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Effect of Syrian Refugees on Native Family Formation: Marriage and Divorce Trends in Turkey*

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Abstract: After the civil war in Syria, Turkey faced a massive refugee wave, making Turkey the top refugee-hosting country in the world. Besides the economic burden of this refugee population, various field surveys reveal that Turkish citizens have some negative perceptions about the refugees. One of the leading concerns on refugees is their possible effects on native family formation by affecting marriage and divorce rates. This study examines the effect of the Syrian refugees on family formation by comparing the trends in different geographical areas of Turkey. While border cities and relatively developed cities host a significant number of Syrians, there are few Syrians living in cities away from the border. By conducting spatial analysis, the study checks whether there is a change in divorce/marriage rates in cities with a high concentration of refugees compared to cities with fewer refugees. By considering the endogenous location choice of the refugees, the study proposes a distance-based instrument to overcome the endogeneity problem in a Difference-in-Differences setting. Results indicate that the refugees do not affect the existing trends in divorce rates and divorce cases. However, there is a limited adverse impact on official marriages. A 1% increase in the refugee ratio corresponds to a 0.03% reduction in official marriages.

Keywords: Syria, refugee, divorce, marriage.

Öz: Suriye iç savaşı sonrası Türkiye, ciddi boyutta bir göç dalgası ile karşı karşıya kaldı. Bu durum, Türkiye'yi, dünyada en fazla mülteci barındıran ülke konumuna getirdi. Mülteci nüfusun yarattığı ekonomik yükün yanı sıra çeşitli saha araştırmaları, Türkiye vatandaşlarının mülteciler hakkında genel olarak olumsuz bir algıya sahip olduğunu ortaya koymaktadır. Suriyelilerin yerli aile yapısına olası etkisi bu olumsuz algının içinde önemli bir yer tutmaktadır. Yerli halk Suriyeli mülteciler kaynaklı boşanma artışlarından ve yerli halkın evlenme oranlarındaki azalmadan endişe duymaktadır. Bu çalışma, Türkiye'nin farklı bölgelerindeki boşanma/evlenme oranlarını karşılaştırarak, Suriyeli mültecilerin boşanma ve evlenme oranlarına etkisini incelemektedir. Suriyeli mültecilerin ülke içerisindeki dağılımı oldukça heterojendir. Suriye sınırına yakın iller ve görece gelişmiş şehirler önemli sayıda Suriyeliye ev sahipliği yaparken, sınır illerine komşu diğer şehirlerde ve sınıra uzak şehirlerde nüfusa oranla çok az Suriyeli yaşamaktadır. Çalışma, mülteci yoğunluğunun yüksek olduğu şehirlerde, daha az mülteci bulunan şehirlere kıyasla boşanma/evlenme oranlarında bir değişiklik olup olmadığını kontrol etmektedir. Mültecilerin şehir seçimi içsellik problemine neden olmaktadır. Çalışma, bu problemi çözmek amacıyla mesafeye dayalı bir araç değişken kullanmaktadır. Yapılan analiz, mültecilerin boşanma veya açılan boşanma davaları üzerinde mevcut trendi olumsuz yönde değiştirici bir etki yapmadığını göstermiştir. Fakat, mültecilerin resmi evlilik sayılarına sınırlı bir olumsuz etki yaptığı gözlenmiştir. Suriyeli mültecilerin oranındaki %1'lik bir artış, resmi evlenme sayılarında %0.03'lük bir azalmaya sebep olmaktadır.

Anahtar Kelimeler: Suriye, mülteci, boşanma, evlenme.

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Introduction

The Arab Spring did not bring freedom or peace to Syria but led to a massive disaster in all terms. The plight of the country forced many Syrians to abandon their homes and created a large immigration wave. According to the United Nations (UNHCR), bordering countries Turkey, Lebanon, Jordan, and Iraq received the largest portion of the Syrian refugees. Official numbers indicate that 5.6 million Syrians have fled to the countries near Syria, and Turkey has been hosting 3.6 million refugees since 2018. This figure makes Turkey the top refugee-hosting country around the world today.

Following the Syrian crisis, the Turkish government implemented an open border policy for Syrian refugees and constructed refugee camps along the cities on the Syrian border. However, with the escalation of the civil war, the number of refugees increased very rapidly, and it became impossible to accommodate all the refugees in camps. Hence, following June 2013, refugees first settled down in border cities, and eventually spread all over the country.

The Turkish society, with admirable hospitality, has been helping the Syrian refugees since the very beginning of the crisis. At first, both locals and refugees thought that the conflict would be resolved soon. However, the escalation of the civil war and the extreme increase in the number of refugees created a debate about the possible negative effects of refugees.

In addition to the economic burden on the government budget, many people think that refugees have lowered wages in the labour market and taken job opportunities from locals.[1] Moreover, native people are concerned about the possible increase in crime rates. Field studies reveal that 60%-70% of the natives believe that Syrian refugees lead to higher crime rates.[2] However, the Ministry of Interior (2017) informed that concerns about the high crime rates of Syrians are unrealistic. It is mentioned that only 1.32% of all crimes in Turkey were committed by Syrian immigrants between 2014 and 2017.

The impact of the refugees on family formation is another important discussion topic. There is a general perception in society about the negative effect of the refugees on divorces and marriages. Many people believe that refugees increase the native divorce rate and lower the native marriage rate. The increased polygamy is also an important

1 For the labour market effects of the Syrian refugees, see Ceritoğlu et al.(2017), Aksu et al.(2018), and Öztek(2021a).

2 For field studies, see Erdoğan (2014,2020) and Taştan et al. (2017). For a trend analysis of crime rates in Turkey, see Öztek(2021b)

concern of native people. People also think that cultural transmission following the marriages with refugees might adversely affect the native future generations.

The Ministry of Family, Labour and Social Services (2016) provides a list of news in national and international media about the problems faced by Syrian and Turkish women. These news are generally focused on specific examples experienced in border cities. They address issues including polygamy, child marriage, and forced marriage. Moreover, some news discusses a causal link between Syrian refugees and increased divorce rates.

A nationwide newspaper, Hürriyet, shares a statement of the president of Şanlıurfa (a refugee-hosting border city) Bar Association in which the president points out the increased number of divorce cases. He mentions that there is a 20% increase in divorce cases in Şanlıurfa between 2014 and 2015. However, according to the Ministry of Justice data, there is only an 8% increase in new divorce cases. Moreover, there is a 3.75% reduction in divorce cases in the years between 2015 and 2016. According to another nationwide newspaper Milliyet, the president of Kilis (the city with the highest refugee share) Bar Association says that the number of divorces increased by 100% in between 2015 and 2016. However, the official increase is 2.5%. Although it is not possible to suggest any causal link with a single (wrong) observation, it appears that there exists a consensus on the adverse effect of refugees on family formation. Even a highly educated person with an expertise in the judicial system has a wrong perception about the effects of refugees.

ORSAM(2015) points out the increase in polygamy and divorce rates due to the marriages between Syrian women and Turkish men. The study mentions that even though the official marriage number with Syrians is very low in border cities, the number of informal marriages and polygamy practices are in increase. This report states that, in the city of Kilis, 20% of the divorces are speculated to be because of Turkish men marrying Syrian brides. RESLOG (2020) indicates rising divorce rates in another border city, Hatay. However, these comments are only based on anecdotal evidence or rumours in the region, and not based on any quantitative data.

Aygül (2018) analyses the divorce rates in top refugee-hosting cities and mentions that the divorce rates are increased with the incoming refugees. However, it is just a level comparison before and after the Syrian crisis, which is not capable of suggesting a causal relationship between refugees and divorce rates. A simple trend comparison with other regions of Turkey reveals similar patterns of high and low refugee-hosting cities.

Despite the high number of Syrian refugees in Turkey, there exists no empirical study (other than the news based on anecdotal evidence and some field surveys)

that focuses on the family formation effect of the refugees. This paper is the first attempt for analysing the relationship between refugees and the marriage/divorce rates in Turkey.

Studies on the economics of migration utilize quasi-experimental design by using the immigrant movements as a natural experiment (Card,1990; Hunt,1992; Dustmann et al.,2017). To analyse the effects of immigrants, these studies exploit the regional variation of the immigrants in a Difference-in-Differences (DiD) setting and utilize instruments to account for possible endogeneity problems.

In this study, by utilizing official numbers for divorce/marriage, and divorce cases in courts, we analyse the impact of Syrian refugees on family formation in Turkey. We exploit the regional variation of the refugee population to assess the effects of Syrians. We cover the 2003-2020 period in a DiD setting and compare the high refugee-hosting cities with fewer or no refugee-hosting cities by using a continuous intensity parameter. To overcome possible endogeneity problems, we propose a distance-based instrument. In our study, we find no evidence that the refugees have a negative impact on divorce rates and the number of divorce cases in Turkey. However, there is a very limited adverse impact on official marriages. According to our estimations, a 1% increase in the refugee ratio corresponds to a 0.03% reduction in official marriages. Our results are robust to various specification checks.

Economics of migration literature focuses on the marriage and divorce decision of immigrants and compare them with natives' marriage/divorce behaviour. Andersson et al. (2015) analyses the patterns in marriage formation, divorce, and re-marriage of people in Sweden, by country of origin. The study finds that marriage and divorce patterns among immigrants are less stable than native Swedish society. Immigrants have higher divorce rates than the country average. Also, they have a higher rate of re-marriage than the Swedish population. Milewski and Kulu (2014) investigates the effects of native/immigrant intermarriage on divorce in Germany. The study shows that immigrant couples have a lower risk of divorce than natives. Their study also suggests that marriages between native Germans and immigrants have a higher likelihood of separation than marriages between two German individuals. Several studies (Frank & Wildsmith,2005; Landale & Ogena,1995) point out the increased risk of divorce due to international immigration. Caarls and Mazzucato (2015) analyses the divorce effect of immigration on Ghanaian couples in Ghana and abroad. The study reveals the stressful process of immigration that leads to a higher risk of divorce.

All the mentioned studies focus either on the effect of international migration on divorce/marriage decisions or compare divorce decisions of natives with immigrants. However, the question in our study departs from the existing studies. We mainly

focus on whether there exists a change in official marriage and divorce rates in Turkey after the Syrian refugee influx. Official marriage/divorce numbers mainly cover Turkish citizens. In 2019, while 0.6% of official marriages are Syrians, only 0.2% of divorces consist of Syrians. Therefore, the present study mainly analyses the effect of refugees on native's marriage and divorce decisions.

Following Becker (1973,1974), the economics of marriage and divorce literature (Grossbard, 1993) provides an economic approach for analysing marriage and divorce. Marriage creates a financial burden, and it is also costly in terms of time and effort. Similarly, divorce may entail some financial or non-financial burden on agents. According to the Becker (1973, 1974, 1981) a relationship will occur if the total value of the couple exceeds the total value of the agents when remain single. This also applies to the divorce decision, as the total value of being divorced should exceed the total value of being married. This is the case if both members prefer marriage or divorce. However, in some cases, one member could get a higher utility from marriage/divorce whereas the other one does not. Then the one with the higher utility should maintain a compensation to convince other member for marriage/divorce. Therefore, from a rational utility-maximizing perspective, marriage should provide a higher utility than not to marry someone.

Marriage in Turkey is a costly process, especially for men. Any groom-to-be should follow the regional traditions to form a family. These include gifts (jewellery, pride price for some regions) to the bride-to-be and her family and expenses for the wedding. Since the expectations of the refugees are lower than natives, it could be less costly to marry an immigrant. This may be an incentive for marriages with Syrians. Field studies (Kaya, 2018) reveal that refugee women treat marriage as a way of diminishing the disadvantages of being a refugee in the host country. Therefore, marriage with locals is a way of saving their lives and future. This perception leads to a higher demand for marriage with native men, and in some cases, it could occur in terms of early age marriage or polygamy. TTB (2014) field study reports the rising polygamy and informal marriages in border cities.

Becker's model has also implications for marriage in terms of sorting. For spouse selection, most people seek partners who have similar traits with respect to religion, ethnic group, education, language, socio-economical characteristics. Positive assortative mating (Becker, 1973) is referred to this positive correlation between the traits of men and women. These similarities increase the cohesion of couples and create fewer conflicts between spouses. However, some agents may choose to marry someone with dissimilar characteristics. The selected spouse could be from a different social or economic background. For native men in Turkey, both positive and negative assortative matching

could be in place. At one side, the refugee hosting region has the most similar culture (including same native language) with Syrian refugees. It is a well-known fact that many people on border region have relatives at the other side of the border. Therefore, a higher marriage rate with refugees could be expected at these cities. And on the other side, due to economic cost of marriage, native men could seek for a refugee spouse.

According to TurkStat 2019 official marriage statistics, 542,314 women got married and only 3,442 (0.6%) of them was Syrian. Moreover, this does not necessarily mean that they got married to a native Turkish citizen. Groom could also be a Syrian. Among 23,744 foreign brides, Syrian brides constitute 14.5%. Officially, the number of Syrian brides is low compared to the total number of Syrians. As anecdotal evidence suggests, most of the Syrian brides have informal marriages. Therefore, actual number of Syrian brides is expected to be higher than official measures. As expected, the number of Syrian grooms is very low. It was 760 in 2019 which was only 0.14% of all grooms.

Polygamy and informal marriage were a part of the social life in border cities even before the Syrian crisis. Therefore, with the incoming refugees, these practices are expected to increase. However, the size of these marriages and the possible adverse effect on native family formation is something to be verified by the data. Unfortunately, we do not have any source of data for polygamy and informal marriages. Thus, it is not possible to conduct any analysis on these practices. However, as proposed by various news and reports, if there exists a sizeable effect on family formation in the region, we should observe changes in formal marriage and divorce trends for the refugee-hosting region.

The paper proceeds as follows. Section 2 provides background information on Syrian refugees in Turkey and the distribution of Syrian refugees within Turkey. We describe our data sources and outline our empirical strategy in Section 3. Section 4 presents the paper's results. We have additional analysis and robustness checks in Section 5. Finally, Section 6 concludes.

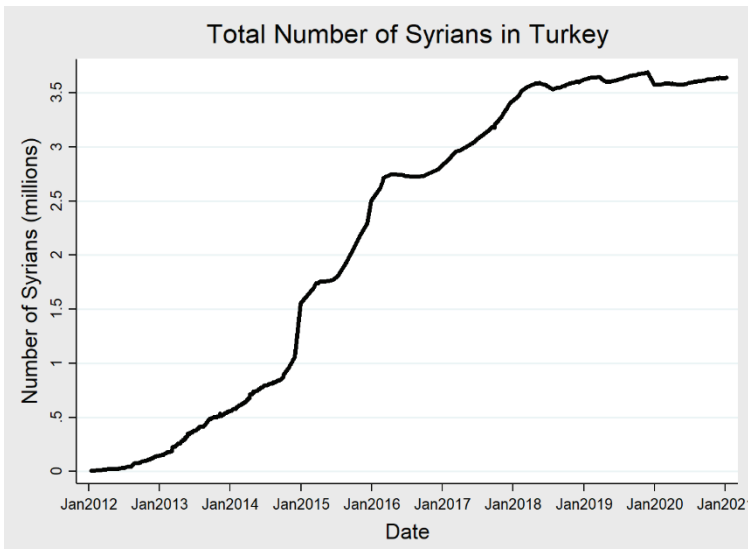
Syrians in Turkey

After the spread of the Arab Spring to Syria, the country entered a devastating civil war. Turkey received the first Syrian refugees in the second half of 2011. Figure 1 presents the number of Syrians in Turkey since January 2012. In January 2012, in total 9,500 Syrians were living in Turkey. With the ongoing civil war, the number of Syrian refugees continued to increase and reached 170,000 at the end of 2012. Right after the refugee influx, the Turkish government first hosted the refugees in temporary places such as school buildings and government guest houses. However,

as the number increased, the government started to build refugee camps in border cities. Almost all Syrians were staying in the camps in 2012. In mid-2013 the number of Syrians reached to 300,000 and camps were no longer capable of hosting all the refugees. Consequently, immigrants first settled down in the South-Eastern cities of Turkey, then gradually dispersed to other cities in the country. At the end of 2013, the total number of Syrian refugees increased to 560,000. By the end of 2014, there were 1.5 million Syrians in Turkey and the number of refugees increased to 2.5 million, 3 million and 3.5 million in 2015, 2016 and 2017, respectively. Since the beginning of 2018, about 3.6 million Syrians have been living in Turkey.

Figure 1

Total Number of Syrians in Turkey

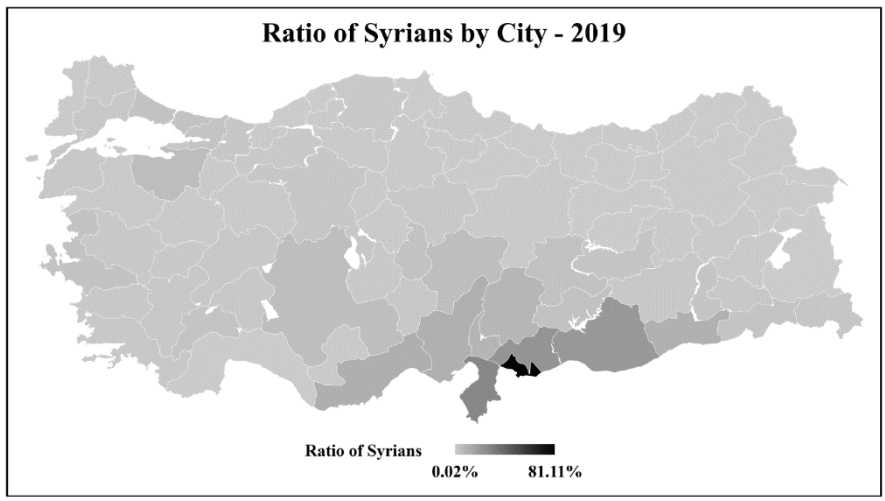


Source: UNHCR

As of the end of 2020, only 2% of the total Syrian refugees have been staying in camps. The remaining refugees are spread throughout different parts of the country and are living on their own means. Even though most of the Syrians have been living in cities close to the Syrian border, a significant part of them is hosted by metropolitan areas such as İstanbul, Ankara, İzmir and Bursa. However, the number of refugees to city population ratios are very low for the cities away from the border. Figure 2 shows the ratio of Syrian refugees in Turkey by province. The Syrians are concentrated in the cities on the border. The ratio is at the highest (81%) for the city of Kilis, and it is followed by other border cities and cities close to the border.

Figure 2

The Ratio of Syrians to the City Population



Source: Directorate General of Migration Management

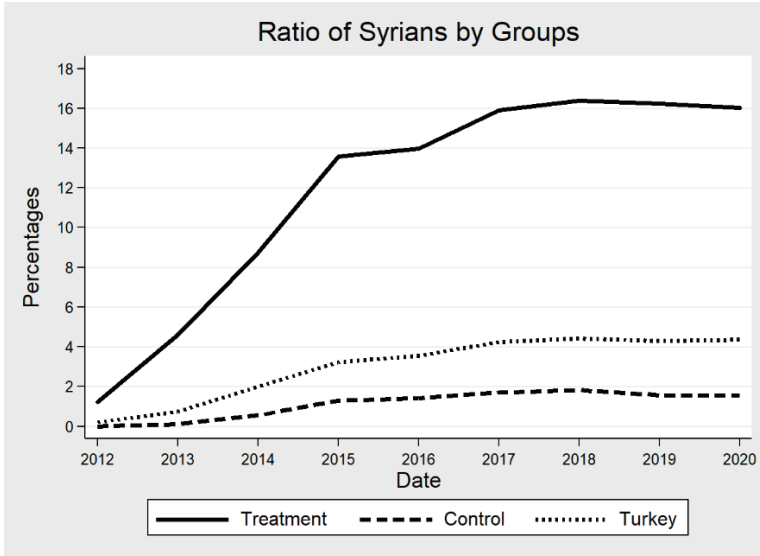
Our analysis is based on the heterogeneous distribution of refugees within the country. The variation in refugee ratio makes it possible to compare cities with a high ratio of Syrians, to those with a low refugee share. In regression analysis, we utilize all cities to estimate the effect of refugees on divorce/marriage rates. However, we create two different groups for the trend analysis. The treatment group consists of cities[3] with a high ratio (more than 2%) of Syrians. Whereas the control group comprises cities[4] that are geographically close to the treatment group but with a few(less than 2% of Syrian share for the post-treatment periods) Syrians. The conflict in Syria started in mid-2011, but Turkey received the first Syrians as of the end of 2011. Therefore, we use 2012 as the time of treatment. Figure 3 shows the average ratio of Syrians for these two groups and the average Syrian share for Turkey. While the 16% of the population in the treatment group is formed by Syrian refugees, this ratio is around 1.5% for the control group and the Turkey average is around 4%. Clearly, Syrians constitute a significant portion of the population in the treatment group.

3 Consist of these ten cities: Kilis, Hatay, Şanlıurfa, Gaziantep, Mardin, Osmaniye, Mersin, Kahramanmaraş, Adana, Adıyaman. Refugee camps are constructed in these cities.

4 Consist of eleven cities: Batman, Malatya, Şırnak, Diyarbakır, Elazığ, Hakkari, Siirt, Muş, Bingöl, Bitlis, Van.

Figure 3

Ratio of Syrians by Group



Source: Directorate General of Migration Management

Officially, while most of the Syrian refugees are registered under "Temporary Protection" status, there is a significant Syrian population living with a "Residence Permit". According to the Address Based Population Registration System (ABPRS) 2019 data, 115,000 Syrians are residing in Turkey with a residence permit. Prior to 2012, we do not have the city allocation of residence permit holders by nationality. However, as of the end of 2012, there were 10,067 Syrian residence permit holders in Turkey. While 50% of them was living in treatment cities, only 9% of them (909 Syrians) was living in the control regions. To ensure the validity of our results, in our regression analysis, we use the total number of Syrians living in each city of Turkey.

Data and Analysis

This section presents our data as well as the analysis method we apply in the study. The next subsection explains the data in detail, which is followed by the trend and regression analysis.

Data

Our study utilizes the yearly number of marriages and divorces distributed by the Turkish Statistical Institute (TurkStat). TurkStat shares official marriage and divorce numbers for each city. We use the 2003-2020 period to have a symmetric analysis for the time of treatment.

The number of divorce cases is taken from the Ministry of Justice. This data, which is published annually, contains information on the number of divorce cases at city level. These figures include only the number of new divorce cases throughout the year. Therefore, the number of files from the previous years are not included in these numbers. Data for new divorce cases is available for the 2012-2019 period.

Data on the number of refugees is derived from the Ministry of Interior Directorate General for Migration Management (DGM) weekly reports. Finally, the number of Syrian residence permit holders is taken from TurkStat annual population data by country of origin.

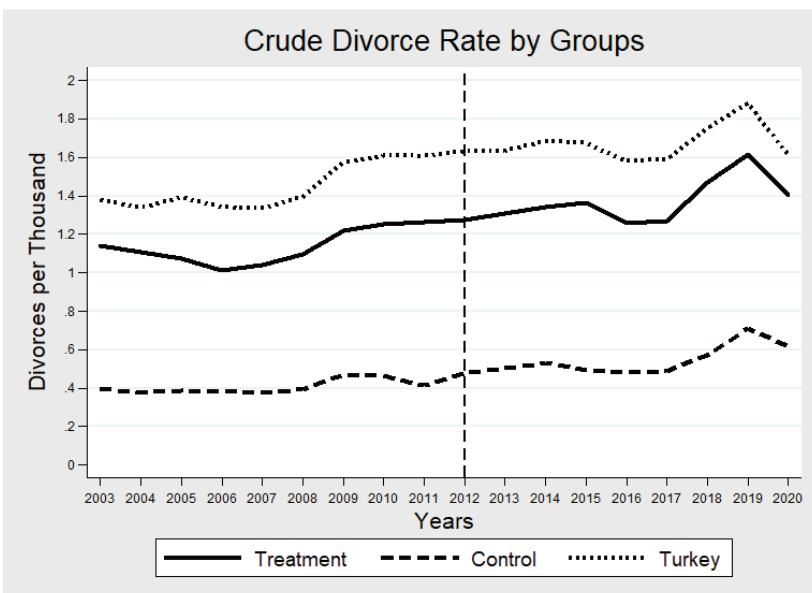
Trend Analysis

This section, by comparing the divorce and marriage trends in treatment and control regions, visually examines whether a change in family formation in cities with high refugee shares.

Figure 4 presents the crude divorce rates (divorces per 1,000 people) for Turkey and treatment/control groups. Following the beginning of the Syrian crisis(i.e., the year 2012), we observe no clear differentiated trend in the treatment group compared to Turkey average.

Figure 4

Crude Divorce Rate by Groups

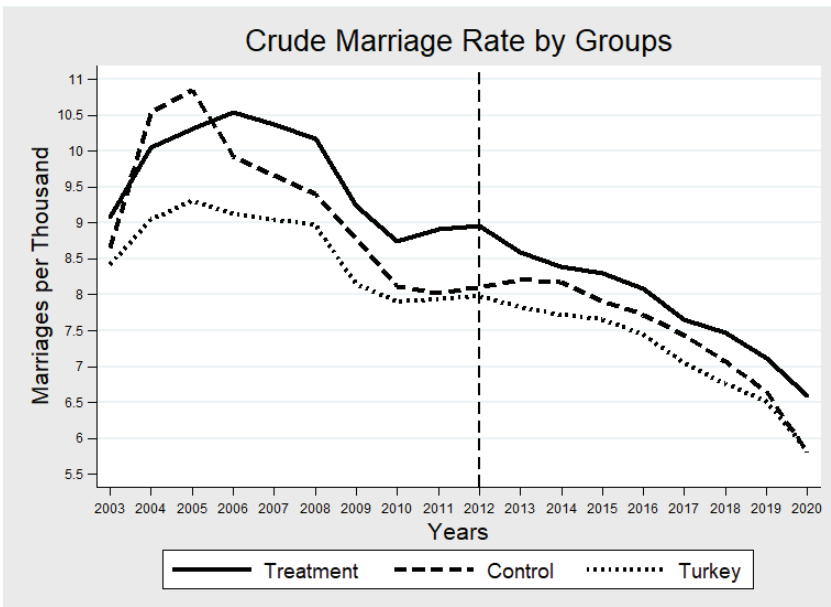


Source: Turkish Statistical Institute (TurkStat)

Figure 5, on the other hand, shows the crude marriage rates by different groups. There is anecdotal evidence of increased informal marriages with Syrian refugees. This could be a polygamy practice that involves the second marriage of a man. However, it could also be the first marriage of young local men. Therefore, we could expect a reduction in official marriages in the border region. From Figure 5, we observe a similar pattern for the treatment group compared to the Turkey average. However, there is a slight increase in the marriage rate for the control group after 2012. We examine this trend difference whether it is due to the refugees or not. Our regression analysis verifies that the decreasing pattern in the treatment region is partly due to the Syrian refugees.

Figure 5

Crude Marriage Rate by Groups

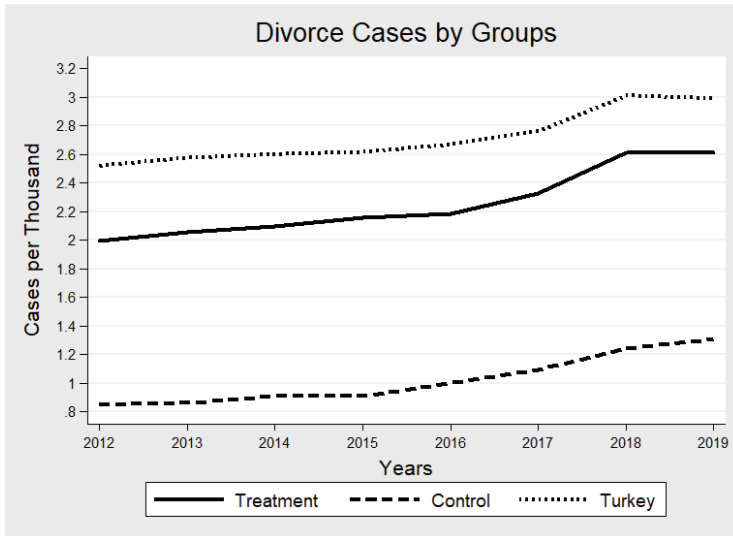


Source: Turkish Statistical Institute (TurkStat)

Finally, Figure 6 presents trends for divorce cases. Data is available for the 2012-2019 period. Following 2012, while the treatment region receives a huge refugee influx, other cities host relatively low number of refugees. Therefore, one could expect a steeper trend for the treatment group. However, there is no differentiated trend for the refugee-hosting regions.

Figure 6

Divorce Cases by Groups



Source: Ministry of Justice

Table 1 presents the annual percentage changes in the crude divorce rate. Aside from Turkey, control, and treatment regions averages, we also report the percentage changes for the highest refugee-hosting border cities. Almost all anecdotal evidence on the divorce effect of refugees concentrates on these cities, which could be due to several reasons. First, these cities host the highest share of refugees. Therefore, it is quite normal to expect higher divorces due to refugees. Second, polygamy and informal marriages are relatively more common in this region. Predictions about the percentage of polygamous marriages are around 2% in Turkey, but field studies reveal that this ratio is higher in South-eastern part of Turkey (Ozkan et al., 2006; Gücük et al., 2010). Moreover, around 15% of the marriages in East and Southeast Turkey are informal (religious marriages) while Turkey average is around 5% (Civelek & Koç, 2007). Third, the natives in these cities have culturally more similarities with Syrian refugees. There is an Arabic-speaking population in border cities; according to the 1927 and 1965 census, on average, 15% of the population in these cities speaks Arabic. Therefore, there are strong cultural links with Syrian refugees.

The mentioned characteristics of these cities may amplify the possible effects of Syrian refugees on family formation. However, from Table 1, we do not observe a dramatic difference between the treatment region and the control cities. Only Şanlıurfa has a higher increase in divorce than control regions. For Kilis and Gaziantep,

in where local media complains heavily about the divorce effect, we observe smaller changes compared to control cities.

Table 1

Percentage Change in Crude Divorce Rate

Year	Turkey	Control	Treatment	Kilis	Hatay	Şanlıurfa	Gaziantep	Mardin
2004	-2.93	-5.83	-3.18	-12.06	-5.30	5.33	-14.82	-7.82
2005	4.05	2.64	-2.72	-11.56	-0.05	-4.53	5.01	4.91
2006	-3.72	-0.94	-5.86	-0.05	-9.68	0.98	-11.25	-0.24
2007	-0.44	-2.15	2.98	-21.07	2.81	6.36	-5.33	-10.33
2008	4.40	5.69	5.07	39.68	10.87	-18.03	3.94	11.63
2009	12.90	18.76	11.11	-1.84	0.69	15.14	16.80	10.50
2010	2.22	-1.35	2.84	-0.84	12.24	-13.27	11.55	26.16
2011	-0.05	-10.51	0.77	2.68	-3.83	-18.41	-0.62	-8.61
Mean	2.05	0.79	1.38	-0.63	0.97	-3.30	0.66	3.27
2012	1.44	15.70	0.99	33.78	5.48	-5.85	-0.29	22.54
2013	0.23	5.02	2.84	-9.24	1.57	34.72	1.24	-15.32
2014	3.09	5.44	2.57	4.19	0.41	24.73	1.64	8.47
2015	-0.64	-6.74	1.65	6.78	2.98	-8.28	-0.26	-0.01
2016	-5.59	-2.90	-7.70	2.43	-5.14	-8.03	-16.86	-9.39
2017	0.53	1.78	0.86	8.57	5.04	-8.55	10.64	17.11
2018	10.18	16.72	15.72	-12.82	9.23	23.92	21.11	10.46
2019	7.55	24.61	9.82	12.16	15.20	20.32	4.67	15.16
2020	-14.25	-13.18	-13.07	-18.01	-17.38	-19.06	-9.14	-0.56
Mean	0.28	5.16	1.52	3.09	1.93	5.99	1.42	5.39
Δ Means	-1.77	4.37	0.14	3.73	0.96	9.29	0.76	2.11

Notes: Table presents the annual percentage changes in the crude divorce rate. Means give the average annual change before and after 2012.

As mentioned, informal marriages are more common in border cities. Therefore, one can expect a higher decrease in official marriages in the treatment region. Table 2 presents the percentage change in crude marriage rates. The average reduction in official marriages after 2012 is higher in the control group (3.45%) compared to the treatment group (3.26%). However, compared to the pre-2012 rates, the reduction in the treatment region (3.17%) is higher than the reduction in the control region (2.89%). Border cities Kilis and Gaziantep experience the highest reduction in official marriages in the treatment region. These figures point out a possible adverse effect of the refugees on marriage rates.

Table 2

Percentage Change in Crude Marriage Rate

Year	Turkey	Control	Treatment	Kilis	Hatay	Şanlıurfa	Gaziantep	Mardin
2004	7.51	21.79	10.54	25.67	16.06	6.17	9.49	17.03
2005	2.92	2.95	2.71	-5.87	0.59	5.37	20.71	14.05
2006	-2.04	-8.47	2.21	-2.24	2.19	-0.70	-5.92	-4.82
2007	-0.87	-2.73	-1.61	-8.49	0.62	3.63	-2.37	-1.95
2008	-0.74	-2.64	-1.95	-11.04	-1.10	-11.52	-3.73	-3.03
2009	-9.15	-6.64	-9.20	-9.97	-9.34	-5.02	-9.45	-0.80
2010	-3.08	-7.50	-5.34	6.15	-3.88	-12.06	-4.01	-6.32
2011	0.36	-1.24	1.92	-0.59	2.28	5.54	3.10	5.72
Mean	-0.64	-0.56	-0.09	-0.80	0.93	-1.07	0.98	2.48
2012	0.64	1.03	0.63	-0.05	-0.99	4.92	0.63	-0.38
2013	-1.95	1.32	-4.19	-4.90	-4.15	-12.75	-3.87	-6.86
2014	-1.39	-0.43	-2.40	7.07	-0.83	-3.77	-1.91	3.11
2015	-0.79	-3.16	-1.11	-6.76	-2.22	3.64	-3.99	-3.27
2016	-2.73	-2.46	-2.40	4.17	0.54	-1.31	-4.54	-2.39
2017	-5.39	-3.58	-5.33	-7.63	-8.03	-6.08	-7.53	1.92
2018	-4.06	-5.07	-2.56	-11.00	-2.10	-4.72	-0.91	-4.23
2019	-3.53	-5.89	-4.69	-6.92	-4.47	-6.94	-2.98	-5.09
2020	-10.64	-12.79	-7.27	-10.28	-6.40	-1.89	-7.74	-7.44
Mean	-3.32	-3.45	-3.26	-4.04	-3.18	-3.21	-3.65	-2.74
Δ Means	-2.68	-2.89	-3.17	-3.24	-4.11	-2.14	-4.63	-5.22

Notes: Table presents the annual percentage changes in the crude marriage rate. Means give the average annual change before and after 2012

The final decision in a divorce case could exceed one year, then, official divorce numbers may contain the effects of the previous year, which could mislead the effects of refugees. Therefore, we also analyse the number of new divorce cases for each year. Table 3 presents the percentage change in crude divorce cases. New divorce cases in the control region(6.42%) have a higher average rate of increase compared to the treatment group(4%). However, Kilis and Mardin have higher rates of increase than the control group.

Trend analysis offers visual evidence rather than a causal relationship. Both trend analysis and summary statistics reveal that there is very limited evidence to be doubtful of any sizeable negative effect of refugees on family formation in Turkey.

Table 3

Percentage Change in Crude Divorce Cases

Year	Turkey	Control	Treatment	Kilis	Hatay	Şanlıurfa	Gaziantep	Mardin
2013	2.19	1.18	3.05	47.07	9.22	6.29	2.70	31.11
2014	0.98	5.60	2.19	-31.28	-1.97	6.27	4.22	-18.00
2015	0.56	-0.27	2.75	3.87	5.98	5.63	-0.51	11.31
2016	2.04	10.17	1.15	17.72	3.67	-6.15	3.71	-13.94
2017	3.52	9.39	6.75	8.10	4.13	9.89	9.63	26.35
2018	9.02	13.49	12.21	-10.19	11.87	24.14	8.53	40.08
2019	-0.70	5.38	-0.13	35.54	4.19	-3.14	1.94	-7.91
Mean	2.52	6.42	4.00	10.12	5.30	6.13	4.32	9.86

Notes: Table presents the annual percentage changes in divorce cases per thousand people. Mean gives the average annual change after 2012.

Econometric Analysis

The preceding analysis revealed that there exists no clear trend change in the number of divorces and divorce cases, but a slightly differentiated trend in official marriages after the refugee influx. This section will examine the existence of the relationship with a regression analysis. We estimate the following baseline equation,

$$log\,(Y)_{ct}=\beta log(Refugees)_{ct}+\delta log\,(Pop)_{ct}+\gamma X_{ct}+\theta_c+\tau_t+\varepsilon_{ct} \qquad (1)$$

where c and t index cities and years. Y is the various outcomes of interest, $Refugees_{ct}$ is the number of refugees in city c in year t, Pop_{ct} is the resident population in city c. X is a vector of city characteristics which includes the city log of total trade volume, per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated (high school and over) among agents older than 18, and the share of the left parties vote in elections. The parameter of interest β represents the elasticity of divorce/marriage rate with respect to the number of refugees. We add θ_c and τ_t for city and year fixed effects, respectively. Finally, ε_{ct} is the error term. All regressions throughout the study are weighted by city resident population. We report robust standard errors in our tables. However, to allow for correlation in error terms over time within cities, we utilize clustered standard errors at the city level. For some tables, we also report results with clustered standard errors. For the rest, we only mention the robustness of results to clustering standard errors.

Equation (1) utilizes a continuous intensity parameter (i.e., number of refugees) and it covers all cities in Turkey. We use levels; however, this equation would be identical for

parameter β if we use ratios (i.e., the share of Syrians in each city) instead of levels.[5] We estimate parameters by OLS and 2SLS, but since there is a negligible[6] amount of Syrians prior to 2012, we have a Difference-in-Differences (DiD) setting. DiD analysis assumes parallel trends for treatment and control regions prior to the treatment. Violation of parallel trend assumption will lead to biased estimation of β. Figures 4 and 5 show similar trends in treatment cities and Turkey before the Syrian crisis. Moreover, we analyse the pre-treatment trends with an event study approach in the robustness checks section.

Our additional variables control for the city's economic, demographic and social status. The logarithm of trade volume, per-capita GDP and unemployment rate check the effect of the city's economy on family formation. While the effect of education is controlled by the ratio of high educated agents, we control for the impact of traditional society by including average household size, women labour force participation rate and the share of the left parties vote in elections to the estimation.

OLS assumes that the regressor variables are exogenous. If any regressor is correlated with the error term, then we have an endogeneity problem. If the refugees' city choice is affected by some other concerns (i.e., not exogenous), the OLS estimates will be biased, and one should apply the method of instrumental variables to carry out statistical inference. After the Syrian crisis, the Turkish government constructed refugee camps and placed early immigrants in these refugee camps. Refugee camps are generally located in border cities, and several of them are very close to the border. However, there are some refugee camps in non-border cities (Kahramanmaraş, Malatya, Adana, and Adıyaman) as well. If the government built these camps due to the location choice of the refugees, that would point out a potential endogeneity problem. After June 2013, refugee camps were no longer capable of hosting all Syrians, and refugees spread all over the country. Clearly, the location choice of refugees after 2013 is endogenous. We test endogeneity and reject the null hypothesis that the refugee population is exogenous at conventional significance levels. Therefore, we employ a two-piece distance instrument to deal with the endogeneity. The first part of our instrument uses the total camp population, whereas the second part utilizes out of camp total refugee population. We have 81 cities in Turkey and there are 13 different governorates in Syria. By using Google Maps, we calculate the travel distance from each city in Turkey to each governorate in Syria. Then by using refugee numbers and travel distances, we create our instrument as follows;

5 Equation (1) gives an identical β parameter with the following equation;
$log(\frac{Y}{Pop})_{ct}=\beta log(\frac{Refugees}{Pop})_{ct}+(\beta+\delta-1)log(Pop)_{ct}+\gamma X_{ct}+\theta_c+\tau_t+\varepsilon_{ct}$

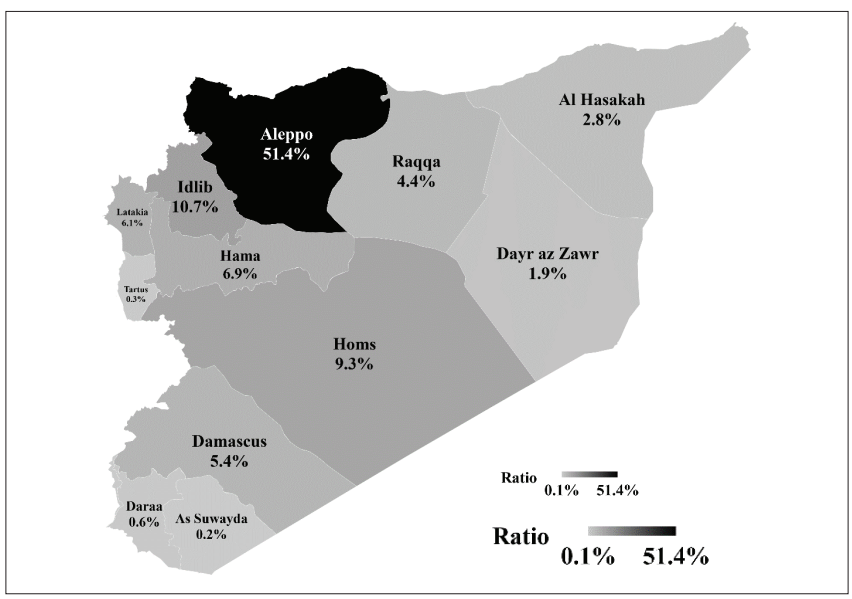
6 The number of Syrians in Turkey was 6,883 and 8,747 in 2010-2011, respectively. Syrian ratio in the total population was around 0.01%.

$$IV_{ct} = \mathbb{1}_c \sum_{s=1}^{13} \frac{\pi_s C_t}{d_{cs}} + \sum_{s=1}^{13} \frac{\pi_s T_t}{d_{cs}} \qquad (2)$$

where C_t and T_t are the total numbers of refugees living in camps and out of camps in year t, respectively. Distance parameter d_{cs} is the travel distance from city c in Turkey to region s in Syria. The share of Syrians living in Turkey from governorate s in Syria is denoted by π_s. For immigrants' background information, we use survey results of Disaster and Emergency Management Presidency (DEMA, 2014;2017) in which they include the information for refugees' past settlement in Syria. We use DEMA(2014) background information for the years before 2015 and DEMA(2017) for the years after 2015. Since we have only two different background information, we do not include a time subscript to π_s. Figure 7 presents the map of the regional background for 2017. A significant portion of the refugees is originally from Aleppo, which is the largest city in Syria. The first part of the instrument uses the camp population; therefore, the indicator function is equal to 1 if city c has a refugee camp in year t. The instrument deflates total number of Syrians by the distance between each city in Turkey and each governorate in Syria.

Figure 7

Regional Background of Syrian Refugees



Source: DEMA (2017)

Results

Table 4 presents the results of equation (1). We present the OLS and 2SLS results with control variables, and results without control variables are left to Appendix Table A1. Due to the endogeneity, OLS estimates are biased (upwards) as the factors that affect location choice are correlated with outcome variables as well. Therefore, we focus on the results of 2SLS that includes all control variables, city fixed effects and year fixed effects. According to the estimates, we do not observe an increasing effect of refugees on divorce. On the contrary, there exists a significant negative relationship. After controlling for other city characteristics, 2SLS gives an elasticity of -0.022 for the number of divorces.

Table 4

Effects of Syrian Refugees on Marriage and Divorce

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Log Refugees	-0.004	-0.022**	0.008***	-0.033**	0.007	0.005
	(0.003)	(0.010)	(0.002)	(0.013)	(0.005)	(0.013)
Log Res Pop	0.895***	1.072***	0.675***	1.070***	0.627***	0.611***
	(0.081)	(0.124)	(0.052)	(0.141)	(0.102)	(0.138)
	Clustered Standard Errors					
Log Refugees	-0.004	-0.022	0.008**	-0.033**	0.007	0.005
	(0.005)	(0.014)	(0.003)	(0.015)	(0.007)	(0.016)
Log Res Pop	0.895***	1.072***	0.675***	1.070***	0.627***	0.611***
	(0.203)	(0.227)	(0.155)	(0.254)	(0.148)	(0.192)
Observations	1,458	1,458	1,458	1,458	648	648
First Stage		1.134***		1.134***		1.134***
		(0.138)		(0.138)		(0.138)
F-Statistics		67.249		67.249		67.249

Notes: Table reports the coefficient for the log of variables. All regressions include control variables, city fixed effects and year fixed effects. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust and clustered standard errors are reported in parentheses. The lower panel presents clustered standard errors at the city level. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

Official divorce numbers suggest that there is no adverse effect of refugees on family separation. On the other hand, we observe a significant reduction in official

marriages. Survey studies suggest that marriages with refugees are generally not approved by legal authorities. If this practice is common in the refugee hosting region, we would expect a reduction in the number of official marriages. Our prediction is verified by the data. We observe a significant elasticity of -0.033. Finally, we do not observe any significant change in divorce cases due to the massive refugee influx. We report first-stage regression results and F-statistics, which is higher than what is suggested in the literature. Since the refugee settlement is directly related to distance to the border, it seems quite normal to have such a strong instrument.

The upper panel of Table 4 uses robust standard errors, whereas the lower panel of Table 4 presents the results when we estimate the model by clustering standard errors at the city level. The coefficient for log divorce is not significant in this case, however, we still observe a significant negative effect on the number of marriages. A 1% increase in the number of refugees leads to an 0.033% decrease in official marriages. Although it is statistically significant, the adverse effect on official marriages is almost negligible.

Marriage and divorce numbers are significantly decreased in 2020 due to the COVID-19 pandemic. Lockdowns, and limitations for wedding ceremonies, compelled many people to postpone their weddings. Courts were also affected by lockdowns. Therefore, we observe a reduction in both marriage and divorce numbers in 2020. We restrict our data by dropping the year 2020 and re-estimate all models in our study. Excluding 2020 data has absolutely no effect on reported results.

The cultural similarities with Syrians in the border region, and the lower cost of marriage with refugees might increase informal marriages with refugees. For their first marriage, instead of native women, native men choose to marry Syrian women. This emerges as a very limited reduction in official marriages. However, there is no increase in divorces and new divorce cases due to Syrians. Therefore, there is no reason to think that refugees lead to an adverse effect on native family separation.

Native Population

The preceding analysis utilizes the total number of residents, which includes Syrian refugees. However, a significant portion of refugees marries or divorces unofficially. Therefore, compared to the refugee population, the official marriage number with Syrians is very low. Then, one might expect to see the impact of refugees on native marriage and divorce rates (i.e., ratio to the native population). Table 5 presents the results when we only consider the native population. Again, there are no effects of refugees on divorce and divorce cases. However, we still observe the adverse effect

of refugees on the total number of marriages. Coefficients are still significant when we cluster the standard errors at the city level.

In Table 4, the elasticity of divorce and marriage with respect to the resident population is around 1. However, in Table 5, this elasticity is around 1.5. Since refugees could legally marry a refugee or native, it is appropriate to use the total resident population instead of the native population.

Table 5

Effects of Syrian Refugees on Marriage and Divorce – Native Population

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Log Refugees	-0.001	-0.001	0.008***	-0.013***	0.003	-0.016
	(0.003)	(0.008)	(0.002)	(0.005)	(0.005)	(0.011)
Log Nat Pop	1.417***	1.418***	1.267***	1.477***	1.082***	0.958***
	(0.095)	(0.112)	(0.047)	(0.064)	(0.182)	(0.207)
Observations	1,458	1,458	1,458	1,458	648	648
First Stage		1.344***		1.344***		1.344***
		(0.125)		(0.125)		(0.125)
F-Statistics		115.478		115.478		115.478

Notes: Table reports the coefficient for the log of variables. All regressions include control variables, city fixed effects and year fixed effects. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

Lagged Effect

Both marriage and divorce take time. Sometimes it could be more than one year. Therefore, in this section, we estimate the equation by using the previous year refugee numbers. The estimated equation is as follows,

$$log\,(Y)_{ct} = \beta log(Refugees)_{ct-1} + \delta log\,(Pop)_{ct} + \gamma X_{ct} + \theta_c + \tau_t + \varepsilon_{ct} \qquad (3)$$

where the only difference with the baseline equation is the $Refugees_{ct-1}$. Results are presented in Table 6. The effect on divorce is similar to the baseline equation.

However, we observe a higher negative effect on marriages. Note that the effect is still very limited, as a 1% increase in the refugee population corresponds to a 0.047% decrease in official marriages. The coefficient for log divorce becomes insignificant when we cluster the standard errors at the city level. However, the log marriage coefficient remains significant under clustered standard errors.

Table 6

Effects of Syrian Refugees on Marriage and Divorce – Lagged Variable

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Log Refugees (t-1)	-0.005*	-0.024**	0.002	-0.047***	0.001	-0.001
	(0.002)	(0.010)	(0.002)	(0.013)	(0.003)	(0.005)
Log Res Pop	0.870***	1.083***	0.710***	1.268***	0.566***	0.577***
	(0.082)	(0.131)	(0.056)	(0.156)	(0.095)	(0.094)
Observations	1,377	1,377	1,377	1,377	648	648
First Stage		1.016***		1.016***		1.016***
		(0.128)		(0.128)		(0.128)
F-Statistics		62.968		62.968		62.968

Notes: Table reports the coefficient for the log of variables. All regressions include control variables, city fixed effects and year fixed effects. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

Robustness Checks

First Differences

An alternative way of dealing with the fixed effects is by using first differences. We estimate the following equation;

$$\Delta log(Y)_{ct} = \beta \Delta log\,(Refugees)_{ct} + \delta \Delta log\,(Pop)_{ct} + \gamma \Delta X_{ct} + \theta_c + \tau_t + \Delta \varepsilon_{ct} \qquad (4)$$

where Δ denotes the difference between year *t* and year *t-1*. Given that we have more than two periods, equations (1) and (4) are not equivalent. Moreover, we control for year and city fixed effects in this model as well. Estimates are generally imprecise

but still, we do not observe any significant negative effects of the refugees on family formation in Turkey. While the upper panel of Table 7 presents results when city fixed effects are not included, the lower panel presents the results with city fixed effects. There is no need to report results with clustered standard errors, as we have no significant coefficients even with robust standard errors.

Table 7

Effects of Syrian Refugees on Marriage and Divorce – First Differences

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
ΔLog Refugees	-0.003	-0.002	0.003**	0.004	0.003	-0.002
	(0.003)	(0.007)	(0.001)	(0.004)	(0.005)	(0.025)
ΔLog Res Pop	0.587***	0.583***	0.458***	0.455***	0.539***	0.519**
	(0.180)	(0.183)	(0.095)	(0.097)	(0.173)	(0.203)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	No	No	No	No	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		1.011***		1.011***		1.011***
		(0.226)		(0.226)		(0.226)
F-Statistics		19.983		19.983		19.983
With City Fixed Effects						
	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
ΔLog Refugees	-0.003	-0.004	0.002	0.003	0.003	-0.016
	(0.003)	(0.007)	(0.001)	(0.003)	(0.005)	(0.033)
ΔLog Res Pop	0.382*	0.383*	0.128	0.127	0.204	0.213
	(0.208)	(0.201)	(0.105)	(0.101)	(0.298)	(0.275)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		1.016***		1.016***		1.016***
		(0.224)		(0.224)		(0.224)
F-Statistics		20.700		20.700		20.700

Notes: Table reports the coefficient for the first difference of log of variables. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

Alternative Specification – First Difference in Ratios

Following Jaitman and Machin (2013), we test an alternative specification that uses the first differences of crude (i.e., numbers per thousands of people) divorce and marriage ratios. We estimate the following equation;

$$\Delta\,(Y/Pop)_{ct}=\beta\Delta\,(Refugees/Pop)_{ct}+\gamma\Delta X_{ct}+\theta_c+\tau_t+\varepsilon_{ct} \qquad (5)$$

where $(Y/Pop)_{ct}$ gives the ratio of divorce/marriage ratio per thousand people. Similarly, $(Refugees/Pop)_{ct}$ is the ratio of the refugees in city *c* in year *t*. Results are consistent with our baseline estimation. While the upper panel of Table 8 presents the results without city fixed effects, the lower panel includes city fixed effects as well. There exists no negative impact on divorce and divorce cases. However, we observe a reduction in official marriages. A 1% increase in the refugee share decreases the official marriage rate by 0.01%. All significant coefficients are also significant with clustered standard errors at the city level. Additional to the previously mentioned control variables, we add city population growth rates to the equation. However, it does not create a sizeable change in coefficients. These results are robust when we use the first difference in the logarithm of the ratios instead of levels. Appendix Table A2 presents the results, and we observe similar impacts of refugees on family formation.

Test for the Parallel Trends Assumption

The critical assumption for an unbiased estimate of β (in equation 1) is that the trends in the outcome variables for both treatment and control regions prior to the beginning of the refugee crisis are parallel. In the trend analysis section, we visually inspected whether differentiated trends exist. Here, we examine the parallel trends assumption by using an event study approach. Following He and Wang (2017), we estimate the following equation;

$$(Y/Pop)_{ct}=\sum_{k\geq -9}^{k=8} D_{ct}^{k}\;\alpha_k+\theta_c+\tau_t+\varepsilon_{ct} \qquad (6)$$

where $(Y/Pop)_{ct}$ is the crude divorce and crude marriage rates in city c in year t. The dummy variables D_{ct}^{k} cover the leads and lags of the assignment event.

Table 8

Effects of Syrian Refugees on Marriage and Divorce – FD in Ratios

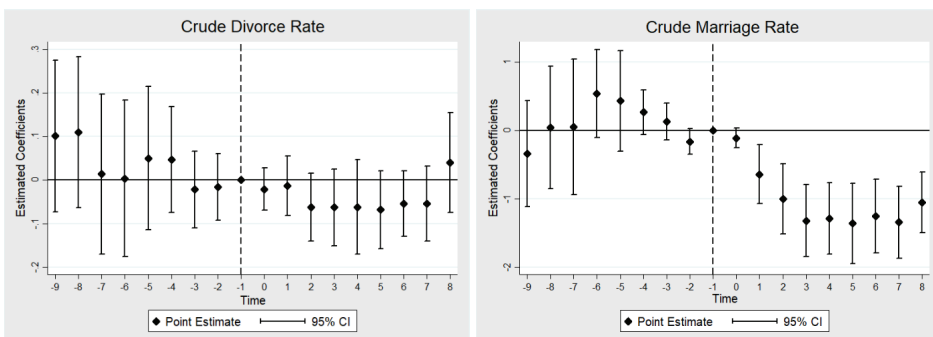
	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Δ Refugee Ratio	-0.547*	-0.854*	-10.210***	-10.516***	-1.211***	-0.410
	(0.318)	(0.486)	(1.158)	(1.388)	(0.466)	(0.684)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	No	No	No	No	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		0.781***		0.781***		0.781***
		(0.094)		(0.094)		(0.094)
F-Statistics		68.360		68.360		68.360
With City Fixed Effects						
	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Δ Refugee Ratio	-0.537	-0.913	-11.336***	-11.841***	-1.422**	-0.770
	(0.384)	(0.671)	(1.435)	(2.516)	(0.656)	(1.252)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		0.777***		0.777***		0.777***
		(0.095)		(0.095)		(0.095)
F-Statistics		67.239		67.239		67.239

Notes: Table reports the coefficient for the first difference of ratios. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

As is standard in the literature, the reference period is set to the period just before the Syrian refugee influx. We define these dummy variables by using the definition we use in trend analysis. Namely, the time of treatment is 2012 and cities with a higher refugee share than 2% are defined as the treatment group. We define all other cities as the control group. To clarify, dummy variable $D_{ct}^{4} = 1$ if city c is in the treatment group and year is 2016(4 years after the crisis) and 0 otherwise. Similarly, $D_{ct}^{-4} = 1$ if city c is in the treatment group and year is 2008(4 years before the crisis) and 0 otherwise. θ_c and τ_t are city and year fixed effects, respectively. The parameter of interest α_k estimates the effect of event (incoming refugees) in Turkey k years before and after the civil war in Syria. If the parallel trends assumption holds, prior to the event, α_k should not be significantly different from zero. We do not report the regression results but display the point estimates with their 95 percent confidence intervals. Figure 8 displays the coefficients for years prior to and after the Syrian crisis. While the left panel presents the results for crude divorce rate, the right panel displays the estimated coefficients for crude marriage rate.

Figure 8

Estimated Effects with Event Study



For both divorce and marriage rates, coefficients prior to the event are not statistically different from zero, which implies that the parallel trends assumption is not violated. Therefore, the pre-treatment trends in the outcome of interest in both

treatment and control cities are similar. Following the arrival of Syrian refugees, we observe no significant change in the crude divorce rate. However, there is a significant reduction in the marriage rate after the refugee influx. We also estimate equation (6) by including all control variables, and it creates very limited changes in the estimated coefficients of the leads of treatments. However, pre-treatment coefficients are still statistically indifferent from zero.

Conclusion

The civil war in Syria caused many Syrians to leave the country. Turkey became one of the main destination countries by hosting almost 4 million Syrians. This massive refugee population brings discussions on the possible effects of the refugees. The main concerns are concentrated on three major points. Natives think that the refugees are taking their jobs, they increase the crime rate, and they adversely affect family formation by lowering native marriages and increasing divorce rates.

This study examines the relationship between refugees and family formation in Turkey. Despite the common negative perception, no negative impacts of refugees on the number of divorce and divorce cases are found. However, we observe a very limited (negligible) adverse effect on the number of official marriages.

Anecdotal evidence suggests that informal marriages are increasing in refugee-hosting regions. Due to the lack of data, it is not possible to test this observation directly. However, any change in the marriage behaviour of the natives should be observed by the change in formal marriages. Our findings partly approve the anecdotal evidence. However, the size of the impact on formal marriages is very limited. The study reveals that concerns on the divorce/marriage effect of the refugees could be due to the prejudices against refugees or misrepresentation of refugees in Turkey.

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Appendix

Table A1

Effects of Syrian Refugees on Marriage and Divorce – Without Controls

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Log Refugees	-0.012***	-0.026	0.015***	-0.123**	-0.006	-0.030**
	(0.003)	(0.019)	(0.003)	(0.059)	(0.006)	(0.013)
Log Res Pop	0.904***	1.080***	0.849***	2.564***	0.339***	0.172
	(0.079)	(0.243)	(0.066)	(0.787)	(0.124)	(0.150)
Observations	1,458	1,458	1,458	1,458	648	648
Controls	No	No	No	No	No	No
City Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		0.604***		0.604***		0.604***
		(0.188)		(0.188)		(0.188)
F-Statistics		10.332		10.332		10.332

Notes: Table reports the coefficient for the log of variables. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.

Table A2

Effects of Syrian Refugees on Marriage and Divorce – FD in Log Ratios

	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Δ Log Refugee Ratio	-0.681*	-0.763*	-1.322***	-1.414***	-0.714***	-0.474
	(0.378)	(0.455)	(0.136)	(0.192)	(0.260)	(0.368)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	No	No	No	No	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		0.781***		0.781***		0.781***
		(0.094)		(0.094)		(0.094)
F-Statistics		68.360		68.360		68.360
With City Fixed Effects						
	Log Divorce		Log Marriage		Log Divorce Cases	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Δ Log Refugee Ratio	-0.539	-0.631	-1.471***	-1.646***	-0.856**	-0.996
	(0.427)	(0.559)	(0.167)	(0.298)	(0.400)	(0.613)
Observations	1,377	1,377	1,377	1,377	567	567
Controls	Yes	Yes	Yes	Yes	Yes	Yes
City Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
First Stage		0.777***		0.777***		0.777***
		(0.095)		(0.095)		(0.095)
F-Statistics		67.239		67.239		67.239

Notes: Table reports the coefficient for the first difference of log-ratios. Control variables include log trade volume, log per-capita GDP, average household size, unemployment rate, women labour force participation rate, the ratio of high educated agents, and the share of the left parties' votes. Robust standard errors are reported in parentheses. Significance levels are denoted as follows: ***1 percent, **5 percent, *10 percent.