

The Impact of Syrian Refugees on the Turkish Labor Market

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Motivation

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- The refugee crisis:
 - Syria is largest source of refugees: 5 million (plus 7 million internally displaced).
 - Turkey largest refugee hosting country worldwide: 2.9 million Syrians.
- Lack of evidence on economic consequences of refugees:
 - Lack of good data: 86% of refugees are in developing countries.
 - Existing evidence predominantly from camps, but less than 30% of refugees live in camps.

Contributions of this Paper

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- Labor market impact of refugees:
 - 85% Syrian refugees outside camps (in 2014), good data on their location.
 - Instrumental variable strategy based on travel distances from 13 governorates in Syria to 26 Turkish subregions.
 - Do not simply compare places close border with those further away.
- Impact of well-defined informal labor supply shock:
 - Syrian refugees did not receive work permits.
 - But high employment rates: refugees are employed informally.
 - Unusually well-defined labor supply shock: broadly informative for economic theory on general immigration.

Literature

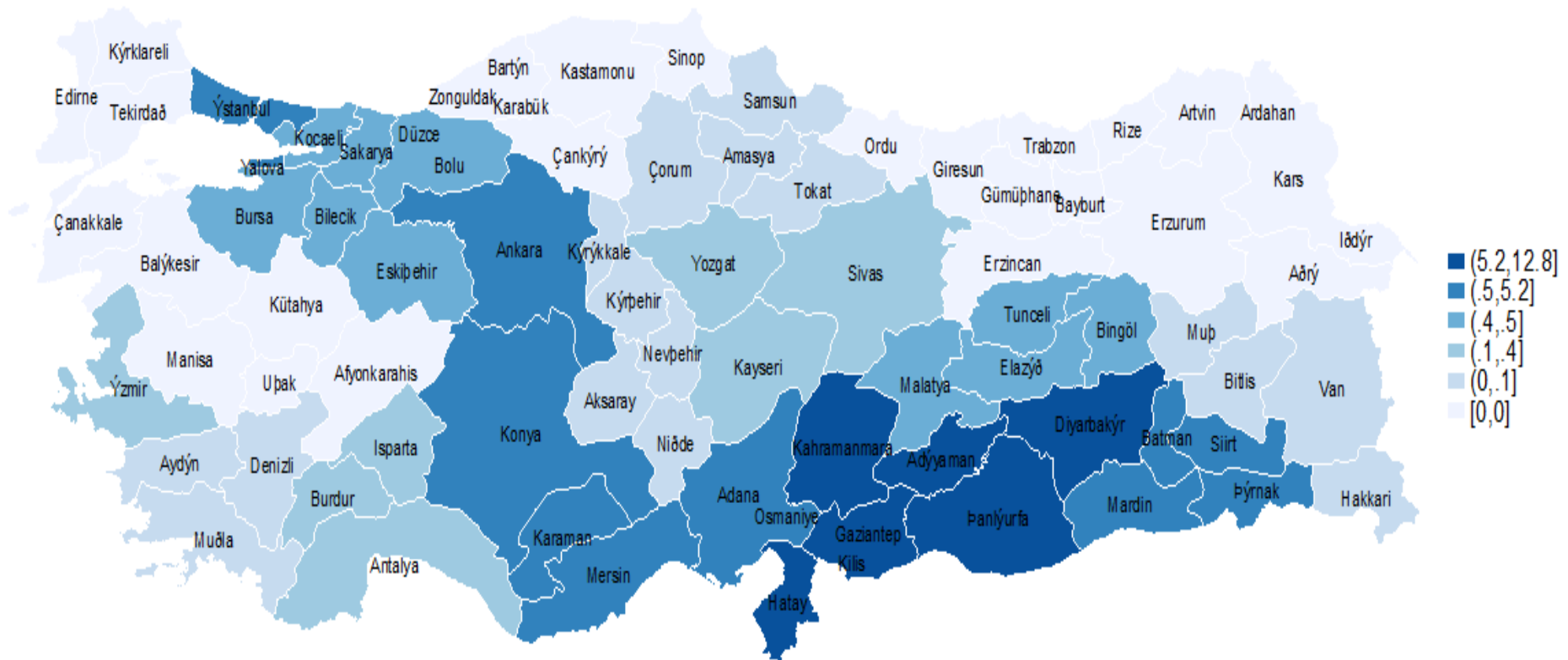
1. **Small literature on labor market impact of refugees in camps:**
 - Tanzania (Alix-Garcia and Saah 2009, Maystadt and Verwimp 2014, Ruiz and Vargas-Silva 2015)
 - Uganda (Kreibaum 2014)
2. **Large displacement effects in line with literature on labor supply shocks:**
 - Post Cold War Germany (Glitz 2012, Braun and Mahmoud 2014, Dustmann, Schönberg and Stuhler 2015).
 - Ethnic Turks from Bulgaria (Aydemir and Kirdar 2013).
 - Repatriates from African colonies to France and Portugal (Hunt 1992, Carrington and Lima 1996).
 - Palestinians in West Bank (Mansour 2010).
 - Internal displacement in Colombia (Calderon-Mejia and Ibanez 2015).
 - Exceptions: mixed evidence for Mariel boatlift (Card 1990, Borjas 2015, 2016, Peri and Yasenov 2015), Russians in Israel (Friedberg 2001).
3. **Larger effects found than for gradual, economic migration, e.g. literature on immigration to US.**
4. **Ceritoglu et al. (2015) address same questions simply comparing border to non-border regions for 2012 and 2013. Results consistent..**
5. **Survey articles: Ruiz and Vargas-Silva (2013), Mabiso et al. (2014), Tumen (2015).**

Background and Data

Syrians in Turkey (2014)

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Figure 1
Ratio of Syrian Refugees to Turkish Population (%)



Statistics for Turkish Working-Age Population (in %)

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	2011	2014
Labor force participation	53.7	57.2
Female LFP	31.3	33.0
Private sector employment	33.1	36.3
Public sector employment	6.1	6.5
Employer	2.5	2.3
Unpaid	6.6	6.3
Unemployment	5.4	5.8
Retired	4.8	4.9
In school	12.4	15.6
Low education	14.2	12.8
Medium education	56.2	57.8
Higher education	29.6	33.7
Share of Private Sector, Paid Employment (in %)		
Informal	39.5	33.4
Part-Time	8.1	8.1

Theoretical Framework

Theoretical Framework: Model

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- CRS production function where output is produced as the CES-aggregate of formal and informal labor.
 - *Elasticity of substitution = σ , Elasticity of labor demand = ψ*
- Turkish workers supply formal or informal labor
 - *ϕ_n = elasticity of labor supply across formal and informal*
- Refugees supply informal labor and are perfect substitutes for native informal labor.

Theoretical Framework: Implications

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- Displacement of native informal labor:
 - Whether effect shows up in wages or employment depends on ϕ_n
- Change in demand for native formal labor is theoretically ambiguous:
 - Increase in demand iff $\sigma < \psi$
 - Decrease in demand iff $\sigma > \psi$

Empirical Strategy

Empirical Strategy: Equations

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Impact of refugees (R) on employment (Y) for Turkish person i in year t and region r :

$$Y_{itr} = \gamma R_{rt} + f_t(D_r) + g(X_{irt}) + h(S_{rt}) + \delta_r + \delta_t + \varepsilon_{irt}$$

- R = refugees normalized by the working-age population
- $f(D)$ = distance from Syrian border (time-varying effect)
- $h(S)$ = trade volume
- $g(X)$ = individual characteristics
- δ_r, δ_t = region and year fixed effects
- γ = impact of refugees – interpretation in levels.
- Standard errors clustered by rt

Empirical Strategy: Instrumental Variable

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$$IV_{rt} = \sum_s \frac{1}{T_{sr}} \pi_s R_t,$$

- T_{sr} = travel distance from Syrian governorate (s) to Turkish NUTS 2 subregion (r)
- π_s = fraction of Syrian population in each governorate in 2010 (pre-war)
- Identification relies on existence of multiple border-crossings.

Empirical Strategy: Wage Decomposition

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To understand impact of refugees on wages we have to account for two effects. The arrival of refugees will:

1. Change the marginal product of Turkish workers.
2. Change who works (selection effects) as refugees displace Turkish.

Solution:

1. Estimate impact on wages not accounting for selection.
2. Estimate impact on composition of workforce. And multiply that impact by pre-refugee wages for each group (161 groups by education, gender, age, formal/informal, full/part-time).
3. For marginal product effect take impact (1) and subtract impact (2).

Results

Impact on Employment – Full Sample, IV

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	Total	Formal	Informal	Full	Part
Panel 1: Baseline Covariates					
Refugee / Population	-0.136 (0.148)	0.450*** (0.157)	-0.595** (0.272)	0.165 (0.104)	-0.301** (0.128)
Panel 2: Full Covariates					
Refugee / Population	-0.262* (0.139)	0.312** (0.124)	-0.612** (0.253)	0.034 (0.104)	-0.296** (0.126)
Obs.	670,380	670,380	670,380	670,380	670,380

Note: first-stage t-statistics 3.5

Impact on Employment – By Subgroup, IV

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	Total	Formal Female	Informal
Refugee/ Pop.	-0.580** (0.236)	0.058 (0.102)	-0.638*** (0.205)
		Male	
Refugee/ Pop.	0.075 (0.206)	0.582*** (0.223)	-0.507* (0.263)
	Low Education (no formal educ.)		
Refugee/ Pop.	-0.767** (0.317)	0.329*** (0.126)	-1.096*** (0.394)
	Medium Education (no high school)		
Refugee/ Pop.	0.072 (0.155)	0.401*** (0.154)	-0.330 (0.212)
	Higher Education (high school and above)		
Refugee/ Pop.	-0.361* (0.206)	0.087 (0.185)	-0.448*** (0.173)

- Informal workers in every group experience displacement (least the medium skilled).
- Gains in formal employment for men and those without high school completion.
- Net displacement for women and low skilled.
- No net displacement for men and medium skilled.

Impact on Wages – Decomposition in Turkish Lira per Month

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	Overall	Due to Observables	Residual
All Employed	30.2** (11.8)	26.3* (15.8)	4.0 (19.7)
Female	50.3 (39.6)	110.3** (45.0)	-60.0 (60.0)
Male	26.5** (11.6)	2.8 (16.1)	23.7 (19.9)
Formal	-2.7 (30.0)	0.5 (10.7)	-3.2 (31.9)
Informal	26.3 (53.5)	73.3** (36.3)	-47.0 (64.6)
Low Education	14.3 (28.4)	149.7*** (49.0)	-135.4** (56.6)
Medium Education	8.0 (14.4)	12.9 (20.1)	-4.9 (24.8)
High Education	49.2 (46.3)	3.2 (24.9)	46.1 (52.6)

- Observed wages increase throughout. Why?
- Answer: selection. Lowest wage women, low educated, informal workers drop out.
- Residual wage changes negative for low-skilled (women and informally employed).

Adjustment Mechanisms

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So how do Turkish workers respond?

1. Move from informal to formal.
2. Women leave labor force and increased school attendance.
3. Decreases in net Turkish population in a region and reduction in native inflows due to refugees.

Placebo Tests / Robustness Checks

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- No evidence of pre-existing trends in employment or wages that would explain our results and are correlated with (instrumented) refugee flows.
- Results robust to controlling for (i) trade volumes, (ii) pre-war economic linkages, and (iii) number of refugees in camps
- 2012 education reform keeps a lot more people in school in border regions, but impact accounted for with our distance from border control.
- Main results are for all 26 Turkish subregions. Results do not change substantially if:
 - we drop Gaziantep (the highest refugee subregion),
 - only include border regions and comparable Eastern Anatolian regions (14 subregions in total).

Conclusions

Broad lessons:

- Refugee inflows generate costs (displacement) and economic opportunities (occupational upgrading?).
- Economically marginalized groups – women and low educated – most negatively impacted. This creates a challenge for policy.

Looking forward:

- January 2016 agreement to issue work permits (no action yet).
- Onward movement of refugees to Western Europe affects both number and characteristics of refugees in Turkey.