The Economic Impact of Syrian Refugees on Host Countries: Quasi-Experimental Evidence from Turkey

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The civil conflict in Syria, which sparked in mid-2011, has sent "refugee shock waves" through many regions in the world. The neighbors of Syria—e.g., Turkey, Lebanon, Iraq, and Jordan—have been affected the most. Based on the United Nations figures, the total number of registered Syrian refugees has exceeded 4.2 millions as of December 2015.[1] Turkey alone has been hosting around 2.2 million refugees. As the conflict in Syria proved to be permanent and the absorption capacity of the neighboring countries diminished over time, the tendency to get clustered right outside of Syria's borders has transformed into a willingness to move toward the West with the hope of somehow gaining legal residency in developed countries, especially in Europe. To sum up, the movement patterns of Syrian refugees can be summarized in two stages: an initial shock generating a rapid and massive movement toward the nearest neighbor (2012 and 2013) followed by a selective search for a new permanent home as the wait gets longer (from the second half of 2014 on).

In this paper, I focus on the rapid, massive, and unexpected flows of Syrian refugees into Turkey for the purpose of estimating the impact of these flows on certain economic outcomes: labor markets, consumer prices, and housing rents. In line with the tradition of treating refugee flows as exogenous immigration shocks [see, e.g., (Card 1990), (Friedberg 2001), (Foged and Peri 2015), and (Tumen 2015)], I use the forced immigration from Syria to Turkey as a natural experiment. The identification strategy exploits the quasi-experimental regional variation in refugee concentration before and after the starting date of the inflows within a difference-in-differences setting. In terms of the two-stage moving pattern I describe above, this identification strategy relies on the first-stage movement, i.e., refugee inflows generated by the initial shock. The Turkish government immediately constructed a number of accommodation camps nearby the Turkey-Syria border and provided subsidized food, health, education, and other services to the refugees, which led to significant bunching of refugees around the camps. Overall, the first two years of the refugee inflows can be described as an era in which both the decision to migrate and the location choice within Turkey are mostly exogenous to the location and employment preferences of Syrian refugees.

I. Data and Empirical Strategy

In the baseline difference-in-differences setting, there is a "treatment region" versus a "control region" and a "pre-immigration period" versus a "post-immigration period." The treatment region consists of 5 NUTS2-level regions, which are the regions with high immigrant concentration marked with green color on the map. The control region, on the other hand, consists of 4 regions indicated with pink color on the map [see Figure 1]. The immigrant to population ratio is virtually zero in the control region. The treatment and control areas are similar in many respects including geographical location, cultural background, social norms & attitudes, and the level of economic development, while they are different in terms of refugee concentration—which

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[1]For more detailed statistical information about the regional dispersion of Syrian refugees, see http://data.unhcr.org/syrianrefugees/regional.php.

is driven by exogenous forces as I explain above.[2] The refugee inflows have started after January 2012. Before this date, the immigrant flow was basically zero. Taking January 2012 as the cutoff point, I construct a window that sets 2010–2011 as the pre-immigration period and 2012–2013 as the post-immigration period. This strategy compares the pre- and post-immigration prices in the treatment region with those in the control region.

I focus on three distinct sets of outcomes: (*i*) labor market outcomes (formal employment, informal employment, unemployment, labor force participation, and wages), (*ii*) consumer prices, and (*iii*) housing rents. For the labor market analysis, I use the Labor Force Survey (LFS) micro-level data set compiled and published by the Turkish Statistical Institute (TurkStat). The LFS provides very detailed information about the respondents' social/demographic characteristics and labor market outcomes. The national labor force statistics are produced from the LFS surveys. For consumer prices, I use the TurkStat's item-level data set, which is used to calculate the official CPI figures in Turkey. Retail prices (including taxes) are collected for 437 items in the entire country. The regional prices are given based on NUTS2-level regional categorization, which is consistent with the regional information in the LFS. For housing rents, we use the Income and Living Conditions Survey (ILCS)—again produced by the TurkStat—that provides extensive cross-sectional information on housing, labor market status, poverty, income level, social exclusion, demography, and health. It should be noted that there are no refugee observations in any of the data sets.

II. Results and Discussion

Table 1 reports the results for the labor market outcomes. The first column says that the refugee inflows to the treatment

region reduces the likelihood of having an informal job by 2.26 percentage points for natives in those regions compared to the natives in the control region. The second column suggests a small increase in the formal employment to population ratio by approximately 0.46 percentage points. While this increase can be intrepreted as a by-product of increased public services (due to the existence of accommodation camps) in the treatment region, the occupational distribution does not exhibit a change that would support this interpretation. So, the net decline in the employment to population ratio is 1.8 percentage points. The third and fourth columns describe what happened to those who lost their jobs. The estimates suggest that the unemployment to population ratio increased by 0.77 percentage points, while the labor force participation declined by 1.03 percentage points. In other words, around 43 percent of those who lost their jobs as a consequence of refugee inflows stayed unemployed, while the remaining 57 percent left labor force. We further find that men preferred to stay unemployed, while females chose to leave the labor force. Syrian refugees are not granted official work permit. Moreover, high informal employment is an inherent feature of the Turkish labor markets—around 21 percent in the overall and more than 50 percent in the refugee-receiving region before the inflows started. The prevalence of informal employment in the Turkish labor markets joined with no work permit arrangements for refugees have amplified the negative impact of Syrian refugee inflows on natives' labor market outcomes. Finally, I examine the wage effect—see the last column in Table 1. Overall, there is no statistically significant effect of the refugee inflows on the wage earnings of the native individuals. This holds for both formal and informal wage earners.

The results for consumer prices (for the 437 items in the CPI) are presented in Table 2. The main finding is that consumer prices have declined as a consequence of refugee inflows in the hosting region—which is consistent with the main consensus in

[2]For more details, see (Ceritoglu et al. 2015), (Balkan and Tumen 2015), and (Balkan, Torun and Tumen 2015).

the literature—see, e.g., (Lach 2007) and (Cortes 2008). The magnitude of this decline is approximately 2.5 percent. The second and third columns in Table 2 suggest that prices of goods and services have declined in similar magnitudes. Strikingly, there exist significant differences across the prices of the items produced in formal labor intensive sectors versus those produced in informal labor intensive sectors.[3] In particular, the decline in prices in the informal labor intensive sectors is around 4 percent, while the impact of refugee inflows on prices is almost zero in formal labor intensive sectors. The informal labor market, which is large in Turkey, offers a mechanism through which the refugee in inflows generate price declines in the hosting region. Increase in the supply of informal immigrant workers generates labor cost advantages in the informal labor intensive sectors, and, thus, leads to a reduction in the prices of the goods produced by these sectors. This does not contradict with the results presented for wages in Table 1. The informal workers who are more likely to be replaced by low-pay immigrants are (*i*) the least productive ones (who potentially receive very low wages) and (*ii*) the low-skill ones who receive high wages. Replacing a combination of the workers from these two groups with observationally equivalent immigrants may not alter the average wages of informal native workers in a statistically significant way. Moreover, anecdotal evidence suggests that the new hires in the informal labor market include a large number of low-cost Syrian refugees. Since the Turkish Household Labor Force Survey does not include the refugees, the new hires are unobserved and the wage regressions may not yield a statistically significant immigration effect.

Finally, Table 3 documents the results for the housing rent regressions. The first column reports the results for all rental units. The estimates suggest that refugee inflows have generated an increase in housing rents and the magnitude of this increase is approximately 5.5 percent. I further examine the role of heterogeneity by dividing the sample into two: units in the lower half of the rent distribution versus the ones in the upper half. Strikingly, we find that rents of the lower-quality units have only increased by 1.7 percent, while the high-quality rental units have faced a rent increase in the order of around 11 percent. This finding supports a residential segregation story, which suggests that the refugee wave has increased the demand for better and safer neighborhoods especially among natives.[4] There are some papers in the literature reporting the opposite result. For example, (Saiz 2003) shows that the "Mariel Boatlift" increased the housing rents in the overall, but the rent increase came almost exclusively from the low-quality units. The main institutional difference between the Mariel Boatlift case and the Syrian refugees that might be driving the difference in the results is that there was already quite a large number of Cubans residing in Miami prior to the boatlift, which is not the case for the Syrian refugees.

III. Concluding Remarks

The problem of Syrian refugees is of primary importance for many countries. By now, it is clear that the refugee problem will not only have short-term impacts, but will also impose several long-term consequences on the hosting countries. These consequences span a large horizon of topics including economic, social, and political outcomes. This paper collects several results about the economic impact of Syrian refugees in Turkey. It will not be surprising to see that there will be a surge of new research on the impact of Syrian refugees on a borader range of outcomes as new data sets with greater micro-level details become available.

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[3]A sector is "informal labor intensive" if more than 50 percent of all workers employed in that sector are informal workers.

[4](Balkan, Torun and Tumen 2015) provide auxiliary evidence showing that the search for a safer residential neighborhood have been intensified among natives after the arrival of Syrian refugees.
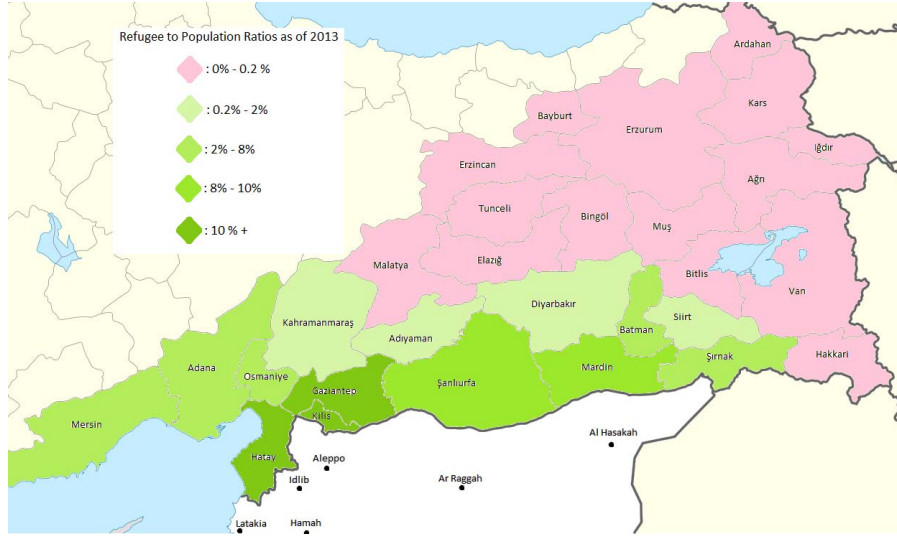
FIGURE 1. TREATMENT VERSUS CONTROL REGIONS.

Note: The refugee/population ratio is below 0.02 in the control region.

Source: (Balkan and Tumen 2015).

TABLE 1—RESULTS FOR LABOR MARKET OUTCOMES.

	Informal Emp.	Formal Emp.	Unemp.	LFP	Log wages
Effect	0.0226***	0.0046**	0.0077***	-0.0103***	0.0081
	(0.0028)	(0.0022)	(0.0015)	(0.0028)	(0.0064)
# of Obs.	357,083	357,083	357,083	357,083	52,701
R^2	0.139	0.348	0.046	0.380	0.618

Note: Standard errors are clustered at the region level. Sample is restricted to the age group 15–64. Region, year, and urban/rural fixed effects are included. Other controls are gender, marital status, age dummies, education dummies, and a full set of age-education interactions. Wage regressions also include a full-time vs part-time job status dummy, firm size dummies, and industry dummies. The first four columns are defined as the ratio of the corresponding employment variable to the population of age 15–64.

Source: (Ceritoglu et al. 2015).

TABLE 2—RESULTS FOR CONSUMER PRICES.

	All	Goods	Services	Formal Lab. Int.	Informal Lab. Int.
Effect	-0.0249***	-0.0264***	-0.0216***	-0.0039***	-0.0384***
	(0.0028)	(0.0032)	(0.0032)	(0.0007)	(0.0045)
# of Obs.	216,912	166,926	50,006	117,061	99,871
R^2	0.992	0.997	0.952	0.991	0.991

Note: Standard errors are clustered at the month level. Region, year, month, and item fixed effects are included.

Source: (Balkan and Tumen 2015).

TABLE 3—RESULTS FOR HOUSING RENTS.

	All	Lower-end	Upper-end
Effect	0.0547**	0.0183	0.107**
	(0.0198)	(0.0161)	(0.0387)
# of Obs.	12,911	6,527	6,384
R^2	0.559	0.312	0.384

Note: Standard errors are clustered at the region level. Region, year, and urban/rural fixed effects are included. Characteristics of the household head (age, education, income level, and employment status) are also controlled for. Lower-end corresponds to the housing rents in the lower half of the rent distribution, while upper-end corresponds to those in the upper half.

Source: (Balkan, Torun and Tumen 2015).

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