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The Effect of the Syrian Refugee Crisis on Rental Prices in
Lebanon

Bachelor Thesis

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Abstract:

The massive inflow of Syrian refugees in 2011 led to Lebanon becoming the country with the highest density of refugees worldwide. This thesis analyses the effect of the Syrian refugee inflow on rental prices in Lebanon. Data was gathered from four different municipalities in the area of Beirut and Mount Lebanon: Beirut, Bourj Hammoud, Jal-El-Dib and Jounieh. The data provides for the years 2007 to 2015. As the data analysis method, the difference-in-difference regression was employed. The results show strong evidence for an increase between 8-25% of rental prices generated by the inflow of the refugees. The inelastic demand, 'no camp' policy and pre-existence of refugees in the municipalities are argued to be possible explanations to the large increase.

Keywords: Syrian refugees, housing rents, difference-in-difference, Lebanon

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1. Introduction:

Recent concerns about the impact of refugees on the hosting country have generated a considerable body of research. There has been no consensus on whether the benefits of refugees outweigh their costs. Studies have traditionally focused on the labour market effects of a refugee inflow. Only recently, economists have developed a growing interest in the housing market as a way of trying to understand the effect of the influx. It is important to consider the housing market in this respect due to the large burden of its cost on the household budget, which affects the purchasing power in the country.

The United Nations High Commissioner for Refugees (UNHCR) (2019a) estimates that Lebanon has more than 940 000 registered Syrian refugees, although the Lebanese government estimates the number of Syrian refugees present in the country to be up to 1.5 million. In spite of the inflow being a major topic both in the political and the public sphere, few studies are done on the impact of the increasing refugee numbers on the economy in Lebanon. This paper fills the gap by answering the following research question:

RQ: How did the Syrian refugee influx affect the rental housing prices in Lebanon?

The study provides the first quantitative findings of local effects of refugees on the rental market and can be used as a guideline for policymakers. In order to achieve the aim of this paper, the analysis is limited to the short-run impact of the refugee inflow on the rental prices in Lebanon between 2007 and 2015. The limitation is due to two main reasons. First, refugees tend to rent their accommodations in the short run instead of purchasing. That could be caused by the hope of going back to their country of origin and/or lack of capital for buying a house. Second, with a limitation to the short run, no concerns need to be made about the supply side response of the housing market. Using longitudinal data given by four different municipalities in Beirut and Mount Lebanon, a difference-in-difference regression is created. Municipality

fixed effects variable is added to the regression to eliminate the location decision endogeneity issue.

The paper is divided as followed. Section 2 gives a background about the economic situation in Lebanon, as well as the housing market. Section 3 reviews existing literature around the effects of refugees on hosting countries. Section 4 introduces the theoretical framework that will be employed to analyze the data, the concept of a demand shock. Section 5 outlines the empirical method. Section 6 presents data, descriptive statistics and the limitations of the data. Section 7 presents and discusses the results in addition to comparing the results with a Turkish case study (Balkan et al., 2018). Section 8 concludes and presents different aspects for further research.

2. Background:

The Syrian Civil War in 2011 is one of the most recent global developments that sparked great migratory flows; as a result, 13 million men, women and children have required humanitarian assistance, 6.1 million people have been displaced inside of Syria and more than 5.6 million Syrians have fled to other countries (UN news, n.d.).

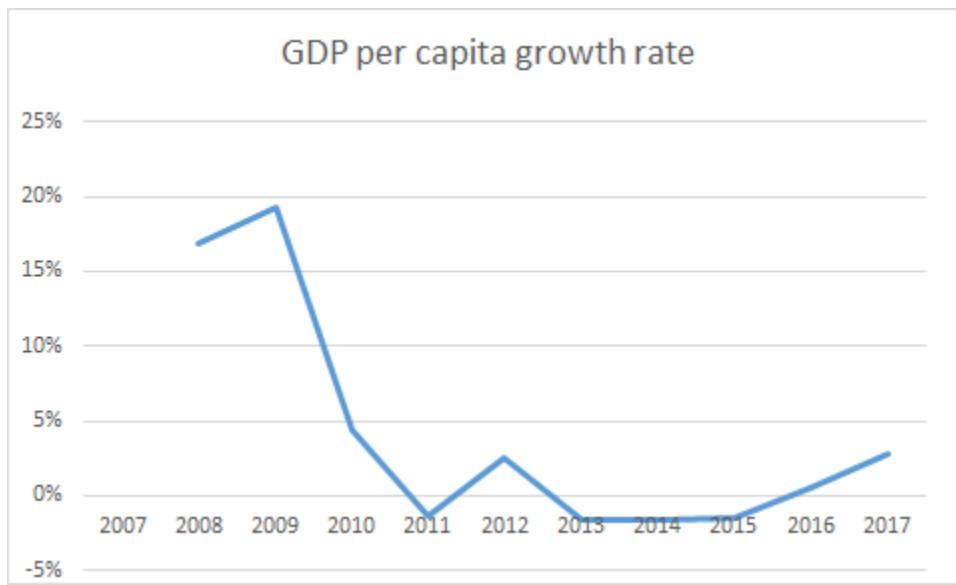
According to the UNHCR (2019b), more than 5 million registered displaced Syrians live in neighboring countries; 3.6 million Syrians in Turkey, 940 000 in Lebanon, 670 000 in Jordan and 253 000 in Iraq (the numbers are extracted in March 2019). Lebanon, being the country with the second largest number of registered Syrian refugees, ranks the highest in the number of refugees in proportion to its population, according to a study by the European Commission (2019). Lebanon has been the destination of many immigration flows, for instance for Armenians that arrived after the genocide by the Ottoman Empire in 1915 (Asfour, 2015) or Palestinians that arrived after 1948 as a result of the foundation of the state of Israel (United Nations Relief and Works Agency, n.d.).

The country followed an open-border policy in 2011, resulting in 1.5 million Syrian refugees entering the country, more than a quarter of the Lebanese population (Wood, 2019). This policy changed in 2014 when the Lebanese government decided to close the borders and initiate restrictive laws towards the Syrians which did not allow them to work (Geha & Talhouk, 2018). According to Geha and Talhouk (2018), this restrictive rationale continued in 2015, when the Lebanese government requested from the UNHCR to stop registering refugees in Lebanon.

2.1 World Development Indicators: Lebanon:

Figure 1: GDP per capita growth rate in Lebanon between 2008 and 2017

GDP per capita is gross domestic product divided by midyear population (including registered refugees). GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in U.S. dollars.



Source: *The World Bank (2019a)*

According to Ajluni and Kawar (2015), the small country Lebanon, with an area of 10 452 km², has endured political, economic and social tensions for decades. The authors point out that since 1975, the country has been witnessing many destabilizing acts: the civil war from 1975 to 1990, the conflict between the militant group Hezbollah and the state of Israel, the assassination of the former prime minister Rafic El Hariri and much more. Ajluni and Kawar (2015) further emphasize that the Syrian conflict endangered the Lebanese economic situation even more because it resulted in less tourism, less direct investments and bad commerce in Lebanon which added up to the already existing political instability in the country. A report from the World Bank Group (2015) calculated the costs of the Syrian crisis for Lebanon to be 7.5 billion dollars. As figure 1 illustrates, Lebanon witnessed a negative GDP per capita growth rate after the refugee crisis in 2011 and 2013 until

2015. The country has one of the highest public debts; the debt to GDP ratio of the country increased from 130% to 150% post-2011 and risks of growing up to 180% in 2023 given the report of International Monetary Fund (2018).

2.2 Terminology:

The Lebanese government, not having signed the 1951 Refugee Convention, does not acknowledge refugee rights and, moreover, introduced restrictive policies regarding free movement, work and legal status of Syrian refugees in January 2015 (Human Rights Watch, 2017). According to the Lebanese Crisis Response Plan from 2015-2016 produced by the Government of Lebanon and the United Nations (2014), the Lebanese government stresses its longstanding position reaffirming that "Lebanon is neither a country of asylum nor a final destination for refugees, let alone a country of resettlement" (n.p.). Accordingly, the Lebanese government treats Syrians as 'displaced' that entered the country after March 2011, whereas the United Nations counts the Syrians as people in need of international protection and classifies them as refugees (Government of Lebanon & the United Nations, 2014). The Lebanese government chooses to employ the term 'displaced' to undermine a potential permanent perspective of Syrians in the country and to not having the need to integrate them in any way (Karam, 2018). This paper chooses to use the term employed by the UN and will refer to the Syrians in Lebanon as refugees.

2.3 Housing in Lebanon:

A 'no-camp' policy has been maintained by the Lebanese government since the influx of the Syrians after 2011, due to the fear of camps becoming permanent, instead of temporary, like in the case of Palestinian refugees who still live in camps since 1948 (Boustani, Carpi, Gebara, & Mourad, 2016). This results in 81% of Syrian refugees renting their accommodations (Norwegian Refugee Council & Save the children, 2014). UN-Habitat and UNHCR (2014), point

out that public housing projects are nowhere to be found in Lebanon. Housing is fully up to the private market (UN-Habitat & UNHCR, 2014). The document about the implications of the Syrian refugee crisis in Lebanon prepared by UN-Habitat and UNHCR (2014), draws attention to the fact that the Lebanese government has not made an effort in producing public houses nor in securing houses for low-income groups since 1942. The housing market has almost no limitations for illegal agreements, most of the Syrians renting apartments have an informal agreement with the landlord, without any formal contract (Norwegian Refugee Council & Save the Children, 2014). Out of 668 households interviewed by Norwegian Refugee Council and Save The Children (2014), only 10% have formal rental agreements.

A legislation law in 1992, known as the Code of Obligations and Contracts, gave freedom for landlords and tenants to agree on a rent (Global Property Guide, 2007). As stated in the brief of Blominvest Bank (2014), contracts usually last for one year, with the possibility of renewing for three years. During these three years, the landlord can not alter the amount of rent (Blominvest Bank, 2014). After these three years, the landlord has the right to ask for a different rent (Blominvest Bank, 2014). The lease usually needs to be registered at the municipality, but many landlords close their eyes to this fact because of the fee that they are expected to pay to the municipality (Ataman, 2015). The fee consists of a rental value tax of 5% for residential establishments (Nahnoo, 2018).

3. Literature Review:

Immigration processes affect and challenge receiving societies in many ways, for instance on a political, social, educational or on an economic level. On an economical level, different categories can be differentiated that can be more closely examined, such as the labour market or the real estate; categories that can be even more differentiated themselves into smaller categories. For instance, in regards to the labour market, the wages of natives and migrants can be examined; in regards to real estate, housing quality, housing prices or rental prices can be further investigated.

In regards to research on the effects of immigration processes on the receiving societies' labour market, there has been recently a notable increase in the international scholarly discourse. When examining existing studies, however, it becomes evident that researchers are not in agreement on the quality of these effects. In his study on the U.S. context between 1960 and 1990 as well as between 1998 and 2001, Borjas (2003) indicates an "adverse labour market impact of immigration" (p. 1369) translating into a negative wage effect for both, domestic and foreign workers. Hence, Borjas' results propagate a negative effect on the hosting society's labour market, more specifically on the wage level between foreign and domestic workers. Contrarily, Card (1990) finds in his study on the large scale immigration of Cubans to the U.S. in 1980 that it had no effect on the native wages and employment, both in the short and in the long run. A more recent finding by Kerr and Kerr (2011), who compare the recent inflows of migrants to Northern Europe and to the U.S., reveals a wage gap between immigrants and natives, comforting to the findings of Borjas. However, the authors further find that this wage gap declines over the duration of the stay of the immigrants. Even though this comparison is not at all exhaustive, it serves to illustrate, that there exists a disagreement in regards to the impact of immigration on the labour market. For this disagreement, there can be different explanations; a methodological explanation, that the particular studies' dealing and interpretation of employed data has to be critically reflected and compared, a contextual explanation, that it has to be acknowledged that the effects of migration processes are highly

context-dependent and that they can only be compared to one another with certain reservations or the limitation of research to adequately grasp the complexity of migration processes in general.

The research on the impact of immigrants on real estate behaves accordingly. In a follow-up study on the large scale immigration of Cubans to the U.S. in 1980, Saiz (2003) investigates this large scale immigration's impact on the rental houses. His findings illustrate an increase in the rental prices as an effect of the immigration influx. Ottaviano and Peri (2006) reinforce these findings of a positive influence on average house values in metropolitan regions in the U.S with cultural diversity. In a more recent article by Saiz and Wachter (2011), the researchers draw attention to an additional factor that influences the housing prices, the impact of the natives' residential region choices resulting from an increasing immigration influx. If natives do not desire to interact with immigrants, the relationship between the inflows and housing prices should be negative. Hence, a high immigration inflow may lead to the outflow of natives from the regions, which results in lower demand. This argument is in line with the findings of a Canadian case study conducted by Akbari and Aydede (2012). In the article, the authors find a small effect of immigration on private housing in Canada. The results are explained by the outmigration of the natives from areas settled by immigrants and the rise in housing supply when an expected demand shock occurs. In regards to housing quality, Saiz (2003), highlights that migrants tend to live in low-quality housings. His study, conducted in the US metropolitan areas, indicates a positive correlation between rents of average-quality houses and immigration inflows. On the other hand, Tumen (2016) demonstrates in a quasi-experiment on the Syrian refugee inflow in Turkey, that the increase in rental prices resulted mainly from high-quality dwellings. The paper notes a 1.7% increase for low-quality housings versus an 11% raise for high-quality ones. The results can be explained by the move of natives to high-quality areas, due to their probable disutility of living close to refugees. Balkan, Tok, Torun and Tumen (2018) investigate the impact of the Syrian refugee crisis on housing rents in Turkey by employing a difference-in-difference method. The report concludes a statistically significant increase in housing rents. The increase mainly results from the high-quality dwellings as concluded in the

2016 quasi-experiment. Balkan et al. (2018) report is used as a reference to study the impact of the Syrian refugee crisis in Lebanon.

The research on the impact of the Syrian refugee influx on the economy in Lebanon is scarce even though Lebanese politicians frequently emphasize the negative impacts in interviews and statements (Houssari, 2019). One of the few studies is provided by Nordström (2016) who examines the effect of the Syrian refugee influx on the economy, demography and the politics in Lebanon. The author argues for an increased risk of conflict in Lebanon due to the influx which worsened an already existing housing crisis, increased the unemployment rate and furthered the friction between Lebanese citizens and Syrian refugees. Another work is conducted by UN-Habitat and UNHCR (2014) which indicates that Syrian refugees satisfy their shelter needs through informal rental market. In those markets, shelter is a definition of a poor quality dwelling and insecure environment. The paper shows how landlords benefit from the need of the Syrian refugees by demanding overpriced rent. UN-Habitat and UNHCR (2014) recommend an increase of the help given by the donors in order to create collective shelters which will help municipalities in handling the crisis.

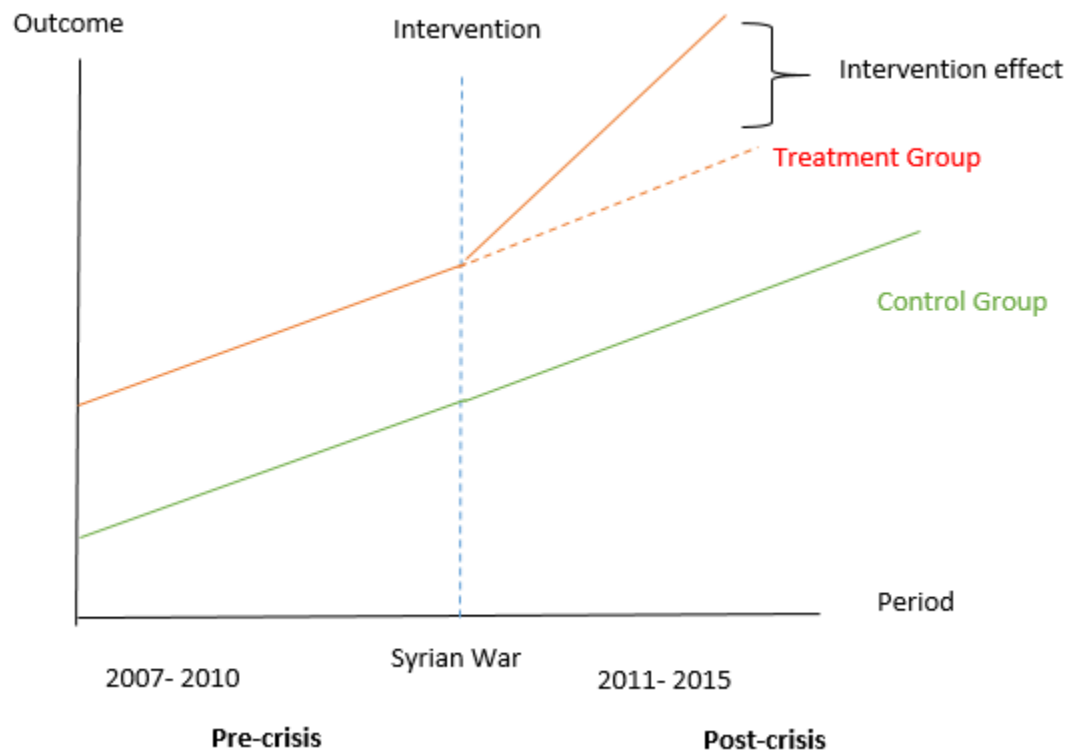
4. Theoretical Framework:

Demand shock is a sudden and temporary change in the demand for a good. It can be both positive, meaning the demand increases or negative, meaning the demand decreases (Bergh & Jakobsson, 2017). As Bergh and Jakobsson (2017) state in their book, both shocks have effects on the prices of the goods. A demand shock can be answered with a supply change, however only in the long run (Bergh & Jakobsson, 2017). Supply of housing is constant in the short and medium run, taking into consideration that construction permits take a long time to be accepted by governments (Bergh & Jakobsson, 2017). Refugee inflow initiates a positive housing demand shock in the receiving country. The increase in demand raises the prices of the houses and/or the rents. However, empirical studies conclude mixed results of the refugee inflow on housing prices as shown in section 3. This could be due to different prerequisites in the country and in the hosting regions.

Syrian refugees in Lebanon that choose low-quality neighborhoods and low rental costs, increase the demand mainly in those regions. In regions with pre-crisis camps, natives are used to living with refugees. The inflow of a new group will raise the demand for the houses in those areas. On the other hand, an inflow of immigrants in regions with no pre-crisis camps, will not experience the same rise in demand, and sometimes maybe a decline. This is due to the fact that natives choose to move away from refugees. By doing so, natives move to high-quality areas, increasing the demand there instead, as Balkan et al. (2018) concludes in his research.

5. Empirical Framework:

Figure 2: Graphical Explanation of Difference-in-Difference Method



In order to fill the gap in researches about the impact of the Syrian refugees on housing prices in Lebanon, this paper analyses this effect by employing a quasi-experimental research method. A quasi-experimental method is generated by an unexpected inflow, which is the case of Syrian refugees fleeing the war (Peri, 2016). The main advantage of this experimental method is that no concern for individual selection bias is needed. On the other hand, a municipality selection problem may occur in the data concerning the allocation choice of the Syrian refugees. Syrian refugees found shelter in areas sharing their political and religious view. Besides those areas, large cities like Beirut and suburbs attracted Syrian refugees due to the opportunity of jobs in construction services (Vliet & Hourani, 2014).

The study follows the difference-in-difference method employed in Balkan et al. (2018) research, with certain modifications, in order to analyse the impact of the Syrian refugees on the receiving regions. Difference-in-difference method helps in estimating the effect of an intervention, often called the treatment, in this case the unexpected inflow of Syrian refugees. This method, as figure 2 shows, contrasts the outcomes of the group directly affected by the causing variable and others that are not. The treatment group is considered to be the group experiencing the change. The control group is employed as a baseline, having all other characteristics similar to the treatment group except the treatment. The difference-in-difference regression looks as follows:

$$\log(\text{rent}) = \alpha + \beta(T * P) + \gamma T + \delta P + f + \varepsilon$$

P being the time variable, T the treatment variable, γ estimates the baseline differences between the control and the treatment group, δ shows the effect over time in the absence of an intervention and f the fixed municipality effects. Due to systematic differences between the treatment and control municipalities, f controls for the time-invariant characteristics in order to access the net effect on the outcome (Torres-Reyna, 2007). The dependent variable in the regression is the log rent. The main parameter of interest is β which is the impact of the Syrian immigration flow on the housing rents in the treatment region in the post-crisis period.

The so-called treatment according to this method is the strong influx of Syrians refugee in certain regions, but not in other. Syrian refugees started entering the country from the beginning of the crisis in March 2011. A dummy variable ‘‘P’’ is created to indicate the timing of the crisis in the regression. The dummy takes the value 0 in the pre-crisis period (2007, 2008, 2009 & 2010) and the value 1 in the post-crisis periods (2011, 2012, 2013, 2014 & 2015). Another dummy is created to identify the treatment from the control group ‘‘T’’ the treatment regions have the dummy value 1 while the control group has the dummy value 0.

The regression helps to calculate the effect of the refugee crisis on the housing prices by comparing the change in rents between the pre-crisis and the post-crisis period in cities with large influx of Syrian refugees on the one hand and with cities with a low influx of Syrian refugees on the other hand. This effect is measured by the interaction term $T*P$ which is the product of a dummy indicating observation from treatment regions and dummy indicating observation from the post-crisis period (2011, 2012, 2013, 2014 & 2015). The interaction term has a value different than zero only when the observation is in the treatment region and in the post-crisis period.

Two difference-in-difference regressions are estimated using two different control and treatment groups. In case 1, Beirut and Bourj Hammoud are defined as the treatment municipalities, while the control regions are Jounieh and Jal El Dib. In case 2, taking into consideration the big socio-economic variation in Beirut's regions, the big city is divided into four smaller regions: Hamra, Mousaitbeh, Mazraa and Khandak El Ghamik. After the division, Hamra and Mousaitbeh are involved in the control group together with Jounieh and Jal El Dib. The treatment group in case 2 includes Mazraa and Khandak El Ghamik with Bourj Hammoud. Table 1 summarizes the two set-ups.

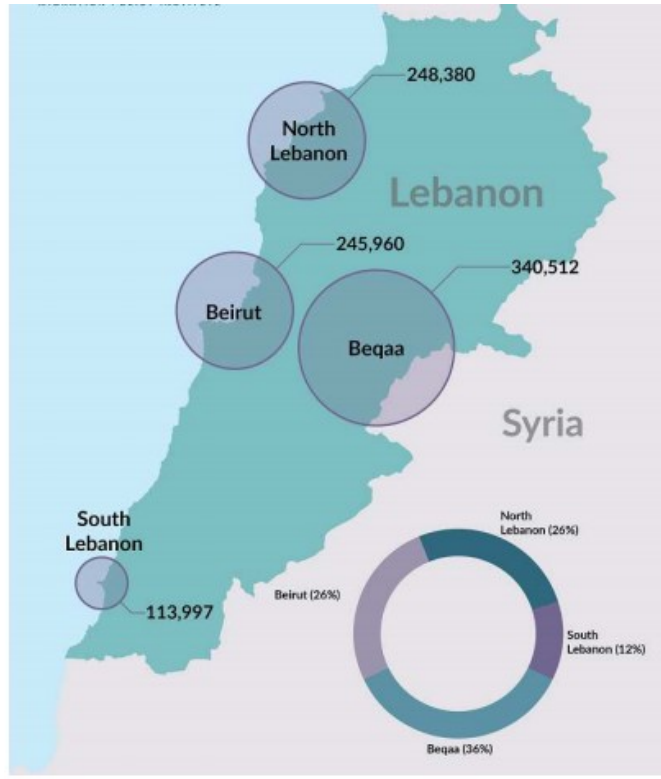
Table 1: Control and Treatment Regions in Case 1 and Case 2

Case	Control	Treatment
Case 1	Jal-El-Dib Jounieh	Bourj Hammoud Beirut
Case 2	Jal-El-Dib Jounieh Hamra (Beirut) Mousaitbeh(Beirut)	Bourj Hammoud Khandak Al Ghamik(Beirut) Mazraa(Beirut)

*Beirut refers to the municipality of Beirut and not the city

6. Data:

Figure 3: Registered Syrian Refugees in Lebanon



Source: UNHCR (2019b), Operations Portal Refugee Situations- Syria Situation

Figure 4: Mount Lebanon



Source: UNHCR (2019c), Mount Lebanon (Beirut)

Figure 3 illustrates that Syrian refugees located themselves close to the borders, with more than 60% of them living in Beqaa and North Lebanon. Due to critical security in these areas and long lasting tensions, this research focuses on data collected from municipalities in the area of the city of Beirut and Mount Lebanon (Figure 3 and 4).

The empirical study is built on longitudinal data, where a sample is followed throughout different points in time allowing to measure the changes within the sample over the time studied (Investopedia, 2018). The data is extracted from four different municipalities: Beirut, Bourj Hammoud, Jal El Dib and Jounieh. According to UNHCR (2019c), Beirut and Mount

Lebanon host 251 149 registered Syrian refugees, as of June 2018. This area is characterized by socio-economic diversity, from upper class and commercial district of Hamra to suburbs like Bourj Hammoud (Vliet & Hourani, 2014).

A survey conducted in 2014 by UNHCR shows that 73% of the Syrians in Lebanon choose various 1 to 3 room apartments; hence this paper focuses on 2 and 3 rooms apartments with the same dwelling quality, excluding luxury apartments or apartments with extreme characteristics, such as luxury apartments (UN-Habitat & UNHCR, 2014). The data is extracted from the appraised value calculated by the municipality for each rental apartment or the rents submitted in the contracts from 2007 to 2015. All numbers were given in United States Dollars (USD) besides one municipality's numbers which were given in Lebanese Pound (LBP). LBP has been pegged to the USD since 1999 where 1 USD=1,507 LBP (OANDA, 2019). Considering the fact that three municipalities had given the rents in USD and that LBP is pegged to the USD, the last municipality's numbers were as well converted to USD with the fixed rate.

The compilation and preparation of the data differed between the four municipalities. Three municipalities calculated an appraised value for a number of rental apartments for each year. The appraised value is an evaluation of the property's value at a certain time. One municipality calculated a median of all the rents in a street, which, by assumption, has dwellings of the same qualities. Two municipalities communicated the numbers orally, one municipality prepared an excel file with few samples and instructions on how to assume the value of more samples and one municipality handed out printed sheets of appraised values. Given those numbers and some further information about how to estimate rents for different apartments (plus/minus X %), a database was created with 1197 observations.

6.1 Collecting Data in Lebanon:

The process of data collection in Lebanon was challenging; it was characterized by unwillingness to help, security concerns and lack of documents and data. As an example, demographical data is sensitive in Lebanon. Sensitiveness is mainly caused by the political constitution which is divided according to sectarian affiliation and the pressure. As a result, the last official census in the country was carried out in 1932 (Lebanese information center, 2013). These facts made it harder to gather all data needed for this research.

In order to be able to meet someone from the municipality you need to have some kind of political contact. The political contact books a meeting between the municipality worker and you. Nothing could be sent by e-mail or taken over the phone due to secrecy issues.

6.2 Limitations of the Data:

It would have been interesting to have data from Beqaa and North, due to their proximity to the borders between Lebanon and Syria and the presence of a high number of Syrian refugees in those areas (as Figure 3 shows). A comparison between the regions close to the borders and the ones further away would have been possible to make. Unfortunately, political tension and lack of helpful contacts in that area reduced the study region to only include Beirut and Mount Lebanon. Due to the problematic data compilation and preparation of the different municipalities, the reliability of the data remains questionable, but it mirrors a reality observed in the country. Other challenges are seen in the rent reported to the municipality, which does not necessarily reflect the true rent paid by the tenants due to the freedom of contracts policy in the country. It should be noted as well that many dwellings are not registered and therefore not found in the municipality database (as shown in section 2.3). These could lead to an underestimation in the results calculated on the effects of the Syrian refugee inflow.

Table 2: Descriptive Statistics by Group and Periods

Pre-crisis: 2007,2008,2009 & 2010

	<i>room</i>	<i>rent</i>	<i>observations</i>
Control Group	Mean 2,226	Mean 554,669	124
Treatment Group	Mean 2,552	Mean 461,615	353

Post-crisis: 2011,2012,2013,2014 & 2015

	<i>room</i>	<i>rent</i>	<i>observations</i>
Control Group	Mean 2,224	Mean 664,840	156
Treatment Group	Mean 2,557	Mean 743,360	564
Total			1197

The mean of the housing rent is in US dollars. It refers to the monthly rent. Rooms do not include toilet nor kitchen.

Table 2 shows the summary statistics in pre-crisis period at the top and post-crisis period for treatment and control groups at the bottom, separated from each other. The numbers above show an increase of 61% in the treatment areas due to the refugee inflow. On the other hand, the control group noted an increase of 20% from the pre-crisis to the post-crisis period. The average rent in the treatment group was lower than the average rent in the control group in the pre-crisis period. This relation takes a new change in the post-crisis period, leading the average rent in the treatment group to higher numbers compared to the control group. The average number of rooms is higher in the treatment region compared to the control region. This may be due to the big Syrian families, or to the random availability of the data in the regions.

7. Results and discussion:

Table 3: Impact of Syrian Refugees on Rents in Lebanon

<i>Case 1</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value</i>
Intercept	6,238	0,029	0,000000
Period dummy: P	0,225	0,039	0,000000
Case 1 Treatment dummy: T	-0,152	0,034	0,000009
Treatment post-crisis: T*P	0,251	0,045	0,000000

<i>Case 2</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value</i>
Intercept	6,273	0,018	0,00000000
Period dummy: P	0,379	0,024	0,00000000
Case 2 Treatment dummy: T	-0,326	0,028	0,00000000
Treatment post-crisis: T*P	0,084	0,035	0,01792357

Table 3, shows the effect of the Syrian influx on rents in the treatment regions. Case 1 shows an increase in housing rents with 25 percent after the Syrian crisis in Lebanon. The results fall to 8.4 percent increase in the treatment areas post-crisis in case 2. The numbers found in the regression are statistically significant at 1% significance level for case 1 and at 5 percent level for case 2.

Due to the Syrian influx in Lebanon, the rents increased in a range between 25 and 8.4 percent in the receiving regions above the increase witnessed in the control regions. The effect of refugee influx on rental prices is the highest in Lebanon compared to the mentioned literature

studying the same case. In contrast, the Turkish case study (Balkan et al., 2018) showed an increase of 3.5-5.5 % in the post-crisis period in treatment regions. The high number is probably a result of Lebanon hosting the highest number of Syrian refugees per capita. Amnesty International (2015) estimated the number of Syrians in Lebanon to be around 1.2 million, more than 20% increase in the population. Meanwhile, Turkey hosted 1.9 million refugees (Amnesty International, 2015), resulting in a 2.5% increase based on Turkey having a population of 77.7 million in 2015 (The World Bank, 2019b).

The results of the study can be explained by the law of demand and supply. The demand for rental accommodations increased with the Syrian refugee inflow. This increasing demand and slow supply raises the rental prices. The demand got into a positive shock due to the 'no camp' policy adopted by the Lebanese government as shown in the section 2.3. The policy has forced Syrian refugees into renting apartments or living in informal settlements. This resulted in higher demand for accommodation compared to the Turkish case study where refugees have the opportunity to settle in camps built by the state (Balkan et al. 2018). Syrians tend to live with proportionally more people in a certain rental space, even a few families together (The Guardian, 2014). By doing so, they are able to afford higher rents. Knowing this fact, Lebanese landlords tend to rent their apartments to Syrian families asking for a higher rent than they would've get from Lebanese renters (International Labour Organisation, 2013).

Pre-existence of refugees in the hosting regions changes the effect of the influx. As shown in previous literature, areas, with no refugees prior to the influx, are characterized by an outflow of natives due to the disutility caused by living in neighborhoods with many refugees (Saiz & Watcher, 2011). This is the case for the Turkish case study made by Balkan et al. (2018). Lebanon is used to hosting big numbers of refugees since the Armenian's arrival in 1918. The presence of refugees does not affect the neighborhood choice of the natives.

8. Conclusion:

Lebanon, the country with the highest refugee concentration per capita, received around 1.2 million Syrian refugees after the Syrian war commenced in 2011. Since then, many political discussions and high media attention have revolved around the challenges of the influx on the Lebanese economy. Still, research in the area is limited.

The present study investigated the impact of the inflow of Syrian refugees on rental prices in Lebanon and illustrated an increase between 8% and 25%, which resulted from the influx by employing a difference-in-difference approach. The increase can be, at least partially, a result of the refugees' willingness to pay more for shelter. However, this paper also argues that the Lebanese government's refusal of establishing official refugee camps for the Syrians has forced many of them into renting private accommodations. As previous literature implies, the pre-existence of refugees in hosting areas does not lead to an outflow of natives after the inflow of refugees. These key findings are supported by the results of this research. However, it is important to stress, that the present study faced limitations, such as the accessibility and reliability of the data obtained from the municipalities and the uncertainty about the rents, due to the free rental market in Lebanon.

The construction activities in the country would be an interesting variable for further research. While the findings show a positive correlation between refugees and rental prices in Lebanon, it would be of interest for policymakers to encourage construction and release more permits in order to dampen the unwanted effects of the inflow on the economy.

Lebanon, having a high refugee rate, should build up an understanding around, not only the economic but as well the social effects of an increasing refugee number. By doing that, the country comes a step closer to providing refugees a sustainable stay and will be able to respond better in future crisis.

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