The Refugee Effect on Host Countries: A Quasi-Experimental Evidence for The Syrian Refugee Effect on Turkey's GDP

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Abstract

Focusing on GDP, this paper employs a double-difference estimation approach to identify whether the influx of refugees following the outbreak of the Syrian civil conflict has negatively affected Turkey's economy. This paper also assesses the significance of using 2011 (the initial influx) and 2012 (the mass influx) during the estimation procedure. The results show a positive refugee effect when using both treatment years. The refugee effect is 10.2 percent in 2011 and 1.67 percent in 2012. This 8.53 percent difference implies that using the mass influx year, 2012 in this case, yields more accurate estimates when analysing cases regarding mass forced migration.

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To my family: Mum, Ozlem, Ali, Onur, and Timur.

1. Introduction

Over the past three decades, the refugee crisis has reached new records, with the volume of forced migrants is increasing daily. According to the UNHCR, there are at least 82.4 million people who have been forced to flee their homes across the globe. Furthermore, 86 percent of this value is hosted in developing countries, and 73 percent are hosted in neighbouring countries (UNHCR, 2017). Among them are 6.7 million Syrians from the Syrian Arab Republic. Since the 2011 escalation in the Syrian civil conflict, Turkey has been the major hosting country of Syrian refugees. It is estimated that to date, Turkey hosts 3.7 million refugees**,** followed by Jordan (1.3 million) and Lebanon (1.5 million) (UNHCR, 2020**)**. Given the persistence of conflict across the world, and the resulting refugee crises', it is imperative that solid empirical analysis exists to prepare economies for the possibility of absorbing a mass influx of refugees. This is a possibility that can affect any global region at any time.

This paper contributes to the debate on the refugee effect and provides evidence on how Turkey has been affected by a mass refugee influx from a neighbouring country, Syria. The main focus will be on a general economic indicator, GDP. The aim is to investigate whether there is a negative impact from an instance of mass migration on host countries and provide reasoning for the observed outcomes. Secondly, this paper will differentiate itself from other studies by investigating whether there is a difference in the year employed by the model. Since refugee crises observe an initial level of migration before the mass movement, the empirical framework for analysing these specific cases will be pulled into query. The need for this research is simple. Despite the moral obligation of the global community, and human rights of refugees (Verdirame, 1999), many countries refuse to absorb refugees with the fear that their economy will be crippled. The steep increase in racist and xenophobic attitudes toward refugees also provides significant motivation and urgency for research in this subject area (United Nations, 2016; Górak, 2019). This paper will focus predominantly on the South-west (and central) Asian and North African (SWANA) region. This is due to two reasons: a. it is culturally and economically similar to Turkey, and b. because this is the region where most of the Syrian refugees settled after the civil war reached its height in 2011. This is also a region with many other instances of forced migration absorbed by neighbouring countries, which adds more depth to the review of literature and proceeding discussion.

1.2. Theory

One must comprehend the characteristics of a refugee before grasping the effect of a mass refugee influx. Moreover, there are certain concepts and theories regarding a positive shock to population that must be reconsidered in the framework of forced migration.

1.2.1. Why Refugee, not Immigration Effect?

The characteristics which distinguish these forms of migration are vital when understanding, interpreting, and generalising the papers' findings. According to the United Nations, a refugee is someone who has been forced to flee his or her country because of persecution, war, or violence- with a well-founded fear of persecution for reasons of race, religion, nationality, political opinion, or membership in a particular social group (UNHCR, 2017, What is a Refugee?). The main difference is regarding choice. An immigrant can choose to move to

another country whereas a refugee often has no choice because staying in their home country is considered fatal. Second is the reason for migration. An immigrant often moves (among many reasons) on the premises of benefiting from better economic conditions. Refugees move to reach safety. The labour market barriers also differ. Immigrants often have a well-founded network and organise work before they move to a country (Bansak, 2015). Refugees, depending on where they settle, wait a long time for (and in some instances are not granted) a work permit. Immigrants can migrate to work in high skilled labour, such as a surgeon, or to work in low skilled markets like construction. However, among lower skilled labour for immigrants and most refugees, there is often a language barrier that stops them from entering higher skilled labour markets (Bodvarsson, 2013).

Although devastating, the lack of choice when looking at forced migration yields better econometric analysis from the removal of the selection bias. This will be mentioned further in the proceeding sections. Since the lack of choice between forced and economic migrants is the main differentiating characteristic, and considering the experimental conditions regarding the movement of Syrian refugees to Turkey, this paper will concern predominantly with the refugee effect as opposed to the immigration effect.

1.2.2. Substitutes and Compliments

A mass influx in labour supply can result in two effects: the substitution effect or the complimentary effect. The first states that if the inflow of labour have the same skills as natives, then they will replace those natives, often by providing cheaper labour. This is the so-called '*stealing job's* that is often referred to in this debate (White, 1998). The implication is that the influx in refugees would limit the jobs available to Turkish natives, while also lowering wages since the supply of labour has increased. On the contrary, the complementary effect states that when lower skilled labour enters the labour market, it pushes natives to higher skilled and better paying jobs. From this perspective, an influx of Syrian refugees would result in Turkish natives fulfilling better employment. These effects are largely concerning the lower skilled natives within a country since those are the workers with similar attributes to the labour supply shock (Ottaviano, 2012). A note to consider is that this concept when considering refugees may be somewhat diluted. Especially in Turkey where there was a delay for refugees to gain a work permit, they may be less likely to affect the formal labour market.

1.2.3. Brain Drain

A significant concept when debating the degree of movement of labour is that of brain drain. The ability to move to other countries which may provide better economic opportunities takes higher skilled labour from, say country A, until this country has a much smaller labour market for higher skilled workers. This concept is most relevant when considering immigration. In the context of refugees, the lack of this selection bias in choosing where to settle creates a new dimension for the brain drain concept. Since refugees often come from conflicted regions, often where institutions have completely broken down, there is a constraint to their access to the higher skilled labour markets (Rabben 2013). This is largely due to the lack of transferability of qualifications that accompany skilled occupations. Licenses, certificates and other credentials may not be recognised by the host country where refugees settle. Moreover, the process for attaining these qualifications in the host country may be far too expensive and time consuming. Thus, it is not a surprise to see doctors and scientists fulfilling lower skilled roles, such as cab drivers, that they are overqualified for. Secondly, the concept of brain drain is a

major issue for the origin country. If our theoretical country A has experienced mass conflict in the likes of Syria, then the brain drain problem would be diluted because the economy is likely to be destabilised. Instead, there is now more consideration toward this intergenerational aspect from where refugees from country A settle. If the conflict in country A is resolved, then those generations who have integrated into a new country B will be less likely to return. Thus, this concept of brain drain is more significant when considering the coming generations of refugees settled in country B, rather than the immediate effect to country A.

1.2.4. Remittances

Similar to the brain drain, remittances will also be categorised differently when considering refugees. Remittances are transfers of money across national boundaries by migrant workers (Rapport, 2006). For the case of forced migrants, especially considering the state of Syrian institutions post conflict (Gobat. 2016), there are reasons why they mostly do not send money back home. When looking into remittances of Sudanese refugees in Cairo (Egypt), Jacobsen (2005) found that the wages they receive are only enough for rent and subsistence. She finds that respondents did not have enough money to send to other family members across other countries. Secondly, Kvittingen (2019) find that refugees escaping danger such as that of Syria often travel with family since they all need to find safety. Even if they do not travel together, they will not be able to form sufficient communication with members of their home country. Thus, the concept, again, is diluted. They may be able to, after some time, send money to family members who may be in other host countries, but research shows the level of remittances paid out are significantly low- especially when compared to immigrants' remittances (Carling, 2008).

1.2.5. Effects on Trade

Research shows that there is a positive relation between trade and migration. Evidence from Spain, the UK and the USA support that immigrant links to home countries has significantly boosted the level of exports. Gould (1994) concludes that immigrants possess foreign market knowledge spill overs that reduce information costs for host countries. He finds that immigrant information and entrepreneurship have a significant impact on the U.S. bilateral trade flows. Furthermore, Girma (2002) follow suit of the former study and find that in the UK there is again a positive relationship between the stock of immigration and exports. However, they conclude that this effect is prominent in immigrants from non-Commonwealth countries. These are countries that have dissimilar institutions to the UK. This makes sense since these immigrants will have acquired knowledge about markets from countries that may function differently to the UK and hence, contribute more beneficial information. Lastly, the research from Spain concludes similar findings to the latter papers. Specifically, Blanes (2003) finds that a 10 percent increase in immigrant stock will increase Spanish exports by 2.3 percent. Again, they reason with this finding with the cut in information costs since the immigrant stock will have knowledge about social and political institutions from there host countries.

1.2.6. Refugee Burden

The refugee burden shows the extent to which a country is constrained by its refugee population (Shellito, 2016):

$$\frac{GDP}{Population} Refugee$$

This ratio gives a general indication as to the effect of a refugee population to its host country by looking at the general economic performance of a country which should signal their ability to host such an influx. Some extensions of the expression have GDP per capita instead of GDP and refugee density to assess the effects with respect to the population (Caryl, 2016).

1.3. Literary review

The global community has failed to respond efficiently to the vast array of research regarding forced migration- especially in the context of refugee crises (Dick, 2003). The important implications to policy from these studies, some of which will be discussed in the proceeding segments, have not been used to shape policy effectively for economies to better absorb an influx in refugees (Black, 2001). However, as is with most economic concepts, the debate of refugee or forced migration effects is somewhat contradictory. This section will consider research from across the globe, then look at research solely from the South-west and Central Asian and North African SWANA region, and finally on the literature regarding Turkey and its refugee population. Much of the research in the realm of migration whether forced or economic, is regarding the labour market. Although this paper will focus on GDP, the labour market outcomes (for natives and existing migrants) are correlated to trends in GDP (Freeman, 1988). This can be through many channels including unemployment. Tatoglu (2011) look at the short and long run relationship between unemployment and GDP and find that in all cases for Europe, beside for Turkey, the Okun's coefficient (Okun, 1962) implies a negative relationship between the unemployment rate and GDP performance. The case for Turkey shows a much smaller negative coefficient (Yildirim, 2003, Gursel, 2002 and Demir 2010), or no long-term causality (Tatoglu, 2010).

1.3.1. Global considerations

Miami and the Mariel Boatlift

The first study to apply the difference-in-difference estimation approach to the context of migration was Card (1990). After Fidel Castro allowed any Cuban to depart to America, only from the Mariel port, the Miami region experienced a mass influx in immigration. This paper is considered a natural experiment and avoids the selection bias that arise from immigrants having a choice of where to go. As a result, the Miami labour market expanded by 7 percent- increasing Cuban workers by 20 percent. Card focuses especially on the low skilled market as most of the influx consisted of this skill level. He states that the labour influx- on average- have less education, are younger and more likely to be men (compared to other Cubans in the region). By comparing Miami (the treatment region) to the control region comprised by Los Angeles, Houston, Atlanta, and Tampa St Petersburg. He finds that there is no significant effect on wage or employment outcomes of non-Cuban workers in Miami. More surprisingly, there is also no effect on other Cuban's wage and employment. He suggests that the absorption of

this 7% increase in Miami's labour market may be due to two reasons. Firstly, the Marielito's replaced the migration that would have occurred if they did not settle there. The second reason is the rapid growth of industries (such as textiles, agriculture, and furniture) which require low skilled labour. These industries observed rapid growth from 1970 to 1980, especially in cities hosting more immigrants. However, Borjas' reappraisal of Cards study finds that there was a significant impact of the mass influx in immigration (Borjas, 2017). He argues that Card's study did not appropriately analyse the wage changes among high school dropouts, and he provides an alternative approach. The emphasis on analysing low skilled workers is because they make up 26.7% of the Miami labour force and the skill set is closest to those immigrants looking for work. He concludes that, between the years 1976-1979 and 1981-1986, the log wage of high school dropouts in Miami fell by 0.463 log points. Furthermore, the frequency distribution for the 1980 treatment year shows that the wage drop observed in Miami was the largest wage drop observed among all metropolitan areas. Overall, he finds that the high school dropout wages fell by 10 to 30 percent. After Borjas' reappraisal, Peri and Yasenov (2019) revisit the Mariel study and provide a better econometric approach to enhance Card's findings. They used the Synthetic Control methods and reliable standard errors as well as better matched placebos to the Miami labour market. In essence, they conclude that there is no significant wage impact among any skill group, and support Cards findings as opposed Borjas'. The implication of this long argued case is that, if any group were to be affected by the shock to labour supply following the influx of Marielito's, it would be those with the lowest skills.

Evidence from Tanzania and Uganda

From 1993 to 1994, western Tanzania observed a mass influx of both Burundian and Rwandan refugees. Jenifer et al (2010) find that the impacts of this influx include: an increase in the prices of non-aid food items, smaller increase in prices of aid-related food items and after an examination of household assets, they find positive wealth effects of refugee camps nearby rural households and negative wealth effects on households in urban areas**.** Betts et al (2014) find that due to the sheer volume in refugees, they possess significant purchasing power. Thus, local producers observe refugees as a new and significant market for the products they supply. Verwimp and Maystadt (2015) find many local farmers in Tanzania export their food surpluses to many refugees from Rwanda and Burundi that the country hosts. This is an important benefit to local producers and the economy in general since there is an increase in market activity.

Similarly, Betts et al (2014) state that 68 percent of refugees in rural settlements bought goods from Ugandan producers, while 97 percent of refugees in Kampala (Uganda's largest urban area) bought goods from Ugandan producers. The authors note that even economic activity among refugees in settlement areas and camps can have positive trickledown effects for local producers further up the value chain from final consumers. Specifically, 80 percent of urban refugees noted that Ugandan producers were their most important suppliers. Thus, refugees can boost growth by serving as productive consumers and producers in their host country.

Germany's refugee absorption

When considering developed countries, Germany is one of the most refugee and immigration concentrated economies (Ostrand, 2015). It is a great example of how refugees could correct

some of the bleak demographic dangers to come over much of Europe, such as population shrinkage, lower fertility and an aging population (Mounk, 2012). According to Eurostat, 81 percent of refugees seeking asylum in the EU in 2015 were younger than 35. Moreover, 55 percent were between the ages of 18 and 34 (DeSilver, 2015). Observing the present economic performance of Japan, the negative impacts of an aging population- among them a smaller labour force- must be avoided (Canon, 2015). These fears worsen when considering economies which rely on the current labour force to fund pensions and other social programmes. Here, refugees may provide an economic opportunity for balancing the demographic shortfalls of a country. According to the IMF, successful labour market integration for current refugees in Europe could boost EU GDP by 0.5 percent and GDP in the most heavily impacted host countries, like Germany, by up to 1.1 percent (Aiyar et al. 2016). The increase in German GDP is largely due to two reasons. First, the increased labour supply and working age population, and second the rise in spending to support asylum seeking. These asylum seekers receive provisions through initial welcome centres, where they will be reviewed and receive a stipend of 143 Euros per month (for each adult). Then on, they receive 359 euros by the state (Weeren, 2016). Previously in section 1.2.5, the effects of refugees on trade were reviewed. Bahckapili and Centin find that German foreign trade exports increased significantly. They conclude that the Syrian commercial activities have significantly improved the foreign trade balance with other regional countries- resulting in an overall increase in German GDP.

1.3.2. Refugee Effect in SWANA

The SWANA region has observed much conflict throughout time, reaching its highest over the past four decades. The consequence of these events is a significant increase in the refugee population throughout most SWANA countries. Much of this refugee circulation is a result of the Syrian civil conflict, but there are also Afghans and Palestinians (among others) who have also experienced forced migration as a result of conflict. The importance of specifically focusing on this region is due to observing how Syrians have affected other countries, and for analysis of similar cultures and countries like the Syrian and Turkish ethnicities.

Palestinians in Jordan

Since the 1970's, Palestinians have endured forced migration to (predominantly) neighbouring countries. Jordan has been the main host of Palestinian refugees- at present, 50 percent of Jordans population are Palestinian (Chen, 2009). The analysis of this literature gives insight to the potential long run outcomes of a mass refugee influx in neighbouring host countries. Palestinians have an integral role in Jordans economic performance, especially in the private sector. Most of the 500 largest companies listed by *The 500 Top Jordanian Companies* in the 1995 shortlist, were privately owned. Among these owners, 60% were Palestinians. They also account for 54% of the sales turnover and 63% of the value of assets of all the companies surveyed. The Palestinian companies mainly dominated banking, commerce and industry (Reiter, 2004). An important consideration with this case is that Palestinians have been denied return to their home country. Thus, there is no indication as to when they will leave host countries. This is similar to other refugee effects post conflict, but perhaps even more pronounced. The importance of this note regards the level of integration. After generations have resided in Jordan, Palestinians have become a fibre to its economic performance.

Secondly, there is no language barrier which would ideally ease the sped of integration. Both the home and host countries speak Arabic, and the same Levantine dialect. These are notes to the individual characteristics of the Palestinian and Jordanian peoples and should be taken into consideration when comparing to the case of Syrians and Turkish peoples.

Syrians in Lebanon

Neighbouring Jordan in both geography and refugee population, is Lebanon. Adding to the previously stated index measure of refugee burden, is a more intuitive approach. Measuring the burden by the number of refugees per 1000 people, shows that Lebanon and Jordan are both ranked at the top of the burdened countries list (Caryl, 2016). Since the UN defines Lebanon as a developing country, the burden is perhaps more notable. Currently, Lebanon hosts 200 refugees out of 1000 inhabitants- more than double of what Jordan (the next highest on the burden list) hosts. With 1.3 million refugees, and many more unregistered, Lebanon population consists of 20% refugees- where many are Syrians who have fled the conflict (Jarmuzek, 2014). The impact of hosting refugees on the labour market in Lebanon is extremely exhaustive considering that it is an already struggling market. Syrians work predominantly in construction, personal services, agriculture, often willing to work for far less than the Lebanese counterparts, and longer hours without receiving social benefits (Masri, 2013)**.** Overall, approximately 60% of the Lebanese national labour force is Syrian (Abou Zeid 2014). Interestingly, David et al (2019) find that native wages following the settlement of Syrians in Lebanon is a decrease of 4 percent. The also find that the foreign native workers are the main competitors for Syrians in the labour market with a reduction of 7.5 percent in wages.

Afghans in Pakistan

Afghanistan, like Syria, has experienced mass conflict for several decades, and like Jordan, Pakistan has had Afghan contributions embedded into its economic performance. Pakistan hosts over 1.5 million refugees. the UNHCR considers the biggest protracted refugee population in the world (UNCHR, 2015). Afghans in Pakistan, from an entrepreneurial and production stance, have developed and dominated the trucking and transportation markets throughout the past 40 years (Zetter, 2012). The growth in military and human supply lines have resulted in growth for both industries following the US war in Afghanistan has again been dominated by Afghans because they have acquired knowledge on transport lines in both countries and because they already have a hold on most of the industry (Atkins, 2013)**.** As a result, the Afghan refugees can contribute to boosting the economic performance of Pakistan, and enhance the economic activity within communities they subside in. This can be through means of increased employment opportunities and increased entrepreneurial activity.

Sudan and Migration

Sudan is a country who has seen much flow of labour, both in terms of forced and voluntary migration. Here, it can be observed that the increase in forced migration due to war and conflict, has provided better work opportunities for natives with higher skilled workers (Alix-Garcia,

2015). However, it also increases the competition for lower skilled jobs, where often it increases the rate of unemployment for these low skilled workers- whether they are refugees, economic migrants, or natives. Nonetheless, Kok (1989) analyses the effect of Eritrean refugees fleeing Eritrea after the outbreak of bombing and other escalated civil conflicts. His findings show that Eritreans integrate and promote agricultural (and thus economic) development within the Kassala region of Sudan. The author notes that the Sudanese government, despite the civil unrest the country was experiencing itself, was welcoming and placed policies to attempt faster integration.

1.3.3. Syrian Refugees in Turkey

Much of the research carried out in Turkey regarding the Syrian refugee effect focuses on the labour market- especially the informal labour markets since Syrians were not initially granted work permits. Again, as with most economic debates, there are contradictory findings as to the extent of the Syrian refugee effect. The lack of work permits issued to Syrians imply negative developments for Turkish workers- those who are under skilled, under educated and female (Del Carpio, 2015). However, Del Carpio finds that the influx of refugees results in higherwage formal jobs where Turkish natives can 'upgrade' their occupation. Their findings are suggestive that this change in the composition of employment meant an increase in Turkish wages. The latter effect is evident in the Turkish labour market and has been analysed by Akgunduz and Torun (2018). They found that since the arrival of Syrian refugees, there has been a decrease in the intensity of manual tasks. This indicates, like the case in Sudan, that Turkish natives have upgraded to better paying and less intense occupations. Thus, refugees often take jobs that native citizens are unwilling to work, such as construction or low wage agriculture (Karasapan, 2015). However, around 70 percent of workers in Turkey who lost their job blamed the Syrian refugee influx (Orhan and Gundogar 2015). Readers should note that the authors mention the perception of many Turkish business leaders was that Syrian refugees are not stealing jobs from the locals- but rather that the influx are filling in positions for unskilled labour that Turkish natives are not willing to work (Del Carpio, 2015). Furthermore, when refugees drive out competition for lower-skilled jobs, it can push natives (particularly younger and more inexperienced workers), by necessity, into increasingly specialized jobs. This leads to a long-run wage increases for natives on average (Foged, 2016). Lastly, Akgunduz et all (2015) conclude that despite a small increase in housing and food prices, employment rates of Turkish natives in various skill groups are largely unaffected by the arrival of Syrian refugees. From this perspective, the Syrian refugee influx has been beneficial for Turkey because the low skilled labour acts as a compliment to Turkish natives.

Contrary to the findings above, Ceritoglu et al (2015) find that immigration of refugees has considerably affected the employment outcomes of Turkish natives- but the impact is negligible on wages. There estimates show a significant loss of informal labour opportunities for Turkish natives after the influx in Syrian labour. Balkan and Tumen (2016) employ regional variation in the inflow of Syrian refugees as a natural experiment and find a significant decline in consumer prices in those regions where refugees settled. They reason their findings with the lower prices being a consequence of the advantages to cheaper labour from the increase in labour supply in the informal sector. From this perspective, the Syrian refugee influx negatively impacts those who are low skilled and working in the informal labour markets. This also unveils a substitution effect discussed in section 1.2.2. Firms choose the cheaper labour and so the *'stealing jobs'* phenomenon may be observed. However, given the former findings, the

latter conclusions may suggest that these lower skilled Turkish workers will be pushed into better jobs.

The research regarding the Syrian refugee effect on GDP is also contradictory. Firstly, Mahia (2020) finds that, after Syrians are integrated into the economy, they boost GDP. Syrian refugees have significantly increased the level of Turkey's investment. It is estimated that, capital inflows from Syria are valued at 179,032 million Turkish Liras- representing approximately 0.5 percent of gross fixed capital formation distribution. This coincides with previous findings (Zetter, 2012; Chen, 2009; Reiter, 2004). However, Kuyumcu (2017) finds a negative refugee effect on Turkish GDP. First, he states that following the Syrian refugee influx, GDP experienced a slowdown in growth. The paper compares GDP growth rates from significant periods: five percent prior to 2013, three percent from 2012 to 2014, four percent in 2015 and almost six percent in 2016. According to Candemir (2016), Turkey's GDP growth beat forecasts and was one of the world's best performing emerging markets. Thus, the slowdown in GDP was relatively short term and can be argued negligible given the magnitude of the influx compared to the rather small degree of slowdown.

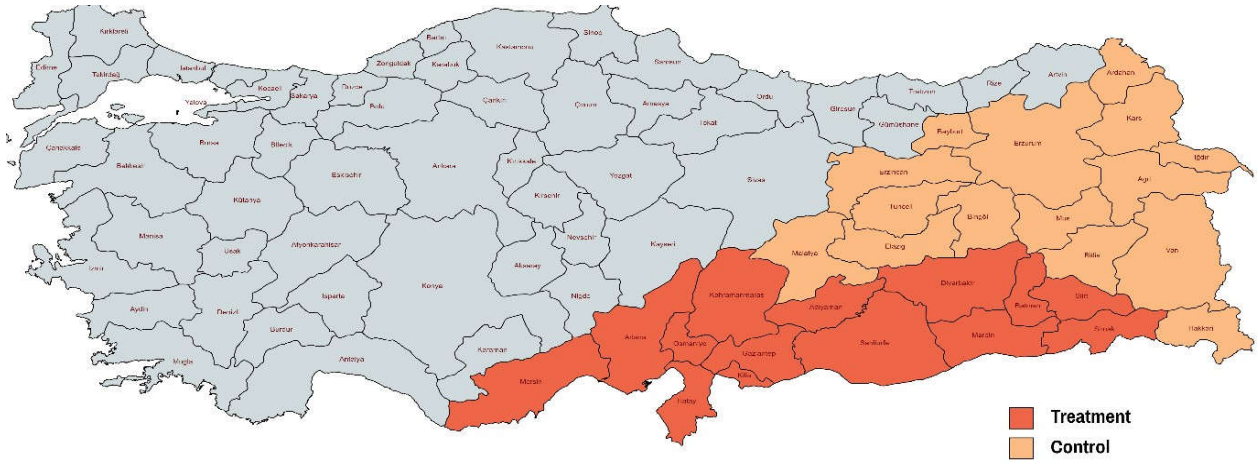
An important contextual consideration for readers is that, due to Turkeys geographic and political placement in the global community, they receive aid- both monetary and other forms- to host refugees and other forms of forced migration (Tsourapas, 2019). Turkey is the bridge between Europe and neighbouring countries that are experiencing conflict or hardship, and been under this type of pressure for a prolonged period. The EU created the EU Facility for Refugees in Turkey (European commission, 2021), where they have allocated over 6 billion euros in aid to Turkish's economy and Syrian refugees. The attempts to aid Turkeys absorption of the refugee influx reduces the refugee 'burden' that would otherwise be emphasised.

2. Data and initial analysis

2.1. Data Sources, Variables and Samples

The data for regional economic indicators is publicly available from the Turkish Institute of Statists (TUIK). The data is arranged in two levels. The first is on the level of 81 provinces across Turkey and the second level is categorized into 26 statistical regions according to the NUTS2 (Nomenclature of Territorial Units for Statistics). The population sample allows the construction of log gross domestic product GDP per capita, and control for inflation, exports, government expenditure, net migration, labour force indicators (labour force participation, unemployment and employment rates), population density and median age. The native demographic characteristics were sourced from the Turkish Household Labour Force Survey micro data set. The Syrian demographic data is sourced from the 2013 AFAD report on Syrians in Turkey (AFAD, 2013). This report is an intense profiling survey with Syrian refugees subsiding in temporary accommodation centres, and outside these centres in a range of Turkish provinces across the Syrian-Turkish border. It is carried out as a face-to-face interview in the accommodation centres in Adana, Adiyaman, Hatay, Gaziantep, Kahramanmaras, Kilis, Malatya, Mardin, Osmaniye and Sanliurfa.

FIGURE 2 | Treatment And Control Regions



Given the Syrian population density in this region, the sample for the treatment group includes the latter provinces and: Mersin, Diyarbakir, Batman, Sirnak and Siirt. The control group: Erzurum, Erzincan, Bayburt, Agri, Kars, Igdir, Ardahan, Malatya, Elazig, Bingol, Tunceli, Van, Mus, Bitlis and Hakkari. Figure 2 provides a visualization of the treatment and control regions.

2.2 Descriptive analysis

This portion of the paper will focus on two components. First, demographic indicators of Syrians to understand the characteristics of the influx in comparison to natives. This will be a key factor in drawing inference and the degree to generalisability to other studies on other regions. Second, on the trend behaviour of GDP and its components. Again, this will be key in understanding the host countries characteristics and will be important for reasoning Turkey's absorption of this influx.

Table 1 | Native Demographic Characteristics: Summary Mean Values Within the Treatment and Control Regions

		Pre-Treatment		Post- Treatment		
		2010	2011	2012	2013	Total
Treatment	Men	0.481	0.482	0.480	0.480	0.481
	Age	34.6	34.9	35.2	35.5	35
	Married	0.645	0.64	0.635	0.638	0.64
	High School & Above	0.221	0.233	0.236	0.247	0.234
	Urban	0.729	0.743	0.740	0.752	0.741
	# Of observations	58,143	56,382	56,167	54,656	225.248
Control	Men	0.479	0.489	0.491	0.490	0.487
	Age	34.0	34.1	34.4	34.5	34.2
	Married	0.643	0.635	0.633	0.628	0.635
	High School & Above	0.216	0.232	0.261	0.248	0.239
	Urban	0.532	0.509	0.512	0.525	0.52
	# Of observations	33,646	32.614	31,127	31,288	128,675

Table 1 shows that the demographic characteristics of the treatment and control native population is very similar. Note that the treatment year applied is 2012 not 2011. Furthermore, the demographic indicators did not change significantly from the pre-to-post treatment periods. The degree of men to women is relatively balanced. The ages of young individuals at the early stages of work are higher, but the ratio of high school and university graduates given the population in both the treatment and control areas is low. The number of observations in the control region is lower than that of the treatment- the total in the control region is almost 100,000 less than the treatment.

2.2.1. Syrians' and Turkish Natives' Demographics

TABLE 2 | Syrian Settlement Provinces 2013 (%)

	Inside camps	No. of camps	Outside camps	Total refugees/ population (%)	Refugees outside camps/population(%)
Sanliurfa	73,295	3	45,000	6.6	2.5
Gaziantep	32,696	4	90,000	6.7	4.9
Kilis	27,247	2	10,000	29	7.8
Hatay	15,404	5	60,000	5	4
Kahramanmaras	14,970	1	10,000	2.3	0.9
Adiyaman	9,893	1	300	1.7	0.1
Adana	9,837	1	9,500	0.9	0.4
Osmaniye	8,268	1	10,000	3.7	2
Malatya	6,440	1	200	0.9	0
Mardin	2,336	1	35,000	4.8	4.5
Total	200,386	20	80,000		

Table 1 shows that the Treatment region outlined in the previous section is the most Syrian refugee dense area of Turkey. This makes sense for two corresponding reasons. First, the region borders Syria and is the easiest location to travel to for safety. Second, since this region borders Syria, it is also the region with the most refugee camps and accommodation centres for Syrians to subside in. A perhaps important note in considering the living standards of Syrians, the total number of refugees within camps is over 200,00 but there are only 20 camps. The number of refugees outside camps are 80,000 which is larger than expected given the time of the report, refugees would have only been in Turkey for one to two years. The ratio of total refugees to the population shows the intensity of Syrian refugees within the provinces. Provinces like Kilis have a higher ratio of refugees in camps compared to its native population. Province like Adana, Malatya and Adiyaman have a higher proportion of refugees compared to their native population.

TABLE 3 | Gender Distribution of Syrian Refugees and Natives (%)

Gender	In Camps	Out Camps	Of Adana Mersin	Hatay K.Maras Osmaniye	G.Antep Adiyaan Kilis	Diyarbakir Sanliurfa	Mardin Siirt Batmn Sirnak	Overall
Male	51.4	51.4	49.7	49.4	48.7	49.1	49	49.2
Female	48.6	48.6	50.3	50.6	51.3	50.9	51	50.8

Table 2 shows that the gender distribution is very balanced inside and outside camps. Usually, we would expect the distribution to be skewed in favour of males when there is a mass influx. This is when considering immigration effects since the economic motivations associated with moving are, in many cultures, mainly the responsibility of men (Card, 1990; Borjas, 2015 and Yasenova, 2017). However, given the context of civil conflict and forced migration, it is understandable why the influx is gender balanced. Everyone from the home country will have fled for safety. For comparative means, looking at the gender distribution of the Ukrainian refugee influx to neighbouring countries, it can be said that females dominate the influx (in terms of adults). This is of course because males have been requested to stay in Ukraine for defensive means (Juric, 2022). Thus, Syria's case should be considered holistically- with consideration for the political building blocks which determine who leaves, as this is a big indication on the gender balance of the influx. Compared to natives, the influx has more males, but this difference is very small. Overall, across all treatment provinces, the gender distribution is balanced for both refugees and natives.

TABLE 4 | Age of Syrian Refugees and Natives (%)

Age Group (years)	In Camps	Out Camps	Of Adana Mersin	Hatay K.Maras Osmaniye	G.Antep Adiyaan Kilis	Diyarbakir Sanliurfa	Mardin Siirt Batmn Sirnak	Overall
1-12	36.7	34	24.9	28.5	30.9	32.2	27	24.9
13-18	16.3	14.9	12.2	13.1	14.8	15.5	13.1	12.2
19-54	42.4	45	48.3	47.3	45	44.1	48	48.3
55-64	2.8	3.7	8	5.4	5	4.5	6.5	8
65+	1.7	2.4	6.6	5.7	4.3	3.6	5.4	6.6

Table 3 shows the age distribution of Syrian refugees inside and outside camps compared to those natives in the treatment provinces. The mode age is between 19 and 54. This is crucial since the working age in Turkey starts from 15 (14 with legal restrictions) (Üngör, 2014). Ages 15 to 24 are considered early working years, ages 25 to 54 are considered prime working years, and ages 55 to 64 are considered mature working age. Given that over half of the population, both inside and outside camps, are within this working age, where most of the latter are at a

prime working age, there must be consideration for the impacts on labour markets. As stated in the theory portion, if Syrians take on unfavoured jobs with lower skill requirements, then the Turkish natives may have better employability prospects. Overall, the importance of age when characterising a refugee influx is large. It can determine at first glance the extent to which this influx will need government assistance – i.e., elderly and young children- or the extent to which they will potentially boost the economic performance of the regions they settle in (as stated in section 1.3.2). As in the case of Germany, an influx of working age refugees may be a solution to an aging population. Thus, the positives regarding the refugee effect are largely tied to the ability to work of the influx. Natives in the treatment region are similar to the influx. It seems that the bleak demographic potentialities described in the case of Germany do not apply to Turkish natives in the treatment region. Like Syrians, most of the population in these regions are of working age (around 60 percent).

TABLE 5 | Education of Syrian Refugees and Natives (%)

	Refugees		Natives					
Education	In Camps	Out Of Camps Overall	Adana Mersin	Hatay K.Maras	G.Antep Osmaniye	Diyarbakir Adiyaan Kilis	Mardin Siirt Sanliurfa Sirnak	Batmn
Illiterate	12.3	18.8	10.6	13.9	14.5	23	19.3	15.9
Literate	5.5	9.5	13.7	15.1	18.7	25.2	23.1	18.7
Primary school	36.6	33	33.7	35.9	31.6	24.1	23.8	30.3
Secondary school	24.7	19.4	18	18.3	18.9	17	20.4	18.3
High school	13.2	9.6	15.5	10.9	10	7.2	9.1	10.8
Higher education	7.8	9.7	8.6	5.9	6.3	3.6	4.1	5.9

Table 5 shows the levels of education attained of natives and Syrian refugees residing in Turkey. Approximately two thirds of the Syrian refugees inside and outside camps only have primary school education. A quarter inside and a fifth outside camps, have secondary school education, and a fifth have high school and/or higher education. Considering the ongoing conflict and unstable operations of institutions- especially educational institutions- not many Syrians in this group have acquired higher skills. The implication here is that these Syrians will be competing with lower skilled Turkish locals. If the substitution effect is observed, then they will replace natives. If they act as compliments, then they will push natives into higher skilled jobs. Compared to the refugee influx, Turkish natives have a lower proportion of individuals who have completed high school and higher education. The same is true for secondary school

excluding Mardin, Siirt, Batman and Sirnak. More of the natives are illiterate and overall, natives in this region on average have less education than the refugee influx. Ultimately, the influx and natives share very similar characteristics.

Table 6 | Registration Status of Syrian Refugees in Turkey (%)

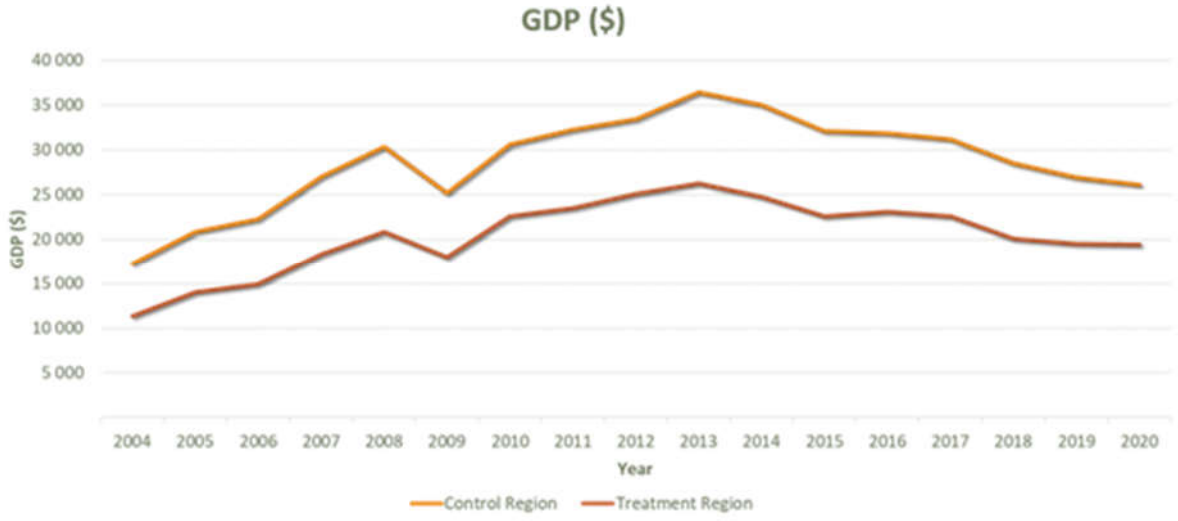
	Male	Female	Total
AFAD Registration	45.6	44.5	45.1
Residence Permit	18.9	18.6	18.8
Camp Registration	5.3	5.3	5.3
Not Registered	30.2	31.5	30.8

Table 5 amplifies that Syrians in Turkey are mostly not formally registered. Almost half of the influx are AFAD registered, a fifth have a residence permit, a third are not registered and, a very small amount have camp registration. The status of refugees is as important, if not more, than other demographic factors. A registration status defines the opportunities available for refugees. The further along the registration status, the more the integration process is enhanced (Hovy, 2018).

2.2.2. GDP Trends till Present

Turkey's complex history has seen many recessionary periods as well as strong recoveries and good economic performance. Referring to Figure 1, Turkey's GDP in both the control and treatment regions have observed similar trends to similar countries (UNHCR, 2020). In the early 2000's, Turkey observed impressive economic and social performance (World bank, 2021). The period saw increased employment and incomes, pushing Turkey along to become an upper-middle-income country.

Figure 1 | Turkey's GDP per capita



Between 2002 and 2012, per capita almost tripled (Kuyumcu, 2017). During these years, there was rapid urbanisation which was sustained with strong macroeconomic and fiscal policy regimes, foreign trade and finance, cooperation with EU laws and regulations and increased access to public services. Relative to other countries, Turkey recovered incredibly well to the 2008/2009 financial crisis. The large decline in GDP per capita can be reasoned with the collapse in foreign demand, which emphasised the previous negative confidence and fall in global competitiveness. By employing countercyclical policies, implementing fiscal stimulus, and cutting interest rates significantly, Turkey recovered most potently in its recessionary history (OECS, 2010). Surface level analysis shows that Turkeys response to the 3.6 million Syrian refugee influx was successful. To date, approximately 2.5 of the initial influx remain in camps (Worldbank, 2021).

3. Method and Empirical Model

3.1. Research questions

This paper will address two research questions. First, an attempt will be made to address the extent in which the Syrian refugee influx has impacted Turkey's GDP. Second, whether there is a difference in using 2011 or 2012 as the treatment year. The second area of concern is especially important as it distinguishes this paper from others that have previously looked at refugee effects in Turkey. It is also important as it draws vital conclusions based on the analysis of forced migration. It has globally been observed that, after an event such as war, the refugees who flee will not all arrive in the settlement region at the same time. Just like the case of Syrians in Turkey, there will be a period that marks the initial influx, and a period that marks the mass influx. As previously mentioned, this quasi-experimental method satisfies the conditions of a natural experiment. Since the analysis employs difference-in-difference estimation, there may be inference on using either year. When using 2011, there is a slight neglect to the mass refugee effect of 2012. However, when using 2011, there is potential of the analysis being affected by the smaller group of refugees already settled within the region. Hence, the second research question holds power in implication for future forced migration and refugee effect analysis.

3.2 Method

This analysis utilizes panel data from 81 provinces and 26 NUTS 2 regions in Turkey. The sample period is from 2009 to 2014-where the treatment year is either a binary variable set to 2011 or 2012. Like Card (1990), this paper will employ a difference-in-difference approach. Since the data are given in different groupings- some on province level and others on statistical region level- the data is categorized into the statistical regions and merged before the framework can be employed. After grouping provinces into 26 regions, the datasets were merged to form one large dataset. From then on, the basic foundations for the model were formed. In order to employ a double-difference model, two indicator variables are created- a. the treatment region: including all provinces meeting the Turkish-Syrian border, and b. the treatment year which signals when the initial influx occurred in 2011 and where the mass influx occurred in 2012. After defining these variables, the data is set to a cross-section where the regression can employ fixed effects, clustered at district level. Previous research shows that given this empirical method, it is vital for certain experimental characteristics to be satisfied

between the treatment and control regions. First and most importantly, the control region highly resembles the treatment region in terms of economic performance and demographic characteristics. The importance of this condition is the fluidity of analysis and enhancement of validity in results. Comparing a control group which highly differs from the treatment region would be ineffective when drawing conclusions. Secondly, and perhaps more important, the control region should not be affected by the treatment. Since this is a natural experiment, there is no control over determining where the Syrians subside. However, given the conditions stated in previous sections regarding lack of choice over location and the data provided by the 2013 AFAD report, the control region holds no significant Syrian refugee population. The amount of Syrian refugee influx absorbed by this region is less that 0.2 percent of the control regions population.

3.3 Empirical Model

To examine the response of GDP to variations in the Syrian refugee influx, this study employs a difference-in-difference DID model to estimate the average regional effect of a mass influx. The model is as follows:

$$\mathrm{Log(GDPPC)} + \beta 0 + \delta 0\ (\mathrm{TYear2011}) + \beta 1\ (\mathrm{TRegion}) + \delta 1(\delta 0\ \cdot\ \beta 1) + \boldsymbol{\theta}' \cdot \mathbf{X}_{\mathbf{i,t}} + \gamma \cdot Z_{i,t} + \varepsilon_{i,t} \quad \textbf{(1)}$$

$$\mathrm{Log(GDPPC)} + \beta 0 + \delta 0\ (\mathrm{TYear2012}) + \beta 1\ (\mathrm{TRegion}) + \delta 1(\delta 0\ \cdot\ \beta 1) + \boldsymbol{\theta}' \cdot \mathbf{X}_{\mathbf{i,t}} + \gamma \cdot Z_{i,t} + \varepsilon_{i,t} \quad \textbf{(2)}$$

Where GDPPC denotes per capita GDP, Tyear is the treatment year set to 2011 (1) or 2012 (2), Tregion is the treatment region, $\delta 1$ is the main variable of interest showing the refugee effect through the interaction between the treatment year and treatment region, θ' is a shorthand for regional controls, $Z_{i,t}$ is a time and regional control and $\varepsilon_{i,t}$ is the disturbance in the model.

3.4. Hypothesis

Following suit of the extensive literary considerations throughout the preceding sections, this paper hypothesises that there will be an insignificant impact from the Syrian refugee crisis. The foundation of this hypothesis is related to the monetary and humanitarian aid received by Turkey to better absorb the influx of Syrian refugees. In terms of the second research question regarding the treatment year, there must be consideration for two characteristics. First, it could be hypothesised that, given the mass influx being significantly more populated than the initial one, there should be a larger effect to the economy. However, since Turkey would have placed procedures for better absorption, and since there will be more aid as the situation becomes more critical, Turkey may be well prepared to minimise and balance the refugee effect. The overall result will depend on the extent to which Turkey was prepared to absorb this influx. This paper hypothesises that given the sheer mass of forced migration in a short amount of time, the use of 2012 as a treatment year will see different results to 2011. Specifically, if there is a negative

effect in 2011, then the effect during 2012 will be more negative. If the effects are positive in 2011, then the effect will be less positive in 2012.

4. Results and Discussion

This section will focus on the findings, reasons for why these findings may have appeared and, what they imply for Turkey.

4.1. Refugee Effect

Table 7 | Refugee Effect From Empirical Model (1) and (2)

Log (GDPPC)	(1)	(2)
Refugee Effect	.102*	.0167*
Constant	8.28***	8.42***
Year Fixed Effect	Yes	Yes
District Fixed Effect	Yes	Yes
Robust Standard Errors	Yes	Yes
R2	0.997	.997

output when using 2011 as the treatment year and panel 2 shows the regression output when using 2012 as the treatment year.

The refugee effect is the interaction between the treatment region and the treatment year- the first panel displays the refugee effect using 2011 as the treatment year and the second panel displays the results when using 2012 as the treatment year. Referring to the first research question, there is not a negative effect to GDP following the influx of Syrian refugees in either the 2011 or 2012 treatment years. The coefficient shows that the refugee effect is 0.102 log points- meaning the GDP per capita in the treatment region is 10.2 percent higher than the control region. When the Treatment year is 2012, the GDP per capita is 0.0167 log points- or 1.67 percent- higher in the treatment region than in the control region. This value is smaller than the refugee effect when employing 2011 as the treatment year. Since the refugee effect is 8.53 percent lower when using 2012, it can be argued that the treatment year should be set to the time where the mass influx is observed may yield more accurate results. There is not a negative refugee effect in this model, but since the degree of the positive refugee effect has fallen from panel (1) to (2), there may be a decline in the potential growth had the influx not occurred.

4.2. Controls

The results for this section will employ model (2) using 2012 as the treatment year.

Table 8 | Regression Output for Empirical Model 2

Log (GDPPC)	Treatment=2012	Standard Error
Government Expenditure	0.064*	
Investment	0.028*	
Exports	0.025**	
Net Migration	-0.049**	
Inflation	-0.0037**	
Unemployment Rate	0.002**	
Employment rate	0.0014*	
Labour force participation	0.0032*	
Constant	8.42***	
Other Controls	yes	
Year Fixed Effect	Yes	
District Fixed Effect	Yes	
Robust Standard Errors	Yes	
R2	0.997	

Table 8 displays the difference in difference control coefficients. These are the controls included with an economic implication. Other controls, population density and median age are also included, but are not necessary to interpret here. All variables are statistically significant at the 10 or 5 percent level. Government expenditure increased by 6.4 percent. This value is relatively high. It also makes sense since the increase in refugees would require the government to respond with providing facilities and such to habilitate the refugee influx absorption. Investment and exports are also positive at 2.8 and 2.5 percent, respectively. Net migration decreases by 4.9 percent and the inflation rate also falls by 0.37 percent. The unemployment rate increases by 0.2 percent, the employment rate by 0.14 percent and the labour force participation rate by 0.32 percent.

4.3. Discussion

Government expenditure is a vital component in GDP when considering the absorption of a refugee influx. Given the positive coefficient, there is evidence that alongside the aid received externally, Turkey has made efforts to absorb and facilitate the refugee influx- like the case of Sudan. Considering the multiplier effect, this has contributed to boosting the GDP of the treatment region- simultaneously reducing the possible negative impact of the influx. Similarly, the positive coefficient of investment shows two conclusions. First, new firm's entrants and firm expansion creates jobs which boost market activity. Second, this boost in capital will aid growth and alongside the multiplier effect, will increase GDP. Again, the increase in exports has contributed to GDP and coincides with the previous literature of the refugee effect cutting information costs associated with foreign markets (Gould, 1994; Grima, 2002; Blanes, 2003).

Card (1990) reasons Miami's successful absorption of Marielito's through looking at migration patterns. By controlling for migration, this paper can draw a similar conclusion. The net migration is negative in the treatment year and region. Thus, given that Turkey observes a relatively high degree of internal migration flows, the reduction in native movements allows for the region to absorb other forms of migration. This replacement of internal migrants with forced migrants reduces the shock to regional population and hence, strengthens Turkey's ability to absorb the mass influx. The labour market indicators show that there was an increase in labour force participation, an increase in the employment rate but also an increase in the unemployment rate by a small value. It could be that the increase in investment and government expenditure has provided more work in the region, but at the same time the increase in labour supply results in some low skilled workers losing their job. Nonetheless, this figure is small and negligible.

Since the Syrian conflict has been ongoing, and Turkey is a neighbouring country, it can be argued that Turkey will have put precautionary measures in place to minimise the potential negative effect on its economy. Turkey has seen a slow forming inflow of refugees before the initial outbreak in 2011. Thus, given previous settling of refugees in similar situations as the Syrians, Turkey would have expected that following the outbreak, they would be the main host country. Turkey has been absorbing immigrants, refugees, and other forms of forced migration for a very long time (Del Carpio, 2015). These factors contribute to Turkey having internal procedures to coping with mass influxes- or at least coping better than other countries who have not experienced the same flow of refugees. This is also a note of caution to readers. When comparing refugee effects in different countries, it is vital to consider a magnitude of characteristics and to be critical of findings. The findings from this paper should be compared with caution due to the latter individual characteristics that Turkey has acquired. A second point can be made here. To be prepared for absorbing a mass influx of refugees, and other forms of migration, countries should propose an *absorption procedure* to reduce the potential impact on the economy.

Turkey has received aid- both monetary and humanitarian- from the European Union and many charities (European commission, 2021). This dedicated source of funding which aims to ensure Turkey has enough resources to meet the demands of the influx, has reduced the possibility of a resource depletion. This support also meant that Turkey did not need to deplete the budget and completely alter their fiscal expenditure plans. There is an implication toward the reconstruction of the refugee burden discussed in section 1.2.6. As well as GDP, the refugee population should be considered against the global support received. Countries like Turkey

may have more of a refugee population than other countries but be less burdened due to this aid. This may provide a more realistic measure to the potential burden on resources from the increased population. Another implication is that, given the latter suggested altercation to the refugee burden ratio, the global community should provide countries absorbing a mass refugee influx with monetary aid. Although aid is provided, the case of Turkey shows that consistency in monetary aid will ensure better absorption.

Most of the literature discuss ways in which the refugee population have contributed to and enhanced GDP through increased market activity, entrepreneurial endeavours and the reduction of information costs. From the case of the Palestinians in Jordan (Atkins,2013; Chen, 2009), we see that when refugees have the same cultural and lingual characteristics, they may integrate quicker. It can be argued that there are many cultural and lingual similarities between the Syrians and Turkish ethnicities. In addition to the latter reasoning, Syrians have acted as an addition to the Turkish economy. Referring to the trends in GDP, Syrians have- in the long term- become an integral part of Turkeys economic activity (Mahia, 2020). Like Afghans in Pakistan, and Palestinians in Jordan, Syrians have boosted Turkish GDP, presumably through increased market activity.

In terms of demographic characteristics, this paper discussed the case of Germany and how the problems that are associated with an aging population can be solved through hosting refugees and immigrants (Mounk, 2012; DeSilver, 2015). The case of Turkey however is different. It can be observed that this country is not facing the same demographic issues as Germany. Moreover, the treatment region is populated with a large working age demographic- both men and women. As with any economic debate, there must be winners and losers. Taking inspiration from the Mariel boatlift and the discussion regarding the Turkish labour market, the winners will be those firms benefiting from cheaper labour (Orhan and Gundogar 2015), those natives benefiting from an upgrade in employment (Akgunduz and Torun, 2018), and those firms who benefit from a cut in information costs and increased foreign trade (Zetter, 2012). The losers are those low skilled labourers that may have lost jobs or faced a drop in wages. Even then, these downfalls are short term experiences, and after the labour market adjusts, these losers – for the majority-will gain jobs and earn wages again (Ceritoglu et al, 2015).

Lastly, a discussion on forced migration without the consideration for projected stay would be insufficient. The ambiguity associated with refugee settlement proposes a barrier to forming effecting long term policy. Cases like Jordan and Pakistan (Atkins,2013; Chen, 2009), where refugees have integrated into the economy are results for long term stay. If a short-term stay was to be considered, the positive impact of a refugee influx may be made harder to argue. In this instance, the cut to information costs and increased entrepreneurial activity is likely to be diluted. Yet, this statement is somewhat paradoxical. One of the main characteristics discussed in section 1.2.1 is that refugees have no way of identifying a timeline of return. Thus, the implication is to create refugee policy for the long term and habilitate refugees from the start of there reidence. Turkey initially, and for several years thereafter, treated refugees as guests. Although there was not a negative refugee effect, this stunt to GDP growth during 2013 described by Kuyumcu (2017) may have been reduced or eliminated had refugees even given work permits.

4.4. Limitations

As thorough as one can be when performing economic analysis, there are always limitations to be considered. The main limitation regarding econometric modelling is perhaps the simplicity of control variables. In the attempt to avoid perfect collinearity, there was omission of variables regarding consumption behaviour. Not just for the benefit of collinearity, but more so due to the lack of available data for the sample period. This variable would have made the analysis stronger as seen in the literature regarding local consumption increasing after a mass refugee influx (Verwimp and Maystadt, 2015; Betts et al 2014). Some variables, such as population density, although not being statistically significant were included with economic reasoning. Ideally, using statistically insignificant variables will to an extent weaken the model. However, given a significant argument as to why the model makes an exception is acceptable. The reasoning here is that, given the population density of a region, the impacts may be different. For example, with less people, the effects to the labour market may differ. Referring to Table 2, the ratio between total refugees and population differs between treatment provinces. This implies that the refugee effect from, say Kilis (29 percent for the ratio between refugee and native population), would differ from Adana (0.9 percent for the ratio between refugee and native population). Another example is that, if a region has a relatively low population density, then the Syrian refugee influx may find it easier to integrate into society. This has many other implications. The faster refugees integrate, the faster they contribute to GDP through mainly entrepreneurial means (Mahia, 2020; Malaeb and Wahba, 2018). This paper considers these reasons sufficient in controlling for the regional population density.

This point is a limitation of all studies regarding forced migration. Each war and civil conflict, each country and each group of refugees will possess individual characteristics. These individualities make generalisability harder. It would be unlikely to compare Turkey and its successful absorption to countries in different geo-political and economic conditions. Thus, readers should focus on the conditions that may enhance the absorption of a refugee influx rather than the list of individual characteristics.

5. Concluding Remarks

5.1 Future Research

Throughout this paper, a consideration has been embedded regarding the nature of research on forced migration. As the global economy progresses, and new conditions unveil, each instance of conflict resulting in forced migration will be different from those that precede it. With each refugee crisis, there must be circumstantial focus on the characteristics of the refugees, the environment of the economy that they settle, and the aid from the global community. Similar research should be carried out on the treatment year when employing a double difference in econometric analysis to discover the extent to which this papers' findings are accurate. Also, to observe whether the difference, or rather lack of difference (in terms of the coefficient sign) between the refugee effect in 2011 as opposed to 2012 is due to the characteristics special to the case in Turkey.

This paper concerns only with those countries that are developed. Research should also perform similar analysis to poorer countries. Given the essence of the findings here, there would be an implication that the refugee effect is worse in countries that are economically weak and lacking

monetary support from the global community. Thus, research on forced migration should be more diverse in analysis, as the implications to policy for countries with different structures (economically and institutionally) are presumably different.

5.2. Conclusion

This paper considers two areas of concern while analysing the Syrian refugee effect on Turkey's GDP. First, there is an inspection of the refugee effect on GDP, focusing on whether the results are negative and economically significant. The findings show that there is a positive refugee effect following the refugee influx. The second research question examines the difference between using 2011 and 2012 as the treatment year, focusing on whether there is a difference between the refugee effect in the initial influx as opposed to the mass influx, respectively. The results show that the refugee effect is less positive when using 2012 (by 8.53 percent). Some of the reasoning for these findings are regarding the characteristics of Turkey. Since they receive refugee specific aid and have been enduring refugee inflows before the Syrian refugee influx, the refugees have been absorbed well. In the short run, this aid reduces any possible negative outcomes. In the long run, after Syrian refugees have integrated into the economy and society, they contribute to boosting GDP growth. This integration outcome is largely through boosting consumption and investment- i.e., through increased market activity in host regions, and through decreasing informational barriers to foreign markets.

Given the conflict observed previously, at present, and the possibilities for the future, the findings from this paper indicate the need for better global cooperation in implementing refugee polices that yield a boost in GDP and reduce the risk of entropy within and between economies.

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