research*. Migration and Politics Research Centre, Hacettepe University.
- Erdoğan, M. (2017). Syrians-Barometer-2017. https://mmuraterdogan.files.wordpress.com/2016/06/syrians-barometer-executive-summary.pdf
- Eryurt, M.A. (2017) Türkiye'ye Göç: Demografik Durum ve Etkiler. Hacettepe University, Institute of Population Studies, PowerPoint Slides.
- Fallah, B., Kraft, C. & Wahba, J. (2019). The Impact of Refugees on Employment and Wages in Jordan. *Journal of Development Economics*, 139, 203-216.
- Ferris, E. and K. Kirişci (2016) *The Consequences of Chaos: Syria's Humanitarian Crisis and the Failure to Protect*, Brookings Institution Press, Washington, D.C.
- Foged, M. & Peri, G. (2016). Immigrants' Effect on Native Workers: New Analysis on Longitudinal Data. American Economic Journal: Applied Economics 8(2): 1-34.
- Foged, M., Hasager, L., & Yaseno V. (2019). The Role of Institutions in the Labor Market of Immigration. Immigration Policy Lab Working Paper, No. 19-07.
- Friedberg, R. M. (2001). The Impact of Mass Migration on the Israeli Labor Market. *Quarterly Journal of Economics*, 116, 1373–1408.
- Glitz, A. (2012). The Labor Market Impact of Immigration: A Quasi-Experiment Exploiting Immigrant Location Rules in Germany. *Journal of Labor Economics*, 30, 175–213.
- Goldsmith-Pinkham, P., Sorkin, I., & Swift, H. (2020) Bartik Instruments: What, When, Why, and How." *American Economic Review*, 110 (8): 2586-2624.
- Hunt, J. (1992). The Impact of the 1962 Repatriates from Algeria on the French Labor Market. *Industrial and Labor Relations Review*, 43, 556–572.
- İnsani Gelişme Vakfı (İNGEV). Suriyeli Mülteci Hayatlar Monitorü. Özet Değerlendirme, <u>http://ingev.org/wp-content/uploads/2017/07/Multeci-Hayatlar-Monitor%C3%BC.pdf</u>, accessed

on July 30, 2018

- Jaeger, D.A., Joyce, T.J., & Kaestner R. (2020). A Cautionary Tale of Evaluating Identifying Assumptions: Did Reality TV Really Cause a Decline in Teenage Childbearing?" *Journal of Business and Economic Statistics* 38(2): 317-326.
- Longhi S., Nijkamp P., & Poot J. (2008) Meta-analysis of Empirical Evidence on the Labour Market Impact of Immigration, *Région et Développement*, 27(1), 161-191.
- Malaeb, B. & Wahba, J. (2018) Impact of Refugees on Immigrants' Labor Market Outcomes. Economic Research Forum, Working Paper No. 1194.
- Mansour, H. (2010). The Effects of Labor Supply Shocks on Labor Market Outcomes: Evidence from the Israeli-Palestinian Conflict. *Labour Economics*, 17, 930–939.
- Maystadt, J-F. & Verwimp P. (2014). Winners and Losers among a Refugee-Hosting Population. *Economic Development and Cultural Change* 62(4): 769-809.
- Maystadt, J-F., Hirvonen, K., Mabiso, A. & Vandercasteelen J. (2019). Impacts of Hosting Forced Migrants in Poor Countries. *Annual Review of Resource Economics* 11: 439-59.
- Mevsimlik Tarım Işçileri (2019). Harran University. <u>http://www.mevsimliktarimiscileri.com/</u>, accessed on October 4, 2019.
- Monras, J. (2020). Immigration and Wage Dynamics: Evidence from the Mexican Peso Crisis. *Journal of Political Economy* 128(8).
- Morales J.S. (2017). The Impact of Internal Displacement on Destination Communities: Evidence from the Colombian Conflict. *Journal of Development Economics* 131: 132-150.
- Ottaviano, G. & Peri, G. (2012). Rethinking the Effect of Immigration on Wages. *Journal of the European Economic Association*, 10, 152-197.
- Peri, G. & Sparber, C. (2009). Task Specialization, Immigration and Wages. American Economic Journal: Applied Economics, 1, 135-169.
- Peri, G. & Yasenov, V. (2019). The Labor Market Effects of a Refugee Wave: Applying the Synthetic Control Method to the Mariel Boatlift. *Journal of Human Resources* 54(2): 267-309.
- Ruiz, I. & Vargas-Silva, C. (2013). The Economics of Forced Migration. *Journal of Development Studies* 49(6): 772-784.
- Ruiz, I. & Vargas-Silva, C. (2015). The labor market impacts of forced migration. American Economic Review Paper and Proceedings 105(5): 581-586.
- Tansel, A., & Acar, E.O. (2017). Labor Mobility across the Formal/Informal Divide in Turkey: Evidence from Individual-level Data. *Journal of Economic Studies* 44(4): 617-635.

- Taymaz, E. (2009). Informality and Productivity: Productivity Differentials between Formal and Informal Firms in Turkey. ERC Working Papes 0901, Middle East Technical University.
- Tunalı, I. (2003). Background Study on Labor Market and Employment in Turkey. Prepared for the European Training Foundation.
- Tunalı, I., Kırdar, M.G. & Dayıoğlu, M. (2018). Female Labor Force Participation in Turkey: A Synthetic Cohort (Panel) Analysis, 1988-2013. Mimeo.
- Turkish Directorate General for Migration Management (TDGMM, 2016). 2015 Türkiye Göç Raporu. Göç İdaresi Genel Müdürlüğü Yayınları. Yayın No: 35.
- Turkish Disaster and Emergency Management Authority (TDEMA). (2013). Syrian refugees in Turkey, 2013: Field survey results. Ankara, Turkey.
- Turkish Disaster and Emergency Management Authority (TDEMA) and WHO (2016). Turkiye'deki Suriyeli Multecilerin Saglik Durumu Arastirmasi.
- Turkish Ministry of Labor and Social Security, General Directorate of Labor, Labor Statistics, Vols. 2011-2016.
- Turkish Ministry of National Education (2019) Formal Statistics. https://sgb.meb.gov.tr/www/resmi-istatistikler/icerik/64.
- Turkish Statistical Institute. (2018a). Foreign Trade Statistics 2004-2015. [Data file]. Retrieved from https://biruni.tuik.gov.tr/disticaretapp/menu.zul.
- Turkish Statistical Institute. (2018b). Statistics by Theme. Population and Demography. Migration Statistics. Statistical Tables and Dynamic Search. Dynamic Search. Retrieved from https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr.
- Turkish Statistical Institute. (2018c). Statistics by Theme. Inflation and Prices. Consumer Price Index. Statistical Tables and Dynamic Search. Dynamic Search. Retrieved from https://biruni.tuik.gov.tr/medas/?kn=84&locale=tr
- Turkish Statistical Institute (2019). Regional Statistics. Health. Numbers of Health Personnel. https://biruni.tuik.gov.tr/bolgeselistatistik/tabloYilSutunGetir.do?durum=acKapa&menuNo=12 0&altMenuGoster=1
- Turkish Union of Chambers and Commodity Exchanges (2018). İstatistikler. Kurulan/Kapanan Şirket İstatistikleri. Retrieved from https://www.tobb.org.tr/BilgiErisimMudurlugu/Sayfalar/KurulanKapananSirketistatistikleri.php
- UNHCR (2018) *Syria Regional Refugee Response*. <u>http://data.unhcr.org/syrianrefugees/regional.php</u> Uysal G. (2013) "Incentives Increase Formal Female Employment." BETAM Research Brief 13/151.

Tables and Figures

A) Demographic Outcomes			B) Labor Market Outcomes	
	Male	Female		Ma
Age Groups			Employed	0.710
18-20	0.059	0.053	Full-time Employed	0.683
20-22	0.039	0.051	Part-time Employed	0.033
22-25	0.078	0.083	Hourly Wage (for Wage Workers)	1.473
25-30	0.143	0.141	Wage Worker	0.472
30-35	0.139	0.134	Temporary Wage Worker	0.054
35-40	0.125	0.122	Permanent Wage Worker	0.418
40-45	0.113	0.110	Self-Employed	0.162
45-50	0.100	0.097	Employer	0.049
50-55	0.086	0.085	Unpaid Family Worker	0.033
55-60	0.068	0.069	In the Labor Force	0.798
60-64	0.051	0.055	Unemployed	0.076
Marital Status			Informal	
Married	0.716	0.738	Employed	0.242
			Wage Worker	0.110
Educational Attainment			Hourly Wage (for Wage Workers)	0.979
Illiterate & No Degree	0.059	0.217	Self-Employed	0.094
Primary & Middle School	0.562	0.519	Unpaid Family Worker	0.028
High School	0.245	0.168		
College & Above	0.134	0.096	Formal	
			Employment	0.475
			Wage Worker	0.362
			Hourly Wage (for Wage Workers)	1.602
			Self-Employed	0.068
			Unpaid Family Worker	0.005
Number of Observations	1.577.886	1,694,819	Number of Observations	1.577.886

Table 1: Mean Values of Demographic and Labor Market Outcomes in the Micro-Level Data

Notes: The data come from the 2004-2015 Turkish Household Labor Force Surveys, excluding the 2012 version. The sample is restricted to ages 18 to 64. We use two separate definitions of unemployment and, hence, labor force participation because the 2014 HLFS introduced a change in the definition of unemployment. An individual had to be looking for a job within the last 3 months to be reported as unemployed in all surveys before 2014; however, with the 2014 survey, this period was reduced to 4 weeks. The reported unemployment variable in the HLFS uses the 3-month criterion by 2013, but the 4-weeks criterion after 2013 -- which we call definition one. The second definition -- which we generate -- uses the 4-weeks criterion across all years; however, this variable can be generated only for the 2009-2015 period. In definition two of labor force participation and unemployment variables, the sample sizes for males and females are 895,947 and 951,362, respectively. All wages are in natural logs. For the wage variable, the number of observations is 664,142 for the male sample and 206,867 for the female sample.

NUTS-2	NUTS-1			Population,	Migra	Migrant to Native Ratio		
Region	Region	5-Region	Major City	2015	2013	2014	2015	
1	1	1	Istanbul	14,657,434	0.002	0.012	0.018	
2	2	1	Tekirdag	1,687,420	0.000	0.000	0.006	
3	2	1	Balikesir	1,700,029	0.000	0.000	0.002	
4	3	1	Izmir	4,168,415	0.000	0.002	0.015	
5	3	1	Aydin	2,955,825	0.000	0.001	0.005	
6	3	1	Manisa	3,013,892	0.000	0.000	0.002	
7	4	1	Bursa	3,881,624	0.001	0.003	0.016	
8	4	1	Kocaeli	3,617,728	0.001	0.003	0.005	
9	5	2	Ankara	5,270,575	0.001	0.003	0.007	
10	5	2	Konya	2,372,740	0.002	0.010	0.015	
11	6	3	Antalya	2,968,561	0.000	0.002	0.002	
12	6	3	Adana	3,928,388	0.005	0.015	0.050	
13	6	3	Hatay	3,142,990	0.029	0.050	0.114	
14	7	2	Kirikkale	1,515,228	0.000	0.001	0.004	
15	7	2	Kayseri	2,379,113	0.000	0.002	0.014	
16	8	4	Zonguldak	1,023,593	0.000	0.000	0.000	
17	8	4	Kastamonu	757,711	0.000	0.000	0.001	
18	8	4	Samsun	2,721,221	0.000	0.000	0.001	
19	9	4	Trabzon	2,572,850	0.000	0.000	0.001	
20	10	5	Erzurum	1,063,789	0.000	0.000	0.000	
21	10	5	Agri	1,131,570	0.000	0.000	0.001	
22	11	5	Malatya	1,700,468	0.003	0.003	0.009	
23	11	5	Van	2,124,349	0.000	0.001	0.001	
24	12	5	Gaziantep	2,665,265	0.049	0.072	0.134	
25	12	5	Sanliurfa	3,546,516	0.026	0.039	0.086	
26	12	5	Mardin	2,173,759	0.015	0.030	0.044	

Table 2: Key Information for the 26 NUTS-2 Regions

Notes: The number of Syrian refugees for 2013 comes from AFAD. Although the numbers for provinces without camps are not reported, it is known that 80,000 Syrians were residing in those provinces that year. Thus, we estimate the numbers for provinces without information by distributing these 80,000 Syrians based on the relative ratios in these provinces in 2014. The numbers for 2014 are taken from Erdogan (2014), who draws on information from AFAD and the Ministry of Interior. The numbers for 2015 are provided by the Ministry of Interior Directorate General of Migration Management. The native populations are taken form TURKSTAT, which are publicly available. All numbers are aggregated at NUTS-2 level.
Table 3: Placebo Regressions of Pre-Shock Residual Trends in Dependent Variables on the Instrument – for Outcomes in the Informal and Formal Sectors

		M	EN		WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
A) INFORMAL SECTOR										
Employed	-0.087	-0.123	-0.088	-0.124	0.116	0.015	0.006	0.016		
	(0.103)	(0.081)	(0.075)	(0.080)	(0.086)	(0.102)	(0.092)	(0.100)		
Wage Worker	0.024	-0.048	-0.015	-0.048	0.055***	0.016	0.011	0.016		
	(0.036)	(0.041)	(0.038)	(0.041)	(0.018)	(0.018)	(0.014)	(0.018)		
Hourly Wage	-0.011	-0.034	0.028	-0.022	-0.208	-0.126	-0.131	-0.122		
	(0.137)	(0.155)	(0.158)	(0.149)	(0.244)	(0.211)	(0.208)	(0.192)		
Self-employed	-0.103	-0.048	-0.042	-0.049	0.031	0.021	0.016	0.023		
	(0.067)	(0.038)	(0.035)	(0.039)	(0.019)	(0.018)	(0.018)	(0.018)		
Unpaid Family Worker	-0.005	-0.012	-0.025	-0.013	0.029	-0.023	-0.022	-0.023		
	(0.032)	(0.015)	(0.016)	(0.015)	(0.066)	(0.079)	(0.067)	(0.079)		
B) FORMAL SECTOR										
Employed	0.060	0.083	0.075	0.085	-0.047***	-0.012	-0.001	-0.012		
	(0.046)	(0.058)	(0.062)	(0.058)	(0.016)	(0.021)	(0.024)	(0.020)		
Wage Worker	0.058**	0.090***	0.069**	0.091***	-0.033***	-0.010	-0.009	-0.010		
	(0.027)	(0.028)	(0.027)	(0.027)	(0.009)	(0.014)	(0.015)	(0.013)		
Hourly Wage	-0.163	0.014	0.027	0.011	-0.165**	-0.097	0.020	-0.096		
	(0.105)	(0.072)	(0.071)	(0.073)	(0.076)	(0.101)	(0.081)	(0.096)		
Self-employed	0.035	0.023	0.018	0.024	0.000	0.003*	0.003*	0.003**		
	(0.039)	(0.039)	(0.040)	(0.040)	(0.002)	(0.001)	(0.001)	(0.001)		
Unpaid Family Worker	0.003	0.001	0.003	0.001	-0.013*	-0.006	0.004	-0.006		
	(0.005)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)		
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No	No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No	No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2011 Turkish Household Labor Force Surveys. Each cell shows the estimates for the slope coefficient from a regression of residual trends of the dependent variable on the value of instrument in 2015, where the residuals are obtained after regressing the dependent variable on a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume--as in main regressions. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table 4: Placebo Regressions of Pre-Shock Residual Trends in Dependent Variables on the Instrument – for Outcomes in the Total Labor Market

		M	EN		 WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
Employment	-0.027 (0.073)	-0.040 (0.051)	-0.013 (0.042)	-0.039 (0.050)	0.069 (0.094)	0.003 (0.117)	0.005 (0.108)	0.004 (0.115)		
Full-time Employment	0.001 (0.061)	0.011 (0.053)	-0.006 (0.050)	0.011 (0.053)	0.145* (0.082)	0.101 (0.100)	0.016 (0.081)	0.099 (0.097)		
Part-time Employment	-0.029 (0.046)	-0.051 (0.037)	-0.007 (0.026)	-0.050 (0.036)	-0.076 (0.078)	-0.098 (0.059)	-0.011 (0.042)	-0.095 (0.057)		
Hourly Wage	0.056 (0.115)	0.094 (0.112)	0.067 (0.110)	0.099 (0.116)	-0.189 (0.123)	-0.120 (0.127)	-0.003 (0.130)	-0.119 (0.120)		
Wage Worker	0.082*** -0.025	0.041 (0.027)	0.054** (0.025)	0.044 (0.027)	0.022 (0.021)	0.006 (0.030)	0.002 (0.025)	0.006 (0.029)		
Self-employed	-0.069 (0.046)	-0.025 (0.041)	-0.024 (0.042)	-0.025 (0.041)	0.031 (0.019)	0.024 (0.018)	0.019 (0.018)	0.025 (0.018)		
Unpaid Family Worker	-0.003 (0.031)	-0.011 (0.016)	-0.021 (0.015)	-0.011 (0.016)	0.016 (0.068)	-0.029 (0.084)	-0.017 (0.074)	-0.028 (0.084)		
Labor Force Participation	-0.015 (0.115)	0.070 (0.096)	0.070 (0.096)	0.067 (0.098)	-0.113 (0.261)	-0.107 (0.201)	-0.044 (0.165)	-0.112 (0.201)		
Unemployment	-0.170 (0.168)	-0.024 (0.143)	0.032 (0.130)	-0.025 (0.142)	-0.013 (0.062)	0.029 (0.060)	0.030 (0.062)	0.027 (0.060)		
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No	No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No	No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2011 Turkish Household Labor Force Surveys. Each cell shows the estimates for the slope coefficient from a regression of residual trends of the dependent variable on the value of instrument in 2015, where the residuals are obtained after regressing the dependent variable on a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume--as in main regressions. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

			MEN			WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.476*** (0.131)	-0.479*** (0.143)	-0.384** (0.163)	-0.422*** (0.150)	0.242	0.073 (0.247)	-0.176 (0.219)	-0.175 (0.262)	-0.208 (0.181)	0.148
Wage Worker	-0.299*** (0.082)	-0.533*** (0.086)	-0.431*** (0.097)	-0.518*** (0.100)	0.110	0.111 (0.084)	0.008 (0.075)	-0.020 (0.080)	0.007 (0.070)	0.036
Hourly Wage	-0.160 (0.342)	-0.541 (0.368)	-0.128 (0.435)	-0.842** (0.387)	0.979	-0.887** (0.418)	-0.927** (0.400)	-0.333 (0.401)	-1.145** (0.541)	0.884
Self-employed	-0.244*** (0.062)	0.001 (0.065)	0.047 (0.074)	0.028 (0.056)	0.094	-0.055 (0.088)	-0.069 (0.081)	-0.148* (0.090)	-0.063 (0.069)	0.026
Unpaid Family Worker	0.096** (0.038)	0.105** (0.042)	0.029 (0.039)	0.114*** (0.040)	0.028	0.010 (0.113)	-0.119 (0.120)	-0.012 (0.135)	-0.154 (0.129)	0.084
B) FORMAL SECTOR										
Employed	0.390*** (0.115)	0.481*** (0.126)	0.508*** (0.145)	0.500*** (0.128)	0.475	-0.329*** (0.061)	-0.137** (0.061)	-0.156** (0.068)	-0.081 (0.066)	0.123
Wage Worker	0.068 (0.082)	0.183** (0.080)	0.164* (0.093)	0.203** (0.084)	0.362	-0.297*** (0.055)	-0.146*** (0.056)	-0.192*** (0.061)	-0.096 (0.064)	0.112
Hourly Wage	0.019 (0.210)	0.643*** (0.240)	0.704*** (0.268)	0.651*** (0.221)	1.602	0.110 (0.281)	0.345 (0.281)	0.636** (0.307)	0.362 (0.261)	1.684
Self-employed	0.224*** (0.048)	0.197*** (0.053)	0.188*** (0.057)	0.212*** (0.067)	0.068	0.001 (0.005)	0.011** (0.005)	0.013** (0.006)	0.013*** (0.005)	0.003
Unpaid Family Worker	0.027** (0.013)	0.033** (0.013)	0.046*** (0.014)	0.030** (0.014)	0.005	-0.025* (0.015)	0.001 (0.015)	0.031 (0.019)	0.002 (0.013)	0.004
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Table 5: Effects of Migrants on Natives in the Informal and Formal Sectors, OLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all but the wage regressions. In the wage regressions, the male and female sample sizes are 139,758 and 44,569, respectively, for the informal sector and 524,383 and 162,298, respectively, for the formal sector. Each cell shows the estimates for the key variable of interest – the ratio of migrants to natives – in a separate OLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate

			MEN			WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.566*** (0.133)	-0.609*** (0.153)	-0.620*** (0.170)	-0.445*** (0.152)	0.242	-0.034 (0.261)	-0.367 (0.235)	-0.460* (0.259)	-0.293 (0.189)	0.148
Wage Worker	-0.257*** (0.090)	-0.596*** (0.096)	-0.595*** (0.109)	-0.531*** (0.108)	0.110	0.213* (0.110)	0.029 (0.080)	-0.011 (0.082)	0.050 (0.074)	0.036
Hourly Wage	0.603 (0.456)	-0.163 (0.370)	0.102 (0.410)	-0.604* (0.357)	0.979	0.322 (0.509)	0.018 (0.382)	0.395 (0.394)	-0.234 (0.451)	0.884
Self-employed	-0.354*** (0.086)	-0.050 (0.070)	-0.011 (0.078)	0.032 (0.053)	0.094	-0.214** (0.101)	-0.231** (0.094)	-0.300*** (0.097)	-0.200** (0.086)	0.026
Unpaid Family Worker	0.061* (0.036)	0.091** (0.046)	0.030 (0.040)	0.090** (0.036)	0.028	-0.039 (0.108)	-0.167 (0.127)	-0.151 (0.141)	-0.144 (0.128)	0.084
B) FORMAL SECTOR										
Employed	0.451*** (0.118)	0.602*** (0.143)	0.663*** (0.174)	0.627*** (0.138)	0.475	-0.516*** (0.105)	-0.213*** (0.071)	-0.234*** (0.075)	-0.122 (0.077)	0.123
Wage Worker	0.161* (0.090)	0.315*** (0.101)	0.351*** (0.124)	0.349*** (0.092)	0.362	-0.476*** (0.095)	-0.234*** (0.067)	-0.261*** (0.068)	-0.151** (0.073)	0.112
Hourly Wage	0.055 (0.206)	0.907*** (0.280)	0.940*** (0.333)	0.951*** (0.233)	1.602	-0.093 (0.313)	0.462 (0.298)	0.522 (0.336)	0.620** (0.271)	1.684
Self-employed	0.194*** (0.054)	0.180*** (0.057)	0.190*** (0.065)	0.182*** (0.066)	0.068	-0.007 (0.007)	0.008 (0.006)	0.008 (0.007)	0.010* (0.005)	0.003
Unpaid Family Worker	0.039*** (0.011)	0.039*** (0.012)	0.043*** (0.014)	0.039*** (0.012)	0.005	-0.017 (0.015)	0.022 (0.015)	0.031 (0.021)	0.029** (0.011)	0.004
First-stage regression	1.851*** (0.157)	2.014*** (0.149)	1.881*** (0.140)	2.158*** (0.142)		1.857*** (0.155)	2.018*** (0.148)	1.885*** (0.139)	2.155*** (0.141)	
F-statistics	138.602	182.536	179.243	230.469		142.745	186.537	183.49	233.856	
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Table 6: Effects of Migrants on Natives in the Informal and Formal Sectors, 2SLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 139,758 individuals for the informal sector and 524,383 individuals for the formal sector, and the female sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates. (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

			MEN			WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.086 (0.084)	0.002 (0.101)	0.124 (0.148)	0.077 (0.088)	0.716	-0.256 (0.235)	-0.313 (0.233)	-0.331 (0.286)	-0.289* (0.169)	0.270
Full-time Employment	-0.036 (0.090)	0.187** (0.091)	0.238** (0.096)	0.276*** (0.088)	0.683	-0.030 (0.137)	0.151 (0.156)	-0.179 (0.131)	0.291** (0.147)	0.218
Part-time Employment	-0.050 (0.089)	-0.185* (0.094)	-0.115 (0.121)	-0.198** (0.078)	0.033	-0.225 (0.144)	-0.463*** (0.142)	-0.152 (0.211)	-0.581*** (0.120)	0.052
Hourly Wage	0.473** (0.186)	0.653*** (0.222)	0.648** (0.255)	0.697*** (0.204)	1.473	-0.095 (0.383)	0.265 (0.381)	0.753** (0.340)	0.398 (0.377)	1.519
Wage Worker	-0.232*** (0.072)	-0.350*** (0.079)	-0.267*** (0.091)	-0.315*** (0.096)	0.472	-0.187*** (0.067)	-0.137* (0.082)	-0.212** (0.083)	-0.089 (0.070)	0.149
Self-Employed	-0.020 (0.062)	0.199*** (0.066)	0.235*** (0.081)	0.240*** (0.068)	0.162	-0.054 (0.086)	-0.058 (0.080)	-0.136 (0.089)	-0.049 (0.069)	0.030
Unpaid Family Worker	0.123*** (0.033)	0.137*** (0.041)	0.076* (0.042)	0.144*** (0.034)	0.033	-0.015 (0.112)	-0.119 (0.124)	0.019 (0.146)	-0.151 (0.129)	0.089
Labor Force Participation	0.100 (0.148)	0.294* (0.154)	-0.093 (0.144)	0.350** (0.152)	0.798	-0.255 (0.232)	-0.211 (0.180)	-0.355** (0.170)	-0.181 (0.161)	0.334
Unemployment	0.187 (0.124)	0.209 (0.146)	-0.180 (0.185)	0.193 (0.151)	0.076	0.066 (0.046)	0.148** (0.060)	0.068 (0.084)	0.155*** (0.055)	0.040
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	

Table 7: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives, OLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The wage regressions include 664,142 individuals in the male sample, and 206,867 individuals in the female sample. In regressions using definition two of labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trace volume. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iv) university graduates. The unemployment definition one uses the unemployment status variable as given in the dataset, which uses a three-months job-search criterion after 2013. The unemployment definition two generates a consistent variable over time by using a one-month definition for all years; however, this can be generated only for years 2009 to 2015. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

No

Yes

NUTS1 Linear Time Trends

5 Region-Year Fixed Effects

No

No

No

No

Yes

No

Yes

No

No

Yes

No

No

No

No

Table 8: Effects of Migrants on Aggregate Employment, Labor Force Participation andUnemployment of Natives, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.115 (0.086)	-0.007 (0.114)	0.043 (0.150)	0.182* (0.099)	0.716	-0.550** (0.245)	-0.580** (0.258)	-0.694** (0.286)	-0.416** (0.188)	0.270
Full-time Employment	-0.031 (0.092)	0.286*** (0.103)	0.308*** (0.112)	0.455*** (0.091)	0.683	-0.277** (0.134)	0.034 (0.157)	-0.290** (0.142)	0.262* (0.146)	0.218
Part-time Employment	-0.084 (0.101)	-0.293*** (0.103)	-0.265** (0.113)	-0.274*** (0.091)	0.033	-0.274* (0.164)	-0.614*** (0.163)	-0.404* (0.206)	-0.677*** (0.138)	0.052
Hourly Wage	0.857*** (0.245)	0.969*** (0.265)	0.910*** (0.297)	1.085*** (0.200)	1.473	0.107 (0.352)	0.663** (0.314)	0.858*** (0.324)	0.983*** (0.284)	1.519
Wage Worker	-0.096 (0.100)	-0.282*** (0.092)	-0.245** (0.101)	-0.182* (0.106)	0.472	-0.264*** (0.068)	-0.205** (0.083)	-0.272*** (0.081)	-0.101 (0.078)	0.149
Self-employed	-0.160* (0.096)	0.129* (0.074)	0.179** (0.085)	0.215*** (0.069)	0.162	-0.222** (0.101)	-0.224** (0.094)	-0.292*** (0.097)	-0.190** (0.085)	0.030
Unpaid Family Worker	0.100*** (0.034)	0.130*** (0.048)	0.073 (0.045)	0.129*** (0.033)	0.033	-0.056 (0.108)	-0.145 (0.132)	-0.120 (0.150)	-0.114 (0.129)	0.089
Labor Force Participation	-0.086 (0.138)	0.248* (0.143)	-0.041 (0.131)	0.257* (0.135)	0.798	-0.687*** (0.242)	-0.439** (0.177)	-0.626*** (0.196)	-0.458*** (0.139)	0.334
Unemployment	0.151 (0.118)	0.142 (0.149)	-0.137 (0.197)	0.096 (0.149)	0.076	0.025 (0.052)	0.118* (0.066)	0.085 (0.087)	0.109* (0.060)	0.040
First-stage regression	1.851*** (0.157)	2.014*** (0.149)	1.881*** (0.140)	2.158*** (0.142)		1.857*** (0.155)	2.018*** (0.148)	1.885*** (0.139)	2.155*** (0.141)	
F-statistics	138.602	182.536	179.243	230.469		142.745	186.537	183.49	233.856	
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The wage regressions include 664,142 individuals in the male sample, and 206,867 individuals in the female sample. In regressions using definition 2 of labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the 10 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. The unemployment definition used in the study generates a consistent variable over time by using a 1-month definition for all years; however, this can be generated only for years 2009 to 2015. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level, ***, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Dependent Variable: Natural Logarithm of Regional Consumer Price Index									
	(1)	(2)	(3)	(4)					
Migrant to Native Ratio	0.257***	0.226***	0.369***	0.262***					
	(0.091)	(0.063)	(0.119)	(0.057)					
Controls for									
Year Fixed Effects	Yes	Yes	Yes	Yes					
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes					
5 Region Linear Time Trends	No	Yes	No	No					
NUTS1 Linear Time Trends	No	No	Yes	No					
5 Region-Year Fixed Effects	No	No	No	Yes					

Table 9: Effect of Migrants on the Regional Consumer Price Index

Notes: The data come from the regional consumer price index of the Central Bank of Turkey, where the CPI for 2003 is normalized to 100. The sample includes observations for 26 NUTS-2 level regions for the 2003-15 time period excluding 2012; hence, there are 312 observations in all regressions. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the natural logarithm of the regional consumer price index on the key variable of interest, and a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table 10: Effect of Migrants on the Openings, Liquidation, and Closings of Firms, Business Cooperatives and Self-Proprietorships

	Log Numb	er of Firms	Log Numb and Coo	er of Firms peratives	Log Number of Self- Proprietorships		
	(1)	(2)	(3)	(4)	(5)	(6)	
Openings	2.326***	3.337***	2.495***	3.760***	3.030***	1.845**	
Liquidation	(0.542)	(0.788)	(0.570)	(0.885)	(0.908)	(0.900)	
Closings	-0.906	-0.583	0.052	-0.209	-2.470	1.075	
Liquidation and Closings	0.588	0.692	0.992 (0.645)	(1.410) 0.960 (1.230)	(2.630)	(2.988) 	
Openings - Closings	2.791*** (0.738)	3.915*** (1.022)	2.906*** (0.838)	4.682*** (1.304)	0.281 (2.463)	0.534 (2.797)	
Openings - Closings - Liquidation	1.938 (1.211)	4.301** (1.784)	2.249* (1.213)	4.840*** (1.831)			
Controls for	X		· · · · ·				
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	
5 Region-Year Fixed Effects	No	Yes	No	Yes	No	Yes	

Notes: Data on the openings, closings, and liquidation of firms, business cooperatives, and self-proprietorships come from the Union of Chambers and Commodity Exchanges of Turkey at the province level for the 2009-15 period. We aggregate the data to the 26 NUTS-2 region level in accordance with our main analysis with the Labor Force Survey data and exclude the data for 2012 because the key variable of interest is missing for this year. Hence, there are 156 observations in all regressions. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
Panel A:	Ι	Dependent Variable:	: Net Migration Ra	te
All	-0.011	0.001	-0.000	0.012
	(0.013)	(0.017)	(0.023)	(0.010)
Age: 15-64	-0.015	-0.002	0.002	0.011
	(0.017)	(0.021)	(0.027)	(0.019)
Age: 15-24	-0.059*	-0.012	0.005	-0.003
	(0.034)	(0.044)	(0.054)	(0.049)
Age: 25-39	0.008	0.010	0.009	0.026
	(0.025)	(0.025)	(0.035)	(0.018)
Age: 40-64	-0.019	-0.011	-0.015	-0.001
1.50.10.01	(0.018)	(0.017)	(0.021)	(0.018)
Education: Illiterate or No Dograd	0.021	0.024	0.018	0.025
Education. Interate of No Degree	(0.021)	(0.024)	(0.024)	(0.023)
	(0.022)	(0.025)	(0.021)	(0.027)
Education: Primary or Middle School	-0.024*	0.010	0.000	0.010
	(0.014)	(0.018)	(0.020)	(0.022)
Education: High School	-0.049	-0.042	-0.035	-0.028
	(0.049)	(0.055)	(0.070)	(0.063)
Education: University	0.036	0.106*	0.111	0.143***
	(0.055)	(0.059)	(0.085)	(0.052)
	· · · · ·	× /	· · · · ·	· · · · ·
Panel B:	Depen	dent Variable: Temj	porary Wage Empl	oyment
Temporary Wage Worker	0.054	-0.289***	-0.239***	-0.339***
	(0.089)	(0.061)	(0.060)	(0.078)
Controls for		· · · · · ·		
Year Fixed Effects	Yes	Yes	Yes	Yes
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes
5 Region Linear Time Trends	No	Yes	No	No
NUTS1 Linear Time Trends	No	No	Yes	No
5 Region-Year Fixed Effects	No	No	No	Yes

Table 11: Effect of Migrants of on Net Migration and Temporary Wage Employment of Natives, 2SLSEstimates

Notes: For Panel A, the data come from the internal migration statistics of the Turkish Statistical Institute. The sample includes observations for the 26 NUTS-2 level regions for the 2008-15 time period excluding 2012 in all regressions but the regressions by education. In the regressions by education, the sample time period covers 2009-15 excluding 2012. Hence, there are 156 observations in regressions for education groups, but 182 observations in all other regressions. Panel B follows the same specifications in Table 8. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors for Panel A and clustered standard errors at the NUTS-2 region and year level for Panel B are given in parantheses. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.





Source: Turkish Statistical Institute and AFAD(2013)





Source: Turkish Statistical Institute and Republic of Turkey Ministry of Interior Directorate General of Migration Management

Notes: The ratios are multiplied by 100. The number code of each NUTS-2 region is shown on the graph.

Figure 2: Preexisting Trends in Selected Labor Market Outcomes for the 5 NUTS-2 Regions with the Highest Value of the Instrument (Treatment) and the Remaning 21 Regions (Control)



FOR ONLINE PUBLICATION

APPENDIX A: Replication Tables

Table A1: Replication of Estimates from Ceritoğlu et al. (2017)

Original Work Replication								
			A) Inform	nal Employment				
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	-0.0223 (0.0028)***	-0.0190 (0.0044)***	-0.0260 (0.0034)***	-0.0223 (0.0028)*** (0.0127)*	-0.0188 (0.0044)*** (0.0117)	-0.0262 (0.0034)*** (0.0145)*		
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206		
			B) Form	al Employment				
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	0.0043 (0.0022)**	0.0089 (0.0039)**	0.0089 -0.0004 0.0039)** (0.0019)		0.0080 (0.0040)** (0.0066)	-0.0020 (0.0020) (0.0019)		
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206		
	C) Labor Force Participation							
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	-0.0110 (0.0028)***	0.0038 (0.0037)	-0.0257 (0.0039)***	-0.0119 (0.0028)*** (0.0105)	0.0036 (0.0037) (0.0089)	-0.0279 (0.0040)*** (0.0141)*		
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206		
			D) Un	employment				
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	0.0070 (0.0015)***	0.0138 (0.0027)***	0.0007 (0.0014)	0.0071 (0.0015)*** (0.0056)	0.0143 (0.0027)*** (0.0093)	0.0003 (0.0014) (0.0031)		
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206		
			E) Informal Re	eal Monthly Earnings				
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	-0.0094 (0.0119)	-0.0126 (0.0127)	-0.0405 (0.0370)	-0.0076 (0.0128) (0.0302)	-0.0103 (0.0131) (0.0267)	0.0377 (0.0426) (0.0711)		
No. Obs.	26,033	21,366	4,667	26,242	21,433	4,809		
			F) Formal Re	al Monthly Earnings				
	Total	Male	Female	Total	Male	Female		
Coef. SE Robust SE Cluster (NUTS2*year)	0.0081 (0.0064)	0.0081 (0.0070)	0.0182 (0.0151)	0.0145 (0.0071)** (0.0114)	0.0122 (0.0078) (0.0117)	0.0288 (0.0170)* (0.0189)		
No. Obs.	52,701	42,942	9,759	84,646	68,880	15,766		

Notes: The data come from TURKSTAT Labor Force Surveys for years 2010–2013. The sample is restricted to the age group 15-64. The analysis is carried out for 9 NUTS2 regions, of which five of them with more than 2% refugee-to-native ratio form the treatment group while the other four form the control group. Each cell shows the estimates for the key variable of interest (the interaction of the treatment region dummy with the post-treatment period dummy) in a separate OLS regression of the dependent variable, given in panel headings from (A) to (F), on the key variable of interest and the set of other control variables. This set includes gender, marital status, age dummies, education dummies, a full set of age-education interactions, and a urban-area dummy -- in addition to the dummies for the treatment region and the post-treatment period. Robust standard errors and clustered standard errors at the NUTS-2 region and year level are given in parentheses in the second and third rows, respectively, in each panel. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table A2: Effect of Migrants in the Informal and Formal Sector with del Carpio and Wagner (2016) Approach [columns (5) and (10)] in comparison to our Main Estimates with del Carpio and Wagner Instrumental Variable

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A) INFORMAL SECTOR										
Employed	-0.515*** (0.133)	-0.538*** (0.152)	-0.539*** (0.167)	-0.364** (0.155)	-0.823** (0.369)	-0.013 (0.281)	-0.323 (0.249)	-0.403 (0.264)	-0.260 (0.199)	-1.750** (0.759)
Wage Worker	-0.225** (0.096)	-0.539*** (0.088)	-0.532*** (0.101)	-0.461*** (0.106)	-1.439*** (0.207)	0.205* (0.121)	0.024 (0.091)	-0.014 (0.092)	0.045 (0.078)	-0.629*** (0.208)
Hourly Wage	0.520 (0.521)	-0.249 (0.424)	-0.050 (0.436)	-0.625 (0.383)	0.207 (0.760)	0.235 (0.555)	-0.083 (0.424)	0.221 (0.386)	-0.236 (0.449)	0.560 (1.070)
Self-employed	-0.331*** (0.087)	-0.037 (0.072)	0.002 (0.079)	0.040 (0.053)	0.575** (0.240)	-0.201** (0.102)	-0.212** (0.093)	-0.267*** (0.090)	-0.181** (0.085)	-0.527** (0.246)
Unpaid Family Worker	0.056 (0.034)	0.085* (0.045)	0.029 (0.038)	0.088*** (0.034)	0.076 (0.092)	-0.023 (0.110)	-0.139 (0.123)	-0.124 (0.136)	-0.124 (0.131)	-0.594 (0.415)
B) FORMAL SECTOR										
Employed	0.392*** (0.115)	0.516*** (0.136)	0.555*** (0.159)	0.528*** (0.132)	1.543*** (0.341)	-0.495*** (0.105)	-0.196*** (0.069)	-0.210*** (0.073)	-0.119 (0.074)	0.717*** (0.138)
Wage Worker	0.115 (0.090)	0.248*** (0.094)	0.269** (0.113)	0.288*** (0.084)	1.244*** (0.276)	-0.454*** (0.094)	-0.212*** (0.065)	-0.230*** (0.066)	-0.147** (0.072)	0.579*** (0.123)
Hourly Wage	-0.003 (0.212)	0.765*** (0.285)	0.760** (0.321)	0.825*** (0.224)	3.054*** (0.662)	-0.103 (0.330)	0.411 (0.310)	0.444 (0.334)	0.568** (0.274)	1.346*** (0.496)
Self-employed	0.183*** (0.053)	0.167*** (0.056)	0.176*** (0.061)	0.154** (0.068)	0.210 (0.139)	-0.008 (0.008)	0.006 (0.006)	0.006 (0.007)	0.009* (0.005)	0.037*** (0.014)
First-stage regression	1.758*** (0.133)	1.876*** (0.123)	1.749*** (0.091)	2.125*** (0.147)	1.921*** (0.320)	1.764*** (0.131)	1.879*** (0.123)	1.753*** (0.090)	2.123*** (0.147)	1.894*** (0.311)
F-statistics	175.167	232.146	370.330	207.963	36.067	180.569	234.950	376.191	209.226	37.016
Controls for										
Year Fixed Effects	Yes Yes									
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5-Region Linear Time Trends	No	Yes	No	No	No	No	Yes	No	No	No
NUTS1 Linear Time Trends	No	No	Yes	No	No	No	No	Yes	No	No
5-Region-Year Fixed Effects	No	No	No	Yes	No	No	No	No	Yes	No
Time-varying Distance	No	No	No	No	Yes	No	No	No	No	Yes

Notes: Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrumental variable is the one used by Del Carpio and Wagner (2016). Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. In the wage regressions, the male sample includes 139,758 individuals for informal sector and 524,383 individuals for informal sector, and the female sample includes 1,694,817 individuals. **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table A3: Effect of Migrants on Total Employment, Labor Force Participation and Unemployment with del Carpio and Wagner (2016) Approach [columns (5) and (10)] in comparison to our Main Estimates with del Carpio and Wagner Instrumental Variable

			MEN			WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Employment	-0.123 (0.085)	-0.022 (0.115)	0.016 (0.148)	0.164 (0.105)	0.721** (0.304)	-0.509** (0.257)	-0.519* (0.270)	-0.614** (0.288)	-0.379* (0.195)	-1.033 (0.713)	
Full-time Employment	-0.050 (0.090)	0.242** (0.094)	0.250** (0.103)	0.410*** (0.081)	1.319*** (0.368)	-0.250* (0.136)	0.057 (0.168)	-0.231* (0.138)	0.254* (0.148)	0.261 (0.380)	
Part-time Employment	-0.073 (0.108)	-0.265** (0.108)	-0.235* (0.122)	-0.245*** (0.090)	-0.598* (0.304)	-0.259 (0.170)	-0.577*** (0.160)	-0.383* (0.209)	-0.632*** (0.135)	-1.295** (0.543)	
Labor Force Participation	-0.069 (0.150)	0.240 (0.149)	-0.011 (0.138)	0.286** (0.144)	-1.086** (0.424)	-0.600** (0.252)	-0.322* (0.183)	-0.446** (0.178)	-0.379*** (0.143)	-2.011*** (0.691)	
Unemployment	0.162 (0.121)	0.151 (0.140)	-0.088 (0.183)	0.147 (0.145)	-1.623*** (0.402)	0.033 (0.054)	0.118* (0.068)	0.088 (0.088)	0.116* (0.059)	-0.139 (0.137)	
First-stage regression	1.758*** (0.133)	1.876*** (0.123)	1.749*** (0.091)	2.125*** (0.147)	1.921*** (0.320)	1.764*** (0.131)	1.879*** (0.123)	1.753*** (0.090)	2.123*** (0.147)	1.894*** (0.311)	
F-statistics	175.167	232.146	370.330	207.963	36.067	180.569	234.950	376.191	209.226	37.016	
Controls for											
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
5-Region Linear Time Trends	No	Yes	No	No	No	No	Yes	No	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No	No	No	No	Yes	No	No	
5-Region-Year Fixed Effects	No	No	No	Yes	No	No	No	No	Yes	No	
Time-varying Distance	No	No	No	No	Yes	No	No	No	No	Yes	

Notes: Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control variables, as et of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrumental variable is the one used by Del Carpio and Wagner (2016). Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are elustered at the NUTS-2 region and year level. In regressions using definition 2 of labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

APPENDIX B: Additional Descriptive Statistics

	Turks				Syrians			Ratio		
	Female	Male	Total		Female	Male	Total	Female	Male	Total
Less than Primary	17.3%	4.6%	10.9%		34.5%	21.8%	29.2%	2.00	4.74	2.67
Primary	35.3%	32.1%	33.7%		33.0%	29.8%	31.6%	0.94	0.93	0.94
Secondary	14.4%	20.6%	17.5%		14.2%	18.6%	16.1%	0.99	0.91	0.92
High School	18.1%	24.7%	21.4%		11.0%	16.7%	13.4%	0.61	0.68	0.63
University	15.0%	18.1%	16.5%		7.3%	13.1%	9.9%	0.49	0.72	0.60

Table B1: Comparison of Educational Distributions of Syrians and Native Population in Turkey

Notes: The data for the native population come from the 2015 Turkish Household Labor Force Survey. The data for Syrians come from a survey conducted by the Disaster and Management Authority of Turkey (DEMA) and the WHO in December 2015. Since the DEMA/WHO survey includes 18- to 59-year-old individuals, the sample is restricted accordingly in the HLFS. "Ratio" is the ratio of the percentage of Syrians in that education group among all Syrians to the percentage of natives in that education group among all natives.

Table B2: Mean Values of Labor Market Outcomes over Time for Men and for Women

A) Males											
	2004	2005	2006	2007	2008	2009	2010	2011	2013	2014	2015
Employed	0 709	0.713	0 711	0 709	0 705	0.683	0 705	0 733	0.735	0 733	0 736
Full-time Employed	0.688	0.694	0.685	0.682	0.676	0.646	0.664	0.691	0.690	0.694	0.700
Part-time Employed	0.021	0.019	0.026	0.027	0.029	0.038	0.041	0.042	0.044	0.039	0.037
In the Labor Force	0.021	01019	0.020	0.027	0.02)	0.782	0 788	0 799	0 798	0.806	0.812
Unemployed						0.098	0.082	0.065	0.064	0.073	0.075
Informal											
Employed	0.297	0.286	0.278	0.266	0.250	0.243	0.243	0.242	0.202	0.193	0.185
Wage Worker	0.128	0.131	0.132	0.125	0.113	0.109	0.111	0.114	0.089	0.087	0.083
Hourly Wage	0.815	0.875	0.911	0.976	0.982	0.993	0.998	1.044	1.077	1.105	1.134
Self-Employed	0.113	0.107	0.104	0.100	0.097	0.096	0.094	0.092	0.084	0.076	0.074
Unpaid Family Worker	0.046	0.036	0.030	0.027	0.026	0.026	0.026	0.026	0.023	0.024	0.023
Formal											
Employment	0.412	0.428	0.433	0.442	0.455	0.440	0.462	0.492	0.533	0.540	0.551
Wage Worker	0.293	0.307	0.316	0.332	0.347	0.336	0.358	0.380	0.418	0.427	0.439
Hourly Wage	1.475	1.521	1.526	1.548	1.563	1.599	1.588	1.614	1.657	1.678	1.707
Self-Employed	0.078	0.077	0.073	0.068	0.064	0.061	0.062	0.066	0.071	0.068	0.068
Number of Observations	134,050	136,951	139,135	135,574	136,229	143,273	150,654	151,813	148,564	152,067	149,576
B) Females											
	2004	2005	2006	2007	2008	2009	2010	2011	2013	2014	2015
Employed	0.233	0.234	0.238	0.239	0.246	0.254	0.275	0.292	0.312	0.310	0.321
Full-time Employed	0.202	0.204	0.198	0.196	0.201	0.197	0.212	0.224	0.238	0.249	0.263
Part-time Employed	0.031	0.030	0.040	0.043	0.045	0.057	0.062	0.069	0.074	0.061	0.058
In the Labor Force						0.292	0.311	0.326	0.350	0.353	0.368
Unemployed						0.038	0.036	0.033	0.038	0.043	0.048
Informal											
Employed	0.151	0.147	0.145	0.140	0.138	0.143	0.155	0.163	0.156	0.144	0.141
Wage Worker	0.034	0.036	0.038	0.036	0.033	0.033	0.035	0.038	0.038	0.039	0.037
Hourly Wage	0.753	0.826	0.827	0.889	0.909	0.923	0.895	0.919	0.926	0.916	0.918
Self-Employed	0.020	0.028	0.026	0.025	0.024	0.029	0.032	0.030	0.029	0.024	0.023
Unpaid Family Worker	0.097	0.082	0.079	0.079	0.080	0.080	0.088	0.094	0.089	0.080	0.080
Formal											
Employment	0.082	0.087	0.093	0.099	0.108	0.111	0.119	0.129	0.156	0.166	0.180
Wage Worker	0.075	0.080	0.086	0.092	0.101	0.100	0.108	0.117	0.143	0.151	0.165
Hourly Wage	1.539	1.605	1.613	1.631	1.653	1.707	1.687	1.704	1.734	1.732	1.737
Self-Employed	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.005
N I COL	142 540	1/10/13/	152 746	148 716	149 012	154,937	161.188	160,700	157.395	159,968	157.174

Notes: The data come from the 2004-2015 Turkish Household Labor Force Surveys, excluding the 2012 version. The sample is restricted to ages 18 to 64. The 2014 HLFS introduced a change in the definition of unemployment. An individual had to be looking for a job within the last 3 months to be reported as unemployed in all surveys before 2014; however, with the 2014 survey, this period was reduced to 4 weeks. The reported unemployment and labor force participation variables--which we generate--uses the 4-weeks criterion across all years; however, this variable can be generated only for the 2009-2015 period. All wages are in natural logs.

Table	B3:	Fraction	of Part-time	Work by	Emplo	went Typ	be and Gender
	-			7		7 7	

	Informal		For	rmal	Total		
	Male	Female	Male	Female	Male	Female	
Wage Worker	0.046	0.151	0.009	0.032	0.019	0.064	
Employer	0.028	0.081	0.006	0.027	0.012	0.042	
Self Employed	0.130	0.424	0.057	0.086	0.101	0.391	
Unpaid Family Worker	0.138	0.315	0.068	0.194	0.129	0.311	
Total	0.088	0.294	0.017	0.038	0.043	0.189	

Notes: Data come from 2004-2011 Household Labor Force Surveys. The sample is restricted to employed individuals.

Table B4: Fraction of Formally Employed by Sector of Employment and Gender

	Fraction of F	ormal Workers	Number of O	bservations
	Male	Female	Male	Female
Agriculture	0.245	0.024	205,592	195,382
Manufacturing	0.779	0.585	232,490	62,703
Construction	0.424	0.811	95,988	2,947
Services	0.718	0.730	587,626	190,610

Notes: Data come from 2004-2011 Household Labor Force Surveys. The sample is restricted to employed individuals.

Table B5: Distribution of Educational Attainment by Gender in the Informal and Formal Sectors

	Info	ormal	 For	rmal
	Male	Female	 Male	Female
Illiterate or No Degree	0.097	0.245	0.017	0.023
Primary or Middle School	0.615	0.554	0.500	0.257
High School	0.219	0.154	0.273	0.268
University	0.068	0.047	0.210	0.452

Notes: Data come from 2004-2015 Household Labor Force Surveys excluding 2012. The sample is restricted to employed individuals.



Figure B1: Total Number of Registered Syrian Migrants in Turkey (in thousands) 2013-2015

Source: UN Refugee Agency, http://data.unhcr.org/syrianrefugees/country.php?id=224

APPENDIX C: Supporting Estimation Results

Depend	lent Variabl	e: Ratio of M	ligrants to N	latives			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Weighted Distance	-0.067**	-0.067***	-0.054**	-0.071***	-0.072**	-0.056***	-0.061***
	(0.024)	(0.023)	(0.023)	(0.024)	(0.026)	(0.016)	(0.021)
Fraction Speaking Arabic, 1965	0.049	0.054	-0.019	0.057	0.062	0.047	0.063
	(0.099)	(0.092)	(0.113)	(0.096)	(0.094)	(0.079)	(0.097)
Region							
West	0.028***	0.028***	0.027***	0.020***	0.020**	0.007	0.019***
	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)	(0.010)	(0.007)
Center	-0.010	-0.009	-0.008	-0.016	-0.016	-0.016	-0.015
	(0.009)	(0.009)	(0.009)	(0.012)	(0.013)	(0.012)	(0.009)
South	0.001	-0.001	0.013	-0.006	-0.008	0.001	-0.003
	(0.009)	(0.009)	(0.011)	(0.012)	(0.014)	(0.011)	(0.010)
North	0.007	0.009	0.017*	0.006	0.003	0.003	0.007
	(0.005)	(0.006)	(0.009)	(0.006)	(0.007)	(0.007)	(0.006)
Unemployed / Population, 2011		0.182					
		(0.154)					
Employed / Population, 2011			-0.116*				
			(0.059)				
Non-agriculturally Employed / Pop., 2011				0.087			
				(0.053)			
Non-agriculturally Employed Females / Pop., 2011					0.168		
					(0.117)		
Share of Manufacturing Sector, 2011						0.099**	
						(0.047)	
Share of Construction Sector, 2011						0.044	
						(0.119)	
Share of Services Sector, 2011						0.008	
al						(0.018)	0.00044
Share Urban, 2011							0.028**
Observations	70	70	70	70	70	70	(0.013)
	/8	/8	/8	18	/8	/8	/ð 0.(20
K-squared	0.601	0.611	0.623	0.623	0.614	0.658	0.629

Table C1: Determinants of Settlement Patterns of Syrian Migrants in Turkey

Notes: The sample includes the 26 NUTS-2 level regions in Turkey in the 2013-15 time period. Weighted distance is the average distance of each NUTS-2 level region in Turkey to each of the 13 provinces of Syria weighted by the fraction of Syrians in Turkey in 2015 originating from that province in Syria. Fraction speaking Arabic comes from the 1965 Turkish Census. Labor market variables and share urban information come from the 2011 THLFS, where population include 18- to 64-year-old individuals only. The OLS regressions also include year dummies. Standard errors are clustered at the NUTS-2 level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table C2: Effects of Migrants on Natives in the Informal Sector by Full-time/Part-time Separation, 2SLS Estimates

			MEN			WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) FULL-TIME										
Employed	-0.475*** (0.130)	-0.367** (0.144)	-0.388** (0.161)	-0.238* (0.141)	0.217	0.220 (0.145)	0.226 (0.157)	-0.064 (0.138)	0.353** (0.152)	0.101
Wage Worker	-0.237*** (0.081)	-0.538*** (0.105)	-0.506*** (0.113)	-0.491*** (0.104)	0.103	0.208** (0.096)	0.049 (0.067)	0.017 (0.066)	0.055 (0.064)	0.030
Hourly Wage	0.726 (0.504)	0.017 (0.404)	0.386 (0.448)	-0.419 (0.352)	0.958	0.601 (0.583)	0.244 (0.424)	0.691* (0.379)	-0.063 (0.499)	0.822
Self-employed	-0.291*** (0.099)	0.079 (0.056)	0.097* (0.059)	0.144*** (0.048)	0.080	-0.010 (0.028)	0.018 (0.024)	-0.020 (0.025)	0.019 (0.023)	0.014
Unpaid Family Worker	0.066* (0.034)	0.136*** (0.042)	0.054 (0.034)	0.138*** (0.038)	0.024	0.016 (0.078)	0.155 (0.097)	-0.063 (0.097)	0.279*** (0.098)	0.055
B) PART-TIME										
Employed	-0.092 (0.085)	-0.242*** (0.091)	-0.232** (0.098)	-0.207*** (0.079)	0.025	-0.255 (0.157)	-0.593*** (0.158)	-0.397** (0.197)	-0.646*** (0.137)	0.047
Wage Worker	-0.020 (0.027)	-0.058* (0.031)	-0.089*** (0.031)	-0.041 (0.031)	0.007	0.005 (0.020)	-0.020 (0.021)	-0.028 (0.024)	-0.005 (0.019)	0.006
Hourly Wage	0.552 (1.175)	-1.164 (1.256)	-1.110 (1.467)	-2.874** (1.425)	1.468	1.350 (1.360)	0.650 (1.407)	1.103 (1.616)	-0.758 (1.139)	1.279
Self-employed	-0.063 (0.044)	-0.129*** (0.048)	-0.108** (0.049)	-0.111*** (0.041)	0.014	-0.204** (0.081)	-0.250*** (0.082)	-0.280*** (0.088)	-0.219*** (0.070)	0.012
Unpaid Family Worker	-0.005 (0.016)	-0.046** (0.018)	-0.024 (0.020)	-0.048*** (0.017)	0.004	-0.055 (0.077)	-0.322*** (0.097)	-0.088 (0.107)	-0.422*** (0.111)	0.029
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 133,578 individuals in the full-time panel and 6,180 individuals in the part-time panel; and the female sample includes 38,273 individuals in the full-time panel and 6,296 individuals in the part-time panel. Each cell shows the estimates for the key variable of interest – the ratio of migrants to natives – in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school yeads, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table C3: Effects of Migrants on Natives in the Formal Sector by Full-time/Part-time Separation, 2SLS Estimates

			MEN			WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) FULL-TIME										
Employed	0.443*** (0.123)	0.653*** (0.146)	0.696*** (0.172)	0.693*** (0.143)	0.466	-0.497*** (0.108)	-0.192*** (0.069)	-0.226*** (0.072)	-0.092 (0.074)	0.117
Wage Worker	0.167* (0.095)	0.335*** (0.102)	0.369*** (0.123)	0.368*** (0.092)	0.359	-0.468*** (0.100)	-0.218*** (0.066)	-0.251*** (0.068)	-0.129* (0.070)	0.108
Hourly Wage	0.050 (0.213)	0.943*** (0.279)	0.975*** (0.329)	0.989*** (0.228)	1.596	-0.032 (0.301)	0.642** (0.282)	0.717** (0.314)	0.759*** (0.237)	1.663
Self-employed	0.176*** (0.054)	0.207*** (0.053)	0.201*** (0.061)	0.225*** (0.063)	0.064	-0.007 (0.007)	0.007 (0.006)	0.006 (0.007)	0.011** (0.005)	0.003
B) PART-TIME										
Employed	0.008 (0.021)	-0.051*** (0.020)	-0.032 (0.023)	-0.067*** (0.021)	0.008	-0.019* (0.011)	-0.021** (0.010)	-0.007 (0.015)	-0.031*** (0.009)	0.005
Wage Worker	-0.007 (0.012)	-0.020* (0.010)	-0.018 (0.012)	-0.019* (0.010)	0.004	-0.009 (0.011)	-0.015 (0.009)	-0.009 (0.012)	-0.022** (0.009)	0.004
Hourly Wage	1.686 (1.040)	0.631 (0.755)	0.510 (0.823)	0.407 (0.840)	2.238	-0.481 (0.955)	-0.207 (0.909)	-0.450 (1.102)	-0.076 (0.963)	2.318
Self-employed	0.018 (0.011)	-0.027** (0.014)	-0.011 (0.015)	-0.043*** (0.015)	0.004	-0.001 (0.001)	0.001 (0.001)	0.002 (0.002)	-0.001 (0.001)	0.000
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 519,334 individuals in the full-time panel 5,049 individuals in the part-time panel; and the female sample includes 156,373 individuals in the full-time panel and 5,025 individuals in the part-time panel. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable, specified in columm (1), on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the slows the of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are on literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respective).

Dependent Variable: N	atural Logarithm o	of Regional Cons	sumer Price Inde	x
	(1)	(2)	(3)	(4)
All	0.274***	0.159***	0.202**	0.290***
	(0.088)	(0.051)	(0.085)	(0.053)
Housing and housing expenditures	0.774***	0.742***	0.705***	0.859***
	(0.165)	(0.158)	(0.199)	(0.168)
Food and Nonalcoholic drinks	0.154	-0.102	-0.020	0.094
	(0.102)	(0.102)	(0.124)	(0.106)
Transportation	0.267**	0.075	0.059	0.246
	(0.118)	(0.159)	(0.179)	(0.157)
Restaurants and hotels	0.408**	-0.172	-0.053	0.158
	(0.179)	(0.132)	(0.198)	(0.156)
Furniture and home equipment	0.039	-0.032	0.154	-0.029
	(0.065)	(0.086)	(0.108)	(0.103)
Various goods and services	0.194	-0.456***	-0.687***	-0.415**
	(0.355)	(0.160)	(0.177)	(0.186)
Clothing and shoes	-0.220	-0.070	0.419	-0.039
	(0.186)	(0.197)	(0.375)	(0.184)
Alcoholic drinks and tobacco	-0.040	-0.076	-0.231***	0.022
	(0.114)	(0.064)	(0.081)	(0.075)
Communication	-0.072 (0.063)	-0.030 (0.090)	-0.047 (0.098)	0.056 (0.113)
Culture and entertainment	-0.176	0.410**	0.383*	0.347*
	(0.147)	(0.192)	(0.224)	(0.183)
Education	0.837***	0.601**	0.794**	0.598*
	(0.223)	(0.261)	(0.384)	(0.327)
Health	-0.373**	-0.145	0.059	0.001
	(0.173)	(0.145)	(0.135)	(0.164)
Controls for				
Year Fixed Effects	Yes	Yes	Yes	Yes
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes
5 Region Linear Time Trends	No	Yes	No	No
NUTS1 Linear Time Trends	No	No	Yes	No
5 Region-Year Fixed Effects	No	No	No	Yes

Table C4: Effect of Migrants on the Regional Consumer Price Index by Main Consumption Categories (ordered by the magnitude of their shares in the average budget)

Notes: The data come from the Turkish Statistical Institute on regional consumer price indices for 12 main consumption categories. The consumption categories are ordered in the table according to their shares in the average household budget. The sample includes observations for 26 NUTS-2 level regions for the 2005-15 time period excluding 2012; hence, there are 260 observations in all regressions. The CPI for 2005 is normalized to 100. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the natural logarithm of the regional consumer price index on the key variable of interest, and a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		М	lale			Fen	nale	
Panel A:			Depe	ndent Variable	e: Net Migratio	n Rate		
All	-0.011	-0.000	-0.006	0.013	-0.011	0.002	0.005	0.012
	(0.014)	(0.018)	(0.023)	(0.017)	(0.016)	(0.018)	(0.023)	(0.017)
Age: 15-64	-0.015 (0.017)	-0.004 (0.021)	-0.006 (0.028)	0.010 (0.020)	-0.015 (0.018)	0.000 (0.022)	0.011 (0.027)	0.011 (0.020)
Age: 15-24	-0.060*	-0.009	-0.003	0.004	-0.058	0.015	0.022	0.029
	(0.034)	(0.043)	(0.058)	(0.048)	(0.038)	(0.022)	(0.030)	(0.020)
Age: 25-39	0.011	0.002	-0.006	0.017	0.005	0.018	0.024	0.036*
	(0.027)	(0.027)	(0.037)	(0.020)	(0.025)	(0.026)	(0.034)	(0.020)
Age: 40-64	-0.021	-0.012	-0.019	-0.002	-0.016	-0.009	-0.012	0.000
	(0.015)	(0.017)	(0.022)	(0.017)	(0.022)	(0.018)	(0.020)	(0.019)
Education: Illiterate or No Degree	-0.031	0.030	-0.044**	0.037	-0.017	0.021	-0.010	0.020
	(0.022)	(0.023)	(0.022)	(0.026)	(0.023)	(0.024)	(0.025)	(0.028)
Education: Primary or Middle School	-0.039***	0.002	-0.026	0.003	-0.008	0.017	0.028	0.017
	(0.014)	(0.020)	(0.021)	(0.024)	(0.015)	(0.018)	(0.021)	(0.022)
Education: High School	-0.033	-0.038	-0.043	-0.024	-0.068	-0.040	-0.020	-0.025
	(0.045)	(0.047)	(0.067)	(0.052)	(0.062)	(0.083)	(0.082)	(0.098)
Education: University	0.031	0.085	0.096	0.116**	0.035	0.151*	0.160	0.199**
	(0.045)	(0.051)	(0.071)	(0.044)	(0.078)	(0.078)	(0.116)	(0.078)
Panel B:			Dependent	Variable: Ten	nporary Wage I	Employment		
Temporary Wage Worker	0.114	-0.441***	-0.323***	-0.538***	0.033	-0.103***	-0.143***	-0.109***
	(0.141)	(0.108)	(0.096)	(0.148)	(0.046)	(0.040)	(0.037)	(0.033)
Controls for Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5 Region Linear Time Trends NUTS1 Linear Time Trends	r es No No	r es Yes No	r es No Yes	res No No	res No No	Yes No	r es No Yes	r es No No
5 Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes

Table C5: Effect of Migrants of on Net Migration and Temporary Wage Employment of Natives by Gender, 2SLS Estimates

Notes: For Panel A, the data come from the internal migration statistics of the Turkish Statistical Institute. The sample includes observations for the 26 NUTS-2 level regions for the 2008-15 time period excluding 2012 in all regressions but the regressions by education. In the regressions by education, the sample time period covers 2009-15 excluding 2012. Hence, there are 156 observations in regressions for education groups, but 182 observations in all other regressions. Panel B follows the same specifications in Table 8. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors for Panel A and clustered standard errors at the NUTS-2 region and year level for Panel B are given in parantheses. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

	Log	Number of Perso	nnel
	(1)	(2)	(3)
Total Doctors	0.880***	0.715**	0.914***
	(0.234)	(0.317)	(0.341)
Specialist Doctors	0.396	0.883**	1.150**
- 	(0.280)	(0.435)	(0.486)
Practitioner Doctors	1.919***	1.075**	1.279***
	(0.447)	(0.437)	(0.465)
Dentists	1.298**	-0.285	-0.002
	(0.542)	(0.497)	(0.521)
Nurses	1.616***	1.375***	1.477***
	(0.189)	(0.265)	(0.270)
Midwifes	0.008	0.787***	0.763***
	(0.232)	(0.269)	(0.283)
Teachers	1.229***	0.207	0.402
	(0.307)	(0.308)	(0.373)
Controls for			
Year Fixed Effects	Yes	Yes	Yes
NUTS2 Fixed Effects	Yes	Yes	Yes
5 Region Linear Time Trends	No	Yes	No
5 Region-Year Fixed Effects	No	No	Yes

Table C6: Effect of Migrants on the Number of Health Personnel and Teachers

Notes: The data on the number of health personnel come from TUIK at the province level for the 2009-15 period. and the data on the number of teachers come from the Ministry of Education at the province level for the 2008-15 period. We aggregate both data to the 26 NUTS-2 region level in accordance with our main analysis with the Labor Force Survey data and exclude the data for 2012 because the key variable of interest is missing for this year. Hence, there are 156 observations in the regressions for health personnel and 182 observations in the regressions for teachers. Each cell shows the estimates for the key variable of interest and a set of geographical-area and year specific control variables as indicated above. The instrument varies by the prewar population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table C6: Effect of Migrants on Temporary Wage Employment of Natives

			MEN					WOMEN	N (8) Mean **** -0.109*** 0.016 (7) (0.033)					
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean				
Temporary Wage Worker	0.114 (0.141)	-0.441*** (0.108)	-0.323*** (0.096)	-0.538*** (0.148)	0.054	0.033 (0.046)	-0.103*** (0.040)	-0.143*** (0.037)	-0.109*** (0.033)	0.016				
Temporary Wage Worker in Agriculture	-0.031 (0.029)	-0.079*** (0.029)	-0.095*** (0.031)	-0.084*** (0.029)	0.009	0.010 (0.033)	-0.052* (0.031)	-0.089*** (0.027)	-0.039* (0.024)	0.007				
Temporary Wage Worker in Manufacturing	0.017 (0.016)	-0.025* (0.015)	-0.022 (0.017)	-0.028* (0.017)	0.005	0.011 (0.011)	0.009 (0.011)	0.012 (0.011)	0.012 (0.010)	0.003				
Temporary Wage Worker in Construction	0.050 (0.076)	-0.238*** (0.079)	-0.114* (0.061)	-0.296*** (0.100)	0.027	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.000				
Temporary Wage Worker in Services	0.078* (0.047)	-0.099*** (0.031)	-0.092*** (0.033)	-0.130*** (0.036)	0.014	0.012 (0.018)	-0.059*** (0.017)	-0.065*** (0.019)	-0.081*** (0.016)	0.006				
Controls for														
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes					
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes					
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No					
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No					
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes					

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

APPENDIX D: Further Estimation Results

D.1 Employment and Wages in the Informal and Formal Sectors by Sector of Employment

Informal employment is much more common in the agriculture and construction sectors.⁶⁰ Hence, we would expect migrants to exert a larger effect on these sectors. Table D1 gives the estimation results only for men in construction, as very few women work in this sector. The results indicate a tremendous negative effect on men's employment in the informal sector. An increase of 10 percentage points in the migrant-to-native ratio eliminates more than half of the jobs for men (a fall of 0.0192 from a baseline level of 0.031, based on column [4]). While this negative effect is realized mostly for wage workers, no robust evidence of an effect on wages exists—although the coefficients in columns (2) to (4) are all negative and sizable. In the formal construction sector, we find no conclusive evidence of an effect on employment or wage employment; however, evidence of a positive effect on wages exists.

Table D2 shows the results for the agricultural sector. For men employed informally in agriculture, we observe a negative effect on wage employment. While the effect on wages is also negative and large in magnitude in all specifications, it is statistically significant only in column (4). For women in the informal agricultural sector, an increase of 10 percentage points in the ratio of migrants to natives eliminates about 30–40% of employment. Unlike for men, the job losses for women are realized mostly for the self-employed rather than for wage workers. While no evidence of an effect on wage employment of women exists, there is a substantial negative effect on their wages. An increase of 10 percentage points in the ratio of migrants to natives causes a 17–19% fall in their wages. Hence, in the sector that is closest to the competitive market structure, the results are consistent with an outward labor-supply shift in a competitive market. The strong effects on both men's and women's wages in agriculture suggest an inelastic labor demand curve in this sector.

Table D3 presents the results for the manufacturing sector. Every 10 incoming Syrians displaces almost two men employed informally in this sector, and all of this displacement occurs in wage employment. By contrast, in the formal manufacturing sector, every 10 Syrians generates jobs for more than three men, of whom about two and a half are wage earners. A positive effect on self-employment also exists. It is important to note that the number of jobs generated in the formal sector exceed the number lost in the informal sector. Men's wages and their wage employment also increase in the formal manufacturing sector—consistent with an outward shift of the demand curve.

⁶⁰ Table B4 in Appendix B shows that, while 78% of men in manufacturing are formally employed, 42.4% of men in construction and only 24.5% of men in agriculture are formally employed.

For women in the informal manufacturing sector, there is no conclusive evidence of an effect on employment, wage employment or wages, but a negative effect on self-employment exists. Women in the formal manufacturing sector, unlike men, do not benefit in terms of employment. However, their wages increase significantly. An increase of 10 percentage points in the migrant ratio leads to a 27–28% rise in women's wages in the formal manufacturing sector. Table D4 shows the same analysis only for the textiles and clothing subsector of manufacturing. For men, more than half of the job losses in the informal sector and about half of the jobs generated in the formal sector are in this subsector. Similarly, this subsector drives the findings for women in the manufacturing sector.

Finally, Table D5 shows the results for the services sector. In the informal sector, there is no conclusive evidence of an effect of migrant shock on employment, type of employment, or wages for either men or women. That natives in the services sector are less substitutable by Syrians is not a surprise because language ability is a key criterion for many service sector jobs. In the formal services sector, there is evidence of a positive effect on men's employment, which is driven mostly by self-employment. Presumably, the rise in product market demand with the arrival of Syrians generates new employment opportunities for small shop owners and other small enterprises. Although there is no evidence of a positive effect on wage employment, wages increase for men in the formal sector. For women in the formal sector, evidence of an effect on employment exists. However, this effect gradually diminishes in magnitude as we relax the specification from column (5) to (8).

D.2 Wage Employment and Wages in the Informal and Formal Sectors by Education

Here, we examine the impact of the migrant shock on natives' wage employment and wages by the educational attainment of natives. Educational attainment is divided into three groups in the informal sector: (i) illiterate or no degree, (ii) primary or middle-school degree, (iii) high school or college degree. In our analysis for the formal sector, however, we group educational attainment into three as follows: (i) middle school degree or lower, (ii) high school degree, (iii) college degree. These choices are related to differences in the distribution of education between the formal and informal sectors and to characteristics that are specific to the Turkish labor market.⁶¹

⁶¹ We combine high school and college graduates in the informal sector because the fraction of college graduates is low (Table B5 in Appendix B). We take the individuals who are illiterate or have no degree as a separate group because a sizable fraction of workers in the informal sector have no degree, especially among women at 24.5%. Moreover, having any kind of school degree is an important marker for men in the labor market in Turkey. Only 1.7% of men and 2.3% of women in the formal sector are illiterate or have no school degree; hence, we combine this group with primary school and middle-school graduates. On the other hand, we separate college graduates from high-school graduates in the formal sector because college graduation is a tremendous difference-maker for women in the formal labor market in Turkey.

As can be seen in Table D6, while a negative effect on wage employment of men in the informal sector exists for all three education groups, suggestive but not conclusive evidence of a negative effect on wage employment decreases monotonically in education, which implies that migrants are closer substitutes to native wage-earner men with lower educational attainment. For women, we find no evidence of a negative effect on wage employment in the informal sector for any education group. As for men, suggestive but not conclusive evidence exists that wages of women with no school degree fall with the migrant shock. The fact that the outward shift of labor supply results in a more negative wage effect for those with no school degree—among both men and women—implies that labor demand in the informal sector is more inelastic for the least educated workers.

In the formal labor market, we see that wages and wage employment of all male workers, except college graduates, increase with the arrival of Syrians. The results with the common-trend assumption across NUTS-2 regions once again fail to reveal any of these findings. In addition, for men in the formal sector, the responsiveness of wage employment vis-à-vis the responsiveness of wages decreases with higher levels of education—suggesting that labor supply elasticity decreases with education. For women in the formal labor market, a negative effect on wage employment but a positive effect on wages of those with the lowest educational attainment exists. This suggests that women in this education group who lose their jobs come from the lower end of the wage distribution.

No evidence of an effect on total employment exists for men of any education group (Table D7). At the same time, a transition from part-time to full-time employment is observed for men with medium levels of education (primary or middle school graduates and high school graduates). No conclusive evidence of an effect on labor force participation or unemployment is observed for men of any education group. For women, the negative impact on employment is driven mostly by the group with primary or middle school degree—which actually constitutes the largest group among women. While the fall in part-time employment of women is observed for women of all educational levels, it is much greater among less educated women (those with less than high school education). Similarly, evidence of a fall in labor force participation exists for the same groups of women with low levels of education.

D.3 Wage Employment and Wages in the Informal and Formal Sectors by Age

Table D8 presents the effects on wage employment and wages in the informal and formal sectors for three age groups: 18–24, 25–39, and 40–64.⁶² All three age groups show a negative effect of the

⁶² The percentage of these age groups among wage workers are 14%, 50%, and 36%, respectively, for men and 21%, 52%, and 27%, respectively, for women. We take individuals aged 18–24 as a separate group because the migrant shock might

migrant shock on wage employment of men in the informal sector. At the same time, the magnitude of this effect is stronger for youth and the 25–39 age group. For wages, on the other hand, no conclusive evidence of an effect exists for any age group. The positive effect of the migrant shock on the formal wage employment of men, reported earlier in Table 5, is observed for the 25–39 and 40–64 age groups. However, the positive effect of the migrant shock on men's wages in the formal sector, also reported earlier, is observed for all age groups. This suggests that labor supply in the formal sector is more inelastic for male youth than older males.

For women in the informal sector, no evidence of an effect on wage employment or on wages exists for any age group, although the estimated negative coefficients for wage effects on the female youth are quite large in magnitude. This lack of evidence for women of different age groups in the informal sector is consistent with the findings for the total sample, as shown in Table 5. For women in the formal sector, a positive effect on wages exists only for youth. This, along with the fact that wage employment of female youth does not respond much to the arrival of Syrians with the preferred specification, suggests that labor supply elasticity for female youth in the formal sector is inelastic— as is the case for male youth.

The effects of the migrant shock on total, full-time, and part-time employment as well as on labor force participation and unemployment of natives by age groups are shown in Table D9. An interesting result is that, for men in the 25–39 age group, total employment increases. For women, the negative effect on total employment, shown earlier in Table 7, exists for all but the youth. At the same time, this effect is the strongest for the older 40–64 age group. In line with this finding, there is evidence of a drop in participation rates of all but the youth and this drop is stronger for the 40-64 age group.

have a disproportionately strong effect on native youth due to the age composition of the migrants.

		A) INFO	ORMAL SE	CTOR		B) FORMAL SECTOR (5) (6) (7) (8) M 0.099** 0.027 0.083** 0.032 0.0 (0.039) (0.045) (0.042) (0.061) 0 0.107*** 0.026 0.088** 0.022 0.0 (0.040) (0.046) (0.044) (0.061) 0.552 1.310** 1.328* 1.259** 1.4 (0.477) (0.655) (0.760) (0.524) 0.0 -0.004 -0.003 -0.005 0.001 0.0 (0.004) (0.004) (0.005) (0.004) 9.00 Yes Yes Yes Yes Yes No Yes No No No				B) FORMAL SECTOR						
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean						
Employed	-0.086** (0.035)	-0.219*** (0.048)	-0.177*** (0.046)	-0.192*** (0.048)	0.031	0.099** (0.039)	0.027 (0.045)	0.083** (0.042)	0.032 (0.061)	0.031						
Wage Worker	-0.087** (0.035)	-0.230*** (0.048)	-0.190*** (0.046)	-0.204*** (0.046)	0.025	0.107*** (0.040)	0.026 (0.046)	0.088** (0.044)	0.022 (0.061)	0.025						
Hourly Wage	0.202 (0.527)	-0.543 (0.569)	-1.083* (0.650)	-0.828 (0.659)	1.066	0.552 (0.477)	1.310** (0.655)	1.328* (0.760)	1.259** (0.524)	1.436						
Self-employed	0.001 (0.009)	0.013 (0.008)	0.014 (0.010)	0.009 (0.006)	0.005	-0.004 (0.004)	-0.003 (0.004)	-0.005 (0.005)	0.001 (0.004)	0.003						
Controls for																
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes							
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes							
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No							
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No							
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes							

Table D1: Effects of Migrants on Natives in the Construction Sector, 2SLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The sample size is 1,577,881 except for that in wage regressions. The sample size in the hourly wage regressions is 30,059 for the informal sector and 33,555 for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table	D2:	Effects	of M	ligrants	on]	Natives	in	the A	Agricu	ltural	Sector.	2SLS	Estimates
				0					0		,		

			MEN					WOMEN		
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.209** (0.094)	-0.062 (0.109)	-0.224** (0.102)	0.054 (0.090)	0.084	-0.156 (0.192)	-0.380** (0.189)	-0.476** (0.207)	-0.327** (0.142)	0.101
Wage Worker	-0.060** (0.028)	-0.101*** (0.029)	-0.131*** (0.030)	-0.083*** (0.024)	0.010	0.016 (0.032)	-0.041 (0.030)	-0.081*** (0.027)	-0.016 (0.023)	0.007
Hourly Wage	-0.760 (0.753)	-1.054 (0.777)	-1.014 (0.853)	-1.705** (0.788)	0.775	-1.508* (0.874)	-1.899** (0.830)	-1.737** (0.844)	-1.877* (0.979)	0.627
Self-employed	-0.210*** (0.065)	-0.018 (0.057)	-0.082 (0.061)	0.086* (0.052)	0.052	-0.126 (0.080)	-0.167** (0.078)	-0.235*** (0.078)	-0.149** (0.073)	0.015
Unpaid Family Worker	0.085** (0.038)	0.084* (0.046)	0.013 (0.037)	0.077* (0.042)	0.020	-0.046 (0.105)	-0.169 (0.123)	-0.157 (0.136)	-0.160 (0.121)	0.078
B) FORMAL SECTOR										
Employed	0.099** (0.040)	0.028 (0.049)	0.055 (0.057)	-0.009 (0.052)	0.030	-0.022 (0.016)	0.004 (0.018)	0.009 (0.023)	0.004 (0.015)	0.003
Wage Worker	0.019 (0.015)	0.008 (0.012)	0.010 (0.013)	0.001 (0.016)	0.003	-0.011** (0.005)	-0.017*** (0.006)	-0.021*** (0.006)	-0.019*** (0.007)	0.001
Hourly Wage	-0.391 (0.934)	1.666 (1.113)	1.892 (1.203)	0.347 (1.230)	1.387	-1.244 (2.938)	0.883 (2.740)	0.871 (2.712)	4.332** (1.986)	1.276
Self-employed	0.074** (0.035)	0.014 (0.041)	0.037 (0.049)	-0.014 (0.046)	0.024	0.000 (0.002)	0.004 (0.003)	0.004 (0.003)	0.003 (0.002)	0.000
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages. In the wage regressions, the male and female sample sizes are 11,783 and 6,464, respectively, for the informal sector and 4,668 and 851, respectively, for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

			MEN					WOMEN		
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.060 (0.052)	-0.156*** (0.048)	-0.149*** (0.047)	-0.188*** (0.047)	0.032	0.022 (0.032)	-0.032 (0.023)	-0.028 (0.028)	-0.014 (0.025)	0.016
Wage Worker	-0.069 (0.043)	-0.161*** (0.043)	-0.160*** (0.047)	-0.186*** (0.038)	0.024	0.068*** (0.024)	0.014 (0.016)	0.017 (0.019)	0.020 (0.015)	0.009
Hourly Wage	1.326** (0.595)	0.595 (0.383)	0.870** (0.387)	0.165 (0.336)	1.040	-0.013 (1.023)	-1.072 (1.261)	-0.354 (1.283)	-3.031** (1.439)	0.892
Self-employed	0.004 (0.013)	0.006 (0.013)	0.010 (0.014)	-0.001 (0.012)	0.004	-0.050*** (0.019)	-0.046*** (0.015)	-0.047*** (0.018)	-0.038*** (0.014)	0.005
B) FORMAL SECTOR										
Employed	0.196*** (0.071)	0.316*** (0.079)	0.352*** (0.094)	0.337*** (0.066)	0.129	-0.185*** (0.044)	-0.049** (0.021)	-0.057** (0.022)	-0.009 (0.014)	0.026
Wage Worker	0.120* (0.071)	0.237*** (0.074)	0.266*** (0.086)	0.259*** (0.059)	0.115	-0.180*** (0.043)	-0.050** (0.021)	-0.057** (0.022)	-0.012 (0.014)	0.025
Hourly Wage	0.487** (0.242)	1.185*** (0.380)	0.952** (0.393)	1.748*** (0.423)	1.451	1.074** (0.538)	2.755*** (0.767)	2.702*** (0.850)	2.825*** (0.701)	1.326
Self-employed	0.026*** (0.009)	0.032*** (0.008)	0.032*** (0.008)	0.035*** (0.007)	0.005	-0.003*** (0.001)	-0.002* (0.001)	-0.003* (0.001)	-0.001 (0.001)	0.000
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Table D3: Effects of Migrants on Natives in the Manufacturing Sector, 2SLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages. In the wage regressions, the male and female sample sizes are 28,402 and 9,757, respectively, for the informal sector and 161,184 and 34,853, respectively, for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

			MEN					WOMEN		
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.028 (0.030)	-0.085*** (0.024)	-0.085*** (0.024)	-0.094*** (0.023)	0.009	0.025 (0.031)	-0.019 (0.021)	-0.019 (0.026)	0.004 (0.021)	0.012
Wage Worker	-0.030 (0.028)	-0.084*** (0.023)	-0.085*** (0.023)	-0.094*** (0.022)	0.008	0.072*** (0.022)	0.027* (0.016)	0.030 (0.018)	0.037*** (0.013)	0.007
Hourly Wage	1.672** (0.843)	0.543 (0.653)	0.685 (0.686)	-0.187 (0.894)	1.113	-1.032 (1.849)	-2.712 (2.463)	-1.868 (2.606)	-3.393* (1.753)	0.898
Self-employed	0.002 (0.003)	0.004 (0.003)	0.004 (0.003)	0.005** (0.002)	0.001	-0.051** (0.020)	-0.045*** (0.016)	-0.049*** (0.018)	-0.038*** (0.014)	0.005
B) FORMAL SECTOR										
Employed	0.154*** (0.048)	0.116** (0.047)	0.095* (0.052)	0.206*** (0.047)	0.025	-0.060*** (0.021)	-0.013 (0.015)	-0.019 (0.015)	0.021* (0.012)	0.013
Wage Worker	0.128*** (0.045)	0.092** (0.044)	0.067 (0.049)	0.177*** (0.044)	0.022	-0.056*** (0.020)	-0.012 (0.015)	-0.018 (0.015)	0.019 (0.012)	0.012
Hourly Wage	0.889*** (0.228)	0.573** (0.271)	0.479 (0.303)	1.539*** (0.272)	1.328	0.869* (0.453)	1.846*** (0.592)	2.294*** (0.732)	1.561*** (0.590)	1.223
Self-employed	0.003 (0.003)	0.004 (0.003)	0.005 (0.003)	0.006** (0.002)	0.001	-0.002* (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	0.000
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No	
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes	

Table D4: Effects of Migrants on Natives in the Textiles and Clothing Sector, 2SLS Estimates

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages. In the wage regressions, the male and female sample sizes are 7,374 and 6,934, respectively, for the informal sector and 28,051 and 16,787, respectively, for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq et ach year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *****, ******, or ******* indicates significance at the 10%, 5% and 1% levels, respectively.

Table D5:	: Effects of	Migrants	on Natives	in the	Services	Sector, 2S	LS Estimates
		0				,	

			MEN					WOMEN	EN Mean 7) (8) Mean 0.045 0.031 8) (0.066) 0.043 0.020 8) (0.051) *** 0.199 0.936 0) (0.502)					
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean				
A) INFORMAL SECTOR														
Employed	-0.212*** (0.053)	-0.172*** (0.059)	-0.070 (0.086)	-0.120* (0.067)	0.095	0.097 (0.070)	0.041 (0.065)	0.040 (0.073)	0.045 (0.066)	0.031				
Wage Worker	-0.042 (0.036)	-0.104*** (0.040)	-0.114** (0.048)	-0.058 (0.046)	0.051	0.125* (0.065)	0.052 (0.053)	0.048 (0.058)	0.043 (0.051)	0.020				
Hourly Wage	0.705 (0.437)	0.282 (0.377)	0.511 (0.423)	0.063 (0.342)	0.946	0.344 (0.600)	0.379 (0.464)	1.002** (0.480)	0.199 (0.502)	0.936				
Self-employed	-0.148*** (0.038)	-0.051* (0.031)	0.047 (0.051)	-0.062** (0.028)	0.032	-0.038*** (0.010)	-0.019* (0.011)	-0.018 (0.012)	-0.013 (0.009)	0.006				
B) FORMAL SECTOR														
Employed	0.057 (0.096)	0.230** (0.097)	0.174* (0.095)	0.266** (0.106)	0.284	-0.301*** (0.065)	-0.166*** (0.053)	-0.184*** (0.053)	-0.116* (0.059)	0.092				
Wage Worker	-0.085 (0.071)	0.043 (0.076)	-0.013 (0.075)	0.067 (0.085)	0.220	-0.279*** (0.057)	-0.167*** (0.049)	-0.183*** (0.051)	-0.119** (0.056)	0.085				
Hourly Wage	-0.160 (0.213)	0.771*** (0.222)	0.855*** (0.274)	0.692*** (0.187)	1.701	-0.186 (0.329)	0.254 (0.290)	0.284 (0.313)	0.347 (0.260)	1.794				
Self-employed	0.097*** (0.031)	0.136*** (0.029)	0.126*** (0.033)	0.160*** (0.028)	0.037	-0.005 (0.006)	0.006 (0.005)	0.006 (0.006)	0.009* (0.005)	0.003				
Controls for														
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes					
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes					
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No					
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No					
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes					

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages. In the wage regressions, the male and female sample isizes are 69,514 and 28,014, respectively, for the informal sector and 324,976 and 124,463, respectively, for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of nigrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table D6: Effects of Migrants on Wage Employment and Wages of Natives in the Informal and Formal Sectors by Natives' Education Level

			MEN					WOMEN		
Education Group	(1)	(2)	(3)	(4)	No obs.	(5)	(6)	(7)	(8)	No obs.
A) WAGE EMPLOYMENT IN	THE INFORI	MAL SECT	OR							
Illiterate or No Degree	-0.454* (0.238)	-1.111*** (0.219)	-1.287*** (0.239)	-0.925*** (0.233)	99,257	0.242** (0.113)	0.091 (0.093)	0.043 (0.099)	0.101 (0.087)	394,694
Primary or Middle School	-0.277*** (0.105)	-0.648*** (0.117)	-0.601*** (0.124)	-0.659*** (0.135)	896,686	0.148 (0.106)	-0.062 (0.076)	-0.102 (0.080)	0.014 (0.066)	885,535
High School or University	-0.134** (0.058)	-0.293*** (0.063)	-0.308*** (0.078)	-0.143** (0.058)	581,942	0.065 (0.085)	-0.034 (0.072)	-0.074 (0.074)	-0.022 (0.071)	414,589
B) WAGES IN THE INFORMA	L SECTOR									
Illiterate or No Degree	-0.231 (0.697)	-1.435** (0.677)	-1.333 (0.880)	-2.051*** (0.731)	13,255	0.109 (0.547)	-0.740 (0.494)	-0.759 (0.590)	-1.397** (0.638)	7,906
Primary or Middle School	0.606 (0.443)	-0.128 (0.367)	0.120 (0.399)	-0.427 (0.374)	98,500	0.976* (0.587)	0.497 (0.487)	0.904* (0.513)	0.421 (0.597)	26,569
High School or University	1.134* (0.587)	0.539 (0.478)	0.916* (0.502)	-0.212 (0.420)	28,003	0.318 (0.831)	0.574 (0.809)	1.199 (0.800)	-0.063 (0.948)	10,094
C) WAGE EMPLOYMENT IN	THE FORMA	AL SECTOR	ર							
Middle School or Lower	0.141 (0.111)	0.318*** (0.111)	0.371*** (0.133)	0.403*** (0.107)	995,943	-0.455*** (0.102)	-0.227*** (0.065)	-0.265*** (0.064)	-0.146** (0.073)	1,280,229
High School	0.168 (0.133)	0.402** (0.164)	0.380** (0.186)	0.241* (0.124)	377,256	-0.452*** (0.110)	-0.275** (0.108)	-0.306*** (0.114)	-0.142 (0.092)	268,271
University	-0.664*** (0.169)	-0.278** (0.112)	-0.174 (0.133)	-0.098 (0.128)	204,686	-1.016*** (0.272)	-0.374 (0.235)	-0.295 (0.269)	-0.218 (0.255)	146,318
D) WAGES IN THE FORMAL	SECTOR									
Middle School or Lower	0.105 (0.285)	1.046*** (0.393)	0.978** (0.422)	0.883*** (0.300)	245,397	0.770** (0.343)	1.177*** (0.314)	1.300*** (0.350)	1.299*** (0.320)	41,043
High School	-0.208 (0.271)	0.921*** (0.237)	1.058*** (0.303)	0.947*** (0.220)	155,236	-0.290 (0.400)	0.380 (0.390)	0.478 (0.434)	0.208 (0.296)	44,916
University	-0.108 (0.230)	0.361 (0.253)	0.348 (0.285)	0.685** (0.289)	123,750	0.087 (0.496)	0.599 (0.412)	0.614 (0.494)	0.723 (0.442)	76,339
Controls for										
Year Fixed Effects NUTS2 Fixed Effects	Yes Yes	Yes Yes	Yes Yes	Yes Yes		Yes Yes	Yes Yes	Yes Yes	Yes Yes	
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No	
NUTS1 Linear Time Trends 5 Region-Year Fixed Effects	No No	No No	Yes No	No Yes		No No	No No	Yes No	No Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. The respective number of individuals who have no formal education, primary or middle school degree, high school degree, and college degree are 99,257, 896,686, 377,256, and 204,686, respectively, for males and 394,694, 885,535, 268,271, and 146,318, respectively, for females. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates. (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table D7: Effects of Migrants on Employment, Full-time Employment, Part-time Employment, Labor Force Participation and Unemployment of Natives by Natives' Education Level

	MEN					WOMEN					
Education Group	(1)	(2)	(3)	(4)	-	(5)	(6)	(7)	(8)		
A) EMPLOYMENT											
Illiterate or No Degree	-0.205	0.089	0.255	0.060		-0.088	-0.298	-0.299	-0.373		
	(0.263)	(0.267)	(0.338)	(0.267)		(0.391)	(0.355)	(0.423)	(0.266)		
Primary or Middle School	-0.153	-0.053	-0.022	0.161		-0.849***	-0.926***	-1.069***	-0.584***		
	(0.093)	(0.116)	(0.147)	(0.102)		(0.233)	(0.268)	(0.292)	(0.207)		
High School	0.058 (0.129)	-0.023 (0.156)	0.005 (0.183)	0.204 (0.153)		-0.511*** (0.126)	-0.554*** (0.177)	-0.658*** (0.196)	-0.255 (0.174)		
University	-0.314*** (0.117)	-0.123 (0.130)	0.010 (0.170)	-0.001 (0.142)		-0.928*** (0.216)	-0.387* (0.216)	-0.226 (0.285)	-0.196 (0.246)		
B) FULL-TIME EMPLOYMENT											
Illiterate or No Degree	-0.020	0.331 (0.241)	0.353 (0.257)	0.386 (0.249)		0.295 (0.211)	0.442*	-0.004	0.497** (0.220)		
Primary or Middle School	-0.047	0.303**	0.301**	0.513***		-0.482***	-0.180	-0.525***	0.212		
	(0.112)	(0.129)	(0.136)	(0.115)		(0.154)	(0.168)	(0.179)	(0.151)		
High School	0.137	0.239	0.249	0.429***		-0.391***	-0.299**	-0.420***	-0.041		
	(0.133)	(0.152)	(0.173)	(0.154)		(0.106)	(0.133)	(0.154)	(0.132)		
University	-0.276 (0.180)	0.023 (0.135)	0.145 (0.150)	0.123 (0.142)		-0.913*** (0.272)	-0.171 (0.214)	-0.057 (0.261)	0.023 (0.211)		
C) PART-TIME EMPLOYMENT											
Illiterate or No Degree	-0.185	-0.242	-0.098	-0.326*		-0.383*	-0.740***	-0.295	-0.870***		
	(0.164)	(0.194)	(0.241)	(0.195)		(0.229)	(0.229)	(0.299)	(0.188)		
Primary or Middle School	-0.106	-0.356***	-0.323**	-0.352***		-0.367**	-0.746***	-0.544***	-0.796***		
	(0.108)	(0.117)	(0.130)	(0.100)		(0.159)	(0.170)	(0.207)	(0.172)		
High School	-0.079	-0.262***	-0.244***	-0.225***		-0.120	-0.255***	-0.238**	-0.213***		
The loss sectors	(0.059)	(0.072)	(0.078)	(0.074)		(0.082)	(0.090)	(0.104)	(0.076)		
University	-0.038	-0.146	-0.136	-0.124 (0.108)		-0.015 (0.144)	(0.108)	-0.170	(0.097)		
D) LABOR FORCE PARTICIPATIO	ON	((1.1.1)			((1.1.1)	(
Illiterate or No Degree	0.213	0.606	0.192	0.548		-0.239	-0.566*	-0.764**	-0.510**		
	(0.375)	(0.413)	(0.455)	(0.413)		(0.395)	(0.300)	(0.347)	(0.238)		
Primary or Middle School	-0.100	0.187	-0.098	0.205		-0.983***	-0.477***	-0.608***	-0.544***		
	(0.141)	(0.149)	(0.160)	(0.137)		(0.228)	(0.167)	(0.188)	(0.139)		
High School	-0.070	0.294*	0.086	0.267*		-0.814***	-0.267	-0.263	-0.317		
	(0.151)	(0.160)	(0.154)	(0.142)		(0.186)	(0.185)	(0.222)	(0.195)		
University	-0.176* (0.093)	0.211** (0.101)	0.041 (0.096)	0.189* (0.109)		-0.237 (0.221)	0.499* (0.256)	0.288 (0.270)	0.520* (0.283)		
E) UNEMPLOYMENT											
Illiterate or No Degree	0.468**	0.624**	-0.047	0.556*		-0.001	0.041	0.032	0.045		
Deine en Middle Cele el	(0.205)	(0.300)	(0.399)	(0.290)		(0.035)	(0.050)	(0.074)	(0.045)		
Primary or Middle School	(0.158 (0.123)	(0.119 (0.157)	-0.126 (0.206)	(0.163)		-0.005 (0.045)	(0.083)	(0.084)	(0.054)		
High School	0.032	0.075	-0.127	0.018		-0.046	0.138	0.017	0.094		
	(0.093)	(0.106)	(0.136)	(0.098)		(0.110)	(0.124)	(0.169)	(0.107)		
University	0.202*	0.190	-0.091	0.175		0.606***	0.690***	0.355	0.639***		
Controls for	(0.100)	(0.110)	(0.100)	(0.120)		(0.175)	(0.201)	(0.200)	(0.171)		
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No		
5 Region-Year Fixed Effects	No	No	r es No	Yes		No	No	r es No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals. The respective number of individuals who have no formal education, primary or middle school degree, high school degree, and college degree are 99,257, 896,686, 377,256, and 204,686, respectively, for males and 394,694, 885,535, 268,271, and 146,318, respectively, for females. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable of interest as et of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or **** indicates significance at the 10%, 5% and 1% levels, respectively.
			MEN			_	WOMEN				
Age Group	(1)	(2)	(3)	(4)	No obs.	(5)	(6)	(7)	(8)	No obs.	
A) WAGE EMPLOYMENT IN	N THE INFO	RMAL SEC	TOR								
18-24	-0.114 (0.211)	-0.734*** (0.193)	-0.722*** (0.212)	-0.730*** (0.226)	264,292	0.344* (0.190)	0.024 (0.126)	-0.110 (0.124)	0.028 (0.115)	302,594	
25-39	-0.469*** (0.081)	-0.753*** (0.107)	-0.747*** (0.126)	-0.640*** (0.099)	584,388	0.167* (0.091)	-0.005 (0.068)	-0.038 (0.072)	0.065 (0.061)	634,592	
40-64	-0.014 (0.093)	-0.341*** (0.073)	-0.369*** (0.086)	-0.289*** (0.090)	729,201	0.236** (0.105)	0.092 (0.087)	0.089 (0.094)	0.065 (0.082)	757,631	
B) WAGES IN THE INFORM	IAL SECTOR	λ									
18-24	0.358 (0.594)	-0.424 (0.453)	0.035 (0.447)	-0.737* (0.378)	34,484	-0.526 (0.642)	-0.582 (0.588)	-0.364 (0.643)	-0.717 (0.793)	12,027	
25-39	0.952* (0.573)	0.166 (0.448)	0.434 (0.525)	-0.374 (0.444)	55,791	0.865 (0.650)	0.446 (0.500)	0.743 (0.473)	0.180 (0.594)	16,663	
40-64	0.176 (0.385)	-0.394 (0.430)	-0.320 (0.481)	-0.813 (0.510)	49,483	0.303 (0.641)	0.088 (0.582)	0.350 (0.662)	-0.160 (0.559)	15,879	
C) WAGE EMPLOYMENT IN	N THE FORM	MAL SECTO	R								
18-24	-0.219** (0.108)	-0.015 (0.120)	0.195 (0.148)	0.242* (0.134)	264,292	-0.574*** (0.139)	-0.289*** (0.105)	-0.312*** (0.108)	-0.061 (0.089)	302,594	
25-39	0.444*** (0.144)	0.491*** (0.140)	0.531*** (0.176)	0.345*** (0.103)	584,388	-0.502*** (0.112)	-0.193** (0.089)	-0.230** (0.093)	-0.171* (0.100)	634,592	
40-64	-0.155 (0.117)	0.222** (0.112)	0.193* (0.115)	0.311** (0.132)	729,201	-0.494*** (0.102)	-0.283*** (0.065)	-0.317*** (0.071)	-0.226*** (0.070)	757,631	
D) WAGES IN THE FORMAL	L SECTOR										
18-24	0.488 (0.372)	0.963** (0.396)	1.060** (0.484)	1.029*** (0.334)	55,621	-0.041 (0.550)	0.745 (0.496)	1.252** (0.541)	1.125** (0.436)	30,730	
25-39	0.157 (0.225)	1.048*** (0.336)	1.013** (0.393)	1.039*** (0.287)	281,857	-0.025 (0.371)	0.386 (0.392)	0.345 (0.442)	0.390 (0.400)	93,051	
40-64	-0.298 (0.311)	0.588** (0.265)	0.700** (0.282)	0.784*** (0.230)	186,905	-0.674 (0.421)	0.271 (0.306)	0.244 (0.366)	0.605** (0.255)	38,517	
Controls for											
Year Fixed Effects NUTS2 Fixed Effects	Yes Yes	Yes Yes	Yes Yes	Yes Yes		Yes Yes	Yes Yes	Yes Yes	Yes Yes		
5-Region Linear Time Trends NUTS1 Linear Time Trends 5-Region-Year Fixed Effects	No No No	Yes No No	NO Yes No	NO NO Ves		NO NO NO	Yes No No	NO Yes No	NO NO Ves		

Table D8: Effects of Migrants on Wage Employment and Wages of Natives in the Informal and Formal Sectors by Natives' Age

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. The number of individuals who are 18-24 years-old is 264,292 for males and 302,594 for females, the number of individuals who are 25-39 years-old is 584,388 for males and 634,592 for females, and the number of individuals who are 40-64 years-old is 729,201 for males and 757,631 for females. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

		N	IEN		WOMEN					
Age Group	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
A) EMPLOYMENT		, ,		. , ,			, ,	, , ,		
18-24	-0.027	-0.213	-0.096	0.013	0.028	-0.253	-0.351	-0.104		
	(0.195)	(0.209)	(0.255)	(0.241)	(0.276)	(0.260)	(0.288)	(0.221)		
25-39	0.204**	0.277***	0.329**	0.344***	-0.634**	-0.564**	-0.676**	-0.396**		
	(0.088)	(0.106)	(0.134)	(0.090)	(0.268)	(0.266)	(0.296)	(0.194)		
40-64	-0.585***	-0.250	-0.225	0.037	-0.759***	-0.746***	-0.907***	-0.564***		
	(0.138)	(0.173)	(0.203)	(0.152)	(0.248)	(0.274)	(0.295)	(0.216)		
B) FULL-TIME EMPLOYME	ENT									
18-24	0.090	-0.026	0.067	0.139	0.065	0.029	-0.243	0.323*		
	(0.175)	(0.193)	(0.218)	(0.224)	(0.185)	(0.176)	(0.172)	(0.172)		
25-39	0.219**	0.470***	0.512***	0.509***	-0.343**	0.078	-0.239	0.266*		
	(0.104)	(0.118)	(0.125)	(0.097)	(0.161)	(0.162)	(0.146)	(0.150)		
40-64	-0.444***	0.198	0.180	0.476***	-0.383***	0.022	-0.362**	0.241		
	(0.165)	(0.143)	(0.151)	(0.146)	(0.140)	(0.168)	(0.154)	(0.162)		
C) PART-TIME EMPLOYME	ENT									
18-24	-0.117	-0.187*	-0.164	-0.126	-0.037	-0.282**	-0.109	-0.427***		
	(0.078)	(0.098)	(0.115)	(0.092)	(0.116)	(0.131)	(0.157)	(0.118)		
25-39	-0.015	-0.193**	-0.183**	-0.165**	-0.291*	-0.642***	-0.437**	-0.663***		
	(0.088)	(0.085)	(0.091)	(0.081)	(0.168)	(0.165)	(0.208)	(0.132)		
40-64	-0.141	-0.448***	-0.405***	-0.439***	-0.376*	-0.768***	-0.545**	-0.805***		
	(0.134)	(0.127)	(0.138)	(0.110)	(0.193)	(0.187)	(0.228)	(0.176)		
D) LABOR FORCE PARTIC	IPATION									
18-24	0.262	0.637**	0.241	0.648**	-0.099	0.035	-0.023	-0.017		
	(0.265)	(0.299)	(0.313)	(0.280)	(0.256)	(0.238)	(0.258)	(0.226)		
25-39	0.252	0.211	-0.166	0.238	-0.804***	-0.479**	-0.741***	-0.459***		
	(0.160)	(0.158)	(0.170)	(0.155)	(0.277)	(0.205)	(0.241)	(0.157)		
40-64	-0.613***	0.099	-0.044	0.102	-0.881***	-0.623***	-0.827***	-0.641***		
	(0.154)	(0.111)	(0.112)	(0.095)	(0.230)	(0.168)	(0.184)	(0.139)		
E) UNEMPLOYMENT										
18-24	0.426**	0.467**	0.013	0.384	0.145	0.234	0.191	0.248**		
	(0.168)	(0.233)	(0.316)	(0.237)	(0.101)	(0.142)	(0.190)	(0.117)		
25-39	0.237*	0.104	-0.232	0.067	0.065	0.181**	0.129	0.182**		
	(0.139)	(0.162)	(0.202)	(0.162)	(0.062)	(0.075)	(0.102)	(0.075)		
40-64	-0.009	0.032	-0.108	0.003	-0.080**	-0.004	-0.008	-0.029		
	(0.099)	(0.120)	(0.158)	(0.117)	(0.037)	(0.036)	(0.046)	(0.030)		
Controls for										
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
5-Region Linear Time Trends	No	Yes	No Voc	No	No	Yes	No Voc	No		
5-Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes		

Table D9: Effects of Migrants on Employment, Full-time Employment, Part-time Employment, Labor Force Participation and Unemployment of Natives by Natives' Age Group

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. The number of individuals who are 18-24 years-old is 264,292 for males and 302,594 for females, the number of individuals who are 25-39 years-old is 584,388 for males and 634,592 for females, and the number of individuals who are 40-64 years-old is 729,201 for males and 757,631 for females. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

APPENDIX E: Robustness Checks

Table E1: Effects of Migrants on Natives in the Informal and Formal Sectors with the del-Carpio and Wagner Instrument

			MEN			WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean	
A) INFORMAL SECTOR											
Employed	-0.514*** (0.133)	-0.538*** (0.152)	-0.539*** (0.167)	-0.363** (0.155)	0.242	-0.013 (0.281)	-0.323 (0.249)	-0.403 (0.264)	-0.260 (0.199)	0.148	
Wage Worker	-0.225** (0.096)	-0.539*** (0.088)	-0.531*** (0.101)	-0.461*** (0.106)	0.110	0.205* (0.121)	0.024 (0.091)	-0.014 (0.092)	0.045 (0.078)	0.036	
Hourly Wage	0.520 (0.520)	-0.249 (0.424)	-0.050 (0.436)	-0.625 (0.383)	0.979	0.235 (0.555)	-0.084 (0.424)	0.221 (0.386)	-0.237 (0.449)	0.884	
Self-employed	-0.331*** (0.087)	-0.037 (0.072)	0.002 (0.079)	0.040 (0.053)	0.094	-0.201** (0.102)	-0.212** (0.093)	-0.267*** (0.090)	-0.181** (0.085)	0.026	
Unpaid Family Worker	0.056 (0.034)	0.085* (0.045)	0.029 (0.038)	0.088*** (0.034)	0.028	-0.023 (0.110)	-0.139 (0.123)	-0.124 (0.136)	-0.124 (0.131)	0.084	
B) FORMAL SECTOR											
Employed	0.392*** (0.115)	0.516*** (0.136)	0.555*** (0.159)	0.528*** (0.132)	0.475	-0.495*** (0.105)	-0.196*** (0.069)	-0.210*** (0.073)	-0.119 (0.074)	0.123	
Wage Worker	0.115 (0.090)	0.248*** (0.094)	0.268** (0.113)	0.288*** (0.084)	0.362	-0.454*** (0.094)	-0.212*** (0.065)	-0.230*** (0.066)	-0.147** (0.072)	0.112	
Hourly Wage	-0.003 (0.212)	0.765*** (0.285)	0.760** (0.321)	0.825*** (0.224)	1.602	-0.103 (0.330)	0.411 (0.310)	0.444 (0.334)	0.568** (0.274)	1.684	
Self-employed	0.183*** (0.053)	0.167*** (0.056)	0.176*** (0.061)	0.154** (0.068)	0.068	-0.008 (0.008)	0.006 (0.006)	0.006 (0.007)	0.009* (0.005)	0.003	
Unpaid Family Worker	0.041*** (0.012)	0.041*** (0.013)	0.044*** (0.014)	0.036*** (0.013)	0.005	-0.019 (0.014)	0.019 (0.015)	0.024 (0.021)	0.028*** (0.010)	0.004	
First-stage regression	1.758*** (0.133)	1.876*** (0.123)	1.749*** (0.091)	2.125*** (0.147)		1.764*** (0.131)	1.879*** (0.123)	1.753*** (0.090)	2.123*** (0.147)		
F-statistics	175.178	232.074	370.266	207.818		180.576	234.871	376.112	209.081		
Controls for											
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 139,758 individuals for the formal sector, and the female sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument is the one that Del Carpio and Wagner use. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E2: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives with the del-Carpio and Wagner Instrument

			MEN			WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean	
Employment	-0.123 (0.085)	-0.022 (0.115)	0.016 (0.148)	0.164 (0.105)	0.716	-0.509** (0.257)	-0.519* (0.270)	-0.614** (0.288)	-0.379* (0.195)	0.270	
Full-time Employment	-0.050 (0.090)	0.242** (0.094)	0.250** (0.103)	0.409*** (0.081)	0.683	-0.250* (0.136)	0.057 (0.167)	-0.231* (0.138)	0.253* (0.148)	0.218	
Part-time Employment	-0.073 (0.108)	-0.265** (0.108)	-0.235* (0.122)	-0.245*** (0.090)	0.033	-0.259 (0.170)	-0.577*** (0.160)	-0.383* (0.209)	-0.632*** (0.135)	0.052	
Hourly Wage	0.746*** (0.251)	0.804*** (0.265)	0.712** (0.277)	0.966*** (0.191)	1.473	0.089 (0.393)	0.604* (0.363)	0.749** (0.357)	0.943*** (0.292)	1.519	
Wage Worker	-0.110 (0.102)	-0.291*** (0.089)	-0.263*** (0.095)	-0.173 (0.111)	0.472	-0.250*** (0.075)	-0.188* (0.096)	-0.244*** (0.094)	-0.102 (0.085)	0.149	
Self-employed	-0.148 (0.099)	0.131* (0.076)	0.179** (0.085)	0.194*** (0.070)	0.162	-0.209** (0.100)	-0.205** (0.092)	-0.260*** (0.088)	-0.172** (0.083)	0.030	
Unpaid Family Worker	0.097*** (0.032)	0.126*** (0.046)	0.073* (0.042)	0.124*** (0.029)	0.033	-0.042 (0.109)	-0.120 (0.130)	-0.099 (0.146)	-0.096 (0.133)	0.089	
Labor Force Participation	-0.069 (0.150)	0.240 (0.149)	-0.011 (0.138)	0.286** (0.144)	0.798	-0.600** (0.252)	-0.322* (0.183)	-0.446** (0.178)	-0.379*** (0.143)	0.334	
Unemployment	0.162 (0.121)	0.151 (0.140)	-0.088 (0.183)	0.147 (0.145)	0.076	0.033 (0.054)	0.118* (0.068)	0.088 (0.088)	0.116* (0.059)	0.040	
First-stage regression	1.758*** (0.133)	1.876*** (0.123)	1.749*** (0.091)	2.125*** (0.147)		1.764*** (0.131)	1.879*** (0.123)	1.753*** (0.090)	2.123*** (0.147)		
F-statistics	175.178	232.074	370.266	207.818		180.576	234.871	376.112	209.081		
Controls for											
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The wage regressions include 664,142 individuals in the male sample, and 206,867 individuals in the female sample. In regressions of labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument is the one that Del Carpio and Wagner use. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates. (iv) university graduates. The unemployment definition generates a consistent variable over time by using a 1-month job-search definition for all years; however, this can be generated only for years 2009 to 2015. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. ***, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E3: Effects of Migrants on Natives in the Informal and Formal Sectors – with Alternative Computations of Standard Errors

		М	EN		WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
A) INFORMAL SECTOR									
<i>Employed</i>	-0.566	-0.609	-0.620	-0.445	-0.034	-0.367	-0.460	-0.293	
Cluster SE - NUTS-2 and Year level	(0.133)***	(0.153)***	(0.170)***	(0.152)***	(0.261)	(0.235)	(0.259)*	(0.189)	
Cluster SE - NUTS-2 level	(0.198)***	(0.245)**	(0.261)**	(0.233)*	(0.440)	(0.420)	(0.471)	(0.277)	
<i>Wage Worker</i>	-0.257	-0.596	-0.595	-0.531	0.213	0.029	-0.011	0.050	
Cluster SE - NUTS-2 and Year level	(0.090)***	(0.096)***	(0.109)***	(0.108)***	(0.110)*	(0.080)	(0.082)	(0.074)	
Cluster SE - NUTS-2 level	(0.163)	(0.158)***	(0.178)***	(0.179)***	(0.142)	(0.113)	(0.124)	(0.097)	
<i>Hourly Wage</i>	0.603	-0.163	0.102	-0.604	0.322	0.018	0.395	-0.234	
Cluster SE - NUTS-2 and Year level	(0.456)	(0.370)	(0.410)	(0.357)*	(0.509)	(0.382)	(0.394)	(0.451)	
Cluster SE - NUTS-2 level	(0.664)	(0.594)	(0.707)	(0.518)	(0.830)	(0.525)	(0.566)	(0.830)	
<i>Self-employed</i>	-0.354	-0.050	-0.011	0.032	-0.214	-0.231	-0.300	-0.200	
Cluster SE - NUTS-2 and Year level	(0.086)***	(0.070)	(0.078)	(0.053)	(0.101)**	(0.094)**	(0.097)***	(0.086)**	
Cluster SE - NUTS-2 level	(0.100)***	(0.094)	(0.122)	(0.048)	(0.178)	(0.175)	(0.181)	(0.140)	
Unpaid Family Worker	0.061	0.091	0.030	0.090	-0.039	-0.167	-0.151	-0.144	
Cluster SE - NUTS-2 and Year level	(0.036)*	(0.046)**	(0.040)	(0.036)**	(0.108)	(0.127)	(0.141)	(0.128)	
Cluster SE - NUTS-2 level	(0.057)	(0.076)	(0.058)	(0.053)*	(0.187)	(0.193)	(0.211)	(0.173)	
B) FORMAL SECTOR									
Employed	0.451	0.602	0.663	0.627	-0.516	-0.213	-0.234	-0.122	
Cluster SE - NUTS-2 and Year level	(0.118)***	(0.143)***	(0.174)***	(0.138)***	(0.105)***	(0.071)***	(0.075)***	(0.077)	
Cluster SE - NUTS-2 level	(0.186)**	(0.203)***	(0.207)***	(0.211)***	(0.159)***	(0.117)*	(0.113)**	(0.150)	
Wage Worker	0.161	0.315	0.351	0.349	-0.476	-0.234	-0.261	-0.151	
Cluster SE - NUTS-2 and Year level	(0.090)*	(0.101)***	(0.124)***	(0.092)***	(0.095)***	(0.067)***	(0.068)***	(0.073)**	
Cluster SE - NUTS-2 level	(0.124)	(0.133)**	(0.151)**	(0.113)***	(0.139)***	(0.098)**	(0.087)***	(0.130)	
Hourly Wage	0.055	0.907	0.940	0.951	-0.093	0.462	0.522	0.620	
Cluster SE - NUTS-2 and Year level	(0.206)	(0.280)***	(0.333)***	(0.233)***	(0.313)	(0.298)	(0.336)	(0.271)**	
Cluster SE - NUTS-2 level	(0.373)	(0.432)**	(0.449)**	(0.433)**	(0.401)	(0.338)	(0.390)	(0.320)*	
Self-employed	0.194	0.180	0.190	0.182	-0.007	0.008	0.008	0.010	
Cluster SE - NUTS-2 and Year level	(0.054)***	(0.057)***	(0.065)***	(0.066)***	(0.007)	(0.006)	(0.007)	(0.005)*	
Cluster SE - NUTS-2 level	(0.073)**	(0.080)**	(0.084)**	(0.089)*	(0.009)	(0.004)	(0.005)	(0.006)	
Unpaid Family Worker	0.039	0.039	0.043	0.039	-0.017	0.022	0.031	0.029	
Cluster SE - NUTS-2 and Year level	(0.011)***	(0.012)***	(0.014)***	(0.012)***	(0.015)	(0.015)	(0.021)	(0.011)**	
Cluster SE - NUTS-2 level	(0.016)**	(0.016)**	(0.015)***	(0.017)**	(0.023)	(0.020)	(0.029)	(0.014)*	
Controls for Year Fixed Effects NUTS2 Fixed Effects 5 Region Linear Time Trends NUTS1 Linear Time Trends	Yes Yes No No	Yes Yes Yes No	Yes Yes No Yes	Yes Yes No No	Yes Yes No No	Yes Yes Yes No	Yes Yes No Yes	Yes Yes No No	
5 Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes	

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 139,758 individuals for the informal sector and 524,383 individuals for the formal sector, and the female sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq ta each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors are given in parentheses. Taking each dependent variable separately, row 2 presents clustered standard errors at the NUTS-2 x Year level and row 3 at the NUTS-2 level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E4: Effects of Migrants on Aggregate Employment, Labor Force Participation andUnemployment of Natives – Standard Errors Clustered at the NUTS-2 Level

	_	М	EN		WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
<i>Employment</i>	-0.115	-0.007	0.043	0.182	-0.550	-0.580	-0.694	-0.416		
Cluster SE - NUTS-2 and Year level	(0.086)	(0.114)	(0.150)	(0.099)*	(0.245)**	(0.258)**	(0.286)**	(0.188)**		
Cluster SE - NUTS-2 level	(0.132)	(0.198)	(0.248)	(0.134)	(0.428)	(0.455)	(0.507)	(0.268)		
<i>Full-time Employment</i>	-0.031	0.286	0.308	0.455	-0.277	0.034	-0.290	0.262		
Cluster SE - NUTS-2 and Year level	(0.092)	(0.103)***	(0.112)***	(0.091)***	(0.134)**	(0.157)	(0.142)**	(0.146)*		
Cluster SE - NUTS-2 level	(0.160)	(0.116)**	(0.129)**	(0.061)***	(0.224)	(0.255)	(0.232)	(0.189)		
Part-time Employment	-0.084	-0.293	-0.265	-0.274	-0.274	-0.614	-0.404	-0.677		
Cluster SE - NUTS-2 and Year level	(0.101)	(0.103)***	(0.113)**	(0.091)***	(0.164)*	(0.163)***	(0.206)*	(0.138)***		
Cluster SE - NUTS-2 level	(0.179)	(0.171)*	(0.208)	(0.137)*	(0.281)	(0.268)**	(0.382)	(0.158)***		
Hourly Wage	0.857	0.969	0.910	1.085	0.107	0.663	0.858	0.983		
Cluster SE - NUTS-2 and Year level	(0.245)***	(0.265)***	(0.297)***	(0.200)***	(0.352)	(0.314)**	(0.324)***	(0.284)***		
Cluster SE - NUTS-2 level	(0.373)**	(0.431)**	(0.481)*	(0.331)***	(0.511)	(0.455)	(0.485)*	(0.431)**		
Wage Worker	-0.096	-0.282	-0.245	-0.182	-0.264	-0.205	-0.272	-0.101		
Cluster SE - NUTS-2 and Year level	(0.100)	(0.092)***	(0.101)**	(0.106)*	(0.068)***	(0.083)**	(0.081)***	(0.078)		
Cluster SE - NUTS-2 level	(0.127)	(0.136)**	(0.164)	(0.137)	(0.098)**	(0.125)	(0.121)**	(0.110)		
Self-employed	-0.160	0.129	0.179	0.215	-0.222	-0.224	-0.292	-0.190		
Cluster SE - NUTS-2 and Year level	(0.096)*	(0.074)*	(0.085)**	(0.069)***	(0.101)**	(0.094)**	(0.097)***	(0.085)**		
Cluster SE - NUTS-2 level	(0.144)	(0.099)	(0.119)	(0.087)**	(0.178)	(0.174)	(0.180)	(0.139)		
<i>Unpaid Family Worker</i>	0.100	0.130	0.073	0.129	-0.056	-0.145	-0.120	-0.114		
Cluster SE - NUTS-2 and Year level	(0.034)***	(0.048)***	(0.045)	(0.033)***	(0.108)	(0.132)	(0.150)	(0.129)		
Cluster SE - NUTS-2 level	(0.053)*	(0.076)	(0.066)	(0.041)***	(0.185)	(0.205)	(0.231)	(0.170)		
Labor Force Participation	-0.086	0.248	-0.041	0.257	-0.687	-0.439	-0.626	-0.458		
Cluster SE - NUTS-2 and Year level	(0.138)	(0.143)*	(0.131)	(0.135)*	(0.242)***	(0.177)**	(0.196)***	(0.139)***		
Cluster SE - NUTS-2 level	(0.266)	(0.245)	(0.228)	(0.246)	(0.443)	(0.226)*	(0.185)***	(0.170)**		
Unemployment	0.151	0.142	-0.137	0.096	0.025	0.118	0.085	0.109		
Cluster SE - NUTS-2 and Year level	(0.118)	(0.149)	(0.197)	(0.149)	(0.052)	(0.066)*	(0.087)	(0.060)*		
Cluster SE - NUTS-2 level	(0.226)	(0.269)	(0.350)	(0.281)	(0.090)	(0.112)	(0.148)	(0.105)		
Controls for Year Fixed Effects NUTS2 Fixed Effects 5 Region Linear Time Trends NUTS1 Linear Time Trends	Yes Yes No No	Yes Yes Yes No	Yes Yes No Yes	Yes Yes No No	Yes Yes No No	Yes Yes Yes No	Yes Yes No Yes	Yes Yes No No		
5 Region-Year Fixed Effects	No	No	No	Yes	No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The wage regressions include 664,142 individuals in the male sample, and 206,867 individuals in the female sample. In regressions of labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest --- the ratio of migrants to natives --- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors are given in parentheses. Taking each dependent variable separately, row 2 presents clustered standard errors at the NUTS-2 x Year level and row 3 at the NUTS-2 level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E5: Relationship between Migrant to Native Ratio and Trade Volume

		Dependent Variable										
	Log of Tra	de Volume	Log of	Exports	Log of Imports							
	(1)	(2)	(3)	(4)	(5)	(6)						
Ratio of Migrants to Natives	3.084***	2.571**	4.513***	3.943***	0.516	-0.011						
	(0.892)	(1.055)	(1.216)	(1.136)	(1.210)	(1.677)						
Controls for												
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes						
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes						
5 Region-Year Fixed Effects	No	Yes	No	Yes	No	Yes						

Notes: The sample includes observations for 26 NUTS-2 level regions for the 2004-15 time period excluding 2012; hence, there are 286 observations in all regressions. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E6: Effects of Migrants on Natives in the Informal and Formal Sectors – excluding the Control for Trade Volume, 2SLS Estimates

			MEN				WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean	
A) INFORMAL SECTOR											
Employed	-0.593*** (0.132)	-0.610*** (0.153)	-0.608*** (0.169)	-0.475*** (0.155)	0.242	0.060 (0.267)	-0.366 (0.234)	-0.458* (0.261)	-0.267 (0.185)	0.148	
Wage Worker	-0.160 (0.098)	-0.594*** (0.097)	-0.603*** (0.113)	-0.500*** (0.102)	0.110	0.251** (0.115)	0.029 (0.079)	-0.012 (0.082)	0.060 (0.073)	0.036	
Hourly Wage	0.947* (0.492)	-0.181 (0.386)	0.048 (0.415)	-0.406 (0.365)	0.979	0.722 (0.564)	0.057 (0.389)	0.348 (0.389)	0.090 (0.403)	0.884	
Self-employed	-0.452*** (0.100)	-0.053 (0.071)	0.001 (0.081)	-0.013 (0.054)	0.094	-0.235** (0.100)	-0.232** (0.094)	-0.296*** (0.097)	-0.222** (0.086)	0.026	
Unpaid Family Worker	0.021 (0.035)	0.089* (0.048)	0.039 (0.044)	0.068* (0.037)	0.028	0.037 (0.110)	-0.165 (0.126)	-0.152 (0.141)	-0.106 (0.120)	0.084	
B) FORMAL SECTOR											
Employed	0.509*** (0.124)	0.605*** (0.142)	0.645*** (0.166)	0.674*** (0.143)	0.475	-0.536*** (0.108)	-0.212*** (0.072)	-0.238*** (0.075)	-0.115 (0.078)	0.123	
Wage Worker	0.180** (0.090)	0.316*** (0.099)	0.340*** (0.120)	0.374*** (0.093)	0.362	-0.501*** (0.099)	-0.233*** (0.067)	-0.264*** (0.068)	-0.152** (0.073)	0.112	
Hourly Wage	0.066 (0.207)	0.911*** (0.282)	0.930*** (0.331)	1.004*** (0.241)	1.602	-0.099 (0.319)	0.463 (0.299)	0.522 (0.336)	0.629** (0.273)	1.684	
Self-employed	0.214*** (0.054)	0.180*** (0.057)	0.183*** (0.063)	0.198*** (0.067)	0.068	-0.009 (0.007)	0.008 (0.006)	0.008 (0.007)	0.011** (0.005)	0.003	
First-stage regression	1.845*** (0.158)	2.014*** (0.149)	1.878*** (0.141)	2.157*** (0.143)		1.851*** (0.156)	2.018*** (0.148)	1.883*** (0.140)	2.154*** (0.142)		
F-statistics	136.735	181.942	177.343	226.725		140.897	185.943	181.547	229.996		
Controls for											
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. In all but wage regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. In the wage regressions, the male sample includes 139,758 individuals for the formal sector and 524,383 individuals for the formal sector, and the female sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control variables, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the pre-war population shares of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school graduates, (iii) general high school, vocational or technical high school graduates, (iv) university graduates. Standard errors, given in parentheses, are clustered at the NUTS-2 region and year level. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table E7: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives– excluding the Control for Trade Volume, 2SLS Estimates

			MEN			WOMEN					
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean	
Employment	-0.084 (0.085)	-0.005 (0.113)	0.037 (0.149)	0.199** (0.097)	0.716	-0.476* (0.248)	-0.578** (0.256)	-0.696** (0.286)	-0.382** (0.184)	0.270	
Full-time Employment	-0.004 (0.084)	0.288*** (0.101)	0.296*** (0.111)	0.481*** (0.089)	0.683	-0.258** (0.129)	0.036 (0.155)	-0.294** (0.142)	0.278* (0.146)	0.218	
Part-time Employment	-0.079 (0.098)	-0.294*** (0.103)	-0.259** (0.115)	-0.281*** (0.091)	0.033	-0.218 (0.166)	-0.614*** (0.163)	-0.402* (0.206)	-0.660*** (0.136)	0.052	
Hourly Wage	1.018*** (0.267)	0.971*** (0.267)	0.882*** (0.292)	1.202*** (0.210)	1.473	0.274 (0.349)	0.671** (0.329)	0.823** (0.330)	1.100*** (0.306)	1.519	
Wage Worker	0.021 (0.113)	-0.278*** (0.093)	-0.263** (0.102)	-0.127 (0.101)	0.472	-0.250*** (0.069)	-0.204** (0.082)	-0.276*** (0.079)	-0.092 (0.078)	0.149	
Self-employed	-0.239** (0.105)	0.128* (0.076)	0.184** (0.086)	0.184*** (0.066)	0.162	-0.244** (0.100)	-0.225** (0.094)	-0.288*** (0.097)	-0.211** (0.084)	0.030	
Unpaid Family Worker	0.073** (0.032)	0.129*** (0.049)	0.080* (0.048)	0.115*** (0.034)	0.033	0.027 (0.110)	-0.143 (0.130)	-0.123 (0.150)	-0.069 (0.120)	0.089	
Labor Force Participation	-0.085 (0.136)	0.239 (0.145)	-0.055 (0.136)	0.237* (0.135)	0.798	-0.662*** (0.245)	-0.390** (0.173)	-0.602*** (0.195)	-0.423*** (0.129)	0.334	
Unemployment	0.146 (0.119)	0.129 (0.150)	-0.160 (0.203)	0.086 (0.149)	0.076	0.025 (0.051)	0.112* (0.066)	0.076 (0.089)	0.103* (0.059)	0.040	
First-stage regression	1.845*** (0.158)	2.014*** (0.149)	1.878*** (0.141)	2.157*** (0.143)		1.851*** (0.156)	2.018*** (0.148)	1.883*** (0.140)	2.154*** (0.142)		
F-statistics	136.735	181.942	177.343	226.725		140.897	185.943	181.547	229.996		
Controls for											
Year Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
NUTS2 Fixed Effects	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
5 Region Linear Time Trends	No	Yes	No	No		No	Yes	No	No		
NUTS1 Linear Time Trends	No	No	Yes	No		No	No	Yes	No		
5 Region-Year Fixed Effects	No	No	No	Yes		No	No	No	Yes		

Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The wage regressions include 664,142 individuals in the male sample, and 206,867 individuals in the female sample. In regressions for labor force participation and unemployment, the sample sizes for males and females are 895,947 and 951,362, respectively. In all other regressions, the male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest -- the ratio of the 13 Syrian provinces, bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey as well as to Lebanon, Jordan, and Iraq, and the stock of refugees in Turkey, Lebanon, Jordan, and Iraq at each year. Individual-specific control variables include full interaction of marital status, eleven age categories, and four education categories. The age groups are 18-20, 20-22, 23-25, 26-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64. The education categories are (i) illiterate or literate but no diploma, (ii) primary school or middle school