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ABSTRACT

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

We estimate the effects of the arrival of 2.5 million Syrian migrants in Turkey by the end of 2015 on the labor market outcomes of natives, using a difference-in-differences IV methodology. We show that relaxing the common-trend assumption of this methodology - unlike recent papers in the same setting - makes a substantial difference in several key outcomes. Despite the massive size of the migrant influx, no adverse effects on the average wages of men or women or on total employment of men are observed. For women, however, total employment falls - which results mainly from the elimination of part-time jobs. While the migrant influx has adverse effects on competing native workers in the informal sector, it has favorable effects on complementary workers in the formal sector. We estimate about one-to-one replacement in employment for native men in the informal sector, whereas both wage employment and wages of men in the formal sector increase. Our findings, including those on the heterogeneity of effects by age and education, are consistent with the implications of the canonical migration model. In addition, increases in prices in the product market and in capital flow to the treatment regions contribute to the rise in labor demand in the formal sector.

JEL Classification: J21, J31, J61, C26

Keywords: labor force and employment, wages, immigrant workers, formal and informal sectors, Syrian refugees, Turkey, difference-in-differences, instrumental variables

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1. Introduction

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.[1] 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, and this number rose to 3.5 million by February 2018.[2] This paper examines the impact of this mass migration on the labor market outcomes of natives in Turkey as of the end of 2015.[3] At that time, very few Syrian migrants in Turkey had work permits,[4] so almost all of them worked in the informal sector.[5]

Mass migration of this scale is certainly rare. While most studies on the impact of migrant influxes have been conducted in the context of North America and Western Europe, the size of the migrant shock in these studies is not comparable, with the exception of the mass migration to Israel from the ex-Soviet Union in the 1990s. The magnitude of the migration of Syrians into Turkey has already drawn the attention of researchers, who used the regional variation in the migrant influx in a difference-in-differences methodology to estimate its impact (Ceritoğlu et al., 2015; del Carpio and Wagner, 2016).

These studies, however, failed to take account of an important dynamic of the Turkish labor market: prior to the arrival of Syrian migrants, the formal sector had seen a tremendous increase in employment—at the expense of employment in the informal sector. According to the Turkish Household Labor Force Surveys, the percentage of 18- to 64-year-old men employed in the formal sector increased from 41.2% to 49.2% between 2004 and 2011, while the percentage of those employed in the informal sector decreased from 29.7% to 24.2%. At the same time, real hourly wages of men in the informal sector increased by about 30% in the same seven-year period.

In this setting, where major labor market outcomes display strong time trends and where significant regional differences abound, the key assumption of the difference-in-difference methodology—that the trend in outcomes are parallel across regions—fails for many outcomes. For instance, of the 26

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

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

3 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.

4 A total of 7,351 work permits were issued for Syrians before January 2016 (Ministry of Labor and Social Security).

5 Workers in the informal sector have no social security coverage.

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. Therefore, in our difference-in-differences estimation, unlike in previous studies in this setting, we relax the common-trend assumption in a number of ways—most importantly by allowing the year effects to vary across groups of regions, as in the seminal paper of Stephens and Yang (2014).[6]

The micro-level data we use come from the 2004–2015 Turkish Household Labor Force Surveys (THLFS), and we use the variation in the ratio of migrants to natives across 26 NUTS-2 level regions in Turkey over time for identification. 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. Furthermore, 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.

International evidence from studies using natural experiments to assess the impact of migrants 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; Aydemir and Kırdar, 2017; Dustmann et al., 2017). A lively debate continues (see, e.g., Borjas, 2016, 2017 vs. Peri and Yasenov, 2015), perhaps because disentangling the migrant impact poses several measurement and statistical challenges. Therefore, a study using a massive migrant influx with a credible identification scheme provides valuable knowledge.

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

[6] The importance of weakening the common-trend assumption has been best illustrated by Stephens and Yang (2014), who reexamine the benefits of schooling in the US context, using the state schooling laws as a source of exogenous variation in schooling like the previous studies on this topic but allowing for year-of-birth effects to vary across five census regions unlike the previous studies. They find that the positive effects of schooling on wages, unemployment and divorce—claimed by previous studies—vanish once they remove the common-trends assumption.

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.

Another distinguishing feature of our study is its focus on the *distributional* effects of the migrant influx across various groups of natives. Our paper is highly methodical in its analysis of labor market outcomes by formal and informal status, gender, age, and education of natives. In addition, it makes distinctions across different sectors of employment and in types of employment. This is crucial in our setting because, unlike the situation in developed countries, a significant fraction of the employed are not wage workers, especially in the informal sector. Differentiating across different types of employment also allows us to examine wages and wage employment together so that we can interpret the findings in a labor market equilibrium framework. Furthermore, we examine potential channels that can help explain our findings, including general equilibrium effects and factor movements.

The findings of this study, perhaps surprisingly, reveal that this exodus of Syrian migrants does not bring about a fall in overall employment or wages of native men. The fall in employment of men in the informal sector is compensated by an equally large increase in the formal sector. Although the employment of native men does not change, their type of employment changes. A shift from wage employment to self-employment and unpaid family work takes place. For native women, although there are no adverse effects on wages, total employment falls, which results almost completely from a decline in part-time employment. These women who lose their part-time jobs exit the labor market.

In the informal sector, wage employment of men falls, and there is suggestive but not conclusive evidence of a fall in their wages—which is consistent with the increase in the supply of informal labor. 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. In essence, the results for men are highly consistent with the implications of the canonical model of supply and demand in a competitive labor market, where capital is fixed in the short run. Moreover, we find evidence for a rise in prices in the product market and for a rise in capital movement to the treatment regions—both of which contribute to the outward shift of the demand curve in the formal labor market.

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 are substantially adversely affected. 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.

In terms of heterogeneity by age and education, the negative effects of the arrival of Syrians on wage employment and wages in the informal sector are more pronounced among the less educated and younger workers. At the same time, the positive effects on wage employment and wages in the formal sector are also stronger for the less educated and younger workers. While these facts hold for both men and women, they are stronger for men. These findings are consistent with the implications of the canonical migration model, given that Syrians are younger and less educated than the natives and that the labor force participation rate is much higher for men than women among Syrians.

In terms of methodology, this paper shows that imposing the common-trend assumption creates substantial bias for several labor market outcomes. The common-trend assumption fails to uncover the positive effect of migrants on wages and on wage employment in the formal sector for men. On the contrary, the common-trend assumption flags false negative effects on employment and wage employment of women in the formal sector and on self-employment of men in the informal sector.

The outline of this article is as follows. Section 2 situates our study in the relevant literature; we make detailed comparisons to other studies that examine the labor market impact of Syrians in Turkey. Section 3 provides background information on the arrival and settlement process of Syrian migrants in Turkey. Section 4 presents the conceptual framework that guides the interpretation of our results. Data and descriptive statistics are given in Section 5, and the identification strategy and estimation are provided in Section 6. Sections 7 and 8 present the results and robustness checks, respectively. Section 9 examines channels that underlie our findings. Section 10 provides a discussion and concludes.

2. Literature Review

To examine the labor market effects of immigrants in host countries, several studies 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 (Card, 1990; Hunt, 1992; Carrington and Delima, 1996; Friedberg, 2001; Mansour, 2010; Cohen-Goldner and Paserman, 2011; Glitz, 2012; Foged and Peri, 2016; Aydemir and Kırdar, 2017; Dustmann et al., 2017). Similar to the so-called "area studies" (see, for instance, Card, 1990; Lalonde and Topel, 1991; Altonji and Card, 1991; Pischke and Velling, 1997, Dustmann et al., 2013), this approach uses the variation in exposure to

immigrants across regions and typically uses IV-difference in differences methodologies.[7] Dustmann et al. (2016) provide a review of this literature.

In another mass migration context, Friedberg (2001) finds no adverse labor market effects of migrants arriving in Israel from the ex-Soviet Union. In that context, the migrants are highly educated, but the migrants in our context are, on average, less educated than the natives—which is similar to most migration contexts. Another key difference is that Israel has always been a country of immigration, so its labor market could be well-prepared for such an influx of migrants. Borjas and Monras (2016) examine the effects of four major refugee supply shocks using a common empirical approach. They find that, while refugees adversely affect the labor market outcomes of competing natives, they favorably affect complementary workers. In this sense, our findings for male native workers are very much in line with theirs.

Also in the Turkish setting, Aydemir and Kırdar (2017) examine the effect of the arrival of ethnic Turks from Bulgaria in 1989 as a result of the political turmoil in Bulgaria at that time. 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.

A few recent studies have also examined certain labor market effects of Syrian migrants in Turkey on natives. Ceritoğlu et al. (2015) use a difference-in-differences methodology with the 2010–2013 THLFS to estimate these effects. They use a dummy treatment variable by defining the five NUTS-2 regions with the highest migrant-to-native ratios as the treatment group and four neighboring NUTS-2 regions in eastern Turkey as the control group. Their inference is based on heteroskedasticity-robust standard errors. However, when we replicate their study, we find that their claims of statistical significance virtually vanish once standard errors are clustered at the region-year level (see Table A1 in Appendix A).[8] This is presumably not a surprise because they had data only up until 2013 and because their treatment variable does not account for the variation in migrant intensity between 2012 and 2013.[9]

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[7] Another approach to assessing the labor market effects of immigration uses the variation in the immigrant supply shock across skill groups at the national level (Borjas et al. 1996, 1997; Borjas 2003; Aydemir and Borjas 2007; Manacorda et al. 2011; Ottaviano and Peri 2011; Dustmann et al. 2013; Llull 2018).

[8] 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.

[9] In fact, the number of Syrians in Turkey in 2013—averaged over the months—was 406,901, compared to 1,897,043 in

Del Carpio and Wagner (2016) also examine the labor market effects of Syrian migrants in Turkey. Their difference-in-differences analysis with the 2011 and 2014 THLFS utilizes the variation in the intensity of migrants across all 26 NUTS-2 regions. Their identification strategy uses a distance-based instrument—one that 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).[10] However, we have serious conceptual concerns about the use of this instrument with a time-varying distance variable. In addition, our replications of this methodology result in estimates with magnitudes that are very hard to explain.

They use a control variable for the distance to the border with the instrument because regional economic shocks in Turkey might be correlated with distance to the border, and hence the migrant shock. While we agree that it is important to account for potential regional economic shocks, we see no reason why these economic shocks should vary *monotonically* in distance to the Syrian border. For instance, why would economic shocks (caused by the war in Syria or not caused by the war in Syria but which happened to be correlated with the migrant shock due to geographical coincidence) in the Black Sea region and the Aegean region—which are roughly equidistant from the Syrian border—be similar? 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.

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. However, these regions form the industrial heartland of Turkey. 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.

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

2015 (UNHCR, 2017).

[10] 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.

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 eliminates the jobs of 14 native wage-worker men in the informal sector and generates jobs for 15 native men in the formal sector. In addition, while our 2SLS results differ little from the OLS results for most outcomes, they are substantially different in del Carpio and Wagner—despite using a very similar instrument.[11] For instance, their OLS estimates indicate a positive effect of the migrant shock on informal employment.

In a recent and concurrent work to ours, Cengiz and Dinçer (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. However, they use only 2015 data on the ratio of migrants to natives. They define three NUTS-2 regions (with the highest ratio of migrants) as the treatment region, 16 NUTS-2 regions (with the lowest ratio of migrants) as the control region, and exclude the remaining 7 NUTS-2 regions. In other words, although they have four post-treatment years with substantial variation in treatment intensity, they use a dummy variable for the treatment status. In another approach, they use the intensity of treatment across regions as the key variable of interest; however, in this case, their key variable of interest is always the ratio of migrants to natives in 2015—even for the other post-treatment years of 2012–14.[12] Another key difference is that they examine only four employment outcomes: informal employment, employment, and employment for two different education groups. They do not account for gender and informal/formal differences in the Turkish context.

In essence, our paper improves upon the previous work on a number of key dimensions. First and most importantly, it relaxes the common-trend assumption—which causes serious bias for several outcomes. Second, rather than selecting arbitrary labor market outcomes, our paper is very methodical in its analysis of labor market outcomes for various demographic groups of natives by formal/informal status. Also, our analysis by type of employment and sector of employment of natives is novel in this setting. Third, our paper examines wage and wage employment together so as to be able to interpret the findings in a labor market equilibrium framework.[13] Fourth, we use richer data

[11] Tables A4 to A7 in Appendix A compare the OLS and 2SLS estimates, using our specifications and that of del Carpio and Wagner. While the OLS and 2SLS estimates differ little in our specifications, except for certain variables for women, they differ substantially with the del Carpio and Wagner specification.

[12] Their difference-in-differences approaches also rely on the common-trend assumption. To overcome this problem, they also formulate a generalized synthetic control model. While this method relaxes the common-trend assumption, it does not account for the variation in the treatment intensity across the regions within the aggregated treatment area.

[13] Ceritoğlu et al. (2015) and Cengiz and Tekgüç (2018) use the standard employment definition only, which includes wage workers, the self-employed, employers, and unpaid family workers. By contrast, the employment definition of del

because our key variable of interest is at the intensity level and for a longer period of time. Finally, several of our key results are different, and we uncover channels that help explain our findings.

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. (2015) and del Carpio and Wagner (2016). We report several positive effects of the migrant influx, but 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. We also find adverse effects on the overall wage employment of men. 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; and unlike Ceritoğlu et al., we find no evidence of an increase in unemployment of native men. A key difference of our findings—which is not reported in any of the three above-mentioned papers—is that the migrant influx has a positive effect on the wages of men in the formal sector and the wages of women employed full-time in the formal sector.

3. Background Information

The initial displacement of people in Syria took place in the early days of the Arab Spring popular uprisings that started in 2010.[14] 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 and accommodated the Syrians in schools and unused public facilities.[15] 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.[16] As the inflow of Syrians continued to increase and accelerate, the Turkish Disaster and Emergency Management Authority (TDEMA) was tasked with setting up camps for them. In about two years, by December 2013, 21 camps had been set up in 10 provinces, housing over 210,000 Syrian refugees. The number of Syrians in Turkey increased to 170,912 by the end of 2012, to 560,129 by the end of

Carpio and Wagner (2016) includes the self-employed as well as wage workers.

[14] See Ferris and Kirişci (2016) for a discussion on the political events that resulted in the mass migration of Syrians.

[15] The six main entry points on the Syrian-Turkish border were open throughout the inflows.

[16] For a discussion of the legal status of Syrian refugees in Turkey, see İçduygu (2015).

2013, jumped to 1,622,839 by the end of 2014 and reached 2,503,549 by the end of 2015.

As more and more refugees arrived, it was obvious that the TDEMA would be unable to cope with this inflow. In October 2014, the Turkish Directorate General for Migration Management (TDGMM) was established and made responsible for registration and overall coordination. The TDEMA continued to operate the refugee camps and provide emergency assistance to new arrivals. Many refugees preferred to settle in urban areas, and only about 10% of Syrians in Turkey lived in refugee camps at the end of 2015 (TDGMM, 2016). Free health and education services are provided to all refugees.

In terms of demographic characteristics, Syrians in Turkey differ from the natives in several important ways. First, Syrian refugees are, on average, younger than the natives; their median age is 21, compared to 31 for natives (Eryurt, 2017). Second, the male to female ratio is higher for Syrians: 53.1% of the refugees at the end of 2015 were male (TDGMM, 2016). Third, 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 World Health Organization [WHO] conducted in December 2015) and natives (based on the 2015 THLFS).[17] In particular, the fraction of individuals with no school degree is much higher for Syrians.

Before the enactment of Law 8375 in January 2016, which allowed Syrians under temporary protection to have work permits only under certain conditions and with certain restrictions, only 7,351 work permits were issued to Syrians—mostly to those who started a business.[18] 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 (see, e.g., Erdoğan, 2014; Ferris and Kirisci, 2016). While we have no statistics on the sector of employment for these workers in the informal sector, the information Karadeniz (2018) provides on the sector of employment for the few Syrians working in the formal sector (based on data from the Social Security Administration of Turkey) shows that the highest fractions are, in fact, in the textiles and clothing manufacturing and construction sectors.

Since no official statistics exist for labor force participation and employment rates of Syrians in

[17] The TDGMM provides official numbers on basic demographics such as gender and age but not on education. Hence, we refer to surveys for Syrians' educational attainment.

[18] However, the number of Syrians who received work permits in 2016 was still only 13,298.

Turkey, we refer to surveys. 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 Vakfı*, 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. In essence, these surveys 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. The survey by *İnsani Gelişme Vakfı* estimates the total number of employed Syrians as 650,000 in May 2017, when the total number of Syrians in Turkey was about 3 million—which is consistent with the above employment rates, given that the share of the working-age population among Syrians is about 61% (TDGMM, 2016) and that child labor occurs.[19]

Refugees brought not only their labor but also their savings that they managed to salvage. The entrepreneurs among them carried their businesses to their new location and started new ones, providing employment to both Syrians and natives. According to the Union of Chambers and Commodity Exchanges of Turkey (2018), the number of companies established in Turkey with Syrian shareholders increased to 1,599 in 2015 from just 30 in 2010. In addition, while Syrian capital in new firm openings amounted to 2.2% of all foreign capital in 2011, this figure rose to 6.1% in 2013, jumped to 15.9% in 2014 and to 22.9% in 2015.

Neighboring countries have become important suppliers of humanitarian and other goods to Syria. Ferris and Kirişci (2016) report that Turkish provinces bordering Syria experienced a rise in their exports to Syria by more than 200% between 2011 and 2014, while the overall increase in Turkey's exports to Syria was only 11%. In addition to humanitarian logistics, the emergence of firms set up by Syrians with connections to their home country was behind this boom in exports.

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, 2013, 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

[19] There is anecdotal evidence of child labor among Syrians, especially in the textile sector (Afanesieva, 2016).

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. We make certain other assumptions, which we 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.[20] In the informal sector, where most native workers are relatively unskilled, we would expect a high degree of substitutability, except for certain services sectors where language skills are important.[21] 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.[22]

The magnitude of the negative effect on wages in the informal sector depends on the elasticity of labor demand. The more inelastic the demand curve, the larger this effect will be. The elasticity of the demand curve depends on four key parameters: the elasticity of substitution between capital and labor, the share of informal labor in total costs, the elasticity of product demand, and the supply elasticities of capital and formal labor (Borjas, 2013).[23] The magnitude of the negative effect on

[20] Whether migrants and natives are perfect or imperfect substitutes has been a critical issue in the debate on the wage effects of migrants in the U.S. context. While Ottaviano and Peri (2012) report a significant level imperfect substitutability between natives and migrants, Borjas et al. (2010, 2012) estimate that natives and migrants are perfect substitutes.

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

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

[23] First, the elasticities of substitution between capital and informal labor and between formal labor and informal labor determine to what extent firms can accommodate the new migrant labor by replacing capital and formal labor. Second, if informal labor costs account for a high share of firms' costs, the arrival of migrants would significantly lower the marginal cost of production and prices. This, in turn, would increase consumer purchases significantly and hence firms' demand for employment. Third, as the marginal cost of production and hence the industry price fall with the arrival of migrants, the elasticity of demand for the output determines how much consumer demand increases, which in turn determines the rise in employment. Fourth, as informal labor becomes more abundant, firms will want to cut down on formal labor and capital. How much these cuts lower the prices of formal labor and capital depends on the supply elasticities of these factors. If they are inelastic, prices respond much and the incentive for replacing formal labor and capital with informal

natives' employment depends on the level of the fall in wages, which depends on the elasticity of labor demand, and on the elasticity of labor supply. The negative effect on natives' employment increases with labor supply elasticity.[24]

Since natives in the formal sector and migrants complement each other,[25] natives can specialize in tasks that are more productive. Consequently, the migrant influx increases the marginal product of natives in the formal sector and, hence, 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.[26] Existing firms expand and new firms are established, increasing the labor demand in both the formal and informal markets. 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 would expect the migrant influx to affect natives' internal migration flows.[27] 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 would also expect general equilibrium effects. First, the arrival of Syrians expands the consumption base and increases demand in the product market.[28] At the same time, it also expands

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labor falls—resulting in a more inelastic demand for informal labor.

[24] Dustmann et al. (2017) also postulate a higher wage rigidity as a reason for a larger employment effect. However, we would not expect much wage rigidity in the informal labor market in Turkey.

[25] Empirical evidence on the complementarity between formal and informal sectors has been reported in developing country settings (see, e.g., Sundaram et al., 2012; Monroy et al., 2014). Outsourcing and agglomeration effects are some of the underlying factors.

[26] In fact, that the capital-to-labor ratio returns to its pre-migration level in the long run as a result of factor movements is the reason for no wage effects in the long run in the canonical migration model with a constant returns to scale production function (Borjas, 2013).

[27] See, for instance, Filer (1992), Card (2001), and Borjas (2006). Monras (2015) shows that internal relocation is critical in dissipating the initial large effects of a migrant shock on wages in the U.S. over time.

[28] Hong and McLaren (2015) find considerable evidence for an increase in consumer demand for local services generated

the production base as migrants enter the labor market. If the change in the consumption base dominates, prices in the product market increase, thus 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.

In sum, in the informal sector, we expect wages and native employment to fall unless capital flows to the treatment regions or general equilibrium effects such as an increase in product prices result in an outward shift of the demand curve that can overwhelm the outward shift of the supply curve. Native outflows from the treatment regions, while exacerbating the fall in native employment, would attenuate the negative wage effect. In the formal sector, we would expect wages and native employment to increase as the demand curve shifts outward due to the complementarity of natives in the formal sector and migrants. Capital flows to the treatment regions or an increase in product prices due to increased consumer demand generated by migrants would further strengthen this outward shift of the demand curve. Native inflows to the treatment regions to work in the formal sector and local migration of displaced native workers from the informal sector to the formal sector would lower wages, although these flows would further increase employment in the formal sector.

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, employer, unpaid family worker), and sector of employment. The information on informal/formal status is

by immigrants in the U.S., which leads to both local employment creation and a rise in non-tradable service wages.

elicited by a question on social security eligibility.[29] We use two alternative definitions of labor force participation and unemployment due to a change in the 2014 survey. Before 2014, individuals were designated as unemployed if they had searched for a job within the last three months; beginning in 2014, this was reduced to four weeks. In the first definition of unemployment and labor force participation, we use this inconsistent definition over time—as was done in the surveys. In the second definition, using a question about job searches within the last four weeks (which is available for years after 2009), we generate consistent definitions over time. 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 Disaster and Emergency Management Authority (2013) provides information on the number of Syrian refugees for 2013. Although no numbers are provided for provinces without camps, 80,000 refugees were reported as residing in such provinces. Thus, for provinces without camps, we distribute 80,000 Syrians based on their shares in these provinces in 2014. 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 Directorate General of Migration Management.

The micro-level data in the THLFS represent the full year, whereas the data on the variation of Syrians across regions are for the end of each year. Figure 1 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 can represent the year average instead of the end of year.[30] 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, for trade activity, we use regional data on exports and imports for the micro-data period (TurkStat, 2018a). Second, we use data on regional consumer

[29] This question is "Does your job provide any social security coverage?" Until the social security reform of 20.05.2006, there were three different social security institutions in Turkey: *SSK* for wage workers, *Bağ-Kur* for the self-employed, and *Emekli Sandığı* for public workers. They were combined under a single umbrella in 2006.

[30] First, for each year, we calculate the average value of the monthly numbers of Syrian migrants (call this x[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 y[t]). We adjust the regional numbers in the cross-sectional data by multiplying it by x[t]/y[t] to align the sum of regional numbers in each year with the average monthly value for that year.

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 the 1965 Turkish census data to generate the fraction of the Arabic-speaking population across the NUTS-2 regions, which helps us understand the determinants of the settlement patterns of Syrian refugees.

6. Identification Method and Estimation

We estimate the following baseline equation,

$$y_{ijt} = \alpha + \beta R_{jt} + X'_{ijt}\Gamma + \gamma Z_{jt} + \delta_j + \delta_t + u_{ijt}, \quad (1)$$

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. 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.[31] 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.[32]

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

[31] Five-year intervals are not used in the 18–25 age range to account for the fact that the 20–21 age group for men is not representative of the population due to mandatory military conscription. Military service can be deferred under certain conditions.

[32] It is important to separate the group with the lowest educational attainment because men with no degree have markedly lower employment rates than all other groups (Dayıoğlu and Kırdar, 2010). It is also crucial to separate the group with college education because 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 age groups.

(1), δ_j stands for the NUTS-2 region dummies and δ_t for the year dummies; u_{ijt} is the error term.

While the specification in equation (1) makes the common-trend assumption across NUTS-2 regions, this assumption fails for several outcomes, as we show in the next section. Therefore, in addition to equation (1), we estimate three different extended versions of it, including (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. The last one is highly similar to the specification of Stephens and Yang (2014), who use the interactions of five US census-region and year-fixed effects. The 5 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). This is also the classification used in the Demographic and Health Surveys of Turkey.

The ratio of migrants to natives would be endogenous if its time or regional variation were related to economic conditions in Turkey. The timing of the arrival of Syrian refugees was determined by the political events in Syria. However, a more likely concern for endogeneity 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 2 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. The fraction of the native Arabic-speaking population in 1965, however, is not statistically significant once distance is accounted for. 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.[33] While the non-agricultural employment rate is positively correlated with migrants' settlement patterns, its statistical significance remains below the conventional levels once distance, language, and dummies for the 5-

[33] However, there might be another reason for this. Syrians who wanted to migrate to Europe before the borders were closed in the summer of 2015 had to enter Greece via western Turkey. In this case, migrants were in western Turkey for a reason other than targeting better employment opportunities.

regions of the country are accounted for.[34]

In essence, while distance is the major determinant of migrant settlement patterns, employment opportunities also seem to be a pull factor. 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.

We define the instrument as follows,

$$I_{n,t} = \sum_{s=1}^{13} (\pi_s M_t)/d_{ns} \quad (2)$$

where n denotes the NUTS-2 region in Turkey, s denotes the province in Syria, π_s is the fraction of Syrians in Turkey in 2015 who originated from province s in Syria,[35] M_t is the number of Syrians in Turkey in year t, d_{ns} is the distance between the major cities of NUTS-2 region n in Turkey and province s in Syria. This instrument first calculates the number of migrants from each of the 13 provinces of Syria for each year ($\pi_s M_t$). Then, for each Turkish region at time t, it weights this number inversely with the distance variable and sums these weighted values over the 13 provinces in Syria. Hence, the instrument proxies the sum of expected number of migrants across Syrian provinces for each Turkish NUTS-2 region at time t. This instrument is identical to that used by del Carpio and Wagner (2016) except for the fact that we use the actual origin-province distribution of the Syrians in Turkey, whereas they use the population shares of the Syrian provinces before the war.[36]

[34] Since the agricultural sector, where employment rates are higher, still constitutes an important fraction of employment in Turkey, we use non-agricultural employment rates.

[35] Figure B1 in Appendix B illustrates this distribution.

[36] If Turkey were the only destination country for Syrian refugees, the pre-war population shares of Syrian provinces and their distance to the Turkish border would determine their actual shares—as in the del Carpio and Wagner instrument. However, Jordan and Lebanon, which border Syria to the south, also received substantial numbers of Syrians. In fact, a tiny fraction of Syrians in Turkey originate from provinces bordering Jordan and Lebanon, given their pre-war populations. In addition, conditional on the distance to the Turkish border and the pre-war population, substantial variation

Nonetheless, in the robustness check section, we show that using the del Carpio and Wagner instrument makes little difference in the results—although our first stages are considerably stronger.

The variation in the key variable of interest coming from our instrument puts less weight on the more urban, industrialized regions of western Turkey, which are far away from the border. This is in stark contrast to the situation in del Carpio and Wagner (2016), where the weights of cities such as Istanbul, Bursa, and İzmir increase because they control for the distance of the Turkish regions from the border along with their instrument. At the same time, it is important to note that the border regions of Turkey are not necessarily more rural and agricultural. For instance, the Gaziantep region—which has the highest ratio of migrants to natives—is one of the country's major industrial centers.

7. Results

We first conduct an analysis of the common-trend assumption, described in Subsection 7.1. We begin presenting our estimation results in Subsection 7.2, where we show the migrant impact in the formal and informal sectors separately. In Subsection 7.3, we present the results for the total labor market. Subsection 7.4 describes the analysis by sector of employment. In Subsections 7.2 to 7.4, after examining the effect on total employment, we investigate how this effect varies by type of employment: wage worker, self-employed, employer, and unpaid family worker.[37] Finally, Subsections 7.5 and 7.6 examine the heterogeneity in the migrant impact by natives' education and age levels, respectively.

7.1 An Analysis of the Common-trend Assumption

To examine the common-trend assumption, we define the treatment group as the five NUTS-2 regions with the highest ratio of migrant to natives, where the ratios are 0.134, 0.114, 0.086, 0.050, and 0.044

exists across Syrian provinces in sending refugees to Turkey because of ethnic and religious differences. A disproportionately high number of refugees originate from the Sunni-Arab Aleppo Region (vs. the Hasaka region, which is predominantly Kurdish, and the Latakia region, which has a significant Alawite population—although all three regions lie on the Turkish border). Using the actual origin-province distribution of Syrians in the instrument assumes that this distribution is not influenced by the variation in economic conditions across Turkish regions. In other words, more refugees originate from Aleppo not because the closest Turkish regions to Aleppo have better economic conditions but because the political events and the ethnic-religious composition of Aleppo result in more emigrants than other Syrian provinces with equal distance to the Turkish border.

[37] See Table B3 in Appendix B for a distribution of type of employment by gender and formal/informal status. It is important to note that 38.8% of men and 17.9% of women in the informal sector are self-employed and that the percentage of unpaid family workers is very high for women in the informal sector, at 57.2%.

in 2015 (Table 2). The ratio is 0.018 for the next highest region, and there are five other regions in the 0.01–0.02 range. Moreover, the order of the top 5 of these regions does not change over time. Hence, this is an appropriate cutoff. We also define the top 3 regions as an alternative treatment group because a notable gap exists between the ratios of the third and fourth regions. These three regions immediately surround the Aleppo Region in Syria, from where almost 60% of the migrants originate.

Figures 3 and 4 show that the profiles of several key labor market outcomes are decidedly different for the treatment and control groups in the pretreatment period.[38] Rather than discussing these differences at this point, we refer to these graphs in later sections when we compare the estimates under the common-trend assumption with the estimates that relax this assumption. We also conduct formal hypothesis tests of a common linear trend assumption between the treatment and control groups, the results of which are given in Table 3 for the two alternative definitions of the treatment groups. The common linear trend assumption fails for half of the outcomes in the informal labor market for both men and women. It fails seriously for men's wages in the formal market, which will be critical in the results; additionally, it fails for four of the five outcomes for women in the formal labor market. When we aggregate the outcomes across the formal and informal labor markets, the assumption fails for 20–40% of the outcomes for men and for 30–40% of the outcomes for women.

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

Table 4 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 5 gives the 2SLS estimates in the same format. In both tables, columns (1) to (4) give the estimates for men and columns (5) to (8) the estimates for women. In terms of specifications, columns (1) and (5) estimate equation (1) with the common-trend assumption across NUTS-2 regions over time, whereas columns (2) and (6) add 5-region specific time trends to equation (1), columns (3) and (7) add NUTS1-region specific time trends to equation (1), and columns (4) and (8) add 5-region by year fixed effects. 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.[39]

A comparison of Tables 4 and 5 shows that, overall, the OLS and 2SLS estimates agree significantly for men. The patterns of statistical significance and the magnitude of coefficient estimates are quite similar. However, the degree of similarity is somewhat less for women than for men (which we

[38] The profiles for the treatment and control groups with the alternative definition of the treatment group (with top-3 regions), given in Figures B2 and B3 in Appendix B, are very similar to those in Figures 3 and 4.

[39] 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.

discuss later), especially for wages and employment in the informal sector. In the following discussion, we focus on the findings based on the 2SLS estimates. We claim robust evidence only if there is statistical significance for all three specifications that relax the common-trend assumption. At the same time, the specification with the region-year fixed effects is our preferred one.

First, we briefly mention the results of our first-stage estimates. As can be seen in Table 5, 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 that distance is a strong predictor of the settlement patterns of Syrian migrants in Turkey, as illustrated in Section 6. Next, we begin discussing our main findings.

7.2.1 Informal Sector

Panel (A) of Table 5 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 eliminates jobs for four native men in the informal sector. While the magnitude of this effect is quite large, a Syrian migrant can eliminate two native jobs because our employment definition includes part-time jobs.[40] 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 5 also shows that all of this replacement of native men in the informal sector is for wage workers.[41] 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 6.3% fall in wages but a 45% (0.1*0.493/0.110) fall in wage employment. 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).[42]

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

[41] The number of employers in the informal sector also falls with the arrival of Syrians.

[42] The analysis of only full-time jobs, given in Table C2 of Appendix C, indicates an increase in full-time self-employment

The common-trend assumption does not hold for men's wage employment in the informal sector, as can be seen from panel (A) of Figure 3 and Table 3. While this outcome exhibits a clear downward trend in the control region, it is relatively constant over time in the treatment region. This means that, in the absence of the migration shock, the post-treatment levels of this outcome would be higher in the treatment region, causing an overestimation of the migration shock. In fact, although we estimate that every 10 Syrians eliminates 2.5 jobs for native wage-worker men in the informal sector with the common-trend assumption, once we relax this assumption, we find that every 10 Syrians eliminates about 5 jobs for native wage-worker men.

A striking example of the bias caused by the common-trend assumption can be found in the situation of self-employed men in the informal sector. Panel (B) of Figure 3 shows that the profile of the fraction of self-employed has a much steeper downward slope in the treatment area than in the control area. Accordingly, in Table 5, the estimate with the common-trend assumption implies that every 10 Syrians eliminates the jobs of almost 2.5 self-employed native men in the informal sector, whereas there is no evidence of a negative effect in columns (2) to (4) with the more flexible specifications. This lack of evidence is not due to higher standard errors; in fact, the coefficients turn positive in columns (2) to (4).

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, except for the one with the common-trend assumption,[43] they are statistically insignificant.[44] 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 pre-treatment period. While no statistical evidence for an effect on women's total employment or 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

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.

[43] As can be seen in panel (A) of Figure 4, the fraction of women employed in the informal sector has an upward trend in the pre-treatment period for the treatment region, whereas the profile is quite constant for the control region—resulting in an overestimate of the migrant shock with the common-trend assumption.

[44] This finding differs from that of del Carpio and Wagner (2016), who report that every 10 Syrians takes the jobs of 6.4 native women in the informal sector. This, we claim, is a result of their use of the distance variable ~~along~~ with their instrument, because our replication of their methodology, given in Table A2 of Appendix A, shows that once we use the distance variable with our instrument, the coefficient becomes a very large negative number that is extremely difficult to interpret—every 10 Syrians eliminates the jobs of 17 native women in the informal sector.

(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 during the pre-treatment period.

7.2.2 Formal Sector

Panel (B) of Table 5 shows that the migrant shock has a substantial positive effect on men's employment. The arrival of every 10 Syrians generates about 5.5 jobs for native men. Moreover, this positive effect exists for all types of employment. Of the 5.5 new jobs generated, roughly 3 jobs are for wage workers,[45] 1.7 jobs are for the self-employed, 0.54 jobs are for employers, and 0.35 are for unpaid family workers. 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 an 8.5% 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 9 uncovers other channels that contribute to the outward shift of the labor demand curve.

The most striking example of the bias caused by the common-trend assumption is for men's wages in the formal sector. The estimates with the common-trend 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 (D) of Figure 3, 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.

The fact that the arrival of Syrians makes no direct change in the labor supply in the formal sector means that we can estimate the labor-supply elasticity using the above-mentioned shift in the demand curve—assuming that natives do not give a labor-supply or migration response. In fact, in Section 9.3, we show that there is no evidence of a migration response at the region level of our analysis. Table 5 shows that, with region-year fixed effects, an increase of 10 percentage points in the ratio of migrants increases wages by 8.6% and employment by 8.3% (0.1*0.299/0.362)—implying an almost unit labor-supply elasticity. This estimate lies on the higher end of the distribution of the previously estimated local labor-supply elasticities as reported in Dustmann et al. (2016), presumably because no alternative labor market—the informal sector in Turkey, for instance—exists in the other contexts.

[45] The specification with the common-trend assumption fails to uncover this large effect on wage employment.

[46] Similarly, Ceritoğlu et al. (2015) and del Carpio and Wagner (2016), who also force the common-trend assumption, 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.

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 show strong negative effects on total employment and wage employment.[47] However, as we gradually relax the common-trend assumption, both the statistical significance and the coefficient magnitudes diminish. In fact, with the region-year fixed effects in column (8), the evidence for total employment vanishes completely. This change is consistent with panels (C) and (D) of Figure 4, 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. The trends in employment and wage employment are close to linear; and, the equality of these linear trends between the treatment and control groups is rejected at the one-percent statistical significance level (Table 3).

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 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. However, no evidence of a positive effect exists on full-time wage employment—unlike the situation for men.

7.3 Total Employment, Labor Force Participation and Unemployment by Gender

We now conduct the same analysis for total employment (both in the formal and informal sectors), 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 6 and 7 present the OLS and 2SLS estimates, respectively. While the discussion below is based on the 2SLS estimates, we provide a brief comparison of the OLS and 2SLS estimates at the end of this subsection and interpret the differences.

For men, no evidence points to an effect on total employment, as the positive effect in the formal sector neutralizes the negative effect in the informal sector. However, when we distinguish between

[47] Among the studies that similarly force the common-trend assumption, Ceritoğlu et al. (2015) report an insignificant negative coefficient for employment of women in the formal sector, but del Carpio and Wagner (2016) avoid this potentially surprising finding by not conducting the analysis in the formal sector separately for men and women.

[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 B4 in Appendix B).

full-time and part-time employment, we find that the former increases at the expense of the latter. There is no evidence of an effect on labor force participation or unemployment with either definition. 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, 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. 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 (wage employment in the formal sector increases at the expense of wage employment in the informal sector).

For women, total employment falls with the arrival of Syrians. Quantitatively, every 10 incoming Syrians eliminates the jobs of almost four women (according to our preferred specification), all of which are part-time jobs. Self-employment also decreases—which is consistent with the significant fall in part-time employment—because almost 40% of the self-employed women work part-time (Table B4 in Appendix B). Women who lose their part-time job leave the labor force. In addition, wages of women increase with the arrival of Syrians. Part of this effect certainly results from the compositional changes in employment as part-time employment falls.

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, while the OLS estimates indicate no evidence of a negative effect on women's total employment, self-employment, or labor force participation, the 2SLS estimates do. Moreover, the magnitude of the 2SLS coefficients are notably higher. Compared to the OLS estimates, the 2SLS estimate capture less of the effect in western Turkey, which is further away from the Syrian border. 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 (about a quarter in western Turkey vs. two thirds in eastern Turkey), a sector which is hit more negatively by the arrival of Syrians, as illustrated in the next section. While the same is true for men, the share of agriculture in men's employment is much lower.

7.4 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.[49] Hence, we

49 Table B5 in Appendix B shows that, while 78% of men in manufacturing are formally employed, 42.4% of men in

would expect migrants to exert a larger effect on these sectors. Table 8 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 about half of the jobs for men (a fall of 0.0179 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 evidence of an effect on employment or wage employment; however, suggestive evidence of a positive effect on wages exists.

Table 9 shows the results for the agricultural sector. For men employed informally in agriculture, we observe a negative effect on wage employment and wages. The effect on wages is substantial; an increase of 10 percentage points in the migrant ratio lowers men's wages by about 15 to 20%.[50] Hence, in the sector that is closest to the competitive market structure, the results are fully consistent with an outward labor-supply shift in a competitive market. For women in the informal agricultural sector, an increase of 10 percentage points in the ratio of migrants to natives eliminates about 30% 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 20–25% fall in their wages. The strong effects on both men's and women's wages in agriculture suggest an inelastic labor demand curve in this sector.

Table 10 presents the results for the manufacturing sector. Every 10 incoming Syrians eliminates the jobs of 1–2 men employed informally in this sector, and almost all of the losses occur in wage employment. By contrast, in the formal manufacturing sector, every 10 Syrians generates jobs for three men, about two of whom are wage earners. A positive effect on self-employment and employers also exists. In other words, 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. For women in the informal manufacturing sector, there is no 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

construction and only 24.5% of men in agriculture are formally employed.

50 The specification with the common-trend assumption misses the effects on both wage employment and wages.

leads to a 20–25% rise in women's wages in the formal manufacturing sector.[51]

Finally, Table 11 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 suggestive 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, there is no robust evidence of an effect on either employment or wages.

7.5 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.[52]

As can be seen in Table 12, while a negative effect on wage employment of men in the informal sector exists for all three education groups, a negative effect on wages exists only for the group with no school degree. In addition, the negative effect on wage employment decreases monotonically in education, which implies that migrants are closer substitutes to native wage-earner men with lower

[51] Table C4 in Appendix C 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.

[52] We combine high school and college graduates in the informal sector because the fraction of college graduates is low (Table B6 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.

educational attainment. For women, we find no evidence of a negative effect on wage employment in the informal sector for any education group. However, wages of women with no school degree fall with the migrant shock. That the outward shift of labor supply results in a negative wage effect only 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 workers, except college graduates, increase with the arrival of Syrians. The results with the common-trend assumption 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 positive wage effect on those with the lowest educational attainment exists.[53]

7.6 Wage Employment and Wages in the Informal and Formal Sectors by Age

Table 13 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.[54] All three age groups show a negative effect of the 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 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 (with the preferred specification). 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

[53] No evidence exists for an effect on total employment, participation, or unemployment of men of any education group (Table C5 in Appendix C). At the same time, 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).

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

employment of female youth does not respond much to the arrival of Syrians, suggests that labor supply elasticity for female youth in the formal sector is inelastic—as is the case for male youth.[55]

8. Robustness Checks

8.1 Alternative Specification for Region-Year Effects

Here, we go one step further in accounting for differences in the trends between the treatment and control areas by using NUTS-1 region-year fixed effects. While this is an even more flexible specification, there is a potential danger that comes with it. Very flexible specifications for time trends across regions might capture the actual effect of the migrant shock. When we use 5-region and year-fixed effects, we use the variation in the migrant ratios within each region at a given time. This variation is further limited to the smaller regions when we use NUTS-1 region-year fixed effects. Nonetheless, as an examination of Table 2 shows, an important variation remains in the migrant ratios within NUTS-1 regions. For instance, in NUTS-1 region 12, identification comes from the variation in the migrant ratios of the three NUTS-2 regions—where the ratios are 0.134, 0.086 and 0.044 in 2015. In the three NUTS-2 regions that lie within the NUTS-1 region 6, the ratios range from 0.114 to 0.002 in 2015. Tables D1 and D2 in the Appendix, which update Tables 5 and 7, respectively, with a column including the estimates with NUTS-1 region-year fixed effects, show that our key findings are qualitatively robust. Quantitatively, the estimates with the specification including NUTS-1 region-year-fixed effects are similar to estimates with other specifications for most variables, but for some variables—such as employment and wage employment of men in the formal sector and self-employment of women in the informal sector—the magnitude of the estimated coefficients is larger.

8.2 Alternative Definition for the Key Variable of Interest

Our key variable of interest, the migrant-to-native ratio, could be measured with error, as Syrian migrants might not stay in the province where they are registered—although they are expected to use public health and education services only in the province where they are registered. To mitigate the effects of such measurement issues, we repeat our key analyses using a more aggregate measure of

[55] 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 C6 in Appendix C. 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 fall in participation rates of this older age group.

the migrant shock: we define a dummy variable for treatment status that takes the value of one if the migrant-to-native ratio is above a certain threshold. Tables D3, D4, and D5 in Appendix D replicate Table 5 and Tables D6, D7, and D8 in Appendix D replicate Table 7 with the thresholds of 0.04, 0.02, and 0.01, respectively, for the treatment dummy. In essence, the key findings hold with all alternative definitions of the treatment dummy. At the same time, with the threshold of 0.01, overall, the first-stage results are weaker and statistical significance in the second-stage results is lower.

8.3 Alternative Samples

First, we drop the data for 2013 from the sample because we had to make some assumptions in the creation of the key variable of interest for this year. Tables D9 and D10 in Appendix D replicate Tables 5 and 7, respectively, with this exclusion in the sample. All findings hold robust; in fact, the estimates change very little. Second, we drop the data for 2014 as well as for 2013, and use the variation in the number of Syrians only for 2015. The numbers for later years may be more reliable for a number of reasons.[56] Tables D11 and D12 in Appendix D replicate Tables 5 and 7, respectively, with this sample. While statistical significance is lower in general, as expected, the magnitudes of the coefficients are quite similar, and the majority of the key findings hold. The only key finding for which statistical significance vanishes is the negative impact on women's total employment—although the magnitude of the negative coefficients remain similar.

8.4 Alternative Definition for the Distance Instrument

Tables D13 and D14 in Appendix D replicate Tables 5 and 7, 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, as expected, due to the issues discussed in Section 6. For instance, the F-statistic with the preferred specification is 36% lower for the male sample. Consequently, statistical significance is slightly lower with the preferred specification for certain variables, including total employment and wages of men in the informal sector in Table D13 and wage employment of men and total employment of women in Table D14.

[56] First, until the summer of 2015, Syrians in Turkey were quite mobile, making their way to western Turkey to enter EU countries via Greece. The numbers for 2015 are for the very end of that year, after the agreement between Turkey and the EU to close the borders of the EU to Syrian refugees. Second, the Turkish government was late in organizing the enumeration of Syrians across the country. In fact, the government body established primarily for this purpose, the Ministry of Interior's Directorate General of Migration Management, provides official data only as of December 31, 2015.

8.5 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. Here, we examine this issue empirically, using data on trade volumes of the 26 NUTS-2 regions over time. Table D15 in Appendix D shows the results of 2SLS estimations for three different measures of trade volume: exports, imports, and the sum of exports and imports. The results show that trade volume increases in the ratio of migrants to natives. 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. This finding highlights the importance of including trade volume as a control variable in our regressions; otherwise, the migrant-to-native ratio would also stand for the effect of this rise in trade. Nonetheless, empirically, accounting for the trade volume makes little difference in the estimates overall,[57] as the change in trade volume is small compared to the size of the migrant influx.

9. 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. In fact, in a study that complements ours, Akgündüz and Torun (2018) provide supporting evidence for this fact. Using a large administrative dataset of firms in Turkey, they find that the arrival of Syrians pushed native workers into more complex jobs by increasing the intensity of more abstract and routine tasks at the expense of manual tasks.[58] However, as discussed in the conceptual framework section, there are other potential channels through which the labor demand curve in the formal sector could rise. One such channel is the general equilibrium effect of

[57] Tables D16 and D17 in Appendix D show how the main results change when we do not account for trade volume in the regressions by replicating the main results in Tables 5 and 7, respectively, without a control for trade volume. 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.

[58] Similarly, using data on 15 European countries, D'Amuri and Peri (2014) find that immigrants push natives into more complex jobs.

an increase in product prices. Another is factor movements.

9.1 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. The results, given in Table C7 in Appendix C, 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 2.5% rise in prices (with the preferred specification). 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.

9.2 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. 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 C8 in Appendix C provides the estimation results. In fact, the arrival of migrants increases the establishment of new firms and self-proprietorships, but there is no evidence of an effect on closings and liquidations.[59] Quantitatively, an increase of 10 percentage points in the ratio of migrants to natives causes a 25% increase in the number of firms and a 22% increase in the number of new self-proprietorships. Moreover, net openings (defined both as openings minus closings and as openings minus closings and liquidations) increase with the arrival of migrants. Therefore, we can conclude that capital flow to the treatment regions contributes the rise in demand in the formal labor market.

9.3 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 the labor market to directly test this hypothesis, we can use education as a proxy. Table C9 in Appendix C shows how the migrant influx changes the net migration rates of natives by

[59] In accordance with this finding, Akgündüz et al. (2018) report an increase in firms' total sales and profits, and Altındağ et al. (2018) find an increase in firms' production.

age and education across the 26 NUTS-2 regions.[60] With the preferred specification, no evidence of a negative effect of the migrant influx on the net migration rate exists for any education or age group of men. Therefore, migration of formal labor to treatment areas is not one of the factors that contribute to the rise in labor demand for men in the formal market.

Internal migration would contribute to our finding that informal employment of native men in the affected areas falls if some men in the informal market migrate to the unaffected areas. However, the results in Table C9 do not indicate any evidence for this, either. It is important to note that these findings do not mean that natives do not give a 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 areas (where most migrants live) to rural areas for natives.

10. Discussion and Conclusions

The arrival of millions of Syrians has ushered in a substantial debate in Turkey with regard to the impact of these migrants, particularly about their impact on the labor market outcomes of natives. Our results indicate 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. By contrast, for native women, self-employment—which is the type of employment with the highest fraction of part-time workers—falls, but there is no evidence of an effect on wage employment.

We find no adverse effect of the migrant shock on native men's wages in the aggregate labor market; in fact, wages of native men increase while their wage employment falls. This suggests that native men in low-paying jobs are displaced by Syrians, which is consistent with the finding that native men's informal wage employment falls, while their formal wage employment increases. Wages of native women also increase, but there is no significant decline in their wage employment. Nevertheless, due to the compositional changes in employment in terms of formal or informal employment, it is more meaningful to assess the wage effects in the formal and informal sectors

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

separately.

In the informal sector, every 10 Syrians eliminates the jobs of 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. This suggestive evidence becomes conclusive for natives with no school degree, both among men and women. The substitutability of native men in the informal sector with migrant workers is high—about one-to-one, 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, as expected, given that the arriving Syrians are both younger and less educated than the natives. These findings are consistent with the implications of the canonical model of migration. There is no evidence that out-migration of workers to the untreated regions contributes to the substantial decline in men's informal employment. However, given the finding that wages in the formal sector increase while wages in the informal sector fall, displaced native men in the informal sector could migrate to the formal sector.

In the formal sector, every 10 Syrians generates jobs for about 5.5 native men, of whom roughly 3 are wage workers, 1.7 are self-employed, 0.54 are employers, and 0.35 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 an 8.6% 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 rises the marginal product of capital. While the two latter channels would play a role in the informal sector as well, the outward shift of the labor supply curve dominates in that sector, resulting in lower wage and employment there.

Significant heterogeneity across sectors of employment exists 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 eliminates more than half of the jobs for men in the informal construction sector. In agriculture, women's employment and both men's and women's wages are hit particularly hard. An increase of 10 percentage points in the ratio of migrants to natives brings about a 30% fall in women's employment and a 15–20% fall in wages of both men and 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.

Our analysis, which examines wage employment and wages together, provides important information on the level of labor supply-and-demand elasticities and on the heterogeneity in them by education and age. In the informal sector, the fact that wage employment responds much more than wages suggests that the labor supply of men is elastic. In addition, the fact that wages of men and women decline only for those with no school degree implies that the labor demand for the least educated group is more inelastic in the informal market. In the formal sector, assuming that the native labor supply does not shift, we estimate a labor supply elasticity that is close to unity. Moreover, labor supply elasticity in the formal sector decreases in education for men and is lower for youth among both men and women.

The findings of this study provide important knowledge for other countries. Jordan and Lebanon have also received massive migration from Syria. In addition, hundreds of thousands of Syrians marched to Western Europe via Turkey, Greece, and the Balkan countries until the summer of 2015, when the EU and Turkey agreed to prevent the migrants from approaching the borders of the EU. While countries in Western Europe do not have an informal sector as large as Turkey's, some workers in these countries—the young and the less educated, for example—are more substitutable with Syrian workers, whereas other workers are more complementary. Therefore, the findings of this study that complementary natives benefit from the arrival of refugees although competing natives are adversely affected, and that the arrival of migrants has important distributional effects across groups of natives by gender, age, education, and type and sector of employment have important implications for many countries facing refugee inflows.

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Tables and Figures

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

A) Demographic Outcomes	Male	Female
Age Groups		
18-20	0.059	0.053
20-22	0.039	0.051
22-25	0.078	0.083
25-30	0.143	0.141
30-35	0.139	0.134
35-40	0.125	0.122
40-45	0.113	0.110
45-50	0.100	0.097
50-55	0.086	0.085
55-60	0.068	0.069
60-64	0.051	0.055
Marital Status		
Married	0.716	0.738
Educational Attainment		
Illiterate & No Degree	0.059	0.217
Primary & Middle School	0.562	0.519
Any High School	0.245	0.168
College & Above	0.134	0.096
Number of Observations	1,577,886	1,694,819

B) Labor Market Outcomes	Male	Female
Employed	0.716	0.270
Full-time Employed	0.683	0.218
Part-time Employed	0.033	0.052
Hourly Wage (for Wage Workers)	1.473	1.519
Wage Worker	0.472	0.149
Self-Employed	0.162	0.030
Employer	0.049	0.003
Unpaid Family Worker	0.033	0.089
In the Labor Force (definition 1)	0.799	0.308
In the Labor Force (definition 2)	0.798	0.334
Unemployed (definition 1)	0.082	0.038
Unemployed (definition 2)	0.076	0.040
Informal		
Employed	0.242	0.148
Wage Worker	0.110	0.036
Hourly Wage (for Wage Workers)	0.979	0.884
Self-Employed	0.094	0.026
Employer	0.010	0.001
Unpaid Family Worker	0.028	0.084
Formal		
Employment	0.475	0.123
Wage Worker	0.362	0.112
Hourly Wage (for Wage Workers)	1.602	1.684
Self-Employed	0.068	0.003
Employer	0.039	0.003
Unpaid Family Worker	0.005	0.004
Number of Observations	1,577,886	1,694,819

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.

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

NUTS-2 Region	NUTS-1 Region	5-Region	Major City	Population, 2015	Migrant to Native Ratio 2013	2014	2015
1	1	1	Istanbul	14,657,434	0.24	1.23	1.81
2	2	1	Tekirdag	1,687,420	0.00	0.02	0.57
3	2	1	Balikesir	1,700,029	0.00	0.02	0.20
4	3	1	Izmir	4,168,415	0.03	0.17	1.48
5	3	1	Aydin	2,955,825	0.01	0.05	0.47
6	3	1	Manisa	3,013,892	0.00	0.02	0.21
7	4	1	Bursa	3,881,624	0.06	0.28	1.62
8	4	1	Kocaeli	3,617,728	0.05	0.26	0.48
9	5	2	Ankara	5,270,575	0.06	0.31	0.72
10	5	2	Konya	2,372,740	0.20	1.03	1.52
11	6	3	Antalya	2,968,561	0.04	0.19	0.22
12	6	3	Adana	3,928,388	0.49	1.47	4.99
13	6	3	Hatay	3,142,990	2.85	4.96	11.40
14	7	2	Kirikkale	1,515,228	0.01	0.05	0.37
15	7	2	Kayseri	2,379,113	0.04	0.22	1.35
16	8	4	Zonguldak	1,023,593	0.00	0.01	0.03
17	8	4	Kastamonu	757,711	0.00	0.00	0.07
18	8	4	Samsun	2,721,221	0.01	0.04	0.11
19	9	4	Trabzon	2,572,850	0.00	0.01	0.06
20	10	5	Erzurum	1,063,789	0.00	0.00	0.04
21	10	5	Agri	1,131,570	0.00	0.01	0.07
22	11	5	Malatya	1,700,468	0.30	0.30	0.94
23	11	5	Van	2,124,349	0.01	0.05	0.12
24	12	5	Gaziantep	2,665,265	4.89	7.23	13.43
25	12	5	Sanliurfa	3,546,516	2.58	3.93	8.58
26	12	5	Mardin	2,173,759	1.50	2.96	4.43

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: A Check of the Common Linear Trend in the Labor Outcomes of Treatment and Control Groups

Treatment Group:	MEN						WOMEN					
	Top 5 NUTS-2 Regions			Top 3 NUTS-2 Regions			Top 5 NUTS-2 Regions			Top 3 NUTS-2 Regions		
	Effect	p-value		Effect	p-value		Effect	p-value		Effect	p-value	
Informal Sector												
Employed	0.000	0.982		-0.003	0.010	**	0.004	0.029	**	0.003	0.107	
Wage Worker	0.004	0.001	***	0.002	0.122		0.002	0.000	***	0.002	0.013	**
Hourly Wage	0.014	0.012	**	0.018	0.001	***	0.009	0.153		0.014	0.022	**
Self-Employed	-0.004	0.000	***	-0.005	0.000	***	0.001	0.311		0.001	0.507	
Employer	0.000	0.674		0.000	0.673		0.000	0.080	*	0.000	0.035	**
Unpaid Family Worker	0.000	0.807		-0.001	0.577		0.001	0.450		0.001	0.696	
Formal Sector												
Employed	0.001	0.819		0.001	0.577		-0.005	0.000	***	-0.006	0.000	***
Wage Worker	0.001	0.555		0.002	0.234		-0.004	0.000	***	-0.005	0.000	***
Hourly Wage	-0.014	0.001	***	-0.018	0.003	***	-0.013	0.088	*	-0.020	0.014	**
Self-Employed	0.000	0.649		0.001	0.582		0.000	0.104		0.000	0.199	
Employer	-0.001	0.096	*	-0.001	0.156		0.000	0.001	***	0.000	0.044	**
Employed	0.000	0.865		-0.002	0.437		-0.001	0.772		-0.002	0.271	
Full-time Employed	0.001	0.799		-0.002	0.551		0.000	0.960		-0.002	0.193	
Part-time Employed	0.000	0.716		0.000	0.799		-0.001	0.504		0.000	0.900	
Hourly Wage	0.004	0.192		0.007	0.059	*	-0.007	0.203		-0.018	0.052	*
Wage Worker	0.005	0.004	***	0.004	0.021	**	-0.002	0.027	**	-0.003	0.003	***
Self-Employed	-0.004	0.002	***	-0.004	0.007	***	0.001	0.425		0.001	0.573	
Employer	-0.001	0.485		-0.001	0.487		0.000	0.030	**	0.000	0.565	
Unpaid Family Worker	0.000	0.839		-0.001	0.587		0.001	0.613		0.000	0.916	
In the Labor Force (def. 1)	-0.001	0.480		-0.005	0.018	**	-0.002	0.408		-0.004	0.099	*
Unemployed (def. 1)	-0.002	0.489		-0.003	0.240		-0.001	0.099	*	-0.002	0.008	***

Notes: The data cover the mean values of the dependent variable for the treatment and control groups in each year from 2004 to 2012. Hence, there are 18 observations in each regression. The regression specifications include a treatment group dummy, a linear year trend, and an interaction of the treatment group dummy and the linear year trend. "Effect" shows the coefficient of the interaction variable; in other words, how the trend of the treatment group differs from that of the control group. The corresponding p-values are also given. Robust standard errors are used. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table 4: Effects of Migrants on Natives in the Informal and Formal Sectors, OLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.476***	-0.479***	-0.384**	-0.422***	0.242	0.073	-0.176	-0.175	-0.208	0.148
	(0.131)	(0.143)	(0.163)	(0.150)		(0.247)	(0.219)	(0.262)	(0.181)	
Wage Worker	-0.299***	-0.533***	-0.431***	-0.518***	0.110	0.111	0.008	-0.020	0.007	0.036
	(0.082)	(0.086)	(0.097)	(0.100)		(0.084)	(0.075)	(0.080)	(0.070)	
Hourly Wage	-0.160	-0.541	-0.128	-0.842**	0.979	-0.887**	-0.927**	-0.333	-1.145**	0.884
	(0.342)	(0.368)	(0.435)	(0.387)		(0.418)	(0.400)	(0.401)	(0.541)	
Self-employed	-0.244***	0.001	0.047	0.028	0.094	-0.055	-0.069	-0.148*	-0.063	0.026
	(0.062)	(0.065)	(0.074)	(0.056)		(0.088)	(0.081)	(0.090)	(0.069)	
Employer	-0.028*	-0.052***	-0.029	-0.046**	0.010	0.008**	0.004	0.005	0.002	0.001
	(0.016)	(0.018)	(0.022)	(0.020)		(0.004)	(0.003)	(0.003)	(0.003)	
Unpaid Family Worker	0.096**	0.105**	0.029	0.114***	0.028	0.010	-0.119	-0.012	-0.154	0.084
	(0.038)	(0.042)	(0.039)	(0.040)		(0.113)	(0.120)	(0.135)	(0.129)	
B) FORMAL SECTOR										
Employed	0.390***	0.481***	0.508***	0.500***	0.475	-0.329***	-0.137**	-0.156**	-0.081	0.123
	(0.115)	(0.126)	(0.145)	(0.128)		(0.061)	(0.061)	(0.068)	(0.066)	
Wage Worker	0.068	0.183**	0.164*	0.203**	0.362	-0.297***	-0.146***	-0.192***	-0.096	0.112
	(0.082)	(0.080)	(0.093)	(0.084)		(0.055)	(0.056)	(0.061)	(0.064)	
Hourly Wage	0.019	0.643***	0.704***	0.651***	1.602	0.110	0.345	0.636**	0.362	1.684
	(0.210)	(0.240)	(0.268)	(0.221)		(0.281)	(0.281)	(0.307)	(0.261)	
Self-employed	0.224***	0.197***	0.188***	0.212***	0.068	0.001	0.011**	0.013**	0.013***	0.003
	(0.048)	(0.053)	(0.057)	(0.067)		(0.005)	(0.005)	(0.006)	(0.005)	
Employer	0.071**	0.067**	0.109***	0.055*	0.039	-0.008***	-0.003	-0.007**	-0.002	0.003
	(0.035)	(0.028)	(0.038)	(0.030)		(0.003)	(0.003)	(0.004)	(0.003)	
Unpaid Family Worker	0.027**	0.033**	0.046***	0.030**	0.005	-0.025*	0.001	0.031	0.002	0.004
	(0.013)	(0.013)	(0.014)	(0.014)		(0.015)	(0.015)	(0.019)	(0.013)	
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 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 varibles, 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 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 5: Effects of Migrants on Natives in the Informal and Formal Sectors, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.523***	-0.543***	-0.539***	-0.398***	0.242	-0.020	-0.316	-0.388	-0.287	0.148
	(0.131)	(0.147)	(0.161)	(0.152)		(0.270)	(0.239)	(0.257)	(0.192)	
Wage Worker	-0.250***	-0.559***	-0.549***	-0.493***	0.110	0.187	0.017	-0.023	0.026	0.036
	(0.091)	(0.088)	(0.100)	(0.105)		(0.114)	(0.087)	(0.088)	(0.077)	
Hourly Wage	0.414	-0.289	-0.081	-0.628*	0.979	0.093	-0.168	0.153	-0.332	0.884
	(0.479)	(0.402)	(0.421)	(0.369)		(0.522)	(0.400)	(0.370)	(0.439)	
Self-employed	-0.313***	-0.024	0.018	0.043	0.094	-0.188*	-0.199**	-0.256***	-0.173**	0.026
	(0.080)	(0.069)	(0.077)	(0.053)		(0.100)	(0.092)	(0.089)	(0.084)	
Employer	-0.017	-0.048***	-0.039*	-0.034*	0.010	0.006*	0.003	0.002	0.001	0.001
	(0.018)	(0.018)	(0.023)	(0.020)		(0.003)	(0.003)	(0.003)	(0.003)	
Unpaid Family Worker	0.058*	0.088**	0.031	0.087**	0.028	-0.025	-0.136	-0.111	-0.141	0.084
	(0.034)	(0.044)	(0.038)	(0.034)		(0.107)	(0.121)	(0.133)	(0.131)	
B) FORMAL SECTOR										
Employed	0.407***	0.532***	0.576***	0.554***	0.475	-0.463***	-0.175**	-0.187**	-0.096	0.123
	(0.115)	(0.135)	(0.160)	(0.133)		(0.098)	(0.070)	(0.075)	(0.075)	
Wage Worker	0.118	0.253***	0.273**	0.299***	0.362	-0.427***	-0.194***	-0.212***	-0.126*	0.112
	(0.086)	(0.091)	(0.110)	(0.084)		(0.088)	(0.065)	(0.068)	(0.073)	
Hourly Wage	0.029	0.799***	0.807**	0.859***	1.602	-0.029	0.451	0.510	0.592**	1.684
	(0.211)	(0.282)	(0.326)	(0.226)		(0.333)	(0.312)	(0.345)	(0.280)	
Self-employed	0.192***	0.175***	0.185***	0.166**	0.068	-0.006	0.007	0.007	0.010*	0.003
	(0.051)	(0.053)	(0.059)	(0.066)		(0.007)	(0.006)	(0.007)	(0.005)	
Employer	0.058	0.063**	0.072**	0.054*	0.039	-0.014***	-0.008*	-0.010**	-0.008**	0.003
	(0.038)	(0.029)	(0.036)	(0.031)		(0.005)	(0.004)	(0.005)	(0.004)	
Unpaid Family Worker	0.040***	0.041***	0.046***	0.035***	0.005	-0.016	0.020	0.028	0.028***	0.004
	(0.012)	(0.013)	(0.015)	(0.013)		(0.014)	(0.015)	(0.020)	(0.010)	
First-stage regression	1.253***	1.312***	1.226***	1.444***		1.256***	1.313***	1.228***	1.442***	
	(0.073)	(0.064)	(0.047)	(0.080)		(0.073)	(0.064)	(0.046)	(0.080)	
F-statistics	295.570	422.059	700.222	323.281		299.414	423.863	707.385	324.048	
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 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 6: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives, OLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.086	0.002	0.124	0.077	0.716	-0.256	-0.313	-0.331	-0.289*	0.270
	(0.084)	(0.101)	(0.148)	(0.088)		(0.235)	(0.233)	(0.286)	(0.169)	
Full-time Employment	-0.036	0.187**	0.238**	0.276***	0.683	-0.030	0.151	-0.179	0.291**	0.218
	(0.090)	(0.091)	(0.096)	(0.088)		(0.137)	(0.156)	(0.131)	(0.147)	
Part-time Employment	-0.050	-0.185*	-0.115	-0.198**	0.033	-0.225	-0.463***	-0.152	-0.581***	0.052
	(0.089)	(0.094)	(0.121)	(0.078)		(0.144)	(0.142)	(0.211)	(0.120)	
Hourly Wage	0.473**	0.653***	0.648**	0.697***	1.473	-0.095	0.265	0.753**	0.398	1.519
	(0.186)	(0.222)	(0.255)	(0.204)		(0.383)	(0.381)	(0.340)	(0.377)	
Wage Worker	-0.232***	-0.350***	-0.267***	-0.315***	0.472	-0.187***	-0.137*	-0.212**	-0.089	0.149
	(0.072)	(0.079)	(0.091)	(0.096)		(0.067)	(0.082)	(0.083)	(0.070)	
Self-Employed	-0.020	0.199***	0.235***	0.240***	0.162	-0.054	-0.058	-0.136	-0.049	0.030
	(0.062)	(0.066)	(0.081)	(0.068)		(0.086)	(0.080)	(0.089)	(0.069)	
Employer	0.042	0.015	0.080	0.009	0.049	0.000	0.001	-0.002	0.000	0.003
	(0.044)	(0.039)	(0.052)	(0.042)		(0.005)	(0.004)	(0.005)	(0.004)	
Unpaid Family Worker	0.123***	0.137***	0.076*	0.144***	0.033	-0.015	-0.119	0.019	-0.151	0.089
	(0.033)	(0.041)	(0.042)	(0.034)		(0.112)	(0.124)	(0.146)	(0.129)	
Labor Force Participation definition 1	-0.047	-0.010	-0.109	0.092	0.799	-0.192	-0.221	-0.303	-0.149	0.308
	(0.160)	(0.162)	(0.157)	(0.169)		(0.237)	(0.231)	(0.269)	(0.169)	
Labor Force Participation definition 2	0.100	0.294*	-0.093	0.350**	0.798	-0.255	-0.211	-0.355**	-0.181	0.334
	(0.148)	(0.154)	(0.144)	(0.152)		(0.232)	(0.180)	(0.170)	(0.161)	
Unemployment definition 1	0.039	-0.012	-0.233	0.015	0.082	0.063	0.091**	0.028	0.141**	0.038
	(0.143)	(0.152)	(0.166)	(0.171)		(0.042)	(0.045)	(0.055)	(0.056)	
Unemployment definition 2	0.187	0.209	-0.180	0.193	0.076	0.066	0.148**	0.068	0.155***	0.040
	(0.124)	(0.146)	(0.185)	(0.151)		(0.046)	(0.060)	(0.084)	(0.055)	
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 OLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, 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 and 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 one uses the unemployment status variable as given in the dataset, which uses a three-months job-search criterion until 2013 but a one-month 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.

Table 7: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.116	-0.011	0.037	0.156	0.716	-0.483*	-0.491*	-0.575**	-0.384**	0.270
	(0.082)	(0.111)	(0.147)	(0.101)		(0.252)	(0.263)	(0.286)	(0.189)	
Full-time Employment	-0.042	0.246***	0.262**	0.403***	0.683	-0.225*	0.070	-0.216	0.246*	0.218
	(0.087)	(0.093)	(0.101)	(0.081)		(0.132)	(0.162)	(0.134)	(0.145)	
Part-time Employment	-0.074	-0.257**	-0.225*	-0.246***	0.033	-0.258	-0.562***	-0.359*	-0.629***	0.052
	(0.103)	(0.105)	(0.120)	(0.088)		(0.164)	(0.157)	(0.207)	(0.131)	
Hourly Wage	0.722***	0.813***	0.728***	0.961***	1.473	0.110	0.632*	0.813**	0.968***	1.519
	(0.233)	(0.254)	(0.272)	(0.184)		(0.388)	(0.364)	(0.370)	(0.308)	
Wage Worker	-0.133	-0.306***	-0.276***	-0.194*	0.472	-0.240***	-0.178*	-0.235**	-0.100	0.149
	(0.093)	(0.083)	(0.090)	(0.105)		(0.073)	(0.093)	(0.092)	(0.082)	
Self-employed	-0.121	0.151**	0.203**	0.209***	0.162	-0.194**	-0.192**	-0.249***	-0.164**	0.030
	(0.090)	(0.072)	(0.084)	(0.069)		(0.098)	(0.090)	(0.088)	(0.082)	
Employer	0.041	0.014	0.033	0.020	0.049	-0.008	-0.005	-0.008	-0.007	0.003
	(0.048)	(0.040)	(0.051)	(0.042)		(0.006)	(0.006)	(0.006)	(0.004)	
Unpaid Family Worker	0.097***	0.129***	0.077*	0.122***	0.033	-0.041	-0.116	-0.083	-0.113	0.089
	(0.031)	(0.045)	(0.041)	(0.029)		(0.107)	(0.127)	(0.144)	(0.132)	
Labor Force Participation definition 1	-0.183	-0.120	-0.208	0.047	0.799	-0.494*	-0.448*	-0.580**	-0.306*	0.308
	(0.154)	(0.156)	(0.152)	(0.159)		(0.253)	(0.257)	(0.266)	(0.163)	
Labor Force Participation definition 2	-0.056	0.221	-0.045	0.266*	0.798	-0.565**	-0.336*	-0.464***	-0.386***	0.334
	(0.145)	(0.149)	(0.146)	(0.142)		(0.245)	(0.177)	(0.173)	(0.138)	
Unemployment definition 1	-0.067	-0.109	-0.245	-0.109	0.082	-0.011	0.043	-0.005	0.078	0.038
	(0.138)	(0.146)	(0.175)	(0.158)		(0.057)	(0.049)	(0.063)	(0.058)	
Unemployment definition 2	0.153	0.131	-0.127	0.122	0.076	0.033	0.113*	0.079	0.114*	0.040
	(0.117)	(0.142)	(0.192)	(0.147)		(0.051)	(0.068)	(0.090)	(0.059)	
First-stage regression	1.253***	1.312***	1.226***	1.444***		1.256***	1.313***	1.228***	1.442***	
	(0.073)	(0.064)	(0.047)	(0.080)		(0.073)	(0.064)	(0.046)	(0.080)	
F-statistics	295.570	422.059	700.222	323.281		299.414	423.863	707.385	324.048	
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 on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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. The instrument is rescaled by dividing by 100,000. 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 8: Effects of Migrants on Natives in the Construction Sector, 2SLS Estimates

	A) INFORMAL SECTOR					B) FORMAL SECTOR				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employed	-0.091***	-0.219***	-0.181***	-0.179***	0.031	0.076**	0.007	0.056	0.014	0.031
	(0.031)	(0.047)	(0.046)	(0.045)		(0.035)	(0.042)	(0.037)	(0.060)	
Wage Worker	-0.092***	-0.228***	-0.190***	-0.189***	0.025	0.084**	0.006	0.061	0.007	0.025
	(0.031)	(0.047)	(0.044)	(0.043)		(0.036)	(0.042)	(0.037)	(0.061)	
Hourly Wage	-0.047	-0.721	-1.279*	-0.865	1.066	0.415	1.059*	1.028	0.945**	1.436
	(0.542)	(0.614)	(0.707)	(0.690)		(0.437)	(0.607)	(0.678)	(0.467)	
Self-employed	-0.000	0.009	0.009	0.007	0.005	-0.004	-0.002	-0.005	0.000	0.003
	(0.008)	(0.007)	(0.008)	(0.006)		(0.004)	(0.004)	(0.005)	(0.003)	
Employer	0.002	0.001	0.001	0.003	0.001	-0.004	0.004	0.000	0.007*	0.004
	(0.003)	(0.003)	(0.004)	(0.004)		(0.004)	(0.004)	(0.005)	(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	

Notes: The sample includes 18-64 year-old males in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. The sample size is 1,577,881 except for that in the 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 9: Effects of Migrants on Natives in the Agricultural Sector, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.178*	-0.033	-0.176*	0.070	0.084	-0.123	-0.316*	-0.388*	-0.292**	0.101
	(0.093)	(0.108)	(0.093)	(0.091)		(0.195)	(0.187)	(0.199)	(0.140)	
Wage Worker	-0.044	-0.076**	-0.098***	-0.070***	0.010	0.017	-0.033	-0.068**	-0.013	0.007
	(0.030)	(0.030)	(0.029)	(0.026)		(0.035)	(0.033)	(0.029)	(0.024)	
Hourly Wage	-1.212	-1.505*	-1.545*	-2.018**	0.775	-2.040**	-2.424***	-2.288**	-1.915**	0.627
	(0.827)	(0.813)	(0.884)	(0.805)		(0.929)	(0.879)	(0.892)	(0.940)	
Self-employed	-0.189***	-0.012	-0.069	0.088*	0.052	-0.108	-0.141*	-0.199***	-0.124*	0.015
	(0.063)	(0.055)	(0.057)	(0.051)		(0.078)	(0.074)	(0.070)	(0.071)	
Employer	-0.021***	-0.021**	-0.017*	-0.020***	0.001	0.001	-0.002	-0.003	-0.002	0.000
	(0.008)	(0.009)	(0.010)	(0.008)		(0.002)	(0.002)	(0.002)	(0.002)	
Unpaid Family Worker	0.076**	0.075*	0.009	0.072*	0.020	-0.033	-0.140	-0.118	-0.153	0.078
	(0.037)	(0.044)	(0.036)	(0.041)		(0.104)	(0.118)	(0.130)	(0.124)	
B) FORMAL SECTOR										
Employed	0.102***	0.043	0.072	-0.010	0.030	-0.020	0.004	0.009	0.005	0.003
	(0.039)	(0.048)	(0.057)	(0.053)		(0.015)	(0.018)	(0.022)	(0.013)	
Wage Worker	0.019	0.011	0.013	0.001	0.003	-0.010**	-0.015***	-0.018***	-0.017***	0.001
	(0.015)	(0.012)	(0.012)	(0.016)		(0.005)	(0.006)	(0.005)	(0.007)	
Hourly Wage	-0.342	1.490	1.648	0.111	1.387	-1.610	0.257	0.228	4.383**	1.276
	(0.930)	(1.090)	(1.153)	(1.212)		(2.957)	(2.712)	(2.708)	(1.882)	
Self-employed	0.075**	0.022	0.046	-0.016	0.024	0.000	0.003	0.004	0.003	0.000
	(0.034)	(0.040)	(0.048)	(0.047)		(0.002)	(0.003)	(0.003)	(0.002)	
Employer	-0.001	-0.013*	-0.017**	-0.010	0.001	-0.001*	-0.001	-0.001	-0.000	0.000
	(0.006)	(0.008)	(0.008)	(0.008)		(0.000)	(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	No	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	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 male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages. The sample sizes in the wage regressions are 11,783 and 6,464 for men and women, respectively, in the informal sector and 4,668 and 851 for men and women, respectively, in 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 10: Effects of Migrants on Natives in the Manufacturing Sector, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.048	-0.129***	-0.116**	-0.161***	0.032	0.015	-0.035*	-0.032	-0.022	0.016
	(0.055)	(0.049)	(0.047)	(0.046)		(0.030)	(0.021)	(0.025)	(0.023)	
Wage Worker	-0.063	-0.142***	-0.137***	-0.164***	0.024	0.056***	0.006	0.006	0.012	0.009
	(0.043)	(0.042)	(0.044)	(0.035)		(0.022)	(0.015)	(0.017)	(0.013)	
Hourly Wage	1.069*	0.394	0.607*	0.071	1.040	0.327	-0.349	0.345	-2.437*	0.892
	(0.589)	(0.365)	(0.336)	(0.294)		(0.911)	(1.206)	(1.351)	(1.436)	
Self-employed	0.008	0.013	0.017	0.003	0.004	-0.045**	-0.041***	-0.041**	-0.038***	0.005
	(0.014)	(0.014)	(0.016)	(0.013)		(0.019)	(0.015)	(0.018)	(0.014)	
Employer	0.013*	0.003	0.004	0.001	0.002	0.001	-0.000	-0.000	0.000	0.000
	(0.008)	(0.005)	(0.005)	(0.005)		(0.000)	(0.000)	(0.001)	(0.000)	
B) FORMAL SECTOR										
Employed	0.171***	0.274***	0.297***	0.299***	0.129	-0.165***	-0.041**	-0.047**	-0.008	0.026
	(0.064)	(0.070)	(0.080)	(0.059)		(0.042)	(0.020)	(0.022)	(0.013)	
Wage Worker	0.094	0.196***	0.213***	0.220***	0.115	-0.160***	-0.040*	-0.045**	-0.010	0.025
	(0.063)	(0.065)	(0.070)	(0.050)		(0.040)	(0.021)	(0.022)	(0.013)	
Hourly Wage	0.401*	0.990***	0.750**	1.640***	1.451	0.822*	2.135***	2.031***	2.461***	1.326
	(0.227)	(0.365)	(0.366)	(0.418)		(0.444)	(0.602)	(0.634)	(0.608)	
Self-employed	0.026***	0.030***	0.030***	0.034***	0.005	-0.003**	-0.002*	-0.003*	-0.001	0.000
	(0.008)	(0.007)	(0.007)	(0.006)		(0.001)	(0.001)	(0.001)	(0.001)	
Employer	0.039**	0.039***	0.046***	0.036***	0.009	-0.002*	-0.000	-0.000	0.001	0.000
	(0.016)	(0.013)	(0.017)	(0.013)		(0.001)	(0.001)	(0.001)	(0.001)	
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	No	No	No	
NUTS1 Linear Time Trends	No	No	Yes	No		No	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 male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages, where the sample sizes are 28,402 and 9,757 for males and females in the informal sector, respectively, and 161,184 and 34,853 for males and females in the formal sector, respectively. 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 11: Effects of Migrants on Natives in the Services Sector, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.206***	-0.163***	-0.066	-0.127*	0.095	0.085	0.031	0.028	0.024	0.031
	(0.048)	(0.056)	(0.087)	(0.066)		(0.074)	(0.070)	(0.076)	(0.070)	
Wage Worker	-0.051	-0.113***	-0.124***	-0.070	0.051	0.110	0.040	0.035	0.023	0.020
	(0.033)	(0.036)	(0.044)	(0.046)		(0.068)	(0.057)	(0.061)	(0.053)	
Hourly Wage	0.665	0.290	0.500	0.072	0.946	0.182	0.213	0.766	0.024	0.936
	(0.460)	(0.390)	(0.406)	(0.345)		(0.638)	(0.497)	(0.472)	(0.495)	
Self-employed	-0.132***	-0.035	0.060	-0.056**	0.032	-0.035***	-0.017	-0.017	-0.011	0.006
	(0.034)	(0.030)	(0.054)	(0.027)		(0.010)	(0.011)	(0.011)	(0.009)	
Employer	-0.012	-0.030***	-0.027**	-0.018	0.006	0.005***	0.005***	0.005***	0.002	0.000
	(0.010)	(0.010)	(0.013)	(0.012)		(0.002)	(0.002)	(0.002)	(0.002)	
B) FORMAL SECTOR										
Employed	0.058	0.208**	0.151	0.250**	0.284	-0.271***	-0.139***	-0.150***	-0.092	0.092
	(0.093)	(0.093)	(0.093)	(0.102)		(0.061)	(0.052)	(0.053)	(0.060)	
Wage Worker	-0.078	0.041	-0.013	0.072	0.220	-0.251***	-0.140***	-0.150***	-0.096*	0.085
	(0.070)	(0.076)	(0.076)	(0.084)		(0.052)	(0.049)	(0.051)	(0.057)	
Hourly Wage	-0.140	0.712***	0.779***	0.644***	1.701	-0.074	0.313	0.355	0.372	1.794
	(0.205)	(0.217)	(0.264)	(0.181)		(0.348)	(0.310)	(0.340)	(0.279)	
Self-employed	0.095***	0.125***	0.114***	0.148***	0.037	-0.004	0.006	0.006	0.008*	0.003
	(0.028)	(0.026)	(0.030)	(0.026)		(0.006)	(0.005)	(0.006)	(0.005)	
Employer	0.023	0.033*	0.042**	0.020	0.025	-0.011**	-0.007	-0.008*	-0.009**	0.002
	(0.021)	(0.018)	(0.021)	(0.017)		(0.004)	(0.004)	(0.004)	(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	

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, where the sample sizes are 69,514 and 28,014 for males and females in the informal sector, respectively, and 324,976 and 124,463 for males and females in the formal sector, respectively. 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 instrument is rescaled by dividing by 100,000. 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 12: 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 INFORMAL SECTOR										
Illiterate or No Degree	-0.467*	-1.064***	-1.211***	-0.842***	99,257	0.234*	0.097	0.056	0.090	394,694
	(0.239)	(0.218)	(0.238)	(0.241)		(0.124)	(0.106)	(0.114)	(0.096)	
Primary or Middle School	-0.260**	-0.594***	-0.538***	-0.602***	896,686	0.115	-0.075	-0.114	-0.007	885,535
	(0.105)	(0.106)	(0.115)	(0.131)		(0.104)	(0.077)	(0.079)	(0.066)	
High School or University	-0.150***	-0.298***	-0.311***	-0.156***	581,942	0.039	-0.059	-0.099	-0.057	414,589
	(0.051)	(0.055)	(0.069)	(0.050)		(0.081)	(0.067)	(0.068)	(0.069)	
B) WAGES IN THE INFORMAL SECTOR										
Illiterate or No Degree	-0.465	-1.589**	-1.577*	-2.059***	13,255	-0.199	-0.928**	-0.962*	-1.306**	7,906
	(0.716)	(0.720)	(0.899)	(0.770)		(0.496)	(0.470)	(0.563)	(0.626)	
Primary or Middle School	0.433	-0.239	-0.041	-0.467	98,500	0.735	0.324	0.677	0.250	26,569
	(0.464)	(0.392)	(0.403)	(0.387)		(0.576)	(0.468)	(0.442)	(0.605)	
High School or University	0.923	0.388	0.715	-0.228	28,003	0.261	0.450	1.001	-0.195	10,094
	(0.567)	(0.448)	(0.452)	(0.375)		(0.887)	(0.869)	(0.823)	(0.971)	
C) WAGE EMPLOYMENT IN THE FORMAL SECTOR										
Middle School or Lower	0.091	0.245**	0.278**	0.341***	995,943	-0.414***	-0.195***	-0.225***	-0.120	1,280,229
	(0.110)	(0.103)	(0.118)	(0.097)		(0.097)	(0.062)	(0.059)	(0.073)	
High School	0.141	0.354**	0.325*	0.204*	377,256	-0.411***	-0.243**	-0.266**	-0.136	268,271
	(0.131)	(0.165)	(0.183)	(0.119)		(0.106)	(0.109)	(0.114)	(0.084)	
University	-0.617***	-0.241**	-0.142	-0.058	204,686	-0.849***	-0.236	-0.131	-0.146	146,318
	(0.160)	(0.105)	(0.127)	(0.122)		(0.234)	(0.237)	(0.295)	(0.262)	
D) WAGES IN THE FORMAL SECTOR										
Middle School or Lower	0.044	0.893**	0.798*	0.774***	245,397	0.655**	1.021***	1.113***	1.192***	41,043
	(0.300)	(0.402)	(0.417)	(0.295)		(0.326)	(0.287)	(0.304)	(0.278)	
High School	-0.177	0.868***	0.989***	0.900***	155,236	-0.156	0.463	0.578	0.288	44,916
	(0.253)	(0.233)	(0.309)	(0.212)		(0.380)	(0.382)	(0.415)	(0.262)	
University	-0.099	0.301	0.282	0.605**	123,750	0.156	0.554	0.564	0.642	76,339
	(0.230)	(0.239)	(0.259)	(0.281)		(0.533)	(0.425)	(0.501)	(0.451)	
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	

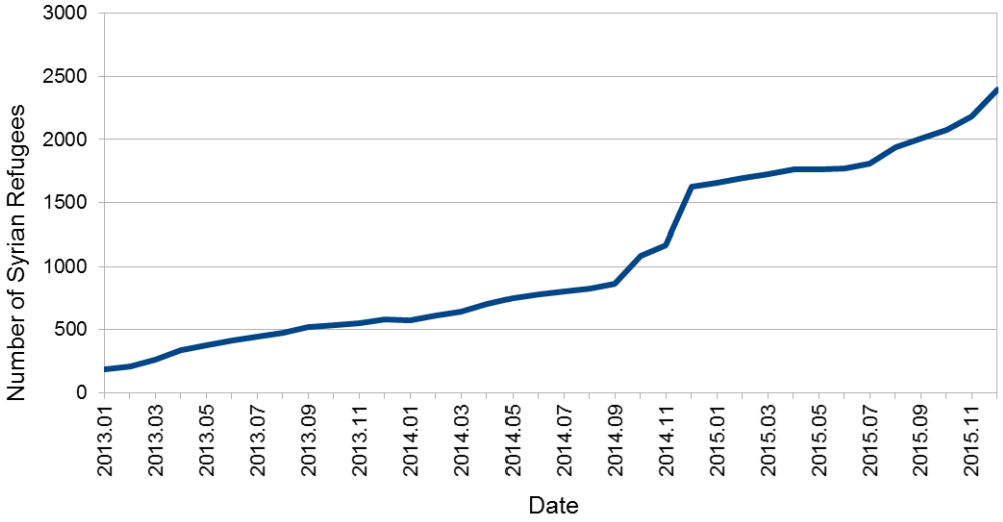
Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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 13: Effects of Migrants on Wage Employment and Wages of Natives in the Informal and Formal Sectors by Natives' Age

	MEN					WOMEN				
Age Group	(1)	(2)	(3)	(4)	No obs.	(5)	(6)	(7)	(8)	No obs.
A) WAGE EMPLOYMENT IN THE INFORMAL SECTOR										
18-24	-0.110	-0.689***	-0.666***	-0.675***	264,292	0.317	0.019	-0.106	0.002	302,594
	(0.220)	(0.194)	(0.217)	(0.226)		(0.197)	(0.136)	(0.131)	(0.120)	
25-39	-0.444***	-0.699***	-0.682***	-0.594***	584,388	0.137	-0.025	-0.058	0.038	634,592
	(0.073)	(0.090)	(0.106)	(0.090)		(0.091)	(0.068)	(0.072)	(0.062)	
40-64	-0.032	-0.329***	-0.353***	-0.270***	729,201	0.210*	0.079	0.075	0.041	757,631
	(0.091)	(0.068)	(0.079)	(0.088)		(0.110)	(0.095)	(0.101)	(0.084)	
B) WAGES IN THE INFORMAL SECTOR										
18-24	0.228	-0.468	-0.073	-0.742*	34,484	-0.914	-1.001*	-0.878	-0.849	12,027
	(0.642)	(0.503)	(0.464)	(0.392)		(0.616)	(0.598)	(0.674)	(0.861)	
25-39	0.671	-0.040	0.150	-0.451	55,791	0.680	0.378	0.643	0.116	16,663
	(0.573)	(0.474)	(0.532)	(0.469)		(0.666)	(0.518)	(0.456)	(0.561)	
40-64	0.050	-0.488	-0.440	-0.777	49,483	0.143	-0.035	0.195	-0.241	15,879
	(0.389)	(0.431)	(0.472)	(0.515)		(0.655)	(0.597)	(0.637)	(0.554)	
C) WAGE EMPLOYMENT IN THE FORMAL SECTOR										
18-24	-0.243**	-0.053	0.131	0.162	264,292	-0.515***	-0.244**	-0.253**	-0.055	302,594
	(0.104)	(0.113)	(0.137)	(0.129)		(0.134)	(0.106)	(0.109)	(0.094)	
25-39	0.379***	0.417***	0.438***	0.318***	584,388	-0.440***	-0.147	-0.172*	-0.138	634,592
	(0.134)	(0.129)	(0.158)	(0.097)		(0.103)	(0.091)	(0.097)	(0.096)	
40-64	-0.167	0.173	0.135	0.262**	729,201	-0.448***	-0.245***	-0.269***	-0.191***	757,631
	(0.118)	(0.105)	(0.109)	(0.124)		(0.095)	(0.061)	(0.063)	(0.071)	
D) WAGES IN THE FORMAL SECTOR										
18-24	0.356	0.784**	0.834*	0.858***	55,621	0.137	0.911*	1.443***	1.202***	30,730
	(0.355)	(0.367)	(0.425)	(0.291)		(0.520)	(0.475)	(0.534)	(0.420)	
25-39	0.107	0.910***	0.851**	0.912***	281,857	-0.018	0.315	0.266	0.342	93,051
	(0.216)	(0.335)	(0.383)	(0.274)		(0.400)	(0.405)	(0.436)	(0.422)	
40-64	-0.248	0.556**	0.651**	0.776***	186,905	-0.537	0.253	0.235	0.540**	38,517
	(0.326)	(0.276)	(0.289)	(0.232)		(0.399)	(0.281)	(0.342)	(0.221)	
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	

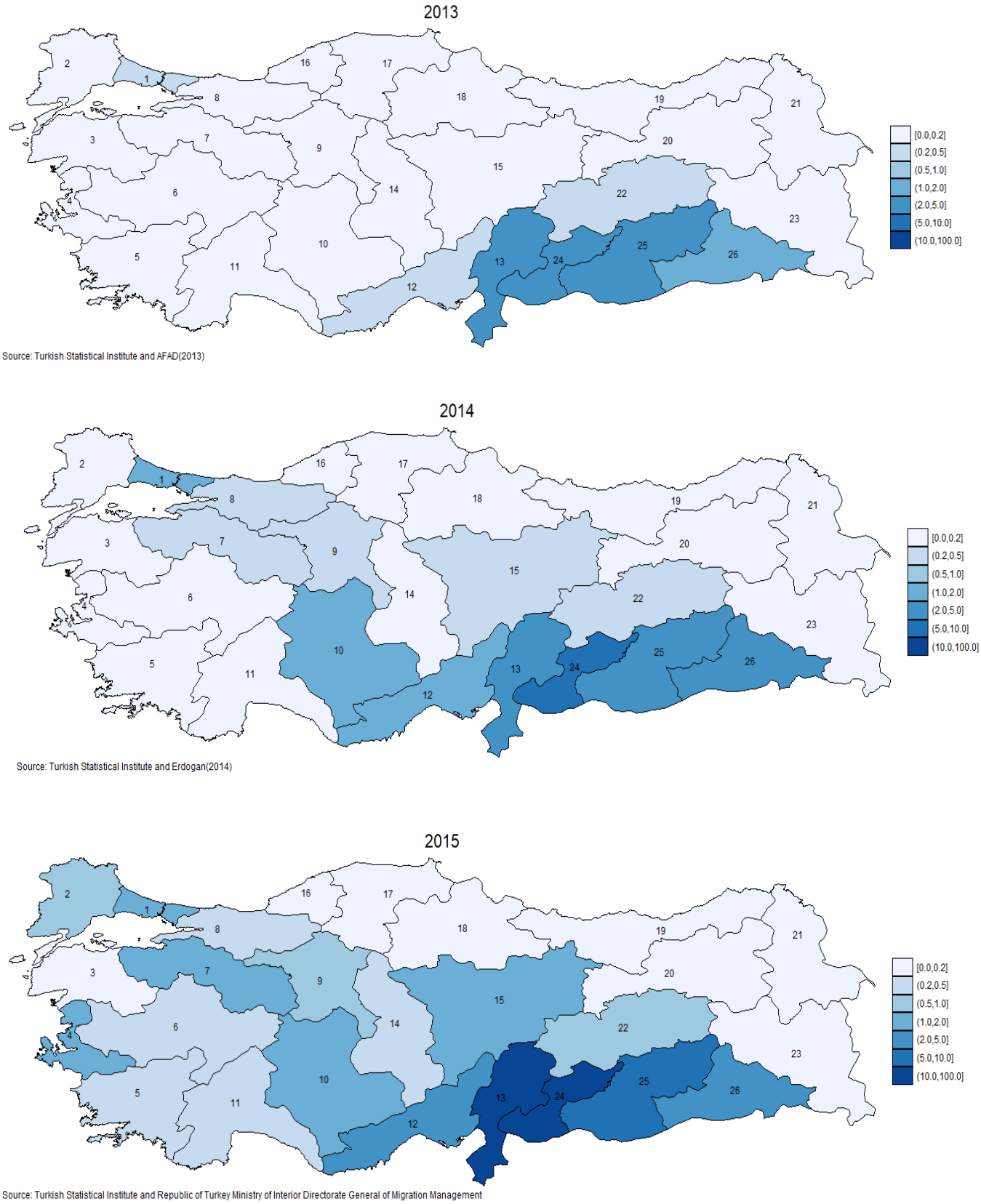
Notes: The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version. Each cell shows the estimates for the key variable of interest -- the ratio of migrants to natives -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 and 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.

Figure 1: Total Number of Registered Syrian Migrants in Turkey (in thousands) 2013–2015



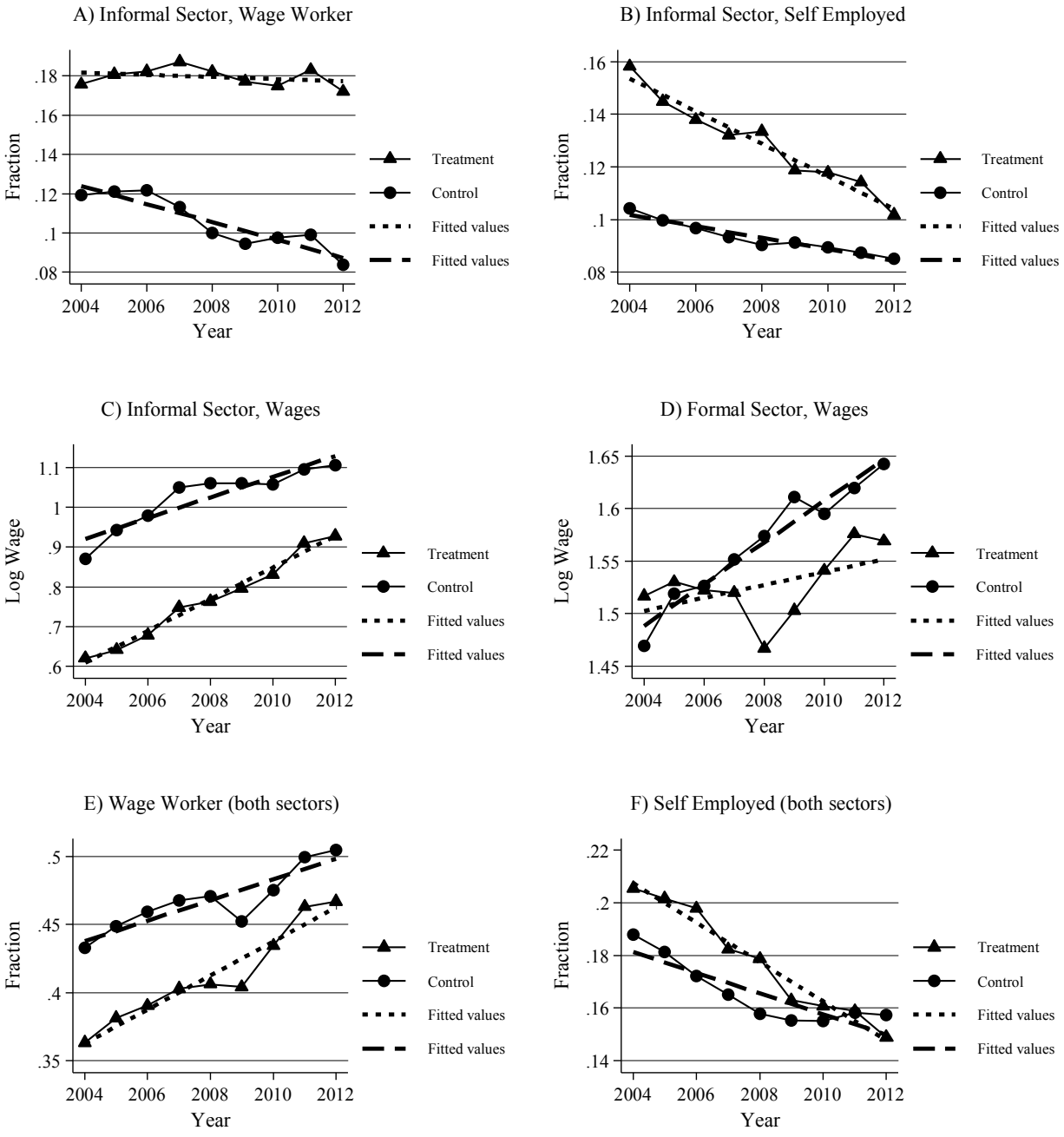
Source: UN Refugee Agency, http://data.unhcr.org/syrianrefugees/country.php?id=224

Figure 2: Ratio of Migrants to Natives across the 26 NUTS-2 Regions 2013–2015



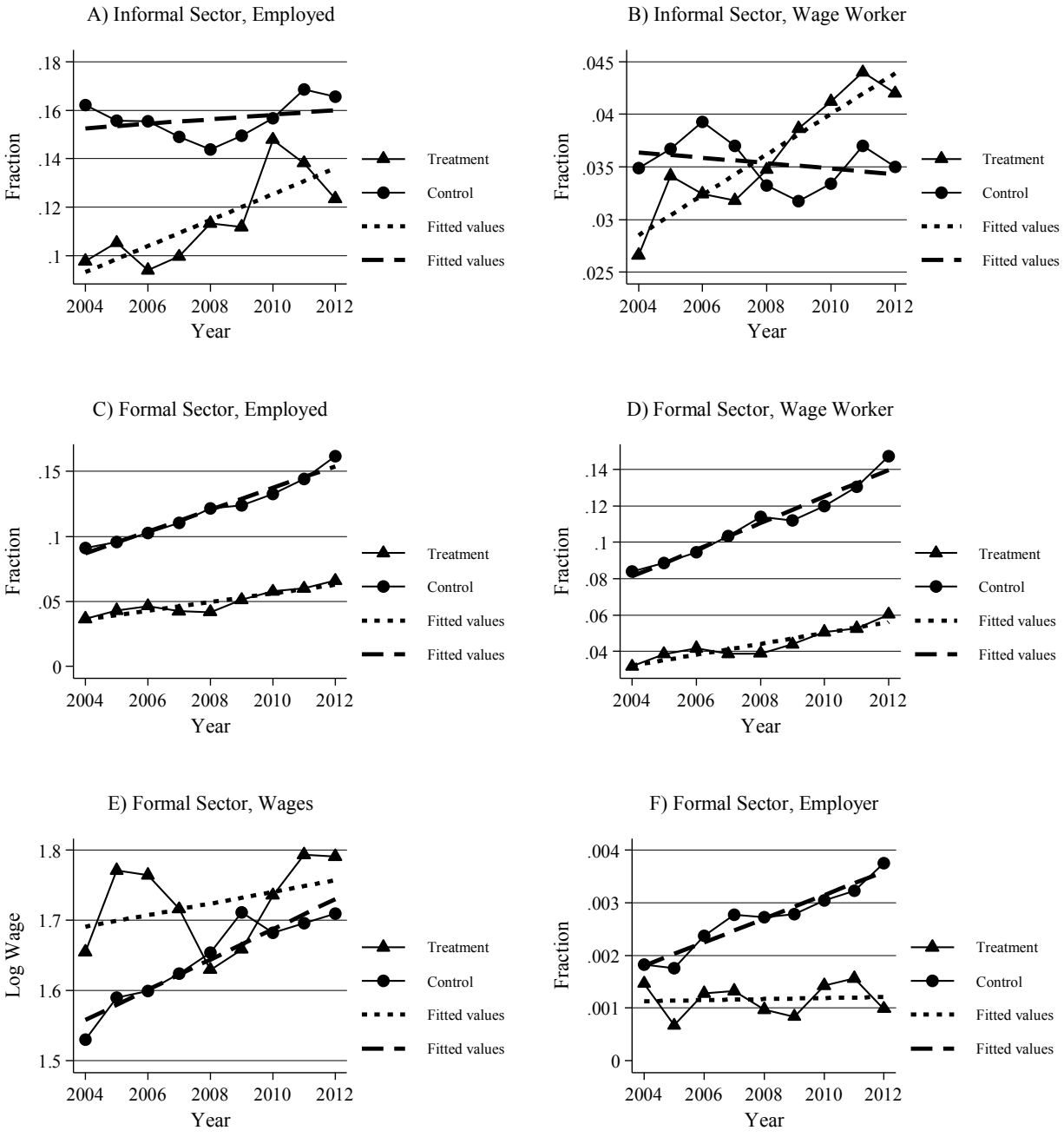
Notes: The ratios are multiplied by 100. The number code of each NUTS-2 region is shown on the graph.

Figure 3: Check of Common-Trend Assumption in Men's Selected Labor Market Outcomes between the Treatment (5 NUTS-2 Regions with the Highest Migrant Ratio) and Control Groups



Notes: a) The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version.
b) In all but wage graphs, the sample includes 1,694,817 individuals.
c) In wage regressions, the sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector.
d) The control group includes the remaining 21 NUTS-2 level regions.

Figure 4: Check of Common-Trend Assumption in Women's Selected Labor Market Outcomes between the Treatment (5 NUTS-2 Regions with the Highest Migrant Ratio) and Control Groups



Notes: a) The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version.
b) In all but wage graphs, the sample includes 1,694,817 individuals.
c) In wage regressions, the sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector.
d) The control group includes the remaining 21 NUTS-2 level regions.

FOR ONLINE PUBLICATION

APPENDIX A: Replication Tables

Table A1: Replication of Estimates from Ceritoğlu et al. (2015)

	Original Work			*Replication*		
	A) Informal Employment					
	Total	Male	Female	Total	Male	Female
Coef.	-0.0223	-0.0190	-0.0260	-0.0223	-0.0188	-0.0262
SE Robust	(0.0028)***	(0.0044)***	(0.0034)***	(0.0028)***	(0.0044)***	(0.0034)***
SE Cluster (NUTS2*year)				(0.0127)*	(0.0117)	(0.0145)*
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206
	B) Formal Employment					
	Total	Male	Female	Total	Male	Female
Coef.	0.0043	0.0089	-0.0004	0.0033	0.0080	-0.0020
SE Robust	(0.0022)**	(0.0039)**	(0.0019)	(0.0023)	(0.0040)**	(0.0020)
SE Cluster (NUTS2*year)				(0.0035)	(0.0066)	(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.	-0.0110	0.0038	-0.0257	-0.0119	0.0036	-0.0279
SE Robust	(0.0028)***	(0.0037)	(0.0039)***	(0.0028)***	(0.0037)	(0.0040)***
SE Cluster (NUTS2*year)				(0.0105)	(0.0089)	(0.0141)*
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206
	D) Unemployment					
	Total	Male	Female	Total	Male	Female
Coef.	0.0070	0.0138	0.0007	0.0071	0.0143	0.0003
SE Robust	(0.0015)***	(0.0027)***	(0.0014)	(0.0015)***	(0.0027)***	(0.0014)
SE Cluster (NUTS2*year)				(0.0056)	(0.0093)	(0.0031)
No. Obs.	357,083	172,385	184,698	354,326	171,120	183,206
	E) Informal Real Monthly Earnings					
	Total	Male	Female	Total	Male	Female
Coef.	-0.0094	-0.0126	-0.0405	-0.0076	-0.0103	0.0377
SE Robust	(0.0119)	(0.0127)	(0.0370)	(0.0128)	(0.0131)	(0.0426)
SE Cluster (NUTS2*year)				(0.0302)	(0.0267)	(0.0711)
No. Obs.	26,033	21,366	4,667	26,242	21,433	4,809
	F) Formal Real Monthly Earnings					
	Total	Male	Female	Total	Male	Female
Coef.	0.0081	0.0081	0.0182	0.0145	0.0122	0.0288
SE Robust	(0.0064)	(0.0070)	(0.0151)	(0.0071)**	(0.0078)	(0.0170)*
SE Cluster (NUTS2*year)				(0.0114)	(0.0117)	(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***	-0.538***	-0.539***	-0.364**	-0.823**	-0.013	-0.323	-0.403	-0.260	-1.750**
	(0.133)	(0.152)	(0.167)	(0.155)	(0.369)	(0.281)	(0.249)	(0.264)	(0.199)	(0.759)
Wage Worker	-0.225**	-0.539***	-0.532***	-0.461***	-1.439***	0.205*	0.024	-0.014	0.045	-0.629***
	(0.096)	(0.088)	(0.101)	(0.106)	(0.207)	(0.121)	(0.091)	(0.092)	(0.078)	(0.208)
Hourly Wage	0.520	-0.249	-0.050	-0.625	0.207	0.235	-0.083	0.221	-0.236	0.560
	(0.521)	(0.424)	(0.436)	(0.383)	(0.760)	(0.555)	(0.424)	(0.386)	(0.449)	(1.070)
Self-employed	-0.331***	-0.037	0.002	0.040	0.575**	-0.201**	-0.212**	-0.267***	-0.181**	-0.527**
	(0.087)	(0.072)	(0.079)	(0.053)	(0.240)	(0.102)	(0.093)	(0.090)	(0.085)	(0.246)
Employer	-0.015	-0.048**	-0.039*	-0.031	-0.035	0.006*	0.003	0.002	0.001	-0.001
	(0.019)	(0.019)	(0.023)	(0.021)	(0.033)	(0.003)	(0.003)	(0.003)	(0.004)	(0.007)
Unpaid Family Worker	0.056	0.085*	0.029	0.088***	0.076	-0.023	-0.139	-0.124	-0.124	-0.594
	(0.034)	(0.045)	(0.038)	(0.034)	(0.092)	(0.110)	(0.123)	(0.136)	(0.131)	(0.415)
B) FORMAL SECTOR										
Employed	0.392***	0.516***	0.555***	0.528***	1.543***	-0.495***	-0.196***	-0.210***	-0.119	0.717***
	(0.115)	(0.136)	(0.159)	(0.132)	(0.341)	(0.105)	(0.069)	(0.073)	(0.074)	(0.138)
Wage Worker	0.115	0.248***	0.269**	0.288***	1.244***	-0.454***	-0.212***	-0.230***	-0.147**	0.579***
	(0.090)	(0.094)	(0.113)	(0.084)	(0.276)	(0.094)	(0.065)	(0.066)	(0.072)	(0.123)
Hourly Wage	-0.003	0.765***	0.760**	0.825***	3.054***	-0.103	0.411	0.444	0.568**	1.346***
	(0.212)	(0.285)	(0.321)	(0.224)	(0.662)	(0.330)	(0.310)	(0.334)	(0.274)	(0.496)
Self-employed	0.183***	0.167***	0.176***	0.154**	0.210	-0.008	0.006	0.006	0.009*	0.037***
	(0.053)	(0.056)	(0.061)	(0.068)	(0.139)	(0.008)	(0.006)	(0.007)	(0.005)	(0.014)
Employer	0.054	0.060**	0.066*	0.050	0.092	-0.015***	-0.009*	-0.011**	-0.009**	-0.001
	(0.038)	(0.029)	(0.036)	(0.031)	(0.084)	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)
First-stage regression	1.758***	1.876***	1.749***	2.125***	1.921***	1.764***	1.879***	1.753***	2.123***	1.894***
	(0.133)	(0.123)	(0.091)	(0.147)	(0.320)	(0.131)	(0.123)	(0.090)	(0.147)	(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 varibles, 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 formal sector; and the female sample includes 44,569 individuals for informal sector and 162,298 individuals for formal sector. 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.

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	-0.022	0.016	0.164	0.721**	-0.509**	-0.519*	-0.614**	-0.379*	-1.033
	(0.085)	(0.115)	(0.148)	(0.105)	(0.304)	(0.257)	(0.270)	(0.288)	(0.195)	(0.713)
Full-time Employment	-0.050	0.242**	0.250**	0.410***	1.319***	-0.250*	0.057	-0.231*	0.254*	0.261
	(0.090)	(0.094)	(0.103)	(0.081)	(0.368)	(0.136)	(0.168)	(0.138)	(0.148)	(0.380)
Part-time Employment	-0.073	-0.265**	-0.235*	-0.245***	-0.598*	-0.259	-0.577***	-0.383*	-0.632***	-1.295**
	(0.108)	(0.108)	(0.122)	(0.090)	(0.304)	(0.170)	(0.160)	(0.209)	(0.135)	(0.543)
Labor Force Participation definition 1	-0.184	-0.114	-0.199	0.080	-1.268***	-0.528**	-0.479*	-0.621**	-0.305*	-1.176*
	(0.158)	(0.159)	(0.153)	(0.157)	(0.434)	(0.260)	(0.265)	(0.271)	(0.169)	(0.680)
Labor Force Participation definition 2	-0.069	0.240	-0.011	0.286**	-1.086**	-0.600**	-0.322*	-0.446**	-0.379***	-2.011***
	(0.150)	(0.149)	(0.138)	(0.144)	(0.424)	(0.252)	(0.183)	(0.178)	(0.143)	(0.691)
Unemployment definition 1	-0.062	-0.092	-0.215	-0.084	-1.989***	-0.019	0.040	-0.007	0.074	-0.143
	(0.142)	(0.146)	(0.171)	(0.156)	(0.478)	(0.064)	(0.052)	(0.067)	(0.060)	(0.150)
Unemployment definition 2	0.162	0.151	-0.088	0.147	-1.623***	0.033	0.118*	0.088	0.116*	-0.139
	(0.121)	(0.140)	(0.183)	(0.145)	(0.402)	(0.054)	(0.068)	(0.088)	(0.059)	(0.137)
First-stage regression	1.758***	1.876***	1.749***	2.125***	1.921***	1.764***	1.879***	1.753***	2.123***	1.894***
	(0.133)	(0.123)	(0.091)	(0.147)	(0.320)	(0.131)	(0.123)	(0.090)	(0.147)	(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 varibles, 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 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.

Table A4: Comparison of OLS and 2SLS Estimates on the Effect of Migrants on Native Men in the Informal and Formal Sectors

	OLS					2SLS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A) INFORMAL SECTOR										
Employed	-0.476***	-0.479***	-0.384**	-0.422***	-0.437**	-0.515***	-0.538***	-0.539***	-0.364**	-0.823**
	(0.131)	(0.143)	(0.163)	(0.150)	(0.215)	(0.133)	(0.152)	(0.167)	(0.155)	(0.369)
Wage Worker	-0.299***	-0.533***	-0.431***	-0.518***	-0.877***	-0.225**	-0.539***	-0.532***	-0.461***	-1.439***
	(0.082)	(0.086)	(0.097)	(0.100)	(0.122)	(0.096)	(0.088)	(0.101)	(0.106)	(0.207)
Hourly Wage	-0.160	-0.541	-0.128	-0.842**	-2.107***	0.520	-0.249	-0.050	-0.625	0.207
	(0.342)	(0.368)	(0.435)	(0.387)	(0.719)	(0.521)	(0.424)	(0.436)	(0.383)	(0.760)
Self-employed	-0.244***	0.001	0.047	0.028	0.296**	-0.331***	-0.037	0.002	0.040	0.575**
	(0.062)	(0.065)	(0.074)	(0.056)	(0.120)	(0.087)	(0.072)	(0.079)	(0.053)	(0.240)
Employer	-0.028*	-0.052***	-0.029	-0.046**	-0.068**	-0.015	-0.048**	-0.039*	-0.031	-0.035
	(0.016)	(0.018)	(0.022)	(0.020)	(0.027)	(0.019)	(0.019)	(0.023)	(0.021)	(0.033)
Unpaid Family Worker	0.096**	0.105**	0.029	0.114***	0.213***	0.056	0.085*	0.029	0.088***	0.076
	(0.038)	(0.042)	(0.039)	(0.040)	(0.070)	(0.034)	(0.045)	(0.038)	(0.034)	(0.092)
B) FORMAL SECTOR										
Employed	0.390***	0.481***	0.508***	0.500***	0.716***	0.392***	0.516***	0.555***	0.528***	1.543***
	(0.115)	(0.126)	(0.145)	(0.128)	(0.184)	(0.115)	(0.136)	(0.159)	(0.132)	(0.341)
Wage Worker	0.068	0.183**	0.164*	0.203**	0.253	0.115	0.248***	0.269**	0.288***	1.244***
	(0.082)	(0.080)	(0.093)	(0.084)	(0.153)	(0.090)	(0.094)	(0.113)	(0.084)	(0.276)
Hourly Wage	0.019	0.643***	0.704***	0.651***	0.797*	-0.003	0.765***	0.760**	0.825***	3.054***
	(0.210)	(0.240)	(0.268)	(0.221)	(0.415)	(0.212)	(0.285)	(0.321)	(0.224)	(0.662)
Self-employed	0.224***	0.197***	0.188***	0.212***	0.353***	0.183***	0.167***	0.176***	0.154**	0.210
	(0.048)	(0.053)	(0.057)	(0.067)	(0.098)	(0.053)	(0.056)	(0.061)	(0.068)	(0.139)
Employer	0.071**	0.067**	0.109***	0.055*	0.124**	0.054	0.060**	0.066*	0.050	0.092
	(0.035)	(0.028)	(0.038)	(0.030)	(0.057)	(0.038)	(0.029)	(0.036)	(0.031)	(0.084)
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 (migrant fraction) in a separate OLS and IV regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control varibles, 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 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. The sample includes 1,577,881 individuals except the wage eqautions where the sample sizes are 139,758 for informal sector and 524,383 for formal sector.

Table A5: Comparison of OLS and 2SLS Estimates on the Effect of Migrants on Native Women in the Informal and Formal Sectors

	OLS					2SLS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A) INFORMAL SECTOR										
Employed	0.073	-0.176	-0.175	-0.208	-0.239	-0.013	-0.323	-0.403	-0.260	-1.750**
	(0.247)	(0.219)	(0.262)	(0.181)	0.331	(0.281)	(0.249)	(0.264)	(0.199)	(0.759)
Wage Worker	0.111	0.008	-0.020	0.007	-0.407***	0.205*	0.024	-0.014	0.045	-0.629***
	(0.084)	(0.075)	(0.080)	(0.070)	(0.066)	(0.121)	(0.091)	(0.092)	(0.078)	(0.208)
Hourly Wage	-0.887**	-0.927**	-0.333	-1.145**	-4.008***	0.235	-0.083	0.221	-0.236	0.560
	(0.418)	(0.400)	(0.401)	(0.541)	(0.903)	(0.555)	(0.424)	(0.386)	(0.449)	(1.070)
Self-employed	-0.055	-0.069	-0.148*	-0.063	0.224***	-0.201**	-0.212**	-0.267***	-0.181**	-0.527**
	(0.088)	(0.081)	(0.090)	(0.069)	(0.105)	(0.102)	(0.093)	(0.090)	(0.085)	(0.246)
Employer	0.008**	0.004	0.005	0.002	0.009	0.006*	0.003	0.002	0.001	-0.001
	(0.004)	(0.003)	(0.003)	(0.003)	(0.006)	(0.003)	(0.003)	(0.003)	(0.004)	(0.007)
Unpaid Family Worker	0.010	-0.119	-0.012	-0.154	-0.066	-0.023	-0.139	-0.124	-0.124	-0.594
	(0.113)	(0.120)	(0.135)	(0.129)	(0.239)	(0.110)	(0.123)	(0.136)	(0.131)	(0.415)
B) FORMAL SECTOR										
Employed	-0.329***	-0.137**	-0.156**	-0.081	0.513***	-0.495***	-0.196***	-0.210***	-0.119	0.717***
	(0.061)	(0.061)	(0.068)	(0.066)	(0.084)	(0.105)	(0.069)	(0.073)	(0.074)	(0.138)
Wage Worker	-0.297***	-0.146***	-0.192***	-0.096	0.458***	-0.454***	-0.212***	-0.230***	-0.147**	0.579***
	(0.055)	(0.056)	(0.061)	(0.064)	(0.084)	(0.094)	(0.065)	(0.066)	(0.072)	(0.123)
Hourly Wage	0.110	0.345	0.636**	0.362	0.777**	-0.103	0.411	0.444	0.568**	1.346***
	(0.281)	(0.281)	(0.307)	(0.261)	(0.386)	(0.330)	(0.310)	(0.334)	(0.274)	(0.496)
Self-employed	0.001	0.011**	0.013**	0.013***	0.041***	-0.008	0.006	0.006	0.009*	0.037***
	(0.005)	(0.005)	(0.006)	(0.005)	(0.009)	(0.008)	(0.006)	(0.007)	(0.005)	(0.014)
Employer	-0.008***	-0.003	-0.007**	-0.002	0.016**	-0.015***	-0.009*	-0.011**	-0.009**	-0.001
	(0.003)	(0.003)	(0.004)	(0.003)	(0.008)	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)
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 (migrant fraction) in a separate OLS and IV regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control varibles, 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 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. The sample includes 1,694,817 individuals except the wage eqauations where the sample sizes are 44,569 for informal sector and 162,298 for formal sector.

Table A6: Comparison of OLS and 2SLS Estimates on the Effect of Migrants on Employment, Labor Force Participation, and Unemployment of Native Men

	OLS					2SLS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Employment	-0.086	0.002	0.124	0.077	0.279*	-0.123	-0.022	0.016	0.164	0.721**
	(0.084)	(0.101)	(0.148)	(0.088)	(0.151)	(0.085)	(0.115)	(0.148)	(0.105)	(0.304)
Full-time Employment	-0.036	0.187**	0.238**	0.276***	0.415**	-0.050	0.242**	0.250**	0.410***	1.319***
	(0.090)	(0.091)	(0.096)	(0.088)	(0.176)	(0.090)	(0.094)	(0.103)	(0.081)	(0.368)
Part-time Employment	-0.050	-0.185*	-0.115	-0.198**	-0.136	-0.073	-0.265**	-0.235*	-0.245***	-0.598*
	(0.089)	(0.094)	(0.121)	(0.078)	(0.129)	(0.108)	(0.108)	(0.122)	(0.090)	(0.304)
Labor Force Participation definition 1	-0.047	-0.010	-0.109	0.092	-0.006	-0.184	-0.114	-0.199	0.080	-1.268***
	(0.160)	(0.162)	(0.157)	(0.169)	(0.268)	(0.158)	(0.159)	(0.153)	(0.157)	(0.434)
Labor Force Participation definition 2	0.100	0.294*	-0.093	0.350**	0.277	-0.069	0.240	-0.011	0.286**	-1.086**
	(0.148)	(0.154)	(0.144)	(0.152)	(0.225)	(0.150)	(0.149)	(0.138)	(0.144)	(0.424)
Unemployment definition 1	0.039	-0.012	-0.233	0.015	-0.286	-0.062	-0.092	-0.215	-0.084	-1.989***
	(0.143)	(0.152)	(0.166)	(0.171)	(0.259)	(0.142)	(0.146)	(0.171)	(0.156)	(0.478)
Unemployment definition 2	0.187	0.209	-0.180	0.193	-0.285	0.162	0.151	-0.088	0.147	-1.623***
	(0.124)	(0.146)	(0.185)	(0.151)	(0.208)	(0.121)	(0.140)	(0.183)	(0.145)	(0.402)
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 (migrant fraction) in a separate OLS and IV regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control varibles, 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 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. The sample includes 1,577,881 individuals the regressions using definition 2 of labor force participation and unemployment where the sample size is 895,947.

Table A7: Comparison of OLS and 2SLS Estimates on the Effect of Migrants on Employment, Labor Force Participation, and Unemployment of Native Women

	OLS					2SLS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Employment	-0.256	-0.313	-0.331	-0.289*	0.274	-0.509**	-0.519*	-0.614**	-0.379*	-1.033
	(0.235)	(0.233)	(0.286)	(0.169)	(0.306)	(0.257)	(0.270)	(0.288)	(0.195)	(0.713)
Full-time Employment	-0.030	0.151	-0.179	0.291**	-0.136	-0.250*	0.057	-0.231*	0.254*	0.261
	(0.137)	(0.156)	(0.131)	(0.147)	(0.129)	(0.136)	(0.168)	(0.138)	(0.148)	(0.380)
Part-time Employment	-0.225	-0.463***	-0.152	-0.581***	-0.455*	-0.259	-0.577***	-0.383*	-0.632***	-1.295**
	(0.144)	(0.142)	(0.211)	(0.120)	(0.239)	(0.170)	(0.160)	(0.209)	(0.135)	(0.543)
Labor Force Participation definition 1	-0.192	-0.221	-0.303	-0.149	0.527	-0.528**	-0.479*	-0.621**	-0.305*	-1.176*
	(0.237)	(0.231)	(0.269)	(0.169)	(0.346)	(0.260)	(0.265)	(0.271)	(0.169)	(0.680)
Labor Force Participation definition 2	-0.255	-0.211	-0.355**	-0.181	0.312	-0.600**	-0.322*	-0.446**	-0.379***	-2.011***
	(0.232)	(0.180)	(0.170)	(0.161)	(0.329)	(0.252)	(0.183)	(0.178)	(0.143)	(0.691)
Unemployment definition 1	0.063	0.091**	0.028	0.141**	0.253**	-0.019	0.040	-0.007	0.074	-0.143
	(0.042)	(0.045)	(0.055)	(0.056)	(0.105)	(0.064)	(0.052)	(0.067)	(0.060)	(0.150)
Unemployment definition 2	0.066	0.148**	0.068	0.155***	0.112	0.033	0.118*	0.088	0.116*	-0.139
	(0.046)	(0.060)	(0.084)	(0.055)	(0.093)	(0.054)	(0.068)	(0.088)	(0.059)	(0.137)
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 (migrant fraction) in a separate OLS and IV regression of the dependent variable, specified in column (1), on the key variable of interest, a set of individual-specific control varibles, 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 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. The sample includes 1,694,817 individuals except the regressions using definition 2 of labor force participation and unemployment where the sample size is 951,362.

APPENDIX B: Additional Descriptive Statistics

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

	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

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 (definition 1)	0.795	0.797	0.789	0.787	0.790	0.794	0.797	0.807	0.805	0.806	0.812
In the Labor Force (definition 2)						0.782	0.788	0.799	0.798	0.806	0.812
Unemployed (definition 1)	0.087	0.084	0.078	0.078	0.085	0.111	0.092	0.074	0.071	0.073	0.075
Unemployed (definition 2)						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
Employer	0.010	0.012	0.013	0.014	0.014	0.013	0.012	0.010	0.007	0.006	0.005
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
Employer	0.037	0.039	0.039	0.039	0.040	0.039	0.038	0.040	0.039	0.038	0.038
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 (definition 1)	0.263	0.264	0.268	0.269	0.279	0.298	0.316	0.330	0.355	0.353	0.368
In the Labor Force (definition 2)						0.292	0.311	0.326	0.350	0.353	0.368
Unemployed (definition 1)	0.030	0.030	0.030	0.030	0.033	0.043	0.042	0.038	0.043	0.043	0.048
Unemployed (definition 2)						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
Employer	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000
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
Employer	0.002	0.002	0.002	0.003	0.002	0.002	0.003	0.003	0.003	0.003	0.004
Number of Observations	143,549	149,434	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. 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. All wages are in natural logs.

Table B3: Type of Employment by Gender in the Informal and Formal Sectors

	Informal		Formal		Total	
	Male	Female	Male	Female	Male	Female
Wage Worker	0.455	0.244	0.765	0.915	0.659	0.549
Employer	0.042	0.005	0.081	0.022	0.068	0.013
Self Employed	0.388	0.179	0.143	0.027	0.226	0.110
Unpaid Family Worker	0.115	0.572	0.010	0.036	0.046	0.328

Notes: Data come from 2004-2015 Household Labor Force Surveys excluding 2012. The sample includes only employed individuals.

Table B4: Fraction of Part-time Work by Employment Type and Gender

	Informal		Formal		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 B5: Fraction of Formally Employed by Sector of Employment and Gender

	Fraction of Formal Workers		Number of Observations	
	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

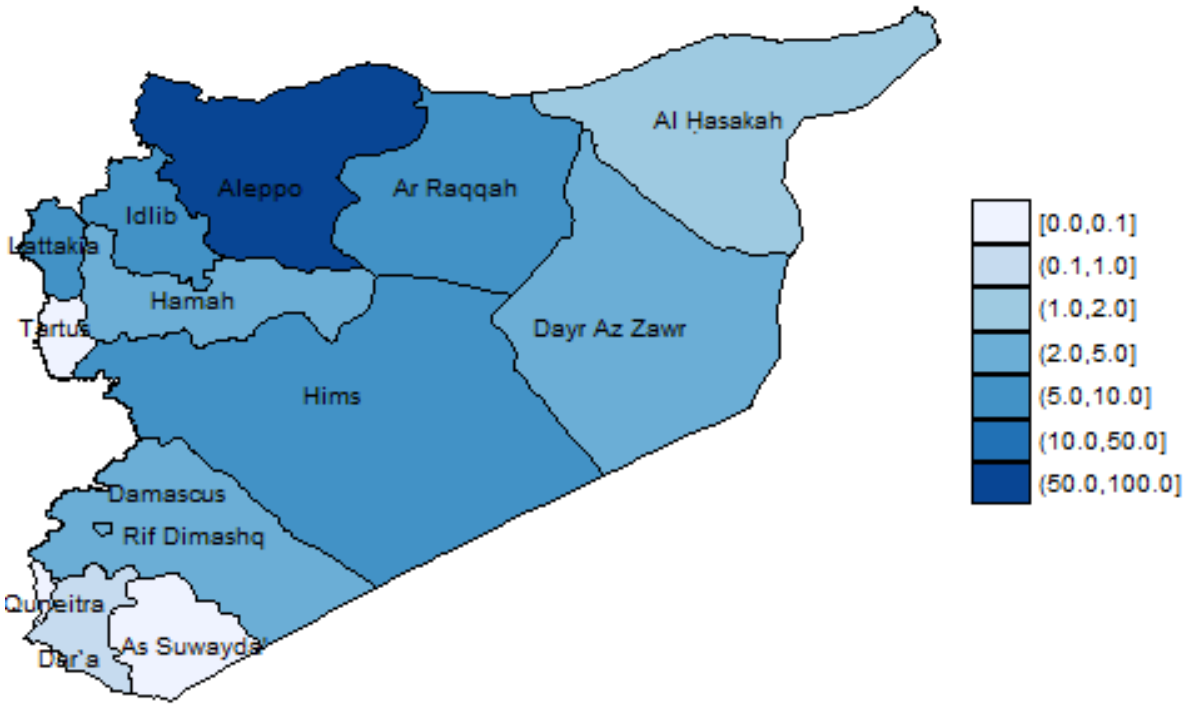
Notes: Data come from 2004-2011 Household Labor Force Surveys. The sample is restricted to employed individuals.

Table B6: Distribution of Educational Attainment by Gender in the Informal and Formal Sectors

	Informal		Formal	
	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

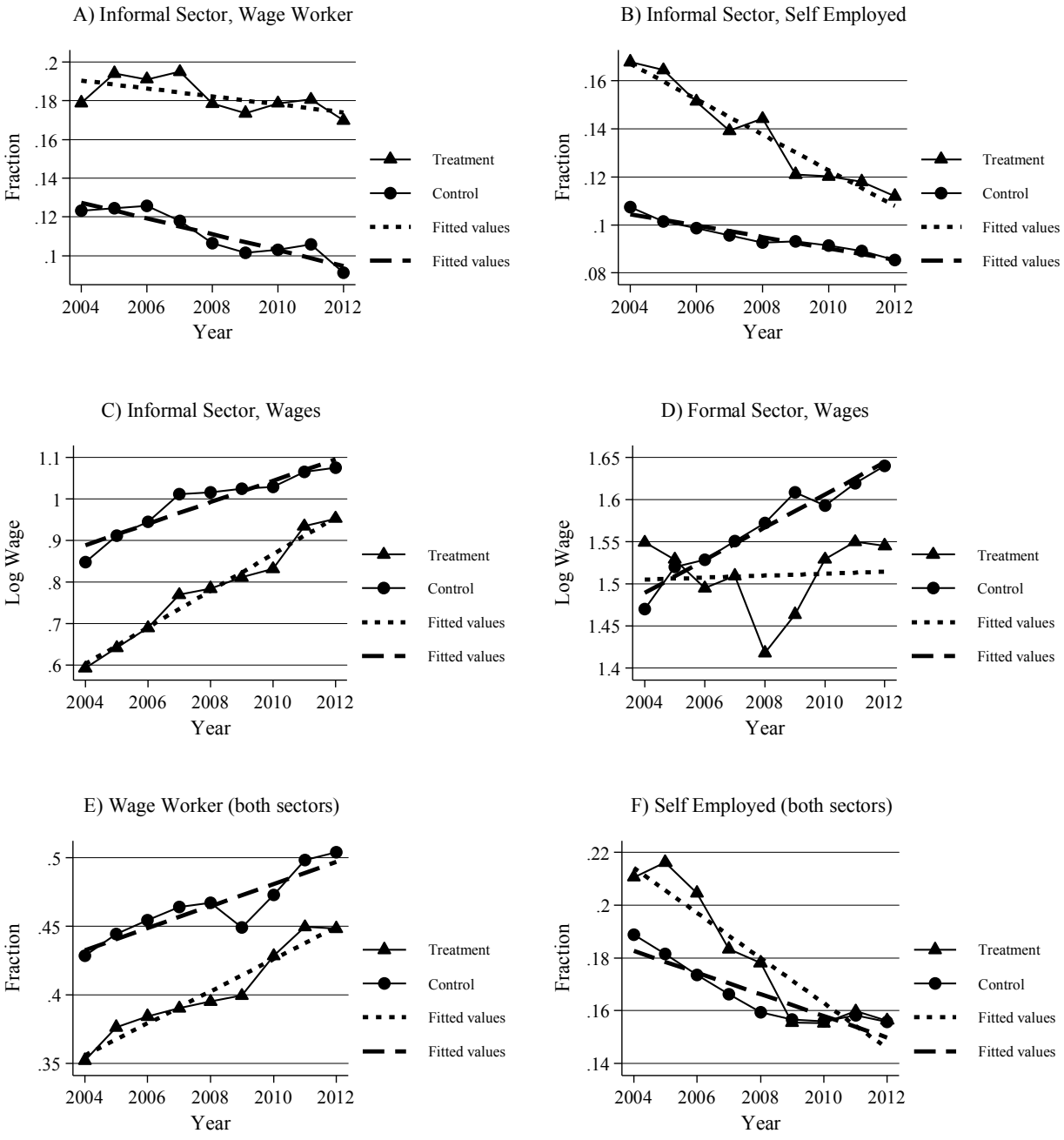
Notes: Data come from 2004-2015 Household Labor Force Surveys excluding 2012. The sample is restricted to employed individuals.

Figure B1: Origin Provinces in Syria of Migrants in Turkey, 2015 (%)



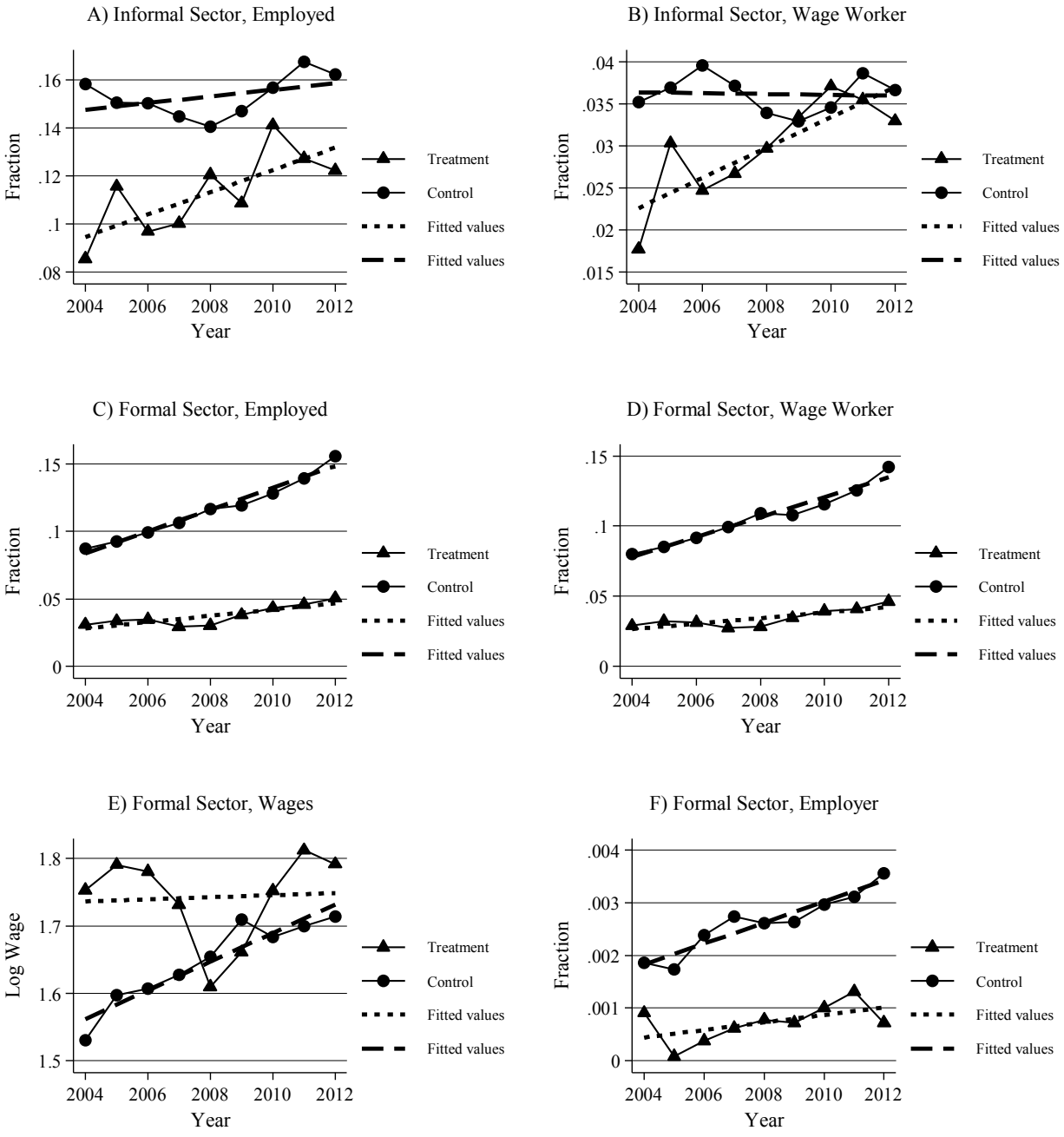
Source: AFAD, Turkish Ministry of Health, and WHO (2016).

Figure B2: Check of Common Trend Assumption in Men's Selected Labor Market Outcomes between the Treatment (3 NUTS-2 Regions with the Highest Migrant Ratio) and Control Groups



Notes: a) The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version.
b) In all but wage graphs, the sample includes 1,694,817 individuals.
c) In wage regressions, the sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector.
d) The control group includes the remaining 23 NUTS-2 level regions.

Figure B3: Check of Common Trend Assumption in Women's Selected Labor Market Outcomes between the Treatment (3 NUTS-2 Regions with the Highest Migrant Ratio) and Control Groups



Notes: a) The sample includes 18-64 year-olds in the 2004-2015 Turkish Household Labor Force Surveys excluding the 2012 version.
b) In all but wage graphs, the sample includes 1,694,817 individuals.
c) In wage regressions, the sample includes 44,569 individuals for the informal sector and 162,298 individuals for the formal sector.
d) The control group includes the remaining 23 NUTS-2 level regions.

APPENDIX C: Additional Estimation Results

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

Dependent Variable: Ratio of Migrants to Natives							
	(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	
						(0.018)	
Share Urban, 2011							0.028**
							(0.013)
Observations	78	78	78	78	78	78	78
R-squared	0.601	0.611	0.623	0.623	0.614	0.658	0.629

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	-0.440***	-0.329**	-0.338**	-0.211	0,217	0.218	0.225	-0.037	0.312**	0,101
	(0.131)	(0.146)	(0.160)	(0.145)		(0.152)	(0.162)	(0.134)	(0.152)	
Wage Worker	-0.229***	-0.506***	-0.469***	-0.457***	0,103	0.191*	0.043	0.012	0.036	0,030
	(0.083)	(0.102)	(0.109)	(0.102)		(0.101)	(0.074)	(0.073)	(0.068)	
Hourly Wage	0.496	-0.163	0.128	-0.503	0,958	0.382	0.063	0.460	-0.200	0,822
	(0.523)	(0.427)	(0.443)	(0.360)		(0.604)	(0.472)	(0.389)	(0.521)	
Self-employed	-0.259***	0.089*	0.110*	0.145***	0,080	-0.005	0.019	-0.016	0.021	0,014
	(0.095)	(0.053)	(0.056)	(0.047)		(0.028)	(0.023)	(0.022)	(0.022)	
Employer	-0.014	-0.041**	-0.030	-0.029	0,010	0.006**	0.003	0.003	0.000	0,001
	(0.017)	(0.016)	(0.020)	(0.019)		(0.003)	(0.002)	(0.003)	(0.003)	
Unpaid Family Worker	0.062*	0.128***	0.051	0.130***	0,024	0.027	0.159*	-0.037	0.254***	0,055
	(0.033)	(0.041)	(0.034)	(0.036)		(0.074)	(0.093)	(0.087)	(0.096)	
B) PART-TIME										
Employed	-0.083	-0.214**	-0.201**	-0.186**	0,025	-0.239	-0.541***	-0.351*	-0.599***	0,047
	(0.086)	(0.092)	(0.101)	(0.075)		(0.156)	(0.151)	(0.196)	(0.130)	
Wage Worker	-0.021	-0.053	-0.081**	-0.035	0,007	-0.004	-0.026	-0.035	-0.011	0,006
	(0.027)	(0.033)	(0.032)	(0.032)		(0.018)	(0.021)	(0.022)	(0.017)	
Hourly Wage	0.664	-0.856	-0.739	-2.193**	1,468	1.079	0.449	0.857	-0.629	1,279
	(0.852)	(0.929)	(1.060)	(1.060)		(1.306)	(1.397)	(1.601)	(1.061)	
Self-employed	-0.055	-0.113**	-0.092*	-0.103***	0,014	-0.183**	-0.218***	-0.241***	-0.194***	0,012
	(0.046)	(0.048)	(0.051)	(0.038)		(0.078)	(0.078)	(0.081)	(0.068)	
Employer	-0.003	-0.007*	-0.009**	-0.005**	0,000	-0.000	-0.001	-0.001	0.000	0,000
	(0.003)	(0.004)	(0.004)	(0.003)		(0.001)	(0.001)	(0.001)	(0.001)	
Unpaid Family Worker	-0.004	-0.040**	-0.019	-0.043***	0,004	-0.052	-0.296***	-0.074	-0.395***	0,029
	(0.016)	(0.017)	(0.020)	(0.016)		(0.075)	(0.090)	(0.107)	(0.108)	
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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 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	0.398***	0.575***	0.599***	0.614***	0,466	-0.444***	-0.154**	-0.179**	-0.066	0,117
	(0.121)	(0.137)	(0.157)	(0.135)		(0.101)	(0.066)	(0.070)	(0.070)	
Wage Worker	0.124	0.272***	0.290***	0.315***	0,359	-0.417***	-0.178***	-0.201***	-0.102	0,108
	(0.093)	(0.093)	(0.109)	(0.083)		(0.092)	(0.063)	(0.066)	(0.068)	
Hourly Wage	0.024	0.832***	0.839***	0.895***	1,596	0.056	0.657**	0.736**	0.733***	1,663
	(0.219)	(0.280)	(0.321)	(0.221)		(0.307)	(0.291)	(0.319)	(0.236)	
Self-employed	-0.259***	0.089*	0.110*	0.145***	0,064	-0.005	0.019	-0.016	0.021	0,003
	(0.095)	(0.053)	(0.056)	(0.047)		(0.028)	(0.023)	(0.022)	(0.022)	
Employer	0.061	0.066**	0.076**	0.057*	0,038	-0.013***	-0.008*	-0.010**	-0.008**	0,003
	(0.037)	(0.029)	(0.035)	(0.031)		(0.005)	(0.004)	(0.005)	(0.004)	
B) PART-TIME										
Employed	0.009	-0.043**	-0.024	-0.060***	0,008	-0.019*	-0.021*	-0.008	-0.030***	0,005
	(0.021)	(0.019)	(0.023)	(0.020)		(0.011)	(0.011)	(0.016)	(0.009)	
Wage Worker	-0.006	-0.018*	-0.016	-0.017*	0,004	-0.010	-0.016*	-0.011	-0.024**	0,004
	(0.012)	(0.011)	(0.013)	(0.010)		(0.011)	(0.010)	(0.012)	(0.010)	
Hourly Wage	1.583	0.515	0.410	0.229	2,238	-0.254	0.012	-0.140	0.394	2,318
	(1.057)	(0.766)	(0.853)	(0.776)		(0.872)	(0.823)	(1.007)	(0.786)	
Self-employed	0.018*	-0.022*	-0.006	-0.039***	0,004	-0.000	0.001	0.001	-0.001	0,000
	(0.010)	(0.012)	(0.015)	(0.014)		(0.001)	(0.001)	(0.001)	(0.001)	
Employer	-0.003**	-0.004**	-0.005**	-0.003	0,000	-0.001*	-0.000	-0.000	0.000	0,000
	(0.001)	(0.002)	(0.002)	(0.002)		(0.000)	(0.001)	(0.001)	(0.001)	
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 5,925 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 C4: Effects of Migrants on Natives in the Textiles and Clothing Sector, 2SLS Estimates

	MEN				WOMEN			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A) INFORMAL SECTOR								
Employed	-0.026	-0.073***	-0.070***	-0.084***	0.018	-0.025	-0.026	-0.006
	(0.029)	(0.023)	(0.020)	(0.022)	(0.029)	(0.019)	(0.023)	(0.019)
Wage Worker	-0.028	-0.073***	-0.071***	-0.084***	0.059***	0.015	0.015	0.028**
	(0.028)	(0.022)	(0.021)	(0.021)	(0.020)	(0.014)	(0.016)	(0.011)
Hourly Wage	1.472*	0.456	0.585	-0.157	-0.436	-1.425	-0.538	-2.582
	(0.859)	(0.676)	(0.715)	(0.870)	(1.790)	(2.540)	(2.832)	(1.693)
Self-employed	0.003	0.005*	0.005	0.006***	-0.045**	-0.040**	-0.042**	-0.038***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.020)	(0.016)	(0.018)	(0.015)
Employer	0.002	-0.002	-0.001	-0.002	0.001*	-0.000	-0.000	0.000
	(0.003)	(0.002)	(0.002)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
B) FORMAL SECTOR								
Employed	0.133***	0.094**	0.069	0.176***	-0.053**	-0.011	-0.017	0.017
	(0.041)	(0.041)	(0.046)	(0.039)	(0.021)	(0.015)	(0.015)	(0.012)
Wage Worker	0.108***	0.069*	0.042	0.149***	-0.049**	-0.010	-0.015	0.016
	(0.038)	(0.037)	(0.042)	(0.037)	(0.020)	(0.015)	(0.015)	(0.013)
Hourly Wage	0.751***	0.375	0.267	1.466***	0.765*	1.536***	1.904***	1.302**
	(0.206)	(0.269)	(0.291)	(0.268)	(0.394)	(0.499)	(0.597)	(0.521)
Self-employed	0.004	0.004	0.005*	0.006**	-0.002*	-0.001	-0.001	0.000
	(0.002)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Employer	0.018***	0.017***	0.019***	0.017***	-0.000	0.001	0.001	0.001
	(0.006)	(0.006)	(0.007)	(0.005)	(0.001)	(0.001)	(0.001)	(0.001)
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 dependent variable for the dummy variables above takes the value of one if a worker is employed in that sector and zero for everyone else in the working-age population given the gender and formal/informal restriction. 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 male sample includes 1,577,881 individuals and the female sample includes 1,694,817 individuals in all regressions but those for hourly wages, where the sample sizes are 7,374 and 6,934 for males and females in the informal sector, respectively, and 28,051 and 16,787 for males and females in the formal sector, respectively. 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 C5: 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	-0.207	0.057	0.205	0.050	-0.045	-0.238	-0.215	-0.331
	(0.261)	(0.265)	(0.341)	(0.280)	(0.406)	(0.368)	(0.430)	(0.281)
Primary or Middle School	-0.149*	-0.054	-0.023	0.131	-0.754***	-0.787***	-0.891***	-0.537***
	(0.087)	(0.110)	(0.142)	(0.101)	(0.222)	(0.254)	(0.267)	(0.198)
High School	0.046	-0.016	0.016	0.173	-0.488***	-0.521***	-0.609***	-0.279
	(0.122)	(0.149)	(0.176)	(0.155)	(0.117)	(0.161)	(0.173)	(0.173)
University	-0.292***	-0.105	0.020	0.019	-0.828***	-0.318	-0.150	-0.199
	(0.106)	(0.124)	(0.164)	(0.140)	(0.191)	(0.224)	(0.314)	(0.255)
B) FULL-TIME EMPLOYMENT								
Illiterate or No Degree	-0.031	0.280	0.296	0.363	0.298	0.428*	0.024	0.473**
	(0.193)	(0.217)	(0.243)	(0.244)	(0.222)	(0.244)	(0.212)	(0.230)
Primary or Middle School	-0.054	0.258**	0.251**	0.451***	-0.412***	-0.117	-0.418***	0.202
	(0.104)	(0.118)	(0.126)	(0.101)	(0.138)	(0.160)	(0.149)	(0.143)
High School	0.107	0.202	0.209	0.355**	-0.362***	-0.276**	-0.381***	-0.061
	(0.120)	(0.142)	(0.160)	(0.144)	(0.098)	(0.120)	(0.136)	(0.129)
University	-0.250	0.041	0.154	0.145	-0.769***	-0.059	0.076	0.048
	(0.172)	(0.121)	(0.130)	(0.126)	(0.229)	(0.211)	(0.280)	(0.210)
C) PART-TIME EMPLOYMENT								
Illiterate or No Degree	-0.176	-0.223	-0.091	-0.313*	-0.343	-0.666***	-0.239	-0.804***
	(0.167)	(0.196)	(0.249)	(0.184)	(0.228)	(0.220)	(0.296)	(0.180)
Primary or Middle School	-0.095	-0.311***	-0.273**	-0.320***	-0.342**	-0.670***	-0.473**	-0.738***
	(0.109)	(0.118)	(0.136)	(0.094)	(0.155)	(0.156)	(0.203)	(0.164)
High School	-0.061	-0.218***	-0.193***	-0.182***	-0.127	-0.245***	-0.228**	-0.217***
	(0.051)	(0.063)	(0.067)	(0.064)	(0.080)	(0.088)	(0.102)	(0.077)
University	-0.042	-0.146	-0.135	-0.125	-0.059	-0.259**	-0.226*	-0.247***
	(0.134)	(0.110)	(0.129)	(0.107)	(0.136)	(0.100)	(0.125)	(0.088)
D) LABOR FORCE PARTICIPATION - as in the dataset								
Illiterate or No Degree	-0.021	0.155	0.100	0.254	-0.062	-0.234	-0.229	-0.307
	(0.403)	(0.406)	(0.426)	(0.427)	(0.393)	(0.359)	(0.414)	(0.271)
Primary or Middle School	-0.228	-0.172	-0.253	-0.022	-0.765***	-0.776***	-0.911***	-0.484***
	(0.164)	(0.167)	(0.168)	(0.177)	(0.232)	(0.257)	(0.264)	(0.171)
High School	-0.049	-0.106	-0.189	0.109	-0.624***	-0.503***	-0.756***	-0.204
	(0.148)	(0.170)	(0.178)	(0.165)	(0.169)	(0.174)	(0.197)	(0.136)
University	-0.282***	-0.052	-0.085	0.055	-0.599***	0.086	0.040	0.168
	(0.097)	(0.090)	(0.094)	(0.115)	(0.199)	(0.200)	(0.207)	(0.228)
E) UNEMPLOYMENT - as in the dataset								
Illiterate or No Degree	0.186	0.098	-0.105	0.204	-0.017	0.004	-0.014	0.024
	(0.239)	(0.266)	(0.304)	(0.305)	(0.037)	(0.030)	(0.040)	(0.037)
Primary or Middle School	-0.079	-0.119	-0.230	-0.153	-0.011	0.010	-0.020	0.053
	(0.148)	(0.161)	(0.191)	(0.177)	(0.045)	(0.040)	(0.047)	(0.050)
High School	-0.094	-0.090	-0.204*	-0.065	-0.135	0.017	-0.147	0.075
	(0.111)	(0.098)	(0.109)	(0.101)	(0.138)	(0.106)	(0.138)	(0.122)
University	0.010	0.052	-0.105	0.035	0.229	0.404**	0.189	0.367**
	(0.084)	(0.084)	(0.125)	(0.111)	(0.174)	(0.165)	(0.219)	(0.154)
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. 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 C6: Effects of Migrants on Employment, Full-time Employment, Part-time Employment, Labor Force Participation and Unemployment of Natives by Natives' Age Group

	MEN				WOMEN			
Age Group	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A) EMPLOYMENT								
18-24	-0.058	-0.221	-0.111	-0.039	0.063	-0.180	-0.247	-0.107
	(0.194)	(0.204)	(0.251)	(0.240)	(0.289)	(0.271)	(0.296)	(0.227)
25-39	0.190**	0.255***	0.302**	0.327***	-0.550**	-0.472*	-0.554*	-0.363*
	(0.079)	(0.096)	(0.121)	(0.085)	(0.272)	(0.268)	(0.291)	(0.193)
40-64	-0.550***	-0.229	-0.201	0.022	-0.687***	-0.652**	-0.779***	-0.515**
	(0.138)	(0.178)	(0.211)	(0.158)	(0.248)	(0.275)	(0.288)	(0.212)
B) FULL-TIME EMPLOYMENT								
18-24	0.055	-0.052	0.031	0.073	0.097	0.071	-0.162	0.303*
	(0.176)	(0.190)	(0.214)	(0.221)	(0.193)	(0.184)	(0.171)	(0.172)
25-39	0.203**	0.427***	0.460***	0.477***	-0.269*	0.126	-0.153	0.258*
	(0.102)	(0.114)	(0.119)	(0.092)	(0.157)	(0.170)	(0.140)	(0.148)
40-64	-0.428***	0.162	0.142	0.417***	-0.339**	0.044	-0.299**	0.218
	(0.161)	(0.132)	(0.140)	(0.136)	(0.131)	(0.168)	(0.136)	(0.157)
C) PART-TIME EMPLOYMENT								
18-24	-0.114	-0.168	-0.143	-0.112	-0.034	-0.251**	-0.084	-0.410***
	(0.077)	(0.103)	(0.122)	(0.093)	(0.115)	(0.128)	(0.158)	(0.120)
25-39	-0.013	-0.171**	-0.158*	-0.150*	-0.281*	-0.598***	-0.401**	-0.621***
	(0.088)	(0.084)	(0.091)	(0.078)	(0.165)	(0.155)	(0.201)	(0.123)
40-64	-0.122	-0.391***	-0.342**	-0.395***	-0.348*	-0.696***	-0.480**	-0.733***
	(0.139)	(0.129)	(0.146)	(0.102)	(0.196)	(0.181)	(0.234)	(0.167)
D) LABOR FORCE PARTICIPATION - definition one								
18-24	0.147	-0.104	-0.259	0.130	0.135	-0.034	-0.195	0.065
	(0.336)	(0.337)	(0.356)	(0.361)	(0.295)	(0.269)	(0.269)	(0.234)
25-39	0.095	0.072	-0.016	0.090	-0.542*	-0.400	-0.534*	-0.244
	(0.177)	(0.180)	(0.182)	(0.181)	(0.276)	(0.265)	(0.275)	(0.162)
40-64	-0.647***	-0.337**	-0.384***	-0.067	-0.754***	-0.687**	-0.832***	-0.528***
	(0.143)	(0.133)	(0.133)	(0.100)	(0.253)	(0.277)	(0.286)	(0.203)
E) UNEMPLOYMENT - definition one								
18-24	0.205	0.117	-0.147	0.169	0.072	0.146	0.052	0.172
	(0.197)	(0.206)	(0.247)	(0.255)	(0.108)	(0.111)	(0.140)	(0.114)
25-39	-0.095	-0.183	-0.319*	-0.237	0.008	0.072	0.020	0.118
	(0.159)	(0.166)	(0.189)	(0.163)	(0.068)	(0.057)	(0.073)	(0.073)
40-64	-0.097	-0.108	-0.183	-0.089	-0.067*	-0.035	-0.052	-0.012
	(0.112)	(0.120)	(0.143)	(0.130)	(0.036)	(0.029)	(0.033)	(0.028)
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. 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 C7: Effect of Migrants on the Regional Consumer Price Index

Dependent Variable: Natural Logarithm of Regional Consumer Price Index				
	(1)	(2)	(3)	(4)
Migrant to Native Ratio	0.235***	0.199***	0.323***	0.251***
	(0.090)	(0.060)	(0.113)	(0.056)
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

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 annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table C8: Effect of Migrants on the Openings, Liquidation, and Closings of Firms, Business Cooperatives and Self-Proprietorships

	Log Number of Firms		Log Number of Firms and Cooperatives		Log Number of Self-Proprietorships	
	(1)	(2)	(3)	(4)	(5)	(6)
Openings	1.315**	2.475***	1.429**	2.813***	3.145***	2.175*
	(0.626)	(0.730)	(0.633)	(0.770)	(0.886)	(1.107)
Liquidation	1.676	1.433	1.681	2.071	--	--
	(1.102)	(1.478)	(1.078)	(1.367)	--	--
Closings	-1.973*	-1.220	-1.190*	-0.380	-3.897	-1.993
	(0.999)	(1.582)	(0.694)	(1.556)	(3.353)	(3.508)
Liquidation and Closings	-0.050	0.359	0.330	1.105	--	--
	(0.728)	(1.241)	(0.642)	(1.221)	--	--
Openings - Closings	1.858***	3.098***	1.888**	3.536***	0.932	2.400
	(0.695)	(0.782)	(0.768)	(0.926)	(2.236)	(3.470)
Openings - Closings - Liquidation	1.870	4.210***	1.647	4.088***	--	--
	(1.296)	(1.287)	(1.489)	(1.299)	--	--
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: 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, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table C9: Effect of Migrants of on Internal Migration

	Dependent Variable: Net Migration Rate					
	All		Male		Female	
	(1)	(2)	(3)	(4)	(5)	(6)
All	-0.019	0.014	-0.018	0.019	-0.020	0.009
	(0.013)	(0.015)	(0.012)	(0.016)	(0.014)	(0.016)
Age: 15-64	-0.027*	0.010	-0.025*	0.016	-0.028*	0.002
	(0.014)	(0.018)	(0.014)	(0.019)	(0.016)	(0.022)
Age: 20-64	0.003	0.025	-0.001	0.025	0.007	0.023
	(0.013)	(0.015)	(0.014)	(0.017)	(0.015)	(0.018)
Age: 15-24	-0.092**	-0.024	-0.079**	0.002	-0.107**	0.023
	(0.036)	(0.055)	(0.034)	(0.048)	(0.043)	(0.018)
Age: 25-39	-0.017	0.025	-0.019	0.019	-0.015	0.032*
	(0.016)	(0.016)	(0.018)	(0.018)	(0.018)	(0.017)
Age: 40-64	-0.003	0.009	-0.006	0.009	-0.000	0.009
	(0.015)	(0.023)	(0.013)	(0.021)	(0.018)	(0.025)
Education: Illiterate or No Degree	-0.019	0.03	-0.033	0.038	-0.015	0.026
	(0.021)	(0.031)	(0.022)	(0.031)	(0.021)	(0.031)
Education: Primary or Middle School	-0.022	0.026	-0.028*	0.028	-0.017	0.018
	(0.015)	(0.025)	(0.016)	(0.028)	(0.016)	(0.025)
Education: Any High School	-0.107**	-0.043	-0.068*	-0.024	-0.166**	-0.063
	(0.049)	(0.069)	(0.040)	(0.047)	(0.074)	(0.130)
Education: University	0.026	0.117	0.019	0.093	0.019	0.171
	(0.054)	(0.073)	(0.042)	(0.060)	(0.082)	(0.112)
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 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. 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, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

APPENDIX D: Robustness Checks

Table D1: Effects of Migrants on Natives in the Informal and Formal Sectors – including the Specification with NUTS-1 Region and Year Fixed Effects, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A) INFORMAL SECTOR										
Employed	-0.523***	-0.543***	-0.539***	-0.398***	-0.420**	-0.020	-0.316	-0.388	-0.287	-0.402
	(0.131)	(0.147)	(0.161)	(0.152)	(0.188)	(0.270)	(0.239)	(0.257)	(0.192)	(0.254)
Wage Worker	-0.250***	-0.559***	-0.549***	-0.493***	-0.542***	0.187	0.017	-0.023	0.026	-0.013
	(0.091)	(0.088)	(0.100)	(0.105)	(0.155)	(0.114)	(0.087)	(0.088)	(0.077)	(0.085)
Hourly Wage	0.414	-0.289	-0.081	-0.628*	-0.120	0.093	-0.168	0.153	-0.332	0.326
	(0.479)	(0.402)	(0.421)	(0.369)	(0.468)	(0.522)	(0.400)	(0.370)	(0.439)	(0.412)
Self-employed	-0.313***	-0.024	0.018	0.043	0.108	-0.188*	-0.199**	-0.256***	-0.173**	-0.339***
	(0.080)	(0.069)	(0.077)	(0.053)	(0.076)	(0.100)	(0.092)	(0.089)	(0.084)	(0.094)
Employer	-0.017	-0.048***	-0.039*	-0.034*	-0.015	0.006*	0.003	0.002	0.001	-0.000
	(0.018)	(0.018)	(0.023)	(0.020)	(0.025)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)
Unpaid Family Worker	0.058*	0.088**	0.031	0.087**	0.029	-0.025	-0.136	-0.111	-0.141	-0.049
	(0.034)	(0.044)	(0.038)	(0.034)	(0.026)	(0.107)	(0.121)	(0.133)	(0.131)	(0.131)
B) FORMAL SECTOR										
Employed	0.407***	0.532***	0.576***	0.554***	0.678***	-0.463***	-0.175**	-0.187**	-0.096	-0.136
	(0.115)	(0.135)	(0.160)	(0.133)	(0.199)	(0.098)	(0.070)	(0.075)	(0.075)	(0.092)
Wage Worker	0.118	0.253***	0.273**	0.299***	0.407***	-0.427***	-0.194***	-0.212***	-0.126*	-0.184**
	(0.086)	(0.091)	(0.110)	(0.084)	(0.141)	(0.088)	(0.065)	(0.068)	(0.073)	(0.079)
Hourly Wage	0.029	0.799***	0.807**	0.859***	0.979***	-0.029	0.451	0.510	0.592**	0.625*
	(0.211)	(0.282)	(0.326)	(0.226)	(0.342)	(0.333)	(0.312)	(0.345)	(0.280)	(0.344)
Self-employed	0.192***	0.175***	0.185***	0.166**	0.157**	-0.006	0.007	0.007	0.010*	0.012
	(0.051)	(0.053)	(0.059)	(0.066)	(0.077)	(0.007)	(0.006)	(0.007)	(0.005)	(0.007)
Employer	0.058	0.063**	0.072**	0.054*	0.065	-0.014***	-0.008*	-0.010**	-0.008**	-0.011*
	(0.038)	(0.029)	(0.036)	(0.031)	(0.045)	(0.005)	(0.004)	(0.005)	(0.004)	(0.006)
First-stage regression	1.253***	1.312***	1.226***	1.444***	1.446***	1.256***	1.313***	1.228***	1.442***	1.425***
	(0.073)	(0.064)	(0.047)	(0.080)	(0.197)	(0.073)	(0.064)	(0.046)	(0.080)	(0.192)
F-statistics	295.570	422.059	700.222	323.281	53.843	299.414	423.863	707.385	324.048	54.889
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
NUTS1 Region-Year Fixed Effects	No	No	No	No	Yes	No	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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 instrument is rescaled by dividing by 100,000. 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 Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives– with the Specification including NUTS-1 Region and Year Fixed Effects, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Employment	-0.116	-0.011	0.037	0.156	0.258	-0.483*	-0.491*	-0.575**	-0.384**	-0.538**
	(0.082)	(0.111)	(0.147)	(0.101)	(0.168)	(0.252)	(0.263)	(0.286)	(0.189)	(0.262)
Full-time Employment	-0.042	0.246***	0.262**	0.403***	0.513***	-0.225*	0.070	-0.216	0.246*	-0.087
	(0.087)	(0.093)	(0.101)	(0.081)	(0.119)	(0.132)	(0.162)	(0.134)	(0.145)	(0.133)
Part-time Employment	-0.074	-0.257**	-0.225*	-0.246***	-0.254**	-0.258	-0.562***	-0.359*	-0.629***	-0.450**
	(0.103)	(0.105)	(0.120)	(0.088)	(0.119)	(0.164)	(0.157)	(0.207)	(0.131)	(0.176)
Hourly Wage	0.722***	0.813***	0.728***	0.961***	1.156***	0.110	0.632*	0.813**	0.968***	1.336***
	(0.233)	(0.254)	(0.272)	(0.184)	(0.293)	(0.388)	(0.364)	(0.370)	(0.308)	(0.411)
Wage Worker	-0.133	-0.306***	-0.276***	-0.194*	-0.136	-0.240***	-0.178*	-0.235**	-0.100	-0.198**
	(0.093)	(0.083)	(0.090)	(0.105)	(0.158)	(0.073)	(0.093)	(0.092)	(0.082)	(0.096)
Self-employed	-0.121	0.151**	0.203**	0.209***	0.266**	-0.194**	-0.192**	-0.249***	-0.164**	-0.327***
	(0.090)	(0.072)	(0.084)	(0.069)	(0.104)	(0.098)	(0.090)	(0.088)	(0.082)	(0.090)
Employer	0.041	0.014	0.033	0.020	0.050	-0.008	-0.005	-0.008	-0.007	-0.012**
	(0.048)	(0.040)	(0.051)	(0.042)	(0.057)	(0.006)	(0.006)	(0.006)	(0.004)	(0.006)
Unpaid Family Worker	0.097***	0.129***	0.077*	0.122***	0.078***	-0.041	-0.116	-0.083	-0.113	-0.001
	(0.031)	(0.045)	(0.041)	(0.029)	(0.023)	(0.107)	(0.127)	(0.144)	(0.132)	(0.131)
Labor Force Participation definition 1	-0.183	-0.120	-0.208	0.047	-0.309*	-0.494*	-0.448*	-0.580**	-0.306*	-0.548***
	(0.154)	(0.156)	(0.152)	(0.159)	(0.185)	(0.253)	(0.257)	(0.266)	(0.163)	(0.211)
Labor Force Participation definition 2	-0.056	0.221	-0.045	0.266*	-0.107	-0.565**	-0.336*	-0.464***	-0.386***	-0.673***
	(0.145)	(0.149)	(0.146)	(0.142)	(0.118)	(0.245)	(0.177)	(0.173)	(0.138)	(0.190)
Unemployment definition 1	-0.067	-0.109	-0.245	-0.109	-0.568**	-0.011	0.043	-0.005	0.078	-0.011
	(0.138)	(0.146)	(0.175)	(0.158)	(0.279)	(0.057)	(0.049)	(0.063)	(0.058)	(0.099)
Unemployment definition 2	0.153	0.131	-0.127	0.122	-0.257	0.033	0.113*	0.079	0.114*	0.076
	(0.117)	(0.142)	(0.192)	(0.147)	(0.214)	(0.051)	(0.068)	(0.090)	(0.059)	(0.087)
First-stage regression	1.253***	1.312***	1.226***	1.444***	1.446***	1.256***	1.313***	1.228***	1.442***	1.425***
	(0.073)	(0.064)	(0.047)	(0.080)	(0.197)	(0.073)	(0.064)	(0.046)	(0.080)	(0.192)
F-statistics	295.570	422.059	700.222	323.281	53.843	299.414	423.863	707.385	324.048	54.889
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
NUTS1 Region-Year Fixed Effects	No	No	No	No	Yes	No	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 on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D3: Effects of Migrants on Natives in the Informal and Formal Sectors – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.04), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.047***	-0.052***	-0.051***	-0.045**	0.242	-0.002	-0.030	-0.037	-0.033	0.148
	(0.015)	(0.018)	(0.019)	(0.023)		(0.024)	(0.025)	(0.027)	(0.026)	
Wage Worker	-0.022**	-0.053***	-0.052***	-0.056***	0.110	0.017*	0.002	-0.002	0.003	0.036
	(0.011)	(0.012)	(0.013)	(0.019)		(0.009)	(0.008)	(0.009)	(0.008)	
Hourly Wage	0.036	-0.027	-0.008	-0.074*	0.979	0.008	-0.015	0.013	-0.037	0.884
	(0.041)	(0.037)	(0.039)	(0.043)		(0.042)	(0.035)	(0.032)	(0.050)	
Self-employed	-0.028***	-0.002	0.002	0.005	0.094	-0.017*	-0.019**	-0.025***	-0.020*	0.026
	(0.006)	(0.007)	(0.007)	(0.006)		(0.009)	(0.009)	(0.009)	(0.011)	
Employer	-0.002	-0.005**	-0.004	-0.004	0.010	0.001**	0.000	0.000	0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.003)		(0.000)	(0.000)	(0.000)	(0.000)	
Unpaid Family Worker	0.005*	0.008**	0.003	0.010**	0.028	-0.002	-0.013	-0.011	-0.016	0.084
	(0.003)	(0.004)	(0.003)	(0.004)		(0.010)	(0.012)	(0.013)	(0.016)	
B) FORMAL SECTOR										
Employed	0.036***	0.051***	0.055***	0.063***	0.475	-0.042***	-0.017***	-0.018***	-0.011	0.123
	(0.012)	(0.015)	(0.017)	(0.020)		(0.006)	(0.006)	(0.006)	(0.008)	
Wage Worker	0.011	0.024***	0.026**	0.034***	0.362	-0.038***	-0.019***	-0.020***	-0.014*	0.112
	(0.008)	(0.009)	(0.010)	(0.011)		(0.005)	(0.005)	(0.006)	(0.008)	
Hourly Wage	0.003	0.077***	0.079**	0.098***	1.602	-0.003	0.043	0.049	0.065**	1.684
	(0.019)	(0.029)	(0.032)	(0.030)		(0.029)	(0.033)	(0.036)	(0.032)	
Self-employed	0.017***	0.017***	0.018***	0.019**	0.068	-0.001	0.001	0.001	0.001	0.003
	(0.006)	(0.006)	(0.007)	(0.009)		(0.001)	(0.001)	(0.001)	(0.001)	
Employer	0.005	0.006**	0.007*	0.006*	0.039	-0.001***	-0.001**	-0.001**	-0.001**	0.003
	(0.003)	(0.003)	(0.003)	(0.004)		(0.000)	(0.000)	(0.000)	(0.000)	
First-stage regression	14.014***	13.747***	12.857***	12.754***		13.970***	13.697***	12.824***	12.608***	
	(1.982)	(2.048)	(2.048)	(2.721)		(1.961)	(2.028)	(2.023)	(2.719)	
F-statistics	49.985	45.024	39.438	21.996		50.694	45.563	40.196	21.530	
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 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 (a treatment dummy taking the value of one where the ratio of migrants to natives is greater than 0.04 and zero otherwise) in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 D4: Effects of Migrants on Natives in the Informal and Formal Sectors – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.02), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.044***	-0.054***	-0.060***	-0.043**	0.242	-0.002	-0.031	-0.043	-0.031	0.148
	(0.014)	(0.019)	(0.023)	(0.021)		(0.023)	(0.026)	(0.032)	(0.024)	
Wage Worker	-0.021**	-0.055***	-0.061***	-0.053***	0.110	0.016**	0.002	-0.003	0.003	0.036
	(0.010)	(0.013)	(0.017)	(0.018)		(0.008)	(0.008)	(0.010)	(0.008)	
Hourly Wage	0.032	-0.027	-0.008	-0.067*	0.979	0.007	-0.016	0.016	-0.037	0.884
	(0.036)	(0.037)	(0.044)	(0.038)		(0.042)	(0.039)	(0.038)	(0.051)	
Self-employed	-0.026***	-0.002	0.002	0.005	0.094	-0.016*	-0.020**	-0.029***	-0.019*	0.026
	(0.005)	(0.007)	(0.009)	(0.006)		(0.009)	(0.009)	(0.011)	(0.010)	
Employer	-0.001	-0.005**	-0.004	-0.004	0.010	0.001**	0.000	0.000	0.000	0.001
	(0.002)	(0.002)	(0.003)	(0.002)		(0.000)	(0.000)	(0.000)	(0.000)	
Unpaid Family Worker	0.005*	0.009**	0.004	0.009***	0.028	-0.002	-0.013	-0.012	-0.015	0.084
	(0.003)	(0.004)	(0.004)	(0.004)		(0.009)	(0.012)	(0.015)	(0.015)	
B) FORMAL SECTOR										
Employed	0.034***	0.052***	0.064***	0.060***	0.475	-0.039***	-0.017***	-0.021***	-0.010	0.123
	(0.011)	(0.015)	(0.021)	(0.018)		(0.004)	(0.006)	(0.007)	(0.008)	
Wage Worker	0.010	0.025***	0.030**	0.032***	0.362	-0.036***	-0.019***	-0.024***	-0.014*	0.112
	(0.007)	(0.009)	(0.012)	(0.009)		(0.004)	(0.006)	(0.006)	(0.008)	
Hourly Wage	0.002	0.082***	0.092**	0.097***	1.602	-0.003	0.046	0.056	0.066**	1.684
	(0.018)	(0.030)	(0.039)	(0.027)		(0.029)	(0.035)	(0.042)	(0.030)	
Self-employed	0.016***	0.017***	0.021**	0.018**	0.068	-0.001	0.001	0.001	0.001	0.003
	(0.005)	(0.007)	(0.008)	(0.009)		(0.001)	(0.001)	(0.001)	(0.001)	
Employer	0.005	0.006**	0.008*	0.006*	0.039	-0.001***	-0.001**	-0.001**	-0.001**	0.003
	(0.003)	(0.003)	(0.004)	(0.003)		(0.000)	(0.000)	(0.000)	(0.000)	
First-stage regression	14.993***	13.310***	11.015***	13.402***		15.008***	13.282***	10.964***	13.332***	
	(2.405)	(2.384)	(2.271)	(2.900)		(2.401)	(2.372)	(2.245)	(2.898)	
F-statistics	38.813	31.136	23.523	21.344		39.063	31.360	23.814	21.160	
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 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 (a treatment dummy taking 1 where the ratio of migrants to natives is greater than 0.02 and 0 otherwise) in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest -- which is instrumented using the del Carpio-Wagner instrument, a set of individual-specific control varibles, 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 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 D5: Effects of Migrants on Natives in the Informal and Formal Sectors – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.01), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.078**	-0.086**	-0.125	-0.042**	0.242	-0.003	-0.050	-0.091	-0.030	0.148
	(0.034)	(0.039)	(0.076)	(0.020)		(0.040)	(0.046)	(0.080)	(0.023)	
Wage Worker	-0.037*	-0.088***	-0.127*	-0.052***	0.110	0.028*	0.003	-0.005	0.003	0.036
	(0.020)	(0.032)	(0.069)	(0.016)		(0.016)	(0.013)	(0.022)	(0.008)	
Hourly Wage	0.059	-0.045	-0.020	-0.071*	0.979	0.013	-0.028	0.033	-0.037	0.884
	(0.076)	(0.060)	(0.104)	(0.041)		(0.077)	(0.065)	(0.081)	(0.050)	
Self-employed	-0.047***	-0.004	0.004	0.005	0.094	-0.028	-0.032*	-0.060*	-0.018*	0.026
	(0.017)	(0.011)	(0.018)	(0.005)		(0.019)	(0.019)	(0.034)	(0.010)	
Employer	-0.003	-0.008*	-0.009	-0.004	0.010	0.001**	0.000	0.000	0.000	0.001
	(0.003)	(0.004)	(0.007)	(0.002)		(0.000)	(0.000)	(0.001)	(0.000)	
Unpaid Family Worker	0.009*	0.014**	0.007	0.009***	0.028	-0.004	-0.022	-0.026	-0.015	0.084
	(0.005)	(0.007)	(0.009)	(0.003)		(0.016)	(0.021)	(0.034)	(0.014)	
B) FORMAL SECTOR										
Employed	0.061**	0.084***	0.133*	0.058***	0.475	-0.069***	-0.028**	-0.044**	-0.010	0.123
	(0.026)	(0.032)	(0.073)	(0.017)		(0.020)	(0.011)	(0.018)	(0.008)	
Wage Worker	0.018	0.040**	0.063*	0.031***	0.362	-0.063***	-0.031***	-0.050***	-0.013*	0.112
	(0.015)	(0.018)	(0.038)	(0.009)		(0.018)	(0.011)	(0.018)	(0.008)	
Hourly Wage	0.005	0.144**	0.217	0.091***	1.602	-0.007	0.088	0.153	0.058**	1.684
	(0.039)	(0.070)	(0.149)	(0.024)		(0.080)	(0.075)	(0.163)	(0.026)	
Self-employed	0.029***	0.028**	0.043*	0.017**	0.068	-0.001	0.001	0.002	0.001	0.003
	(0.010)	(0.012)	(0.025)	(0.008)		(0.001)	(0.001)	(0.002)	(0.001)	
Employer	0.009	0.010*	0.017	0.006*	0.039	-0.002**	-0.001*	-0.002*	-0.001**	0.003
	(0.006)	(0.005)	(0.011)	(0.003)		(0.001)	(0.001)	(0.001)	(0.000)	
First-stage regression	8.409***	8.313***	5.289**	13.748***		8.481***	8.274***	5.246**	13.619***	
	(2.775)	(2.706)	(2.462)	(2.716)		(2.756)	(2.689)	(2.437)	(2.702)	
F-statistics	9.181	9.425	4.623	25.604		9.486	9.486	4.623	25.402	
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 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 (a treatment dummy taking 1 where the ratio of migrants to natives is greater than 0.01 and 0 otherwise) in a separate 2SLS regression of the dependent variable, specified in column (1), on the key variable of interest -- which is instrumented using the del Carpio-Wagner instrument, a set of individual-specific control varibles, 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 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 Aggregate Employment, Labor Force Participation and Unemployment of Natives – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.04), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.010	-0.001	0.004	0.018*	0.716	-0.043*	-0.047*	-0.055*	-0.044*	0.270
	(0.008)	(0.011)	(0.014)	(0.010)		(0.024)	(0.027)	(0.029)	(0.026)	
Full-time Employment	-0.004	0.023***	0.025***	0.046***	0.683	-0.020*	0.007	-0.021	0.028*	0.218
	(0.008)	(0.008)	(0.009)	(0.008)		(0.012)	(0.015)	(0.014)	(0.015)	
Part-time Employment	-0.007	-0.025**	-0.021*	-0.028**	0.033	-0.023	-0.054***	-0.034	-0.072***	0.052
	(0.009)	(0.011)	(0.012)	(0.012)		(0.015)	(0.016)	(0.021)	(0.021)	
Hourly Wage	0.064***	0.077***	0.070***	0.110***	1.473	0.009	0.058	0.075*	0.107**	1.519
	(0.020)	(0.025)	(0.027)	(0.024)		(0.034)	(0.039)	(0.041)	(0.043)	
Wage Worker	-0.012	-0.029***	-0.026**	-0.022	0.472	-0.022***	-0.017*	-0.022**	-0.011	0.149
	(0.010)	(0.010)	(0.011)	(0.015)		(0.008)	(0.010)	(0.011)	(0.011)	
Self-employed	-0.011	0.014*	0.019**	0.024**	0.162	-0.017**	-0.018**	-0.024***	-0.019*	0.030
	(0.007)	(0.007)	(0.008)	(0.010)		(0.009)	(0.009)	(0.009)	(0.010)	
Employer	0.004	0.001	0.003	0.002	0.049	-0.001	-0.001	-0.001	-0.001*	0.003
	(0.004)	(0.004)	(0.005)	(0.005)		(0.000)	(0.001)	(0.001)	(0.001)	
Unpaid Family Worker	0.009***	0.012***	0.007*	0.014***	0.033	-0.004	-0.011	-0.008	-0.013	0.089
	(0.003)	(0.004)	(0.004)	(0.004)		(0.010)	(0.012)	(0.014)	(0.016)	
Labor Force Participation definition 1	-0.016	-0.011	-0.020	0.005	0.799	-0.044*	-0.043	-0.056**	-0.035	0.308
	(0.015)	(0.016)	(0.016)	(0.018)		(0.023)	(0.026)	(0.027)	(0.022)	
Labor Force Participation definition 2	-0.005	0.023*	-0.005	0.032**	0.798	-0.051**	-0.034	-0.049**	-0.046**	0.334
	(0.013)	(0.013)	(0.016)	(0.015)		(0.024)	(0.021)	(0.023)	(0.023)	
Unemployment definition 1	-0.006	-0.010	-0.023	-0.012	0.082	-0.001	0.004	-0.000	0.009	0.038
	(0.013)	(0.015)	(0.018)	(0.018)		(0.005)	(0.005)	(0.006)	(0.007)	
Unemployment definition 2	0.014	0.013	-0.013	0.014	0.076	0.003	0.012	0.008	0.014*	0.040
	(0.010)	(0.014)	(0.020)	(0.017)		(0.005)	(0.007)	(0.010)	(0.008)	
First-stage regression	14.014***	13.747***	12.857***	12.754***		13.970***	13.697***	12.824***	12.608***	
	(1.982)	(2.048)	(2.048)	(2.721)		(1.961)	(2.028)	(2.023)	(2.719)	
F-statistics	49.985	45.024	39.438	21.996		50.694	45.563	40.196	21.530	
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 -- a treatment dummy taking the value of one where the ratio of migrants to natives is greater than 0.04 and zero otherwise -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D7: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.02), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.010	-0.001	0.004	0.017*	0.716	-0.040*	-0.049*	-0.064*	-0.041*	0.270
	(0.007)	(0.011)	(0.016)	(0.009)		(0.023)	(0.028)	(0.035)	(0.025)	
Full-time Employment	-0.003	0.024***	0.029***	0.043***	0.683	-0.019*	0.007	-0.024	0.027*	0.218
	(0.007)	(0.008)	(0.011)	(0.008)		(0.011)	(0.016)	(0.016)	(0.014)	
Part-time Employment	-0.006	-0.025**	-0.025*	-0.027**	0.033	-0.022	-0.056***	-0.040	-0.068***	0.052
	(0.009)	(0.011)	(0.015)	(0.012)		(0.015)	(0.017)	(0.025)	(0.020)	
Hourly Wage	0.061***	0.081***	0.081**	0.107***	1.473	0.009	0.063	0.088*	0.107***	1.519
	(0.019)	(0.026)	(0.032)	(0.022)		(0.033)	(0.042)	(0.050)	(0.041)	
Wage Worker	-0.011	-0.030***	-0.031**	-0.021	0.472	-0.020***	-0.018*	-0.026**	-0.011	0.149
	(0.009)	(0.011)	(0.014)	(0.014)		(0.007)	(0.011)	(0.013)	(0.010)	
Self-employed	-0.010	0.015*	0.023**	0.022**	0.162	-0.016*	-0.019**	-0.028***	-0.018*	0.030
	(0.006)	(0.008)	(0.011)	(0.009)		(0.008)	(0.009)	(0.011)	(0.010)	
Employer	0.003	0.001	0.004	0.002	0.049	-0.001	-0.001	-0.001	-0.001*	0.003
	(0.004)	(0.004)	(0.006)	(0.004)		(0.000)	(0.001)	(0.001)	(0.000)	
Unpaid Family Worker	0.008***	0.013***	0.009*	0.013***	0.033	-0.003	-0.011	-0.009	-0.012	0.089
	(0.003)	(0.004)	(0.005)	(0.003)		(0.009)	(0.013)	(0.016)	(0.015)	
Labor Force Participation definition 1	-0.015	-0.012	-0.023	0.005	0.799	-0.041*	-0.044	-0.065**	-0.033	0.308
	(0.014)	(0.016)	(0.019)	(0.017)		(0.022)	(0.027)	(0.032)	(0.021)	
Labor Force Participation definition 2	-0.005	0.029*	-0.009	0.033**	0.798	-0.051**	-0.044*	-0.089*	-0.048**	0.334
	(0.013)	(0.017)	(0.029)	(0.016)		(0.024)	(0.027)	(0.048)	(0.023)	
Unemployment definition 1	-0.006	-0.011	-0.027	-0.012	0.082	-0.001	0.004	-0.001	0.008	0.038
	(0.012)	(0.015)	(0.021)	(0.017)		(0.005)	(0.005)	(0.007)	(0.007)	
Unemployment definition 2	0.014	0.017	-0.024	0.015	0.076	0.003	0.015	0.015	0.014	0.040
	(0.010)	(0.018)	(0.038)	(0.019)		(0.005)	(0.010)	(0.018)	(0.009)	
First-stage regression	14.993***	13.310***	11.015***	13.402***		15.008***	13.282***	10.964***	13.332***	
	(2.405)	(2.384)	(2.271)	(2.900)		(2.401)	(2.372)	(2.245)	(2.898)	
F-statistics	38.813	31.136	23.523	21.344		39.063	31.360	23.814	21.160	
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 -- a treatment dummy taking 1 where the ratio of migrants to natives is greater than 0.02 and 0 otherwise -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D8: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives – Dummy Variable for Treatment Status (Treatment=1 when Migrant to Native Ratio > 0.01), 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.017	-0.002	0.009	0.016*	0.716	-0.072	-0.078	-0.135	-0.041*	0.270
	(0.015)	(0.018)	(0.033)	(0.009)		(0.047)	(0.052)	(0.093)	(0.024)	
Full-time Employment	-0.006	0.039**	0.061*	0.042***	0.683	-0.033	0.011	-0.051	0.026*	0.218
	(0.013)	(0.016)	(0.032)	(0.008)		(0.023)	(0.025)	(0.038)	(0.014)	
Part-time Employment	-0.011	-0.041*	-0.052	-0.026**	0.033	-0.038	-0.089**	-0.084	-0.067***	0.052
	(0.017)	(0.023)	(0.039)	(0.012)		(0.030)	(0.039)	(0.064)	(0.019)	
Hourly Wage	0.121*	0.141**	0.190	0.102***	1.473	0.022	0.117	0.222	0.096***	1.519
	(0.064)	(0.063)	(0.116)	(0.020)		(0.084)	(0.093)	(0.190)	(0.035)	
Wage Worker	-0.020	-0.048**	-0.064	-0.020	0.472	-0.036**	-0.028	-0.055*	-0.011	0.149
	(0.016)	(0.022)	(0.042)	(0.013)		(0.016)	(0.019)	(0.033)	(0.010)	
Self-employed	-0.018	0.024*	0.047	0.022**	0.162	-0.029	-0.030	-0.058*	-0.017*	0.030
	(0.014)	(0.013)	(0.030)	(0.009)		(0.019)	(0.018)	(0.033)	(0.010)	
Employer	0.006	0.002	0.008	0.002	0.049	-0.001	-0.001	-0.002	-0.001*	0.003
	(0.007)	(0.006)	(0.012)	(0.004)		(0.001)	(0.001)	(0.002)	(0.000)	
Unpaid Family Worker	0.015***	0.020***	0.018	0.013***	0.033	-0.006	-0.018	-0.019	-0.012	0.089
	(0.005)	(0.008)	(0.012)	(0.003)		(0.016)	(0.022)	(0.036)	(0.014)	
Labor Force Participation definition 1	-0.027	-0.019	-0.048	0.005	0.799	-0.073	-0.071	-0.136	-0.032	0.308
	(0.027)	(0.028)	(0.048)	(0.016)		(0.048)	(0.050)	(0.089)	(0.020)	
Labor Force Participation definition 2	-0.011	0.048	-0.037	0.033**	0.798	-0.109	-0.075	-0.415	-0.049**	0.334
	(0.030)	(0.032)	(0.157)	(0.016)		(0.068)	(0.057)	(0.971)	(0.023)	
Unemployment definition 1	-0.010	-0.017	-0.057	-0.011	0.082	-0.002	0.007	-0.001	0.008	0.038
	(0.021)	(0.024)	(0.051)	(0.017)		(0.009)	(0.008)	(0.015)	(0.007)	
Unemployment definition 2	0.030	0.028	-0.104	0.015	0.076	0.006	0.025	0.070	0.014	0.040
	(0.023)	(0.033)	(0.278)	(0.019)		(0.010)	(0.021)	(0.182)	(0.009)	
First-stage regression	8.409***	8.313***	5.289**	13.748***		8.481***	8.274***	5.246**	13.619***	
	(2.775)	(2.706)	(2.462)	(2.716)		(2.756)	(2.689)	(2.437)	(2.702)	
F-statistics	9.181	9.425	4.623	25.604		9.486	9.486	4.623	25.402	
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 -- a treatment dummy taking 1 where the ratio of migrants to natives is greater than 0.01 and 0 otherwise -- in a separate 2SLS regression of the dependent variable on the key variable of interest, a set of individual-specific control varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D9: Effects of Migrants on Natives in the Informal and Formal Sectors – with only 2014 and 2015 as Post-treatment Years, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.516***	-0.549***	-0.567***	-0.393**	0.246	-0.014	-0.344	-0.441*	-0.293	0.147
	(0.127)	(0.147)	(0.162)	(0.151)		(0.272)	(0.243)	(0.261)	(0.191)	
Wage Worker	-0.241**	-0.534***	-0.543***	-0.481***	0.112	0.185*	0.010	-0.038	0.025	0.036
	(0.095)	(0.085)	(0.099)	(0.107)		(0.111)	(0.081)	(0.081)	(0.075)	
Hourly Wage	0.361	-0.269	0.004	-0.664*	0.971	-0.003	-0.239	0.082	-0.423	0.879
	(0.490)	(0.409)	(0.436)	(0.389)		(0.540)	(0.408)	(0.371)	(0.495)	
Self-employed	-0.312***	-0.037	-0.007	0.041	0.095	-0.187*	-0.198**	-0.266***	-0.175**	0.026
	(0.079)	(0.066)	(0.073)	(0.051)		(0.101)	(0.094)	(0.090)	(0.084)	
Employer	-0.018	-0.049***	-0.039	-0.034*	0.011	0.006**	0.003	0.003	0.001	0.001
	(0.018)	(0.019)	(0.024)	(0.020)		(0.003)	(0.003)	(0.003)	(0.003)	
Unpaid Family Worker	0.055	0.071*	0.022	0.082**	0.029	-0.017	-0.159	-0.139	-0.143	0.084
	(0.034)	(0.042)	(0.039)	(0.032)		(0.111)	(0.125)	(0.140)	(0.129)	
B) FORMAL SECTOR										
Employed	0.401***	0.532***	0.585***	0.544***	0.468	-0.458***	-0.167**	-0.182**	-0.093	0.119
	(0.119)	(0.138)	(0.164)	(0.136)		(0.099)	(0.075)	(0.078)	(0.080)	
Wage Worker	0.113	0.284***	0.314***	0.293***	0.357	-0.422***	-0.189***	-0.213***	-0.123	0.109
	(0.087)	(0.095)	(0.117)	(0.086)		(0.090)	(0.069)	(0.069)	(0.076)	
Hourly Wage	0.033	0.851***	0.908**	0.857***	1.595	-0.034	0.451	0.518	0.593**	1.677
	(0.233)	(0.303)	(0.357)	(0.249)		(0.328)	(0.308)	(0.348)	(0.295)	
Self-employed	0.192***	0.156***	0.160***	0.166**	0.068	-0.006	0.008	0.008	0.010*	0.003
	(0.051)	(0.054)	(0.058)	(0.067)		(0.007)	(0.006)	(0.007)	(0.005)	
Employer	0.055	0.059**	0.070**	0.050	0.039	-0.014***	-0.008*	-0.009**	-0.008**	0.003
	(0.038)	(0.028)	(0.035)	(0.032)		(0.005)	(0.004)	(0.004)	(0.004)	
First-stage regression	1.252***	1.331***	1.248***	1.440***		1.255***	1.331***	1.249***	1.437***	
	(0.077)	(0.068)	(0.048)	(0.081)		(0.076)	(0.068)	(0.047)	(0.081)	
F-statistics	262.116	385.337	684.869	312.229		269.616	388.484	693.269	313.290	
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 and 2013 versions. In all but wage regressions, the male sample includes 1,429,317 individuals and the female sample includes 1,537,422 individuals. In the wage regressions, the male sample includes 129,540 individuals for the informal sector and 466,562 individuals for the formal sector, and the female sample includes 39,994 individuals for the informal sector and 142,218 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2014-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 D10: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives – with only 2014 and 2015 as Post-treatment Years, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.115	-0.017	0.018	0.151	0.714	-0.472*	-0.511*	-0.623**	-0.385**	0.266
	(0.083)	(0.117)	(0.153)	(0.100)		(0.258)	(0.271)	(0.293)	(0.190)	
Full-time Employment	-0.039	0.253***	0.256**	0.396***	0.682	-0.216	0.044	-0.245*	0.243*	0.216
	(0.092)	(0.090)	(0.099)	(0.075)		(0.138)	(0.163)	(0.139)	(0.144)	
Part-time Employment	-0.076	-0.270**	-0.238*	-0.245***	0.032	-0.256	-0.555***	-0.377*	-0.629***	0.050
	(0.107)	(0.107)	(0.124)	(0.090)		(0.167)	(0.162)	(0.210)	(0.129)	
Hourly Wage	0.705***	0.859***	0.834***	0.940***	1.462	0.100	0.695**	0.909**	0.961***	1.509
	(0.239)	(0.262)	(0.291)	(0.198)		(0.379)	(0.348)	(0.366)	(0.313)	
Wage Worker	-0.128	-0.250***	-0.229**	-0.189*	0.469	-0.238***	-0.180*	-0.252***	-0.098	0.145
	(0.092)	(0.082)	(0.094)	(0.108)		(0.073)	(0.092)	(0.087)	(0.082)	
Self-employed	-0.120	0.119*	0.153**	0.207***	0.163	-0.193*	-0.191**	-0.258***	-0.165**	0.029
	(0.089)	(0.069)	(0.076)	(0.068)		(0.100)	(0.093)	(0.089)	(0.082)	
Employer	0.037	0.009	0.031	0.016	0.049	-0.008	-0.004	-0.006	-0.007	0.003
	(0.049)	(0.041)	(0.052)	(0.043)		(0.006)	(0.005)	(0.006)	(0.005)	
Unpaid Family Worker	0.096***	0.105**	0.063	0.117***	0.033	-0.034	-0.137	-0.107	-0.115	0.088
	(0.032)	(0.044)	(0.044)	(0.027)		(0.111)	(0.132)	(0.151)	(0.129)	
Labor Force Participation definition 1	-0.177	-0.126	-0.227	0.049	0.798	-0.481*	-0.474*	-0.636**	-0.307*	0.303
	(0.159)	(0.158)	(0.156)	(0.165)		(0.259)	(0.266)	(0.277)	(0.163)	
Labor Force Participation definition 2	-0.061	0.211	-0.092	0.267*	0.798	-0.569**	-0.357**	-0.527***	-0.384***	0.331
	(0.144)	(0.145)	(0.150)	(0.138)		(0.245)	(0.172)	(0.175)	(0.133)	
Unemployment definition 1	-0.061	-0.109	-0.245	-0.102	0.083	-0.009	0.037	-0.013	0.078	0.037
	(0.149)	(0.155)	(0.183)	(0.171)		(0.058)	(0.047)	(0.061)	(0.059)	
Unemployment definition 2	0.151	0.122	-0.156	0.122	0.079	0.030	0.105	0.068	0.113*	0.040
	(0.122)	(0.151)	(0.205)	(0.152)		(0.050)	(0.066)	(0.088)	(0.059)	
First-stage regression	1.252***	1.331***	1.248***	1.440***		1.255***	1.331***	1.249***	1.437***	
	(0.077)	(0.068)	(0.048)	(0.081)		(0.076)	(0.068)	(0.047)	(0.081)	
F-statistics	262.116	385.337	684.869	312.229		269.616	388.484	693.269	313.290	
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 and 2013 versions. The wage regressions include 596,103 individuals in the male sample, and 182,212 individuals in the female sample. In regressions using definition 2 of labor force participation and unemployment, the sample sizes for males and females are 747,383 and 793,967, respectively. In all other regressions, the male sample includes 1,429,317 individuals and the female sample includes 1,537,422 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the annual stock of Syrian migrants (2014-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D11: Effects of Migrants on Natives in the Informal and Formal Sectors – with only 2015 as Post-treatment Year, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
A) INFORMAL SECTOR										
Employed	-0.475***	-0.524***	-0.546***	-0.334*	0.253	0.009	-0.327	-0.411	-0.241	0.147
	(0.148)	(0.172)	(0.183)	(0.180)		(0.325)	(0.312)	(0.329)	(0.221)	
Wage Worker	-0.229*	-0.517***	-0.540***	-0.442***	0.115	0.157	-0.010	-0.057	0.002	0.036
	(0.116)	(0.103)	(0.115)	(0.126)		(0.119)	(0.086)	(0.083)	(0.083)	
Hourly Wage	0.282	-0.136	0.047	-0.529	0.960	-0.119	-0.139	0.195	-0.418	0.874
	(0.579)	(0.448)	(0.459)	(0.427)		(0.624)	(0.424)	(0.385)	(0.550)	
Self-employed	-0.276***	-0.036	-0.004	0.051	0.097	-0.160	-0.180	-0.235**	-0.142	0.026
	(0.075)	(0.073)	(0.082)	(0.054)		(0.121)	(0.118)	(0.113)	(0.100)	
Employer	-0.015	-0.045**	-0.036	-0.026	0.011	0.007*	0.003	0.003	0.001	0.001
	(0.019)	(0.019)	(0.026)	(0.021)		(0.004)	(0.003)	(0.003)	(0.004)	
Unpaid Family Worker	0.045	0.075	0.034	0.083**	0.029	0.006	-0.141	-0.121	-0.102	0.084
	(0.036)	(0.052)	(0.045)	(0.036)		(0.131)	(0.159)	(0.174)	(0.144)	
B) FORMAL SECTOR										
Employed	0.358***	0.468***	0.521***	0.457***	0.459	-0.402***	-0.170**	-0.184**	-0.079	0.113
	(0.137)	(0.154)	(0.175)	(0.155)		(0.094)	(0.083)	(0.084)	(0.096)	
Wage Worker	0.085	0.236**	0.259**	0.227**	0.348	-0.368***	-0.191**	-0.215***	-0.106	0.104
	(0.098)	(0.097)	(0.114)	(0.088)		(0.083)	(0.075)	(0.069)	(0.091)	
Hourly Wage	0.026	0.794**	0.831**	0.759***	1.582	-0.037	0.388	0.445	0.523*	1.667
	(0.269)	(0.322)	(0.356)	(0.284)		(0.331)	(0.287)	(0.308)	(0.291)	
Self-employed	0.176***	0.133**	0.141**	0.139*	0.068	-0.006	0.006	0.007	0.007	0.003
	(0.057)	(0.062)	(0.065)	(0.076)		(0.008)	(0.005)	(0.006)	(0.006)	
Employer	0.054	0.064**	0.083**	0.053	0.039	-0.013**	-0.005	-0.006*	-0.006	0.002
	(0.044)	(0.030)	(0.041)	(0.035)		(0.006)	(0.004)	(0.004)	(0.004)	
First-stage regression	1.249***	1.318***	1.250***	1.431***		1.253***	1.319***	1.251***	1.428***	
	(0.094)	(0.085)	(0.060)	(0.097)		(0.093)	(0.084)	(0.060)	(0.096)	
F-statistics	175.298	242.425	430.978	219.336		181.441	247.433	435.974	221.117	
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, 2013 and 2014 versions. In all but wage regressions, the male sample includes 1,277,250 individuals and the female sample includes 1,377,454 individuals. In the wage regressions, the male sample includes 119,675 individuals for the informal sector and 409,516 individuals for the formal sector, and the female sample includes 35,470 individuals for the informal sector and 122,661 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 D12: Effects of Migrants on Aggregate Employment, Labor Force Participation and Unemployment of Natives – with only 2015 as Post-treatment Year, 2SLS Estimates

	MEN					WOMEN				
Dependent Variable	(1)	(2)	(3)	(4)	Mean	(5)	(6)	(7)	(8)	Mean
Employment	-0.117	-0.056	-0.024	0.123	0.712	-0.393	-0.498	-0.595	-0.319	0.261
	(0.090)	(0.146)	(0.183)	(0.112)		(0.312)	(0.351)	(0.374)	(0.218)	
Full-time Employment	-0.031	0.198**	0.179*	0.352***	0.681	-0.149	-0.003	-0.269*	0.246	0.212
	(0.098)	(0.093)	(0.106)	(0.062)		(0.157)	(0.192)	(0.159)	(0.157)	
Part-time Employment	-0.086	-0.254**	-0.203	-0.228**	0.031	-0.244	-0.495**	-0.326	-0.565***	0.049
	(0.123)	(0.123)	(0.148)	(0.102)		(0.197)	(0.205)	(0.268)	(0.135)	
Hourly Wage	0.621**	0.797***	0.749**	0.840***	1.443	0.096	0.645*	0.854**	0.927***	1.496
	(0.269)	(0.275)	(0.294)	(0.224)		(0.411)	(0.347)	(0.355)	(0.344)	
Wage Worker	-0.144	-0.281***	-0.281***	-0.215*	0.463	-0.212**	-0.201*	-0.273***	-0.104	0.140
	(0.098)	(0.086)	(0.095)	(0.119)		(0.085)	(0.107)	(0.100)	(0.094)	
Self-employed	-0.100	0.098	0.137	0.191**	0.165	-0.166	-0.174	-0.229**	-0.135	0.030
	(0.096)	(0.083)	(0.088)	(0.075)		(0.119)	(0.116)	(0.112)	(0.097)	
Employer	0.038	0.019	0.047	0.027	0.050	-0.006	-0.002	-0.003	-0.005	0.003
	(0.055)	(0.042)	(0.058)	(0.045)		(0.006)	(0.005)	(0.005)	(0.004)	
Unpaid Family Worker	0.088***	0.109**	0.072	0.121***	0.034	-0.009	-0.121	-0.091	-0.076	0.088
	(0.033)	(0.055)	(0.053)	(0.028)		(0.130)	(0.168)	(0.189)	(0.144)	
Labor Force Participation definition 1	-0.169	-0.136	-0.202	0.057	0.797	-0.396	-0.459	-0.599*	-0.234	0.297
	(0.191)	(0.188)	(0.174)	(0.200)		(0.311)	(0.348)	(0.356)	(0.183)	
Labor Force Participation definition 2	-0.068	0.247	-0.049	0.248	0.795	-0.510*	-0.342*	-0.530***	-0.335**	0.325
	(0.174)	(0.160)	(0.140)	(0.160)		(0.293)	(0.183)	(0.188)	(0.143)	
Unemployment definition 1	-0.052	-0.080	-0.177	-0.067	0.085	-0.003	0.038	-0.003	0.085	0.036
	(0.180)	(0.181)	(0.199)	(0.208)		(0.067)	(0.047)	(0.057)	(0.070)	
Unemployment definition 2	0.135	0.176	-0.084	0.123	0.080	0.030	0.120	0.084	0.113	0.039
	(0.144)	(0.181)	(0.236)	(0.180)		(0.059)	(0.073)	(0.099)	(0.069)	
First-stage regression	1.249***	1.318***	1.250***	1.431***		1.253***	1.319***	1.251***	1.428***	
	(0.094)	(0.085)	(0.060)	(0.097)		(0.093)	(0.084)	(0.060)	(0.096)	
F-statistics	175.298	242.425	430.978	219.336		181.441	247.433	435.974	221.117	
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, 2013 and 2014 versions. The wage regressions include 529,192 individuals in the male sample, and 158,131 individuals in the female sample. In regressions using definition 2 of labor force participation and unemployment, the sample sizes for males and females are 595,316 and 633,999, respectively. In all other regressions, the male sample includes 1,277,250 individuals and the female sample includes 1,377,454 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 varibles, a set of geographical-area and year specific control variables as indicated above, and the logarithm of trade volume. The instrument varies by the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D13: 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***	-0.538***	-0.539***	-0.363**	0.242	-0.013	-0.323	-0.403	-0.260	0.148
	(0.133)	(0.152)	(0.167)	(0.155)		(0.281)	(0.249)	(0.264)	(0.199)	
Wage Worker	-0.225**	-0.539***	-0.531***	-0.461***	0.110	0.205*	0.024	-0.014	0.045	0.036
	(0.096)	(0.088)	(0.101)	(0.106)		(0.121)	(0.091)	(0.092)	(0.078)	
Hourly Wage	0.520	-0.249	-0.050	-0.625	0.979	0.235	-0.084	0.221	-0.237	0.884
	(0.520)	(0.424)	(0.436)	(0.383)		(0.555)	(0.424)	(0.386)	(0.449)	
Self-employed	-0.331***	-0.037	0.002	0.040	0.094	-0.201**	-0.212**	-0.267***	-0.181**	0.026
	(0.087)	(0.072)	(0.079)	(0.053)		(0.102)	(0.093)	(0.090)	(0.085)	
Employer	-0.015	-0.048**	-0.039*	-0.031	0.010	0.006*	0.003	0.002	0.001	0.001
	(0.019)	(0.019)	(0.023)	(0.021)		(0.003)	(0.003)	(0.003)	(0.004)	
Unpaid Family Worker	0.056	0.085*	0.029	0.088***	0.028	-0.023	-0.139	-0.124	-0.124	0.084
	(0.034)	(0.045)	(0.038)	(0.034)		(0.110)	(0.123)	(0.136)	(0.131)	
B) FORMAL SECTOR										
Employed	0.392***	0.516***	0.555***	0.528***	0.475	-0.495***	-0.196***	-0.210***	-0.119	0.123
	(0.115)	(0.136)	(0.159)	(0.132)		(0.105)	(0.069)	(0.073)	(0.074)	
Wage Worker	0.115	0.248***	0.268**	0.288***	0.362	-0.454***	-0.212***	-0.230***	-0.147**	0.112
	(0.090)	(0.094)	(0.113)	(0.084)		(0.094)	(0.065)	(0.066)	(0.072)	
Hourly Wage	-0.003	0.765***	0.760**	0.825***	1.602	-0.103	0.411	0.444	0.568**	1.684
	(0.212)	(0.285)	(0.321)	(0.224)		(0.330)	(0.310)	(0.334)	(0.274)	
Self-employed	0.183***	0.167***	0.176***	0.154**	0.068	-0.008	0.006	0.006	0.009*	0.003
	(0.053)	(0.056)	(0.061)	(0.068)		(0.008)	(0.006)	(0.007)	(0.005)	
Employer	0.054	0.060**	0.066*	0.050	0.039	-0.015***	-0.009*	-0.011**	-0.009**	0.003
	(0.038)	(0.029)	(0.036)	(0.031)		(0.005)	(0.005)	(0.005)	(0.004)	
Unpaid Family Worker	0.041***	0.041***	0.044***	0.036***	0.005	-0.019	0.019	0.024	0.028***	0.004
	(0.012)	(0.013)	(0.014)	(0.013)		(0.014)	(0.015)	(0.021)	(0.010)	
First-stage regression	1.758***	1.876***	1.749***	2.125***		1.764***	1.879***	1.753***	2.123***	
	(0.133)	(0.123)	(0.091)	(0.147)		(0.131)	(0.123)	(0.090)	(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 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 varibles, 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. 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 D14: 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	-0.022	0.016	0.164	0.716	-0.509**	-0.519*	-0.614**	-0.379*	0.270
	(0.085)	(0.115)	(0.148)	(0.105)		(0.257)	(0.270)	(0.288)	(0.195)	
Full-time Employment	-0.050	0.242**	0.250**	0.409***	0.683	-0.250*	0.057	-0.231*	0.253*	0.218
	(0.090)	(0.094)	(0.103)	(0.081)		(0.136)	(0.167)	(0.138)	(0.148)	
Part-time Employment	-0.073	-0.265**	-0.235*	-0.245***	0.033	-0.259	-0.577***	-0.383*	-0.632***	0.052
	(0.108)	(0.108)	(0.122)	(0.090)		(0.170)	(0.160)	(0.209)	(0.135)	
Hourly Wage	0.746***	0.804***	0.712**	0.966***	1.473	0.089	0.604*	0.749**	0.943***	1.519
	(0.251)	(0.265)	(0.277)	(0.191)		(0.393)	(0.363)	(0.357)	(0.292)	
Wage Worker	-0.110	-0.291***	-0.263***	-0.173	0.472	-0.250***	-0.188*	-0.244***	-0.102	0.149
	(0.102)	(0.089)	(0.095)	(0.111)		(0.075)	(0.096)	(0.094)	(0.085)	
Self-employed	-0.148	0.131*	0.179**	0.194***	0.162	-0.209**	-0.205**	-0.260***	-0.172**	0.030
	(0.099)	(0.076)	(0.085)	(0.070)		(0.100)	(0.092)	(0.088)	(0.083)	
Employer	0.039	0.012	0.027	0.019	0.049	-0.009	-0.006	-0.009	-0.009*	0.003
	(0.049)	(0.041)	(0.052)	(0.042)		(0.006)	(0.006)	(0.006)	(0.005)	
Unpaid Family Worker	0.097***	0.126***	0.073*	0.124***	0.033	-0.042	-0.120	-0.099	-0.096	0.089
	(0.032)	(0.046)	(0.042)	(0.029)		(0.109)	(0.130)	(0.146)	(0.133)	
Labor Force Participation definition 1	-0.184	-0.114	-0.199	0.080	0.799	-0.528**	-0.479*	-0.621**	-0.305*	0.308
	(0.158)	(0.159)	(0.153)	(0.157)		(0.260)	(0.265)	(0.271)	(0.169)	
Labor Force Participation definition 2	-0.069	0.240	-0.011	0.286**	0.798	-0.600**	-0.322*	-0.446**	-0.379***	0.334
	(0.150)	(0.149)	(0.138)	(0.144)		(0.252)	(0.183)	(0.178)	(0.143)	
Unemployment definition 1	-0.062	-0.092	-0.215	-0.084	0.082	-0.019	0.040	-0.007	0.074	0.038
	(0.142)	(0.146)	(0.171)	(0.156)		(0.064)	(0.052)	(0.067)	(0.060)	
Unemployment definition 2	0.162	0.151	-0.088	0.147	0.076	0.033	0.118*	0.088	0.116*	0.040
	(0.121)	(0.140)	(0.183)	(0.145)		(0.054)	(0.068)	(0.088)	(0.059)	
First-stage regression	1.758***	1.876***	1.749***	2.125***		1.764***	1.879***	1.753***	2.123***	
	(0.133)	(0.123)	(0.091)	(0.147)		(0.131)	(0.123)	(0.090)	(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 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 on the key variable of interest, a set of individual-specific control varibles, 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.

Table D15: Relationship between Migrant to Native Ratio and Trade Volume

	Dependent Variable					
	Log of Trade Volume		Log of Exports		Log of Imports	
	(1)	(2)	(3)	(4)	(5)	(6)
Ratio of Migrants to Natives	2.714***	2.403**	4.184***	3.846***	0.220	-0.054
	(0.836)	(1.033)	(1.181)	(1.128)	(1.250)	(1.634)
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 varibles, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. Robust standard errors are given. *, **, or *** indicates significance at the 10%, 5% and 1% levels, respectively.

Table D16: 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	-0.548***	-0.542***	-0.524***	-0.427***	0.242	0.063	-0.317	-0.385	-0.263	0.148
	(0.130)	(0.149)	(0.163)	(0.157)		(0.274)	(0.237)	(0.259)	(0.187)	
Wage Worker	-0.165*	-0.560***	-0.559***	-0.464***	0.110	0.221*	0.016	-0.023	0.036	0.036
	(0.096)	(0.089)	(0.104)	(0.098)		(0.118)	(0.086)	(0.088)	(0.076)	
Hourly Wage	0.732	-0.315	-0.140	-0.428	0.979	0.434	-0.172	0.066	-0.030	0.884
	(0.508)	(0.423)	(0.434)	(0.377)		(0.567)	(0.413)	(0.373)	(0.373)	
Self-employed	-0.401***	-0.022	0.033	-0.001	0.094	-0.207**	-0.198**	-0.251***	-0.194**	0.026
	(0.092)	(0.072)	(0.082)	(0.054)		(0.098)	(0.092)	(0.090)	(0.083)	
Employer	-0.004	-0.049***	-0.041*	-0.028	0.010	0.007**	0.003	0.002	0.001	0.001
	(0.019)	(0.018)	(0.022)	(0.019)		(0.003)	(0.003)	(0.003)	(0.003)	
Unpaid Family Worker	0.022	0.089*	0.043	0.066*	0.028	0.041	-0.138	-0.113	-0.106	0.084
	(0.034)	(0.047)	(0.043)	(0.035)		(0.109)	(0.118)	(0.134)	(0.122)	
B) FORMAL SECTOR										
Employed	0.460***	0.530***	0.553***	0.600***	0.475	-0.482***	-0.176**	-0.192**	-0.089	0.123
	(0.121)	(0.135)	(0.154)	(0.139)		(0.100)	(0.071)	(0.075)	(0.077)	
Wage Worker	0.136	0.252***	0.259**	0.322***	0.362	-0.450***	-0.195***	-0.216***	-0.127*	0.112
	(0.087)	(0.091)	(0.107)	(0.085)		(0.091)	(0.066)	(0.068)	(0.073)	
Hourly Wage	0.039	0.798***	0.795**	0.910***	1.602	-0.036	0.450	0.510	0.600**	1.684
	(0.211)	(0.284)	(0.324)	(0.237)		(0.336)	(0.314)	(0.345)	(0.283)	
Self-employed	0.209***	0.175***	0.177***	0.181***	0.068	-0.008	0.007	0.007	0.010**	0.003
	(0.051)	(0.053)	(0.057)	(0.067)		(0.007)	(0.006)	(0.007)	(0.005)	
Employer	0.063	0.063**	0.074**	0.053*	0.039	-0.015***	-0.008*	-0.010**	-0.008**	0.003
	(0.038)	(0.029)	(0.036)	(0.031)		(0.005)	(0.004)	(0.004)	(0.004)	
First-stage regression	1.252***	1.312***	1.224***	1.444***		1.256***	1.313***	1.225***	1.442***	
	(0.074)	(0.064)	(0.047)	(0.080)		(0.073)	(0.064)	(0.047)	(0.080)	
F-statistics	286.625	419.021	673.922	324.720		294.466	422.714	689.063	325.081	
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 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 varibles, a set of geographical-area and year specific control variables as indicated above. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 D17: 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	-0.088	-0.012	0.029	0.173*	0.716	-0.419*	-0.493*	-0.577**	-0.352*	0.270
	(0.081)	(0.109)	(0.146)	(0.098)		(0.254)	(0.260)	(0.286)	(0.185)	
Full-time Employment	-0.018	0.245***	0.247**	0.427***	0.683	-0.210*	0.069	-0.220*	0.261*	0.218
	(0.079)	(0.091)	(0.101)	(0.077)		(0.127)	(0.159)	(0.133)	(0.144)	
Part-time Employment	-0.071	-0.257**	-0.218*	-0.254***	0.033	-0.209	-0.562***	-0.357*	-0.614***	0.052
	(0.100)	(0.106)	(0.123)	(0.087)		(0.166)	(0.157)	(0.208)	(0.128)	
Hourly Wage	0.867***	0.804***	0.694**	1.074***	1.473	0.252	0.624	0.765**	1.074***	1.519
	(0.252)	(0.256)	(0.268)	(0.194)		(0.388)	(0.382)	(0.378)	(0.334)	
Wage Worker	-0.029	-0.308***	-0.300***	-0.142	0.472	-0.229***	-0.178*	-0.239***	-0.091	0.149
	(0.103)	(0.084)	(0.091)	(0.098)		(0.073)	(0.092)	(0.090)	(0.082)	
Self-employed	-0.192**	0.152**	0.210**	0.180***	0.162	-0.214**	-0.191**	-0.244***	-0.184**	0.030
	(0.097)	(0.074)	(0.087)	(0.066)		(0.097)	(0.090)	(0.089)	(0.081)	
Employer	0.058	0.014	0.034	0.026	0.049	-0.007	-0.006	-0.008	-0.008*	0.003
	(0.051)	(0.040)	(0.051)	(0.041)		(0.006)	(0.006)	(0.006)	(0.004)	
Unpaid Family Worker	0.074**	0.129***	0.085*	0.109***	0.033	0.031	-0.118	-0.087	-0.069	0.089
	(0.030)	(0.047)	(0.045)	(0.029)		(0.109)	(0.124)	(0.144)	(0.121)	
Labor Force Participation definition 1	-0.154	-0.121	-0.214	0.060	0.799	-0.452*	-0.449*	-0.575**	-0.285*	0.308
	(0.153)	(0.154)	(0.152)	(0.159)		(0.253)	(0.255)	(0.269)	(0.160)	
Labor Force Participation definition 2	-0.056	0.214	-0.054	0.246*	0.798	-0.545**	-0.299*	-0.450***	-0.355***	0.334
	(0.143)	(0.150)	(0.150)	(0.142)		(0.246)	(0.171)	(0.171)	(0.130)	
Unemployment definition 1	-0.066	-0.109	-0.243	-0.113	0.082	-0.032	0.044	0.002	0.067	0.038
	(0.137)	(0.146)	(0.175)	(0.158)		(0.060)	(0.049)	(0.061)	(0.057)	
Unemployment definition 2	0.149	0.121	-0.142	0.111	0.076	0.033	0.108	0.073	0.109*	0.040
	(0.118)	(0.143)	(0.198)	(0.147)		(0.051)	(0.068)	(0.091)	(0.059)	
First-stage regression	1.252***	1.312***	1.224***	1.444***		1.256***	1.313***	1.225***	1.442***	
	(0.074)	(0.064)	(0.047)	(0.080)		(0.073)	(0.064)	(0.047)	(0.080)	
F-statistics	286.625	419.021	673.922	324.720		294.466	422.714	689.063	325.081	
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 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 on the key variable of interest, a set of individual-specific control varibles, and a set of geographical-area and year specific control variables as indicated above. The instrument varies by the annual stock of Syrian migrants (2013-15), the bilateral distances of the 13 Syrian provinces to the 26 NUTS-2 regions in Turkey, and the distribution of the Syrians in Turkey at the end of 2015 according to their origin region across the 13 provinces in Syria. 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 one uses the unemployment status variable as given in the dataset, which uses a 3-month job-search criterion until 2013 but a 1-month job-search criterion after 2013. The unemployment definition two 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.