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## A gate to the world for all? The reaction of neighborhoods in Hamburg to refugee housings

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# A gate to the world for all? The reaction of neighborhoods in Hamburg to refugee housings

Marek Endrich<sup>1</sup>

30.11.2022

## Abstract

This paper analyses the political reaction of residents to refugee housings in their neighborhood. The city of Hamburg, Germany, experienced between 2014 and 2021 large refugee inflows that required many new housings. Openings of refugee housings led to an increase in the vote share of anti-immigrant right-wing parties in the neighborhood. The effect is persistent, driven by the exposure of residents to large reception centers and follow-up accommodations and amplified for facilities with a high share of male inhabitants. Results are robust to a matching estimator that accounts for an unbalanced distribution of housings. Neighborhoods with worse economic conditions, many migrants of other origins and a relatively large share of allocated refugee housings react more negatively to openings. With the finding that new housings come with electoral losses for the ruling party, it suggests that frustration by residents about a biased allocation is one contributing factor to the vote gains of right-wing parties.

*Keywords:* migration, political economy, refugee housing, voting

*JEL Classification:* F22, D72, J15, H76

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# 1 Introduction

Large refugee inflows are a phenomenon that ongoing conflicts and climate change are likely to make a frequent encounter for European countries. Two recent examples, the Syrian war in 2013 and the war in Ukraine in 2022, illustrate how destination countries have limited control over the cause of such movements. When refugee flows lead to destabilizing repercussions in destination countries, foreign countries can use refugees as political leverage as it has happened with Turkey and Belarus.<sup>2</sup> In such circumstances, it is vital to know how countries should distribute and house refugees to limit potential social and economic ramifications and preserve a stable political environment.

Reactions by residents in the host countries to arriving refugees can vary. In Germany after 2014, they oscillated between a ‘welcome culture’, an aversion of the allocation of refugees to an outright refusal to host them. Researchers have looked at the larger political effects of refugee inflows, but neighborhood exposure and the importance of housing is much less explored.

I study the political development in the German Federal State of Hamburg during the refugee inflow after the Syrian war to examine how people react to the allocation of refugee housings in their neighborhood. Hamburg faced a surprising increase in refugee numbers and had too few housings available. A tight housing market and disputes with local initiatives troubled the creation of new accommodations. This included public campaigns and court cases against the opening of housings and heated debates about an unequal distribution across the city. In reaction, the city of Hamburg introduced in 2017 a quota on a balanced refugee allocation at the district level, while the distribution on lower administrative levels remained unregulated. I use this setting to study how the location of refugee housings affects local attitudes measured by the electoral performance of right-wing anti-immigrant parties.

Various theories predict how residents perceive newcomers and how they might react to refugee housings in their vicinity. According to the intergroup contact theory, the exposure to refugees in an environment conducive to amicable interactions can reduce intergroup prejudice (Allport 1954). Regular contact between refugees living in refugee housings and nearby locals can undo wrong beliefs and increase sympathy for each other. However, locals could also perceive refugees as competitors on the labor market and for social services, or fear for the quality of amenities. If this applies to provisions at the neighborhood level, it can make residents wary about the new neighbors. The exposure to refugees from a different cultural background

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<sup>2</sup> Turkey received financial aid from the European Union (EU) to stop migrants from transitioning towards the EU. Belarus in 2021 created a migrant crisis at its borders with the EU when it allowed refugees into the country.

and their housing can also serve as a trigger for identity concerns or grievances about residents' socio-economic conditions. And last, the perceived fairness in the allocation of housings can drive the reaction. If residents have to carry a larger burden than areas with other socio-economic characteristics, refugees could be scapegoats for the dissatisfaction with the decisions of political authorities.

To measure the reaction to an exposure of refugee housings and suggest channels of influence, I collected information on all refugee housings that opened between 2013 and 2021 in Hamburg. I consider different housings and relate their location to electoral data from state, national and EU elections at the voting station level. The precise location of housings and the small-scale voting data allow to restrict the treatment of an exposure to residents who live close-by. This differentiates the study from many others in the field that work with refugee inflows on a larger scale. I analyze, first, how the opening of refugee housings affects the right-wing vote share in the surrounding neighborhood. An event-study approach measures the persistence of the effect in the medium-term. A matching estimation addresses the issue that neighborhoods treated with a refugee housing might have different characteristics. Further, I consider the capacity of the housing, the type of settlement and the composition of inhabitants in explaining the reaction of residents. To explore channels of influence, I distinguish between neighborhoods characterized by different socio-economic backgrounds. Comparing openings in areas with different allocation intensities and the electoral performance of other parties provide insights if political frustrations about the distribution of housings is one explanation behind the effect.

The opening of housings led to a vote increase in the surrounding neighborhood for right-wing parties in the subsequent election. The effect is persistent and is driven by large reception centers and housings with a capacity of over 500 inhabitants. It is larger for facilities that host a high share of men. I detect large imbalances in the distribution of refugee housings across neighborhoods, but the results are robust to a matching approach. The effect on voters is the strongest for housings in their direct neighborhood. Residents in areas in a worse economic situation and with many migrants of other origins than refugees react more negatively to the openings. It suggests that competitive concerns or grievances about the economic situation and aversions to other migrant newcomers can be behind the effect. But disadvantaged neighborhoods had also to carry a larger burden of housing refugees. The political frustration of residents regarding the allocation policy could be a reason for voting for right-wing anti-immigrant parties. In line with this explanation, neighborhoods in quarters with a relatively large share of refugee housings react more negatively to the opening of houses, second and more new houses in a neighborhood have a larger detrimental effect and the increase in the vote share of right-wing parties comes at a loss for the governing party.

The study supplements other research that has used the context of the Syrian War to analyze how large inflows of refugees affect the voting behavior. Much of the research focused

on the short-term effect of refugee inflows on voting at the aggregate level in municipalities or counties. One line finds that exposure to passing refugees led to an increase in negative sentiments and electoral gains for far-right parties (Hangartner et al. 2018, Steinmayr 2021). A line that examined the allocation of refugees to hosting communities finds mixed results that seem to depend on the organization of the housing and conditions for contacts between refugees and locals. Campo et al. (2021) show that having a refugee center led to an increase in the vote share of radical right-wing populist parties in Italian municipalities that played on identity concerns. Bratti et al. (2020) observe how an anti-immigration backlash spilled over to neighboring municipalities. For Germany, more refugees nearby reduced concerns on immigration (Gallegos Torres 2022), but residents reacted negatively when their municipality hosted a reception center (Bredtmann 2022) and did not react favorably to refugee housings in their neighborhood (Hennig 2021, Ferwerda and Riaz 2022).

When hosting communities are engaged and interactions between refugees and local inhabitants facilitated, the allocation of refugees can positively affect immigration sentiments. Gamalerio et al. (2022) focus on reception centers in Italy that local governments had to apply for and self-manage and find that it led to improved compositional amenities and contacts and to electoral losses for the far-right parties. When sustained and encouraged interactions in line with the contact theory are fulfilled or when the allocation was limited to a low number of refugees, the exposure can help to reduce prejudice (Steinmayr 2021, Vertier et al. 2020).

The studies on the refugee inflows after 2014 are part of a broader literature that studies the effects of immigration on voting behavior over longer periods. Immigration increased support for far-right parties (Otto and Steinhardt 2014), especially when migrants were low-educated and from non-Western countries (Edo et al. 2019) or in regions that were economically struggling and where amenities were suffering (Halla et al. 2017, Tomberg et al. 2021). The papers relate the negative sentiments to concerns about the labor market or welfare system and to negative externalities of refugees on compositional amenities. But when the contact channel works, the reaction can also be positive (Schneider-Strawczynski 2022). The reaction of residents also depends on the type of area, where far-right and right-leaning parties gain in rural communities but suffer in the most urban municipalities (Dustmann et al. 2018).

Many of the above papers relate the stock of refugees or migrants in a municipality to voting behavior, but do not look at their housing and the locational choices. This paper takes a more nuanced approach, differentiating among kinds of housings and measuring exposure in the direct neighborhood by geo-coding their locations. Two other papers use precise housing locations. Hennig (2021) finds that, on average, there is no relation between refugee housings and voting behavior in Berlin. Ferwerda and Riaz (2022) focus on the spatial distance to the housing of voters in Berlin, Hamburg and a sample of municipalities and observe large electoral effects. This paper differs by distinguishing between types of housings, similar to Bredtmann

(2022) for municipalities, and adds their size and the composition of inhabitants as explanatory factors. It measures the persistence of the effect across multiple elections, accounts for the unbalanced distribution of housings and tests for heterogeneous effects across neighborhoods. In its empirical setup, the study contributes to a literature that uses fine-grained electoral data to measure the local reaction to political decisions such as on health care facilities (Kaba 2022, Adiguzel et al. 2022). A complementary work on anti-immigrant parties in Hamburg is by Otto and Steinhardt (2014) who focus on foreigner shares, use a different time period and work with data at the aggregated district level. Last, I suggest a hitherto under-explored channel of influence by focusing on how a biased allocation of housings might lead to right-wing gains and political repercussions for the governing party.

In summary, the paper adds to the understanding of how, even in favorable conditions of an urban environment and encouraged interactions, adverse reactions to refugees can develop. These can prevail for years, suggesting a less-optimal environment for their integration. On a broader scale, ill-done allocations can lead to electoral gains for far-right parties, resulting in negative political repercussions from more isolationist policy positions. It is therefore important to optimize the distribution and structure of housings so that refugees and residents both can benefit.

## 2 Context

### 2.1 Refugees and housings in Hamburg

The State of Hamburg is the second largest city in Germany, with a population of 1.85 million inhabitants in 2021. It has experienced several immigration episodes over the last decades, including the wars in Yugoslavia in the 1990s and of migrants with German ethnic origins after the breakdown of the former Soviet Union.<sup>3</sup> Before the migration flows in 2014, Hamburg was ahead of Berlin as the State in Germany with the highest proportion of migrants, 30.8 percent of its population having a migrant background and 14.3 percent a foreign nationality.

As in many parts of Europe, Hamburg experienced in 2014 a large and unexpected inflow of refugees. The numbers of asylum seekers in Germany who filed applications for protection increased from 48,589 in 2010 to a peak in 2016 of 745,545 and decreased later in 2021 to 190,816. Arriving refugees were distributed across the German states according to an allocation quota

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<sup>3</sup> The history of immigration to Hamburg is much older and relates to the status of Hamburg as a port city, crediting itself to be the 'gate to the world'.

called the *Königssteiner Schlüssel*,<sup>4</sup> translating into 2.53 percent of all refugees in 2016 being assigned to Hamburg. The number of assigned asylum seekers in Hamburg increased from 1,171 in 2010 to 17,512 in 2016 and later stabilized at around 4,000. Refugees came predominantly from Middle Eastern or North African countries.<sup>5</sup> In 2018, 61 percent of all refugees were male and 76 percent above 18 years old.

After their arrival, refugees had to stay between six weeks to six months in a reception center.<sup>6</sup> Reception centers had a transitory purpose before refugees moved to their own housing or follow-up accommodations provided by the government. During shortages in follow-up accommodations and in rentals on the housing market, the average duration in reception centers increased to one year. The tight housing market in Hamburg made it difficult for refugees to find their own housing and follow-up accommodations were the predominant mode of living.<sup>7</sup> Follow-up accommodations were for longer-term stays and provided more space and privacy, allowing refugees to live more independently. They also had better support programs organized by the hospitality and social management departments and more supporting volunteers.

Because of the high need for housings, especially in 2015 and 2016, and few opportunities, temporary reception centers were created in facilities such as vacant stores or containers. The public institution 'Fördern and Wohnen housed refugees and handled the management of facilities.<sup>8</sup>

In 2013, 75 refugee housings existed in Hamburg, of which 25 had a capacity of 200 inhabitants or more. In public meetings, the city informed neighbors about new housings. This study focuses on medium-sized and large refugee housings with a capacity of over 200 inhabitants. It ensures the visibility of houses in a neighborhood and of a similar opening process and excludes smaller specialized housings such as for adolescents. 88 new refugee housings opened between 2013 to 2021, comprising 31 reception centers and 57 follow-up accommodations. Figure 1 shows how housing numbers and the overall capacity reached a high point of 82 housings and a capacity of 41,662 residents in 2016 and then declined to 65 housings with a capacity of 29,257 in 2021. The creation of houses increased strongly after 2013 to up to 30 new houses in 2015 and decreased to zero in 2020-2021 (see Figure 2). New refugee housings had a mean capacity

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<sup>4</sup> The distribution for the 18 German states follows a contingent that is based 2/3 on tax income and 1/3 on population numbers

<sup>5</sup> At the end of 2017, 29.4 percent of the 54,230 registered refugees in Hamburg were from Afghanistan, 19.2 percent from Syria and 7.8 percent from Iran. But the share among new arrivals from these countries reached up to 90 percent as in December 2015.

<sup>6</sup> After 2016, all refugees got documented in the reception center of Rahlstedt before moving to other centers.

<sup>7</sup> In 2016, the equivalent of 11 percent of all refugees living in centralized housings found a place on the housing market.

<sup>8</sup> Private companies built some follow-up accommodations with the right to transform them into social housings later (17 percent between 2016-2018).



of 510 places and 45 percent remained open longer than 2021.

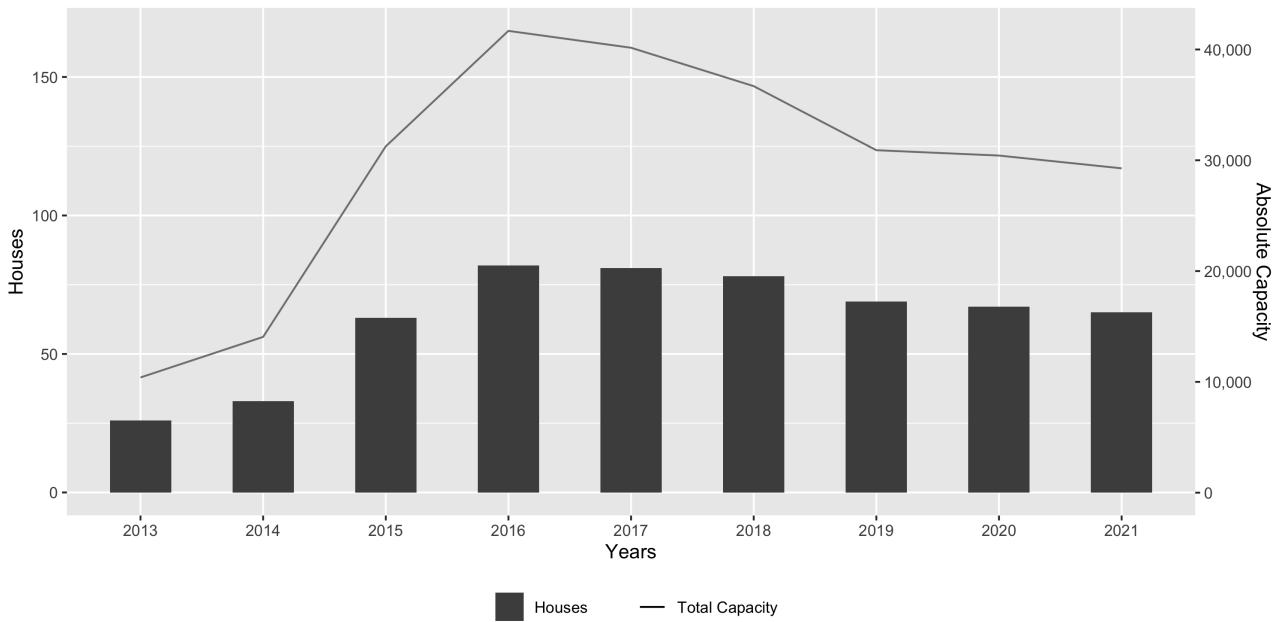


Figure 1: Refugee Housings and Capacity over time

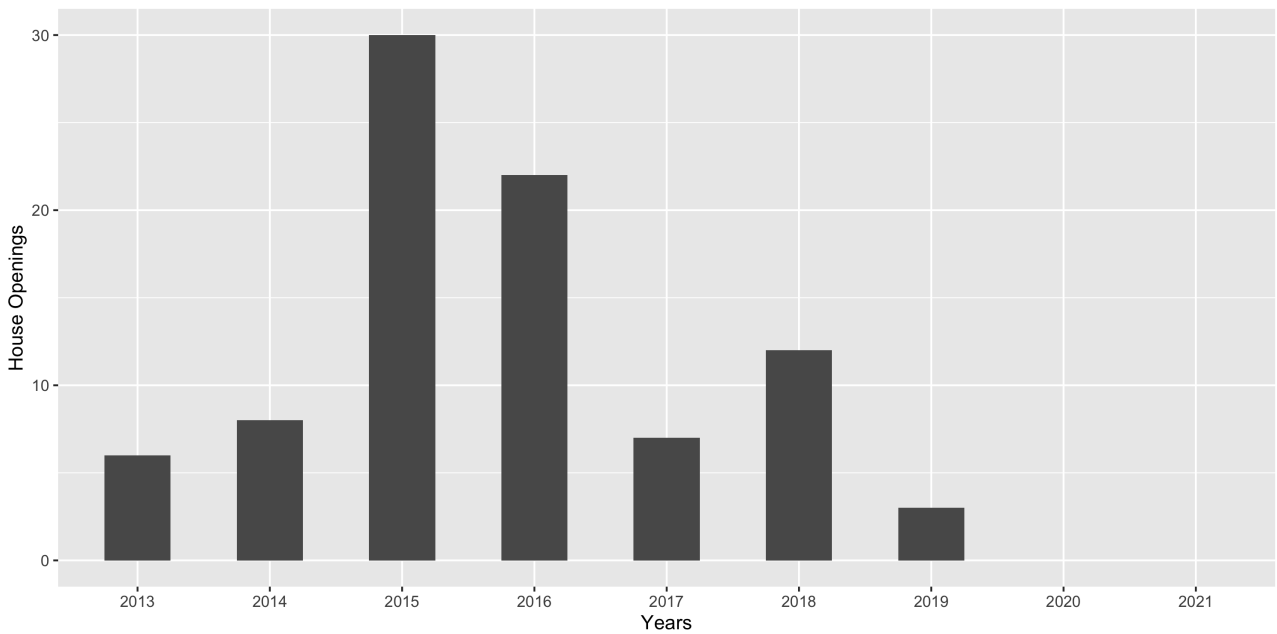


Figure 2: Openings of Refugee Housings over time

## 2.2 Political landscape

The main political party in Germany with an anti-immigrant outlook is the *Alternative für Deutschland* (AfD). It was created in 2013 in Hamburg to oppose the Euro and European integration. But under the rising refugee numbers, it adjusted its ideology to a much more critical view on immigration, turning into a party that resembled other radical-right parties in the European context (Arzheimer and Berning 2019). The AfD first entered the city parliament of Hamburg in 2015 with a vote share of 6.1 percent. In this election, it already attracted voters with a critical view on the immigration situation,<sup>9</sup> and further leveraged the salience of immigration in the 2017 national elections when the party entered the German national parliament. Other right-wing parties such as the NPD or DVU were active in Hamburg but had limited electoral success.<sup>10</sup>

The aggregated vote share of parties from the right-wing anti-immigrant party spectrum rose from lower levels in 2013 to a high point in the national election of 2017 with 8.9 percent and stabilized around 6 percent in the three elections between 2019 and 2021 (see Figure 3).<sup>11</sup> Other parties' electoral performances varied over the years and between elections. The social democratic party (*SPD*) received the most votes in the two state elections in 2015 and 2020 and held the post of the mayor over the period, first governing alone and after 2015 in a coalition with the green party (*Green*). The conservative Christian Democratic Union (*CDU*) faced a decreasing vote share, while the *Green* has gained votes and the leftist party (*LINKE*) and the liberal party (*FDP*) remained constant (Figure A1 in Appendix A.)

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<sup>9</sup> According to post-election surveys by 'Infratest dimap', the most important topic for AfD voters in 2015 with 33 percent was on foreigners and immigration.

<sup>10</sup> In the 2011 state elections, the NPD achieved 0.9 percent or the NPD and DVU combined 1 percent in the local national elections of 2009.

<sup>11</sup> These include the parties *AfD*, *DVU*, *NPD*, *3. Weg* and *PRO NRW*.

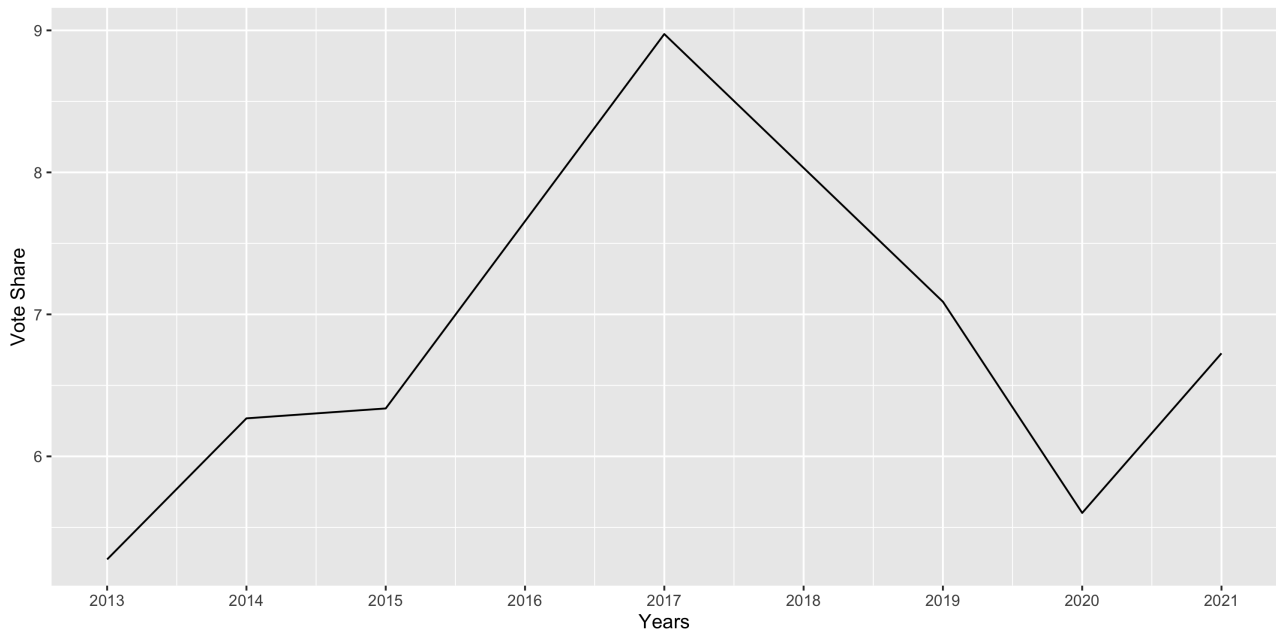


Figure 3: Right-wing vote share in Hamburg

*Note:* The voting results are from the 2013, 2017 and 2021 national elections, the 2015 and 2020 state elections and the 2014 and 2019 European elections.

Besides the political parties, local citizen initiatives from quarters (so-called 'Stadtteile') in Hamburg accompanied the housing of refugees. Created in response to the announcement of refugee housings in their area, they criticized the size of housings and their unequal distribution across the quarters, conducted demonstrations and supported court cases against their construction.<sup>12</sup> Initiatives from quarters with a large share of housings were especially vocal about the unequal distribution.<sup>13</sup> Under the umbrella association 'Hamburg for a successful integration', they also started citizen referenda. In 2017, the city of Hamburg signed a memorandum with the initiatives that included individual agreements on housings and an allocation quota applicable to the district level to achieve a balanced refugee distribution.<sup>14</sup> The rule did not apply to existing locations and can be suspended in exceptional circumstances, as in the refugee crisis during the war in Ukraine in 2022.

<sup>12</sup> Court cases often targeted the new development regulation that eased the construction of housings in areas previously designed for other purposes.

<sup>13</sup> Examples include the initiatives 'Sozial Gerechtes Eidelstedt' or 'Vorrang für Integration und Nachhaltigkeit in Rissen' who called for equal proportionate numbers of refugees across quarters, the 'Bürgerinitiative Neugraben-Fischbek' who campaigned for a limit on refugees per quarter or the 'Lebenswertes Lemsahl-Mellingstedt e.V.' who demanded that other quarters take over a larger share of refugees. See the Appendix Table A1 for the text of the declarations.

<sup>14</sup> The quota depends on the area, the number of inhabitants and indices on the social conditions and infrastructure; Parliament of the City of Hamburg, Submission 21/5231.

## 3 Empirics

### 3.1 Data

In the empirical set-up, I combine three different datasets. To document all refugee housings that opened between 2013 and 2021, I rely on available replies by the Hamburg Senate to requests of parliamentarians on refugees that were provided monthly since the beginning of 2015. They provide detailed information, including the number of registered refugees and opened and closed refugee housings. I add occasional reports on refugee housings from other parliamentary requests and monthly reports from the department responsible for refugees at the City of Hamburg on the refugee situation available since 2020. I was further provided with lists of opening and closing dates for refugee housings by 'Fördern und Wohnen'. They also shared information on the composition of inhabitants in the housings. On this basis, the data for each housing includes the opening and closing dates, the address, the capacity, if the housing is a reception center or a follow-up accommodation and the share of males, females and children. See Table B1 in Appendix B for the definition of housing characteristics.<sup>15</sup>

For electoral data, I use information on voting shares from the federal elections of 2013, 2017 and 2021, from the state elections in 2015 and 2020 and from the European elections in 2014 and 2019. For state elections, I rely on votes for the state-wide lists because they included the major parties across all voting stations.<sup>16</sup> The State Statistical Office of Hamburg provides the electoral data at the level of voting stations, of which there were 1,274 in 2013. The number of voting stations increased in later years and I harmonize the areas covered by voting stations to the boundaries of 2013 by using eligible-voter-adjusted weights. I restrict the voting data to in-person votes, because areas of in-mail voting had different sizes. Voting stations served, on average, 1,018 eligible voters, of which 410 went for in-person voting.

Figure 4 shows the voting results for the right-wing parties in the national election of 2017 when they received their highest vote share. Their success across the voting stations varied between 1.2 and 41.0 percent, with a lower vote share for the parties in the central parts of the city.

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<sup>15</sup> The follow-up housings were also open to homeless persons, but most inhabitants were refugees, by example 84.3 percent in November 2016

<sup>16</sup> In state elections, citizens vote for candidates of each electoral district and for state-wide candidates and party lists.

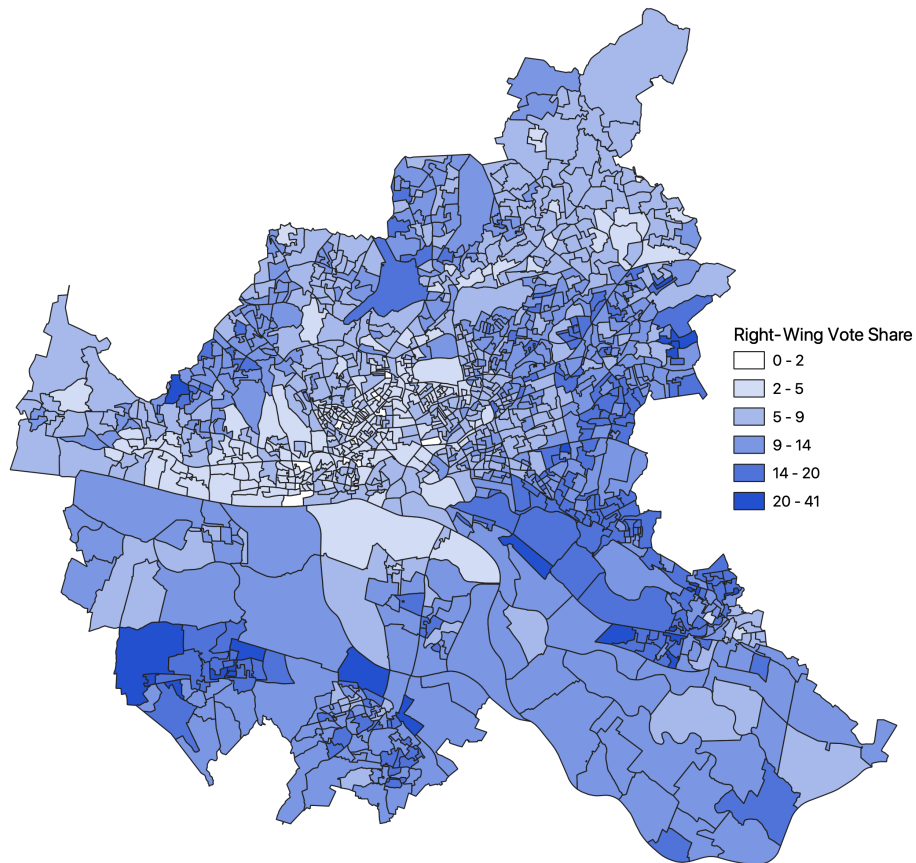


Figure 4: Right-wing vote share in the election 2017

The third dataset comprises information on population characteristics at the level of statistical units for the year 2013 ( $n=942$ ), adjusted by population weights to the geographical areas of voting stations. See Table 1 for an overview of the data and Table B1 in Appendix B for further information. The population characteristics allow to evaluate the distribution of refugee housings in relation to neighborhood characteristics and are used in the matching estimation. They include the share of youngsters and elderly, the proportion of foreigners and of inhabitants with a migrant background, the unemployment rate, the rate of persons who receive social support and the population density of the voting station area.

The idea of the empirical approach is to compare the vote share of right-wing parties in voting districts before and after the opening of a refugee housing to voting districts with no opening. It is necessary to set a distance threshold for the exposure of residents to refugee housings in their neighborhood. Treated voting station have a refugee housing either within or up to a walking distance of five minutes from the boundaries of their area, meaning 400 meters. I later use different buffers around neighborhoods to investigate how much the distance to a housing matters.

Table 1: Summary statistics

Statistic	N	Mean	St. Dev.	Min	Max
Eligible Voters	8,918	1,017	235.88	0.00	3,926
Turnout in-person voting	8,918	40.24	8.95	9.73	64.50
Right-wing vote share	8,918	6.96	3.71	0.00	42.83
Conservative-liberal vote share	8,918	24.93	11.57	0.00	72.75
SPD vote share	8,918	33.08	11.22	0.00	74.55
Green vote share	8,918	18.80	10.27	0.00	58.02
Left vote share	8,918	9.55	5.39	0.00	44.02
Population	1,274	1,398	523	3	4,679
Proportion foreign	1,274	13.28	7.53	1.35	67.45
Proportion migrant	1,274	29.18	13.70	4.40	77.87
Proportion migrant North Africa/ Middle East	1,274	2.24	1.33	0.00	11.81
Proportion migrant others	1,274	26.85	13.10	0.004	76.35
Proportion <18	1,274	15.37	4.19	2.05	31.65
Proportion >65	1,274	19.20	6.78	2.84	91.29
Unemployment rate	1,274	5.52	2.73	0.00	15.73
Social support rate	1,274	9.29	7.25	0.20	39.64
Density	1,274	0.76	0.61	0.004	3.01

*Note:* Population characteristics for the year 2013, voting results for 2013 to 2021. Vote shares of parties are provided in percent. The Conservative-liberal parties include the CDU and FDP. The right-wing parties include the AfD, DVU, NPD, 3. Weg and PRO NRW. In the subgroups of migrants a few persons are missing for privacy reasons.

Figure 5 shows the location of the 49 new refugee housings that were active during the national election of 2017 or opened within two months after. The two-month delay considers that the public announcement of housings before their opening can already affect voting decisions. The housings are spread out across the city, though there are less in the densely populated areas in the center. In anticipation of the empirical analysis which will focus on recent openings before elections, I separate them into the 19 houses opened over 2 years before the election and the 30 houses opened between two years before until two months after the election. The marked areas present the 101 treated units in 2017 in whose vicinity a housing recently opened or was announced.

Over the period between 2013 and 2021, 261 of the 1,274 voting station units were treated at some point, including ones where the housing closed again or a second or more housings opened.

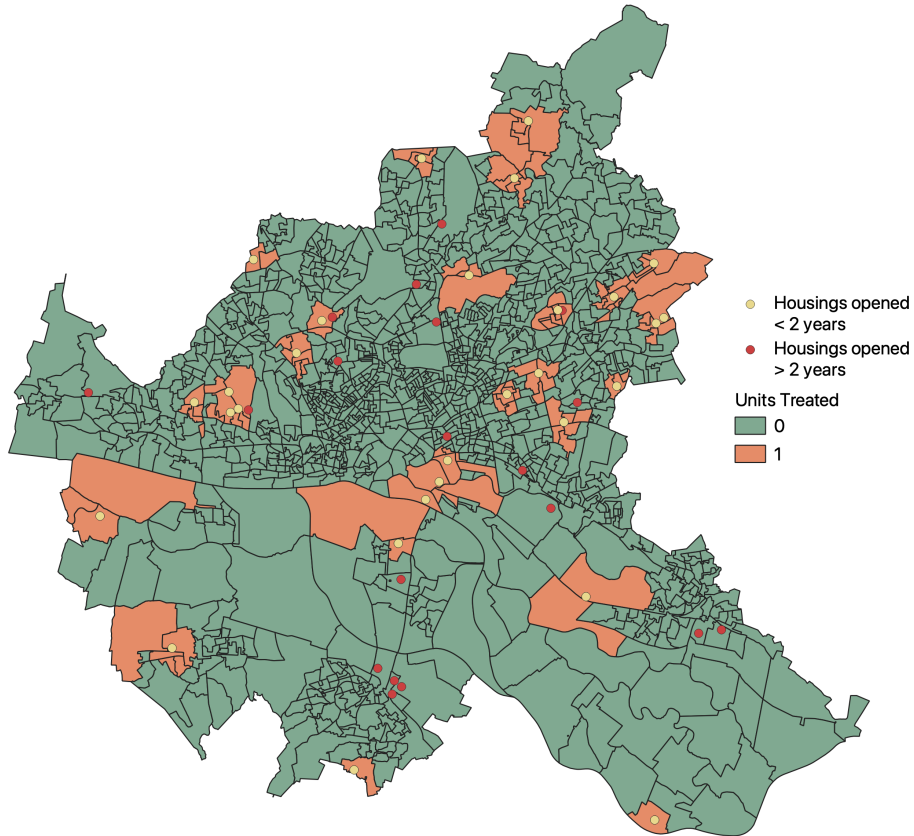


Figure 5: Refugee housings and treated voting station areas in 2017

### 3.2 Empirical approach

In the empirical analysis, I will measure how the opening of a refugee housing affects the right-wing vote share. In specification 1, the time dimension  $t$  represents the seven elections between 2013 and 2021 and  $i$  stands for the voting station unit. The outcome variable  $y_{it}$  is the vote share of all right-wing anti-immigrant parties in each election at the voting station level. The treatment  $d_{it}$  tells if in or nearby a voting station a refugee housing has opened in the two years before until two months after an election. Elections had different frequencies, which resulted in varying time intervals. The average interval between elections was 487 days and I use a two-year lag to capture the effect of a wide range of openings between elections.<sup>17</sup> The specification has varying treatment definitions. First, I look at all newly opened refugee housings, meaning that units count as treated whenever any housing has opened around an election. The second treatment includes only the first openings of any refugee housing in a polling station area,

<sup>17</sup> Only between the elections of 2015 and 2017 the gap was longer. The results are qualitatively similar if I extend the lag to 952 days to cover all openings.

meaning that I discard openings of more housings while a previous one is open. However, if the first housing has closed, a new opening will count as a treatment. This strategy is necessary to implement a matching approach and compare treated and non-treated units. In later sections, I will also focus on openings of refugee housings in neighborhoods where already one or more housing exist.

The regressions include time fixed effects  $\delta_t$  to account for overall changes in voting shares across elections and voting station fixed effects  $\Psi_i$  for different voting inclinations across neighborhoods. Standard errors are clustered at the voting station level. The coefficient of interest  $\beta$  measures the change in the vote share of right-wing parties in neighborhoods with an opened refugee housing compared to all other units.

$$y_{it} = \beta d_{it} + \Psi_i + \delta_t + u_{it} \quad (1)$$

Many papers use a quasi-experimental setting according to dispersion policies (Campo et al. 2021) and arbitrary allocations because of housing shortages that resulted in unbiased distributions (Bredtmann 2022, Hennig 2021), or relied on variation from pre-existing accommodations that could serve as refugee housings (Steinmayr 2021, Gamalerio et al. 2022). In Germany, an allocation quota applies to the state level and, after 2017, also to the district level in Hamburg, but not to quarters or neighborhoods. This can be a problem for the regression if the allocation of refugee housings to neighborhoods is related to socio-economic characteristics of the population, which in turn can affect the voting potential of right-wing parties. Therefore, I supplement the above specification with a matching estimation.

First, I compare the population characteristics of voting stations in 2013 that became treated later with ones that remained untreated. There are considerable differences between the two groups (Table 2). Refugee housings are more often in or close to neighborhoods with a higher share of foreigners and of migrants, suffer from a higher unemployment rate and a higher share of people relying on social support and are less densely populated. The distribution of refugee housings was unbalanced in relation to neighborhood characteristics and I examine in later sections if the allocation bias can play a role in explaining the reaction of residents to new housings.

To even out these imbalances, I match the (prospective) treated units with each one untreated comparison unit that resembles it as closely as possible, based on the observable characteristics. I apply a nearest-neighbor matching using a propensity score derived from a *logit* regression of the treatment status on covariates with 1:1 neighbors and no replacements.

The second part of Table 2 shows that the matching is effective in eliminating any significant



differences between the two groups and I rely the matched sample in the empirical analysis.

Table 2: Difference treated and untreated units for 2013

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	15.61	15.31	0.30	1.00
Proportion > 65	19.12	19.22	-0.10	-0.21
Proportion foreign	15.20	12.78	2.42	4.67***
Proportion migrant	31.86	28.49	3.37	3.56***
Unemployment rate	6.02	5.38	0.64	3.29**
Social support rate	10.41	9.00	1.41	2.78**
Density	0.53	0.82	-0.29	-7.02***

(a) Full sample, n=1274

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	15.61	15.75	-0.14	-0.39
Proportion > 65	19.12	19.39	-0.27	-0.53
Proportion foreign	15.20	14.30	0.90	1.19
Proportion migrant	31.86	30.99	0.87	0.72
Unemployment rate	6.02	5.96	0.06	0.02
Social support rate	10.41	10.38	0.03	0.04
Density	0.53	0.51	0.02	0.46

(b) After matching, n=522

### 3.3 Results

Table 3 presents the results from specification 1, in the first two columns for the full sample, differentiated by all openings (1) and only the first new opening for each unit (2), and in column (3) for the first new opening based on the sample of matched observations.<sup>18</sup> The opening of a refugee housing led to an increase in the vote share of right-wing parties in the elections over the next two years. The difference of 0.46 percentage points accounts for 7.3 percent of their overall vote share in 2015 or 5.2 percent in 2017. For first openings, the effect is 0.40 percentage points and the coefficient from the matched approach is at 0.31 percentage points and remains highly significant.

I then use the first opening of refugee housings in a neighborhood to analyze its political impact in an event-study setting. Units count as treated as long as the housing is open. It provides information on the persistence of an electoral effect. Methodologically, it allows to check for pre-trends to address concerns that treated units are on different voting trajectories

<sup>18</sup> The number of houses used for treatments can be lower than the overall number of new houses because some opened during the same pre-election period in a neighborhood. Housings for treatment were first selected by year and then by the larger capacity.

Table 3: Main Regression

	<i>Dependent variable:</i>		
	Vote share right-wing		
	(1)	(2)	(3)
	(All openings )	(First opening)	(First opening matching)
Housing	0.463*** (0.113)	0.398*** (0.120)	0.312*** (0.112)
Observations	8,918	8,918	3,654
F Statistic	17.073***	12.255***	6.502**
Number refugee houses	71	66	66
Number treatments	402	366	366
Number treated units	261	261	261

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

in the period before the house opening. The event-study applies to both the full sample of first openings and to the matched observations and includes election and voting station fixed effects. Figure 6 shows that the increase in the right-wing vote share as a reaction to refugee housings remains at around 0.5 percentage points for elections in the following six years, even though it becomes statistically not distinguishable from zero in year 5-6. The results from the estimation based on the matched sample are slightly lower, suggesting that voting areas with housings had characteristics that made them more prone to vote for a right-wing party. Openings were not preceded by an already rising trend in right-wing votes, as there are no significant differences between pre-trends of treated and untreated units in the four years before.

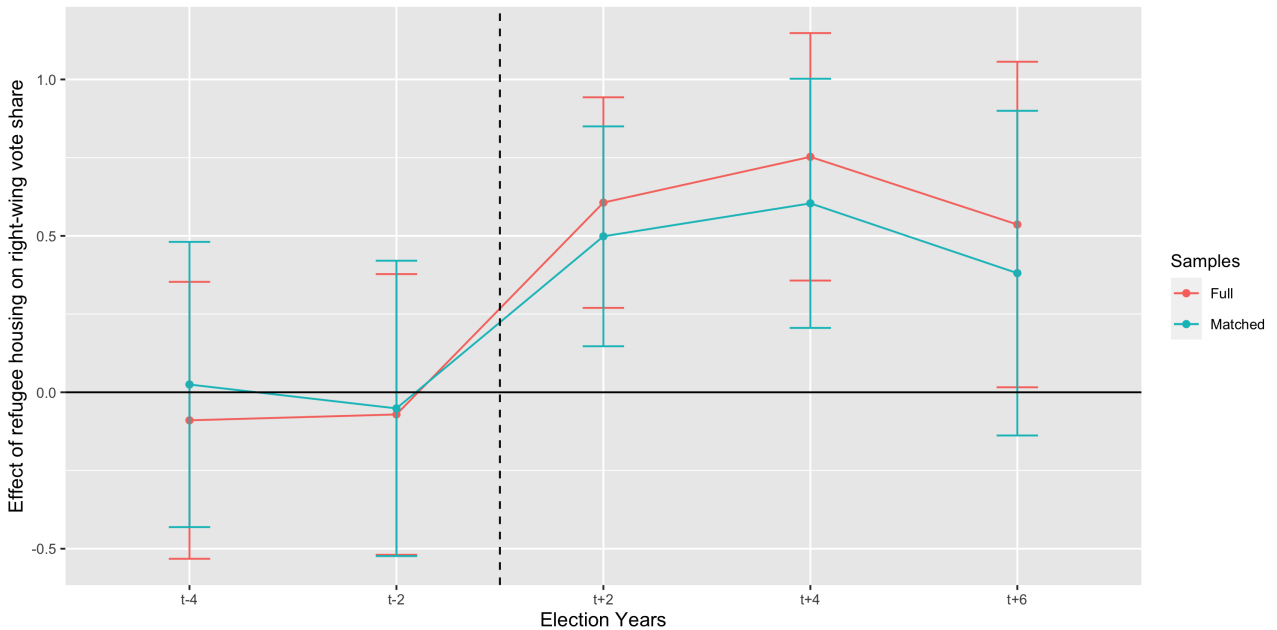


Figure 6: Right-wing Vote Share effect of refugee housing

Next, I test if the effect depends on the size of the housing. I use specification 1 with all openings, but define two treatments. In one, neighborhoods are treated if a housing with a capacity of over 500 inhabitants opens nearby, and a second one for medium-sized houses with between 200 and 500 inhabitants. In Table 4, the effect is significant for large housings with an effect of 1.07 percentage points, while for medium-sized ones, it is not distinguishable from zero.

Table 4: Differentiated by large and medium-sized housings

	<i>Dependent variable:</i>
	Vote share right-wing
	(1)
Medium housing	0.187 (0.131)
Large housing	1.074*** (0.231)
Observations	8,918
F Statistic	17.700*** (df = 2; 7636)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

It could be once more that biases in the allocation of housings to areas that exhibit characteristics associated with right-wing voting explain the electoral effects. I run two regressions using first openings, but limit the treatment to large or medium-sized housings. The results are very similar to the regression with two treatments, see Table C3 in Appendix C. Then, I check the balance of each kind of treatment for population characteristics across the (un-)treated voting stations. The distribution of large housings is even more skewed towards neighborhoods in weaker economic conditions and a higher foreigner and migrant share (see Table C1 in Appendix C). It is more balanced out for medium-sized housings, though they are still more prominent in areas with a higher foreigner share and lower population densities. Applying the same matching approach as above shows that the effect of large housings is driven by their size and not their location. They exhibit a significant, albeit slightly lower, positive effect on right-wing votes, while medium-sized housings have no effect. Large housings also lead to a persistent positive effect on the right-wing vote share of about 1 percentage point for the next six years (in Figure C1 in Appendix C).

However, new reception centers have on average a larger capacity of 619 inhabitants compared to follow-up refugee housings with 450, and the effect could be driven by reception centers being more negatively perceived by neighbors. Indeed, the larger fluctuation of inhabitants, fewer opportunities for sustained interactions and fewer engagement by neighbors suggest less conducive conditions. I differentiate first among all reception centers (*EA*) and follow-up accommodations (*FUA*) and then separate them by capacity. On average, the opening of an EA leads to a more adverse reaction, though the effect of new FUAs is also significant (Table 5).

But considering the capacities, large reception centers and follow-up accommodations both create a strong adverse reaction, raising the right-wing vote share by about 1.0 percentage point. For both kinds of small housings, the effect is not distinguishable from zero.<sup>19</sup>

Table 5: Different types of housings

	<i>Dependent variable:</i>	
	Vote share right-wing	
	(1)	(2)
EA	0.738** (0.350)	
FUA	0.419*** (0.125)	
Medium EA		0.266 (0.599)
Medium FUA		0.180 (0.132)
Large EA		0.990** (0.430)
Large FUA		1.127*** (0.257)
Observations	8,918	8,918
F Statistic	10.120***	8.887***

*Note:* The regressions include all openings of refugee housings. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Another factor that can influence the reaction of neighbors to newcomers is the composition of inhabitants in refugee housings. Male refugees are often perceived as a larger cultural and security threat (Ward 2019), and incidents such as the assault of refugees in Cologne 2015 have led to their negative portrayal in the media. I define a high visibility of men as having over two men out of three inhabitants, which applies to 12 out of the 88 housings. I test for different effects for housings with a *high share men* and *non-high share men* and separate again according to capacity.

In Table 6, housings with a high share of male inhabitants lead to a stronger negative reaction in a neighborhood, while it remains negative and significant for housings with more females and children. For medium-sized housings, only facilities with many male inhabitants result in voting gains for right-wing parties, though the result is weakly significant. The effect is stronger for large housings of both types of compositions and amplified for many male inhabitants.

Does it matter if residents live very close-by to a housing or further away but still nearby? I supplement the treatment of a direct exposure to a housing with buffers between 400 to

<sup>19</sup> I do not implement a matching approach for the finer typology of housings, because the number of observations among some subgroups is small, such as 18 voting stations treated with a medium-sized reception center.

Table 6: Different composition in housings

	<i>Dependent variable:</i>	
	Vote share right-wing	
	(1)	(2)
High share men	0.958*** (0.273)	
Non-high share men	0.396*** (0.122)	
Medium housing w/high share men		0.565* (0.332)
Medium housing w/lower share men		0.137 (0.139)
Large housing w/high share men		1.382*** (0.388)
Large housing w/lower share men		1.008*** (0.259)
Observations	8,918	8,918
F Statistic	9.946***	9.314***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

800 meters around a voting district and between 800 to 1200 meters. The results show the clear effect is limited to direct neighbors and dissipates with an increasing distance, becoming insignificant at 5 percent for neighbors living in areas further away (Table C4 in Appendix C).

To summarize, the opening of refugee housings led to electoral gains for right-wing anti-immigrant parties in the vicinity of the facility. The effects are persistent for the six years after an opening, driven by large reception centers and follow-up accommodations and amplified for facilities with a high share of men. They are most pronounced for direct neighbors and are not explained by the different characteristics of the treated neighborhoods.

### Channel of influence

To explore explanations for the adverse reaction to the opening of refugee housings, I measure if the effect differs depending on neighborhood characteristics. I first test for heterogeneities according to the share of the elderly among residents and the share of foreigners and migrant groups. I also capture the economic situation by including the unemployment rate and the share of people who receive social support and add the density of the area. The treatment of a new housing is interacted with a binary indicator that takes a value of one for voting stations that are in the top third range for each indicator and zero for moderate and low values.

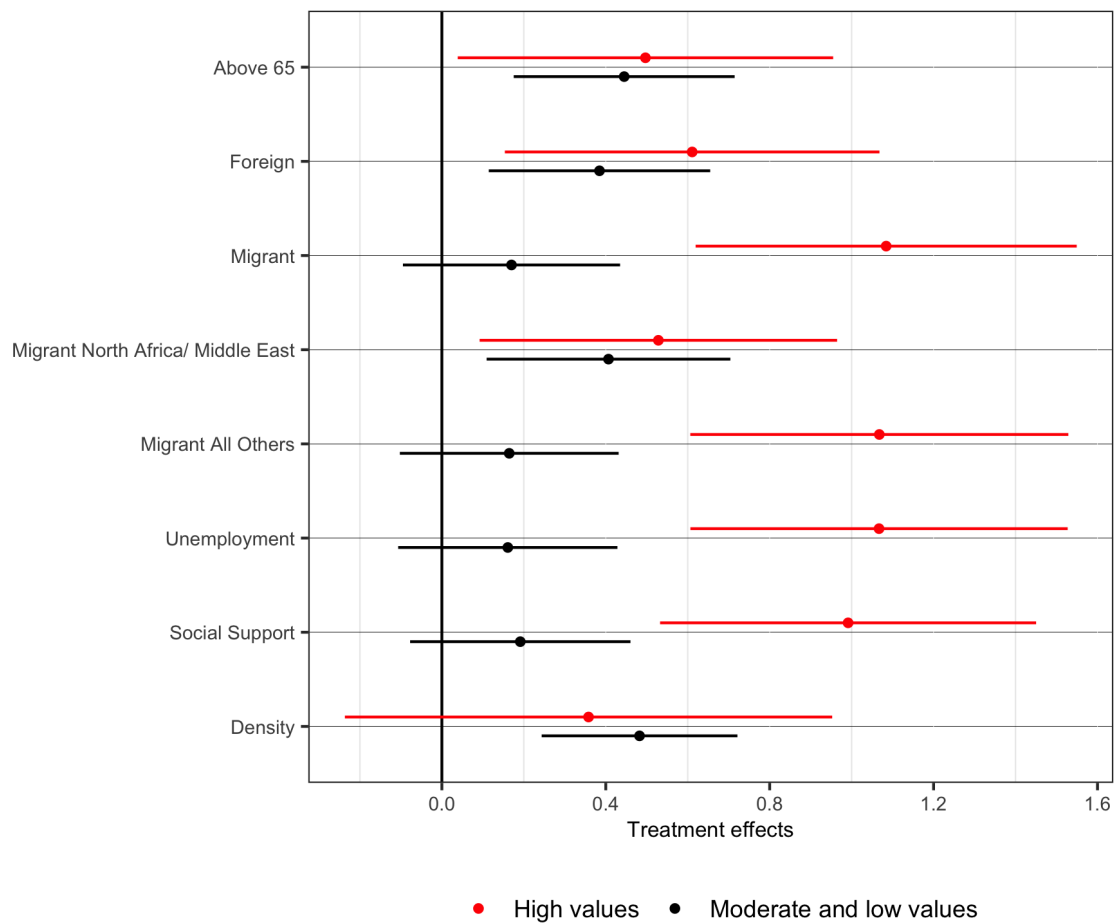


Figure 7: Treatment effect by different voting station areas' characteristics, 66th percentile

Figure 7 portrays the effects of refugee housings in areas with different population characteristics. The opening of housings leads to a significantly higher gain in the vote share of right-wing parties in areas with high rates of unemployment and social support, while it is not distinguishable from zero for better-off areas. This lends support to the argument that economic grievances or competition for social services provided at the neighborhood level could be one explanatory factor. Further, the effect is stronger in neighborhoods with a high migrant share, but there is no significant difference between areas with a high and a lower share of

foreigners. The composition of the groups of migrants and foreigners differs substantially. For example, residents with an origin in the former Soviet Republics make up 13.4 of the migrant but only 6.9 percent of the foreigner share. Inflows of refugees can lead to lower wages for existing migrants (Ottaviano and Peri 2012) and they can be competitors for jobs or amenities. Previous migrants can also fear being subsumed under a public backlash against all migrants. But migrants of a similar origin as refugees could also have a more positive outlook on the newcomers (Deole and Huang 2021). I distinguish between migrants of similar origins as most of the newly arrived refugees, meaning Western Asia and North Africa and migrants of other backgrounds.<sup>20</sup> While the negative reaction does not differ between areas with many or few migrants from a similar origin, it is much stronger in areas with many migrants of other origin countries. A varying share of elderly inhabitants or areas with different densities are not related to changes in the voting behavior.

While a more negative reaction of economically disadvantaged areas and with many other migrants suggests competitive concerns or grievances as explanations, the biased allocation of housings to these areas could be another contributing factor. New housings can trigger frustration if residents feel to carry a relatively larger burden than areas with other socio-economic characteristics. Housing refugees can come with increases in the crime rate (Dehos 2021) or declining housing prices and a worsening quality of neighborhood amenities (Hennig 2021). One way to protest against the allocation policy is by voting for anti-immigrant right-wing parties. To dig further into this channel, I examine if the reaction to the opening of a refugee housing depends on the stock of existing refugee housings that were newly opened in the surrounding quarter, including housings with below 200 capacity. Hamburg consists of 104 quarters that are based on historical origins and are well known to its residents. Many of the citizen initiatives around refugee housings were related to quarters and referred to their number of housed refugees in public debates. The measure is operationalized as the capacity of all other refugee housings per capita on the quarter level (see Figure D1 in Appendix D for the distribution of refugees per capita in 2017). I introduce a split at the 66th percentile for a high and medium or low allocation of refugee housings for each election year and interact this variable with the treatment indicator of a new house opening in a neighborhood.

If new housings in a burdened area act as a trigger, I also expect a stronger negative response of residents to the second or more openings in a neighborhood. I define the treatment as the opening of a second or higher refugee housings in a neighborhood when another housing that was opened since 2013 is still active in the year of an election. An additional indicator measures the effect of first openings of houses in a voting station area.

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<sup>20</sup> See for the composition of migrant groups Table B1 in Appendix B.

Table 7 shows that the negative reaction to the opening of a housing is stronger for neighborhoods in quarters with a relatively large share of new housings compared to areas with fewer houses. The result is robust to all openings, first openings and for the matched sample. While other openings and areas with a high share of refugee housings positively affect the vote shares of right-wing parties, the effects are not distinguishable from zero for the matched sample.

Table 7: Interaction with stock of refugee housings at 66th percentile

	<i>Dependent variable:</i>		
	(Vote share right-wing)		
	(1)	(2)	(3)
	(All openings)	(Only first)	(Only first, matched)
Housing	0.292** (0.146)	0.255* (0.151)	0.063 (0.150)
High housing quarter share	0.243** (0.101)	0.255** (0.100)	-0.053 (0.180)
Housing X high housing quarter share	0.660** (0.263)	0.716*** (0.244)	0.982*** (0.271)
Observations	8,918	8,918	3,654
F Statistic	14.182***	12.575***	6.263***

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The reaction to second or more housings in a direct neighborhood is considerably larger than for first openings (see Table D1 in Appendix D). While the effect remains significant for the opening of first housings, the stronger effect underlines how more housings increase the adverse reaction.

If voters exposed to new refugee housings were to express their dissatisfaction with the distribution, one would expect that the party responsible for the policy suffered at the ballot. I investigate the electoral performance of the other major parties, using specification 1 and interchanging the right-wing vote share with the vote share of the social democrats, the green party, the conservative and liberal parties, the leftist party and the turnout of in-person voters. The increases in the vote share of the right-wing parties come only from the ruling social democrats who suffered electoral losses of about 0.67 percentage points in the neighborhoods around refugee housings (see Table 8). There was no change in the proportion of eligible residents who went for in-person voting, and there were no differences in the vote shares of the other parties. The finding of the electoral losses of the ruling party together with the stronger reaction of residents in areas with many housings point in the direction that voters perceived the elections as an opportunity to voice their frustration with the biased allocation of housings.



Table 8: Other parties

	<i>Dependent variable:</i>				
	Vote share SPD	Vote share Green	Vote share Conservative & Liberal	Vote share Left	Turnout In-person voting
	(1)	(2)	(3)	(4)	(5)
Housing (all)	-0.686*** (0.201)	0.155 (0.178)	0.204 (0.178)	0.005 (0.114)	0.113 (0.187)
Housing (first)	-0.667*** (0.203)	0.123 (0.176)	0.202 (0.177)	0.052 (0.121)	0.113 (0.191)
Housing (match)	-0.670*** (0.207)	0.093 (0.180)	0.250 (0.183)	0.113 (0.121)	0.259 (0.192)
Observations (all)	8,918	8,918	8,918	8,918	8,918
Observations (first)	8,918	8,918	8,918	8,918	8,918
Observations (match)	3,654	3,654	3,654	3,654	3,654

*Note:* The three rows show the effect of the opening of refugee housings. The upper, and respectively the middle part, use the full sample for all new refugee housings, or all first openings of new refugee housings in a voting station area. The lower part uses the matched sample for all first openings in a voting station area. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

### *Robustness check*

Another test to see if the matching approach worked is to compare how likely the prospective treated neighborhoods were to vote for right-wing parties even in the absence of an opening. I relate their treatment after 2013 to the available voting results of right-wing parties in earlier elections when Hamburg did not experience similar refugee inflows. I include the national elections of 2009 and 2011 and the state election of 2011 and add a combined sample.<sup>21</sup>

The treated voting areas had for all previous elections a higher inclination to vote for right-wing parties (see Table E1 in Appendix E). It shows again the unequal allocation of housings to certain kinds of neighborhoods. But no significant differences appear for the sample of matched observations, garnering further support that the matching was successful.

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<sup>21</sup> No maps of pre-2009 elections exist with the State Statistical Office in Hamburg.

## 4 Discussion and conclusion

The paper shows that the opening of refugee housings led to an increase in the anti-immigrant right-wing vote share in the surrounding neighborhoods of Hamburg. The effect is driven by large reception centers and follow-up accommodations, demonstrates persistence for the six years after the opening and is amplified for housings with a high share of men. Areas in a worse economic situation and with a high share of migrants from different origin countries than refugees react more strongly to the opening of housings. Further, the effect is most relevant for quarters with a relatively high allocation of refugee housings, is stronger for second and more openings in a neighborhood, and comes to the detriment of the ruling party.

How can one reconcile the finding of a negative reaction by neighbors in Hamburg with weaker (Ferwerda and Riaz 2022) or no results (Hennig 2021) for neighborhoods in Berlin? Because of the allocation quota, both cities had to host a similar number of refugees per capita.<sup>22</sup> They also have similar shares of foreigners and migrants.<sup>23</sup> A tight housing market plagued both cities, and they had problems finding suitable facilities to house refugees. But concerns over an unequal distribution were more prevalent in Hamburg and residents voicing their frustration at the ballot could be one factor explaining the different reaction among the two cities.

However, to explain the differences, a systematic study across cities would be helpful. Also, this study, while looking at longer periods than previous papers on the refugee inflow after 2013, is limited to observing the medium-term reaction of neighbors. It is telling that the negative effect prevails despite all the efforts by public authority to integrate refugees in their neighborhood and the engagement of citizens.

With these results in sight, one recommendation is to restrict housings to medium or small sizes and not have a too large share of male inhabitants. However, this can increase costs in building and maintaining refugee accommodations. One has to consider the inherent trade-off that the distribution of refugee housings entails. Opening new facilities in areas with more space, more suitable facilities and better conditions for integration and engaged locals can come with fewer costs for public authority. But these neighborhoods can have common characteristics that might make residents perceive other areas to avoid their responsibility. If a biased distribution leads to frustration and political resentment of residents, it can worsen the conditions for a

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<sup>22</sup> Over the period from 2014 to 2017, Hamburg hosted 2.26 new refugees per 100 inhabitants and Berlin 2.28 per 100 inhabitants

<sup>23</sup> Berlin and, respectively, Hamburg had a foreigner share of 15.5 percent, or 14.7 percent, and a migrant share of 29.9 percent, or 33.4 percent, in 2015 (BMI 2016).

successful integration of migrants and harm the governing parties at elections.

One solution to this problem could be to reward neighborhoods or quarters that are willing to host many refugee housings. The Italian case might be a good example, where local governments bid in tenders for housings that come with financial support and where this has led to a positive sentiment towards refugees (Gamalerio et al. 2022). An alternative could be a quota trading mechanism for refugee housings similar to one suggested for distributing refugees across European countries (Fernández-Huertas Moraga and Rapoport 2014). At the city level, each quarter was to receive a share of houses and quarters with a lower inclination to build such housings could buy the quota from others that have fewer problems hosting refugees. It would, though, require suitable administrative structures. Also, in times of duress and large unexpected inflows of refugees, a channeling of funds from the State might be better. These funds should be besides eventual financial support that is directed at the support and integration of refugees in the neighborhood.

The concern about voting gains of right-wing parties around housings might lessen when one sees that it is limited to areas just around housings and explains only a part of the overall electoral success of anti-immigrant parties. But as the voting behavior can reflect the attitude developing around refugees by residents and not all negatively inclined voters might switch to a right-wing party, it can create worry of a negative sentiment around housings. This can be costly for a society, as it is one factor that can inhibit the integration success of refugees and threaten the cohesion of a society (Aksoy et al. 2020).

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# Appendix

## Appendix A: Context of housings and politics

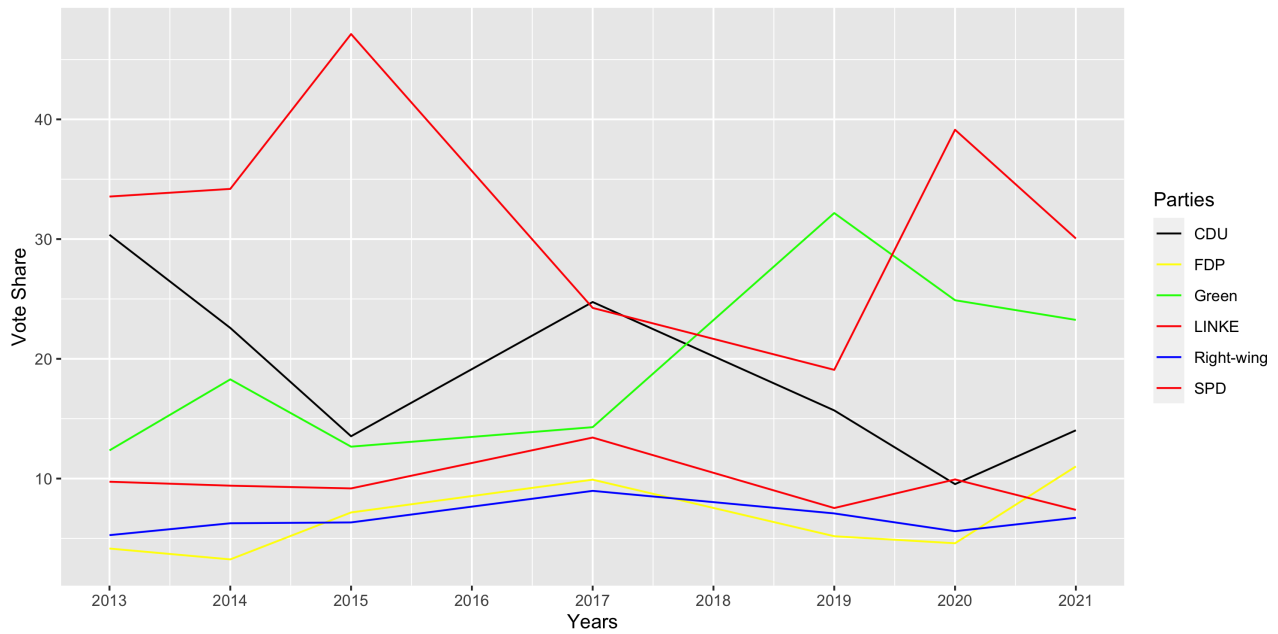


Figure A1: Vote share all major parties in Hamburg

*Note:* The voting results are from the 2013, 2017 and 2021 national elections, the 2015 and 2020 state elections and the 2014 and 2019 European elections.

Table A1: Examples of Initiative Declarations

Initiatives	Declarations
Sozial Gerechtes Eidelstedt	<i>Our goal is to provide small-scale, balanced housing for refugees throughout the city. All parts of the city should make their fair contribution to the provision of permanent housing for refugees. From the beginning, there should be a mix of refugees and locals. We feel committed to the vote of 26,000 Hamburg citizens and in particular 2,800 Eimsbüttlers, who have spoken out in favor of small-scale housing with their signatures for the popular initiative 'Hamburg for Good Integration' in 2016. Source: <a href="https://www.soziales-eidelstedt.de/">https://www.soziales-eidelstedt.de/</a></i>
Vorrang für Integration und Nachhaltigkeit in Rissen (VIN-Rissen)	<i>Equal and realistic proportions of refugees and district residents ensure that the integration challenges are distributed evenly among the quarters. This is fair and creates additional solidarity. VIN-Rissen therefore calls for the creation of a Hamburg distribution key that organizes the distribution on the basis of the population distribution in Hamburg's quarters and taking into account other integration aspects (e.g. proximity of jobs, infrastructures, population structure, city planning and refugee structure, etc.). Source: <a href="https://www.vin-rissen.del">https://www.vin-rissen.del</a></i>
Bürgerinitiative Neugraben-Fischbek	<i>Core requirements: A ceiling of 1,500 refugees for the Neugraben-Fischbek district. A fair distribution of refugees across all 104 districts of Hamburg. Source: Bürgerinitiative Neugraben-Fischbek</i>
Lebenswertes Lemsahl-Mellingstedt e.V.	<i>Integration of the refugees coming to us can only take place in small neighborhoods adapted to local conditions, based on the already existing population size and local infrastructure...The size of the Central Initial Reception at Fiersbarg with over 1000 places, which was planned for Lemsahl-Mellingstedt at that time, was completely oversized and had led to a refugee rate of over 15... other parts of the city, which did not have any accommodations yet, were also the next to go. Source: <a href="http://www.lebenswertes-lemsahl.de/index.php">http://www.lebenswertes-lemsahl.de/index.php</a></i>



## Appendix B: Additional variable explanations

Table B1: Information housing and selected neighborhood characteristics

Variables	Explanation
<b>Housing characteristics</b>	
Opening and closing date	Month and year the housing was opened or closed
Address of housing	Geo-coded location in longitude and latitude
Capacity	The capacity of the refugee housing
Type of housing	Reception Center (EA) or Follow-up accommodation (FUA)
Composition in refugee housings	Share of men, female and children. The information was available for one time during the period of observation for 39 houses, on a yearly basis for 48 houses and unavailable for 1 house. For houses with variation over time, the within-standard deviation of the share of men is 5.97, suggesting a stable composition within houses. To get cross-sectional information on the share of men, I use the composition in houses at the year of their opening and the available information for the other houses. The house with missing information is not used in a treatment as it opens in the same pre-election period and nearby another housing and is of lower capacity.
<b>Variables</b>	
Proportion migrant North Africa/ Middle East (equivalent with Western Asia)	Countries: Egypt, Algeria, Libya, Morocco, Sudan, Tunisia, Ethiopia, Eritrea, Djibouti, Mali, Mauritania, Niger, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen, Armenia, Azerbaijan, Georgia, Iraq, Israel, Jordan, Lebanon, Syria, Iran, Cyprus. The Statistical Office of Hamburg provides information on migrant origin on the level of the statistical sectors for regions, here for the country groups of North Africa and Western Asia.

## Appendix C: Additional main results

Table C1: Difference treated and untreated units for 2013, >500 capacity

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	16.19	15.30	0.89	2.03**
Proportion > 65	18.70	19.24	-0.54	-0.75
Proportion foreign	17.55	12.91	4.64	5.99***
Proportion migrant	36.08	28.59	7.49	5.30***
Unemployment rate	6.52	5.44	1.08	3.80***
Social support rate	11.80	9.08	2.72	3.62***
Density	0.43	0.79	-0.36	-5.73***

(a) Full sample, n=1274

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	16.19	16.27	-0.08	-0.14
Proportion > 65	18.70	20.05	-1.35	1.53
Proportion foreign	17.55	15.96	1.59	1.10
Proportion migrant	36.08	34.67	1.41	0.66
Unemployment rate	6.52	6.19	0.33	0.80
Social support rate	11.80	10.83	0.97	0.92
Density	0.43	0.39	0.04	0.72

(b) After matching, n=200

Table C2: Difference treated and untreated units for 2013, <500 capacity

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	15.19	15.41	-0.22	-0.67
Proportion > 65	19.01	19.23	-0.22	-0.41
Proportion foreign	14.86	12.99	1.87	3.18**
Proportion migrant	30.61	28.92	1.69	1.59
Unemployment rate	5.81	5.47	0.34	1.59
Social support rate	9.79	9.21	0.58	1.03
Density	0.55	0.80	-0.25	-5.21***

(a) Full sample, n=1274

Variable	Treated	Untreated	Difference	t-value
Proportion < 18	15.19	15.31	-0.12	-0.28
Proportion > 65	19.01	19.31	-0.30	-0.48
Proportion foreign	14.86	14.03	0.83	0.95
Proportion migrant	30.61	30.41	0.20	0.15
Unemployment rate	5.81	5.70	0.11	0.42
Social support rate	9.79	9.51	0.28	0.40
Density	0.55	0.52	0.03	0.62

(b) After matching, n=384

Table C3: Only first treatment new

	<i>Dependent variable:</i>			
	Vote share right-wing			
	(1)	(2)	(3)	(4)
	(>500 capacity)	(<500 capacity)	(>500 capacity matched)	(<500 capacity matched)
Housing	1.102*** (0.234)	0.215 (0.135)	0.738*** (0.238)	0.164 (0.137)
Observations	8,918	8,918	1,400	2,688
F Statistic	33.222***	2.712*	9.694***	1.337
Number refugee houses	27	44	27	44
Number treated units	122	278	122	278

*Note:* Regression (1), and respectively regression (2), use the full sample for all first openings in a voting station unit of houses with above 500 capacity, or below 500 capacity. Regression (3) and respectively (4), use the matched sample for all first openings in a voting station unit of houses with above 500 capacity, or below 500 capacity \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

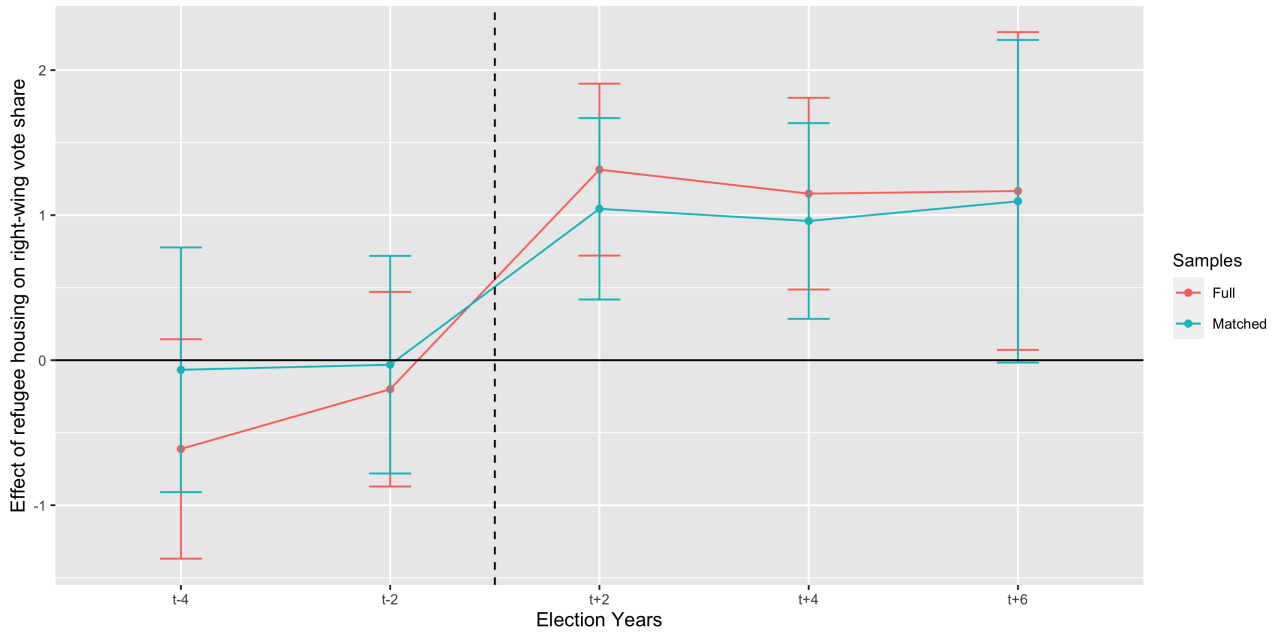


Figure C1: Right-wing Vote Share effect of refugee housing, above 500 capacity

Table C4: Varying buffers with separated samples

<i>Dependent variable:</i>	
Vote share right-wing	
(1)	
below 400m	0.459*** (0.112)
400m - 800m	0.190* (0.103)
800m - 1200m	0.161* (0.095)
Observations	8,918
F Statistic	8.122***

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Appendix D: Channels of influence

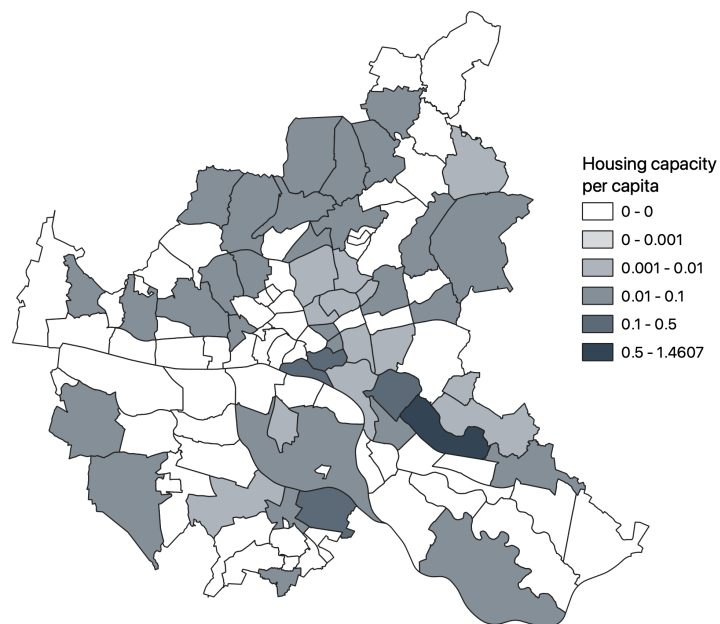


Figure D1: Distribution refugees per capita across Stadtteile 2017

Table D1: Second openings

	<i>Dependent variable:</i>	
	Vote share right-wing	
	(1)	(2)
First opening		0.368*** (0.118)
Second and higher opening	1.158*** (0.449)	1.247*** (0.445)
Observations	8,918	8,918
F Statistic	15.264***	12.596***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

## Appendix E: Robustness checks

Table E1: Ex-ante treatment effect

	<i>Dependent variable:</i>			
	Vote share right-wing			
	(1)	(2)	(3)	(4)
	(Election 2008)	(Election 2009)	(Election 2011)	(combined)
Housing (full)	0.246*** (0.067)	0.305*** (0.067)	0.216*** (0.069)	0.256*** (0.059)
Constant (full)	0.947*** (0.027)	1.127*** (0.031)	1.072*** (0.031)	1.049*** (0.026)
Housing (match)	0.058 (0.085)	0.044 (0.092)	0.007 (0.090)	0.036 (0.078)
Constant (match)	1.135*** (0.059)	1.388*** (0.071)	1.280*** (0.066)	1.268*** (0.058)
Observations (full)	1,274	1,274	1,274	3,822
Observations (match)	522	522	522	1,566

*Note:* The upper part of the table shows the full sample with all first openings, the lower part uses the matched sample. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01