The Impact of Refugee Crises on Firm Dynamics and Internal Migration: Evidence from the Syrian Refugee Crisis in Turkey

Yusuf Emre Akgündüz [*] Marcel van den Berg [†]
Wolter Hassink [‡]

Abstract

The civil war in Syria has culminated into major refugee crises in its neighboring countries. By the end of 2013 more than half a million people were seeking shelter in cities and refugee camps in Turkey. We analyze how the Syrian refugee influx in Turkey affected firm entry and exit rates, foreign investments and internal migration in regions of Turkey where refugees are being accommodated. Refugee camps are geographically concentrated near the Syrian border, which enables us to employ the rest of regional Turkey as control group with a difference-in-difference approach to analyze the impact on local economies. Our findings suggest that firm entry increased in provinces hosting refugees and we find no concurrent increase in firm exits. The net increase appears to be at least partially driven by foreign owned firms. We also find that internal migration in and out of the host regions declined. We conclude with a discussion of the effects of the refugee crisis on local economies in terms of both employment and firm dynamics.

Keywords: refugees, firm entry and exit, migration, inflation, regional economy, difference-in-difference
JEL-classification: F22, J61, R23

[*]CPB Netherlands Bureau of Economic Policy Analysis, Van Stolkweg 14, 2585 JR, the Hague, The Netherlands and Utrecht University, e-mail: y.e.akgunduz@cpb.nl

[†]Statistics Netherlands, CBS-weg 11, 6412 EX, Heerlen, The Netherlands, e-mail: m.r.vandenberg@cbs.nl

[‡]Utrecht University, Utrecht University School of Economics, Kriekenpitplein 21-22, 3584 EC, Utrecht, The Netherlands and IZA e-mail: w.h.j.hassink@uu.nl. The content of this publication does not reflect the official opinion of Statistics Netherlands or the CPB Netherlands Bureau for Economic Policy Analysis. Responsibility for the information and views expressed in the paper lies entirely with the authors.

1 Introduction

The Syrian Civil War that began in 2011 came at an enormous human cost. The United Nations puts the number of people who have fled their homes at 9 million by the end of 2013 and the number has been increasing since then. While 6.5 million of these refugees are internally displaced in Syria, 2.5 million escaped the war and are now refugees in Syria's neighboring countries: Turkey, Lebanon, Jordan and Iraq. Accommodating this many refugees, whose return dates are uncertain at best, is bound to not only put a strain on host countries' public finances, but to affect local economies as well. In Turkey, Syrian refugees started arriving in May 2011. At first, numbers of arriving refugees were relatively small at about 7,600 in November 2011 according to UNHCR statistics. The situation had reached crisis proportions by the end of 2012 when the total number of registered refugees in Turkey was approximately 135,000. The flood of refugees continued and reached close to a million by the end of 2014. The impact of this particular refugee crisis has been widening in 2015 from regions neighboring Syria northbound into Europe all the way up to Scandinavia (Yazgan et al., 2015). Refugee crises of these proportions constitute some of the sharper immigration shocks in recent history.

Maystadt and Verwimp (2014) develop a theoretical model on the effects that refugee inflows may have on local economies through multiple channels. They discuss seven possible channels through which the refugee inflow can have an effect: prices, employment, wages, business, infrastructure, health and sanitation services, crime and unrest. These effects are likely to impact differently on the welfare of specific sub-populations. Maystadt and Verwimp (2014) show this empirically using consumption data. The literature on the economic effects of refugee crises has previously considered prices, health of children and the labour market (Alix-Garcia and Saah, 2010; Baez, 2011; Alix-Garcia et al., 2012; Alix-Garcia and Bartlett, 2015). Once we also consider the evidence provided in the migration literature, employment outcomes are the clear focus of research (Borjas, 2006; Dustmann et al., 2008; Card et al., 2012). Economic theory would suggest that migration increases supply and thus competition on local labor markets, leading to lower employment and wages for lower skilled natives. In line with these predictions, the analysis of Ceritoglu et al. (2015) for the Syrian refugee crisis in Turkey suggests that informal employment and wages of vulnerable groups decreased among the native population in regions hosting refugees.

We analyze the impact of the Syrian refugee crisis on local economies in Turkey on two generally ignored dimensions: firm entry and exit and internal migration. Evidence on firm entry and exit is especially lacking in both

migration and refugee literature. Focusing exclusively on employment outcomes in the empirical literature may lead to equating the inflow of refugees with only an increase in (low-skilled) supply of labor. Refugees also represent demand for local goods, differing tastes, (liquid) capital and networks. Their effects on business outcomes may therefore be relevant to get a complete picture of how refugee crises affect hosting economies.

A straightforward analysis of geographical correlations between refugees and outcomes would underestimate the impact refugees exert, since refugees might choose entrepreneurial domains with better prospects. The most obvious solution is to exploit exogenous shocks leading to large scale immigration, but they too can be difficult to analyze. If there are no measures managing arrivals' location choices within the host country, it will be difficult to construct a proper control group. Geographical constraints on the location of the refugee camps and the dramatic speed at which refugees started crossing the Turkish border allow us to circumvent many of the empirical identification and endogeneity issues discussed by Dustmann et al. (2008). The destination of Syrian refugees arriving in Turkey is limited geographically to the location of the refugee camps in the border region and the size of the inflow is large enough to allow for the estimation of the effects on the outcomes using regional data in a simple difference-in-difference (DiD) framework. Our analysis is based on publicly available data sources. A remaining problem is that provinces receiving refugees are located in the southeast of Turkey, which is less developed than the western part of the country. Therefore, we test the results from DiD-models using the synthetic control method of Abadie et al. (2010) to give higher weights to control group provinces that have pre-treatment outcomes closer to those in hosting regions. We use several data sources for the analysis. We use data from Turkish Statistics on various economic indicators and internal migration. We use monthly reports from the Turkish Chamber of Commerce to construct a rich dataset regarding the number of start-ups, firm exits and the amount of foreign capital involved. We use these reports to construct measures of firm entry and exit in each province as well as the share of foreign capital involved in newly established firms. Finally, we use UNHCR reports from 2012, 2013 and 2014 on the number of refugees in each province.

The key finding of our analysis is that the number of start-ups in regions hosting refugees increased. We find that at least a significant portion of this increase is due to the influx of foreign capital rather than capital owned by Turkish citizens. This does not seem to have led to a crowding out effect on established firms in these provinces. The effect on the number of exiting firms is statistically insignificant. In addition, we find a significant decrease in in-migration to provinces hosting refugees, but also a (less robust) decline

in out-migration. That is, fewer Turks move to the main hosting regions, but native Turks seem to be staying put in hosting regions. The refugee crisis thus seems to have crowded out internal migration to areas hosting refugee camps without affecting the behavior of natives already living in these provinces.

This paper contributes to the literature on the economics of refugee crises in several ways. Our primary contribution is the provision of evidence on the effect of the refugees on local business outcomes, a potential channel discussed by Maystadt and Verwimp (2014) that has not been analyzed empirically in the refugee literature thus far. Our findings help explain several paradoxes in the literature. The lack of large employment and wage effects on natives from refugee inflows was generally explained by a decline in internal migration Borjas (2006). The positive impact on firm entry and foreign capital inflows might offer a second channel through which the limited employment effects can be explained. The paper also complements the study of Maystadt and Verwimp (2014), who found an increase the consumption of non-agricultural workers and a decrease in the consumption of local business owners. The former group is likely to benefit from new business activity refugee inflows spur while the latter group may be facing increasing competition from newly established firms. Finally, the main narrative emerging from our analysis thus shows some benefits to local business that might help explain why the employment effects seem limited to informal employment Ceritoglu et al. (2015).

The remainder of the paper is organized as follows. Section 2 provides a brief description of the legal and social status of the Syrian refugees and the development of their situation. Section 3 discusses the framework and the empirical methodology. Section 4 introduces the data employed in the analysis. Section 5 presents provides the main results and is followed by the robustness tests shown in section 6. Section 7 concludes.

2 Syrian refugees in Turkey

In November 2011, responding to the civil war reaching the northern areas of Syria, approximately 7,000 refugees crossed the Turkish border. By November 2014, Turkey was hosting approximately a million refugees. Officially, the Turkish government did not recognize the Syrian refugees as asylum seekers. In technical terms the refugees were being treated as guests (Özden, 2013). This has two important implications. First, they cannot apply for asylum in a third country. This limits the opportunities of migrating to other countries. Second, unlike the refugee status, the guest status implies that refugees can be relocated by the Turkish government without any legal process. To alleviate

the conditions of the Syrian refugees and to limit uncertainty, the government enacted a temporary protection policy that ensures an open border between Turkey and Syria and that promises no forced exit. Syrians staying outside refugee camps by now make up 75 percent of the total number of refugees.

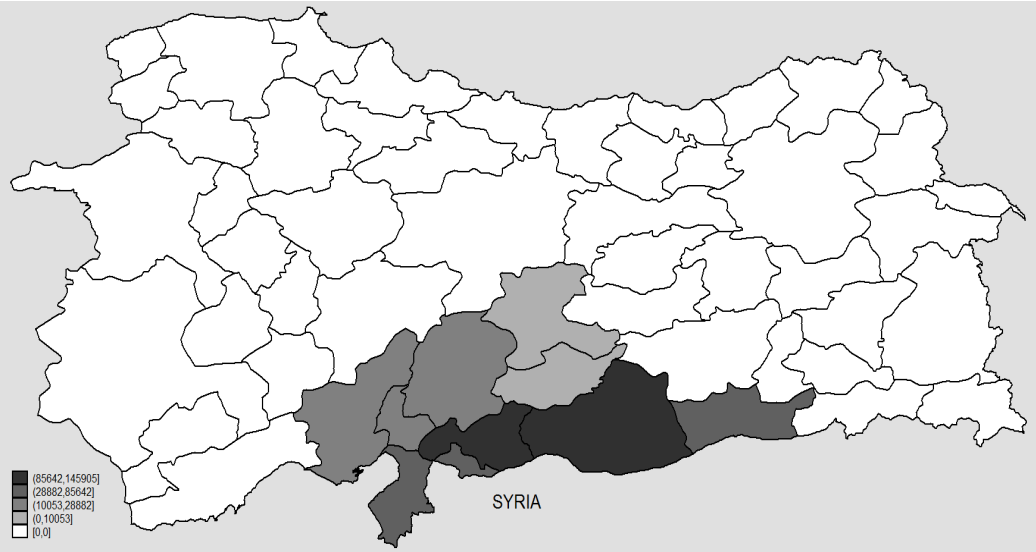
The guest status of the Syrian refugees is important to keep in mind in our empirical analysis. Many papers analyzing the impact of migration on labor market outcomes suffer from what Friedberg and Hunt (1995) call the 'composition problem'. If employment levels among migrants are lower than among incumbents, hosting migrants in a region will lower the employment rate, independent of any effects on the incumbents (natives) participating on the labor market. As such, interpreting lower employment rates as the effect of migration on natives becomes questionable. Since Syrian refugees do not have residential or citizenship status, they are not counted in official provincial statistics on employment or internal migration. As such, analyzing the effects of the refugee influx in southern Turkey will provide us with net employment effects on natives and other migrants in the area, independent of employment rates among refugees.

Figure 1 shows the numbers of refugees in regions with camps that are close to the border in the southeastern part of Turkey in 2013. This region of Turkey is characterized by relatively low population densities. Total population in the region hosting refugees is approximately 10 million.[1] The arrival of a million Syrians is thus likely to have noticeable consequences for the local economy. A fraction of refugees has also relocated to the larger cities in the western part of Turkey, such as Istanbul and Izmir. The ORSAM (2013) report uses data from the Ministry of the Interior to show that there are nearly 330,000 refugees in Istanbul while the rest of the Western provinces has received negligible numbers of refugees (e.g. 10,000 in Izmir). Nevertheless, we take this into account in the analysis by dropping Istanbul from all regressions and further testing the robustness of our findings by excluding provinces west of Ankara, which is located more or less in the middle of Turkey.

Anecdotal evidence and reports from the region give some clues as to the impact the arrival of the Syrian refugees can have on local economies. While registration does not immediately translate into a work permit, Syrians are employed mainly informally as work permits are starting to be issued only slowly. We found no official numbers (nor reliable estimates) on how many refugees have entered the local labor market, but Syrians are reportedly em-

[1] In terms of the NUTS-3 classification, refugee camps are located in the regions of Hatay (Antakya), Adana, Osmaniye, Kilis, Kahramanmaraş, Gaziantep, Şanlıurfa, Mardin, Adıyaman and Malatya.

Figure 1: Syrian refugees in Turkey (source: UNHCR Daily Sitrep 31/12/2013)



ployed mainly in low-skilled jobs in construction and service sectors (Dinçer et al., 2013). The language barrier is likely to limit employment in higher skilled jobs. The ORSAM (2013) report notes that there was also a large inflow of Syrian capital brought in with the refugees.

3 Theoretical framework and methodology

While they focus their empirical analysis on consumption by specific subgroups, Maystadt and Verwimp (2014) provide a theoretical model on the effects refugee inflows may have on local economies with multiple channels. They discuss seven possible channels through which the refugee influx could have an effect: prices, employment, wages, business, infrastructure, health and sanitation services, crime and unrest. We study the effects of the Syrian refugee crisis in southeastern Turkey on two channels related to capital and labor mobility; (1) start-ups, foreign start-ups and firm exit, (2) internal migration (within Turkey) both in terms of inflows and outflows.

The most direct impact of refugee inflows on firm start-ups would be through capital refugees bring with them from Syria to Turkey. While there is no easy way to measure to what extent refugees are able to transfer their capital from Syria to Turkey, it seems safe to assume that their more liquid capital arrives with them. Indeed, their networks and social capital certainly do. Furthermore, refugees may differ in terms of tastes and preferences from natives, spurring product differentiation and new start-ups. The balance be-

tween new start-ups due to capital flows and additional demand is important to investigate with respect to firm owners' welfare. If demand generated by new arrivals is limited while capital inflows are high, crowding out of incumbent firms could be a threat.

The impact of refugee crisis on internal migration is more straightforward. Should finding a job become more difficult or should there be any other negative welfare effect of living in a province hosting Syrian refugees then internal migration to these provinces may decline. We empirically investigate the effect of hosting refugees on internal migration by distinguishing between entry, exit and net migration rates of affected provinces. A possible lack of effects on employment rates and wages could be (at least partially) explained by a negative effect that immigration might have on internal migration. Borjas (2006) finds that non-native migration into specific regions simultaneously leads to higher exit rates and lower entry rates into these regions by natives. This finding is echoed by Pischke and Velling (1997) regarding Germany.

While it may be oversimplifying the situation, the responses in the number of firm dynamics, flows of foreign capital and internal migration outcomes can provide a general perspective on the effect hosting refugees has on the pull and push factors driving both capital and labor in- and outflows. An increase (decrease) in internal migration outcomes can be thought of as the local labor market becoming more (less) attractive. The same relationship can be drawn between firm dynamics and capital.

We fit a linear difference-in-difference model with province level fixed effects for each outcome variable. We estimate the effects on nine outcomes. The outcomes we investigate along the firm dimension are (1) firm entry (start-ups), (2) firm exit and (3) net change in the number of firms calculated by the difference between firm entry and exit. The dimension of foreign capital inflows is investigated for (4) firm entry established with backing of foreign capital, (5) the total value of foreign capital invested in newly established firms and (6) the share of foreign owned firms in newly established ventures. Finally, the internal migration dimension is investigated for (7) the entry rate, (8) the exit rate and (9) the net migration rate.

The models to be estimated are presented in equations 1 through 3. All models are estimated with both year (T_t) and province fixed effects (R_i). The analysis is performed on data from 80 provinces (as we discussed earlier, Istanbul is excluded from the analysis). However, the number of years the analysis covers varies by outcome dimension. Firm and migration outcomes are available for six years, from 2009 to 2014. Meanwhile, data on foreign capital is available from 2010 onwards. The analysis of this dimension thus concerns the period 2010-2014. The main parameter of interest is the effect of the treatment variable I, equivalent to the number of refugees by province

in thousands according to UNHCR. A common concern in the literature regarding natural experiments is the size of the standard errors. We follow the suggestion of Bertrand et al. (2004) and cluster the standard errors at the provincial level.

$$Start_{it} = a + \rho I_{it} + T_t + R_i + e_{it} \quad i = 1, ..., 80 \quad t = 1, 2, 3, 4, 5, 6 \tag{1}$$

$$Foreign_{it} = a + \rho I_{it} + T_t + R_i + e_{it} \quad i = 1, ..., 80 \quad t = 1, 2, 3, 4, 5 \tag{2}$$

$$\frac{Mig_{it}}{Pop_{it-1}} = a + \rho I_{it} + T_t + R_i + e_{it} \quad i = 1, ..., 8 \quad t = 1, 2, 3, 4, 5, 6 \tag{3}$$

We check the robustness of the results in three ways. First, we exclude all provinces west of Ankara (including Ankara itself) and re-estimate the DiD-model on the remaining 53 provinces. This step seems necessary both because western Turkey is significantly different from southeastern Turkey in terms of the level of development and because a fraction of the refugees migrated to the bigger cities in the west, such as Izmir and Ankara. As previously noted, Istanbul is consistently excluded from the analysis. Second, we perform placebo tests by assuming that the numbers of refugees present in 2014 were already sheltered in Turkey in 2011. Finally, we use the synthetic control method of Abadie et al. (2010), which explicitly recognizes uncertainty regarding the validity of the control group. The basic estimation procedure is presented in 4 where Y is the mean of any of the three outcome dimensions we analyze across the treated regions. The n provinces from the control group are weighted using the vector $W = \|w_{i+1}, ..., w_{1+n}\|$ where $\|w_2 + ... + w_{i+n} = 1\|$. The purpose of this procedure is to generate a counterfactual control group that most closely resembles the regions hosting refugees.

$$\rho = Y_1 - \sum_{i=2}^{i+n} w^N Y^N \tag{4}$$

The weight given to each province in constructing the synthetic control is based on pre-treatment outcomes Z. To this end, we use the pre-treatment average of the outcome dimension, Y, the unemployment rate and the import and export value of the province. The unemployment rate is included to control for the general economic performance while trade values are added to control for the degree of 'openness' of the province. The treated unit $i = 1$ is constructed by taking the mean of the outcome variables in regions hosting refugees since 2012.[2]

[2]We exclude the three provinces that received refugees first in 2013. The number of

4 Data

Since the number of refugees was still relatively small in 2011 and really started picking up only in 2012, we consider 2012 the first year of 'treatment' in our empirical analysis. Treatment in our analysis is defined as Syrian refugees fleeing from Syria to specific Turkish regions. Data on the numbers of refugees in southeastern Turkey are drawn from the 2012 (December), 2013 (December) and 2014 (September) reports of the UNHCR on Syrian refugees in Turkey (UNHCR, 2014). The number of Syrian refugees in Turkey in 2012 only concerns refugees in camps while the 2013 and 2014 numbers also include refugees in urban areas. Nonetheless, the number of refugees outside camps was still relatively low in 2012 - 40,000 to 60,000 people - so this is not likely to affect our analysis. Data is provided at the provincial level, allowing us to vary the treatment by the number of refugees sheltered in a specific province. The total number of refugees in 2012 amounts to about 200,000, while in 2013 this number increases to about 560,000. In 2014, the total number of registered refugees reached 847,000. The UNHCR estimates the number of refugees outside camps at the provincial level. While most refugees were located in camps in 2012, the number of people located outside camps in 2014 is more than three times of that located in camps. Numbers of refugees staying in provincial southeastern Turkey for each year are presented in table 1.

Table 1: Number of refugees by year

	2012	2013	2014
Adana	0	16,666	46,935
Kahramanmaraş	16,830	28,882	54,027
Malatya	0	7,205	7,937
Mardin	0	40,965	47,645
Osmaniye	7,914	18,046	24,083
Adıyaman	8,880	10,053	12,435
Hatay	12,776	85,642	15,5294
Kilis	13,510	63,292	88,691
Gaziantep	25,512	145,905	210,625
Şanliurfa	58,558	134,357	181,044

refugees in these three regions are low and the treatment year in the synthetic control model is constructed to equal 2012. As in the DiD-models, Istanbul is excluded from the construction of the synthetic controls.

Turkey is officially divided into 81 provinces. The Chamber of Commerce provides data on the number of newly established firms, the number of firm exits and the number of foreign owned firms at the provincial level. TUIK provides data concerning internal migration at the provincial level (NUTS-3 regions) between 2009 and 2014 resulting in a total of 486 observations. As discussed in the previous section, we focus on three dimensions: entry, exit and net migration. In line with Borjas (2006) and much of the migration literature, migration variables are converted into rates by dividing them by the native population in the previous year, M_t/N_{t-1}. Since these values concern internal migration at the national level, the national mean of each year equals zero.

Table 2: Start-ups and employment in Turkey before and after the refugee crisis

	pre-2012			post-2012			
	rest of Turkey (control)	southeast (treatment)	diff.	rest of Turkey (control)	southeast (treatment)	diff.	dif-in-dif
Firm dynamics							
Start-ups ($N = 480$)	380.9	442.8	61.8	381.3	476.1	94.7	32.8
Firm exits ($N = 480$)	72.3	104.5	32.2	69.9	90.6	20.6	-11.5
% foreign start-ups ($N = 400$)	0.02	0.02	-0.003	0.03	0.06	0.03	0.03
No. of foreign start-ups ($N = 400$)	14.8	7.8	-7.01	18.7	27.9	-0.8	9.1
Migration (rates x1000)							
Entry rate ($N = 480$)	36.8	27.3	9.5	40.4	26.9	13.5	-4.0
Exit rate ($N = 480$)	41.3	33.1	8.2	41.0	33.5	7.5	0.6
Net migration rate ($N = 480$)	-4.45	-5.71	1.26	-0.62	-6.57	5.95	-4.68

In table 2 we present some descriptive statistics for the firm, foreign capital and internal migration variables serving as the outcome dimensions of our analysis. The years 2012, 2013 and 2014 are considered the treatment years. Mean values are presented for the 70 provinces that do not host any refugee camps (the control group) and the ten provinces that do host refugees (the treatment group) by 2014. We separate between the period before and after treatment. The intertemporal developments of the outcome variables of interest are plotted in figures A1 and A2 in the appendix. A visual inspection appears to support the parallel trend assumption. We further present placebo tests for each outcome in the appendix by assuming that the respective numbers of refugees in each province in 2014 were sheltered in 2011

instead. None of the estimates show to be statistically significant.

5 Results

5.1 Firm dynamics and foreign capital

Tabe 3 shows the effect of hosting refugees on the number of newly established firms, firm exits and the net number of new establishments. The first three columns show the results with all of Turkey (excluding Istanbul) serving as the control group while the latter three columns show the results without provinces west of Ankara in the control group. The effects are statistically significant for both the number of new establishments and the net change in the number of firms. We find no significant change in the number of firm exits, indicating that the increase in newly established firms is not crowding out incumbent firms. The effect is of significant magnitude, with 1.34 new firms being opened for every 1000 refugees.

Table 3: Impact of the refugee influx on start-ups and net change in firm numbers

	Opened	Closed	Net	Opened	Closed	Net
Refugees	1.3381**	-0.0803	1.4184**	1.7040***	0.0668	1.6372**
	(0.6714)	(0.1027)	(0.6484)	(0.6024)	(0.0632)	(0.6121)
N	480	480	480	306	306	306
Control	All	All	All	East	East	East

*** p<0.01, ** p<0.05, * p<0.1

Note: All models include province and year fixed effects. Standard errors are clustered at the level of provinces.

Table 4: Impact of the refugee influx on new foreign start-ups and their value

	Opened	Value	Share	Opened	Value	Share
Refugees	0.5458**	0.1047	0.0006***	0.5579**	0.097	0.0006***
	(0.2547)	(0.0662)	(0.0002)	(0.2596)	(0.0688)	(0.0002)
N	400	400	400	255	255	255
Control	All	All	All	East	East	East

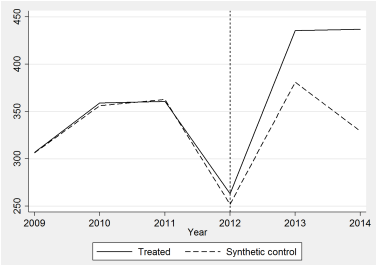
*** p<0.01, ** p<0.05, * p<0.1

Note: All models include province and year fixed effects. Standard errors are clustered at the level of provinces.

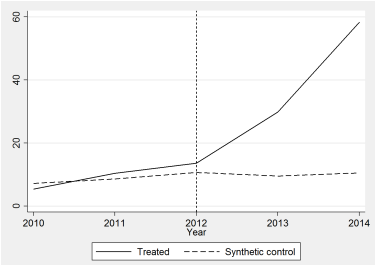
Table 4 gives a better answer to the question of whether the newly established firms are generally being opened with backing of foreign capital or whether they are generally being opened by Turks in response to the demand generated and labor supplied by refugees. The coefficients on the number of firms opened with backing from foreign capital and the share of foreign firms among new establishments are both statistically significant. The coefficient for the value of foreign firms is positive but not significant. As in the previous table, the results change very little when western provinces are excluded. According to the first column in tables 3 and 4 around 40 percent of the newly established firms are being opened with backing of foreign capital (0.55/1.34). The results paint a relatively positive picture for businesses in provinces hosting refugees. Not only are more start-ups being established, there is also no increase in the number of firm exits and a good portion of the increase appears to be driven by native capital.

The validity of the control group in the DiD-analysis remains a worry. In figures 1a and 1b, we show the synthetic control estimates of the foreign owned firms and of the net change in the number of firms for the 7 provinces that first received refugees in 2012. As might be expected, the synthetic control estimator gives 0 weight to a number of provinces in both estimates. Despite the relatively small number of pre-treatment years, the synthetic control trend is fairly close to the treatment trend in pre-treatment years. The figures confirm the DiD-findings as there is a clear rise in both the net change in the number of firms and the number of foreign owned establishments. The effects seem to be driven largely by the increases in 2014 when the numbers of refugees are the highest.

(a) Net change in firms



(b) Foreign capital firms



5.2 Internal migration

Table 5 presents the regression model results with internal migration as our dependent variable of interest. The dependent variables are divided by the lag of the population following Borjas (2006), which results in the first year of data (2008) being dropped from the analysis. The results show highly significant negative effects on the entry and exit rates and the results differ little when western provinces are excluded from the analysis. It is surprising to find that the directions of both dimensions are the same. However, the impact on entry appears to be nearly twice as large than that on exit. The coefficient for the net rate is negative but not statistically significant. Overall, the results seem to indicate that the arrival of refuges reduced mobility of native Turks to and from the area. However, it is worth noting that the analysis is set at the provincial level; we thus cannot capture mobility between urban and rural areas within provinces in our analysis.

Table 5: Impact of the refugee influx on internal migration

	Entry	Exit	Net	Entry	Exit	Net
Refugees	-0.0035***	-0.0019**	-0.0016	-0.0041**	-0.0025**	-0.0016
	(0.0013)	(0.0010)	(0.0012)	(0.0017)	(0.0012)	(0.0015)
N	480	480	480	306	306	306
Control	All	All	All	East	East	East

*** p<0.01, ** p<0.05, * p<0.1

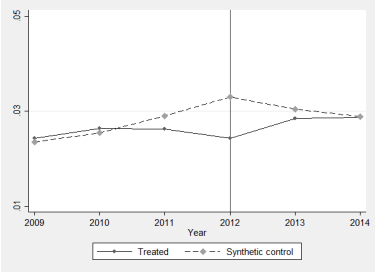
Note: All models include province and year fixed effects. Standard errors are clustered at the level of provinces.

Since the impact of the refugee inflows on exit rates seems to be limited, it appears that native incumbents on the labor market are largely staying put. However, potential new entrants to the region seem to be staying away due to the influx of refugees. Several explanations can be offered for the behavior of internal migrants. Competition on the labor market could be perceived to be higher due to the influx of Syrian refugees trying to find employment in Turkey. Alternatively, Card et al. (2012) argue that a negative sentiment of the natives concerning refugees may be resulting in lower entry rates into the regions sheltering refugees. Either way, refugees appear to present a push factor for native migration within Turkey.

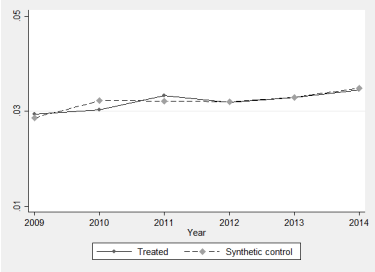
We present the synthetic control estimates for internal migration outcomes in figures 1a and 1b. The results confirm the DiD-results of the entry rate but not those of the exit rate. The error (the difference between the synthetic control- and treatment-region-means) in the pre-treatment trend

seems to be larger than on the firm dynamics dimension. Rather interestingly, the effects seem largest in 2012, when the refugee crisis just took off. This might indicate some level of expectation forming among natives shaping their mobility decisions.

(a) Entry rate



(b) Exit rate



6 Conclusions

Due to the unfortunate rise in the number of refugee crises, their effects on host economies are being studied from multiple angles. The Syrian refugee crisis in Turkey represents one of the larger refugee crises in recent decades with over a million displaced people crossing borders in a time span of three years. While the impact of refugee influxes on various dimensions of employment usually claims the spotlights, our analysis shows that refugees have a wider range of effects, also on firm dynamics, more specifically on start-ups. We find that regions hosting refugees experienced a rise in the number of start-ups in the order of 1.3 new business ventures per 1000 refugees. About 40 percent of this increase is explained through the rise in newly established firms with backing of foreign capital. While we cannot confirm that the capital brought to Turkey by the Syrian refugees is responsible for this finding, the results do suggest an intensified dynamic in the business environment of regions hosting refugees. Meanwhile, mobility of native Turks to and from the affected regions appears to have declined. Combined, these two findings suggest intensifying pull factors for capital and an increasing push factors for native labor.

For a complete picture of the effects of the Syrian refugee crisis on local economies in Turkey, further research is needed on prices, market activity, health and a myriad of alternative outcome dimensions. Despite the negative effects on informal employment and wages of Ceritoglu et al. (2015), our

findings suggest that the complete welfare effects of hosting refugees goes beyond employment effects. Indeed, heterogeneous effects on specific subgroups of the native population should be expected. Taken together, the impact on employment and the business environment could determine who will benefit and who will suffer from the refugee influx among the native population (Maystadt and Verwimp, 2014). The effect on the business environment through capital inflows and increased demand for specific goods also helps explain why employment and wage levels in regions sheltering refugees do not seem to be imploding.

References

Abadie, A., Diamond, A., and Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of californiaŠs tobacco control program. *Journal of the American Statistical Association*, 105(490).

Alix-Garcia, J. and Bartlett, A. (2015). Occupations under fire: the labour market in a complex emergency. *Oxford Economic Papers*, page gpv006.

Alix-Garcia, J., Bartlett, A., and Saah, D. (2012). Displaced populations, humanitarian assistance and hosts: A framework for analyzing impacts on semi-urban households. *World Development*, 40(2):373–386.

Alix-Garcia, J. and Saah, D. (2010). The effect of refugee inflows on host communities: Evidence from tanzania. *The World Bank Economic Review*, 24(1):148–170.

Baez, J. E. (2011). Civil wars beyond their borders: The human capital and health consequences of hosting refugees. *Journal of Development Economics*, 96(2):391–408.

Bertrand, M., Duflo, E., and Mullainathan, S. (2004). How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics*, 119(1).

Borjas, G. J. (2006). Native internal migration and the labor market impact of immigration. *Journal of Human Resources*, 41(2):221–258.

Card, D., Dustmann, C., and Preston, I. (2012). Immigration, wages, and compositional amenities. *Journal of the European Economic Association*, 10(1):78–119.

Ceritoglu, E., Yunculer, G., Burcu, H., Torun, H., and Tumen, S. (2015). The impact of syrian refugees on natives' labor market outcomes in turkey: Evidence from a quasi-experimental design. MPRA paper no. 61503.

Dinçer, O. B., Federici, V., Ferris, E., Karaca, S., Kirişci, K., and Çarmıklı, E. Ö. (2013). *Turkey and Syrian Refugees: The Limits of Hospitality*. International Strategic Research Organization (USAK).

Dustmann, C., Glitz, A., and Frattini, T. (2008). The labour market impact of immigration. *Oxford Review of Economic Policy*, 24(3):477–494.

Friedberg, R. M. and Hunt, J. (1995). The impact of immigrants on host country wages, employment and growth. *The Journal of Economic Perspectives*, pages 23–44.

Maystadt, J.-F. and Verwimp, P. (2014). Winners and losers among a refugee-hosting population. *Economic development and cultural change*, 62(4):769–809.

Pischke, J.-S. and Velling, J. (1997). Employment effects of immigration to germany: an analysis based on local labor markets. *Review of Economics and Statistics*, 79(4):594–604.

UNHCR (2014). *UNHCR Turkey Syrian Refugee Daily Sitreps Dec-2012 and Dec-2013*. United Nations High Commissioner for Refugees.

Yazgan, P., Eroglu Utku, D., and Sirkeci, I. (2015). Syrian crisis and migration. *Migration Letters*, 12(3):181–192.

Özden, S. (2013). Syrian refugees in turkey. Mpc research report 2013/05.

Appendix A

Table A1: Placebo estimates

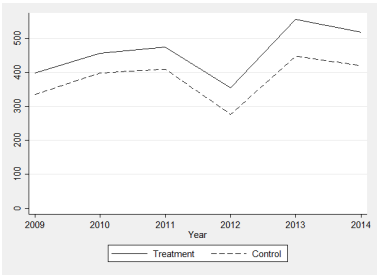
Firms	Opened	Closed	Net
Refugees	0.2663	0.0545	0.2117
	(0.2543)	(0.0582)	(0.2218)
N	240	240	240
Foreign capital	Opened	Value	Share
Placebo	0.0248	0.0427	0.0001
	(0.0241)	(0.0354)	(0.0001)
	160	160	160
Migration	Entry	Exit	Net
Placebo	0.0004	0.0007	0.0003
	(0.0010)	(0.0010)	(0.0010)
N	240	240	240

*** p<0.01, ** p<0.05, * p<0.1

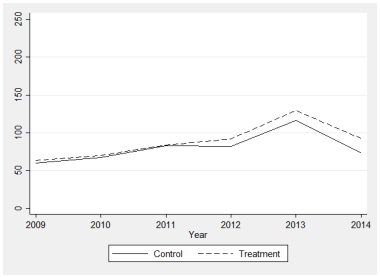
Note: All models include 79 province and (2) 3 year fixed effects. Standard errors are clustered at the level of 80 provinces. The placebo is constructed by assuming that the number of refugees in each province in 2014 were present in 2011.

Figure A1: Start-ups and foreign capital

(a) Number of firms opened



(b) Number of firms closed



(c) Number of foreign firms with foreign capital

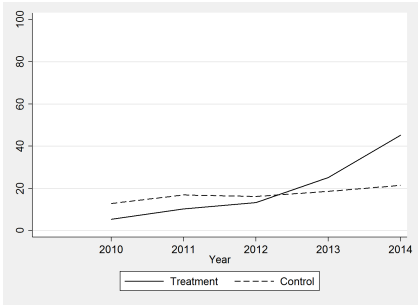
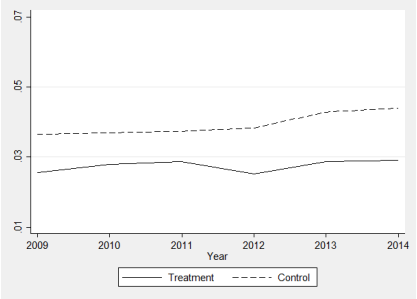
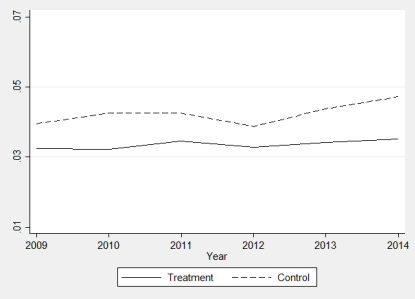


Figure A2: Development of inter-country migration

(a) Number of individuals entering the province



(b) Number of individuals exiting the province



(c) Net migration (Entry-Exit)