The Impact of Syrian Refugees on the Overeducation of Natives: Evidence from Turkish Labor Markets

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Introduction

- In most developed countries, high enrollment rates in secondary and tertiary education have caused to concern that labor demand has fully absorbed all labor suitable for their skills.
- Overeducation, which is incidence that a worker has an education level above a job required, is 26% on average in developed and developing countries.
- Turkey is no exception when it comes to overeducation, increasing its the rate from 31% to 46% between 2004–2019.

Introduction

- During this period, Turkish labor market faced Massive Syrian refugee inflow into Turkish border beginning in 2011.

- However, no study paid attention to how such refugee influx might have affected occupation positioning of natives based on their educational background even though labor market effects have been well-documented.
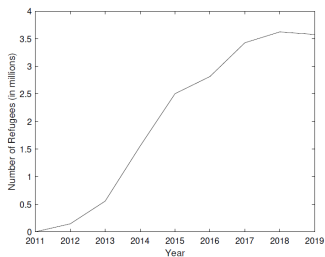
This paper

- Our aim in this study is to analyze how natives have adjusted their occupation based on educational backgrounds when they faced a migration shock.

- We particularly study the causal effect of Syrian migrants on the probability of Turkish natives being overeducated.

- As the effects of the migrants could differ among different groups of natives such as young, women, and low educated workers, we also carry out this analysis by these subgroups as well for formal and informal sectors.
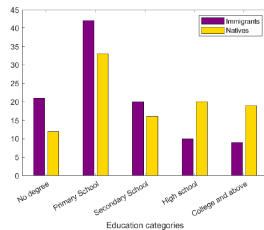
Background

- In the literature large amount of papers have addressed the link between migration and mismatch. However, most of them are related to mismatch determinants of migrants and natives themselves (Lindley, 2009; Nielsen, 2011; Nieto el al., 2015; Lu and Hou, 2020; Schuss, 2020).

- Our study may be close to those that investigate the relationship between migration and occupational choice or mobility of natives (Foged and Peri, 2016; Peri and Sparber, 2020).

- For Turkey, Akgunduz and Torun (2018) found consistent with previous studies that 2.5 million Syrian refugees increase task complexity and induce them to upgrade their ICT-based and abstract tasks, especially among medium-level educated workers.

- Hence, our paper fills the gap in the literature in a way that sudden migration shock changes the utilization of skills in terms of schooling level.

Syrian refugees in Turkey

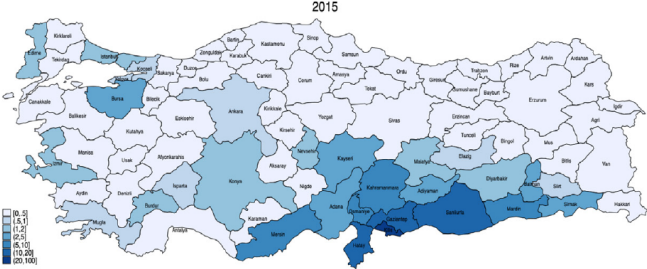(a) Timeseries of the number of Syrian refugees in Turkey

(b) Educational Attainment of Syrians and Natives

Ratio of migrant to natives across provinces (2012)

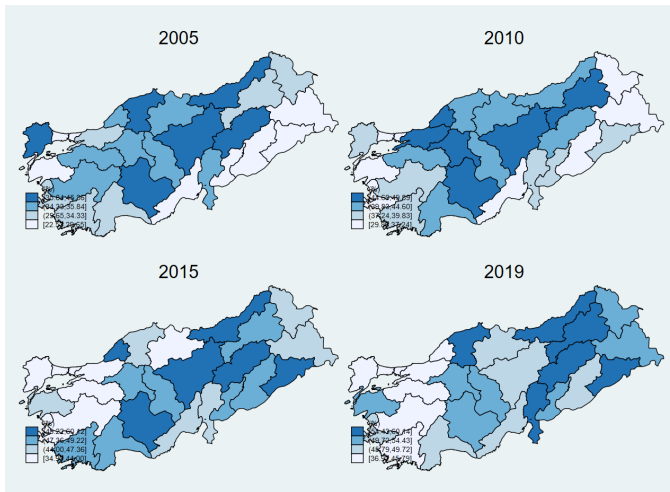# Ratio of migrant to natives across provinces (2015)

Data and Measurement of Mismatch

- We use three data sources to investigate the effect of Syrian refugee shock on the overeducation in the Turkish labor market.

- First one is LFS dataset. We exclude those who born in abroad to keep the native population. Since we are interested in the mismatch situation of natives, our sample are reduced to only employed people. Then our focused sample is working age (18-65) population who are employed full-time in the private sector.

- To measure the whether a worker overeducated or not, there are two approaches: self-reporting and objective approach. Former has some drawbacks. More importantly, there is no representative data.

- We adopt modal approach developed by Kiker et al. (1997) among latter.

Regional destribution of overeducation

Data and Measurement of Mismatch

- In this approach firstly we neeed to identify the required schooling years of each occupation. Kiker et al. (1987) suggested that workers with most observed schooling years in an occupation should be chosen as adequately (or matched) educated.

- If a worker has schooling greater than this level, then he or she would be over-educated.

Identification

- We use the 2004-2019 waves of Turkish Household and Labor force survey data and employ a difference-in-differences estimation with a continuous treatment framework which allows us to compare the pre-treatment period of outcomes with treatment considering different migration intensity. In particular, we estimate the following equation:

$$y_{ist} = \alpha + X'_{ist}\Phi + \beta ratio_{st} + D_k + D_{kt} + D_o + D_s + D_{rt} + \varepsilon_{ist}$$

where y_{ist} is a dummy variable that is equal to 1 if worker i in subregion s at time t has more schooling years than an occupation should adequately required, zero otherwise. $ratio_{st}$ is variable of interest.

Identification

- In order to overcome endodeneity problem, we utilized distance-based instrumental variable approach and used the instrument of Aksu et al. (2022). Their instrument accounts for not only the distance of Syrian provinces to Turkish provinces but also their distance to the other three bordering countries, Iraq, Lebanon, and Jordan, in the following way:

$$I_{st} = \sum_{g=1}^{13} \frac{\left(\frac{1}{d_{g,T}}\right)\omega_g}{\left(\frac{1}{d_{g,T}} + \frac{1}{d_{g,I}} + \frac{1}{d_{g,L}} + \frac{1}{d_{g,J}}\right)} \frac{R_t}{d_{s,g}}$$

where $d_{g,T}$, $d_{g,I}$, $d_{g,L}$, $d_{g,J}$ are the minimum distance of the Syrian province g to any entry point in the border of Turkey, Iraq, Lebanon, and Jordan respectively. ω_g is pre-war population share of Syrian province g. R is total number of refugees in four countries. $d_{s,g}$ is the distance of Turkish subregion s to Syrian province g.

Identification
Effects on employment

- We should keep in mind that overeducation model and mechanisms above cover only those who are in employed status. On the other hand, some people may be crowded out by immigrants because of the competition with Syrian migrants. In order to see whether displacement effect works, we estimate a employment model in formal and informal sector.
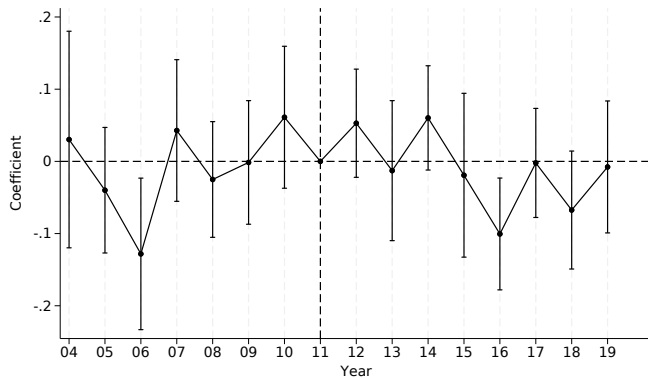
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$$z_{ist} = \alpha + X_{ist}^{'}\Phi + \theta \, ratio_{st} + D_s + D_{rt} + \varepsilon_{ist}$$

- Where z_{ist} is dummy variable which takes 1 if labor force status of individual i is employed.
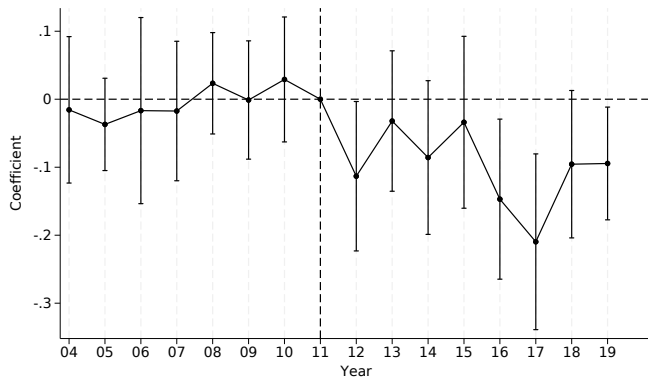
Results -men

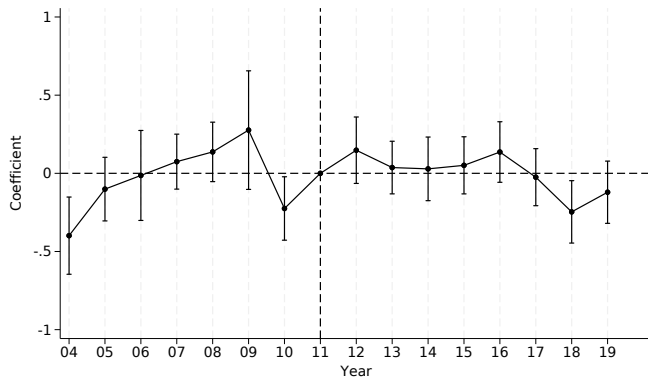|	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS
FORMAL SECTOR					
Refugees/pop.	-0.051	-0.126**	-0.016	-0.104**	-0.046
	(0.100)	(0.049)	(0.035)	(0.045)	(0.035)
First stage F-stat.	124.4	124.3	124.3	121.1	127.2
Observations	612,388	606,946	606,946	606,938	606,938
INFORMAL SECTOR					
Refugees/pop.	-0.016	-0.230***	-0.119**	-0.153***	-0.117**
	(0.125)	(0.034)	(0.046)	(0.041)	(0.043)
First stage F-stat.	101.7	101.2	101.2	104.1	104
Observations	218,100	195,338	195,338	195,268	195,268
Year FE	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+
Demographic FE	-	+	+	+	+
Occupation FE	-	-	+	-	+
Employment FE	-	-	-	+	+

Event study -men, formal sector

Event study -men, informal sector

Results –women

	(1) 2SLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS
FORMAL SECTOR					
Refugees/pop.	-0.185***	-0.217**	-0.059	-0.202*	-0.103
	(0.044)	(0.078)	(0.076)	(0.105)	(0.071)
First stage F-stat.	76.11	75.24	75.28	78.69	78.74
Observations	161,572	159,771	159,771	159,744	159,744
INFORMAL SECTOR					
Refugees/pop.	-0.191	-0.035	0.032	0.039	0.049
	(0.137)	(0.079)	(0.050)	(0.042)	(0.045)
First stage F-stat.	79.59	77.30	77.42	79.46	79.51
Observations	72,381	66,023	66,023	65,857	65,857
Year FE	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+
Demographic FE	-	+	+	+	+
Occupation FE	-	-	+	-	+
Employment FE	-	-	-	+	+

Event study -women, formal sector
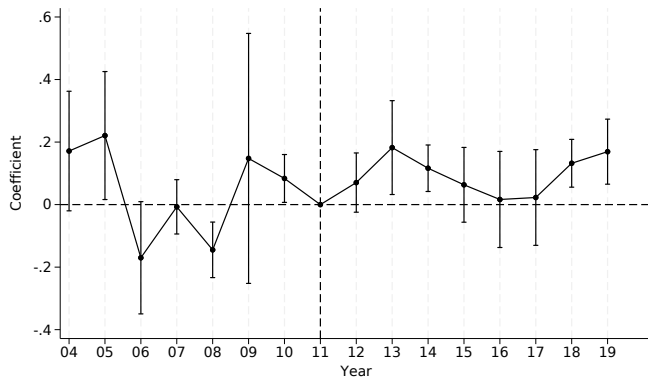
Event study -women, informal sector

Results -men by age group

	(1)	(2)	(3)	(4)	(5)	(6)
	FORMAL SECTOR			INFORMAL SECTOR		
18-34						
Refugees/pop.	-0.276***	-0.024	-0.078*	-0.317***	-0.174***	-0.178***
	(0.058)	(0.036)	(0.039)	(0.055)	(0.026)	(0.027)
First stage F-stat.	128.4	128.5	131.9	100.9	100.9	105.8
Observations	307,885	307,885	307,870	102,779	102,779	102,667
35-54						
Refugees/pop.	0.039	0.047	0.041	-0.046	-0.035	-0.044
	(0.074)	(0.046)	(0.044)	(0.055)	(0.057)	(0.054)
First stage F-stat.	119.6	119.8	123.2	100.2	100.2	104.3
Observations	284,057	284,057	284,047	77,052	77,052	76,932
55-64						
Refugees/pop.	-0.392***	-0.092**	-0.162*	-0.319***	-0.013	-0.098
	(0.175)	(0.043)	(0.089)	(0.053)	(0.080)	(0.097)
First stage F-stat.	110.1	110.5	121.9	81.75	81.99	86.18
Observations	15,004	15,004	14,857	15,507	15,507	15,309
Year FE	+	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+	+
Demographic FE	+	+	+	+	+	+
Occupation FE	-	+	+	-	+	+
Employment FE	-	-	+	-	-	+

Results -women by age group

	(1)	(2)	(3)	(4)	(5)	(6)
	FORMAL SECTOR			INFORMAL SECTOR		
18-34						
Refugees/pop.	-0.379***	-0.088	-0.167*	-0.121	0.088*	0.087*
	(0.078)	(0.083)	(0.085)	(0.156)	(0.043)	(0.047)
First stage F-stat.	80.72	80.79	84.31	85.80	86.08	91.82
Observations	95,900	95,900	95,858	30,234	30,234	30,047
35-54						
Refugees/pop.	0.166	0.033	0.028	-0.170***	-0.081	-0.043
	(0.154)	(0.055)	(0.059)	(0.032)	(0.052)	(0.046)
First stage F-stat.	61.79	61.83	66.68	70.26	70.40	71.79
Observations	61,973	61,973	61,909	30,943	30,943	30,757
55-64						
Refugees/pop.	-0.065	-0.032	0.248	0.108**	0.108**	0.104*
	(0.262)	(0.200)	(0.655)	(0.051)	(0.044)	(0.055)
First stage F-stat.	45.34	47.02	53.20	42.01	42.09	42.07
Observations	1,881	1,879	1,676	4,838	4,833	4,714
Year FE	+	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+	+
Demographic FE	+	+	+	+	+	+
Occupation FE	-	+	+	-	+	+
Employment FE	-	-	+	-	-	+

Results -men by education level

	(1)	(2)	(3)	(4)	(5)	(6)
	FORMAL SECTOR			INFORMAL SECTOR		
LOW EDUCATION						
Refugees/pop.	-0.088**	-0.017	-0.059**	-0.201***	-0.119***	-0.119***
	(0.040)	(0.026)	(0.028)	(0.033)	(0.036)	(0.029)
First stage F-stat.	130.1	130.2	133.7	101.5	101.5	104.2
Observations	329,283	329,283	329,258	156,083	156,082	155,978
HIGH EDUCATION						
Refugees/pop.	-0.162**	-0.040	-0.038	-0.463**	-0.196***	-0.164*
	(0.069)	(0.036)	(0.047)	(0.199)	(0.064)	(0.084)
First stage F-stat.	114.4	114.5	117.8	99.39	99.36	104.2
Observations	277,663	277,663	277,650	39,255	39,255	39,129
Year FE	+	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+	+
Demographic FE	+	+	+	+	+	+
Occupation FE	-	+	+	-	+	+
Employment FE	-	-	+	-	-	+

Results -women by education level

	(1)	(2)	(3)	(4)	(5)	(6)
	FORMAL SECTOR			INFORMAL SECTOR		
LOW EDUCATION						
Refugees/pop.	-0.488***	-0.182*	-0.221	-0.039	-0.010	0.013
	(0.060)	(0.101)	(0.132)	(0.071)	(0.057)	(0.041)
First stage F-stat.	98.08	98.17	106.3	79.77	79.89	81.74
Observations	62,874	62,874	62,739	53,049	53,049	52,884
HIGH EDUCATION						
Refugees/pop.	-0.071	-0.040	-0.074	0.025	0.285*	0.302***
	(0.164)	(0.065)	(0.049)	(0.483)	(0.156)	(0.090)
First stage F-stat.	65.59	65.74	68.23	66.46	66.99	70.87
Observations	96,897	96,897	96,855	12,974	12,974	12,773
Year FE	+	+	+	+	+	+
NUTS-2 FE	+	+	+	+	+	+
NUTS-1 x year FE	+	+	+	+	+	+
Demographic FE	+	+	+	+	+	+
Occupation FE	-	+	+	-	+	+
Employment FE	-	-	+	-	-	+

Results, employment -men

	(1) OLS	(2) 2SLS	(3) OLS	(4) 2SLS
	FORMAL SECTOR		INFORMAL SECTOR	
ALL SAMPLE				
Refugees/pop.	0.135***	0.118*	-0.244***	-0.211***
	(0.052)	(0.062)	(0.042)	(0.043)
First-stage F-stat.		701.8		701.8
Observations	1,946,202	1,946,202	1,946,202	1,946,202
Controls	+	+	+	+
NUTS-1 x year FE	+	+	+	+

Results, employment -women

	(1) OLS	(2) 2SLS	(3) OLS	(4) 2SLS
	FORMAL SECTOR		INFORMAL SECTOR	
ALL SAMPLE				
Refugees/pop.	-0.136***	-0.150***	0.052*	0.076**
	(0.027)	(0.027)	(0.030)	(0.032)
First-stage F-stat.		682.7		682.7
Observations	2,124,223	2,124,223	2,124,223	2,124,223
Controls	+	+	+	+
NUTS-1 x year FE	+	+	+	+

Conclusion

- It is a well-known fact that migration has caused significant consequences for hosting country. In addition to wage and employment effect, employability of natives suitable for their skill set have an important dimension to able to use human resource effectively in economy and to enhance job satisfaction and income level of labor.

- Our results showed that an increase in the share of Syrian refuge in total subregion population leads to a reduction in overeducation probability. This finding is strongly confirmed for **low-educated** and **young-age group** native men in informal sector.

- However, this effect might occurs due to the exiters in this sector.

- Null effect is found in native women. As they are crowded out from the formal sector, they do not change matching composition. Exception to this is young aged women.

Thank you for listening.

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