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WORKING PAPER NO. 703

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

Giulia Buccione and Valeria Zurla

March 2024



University of Naples Federico II



University of Salerno



Bocconi University, Milan

CSEF - Centre for Studies in Economics and Finance
DEPARTMENT OF ECONOMICS AND STATISTICS – UNIVERSITY OF NAPLES FEDERICO II
80126 NAPLES - ITALY
Tel. and fax +39 081 675372 – e-mail: csef@unina.it
ISSN: 2240-9696

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Giulia Buccione* and Valeria Zurla†

Abstract

Does refugee immigration affect the quality of neighborhood amenities? In this paper, we exploit the unique setting provided by the Italian refugee reception system to study the effect of refugees' inflows on housing prices, the extent to which this response reflects individuals' preferences for immigration, and perceived neighborhood quality. 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%, mainly driven by an amenity effect. We find that the negative effect is larger in larger cities and decreases with the size of the center and the availability of services to facilitate integration. We test whether opening refugees centers impacts local public spending, which we use to proxy the actual quality of local amenities. 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 2.4%, largely driven by a reduction in welfare spending. Given this well-established negative effect, are there factors or policy responses that might mitigate it? Our findings suggest that investing in services devoted to the mutual integration of the local and refugee community can be effective.

JEL Classification: P22, J15, R23, O18.

Keywords: Refugees, Housing markets, Forced migration, Amenities.

Acknowledgments: We thank Anna Aizer, Andrew Foster, Brian Knight, Emily Oster, Bryce Steinberg, Stelios Michalopoulos, Marco Stenborg Petterson as well as seminar participants at the Brown Applied Micro Lunch, Brown Health Breakfast and Brown Development Tea for the helpful comments.

* Brown University. Email: giulia.buccione@brown.edu

† CSEF University of Naples Federico II and PWI UT Austin. Email: valeria.zurla@unina.it

1 Introduction

Between 2014 and 2017, Europe has dealt with an unprecedented inflow of refugees and migrants, known as the “refugee crisis”¹. 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 European Union. 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 governments and raised questions about the consequences of forced displacement on host countries and on the optimal way to design reception systems to host asylum-seekers. Given the increasing prevalence of phenomena of forced displacement, understanding the answer to these questions is more relevant than ever.

This paper studies the effects of refugees’ inflows on housing prices and local amenities and how these responses reflect individuals’ preferences for immigration. We study this question by focusing on the Italian reception system. In 2014, Italy had to institute emergency reception centers (CAS) to deal with frequent arrivals of refugees. We exploit the sudden, and arguably exogenous 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 the quality of local amenities, proxied by local public spending, changes. Since, in our context, refugees do not compete with natives in the labor and housing market, and centers would not have otherwise been available as residential buildings, we can more confidently interpret changes in housing prices as the result of a pure amenity effect reflecting natives’ perceptions. Then, conditional on housing prices changing, the second part of our analysis attempts to understand how this affects the quality of local amenities, measured using local public finance data, and the mechanisms behind this change.

For our analysis, we assemble a novel dataset containing information on the exact location of the universe of active and inactive Italian reception centers in the period 2004 to 2018 (provided by the Italian Ministry of Interior) and on house prices at the neighborhood level (provided by the Italian Land Registry Office). We supplement this data with information on per capita public expenditures at the municipal level.

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

Our empirical strategy exploits variation over time and space in the opening of emergency reception centers. Key to our design is that centers are randomly assigned to neighborhoods across periods. In other words, our underlying assumption is that the timing of centers' opening is not correlated with unobservable characteristics of the neighborhood. 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. Reassuringly, we do not find a significant relationship.

In the first part of our analysis, we study the effect of the opening of an emergency reception center on housing prices using a dynamic event study design. The results show that, after opening 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 and mechanisms behind the observed adverse effect on prices, we perform a heterogeneity analysis. We find that the effect is larger in larger cities, decreases with the center's size, the baseline share of foreign population, and the center offering services to facilitate integration. Our results indicate that refugee inflows can have a detrimental effect on local housing prices by worsening natives' perceptions of the quality of the neighborhood. This effect is more prominent 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. The analysis also suggests that, by resorting to effective policy levers such as adequate integration services, the detrimental effects can be drastically mitigated.

In the second part of our analysis, we test whether opening refugees centers impacts local public spending, which we use as a proxy for the objective quality of local amenities. 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. After the opening of a reception center, areas close to the center experience a relative fall in expenditure per capita of about 20 EUR, which corresponds to a 2.4% decline with respect to the pre-period average, largely driven by a reduction in welfare spending. Overall, our preliminary findings are consistent with locals becoming less favorable to redistributive policies after the opening of a reception center, particularly for spending categories, such as welfare ones, that are more likely to advantage migrants and refugees.

This paper makes three primary contributions to the existing literature. The first contribution speaks to the relationship between immigration and local housing prices. It builds on growing research showing that immigration has a detrimental effect on local housing prices (Saiz and Wachter

(2011), Sá (2015), Accetturo et al. (2014)). Contrary to these negative effects, the literature has also shown that the housing demand from immigrants can lead to positive effects on housing prices in larger geographic areas (Saiz (2003); Saiz (2007); Ottaviano and Peri (2006)). In contrast to these papers, we use the precise location of refugees centers. The characteristics of our institutional setting, which imply that migrants are not competing with natives for housing opportunities and labor market opportunities and that centers would not otherwise be available as residential buildings, exclude a demand-driven effect on prices and allows us to interpret house price dynamics as mainly determined by an amenity effect. After having established that housing prices negatively react to the arrival of refugees, we move a step further and explore which policy levers might mitigate the documented negative effect on housing prices.

Note that most of this literature has focused on the effects of migrants' inflows on housing prices (for example Gonzalez and Ortega (2013) in Spain, Accetturo et al. 2014 in Italy and Sá (2015) in UK), while 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. Closest in spirit to our paper is Hennig (2021), which studies the impact of refugees shelter on the housing market in Berlin. Consistent with our findings, Hennig (2021) shows that, after a refugee shelter is established, house rents decrease by 3–4% within 100m of the shelter, and ratings for local amenities also decline.

We also contribute to the literature on immigration and local public spending by providing new evidence on how immigration affects local public spending and the quality of local amenities. The 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)). 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) shows that a larger refugee population in the period 1985–94 in Sweden lead to less support for redistribution using panel survey data.

The third contribution of this paper is to combine the study of immigration, housing prices, and amenities in a unified framework. What unifies the housing and local public spending findings is

that the affected residents and voters are the same in both cases. In this way, we are able to study both the private (i.e. housing market) and public (i.e. public spending) reactions of natives to the arrival of refugees.

Finally, our paper contributes to the recent literature studying the effects of the 2014-2017 refugee crisis in Italy. 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). Gamalerio 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.

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 local public spending. Section 6 concludes.

2 Institutional Background

2.1 The 2014-2017 Migration Wave

This paper focuses 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 significant migration inflows, primarily via sea, as shown in Figure 1. While before 2011, the number of arrivals was relatively stable, it first peaked in 2011 as a consequence of the 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 via sea reached a new high, hitting 170,100: in the first three months of 2014 only, the number of arrivals via sea was 13 times higher than in 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 from the Middle East, mainly Syria, escaping conflict and civil breakdown. Most of the arrivals came through the Central Mediterranean Route, with starting point in Libya. Most migrants arrived in Italy smuggled by traffickers from North Africa or rescued at sea. In 2018 arrivals sharply decreased after Italy signed cooperation deals

with Libya. The deals strengthened the Libyan Coast Guard, increased departure control, 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 located near the main points of arrival, where migrants are directed for first assistance and identification. After first assistance, refugees are transferred into *primary reception centers*². 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 reception³. The SPRAR system's aim is to enable applicants or holders of an international protection status to undertake a pathway towards social and economic inclusion and, ultimately independence. The centers offer legal assistance and help refugees learn the language, find a job and complete their education.

In 2014, the frequency of arrivals led to the breakdown of the ordinary system and to the institution of *emergency reception centers* (CAS)⁴. The need to find immediate solutions to the pressing demand for reception has pushed toward a model of reception distributed across the whole national territory and directly managed by the Ministry of the Interior. When the need arises, the government asks local private entities (NGOs, churches, hotel owners) to find an emergency placement for migrants. Notably, a center can open 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. Emergency Reception Centers became the rule between 2014 and 2017: Figure 2 shows that in 2016, 77.72% of

²There 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".

³When 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 in 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.

⁴The 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.

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 can have very different characteristics. Figure A2 shows that around 50% of emergency reception centers were housed in private houses and apartments and were relatively small in size⁵. This particular model of reception implied that refugees and natives lived in close 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 3 shows the distribution of emergency centers' capacity. The distribution is left-skewed, with most centers very small (the median is 9).

Overall, converting their structures into emergency centers was easy and rather profitable for local NGOs and hotel owners (particularly off-season). These centers were financed directly by the government who paid the managing institution 35 EUR per day and person for board, food and lodging⁶. Since emergency centers were conceived to be temporary structures, they did not need to provide any services other than food and lodging. 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 already operating in the field of refugees' assistance, for example, offered a wide variety of services to foster integration.

Although emergency centers were supposed to host migrants temporarily, migrants spend on average between six months and two years in these centers due to the long asylum procedures. While their asylum request is pending, migrants are not allowed to work or relocate out of the assigned reception center.

⁵In most 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, 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.

⁶Anecdotal 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.

3 Data

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 to 2018, provided by the Italian Ministry of Interior (Doc. CCXXXVI, n. 3). To the best of our knowledge, this is the first paper 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. Our final sample consists of 7,156 structures (almost one per municipality, given that there are 7,904 municipalities in Italy). Panel (a) of Figure A3 reports that more than 60% of emergency centers are concentrated in small municipalities, while 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 about 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. Table 1 summarizes the data, showing that the bulk of emergency centers was opened homogeneously around the country, with a slightly higher concentration in Northern and Central Italy, during the peak year 2016. More than half of the universe of reception centers was located in city centers and semi-central areas, peripheral and sub-urban areas hosting the remaining 37%. The majority of these centers had a small or medium capacity (Figure 3).

Italian Land Registry Office Data We obtain data on house prices from the Italian Land Registry Office (LRO, hereon) for the period 2006 to 2019. Each municipality in the LRO is divided into "zones", comparable to urban districts. Each zone represents an area homogeneous in terms of socioeconomic and geographic conditions. Indeed, the zones 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 zone must belong to a single administrative area defined by the land office ("microzona catastale"). Figure A4 represents the division into zones for the city of Milan. The LRO provides the minimum and maximum price recorded in each zone every year. Our final dependent variable is the logarithmic

transformation of the average price⁷.

We obtain 148,323 house price observations for 26,712 zones (whose descriptive statistics are summarized in Table 2). The median size of a zone is of 1.8 km^2 , consistent with the average size of an Italian urban district. Zones 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%). 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 can match it to the house prices data at the LRO zone level, and 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).

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 from the period 2005 to 2019. For every year, these data provide information on the allocation of revenues and expenditures according to the municipality budget. In our analysis, we use fiscal entries officially approved by the local council at the beginning of the fiscal year to best reflect political decisions and limit measurement errors related to past budgeting decisions or administrative delays.

In our final sample, total yearly per capita expenditures average to 795 EUR. Expenditures are further divided into sub-categories on the basis of 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 indicating their source (e.g. transfers from the national government, local taxes, etc.), with total yearly per capita revenues' averaging 1400 EUR.

Data on municipal politicians are from the Home Office and contain information on age, gender, education, past professional background, political affiliation, and duration of the political

⁷More details on the procedure used by the LRO to construct their housing prices estimates are reported in Appendix B.

mandate.

Finally, we derive background municipal-level controls from the Italian Institute of Statistics (ISTAT).

4 The Effect on the Housing Market

This section investigates how housing prices react to the opening of an emergency reception center. We start by presenting a conceptual framework to consider the potential effects of centers on the housing market. Our framework shows that, given the specific features of our setting that allow to account for other conflicting explanations, changes in house prices following the opening of a center can be more easily interpreted as reflecting changes in natives' perceptions.

Conceptual Framework Our conceptual framework is inspired by the model developed by Accetturo et al. (2014). A city has 2 zones, 1 and 2. Each individual i residing in zone z maximizes her utility function, which is a function of the amenities in zone z , and a consumption good and housing consumed by i . The model assumes that the two zones are ex-ante identical in terms of amenities⁸. 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 a final decision on their asylum request is issued. Second, they are not allowed to work during this waiting time, making labor market competition between locals and migrants negligible in the formal sector⁹. Third, since centers open in places that would not otherwise be available as residential buildings, housing competition between locals and natives is absent, and aggregate housing demand is the same across zones, with natives' share only determining it.

Housing supply is a function of the price elasticity of housing supply in zone z . Equilibrium

⁸We present evidence in support of the as-good-as-random assignment of migrants to reception centers in Section 4.4

⁹We 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 deficient therefore, the informal labor market competition between locals and migrants is also presumably negligible.

prices for both zones are derived through 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 $A(m)$ ¹⁰. 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 or fear an increase in crime or more competition for public goods. 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.

Free mobility of natives implies that, in equilibrium, their utility levels equalize across locations, determining the share of natives across districts¹¹.

From the outlined theoretical framework, we can derive three clear testable predictions on how a local immigrant shock influences zone and city-level local amenities and prices. First, this model has no income effect, 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. Therefore, the price effects in this setting can be interpreted more easily as a signal of changes in the subjective quality of the district: the amenity effect exclusively determines the average price of housing at the city level. 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. The final city-level price is just the average price triggered by the amenity effect across the two districts. For instance, if natives consider migrants 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 migrants, 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

¹⁰In 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. It is plausible to think that they would tend to cluster in historical enclaves (Dahlberg, Edmark, and Lundqvist (2001)). Note also that the vast majority of migrants passing to Italy ask for relocation in other EU countries.

¹¹Following Accetturo et al. (2014), we assume 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

refugees operating through an amenity effect. Given that migrants do not compete for jobs and houses, the effect of migration at the zone level, relative to the city average, is negative (positive) if migration deteriorates (improves) the perception of or the actual quality of local amenities.

Third, housing supply elasticity generates heterogeneous predictions. In small-sized municipalities that are largely depopulated, housing supply elasticity is near zero; this implies that both the native flight and the negative (positive) amenity effect would be negligible on both zone and city level prices.

Our analysis has one important caveat: at the moment we are not able to assess whether the housing prices response might reflect a change in crime rates. As a consequence, we will not be able to distinguish the exact channels behind the amenity effect we will document. In future work, we plan to explore whether changes in crime rates drive, at least partially, the changes in natives' perceptions and local public spending.

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. In our main specification, we restrict our attention to zones where an emergency reception center is opened at a certain point in time. We use the following event study specification:

$$y_{zcmpt} = \delta_z + \lambda_{cpt} + \sum_{l=a}^b \gamma_l D_{zt}^l + X'_{mt} \alpha + \varepsilon_{zcmpt} \quad (1)$$

where y_{zcmpt} is the per square meter house price (in log) observed in zone z , category c ¹², municipality m , province p , time t . δ_z are zone fixed effects and the term λ_{cpt} allows us to control flexibly for shocks that are province and category specific¹³. Standard errors are clustered at the zone level. The event study indicators D_{zt}^l are our treatment of interest, as they capture time from the opening of a reception center, i.e. $D_{zt}^l = \mathbb{1}[t = t_z^* + l]$, where t_z^* is the calendar time of opening of an emergency center in zone z . In all our event-study specifications, we normalize $\gamma_{-1} = 0$ and set $a = -8$

¹²Category refers to the classification of microzones into central, semi-central, peripheral, sub-urban and extra-urban as detailed in Section 3.

¹³Results are robust to the inclusion of province by calendar time fixed effects only (λ_{pt}) as well as to inclusion of municipality by category by time fixed effects (λ_{mct}). See Section 4.4. Note that, 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

and $b = 8$ ¹⁴.

The coefficients γ_l for $l \geq 0$ capture the effect of the opening of a reception center on housing prices, l periods after the opening relative to the period before the opening. Identification of γ_l hinges 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. Although this identifying assumption cannot be tested directly, our analysis leverages data from before the reform and rich specifications to maximize its plausibility. In particular, the inclusion of province-category specific time effects controls for unobserved shocks specific to a given province and category. This allows us to construct potentially more realistic counterfactuals. As a further check, we also evaluate whether the parallel trend assumptions holds in the time periods leading up to the opening of the center.

We perform different checks in order to increase the confidence in our empirical design in Section 4.4. In particular, recent papers (e.g. Goodman-Bacon (2021)) have warned against identification of average treatment effects from two-way fixed effects model in the presence of treatment effects heterogeneity. We demonstrate that we obtain very similar results including never-treated units as well as using alternative estimators designed to deal with these issues

4.2 Results

Figure 4 shows event study estimates of the effect of opening a center on housing prices. The figure plots the event study coefficients γ_l from equation 1 where the dependent variable is the log average house price in the zone. These event study coefficients are relatively flat and close to zero in the years before the opening of the reception center, providing suggestive evidence in favor of the parallel trends assumption. After the opening of a center, there is a significant decrease in prices. House prices decrease by around 1%. The effect lasts for around three years after the opening and starts to revert to its pre-event level four years after the opening. This latter pattern coincides, in many cases, with the closing of centers at the end of the migration crisis.

To better quantify the magnitude of the effects, Table 4 reports the average effect of the opening of an emergency reception center on prices in the short, medium, and long run. To better interpret our findings, we use the average effect of opening a center in what we call the "medium-run" (2-3

¹⁴Our results are robust to binning our event study indicators at $a = -7$ and $b = 7$, in this way, we avoid collinearity issues discussed in Borusyak, Jaravel, and Spiess (2021) in event study models with no never-treated units

years after the opening). We find that, in the medium-run, housing prices decrease by 0.72%. Our samples' pre-period average price per square meter is 1,100 EUR. Therefore, our estimated effect implies a reduction of 7.92 EUR in price per square meter in the medium-run.

Consider a residential apartment in the center of Milan, which sold on average for 5,500 EUR per square meter in the pre-period. 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 3,600 EUR, relative to the amount they would have received had no center opened. This suggests that the estimated effect on housing prices is statistically significant but also economically sizeable.

4.3 Mechanisms and 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 first investigate how the housing prices response to the opening of a center changes in smaller cities compared to larger cities. Figure 5 reports the results of this analysis. Panel (a) shows our event-study estimates in municipalities with more than 10,000 inhabitants (which corresponds to the median municipality population in our sample). The results, in this case, confirm 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) shows the results restricting our attention to smaller municipalities (with less than 10,000 inhabitants). Also in this case, there are no significant trends before the opening of a center. After the event, we observe a slight decrease in housing prices, much smaller in magnitude than in larger cities. The effect then reverts to its pre-event level quicker than in larger cities.

The heterogeneity in results by population is consistent with the predictions outlined in our conceptual framework. In small-sized municipalities that are largely depopulated, housing supply elasticity is near zero; this implies that both the native flight and the negative amenity effect are negligible on both zone and city level prices.

How do the effects change with the size of the center? Figure 6 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 smaller centers, while Panel (b) reports the results for larger centers. What emerges from this analysis is that the opening of a small center has more negative consequences on housing prices than larger centers. Notably, small centers are usually located in apartments within private buildings or private houses where locals live. The results provide suggestive evidence that the negative effect of the opening of a center is bigger the more frequent the daily contacts between refugees and natives are¹⁵. Investigating the interaction between population and size of the center suggests that a large share of the negative effect is driven by small centers opening in municipalities with more than 10,000 inhabitants (where the housing market tend to be more responsive).

We explore heterogeneity on two additional levels. We test whether the adverse effects are more pronounced when a center opens in the city center or the periphery (Figure A9) and whether the effects are different in municipalities with a higher share of foreign population in the pre-period (Figure 7). 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 are present for a longer time and perhaps more integrated and highlights the importance of investing on policies to facilitate the integration of refugees' in natives' communities.

The evidence produced so far shows that, consistent with the literature, an inflow of refugees, here proxied by the opening of a reception center, hurts local housing prices, reflecting individuals' preferences regarding immigration and changing the perceived neighborhood quality. It also suggests that the negative effect of opening a reception center is driven by the close and frequent contact with natives.

Given this well-established negative effect, are there factors or policy responses that might mitigate the effect? The literature has not yet explored this issue, mostly due to institutional and data

¹⁵This 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>

constraints. We can make progress on this question using the specificity of our setting. In particular, we can investigate if the quality of the emergency reception centers and the set of services offered to facilitate integration play a role in alleviating the adverse effects of refugees' reception on the housing market.

We categorize emergency reception centers based on their services and overall quality. The classification relies on information about the managing institution of the center (for example, whether or not it is an NGO specialized in refugees' reception) as well as information about the services offered found directly on the center's website¹⁶. 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. The negative effects of opening a center on housing prices seem to be mostly driven by low-quality centers. While this result is only suggestive, it is particularly interesting as it directly speaks to the policy levers that could be used to alleviate the adverse impacts of the refugees' reception systems and, in general, of migration inflows. Directly investing in services fostering integration seems to be important to significantly reduce the adverse effects associated with opening reception centers.

4.4 Robustness

As mentioned in Section 4.1, the key to our main design, where all units are eventually treated, is that centers are randomly assigned to zones across periods. 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, the short time period, the emergency of the migratory event, and the institutional background highlighted above suggest that we can be confident that the distribution of these centers across periods within treated zones is as-good-as-random.

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

¹⁶We were able to link centers to their website for 94% of our sample. Almost two-thirds of the centers do not offer any service except food and lodging

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 controls 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 being statistically significant at the 1% level. We also test for the joint significance of the variables and find no significant effect (p -value=0.344). Lastly, we need to rule out that these results are driven by a 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 with less than 150,000 (Column 3), 50,000 (Column 4), and 10,000 (Column 5) inhabitants. Overall, the estimates are close to zero, with few of them being statistically significant at the 10% level. This provides encouraging evidence in favor of the assumption that reception centers' opening timing 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.

As mentioned above, in our main design, all units are eventually treated in a relatively short window of time. To assess how this impacts our estimates, in the Appendix, we present one robustness analysis including never-treated zones in our estimation. This permits to identify the event-study coefficients in equation 1 by confronting treated zones to not-yet treated zones as well as to never-treated zones. We obtain very similar results with this alternative specification. Moreover, Recent papers have warned against identification of average treatment effects from two-way fixed effects models in the presence of treatment effects heterogeneity. In the Appendix, we show that we obtain very similar estimates based on the alternative estimators by Sun and Abraham (2021).

We then perform several additional robustness checks. First, in Figure A7, 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 the crime level. Moreover, our treatment, opening 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 effect¹⁷. The rationale behind our choice of allowing trends by category to differ across provinces rather than municipalities is that municipalities do not usually have enough variation in terms of categories¹⁸). Using municipality-by-category-by-time fixed effects would make us automatically drop part of the sample (around 1%). Figure A8 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 interpret our heterogeneity analysis correctly comparing centers providing services for integration and centers not providing services for integration, we test 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 several 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 a center providing services for integration except of area.

5 The Effect on Local Public Spending

In Section 4, we have assessed that the arrival of refugees had a negative impact on the perceived neighborhood quality by natives. Specifically, we argued that the reduction in housing prices following the opening of a refugee reception center, because of the characteristics of the Italian context, was mainly driven by an amenity effect, likely reflecting individuals' preferences for im-

¹⁷As 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.

¹⁸the average in the sample being 2 categories per municipality

migration.

In this section, we test whether opening refugees centers impacts local public spending, which we use as a proxy for local amenities.

There are different reasons why this might be the case. First, a refugee inflow can be thought of as a shock to the homogeneity of the community. This type of shock might impact local preferences for redistribution, consistent with several papers showing that individuals become less favorable to redistribution policies as their communities become more heterogeneous. (Alesina, Miano, and Stantcheva (2018); Alesina and La Ferrara (2000)).

Second, refugees' inflows might alter not only the perceived quality of the neighborhood, but also its actual quality, 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 and safety (Bianchi, Buonanno, and Pinotti (2012))¹⁹.

Finally, refugees inflows have been shown to alter voting behaviors, implying that political incentives for public officials in office might change. This is particularly true in the Italian case, where the decision to open an emergency reception center is fully managed by the central State, bypassing local governments. Yet local politicians might be charged full responsibility for the opening of a reception center and might attempt to avoid electoral punishment by cutting on expenditures that refugees largely receive²⁰.

In this section, we test the strength of these potential mechanisms by exploring whether the opening of a refugee center is associated with changes to local public spending.

5.1 Empirical Strategy

We study the effects of opening an emergency reception center on local public spending, using an event study design. We focus on municipalities where a refugee emergency center is opened at a

¹⁹We are in the process of acquiring data on crime rates to test this hypothesis directly. However, estimates in other settings show that refugees arrivals do not seem to have a positive impact on crime rates (in some cases, the studies found a reduction in crime, for example, in Kırdar, Cruz, and Türküm (2022)

²⁰For example, Gamalerio (2018) shows that local politicians are less likely to open a SPRAR center (which, unlike emergency centers, local governments have power of decision on) in their last year of mandate because of the fear to be blamed by their constituency and decrease their chances of getting re-elected.

certain point in time and estimate the following specification:

$$y_{rmpt} = \delta_{rm} + \lambda_{pt} + \sum_{l=-4, l \neq -1}^3 \gamma_l D_{mt}^l + \rho L_{rmpt} + \varepsilon_{rmpt} \quad (2)$$

where y_{rmpt} is a variable of interest, such as per-capita total expenditure, in term r , municipality m , within province p , in year t . δ_{rm} are municipality-term fixed effects and λ_{pt} 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 , $D_{mt}^l = \mathbb{1}[t = t_m^* + l]$ is an event study indicator to denote whether a refugee center was opened in municipality m . L_{rmpt} 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 first present results for total expenditures and total revenues. Figure 9 shows the event study estimates of specification 2 on per capita total expenditures. The figure displays the coefficients of a full set of dummies going from 4 years before opening an emergency reception center to 3 years after. We can observe a clear pattern for total expenditures: the decline in expenditure does not occur before the center opens. None of the coefficients for the years preceding the event are significantly different from zero. After that, total per capita expenditure becomes negative. To give a sense of the magnitude of the effect, total per capita expenditures reduced by 20 EUR two years after 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 (Figure A10)²¹.

²¹The estimates are noisy, which is partly due to the fact that revenues are often measured with error in the AIDA PA database. For this reason, we will focus on expenditures for the rest of the analysis.

To unpack the effect on expenditures, we focus on different types of expenditures. First, we propose a subdivision in two spending categories, *excludable* and *non-excludable goods*. The former category refers to any expenditure that directly benefits individuals, such as health vouchers, education support, and welfare benefits. The latter category groups together all the expenditures that pertain to the municipality as a whole, such as investments in public transports, infrastructures, and public spaces. Figure A11 reproduces our event study estimates for respectively excludable (Panel (a)) and non-excludable goods' expenditures (Panel (b)). Interestingly, the negative effect seems to be driven by excludable goods.

Figure 10 zooms in further and shows, in Panel (a), the effects on welfare spending. This spending category represents transfers of funds to families in need, economically vulnerable individuals, and migrants and refugees. While the coefficients in the pre-period are slightly positive, welfare spending declines 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 pattern is potentially explained by the fact that local public spending in large centers tends to be stickier, and more difficult to modify (in terms of procedures and operationally). Moreover, the 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 services²², 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

²²Results for the remaining spending categories are available upon request.

not offering this kind of services. While this evidence is only suggestive, it shows, as expected, that a cut in welfare spending follows the opening of a low-quality emergency center.

6 Discussion and Conclusion

Forced displacement is becoming a more common phenomenon, putting enormous pressure on governments and raising questions about the consequences for host countries and the optimal way to design reception systems to host asylum-seekers. This paper studies the effects of refugees' inflows on housing prices and local amenities and how these responses reflect individuals' preferences for immigration. We exploit variation in the timing and location of reception centers' opening to estimate a dynamic event-study model. 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 decreases with the center's size 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 2.4% relative to the baseline, largely driven by a reduction in welfare spending, suggesting a significant decrease in the quality of local amenities.

Overall, our findings provide systematic evidence that refugee reception systems can have both private-side detrimental effects, by decreasing local housing prices and worsening natives' perceptions, and a public-side adverse effect by reducing the quality of local amenities, local public spending, and making individuals less favorable to redistributive policies.

Our findings are of interest for the future design of reception systems and management of refugee housing. While the fact that centers, particularly smaller centers in larger cities, are seen as a negative amenity for the neighborhood may provide an argument against their use, our findings provide clear-cut implications for policy. 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.
Panel A: Geographic Distribution		
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
Panel B: Distribution Across Categories		
City Center	0.463	0.499
Semi-Center	0.17	0.375
Perip/Suburb/Extraurb	0.368	0.482
Size	22.685	54.436
Panel C: Time of Opening		
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 Open	Year Open	Year Open	Year Open	Year Open
	<i>All</i>	<i>All</i>	<i>Pop\leq100K</i>	<i>Pop\leq50K</i>	<i>Pop\leq10K</i>
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)
N	2030	1993	1797	1635	1068
R^2	.28	.29	.36	.32	.3
F p-value	.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	-0.0067*** (0.0016)
Short-Run (0-1 years)	-0.0038** (0.0014)
Medium-Run (2-3 years)	-0.0072*** (0.0016)
Long-Run (4 years +)	-0.0071*** (0.0017)
N	106,434

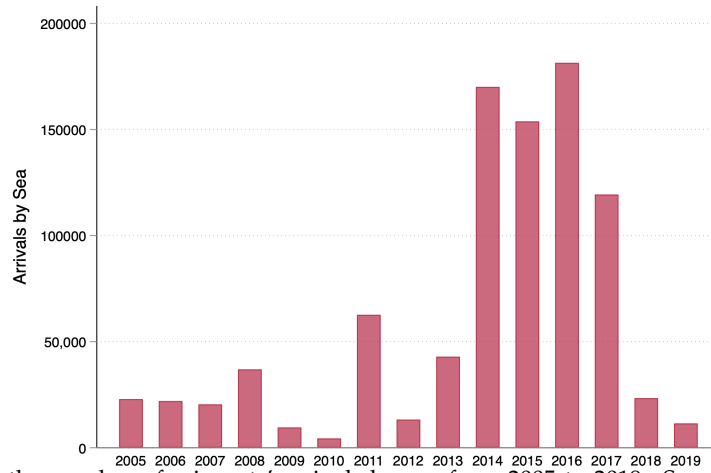
Notes: The table reports the average effect of the opening of a reception center on prices. The estimates are constructed by taking the average of the coefficients from equation 1 across all periods, in the short-run, medium-run and long-run. Standard errors clustered at the zone level and are reported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

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

	(1)	(2)	(3)
	Services	Services	Services
	<i>All</i>	<i>Pop\leq50K</i>	<i>Pop\leq10K</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

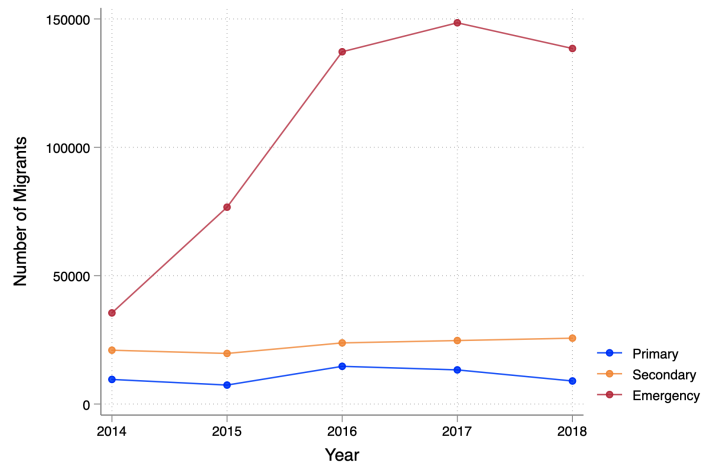
Notes: The table reports the results of a regression of the variable *Services* (which is equal to 1 if a center provides services for integration) on a number of zones' characteristics. All the independent variables are measured in 2006 and therefore before the opening of any emergency reception centers.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



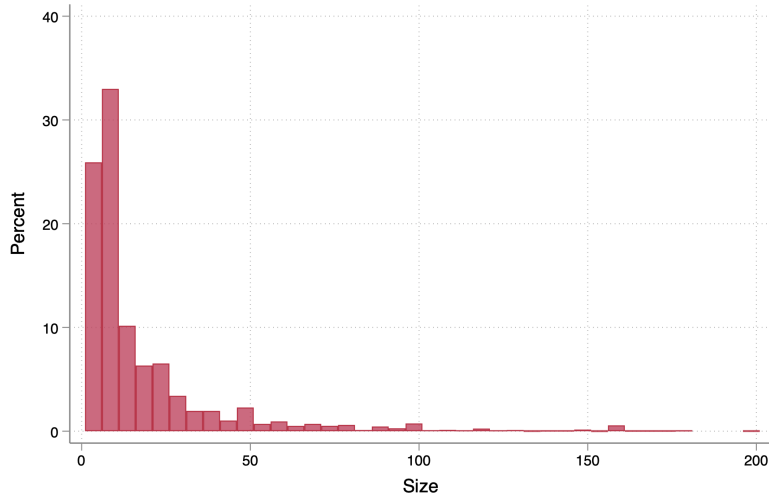
Notes: The figure shows the number of migrants' arrivals by sea from 2005 to 2019. Source: Italian Ministry of the Interior.

Figure 2: The Distribution of Migrants by Type of Center



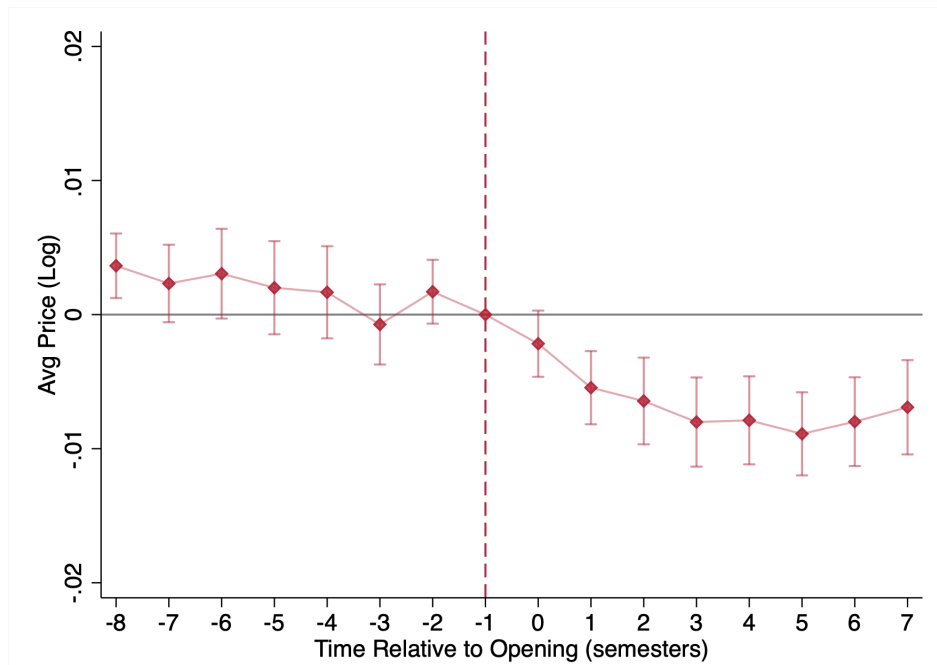
Notes: The figure shows the number of migrants hosted in primary, secondary and emergency reception centers from 2014 to 2018. Source: Italian Ministry of the Interior

Figure 3: Distribution of Center Size



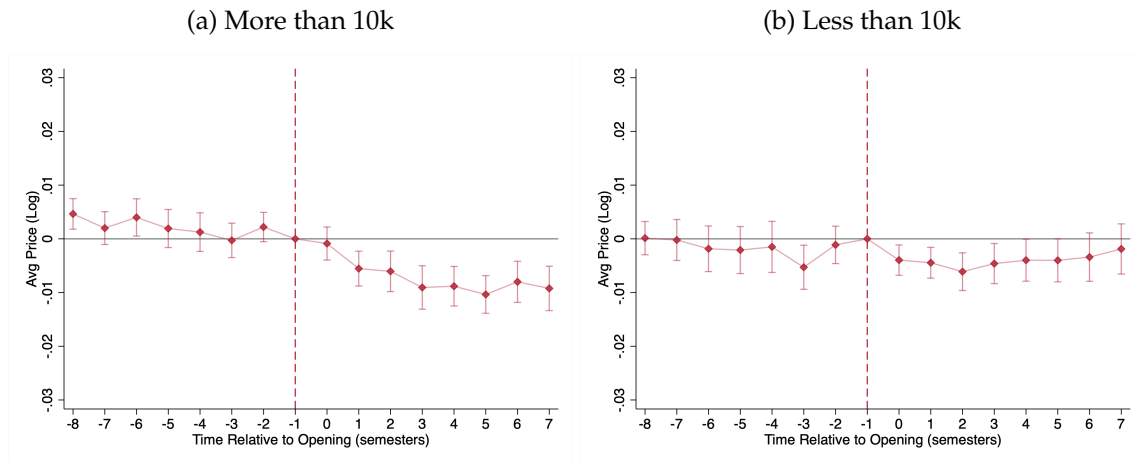
Notes: The figure shows the distribution of emergency reception centers in terms of capacity.

Figure 4: The Housing Prices Response to the Opening of an Emergency Reception Center



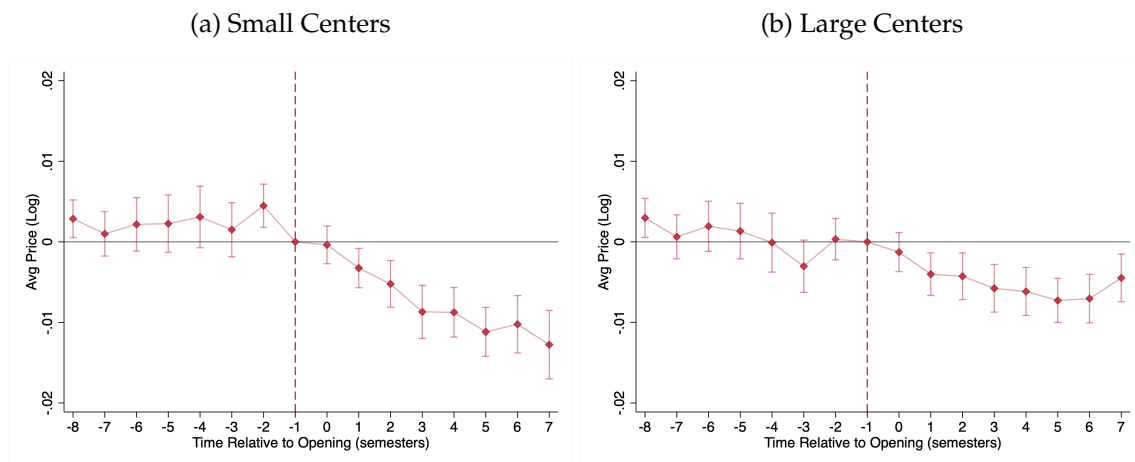
Notes: The figure shows the estimated coefficients γ_l from the econometric specification in 1. 95% confidence intervals are reported. Standard errors are clustered at the zone level.

Figure 5: The Effects on Housing Prices: Heterogeneity by Population



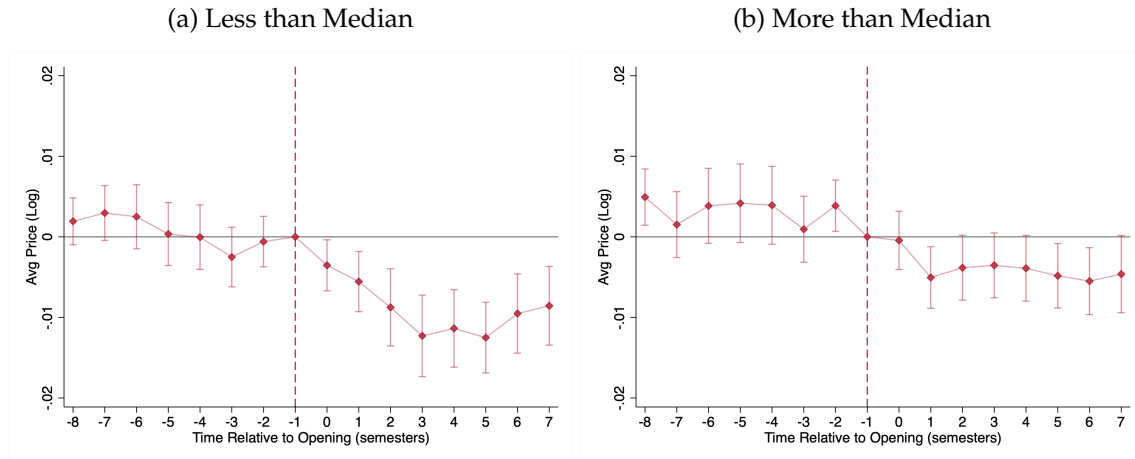
Notes: The figure shows the estimated coefficients γ_i from the econometric specification in 1 dividing the sample by municipality population. Panel (a) shows the results for municipalities with more than 10,000 inhabitants. Panel (b) shows the results for municipalities with less than 10,000 inhabitants.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

Figure 6: The Effects on Housing Prices: Heterogeneity by Size of the Center



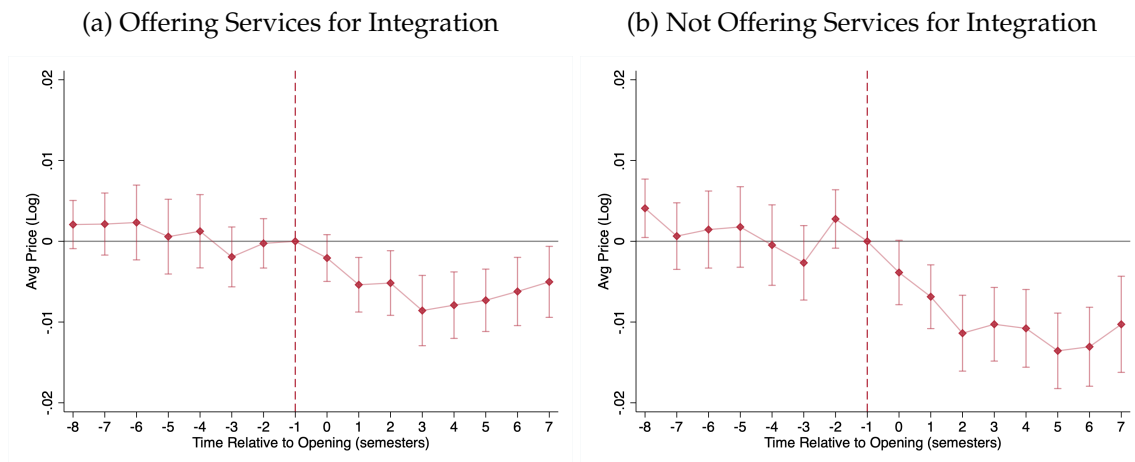
Notes: The figure shows the estimated coefficients γ_i from the econometric specification in 1 dividing the sample by the capacity of the emergency center that opens. Panel (a) shows the results for centers whose size is smaller than the median size (equal to 9). Panel (b) shows the results for centers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

Figure 7: The Effects on Housing Prices: Share of Foreign Population



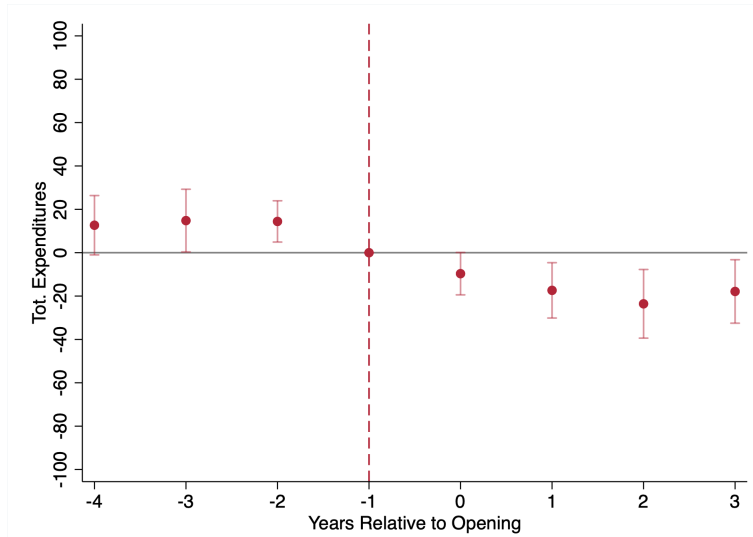
Notes: The figure shows the estimated coefficients γ_t from the econometric specification in 1 estimated separately for municipalities with a share of foreign population in the pre-period lower than the median (Panel (a)) and higher than the median (Panel (b)). 95% confidence intervals are reported.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

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



Notes: The figure shows the estimated coefficients γ_t 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

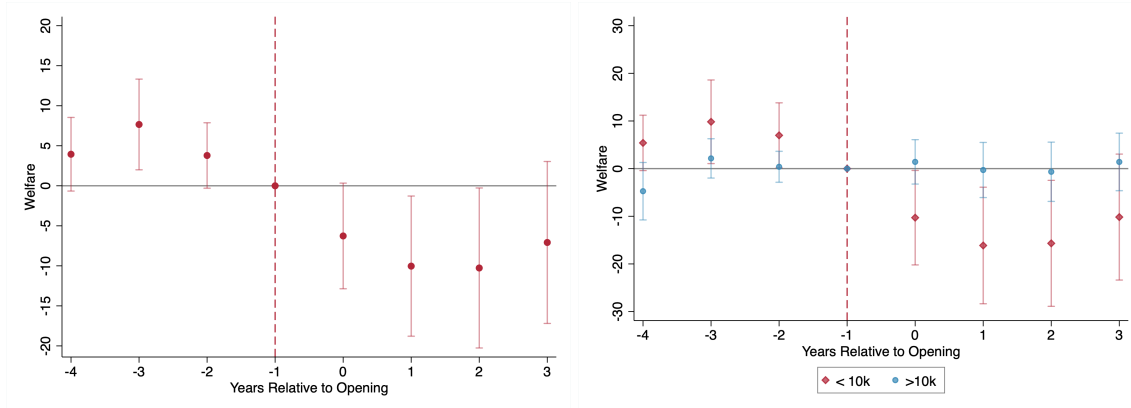


Notes: The figure shows the estimated coefficients γ_t from the econometric specification in 2 on total expenditures. 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

Figure 10: The Effects on Public Spending: Welfare

(a) Welfare

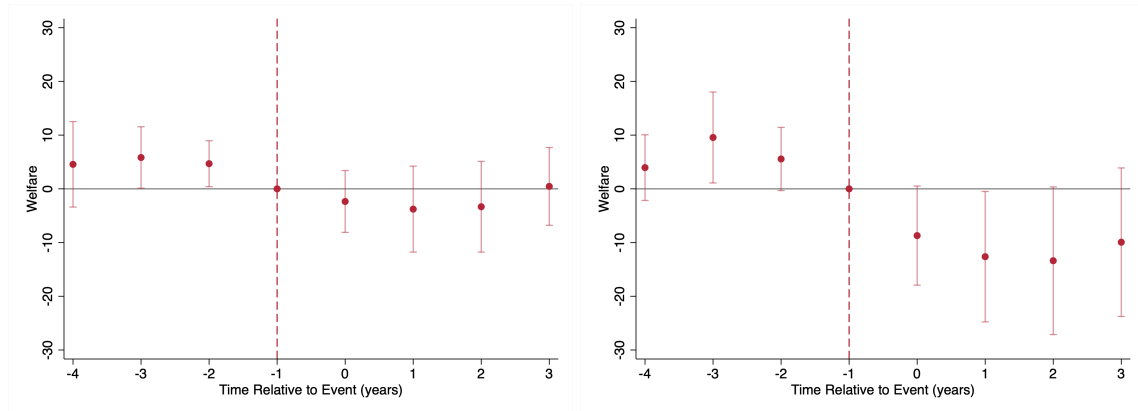
(b) Welfare by Population



Notes: The figure shows the estimated coefficients γ_t 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

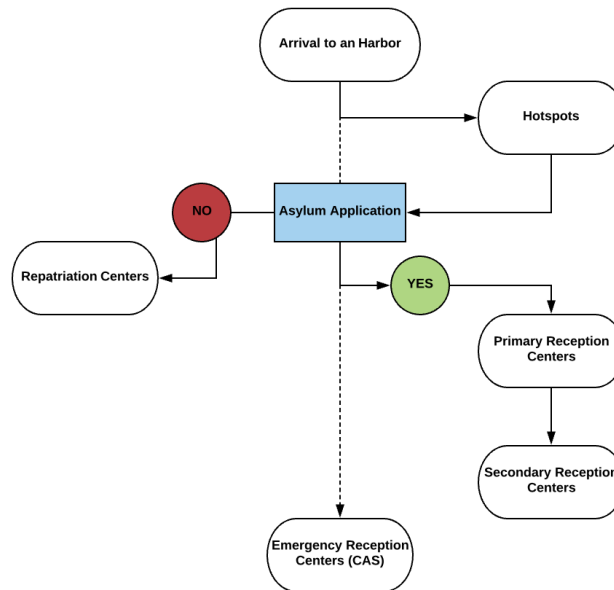


Notes: The figure shows the estimated coefficients γ_l from the econometric specification in 2 where the dependent variable is welfare spending per capita. Panel (a) shows the results restricting the sample to centers offering services for integration, while Panel (b) relies on the subset of centers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

Appendix

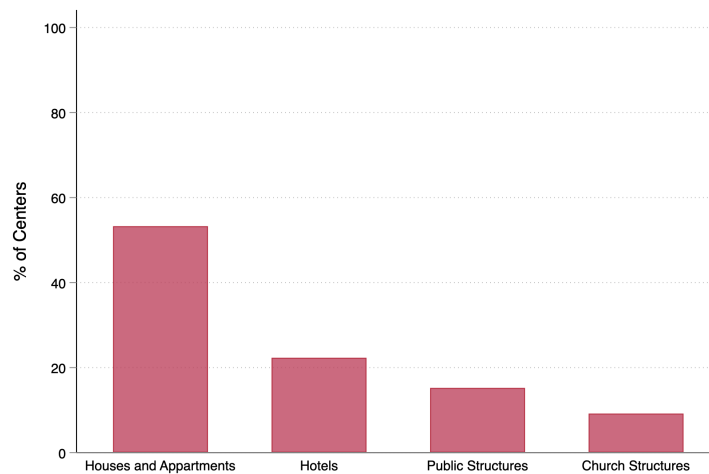
A Additional Tables and Figures

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.

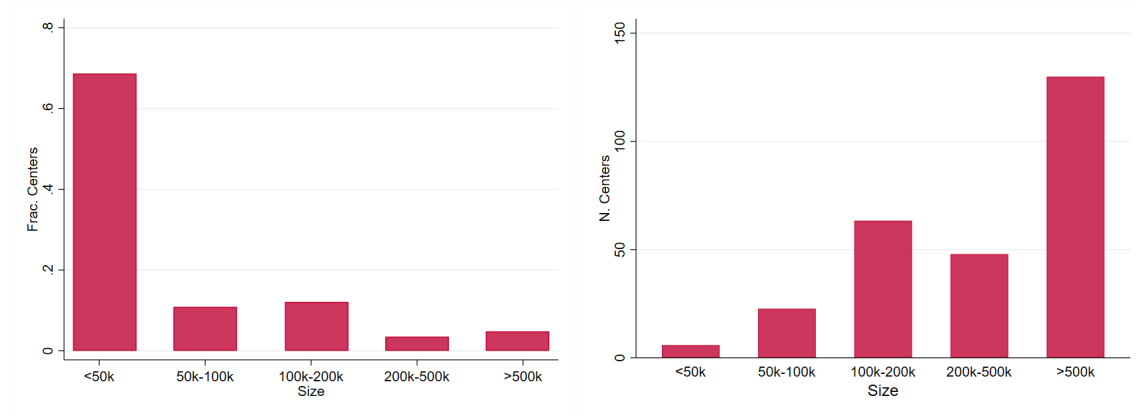
Figure A2: Types of Buildings Hosting Emergency Reception Centers



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

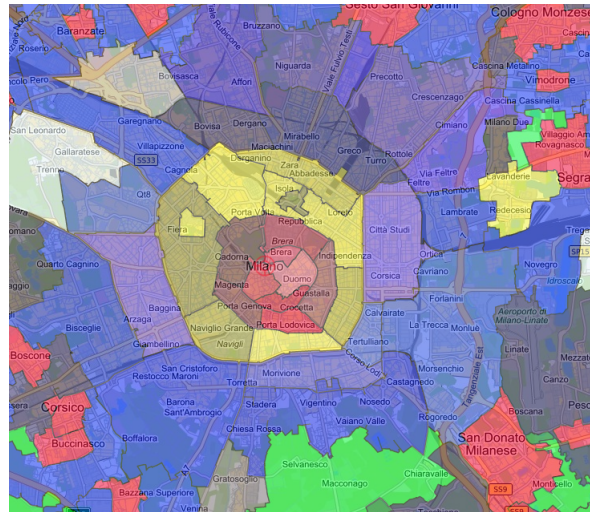
Figure A3: The Distribution of Emergency Reception Centers

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



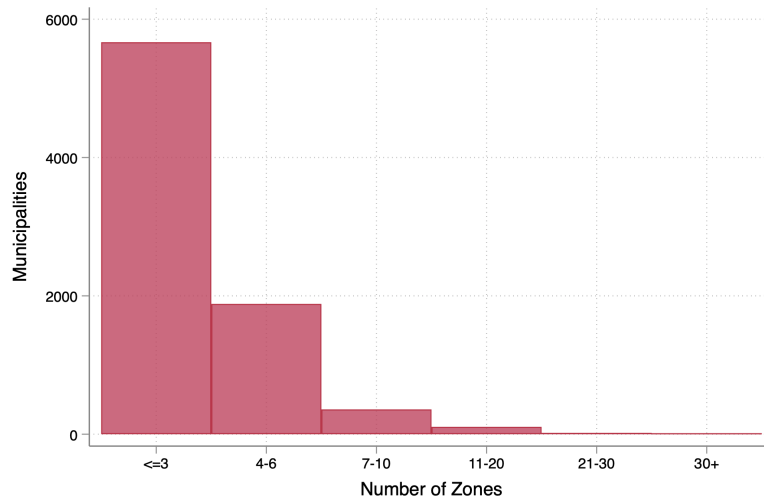
Notes: Panel (a) shows the distribution of centers by Municipality Population. Panel (b) shows the average number of centers by Municipality Population.

Figure A4: Example of Microzones: Milan



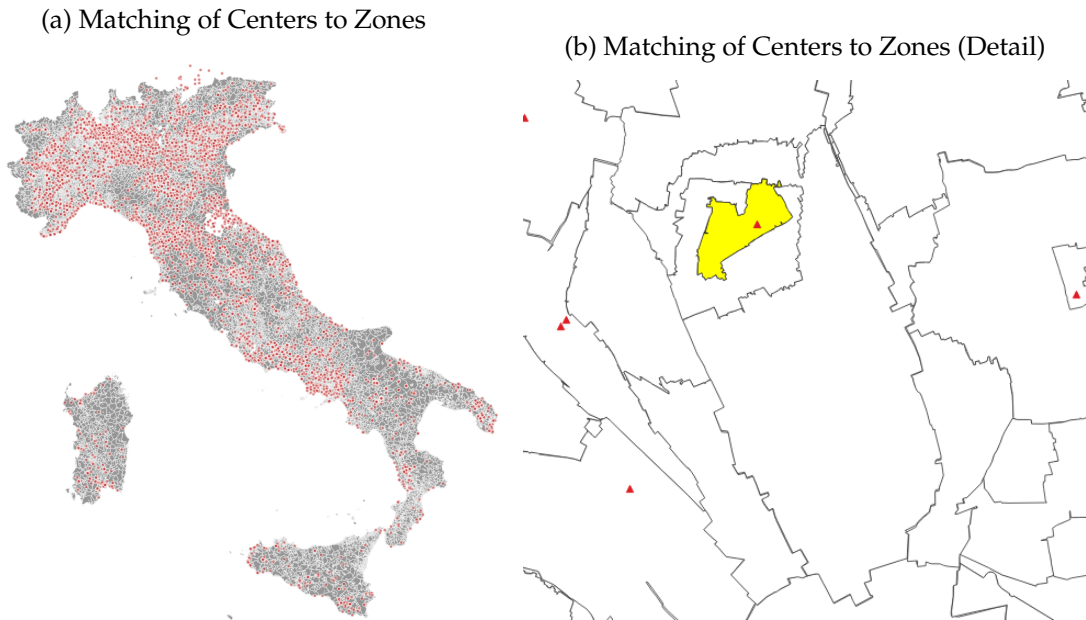
Notes: The figure shows an example of division in microzones for the city of Milan.

Figure A5: Distribution of Microzones



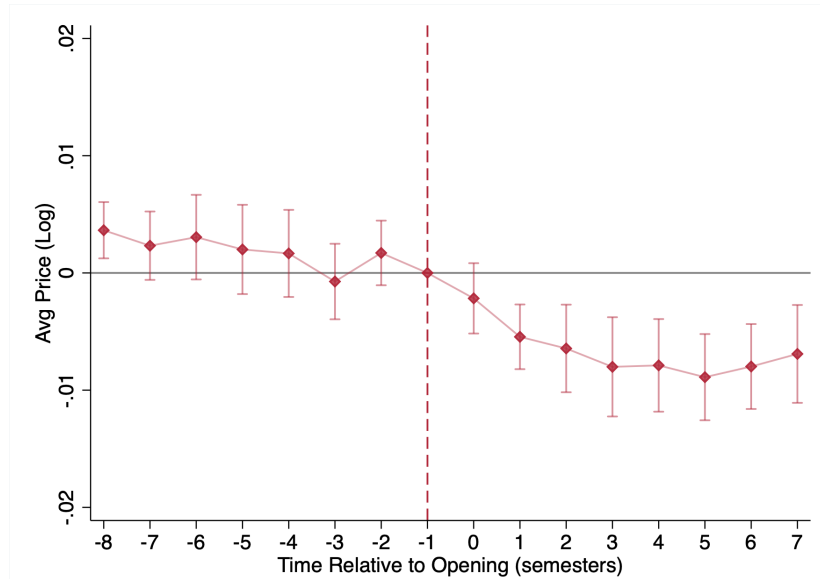
Notes: The figure shows the distribution of municipalities by the number of microzones they are divided into. Most municipalities in Italy are relatively small and are divided in 3 or less than 3 microzones.

Figure A6: Matching of Emergency Reception Centers to LRO Data



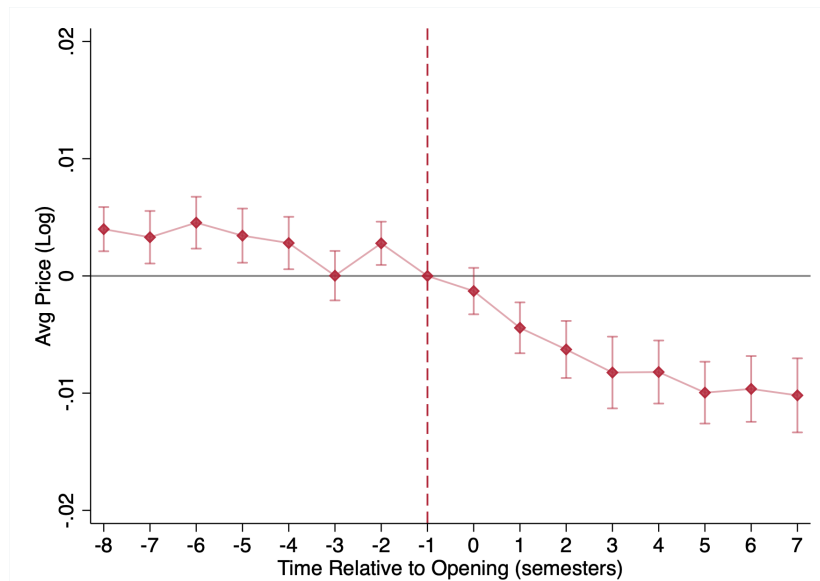
Notes: Panel (a) shows the geographic distribution of emergency reception centers (red triangles) matched to the LRO zones (in gray). Panel (b) reports a zoom of one particular LRO zone (in yellow) matched to one reception center to exemplify our matching procedure.

Figure A7: Robustness: Standard Errors Clustered at the Municipality Level



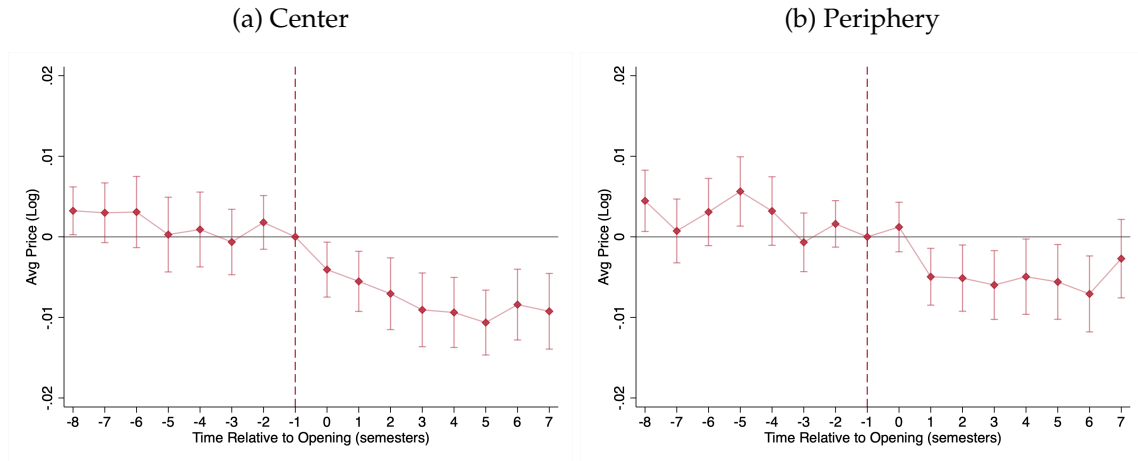
Notes: The figure shows the estimated coefficients γ_l from the econometric specification in 1. 95% confidence intervals are reported. Standard errors are clustered at the municipality level.

Figure A8: Robustness: Municipality by Category by Time Fixed Effects



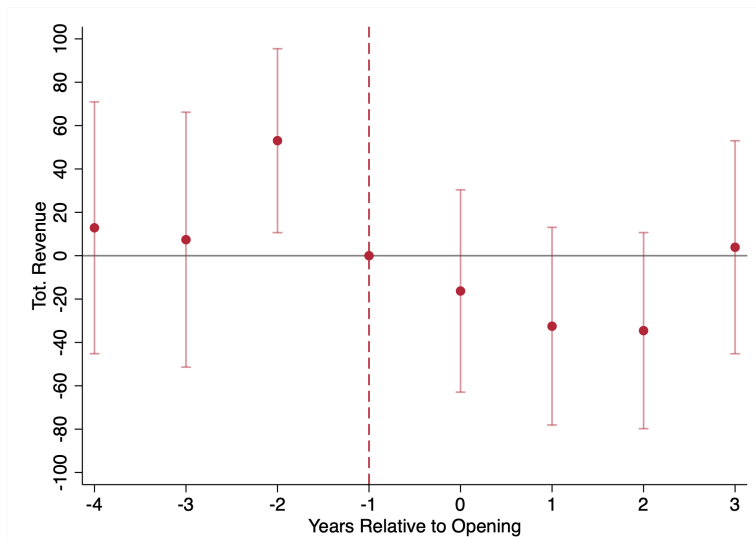
Notes: The figure shows the estimated coefficients γ_l from the econometric specification in 1 using municipality by category by calendar time fixed effects instead of province by category by time fixed effects. This allows us to capture differences in housing prices trends for different zone categories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

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



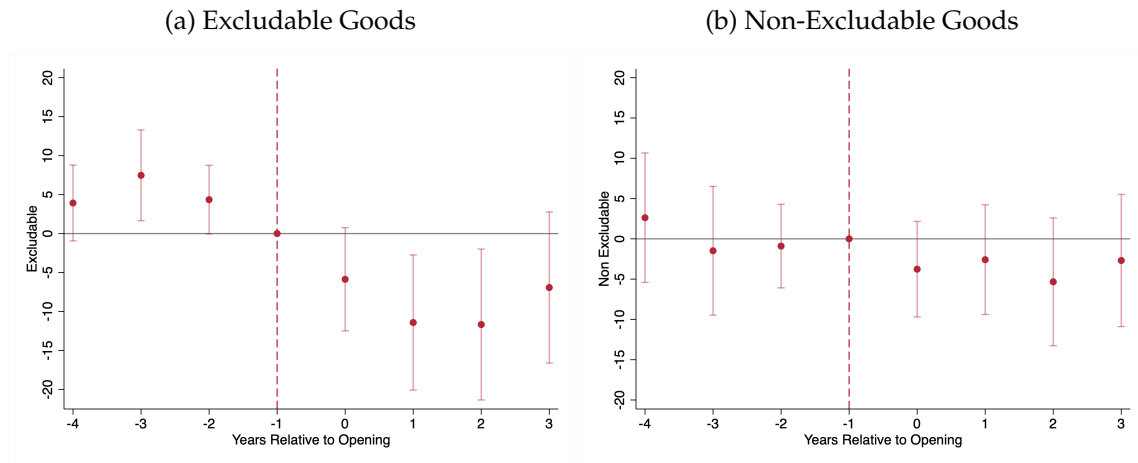
Notes: The figure shows the estimated coefficients γ_t from the econometric specification in 1 estimated separately for emergency reception centers opened in the city center (Panel (a)) and for emergency reception centers opened in the periphery (Panel (b)). 95% confidence intervals are reported. Standard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

Figure A10: The Effects on Public Spending: Total Revenues



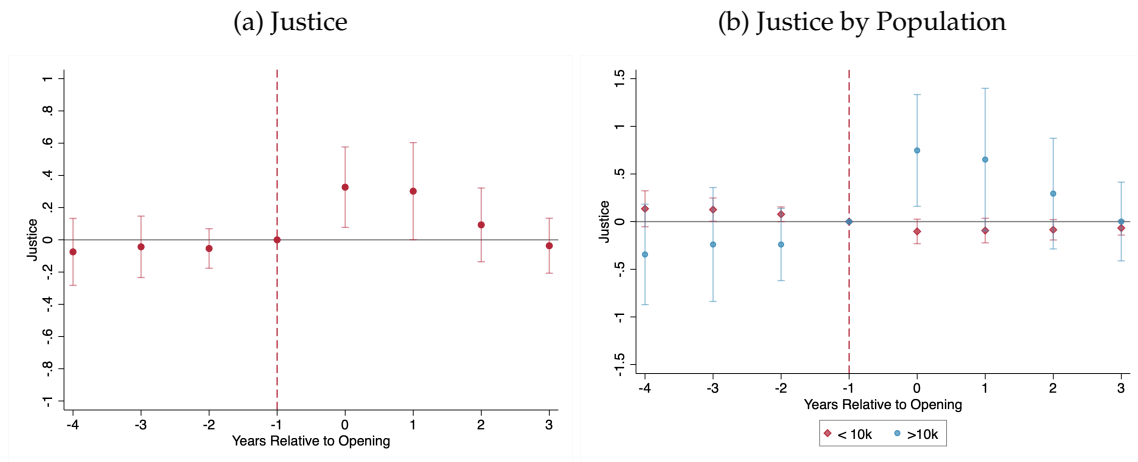
Notes: The figure shows the estimated coefficients γ_t from the econometric specification in 2 on total expenditures. 95% confidence intervals are reported. Standard errors are clustered at the municipality-term level.

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



Notes: The figure shows the estimated coefficients γ_t 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 γ_t 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 nonresidential 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.