

# Welcome to the Neighborhood? Evidence from the Refugees' Reception System in Italy

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## Abstract

Between 2014 and 2017, Europe experienced massive refugee inflows. Local reception systems had to adapt, opening new emergency reception centers to host refugees. This phenomenon has prompted an ongoing debate on the impact of forced displacement on host countries' economic and social outcomes. In this paper, we exploit the unique setting provided by the Italian refugee reception system to study: (i) the effect of refugee inflows on housing prices, arguing that they reflect changes in natives' perceptions toward refugees; (ii) local public spending. Using administrative data on the exact location of reception centers and a dynamic event study design, we find that, after the opening of a reception center, areas close to the center experience a relative fall in housing prices of about 1%. The effect is mainly driven by larger cities and is decreasing with the size of the center and the center offering services to facilitate integration. Finally, having assessed that natives' perceptions react to the arrival of refugees, we test whether local public spending is affected since refugees represent a shock to the homogeneity of the community of reference. We find that after the opening of a reception center, areas close to the center experience a relative fall in expenditure per capita of about 20 EUR, largely driven by a reduction in welfare spending.

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# 1 Introduction

During the years 2014-2017, Europe has dealt with an unprecedented inflow of refugees and migrants, known as the "refugee crisis"<sup>1</sup>. EU-28 countries processed more than 3.5 million asylum applications (Eurostat, 2020) in this period, while, in the peak year of 2015 only, more than one million people crossed the Mediterranean sea to reach the EU. These large-scale movements were mostly triggered by the escalation of violence in the Syrian conflict and social unrest in other regions of North Africa and the Middle East. The refugee crisis put enormous pressure on the ordinary reception systems designed to host asylum-seekers, particularly in Italy and Greece, which are the main entry points to the EU; eventually, it prompted a series of reforms to strengthen existing reception systems, whose socio-economic and political consequences on the hosting countries have yet to be fully assessed.

This paper examines how the opening of reception centers affects natives' perceptions towards refugees and preferences for redistribution in the hosting country. We study this question focusing on the Italian reception system. Indeed, after 2014 Italy had to institute emergency reception centers (CAS) to deal with frequent arrivals of refugees. Therefore, we exploit the sudden opening of Italian reception centers during the refugee crisis to ask: (i) if local housing prices react to the opening of a reception center; (ii) if municipal public finance changes. Since in our context refugees do not compete with natives for houses and jobs, we can more confidently interpret house prices' changes as the result of a pure amenity effect reflecting natives' perception. Then, conditional on natives' perception moving, the second part of our analysis attempts to understand if preferences for redistribution react to the opening of a reception center, using public finance data to measure it.

Our empirical strategy exploits variation over time and space in the opening of an emergency reception center. In the first part of our analysis, where we study the effect of the opening of an emergency reception center on housing prices, we employ a

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<sup>1</sup>Throughout, the paper will use the terms migrants and refugees interchangeably, following the literature covering the refugee crisis in Europe.

dynamic event study design, restricting the sample only to areas within a city where a refugee emergency center is opened at a certain point in time. Our results show that, after the opening of a reception center, areas close to the center experience a relative fall in housing prices of about 1%. In order to pin down the drivers of the adverse effect on prices, we repeat our analysis considering several sources of heterogeneity. Accordingly, we find that the effect is mainly driven by larger cities, and is decreasing with the size of the center and the center offering services to facilitate integration. Taken together, our results indicate that refugee inflows can have a detrimental effect on local housing prices by worsening natives' perceptions, and this effect is larger when the contact between natives and locals is more frequent, as it is in the case of small reception centers within private buildings where locals reside. On the other hand, the analysis also seems to suggest that, by resorting to effective policy levers such as adequate integration services, the described detrimental effects can be drastically mitigated.

In the second part of our analysis, having assessed that natives' perceptions react to the arrival of refugees, we test whether local public spending is affected by the opening of an emergency reception center, since refugees represent a shock to the homogeneity of the community of reference. We employ a dynamic event study design, restricting the sample only to municipalities where a refugee emergency center is opened at a certain point in time. We find that, after the opening of a reception center, areas close to the center experience a relative fall in expenditure per capita of about 20 EUR, largely driven by a reduction in welfare spending. Overall, our preliminary findings are consistent with locals becoming less favorable to redistributive policies in the aftermath of the opening of a reception center, particularly for spending categories, such as welfare ones, that are more likely to advantage migrants and refugees.

To analyze the research questions at hand, we rely on four main sources of data. First, we use data from the annual official report of the Italian Ministry of Interior (Doc. CCXXXVI, n.3) on the organization of the Italian system of reception. For each center, the data contain information on the location (region, province, municipality and

address), its name, type of structure (center for adults or minors), capacity, opening date, status (whether it is active or closed), the identity of the managing institution, and the procedure of acquisition. Second, we obtain data on house prices from the Italian Land Registry Office (LRO, hereon) over the period 2006–19, providing us with annual information on house prices at the zone level, which is a homogeneous area in terms of socioeconomic and geographic conditions within a city. Third, for each year and municipality, our per capita public expenditure data come from AIDA PA. Lastly, we derive additional information on local mayors from the Home Office, and background municipal-level controls from the Italian Institute of Statistics (ISTAT).

Key to our design is that, being all the zones in our sample treated at a certain point in time, centers are randomly assigned to zones across periods. In other words, our underlying assumption is that the timing of centers' opening is not correlated with unobservable characteristics of the zone. We directly test for this by inspecting whether the year of first opening of an emergency center within a given zone is correlated with observable pre-period characteristics such as housing market characteristics and other socio-economic features of the municipality. Reassuringly, there is no statistically significant relationship between the year of opening of the center and these variables measured at the beginning of the period.

This study relates and hopes to contribute to several strands of literature. Primarily, it builds on growing research showing that immigration has a detrimental effect on local housing prices (Saiz and Wachter (2011)), while it has a positive effect on housing prices at the city level (Saiz (2003); Saiz (2007); Ottaviano and Peri (2006)), results depending on the definition of the market at a proper geographical level to account for native mobility. Most of the literature has focused on the effects of migrants' inflows on housing prices in Western countries (for example Gonzalez and Ortega (2013) in Spain, Accetturo et al. 2014 in Italy and Sá (2015) in UK). On the other hand, there are very few studies focusing specifically on refugees. Rozo and Sviatschi (2021) analyze the effects of the arrival of Syrian refugees on housing expenditures and income of Jordanian nationals. They find that refugee inflows are reflected in higher expenditures

on housing and transportation and lower expenditures on food, education and health care. Fewer studies within this literature have instead focused on the effects of the 2014-2017 refugees' crisis in Europe on host countries' outcomes as well as on the effectiveness of European reception systems. Moreover, because of the characteristics of European reception systems (which are mostly based on small centers scattered within and across municipalities), it is important to understand how natives' perceptions of refugees evolved within European countries during the refugees' crisis. To the best of our knowledge, Hennig (2021) is the only paper studying the impact of refugees on the housing market in the European context and employing the features of the reception system as a source of identification. The author finds that, after a refugee shelter is established, house rents in Berlin decrease by 3–4% within 100m of the shelter, and ratings for local amenities also decline.

Our paper is also related to a second important strand of literature that studies preferences for redistribution and public spending in heterogeneous social groups. This literature has shown that public spending is typically lower in groups that are more fragmented across racial and ethnic lines (Alesina and La Ferrara (2000)). Importantly, Alesina, Miano, and Stantcheva (2018) document that reminding respondents of immigration in a randomized survey experiment makes them less favorable to redistribution policies. Accordingly, Dahlberg, Edmark, and Lundqvist (2012) show that a larger refugee population in the period 1985–94 in Sweden lead to less support for redistribution using panel survey data.

Finally, our paper contributes to a relatively recent literature studying the effects of the 2014-2017 refugee crisis in Italy that often employs the specific features of the Italian reception system for identification. Gamalerio (2018) studies whether electoral incentives affect migration policies by showing that local politicians in their last year of mandate were less likely to open a non-emergency reception center (SPRAR). Gamalelio et al. (2020) and Campo, Giunti, and Mendola (2021) both find that the opening of a reception center has a positive effect on the support for extreme-right anti-immigration parties.

We contribute to the existing literature by focusing on Italy and its reception system. First, having established that housing prices negatively react to the arrival of refugees, we move a step further and ask if there exist policy levers that might mitigate the documented negative effect on natives' perceptions. Second, we argue that, given its specific features, the Italian case is an ideal one where to study natives' perceptions through housing prices, thus controlling for other potential channels. Third, interpreting refugee inflows as a shock to the homogeneity of the constituency, we are the first to employ public spending data in order to study how this affects preferences for redistribution. Finally, we attempt to provide a unified framework to study both the private (i.e. housing market) and public (i.e. public spending) reaction of natives to the arrival of refugees.

The remainder of this paper proceeds as follows. Section 2 provides background information on the Italian reception system. Section 3 presents our data. In Section 4, we discuss our analysis on the housing market. Section 5 presents our analysis on public finance. Section 6 concludes.

## 2 Institutional Background

### 2.1 The 2014-2017 Migration Wave

In this paper, we focus on the extraordinary inflows of migrants that interested Italy between 2014 and 2017. Given its central position in the Mediterranean sea, Italy has always been subject to important inflows of migrants, arriving especially via sea. Figure 1 shows the number of arrivals via sea between 2005 and 2019. Before 2011, the number of migrants arriving to Italy via sea was stable at around 20,000 per year. The number of arrivals first peaked in 2011, reaching almost 63,000, due to the increase in political instability in North Africa caused by the Arab Spring. While the inflow momentarily decreased in 2012 and 2013, 2014 inaugurated a season of unprecedented migrations to Italy. Arrivals by sea reached a new high hitting 170,100. To put numbers into context,

in the first three months of 2014 only, the number of arrivals via sea was 13 times higher than in the same period of 2013. The increased volume of migrants was a result of many different factors. Many thousands arrived from sub-Saharan Africa, notably Eritrea and Somalia, fleeing economic chaos, war, and human rights abuses. A significant portion of arrivals came also from the Middle East, mainly Syria, escaping conflict and civil breakdown. Most of the arrivals came through the Central Mediterranean Route for which the most common starting point was Libya. Most asylum seekers arrived in Italy smuggled by traffickers from North Africa or rescued at sea. Between 2014 and 2017 the number of arrivals was relatively stable, ranging between 120,000 and 180,000. In 2018 arrivals sharply decreased after Italy signed a number of cooperation deals with Libya. The deals strengthened the Libyc Coast Guard, increased controls on departures, and blocked migrants' movements from Libya.

## 2.2 The Italian Reception System

The Italian Reception System for refugees, asylum-seekers and migrants is articulated on three main levels. The first level is constituted by the so-called *hotspots*. *Hotspots* are equipped disembarkment areas where migrants are directed for first assistance and identification. Currently, there are 6 hotspot centers in Italy, mostly located in the South, near the main points of arrivals to the country via sea. *Hotspots* have an average capacity of 370 people. After first assistance, refugees are transferred into *primary reception centers*<sup>2</sup>. In these centers, migrants are identified, the regularity of their presence in Italy is certified and they receive assistance to start and finalize their request for asylum or humanitarian protection. *Secondary reception centers* (SPRAR) constitute the third level of the Italian reception system. These centers are managed by local institutions in collaboration with the third sector and offer individual projects for integrated reception. The SPRAR system is funded by the national government

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<sup>2</sup>There are different types of *primary reception centers*: "Centri di Primo Soccorso e Accoglienza" (CPSA), i.e. "First Aid and Reception Centers", "Centri di Accoglienza" (CDA), i.e. "Reception Centers" and "Centri di Accoglienza per Richiedenti Asilo" (CARA), i.e. "Reception Centers for Asylum Seekers".

through money channeled to local municipalities <sup>3</sup>. The aim of the SPRAR system is to enable applicants or holders of an international protection status to undertake a pathway towards social and economic inclusion and ultimately full independence. The centers offer legal assistance and help refugees and international protection holders learn the language, find a job and complete their education.

In 2014, the frequency of arrivals and the difficulties in receiving and distributing large numbers of migrants through the ordinary system led to the institution of the so-called *emergency reception centers* (CAS) <sup>4</sup>. The need to find immediate solutions to the pressing demand of reception has pushed towards a model of reception distributed across the whole national territory and directly managed by the Ministry of the Interior. In particular, these centers are managed by the local offices of the Ministry of the Interior ("Prefecture") and municipal governments do not have powers over them. When the need arises, the government asks local private entities (NGOs, churches, hotel owners) to find an emergency placement for migrants. Importantly, a center can be opened in a municipality with no need for agreement from the local municipal government: the location of emergency centers are proposed and decided by economic operators, without consultation with local municipality administrations. Due to the increasing and continuous inflow of migrants between 2014 and 2017, Emergency Reception Centers have become the rule. Figure 2 shows the increased use of emergency reception centers over time as reception facilities. In 2016, 77.72% of migrants were hosted in emergency centers, 8.32% were in primary reception centers, 13.5% were in secondary reception centers, and 0.46% in hotspots.

Emergency reception centers vary a lot by type of building, capacity and managing institution. Any building can be used as an emergency center. Figure 3 shows that around 50% of emergency reception centers are housed in private houses and apart-

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<sup>3</sup>When the Department of the Interior wants to allocate refugees within Secondary reception centers, it issues a tender to create new SPRAR centers at the municipal level. Mayors can decide whether to participate to the tender and open a SPRAR center. Municipalities that open a SPRAR center receive grants from the central government and a benefit that can be spent freely by the municipal government and does not need to be used for the activities of the center

<sup>4</sup>The different phases of the Italian Reception System are outlined in Figure A1. Emergency reception centers are in practice a track for reception parallel to the SPRAR centers.

ments and are therefore relatively small in size. In the vast majority of cases, these private houses and apartments were already owned by local NGOs before the refugee crisis and were used for other non-profit activities (for example as shelters for families in need or victims of abuse or assisted housing facilities for the elderly). During the migration crisis, these spaces were converted into emergency centers. The fact that the vast majority of centers are divided across networks of private apartments is particularly important for our analysis: it implies that refugees and natives lived in closed contact, often in the same building. 15% of emergency centers were opened in large group accommodation buildings, such as former schools, police stations, hospitals, military buildings or retirement homes. 10% of centers were opened in church-owned buildings. Finally, 22% of emergency centers were opened in hotels, beds and breakfast and touristic structures. Figure 4 shows the distribution of emergency centers' capacity. The distribution is left-skewed, with most centers being very small (the median is 9). This reflects the fact that most centers were opened in private apartments, with a few outliers driven by centers opened in large, disused public buildings.

Note that overall converting their structures temporarily into emergency centers was rather profitable for both local NGOs and hotel owners (particularly off-season). These centers are financed directly by the government who pays the managing institution 35 EUR per day and person for board, food and lodging. Of this 35 EUR, 2.5 EUR per day are given directly to the migrant in the form of pocket money<sup>5</sup>. Moreover, opening an emergency center was relatively easy, since CAS were conceived to be temporary structures to deal with a specific emergency and thus they did not need to provide any service other than food and lodging (unlike SPRAR centers). The provision of additional services such as legal assistance, language classes and job training was at the complete discretion of the managing institution. This resulted in a large variation in the provision of services and the overall quality of centers. Centers managed by NGOs that were already operating in the field of refugees' assistance, for example,

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<sup>5</sup>Anecdotal evidence shows that, for hotel owners, hosting migrants is a lucrative business: they receive 35 EUR per day for each when the actual cost is about 26 EUR.

offered a wide variety of services aimed at fostering integration. Centers managed by less recognized institutions were of lower quality.

Finally, it is important to mention that, although CAS centers should host migrants temporarily, migrants spend on average between 6 months and 2 years in these centers. This is because Italy has the longest asylum procedure in Europe, ranging between 18 and 24 months from application to formal status registration. The waiting times expand even further as most migrants passing through Italy ask to be relocated to other EU countries, activating more lengthy bureaucratic procedures. While their asylum request is pending, migrants are not allowed to work or relocate out of the assigned reception center.

## 3 Data

### 3.1 Emergency Reception Centers Data

For our analysis, we assemble a novel dataset containing information on the universe of active and inactive Italian reception centers in the period 2004-2018. The data comes from the annual official report of the Italian Ministry of Interior (Doc. CCXXXVI, n. 3) on the organization of the Italian system of reception. To the best of our knowledge, this is the first research to directly employ administrative data on reception centers to estimate for the effects of migration on natives. We restrict our analysis to emergency reception centers opened between 2014 and 2017, which together correspond to 99,07% of the original sample. This allows us to exploit only variation in reception centers that were opened in response to the huge migration inflows of 2014-2017. Our final sample consists of 7,156 structures in the study period, (almost one per municipality, given that there are 7,904 municipalities in Italy). Indeed, while Panel (a) of Figure A2 reports that more than 60% of emergency centers are concentrated in small municipalities, Panel (b) shows that the average number of centers by municipality increases with its size, with small municipalities having less than one center each.

For each center, we have precise information of the location (region, province, municipality and address), its name, type of structure (center for adults or minors), capacity, opening date, status (whether it is active or closed), the identity of the managing institution, and the procedure of acquisition (public tender, etc.). Table 1 summarizes the data, showing that the bulk of emergency centers were opened homogeneously around the country, with a slightly higher concentration in Northern and Central Italy, during the peak year 2016. We can also notice that more than half of the universe of reception centers is located in city centers and semi-central areas, peripheral and sub-urban areas hosting the remaining 37%. Also, as mentioned above, Figure 4 shows that the majority of these centers had a small or medium capacity in line with the fact that the centers were hosted in emergency structures such as private apartments and hotels (the mode coinciding with an average size of 9).

### 3.2 Italian Land Registry Office Data

We obtain data on house prices from the Italian Land Registry Office (LRO, hereon) over the period 2006–19. Each city in the LRO is divided into "microzones", which are comparable to urban districts. Each microzone is meant to reflect a homogenous area in terms of socioeconomic and geographic conditions. Indeed, the microzones are defined so that: (i) the maximum price recorded in it is not larger than 1.5 times the minimum price of the area; (ii) each microzone must belong to a single administrative microzone defined by the land office ("microzona catastale"). Figure A3 represents the division into zones for the city of Milan. For each microzone, we consider the annual price of a "standard house in normal conditions". Specifically, the LRO provides the minimum and maximum price recorded in each microzone every year (outliers are excluded). We computed the 'average' price as the mean between the minimum and maximum price. Our final measure for the dependent variable is the logarithmic transformation of the average price<sup>6</sup>.

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<sup>6</sup>More details on the procedure used by the LRO to construct their housing prices estimates are reported in Appendix B.

Overall, we obtain 148,323 house price observations for 26,712 microzones whose descriptive statistics are summarized in Table 2. The average zone seems large, but we observe a median size of  $1.8 \text{ km}^2$ , consistent with the average size of an Italian urban district; rural zones instead tend to be larger and encompass sparsely populated surroundings. Accordingly, the average size of the zone is smaller when we consider only the 20 biggest Italian cities (row 2). Microzones are further classified in the following categories: central (32.21%), semi-central (4.9%), peripheral (15.24%), sub-urban (15.02%), extra-urban (32.63%). Once removing the last category, the average size of the microzone becomes  $2.08 \text{ km}^2$ , with a median of less than  $1 \text{ km}^2$  (row 3). Additionally, Figure A4 shows that most Italian municipalities are split into less than 3 zones. The average house price at the zone level is about 1400 EUR per square meter and the variation across zones is considerable (the ratio of the interquartile range to the median is above 1.8).

Using the information on the exact address of each emergency reception center, we are able to calculate its latitude and longitude and match it to the house prices data at the LRO zone level, as well as to the other sources of data at the municipal level. As Figure ?? illustrates, the emergency centers (in red) are spatially matched to the LRO zones (in gray) if they are completely contained within its boundaries (for instance, in Figure ??, Panel (b) the zone in yellow completely contains the center).

### 3.3 Fiscal Spending and Municipal Characteristics Data

In order to study the evolution of public expenditures following the opening of a refugee center, we use detailed yearly data on municipal budgets from AIDA PA during the period 2005-2019. For every year, these data provide information on the allocation of revenues and expenditures according to the municipality budget, and the actual flows appearing in the end of the year statement. For our analysis, we use fiscal entries officially approved by the local council at the beginning of the fiscal year in order to best reflect political decisions and limit measurement and confounding errors related

to past budgeting decisions or administrative delays.

In our final sample, total yearly per capita expenditures averages to 795 EUR. Expenditures are further divided into sub-categories called "Missioni", which refer to their economic and functional destination, and are divided as follows: environment (20%), cultural heritage (2.4%), energy (0.8%), justice (0.12%), education (10%), order (4.4%), youth (1.7%), loans (11.2%), administration (36%), families and poor (13%), development (0.7%), transportation (9%), tourism (0.6%). Revenues are further detailed into sub-categories called "Titoli", which indicate their source (e.g. transfers from the national government, local taxes, etc.), with total yearly per capita revenues' averaging to 1400 EUR.

Data on municipal politicians are from the Home Office and contain information on age, gender, education, past professional background, and political affiliation, as well as covered seat and duration of the political mandate. We concentrate on ordinarily elected mayors, excluding commissioned or appointed mayors.

Finally, we derive background municipal-level controls from the Italian Institute of Statistics (ISTAT): share of foreign population, share of high school graduates, number of firms per 1,000 inhabitants, area, number of NGOs per 1,000 inhabitants. As detailed in the previous section, we make use of the exact address of the emergency centers to match them to our municipal-level public spending and political data, as well as other municipal-level controls.

## 4 The Effect on the Housing Market

This section investigates how housing prices reacted to the opening of an emergency reception center in Italy. Before introducing our empirical strategy and results, we argue that, given some features of the Italian context, changes in house prices following the opening of a center should closely reflect changes in natives' perceptions, as our setting allows us to account for other conflicting explanations.

To illustrate this point, we introduce our conceptual framework which is inspired

by the model developed by Accetturo et al. (2014). In the standard setting, a city has 2 zones, 1 and 2. Each individual  $i$  residing in zone  $z$  maximizes his/her utility function, which is a function of the amenities in zone  $z$ , as well as a consumption good and housing consumed by  $i$ . The model assumes that the two zones are ex-ante identical in terms of amenities <sup>7</sup>. Marshallian demands are derived through utility maximization. There are two types of individuals in the city, natives and immigrants. Natives are free to move across zones.

Our framework departs from Accetturo et al. (2014) in three key elements. First, migrants do not actively participate in the housing market since they are accommodated in government reception centers. They are not free to move out and rely on private accommodations until they get a final decision on their asylum request. Second, they are not allowed to work during this waiting time, thus labor market competition between locals and migrants is negligible in the formal sector <sup>8</sup>. Third, since centers are opened in places that were not suited for private housing or already off the market, house competition between locals and natives is absent, and aggregate housing demand is the same across zones and it is only determined by natives' share.

Following Accetturo et al. (2014), housing supply is a function of the price elasticity of housing supply in zone  $z$ . Equilibrium prices for both districts are derived by means of the two aggregate demand and supply functions. The inflow of refugees alters the natives' valuation of local amenities, as amenities are a function of immigration, that is  $A(m)$  <sup>9</sup>. Ex-ante, we impose no restrictions on the direction of the impact of immigration on local amenities. On the one hand, natives might prefer cultural homogeneity, and/or fear an increase in crime or more competition on public goods.

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<sup>7</sup>We will claim for the as-good-as-random assignment of migrants to reception centers in Section 4.4

<sup>8</sup>We are aware that some parts of the informal sector might absorb part of the labor supply of refugees. However, this is likely to happen for jobs for which natives' labor supply is particularly low and therefore the informal labor market competition between locals and migrants is also presumably negligible.

<sup>9</sup>In this framework, we focus only on the dynamics triggered by an inflow of migrants, abstracting from migrants' long-term decisions of relocating out of the center once they get their paperwork. Anyway, it is plausible to think that they would tend to cluster in historical enclaves (Dahlberg, Edmark, and Lundqvist (2001)). The model by Accetturo et al. (2014) describes this scenario. Also, the vast majority of migrants passing to Italy ask for relocation in other EU countries.

In these cases, natives perceive migrants as a local disamenity. On the other hand, natives may value greater cultural diversity, perceiving migrants as a local amenity. In any case, free mobility of natives implies that in equilibrium their utility levels equalize across locations, finally determining the share of natives across districts <sup>10</sup>.

From the outlined theoretical framework, we can now derive three clear testable predictions on how a local immigrant shock influences zone and city-level local amenities and prices, and discuss how these depart from Accetturo et al. (2014) ones. First, there is no income effect in this model and house price dynamics are solely determined by an amenity effect. Indeed, migrants are not competing with natives for housing opportunities, excluding a demand-driven effect on prices. Consequentially, the average price of housing at the city level is exclusively determined by an amenity effect, which is either negative, positive, or equal to zero when natives are indifferent towards migrants. Therefore, the impact of immigration on amenities generates pressure on city-level prices because natives are willing to pay a premium for living close to (or far from) foreigners, which is not compensated by a corresponding rise in migrants' demand for housing. Therefore, the final city-level price is just the average price across the two districts triggered by the amenity effect. For instance, if natives consider migrants as a positive amenity, prices will inflate in the zone hosting migrants, while prices will decline less in the other zone if some native flight occurs, resulting in a rise in city-level prices. If natives are indifferent to the presence of immigrants then there is no impact on prices at the city level. Second, changes in housing prices at the zone level exclusively reflect natives' perceptions of refugees operating through an amenity effect. Given that migrants do not compete for jobs and/or houses, the effect of migration at the zone level, in relation to the city average, is negative (positive)

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<sup>10</sup>Note that we preserve the main characteristics of the model in Accetturo et al. (2014). First of all, it assumes that all the migrants exogenously concentrate in the same zone and welfare-maximizing location decisions are left to the native population only. However, we are able to support this assumption with a stronger institutional feature. Second, we retain the requirement that natives are not allowed to move outside the city in response to immigration to ease the tractability of the model. Third, we assume that natives can costlessly move, thus equalizing utility levels between zones. Indeed, moving from one zone to another does not generally entail neither a job change nor a dramatic detachment from family and friends networks.

if migration deteriorates (improves) the perception of the quality of local amenities. Finally, housing supply elasticity generates heterogeneous predictions. In small-sized municipalities which are largely depopulated, housing supply elasticity is near to zero; this implies that both the native flight and the negative (positive) amenity effect would be negligible on both zone and city level prices.

## 4.1 Empirical Strategy

We study the effects of the opening of an emergency reception center on the housing market using an event study design. We restrict our attention only to zones where an emergency reception center is opened at a certain point in time and run the following flexible event-study specification:

$$y_{z,c,m,p,t} = \delta_z + \lambda_{c,p,t} + \sum_{l=-5, l \neq -1}^3 \gamma_l D_{z,t}^l + \gamma_{-6+} \mathbb{1}[t < t_z^* - 5] + \gamma_{4+} \mathbb{1}[t > t_z^* + 3] + X'_{m,2006} \alpha_t + \varepsilon_{z,c,m,p,t} \quad (1)$$

where  $y_{z,c,m,p,t}$  is the per square meter house price (in log) in zone  $z$ , category  $c^{11}$ , municipality  $m$ , province  $p$ , time  $t$ .  $\delta_z$  are zone fixed effects and  $\lambda_{c,p,t}$  are province-by-category-by-time fixed effects which capture differences in housing prices trends for different zone categories at the province level<sup>12</sup>. Letting  $t_z^*$  denote the calendar time of opening of an emergency center in zone  $z$ ,  $D_{z,t}^l = \mathbb{1}[t = t_z^* + l]$  is an event study indicator that denotes whether a center was opened in zone  $z$  at time  $t_z^*$ . In all our specifications we use the normalization that  $\gamma_{-1}=0$ .  $\mathbb{1}[t < t_z^* - 5]$  and  $\mathbb{1}[t > t_z^* + 3]$  are indicators equal to one if a center opened in a zone before or after the time window of interest, respectively. Finally, the set of interactions  $X'_{m,2006} \alpha_t$  allows the calendar time fixed effects to differ by 2006 (i.e. pre-period) municipal characteristics (share of

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<sup>11</sup>Category refers to the classification of microzones into central, semi-central, peripheral, sub-urban and extra-urban as detailed in Section 3.2.

<sup>12</sup>Results are robust to the inclusion of province by calendar time fixed effects only ( $\lambda_{p,t}$ ) as well as to inclusion of municipality-by-category-by-time fixed effects ( $\lambda_{m,c,t}$ ). See Section 4.4. However, in the Italian context, it is particularly relevant to control for trends in housing prices by category since housing prices tend to differ more within municipalities across zones, than across municipalities

foreign population, share of high school graduates, area and number of firms per 1,000 citizens). Standard errors are clustered at the zone level.

The coefficients  $\gamma_l$  for  $l \geq 0$  capture how the housing prices in zone  $z$  change  $l$  time periods after the opening of the reception center. Identification of these coefficients relies on the assumption that zones where a center has yet to be opened form a useful counterfactual for zones where a center has already opened, after accounting for fixed differences among zones and unobserved province and category-specific common shocks. Therefore, key to our design is that, being all the zones in our sample treated at a certain point in time, centers are randomly assigned to zones across periods. In other words, the timing of centers' opening must not be correlated with unobservable characteristics of the zone. While these assumptions cannot be tested directly, we perform different checks in order to increase the confidence in our empirical design in Section 4.4.

## 4.2 Results

Event study estimates of an emergency reception center's opening on housing prices from equation 1 are shown in Figure 5. Specifically, the figure displays the coefficients of a full set of dummies going from  $-6_+$  years before the opening of an emergency reception center to  $4_+$  years after. We take as reference the year previous to the opening of such center, while the year of the event is associated with time 0. First, we can note that the event study coefficients in the years before the opening of an emergency reception center are relatively flat, close to zero and not significant. This provides suggestive evidence in favor of the parallel trends assumption, namely that prices were not already following a declining path in the years previous to the event. After the opening of an emergency reception center, the event study coefficients become negative and significant. When a reception center opens, house prices decrease by around 1%. The effect lasts for around 3 years after the opening and starts to revert back to its pre-event level 4 years after the opening. This latter pattern coincides, in

many cases, with the closing of centers at the end of the migration crisis.

Table 4 reports the average effect of the opening of an emergency reception centers on prices in the short, medium and long run. To illustrate our findings and provide a sense of their magnitude, we use the average effect of the opening of a center in what we call the "medium-run" (2-3 years after the opening). We find that, in the medium-run, housing prices decrease by 0.68%. In our sample, the pre-period average price per square meter is 1,100 EUR. Our estimated effect, therefore, implies a reduction of 7.48 EUR per square meter in the medium-run. To put numbers in perspective, consider a residential apartment in the center of Milan, which in the pre-period sold on average for 5,500 EUR. Our estimates imply that owners of a two-bedroom apartment in the center of Milan (around 90 square meters) that sell their homes 2-3 years after the opening of a reception center would lose about 3,400 EUR, relative to the amount they would have received had no center opened. This suggests that the estimated effect on housing prices is not only statistically significant but also economically sizeable.

### 4.3 Heterogeneity

In order to pin down the drivers behind the observed housing market responses, we proceed to assess the heterogeneity of the effects of the opening of an emergency reception center on the housing market. We do so by estimating model 1 on different samples split by characteristics such as population, centers' size and quality of the centers. We start our heterogeneity analysis by investigating whether housing prices reacted differently to the opening of a reception center in smaller cities compared to larger cities. Figure 6 reports the results of this analysis. Panel (a) shows the results of the estimation of our event study specification in municipalities with more than 10,000 inhabitants (which roughly corresponds to the median municipality population in our sample). The results, in this case, mirror the results in the whole sample: there are no significant trends before the opening of a center while, after a center opens, event-study coefficients become negative and significant. In larger cities, after the opening

of a center, housing prices decrease by around 1%. Panel (b) on the other hand shows the results restricting our attention to smaller municipalities (with less than 10,000 inhabitants). In this case, our estimates are substantially noisier and do not show a clear pattern nor a significant effect on housing prices. The heterogeneity in results by population is consistent with the predictions outlined in our conceptual framework. In small-sized municipalities which are largely depopulated, housing supply elasticity is near to zero; this implies that both the native flight and the negative amenity effect are negligible on both zone and city level prices.

We then move to explore heterogeneity of results by the center's capacity. Figure 7 reports the results of the estimation of specification 1 separately for centers whose capacity is lower than the median (which is equal to 9) and for centers whose capacity is larger than the median. Panel (a) reports the results for centers smaller in size while Panel (b) reports the results for larger centers. What emerges from this heterogeneity analysis is that small centers are really driving our results. Interestingly, small centers are usually located in apartments within private buildings or private houses where locals live, suggesting that the negative effect might be driven by centers where refugees are exposed to daily contacts with natives<sup>13</sup>. In the Appendix, we also investigate the interaction between population and size of the center (Figure A8) and conclude that our results are driven in most part by small centers opening in municipalities with more than 10,000 inhabitants (where the housing market tend to be more responsive).

The evidence produced so far shows that, consistent with the literature, an inflow of refugees, here proxied by the opening of a reception center, has a negative impact on local housing prices, used to measure natives' perceptions. It also suggests that the negative effect of the opening of a reception center seems to be driven by the close and frequent contact with natives, as our results for small centers nudge at. However, it is in principle natural to ask whether there exist factors that might mitigate this well-established negative effect, an issue that has not been studied yet in the relevant

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<sup>13</sup>This mechanism is supported by anecdotal evidence in the media. <https://www.uniat.it/se-il-tuo-vicino-di-casa-crea-un-centro-daccoglienza-non-puoi-fare-nulla-ma-il-tuo-appartamento-sara-invendibile/>, <https://www.ilgiorno.it/brescia/cronaca/condominio-profughi-1.2443527>

literature. Specifically, in the last step of our heterogeneity analysis, we investigate if the quality of the emergency reception centers and the services they offer to facilitate integration play a role in alleviating the negative effects of refugees' reception on the housing market.

To understand whether this is the case, we categorize emergency reception centers based on the services they offer and their overall quality. The classification relies on information about the managing institution of the center (whether or not it is an NGO specialized in refugees') as well as information about the services offered found directly in the center's website<sup>14</sup>. Results are reported in Figure 8. Panel (a) shows the results restricting the sample to centers offering services for integration, while Panel (b) shows the results restricting the sample to centers not offering services for integration. Note that the negative effects of the opening of a center on housing prices seem to be mostly driven by low-quality centers. This result is particularly interesting and suggestive since it directly speaks to the policy levers that could be used to alleviate the adverse impacts of the refugees' reception system. Directly investing in services fostering integration seem to be important to significantly reduce the adverse effects associated with the opening of reception centers which have been largely documented by the literature.

Finally, in the Appendix, we explore heterogeneity on two additional levels. We test whether the negative effects are more pronounced when a center opens in the city center or in the periphery (Figure A9) and whether the effects are different in municipalities with a higher share of foreign population to begin with (Figure A10). In this latter heterogeneity exercise, we find that the negative effects of the opening of a reception center on the housing market are attenuated in municipalities with a higher share of foreign population in the pre-period. This result is particularly useful to understand the drivers of the housing prices' response: it is consistent with the idea that natives' perceptions react less in communities and municipalities where migrants and refugees

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<sup>14</sup>We were able to link centers to their website for 94% of our sample. Note that almost two-thirds of the centers in our sample do not offer any service other than food and lodging

are present for longer time and perhaps more integrated, and highlights the importance of investing on policies to facilitate the integration of refugees' in natives' communities.

## 4.4 Robustness

### 4.4.1 Assignment of Centers to Zones

As mentioned in Section 4.1, key to our design is that, being all the zones in our sample treated at a certain point in time, centers are randomly assigned to zones across periods. In other words, our underlying assumption is that the timing of centers' opening is not correlated with unobservable characteristics of the zone. From a theoretical point of view, given the short time span, the emergency of the migratory event, and the institutional background highlighted above, we are more confident that the distribution of these centers across periods within treated zones is as-good-as-random.

However, we directly test for this concern in Table 3. We construct a variable, *Year Opening*, corresponding to the year when the first center opened in a given zone, and we restrict the sample to the year 2006 so that all the other variables are measured in the first period of our sample. Our estimation sample has 2,087 zones, the average year of opening being 2015. In the first column, we regress the year of first opening on zone-level controls, namely housing price, the dependent variable of our main analysis, category of the zone, and housing price growth between 2006 and 2013. We also include province-level fixed-effects. The regression is weighted by population in the municipality and standard errors are clustered at the province level. Reassuringly, there is no statistically significant relationship between the year of opening of the center and the variables on the housing market measured at the beginning of the period. Also, the variables are not jointly significant either (p-value=0.172). Column 2 re-estimates the previous specification adding a variety of municipal-level variables measured in 2006: the share of foreign-born residents, the share of people with a secondary education diploma, the number of firms per 1,000 inhabitants, the area of the municipality, and the number of NGOs per 1,000 inhabitants. The estimates are all close to zero, with

none of them being statistically significant at the 1% level. We also test for the joint significance of the variables and we find no significant effect ( $p\text{-value}=0.344$ ).

Lastly, we need to rule out the possibility that these results are driven by few large cities where assignment rules were less likely to be conditioned on predetermined characteristics, as these areas were primary receivers of refugees with constrained spaces. Therefore, we replicate the same analysis of Column 2 for municipalities respectively with less than 150,000 (Column 3), 50,000 (Column 4), and 10,000 (Column 5) inhabitants. Overall, the estimates are largely close to zero, with few of them being statistically significant at the 10% level. This provides encouraging evidence in favor of the assumption that the timing of reception centers' opening was almost random across zones, conditional on fully interacted province, category and year fixed effects. Indeed, in our baseline specification, we always control for province-by-category-by-year fixed effects to account for the fact that randomization occurs within the pool of available zones of the same type.

#### 4.4.2 Other Robustness Checks

We perform a number of additional robustness checks. First, in Figure A6 in the Appendix, we repeat our main analysis clustering standard errors at the municipal level to account for common shocks that might occur at this level of aggregation, such as shocks to the labor market or to the crime level. Moreover, our treatment, the opening of a reception center, might be assigned at the city level, rather than the zone level. Reassuringly, the pattern of results is unchanged.

Second, we re-estimate equation 1, replacing province-by-category-by-time fixed effects with municipality-by-category-by-time fixed effect <sup>15</sup>. The rationale behind our choice of allowing trends by category to differ across provinces rather than municipalities is explained by the fact that municipalities do not usually have enough variation in

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<sup>15</sup>As mentioned above, in the Italian context, it is particularly relevant to control for zones' categories. Average housing prices tend to differ more within municipalities across zones (or across zones between municipalities), than across municipalities.

terms of categories (the average in the sample being 2 categories per municipality). Using municipality-by-category-by-time fixed effects would make us automatically drop part of the sample (around, 1% ). In any case, Figure A7 in the Appendix reports the results using municipality-by-category-by-time fixed effects and confirms the main pattern of results.

Finally, in order to be able to interpret correctly our heterogeneity analysis comparing centers providing services for integration and centers not providing services for integration, we test for whether the opening of centers that provide services for integration is correlated with particular observable pre-period characteristics of the municipality. Table 5 reports the results of a regression where the dependent variable is equal to 1 if the center offers services for integration on a number of pre-period characteristics. In particular, we consider as independent variables housing prices, category of the zone, share of foreign population, share of high school graduates, number of firms per 1,000 inhabitants, area and number of NGOs per 1,000 inhabitants. We do not find a significant relationship between any of these variables and the probability of opening of center providing services for integration with the exception of area.

## 5 The Effect on Fiscal Policy

In Section 4, we have assessed that natives' perceptions negatively reacted to the arrival of refugees. Specifically, we argued that the reduction in housing prices following the opening of a refugee reception center was solely driven by an amenity effect because of the characteristics of the Italian context. Having established that, in this Section we explore whether, conditional on natives' perceptions reacting, the opening of a refugee center is associated with changes to local public spending, and the different mechanisms at play.

First, a refugee inflow can be thought of as a shock to the homogeneity of the community. Since we observe an alteration of natives' perceptions, this might in turn impact local preferences for redistribution consistent with several papers showing

that individuals become less favorable to redistribution policies as they are faced with immigration or their community becomes more heterogeneous (Alesina, Miano, and Stantcheva (2018); Alesina and La Ferrara (2000)).

Second, refugees' flows might alter several aspects of the neighborhood, resulting in a direct increase in some budgeting expenditures. For instance, if crime rates rise following the opening of a reception center, this might lead both to a deterioration of local amenities and an increase in some public expenditure categories such as policing, safety, etc. (Bianchi, Buonanno, and Pinotti (2012)).

Lastly, political incentives might play a role, especially in the Italian case. Indeed, the decision to open an emergency reception center is fully managed by the central State bypassing local governments, local politicians having no chances to object to this decision. Yet local politicians might be charged full responsibility for the opening of a reception center in the municipality by their constituency. Therefore, politicians might attempt to avoid the electoral punishment from their constituency following the opening of a reception center by cutting on municipal expenditures that are largely received by refugees, such as welfare spending and support to families in need. This is likely to be the case for Italy: along the same lines, Gamalerio (2018) shows that local politicians are less likely to open a SPRAR center in their last year of mandate because of the fear to be blamed by their constituency and decrease their chances of getting re-elected. The results further suggest that electoral incentives may induce politicians to make decisions that are economically detrimental from an economic perspective in terms of foregone State transfers. <sup>16</sup>

## 5.1 Empirical Strategy

We study the effects of the opening of an emergency reception center on local public spending, using an event study design. We concentrate on municipalities where a refugee emergency center is opened at a certain point in time and estimate the following

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<sup>16</sup>Recall that SPRAR centers are opened on the decision of the local government and, in this case, the State directly transfers funds to the municipality.

flexible event-study specification:

$$y_{r,m,p,t} = \delta_{r,m} + \lambda_{p,t} + \sum_{l=-4, l \neq -1}^3 \gamma_l D_{m,t}^l + \rho L_{r,m,p,t} + \varepsilon_{r,m,p,t} \quad (2)$$

where  $y_{r,m,p,t}$  is a variable of interest, such as per-capita total expenditure, in term  $r$ , municipality  $m$ , within province  $p$ , in year  $t$ .  $\delta_{r,m}$  are municipality-term fixed effects and  $\lambda_{p,t}$  are province-by-year fixed effects which capture differences in fiscal trends at the province level. The municipality-term fixed effect is key in this specification because it allows us to control for any characteristics of the mayor and change to the political constituency, focusing on the variation within a given political mandate. Letting  $t_m^*$  denote the calendar time of the opening of a refugee center in municipality  $m$ ,  $D_{m,t}^l = \mathbb{1}[t = t_m^* + l]$  is an event study indicator to denote whether a refugee center was opened in municipality  $m$ .  $L_{r,m,p,t}$  is an indicator variable that takes value of 1 in the last year of the legislature, to take into account re-election incentives that might distort public spending (Gamalerio (2018)). Standard errors are clustered at the municipal-term level. In all our event study specifications we normalize  $\gamma_{-1} = 0$ . Furthermore, we remove from the sample years in which an election was held and an emergency center opened, since for these years we cannot disentangle the effect of being in the first year of a new legislature from the effect of a reception center opening.

## 5.2 Results

We start presenting results for the most aggregated elements appearing on Italian municipal budgets, namely total expenditures and total revenues. Event study estimates of an emergency reception center's opening on per capita total expenditures and revenues from equation 2 are shown respectively in Figure 9, Panel (a), and Figure 9, Panel (b). Both figures display the coefficients of a full set of dummies going from 4 years before the opening of an emergency reception center to 3 years after. We take as reference the year previous to the opening of such center, while the year of the event is associated with time 0. On the one hand, we can observe a clear pattern for total

expenditures: the decline in expenditure does not occur before the center opens since none of the coefficients for the years preceding the event is significantly different from zero; after that, total per capita expenditure becomes negative. For instance, total per capita expenditures reduce by 20 EUR in two years from the event, which corresponds to a 2.4% decline with respect to the pre-period average (820 EUR). On the other hand, total revenues do not seem to follow a clear pattern. The estimates are noisy and confidence intervals are really large, which makes these effects almost never statistically different from zero. This is partly due to data issues since revenues are often measured with error in the AIDA PA database. For this reason, we will set aside from the rest of our analysis any interpretation about revenues, and we will concentrate on expenditures, where most of the action seems to take place.

We proceed zooming in into total expenditure, disaggregating it into different types of expenditures. First, we propose a subdivision in two spending categories, that we call *excludable* and *non-excludable goods*. The former category refers to any type of expenditure that directly benefits individuals, such as health vouchers, education support, welfare benefits. The latter instead groups together all the expenditures that pertain to the municipality as a whole, such as investments in public transports, infrastructures and investments in public spaces. Figures A11 reproduces our event study estimates for respectively excludable (Panel (a)) and non-excludable goods' expenditures (Panel (b)). Interestingly, the main pattern we found on total expenditures is reflected in the analysis of excludable goods' expenses, while there seems to be no change in non-excludable goods expenditures after the opening of a reception center. Indeed, the magnitudes on the coefficients in Figure A11 Panel (a) closely resembles the ones detected in our main analysis of total expenditures.

Finally, we zoom in further into our excludable goods category of expenditure, in order to identify which is the final budget invoice that is driving the results we observe at the aggregate level. Figure 10, Panel (a), shows the expenditure category which is actually responsible for the overall negative changes we detected in total expenditures after the opening of a reception center, namely welfare. This spending category

represents transfers of funds to families in need, economically vulnerable individuals and also migrants and refugees. While the coefficients in the pre-period are slightly positive with respect to our reference year (which might reflect an anticipation effect in response to the announcement of the opening of an emergency reception center), the decline in welfare spending occurs only in the aftermath of the opening of an emergency reception center. In Figure 10, Panel (b), we show that the reduction in welfare spending after the opening of an emergency reception center occurs only in smaller cities. This might be due to the fact that local public spending in large centers tends to be stickier, more difficult to modify (in terms of procedures and operationally). Moreover, electoral incentives of politicians in larger municipalities are less likely to be affected by the opening of an emergency reception center. We also investigate whether the opening of an emergency reception center affects any other spending category. It does not seem to be the case, with the exception of expenditure on justice services<sup>17</sup>, which includes both expenditures on tribunal courts and expenditures on prisons. Figure A12 in the Appendix provides evidence that expenditures on justice did increase following the opening of an emergency reception center. This finding suggests that crime rates might have changed when refugees arrived, a theory we cannot further substantiate at the moment since we do not have access to crime data at the municipality level. In future work, we plan to explore whether changes in crime rates drive, at least partially, the changes we found in natives' perceptions and local public spending.

Finally, we bring back into our analysis the quality of the center as an important source of heterogeneity. Figure 11, Panel (a) replicates equation 2 analysis for the subset of centers offering services for integration, as described in Section 4.3, while Panel (b) relies on the subset of centers not offering this kind of services. As expected, the opening of a low-quality emergency center is followed by a cut on welfare spending. Although we do observe a slight decrease in welfare spending after a high-quality center open, the post-event coefficients are not statistically different from zero and small in magnitudes.

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<sup>17</sup>Results for the remaining spending categories are available upon request.

## 6 Conclusion

This paper has studied the effects of the opening of emergency reception centers in Italy over the period during the refugee crisis on local housing prices and municipal public finance. We exploit variation in the timing and location of reception centers' opening to estimate a dynamic event model, restricting the sample only to areas where a refugee emergency center is opened at a certain point in time. We find that, after the opening of a reception center, areas close to the center experience a relative fall in housing prices of about 1%. The effect is mainly driven by larger cities, and is decreasing with the size of the center and the center offering services to facilitate integration. Moreover, after the opening of a reception center, areas close to the center experience a relative fall in expenditure per capita of about 20 EUR, largely driven by a reduction in welfare spending.

Overall, our findings provide systematic evidence that the reception system can have both private-side detrimental effects, by decreasing local housing prices and worsening natives' perceptions, and a public-side adverse effect, by reducing local public spending and making individuals less favorable to redistributive policies. However, our findings have also a clear-cut implication for policy, since they suggest that investing in and expanding services devoted to the mutual integration of the local and refugee community can prove effective in mitigating, when not eradicating, such adverse effects of the reception system.

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# Tables and Figures

Table 1: Summary Statistics: Characteristics of Centers

	Mean	Std. Dev.
<b>Panel A: Geographic Distribution</b>		
North-East	0.203	0.402
North-West	0.410	0.492
Center	0.220	0.414
South	0.127	0.333
Islands	0.041	0.199
<b>Panel B: Distribution Across Categories</b>		
City Center	0.463	0.499
Semi-Center	0.17	0.375
Perip/Suburb/Extraurb	0.368	0.482
Size	22.685	54.436
<b>Panel C: Time of Opening</b>		
Open in 2014	0.098	0.297
Open in 2015	0.275	0.447
Open in 2016	0.614	0.487
Open in 2017	0.006	0.078
Observations	7,156	

*Notes:* The table shows descriptive statistics on the characteristics of emergency reception centers. Panel A reports statistics on the geographic distribution of centers. Panel B reports statistics on the distribution of centers across categories within municipalities. Panel C reports statistics about the year of opening of emergency centers.

Table 2: Summary Statistics: OMI Zones

	Mean	Median	Std. Dev.	Obs.
Area (all)	11.103	1.841	27.75	26,712
Area (cities)	5.379	2.225	13.98	829
Area (w/o R)	2.084	.925	4.115	17,995
Price	1392.082	1275	623.075	148,323

*Notes:* The table reports descriptive statistics on the characteristics of the microzones in our sample, calculated from the LRO data. The first row reports the mean, median and standard deviation of the area (in squared km) of all microzones in our sample. The second row reports the same statistics considering only the 20 Italian biggest cities. The third row reports statistics excluding extra-urban zones, which tend to be bigger in size. The last row shows statistics on the price per square meter at the zone level.

Table 3: Testing for "As-Good-As" Random Assignment of Centers to OMI Zones

	(1)	(2)	(3)	(4)	(5)
	Year Opening All	Year Opening All	Year Opening <i>Pop</i> ≤100K	Year Opening <i>Pop</i> ≤50K	Year Opening <i>Pop</i> ≤10K
Log. Avg. Price	-.14 (.096)	.0085 (.11)	.18 (.22)	.058 (.16)	.092 (.14)
Category	.055 (.047)	.078 (.053)	.05 (.039)	.024 (.022)	.034 (.021)
Price Develop. ('06-13)	-.31 (.31)	-.34 (.32)	.1 (.2)	.06 (.21)	-.041 (.19)
Foreign. Pop.		-1.9 (1.7)	-2.4 (1.7)	-.93 (.7)	1.3** (.65)
High School Grad.		-1.2 (.89)	-1.6* (.9)	-1.1 (.71)	.15 (.61)
Firms		.002 (.0021)	-.002 (.0023)	-.0024 (.0017)	-.00042 (.0012)
Area		6.3e-07 (3.2e-06)	2.2e-06 (3.1e-06)	3.6e-06 (3.0e-06)	-2.5e-06 (6.1e-06)
NGO		-.034 (.027)	-.023 (.024)	-.0093 (.014)	-.0046 (.012)
Constant	2016*** (.73)	2016*** (.69)	2015*** (1.2)	2016*** (.96)	2015*** (.95)
Number of Obs	2030	1993	1797	1635	1068
Number of Clusters	82	82	80	76	70
R <sup>2</sup>	.28	.29	.36	.32	.3
F_pvalue	.135	.322	.26	.079	.422

*Notes:* The table reports the results of a regression of the variable *Year Opening* (which corresponds to the year when the first emergency reception center opened in a given zone) on a number of zones' characteristics. All the independent variables are measured in 2006 and therefore before the opening of any emergency reception centers. All regressions include province level fixed effects. Standard errors are clustered at the province level. *F-pvalue* reports the p-value of a joint significance test of all the variables included in each regression for each column. See Section 4.4 for details. Levels of significance: \*10%, \*\*5%, and \*\*\*1%.

Table 4: Average Effects on Housing Prices

	Estimate
Overall	-0.0051*
	(0.0027)
Short-Run (0-1 years)	-0.0031**
	(0.0014)
Medium-Run (2-3 years)	-0.0068**
	(0.0029)
Long-Run (4 years +)	-0.0055
	(0.0041)
N	582,603

*Notes:* The table reports the average effect of the opening of a reception center on prices. The estimates are constructed by taking the average of the coefficients from equation 1 across all periods, in the short-run, medium-run and long-run. Standard errors clustered at the zone level and are reported in parentheses. Levels of significance: \*10%, \*\*5%, and \*\*\*1%.

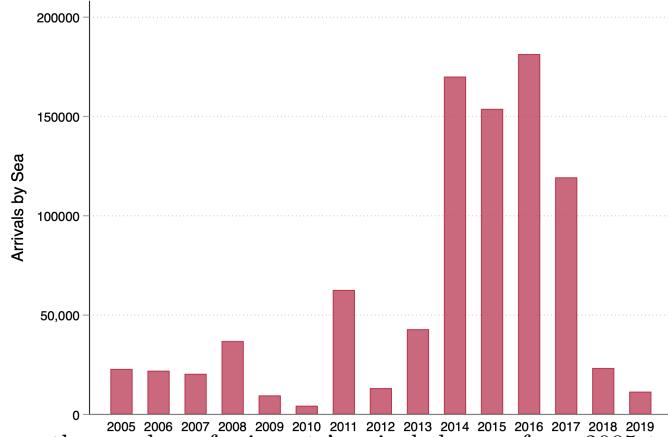
Table 5: Robustness: Allocation of Centers Providing Services for Integration

	(1)	(2)	(3)
	Services <i>All</i>	Services <i>Pop≤50K</i>	Services <i>Pop≤10K</i>
Log Avg. Price	.033 (.031)	.046 (.035)	.0014 (.042)
Category	-.0022 (.0048)	-.0013 (.005)	.0037 (.0053)
Foreign Pop.	-.012 (.25)	-.016 (.27)	.088 (.25)
High School Grad.	.23 (.21)	.2 (.24)	.13 (.25)
Firms	-.00019 (.00066)	-.0008 (.0006)	-.00072 (.00069)
Area	-1.4e-06*** (4.6e-07)	-4.1e-07 (1.3e-06)	1.5e-06 (3.2e-06)
NGO	.0041 (.0045)	.002 (.0043)	.0022 (.0046)
Constant	-.036 (.17)	-.073 (.19)	.2 (.23)
Number of Obs	3439	2792	1776
Number of Clusters	98	98	91
R2	.32	.31	.32

*Notes:* The table reports the results of a regression of the variable *Services* (which is equal to 1 if a center provides services for integration) on a number of zones' characteristics. All the independent variables are measured in 2006 and therefore before the opening of any emergency reception centers. All regressions include province level fixed effects. Standard errors are clustered at the province level.

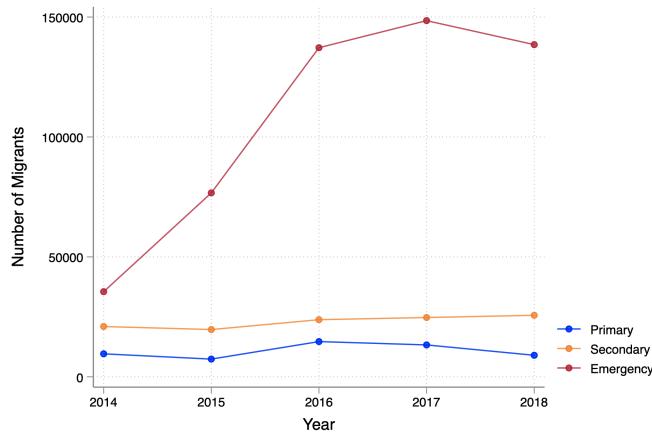
Levels of significance: \*10%, \*\*5%, and \*\*\*1%.

Figure 1: Arrivals by Sea: 2005-2019



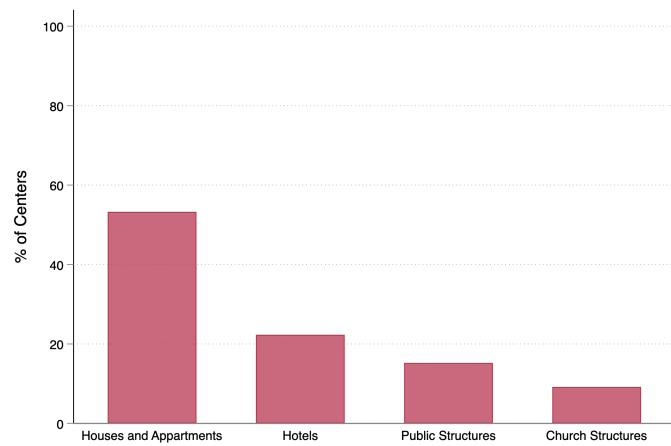
Notes: The figure shows the number of migrants' arrivals by sea from 2005 to 2019. Source: Italian Ministry of the Interior.

Figure 2: The Distribution of Migrants by Type of Center



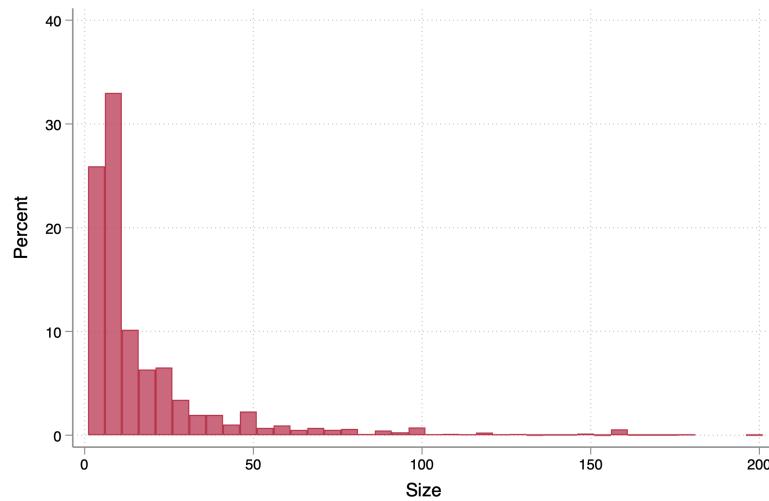
Notes: The figure shows the number of migrants hosted in primary, secondary and emergency reception centers from 2014 to 2018. Source: Italian Ministry of the Interior

Figure 3: Types of Buildings Hosting Emergency Reception Centers



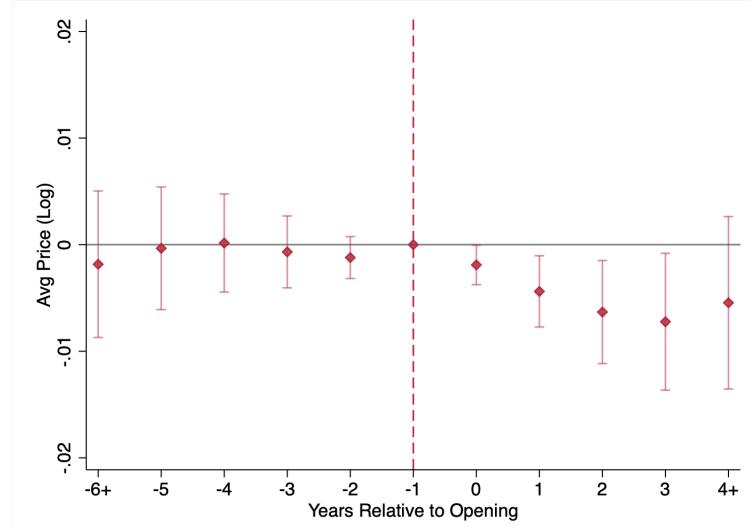
Notes: The figure shows the distribution of emergency reception centers by type of building.

Figure 4: Distribution of Center Size



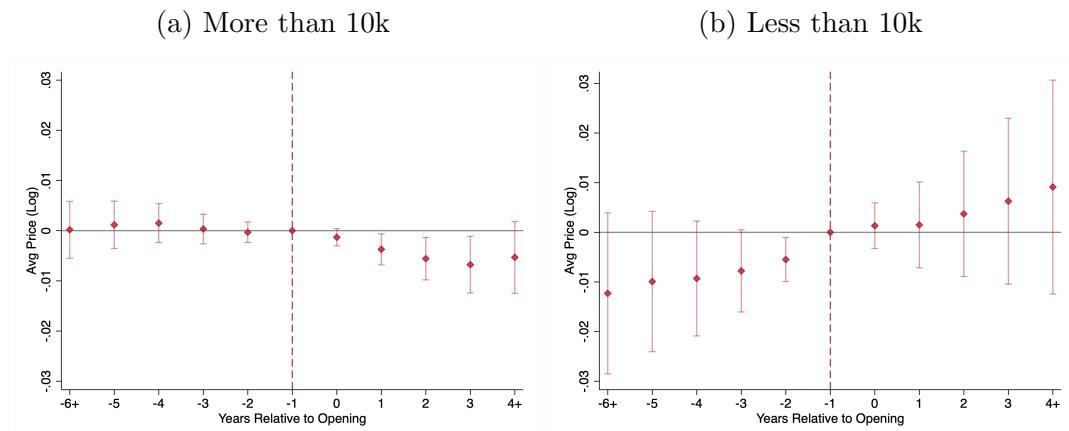
Notes: The figure shows the distribution of emergency reception centers in terms of capacity.

Figure 5: The Housing Prices Response to the Opening of an Emergency Reception Center



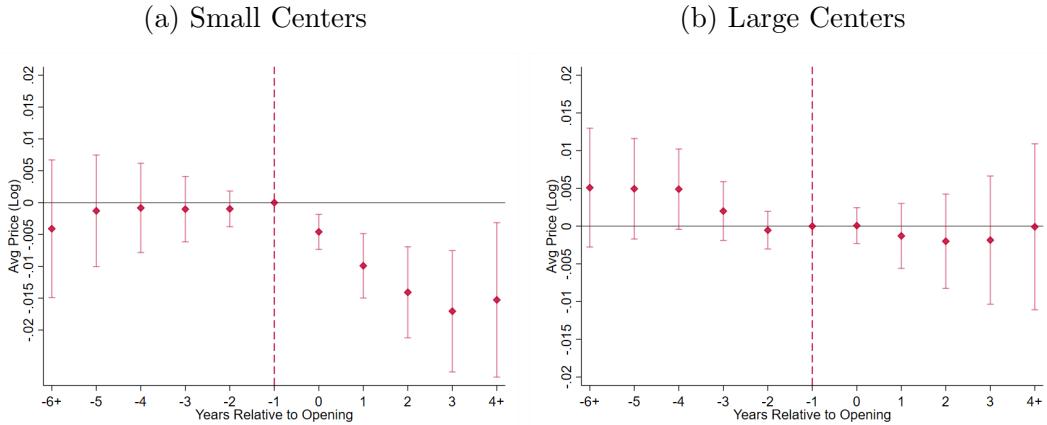
Notes: The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure 6: The Effects on Housing Prices: Heterogeneity by Population



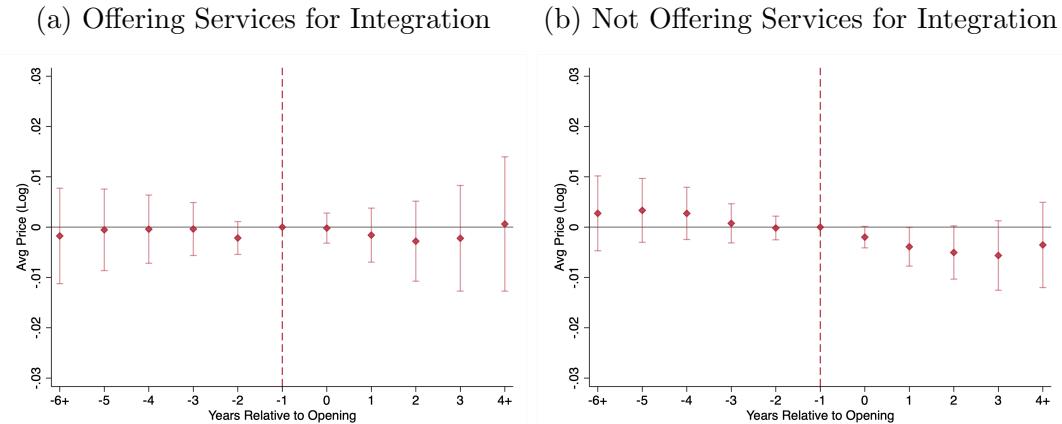
Notes: The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 dividing the sample by municipality population. Panel (a) shows the results for municipalities with more than 10,000 inhabitants. Panel (b) shows the results for municipalities with less than 10,000 inhabitants. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure 7: The Effects on Housing Prices: Heterogeneity by Size of the Center



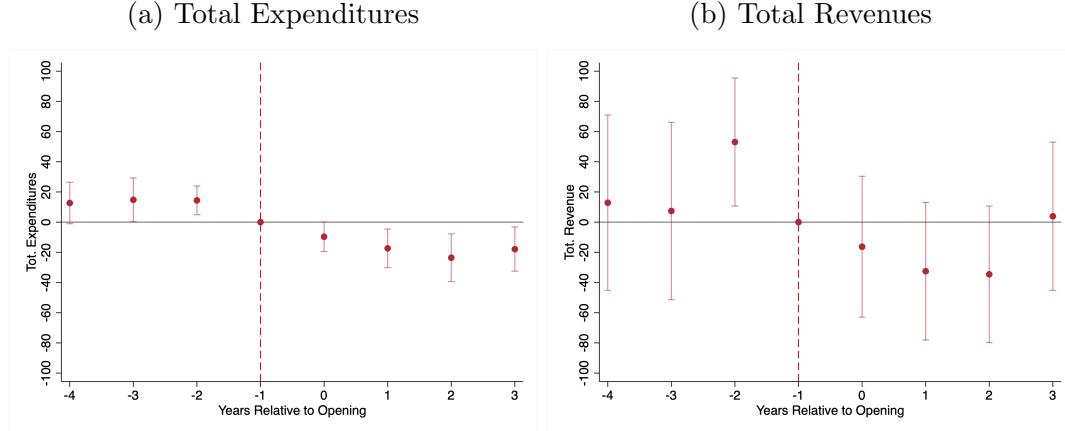
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 dividing the sample by the capacity of the emergency center that opens. Panel (a) shows the results for centers whose size is smaller than the median size (equal to 9). Panel (b) shows the results for centers whose size is larger than the median. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure 8: The Effects on Housing Prices: The Role of Integration



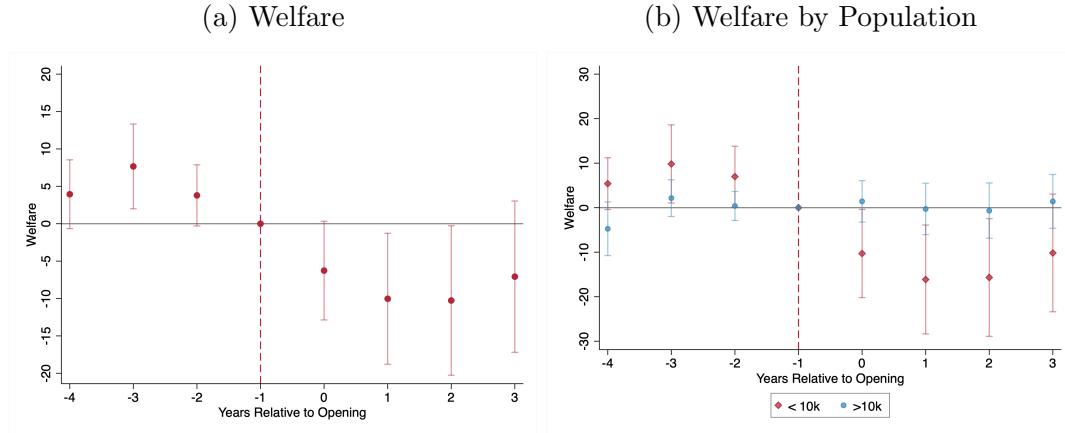
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 dividing the centers by the services they offer. See Section 4.3 for details. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure 9: The Effects on Public Spending: Total Expenditures and Revenues



*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 2. Panel (a) shows the results for total expenditures (in per capita terms) while Panel (b) focuses on total revenues (in per capita terms). 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

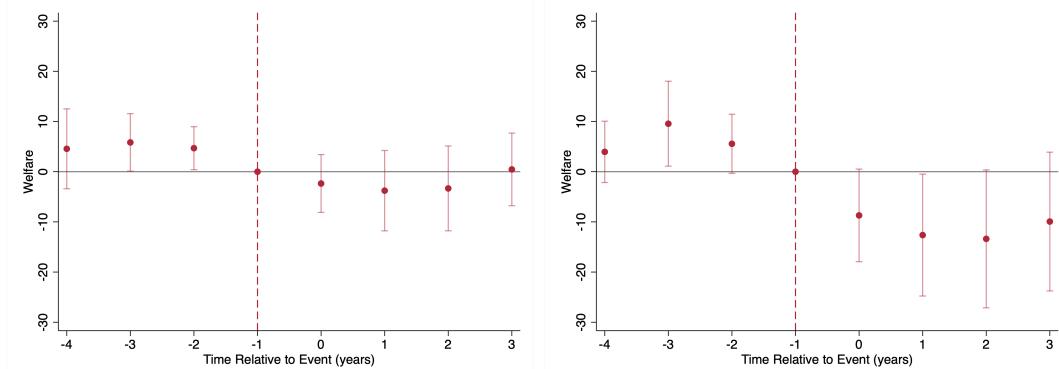
Figure 10: The Effects on Public Spending: Welfare



*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 2. Panel (a) shows the results for welfare spending (in per capita terms). Panel (b) shows that the negative effects on welfare spending are driven by municipalities with less than 10,000 inhabitants (red series). On the other hand, there is no effect on welfare spending in municipalities with more than 10,000 inhabitants (blue series). 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

Figure 11: The Effects on Welfare Spending: Does Quality Matter?

- (a) Centers Offering Services for Integration      (b) Centers Not Offering Services for Integration

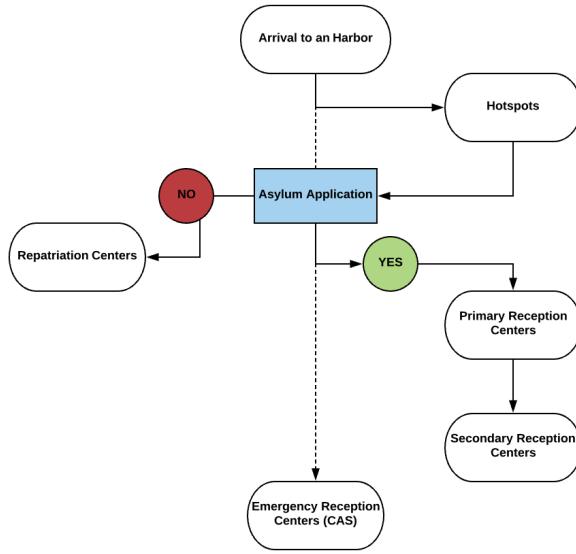


*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 2 where the dependent variable is welfare spending per capita. Panel (a) shows the results restricting the sample to centers offering services for integration, while Panel (b) relies on the subset of centers not offering this kind of services. 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

# Appendix

## A Additional Tables and Figures

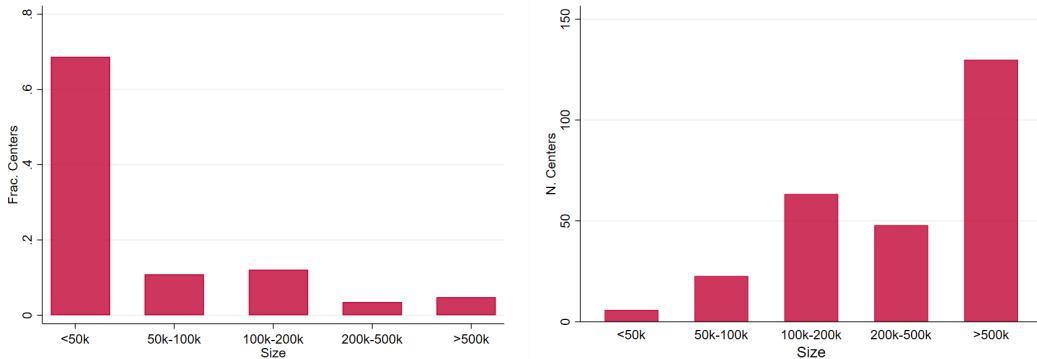
Figure A1: The Italian Reception System



*Notes:* The figure shows the structure of the Italian reception system. The solid lines represent the typical path of a refugee arriving to Italy within the ordinary reception system. The dashed lines represent the path within the emergency reception system.

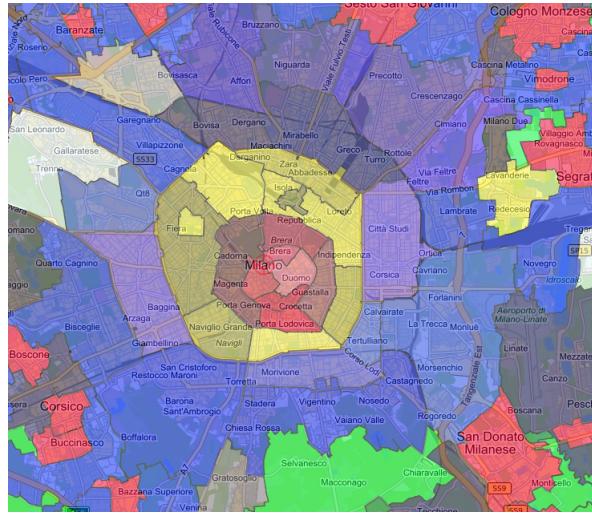
Figure A2: The Distribution of Emergency Reception Centers

(a) Distribution of Centers by Municipality Population      (b) Average Number of Centers by Municipality Population



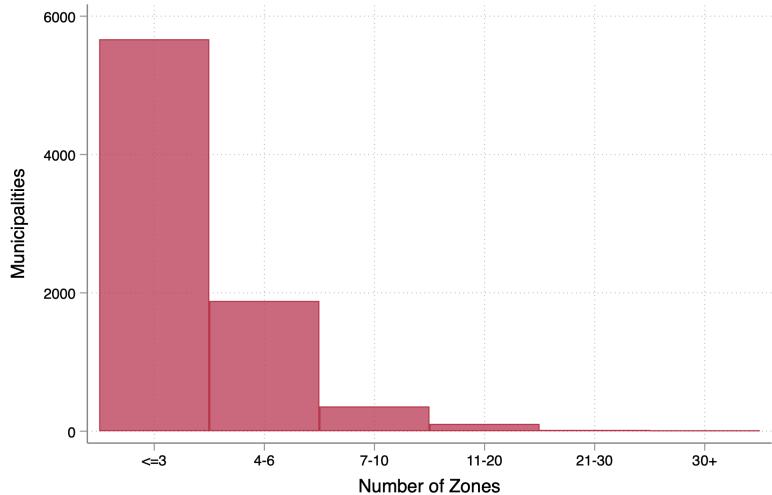
*Notes:* Panel (a) shows the distribution of centers by Municipality Population. Panel (b) shows the average number of centers by Municipality Population.

Figure A3: Example of Microzones: Milan



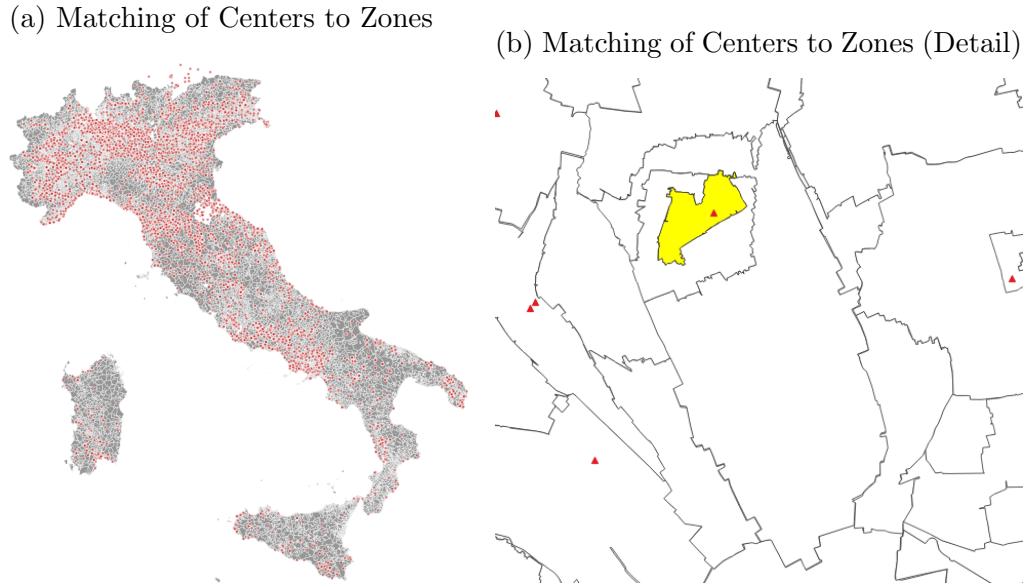
*Notes:* The figure shows an example of division in microzones for the city of Milan.

Figure A4: Distribution of Microzones



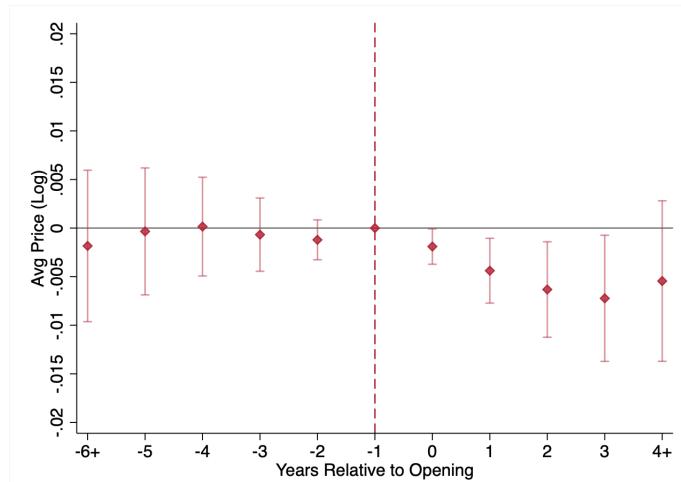
*Notes:* The figure shows the distribution of municipalities by the number of microzones they are divided into. Most municipalities in Italy are relatively small and are divided in 3 or less than 3 microzones.

Figure A5: Matching of Emergency Reception Centers to LRO Data



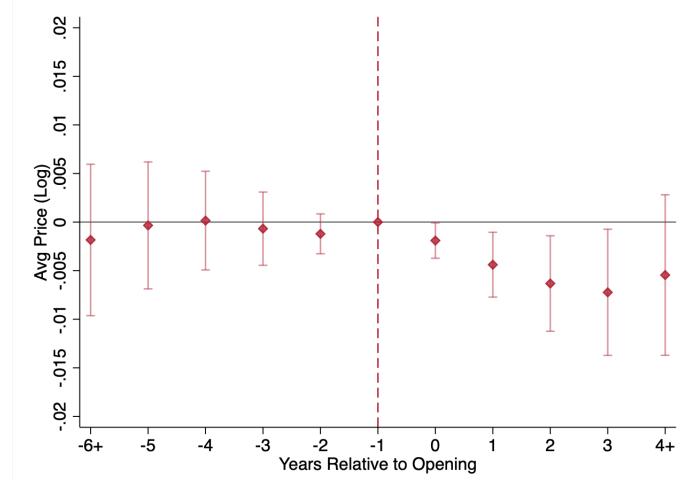
*Notes:* Panel (a) shows the geographic distribution of emergency reception centers (red triangles) matched to the LRO zones (in gray). Panel (b) reports a zoom of one particular LRO zone (in yellow) matched to one reception center to exemplify our matching procedure.

Figure A6: Robustness: Standard Errors Clustered at the Municipality Level



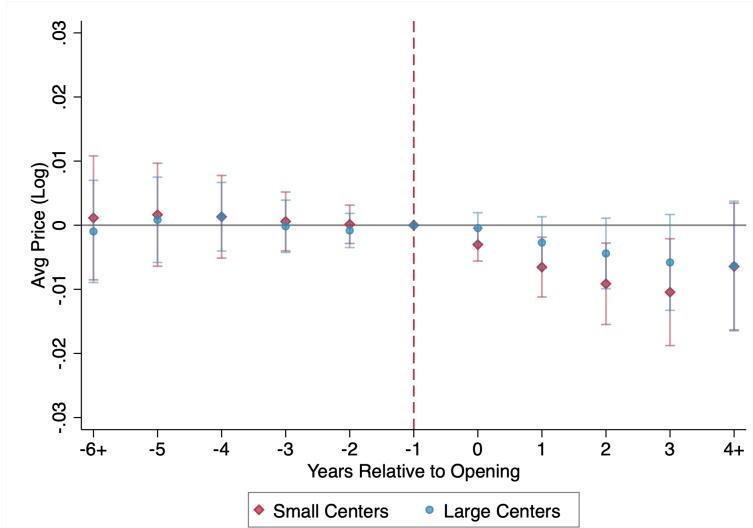
*Notes:* The figure shows the estimated coefficients  $\gamma_t$  from the econometric specification in 1. 95% confidence intervals are reported. Standard errors are clustered at the municipality level.

Figure A7: Robustness: Municipality by Category by Time Fixed Effects



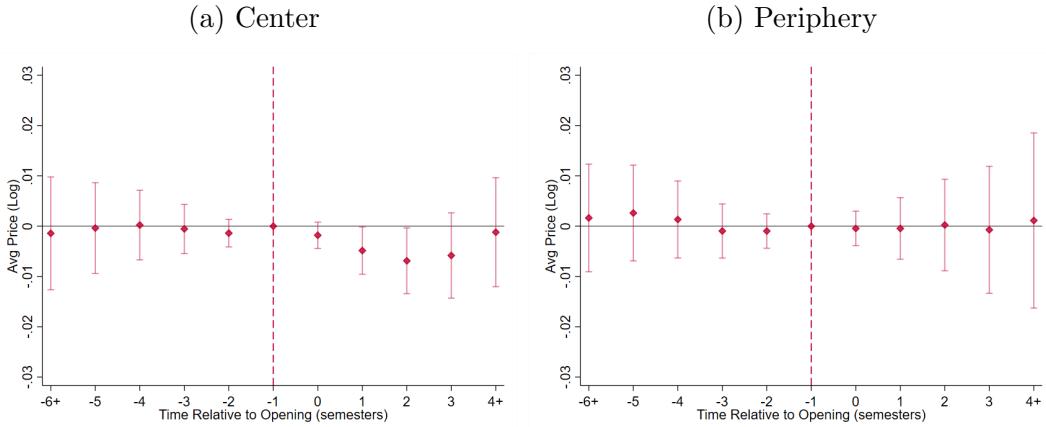
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 using municipality by category by calendar time fixed effects instead of province by category by time fixed effects. This allows us to capture differences in housing prices trends for different zone categories at the municipality level. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure A8: Heterogeneity Analysis: Interaction between Size of the Centers and Population



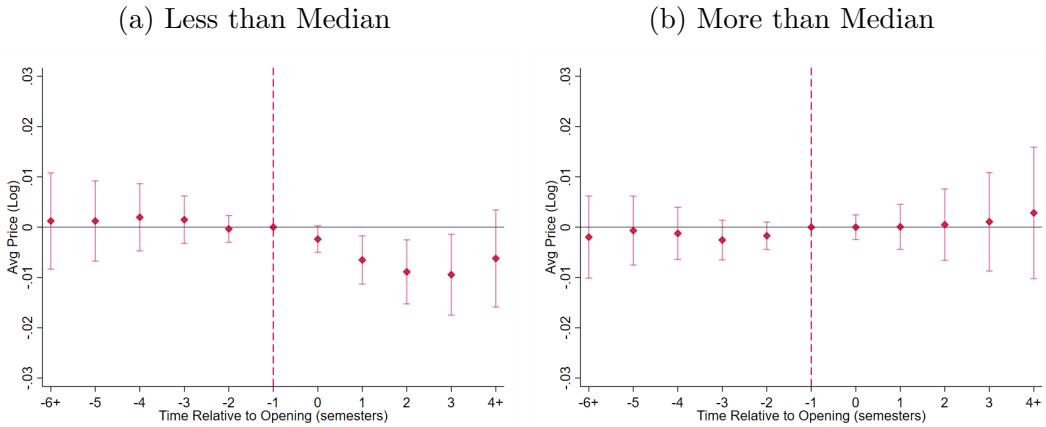
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 splitting the sample by population size and centers' size. The figure shows the heterogeneity in results between centers whose size is smaller than the median size (red series) and centers whose size is larger than the median size (blue series) in large cities (i.e. cities with population larger than 10k).

Figure A9: The Effects on Housing Prices: Center vs Periphery



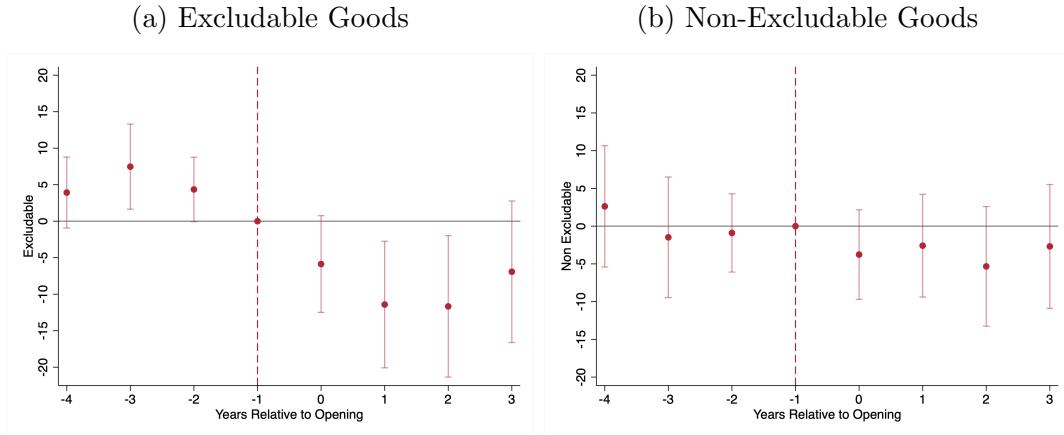
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 estimated separately for emergency reception centers opened in the city center (Panel (a)) and for emergency reception centers opened in the periphery (Panel (b)). 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure A10: The Effects on Housing Prices: Share of Foreign Population



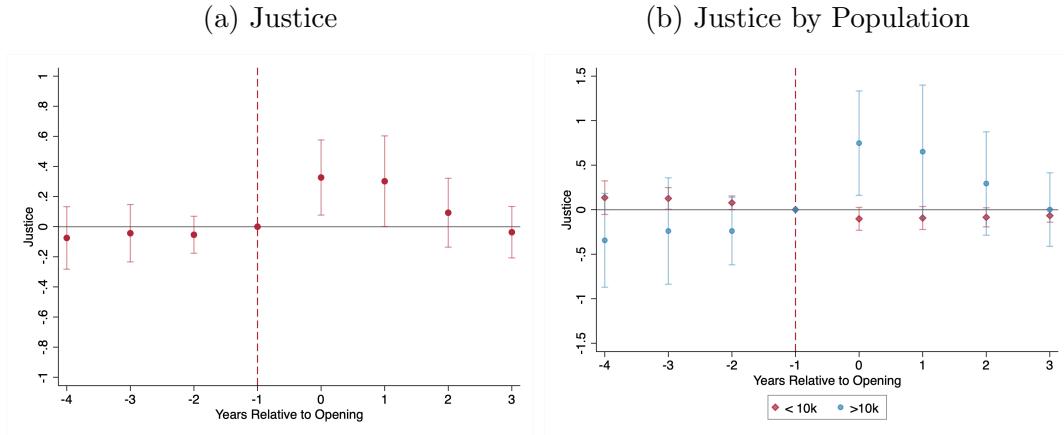
*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 1 estimated separately for municipalities with a share of foreign population in the pre-period lower than the median (Panel (a)) and higher than the median (Panel (b)). 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure A11: The Effects on Public Spending: Excludable vs Non-Excludable Goods



*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 2. Panel (a) shows the results for expenditures in excludable goods (such as health vouchers, education spending and welfare benefits) while Panel (b) focuses on expenditures in non-excludable goods (such as public transportation, infrastructures and investments in public spaces). 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

Figure A12: The Effects on Public Spending: Justice



*Notes:* The figure shows the estimated coefficients  $\gamma_l$  from the econometric specification in 2. Panel (a) shows the results for expenditures in services related to justice. Panel (b) shows that the positive effects on justice spending are driven by municipalities with more than 10,000 inhabitants (blue series). On the other hand, there is no effect on welfare spending in municipalities with less than 10,000 inhabitants (red series). 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

## B LRO Data

Every semester, the LRO collects information from two different sources: bills of sales, and assessments of real estate agencies and specialized magazines. The LRO registers roughly 700,000 residential property transactions per year. If the number of transactions that took place in a microzone over a semester is sufficiently high, estimates of the prices are based on bills of sales only. Otherwise, real estate agencies and specialized magazines are used jointly with bills of sales to obtain the final estimate. Overall, about 40% of the records from which the prices are estimated come from transactions, 30% from real estate agencies, and the remaining 30% from specialized magazines and other sources. Although the LRO distinguishes several types of residential and non-residential dwellings (notably, villas, exclusive houses, normal houses, and economic houses), only for normal houses the data is available for all the microzones and all the years under study, while information for other types of houses can be considered less accurate. For each microzone, the LRO provides the minimum and maximum price recorded in each microzone and time period (outliers are excluded). We computed the ‘average’ price as the mean between the minimum and maximum price. Unfortunately, the LRO refused to provide any other information on the distribution of prices within the microzone.