Online Supplement to ““They Take Our Houses”: Benefit Competition and the Erosion of Support for Immigrants’ Social Rights”

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Contents

S.1 Social housing and income in the Netherlands

In 2009, the European Commission accused the Dutch government of providing illegal state aid to housing associations by providing loan guarantees, even though the latter also engage in non-social activities such as constructing and selling non-social housing.[1] The minority government of the Liberal Party (VVD) and the Christian Democratic Party (CDA), with formal support from the Party for Freedom (PVV), responded by introducing an income threshold for the first time. The temporary regulation stated that from January 1, 2011 onwards, 90% of vacant social housing should be allocated to households with gross annual incomes below €33,614 (2011 prices) and housing associations could allocate up to 10% freely.[2] This regulation was later integrated in a new Housing Act, which went into force on July 1, 2015. The 90% rule was replaced with the 80-10-10 rule: 80% of all new allocations should go to households with incomes below €34,911 (2015 prices), up to 10% to those with incomes between €34,911 and €38,950 (2015 prices), and up to 10% freely. The Labor Party (PvdA), who formed a majority government with the Liberal Party, and the Christian Union (CU) had pushed for this to increase the opportunities for middle-income households. Although the Liberal Party strongly opposed

[1] Commission Decision of 9 December 2009 (No. C (2009) 9963).

[2] *Tijdelijke regeling diensten van algemeen economisch belang toegelaten instellingen volkshuisvesting* [Temporary regulation for services of general economic interest by admitted housing associations] (nr. BJZ2010028548).

it, the motion reached a majority in parliament thanks to the support of opposition parties, including this time the Party for Freedom.[3]

Table S.1 explores the relationship between income and housing tenure in detail. It reveals two interesting patterns. Firstly, renting from housing associations is the dominant form of housing tenure for those with gross annual incomes below €40,000. This makes sense as they may prefer affordable housing and face greater constraints in other parts of the local housing market. Secondly, the likelihood to rent from housing associations decreases with income, but a substantial part of middle- and high-income households continues to live in social housing.

Table S.1 Housing stock by housing tenure and broad income group of residents (%)

	2009			2012		
Gross annual income (x €10,000)	Owner-occupied	Housing associations	Private landlords	Owner-occupied	Housing associations	Private landlords
< 2	18.8	65.0	16.2	19.9	63.9	16.2
2 – 4	38.0	50.2	11.8	36.8	51.0	12.2
4 – 6	63.7	26.3	10.0	61.8	26.8	11.4
6 – 8	75.8	15.7	8.5	74.1	16.2	9.7
8 – 10	81.5	10.4	8.1	80.5	10.5	9.0
> 10	84.8	6.5	8.7	86.0	4.9	9.1
Total	57.0	32.2	10.8	56.9	31.7	11.4

Source: Statistics Netherlands (2017; own calculations).
Note: Percentages are based on the total housing stock minus the "unknown" category for housing tenure.

[3] Parliamentary Document XVIII 2013/2014, 33750.

S.2 Measuring social housing allocations

This section describes the construction of the measure of social housing allocations in more detail. In the main text, I define social housing allocations as the share of the vacant social housing allocated to new refugees in each municipality *j* in each year *t*:

$$Social\ housing\ allocations_{jt} = \frac{Social\ housing\ allocated\ to\ new\ refugees_{jt}}{Vacant\ social\ housing_{jt}}\ X\ 100\%$$

First, I estimated the number of social dwellings allocated to new refugees by dividing the number of newly dispersed refugees in each municipality-year by the average household size of refugees. I use publicly available data on the number of dispersed refugees between 2007 and 2015 and on the number of dispersed regularized asylum seekers between 2007 and 2010 from the Dutch Ministry of Security and Justice (*Ministerie van Veiligheid en Justitie*). These can be found through the search engine on the website of the Dutch government: www.rijksoverheid.nl. These figures refer to all new refugees, including children, who moved into permanent housing in the municipality. (In 2016, the figures include both permanent and temporary housing arrangements.)

Data on the average refugee household size per municipality were not available for most of the period of analysis. Based on previous studies (see, Wissink and Lijzenga 2014), I therefore assume that the average refugee household consists of two refugees. My measure thus does not account for differences in refugee household size between municipalities or over time. This is a limitation as municipalities may struggle more to find housing for single-person or large households due to the predominance of family homes in the social housing stock. I obtained municipal data on refugee household sizes for 2015 through personal communication with the Central Agency for the Reception of

Asylum Seekers (COA) to validate my measure of social housing allocations with a similar measure based on time- and regional-varying refugee household size. I find that both measures are highly correlated.

Secondly, I estimated the number of vacant social dwellings by multiplying the social housing stock by the local annual turnover rate for social dwellings. The number of vacant social housing captures the goods that individuals are competing for better than the social housing stock because most dwellings will stay occupied by their current residents. I use data on the rental stock owned by housing associations, available from 2009 to 2016 through Statistics Netherlands (*Centraal Bureau voor de Statistiek*, CBS), as a proxy for the social housing stock. In 2015, housing associations owned 75% of the total rental stock and 91% of their rental stock was social housing (WoonOnderzoek 2015b; own calculations). There is a break in the time-series due to a new method to measure the housing stock, but the data based on the old and new method (available for 2012) are almost perfectly correlated.

The local annual turnover rates are not available for municipalities, but housing associations are required to include this information in their annual reports. I obtained annual data on the turnover rates of the rental housing stock owned by housing associations through personal communication with Aedes, the confederation of housing associations, for 2011 to 2015 and the Authority for Housing Associations (*Autoriteit woningcorporaties*, Aw) for 2007 to 2010. Although these rates do not capture the turnover in the entire social housing market (because private landlords also provide social housing), they come very close. There were approximately 350 housing associations during this period. I match the annual turnover rate of each housing association to the

municipality in which they had their headquarters and take a weighted average by housing stock if a municipality is the headquarter of multiple housing associations. For municipalities without a headquarter, which is almost half of all municipalities, I replace the missing values for each year with the average turnover rate of that year.

After dividing the estimated number of social dwellings allocated to refugees by the estimated number of vacant social dwellings, and multiplying it by a factor 100, I end up with the measure of social housing allocations to refugees. In principle, this measure should range from 0%, where no vacant social housing is allocated to refugees, to 100% where all vacant social housing is allocated to refugees. However, the measure exceeds 100% in six municipality-years. This means that more social housing was allocated to refugee households than I estimated to be available. This could reflect measurement error from the estimated refugee household size or the imputed annual turnover rates. It could also capture that municipalities found housing for refugees on the private rental market, as private landlords can rent out social housing too. To deal with these concerns, I run all analyses with a trimmed measure of social housing allocations (i.e. excluding observations below the 1st percentile and above the 99th percentile). In the robustness tests in S.7, I repeat the analysis with the unadjusted measure and a more conservative measure of social housing allocations that uses the social housing stock as the denominator. This leads to similar results.

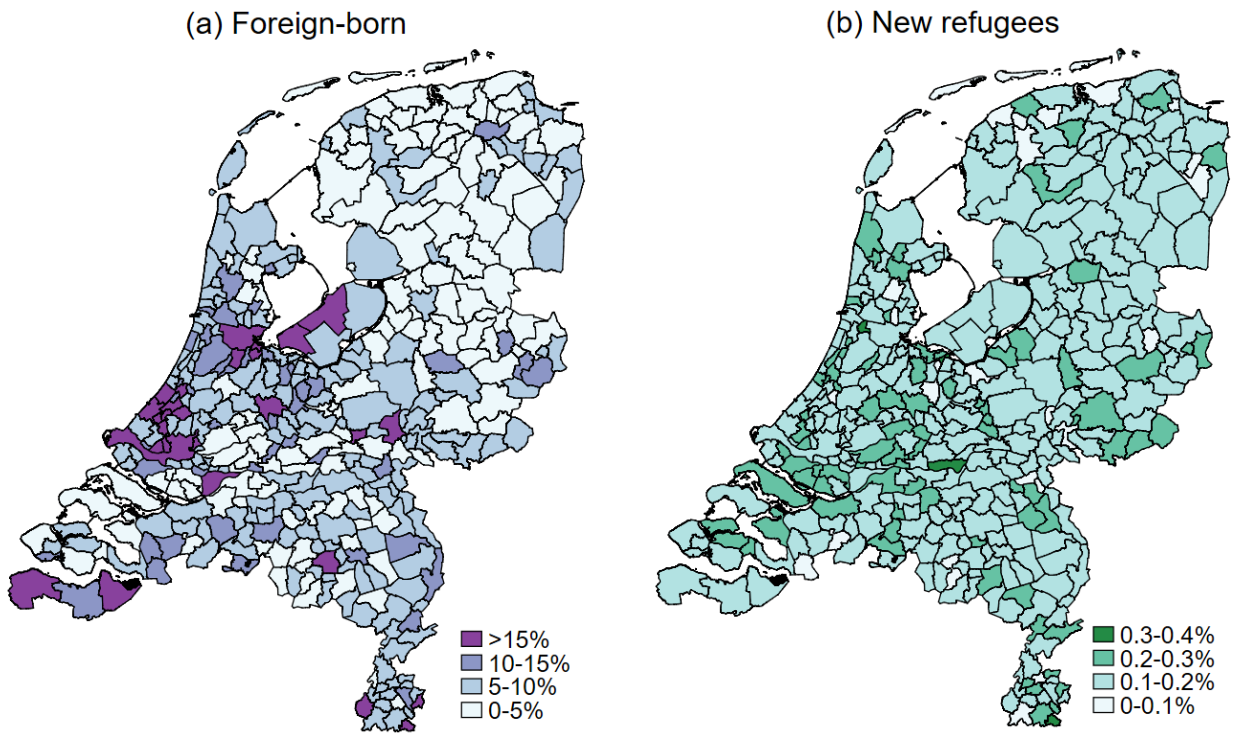
S.3 Exogeneity of social housing allocations

This section presents empirical evidence to support the assumption that the measure of social housing allocations is exogenous to the welfare attitudes of the native-born population. To this end, I focus on the determinants of the main components of the social housing allocations measure: refugee dispersals and the social housing supply.

Determinants of refugee dispersals

The dispersal targets of the mandatory refugee dispersal system are plausibly exogenous to individuals' welfare attitudes as they depend solely on the number of refugees in need of housing and the municipalities' population size. Figure S.1 illustrates that the geographical distribution of the total foreign-born population shows clear signs of self-selection into urban areas (panel a) while the refugee dispersal system leads in practice to a relatively even distribution of the inflow of new refugees (panel b). The percentage of new refugees is also unrelated to the percentage of foreign-born ($r=-0.02$, $p>0.05$).

Figure S.1 Percentage of foreign-born and new refugees in Dutch municipalities in 2015



Source: Author's dataset and Statistics Netherlands (2017)

Yet, other factors may influence whether new refugees receive permanent housing in a municipality. Previous evaluations, for example, found that large municipalities struggle most with placing single-person refugee households due to the overrepresentation of family homes in the social housing stock (RIGO 2016; Smits van Waesberghe and Razenberg 2016). To assess the determinants of refugee dispersals, I therefore run fixed effects linear models with the number of new refugees dispersed in a municipality as the dependent variable. I include year fixed effects and focus the analysis on 2010 until 2015.[4]

[4] I exclude the pre-2010 period because the government only published a single target for municipalities for the temporary dispersal system for regularized asylum seekers.

Table S.2 summarizes the results. Model 1 includes the refugee dispersal targets. As expected, these targets have a strong, positive and significant effect on the number of dispersed refugees. Compared to a baseline model with year fixed effects only (not reported here), the inclusion of refugee dispersal targets increases the within R-squared from 0.281 to 0.800. This confirms that dispersal targets are an important predictor of the number of dispersed refugees.

Model 2 adds population size, the percentage of foreign-born, and the presence of an asylum seekers' center. The immigration variables are insignificant suggesting that new refugees do not self-select into more ethnically diverse municipalities in their first year. Population size has a negative and significant effect on the number of new refugees: when the population increases with 1,000 inhabitants, the number of dispersed refugees reduces by 4 units. Substantively, the effect is small as population size only increases with 1,000 inhabitants (or more) in less than five per cent of the municipality-years. It also has a modest effect on the within R-squared: it moves from 0.800 to 0.816.

Model 3 considers housing market characteristics as these may constrain the ability of municipalities to fulfill their task. Data on rent levels are unavailable, but the variation should be small as social housing rents are regulated. I find that the percentage of social housing, the percentage of private rental housing, average housing values, and tightness of the local housing market (using the ratio of single-person households to rental units as a proxy) do not alter the inflow of new refugees.[5]

[5] Since the dummy for municipalities with long-term population decline is time-invariant, I do not include it here.

Table S.2 Determinants of the number of newly dispersed refugees (2010-2015)

	(1)	(2)	(3)	(4)	(5)	(6) Post-2011
Dispersal targets	0.805**	0.925**	0.927**	0.927**	0.930**	0.910**
	(0.071)	(0.037)	(0.037)	(0.037)	(0.038)	(0.059)
Population size		-0.004**	-0.004**	-0.004**	-0.004**	-0.003
		(0.001)	(0.001)	(0.002)	(0.001)	(0.005)
Foreign-born (%)		2.663	2.910	2.918	3.105	2.236
		(2.035)	(2.185)	(2.179)	(2.169)	(2.593)
Asylum seekers' center		-1.973	-2.000	-2.213	-2.587	-0.903
		(3.058)	(3.012)	(3.037)	(3.050)	(4.278)
Social housing (%)			0.181	0.172	0.144	-0.272
			(0.418)	(0.420)	(0.416)	(1.155)
Private rental housing (%)			0.456	0.452	0.462	0.036
			(0.358)	(0.362)	(0.362)	(1.057)
Average housing values			-4.886	-4.196	-5.348	-22.321*
			(4.039)	(3.438)	(3.683)	(9.069)
Singles-to-units ratio			-1.620	-2.112	-2.514	4.689
			(9.871)	(9.549)	(9.427)	(11.801)
Low-educated (%)				0.098	0.104	0.055
				(0.085)	(0.086)	(0.115)
Unemployment (%)				-1.369	-1.332	-2.947
				(2.525)	(2.484)	(2.089)
Ref: Left bloc						
Centrist bloc					0.920	-0.121
					(2.941)	(3.544)
Right bloc					-2.481	-4.282
					(3.248)	(4.068)
Local bloc					-2.884	-3.515
					(3.466)	(3.848)
Vacant social housing (%)						-0.654
						(40.854)
Vacant private rentals (%)						0.315*
						(0.126)
Vacant owner-occupied (%)						0.347
						(0.412)
Observations	2,328	2,328	2,328	2,328	2,316	1,546
Number of municipalities	388	388	388	388	388	388
Years	6	6	6	6	6	4
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared within	0.800	0.816	0.816	0.816	0.817	0.848

Note: Coefficients from fixed effects linear models. Robust standard errors in parentheses.
** p<0.01, * p<0.05, + p<0.10

Model 4 further controls for the percentage of low-educated and the unemployment rate. I find that these socioeconomic variables do not predict whether municipalities provide more housing to new refugees.

In Model 5, I focus on political variables. Although the mandatory refugee dispersal policy, in place since 1995, is decided on the national level, voters may try to influence its implementation through their local government. I do not have access to data on the partisanship of local governments, but I can control for the political color of the largest party bloc using data from local elections held on March 3, 2010 and March 19, 2014. I assume that the different views on immigration and the welfare state at the national level also influence parties' positions at the local level. Since the Dutch party system is very fragmented, I group political parties into four party blocs: a left-wing bloc, a center bloc, a right-wing bloc, and a local bloc.[6] I include right-wing populist parties in the right-wing bloc because they have a limited presence at the local level: for example, the Party for Freedom only competed in two municipalities (The Hague and Almere) in 2010 and 2014.

[6] I code the Labor Party, Socialist Party, and Green Party as left-wing and I include any list connections with one of these parties. Center parties are the Christian Democrats, Social-Liberal Party, and the Christian Union while the Liberal Party, the Reformed Political Party, the Party for Freedom, List Pim Fortuyn, and Proud of the Netherlands are coded as right-wing parties. I further exclude political parties that compete in multiple municipalities, but do not have a presence in the national parliament.

Model 5 adds this variable and takes left-wing parties as the reference category. The results show that the number of newly dispersed refugees is lower in municipalities with large right-wing or local parties than in municipalities with large left-wing parties, but the differences are statistically insignificant. The findings are similar when I exclude the two municipalities where the Party for Freedom competed and entered the local council (not reported here). Local partisanship thus does not seem to influence the efforts of municipalities to meet their dispersal targets.

Finally, Model 6 controls for more characteristics of the housing market: the vacancy rates for social housing, private rentals, and owner-occupied housing. I include them in a separate model because data for the latter two are only available from 2012. In this period, the refugee dispersal system experienced greater pressures due to the large influx of refugees. Based on this smaller sample, I find that the vacancy rates of private rental housing have a positive and significant effect on the number of dispersed refugees in a municipality. In other words, municipalities seem to provide more housing to refugees when there are more private rental dwellings available. Interestingly, population size no longer affects the number of dispersals while average housing values now do. Although the within R-squared is higher in this model (0.848), very little of this can be attributed to the role of the vacancy rates. A model for the same period without these variables (not reported here) has the same explanatory power.

All in all, these findings suggest that voters are unlikely to influence the decision of municipalities to fulfill their mandatory task to provide permanent housing to new refugees. They also show that the number of dispersed refugees in a municipality is best predicted by the refugee dispersal targets of a municipality. It does not depend on common

demographic, socioeconomic, most housing market related, or political factors. The effect of population size is statistically significant, but it is modest compared to the effect of dispersal targets. The number of dispersed refugees drops from 34 to 29 as we move from the mean of population size to one (within variation) standard deviation above the mean, while the number of dispersed refugees increases from 34 to 68 as we move from the mean of dispersal targets to one (within variation) standard deviation above the mean. The effect of vacant private rentals, based on the post-2011 sample, is also very small: the number of dispersed refugees increases from 38 to 39 as we move from the mean of vacant private rentals to one (within variation) standard deviation above the mean. To reduce the risk of bias, I will control for these context variables in the robustness tests of the analysis of voters' attitudes.

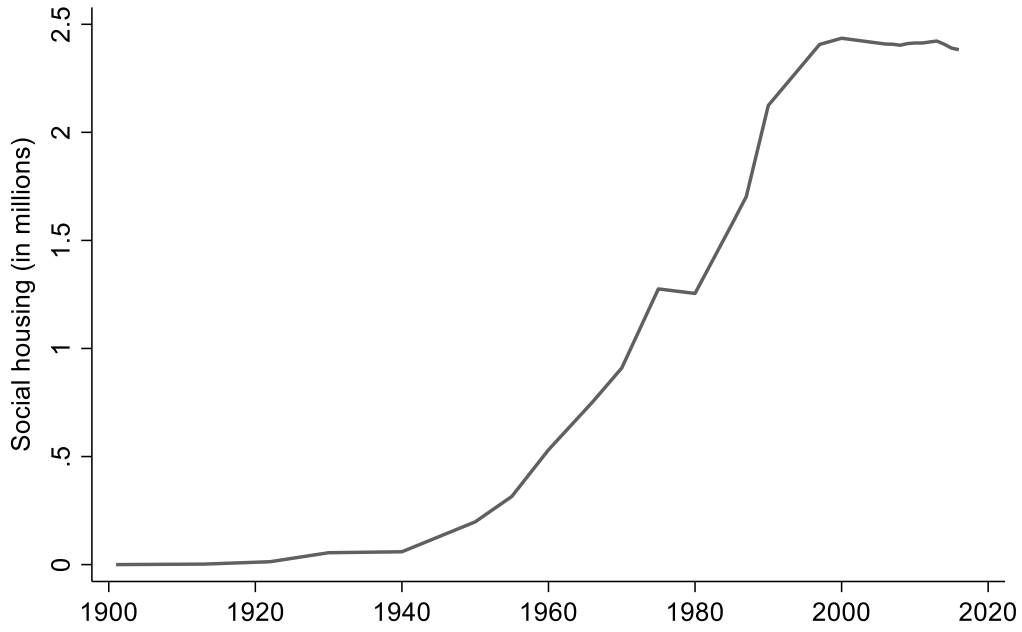
Voters and the social housing supply

The previous section showed that voters do not seem to influence the decision of municipalities to provide housing to new refugees. Here, I argue that voters are also unlikely to successfully influence the supply of social housing in the short term.

First, housing associations are responsible for constructing most social housing, but they are private actors and voters have few options to directly influence on their actions. While local governments can encourage housing associations to build more, they too have limited influence over housing associations, especially since their privatization and the abolition of construction subsidies in the 1990s (Haffner et al. 2009). This comes out in Figure S.2, which shows the total number of houses owned by housing associations. Their stock stagnated in recent decades and between 2000 and 2016, it even decreased by

2.2 percentage points (pp) while the total number of Dutch households increased by 13.5 pp.

Figure S.2 Total social housing stock since 1901

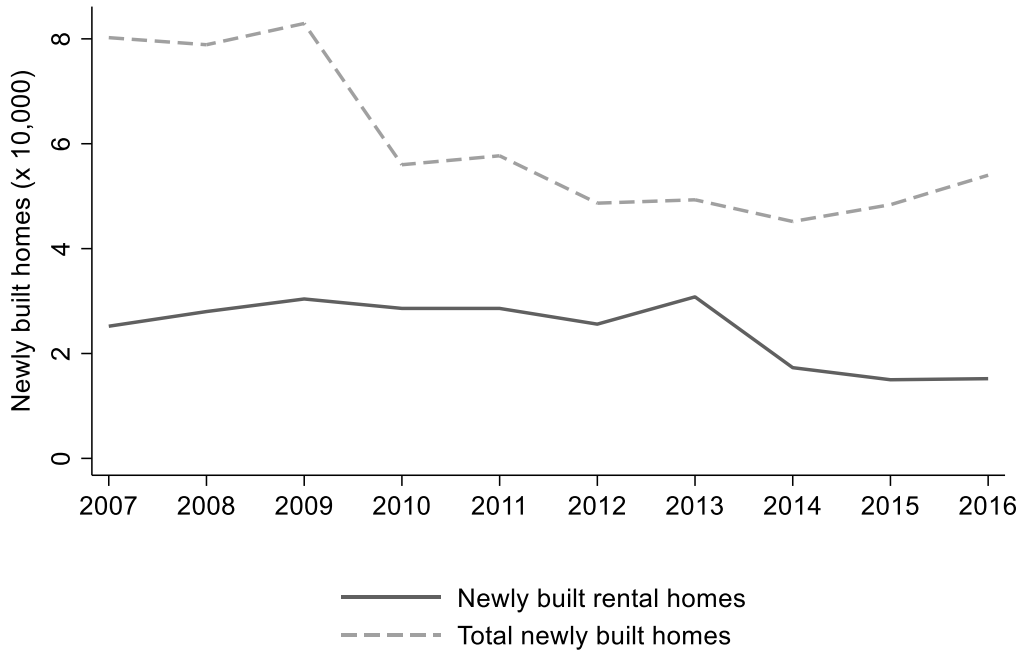


Source: Aedes (2018)

Moreover, the period of analysis includes the Great Recession of 2008-2009 and the economic crisis of 2011-2012. Both crises had a negative impact on the Dutch housing market as witnessed by the slowdown in construction, the decline in housing values, and the rise of the low-income population. Although housing associations continued to build during the 2008-09 crisis, Figure S.3 shows that the number of new rental homes built by housing associations reduced significantly after 2013. This drop coincides with the introduction of a social landlord levy, one of the austerity measures of the national government. An evaluation concluded that this levy (rising from 1.2 billion euro in 2014

to 1.7 billion euro in 2017), reduces the financial room for housing associations to invest and discourages them to construct new properties (Veenstra et al. 2016). All of this suggests that the welfare attitudes of voters were unlikely to affect the social housing supply in this period.

Figure S.3 The number of newly built rental homes between 2007 and 2016



Source: Aedes (2018)

Correlation matrix of municipal-level characteristics

Table S.3 reports the correlations between the measure of social housing allocations to refugees and other municipal-level determinants of welfare attitudes. The correlations with the main independent variable are all statistically significant ($p<0.05$), except those with the percentage of low-educated and unemployment rates. Most of them are weak, but the correlation with the size of the social housing market is moderately strong. This makes sense given the construction of the measure. The correlation matrix also shows that the percentage of foreign-born, a common proxy of benefit competition in previous studies, is more strongly correlated with population size, social housing, unemployment, and private rentals, leaving open the influence of confounders.

Table S.3 Correlation matrix of municipal characteristics

	Social housing allocations	Foreign-born	Social housing	Low-educated	Unem-ploymen t	Pop. size	Private rentals	Average housing values	Singles-to-units ratio	Vacant private rental
Foreign-born (%)	-0.21									
Social housing (%)	-0.41	0.52								
Low-educated (%)	-0.03†	-0.17	0.05							
Unemployment (%)	-0.01†	0.39	0.36	-0.12						
Population size	-0.16	0.61	0.42	-0.09	0.31					
Private rentals (%)	-0.04	0.53	0.01†	-0.28	0.18	0.37				
Average housing values	0.05	-0.14	-0.37	-0.23	-0.54	-0.17	0.10			
Singles-to-units ratio	0.17	0.04	-0.50	-0.32	0.02†	0.00†	0.10	-0.18		
Vacant private rentals (%)	-0.05	-0.03†	-0.10	0.07	-0.11	-0.10	0.06	0.01†	-0.00†	
Vacant owner-occupied (%)	-0.06	0.09	-0.13	-0.19	-0.11	-0.02†	0.37	0.09	0.08	0.66

Note: Based on the municipal dataset (2007-2015). '†' denotes correlations with p-values exceeding 0.05.

S.4 Regional media analysis

Like many other studies on the influence of contextual factors on public opinion, I assume that individuals perceive their surroundings. More specifically, I assume that individuals are aware of the allocations of social housing to refugees in their municipality. This seems likely given that Dutch municipalities are relatively small, most refugees are visible minorities, and the refugee dispersal system has existed since 1995. Ideally, this assumption would be tested directly (see, for example, Newman et al. 2015). Unfortunately, the panel study does not include any items to do this. However, I can provide some suggestive evidence from a preliminary analysis of regional newspapers, one of several sources of information that individuals may access. If the allocation of social housing to refugees is covered by regional newspapers, this would provide some evidence in support of a key assumption.

From the LexisNexis Database, I select twelve widely read Dutch regional newspapers representing regions from across the country.[7] For the analysis, I limit the focus to the period of January 1, 2007 until December 31, 2018. Figure 1 in the main text has shown that the number of refugee dispersals fluctuated during this period: from intermediate levels between 2007 and 2009 (due to the dispersals of regularized asylum

[7] These papers are "Dagblad van het Noorden", "De Gelderlander", "BN/DeStem", "Leeuwarder Courant", "Brabants Dagblad", "Het Parool", "Eindhovens Dagblad", "Dagblad De Limburger (PL)", "De Twentsche Courant", "Tubantia", "Noordhollands Dagblad", "Provinciale Zeeuwse Courant", and "AD/Haagsche Courant".

seekers), to low levels between 2010 and 2013, to high levels between 2014 and 2016 (due to the large influx of Syrian refugees). I expect that news coverage by regional media will follow these trends.

The search string to identify articles on the provision of housing to refugees contained various terms for 'refugees' and 'housing'.[8] To compare the salience of refugee housing, I also conducted searches for other issues for which local governments are responsible, namely the provision of social assistance and youth care.[9] Using quantitative content analysis, I measure the frequency of articles on each topic. While a systematic content analysis goes beyond the scope of this study, this preliminary analysis gives useful insights in broad trends of news coverage of this topic.

Figure S.4 shows the frequency of news articles on refugee housing (solid line), social assistance (dashed line), and youth care (dotted line) between 2007 and 2018. Three observations can be made about the coverage of refugee housing by regional newspapers.

Firstly, regional newspapers provide continuous coverage of the issue of refugee housing. Before 2014, there were, on average, 440 articles on this topic in all twelve newspapers: this amounts to 37 articles per year per regional newspaper. After 2013, news coverage was considerably higher: on average, 3137 articles on refugee housing appeared

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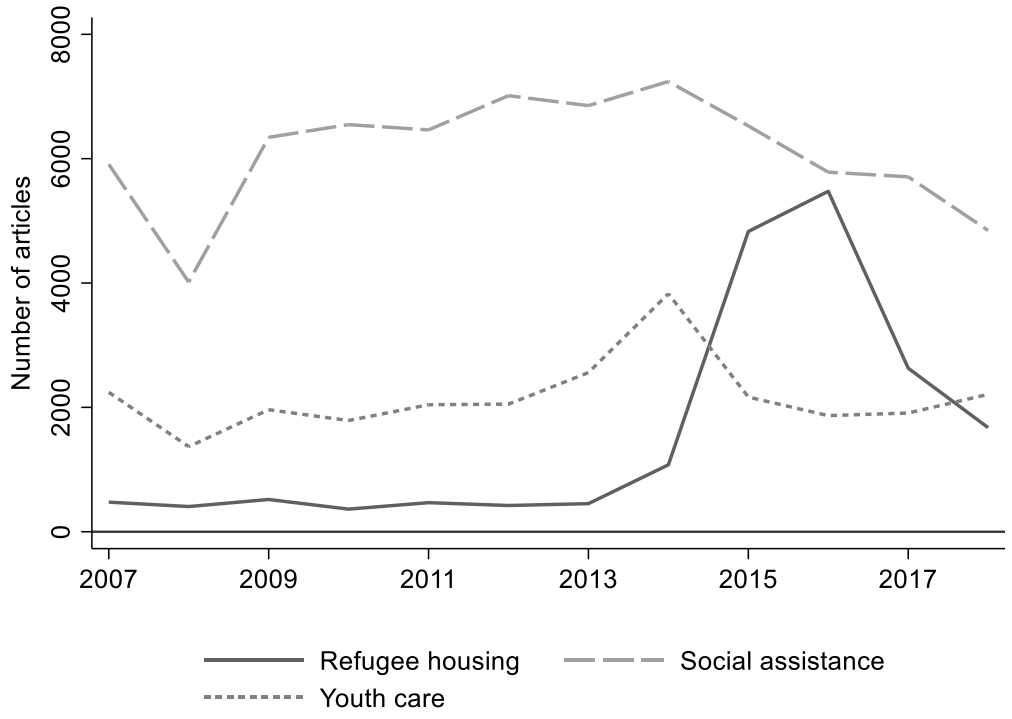
[8] In Dutch, the search string is: [refugees] (vluchtelingen OR statushouders OR vergunninghouders OR verblijfsgerechtigden OR pardonners) AND [housing] (woning OR huurwoning OR sociale huur OR sociale huurwoning OR huisvesting OR huis).

[9] The search term for youth care was (jeugdzorg), while for social assistance the search string was (bijstandsuitkering OR bijstand OR uitkering).

in all newspapers combined which translates to 260 articles per year per regional newspaper. The trends are similar when newspapers are grouped by broad NUTS-1 region (not reported here).

Figure S.4 Frequency of articles on refugee housing, social assistance, and youth care



Secondly, the coverage of refugee housing by regional newspapers largely follows the actual number of refugee dispersals. In most years, the number of articles is low, reflecting the low number of refugee dispersals. There is a clear spike after 2013 when the Netherlands, and many other European countries, experienced a high intake of refugees and the housing market was particularly tight. Interestingly, the allocation of social housing to regularized asylum seekers between 2007 and 2009 did not trigger more coverage by regional newspapers. This may reflect the broad support for this group of

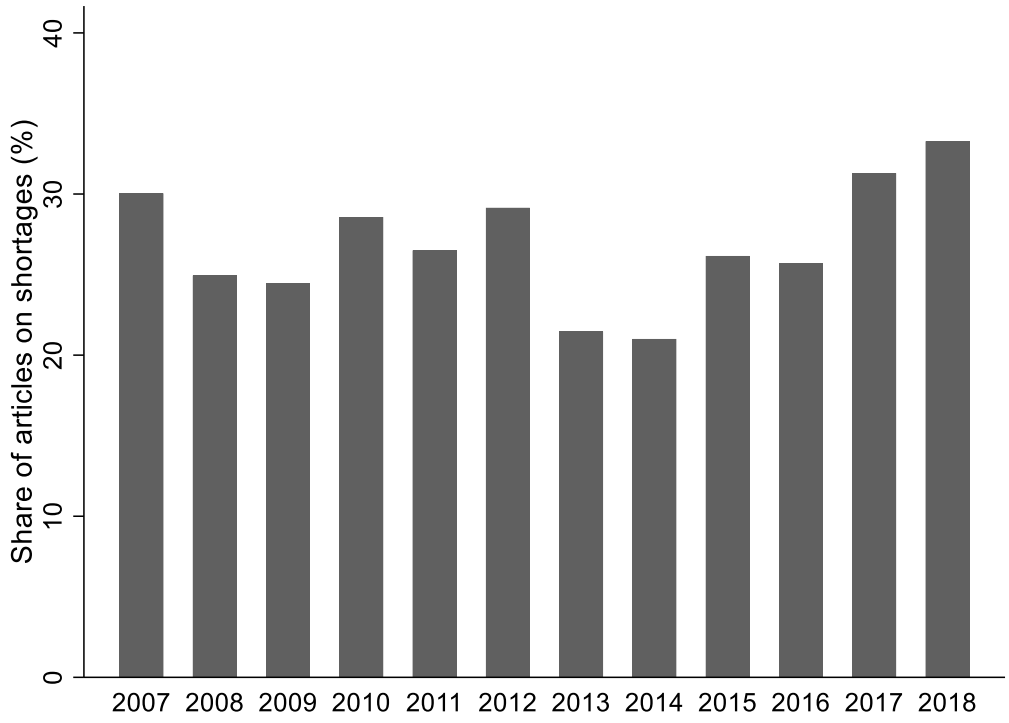
asylum seekers, whom many considered victims of long and inadequate asylum procedures by the government. Another reason could be that the massive operation to provide permanent housing to nearly 27,500 regularized asylum seekers occurred in the context of a booming housing market and high economic growth.

Thirdly, Figure S.4 shows that in most years the salience of refugee housing is substantially lower than of social assistance and youth care, two other important local issues. This makes sense because more people are affected by the latter two social programs. After 2014, however, the coverage of the refugee housing topic overtakes the coverage of youth care and it comes very close to the coverage of social assistance. This comparison shows that regional newspapers inform their readers about refugee housing, in line with my assumption, but it is often less salient than other local social issues.

Finally, I analyzed how often articles in regional newspapers link the issue of refugee housing to housing shortages. To this end, I added search terms for 'shortages' to the search string of refugee housing.[10] From these results, I calculate the proportion of articles on refugee housing that also mention shortages. Figure S.5 depicts this and it shows that, on average, more than a quarter of all articles on refugee housing mention shortages. Voters may thus reasonably link the inflow of refugees into their municipality to shortages in the social housing market.

[10] In Dutch, the search string for shortages was (tekort OR woningnood OR krapte OR schaarste OR weinig OR gebrek).

Figure S.5 Share of articles on refugee housing related to shortages



S.5 Panel attrition

Table S.4 Response rates for each wave of the politics and values module

Wave	1	2	3	4	5	6	7	8	9
Year	2007	2008	2009	2010	2011	2012	2013	2015	2016
Number of invited household members	8204	8289	9398	7328	7372	6692	6416	6913	6211
Response	6811	6037	6386	5394	5934	5732	5690	6092	5592
Response rate (%)	83.0	72.8	68.0	73.6	80.5	85.7	88.7	88.1	90.0

Source: LISS (2018)

Table S.5 Respondent characteristics by number of completed questionnaires

	Completed questionnaires				
	One	Two	Three	Four	Five or more
Individual-level					
Income	2.86	2.81	2.85	2.77	2.75
Female	0.52	0.55	0.55	0.55	0.53
Age	44.02	44.00	44.47	46.50	51.96
University education	0.09	0.11	0.08	0.07	0.08
Unemployed	0.02	0.03	0.02	0.02	0.02
Household size	2.76	2.61	2.76	2.69	2.56
Municipal-level					
Social housing allocations	4.50	5.39	4.13	4.18	4.28
Foreign-born (%)	10.28	10.94	10.41	10.51	9.90
Asylum seekers' center	0.22	0.21	0.21	0.19	0.19
Social housing (%)	30.52	30.32	30.36	29.43	29.27
Low-educated (%)	33.47	32.55	33.26	33.07	32.97
Long-term population decline	0.18	0.17	0.19	0.20	0.19
Singles-to-units ratio	0.88	0.88	0.87	0.88	0.87
Total respondents	1,924	1,727	1,013	754	4,700

S.6 Descriptive statistics

Table S.6 Support for immigrants' social rights (ordinal variable)

Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
9.8	48.7	25.0	11.0	5.5

Note: Average percentage of respondent-years, LISS (2007-2016).

Table S.7 Operationalization of the main variables

Variable	*Description*	*Source*	*Years*
Support for immigrants' social rights	Whether immigrants should be granted equal social rights. Recoded 5-point variable into binary variable. 1=Support (strongly agree or agree), 0=No Support (neither agree nor disagree, disagree, or strongly disagree)	LISS	2007-2016
Income	Net monthly household income in 2015 constant euros (x 1,000). Values ≥ 3SD from the mean are top-coded.	LISS, SN	2008-2016
Female	Gender of the respondent. 1=Female, 0=Male	LISS	2007-2016
Age	Age of the respondent in years.	LISS	2007-2016
University degree	Highest level of education of the respondent. 1=University degree, 0=Not	LISS	2007-2016
Unemployed	Employment status of the respondent. 1=Unemployed, 0=Not	LISS	2007-2016
Household size	Number of household members	LISS	2007-2016
Social housing allocations	The percentage of vacant social housing allocated to new refugees.	Author's dataset	2009-2015
Foreign-born (%)	The percentage of foreign-born.	SN	2007-2016
Asylum seekers' center	The presence of an asylum seekers' center. 1=Yes, 0=No	COA*	2006-2016
Social housing (%)	Rental housing owned by housing associations as a percentage of the total housing stock.	SN	2009-2016
Low-educated (%)	The percentage of low-educated (aged 15 to 75).	SN	2007-2016
Long-term population decline	1=Municipalities with current or anticipated severe decline in population, households, or both, 0=Not.	PD	2015
Singles-to-units ratio	The number of single-person households to the total number of (social and private) rental units.	SN	2007-2016

Notes: LISS – Longitudinal Internet Studies for the Social sciences; SN – Statistics Netherlands; COA – Central Agency for the Reception of Asylum Seekers; PD – Parliamentary Document 2015-0000348484. * I obtained data from COA through private communication.

Table S.8 Summary statistics of the main variables

Variable		*Mean*	*Std. Dev.*	*Min*	*Max*	*N*
Individual-level						
Support for immigrants' social Rights	overall between within	0.58	0.49 0.40 0.32	0 0 -0.30	1 1 1.47	N = 46506 n = 10245
Income	overall between within	2.76	1.43 1.40 0.62	0 0 -8.15	15.91 15.91 15.92	N = 37582 n = 8651
Female	overall between within	0.53	0.50 0.50 0	0 0 0.53	1 1 0.53	N = 46855 n = 10252
Age	overall between within	50.19	16.62 17.06 2.36	18 18 25.94	97 95.5 65.94	N = 46925 n = 10277
University education	overall between within	0.08	0.28 0.28 0.07	0 0 -0.81	1 1 0.97	N = 46845 n = 10273
Unemployed	overall between within	0.02	0.15 0.11 0.11	0 0 -0.87	1 1 0.91	N = 46924 n = 10277
Household size	overall between within	2.59	1.29 1.27 0.40	1 1 -2.07	10 8.5 7.26	N = 46925 n = 10277
Municipal-level						
Social housing allocations	overall between within	4.32	3.52 2.63 2.77	0 0 -7.15	22.20 22.04 19.56	N = 30040 n = 8120
Foreign-born (%)	overall between within	10.07	6.71 6.79 1.28	1.64 1.66 -7.71	34.98 34.98 31.63	N = 46007 n = 10155
Asylum seekers' center	overall between within	0.19	0.40 0.37 0.18	0 0 -0.69	1 1 1.08	N = 46007 n = 10155
Social housing (%)	overall between within	29.42	8.05 7.99 1.68	0 5.74 5.02	49.77 49.77 50.88	N = 34795 n = 8249
Low-educated (%)	overall between within	32.99	4.93 4.56 2.53	18.18 21.05 18.65	50 50 48.51	N = 46007 n = 10155
Long-term population decline	overall between within	0.19	0.39 0.38 0.05	0 0 -0.70	1 1 1.07	N = 46007 n = 10155
Singles-to-units ratio	overall between within	0.88	0.15 0.14 0.05	0.52 0.53 0.16	2.04 2.04 1.47	N = 46007 n = 10155

Note: Based on the full sample of adult native-born respondents from 2007 to 2016.

S.7 Robustness tests for support for immigrants' social rights

This section reports a series of robustness tests of the main finding that social housing competition reduces support for immigrants' social rights more among lower-income voters than among high-income voters in the secondary target group. Table S.9 summarizes the effect of these tests on the main coefficients: respondent's income, social housing allocations, and their interaction.[11] The original results refer to model 8 in table 3 in the main text. There I also discussed the alternative explanations of social class, authoritarianism, and urbanization (tests (1) to (6) in table S.9). Below I focus on other alternative explanations and model specifications.

Ideology. Left-wing individuals could be more supportive of immigrants' social rights given their commitment to the principle of social equality. Although the causal direction between political ideology and welfare attitudes can be disputed, test (7) includes ideology, measured with an eleven-point left-right self-placement scale. The sample size drops slightly, but I find that the interaction between income and social housing allocations is robust to the inclusion of ideology.

Homeowners. Although homeowners and renters both move into rental housing in the Netherlands (respectively, 31% compared to 63% according to the 2015 Housing Survey), homeowners are more likely to move to owner-occupied homes. I control for housing tenure, a household-level variable. The results from test (8) confirm the main findings.

[11] The full models of the robustness tests can be found in the file *log_main_analysis.scml*.

Table S.9 Overview of the robustness tests for support for immigrants' social rights

	Income		*Social housing allocations*		*Interaction*	
	Est.	s.e.	Est.	s.e.	Est.	s.e.
(0) Original results	0.919	0.055	0.949*	0.023	1.015*	0.006
Adding control variables						
(1) Social class	0.911	0.057	0.944*	0.024	1.014*	0.007
(2) Authoritarianism	0.919	0.055	0.949*	0.023	1.015*	0.006
(3) Urban area	0.916	0.055	0.947*	0.023	1.015*	0.006
(4) Large cities interaction	0.886	0.057	0.942*	0.023	1.017*	0.007
(5) Population size	0.916	0.055	0.948*	0.023	1.015*	0.006
(6) Population density	0.920	0.055	0.949*	0.023	1.015*	0.006
(7) Ideology	0.926	0.061	0.944*	0.024	1.015*	0.007
(8) Homeownership	0.914	0.055	0.949*	0.023	1.015*	0.006
(9) Out of the labor force	0.915	0.055	0.949*	0.023	1.014*	0.006
(10) Private rental market (%)	0.918	0.055	0.949*	0.023	1.015*	0.006
(11) Average housing value	0.920	0.055	0.950*	0.023	1.014*	0.006
(12) Vacant private rentals (%)	0.933	0.089	0.934*	0.030	1.017*	0.008
(13) Young adults (%)	0.918	0.055	0.948*	0.023	1.015*	0.006
(14) Vacant social housing (%)	0.919	0.055	0.949*	0.023	1.015*	0.006
(15) Unemployment (%)	0.919	0.055	0.948*	0.023	1.015*	0.006
(16) Industrial jobs (%)	0.915	0.062	0.952+	0.027	1.015*	0.007
(17) Benefit recipients (%)	0.922	0.055	0.948*	0.023	1.014*	0.006
Alternative allocations measure						
(18) Non-trimmed measure	0.923	0.053	0.954*	0.018	1.014*	0.006
(19) Stock-based measure	0.905+	0.053	0.432**	0.116	1.255**	0.095
(20) Post-2009 years	0.907	0.060	0.947*	0.026	1.015*	0.007
Alternative specifications						
(21) Municipal reforms	0.890+	0.057	0.946*	0.024	1.017*	0.007
(22) Exposure effect	1.031	0.033	0.984	0.015	1.002	0.001
(23) Homogenous areas	0.884	0.080	0.940*	0.028	1.016+	0.008
(24) Strongly agree	0.944	0.075	0.927*	0.035	1.019*	0.009
(25) Ordinal DV	-0.024	0.015	-0.013*	0.006	0.003*	0.002
(26) Pro-immigrant DV	-0.028	0.032	-0.024*	0.012	0.007*	0.003
(27) Placebo DV	0.977	0.070	1.001	0.030	0.996	0.008
(28) Gross income	0.939+	0.034	0.950*	0.020	1.010**	0.004
(29) Random effects	1.013	0.022	0.947**	0.018	1.010**	0.003
(30) CRE probit	-0.069*	0.034	-0.040**	0.013	0.011**	0.003

Notes: Original results refer to model 8 in table 3. Estimates are logit coefficients (except for tests 25 and 26). ** p<0.01, * p<0.05, + p<0.1

Out of the labor force. Individuals with a weak labor market position should feel more threatened by immigrants (Mewes and Mau 2013). Test (9) therefore includes a dummy for being out of the labor force. The main results do not change.

Housing market conditions. I account for characteristics of the housing market because local housing markets vary and the social housing market does not operate in isolation. I control for the size of the private rental market, average housing values, vacancy rates for social housing, and for private rental housing, and the percentage of young adults as they may enter the housing market for the first time. Tests (10) to (14) show that the main findings hold when controlling for these variables.

Economic conditions. The final set of control variables captures economic conditions, which may influence support for immigrants' social rights by activating nascent prejudices (Sniderman et al. 2004) or through socialization. I control for unemployment rates, the share of industrial jobs (available from 2010 to 2015), and the percentage of benefit recipients in tests (15), (16), and (17). Including these economic variables does not change the main results.

Social housing allocations. The following tests address possible concerns regarding the measure of social housing allocations. First, I repeat the analysis with a measure that does not trim the extreme values. Second, I test an alternative measure of social housing allocations based on the number of social housing allocated to refugees as a share of the total social housing stock (instead of supply). Thirdly, I restrict the analysis to the post-2009 years when the dispersal system of regularized asylum seekers stopped operating. Tests (18), (19), and (20) show that this leads to similar results.

Municipal reforms. Adjusting the municipal-level variables to the 2017 borders introduces measurement error, which could be a cause for concern if it were related to social housing allocations. For example, municipalities struggling to meet their refugee dispersal targets could decide to merge with another municipality. Comparing summary statistics shows that social housing allocations is not much higher in municipalities that underwent reform. Test (21) also shows that the main findings are similar when I restrict the analysis to those living in municipalities without reforms.

Exposure effects. If individuals dislike the mere presence of immigrants in their neighborhood, they should oppose immigrants' social rights even if they do not compete with immigrants for scarce social goods. Following this logic, the allocation of social housing to refugees should have a stronger effect in ethnically homogenous municipalities. Test (22) explores the interaction between social housing allocations and the level of foreign-born. Note that the coefficients in the table refer to these variables. The insignificant coefficients suggest that the main findings are not driven by an exposure effect. Test (23) shows that the relationship between income and social housing allocations also holds when I restrict the analysis to ethnically homogenous municipalities (defined as below the median of the percentage of foreign-born).

Dependent variable. In the main text, the dependent variable equals '1' if the respondent 'agrees' or 'strongly agrees' with the statement that immigrants should be granted equal social rights. Table S.6 showed that support for immigrants' social rights is relatively high: in almost 60 per cent of the respondent-years, respondents either agree or strongly agree with the statement. The table also shows that support for immigrants' social rights is substantially lower when we look at those instances when respondents strongly

agree. This only occurs in 9.8 per cent of the respondent-years. In test (24), I use a more restrictive measure of support for immigrants' social rights as strongly agreeing that immigrants should have equal social rights. Although the sample size drops, the patterns are similar. Social housing allocations reduce support for immigrants' social rights more among those with lower incomes. In test (25), I make use of the full range of variation in the dependent variable by using the original, five-category survey item. Using a fixed effects linear model with robust standard errors, I find that the relationship between social housing allocations and income is similar with an ordinal dependent variable.

Also, I use pro-immigrant sentiment as an alternative dependent variable. Following Gallego and Pardos-Prado (2014), I measure this as an additive index of four items that ask whether: 'it is good if society consists of people from different cultures', 'there are too many people of foreign origin or descent in the Netherlands' (reversed), 'it does not help a neighborhood if many people of foreign origin or descent move in' (reversed), and 'legally residing foreigners should be entitled to the same social security as Dutch people'. The items seem to capture the same concept (Crohnbach's alpha = 0.73). The coefficients are in the expected direction and significant in test (26). Lastly, I re-estimate the baseline model with a placebo dependent variable. As expected, the results from test (27) show that social housing allocations do not make lower-income individuals more likely to believe that children should look after their parents.

Gross income. Although the survey includes information on gross income, which captures the logic of the argument better, I use a measure based on net income because it has fewer missing values. (The LISS imputes the values for gross income if net income

was available.) Using this measure of gross monthly household income in test (28), I find that the patterns are the same, if not stronger.

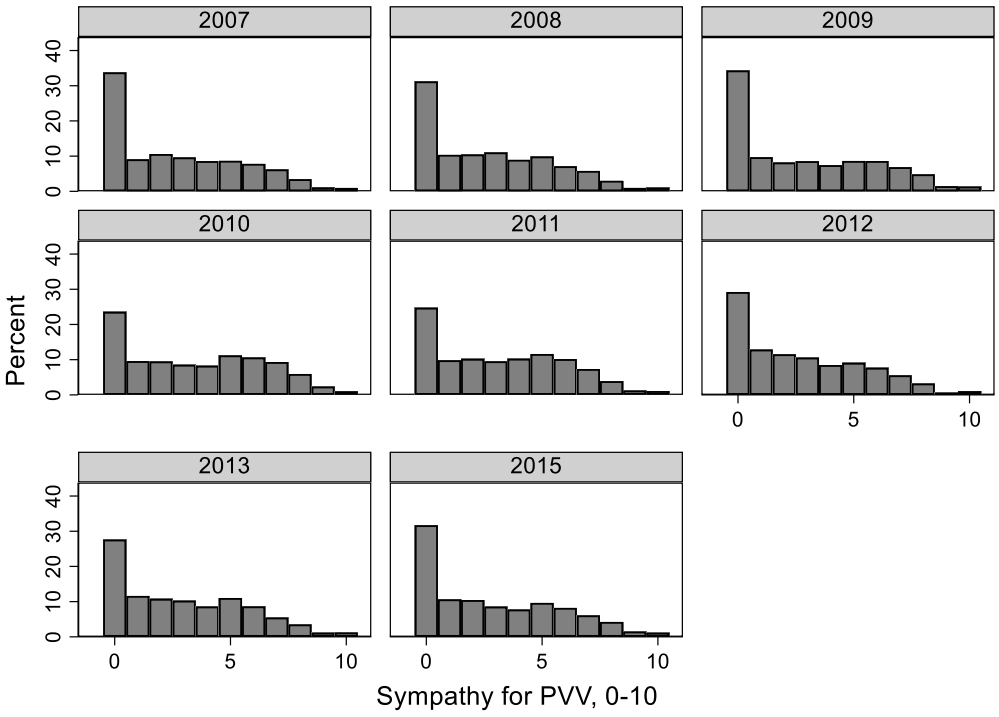
Model specifications. The main models rely on a stringent specification using fixed effects for the individual and the year. Tests (29) and (30) show that the results are similar with a random effects logit specification and a correlated random effects (CRE) probit specification.

General competition. It could be argued that self-interested individuals should reduce their support for immigrants' social rights when goods become scarce, even if this is unrelated to immigration. By restricting the pool of potential recipients, individuals can increase their chances. I therefore tested whether the effect of income depends on measures of general competition, such as the unemployment rate, the percentage of benefit recipients, average housing values, vacancy rates of rental housing, and the percentage of private rental housing. These general measures do not affect lower-income individuals more than higher-income individuals (available upon request). This suggests that individuals do not reduce their support for immigrants' social rights indiscriminately. Instead, they seem to do so when competition can be linked to immigration.

S.8 Robustness tests for support for the populist right

Between 2006 and 2015, the main right-wing populist party in the Netherlands was the Party for Freedom (*Partij voor de Vrijheid*, PVV). The dependent variable measures voters' evaluations of this party ranging from '0', unsympathetic, to '10', sympathetic. Average support for the populist right is low to moderate: the party receives a score of 3 (out of 10) and Figure S.6 shows that this score is driven by a high proportion of respondents who find the party unsympathetic. To compare, support is 4.9 for the main right-wing party, the Liberal Party, and 5.0 for the main left-wing party, the Labor Party.

Figure S.6 Distribution of support for the right-wing populists over time



Previous studies have demonstrated the relevance of the desire to restrict immigrants' social rights for support for the populist right (see, for example, Bay et al. 2013; De Koster et al. 2013). Mirroring the patterns for support for immigrants' social rights, I find in table S.10 that the effect of income and social housing allocations on support for the populist right is in the expected direction in all models. While the coefficients are significant in the full sample and the secondary target group, they are insignificant for respondents in the primary target group. This suggests that social housing allocations to refugees increases support for the populist right more among lower middle-income voters than among high-income voters.

In table S.11, I explore the robustness of the finding in the main text that this pattern for lower middle-income voters holds particularly for those living in tighter housing markets (model 12 in table 4). I find that the results are robust to controlling for a wide range of alternative explanations.

Table S.10 Social housing allocations and support for the populist right

	Full sample		Primary target		Secondary target	
	(1)	(2)	(3)	(4)	(5)	(6)
Income (x €1,000)	0.047*	0.051*	-0.074	-0.046	0.068*	0.073**
	(0.021)	(0.022)	(0.142)	(0.143)	(0.028)	(0.028)
Social housing allocations	0.025**	0.025**	0.029	0.031	0.030**	0.030**
	(0.008)	(0.008)	(0.034)	(0.034)	(0.010)	(0.010)
Income X Allocations	-0.008**	-0.008**	-0.016	-0.017	-0.010**	-0.010**
	(0.002)	(0.002)	(0.023)	(0.023)	(0.003)	(0.003)
Age		-0.026		-0.116		-0.017
		(0.021)		(0.090)		(0.017)
University degree		-0.428**		-0.392		-0.526*
		(0.166)		(0.281)		(0.229)
Household size		-0.016		-0.218		-0.021
		(0.033)		(0.169)		(0.040)
Unemployed		0.013		-0.311+		0.166+
		(0.079)		(0.162)		(0.090)
Foreign-born (%)		0.010		0.002		0.008
		(0.011)		(0.023)		(0.013)
Asylum seekers' center		-0.043		0.059		-0.114
		(0.058)		(0.107)		(0.074)
Social housing (%)		-0.004		0.005		-0.005
		(0.008)		(0.017)		(0.010)
Low-educated population (%)		-0.001		-0.008		-0.000
		(0.004)		(0.010)		(0.005)
Long-term population decline		0.467+		1.349*		0.649+
		(0.284)		(0.675)		(0.383)
Singles-to-units ratio		0.091		-0.796		0.167
		(0.260)		(0.618)		(0.282)
Observations	25,437	25,386	6,320	6,299	19,117	19,087
Number of respondents	7,218	7,207	2,269	2,264	5,786	5,777
Waves	6	6	6	6	6	6
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Estimates from fixed effects linear models with robust standard errors.
** p<0.01, * p<0.05, + p<0.1

Table S.11 Overview of the robustness tests for support for the populist right

	Income		*Social housing allocations*		*Interaction*	
	Est.	s.e.	Est.	s.e.	Est.	s.e.
(0) Original results	0.076*	0.033	0.033**	0.012	-0.010**	0.003
Adding control variables						
(1) Social class	0.056+	0.032	0.024+	0.012	-0.008*	0.003
(2) Authoritarianism	0.075*	0.033	0.033**	0.012	-0.010**	0.003
(3) Urban area	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(4) Large cities interaction	0.073+	0.037	0.026*	0.012	-0.009**	0.003
(5) Population size	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(6) Population density	0.077*	0.033	0.034**	0.012	-0.010**	0.003
(7) Ideology	0.064+	0.033	0.029*	0.011	-0.009**	0.003
(8) Homeownership	0.075*	0.033	0.033**	0.012	-0.010**	0.003
(9) Out of the labor force	0.075*	0.033	0.033**	0.012	-0.010**	0.003
(10) Private rental market (%)	0.076*	0.033	0.033**	0.011	-0.010**	0.003
(11) Average housing value	0.075*	0.032	0.033**	0.012	-0.010**	0.003
(12) Vacant private rentals (%)	-0.017	0.039	0.022	0.014	-0.010**	0.003
(13) Young adults (%)	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(14) Vacant social housing (%)	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(15) Unemployment (%)	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(16) Industrial jobs (%)	0.049	0.030	0.025*	0.012	-0.009**	0.003
(17) Benefit recipients (%)	0.075*	0.033	0.033**	0.012	-0.010**	0.003
Alternative allocations measure						
(18) Non-trimmed measure	0.051	0.032	0.019*	0.008	-0.005**	0.002
(19) Stock-based measure	0.060+	0.032	0.326**	0.115	-0.094**	0.031
(20) Post-2009 years	0.053+	0.029	0.024*	0.012	-0.009**	0.003
Alternative specifications						
(21) Municipal reforms	0.056+	0.032	0.032*	0.012	-0.010**	0.003
(22) Exposure effect	0.012	0.017	-0.011	0.008	0.002+	0.001
(23) Homogenous areas	0.076*	0.033	0.033**	0.012	-0.010**	0.003
(24) Binary DV	1.228*	0.123	1.087*	0.045	0.974*	0.012
(25) Gross income	0.045*	0.020	0.025*	0.010	-0.005**	0.002
(26) Random effects	0.019	0.025	0.035**	0.011	-0.010**	0.003

Notes: The original results refer to model 12 in table 4 in the main text. Estimates are coefficients from fixed effects linear models with robust standard errors (except for test 24 which are odds ratios). ** p<0.01, * p<0.05, + p<0.1

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